

**CAROL  
BRAND**

**ELECTRONICS  
WIRE & CABLE**



ELECTRONIC WIRE AND CABLE FOR  
SIGNAL TRANSMISSION AND SOUND/SECURITY  
APRIL 2010

## Electronics

This catalog contains in-depth information on the most comprehensive line of copper Electronics products available today for data transmission, sound, security/fire alarm, professional audio and video broadcast.

In a rapidly changing industry with ever-growing demands, General Cable continues to stay ahead of the curve with engineered products that guarantee future performance. Choose from the best cable in its class—Carol® Brand.

Our products are readily available for immediate shipment through our network of authorized stocking distributors and distribution centers.



All information in this catalog is presented solely as a guide to product selection and is believed to be reliable. All printing errors are subject to correction in subsequent releases of this catalog. Although General Cable has taken precautions to ensure the accuracy of the product specifications at the time of publication, the specifications of all products contained herein are subject to change without notice.

GENERAL CABLE, CAROL BRAND, CAROLPRENE, COMMAND SERIES, DEMAND BETTER... EXPECT MORE, FLEXFOIL, HELIX/HI-TEMP, LO-CAP, MOISTURE GUARD, ONE COMPANY CONNECTING, THE WORLD, PULL-PAC, SMARTWRAP, SPOOL-PAC, SUPERFLEX, WIRE WIZARD and logos are trademarks of General Cable Technologies Corporation.

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# Demand Better... Expect More™

FROM CAROL® BRAND

## QUALITY

General Cable is committed to meeting customer requirements through continuous quality improvements. As a significant part of our commitment to quality, General Cable's manufacturing facilities are certified to the ISO 9001:2000 quality standard. We strive to provide value optimization through innovation and quality solutions.

- Our in-house testing capabilities are extensive, with strict adherence to our product specifications as well as industry standards.
- Cables are safety listed and verified.
- Third-party testing labs like UL and ETL are utilized to quantify and confirm our quality and provide final qualification data that sets the foundation for our extended product warranty.
- General Cable products have stood the test of time with proven reliability and performance.

INTERNATIONAL  
**ISO 9001:2000**  
CERTIFICATION

## CUSTOMER SERVICE



General Cable is dedicated to customer service and satisfaction. Call our team of professionally trained sales associates at

**888-295-5896**

with any questions to meet your application needs.

GENERALCABLE.COM

# What's New?

## EXPANDED COMPETITIVE OFFERINGS

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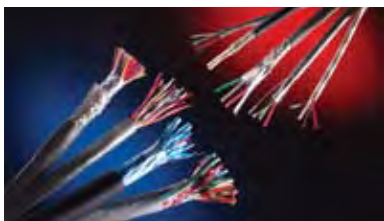


### Cross-Reference & Online Spec Sheets

We have expanded our Carol® Brand Electronics offering and now have more competitive crosses than anyone. Many of these cables are in stock and ready for immediate shipment from one of our stocking distributors. For questions on any of the Carol Electronics cables, detailed spec sheets are now available online at [www.generalcable.com/Products/Electronics/Product Specification Sheets](http://www.generalcable.com/Products/Electronics/Product Specification Sheets).

## LOOKING FOR PLENUM CABLES?

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The Carol® Electronics Catalog has been revamped, with Plenum Cables now being featured in the Communications & Control Multi-Conductor and Multi-Paired sections. If you're still not sure what you're looking for, please contact our Customer Service associates at 866.295.5896 today!

## ALARM & SECURITY SOLUTIONS

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General Cable has increased the information in its Alarm & Security Solutions Guide, with the addition of Sheer Wire™ Cables for Lighting Control & Touch Panel Systems, Bundled Composite Access Control Cables, Command® Series Home Entertainment Cables and our line of Carol® Brand Helix/Hi-Temp® Data Communications Cables. To view the updated guide, see pages 114-116 in the catalog.

## SHEER WIRE™ PRODUCTS

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Carol® Brand has added the Sheer Wire™ line of cable for Lighting Control & Touch Panel Systems to its already expansive electronics offering. For more information, see page A2 or call 866-295-5896 today for your FREE Sheer Wire catalog.

## ARMORED ELECTRONICS PRODUCTS

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Carol® Brand Electronics products are now offered with an interlock armored option, which provides outstanding mechanical protection and is flexible for easy installation, potentially saving time and money. For complete product information, go to pages 179-180.

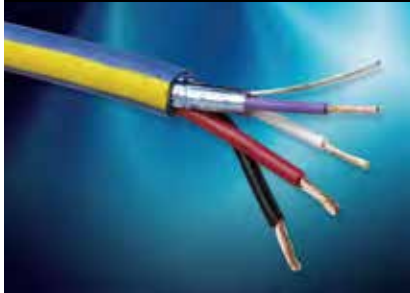
**CAROL  
BRAND**

 **General Cable**

# Carol® Brand Alarm & Security Solutions

## SHEER WIRE™

### Sheer Wire™ Lighting Control and Touch Panel Systems



#### Applications:

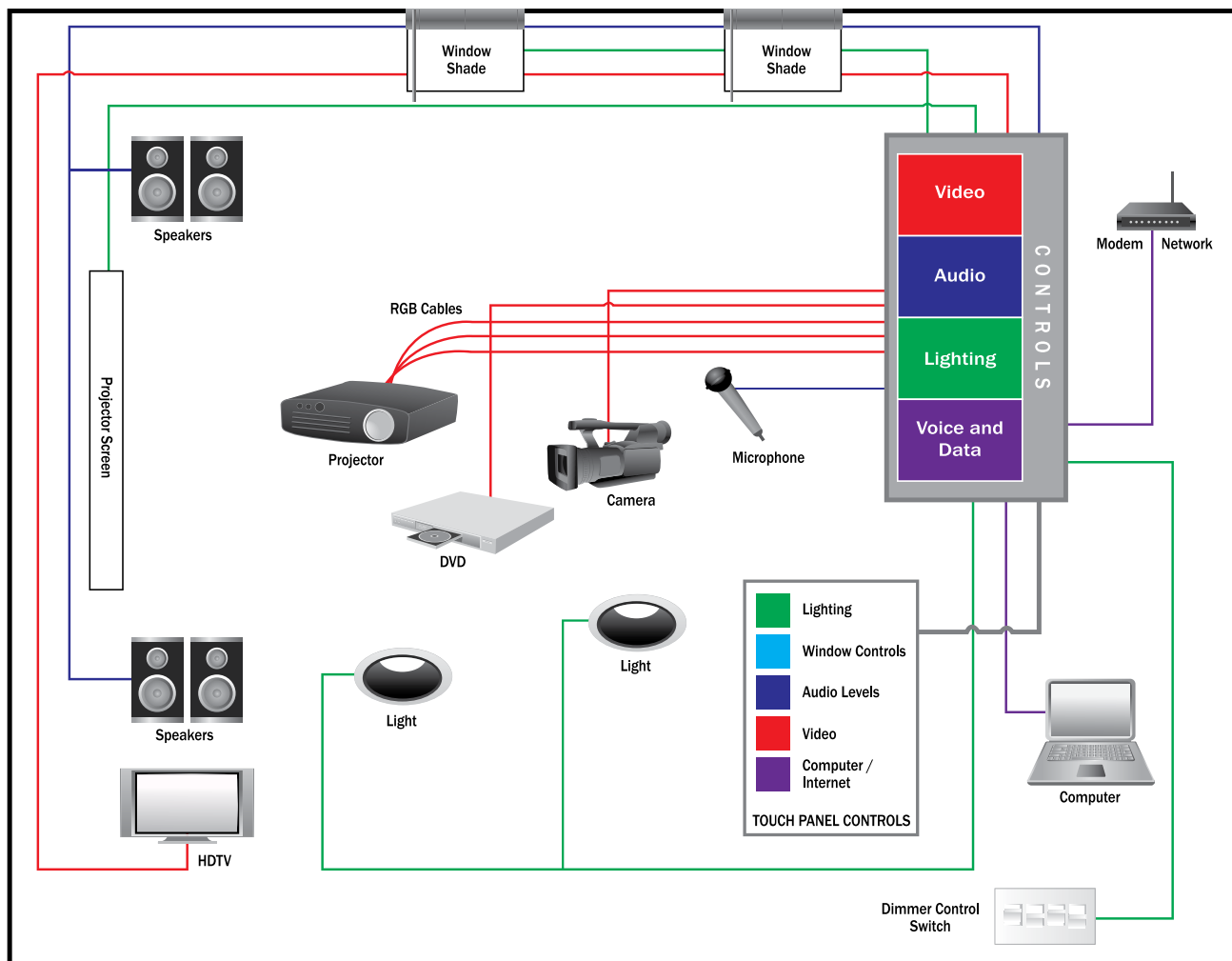
Lighting Controls  
Window Controls  
Audio Level Controls  
Video Controls  
Computer/Internet Controls

#### Cable Solution

#### Description

|              |                                                                            |
|--------------|----------------------------------------------------------------------------|
| 1618SVA1     | 18/4 16/30 BC 20 AWG 10/30 + 16/1 PR 26/30 BC (UL) CL3R                    |
| 1822AXL0     | 22/1PR 7/30 + 18/2 7/26 (UL) CL3R FT-4                                     |
| 1822CCD8     | Touch Panel Composite: 1 Control Element + 2 5e Elements                   |
| 1822CCT8     | Touch Panel Composite: 1 Control Element + 2 5e Elements + 2 RG 6          |
| 1822CDC8     | 22C 5E: (1)18/22CRT-89/04, (1)181VQ6-09, 181VQ6-00, (2) Cat 5e             |
| 1822CRT8     | Comp 4C 2E: 22/1PR 7/30 BC 24 AWG 7/32 TC Drain + 1/2C 7/26 BC (UL) CL3R   |
| 1822KYP1     | Comp 4C 2E: 18/2C 16/30 BC + 22/1PR 7/30 BC Shielded                       |
| 182LUTDS     | 18/2 7/26 BC PVC NYLON (UL) TC for Lutron Dimmer & Switch                  |
| 184LUTDS     | 18/4 7/26 BC PVC Nylon O/A AM SHLD 20 AWG 7/36 TC Drain PVC                |
| 222LUTDS     | 22/2 7/30 BC PVC O/A AM SHLD 24 AWG 7/32 TC Drain PVC                      |
| 164LTCH0     | 16/4 65/34 BC .012" PVC Lite Touch                                         |
| 224SLTCH     | 22/4 7/30 BC .015 PVC, O/A AM SHLD, 24 7/32 TC Drain/A 0.35 PVC Lite Touch |
| EF24C0021000 | 24/2 Conductor Shielded Low Cap Type CMP                                   |

Call today for your  
**FREE COMPLETE  
SHEER WIRE™  
CATALOG**  
1.866.295.5896



# PRODUCT SECTION LOCATOR

## SECTION

## PAGES

**1 Hook-Up Wire**

**1-7**

**2 Communication & Control Cable, Multi-Conductor**

**8-41**

**3 Communication & Control Cable, Multi-Paired**

**42-66**

**4 Computer Cable**

**67-84**

**5 Coaxial Cable**

**85-112**

**6 Fire Alarm/Life Safety Cable**

**113-129**

**7 Sound, Alarm & Security Cable**

**130-145**

**8 Audio/Video & Home Entertainment Cable**

**146-177**

**9 Specialty Cable**

**178-185**

**10 Technical Information**

**186-247**

# Table of Contents

## SECTION

## PAGES

### 1 Hook-Up Wire

1-7

|                                                   |   |
|---------------------------------------------------|---|
| UL 1007, UL 1569, CSA TR-64 .....                 | 2 |
| UL 1015, CSA TEW .....                            | 3 |
| MIL-W-76B .....                                   | 4 |
| UL Types MTW, TFF, AWM & CSA TEW .....            | 5 |
| Heavy Wall UL Types MTW, AWM & NEC Type THW ..... | 6 |
| Rubber/PVC/Polyethylene .....                     | 7 |

### 2 Communication & Control Cable, Multi-Conductor

8-41

|                                                  |       |
|--------------------------------------------------|-------|
| Multi-Conductor, Unshielded .....                | 9-17  |
| Multi-Conductor, Unshielded (CSA) .....          | 18-20 |
| Multi-Conductor, Rubber, Unshielded .....        | 21    |
| Power-Limited Tray Cable, Unshielded .....       | 22    |
| Multi-Conductor, Foil Shield .....               | 23-28 |
| Multi-Conductor, Foil Shield (CSA) .....         | 29-31 |
| Power-Limited Tray Cable, Foil Shield .....      | 32    |
| Multi-Conductor, Spiral Shield .....             | 33    |
| Multi-Conductor, Braid Shield .....              | 34-37 |
| Multi-Conductor, Foil/Braid Shield .....         | 38    |
| Multi-Conductor, Foil & TC Braid Shield .....    | 39    |
| Multi-Conductor, Rubber, Braid Shield .....      | 40    |
| Multi-Conductor, Carolprene®, Braid Shield ..... | 41    |

### 3 Communication & Control Cable, Multi-Paired

42-66

|                                                                  |       |
|------------------------------------------------------------------|-------|
| Multi-Paired, Unshielded .....                                   | 43-45 |
| Multi-Paired, Foil Shield .....                                  | 46-52 |
| Multi-Paired, Foil Shield (CSA) .....                            | 53-54 |
| Multi-Paired, Foil Shield, Mid-Cap .....                         | 55    |
| Multi-Paired, Foil Shield, Lo-Cap® .....                         | 56    |
| Multi-Paired, Overall Foil & TC Braid Shield, Lo-Cap® .....      | 57    |
| Multi-Paired, Individually Shielded .....                        | 58    |
| Multi-Paired, Individually Shielded (CSA) .....                  | 59    |
| Multi-Paired, Individually Shielded, Overall Shield .....        | 60    |
| Multi-Paired, Individually Foil Shielded .....                   | 61-64 |
| Power-Limited Tray Cable, Individually Shielded .....            | 65    |
| Power-Limited Tray Cable, Foil Shield or Foil/Braid Shield ..... | 66    |

# Table of Contents

## SECTION

## PAGES

### 4 Computer Cable

67-84

|                                                               |       |
|---------------------------------------------------------------|-------|
| Multi-Conductor, Foil Shield.....                             | 68-69 |
| Multi-Conductor, Foil/Braid Shield .....                      | 70-71 |
| Multi-Conductor, Foil/Braid Shield, Lo-Cap® .....             | 72    |
| Multi-Paired, Foil Shield .....                               | 73    |
| Multi-Paired, Foil Shield, Lo-Cap® .....                      | 74    |
| Multi-Paired, Foil/Braid Shield.....                          | 75    |
| Multi-Paired, Foil/Braid Shield, Lo-Cap® .....                | 76-79 |
| Multi-Paired, Individually Foil Shielded .....                | 80-82 |
| Multi-Paired, Individually Foil Shielded, Lo-Cap® .....       | 83    |
| Multi-Paired, Individually Foil/Braid Shielded, Lo-Cap® ..... | 84    |

### 5 Coaxial Cable

85-112

#### Coaxial Solutions Guide.....86-87

|                       |         |
|-----------------------|---------|
| RG 6/U Type .....     | 88-93   |
| RG 8/U Type .....     | 94-95   |
| RG 11/U Type.....     | 96-99   |
| RG 58/U Type .....    | 100     |
| RG 59/U Type .....    | 101-108 |
| RG 62/U Type .....    | 109     |
| RG 174/U Type .....   | 110     |
| RG 213/U Type .....   | 111     |
| Twinaxial Cables..... | 112     |

### 6 Fire Alarm/Life Safety Cable

113-129

#### Alarm & Security Solutions Guide..... 114-116

|                                                     |         |
|-----------------------------------------------------|---------|
| Multi-Conductor, Unshielded, Non-Plenum .....       | 117     |
| Multi-Conductor, Unshielded, Non-Plenum (CSA) ..... | 118     |
| Multi-Conductor, Shielded, Non-Plenum .....         | 119     |
| Multi-Conductor, Shielded, Non-Plenum (CSA) .....   | 120     |
| Multi-Conductor, Unshielded, Plenum .....           | 121-122 |
| Multi-Conductor, Shielded, Plenum .....             | 123-124 |
| Mid-Capacitance, Unshielded, Non-Plenum .....       | 125     |
| Mid-Capacitance, Shielded, Non-Plenum.....          | 126     |
| Mid-Capacitance, Unshielded, Plenum.....            | 127     |
| Mid-Capacitance, Shielded, Plenum.....              | 128     |
| Multi-Paired, Unshielded, Non-Plenum (CSA) .....    | 129     |

# Table of Contents

## SECTION

## PAGES

### 7 Sound, Alarm & Security Cable

130-145

#### **Composite Access Control Cable..... 131**

|                                                          |     |
|----------------------------------------------------------|-----|
| Composite Access Control Cable, Plenum.....              | 132 |
| Composite Access Control Cable, Riser.....               | 133 |
| Multi-Conductor, Unshielded, Riser .....                 | 134 |
| Multi-Conductor, Shielded, Riser .....                   | 135 |
| Multi-Conductor, Unshielded, Plenum .....                | 136 |
| Multi-Conductor, Shielded, Plenum .....                  | 137 |
| Telephone Station/Intercom & Speaker/Burglar Alarm ..... | 138 |
| Antenna Rotor .....                                      | 139 |
| Low-Voltage Sprinkler Wire .....                         | 140 |
| Thermostat Wire Type LVT .....                           | 141 |
| Thermostat Wire Type CL2.....                            | 142 |
| Thermostat Wire, Unjacketed.....                         | 143 |
| Carol® Helix/Hi-Temp® Category 6 Cable .....             | 144 |
| Carol® Helix/Hi-Temp® Category 5e Cable.....             | 145 |

### 8 Audio/Video & Home Entertainment Cable

146-177

#### **Command® Series Home Entertainment Cables Guide..... 147-148**

#### **Command® Series Cruise Ship Cables Guide .....** 149-150

|                                                                   |         |
|-------------------------------------------------------------------|---------|
| Command® Series Speaker Cable .....                               | 151-155 |
| Speaker Wire .....                                                | 156     |
| Superflex® Speaker Wire .....                                     | 157     |
| Pro Audio Speaker Wire .....                                      | 158     |
| Special Audio, Communication & Instrumentation .....              | 159-161 |
| Low Skew 4-Pair UTP .....                                         | 162     |
| SmartWrap™ Bundled Cable.....                                     | 163     |
| Direct Burial, Audio & Communication.....                         | 164-165 |
| Digital Audio Snake Cable.....                                    | 166     |
| Analog Audio Snake Cable .....                                    | 167-168 |
| Guitar/Instrument Cable .....                                     | 169     |
| Ultra Flexible, Low Impedance 2-Conductor Microphone Cable .....  | 170     |
| Multi-Conductor, Flexfoil® Shield .....                           | 171     |
| Multi-Conductor, Rubber, Braid Shield Microphone Cable.....       | 172     |
| Multi-Conductor, Spiral Shield .....                              | 173     |
| Multi-Conductor, Braid Shield .....                               | 174     |
| Microphone Cable, Multi-Conductor, Carolprene®, Braid Shield..... | 175     |
| SMPTE-311 Hybrid Fiber Optic/Copper Camera Cable.....             | 176     |
| Electronic News Gathering/Field Production Camera Cable.....      | 177     |

# Table of Contents

## SECTION

## PAGES

### 9 Specialty Cable

178-185

**Armored Electronics Products Guide..... 179-180**

**Wind Energy..... 181**

Fluorobus Cable ..... 182

Fire Wire ..... 183

Computer Cable ..... 184

Composite Data and Control Cable ..... 185

### 10 Technical Information

186-247

Insulation & Jacket Properties..... 187

Decimal Conversion Factors ..... 188

Unit Conversion Factors..... 189

Temperature Conversion Chart ..... 190

Conduit Capacity Chart..... 191

Coax Connector Cross Reference ..... 192-199

AWG Conductor Chart ..... 200

Cable Design Equations—Braid Shield..... 201

Cable Design Equations—Coaxial Cable ..... 202

Cable Design Equations—Balanced Pair ..... 203

Engineering Prefixes..... 204

Glossary..... 205-215

Abbreviations & Acronyms ..... 216-218

Product Finder—Hook-Up Wire ..... 219

Product Finder—Multi-Conductor Cable ..... 220-222

Product Finder—Multi-Paired Cable ..... 223-225

NEC/CEC Substitution Chart ..... 226-227

Agency Symbols..... 228

Agency Approval Index ..... 229

Put-Ups and Color Codes..... 230

Applications Index..... 231-233

Belden-to-General Cable Carol® Brand Cross Reference Index ..... 234-239

Part Number Index ..... 240-246

Notes ..... 247



There is a reason  
we call him -

# Wire Wizard.<sup>SM</sup>

**Alben Roland –Wire Wizard.<sup>SM</sup> When it comes to solving your problems, he makes magic happen.**

Alben's highest and most challenging form of wire wizardry is new product development, followed closely by solving tough, often one-of-a-kind technical problems. His powers are also evident in quality control and in laboratory testing. We call on Alben to perform his wizardry all the time. And so do our customers. Alben, Manager, Product Engineering, Carol® Brand Electronic Products, and the entire team of General Cable Wire Wizards are ready to perform magic. "Whether it's providing a prototype, solving an applications problem, or answering a technical question, we try to make magic happen," explains Alben. Magic or not, our Wizards always seem to find the answer and serve the customer. And there's no smoke or mirrors about that.

**CAROL  
BRAND**

If you'd like to put the powers of Alben and General Cable Carol Brand products to work for you, talk to a General Cable rep today. To connect, just call 1.888.295.5896 or e-mail us at [info@generalcable.com](mailto:info@generalcable.com).

**REEL People ... Adding REAL Value**

 **General Cable**  
[www.generalcable.com](http://www.generalcable.com)



**Building Bridges** in the Sky



**Making Contact** with the World



**Directing Traffic** without Gridlock

General Cable is a leader in the development, design, manufacture, marketing and distribution of copper, aluminum and fiber optic wire and cable for the energy, industrial, specialty and communications markets.

Our products inspire progress worldwide ... customers use our value-added products to create global infrastructure that improves the standard of living for people everywhere.

Each day we're building business momentum — developing ideas into innovative solutions and industry-leading products, expanding geographic access and furthering our investment in highly capable associates, Lean Manufacturing, material science and technology resources.

General Cable is influencing the world ... with more than two-thirds of our sales generated outside North America and more than 11,000 associates in 45 manufacturing facilities throughout 22 countries. As one of the largest wire and cable manufacturers, we are the *One Company Connecting the World*.

### **Energy Cables**

Our cables carry energy across the world — through the air, underground and under the sea. Increasing demand for energy is accelerating investment in exploration, extraction, power generation, transmission and distribution — whether based on coal, natural gas, oil, nuclear, wind, solar or water.

### **Industrial & Specialty Cables**

Our cables channel the power and signals that make equipment hum and engines run. From oil rigs and broadcast studios to cars and trains, and in commercial buildings, public venues, factory floors and special applications such as military, nuclear, marine and mining — we serve an extensive range of markets.

### **Communications Cables**

Our cables keep information flowing — facilitating a non-stop stream of words and images around the world. We meet the high-speed bandwidth needs of global communications networks, from fiber optic submarine communications cables, copper and fiber aerial and underground cables, to copper and fiber optic enterprise cables and system solutions.

### **World Headquarters - General Cable**

4 Tesseneer Drive • Highland Heights, KY • 41076-9753 U.S.A.



Our Green Initiative symbol recognizes our role and responsibility in promoting sustainability. The symbol also reflects our commitment to achieving industry-leading standards and responding proactively to environmental global issues.

**Look for our products with the RoHS symbol for your green building initiatives.**

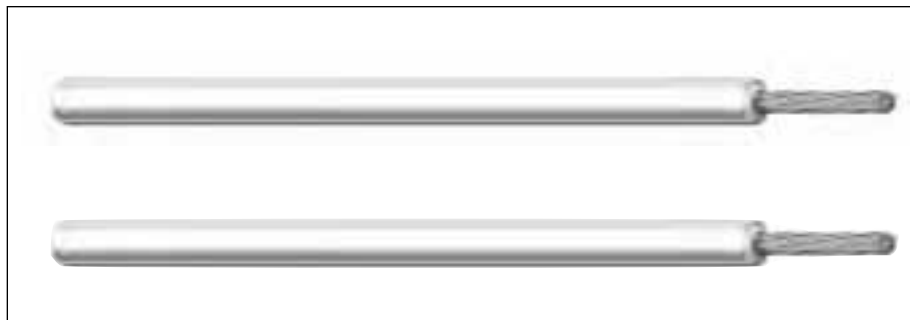


**Visit [www.generalcable.com](http://www.generalcable.com)**  
Select "company", then select "environmental"



# Hook-Up Wire

1



Most applications of hook-up and lead wire for board-to-board or point-to-point wiring rely on PVC-insulated designs.

General Cable's Carol® Brand products offer both electrical and electronic designers a vast array of quality PVC hook-up wire to meet the specific technical demands of today, with "off-the-shelf" distributor inventoried products.

Hook-up wire is also available in special colors and/or stripe combinations with a minimum of lead time. In addition, General Cable offers a variety of put-ups to meet individual customer requirements.

| Index                                          | Page |
|------------------------------------------------|------|
| UL 1007, UL 1569,<br>CSA TR-64                 | 2    |
| UL 1015, CSA TEW                               | 3    |
| MIL-W-76B                                      | 4    |
| UL Types MTW, TFF,<br>AWM & CSA TEW            | 5    |
| Heavy Wall UL Types MTW,<br>AWM & NEC Type THW | 6    |
| Rubber/PVC/Polyethylene                        | 7    |

# UL 1007, UL 1569, CSA TR-64



| CATALOG<br>NUMBER | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |    | NOMINAL O.D. |    |
|-------------------|-------------|-----------------|------------------------------|----|--------------|----|
|                   |             |                 | INCHES                       | mm | INCHES       | mm |

## SOLID CONDUCTORS

|               |    |       |       |      |       |      |
|---------------|----|-------|-------|------|-------|------|
| <b>C2003A</b> | 24 | Solid | 0.016 | 0.41 | 0.052 | 1.32 |
| <b>C2004A</b> | 22 | Solid | 0.016 | 0.41 | 0.057 | 1.45 |
| <b>C2028A</b> | 20 | Solid | 0.016 | 0.41 | 0.064 | 1.63 |
| <b>C2052A</b> | 18 | Solid | 0.016 | 0.41 | 0.072 | 1.83 |
| <b>C2053A</b> | 16 | Solid | 0.016 | 0.41 | 0.083 | 2.11 |

## STRANDED CONDUCTORS

|               |    |       |       |      |       |      |
|---------------|----|-------|-------|------|-------|------|
| <b>C2015A</b> | 24 | 7/32  | 0.016 | 0.41 | 0.056 | 1.42 |
| <b>C2016A</b> | 22 | 7/30  | 0.016 | 0.41 | 0.062 | 1.57 |
| <b>C2040A</b> | 20 | 10/30 | 0.016 | 0.41 | 0.070 | 1.78 |
| <b>C2064A</b> | 18 | 16/30 | 0.016 | 0.41 | 0.080 | 2.03 |
| <b>C2065A</b> | 16 | 26/30 | 0.016 | 0.41 | 0.092 | 2.34 |

## Color Code Chart

| ORDERING<br>SUFFIX | COLORS | ORDERING<br>SUFFIX | COLORS |
|--------------------|--------|--------------------|--------|
| <b>01</b>          | Black  | <b>06</b>          | Green  |
| <b>02</b>          | White  | <b>07</b>          | Blue   |
| <b>03</b>          | Red    | <b>08</b>          | Brown  |
| <b>04</b>          | Orange | <b>10</b>          | Gray   |
| <b>05</b>          | Yellow | <b>19</b>          | Violet |

Striped combinations available upon request; consult Customer Service.

## Product Construction:

### Conductor:

- 24 thru 16 AWG
- Fully annealed tinned copper per ASTM B-33
- Solid or stranded

### Insulation:

- Premium-grade, color-coded PVC
- Temperature range: -20°C to +105°C
- Color code: See chart below

## Applications:

- Internal wiring of electrical and electronic equipment
- Internal wiring of panels and meters
- Point-to-point wiring
- Suggested voltage rating: 300 volts

## Compliances:

- UL Style 1007 – 80°C, 300V
- UL Style 1569 – 105°C, 300V
- CSA TR-64 – 90°C, 300V
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL VW-1 Vertical Wire Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

# UL 1015, CSA TEW

## Product Construction:

### Conductor:

- 24 thru 10 AWG
- Fully annealed tinned copper per ASTM B-33
- Solid or stranded

### Insulation:

- Premium-grade, color-coded PVC
- Temperature range: -20°C to +105°C
- Color code: See chart below

### Applications:

- Internal wiring of electrical and electronic equipment
- Internal wiring of panels and meters
- Point-to-point wiring
- Suggested voltage rating: 600 volts

### Compliances:

- UL Style 1015 – 105°C, 600V
- CSA Type TEW
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL VW-1 Vertical Wire Flame Test

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOMINAL O.D. |    |
|----------------|----------|--------------|---------------------------|----|--------------|----|
|                |          |              | INCHES                    | mm | INCHES       | mm |

#### SOLID CONDUCTORS

|               |    |       |       |      |       |      |
|---------------|----|-------|-------|------|-------|------|
| <b>C2117A</b> | 22 | Solid | 0.032 | 0.81 | 0.089 | 2.26 |
| <b>C2118A</b> | 20 | Solid | 0.032 | 0.81 | 0.096 | 2.44 |
| <b>C2119A</b> | 18 | Solid | 0.032 | 0.81 | 0.104 | 2.64 |

#### STRANDED CONDUCTORS

|               |    |        |       |      |       |      |
|---------------|----|--------|-------|------|-------|------|
| <b>C2100A</b> | 24 | 7/32   | 0.032 | 0.81 | 0.088 | 2.24 |
| <b>C2101A</b> | 22 | 7/30   | 0.032 | 0.81 | 0.094 | 2.39 |
| <b>C2102A</b> | 20 | 10/30  | 0.032 | 0.81 | 0.102 | 2.59 |
| <b>C2103A</b> | 18 | 16/30  | 0.032 | 0.81 | 0.112 | 2.84 |
| <b>C2104A</b> | 16 | 26/30  | 0.032 | 0.81 | 0.124 | 3.15 |
| <b>C2105A</b> | 14 | 41/30  | 0.032 | 0.81 | 0.141 | 3.58 |
| <b>C2106A</b> | 12 | 65/30  | 0.032 | 0.81 | 0.160 | 4.06 |
| <b>C2107A</b> | 10 | 105/30 | 0.033 | 0.84 | 0.184 | 4.67 |

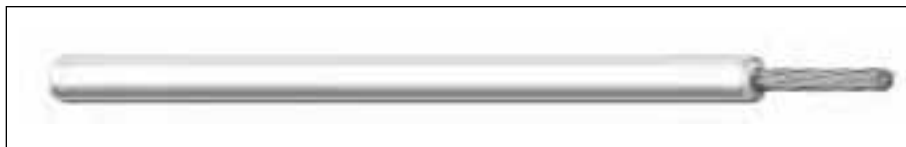
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| ORDERING SUFFIX | COLORS | ORDERING SUFFIX | COLORS |
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| <b>01</b>       | Black  | <b>06</b>       | Green  |
| <b>02</b>       | White  | <b>07</b>       | Blue   |
| <b>03</b>       | Red    | <b>08</b>       | Brown  |
| <b>04</b>       | Orange | <b>10</b>       | Gray   |
| <b>05</b>       | Yellow | <b>19</b>       | Violet |

Striped combinations available upon request; consult Customer Service.

# MIL-W-76B

Type MW



| CATALOG<br>NUMBER | TYPE<br>DESIGNATION | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |    | NOMINAL O.D. |    |
|-------------------|---------------------|-------------|-----------------|------------------------------|----|--------------|----|
|                   |                     |             |                 | INCHES                       | mm | INCHES       | mm |

## MIL-W-76B TYPE MW (MEDIUM WALL)

|                |             |    |       |       |      |       |      |
|----------------|-------------|----|-------|-------|------|-------|------|
| <b>C7600A</b>  | MW-C24(7)U  | 24 | 7/32  | 0.016 | 0.41 | 0.056 | 1.42 |
| <b>C7602A</b>  | MW-C22(7)U  | 22 | 7/30  | 0.016 | 0.41 | 0.062 | 1.57 |
| <b>C7604A</b>  | MW-C20(10)U | 20 | 10/30 | 0.016 | 0.41 | 0.070 | 1.78 |
| <b>C7606A</b>  | MW-C18(16)U | 18 | 16/30 | 0.016 | 0.41 | 0.080 | 2.03 |
| <b>C7608A*</b> | MW-C16(26)U | 16 | 26/30 | 0.016 | 0.41 | 0.092 | 2.34 |
| <b>C7610A*</b> | MW-C14(41)U | 14 | 41/30 | 0.016 | 0.41 | 0.109 | 2.77 |
| <b>C7611A*</b> | MW-C12(65)U | 12 | 65/30 | 0.016 | 0.41 | 0.128 | 3.25 |

\*-25°C to +105°C

## Color Code Chart

| ORDERING<br>SUFFIX | COLORS | ORDERING<br>SUFFIX | COLORS |
|--------------------|--------|--------------------|--------|
| <b>01</b>          | Black  | <b>06</b>          | Green  |
| <b>02</b>          | White  | <b>07</b>          | Blue   |
| <b>03</b>          | Red    | <b>08</b>          | Brown  |
| <b>04</b>          | Orange | <b>10</b>          | Gray   |
| <b>05</b>          | Yellow | <b>19</b>          | Violet |

Striped combinations available upon request; consult Customer Service.

## Product Construction:

### Conductor:

- 24 thru 12 AWG
- Fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Type MW: Medium wall
- Temperature range: -12°C to +90°C
- Color code: See chart below

## Applications:

- Internal wiring of electrical and electronic equipment
- Internal wiring of panels and meters
- Point-to-point wiring
- Suggested voltage rating: 1000 volts (MIL-W-76B)
- Non QPL

## Compliances:

- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options

# UL Types MTW, TFF, AWM & CSA TEW

90°C 600 Volt MTW, TFF 105°C 600 Volt AWM/TEW

## Product Construction:

### Conductor:

- 18 through 8 AWG fully annealed stranded bare copper per ASTM B-8

### Insulation:

- Premium-grade, color-coded PVC
- Temperature range:  
MTW: -40°C to +90°C  
TEW/AWM: -20°C to +105°C
- Color code: See chart below

### Jacket Marking:

- 18 and 16 AWG:  
CAROL (SIZE) 600V E# MTW (UL) OR  
TFF OR AWM VW-1 --- CSA TEW 105°C  
FT-1
- 14 through 8 AWG:  
CAROL (SIZE) 600V E# MTW (UL) OR  
AWM VW-1 --- CSA TEW 105°C FT-1

## Applications:

- Motor and transformer lead
- External wiring of machinery
- Internal wiring of electrical and electronic equipment
- Internal wiring of panels and meters
- Point-to-point wiring

## Features:

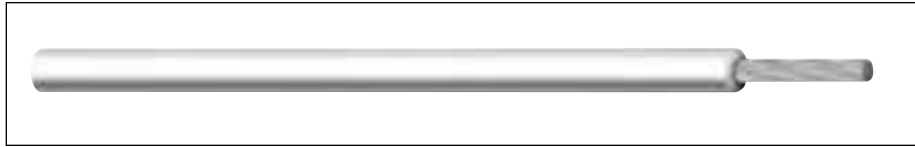
- Outstanding oil, flame and moisture resistance
- Extra flexible

## Compliances:

- UL and NMTBA Type MTW/AWM
- CSA TEW
- RoHS Compliant Directive 2002/95/EC
- Passes VW-1 Vertical Flame Test
- AWM Style 1015 – 18-8 AWG
- AWM Style 1335 – 18-10 AWG
- AWM Style 1336 – 8 AWG

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG<br>NUMBER                            | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOMINAL O.D. |      | STOCK<br>COLORS | APPROX.<br>NET WEIGHT<br>LBS/M <sup>(S)</sup> |
|----------------------------------------------|-------------|-----------------|------------------------------|------|--------------|------|-----------------|-----------------------------------------------|
|                                              |             |                 | INCHES                       | mm   | INCHES       | mm   |                 |                                               |
| UL TYPE MTW, AWM, TFF, CSA TYPE TEW-600 VOLT |             |                 |                              |      |              |      |                 |                                               |
| 76502                                        | 18          | 16/30           | 0.032                        | 0.81 | 0.110        | 2.79 | 1-12            | 10                                            |
| 76512                                        | 16          | 26/30           | 0.032                        | 0.81 | 0.123        | 3.12 | 1-12            | 14                                            |
| 76812                                        | 14          | 19/.0159        | 0.032                        | 0.81 | 0.136        | 3.40 | 1-12            | 20                                            |
| 76822                                        | 12          | 19/.0185        | 0.032                        | 0.81 | 0.155        | 3.91 | 1-7             | 28                                            |
| 76832                                        | 10          | 19/.0234        | 0.032                        | 0.81 | 0.179        | 4.55 | 1-5             | 42                                            |
| 76843                                        | 8           | 19/.0295        | 0.047                        | 1.19 | 0.242        | 6.15 | 1-5             | 72                                            |

<sup>(S)</sup>Actual shipping weight may vary.

## Color Code Chart

| ORDERING SUFFIX | COLORS | ORDERING SUFFIX | COLORS |
|-----------------|--------|-----------------|--------|
| <b>01</b>       | Black  | <b>04</b>       | Orange |
| <b>02</b>       | White  | <b>08</b>       | Brown  |
| <b>03</b>       | Red    | <b>19</b>       | Purple |
| <b>07</b>       | Blue   | <b>10</b>       | Gray   |
| <b>06</b>       | Green  | <b>13</b>       | Pink   |

# Heavy Wall UL Types MTW, AWM & NEC Type THW

90°C 600 Volts



| CATALOG<br>NUMBER             | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOMINAL O.D. |      | APPROX.<br>NET WEIGHT<br>LBS/m <sup>(S)</sup> |
|-------------------------------|-------------|-----------------|------------------------------|------|--------------|------|-----------------------------------------------|
|                               |             |                 | INCHES                       | mm   | INCHES       | mm   |                                               |
| AWM, MTW, THW – 600 VOLT – UL |             |                 |                              |      |              |      |                                               |
| 76954                         | 6           | 19/.0372        | 0.064                        | 1.63 | 0.315        | 8.00 | 110                                           |
| 76994                         | 4           | 19/.0469        | 0.065                        | 1.65 | 0.365        | 9.27 | 150                                           |

<sup>(S)</sup>Actual shipping weight may vary.

## Product Construction:

### Conductor:

- 6 and 4 AWG fully annealed stranded bare copper per ASTM B-8

### Insulation:

- Premium-grade, color-coded PVC, black
- Temperature range: -40°C to +90°C

### Jacket Marking:

- CAROL 6 AWG 600V E# MTW OR THW (UL) OR AWM

## Applications:

- Motor and transformer lead
- External wiring of machinery

## Features:

- Outstanding oil, flame and moisture resistance
- Extra flexible

## Compliances:

- UL Type AWM
- UL and NMTBA Type MTW
- NEC Type THW
- RoHS Compliant Directive 2002/95/EC
- Passes UL VW-1 Vertical Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL  
BRAND**



Designed to Meet  
UL VW-1 Vertical  
Wire Flame Test

Underwriters Laboratories Inc.



**General Cable**

# Rubber/PVC/Polyethylene

## Product Construction:

### Conductor:

- 20, 18 and 14 AWG
- Fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded rubber, PVC or polyethylene
- Temperature range:
  - 20°C to +60°C rubber
  - 25°C to +60°C PVC
  - 20°C to +80°C polyethylene
- Color code: See chart below

### Applications:

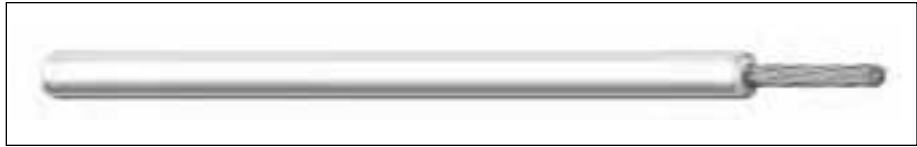
- Test equipment
- Oscillators

### Compliances:

- RoHS Compliant Directive 2002/95/EC

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | BREAKDOWN VOLTAGE (AC, rms) | WORKING VOLTAGE* | NOMINAL O.D. |    |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------------|------------------|--------------|----|
|                |              |          |              | INCHES                    | mm |                             |                  | INCHES       | mm |

#### RUBBER TEST LEAD

|              |   |    |       |       |      |         |         |       |      |
|--------------|---|----|-------|-------|------|---------|---------|-------|------|
| <b>C1326</b> | 1 | 20 | 41/36 | 0.040 | 1.02 | 6,000V  | 1,500V  | 0.125 | 3.18 |
| <b>C1319</b> | 1 | 20 | 41/36 | 0.047 | 1.19 | 12,000V | 3,000V  | 0.140 | 3.56 |
| <b>C1321</b> | 1 | 18 | 65/36 | 0.045 | 1.14 | 20,000V | 5,000V  | 0.145 | 3.68 |
| <b>C1318</b> | 1 | 18 | 65/36 | 0.088 | 2.24 | 29,000V | 10,000V | 0.230 | 5.84 |

#### PVC TEST LEAD

|               |   |    |       |       |      |         |        |       |      |
|---------------|---|----|-------|-------|------|---------|--------|-------|------|
| <b>C1320A</b> | 1 | 18 | 65/36 | 0.047 | 1.19 | 20,000V | 5,000V | 0.140 | 3.56 |
|---------------|---|----|-------|-------|------|---------|--------|-------|------|

#### POLYETHYLENE TEST LEAD

|               |   |    |        |       |      |        |      |       |      |
|---------------|---|----|--------|-------|------|--------|------|-------|------|
| <b>C7108A</b> | 1 | 14 | 105/34 | 0.032 | 0.81 | 4,000V | 600V | 0.140 | 3.56 |
|---------------|---|----|--------|-------|------|--------|------|-------|------|

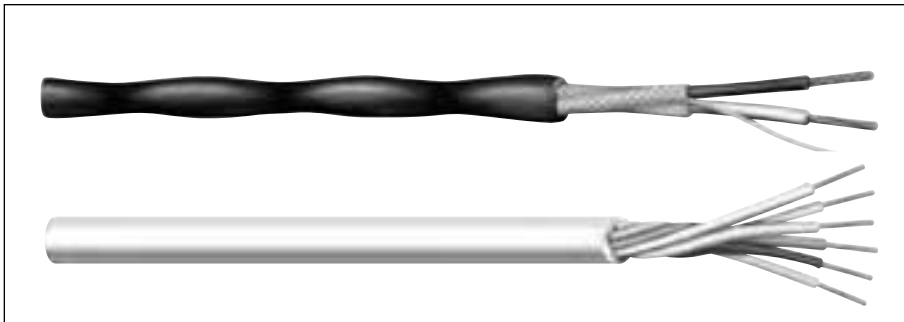
\*For intermittent duty only.

### Color Code Chart

| ORDERING SUFFIX | COLORS |
|-----------------|--------|
| <b>01</b>       | Black  |
| <b>03</b>       | Red    |
| <b>06</b>       | Green  |

# Communication & Control Cable, Multi-Conductor

2



The multi-conductor array of communication and control cable facilitates cable pull-ins and single-site installations.

This cable is typically used for industrial equipment control, electric valve actuation and remote signaling, as well as communications and broadcast applications. These designs are available in a wide variety of insulation and jacketing materials, as well as shield designs to alleviate unwanted circuit noise.

General Cable's Carol® Brand products are manufactured to meet the latest UL, CSA and NEC requirements and approvals.

## A Design To Meet Every Application

**PVC/PVC** designs employ polyvinyl chloride insulations and jackets capable of meeting everyday, general purpose applications.

**PE or PP/PVC** designs employ high quality polyethylene or polypropylene insulations to assure faithful reproduction of transmitted signals across interconnection circuits.

**Foamed PP/PVC** designs use high speed, foamed polypropylene insulations for long-distance critical circuits, which would not perform if higher loss insulations were employed.

**FEP/FEP** designs employ fluoropolymer 200°C-rated materials. They are recommended for use in applications where high temperature, plenum rating, electrical and mechanical safety and chemical resistance are essential.

**Rubber/Rubber** is typically employed in installations characterized as severely hostile environments, where these designs provide unsurpassed service life.

**Rubber/Carolprene®** offers the ultimate performance for applications that demand the greatest protection from the environment, including physical abuse. The specially formulated Carolprene® jacket has been proven time and again to withstand all types of abuse, both mechanical and chemical.

| Index                                      | Page  |
|--------------------------------------------|-------|
| Multi-Conductor, Unshielded                | 9-17  |
| Multi-Conductor, Unshielded (CSA)          | 18-20 |
| Multi-Conductor, Rubber, Unshielded        | 21    |
| Power-Limited Tray Cable, Unshielded       | 22    |
| Multi-Conductor, Foil Shield               | 23-28 |
| Multi-Conductor, Foil Shield (CSA)         | 29-31 |
| Power-Limited Tray Cable, Foil Shield      | 32    |
| Multi-Conductor, Spiral Shield             | 33    |
| Multi-Conductor, Braid Shield              | 34-37 |
| Multi-Conductor, Foil/Braid Shield         | 38    |
| Multi-Conductor, Foil & TC Braid Shield    | 39    |
| Multi-Conductor, Rubber, Braid Shield      | 40    |
| Multi-Conductor, Carolprene®, Braid Shield | 41    |

# Multi-Conductor, Unshielded

UL 2464, NEC Type CM (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- Fully annealed tinned copper per ASTM B-33 (C4008A, C4311A)
- Fully annealed solid bare copper per ASTM B-3 (C2754A)

### Insulation:

- Premium-grade, color-coded S-R PVC per UL 1061

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Public address systems
- Intercoms
- Remote control circuits
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

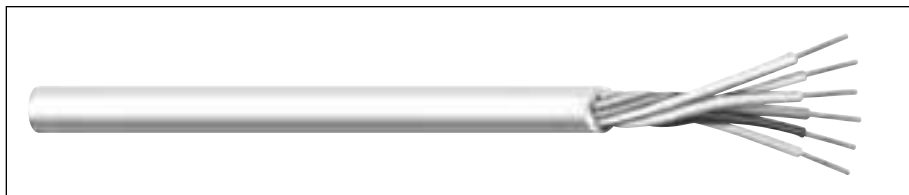


| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | COLOR CODE | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|----------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |            |                      |
| <b>C4008A</b>  | 2            | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.156        | 3.94 | Black/Red  | 24.5                 |
| <b>C4311A</b>  | 2            | 20       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.166        | 4.22 | Black/Red  | 28.0                 |
| <b>C2754A</b>  | 2            | 19       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.176        | 4.47 | Brown/Tan  | 29.5                 |

\*Capacitance between conductors

# Multi-Conductor, Unshielded

UL 2464, NEC Type CM (UL) c(UL), CSA CMG



| CATALOG NUMBER | NO. OF COND. | AWG SIZE     | COND. STRAND  | NOM. INSULATION THICKNESS |              | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. C-C CAP.* pF/ft |
|----------------|--------------|--------------|---------------|---------------------------|--------------|-----------------------|------|--------------|------|----------------------|
|                |              |              |               | INCHES                    | mm           | INCHES                | mm   | INCHES       | mm   |                      |
| C4081A         | 6            | 4-22<br>2-18 | 7/30<br>16/30 | 0.010<br>0.016            | 0.25<br>0.41 | 0.032                 | 0.81 | 0.244        | 6.20 | 24.5<br>31.0         |
| C4082A         | 7            | 5-22<br>2-18 | 7/30<br>16/30 | 0.010<br>0.016            | 0.25<br>0.41 | 0.032                 | 0.81 | 0.253        | 6.43 | 24.5<br>31.0         |
| C4083A         | 8            | 6-22<br>2-18 | 7/30<br>16/30 | 0.010<br>0.016            | 0.25<br>0.41 | 0.032                 | 0.81 | 0.263        | 6.69 | 24.5<br>31.0         |
| C4084A         | 9            | 7-22<br>2-18 | 7/30<br>16/30 | 0.010<br>0.016            | 0.25<br>0.41 | 0.032                 | 0.81 | 0.273        | 6.94 | 24.5<br>31.0         |

\*Capacitance between conductors

## Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1 18 ga.     | Black  |
| 2            | White  |
| 1 22 ga.     | Red    |
| 2            | Green  |
| 3            | Brown  |
| 4            | Blue   |
| 5            | Orange |
| 6            | Yellow |
| 7            | Violet |

## Product Construction:

### Conductor:

- 22 thru 18 fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC (18 AWG), S-R PVC (22 AWG)
- Color code: See chart below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- TV antenna rotor control
- Satellite actuator control
- Public address systems
- Suggested voltage rating: 300 volts

## Features:

- Tinned copper conductors provide excellent corrosion resistance
- Assists with soldering applications

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**

**UL** LISTED

**CSA** CMG Certified  
Canadian Standard Association

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test

Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Conductor, Unshielded

UL 2464, UL 2576, NEC Type CM (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded S-R PVC per UL 1061
- Color code: See charts below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Public address systems
- Intercoms
- Internal telephones
- Remote control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Features:

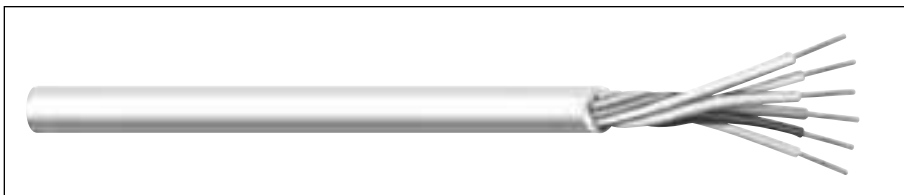
- Easy to terminate
- Excellent electrical properties
- Tinned conductors provide excellent corrosion resistance
- Assists soldering applications

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- UL Style 2576 (UL: 80°C, 150V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | COLOR CODE      | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|-----------------|----------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |                 |                      |
| <b>C2461A</b>  | 2            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.152        | 3.86 | Black/Red       | 23.0                 |
| <b>C2462A</b>  | 3            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.163        | 4.14 | Black/Red/Green | 23.0                 |
| <b>C2463A</b>  | 4            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.174        | 4.42 | 1               | 23.0                 |
| <b>C2464A</b>  | 5            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.183        | 4.75 | 1               | 23.0                 |
| <b>C2466A</b>  | 6            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.200        | 5.08 | 1               | 23.0                 |
| <b>C2488A</b>  | 7            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.200        | 5.08 | 1               | 23.0                 |
| <b>C2465A</b>  | 8            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.214        | 5.44 | 1               | 23.0                 |
| <b>C2470A</b>  | 9            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.227        | 5.77 | 1               | 23.0                 |
| <b>C2471A</b>  | 10           | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.244        | 6.20 | 1               | 23.0                 |
| <b>C2467A</b>  | 12           | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.251        | 6.38 | 1               | 23.0                 |
| <b>C2473A</b>  | 15           | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.275        | 6.99 | 2               | 23.0                 |

\*Capacitance between conductors

### Color Code Chart 1 - For cables up to and including 12 conductors

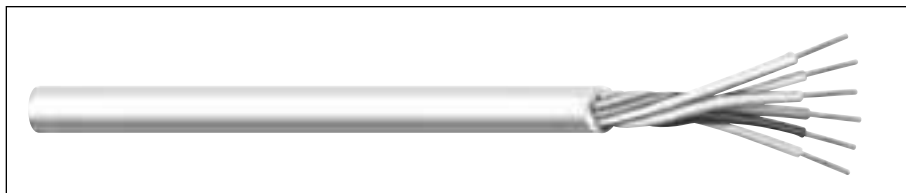
| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| 1            | Black | 7            | Orange |
| 2            | White | 8            | Yellow |
| 3            | Red   | 9            | Violet |
| 4            | Green | 10           | Gray   |
| 5            | Brown | 11           | Pink   |
| 6            | Blue  | 12           | Tan    |

### Color Code Chart 2 Per ICEA - For cables with 15 conductors

| NO. OF COND. | COLOR  | NO. OF COND. | COLOR        | NO. OF COND. | COLOR       |
|--------------|--------|--------------|--------------|--------------|-------------|
| 1            | Black  | 6            | Blue         | 11           | Blue/Black  |
| 2            | White  | 7            | White/Black  | 12           | Black/White |
| 3            | Red    | 8            | Red/Black    | 13           | Red/White   |
| 4            | Green  | 9            | Green/Black  | 14           | Green/White |
| 5            | Orange | 10           | Orange/Black | 15           | Blue/White  |

# Multi-Conductor, Unshielded

UL 2464, UL 2576, NEC Type CM (UL) c(UL), CSA CMG



## Product Construction:

### Conductor:

- 22 AWG fully annealed, stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded S-R PVC per UL 1061
- Color code: See charts below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Public address systems
- Intercoms
- Internal telephones
- Remote control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Features:

- Easy to terminate
- Excellent electrical properties
- Tinned conductors provide excellent corrosion resistance
- Assists soldering applications

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- UL Style 2576 (UL: 80°C, 150V)
- CSA CMG (CSA 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | COLOR CODE      | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|-----------------|----------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |                 |                      |
| C6348A†        | 2            | 22       | 7/30         | 0.010                     | 0.25 | 0.015                 | 0.38 | 0.130        | 3.30  | Black/Red       | 24.5                 |
| C4062A         | 3            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.176        | 4.47  | Black/Red/Green | 24.5                 |
| C4063A         | 4            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.189        | 4.80  | 1               | 24.5                 |
| C4064A         | 5            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.203        | 5.16  | 1               | 24.5                 |
| C4066A         | 6            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.218        | 5.54  | 1               | 24.5                 |
| C4088A         | 7            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.205        | 5.54  | 1               | 24.5                 |
| C4065A         | 8            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.230        | 5.94  | 1               | 24.5                 |
| C4070A         | 9            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.249        | 6.32  | 1               | 24.5                 |
| C4071A         | 10           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.268        | 6.81  | 1               | 24.5                 |
| C4067A         | 12           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.276        | 7.01  | 1               | 24.5                 |
| C4073A         | 15           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.303        | 7.70  | 2               | 24.5                 |
| C4075A         | 20           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.334        | 8.48  | 2               | 24.5                 |
| C4076A         | 25           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.368        | 9.35  | 2               | 24.5                 |
| C4077A         | 30           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.389        | 9.88  | 2               | 24.5                 |
| C4078A         | 40           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.434        | 11.02 | 2               | 24.5                 |
| C4079A         | 50           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.489        | 12.42 | 2               | 24.5                 |

\*Capacitance between conductors

†CM-CSA CMG Only

### Color Code Chart 1 - For cables up to and including 12 conductors

| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| 1            | Black | 7            | Orange |
| 2            | White | 8            | Yellow |
| 3            | Red   | 9            | Violet |
| 4            | Green | 10           | Gray   |
| 5            | Brown | 11           | Pink   |
| 6            | Blue  | 12           | Tan    |

### Color Code Chart 2 Per ICEA - For cables of 15 thru 50 conductors

| NO. OF COND. | COLOR        | NO. OF COND. | COLOR              | NO. OF COND. | COLOR              | NO. OF COND. | COLOR             |
|--------------|--------------|--------------|--------------------|--------------|--------------------|--------------|-------------------|
| 1            | Black        | 14           | Green/White        | 27           | Blue/Black/White   | 39           | White/Black/Green |
| 2            | White        | 15           | Blue/White         | 28           | Black/Red/Green    | 40           | Red/White/Green   |
| 3            | Red          | 16           | Black/Red          | 29           | White/Red/Green    | 41           | Green/White/Blue  |
| 4            | Green        | 17           | White/Red          | 30           | Red/Black/Green    | 42           | Orange/Red/Green  |
| 5            | Orange       | 18           | Orange/Red         | 31           | Green/Black/Orange | 43           | Blue/Red/Green    |
| 6            | Blue         | 19           | Blue/Red           | 32           | Orange/Black/Green | 44           | Black/White/Blue  |
| 7            | White/Black  | 20           | Red/Green          | 33           | Blue/White/Orange  | 45           | White/Black/Blue  |
| 8            | Red/Black    | 21           | Orange/Green       | 34           | Black/White/Orange | 46           | Red/White/Blue    |
| 9            | Green/Black  | 22           | Black/White/Red    | 35           | White/Red/Orange   | 47           | Green/Orange/Red  |
| 10           | Orange/Black | 23           | White/Black/Red    | 36           | Orange/White/Blue  | 48           | Orange/Red/Blue   |
| 11           | Blue/Black   | 24           | Red/Black/White    | 37           | White/Red/Blue     | 49           | Blue/Red/Orange   |
| 12           | Black/White  | 25           | Green/Black/White  | 38           | Black/White/Green  | 50           | Black/Orange/Red  |
| 13           | Red/White    | 26           | Orange/Black/White |              |                    |              |                   |

**CAROL BRAND**

UL LISTED

CMG Certified Canadian Standard Association

UL

Designed to Meet UL Vertical Tray Flame Test

Underwriters Laboratories Inc.

RoHS Compliant Directive 2002/95/EC

General Cable

# Multi-Conductor, Unshielded

UL 2464, UL 2576, NEC Type CM (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 20 or 18 AWG fully annealed stranded, tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC per UL 1007
- Color code: See charts below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

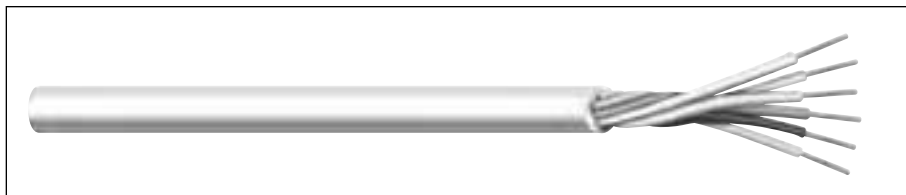
- Public address systems
- Intercoms
- Internal telephones
- Remote control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- UL Style 2576 (UL: 80°C, 150V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | COLOR CODE | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|------------|----------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |            |                      |
| <b>C6351A†</b> | 2            | 20       | 7/28         | 0.016                     | 0.41 | 0.025                 | 0.64 | 0.192        | 4.88  | Black/Red  | 28.0                 |
| <b>C6352A</b>  | 3            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.216        | 5.50  | 1          | 28.0                 |
| <b>C6353A</b>  | 4            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.235        | 5.97  | 1          | 28.0                 |
| <b>C6355A</b>  | 5            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.254        | 6.46  | 1          | 28.0                 |
| <b>C6356A</b>  | 7            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.275        | 6.99  | 1          | 28.0                 |
| <b>C6357A</b>  | 9            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.317        | 8.05  | 1          | 28.0                 |
| <b>C6360A</b>  | 12           | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.354        | 9.00  | 2          | 28.0                 |
| <b>C6358A</b>  | 15           | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.392        | 9.96  | 2          | 28.0                 |
| <b>C2830A†</b> | 2            | 18       | 16/30        | 0.016                     | 0.41 | 0.015                 | 0.64 | 0.190        | 5.33  | Black/Red  | 30.5                 |
| <b>C2831A</b>  | 3            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.236        | 5.99  | 1          | 30.5                 |
| <b>C2404A</b>  | 4            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.258        | 6.55  | 1          | 30.5                 |
| <b>C2420A</b>  | 5            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.280        | 7.11  | 1          | 30.5                 |
| <b>C2421A</b>  | 7            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.309        | 7.85  | 1          | 30.5                 |
| <b>C2422A</b>  | 9            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.358        | 9.09  | 1          | 30.5                 |
| <b>C2412A</b>  | 12           | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.401        | 10.19 | 2          | 30.5                 |
| <b>C2423A</b>  | 15           | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.445        | 11.30 | 2          | 30.5                 |
| <b>C2424A</b>  | 19           | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.469        | 11.91 | 2          | 30.5                 |
| <b>C2433A</b>  | 25           | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.550        | 13.94 | 2          | 30.5                 |

\*Capacitance between conductors

†CM (UL) c(UL), CSA CMG Only

### Color Code Chart 1 - For cables up to and including 9 conductors

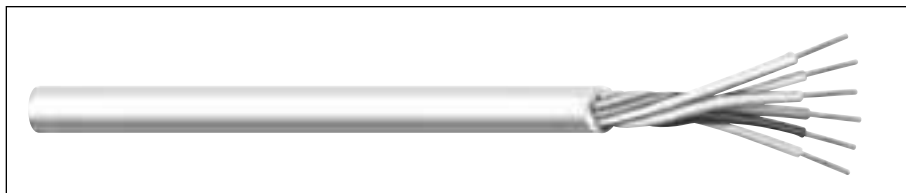
| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| 1            | Black | 6            | Blue   |
| 2            | White | 7            | Orange |
| 3            | Red   | 8            | Yellow |
| 4            | Green | 9            | Violet |
| 5            | Brown |              |        |

### Color Code Chart 2 Per ICEA - For cables of 12 thru 25 conductors

| NO. OF COND. | COLOR       | NO. OF COND. | COLOR        | NO. OF COND. | COLOR             |
|--------------|-------------|--------------|--------------|--------------|-------------------|
| 1            | Black       | 10           | Orange/Black | 19           | Blue/Red          |
| 2            | White       | 11           | Blue/Black   | 20           | Red/Green         |
| 3            | Red         | 12           | Black/White  | 21           | Orange/Green      |
| 4            | Green       | 13           | Red/White    | 22           | Black/White/Red   |
| 5            | Orange      | 14           | Green/White  | 23           | White/Black/Red   |
| 6            | Blue        | 15           | Blue/White   | 24           | Red/Black/White   |
| 7            | White/Black | 16           | Black/Red    | 25           | Green/Black/White |
| 8            | Red/Black   | 17           | White/Red    |              |                   |
| 9            | Green/Black | 18           | Orange/Red   |              |                   |

# Multi-Conductor, Unshielded

UL 2464, UL 2587, NEC Type CL3 and CM (UL) c(UL), CSA CMG



## Product Construction:

### Conductor:

- 16 thru 12 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +90°C

## Applications:

- Public address systems
- Intercoms
- Internal telephones
- Remote control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 725 Type CL3 (UL: 75°C)
- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- UL Style 2587 (UL: 90°C, 600V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|----------------------|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm |                      |

### NEC TYPE CM, UL STYLE 2464 (80°C, 300 VOLTS)

|        |    |    |          |       |      |       |      |       |       |      |
|--------|----|----|----------|-------|------|-------|------|-------|-------|------|
| C2405A | 2  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.260 | 6.81  | 30.5 |
| C2406A | 3  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.283 | 7.19  | 30.5 |
| C2425A | 4  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.306 | 7.77  | 30.5 |
| C2434A | 5  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.334 | 8.48  | 30.5 |
| C2426A | 7  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.363 | 9.25  | 30.5 |
| C2443A | 8  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.393 | 10.03 | 30.5 |
| C2435A | 9  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.423 | 10.80 | 30.5 |
| C2427A | 12 | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.476 | 12.17 | 30.5 |
| C2428A | 15 | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.530 | 13.46 | 30.5 |
| C2429A | 19 | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.559 | 14.33 | 30.5 |
| C2436A | 25 | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.657 | 16.69 | 30.5 |

### NEC TYPE CL3, UL STYLE 2587 (90°C, 600 VOLTS)

|         |   |    |           |       |      |       |      |       |       |      |
|---------|---|----|-----------|-------|------|-------|------|-------|-------|------|
| C2409A† | 2 | 14 | 19/.0147  | 0.030 | 0.81 | 0.032 | 0.81 | 0.326 | 8.51  | 29.0 |
| C2430A  | 4 | 14 | 19/.0147  | 0.032 | 0.81 | 0.032 | 0.81 | 0.391 | 9.93  | 28.2 |
| C2437A  | 5 | 14 | 19/.0147  | 0.032 | 0.81 | 0.032 | 0.81 | 0.428 | 10.87 | 28.2 |
| C2431A  | 7 | 14 | 19/.0147  | 0.032 | 0.81 | 0.032 | 0.81 | 0.469 | 11.91 | 28.2 |
| C2410A  | 2 | 12 | 19/0.0185 | 0.032 | 0.81 | 0.032 | 0.81 | 0.366 | 9.40  | 31.0 |
| C2440A  | 4 | 12 | 19/0.0185 | 0.032 | 0.81 | 0.032 | 0.81 | 0.437 | 11.02 | 31.0 |

\*Capacitance between conductors

†CL3, UL2587, CSA CMH Only

## Color Code Chart Per ICEA

| NO. OF COND. | COLOR       | NO. OF COND. | COLOR        | NO. OF COND. | COLOR             |
|--------------|-------------|--------------|--------------|--------------|-------------------|
| 1            | Black       | 10           | Orange/Black | 19           | Blue/Red          |
| 2            | White       | 11           | Blue/Black   | 20           | Red/Green         |
| 3            | Red         | 12           | Black/White  | 21           | Orange/Green      |
| 4            | Green       | 13           | Red/White    | 22           | Black/White/Red   |
| 5            | Orange      | 14           | Green/White  | 23           | White/Black/Red   |
| 6            | Blue        | 15           | Blue/White   | 24           | Red/Black/White   |
| 7            | White/Black | 16           | Black/Red    | 25           | Green/Black/White |
| 8            | Red/Black   | 17           | White/Red    |              |                   |
| 9            | Green/Black | 18           | Orange/Red   |              |                   |

**CAROL BRAND**

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**CSA** CMG Certified  
Canadian Standard Association

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test

Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Conductor, Unshielded

NEC Type CMP (UL) c(UL)

## Product Construction:

### Conductor:

- 18 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded FEP
- Color code: See chart below

### Jacket:

- Flexguard® PVC, natural or as requested
- Temperature range: -20°C to +75°C

## Applications:

- Audio systems
- Remote control circuits
- Process control and instrumentation
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 (UL: 75°C, 300V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Fire-retardant, low-smoke jacket

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG<br>NUMBER | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | NOM. C-C<br>CAP.*<br>pF/ft |
|-------------------|-----------------|-------------|-----------------|------------------------------|------|--------------------------|------|--------------|------|----------------------------|
|                   |                 |             |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   |                            |
| <b>C8102</b>      | 4               | 18          | 19/30 TC        | 0.007                        | 0.18 | 0.014                    | 0.36 | 0.178        | 4.52 | 21.5                       |

\*Capacitance between conductors

## Color Code Chart

| NO. OF<br>COND. | COLOR |
|-----------------|-------|
| 1               | Black |
| 2               | White |
| 3               | Red   |
| 4               | Green |

# Multi-Conductor, Unshielded

NEC Type CMP (UL) c(UL) and/or CL2P



## Product Construction:

### Conductor:

- 22 thru 14 AWG fully annealed stranded tinned or bare copper per ASTM B-3, B-8 or B-33

### Insulation:

- Premium-grade, color-coded Flexguard® PVC
- Color code: See chart below

### Jacket:

- Fluoropolymer, natural
- Temperature range: -20°C to +75°C
- Sequential footage marked to facilitate installation
- Includes ripcord

## Applications:

- Intercom systems
- Background music
- Audio systems
- Power-limited control circuits
- Suggested voltage rating: 150 volts

## Compliances:

- NEC Article 725 (UL: 75°C, 150V)
- NEC Article 800 (UL: 75°C, 300V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Abrasion-, chemical- and water-resistant jacket

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. C-C CAP* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|---------------------|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm |                     |

### 22 AWG CONDUCTORS

|        |   |    |         |       |      |       |      |       |      |      |
|--------|---|----|---------|-------|------|-------|------|-------|------|------|
| C3105† | 2 | 22 | 7/30 TC | 0.006 | 0.15 | 0.010 | 0.25 | 0.089 | 2.26 | 29.0 |
| C3106† | 4 | 22 | 7/30 TC | 0.006 | 0.15 | 0.010 | 0.25 | 0.121 | 3.07 | 29.0 |

### 18 AWG CONDUCTORS

|       |    |    |         |       |      |       |      |       |      |      |
|-------|----|----|---------|-------|------|-------|------|-------|------|------|
| C3102 | 2  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.123 | 3.12 | 31.0 |
| C3190 | 3  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.143 | 3.63 | 31.0 |
| C3103 | 4  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.163 | 4.14 | 31.0 |
| C3134 | 5  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.187 | 4.75 | 30.8 |
| C3192 | 6  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.198 | 5.03 | 31.0 |
| C3191 | 8  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.223 | 5.66 | 31.0 |
| C3178 | 10 | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.244 | 6.19 | 31.0 |
| C3179 | 12 | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.263 | 6.68 | 31.0 |

### 16 AWG CONDUCTORS

|       |   |    |             |       |      |       |      |       |      |      |
|-------|---|----|-------------|-------|------|-------|------|-------|------|------|
| C3193 | 2 | 16 | 19/.0117 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.141 | 3.58 | 33.0 |
| C3194 | 3 | 16 | 7/.0192 BC  | 0.008 | 0.20 | 0.010 | 0.25 | 0.164 | 4.17 | 33.0 |
| C3195 | 4 | 16 | 7/.0192 BC  | 0.008 | 0.20 | 0.010 | 0.25 | 0.187 | 4.75 | 33.0 |

### 14 AWG CONDUCTORS

|        |   |    |             |       |      |       |      |       |      |      |
|--------|---|----|-------------|-------|------|-------|------|-------|------|------|
| C3126† | 2 | 14 | 19/.0147 BC | 0.010 | 0.25 | 0.010 | 0.25 | 0.168 | 4.27 | 35.0 |
|--------|---|----|-------------|-------|------|-------|------|-------|------|------|

### 12 AWG CONDUCTORS

|        |   |    |             |       |      |       |      |       |      |      |
|--------|---|----|-------------|-------|------|-------|------|-------|------|------|
| C3135† | 2 | 12 | 19/.0185 BC | 0.010 | 0.25 | 0.010 | 0.25 | 0.238 | 6.05 | 37.0 |
|--------|---|----|-------------|-------|------|-------|------|-------|------|------|

\*Capacitance between conductors

†CL2P only

## Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | White  |
| 3            | Red    |
| 4            | Green  |
| 5            | Brown  |
| 6            | Blue   |
| 7            | Orange |
| 8            | Yellow |
| 9            | Violet |
| 10           | Gray   |
| 11           | Pink   |
| 12           | Tan    |

**CAROL BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Conductor, Unshielded

NEC Type CMP (UL) c(UL) and/or CL3P

## Product Construction:

### Conductor:

- 22 thru 12 AWG fully annealed solid, stranded tinned or bare copper per ASTM B-3, B-8 or B-33

### Insulation:

- Premium-grade, color-coded Flexguard® PVC
- Color code: See chart below

### Jacket:

- Flexguard® PVC, natural
- Temperature range: 0°C to +75°C
- Sequential footage marked to facilitate installation
- Includes ripcord

## Applications:

- Intercom systems
- Background music
- Audio systems
- Power-limited control circuits
- Suggested voltage rating: 150 volts

## Compliances:

- NEC Article 725 (UL: 75°C, 150V)
- NEC Article 800 (UL: 75°C, 300V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Flexible
- Easy to terminate

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM.* C-C CAP. pF/ft |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|----------------------|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm |                      |

### 22 AWG CONDUCTORS

|              |   |    |         |       |      |       |      |       |      |      |
|--------------|---|----|---------|-------|------|-------|------|-------|------|------|
| <b>C3115</b> | 2 | 22 | 7/32 TC | 0.008 | 0.20 | 0.015 | 0.38 | 0.122 | 3.10 | 30.0 |
| <b>C3116</b> | 4 | 22 | 7/32 TC | 0.008 | 0.20 | 0.015 | 0.38 | 0.141 | 3.58 | 30.0 |

### 18 AWG CONDUCTORS

|              |    |    |          |       |      |       |      |       |      |      |
|--------------|----|----|----------|-------|------|-------|------|-------|------|------|
| <b>C3110</b> | 2  | 18 | Solid BC | 0.008 | 0.20 | 0.015 | 0.38 | 0.142 | 3.61 | 37.0 |
| <b>C3114</b> | 3  | 18 | Solid BC | 0.008 | 0.20 | 0.015 | 0.38 | 0.151 | 3.84 | 37.0 |
| <b>C3111</b> | 4  | 18 | Solid BC | 0.008 | 0.20 | 0.015 | 0.38 | 0.166 | 4.22 | 37.0 |
| <b>C3117</b> | 5  | 18 | Solid BC | 0.008 | 0.20 | 0.015 | 0.38 | 0.182 | 4.62 | 37.0 |
| <b>C3118</b> | 6  | 18 | Solid BC | 0.008 | 0.20 | 0.015 | 0.38 | 0.199 | 5.05 | 37.0 |
| <b>C3119</b> | 8  | 18 | Solid BC | 0.008 | 0.20 | 0.015 | 0.38 | 0.216 | 5.49 | 37.0 |
| <b>C3112</b> | 2  | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.156 | 3.96 | 35.0 |
| <b>C3120</b> | 3  | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.166 | 4.22 | 35.0 |
| <b>C3113</b> | 4  | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.182 | 4.62 | 35.0 |
| <b>C3125</b> | 5  | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.200 | 5.08 | 54.6 |
| <b>C3121</b> | 6  | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.216 | 5.49 | 35.0 |
| <b>C3122</b> | 8  | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.239 | 6.07 | 35.0 |
| <b>C3123</b> | 10 | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.278 | 7.06 | 35.0 |
| <b>C3124</b> | 12 | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.287 | 7.29 | 35.0 |

### 16 AWG CONDUCTORS

|              |   |    |             |      |      |       |      |       |      |      |
|--------------|---|----|-------------|------|------|-------|------|-------|------|------|
| <b>C3127</b> | 2 | 16 | 19/.0117 BC | .009 | .227 | 0.015 | 0.38 | 0.178 | 4.52 | 40.0 |
|--------------|---|----|-------------|------|------|-------|------|-------|------|------|

### 14 AWG CONDUCTORS

|               |   |    |             |       |      |       |      |       |      |      |
|---------------|---|----|-------------|-------|------|-------|------|-------|------|------|
| <b>C3128†</b> | 2 | 14 | 19/.0147 BC | 0.010 | 0.20 | 0.015 | 0.38 | 0.212 | 5.38 | 40.0 |
|---------------|---|----|-------------|-------|------|-------|------|-------|------|------|

### 12 AWG CONDUCTORS

|               |   |    |             |       |      |       |      |       |      |      |
|---------------|---|----|-------------|-------|------|-------|------|-------|------|------|
| <b>C3129†</b> | 2 | 12 | 19/.0185 BC | 0.010 | 0.20 | 0.015 | 0.38 | 0.254 | 6.45 | 43.0 |
|---------------|---|----|-------------|-------|------|-------|------|-------|------|------|

\*Capacitance between conductors

†CL3P only

## Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | White  |
| 3            | Red    |
| 4            | Green  |
| 5            | Brown  |
| 6            | Blue   |
| 7            | Orange |
| 8            | Yellow |

# Multi-Conductor, Unshielded

AWM Style 2464, CSA Type AWM I/II A/B, NEC/CEC Type CMG (CSA C/US)



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | COLOR CODE      | NOM. C-C CAP* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|-----------------|---------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |                 |                     |
| C4100A         | 2            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.165        | 4.19  | Black/Red       | 27.5                |
| C4101A         | 3            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.176        | 4.47  | Black/Red/Green | 27.5                |
| C4102A         | 4            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.189        | 4.80  | 1               | 27.5                |
| C4103A         | 5            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.203        | 5.16  | 1               | 27.5                |
| C4104A         | 6            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.208        | 5.28  | 1               | 27.5                |
| C4105A         | 7            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.218        | 5.54  | 1               | 27.5                |
| C4106A         | 8            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.234        | 5.94  | 1               | 27.5                |
| C4107A         | 9            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.249        | 6.32  | 1               | 27.5                |
| C4108A         | 10           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.268        | 6.81  | 1               | 27.5                |
| C4109A         | 12           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.276        | 7.01  | 1               | 27.5                |
| C4110A         | 15           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.303        | 7.70  | 2               | 27.5                |
| C4111A         | 18           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.318        | 8.08  | 2               | 27.5                |
| C4112A         | 20           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.334        | 8.48  | 2               | 27.5                |
| C4113A         | 25           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.368        | 9.35  | 2               | 27.5                |
| C4114A         | 30           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.389        | 9.88  | 2               | 27.5                |
| C4115A         | 40           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.434        | 11.02 | 2               | 27.5                |
| C4116A         | 50           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.489        | 12.42 | 2               | 27.5                |

\*Capacitance between conductors

**Color Code Chart 1–** For cables up to and including 12 conductors

| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| 1            | Black | 7            | Orange |
| 2            | White | 8            | Yellow |
| 3            | Red   | 9            | Violet |
| 4            | Green | 10           | Gray   |
| 5            | Brown | 11           | Pink   |
| 6            | Blue  | 12           | Tan    |

**Color Code Chart 2 Per ICEA –** For cables of 15 thru 50 conductors

| NO. OF COND. | COLOR        | NO. OF COND. | COLOR              | NO. OF COND. | COLOR             |
|--------------|--------------|--------------|--------------------|--------------|-------------------|
| 1            | Black        | 18           | Orange/Red         | 35           | White/Red/Orange  |
| 2            | White        | 19           | Blue/Red           | 36           | Orange/White/Blue |
| 3            | Red          | 20           | Red/Green          | 37           | White/Red/Blue    |
| 4            | Green        | 21           | Orange/Green       | 38           | Black/White/Green |
| 5            | Orange       | 22           | Black/White/Red    | 39           | White/Black/Green |
| 6            | Blue         | 23           | White/Black/Red    | 40           | Red/White/Green   |
| 7            | White/Black  | 24           | Red/Black/White    | 41           | Green/White/Blue  |
| 8            | Red/Black    | 25           | Green/Black/White  | 42           | Orange/Red/Green  |
| 9            | Green/Black  | 26           | Orange/Black/White | 43           | Blue/Red/Green    |
| 10           | Orange/Black | 27           | Blue/Black/White   | 44           | Black/White/Blue  |
| 11           | Blue/Black   | 28           | Black/Red/Green    | 45           | White/Black/Blue  |
| 12           | Black/White  | 29           | White/Red/Green    | 46           | Red/White/Blue    |
| 13           | Red/White    | 30           | Red/Black/Green    | 47           | Green/Orange/Red  |
| 14           | Green/White  | 31           | Green/Black/Orange | 48           | Orange/Red/Blue   |
| 15           | Blue/White   | 32           | Orange/Black/Green | 49           | Blue/Red/Orange   |
| 16           | Black/Red    | 33           | Blue/White/Orange  | 50           | Black/Orange/Red  |
| 17           | White/Red    | 34           | Black/White/Orange |              |                   |

## Product Construction:

### Conductor:

- 22 AWG fully annealed, stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See charts below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Public address systems
- Intercoms
- Internal telephones
- Remote control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 or 600 volts

## Features:

- Easy to terminate
- Excellent electrical properties
- Tinned conductors provide excellent corrosion resistance
- Assists soldering applications

## Compliances:

- AWM Style 2464 (CSA: 80°C, 300V)
- CSA Type AWM (105°C, 600V)
- CSA Certified CMG to harmonized standard UL444 and CSA 22.2 No. 214
- NEC/CEC Type CMG (CSA: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT4 vertical flame test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Conductor, Unshielded

AWM Style 2464, CSA Type AWM I/II A/B, NEC/CEC Type CMG (CSA C/US)

## Product Construction:

### Conductor:

- 20 or 18 AWG fully annealed, stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See charts below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Public address systems
- Intercoms
- Internal telephones
- Remote control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 or 600 volts

## Features:

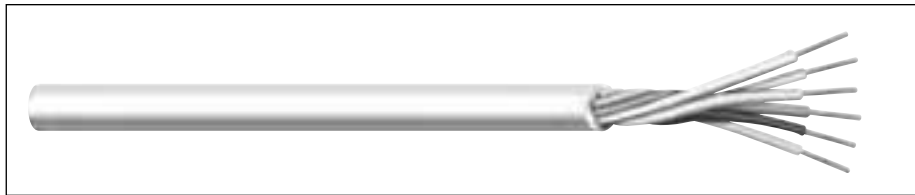
- Easy to terminate
- Excellent electrical properties
- Tinned conductors provide excellent corrosion resistance
- Assists soldering applications

## Compliances:

- AWM Style 2464 (CSA: 80°C, 300V)
- CSA Type AWM (105°C, 600V)
- CSA Certified CMG to harmonized standard UL444 and CSA 22.2 No. 214
- NEC/CEC Type CMG (CSA: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT4 vertical flame test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | COLOR CODE | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|------------|----------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |            |                      |
| C4117A         | 2            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.206        | 5.23  | Black/Red  | 25.0                 |
| C4118A         | 3            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.216        | 5.49  | 1          | 25.0                 |
| C4119A         | 4            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.235        | 5.97  | 1          | 25.0                 |
| C4120A         | 5            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.254        | 6.45  | 1          | 25.0                 |
| C4121A         | 7            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.275        | 6.99  | 1          | 25.0                 |
| C4122A         | 9            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.317        | 8.05  | 1          | 25.0                 |
| C4123A         | 12           | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.354        | 8.99  | 2          | 25.0                 |
| C4124A         | 15           | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.392        | 9.96  | 2          | 25.0                 |
| C4125A         | 2            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.224        | 5.69  | Black/Red  | 27.5                 |
| C4214A         | 2            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.224        | 5.69  | 1          | 27.5                 |
| C4126A         | 3            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.236        | 5.99  | 1          | 27.5                 |
| C4127A         | 4            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.258        | 6.55  | 1          | 27.5                 |
| C4128A         | 5            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.280        | 7.11  | 1          | 27.5                 |
| C4206A         | 6            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.304        | 7.72  | 1          | 27.5                 |
| C4129A         | 7            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.309        | 7.85  | 1          | 27.5                 |
| C4130A         | 9            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.358        | 9.09  | 1          | 27.5                 |
| C4131A         | 12           | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.401        | 10.19 | 2          | 27.5                 |
| C4132A         | 15           | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.445        | 11.30 | 2          | 27.5                 |
| C4133A         | 19           | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.469        | 11.91 | 2          | 27.5                 |
| C4134A         | 25           | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.549        | 13.94 | 2          | 27.5                 |

\*Capacitance between conductors

### Color Code Chart 1 - For cables up to and including 9 conductors

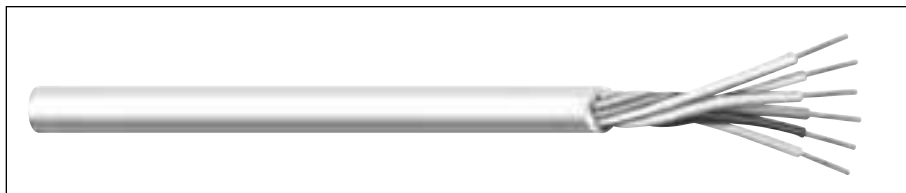
| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| 1            | Black | 6            | Blue   |
| 2            | White | 7            | Orange |
| 3            | Red   | 8            | Yellow |
| 4            | Green | 9            | Violet |
| 5            | Brown |              |        |

### Color Code Chart 2 Per ICEA - For cables of 12 thru 25 conductors

| NO. OF COND. | COLOR       | NO. OF COND. | COLOR        | NO. OF COND. | COLOR             |
|--------------|-------------|--------------|--------------|--------------|-------------------|
| 1            | Black       | 10           | Orange/Black | 19           | Blue/Red          |
| 2            | White       | 11           | Blue/Black   | 20           | Red/Green         |
| 3            | Red         | 12           | Black/White  | 21           | Orange/Green      |
| 4            | Green       | 13           | Red/White    | 22           | Black/White/Red   |
| 5            | Orange      | 14           | Green/White  | 23           | White/Black/Red   |
| 6            | Blue        | 15           | Blue/White   | 24           | Red/Black/White   |
| 7            | White/Black | 16           | Black/Red    | 25           | Green/Black/White |
| 8            | Red/Black   | 17           | White/Red    |              |                   |
| 9            | Green/Black | 18           | Orange/Red   |              |                   |

# Multi-Conductor, Unshielded

AWM Styles 2464, 2587, CSA Type AWM I/II A/B, NEC/CEC Type CMG (CSA C/US), or NEC Type CL2



## Product Construction:

### Conductor:

- 16 thru 12 AWG fully annealed, stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Public address systems
- Intercoms
- Internal telephones
- Remote control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 or 600 volts

## Features:

- Easy to terminate
- Excellent electrical properties
- Tinned conductors provide excellent corrosion resistance
- Assists soldering applications

## Compliances:

- AWM Style 2464 (CSA or UL: 80°C, 300V)
- AWM Style 2587 (CSA: 90°C, 600V)
- CSA Type AWM (105°C, 600V)
- CSA Certified CMG to harmonized standard UL444 and CSA 22.2 No. 214
- NEC/CEC Type CMG (CSA: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT4 Vertical Flame Test
- UL Certified CL2 to Standard UL13\*\*
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|----------------------|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm |                      |

### AWM STYLE 2464, CSA TYPE AWM, CSA C/US TYPE CMG

|        |    |    |          |       |      |       |      |       |       |      |
|--------|----|----|----------|-------|------|-------|------|-------|-------|------|
| C4135A | 2  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.268 | 6.81  | 27.0 |
| C4136A | 3  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.283 | 7.19  | 27.0 |
| C4137A | 4  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.306 | 7.77  | 27.0 |
| C4138A | 5  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.334 | 8.48  | 27.0 |
| C4139A | 7  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.364 | 9.25  | 27.0 |
| C4140A | 8  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.395 | 10.03 | 27.0 |
| C4141A | 9  | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.425 | 10.80 | 27.0 |
| C4142A | 12 | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.479 | 12.17 | 27.0 |
| C4143A | 15 | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.530 | 13.46 | 27.0 |
| C4144A | 19 | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.564 | 14.33 | 27.0 |
| C4145A | 25 | 16 | 19/.0117 | 0.021 | 0.53 | 0.032 | 0.81 | 0.657 | 16.69 | 27.0 |

### AWM STYLE 2587, CSA TYPE AWM (FT4), NEC TYPE CL2\*\*

|        |   |    |          |       |      |       |      |       |       |      |
|--------|---|----|----------|-------|------|-------|------|-------|-------|------|
| C4146A | 2 | 14 | 19/.0147 | 0.032 | 0.81 | 0.032 | 0.81 | 0.334 | 8.48  | 25.0 |
| C4147A | 4 | 14 | 19/.0147 | 0.032 | 0.81 | 0.032 | 0.81 | 0.391 | 9.93  | 25.0 |
| C4148A | 5 | 14 | 19/.0147 | 0.032 | 0.81 | 0.032 | 0.81 | 0.428 | 10.87 | 25.0 |
| C4149A | 7 | 14 | 19/.0147 | 0.032 | 0.81 | 0.032 | 0.81 | 0.469 | 11.91 | 25.0 |
| C4150A | 2 | 12 | 19/.0185 | 0.032 | 0.81 | 0.032 | 0.81 | 0.370 | 9.40  | 29.4 |
| C4151A | 4 | 12 | 19/.0185 | 0.032 | 0.81 | 0.032 | 0.81 | 0.434 | 11.02 | 29.4 |

\* Capacitance between conductors

## Color Code Chart Per ICEA

| NO. OF COND. | COLOR       | NO. OF COND. | COLOR        | NO. OF COND. | COLOR             |
|--------------|-------------|--------------|--------------|--------------|-------------------|
| 1            | Black       | 10           | Orange/Black | 19           | Blue/Red          |
| 2            | White       | 11           | Blue/Black   | 20           | Red/Green         |
| 3            | Red         | 12           | Black/White  | 21           | Orange/Green      |
| 4            | Green       | 13           | Red/White    | 22           | Black/White/Red   |
| 5            | Orange      | 14           | Green/White  | 23           | White/Black/Red   |
| 6            | Blue        | 15           | Blue/White   | 24           | Red/Black/White   |
| 7            | White/Black | 16           | Black/Red    | 25           | Green/Black/White |
| 8            | Red/Black   | 17           | White/Red    |              |                   |
| 9            | Green/Black | 18           | Orange/Red   |              |                   |

**CAROL BRAND**

**UL LISTED**

**SP US**

**AW**

**RoHS Compliant**  
Directive 2002/95/EC

**General Cable**

# Multi-Conductor, Rubber, Unshielded

## Product Construction:

### Conductor:

- 20 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded rubber
- Color code: See chart below

### Jacket:

- Rubber, black
- Temperature range: -20°C to +60°C

## Applications:

- Energy management systems
- Control circuits
- Fire alarm control
- Broadcast and studio requirements
- Suggested voltage rating: 350 volts

## Features:

- Excellent impact resistance
- High level of abrasion resistance
- High flexibility
- Excellent mechanical strength
- Excellent moisture resistance

## Compliances:

- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |
| <b>C3602</b>   | 2            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.230        | 5.84  |
| <b>C3603</b>   | 3            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.255        | 6.48  |
| <b>C3604</b>   | 4            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.260        | 6.60  |
| <b>C3605</b>   | 5            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.300        | 7.62  |
| <b>C3606</b>   | 6            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.315        | 8.00  |
| <b>C3607</b>   | 7            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.347        | 8.81  |
| <b>C3608</b>   | 8            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.260        | 9.14  |
| <b>C3610</b>   | 10           | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.410        | 10.41 |

## Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| <b>1</b>     | Black  |
| <b>2</b>     | White  |
| <b>3</b>     | Red    |
| <b>4</b>     | Green  |
| <b>5</b>     | Blue   |
| <b>6</b>     | Brown  |
| <b>7</b>     | Yellow |
| <b>8</b>     | Orange |
| <b>9</b>     | Gray   |
| <b>10</b>    | Violet |

# Power-Limited Tray Cable, Unshielded

NEC Type PLTC



## Product Construction:

### Conductor:

- 22 thru 12 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Cable tray installations
- Power limited circuits
- Intercom systems
- Business machines
- Cash registers
- Automatic valve control systems
- Irrigation systems
- Suggested voltage rating: 300 volts
- Burglar alarms

## Features:

- Sunlight-resistant PVC jacket
- UL rated for cable tray use

## Compliances:

- NEC Article 725 Power-Limited Tray Cable (UL: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Meets UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. C-C CAP* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|---------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |                     |
| C0431A         | 2            | 22       | 7/30         | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.190        | 4.83 | 27.5                |
| C0432A         | 3            | 22       | 7/30         | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.198        | 5.03 | 27.5                |
| C0433A         | 2            | 20       | 7/28         | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.206        | 5.23 | 30.5                |
| C0434A         | 3            | 20       | 7/28         | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.216        | 5.49 | 30.5                |
| C0435A         | 2            | 18       | 16/30        | 0.015                     | 0.38 | 0.037                 | 0.94 | 0.226        | 5.74 | 31.5                |
| C0436A         | 3            | 18       | 16/30        | 0.015                     | 0.38 | 0.037                 | 0.94 | 0.237        | 6.02 | 31.5                |
| C0444A         | 4            | 18       | 16/30        | 0.015                     | 0.38 | 0.037                 | 0.94 | 0.257        | 6.53 | 31.5                |
| C0437A         | 2            | 16       | 19/.0117     | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.243        | 6.17 | 37.0                |
| C0438A         | 3            | 16       | 19/.0117     | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.250        | 6.35 | 37.0                |
| C0439A         | 2            | 14       | 19/.0147     | 0.013                     | 0.33 | 0.042                 | 1.07 | 0.288        | 7.32 | 40.5                |
| C0440A         | 3            | 14       | 19/.0147     | 0.013                     | 0.33 | 0.042                 | 1.07 | 0.290        | 7.37 | 40.5                |
| C0441A         | 2            | 12       | 19/.0185     | 0.013                     | 0.33 | 0.042                 | 1.07 | 0.315        | 8.00 | 44.0                |

\*Capacitance between conductors

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | White |
| 4            | Green |

**CAROL BRAND**



Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.



# Multi-Conductor, Foil Shield

## NEC Type CL2 and CM (UL) c(UL) CMH

### Product Construction:

#### Conductor:

- 24 thru 12 AWG fully annealed solid or stranded tinned copper per ASTM B-33

#### Insulation:

- Premium-grade, color-coded polyethylene
- Premium-grade, color-coded polypropylene
- Color code: See charts below

#### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

#### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

### Applications:

- Recording studios and sound stages
- Broadcast and sound systems
- Computers
- Industrial equipment control
- Suggested voltage rating: 300 or 600 volts

### Features:

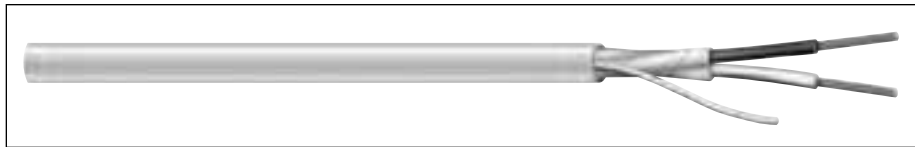
- Excellent electrical properties
- Superior shielding effectiveness
- 25% shield overlap provides excellent shielding efficiency
- Good flexibility

### Compliances:

- UL Style 2092 (UL: 60°C, 300V)
- UL Style 2093 (UL: 60°C, 300V)
- UL Style 2094 (UL: 60°C, 300V)
- UL Style 2106 (UL: 60°C, 600V)
- UL Style 2107 (UL: 60°C, 600V)
- UL Style 2464 (UL: 80°C, 300V)
- NEC Article 725 Type CL2 (UL: 75°C)
- NEC Article 800 Type CM (UL: 75°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- CSA CMH (CSA: 60°C)
- Passes CSA CMH Flame Test

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG<br>NUMBER                      | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | NOM. CAP***<br>pF/ft |      |
|----------------------------------------|-----------------|-------------|-----------------|------------------------------|------|--------------------------|------|--------------|------|----------------------|------|
|                                        |                 |             |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | A                    | B    |
| UL STYLE 2092, CM (UL) C(UL) CMH, 300V |                 |             |                 |                              |      |                          |      |              |      |                      |      |
| C2513A                                 | 2               | 24          | 7/32            | 0.016                        | 0.41 | 0.026                    | 0.66 | 0.167        | 4.24 | 18.0                 | 33.0 |
| C2514A                                 | 2               | 22          | 7/30            | 0.016                        | 0.41 | 0.020                    | 0.51 | 0.167        | 4.24 | 20.0                 | 36.0 |
| C2524A                                 | 2               | 20          | 7/28            | 0.016                        | 0.41 | 0.020                    | 0.51 | 0.183        | 4.65 | 22.5                 | 40.5 |
| C2534A                                 | 2               | 18          | 16/30           | 0.016                        | 0.41 | 0.020                    | 0.51 | 0.201        | 5.21 | 25.5                 | 45.5 |

Polyethylene Insulation, Color Code Chart #1

|                                               |   |    |       |       |      |       |      |       |      |      |      |
|-----------------------------------------------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| <b>UL STYLE 2093, CM (UL) c(UL) CMH, 300V</b> |   |    |       |       |      |       |      |       |      |      |      |
| <b>C2526A</b>                                 | 3 | 22 | 7/30  | 0.016 | 0.41 | 0.030 | 0.76 | 0.196 | 4.98 | 18.5 | 33.5 |
| <b>C2528A</b>                                 | 3 | 20 | 7/28  | 0.016 | 0.41 | 0.030 | 0.76 | 0.210 | 5.34 | 21.0 | 37.5 |
| <b>C2525A</b>                                 | 3 | 20 | 7/28  | 0.016 | 0.41 | 0.030 | 0.76 | 0.213 | 5.41 | 21.0 | 37.0 |
| <b>C2535A</b>                                 | 3 | 18 | 16/30 | 0.016 | 0.41 | 0.020 | 0.51 | 0.213 | 5.56 | 23.0 | 41.0 |

Polyethylene Insulation, Color Code Chart #1

|                                               |   |    |      |       |      |       |      |       |      |      |      |
|-----------------------------------------------|---|----|------|-------|------|-------|------|-------|------|------|------|
| <b>UL STYLE 2094, CM (UL) c(UL) CMH, 300V</b> |   |    |      |       |      |       |      |       |      |      |      |
| <b>C2523A</b>                                 | 4 | 22 | 7/30 | 0.016 | 0.41 | 0.030 | 0.76 | 0.213 | 5.41 | 18.5 | 33.5 |
| <b>C2555A</b>                                 | 4 | 20 | 7/28 | 0.016 | 0.41 | 0.030 | 0.76 | 0.234 | 5.94 | 20.5 | 36.5 |

Polyethylene Insulation, Color Code Chart #1

|                                 |   |    |          |       |      |       |      |       |      |      |      |
|---------------------------------|---|----|----------|-------|------|-------|------|-------|------|------|------|
| <b>UL STYLE 2106, CSA, 600V</b> |   |    |          |       |      |       |      |       |      |      |      |
| <b>C2536A*</b>                  | 2 | 16 | 19/.0117 | 0.031 | 0.79 | 0.032 | 0.81 | 0.307 | 7.80 | 20.0 | 36.0 |
| <b>C2538A**</b>                 | 2 | 14 | 19/.0147 | 0.031 | 0.79 | 0.032 | 0.81 | 0.335 | 8.51 | 23.0 | 42.0 |
| <b>C2539A**</b>                 | 2 | 12 | 19/.0185 | 0.032 | 0.81 | 0.032 | 0.81 | 0.376 | 9.55 | 26.0 | 46.0 |

\* CM (UL) c(UL) CMH

\*\* CL2

Polyethylene Insulation, Color Code Chart #1

|                                               |   |    |          |       |      |       |      |       |      |      |      |
|-----------------------------------------------|---|----|----------|-------|------|-------|------|-------|------|------|------|
| <b>UL STYLE 2107, CM (UL) c(UL) CMH, 600V</b> |   |    |          |       |      |       |      |       |      |      |      |
| <b>C2537A</b>                                 | 3 | 16 | 19/.0117 | 0.031 | 0.79 | 0.032 | 0.81 | 0.325 | 8.26 | 19.0 | 34.0 |

Polyethylene Insulation, Color Code Chart #1

|                                                   |   |    |      |       |      |       |      |       |     |      |      |
|---------------------------------------------------|---|----|------|-------|------|-------|------|-------|-----|------|------|
| <b>UL STYLE 2464, CL2/CM (UL) c(UL) CMH, 300V</b> |   |    |      |       |      |       |      |       |     |      |      |
| <b>C2540A</b>                                     | 2 | 20 | 7/28 | 0.013 | 0.33 | 0.032 | 0.81 | 0.194 | 4.9 | 49.7 | 89.5 |

PVC Insulation, Color Code Chart #2

|                                |   |    |       |       |      |       |      |       |      |      |      |
|--------------------------------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| <b>CM (UL) c(UL) CMH, 300V</b> |   |    |       |       |      |       |      |       |      |      |      |
| <b>C2515A</b>                  | 2 | 22 | Solid | 0.007 | 0.18 | 0.020 | 0.51 | 0.124 | 3.15 | 30.0 | 55.0 |
| <b>C2516A</b>                  | 2 | 22 | 7/30  | 0.008 | 0.20 | 0.020 | 0.51 | 0.137 | 3.48 | 28.0 | 51.0 |
| <b>C2517A</b>                  | 3 | 22 | 7/30  | 0.008 | 0.20 | 0.020 | 0.51 | 0.144 | 3.36 | 25.0 | 45.0 |

Polypropylene Insulation, Color Code Chart #2

\*\*\*A – Capacitance between conductors

\*\*\*B – Capacitance between one conductor and other conductors connected to shield

#### Color Code Chart 1

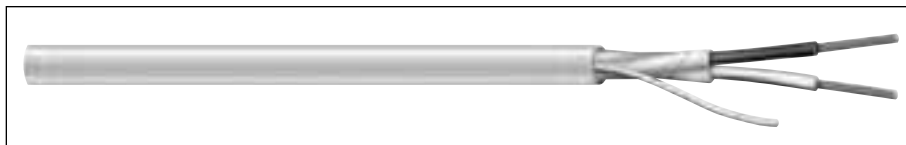
| NO. OF COND. | COLOR   |
|--------------|---------|
| 1            | Black   |
| 2            | Natural |
| 3            | Red     |
| 4            | Green   |

#### Color Code Chart 2

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | Clear |

# Multi-Conductor, Foil Shield

UL 2092, NEC Type CM (UL) c(UL) CMH



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A          | B |

## UL STYLE 2092, CM (UL) C(UL) CMH, 300V

|               |   |    |       |       |      |       |      |       |      |      |      |
|---------------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| <b>C2518A</b> | 2 | 22 | 7/30  | 0.016 | 0.41 | 0.026 | 0.66 | 0.181 | 4.60 | 20.0 | 36.0 |
| <b>C2519A</b> | 2 | 20 | 7/28  | 0.016 | 0.41 | 0.028 | 0.71 | 0.201 | 5.11 | 21.5 | 38.5 |
| <b>C2521A</b> | 2 | 18 | 16/30 | 0.018 | 0.46 | 0.028 | 0.71 | 0.229 | 5.82 | 23.5 | 43.0 |

Polyethylene Insulation, Color Code Chart #1

## CM (UL) c(UL) CMH, 300V

|               |   |    |      |       |      |       |      |       |      |      |      |
|---------------|---|----|------|-------|------|-------|------|-------|------|------|------|
| <b>C2520A</b> | 2 | 22 | 7/30 | 0.008 | 0.20 | 0.020 | 0.51 | 0.137 | 3.48 | 28.0 | 50.0 |
|---------------|---|----|------|-------|------|-------|------|-------|------|------|------|

Polypropylene Insulation, Color Code Chart #2

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

### Color Code Chart 1

| NO. OF COND. | COLOR   |
|--------------|---------|
| 1            | Black   |
| 2            | Natural |

### Color Code Chart 2

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |

### Product Construction:

#### Conductor:

- 22 thru 18 AWG fully annealed stranded tinned copper per ASTM B-33

#### Insulation:

- Premium-grade, color-coded polyethylene or polypropylene
- Color code: See charts below

#### Shield:

- 100% aluminum/polyester foil “bonded” to jacket, foil facing in
- Stranded tinned copper drain wire

#### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

### Applications:

- 100% shielded cable where RF shielding is required
- Control circuits
- Data and signal transmission
- Computer interconnections
- Suggested voltage rating: 300 volts

### Features:

- The jacket and shield are “bonded” for ease of removal on automatic stripping equipment

### Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2092 (UL: 60°C, 300V)
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- CSA CMH (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Passes CSA CMH Flame Test

### Packaging:

- Please contact Customer Service for packaging and color options

# Multi-Conductor, Foil Shield

UL 2464, NEC Type CM (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 18 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded S-R PVC
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Audio, broadcast, instrumentation and sound systems
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| <b>C2543A</b>  | 4            | 18       | 19/30        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.238        | 6.05 | 47         | 84.5 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | White |
| 4            | Green |

# Multi-Conductor, Foil Shield

NEC Type CMP (UL) c(UL)



| CATALOG<br>NUMBER | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | NOM. CAP*<br>pF/ft |      |
|-------------------|-----------------|-------------|-----------------|------------------------------|------|--------------------------|------|--------------|------|--------------------|------|
|                   |                 |             |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | A                  | B    |
| <b>C8106</b>      | 3               | 18          | 19/30 TC        | 0.007                        | 0.18 | 0.014                    | 0.36 | 0.178        | 4.27 | 54.0               | 95.0 |
| <b>C8114</b>      | 4               | 18          | 19/30 TC        | 0.007                        | 0.18 | 0.014                    | 0.36 | 0.185        | 4.70 | 30.0               | 55.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF<br>COND. | COLOR |
|-----------------|-------|
| <b>1</b>        | Black |
| <b>2</b>        | White |
| <b>3</b>        | Red   |
| <b>4</b>        | Green |

## Product Construction:

### Conductor:

- 18 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded FEP
- Color code: See chart below

### Separator:

- Polyester tape with 25% overlap

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap
- Stranded tinned copper drain wire

### Jacket:

- FEP, red or as requested
- Temperature range: -40°C to +200°C

## Applications:

- Computer systems
- Remote control circuits
- Process control and instrumentation
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Fire-retardant, low-smoke jacket
- Suitable for outdoor and direct burial
- Chemical-resistant

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL  
BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Conductor, Foil Shield

NEC Type CMP (UL) c(UL) and/or CL2P

## Product Construction:

### Conductor:

- 22 thru 16 AWG fully annealed stranded tinned or bare copper per ASTM B-3, B-8 or B-33
- Class B stranding per ASTM B-8

### Insulation:

- Premium-grade, color-coded Flexguard®
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester foil, with 25% overlap
- Stranded tinned copper drain wire

### Jacket:

- Fluoropolymer, natural
- Temperature range: -20°C to +75°C
- Sequential footage marked to facilitate installations
- Stranded tinned copper drain wire
- Includes ripcord

## Applications:

- Intercom systems
- Background music
- Audio systems
- Power-limited control circuits
- Suggested voltage rating: 150 volts

## Compliances:

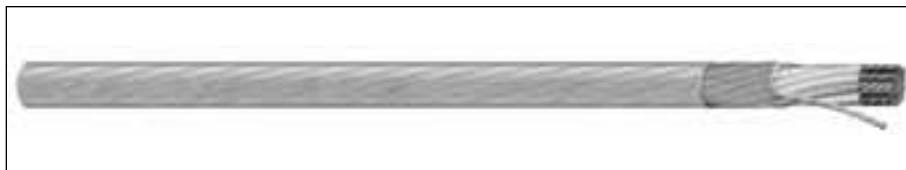
- NEC Article 725 (UL: 75°C, 150V)
- NEC Article 800 (UL: 75°C, 300V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Abrasion-, chemical- and water-resistant jacket

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.** |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|-------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A           | B |

### 22 AWG CONDUCTORS

|               |   |    |         |       |      |       |      |       |      |      |      |
|---------------|---|----|---------|-------|------|-------|------|-------|------|------|------|
| <b>C3154*</b> | 2 | 22 | 7/30 TC | 0.006 | 0.15 | 0.010 | 0.25 | 0.103 | 2.62 | 51.0 | 92.0 |
| <b>C3310*</b> | 3 | 22 | 7/30 TC | 0.006 | 0.15 | 0.010 | 0.25 | 0.116 | 2.95 | 45.0 | 81.0 |
| <b>C3155*</b> | 4 | 22 | 7/30 TC | 0.006 | 0.15 | 0.010 | 0.25 | 0.130 | 3.30 | 45.0 | 81.0 |
| <b>C3311*</b> | 6 | 22 | 7/30 TC | 0.006 | 0.15 | 0.010 | 0.25 | 0.152 | 3.86 | 40.0 | 73.0 |

### 20 AWG CONDUCTORS

|               |   |    |         |       |      |       |      |       |      |      |      |
|---------------|---|----|---------|-------|------|-------|------|-------|------|------|------|
| <b>C3320*</b> | 2 | 20 | 7/28 TC | 0.007 | 0.18 | 0.010 | 0.25 | 0.120 | 3.05 | 53.0 | 96.0 |
| <b>C3321*</b> | 3 | 20 | 7/28 TC | 0.007 | 0.18 | 0.010 | 0.25 | 0.136 | 3.45 | 46.0 | 84.0 |
| <b>C3322*</b> | 4 | 20 | 7/28 TC | 0.007 | 0.18 | 0.010 | 0.25 | 0.153 | 3.89 | 46.0 | 84.0 |

### 18 AWG CONDUCTORS

|              |    |    |         |       |      |       |      |       |      |      |      |
|--------------|----|----|---------|-------|------|-------|------|-------|------|------|------|
| <b>C3162</b> | 2  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.152 | 3.86 | 54.0 | 98.0 |
| <b>C3164</b> | 3  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.158 | 4.01 | 47.0 | 85.0 |
| <b>C3163</b> | 4  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.178 | 4.52 | 47.0 | 85.0 |
| <b>C3166</b> | 6  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.212 | 5.38 | 43.0 | 76.0 |
| <b>C3180</b> | 8  | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.229 | 5.82 | 43.0 | 76.0 |
| <b>C3181</b> | 10 | 18 | 7/26 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.273 | 6.93 | 43.0 | 76.0 |
| <b>C3182</b> | 12 | 18 | 7/26 BC | 0.008 | 0.20 | 0.012 | 0.30 | 0.285 | 7.24 | 43.0 | 76.0 |

### 16 AWG CONDUCTORS

|              |   |    |             |       |      |       |      |       |      |      |       |
|--------------|---|----|-------------|-------|------|-------|------|-------|------|------|-------|
| <b>C3169</b> | 2 | 16 | 19/0.117 BC | 0.008 | 0.20 | 0.010 | 0.25 | 0.181 | 4.60 | 62.0 | 112.0 |
| <b>C3340</b> | 3 | 16 | 7/0.192 BC  | 0.008 | 0.20 | 0.010 | 0.25 | 0.185 | 4.70 | 52.0 | 93.0  |
| <b>C3341</b> | 4 | 16 | 7/0.192 BC  | 0.008 | 0.20 | 0.010 | 0.25 | 0.210 | 5.16 | 52.0 | 93.0  |

\*CL2P only

\*\*A – Capacitance between conductors

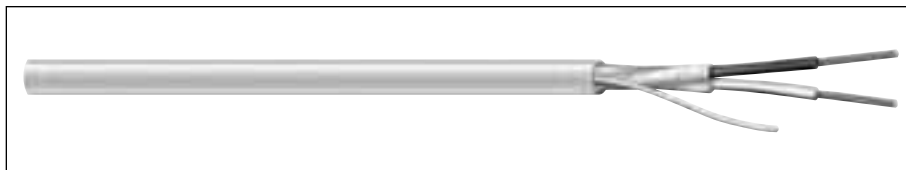
\*\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | White  |
| 3            | Red    |
| 4            | Green  |
| 5            | Brown  |
| 6            | Blue   |
| 7            | Orange |
| 8            | Yellow |
| 9            | Violet |
| 10           | Gray   |
| 11           | Pink   |
| 12           | Tan    |

# Multi-Conductor, Foil Shield

NEC Type CMP (UL) c(UL) and CL3P



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A          | B |

## 22 AWG CONDUCTORS

|       |   |    |         |       |      |       |      |       |      |      |      |
|-------|---|----|---------|-------|------|-------|------|-------|------|------|------|
| C3158 | 2 | 22 | 7/30 TC | 0.008 | 0.20 | 0.015 | 0.38 | 0.127 | 3.23 | 51.0 | 91.0 |
| C3159 | 4 | 22 | 7/30 TC | 0.008 | 0.20 | 0.015 | 0.38 | 0.146 | 3.71 | 45.0 | 81.0 |

## 18 AWG CONDUCTORS

|       |    |    |          |       |      |       |      |       |      |      |       |
|-------|----|----|----------|-------|------|-------|------|-------|------|------|-------|
| C3060 | 2  | 18 | Solid BC | 0.008 | 0.20 | 0.015 | 0.38 | 0.148 | 3.76 | 67.0 | 120.0 |
| C3061 | 4  | 18 | Solid BC | 0.008 | 0.20 | 0.015 | 0.38 | 0.171 | 4.34 | 58.0 | 104.0 |
| C3062 | 2  | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.164 | 4.17 | 61.0 | 110.0 |
| C3064 | 3  | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.169 | 4.29 | 53.0 | 96.0  |
| C3063 | 4  | 18 | 7/26 BC  | 0.008 | 0.20 | 0.015 | 0.38 | 0.185 | 4.70 | 53.0 | 96.0  |
| C3065 | 6  | 18 | 7/26 BC  | 0.010 | 0.25 | 0.015 | 0.38 | 0.230 | 5.84 | 48.0 | 86.0  |
| C3183 | 10 | 18 | 7/26 BC  | 0.012 | 0.20 | 0.015 | 0.38 | 0.310 | 7.87 | 47.0 | 84.0  |
| C3184 | 12 | 18 | 7/26 BC  | 0.010 | 0.25 | 0.015 | 0.38 | 0.308 | 7.82 | 52.5 | 94.6  |

## 16 AWG CONDUCTORS

|       |   |    |            |       |      |       |      |       |      |      |       |
|-------|---|----|------------|-------|------|-------|------|-------|------|------|-------|
| C3068 | 2 | 16 | 19/0117 BC | 0.009 | 0.23 | 0.015 | 0.38 | 0.187 | 4.75 | 75.0 | 134.0 |
|-------|---|----|------------|-------|------|-------|------|-------|------|------|-------|

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | White  |
| 3            | Red    |
| 4            | Green  |
| 5            | Brown  |
| 6            | Blue   |
| 7            | Orange |
| 8            | Yellow |
| 9            | Violet |
| 10           | Gray   |
| 11           | Pink   |
| 12           | Tan    |

## Product Construction:

### Conductor:

- 22 thru 16 AWG fully annealed stranded tinned or bare copper per ASTM B-3, B-8 or B-33

### Insulation:

- Premium-grade, color-coded Flexguard® PVC
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Stranded tinned copper drain wire

### Jacket:

- Flexguard® PVC, natural
- Temperature range: 0°C to +75°C
- Sequential footage marked to facilitate installation
- Includes ripcord

## Applications:

- Intercom systems
- Background music
- Audio systems
- Power-limited control circuits
- Suggested voltage rating: 150 volts

## Compliances:

- NEC Article 725 (UL: 75°C, 150V)
- NEC Article 800 (UL: 75°C, 300V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Flexible
- Easy to terminate

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Conductor, Foil Shield

Various AWM Styles, CSA Type AWM I/II A/B, NEC/CEC Type CMG (CSA C/US), NEC Type CL2

## Product Construction:

### Conductor:

- 24 thru 12 AWG fully annealed solid or stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded polypropylene
- Color code: See charts below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Recording studios and sound stages
- Broadcast and sound systems
- Computers
- Industrial equipment control
- Suggested voltage rating: 300 or 600 volts

## Features:

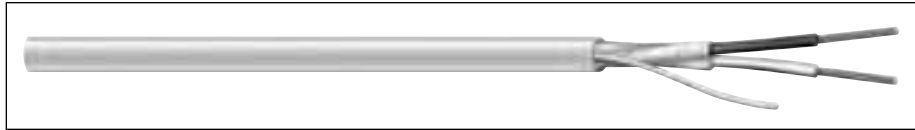
- Excellent electrical properties
- Superior shielding effectiveness
- 25% shield overlap provides excellent shielding efficiency
- Good flexibility

## Compliances:

- AWM Style 20251 (CSA: 60°C, 150V, 300V peak)
- CSA Type AWM (80°C, 600V)
- CSA Certified CMG to harmonized standard UL444 and CSA 22.2 No. 214
- NEC Type CL2/CEC Type CMG (CSA: 80°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT4 Vertical Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A          | B |

### AWM STYLE 20251, CSA TYPE AWM, CSA C/US TYPE CMG

|        |   |    |       |       |      |       |      |       |      |      |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| C4152A | 2 | 24 | 7/32  | 0.016 | 0.41 | 0.026 | 0.66 | 0.167 | 4.24 | 23.0 | 42.0 |
| C4153A | 2 | 22 | 7/30  | 0.016 | 0.41 | 0.026 | 0.66 | 0.179 | 4.55 | 21.0 | 38.0 |
| C4154A | 2 | 20 | 7/28  | 0.016 | 0.41 | 0.030 | 0.76 | 0.203 | 5.16 | 22.0 | 40.0 |
| C4155A | 2 | 18 | 16/30 | 0.018 | 0.46 | 0.030 | 0.76 | 0.233 | 5.92 | 24.0 | 43.0 |
| C4156A | 3 | 22 | 7/30  | 0.016 | 0.41 | 0.030 | 0.76 | 0.196 | 4.98 | 25.0 | 45.0 |
| C4157A | 3 | 20 | 7/28  | 0.016 | 0.41 | 0.030 | 0.76 | 0.210 | 5.33 | 27.0 | 51.0 |
| C4158A | 3 | 20 | 7/28  | 0.016 | 0.41 | 0.030 | 0.76 | 0.213 | 5.41 | 29.0 | 52.0 |
| C4159A | 3 | 18 | 16/30 | 0.018 | 0.46 | 0.030 | 0.76 | 0.247 | 6.27 | 22.0 | 40.0 |
| C4160A | 4 | 22 | 7/30  | 0.016 | 0.41 | 0.030 | 0.76 | 0.213 | 5.41 | 23.0 | 42.0 |
| C4161A | 4 | 20 | 7/28  | 0.016 | 0.41 | 0.030 | 0.76 | 0.234 | 5.94 | 26.0 | 74.0 |

Color Code Chart #1

### AWM STYLE 2106, CSA TYPE AWM, CSA C/US TYPE CMG

|        |   |    |          |       |      |       |      |       |      |      |      |
|--------|---|----|----------|-------|------|-------|------|-------|------|------|------|
| C4162A | 2 | 16 | 19/.0117 | 0.032 | 0.81 | 0.032 | 0.81 | 0.307 | 7.80 | 27.0 | 49.0 |
| C4165A | 3 | 16 | 19/.0117 | 0.032 | 0.81 | 0.032 | 0.81 | 0.326 | 8.28 | 26.0 | 46.0 |

Color Code Chart #1

### NEC TYPE CL2, AWM STYLE 2464, CSA TYPE AWM

|        |   |    |       |       |      |       |      |       |      |      |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| C4163A | 2 | 14 | 41/30 | 0.020 | 0.51 | 0.032 | 0.81 | 0.298 | 7.57 | 31.0 | 56.0 |
|--------|---|----|-------|-------|------|-------|------|-------|------|------|------|

Color Code Chart #3

### NEC TYPE CL2, AWM STYLE 2106, CSA TYPE AWM

|        |   |    |          |       |      |       |      |       |      |      |      |
|--------|---|----|----------|-------|------|-------|------|-------|------|------|------|
| C4164A | 2 | 12 | 19/.0185 | 0.032 | 0.81 | 0.040 | 1.02 | 0.390 | 9.90 | 35.0 | 63.0 |
|--------|---|----|----------|-------|------|-------|------|-------|------|------|------|

Color Code Chart #1

### AWM STYLE 20251, CSA TYPE AWM, CSA C/US TYPE CMG

|        |   |    |       |       |      |       |      |       |      |      |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| C4167A | 2 | 22 | Solid | 0.007 | 0.18 | 0.020 | 0.51 | 0.124 | 3.15 | 40.0 | 76.0 |
| C4168A | 2 | 22 | 7/30  | 0.008 | 0.20 | 0.020 | 0.51 | 0.137 | 3.48 | 34.0 | 67.0 |
| C4169A | 3 | 22 | 7/30  | 0.008 | 0.20 | 0.020 | 0.51 | 0.144 | 3.66 | 32.0 | 60.0 |

Polyethylene Insulation, Color Code Chart #2

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

### Color Code Chart 1

| NO. OF COND. | COLOR   |
|--------------|---------|
| 1            | Black   |
| 2            | Natural |
| 3            | Red     |
| 4            | Green   |

### Color Code Chart 2

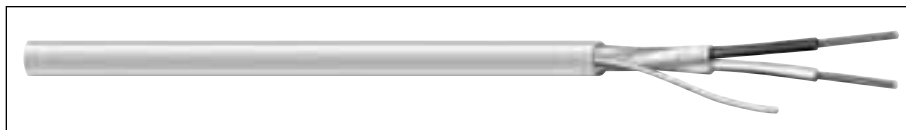
| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | Clear |

### Color Code Chart 3

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | White |

# Multi-Conductor, Foil Shield

AWM Styles 2464, CSA Type AWM I/II A/B, NEC/CEC Type CMG (CSA C/US), or NEC Type CL2



| CATALOG<br>NUMBER                                 | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM.<br>INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | COLOR<br>CODE | NOM. CAP.*<br>pF/ft |       |
|---------------------------------------------------|-----------------|-------------|-----------------|---------------------------------|------|--------------------------|------|--------------|------|---------------|---------------------|-------|
|                                                   |                 |             |                 | INCHES                          | mm   | INCHES                   | mm   | INCHES       | mm   |               | A                   | B     |
| AWM STYLE 2464, CSA TYPE AWM, CSA C/US TYPE CMG   |                 |             |                 |                                 |      |                          |      |              |      |               |                     |       |
| C4192A                                            | 2               | 22          | 7/30            | 0.009                           | 0.23 | 0.030                    | 0.76 | 0.165        | 4.19 | 1             | 47.0                | 85.0  |
| C4210A                                            | 2               | 22          | 7/30            | 0.009                           | 0.23 | 0.032                    | 0.81 | 0.165        | 4.19 | 2             | 47.0                | 85.0  |
| C4193A                                            | 3               | 22          | 7/30            | 0.009                           | 0.23 | 0.030                    | 0.76 | 0.169        | 4.29 | 2             | 43.0                | 76.0  |
| C4194A                                            | 4               | 22          | 7/30            | 0.009                           | 0.23 | 0.030                    | 0.76 | 0.181        | 4.60 | 2             | 43.0                | 76.0  |
| C4207A                                            | 6               | 22          | 7/30            | 0.009                           | 0.23 | 0.032                    | 0.81 | 0.204        | 5.18 | 2             | 43.0                | 76.0  |
| C4208A                                            | 8               | 22          | 7/30            | 0.009                           | 0.23 | 0.032                    | 0.81 | 0.223        | 5.66 | 2             | 43.0                | 76.0  |
| C4166A                                            | 2               | 20          | 7/28            | 0.012                           | 0.30 | 0.030                    | 0.76 | 0.187        | 4.75 | 1             | 46.0                | 83.0  |
| C4211A                                            | 2               | 20          | 7/28            | 0.012                           | 0.30 | 0.032                    | 0.81 | 0.191        | 4.85 | 2             | 46.0                | 83.0  |
| C4195A                                            | 3               | 20          | 7/28            | 0.012                           | 0.30 | 0.030                    | 0.76 | 0.200        | 5.08 | 2             | 42.0                | 75.0  |
| C4196A                                            | 4               | 20          | 7/28            | 0.012                           | 0.30 | 0.030                    | 0.76 | 0.216        | 5.49 | 2             | 42.0                | 75.0  |
| C4197A                                            | 2               | 18          | 16/30           | 0.012                           | 0.30 | 0.030                    | 0.76 | 0.203        | 5.16 | 1             | 51.0                | 92.0  |
| C4212A                                            | 2               | 18          | 16/30           | 0.012                           | 0.30 | 0.032                    | 0.81 | 0.205        | 5.20 | 2             | 51.0                | 92.0  |
| C4198A                                            | 3               | 18          | 16/30           | 0.012                           | 0.30 | 0.030                    | 0.76 | 0.214        | 5.44 | 2             | 46.0                | 83.0  |
| C4204A                                            | 4               | 18          | 16/30           | 0.012                           | 0.30 | 0.032                    | 0.81 | 0.236        | 5.99 | 2             | 46.0                | 83.0  |
| C4205A                                            | 6               | 18          | 16/30           | 0.012                           | 0.30 | 0.032                    | 0.81 | 0.271        | 6.88 | 2             | 46.0                | 83.0  |
| C4199A                                            | 2               | 16          | 19/.0117        | 0.010                           | 0.25 | 0.030                    | 0.76 | 0.218        | 5.54 | 1             | 62.0                | 112.0 |
| C4213A                                            | 2               | 16          | 19/.0117        | 0.010                           | 0.25 | 0.032                    | 0.81 | 0.219        | 5.56 | 2             | 62.0                | 112.0 |
| C4200A                                            | 3               | 16          | 19/.0117        | 0.010                           | 0.25 | 0.030                    | 0.76 | 0.230        | 5.84 | 2             | 58.0                | 104.0 |
| AWM STYLE 2464, CSA TYPE AWM (FT4), NEC TYPE CL2* |                 |             |                 |                                 |      |                          |      |              |      |               |                     |       |
| C4201A                                            | 2               | 14          | 19/.0147        | 0.014                           | 0.36 | 0.030                    | 0.76 | 0.268        | 6.81 | 1             | 60.0                | 107.0 |
| C4215A                                            | 2               | 14          | 19/.0147        | 0.014                           | 0.36 | 0.030                    | 0.76 | 0.268        | 6.81 | 2             | 60.0                | 107.0 |
| C4202A                                            | 2               | 12          | 19/.0185        | 0.014                           | 0.36 | 0.030                    | 0.76 | 0.302        | 7.67 | 1             | 64.0                | 116.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart 1

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |

## Color Code Chart 2

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | White  |
| 3            | Red    |
| 4            | Green  |
| 5            | Brown  |
| 6            | Blue   |
| 7            | Orange |
| 8            | Yellow |

## Product Construction:

### Conductor:

- 22 thru 12 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See charts below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Recording studios and sound stages
- Broadcast and sound systems
- Industrial equipment control
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 or 600 volts

## Features:

- Superior shielding effectiveness
- 25% shield overlap provides excellent shielding efficiency
- Good flexibility

## Compliances:

- AWM Style 2464 (UL or CSA: 80°C, 300V)
- CSA Type AWM (105°C, 600V)
- CSA Certified CMG to harmonized standard UL444 and CSA 22.2 No. 214
- NEC/CEC Type CMG (CSA: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT4 Vertical Flame Test
- UL Certified CL2 to Standard UL 13\*

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



# Multi-Conductor, Foil Shield

AWM Style 2464, CSA Type AWM I/II A/B, NEC/CEC Type CMG (CSA C/US)

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See charts below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Computer interconnections
- Data transmission
- Control circuits
- Industrial equipment control
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 or 600 volts

## Features:

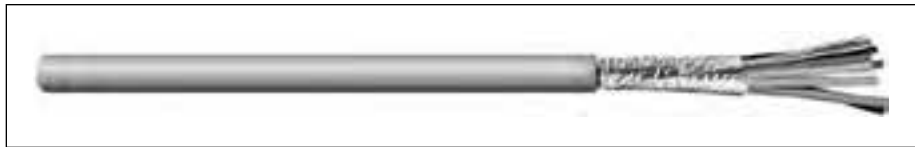
- Superior shielding effectiveness
- 25% shield overlap provides excellent shielding efficiency
- Good flexibility

## Compliances:

- AWM Style 2464 (UL or CSA: 80°C, 300V)
- CSA Type AWM (105°C, 600V)
- CSA Certified CMG to harmonized standard UL444 and CSA 22.2 No. 214
- NEC/CEC Type CMG (CSA: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT4 Vertical Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG<br>NUMBER                               | NO.<br>OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOMINAL<br>INSULATION<br>THICKNESS |      | NOMINAL<br>JACKET<br>THICKNESS |      | NOMINAL<br>O.D. |      | NOMINAL DCR<br>Ω/kft<br>@20°C |       | NOMINAL<br>CAP*<br>pF/ft |      |
|-------------------------------------------------|--------------------|-------------|-----------------|------------------------------------|------|--------------------------------|------|-----------------|------|-------------------------------|-------|--------------------------|------|
|                                                 |                    |             |                 | INCHES                             | mm   | INCHES                         | mm   | INCHES          | mm   | COND.                         | SHLD. | A                        | B    |
| AWM STYLE 2464, CSA TYPE AWM, CSA C/US TYPE CMG |                    |             |                 |                                    |      |                                |      |                 |      |                               |       |                          |      |
| C4216A                                          | 2                  | 24          | 7/32            | 0.010                              | 0.25 | 0.032                          | 0.81 | 0.157           | 3.99 | 26.0                          | 18.0  | 40.0                     | 72.0 |
| C4217A                                          | 3                  | 24          | 7/32            | 0.010                              | 0.25 | 0.032                          | 0.81 | 0.164           | 4.17 | 26.0                          | 18.0  | 36.0                     | 66.0 |
| C4218A                                          | 4                  | 24          | 7/32            | 0.010                              | 0.25 | 0.032                          | 0.81 | 0.175           | 4.45 | 26.0                          | 18.0  | 36.0                     | 66.0 |
| C4219A                                          | 5                  | 24          | 7/32            | 0.010                              | 0.25 | 0.032                          | 0.81 | 0.188           | 4.78 | 26.0                          | 16.0  | 36.0                     | 66.0 |
| C4220A                                          | 6                  | 24          | 7/32            | 0.010                              | 0.25 | 0.032                          | 0.81 | 0.201           | 5.11 | 26.0                          | 16.0  | 34.0                     | 61.0 |
| C4221A                                          | 7                  | 24          | 7/32            | 0.010                              | 0.25 | 0.032                          | 0.81 | 0.201           | 5.11 | 26.0                          | 16.0  | 34.0                     | 61.0 |
| C4222A                                          | 8                  | 24          | 7/32            | 0.010                              | 0.25 | 0.032                          | 0.81 | 0.215           | 5.46 | 26.0                          | 16.0  | 34.0                     | 61.0 |
| C4223A                                          | 9                  | 24          | 7/32            | 0.010                              | 0.25 | 0.032                          | 0.81 | 0.228           | 5.79 | 26.0                          | 16.0  | 34.0                     | 61.0 |
| C4224A                                          | 10                 | 24          | 7/32            | 0.010                              | 0.25 | 0.032                          | 0.81 | 0.245           | 6.22 | 26.0                          | 14.0  | 34.0                     | 61.0 |

Color Code Chart #1

|        |    |    |      |       |      |       |      |       |       |      |      |      |      |
|--------|----|----|------|-------|------|-------|------|-------|-------|------|------|------|------|
| C4225A | 15 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.276 | 7.01  | 26.0 | 14.0 | 34.0 | 61.0 |
| C4226A | 20 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.303 | 7.70  | 26.0 | 14.0 | 34.0 | 61.0 |
| C4227A | 25 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.333 | 8.46  | 26.0 | 12.0 | 34.0 | 61.0 |
| C4228A | 30 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.351 | 8.92  | 26.0 | 12.0 | 34.0 | 61.0 |
| C4229A | 40 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.391 | 9.93  | 26.0 | 12.0 | 34.0 | 61.0 |
| C4230A | 50 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.439 | 11.15 | 26.0 | 10.0 | 34.0 | 61.0 |

Color Code Chart #2

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart 1 – For cables up to and including 10 conductors

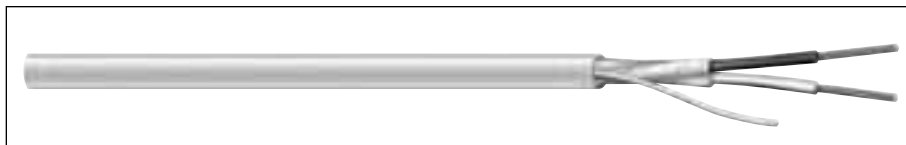
| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| 1            | Black | 6            | Blue   |
| 2            | White | 7            | Orange |
| 3            | Red   | 8            | Yellow |
| 4            | Green | 9            | Violet |
| 5            | Brown | 10           | Gray   |

## Color Code Chart 2 Per ICEA – For cables of 15 to 50 conductors

| NO. OF COND. | COLOR        | NO. OF COND. | COLOR              | NO. OF COND. | COLOR             |
|--------------|--------------|--------------|--------------------|--------------|-------------------|
| 1            | Black        | 18           | Orange/Red         | 35           | White/Red/Orange  |
| 2            | White        | 19           | Blue/Red           | 36           | Orange/White/Blue |
| 3            | Red          | 20           | Red/Green          | 37           | White/Red/Blue    |
| 4            | Green        | 21           | Orange/Green       | 38           | Black/White/Green |
| 5            | Orange       | 22           | Black/White/Red    | 39           | White/Black/Green |
| 6            | Blue         | 23           | White/Black/Red    | 40           | Red/White/Green   |
| 7            | White/Black  | 24           | Red/Black/White    | 41           | Green/White/Blue  |
| 8            | Red/Black    | 25           | Green/Black/White  | 42           | Orange/Red/Green  |
| 9            | Green/Black  | 26           | Orange/Black/White | 43           | Blue/Red/Green    |
| 10           | Orange/Black | 27           | Blue/Black/White   | 44           | Black/White/Blue  |
| 11           | Blue/Black   | 28           | Black/Red/Green    | 45           | White/Black/Blue  |
| 12           | Black/White  | 29           | White/Red/Green    | 46           | Red/White/Blue    |
| 13           | Red/White    | 30           | Red/Black/Green    | 47           | Green/Orange/Red  |
| 14           | Green/White  | 31           | Green/Black/Orange | 48           | Orange/Red/Blue   |
| 15           | Blue/White   | 32           | Orange/Black/Green | 49           | Blue/Red/Orange   |
| 16           | Black/Red    | 33           | Blue/White/Orange  | 50           | Black/Orange/Red  |
| 17           | White/Red    | 34           | Black/White/Orange |              |                   |

# Power-Limited Tray Cable, Foil Shield

NEC Type PLTC



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |       |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|-------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B     |
| C0450A         | 2            | 22       | 7/30         | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.191        | 4.85 | 43.0       | 77.5  |
| C0451A         | 3            | 22       | 7/30         | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.199        | 5.05 | 39.5       | 71.0  |
| C0452A         | 2            | 20       | 7/28         | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.207        | 5.26 | 50.0       | 89.5  |
| C0453A         | 3            | 20       | 7/28         | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.217        | 5.51 | 45.0       | 81.0  |
| C0454A         | 2            | 18       | 16/30        | 0.015                     | 0.38 | 0.037                 | 0.94 | 0.227        | 5.77 | 51.5       | 92.5  |
| C0455A         | 3            | 18       | 16/30        | 0.015                     | 0.38 | 0.037                 | 0.94 | 0.238        | 6.04 | 46.5       | 83.5  |
| C0456A         | 2            | 16       | 19/.0117     | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.243        | 6.17 | 64.0       | 115.5 |
| C0457A         | 3            | 16       | 19/.0117     | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.255        | 6.48 | 56.5       | 102.0 |
| C0458A         | 2            | 14       | 19/.0147     | 0.013                     | 0.33 | 0.042                 | 1.07 | 0.288        | 7.32 | 72.5       | 131.0 |
| C0459A         | 3            | 14       | 19/.0147     | 0.015                     | 0.33 | 0.042                 | 1.07 | 0.298        | 7.57 | 60.0       | 108.0 |
| C0460A         | 2            | 12       | 19/.0185     | 0.013                     | 0.33 | 0.042                 | 1.07 | 0.315        | 8.00 | 80.5       | 145.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | White |

## Product Construction:

### Conductor:

- 22 thru 12 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Cable tray installations
- Power limited circuits
- Intercom systems
- Business machines
- Cash registers
- Industrial control systems
- Petrochemical refineries
- Suggested voltage rating: 300 volts
- Burglar alarms

## Features:

- Sunlight-resistant PVC jacket
- Good weather resistance
- UL tray cable rated

## Compliances:

- NEC Article 725 Power-Limited Tray Cable (UL: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



Designed to Meet  
UL Vertical Tray  
Flame Test

Underwriters Laboratories Inc.



**General Cable**

# Multi-Conductor, Spiral Shield

UL 2095, NEC Type CL2 and CM (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 22 thru 16 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See charts below

### Shield:

- 85% spiral tinned copper

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Electronic circuits where RF shielding is required
- Radio transmitters
- Sound systems
- Recording studios
- Suggested voltage rating: 300 volts

## Features:

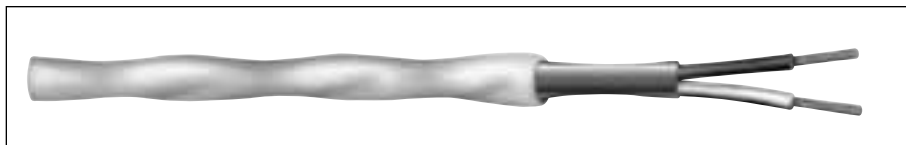
- Spiral shield allows ease of "pigtail soldering"
- Maximum flexibility

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2095 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test
- NEC Article 725 Type CL2 (UL: 75°C)

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A          | B |

### UL STYLE 2095, CM (UL) c(UL), CSA CMG, 300V

|               |   |    |      |       |      |       |      |       |      |      |      |
|---------------|---|----|------|-------|------|-------|------|-------|------|------|------|
| <b>C2882A</b> | 2 | 22 | 7/30 | 0.015 | 0.38 | 0.032 | 0.81 | 0.197 | 5.00 | 40.0 | 72.0 |
| <b>C2888A</b> | 2 | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.215 | 5.46 | 44.0 | 80.2 |

Color Code Chart #1

### CL2/CM (UL) c(UL), CSA CMG, 300V

|               |   |    |      |       |      |       |      |       |      |      |      |
|---------------|---|----|------|-------|------|-------|------|-------|------|------|------|
| <b>C1335A</b> | 3 | 22 | 7/30 | 0.015 | 0.38 | 0.032 | 0.81 | 0.206 | 5.23 | 37.0 | 67.0 |
| <b>C1337A</b> | 4 | 22 | 7/30 | 0.015 | 0.38 | 0.032 | 0.81 | 0.222 | 5.64 | 37.0 | 67.0 |
| <b>C1341A</b> | 6 | 22 | 7/30 | 0.015 | 0.38 | 0.032 | 0.81 | 0.257 | 6.53 | 34.5 | 62.0 |
| <b>C2768A</b> | 3 | 18 | 7/26 | 0.020 | 0.51 | 0.032 | 0.81 | 0.266 | 6.76 | 41.0 | 74.0 |

Color Code Chart #1

### CM (UL) c(UL), CSA CMG, 300V

|               |   |    |          |       |      |       |      |       |      |      |       |
|---------------|---|----|----------|-------|------|-------|------|-------|------|------|-------|
| <b>C2892A</b> | 2 | 18 | 16/30    | 0.016 | 0.41 | 0.032 | 0.81 | 0.252 | 6.40 | 49.5 | 89.0  |
| <b>C2895A</b> | 2 | 16 | 19/.0117 | 0.016 | 0.41 | 0.032 | 0.81 | 0.265 | 6.73 | 58.0 | 104.0 |

Color Code Chart #2

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

### Color Code Chart 1

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | Red    |
| 3            | White  |
| 4            | Green  |
| 5            | Yellow |
| 6            | Blue   |

### Color Code Chart 2

| CATALOG NUMBER | CONDUCTOR | COLOR |
|----------------|-----------|-------|
| <b>C2892A</b>  | 1         | White |
|                | 2         | Red   |
| <b>C2895A</b>  | 1         | White |
|                | 2         | Black |

# Multi-Conductor, Braid Shield

NEC Type CL2 and CM(UL) c(UL), CSA CMG



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| <b>C2676A</b>  | 2            | 22       | Solid        | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.209        | 5.31 | 38.6       | 69.4 |
| <b>C2677A</b>  | 2            | 22       | 7/30         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.211        | 5.36 | 39.3       | 70.7 |

\*A – Capacitance between conductors\*

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| <b>1</b>     | Black |
| <b>2</b>     | Red   |

## Product Construction:

### Conductor:

- 22 AWG fully annealed solid or stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Shield:

- 88% tinned copper braid
- Stranded or solid tinned copper drain wire

### Jacket:

- PVC, black
- Temperature range: -20°C to +75°C

## Applications:

- Electronic circuits where RF shielding is required
- Radio transmitters
- Sound systems
- Recording studios
- Good flexibility
- Excellent shielding for noise reduction
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- NEC Article 725 Type CL2 (UL: 75°C)

## Packaging:

- Please contact Customer Service for packaging and color options

# Multi-Conductor, Braid Shield

UL 2092, 2093, 2094, NEC Type CM (UL) c(UL) CMH

## Product Construction:

### Conductor:

- 20 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded polyethylene
- Color code: See chart below

### Shield:

- 80% tinned copper braid
- Mylar wrap under braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

## Applications:

- Electronic circuits where RF shielding is required
- Video interconnect
- Broadcast and studio
- Sound systems
- Suggested voltage rating: 300 volts

## Features:

- Low capacitance
- Lightweight
- Excellent shielding for noise reduction

## Compliances:

- NEC Article 800 Type CM/CMH (UL: 75°C)
- AWM style 2092 (UL: 60°C, 300V)
- AWM style 2093 (UL: 60°C, 300V)
- AWM style 2094 (UL: 60°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL VW-1 Vertical Wire Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A          | B |

### AWM STYLE 2092, CM (UL) c(UL) CMH, 300V

|               |   |    |       |       |      |       |      |       |      |      |      |
|---------------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| <b>C1642A</b> | 2 | 20 | 26/34 | 0.016 | 0.38 | 0.029 | 0.74 | 0.226 | 5.74 | 24.0 | 43.0 |
|---------------|---|----|-------|-------|------|-------|------|-------|------|------|------|

### AWM STYLE 2093, CM (UL) c(UL) CMH, 300V

|               |   |    |       |       |      |       |      |       |      |      |      |
|---------------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| <b>C1643A</b> | 3 | 20 | 26/34 | 0.016 | 0.38 | 0.029 | 0.74 | 0.236 | 5.99 | 22.0 | 40.0 |
|---------------|---|----|-------|-------|------|-------|------|-------|------|------|------|

### AWM STYLE 2094, CM (UL) c(UL) CMH 300V

|               |   |    |       |       |      |       |      |       |      |      |      |
|---------------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| <b>C1644A</b> | 4 | 20 | 26/34 | 0.016 | 0.38 | 0.029 | 0.74 | 0.255 | 6.48 | 22.0 | 39.0 |
| <b>C1645A</b> | 5 | 20 | 26/34 | 0.016 | 0.38 | 0.029 | 0.74 | 0.274 | 6.96 | 22.0 | 39.0 |
| <b>C1646A</b> | 6 | 20 | 26/34 | 0.016 | 0.38 | 0.029 | 0.74 | 0.290 | 7.37 | 20.0 | 36.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | White  |
| 3            | Red    |
| 4            | Green  |
| 5            | Yellow |
| 6            | Blue   |

# Multi-Conductor, Braid Shield

UL 2095, NEC Type CM (UL) c(UL)



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| C2679A         | 2            | 22       | 7/30         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.212        | 5.38 | 40.0       | 72.0 |
| C2678A         | 3            | 22       | 7/30         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.221        | 5.61 | 37.0       | 67.0 |
| C2680A         | 4            | 22       | 7/30         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.237        | 6.02 | 37.0       | 67.0 |
| C2681A         | 2            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.230        | 5.84 | 44.0       | 80.0 |
| C1332A         | 3            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.240        | 6.10 | 40.0       | 72.0 |
| C2683A         | 4            | 20       | 7/28         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.259        | 6.58 | 40.0       | 73.0 |
| C2686A         | 2            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.252        | 6.40 | 49.0       | 89.0 |
| C2687A         | 3            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.264        | 6.71 | 45.0       | 80.5 |
| C2688A         | 4            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.286        | 7.26 | 45.0       | 80.5 |
| C2689A         | 2            | 16       | 19/29        | 0.020                     | 0.51 | 0.030                 | 0.76 | 0.280        | 7.11 | 51.0       | 91.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | White |
| 4            | Green |

## Product Construction:

### Conductor:

- 22 thru 16 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Shield:

- 75% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Electronic circuits where RF shielding is required
- Radio transmitters
- Sound systems
- Recording studios
- Provides good flexibility
- Excellent shielding for noise reduction
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2095 (UL: 80°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- CSA CMG (CSA: 60°C)
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

# Multi-Conductor, Braid Shield

## MIL-W-16878 Type B

### Product Construction:

#### Conductor:

- 28 AWG fully annealed stranded tinned copper per ASTM B-33

#### Insulation:

- Premium-grade, color-coded PVC per MIL-W-16878 Type B
- Color code: See chart below

#### Shield:

- 90% tinned copper braid

#### Jacket:

- PVC, gray
- Temperature range: -20°C to +90°C

### Applications:

- Electronic circuits where RF shielding is required
- Remote control for studio equipment
- Sound systems
- Provides good flexibility
- Excellent shielding for noise reduction
- Suggested voltage rating: 600 volts
- Non QPL

### Compliances:

- RoHS Compliant Directive 2002/95/EC

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| C6500A         | 2            | 28       | 7/36         | 0.010                     | 0.28 | 0.016                 | 0.41 | 0.130        | 3.30 | 34.0       | 61.0 |
| C6501A         | 3            | 28       | 7/36         | 0.010                     | 0.28 | 0.016                 | 0.41 | 0.135        | 3.30 | 32.5       | 58.5 |
| C6502A         | 4            | 28       | 7/36         | 0.010                     | 0.28 | 0.016                 | 0.41 | 0.145        | 3.68 | 32.5       | 58.5 |
| C6503A         | 6            | 28       | 7/36         | 0.010                     | 0.28 | 0.019                 | 0.48 | 0.172        | 4.37 | 30.5       | 55.0 |
| C6504A         | 8            | 28       | 7/36         | 0.010                     | 0.28 | 0.021                 | 0.53 | 0.187        | 4.75 | 30.5       | 55.0 |
| C6505A         | 10           | 28       | 7/36         | 0.010                     | 0.28 | 0.021                 | 0.53 | 0.212        | 5.38 | 30.5       | 55.0 |
| C6506A         | 12           | 28       | 7/36         | 0.010                     | 0.28 | 0.021                 | 0.53 | 0.217        | 5.51 | 30.5       | 55.0 |
| C6507A         | 15           | 28       | 7/36         | 0.010                     | 0.28 | 0.021                 | 0.53 | 0.237        | 6.01 | 30.5       | 55.0 |
| C6508A         | 20           | 28       | 7/36         | 0.010                     | 0.28 | 0.021                 | 0.53 | 0.259        | 6.58 | 30.5       | 55.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

### Color Code Chart

| NO. OF COND. | COLOR       | NO. OF COND. | COLOR        | NO. OF COND. | COLOR      |
|--------------|-------------|--------------|--------------|--------------|------------|
| 1            | Black       | 8            | Red/Black    | 15           | Blue/White |
| 2            | White       | 9            | Green/Black  | 16           | Black/Red  |
| 3            | Red         | 10           | Orange/Black | 17           | White/Red  |
| 4            | Green       | 11           | Blue/Black   | 18           | Orange/Red |
| 5            | Orange      | 12           | Black/White  | 19           | Blue/Red   |
| 6            | Blue        | 13           | Red/White    | 20           | Red/Green  |
| 7            | White/Black | 14           | Green/White  |              |            |

# Multi-Conductor, Foil/Braid Shield

UL 2094, NEC Type CL2



| CATALOG<br>NUMBER | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.*<br>pF/ft |      |
|-------------------|-----------------|-------------|-----------------|------------------------------|------|--------------------------|------|--------------|------|---------------------|------|
|                   |                 |             |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | A                   | B    |
| <b>C1648A</b>     | 8               | 20          | 26/34           | 0.016                        | 0.38 | 0.029                    | 0.74 | 0.316        | 8.03 | 20.0                | 36.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF<br>COND. | COLOR | NO. OF<br>COND. | COLOR  |
|-----------------|-------|-----------------|--------|
| <b>1</b>        | Black | <b>5</b>        | Yellow |
| <b>2</b>        | White | <b>6</b>        | Blue   |
| <b>3</b>        | Red   | <b>7</b>        | Brown  |
| <b>4</b>        | Green | <b>8</b>        | Orange |

## Product Construction:

### Conductor:

- 20 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded polyethylene
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- 80% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

## Applications:

- Electronic circuits where RF shielding is required
- Video interconnect
- Broadcast and studio
- Sound systems
- Suggested voltage rating: 300 volts

## Features:

- Low capacitance
- Lightweight
- Excellent shielding for noise reduction

## Compliances:

- NEC Article 725 Type CL2 (UL: 75°C)
- UL Style 2094 (UL: 60°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL  
BRAND**

**UL  
LISTED**

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.

**RoHS Compliant**  
Directive 2002/95/EC

**General Cable**

# Multi-Conductor, Foil & TC Braid Shield

NEC Type CMP (UL) c(UL)

## Product Construction:

### Conductor:

- Fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded FEP
- Color code: See chart below

### Separator:

- Polyester tape with 25% overlap

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap
- Tinned copper braid, 90% coverage

### Jacket:

- FEP, red or as requested
- Temperature range: -40°C to +200°C

## Applications:

- Computer systems
- Remote control circuits
- Process control and instrumentation
- Audio controls
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Fire-retardant, low-smoke jacket

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A          | B |

### 16 AWG CONDUCTORS

|              |   |    |       |       |      |       |      |       |      |      |      |
|--------------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| <b>C8108</b> | 6 | 16 | 19/29 | 0.007 | 0.18 | 0.014 | 0.36 | 0.270 | 6.86 | 33.0 | 61.0 |
| <b>C8119</b> | 3 | 16 | 19/29 | 0.007 | 0.18 | 0.014 | 0.36 | 0.209 | 5.31 | 35.0 | 63.0 |
| <b>C8111</b> | 2 | 16 | 19/29 | 0.007 | 0.18 | 0.014 | 0.36 | 0.198 | 5.03 | 35.0 | 63.0 |

### 18 AWG CONDUCTORS

|              |   |    |       |       |      |       |      |       |      |      |      |
|--------------|---|----|-------|-------|------|-------|------|-------|------|------|------|
| <b>C8120</b> | 6 | 18 | 19/30 | 0.007 | 0.18 | 0.014 | 0.36 | 0.242 | 6.15 | 33.0 | 61.0 |
| <b>C8110</b> | 4 | 18 | 19/30 | 0.007 | 0.18 | 0.014 | 0.36 | 0.206 | 5.23 | 35.0 | 63.0 |
| <b>C8107</b> | 3 | 18 | 19/30 | 0.007 | 0.18 | 0.014 | 0.36 | 0.190 | 4.83 | 35.0 | 63.0 |

### 24 AWG CONDUCTORS

|              |   |    |      |       |      |       |      |       |      |      |      |
|--------------|---|----|------|-------|------|-------|------|-------|------|------|------|
| <b>C8115</b> | 3 | 24 | 7/32 | 0.006 | 0.15 | 0.014 | 0.36 | 0.133 | 3.38 | 25.0 | 45.0 |
|--------------|---|----|------|-------|------|-------|------|-------|------|------|------|

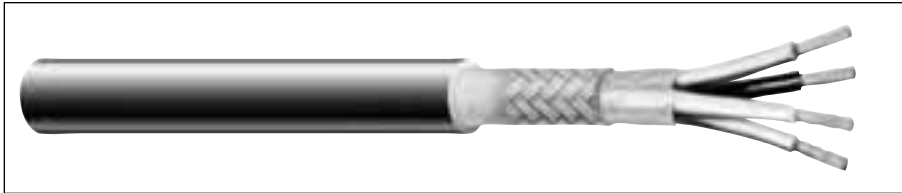
\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | White  |
| 3            | Red    |
| 4            | Green  |
| 5            | Orange |
| 6            | Blue   |

# Multi-Conductor, Rubber, Braid Shield



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |
| <b>C1302</b>   | 2            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.270        | 6.86 |
| <b>C1304</b>   | 3            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.285        | 7.24 |
| <b>C1305</b>   | 4            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.300        | 7.62 |
| <b>C1308</b>   | 5            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.330        | 8.38 |
| <b>C1310</b>   | 6            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.340        | 8.64 |
| <b>C1312</b>   | 7            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.355        | 9.02 |
| <b>C1313</b>   | 8            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.385        | 9.78 |

## Color Code Chart

| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| <b>1</b>     | Black | <b>5</b>     | Blue   |
| <b>2</b>     | White | <b>6</b>     | Brown  |
| <b>3</b>     | Red   | <b>7</b>     | Yellow |
| <b>4</b>     | Green | <b>8</b>     | Orange |

## Product Construction:

### Conductor:

- 20 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded rubber
- Color code: See chart below

### Shield:

- 80% tinned copper braid

### Jacket:

- Rubber, black
- Temperature range: -20°C to +60°C

## Applications:

- Control circuits
- Broadcast and studio applications
- Audio interconnects
- Suggested voltage rating: 300 volts

## Features:

- Impact- and abrasion-resistant
- Stranded conductors for superior flexibility

## Compliances:

- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options

# Multi-Conductor, Carolprene<sup>®</sup>, Braid Shield

## Product Construction:

### Conductor:

- 18 thru 14 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded rubber
- Color code: See chart below

### Shield:

- 80% tinned copper braid

### Jacket:

- Carolprene<sup>®</sup>, black
- Temperature range: -20°C to +60°C

## Applications:

- Control circuits
- Broadcast and studio applications
- Audio interconnects
- Suggested voltage rating: 300 volts

## Features:

- Impact- and abrasion-resistant
- Stranded conductors for superior flexibility
- Designed to meet UL VW-1 Vertical Wire Flame Test

## Compliance:

- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options



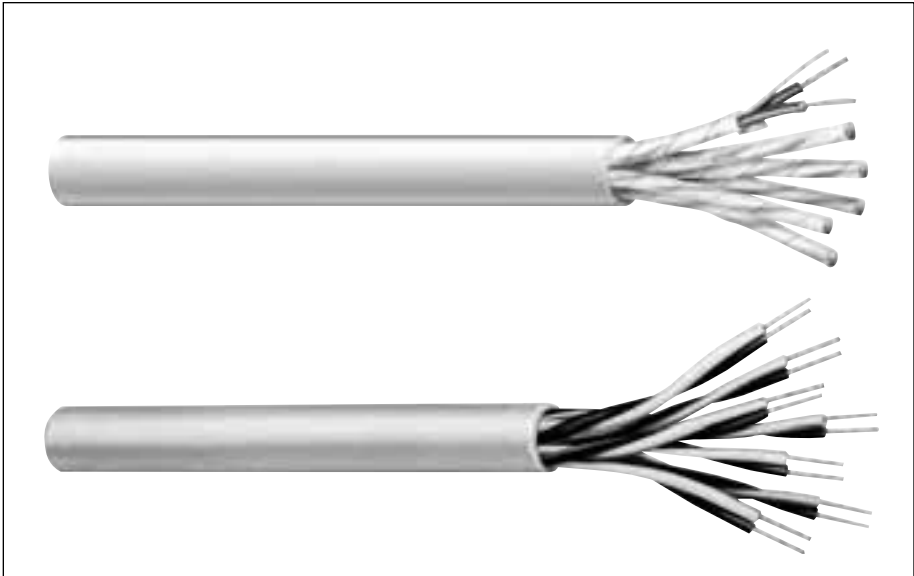
| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |
| <b>C1202</b>   | 2            | 18       | 41/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.295        | 7.49  |
| <b>C1203</b>   | 3            | 18       | 41/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.305        | 7.75  |
| <b>C1204</b>   | 4            | 18       | 41/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.330        | 8.38  |
| <b>C1206</b>   | 6            | 18       | 41/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.370        | 9.39  |
| <b>C1208</b>   | 8            | 18       | 41/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.420        | 10.67 |
| <b>C1210</b>   | 10           | 18       | 41/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.425        | 10.80 |
| <b>C1212</b>   | 12           | 18       | 41/34        | 0.020                     | 0.51 | 0.065                 | 1.65 | 0.555        | 14.10 |
| <b>C1602</b>   | 2            | 16       | 65/34        | 0.025                     | 0.64 | 0.035                 | 0.89 | 0.335        | 8.51  |
| <b>C1603</b>   | 3            | 16       | 65/34        | 0.025                     | 0.64 | 0.035                 | 0.89 | 0.355        | 9.02  |
| <b>C1604</b>   | 4            | 16       | 65/34        | 0.025                     | 0.64 | 0.035                 | 0.89 | 0.385        | 9.78  |
| <b>C1606</b>   | 6            | 16       | 65/34        | 0.025                     | 0.64 | 0.040                 | 1.02 | 0.445        | 11.30 |
| <b>C1608</b>   | 8            | 16       | 65/34        | 0.025                     | 0.64 | 0.040                 | 1.02 | 0.510        | 12.95 |
| <b>C1612</b>   | 2            | 14       | 41/30        | 0.030                     | 0.76 | 0.040                 | 1.02 | 0.395        | 10.03 |
| <b>C1614</b>   | 4            | 14       | 41/30        | 0.030                     | 0.76 | 0.040                 | 1.02 | 0.455        | 11.56 |

## Color Code Chart

| NO. OF COND. | COLOR | NO. OF COND. | COLOR       |
|--------------|-------|--------------|-------------|
| <b>1</b>     | Black | <b>7</b>     | Yellow      |
| <b>2</b>     | White | <b>8</b>     | Orange      |
| <b>3</b>     | Red   | <b>9</b>     | Gray        |
| <b>4</b>     | Green | <b>10</b>    | Violet      |
| <b>5</b>     | Blue  | <b>11</b>    | White/Black |
| <b>6</b>     | Brown | <b>12</b>    | White/Red   |

Communication & Control Cable, Multi-Paired

3



In many electronic applications, two wires are required to complete circuits; these are often referred to as “balanced arrays” or “twisted pair” constructions.

Paired cable designs find frequent application in circuits requiring circuit-to-circuit isolation from noise, minimization of capacitance imbalances and a reduction of EMI interference currents.

Circuit separation is further enhanced in those designs employing individual circuit shields in concert with an overall shield. These shielding systems are available from General Cable in myriad combinations to suit the unique needs of the circuit designer.

As with the multi-conductor designs, a wide array of insulating and jacketing materials are available to meet specific electronic applications.

General Cable’s Carol® Brand communication cable products are manufactured to meet the latest UL, CSA and NEC requirements and approvals.

| Index                                                      | Page  |
|------------------------------------------------------------|-------|
| Multi-Paired, Unshielded                                   | 43-45 |
| Multi-Paired, Foil Shield                                  | 46-52 |
| Multi-Paired, Foil Shield (CSA)                            | 53-54 |
| Multi-Paired, Foil Shield, Mid-Cap                         | 55    |
| Multi-Paired, Foil Shield, Lo-Cap®                         | 56    |
| Multi-Paired, Overall Foil & TC Braid Shield, Lo-Cap®      | 57    |
| Multi-Paired, Individually Shielded                        | 58    |
| Multi-Paired, Individually Shielded (CSA)                  | 59    |
| Multi-Paired, Individually Shielded, Overall Shield        | 60    |
| Multi-Paired, Individually Foil Shielded                   | 61-64 |
| Power-Limited Tray Cable, Individually Shielded            | 65    |
| Power-Limited Tray Cable, Foil Shield or Foil/Braid Shield | 66    |

# Multi-Paired, Unshielded

UL 2464, NEC Type CM (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 22 AWG fully annealed solid or stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded S-R PVC
- Color code: See chart below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|----------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |                      |
| <b>C4008A</b>  | 1            | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.156        | 3.94  | 24.5                 |
| <b>C4010A</b>  | 2            | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.218        | 5.54  | 24.5                 |
| <b>C4014A</b>  | 3            | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.229        | 5.82  | 24.5                 |
| <b>C4015A</b>  | 4            | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.249        | 6.32  | 24.5                 |
| <b>C4017A</b>  | 6            | 22       | Solid        | 0.012                     | 0.30 | 0.032                 | 0.81 | 0.293        | 7.44  | 24.5                 |
| <b>C6010A</b>  | 2            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.228        | 5.79  | 24.5                 |
| <b>C6014A</b>  | 3            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.240        | 6.10  | 24.5                 |
| <b>C6015A</b>  | 4            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.262        | 6.65  | 24.5                 |
| <b>C6017A</b>  | 6            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.300        | 7.62  | 24.5                 |
| <b>C6019A</b>  | 9            | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.366        | 9.30  | 24.5                 |
| <b>C6023A</b>  | 12           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.410        | 10.40 | 24.5                 |
| <b>C6026A</b>  | 15           | 22       | 7/30         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.456        | 11.58 | 24.5                 |

\* Capacitance between conductors

## Color Code Chart

| NO. OF PAIRS | COLOR                    | NO. OF PAIRS | COLOR                   |
|--------------|--------------------------|--------------|-------------------------|
| <b>1</b>     | Black paired with Red    | <b>9</b>     | Red paired with Green   |
| <b>2</b>     | Black paired with White  | <b>10</b>    | Red paired with Blue    |
| <b>3</b>     | Black paired with Green  | <b>11</b>    | Red paired with Yellow  |
| <b>4</b>     | Black paired with Blue   | <b>12</b>    | Red paired with Brown   |
| <b>5</b>     | Black paired with Yellow | <b>13</b>    | Red paired with Orange  |
| <b>6</b>     | Black paired with Brown  | <b>14</b>    | Green paired with White |
| <b>7</b>     | Black paired with Orange | <b>15</b>    | Green paired with Blue  |
| <b>8</b>     | Red paired with White    |              |                         |

# Multi-Paired, Unshielded

UL 2464, NEC Type CM (UL) c(UL), CSA CMG



## Product Construction:

### Conductor:

- 18 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded S-R PVC
- Color code: See chart below

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOM. C-C CAP* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|---------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |                     |
| C6101A         | 1            | 18       | 16/30        | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.206        | 5.23  | 26.3                |
| C6118A         | 2            | 18       | 16/30        | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.320        | 8.13  | 26.3                |
| C6103A         | 3            | 18       | 16/30        | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.338        | 8.59  | 26.3                |
| C6119A         | 4            | 18       | 16/30        | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.372        | 9.45  | 26.3                |
| C6120A         | 5            | 18       | 16/30        | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.408        | 10.36 | 26.3                |
| C6106A         | 6            | 18       | 16/30        | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.445        | 11.30 | 26.3                |
| C6121A         | 8            | 18       | 16/30        | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.484        | 12.29 | 26.3                |
| C6109A         | 9            | 18       | 16/30        | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.522        | 13.26 | 26.3                |
| C6111A         | 15           | 18       | 16/30        | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.659        | 16.74 | 26.3                |

\* Capacitance between conductors

## Color Code Chart

| NO. OF PAIRS | COLOR                    | NO. OF PAIRS | COLOR                   |
|--------------|--------------------------|--------------|-------------------------|
| 1            | Black paired with Red    | 9            | Red paired with Green   |
| 2            | Black paired with White  | 10           | Red paired with Blue    |
| 3            | Black paired with Green  | 11           | Red paired with Yellow  |
| 4            | Black paired with Blue   | 12           | Red paired with Brown   |
| 5            | Black paired with Yellow | 13           | Red paired with Orange  |
| 6            | Black paired with Brown  | 14           | Green paired with White |
| 7            | Black paired with Orange | 15           | Green paired with Blue  |
| 8            | Red paired with White    |              |                         |

**CAROL BRAND**

**UL** LISTED

**CSA** CMG Certified Canadian Standard Association

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test

Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Paired, Unshielded

## NEC Type CMP (UL) c(UL)

### Product Construction:

#### Conductor:

- 18 AWG fully annealed stranded tinned copper per ASTM B-33

#### Insulation:

- Premium-grade, color-coded FEP
- Color code: See chart below

#### Jacket:

C8116

- FEP, red or as requested
- Temperature range: -40°C to +200°C

C8122

- Flexguard® PVC, natural
- Temperature range: -20°C to +75°C

### Applications:

- Audio systems
- Remote control circuits
- Process control and instrumentation
- Suggested voltage rating: 300 volts

### Compliances:

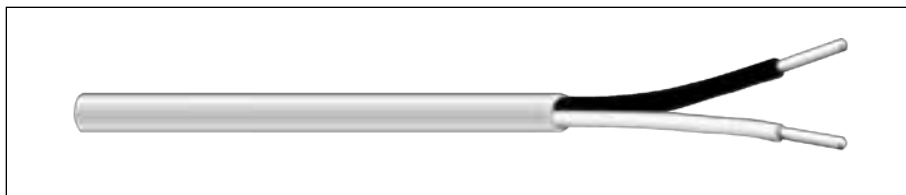
- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

### Features:

- Fire-retardant, low-smoke jacket

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|----------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |                      |
| <b>C8116</b>   | 1            | 18       | 19/30        | 0.007                     | 0.18 | 0.009                 | 0.23 | 0.142        | 3.61 | 20.0                 |
| <b>C8122</b>   | 1            | 18       | 19/30        | 0.007                     | 0.18 | 0.015                 | 0.38 | 0.154        | 3.91 | 20.0                 |

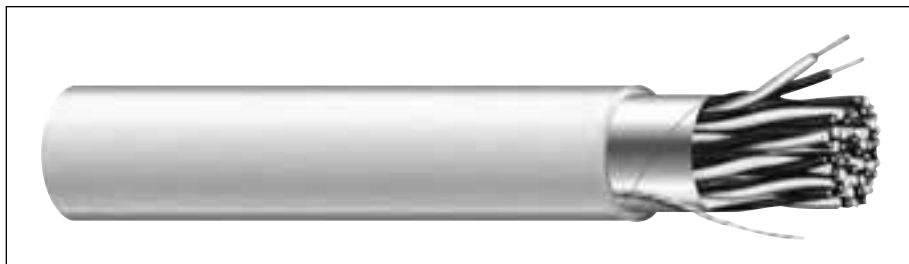
\*Capacitance between conductors

### Color Code Chart

| NO. OF PAIRS | COLOR         |
|--------------|---------------|
| 1            | Black and Red |

# Multi-Paired, Foil Shield

NEC Type CM (UL) c(UL), CSA CMG



## Product Construction:

### Conductor:

- 22 AWG fully annealed solid or stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded S-R PVC
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

## Applications:

- Audio systems
- Communication circuits
- Instrumentation and control use
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|---------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | A             | B    |
| <b>C7104A†</b> | 1            | 22       | 7/0096       | 0.013                     | 0.33 | 0.035                 | 0.89 | 0.185        | 4.70  | 35.0          | 62.0 |
| <b>C1670A</b>  | 2            | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.218        | 5.54  | 32.0          | 57.0 |
| <b>C1676A</b>  | 4            | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.249        | 6.32  | 28.0          | 50.0 |
| <b>C1671A</b>  | 6            | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.292        | 7.42  | 25.0          | 45.0 |
| <b>C1672A</b>  | 9            | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.338        | 8.59  | 25.0          | 45.0 |
| <b>C1673A</b>  | 15           | 22       | Solid        | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.419        | 10.64 | 25.0          | 45.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

† Also UL Style 2464 (UL: 80°C, 300V)

## Color Code Chart

| NO. OF PAIRS | COLOR                    | NO. OF PAIRS | COLOR                   |
|--------------|--------------------------|--------------|-------------------------|
| 1            | Black paired with Red    | 9            | Red paired with Green   |
| 2            | Black paired with White  | 10           | Red paired with Blue    |
| 3            | Black paired with Green  | 11           | Red paired with Yellow  |
| 4            | Black paired with Blue   | 12           | Red paired with Brown   |
| 5            | Black paired with Yellow | 13           | Red paired with Orange  |
| 6            | Black paired with Brown  | 14           | Green paired with White |
| 7            | Black paired with Orange | 15           | Green paired with Blue  |
| 8            | Red paired with White    |              |                         |

# Multi-Paired, Foil Shield

UL 2095, NEC Type CM (UL) c(UL)

## Product Construction:

### Conductor:

- 22 AWG fully annealed solid tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded S-R PVC
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

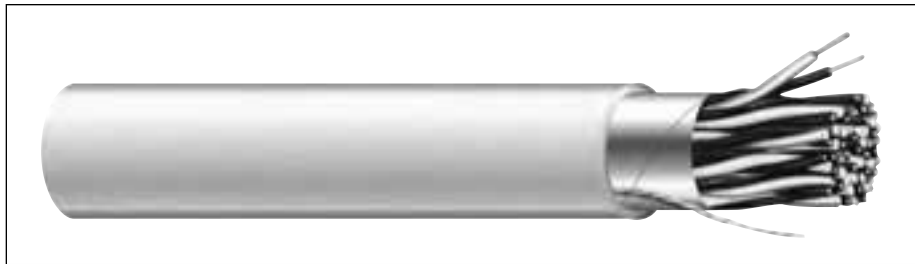
- Intercom systems
- Sound systems
- Electronic instrumentation control systems
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C, 300V)
- UL Style 2095 (UL: 80°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|---------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | A             | B    |
| <b>C6451A</b>  | 51           | 22       | Solid        | 0.010                     | 0.25 | 0.050                 | 1.27 | 0.715        | 18.16 | 25.0          | 45.0 |

\*A – Capacitance between conductors

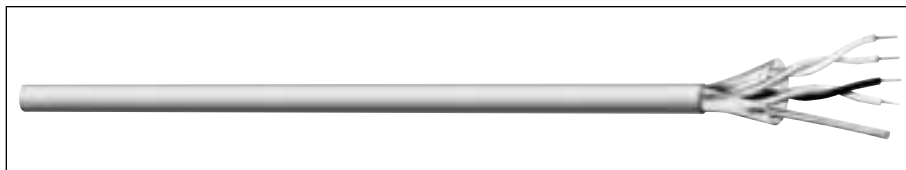
\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                                  | NO. OF PAIRS | COLOR                                 | NO. OF PAIRS | COLOR                                  |
|--------------|----------------------------------------|--------------|---------------------------------------|--------------|----------------------------------------|
| 1            | Blue paired with White                 | 18           | Brown/White striped paired with White | 35           | Green/White striped paired with Red    |
| 2            | Orange paired with White               | 19           | Brown/Gray striped paired with White  | 36           | Green/Brown striped paired with Red    |
| 3            | Green paired with White                | 20           | Gray/White striped paired with White  | 37           | Green/Gray striped paired with Red     |
| 4            | Brown paired with White                | 21           | Blue paired with Red                  | 38           | Brown/White striped paired with Red    |
| 5            | Gray paired with White                 | 22           | Orange paired with Red                | 39           | Brown/Gray striped paired with Red     |
| 6            | Blue/White striped paired with White   | 23           | Green paired with Red                 | 40           | Gray/White striped paired with Red     |
| 7            | Blue/Orange striped paired with White  | 24           | Brown paired with Red                 | 41           | Blue paired with Black                 |
| 8            | Blue/Green striped paired with White   | 25           | Gray paired with Red                  | 42           | Orange paired with Black               |
| 9            | Blue/Brown striped paired with White   | 26           | Blue/White striped paired with Red    | 43           | Green paired with Black                |
| 10           | Blue/Gray striped paired with White    | 27           | Blue/Orange striped paired with Red   | 44           | Brown paired with Black                |
| 11           | Orange/White striped paired with White | 28           | Blue/Green striped paired with Red    | 45           | Gray paired with Black                 |
| 12           | Orange/Green striped paired with White | 29           | Blue/Brown striped paired with Red    | 46           | Blue/White striped paired with Black   |
| 13           | Orange/Brown striped paired with White | 30           | Blue/Gray striped paired with Red     | 47           | Blue/Orange striped paired with Black  |
| 14           | Orange/Gray striped paired with White  | 31           | Orange/White striped paired with Red  | 48           | Blue/Green striped paired with Black   |
| 15           | Green/White striped paired with White  | 32           | Orange/Green striped paired with Red  | 49           | Blue/Brown striped paired with Black   |
| 16           | Green/Brown striped paired with White  | 33           | Orange/Brown striped paired with Red  | 50           | Blue/Gray striped paired with Black    |
| 17           | Green/Gray striped paired with White   | 34           | Orange/Gray striped paired with Red   | 51           | Orange/White striped paired with Black |

# Multi-Paired, Foil Shield

NEC Type CMP (UL) c(UL)



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A          | B |

## 22 AWG CONDUCTORS

|              |   |    |      |       |      |       |      |       |      |      |      |
|--------------|---|----|------|-------|------|-------|------|-------|------|------|------|
| <b>C3204</b> | 1 | 22 | 7/30 | 0.006 | 0.15 | 0.010 | 0.25 | 0.117 | 2.97 | 31.0 | 55.8 |
| <b>C3205</b> | 2 | 22 | 7/30 | 0.006 | 0.15 | 0.010 | 0.25 | 0.151 | 3.84 | 25.0 | 45.0 |
| <b>C3206</b> | 3 | 22 | 7/30 | 0.006 | 0.15 | 0.010 | 0.25 | 0.177 | 4.50 | 25.0 | 36.0 |
| <b>C3207</b> | 4 | 22 | 7/30 | 0.006 | 0.15 | 0.010 | 0.25 | 0.200 | 5.08 | 20.0 | 45.0 |
| <b>C3208</b> | 6 | 22 | 7/30 | 0.006 | 0.15 | 0.010 | 0.25 | 0.237 | 6.02 | 18.0 | 32.4 |

## 24 AWG CONDUCTORS

|              |      |    |      |       |      |       |      |       |      |      |      |
|--------------|------|----|------|-------|------|-------|------|-------|------|------|------|
| <b>C3150</b> | 2    | 24 | 7/32 | 0.006 | 0.15 | 0.010 | 0.25 | 0.130 | 3.30 | 22.0 | 39.6 |
| <b>C3153</b> | 3    | 24 | 7/32 | 0.006 | 0.15 | 0.010 | 0.25 | 0.152 | 3.86 | 18.0 | 32.4 |
| <b>C3151</b> | 4    | 24 | 7/32 | 0.006 | 0.15 | 0.010 | 0.25 | 0.170 | 4.32 | 17.0 | 30.6 |
| <b>C3165</b> | 6    | 24 | 7/32 | 0.006 | 0.15 | 0.010 | 0.25 | 0.200 | 5.08 | 17.0 | 30.6 |
| <b>C3152</b> | 12.5 | 24 | 7/32 | 0.006 | 0.15 | 0.012 | 0.30 | 0.290 | 7.04 | 17.0 | 30.6 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                       |
|--------------|-----------------------------|
| 1            | Black & Yellow              |
| 2            | Red & Violet                |
| 3            | Dark Blue & Brown           |
| 4            | Orange & Dark Green         |
| 5            | Pink & Gray                 |
| 6            | Tan & White                 |
| 7            | Light Blue & Light Green    |
| 8            | Red/White & White/Red       |
| 9            | Orange/White & White/Orange |
| 10           | Yellow/White & White/Yellow |
| 11           | Gray/White & White/Gray     |
| 12           | Blue/White & White/Blue     |
| 1C           | Dark Green/Yellow           |

## Product Construction:

### Conductor:

- 22 and 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded fluoropolymer
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Stranded tinned copper drain wire

### Jacket:

- Fluoropolymer, natural
- Temperature range: -40°C to +150°C
- Sequential footage marked to facilitate installation
- Includes ripcord

## Applications:

- EIA RS-232 circuits
- Remote control circuits
- Process control and instrumentation
- Power-limited control circuits
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 (UL: 150°C, 300V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Water-resistant jacket

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Paired, Foil Shield

NEC Type CMP (UL) c(UL)

## Product Construction:

### Conductor:

- 22 and 18 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded FEP
- Color code: See chart below

### Separator:

- Polyester tape with 25% overlap

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Stranded tinned copper drain wire

### Jacket:

- FEP, red or as requested
- PVDF, red or as requested

#### C8101, C8109

- Temperature range: -40°C to +200°C

#### C8104, C8103

- Temperature range: -40°C to +150°C

## Applications:

- Computer systems
- Remote control circuits
- Process control and instrumentation
- Suggested voltage rating: 300 volts

## Compliances:

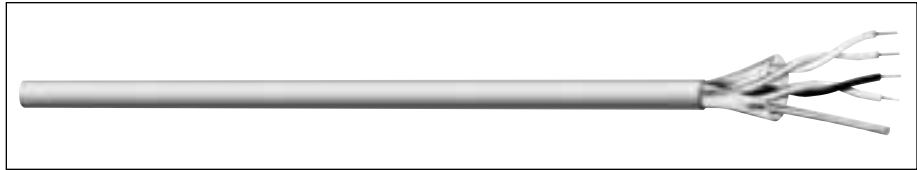
- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Fire-retardant, low-smoke jacket

## Packaging:

- Please contact Customer Service for packaging and color options
- 1000' (305m) reels



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A                | B    |
| <b>C8101**</b> | 1            | 18       | 19/30        | 0.007                     | 0.18 | 0.016                 | 0.41 | 0.165        | 4.19 | 51.0             | 95.0 |
| <b>C8104</b>   | 1            | 18       | 19/30        | 0.007                     | 0.18 | 0.016                 | 0.41 | 0.165        | 4.19 | 51.0             | 95.0 |
| <b>C8103</b>   | 1            | 22       | 7/30         | 0.006                     | 0.15 | 0.014                 | 0.36 | 0.120        | 3.05 | 35.0             | 65.0 |
| <b>C8109**</b> | 1            | 22       | 7/30         | 0.006                     | 0.15 | 0.016                 | 0.41 | 0.122        | 3.10 | 35.0             | 65.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

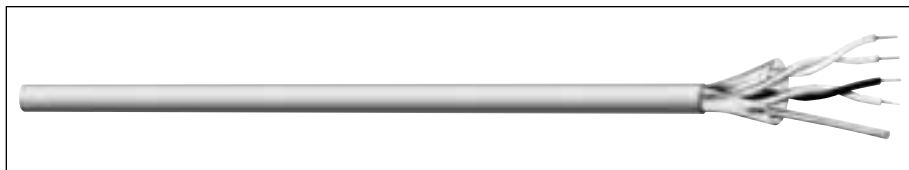
\*\* FEP jacket

## Color Code Chart

| NO. OF PAIRS | COLOR         |
|--------------|---------------|
| 1            | Black and Red |

# Multi-Paired, Foil Shield

NEC Type CMP (UL) c(UL)



| CATALOG<br>NUMBER | NO. OF<br>PAIRS | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|-------------------|-----------------|-------------|-----------------|------------------------------|------|--------------------------|------|--------------|------|------------|------|
|                   |                 |             |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | A          | B    |
| <b>C8118</b>      | 2               | 24          | 7/32            | 0.014                        | 0.15 | 0.015                    | 0.38 | 0.203        | 5.16 | 12.0       | 22.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF<br>PAIRS | COLOR                                 |
|-----------------|---------------------------------------|
| <b>1</b>        | White/Blue paired with Blue/White     |
| <b>2</b>        | White/Orange paired with Orange/White |

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded foam FEP
- Color code: See chart below

### Separator:

- Polyester tape with 25% overlap

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Stranded tinned copper drain wire

### Jacket:

- PVDF, gray or as requested
- Temperature range: -40°C to +150°C

## Applications:

- Computer systems
- Remote control circuits
- Process control and instrumentation
- Suitable for RS232, RS422, RS485
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Fire-retardant, low-smoke jacket

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL  
BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Paired, Foil Shield

NEC Type CMP (UL) c(UL)

## Product Construction:

### Conductor:

- 24, 22 and 18 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded FEP
- Color code: See chart below

### Separator:

- Polyester tape with 25% overlap

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Stranded tinned copper drain wire

### Jacket:

- Flexguard® PVC, natural or as requested
- Temperature range: -20°C to +75°C

## Applications:

- Computer systems
- Remote control circuits
- Process control and instrumentation
- Suggested voltage rating: 300 volts

## Compliances:

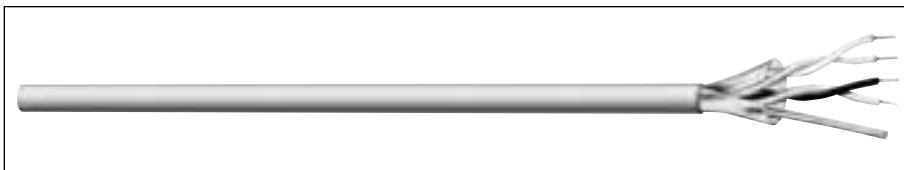
- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Fire-retardant, low-smoke jacket

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A                | B    |
| <b>C8127</b>   | 1            | 24       | 7/32         | 0.006                     | 0.15 | 0.014                 | 0.36 | 0.108        | 2.69 | 30.0             | 60.0 |
| <b>C8113</b>   | 3            | 24       | 7/32         | 0.006                     | 0.15 | 0.014                 | 0.36 | 0.161        | 4.09 | 25.0             | 45.0 |
| <b>C8126</b>   | 1            | 22       | 7/30         | 0.006                     | 0.15 | 0.014                 | 0.36 | 0.120        | 3.05 | 35.0             | 65.0 |
| <b>C8123</b>   | 1            | 18       | 19/30        | 0.007                     | 0.18 | 0.014                 | 0.36 | 0.160        | 4.06 | 51.0             | 90.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

|                |   |    |      |       |      |       |      |       |      |      |      |
|----------------|---|----|------|-------|------|-------|------|-------|------|------|------|
| <b>C8124**</b> | 1 | 22 | 7/30 | 0.007 | 0.18 | 0.017 | 0.43 | 0.128 | 3.25 | 32.0 | 62.0 |
|----------------|---|----|------|-------|------|-------|------|-------|------|------|------|

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

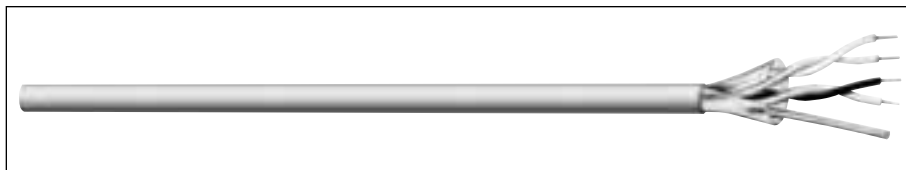
\*\*This item does not have a separator and has a shield fusible to the jacket to facilitate removal along with the jacket while stripping.

## Color Code Chart

| NO. OF PAIRS | COLOR                   |
|--------------|-------------------------|
| 1            | Black and Red           |
| <b>C8113</b> |                         |
| NO. OF PAIRS | COLOR                   |
| 1            | Black paired with White |
| 2            | Black paired with Red   |
| 3            | Black paired with Green |

# Multi-Paired, Foil Shield

NEC Type CMP (UL) c(UL) and/or CL2P



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A          | B |

## 22 AWG, CL2P, c(UL) 150 VOLTS

|              |   |    |         |       |       |       |      |       |      |      |      |
|--------------|---|----|---------|-------|-------|-------|------|-------|------|------|------|
| <b>C3352</b> | 2 | 22 | 7/30 TC | 0.007 | 0.180 | 0.010 | 0.25 | 0.157 | 3.99 | 37.0 | 66.0 |
| <b>C3353</b> | 3 | 22 | 7/30 TC | 0.007 | 0.180 | 0.010 | 0.25 | 0.194 | 4.42 | 30.0 | 53.0 |
| <b>C3354</b> | 4 | 22 | 7/30 TC | 0.007 | 0.180 | 0.010 | 0.25 | 0.207 | 4.75 | 30.0 | 53.0 |
| <b>C3356</b> | 6 | 22 | 7/30 TC | 0.007 | 0.180 | 0.010 | 0.25 | 0.246 | 5.74 | 27.0 | 48.0 |

## 18 AWG, CL2P/CMP, c(UL) 150 VOLTS

|              |   |    |         |       |       |       |      |       |      |      |      |
|--------------|---|----|---------|-------|-------|-------|------|-------|------|------|------|
| <b>C3362</b> | 2 | 18 | 7/26 BC | 0.008 | 0.020 | 0.010 | 0.25 | 0.205 | 5.21 | 44.0 | 79.0 |
| <b>C3364</b> | 4 | 18 | 7/26 BC | 0.008 | 0.020 | 0.010 | 0.25 | 0.277 | 7.04 | 33.0 | 59.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

### Color Code Chart

| NO. OF PAIRS | COLOR               |
|--------------|---------------------|
| 1            | Black & Yellow      |
| 2            | Red & Violet        |
| 3            | Dark Blue & Brown   |
| 4            | Orange & Dark Green |
| 5            | Pink & Gray         |
| 6            | Tan & White         |

### Product Construction:

#### Conductor:

- 22 and 18 AWG fully annealed stranded tinned copper per ASTM B-33 or stranded bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded Flexguard® PVC
- Color code: See chart below

#### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Stranded tinned copper drain wire

#### Jacket:

- Fluoropolymer, natural
- Temperature range: -20°C to +75°C
- Sequential footage marked to facilitate installation
- Includes ripcord

### Applications:

- EIA RS-232 circuits
- Remote control circuits
- Process control and instrumentation
- Power-limited control circuits
- Suggested voltage rating: 150 volts

### Compliances:

- NEC Article 800 (UL: 75°C, 300V)
- NEC Article 725 (UL: 75°C, 150V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

### Features:

- Abrasion-, chemical- and water-resistant jacket

### Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Paired, Foil Shield

AWM Style 2464, CSA Type AWM I/II A/B, NEC/CEC Type CMG (CSA C/US)

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 or 600 volts

## Features:

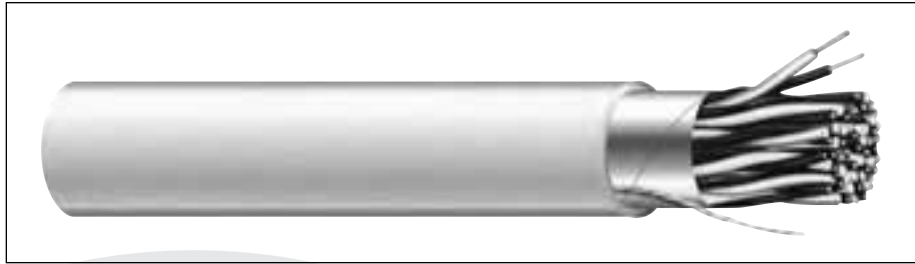
- Excellent electrical properties
- Superior shielding effectiveness
- 25% shield overlap provides excellent shielding efficiency
- Assists system designers in meeting FCC Docket 20780 demands
- Good flexibility

## Compliances:

- AWM Style 2464 (CSA: 80°C, 300V)
- CSA Type AWM (105°C, 600V)
- CSA Certified CMG to harmonized standard UL444 and CSA 22.2 No. 214
- NEC/CEC Type CMG (CSA: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT4 Vertical Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR Ω/KFT |       | COLOR CODE | NOM. CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|-------------------|-------|------------|------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | COND.             | SHLD. |            | A                | B    |
| C4170A         | 1            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.157        | 3.99  | 26.0              | 18.0  | 1          | 36.4             | 65.5 |
| C4209A         | 1            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.157        | 3.99  | 26.0              | 18.0  | Wht/Blk    | 36.4             | 65.5 |
| C4191A         | 1            | 24       | 7/32         | 0.009                     | 0.23 | 0.030                 | 0.76 | 0.148        | 3.78  | 26.0              | 16.5  | Blk/Red    | 43.0             | 78.0 |
| C4171A         | 2            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.214        | 5.44  | 26.0              | 18.0  | 1          | 31.9             | 57.3 |
| C4172A         | 3            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.225        | 5.72  | 26.0              | 16.5  | 1          | 28.6             | 51.4 |
| C4173A         | 4            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.245        | 6.22  | 26.0              | 16.5  | 1          | 28.6             | 51.4 |
| C4174A         | 5            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.265        | 6.73  | 26.0              | 16.5  | 1          | 28.6             | 51.4 |
| C4175A         | 6            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.287        | 7.29  | 26.0              | 15.2  | 1          | 26.3             | 47.5 |
| C4176A         | 7            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.287        | 7.29  | 26.0              | 15.2  | 1          | 26.3             | 47.5 |
| C4177A         | 8            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.309        | 7.85  | 26.0              | 15.0  | 1          | 26.3             | 47.5 |
| C4178A         | 9            | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.331        | 8.41  | 26.0              | 15.0  | 1          | 26.3             | 47.5 |
| C4179A         | 10           | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.359        | 9.12  | 26.0              | 14.0  | 1          | 26.3             | 47.5 |
| C4180A         | 15           | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.410        | 10.41 | 26.0              | 13.8  | 1          | 26.3             | 47.5 |
| C4181A         | 19           | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.432        | 10.97 | 26.0              | 13.5  | 1          | 26.3             | 47.5 |
| C4182A         | 25           | 24       | 7/32         | 0.010                     | 0.25 | 0.032                 | 0.81 | 0.505        | 12.83 | 26.0              | 12.7  | 1          | 26.3             | 47.5 |

\*A - Capacitance between conductors

\*B - Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR             | NO. OF PAIRS | COLOR             |
|--------------|-------------------|--------------|-------------------|
| 1            | Black with Red    | 14           | Green with White  |
| 2            | Black with White  | 15           | Green with Blue   |
| 3            | Black with Green  | 16           | Green with Yellow |
| 4            | Black with Blue   | 17           | Green with Brown  |
| 5            | Black with Yellow | 18           | Green with Orange |
| 6            | Black with Brown  | 19           | White with Blue   |
| 7            | Black with Orange | 20           | White with Yellow |
| 8            | Red with White    | 21           | White with Brown  |
| 9            | Red with Green    | 22           | White with Orange |
| 10           | Red with Blue     | 23           | Blue with Yellow  |
| 11           | Red with Yellow   | 24           | Blue with Brown   |
| 12           | Red with Brown    | 25           | Blue with Orange  |
| 13           | Red with Orange   |              |                   |

# Multi-Paired, Foil Shield

AWM Style 2464, CSA Type AWM I/II A/B, NEC/CEC Type CMG (CSA C/US)



## Product Construction:

### Conductor:

- 22 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage ratings: 300 or 600 volts

## Features:

- Excellent electrical properties
- Superior shielding effectiveness
- 25% shield overlap provides excellent shielding efficiency
- Assists system designers in meeting FCC Docket 20780 demands
- Good flexibility

## Compliances:

- AWM Style 2464 (CSA: 80°C, 300V)
- CSA Type AWM (105°C, 600V)
- CSA Certified CMG to harmonized standard UL444 and CSA 22.2 No. 214
- NEC/CEC Type CMG (CSA: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT4 Vertical Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOMINAL INSULATION THICKNESS |      | NOMINAL JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR $\Omega$ /kft |       | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|------------------------------|------|--------------------------|------|--------------|-------|---------------------------|-------|---------------------|------|
|                |              |          |              | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm    | COND.                     | SHLD. | A                   | B    |
| C4183A         | 1            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.169        | 4.29  | 15.0                      | 18.0  | 44.8                | 80.7 |
| C4184A         | 2            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.234        | 5.94  | 15.0                      | 16.5  | 35.9                | 64.6 |
| C4185A         | 3            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.246        | 6.25  | 15.0                      | 16.5  | 30.9                | 55.7 |
| C4186A         | 4            | 24       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.269        | 6.83  | 15.0                      | 16.5  | 30.9                | 55.7 |
| C4187A         | 5            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.294        | 7.47  | 15.0                      | 16.5  | 30.9                | 55.7 |
| C4188A         | 6            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.320        | 8.13  | 15.0                      | 16.5  | 28.4                | 51.0 |
| C4189A         | 9            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.367        | 9.32  | 15.0                      | 16.5  | 28.4                | 51.0 |
| C4190A         | 15           | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.457        | 11.61 | 15.0                      | 16.5  | 28.4                | 51.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR             | NO. OF PAIRS | COLOR            |
|--------------|-------------------|--------------|------------------|
| 1            | Black with Red    | 9            | Red with Green   |
| 2            | Black with White  | 10           | Red with Blue    |
| 3            | Black with Green  | 11           | Red with Yellow  |
| 4            | Black with Blue   | 12           | Red with Brown   |
| 5            | Black with Yellow | 13           | Red with Orange  |
| 6            | Black with Brown  | 14           | Green with White |
| 7            | Black with Orange | 15           | Green with Blue  |
| 8            | Red with White    |              |                  |

# Multi-Paired, Foil Shield, Mid-Cap

NEC Type CMP (UL) c(UL)

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded fluoropolymer
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Stranded tinned copper drain wire

### Jacket:

- Fluoropolymer, natural
- Temperature range: -40°C to +150°C
- Sequential footage marked to facilitate installation
- Includes ripcord

## Applications:

- EIA RS-232 and RS-422 circuits
- Remote control circuits
- Process control and instrumentation
- Power-limited control circuits
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 (UL: 150°C, 300V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Abrasion-, chemical- and water-resistant jacket

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| <b>C3214</b>   | 2            | 24       | 7/32         | 0.010                     | 0.25 | 0.010                 | 0.25 | 0.150        | 3.81 | 17.0       | 30.0 |
| <b>C3215</b>   | 3            | 24       | 7/32         | 0.010                     | 0.25 | 0.010                 | 0.25 | 0.177        | 4.50 | 15.0       | 27.0 |
| <b>C3216</b>   | 4            | 24       | 7/32         | 0.010                     | 0.25 | 0.010                 | 0.25 | 0.201        | 5.11 | 15.0       | 27.0 |
| <b>C3217</b>   | 4.5          | 24       | 7/32         | 0.010                     | 0.25 | 0.010                 | 0.25 | 0.214        | 5.18 | 15.0       | 27.0 |
| <b>C3218</b>   | 6            | 24       | 7/32         | 0.010                     | 0.25 | 0.010                 | 0.25 | 0.239        | 6.07 | 14.0       | 25.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                         |
|--------------|-------------------------------|
| <b>1</b>     | Black paired with Yellow      |
| <b>2</b>     | Red paired with Violet        |
| <b>3</b>     | Dark Blue paired with Brown   |
| <b>4</b>     | Orange paired with Dark Green |
| <b>5</b>     | Pink paired with Gray         |
| <b>6</b>     | Tan paired with White         |
| <b>1C</b>    | Green with Yellow Stripe      |

# Multi-Paired, Foil Shield, Lo-Cap®

NEC Type CMP (UL) c(UL)



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* pF/ft |       | IMPED. Ω NOM |
|----------------|--------------|----------|--------------|-----------------------|------|--------------|------|------------------|-------|--------------|
|                |              |          |              | INCHES                | mm   | INCHES       | mm   | A                | B     |              |
| <b>C3028</b>   | 2            | 24       | 7/32         | 0.010                 | 0.25 | 0.159        | 4.04 | 15.0             | 27.00 | 94.0         |
| <b>C3029</b>   | 3            | 24       | 7/32         | 0.010                 | 0.25 | 0.183        | 4.65 | 14.0             | 25.00 | 107.0        |
| <b>C3030</b>   | 4            | 24       | 7/32         | 0.010                 | 0.25 | 0.246        | 6.25 | 14.0             | 25.00 | 107.0        |
| <b>C3031</b>   | 6            | 24       | 7/32         | 0.012                 | 0.30 | 0.285        | 7.24 | 13.0             | 23.00 | 115.0        |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                         |
|--------------|-------------------------------|
| <b>1</b>     | Black paired with Yellow      |
| <b>2</b>     | Red paired with Violet        |
| <b>3</b>     | Dark Blue paired with Brown   |
| <b>4</b>     | Orange paired with Dark Green |
| <b>5</b>     | Pink paired with Gray         |
| <b>6</b>     | Tan paired with White         |

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded fluoropolymer
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Stranded tinned copper drain wire

### Jacket:

- Fluoropolymer, natural
- Temperature range: -40°C to +150°C
- Sequential footage marked to facilitate installation
- Includes ripcord

## Applications:

- EIA RS-232 and RS-422 circuits
- Remote control circuits
- Process control and instrumentation
- Low capacitance requirements
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 (UL: 150°C, 300V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Abrasion-, chemical- and water-resistant jacket

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Paired, Overall Foil & TC Braid Shield, Lo-Cap®

NEC Type CMP (UL) c(UL)

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded foam FEP
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Tinned copper braid, 90% coverage

### Jacket:

#### C8117

- FEP, red or as requested
- Temperature range: -40°C to +200°C

#### C8129

- Flexguard® PVC, natural
- Temperature range: -20°C to +75°C

## Applications:

- Computer systems
- Remote control circuits
- Process control and instrumentation
- Suggested voltage rating: 300 volts

## Compliances:

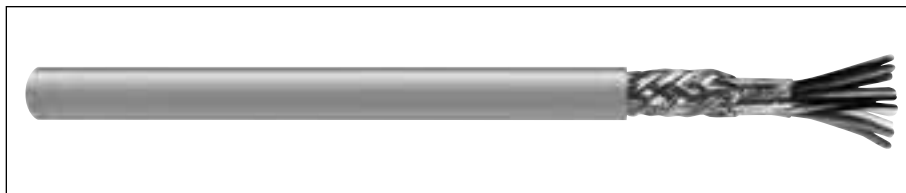
- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Fire-retardant, low-smoke jacket

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| <b>C8117</b>   | 1            | 24       | 7/32         | 0.026                     | 0.66 | 0.014                 | 0.36 | 0.208        | 5.28 | 12.0       | 22.0 |
| <b>C8129</b>   | 2            | 24       | 7/32         | 0.019                     | 0.48 | 0.017                 | 0.43 | 0.280        | 6.93 | 12.0       | 22.0 |

\*A – Capacitance between conductors

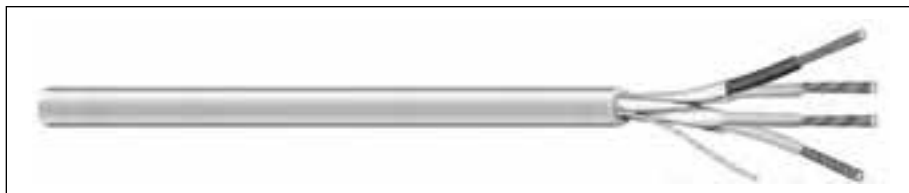
\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| C8117<br>NO. OF PAIRS | COLOR                                 |
|-----------------------|---------------------------------------|
| 1                     | White/Blue paired with Blue/White     |
| C8129<br>NO. OF PAIRS | COLOR                                 |
| 1                     | White/Blue paired with Blue/White     |
| 2                     | White/Orange paired with Orange/White |

# Multi-Paired, Individually Shielded

UL 2717, UL 2835, NEC Type CM (UL) c(UL) CMH or CMG



| CATALOG<br>NUMBER                                                         | NO. OF<br>PAIRS | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |       | NOMINAL CAP.*<br>pF/ft |      |
|---------------------------------------------------------------------------|-----------------|-------------|-----------------|------------------------------|------|--------------------------|------|--------------|-------|------------------------|------|
|                                                                           |                 |             |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm    | A                      | B    |
| POLYPROPYLENE INSULATION – NEC TYPE CM(UL) c(UL) CMH                      |                 |             |                 |                              |      |                          |      |              |       |                        |      |
| C1352A                                                                    | 2               | 22          | 7/30            | 0.007                        | 0.18 | 0.020                    | 0.51 | 0.160        | 4.06  | 30.0                   | 45.0 |
| POLYPROPYLENE INSULATION – UL STYLE 2717, UL STYLE 2835, CM(UL) c(UL) CMH |                 |             |                 |                              |      |                          |      |              |       |                        |      |
| C1353A**                                                                  | 2               | 22          | 7/30            | 0.010                        | 0.25 | 0.028                    | 0.71 | 0.208        | 5.028 | 25.0                   | 53.5 |
| SR-PVC INSULATION – UL STYLE 2464, CM(UL) c(UL) CMG                       |                 |             |                 |                              |      |                          |      |              |       |                        |      |
| C7106A                                                                    | 2               | 20          | 7/28            | 0.010                        | 0.25 | 0.041                    | 1.04 | 0.305        | 7.75  | 46.0                   | 82.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

\*\*Individually shielded with overall shield

## Color Code Chart

| NO. OF PAIRS | COLOR       |
|--------------|-------------|
| 1            | Black/Red   |
| 2            | Green/White |

## Product Construction:

### Conductor:

- 22 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded polypropylene
- Color code: See chart below

### Shield:

- Individually shielded pairs
- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Where total isolation of signal is required
- Computers
- Control circuits
- Industrial equipment
- Suggested voltage rating: 300 volts

## Features:

- Excellent high frequency properties
- Mechanical durability

## Compliances:

- NEC Article 800 Type CM (UL: 75°C, 300V)
- UL Style 2717 (UL: 80°C)
- UL Style 2835 (UL: 60°C, 30V)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMH (CSA: 60°C)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMH or CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**

**UL** LISTED

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Paired, Individually Shielded

CSA Type AWM I/II A/B, NEC/CEC Type CMG (CSA C/US)

## Product Construction:

### Conductor:

- 22 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Shield:

- Individually shielded pairs
- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Where total isolation of signal is required
- Computers
- Control circuits
- Industrial equipment
- Suggested voltage rating: 300 or 600 volts

## Features:

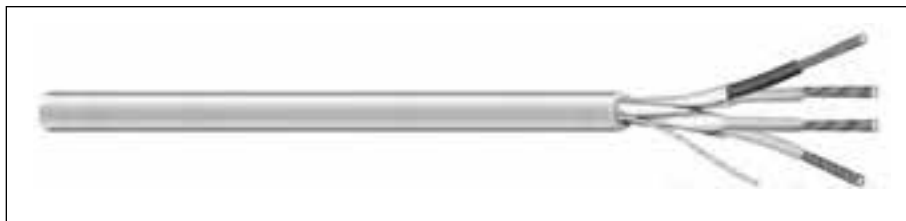
- Excellent high-frequency properties
- Mechanical durability

## Compliances:

- CSA Type AWM (105°C, 600V)
- CSA Certified CMG to harmonized standard UL444 and CSA (22.2 No. 2)
- NEC/CEC Type CMG (CSA: 105°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet CSA 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT4 Vertical Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOMINAL INSULATION THICKNESS |      | NOMINAL JACKET THICKNESS |      | NOMINAL O.D. |      | NOMINAL DCR $\Omega$ /kft |       | NOMINAL CAP.* pF/ft |       |
|----------------|--------------|----------|--------------|------------------------------|------|--------------------------|------|--------------|------|---------------------------|-------|---------------------|-------|
|                |              |          |              | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | COND.                     | SHLD. | A                   | B     |
| C4203A         | 2            | 22       | 7/30         | 0.007                        | 0.18 | 0.020                    | 0.51 | 0.160        | 4.06 | 16.6                      | 7.2   | 67.0                | 121.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR            |
|--------------|------------------|
| 1            | Black with Red   |
| 2            | Green with White |

# Multi-Paired, Individually Shielded, Overall Shield

UL 2464, UL 2576, NEC Type CMR (UL) c(UL), CSA CMG



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |       | NOMINAL O.D.        |                   | NOMINAL CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|-------|---------------------|-------------------|---------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm    | INCHES              | mm                | A             | B    |
| <b>C1350A</b>  | 2            | 22       | 7/30         | 0.010                     | 0.25 | 0.035                 | 0.889 | 0.175<br>x<br>0.280 | 4.45<br>x<br>7.11 | 40            | 71.5 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR        |
|--------------|--------------|
| 1            | Black/White  |
| 2            | Black/Yellow |

## Product Construction:

### Conductor:

- 22 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded S-R PVC per UL 1061
- Color code: See chart below

### Shield:

- Individually shielded pairs plus an overall foil shield and drain wire
- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing in
- Stranded tinned copper drain wire

### Jacket:

- PVC, beige
- Temperature range: -20°C to +80°C

## Applications:

- Computer interconnections
- Data transmission
- Control circuits
- Industrial equipment control
- Suggested voltage rating: 300 volts

## Features:

- Excellent high frequency properties
- Mechanical durability

## Compliances:

- NEC Article 800 Type CMR (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- UL Style 2576
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

# Multi-Paired, Individually Foil Shielded

## NEC Type CMP (UL) c(UL)

### Product Construction:

#### Conductor:

- 22 AWG fully annealed stranded tinned copper per ASTM B-33

#### Insulation:

- Premium-grade, color-coded fluoropolymer
- Color code: See chart below

#### Shield:

- 100% Flexfoil® aluminum/polyester foil, each with 25% overlap, minimum
- Stranded tinned copper drain wire

#### Jacket:

- Fluoropolymer, red
- Temperature range: -20°C to +150°C
- Sequential footage marked to facilitate installation
- Includes ripcord

### Applications:

- Point of sale systems
- Remote control circuits
- Process control and instrumentation
- Power-limited control circuits
- Suggested voltage rating: 300 volts

### Compliances:

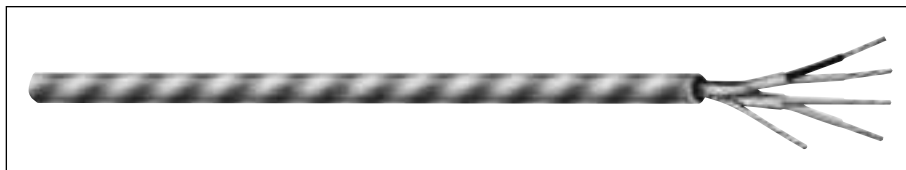
- NEC Article 800 (UL: 150°C, 300V)
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

### Features:

- Individually shielded pairs for excellent signal isolation
- Abrasion-, chemical- and water-resistant jacket

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.** |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|-------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A           | B    |
| <b>C3156*</b>  | 2            | 22       | 7/30         | 0.006                     | 0.15 | 0.010                 | 0.25 | 0.147        | 3.73 | 35.0        | 63.0 |
| <b>C3157†</b>  | 3            | 22       | 7/30         | 0.006                     | 0.15 | 0.010                 | 0.25 | 0.184        | 4.67 | 35.0        | 63.0 |

\* Cabled on common axis to reduce diameter, foil out, common drain wire

\*\* A – Capacitance between conductors

\*\* B – Capacitance between one conductor and other conductors connected to shield

† 3 individually shielded pairs with separate drain wires

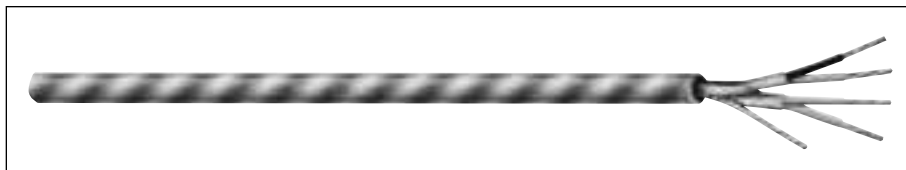
### Color Code Chart

| <b>C3156</b> |                         |
|--------------|-------------------------|
| NO. OF PAIRS | COLOR                   |
| <b>1</b>     | Black paired with Red   |
| <b>2</b>     | White paired with Green |

| <b>C3157</b> |                         |
|--------------|-------------------------|
| NO. OF PAIRS | COLOR                   |
| <b>1</b>     | Black paired with Red   |
| <b>2</b>     | Black paired with White |
| <b>3</b>     | Black paired with Green |

# Multi-Paired, Individually Foil Shielded

NEC Type CMP (UL) c(UL)



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| <b>C8134</b>   | 2            | 24       | 7/32         | 0.019                     | 0.48 | 0.015                 | 0.38 | 0.255        | 7.48 | 35.0       | 76.0 |
| <b>C8105</b>   | 2            | 22       | 7/30         | 0.006                     | 0.15 | 0.014                 | 0.36 | 0.186        | 4.72 | 43.0       | 75.0 |
| <b>C8131</b>   | 3            | 22       | 7/30         | 0.010                     | 0.25 | 0.018                 | 0.46 | 0.237        | 6.02 | 35.0       | 76.0 |
| <b>C8133</b>   | 6            | 22       | 7/30         | 0.010                     | 0.25 | 0.018                 | 0.45 | 0.314        | 7.98 | 35.0       | 76.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| <b>C8105<br/>NO. OF PAIRS</b> | <b>COLOR</b>            |
|-------------------------------|-------------------------|
| <b>1</b>                      | Black paired with Red   |
| <b>2</b>                      | White paired with Green |

| <b>C8131<br/>NO. OF PAIRS</b> | <b>COLOR</b>            |
|-------------------------------|-------------------------|
| <b>1</b>                      | Black paired with Red   |
| <b>2</b>                      | Black paired with White |
| <b>3</b>                      | Black paired with Green |

| <b>C8133<br/>NO. OF PAIRS</b> | <b>COLOR</b>             |
|-------------------------------|--------------------------|
| <b>1</b>                      | Black paired with Red    |
| <b>2</b>                      | Black paired with White  |
| <b>3</b>                      | Black paired with Green  |
| <b>4</b>                      | Black paired with Blue   |
| <b>5</b>                      | Black paired with Yellow |
| <b>6</b>                      | Black paired with Brown  |

| <b>C8134<br/>NO. OF PAIRS</b> | <b>COLOR</b>                          |
|-------------------------------|---------------------------------------|
| <b>1</b>                      | White/Blue paired with Blue/White     |
| <b>2</b>                      | White/Orange paired with Orange/White |

## Product Construction:

### Conductor:

- 24 thru 22 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded FEP or foamed FEP
- Color code: See chart below

### Pair Shield:

- 100% Flexfoil® aluminum/polyester foil, with 25% overlap, minimum
- Individually shielded pairs with stranded tinned copper drain wire

### Jacket:

- Flexguard® PVC, natural
- Temperature range: -20°C to +75°C

## Applications:

- Computer systems
- Remote control circuits
- Process control and instrumentation
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Individually shielded pairs for excellent signal isolation
- Fire-retardant, low-smoke jacket

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Paired, Individually Foil Shielded

## NEC Type CMP (UL) c(UL)

### Product Construction:

#### Conductor:

- 22 AWG fully annealed stranded tinned copper per ASTM B-33

#### Insulation:

- Premium-grade, color-coded FEP
- Color code: See chart below

#### Pair Shield:

- 100% Flexfoil® aluminum/polyester foil, with 25% overlap, minimum
- Individually shielded pairs with stranded tinned copper drain wire

#### Jacket:

- FEP, red or as requested
- Temperature range: -40°C to +200°C

### Applications:

- Computer systems
- Remote control circuits
- Process control and instrumentation
- Suggested voltage rating: 300 volts

### Compliances:

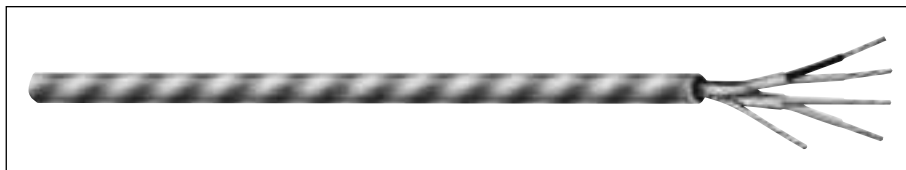
- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

### Features:

- Individually shielded pairs for excellent signal isolation
- Fire-retardant, low-smoke jacket

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| <b>C8112</b>   | 2            | 22       | 7/30         | 0.006                     | 0.15 | 0.014                 | 0.36 | 0.186        | 4.72 | 35.0       | 65.0 |
| <b>C8132</b>   | 6            | 22       | 7/30         | 0.010                     | 0.25 | 0.015                 | 0.38 | 0.309        | 7.85 | 30.0       | 65.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

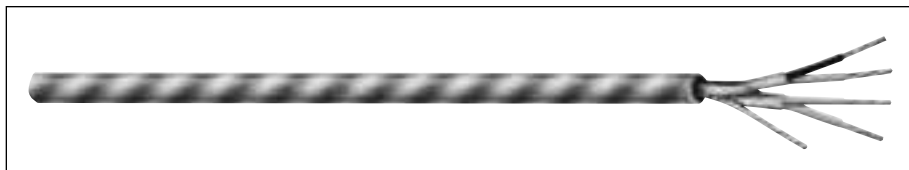
### Color Code Chart

| <b>C8112</b> |                         |
|--------------|-------------------------|
| NO. OF PAIRS | COLOR                   |
| <b>1</b>     | Black paired with Red   |
| <b>2</b>     | White paired with Green |

| <b>C8132</b> |                          |
|--------------|--------------------------|
| NO. OF PAIRS | COLOR                    |
| <b>1</b>     | Black paired with Red    |
| <b>2</b>     | Black paired with White  |
| <b>3</b>     | Black paired with Green  |
| <b>4</b>     | Black paired with Blue   |
| <b>5</b>     | Black paired with Yellow |
| <b>6</b>     | Black paired with Brown  |

# Multi-Paired, Individually Foil Shielded

NEC Type CMP (UL) c(UL)



| CATALOG<br>NUMBER | NO. OF<br>PAIRS | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|-------------------|-----------------|-------------|-----------------|------------------------------|------|--------------------------|------|--------------|------|------------|------|
|                   |                 |             |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | A          | B    |
| <b>C8128</b>      | 2               | 24          | 7/32            | 0.019                        | 0.48 | 0.018                    | 0.46 | 0.261        | 6.63 | 12.5       | 22.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                                 |
|--------------|---------------------------------------|
| <b>1</b>     | White/Blue paired with Blue/White     |
| <b>2</b>     | White/Orange paired with Orange/White |

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded foam FEP
- Color code: See chart below

### Pair Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Individually shielded pairs with stranded tinned copper drain wire

### Jacket:

- PVDF, gray or as requested
- Temperature range: -40°C to +150°C

## Applications:

- Computer systems
- Remote control circuits
- Process control and instrumentation
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Individually shielded pairs for excellent signal isolation
- Fire-retardant, low-smoke jacket

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL  
BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Power-Limited Tray Cable, Individually Shielded

UL 2464, NEC Type PLTC AND CSA CMG

## Product Construction:

### Conductor:

- 22 or 18 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded PVC
- Color code: Each pair black and red, numbered at one-inch intervals

### Shield:

- Pairs are 100% individually shielded with Flexfoil® aluminum/polyester, foil facing in
- Stranded tinned copper drain wire each pair

### Jacket:

- PVC, gray
- Temperature range: -20°C to +105°C

## Applications:

- Power-limited circuits
- Intercom systems
- Business machines
- Cash registers
- Computer interconnects
- Suitably marked for appropriate tray cable installations
- Burglar alarms
- Suggested voltage rating: 300 volts

## Features:

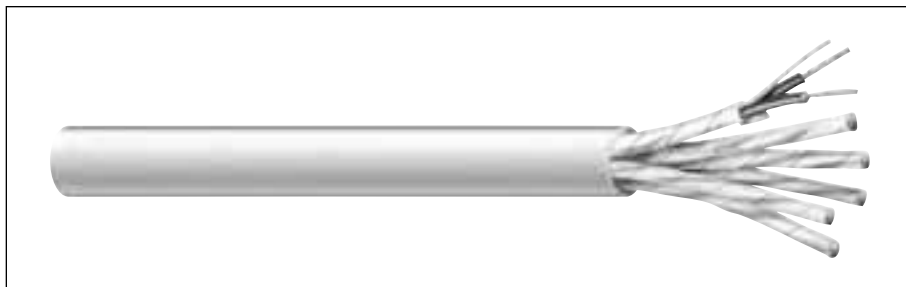
- Superior temperature characteristics
- Robust, highly durable
- Sunlight-resistant jacket

## Compliances:

- NEC Article 725 Power-Limited Tray Cable (UL: 105°C, 300V)
- UL Style 2464 (UL: 80°C)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|---------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | A             | B    |
| C0570A         | 2            | 22       | 7/30         | 0.016                     | 0.41 | 0.042                 | 1.07 | 0.327        | 8.31  | 38.5          | 69.5 |
| C0571A         | 3            | 22       | 7/30         | 0.015                     | 0.41 | 0.042                 | 1.07 | 0.345        | 8.76  | 38.5          | 69.5 |
| C0572A         | 4            | 22       | 7/30         | 0.015                     | 0.41 | 0.042                 | 1.07 | 0.378        | 9.60  | 38.5          | 69.5 |
| C0573A         | 6            | 22       | 7/30         | 0.015                     | 0.41 | 0.053                 | 1.35 | 0.469        | 11.91 | 38.5          | 69.5 |
| C0574A         | 9            | 22       | 7/30         | 0.015                     | 0.41 | 0.053                 | 1.35 | 0.542        | 13.77 | 38.5          | 69.5 |
| C0575A         | 11           | 22       | 7/30         | 0.015                     | 0.41 | 0.053                 | 1.35 | 0.589        | 14.96 | 38.5          | 69.5 |
| C0584A         | 2            | 18       | 16/30        | 0.016                     | 0.41 | 0.042                 | 1.07 | 0.380        | 9.65  | 50.5          | 91.0 |
| C0585A         | 3            | 18       | 16/30        | 0.016                     | 0.41 | 0.053                 | 1.35 | 0.437        | 11.10 | 50.5          | 91.0 |
| C0586A         | 4            | 18       | 16/30        | 0.016                     | 0.41 | 0.053                 | 1.35 | 0.478        | 12.14 | 50.5          | 91.0 |
| C0587A         | 6            | 18       | 16/30        | 0.016                     | 0.41 | 0.053                 | 1.35 | 0.566        | 14.38 | 50.5          | 91.0 |
| C0588A         | 9            | 18       | 16/30        | 0.016                     | 0.41 | 0.063                 | 1.60 | 0.679        | 17.25 | 50.5          | 91.0 |
| C0589A         | 11           | 18       | 16/30        | 0.016                     | 0.41 | 0.063                 | 1.60 | 0.738        | 18.75 | 50.5          | 91.0 |
| C0590A         | 15           | 18       | 16/30        | 0.015                     | 0.38 | 0.063                 | 1.60 | 0.845        | 21.46 | 50.5          | 91.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

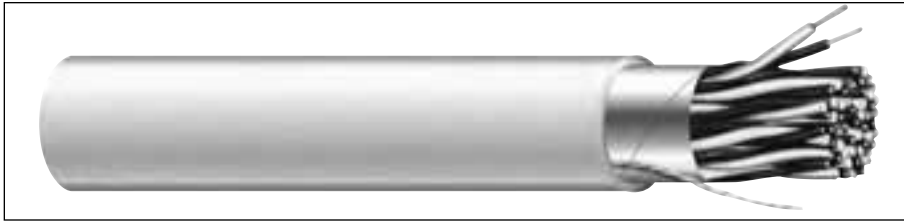
## Color Code Chart

| NO. OF PAIRS | COLOR        |
|--------------|--------------|
| 1 thru 15    | Black<br>Red |

Each pair marked and numbered

# Power-Limited Tray Cable, Foil Shield or Foil/Braid Shield

UL 2464, NEC Type PLTC/CM, CSA CMG



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOMINAL CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|---------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A             | B |

## PVC INSULATION — UL STYLE 2464, NEC TYPE PLT/CM, CSA CMG, 105°C

|        |    |    |         |       |      |       |      |       |       |      |      |
|--------|----|----|---------|-------|------|-------|------|-------|-------|------|------|
| C0550A | 2  | 22 | 7/.0096 | 0.015 | 0.38 | 0.042 | 1.07 | 0.294 | 7.47  | 32.0 | 57.0 |
| C0551A | 3  | 22 | 7/.0096 | 0.015 | 0.38 | 0.042 | 1.07 | 0.309 | 7.85  | 29.0 | 52.2 |
| C0552A | 4  | 22 | 7/.0096 | 0.015 | 0.38 | 0.042 | 1.07 | 0.337 | 8.56  | 29.0 | 52.2 |
| C0553A | 6  | 22 | 7/.0096 | 0.015 | 0.38 | 0.042 | 1.35 | 0.418 | 10.62 | 26.5 | 47.7 |
| C0554A | 9  | 22 | 7/.0096 | 0.015 | 0.38 | 0.042 | 1.35 | 0.480 | 12.19 | 26.5 | 47.7 |
| C0555A | 11 | 22 | 7/30    | 0.015 | 0.38 | 0.053 | 1.35 | 0.520 | 13.21 | 27.0 | 48.5 |
| C0556A | 15 | 22 | 7/30    | 0.015 | 0.38 | 0.053 | 1.35 | 0.592 | 15.04 | 27.0 | 48.5 |
| C0560A | 2  | 18 | 16/30   | 0.016 | 0.41 | 0.042 | 1.07 | 0.314 | 7.98  | 40.0 | 72.0 |
| C0561A | 3  | 18 | 16/30   | 0.016 | 0.41 | 0.042 | 1.35 | 0.403 | 10.24 | 33.5 | 60.3 |
| C0562A | 4  | 18 | 16/30   | 0.016 | 0.41 | 0.042 | 1.35 | 0.440 | 11.18 | 33.5 | 60.3 |
| C0563A | 6  | 18 | 16/30   | 0.016 | 0.41 | 0.042 | 1.35 | 0.519 | 13.18 | 30.5 | 54.9 |
| C0564A | 9  | 18 | 16/30   | 0.016 | 0.41 | 0.042 | 1.60 | 0.622 | 15.80 | 30.5 | 54.9 |
| C0566A | 15 | 18 | 16/30   | 0.016 | 0.41 | 0.042 | 1.60 | 0.622 | 15.80 | 30.5 | 54.9 |

\*A — Capacitance between conductors

\*B — Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR     |
|--------------|-----------|
| 1 thru 9     | Black/Red |

Each pair marked and numbered



## LO-CAP® DATACOM COLOR CODE WITH 65% TINNED COPPER BRAID

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOMINAL CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|---------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A             | B |

## FOAMED POLYETHYLENE INSULATION — NEC TYPE PLTC/CM, CEC CM c(UL), 60°C

|        |   |    |         |       |      |       |      |       |      |      |      |
|--------|---|----|---------|-------|------|-------|------|-------|------|------|------|
| C7112A | 1 | 22 | 7/.0096 | 0.024 | 0.61 | 0.037 | 0.94 | 0.261 | 6.63 | 11.5 | 20.5 |
| C7114A | 2 | 22 | 7/.0096 | 0.017 | 0.43 | 0.042 | 1.07 | 0.343 | 8.71 | 11.0 | 19.6 |
| C7116A | 3 | 22 | 7/.0096 | 0.015 | 0.38 | 0.042 | 1.07 | 0.344 | 8.74 | 11.0 | 19.6 |

\*A — Capacitance between conductors

\*B — Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                                       |
|--------------|---------------------------------------------|
| 1            | White/Blue Stripe and Blue/White Stripe     |
| 2            | White/Orange Stripe and Orange/White Stripe |
| 3            | White/Green Stripe and Green/White Stripe   |

## Product Construction:

### Conductor:

- 22 or 18 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded PVC or FMPE
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, foil facing out
- Stranded tinned copper drain wire
- 65% tinned copper braid (C7101A, C7103A and C7107A only)

### Jacket:

- PVC, gray or black
- Temperature range: -20°C to +60°C or +105°C

## Applications:

- Power-limited circuits
- Intercom systems
- Business machines
- Computer interconnects
- Suitably marked for appropriate tray cable installations
- Petrochemical control systems
- Burglar alarms
- Suggested voltage rating: 300 volts

## Features:

- Superior temperature characteristics
- Robust, highly durable
- Sunlight-resistant jacket

## Compliances:

- NEC Article 725 Power-Limited Tray Cable (UL: 105°C or 60°C, 300V)
- NEC Article 800 Communications Cable (UL: 105°C or 60°C, 300V)
- †UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C) or CM c(UL)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

† UL Style 2464 only available on PVC insulation constructions

**CAROL BRAND**

**UL** LISTED

**CSA** CMG Certified Canadian Standard Association

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Computer Cable

4



General Cable manufactures a comprehensive line of computer cables.

This complete line of paired and unpaired, shielded computer cables—which are UL and CSA listed—are used primarily for the internal or external interconnection of electronic equipment and computers. Applications include data transmission, CAD/CAM, telemetry, data displays, computer print-out, credit verification systems and similar applications.

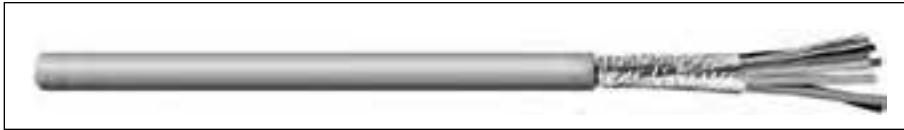
General Cable also offers a variety of put-ups for computer cables to meet your individual requirements.

Our products are manufactured to meet the latest UL, CSA and NEC requirements and approvals.

| Index                                                         | Page  |
|---------------------------------------------------------------|-------|
| Multi-Conductor,<br>Foil Shield                               | 68-69 |
| Multi-Conductor,<br>Foil/Braid Shield                         | 70-71 |
| Multi-Conductor,<br>Foil/Braid Shield, Lo-Cap®                | 72    |
| Multi-Paired,<br>Foil Shield                                  | 73    |
| Multi-Paired,<br>Foil Shield, Lo-Cap®                         | 74    |
| Multi-Paired,<br>Foil/Braid Shield                            | 75    |
| Multi-Paired, Foil/Braid<br>Shield, Lo-Cap®                   | 76-79 |
| Multi-Paired, Individually<br>Foil Shielded                   | 80-82 |
| Multi-Paired, Individually<br>Foil Shielded, Lo-Cap®          | 83    |
| Multi-Paired, Individually<br>Foil/Braid Shielded,<br>Lo-Cap® | 84    |

# Multi-Conductor, Foil Shield

UL 2464, NEC Type CMR (UL) c(UL), CSA CMG



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOMINAL INSULATION THICKNESS |      | NOMINAL JACKET THICKNESS |      | NOMINAL O.D. |      | NOMINAL DCR $\Omega/\text{kft}$ @20°C |       | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|------------------------------|------|--------------------------|------|--------------|------|---------------------------------------|-------|---------------------|------|
|                |              |          |              | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | COND.                                 | SHLD. | A                   | B    |
| C0740A         | 2            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.157        | 3.99 | 26.0                                  | 7.2   | 36.0                | 64.0 |
| C0741A         | 3            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.164        | 4.17 | 26.0                                  | 7.2   | 33.0                | 59.0 |
| C0742A         | 4            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.175        | 4.45 | 26.0                                  | 7.2   | 33.0                | 59.0 |
| C0753A         | 5            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.188        | 4.78 | 26.0                                  | 7.2   | 33.0                | 59.0 |
| C0743A         | 6            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.201        | 5.11 | 26.0                                  | 7.2   | 30.0                | 55.0 |
| C0754A         | 7            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.201        | 5.11 | 26.0                                  | 7.2   | 30.0                | 55.0 |
| C0744A         | 8            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.215        | 5.46 | 26.0                                  | 7.2   | 30.0                | 55.0 |
| C0755A         | 9            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.228        | 5.79 | 26.0                                  | 7.2   | 30.0                | 55.0 |
| C0745A         | 10           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.245        | 6.22 | 26.0                                  | 7.2   | 30.0                | 55.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart 1 - For cables up to and including 10 conductors

| NO. OF COND. | COLOR       | NO. OF COND. | COLOR      |
|--------------|-------------|--------------|------------|
| 1            | Black       | 6            | Light Blue |
| 2            | White       | 7            | Orange     |
| 3            | Red         | 8            | Yellow     |
| 4            | Light Green | 9            | Violet     |
| 5            | Light Brown | 10           | Gray       |

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOMINAL INSULATION THICKNESS |      | NOMINAL JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR $\Omega/\text{kft}$ @20°C |       | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|------------------------------|------|--------------------------|------|--------------|-------|---------------------------------------|-------|---------------------|------|
|                |              |          |              | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm    | COND.                                 | SHLD. | A                   | B    |
| C0746A         | 15           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.276        | 7.01  | 26.0                                  | 7.2   | 30.0                | 55.0 |
| C0747A         | 20           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.303        | 7.70  | 26.0                                  | 7.2   | 30.0                | 55.0 |
| C0748A         | 25           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.333        | 8.46  | 26.0                                  | 7.2   | 30.0                | 55.0 |
| C0749A         | 30           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.351        | 8.92  | 26.0                                  | 7.2   | 30.0                | 55.0 |
| C0750A         | 40           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.391        | 9.93  | 26.0                                  | 7.2   | 30.0                | 55.0 |
| C0751A         | 50           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.439        | 11.15 | 26.0                                  | 7.2   | 30.0                | 55.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart 2 Per ICEA - For cables of 15 thru 50 conductors

| NO. OF COND. | COLOR             | NO. OF COND. | COLOR                   | NO. OF COND. | COLOR                    | NO. OF COND. | COLOR                  |
|--------------|-------------------|--------------|-------------------------|--------------|--------------------------|--------------|------------------------|
| 1            | Black             | 14           | Light Green/White       | 27           | Light Blue/Black/White   | 39           | White/Black/Green      |
| 2            | White             | 15           | Light Blue/White        | 28           | Black/Red/Green          | 40           | Red/White/Green        |
| 3            | Red               | 16           | Black/Red               | 29           | White/Red/Green          | 41           | Light Green/White/Blue |
| 4            | Light Green       | 17           | White/Red               | 30           | Red/Black/Green          | 42           | Orange/Red/Green       |
| 5            | Orange            | 18           | Orange/Red              | 31           | Light Green/Black/Orange | 43           | Light Blue/Red/Green   |
| 6            | Light Blue        | 19           | Light Blue/Red          | 32           | Orange/Black/Green       | 44           | Black/White/Blue       |
| 7            | White/Black       | 20           | Red/Green               | 33           | Light Blue/White/Orange  | 45           | White/Black/Blue       |
| 8            | Red/Black         | 21           | Orange/Green            | 34           | Black/White/Orange       | 46           | Red/White/Blue         |
| 9            | Light Green/Black | 22           | Black/White/Red         | 35           | White/Red/Orange         | 47           | Light Green/Orange/Red |
| 10           | Orange/Black      | 23           | White/Black/Red         | 36           | Orange/White/Blue        | 48           | Orange/Red/Blue        |
| 11           | Light Blue/Black  | 24           | Red/Black/White         | 37           | White/Red/Blue           | 49           | Light Blue/Red/Orange  |
| 12           | Black/White       | 25           | Light Green/Black/White | 38           | Black/White/Green        | 50           | Black/Orange/Red       |
| 13           | Red/White         | 26           | Orange/Black/White      |              |                          |              |                        |

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded S-R PVC per UL 1061
- Color code: See charts below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Computer interconnections
- Data transmission
- Control circuits
- Industrial equipment control
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CMR (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**

**UL** LISTED

**CSA** CMG Certified Canadian Standard Association

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test

Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Conductor, Foil Shield

UL 2464, NEC Type CM (UL) c(UL) or CMR (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 22 or 20 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded S-R PVC or PVC
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

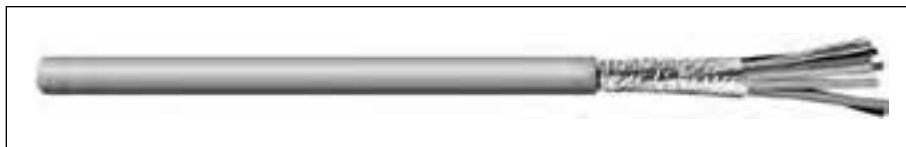
- Computer interconnections
- Data transmission
- Control circuits
- Industrial equipment control
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 800 Type CM - 20 or 22 AWG (UL: 75°C)
- NEC Article 800 Type CMR - 20 or 22 AWG (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOMINAL INSULATION THICKNESS |    | NOMINAL JACKET THICKNESS |    | NOMINAL O.D. |    | NOMINAL DCR $\Omega$ /kft @20°C |       | NOMINAL CAP.* pF/ft |   |
|----------------|--------------|----------|--------------|------------------------------|----|--------------------------|----|--------------|----|---------------------------------|-------|---------------------|---|
|                |              |          |              | INCHES                       | mm | INCHES                   | mm | INCHES       | mm | COND.                           | SHLD. | A                   | B |

### S-R PVC – CMR (UL) c(UL)

|               |    |    |      |       |      |       |      |       |      |      |     |      |      |
|---------------|----|----|------|-------|------|-------|------|-------|------|------|-----|------|------|
| <b>C0760A</b> | 2  | 22 | 7/30 | 0.010 | 0.25 | 0.032 | 0.81 | 0.169 | 4.29 | 16.5 | 6.3 | 36.0 | 65.0 |
| <b>C0761A</b> | 3  | 22 | 7/30 | 0.010 | 0.25 | 0.032 | 0.81 | 0.177 | 4.50 | 16.5 | 6.3 | 36.0 | 65.0 |
| <b>C0762A</b> | 4  | 22 | 7/30 | 0.010 | 0.25 | 0.032 | 0.81 | 0.190 | 4.83 | 16.5 | 6.3 | 36.0 | 65.0 |
| <b>C0763A</b> | 6  | 22 | 7/30 | 0.010 | 0.25 | 0.032 | 0.81 | 0.219 | 5.56 | 16.5 | 6.3 | 34.0 | 61.0 |
| <b>C0764A</b> | 8  | 22 | 7/30 | 0.010 | 0.25 | 0.032 | 0.81 | 0.235 | 5.97 | 16.5 | 6.3 | 34.0 | 61.0 |
| <b>C0765A</b> | 10 | 22 | 7/30 | 0.010 | 0.25 | 0.032 | 0.81 | 0.269 | 6.83 | 16.5 | 6.3 | 34.0 | 61.0 |
| <b>C0766A</b> | 15 | 22 | 7/30 | 0.010 | 0.25 | 0.032 | 0.81 | 0.304 | 7.72 | 16.5 | 6.3 | 34.0 | 61.0 |
| <b>C0767A</b> | 20 | 22 | 7/30 | 0.010 | 0.25 | 0.032 | 0.81 | 0.335 | 8.51 | 16.5 | 6.3 | 34.0 | 61.0 |
| <b>C0768A</b> | 25 | 22 | 7/30 | 0.010 | 0.25 | 0.032 | 0.81 | 0.369 | 9.37 | 16.5 | 6.3 | 34.0 | 61.0 |

### PVC – CM (UL) c(UL)

|               |    |    |      |       |      |       |      |       |       |      |     |      |      |
|---------------|----|----|------|-------|------|-------|------|-------|-------|------|-----|------|------|
| <b>C0780A</b> | 2  | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.207 | 5.26  | 11.0 | 6.3 | 39.0 | 70.0 |
| <b>C0781A</b> | 3  | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.217 | 5.51  | 11.0 | 6.3 | 39.0 | 70.0 |
| <b>C0782A</b> | 4  | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.236 | 5.99  | 11.0 | 6.3 | 39.0 | 70.0 |
| <b>C0783A</b> | 6  | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.276 | 7.01  | 11.0 | 6.3 | 37.0 | 66.0 |
| <b>C0784A</b> | 8  | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.297 | 7.54  | 11.0 | 6.3 | 37.0 | 66.0 |
| <b>C0785A</b> | 10 | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.345 | 8.76  | 11.0 | 6.3 | 37.0 | 66.0 |
| <b>C0786A</b> | 15 | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.393 | 9.98  | 11.0 | 6.3 | 37.0 | 66.0 |
| <b>C0787A</b> | 20 | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.435 | 11.05 | 11.0 | 6.3 | 37.0 | 66.0 |
| <b>C0788A</b> | 25 | 20 | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.483 | 12.27 | 11.0 | 6.3 | 40.0 | 72.0 |

\*A – Capacitance between conductors

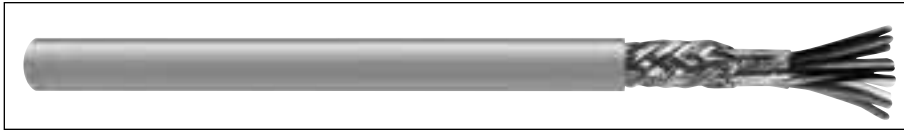
\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR       | NO. OF COND. | COLOR        | NO. OF COND. | COLOR             |
|--------------|-------------|--------------|--------------|--------------|-------------------|
| <b>1</b>     | Black       | <b>10</b>    | Orange/Black | <b>19</b>    | Blue/Red          |
| <b>2</b>     | White       | <b>11</b>    | Blue/Black   | <b>20</b>    | Red/Green         |
| <b>3</b>     | Red         | <b>12</b>    | Black/White  | <b>21</b>    | Orange/Green      |
| <b>4</b>     | Green       | <b>13</b>    | Red/White    | <b>22</b>    | Black/White/Red   |
| <b>5</b>     | Orange      | <b>14</b>    | Green/White  | <b>23</b>    | White/Black/Red   |
| <b>6</b>     | Blue        | <b>15</b>    | Blue/White   | <b>24</b>    | Red/Black/White   |
| <b>7</b>     | White/Black | <b>16</b>    | Black/Red    | <b>25</b>    | Green/Black/White |
| <b>8</b>     | Red/Black   | <b>17</b>    | White/Red    |              |                   |
| <b>9</b>     | Green/Black | <b>18</b>    | Orange/Red   |              |                   |

# Multi-Conductor, Foil/Braid Shield

UL 2464, NEC Type CL2 (UL) or CM (UL) c(UL), CSA CMG



## Product Construction:

### Conductor:

- 28 and 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded S-R PVC per UL 1061
- Color code: See charts below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire (28 AWG only)
- 65% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Features:

- Braid shield provides good flexibility
- Superior shielding where noise rejection is critical
- Assists system designers in meeting FCC Docket 20780 demands

## Compliances:

- NEC Article 725 Type CL2 - 28 AWG (UL: 75°C)
- NEC Article 800 Type CM - 24 AWG (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOMINAL INSULATION THICKNESS INCHES | mm | NOMINAL JACKET THICKNESS INCHES | mm | NOMINAL O.D. INCHES | mm | NOMINAL DCR $\Omega$ /kft @20°C | COND. | SHLD. | NOMINAL CAP** pF/ft | A | B |
|----------------|--------------|----------|--------------|-------------------------------------|----|---------------------------------|----|---------------------|----|---------------------------------|-------|-------|---------------------|---|---|
|----------------|--------------|----------|--------------|-------------------------------------|----|---------------------------------|----|---------------------|----|---------------------------------|-------|-------|---------------------|---|---|

### CL2, CMG, UL 2464

|         |    |    |      |       |      |       |      |       |      |      |     |      |      |  |  |
|---------|----|----|------|-------|------|-------|------|-------|------|------|-----|------|------|--|--|
| C0939A* | 3  | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.166 | 4.22 | 67.5 | 5.0 | 26.0 | 47.0 |  |  |
| C0940A* | 4  | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.176 | 4.47 | 67.5 | 5.0 | 26.0 | 47.0 |  |  |
| C0941A* | 5  | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.186 | 4.72 | 67.5 | 5.0 | 26.0 | 47.0 |  |  |
| C0942A* | 6  | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.196 | 4.98 | 67.5 | 5.0 | 25.0 | 44.0 |  |  |
| C0943A* | 7  | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.196 | 4.98 | 67.5 | 5.0 | 25.0 | 44.0 |  |  |
| C0944A* | 8  | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.207 | 5.26 | 67.5 | 5.0 | 25.0 | 44.0 |  |  |
| C0945A* | 9  | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.217 | 5.51 | 67.5 | 5.0 | 20.0 | 36.0 |  |  |
| C0946A* | 10 | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.231 | 5.87 | 67.5 | 5.0 | 20.0 | 36.0 |  |  |
| C0947A  | 15 | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.256 | 6.50 | 67.5 | 5.0 | 20.0 | 36.0 |  |  |
| C0948A  | 25 | 28 | 7/36 | 0.010 | 0.25 | 0.032 | 0.81 | 0.301 | 7.65 | 67.5 | 5.0 | 20.0 | 36.0 |  |  |

### CM, CMG, UL 2464

|        |    |    |      |       |      |       |      |       |      |      |     |      |      |  |  |
|--------|----|----|------|-------|------|-------|------|-------|------|------|-----|------|------|--|--|
| C0951A | 3  | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.186 | 4.72 | 25.7 | 5.3 | 33.0 | 59.0 |  |  |
| C0952A | 4  | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.197 | 5.00 | 25.7 | 5.5 | 33.0 | 59.0 |  |  |
| C0953A | 5  | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.210 | 5.33 | 25.7 | 4.4 | 33.0 | 59.0 |  |  |
| C0954A | 6  | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.223 | 5.66 | 25.7 | 4.6 | 30.0 | 55.0 |  |  |
| C0955A | 7  | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.223 | 5.66 | 25.7 | 4.6 | 30.0 | 55.0 |  |  |
| C0956A | 8  | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.237 | 6.02 | 25.7 | 3.8 | 30.0 | 55.0 |  |  |
| C0957A | 9  | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.250 | 6.35 | 25.7 | 3.9 | 30.0 | 55.0 |  |  |
| C0958A | 10 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.267 | 6.78 | 25.7 | 4.2 | 30.0 | 55.0 |  |  |
| C0959A | 15 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.298 | 7.57 | 25.7 | 3.6 | 30.0 | 55.0 |  |  |
| C0960A | 20 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.325 | 8.26 | 25.7 | 4.5 | 30.0 | 55.0 |  |  |
| C0961A | 25 | 24 | 7/32 | 0.010 | 0.25 | 0.032 | 0.81 | 0.355 | 9.02 | 25.7 | 3.5 | 30.0 | 55.0 |  |  |

\*Color Code Chart 1. Remaining items Color Code Chart 2

\*\*A – Capacitance between conductors

\*\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart 1

| NO. OF COND. | COLOR       | NO. OF COND. | COLOR      |
|--------------|-------------|--------------|------------|
| 1            | Black       | 6            | Light Blue |
| 2            | White       | 7            | Orange     |
| 3            | Red         | 8            | Yellow     |
| 4            | Light Green | 9            | Violet     |
| 5            | Light Brown | 10           | Gray       |

## Color Code Chart 2 Per ICEA

| NO. OF COND. | COLOR             | NO. OF COND. | COLOR             | NO. OF COND. | COLOR                   |
|--------------|-------------------|--------------|-------------------|--------------|-------------------------|
| 1            | Black             | 10           | Orange/Black      | 19           | Light Blue/Red          |
| 2            | White             | 11           | Light Blue/Black  | 20           | Red/Green               |
| 3            | Red               | 12           | Black/White       | 21           | Orange/Green            |
| 4            | Light Green       | 13           | Red/White         | 22           | Black/White/Red         |
| 5            | Orange            | 14           | Light Green/White | 23           | White/Black/Red         |
| 6            | Light Blue        | 15           | Light Blue/White  | 24           | Red/Black/White         |
| 7            | White/Black       | 16           | Black/Red         | 25           | Light Green/Black/White |
| 8            | Red/Black         | 17           | White/Red         |              |                         |
| 9            | Light Green/Black | 18           | Orange/Red        |              |                         |

**CAROL BRAND**

**UL LISTED**

**CSA CMG Certified**  
Canadian Standard Association

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.

**RoHS Compliant**  
Directive 2002/95/EC

**General Cable**

# Multi-Conductor, Foil/Braid Shield

UL 2464, NEC Type CMR (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 22 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded S-R PVC per UL 1061
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- 65% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Features:

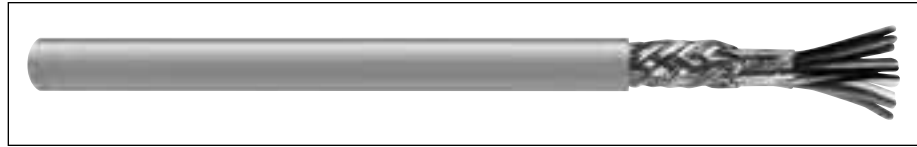
- Braid shield provides good flexibility
- Superior shielding where noise rejection is critical
- Assists system designers in meeting FCC Docket 20780 demands

## Compliances:

- NEC Article 800 Type CMR (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOMINAL INSULATION THICKNESS |      | NOMINAL JACKET THICKNESS |      | NOMINAL O.D. |      | NOMINAL DCR $\Omega/\text{kft}$ @20°C |       | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|------------------------------|------|--------------------------|------|--------------|------|---------------------------------------|-------|---------------------|------|
|                |              |          |              | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | COND.                                 | SHLD. | A                   | B    |
| <b>C0971A</b>  | 3            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.199        | 5.05 | 16.6                                  | 5.6   | 36.0                | 66.0 |
| <b>C0972A</b>  | 4            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.212        | 5.38 | 16.6                                  | 4.4   | 36.0                | 66.0 |
| <b>C0973A</b>  | 5            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.226        | 5.74 | 16.6                                  | 4.7   | 36.0                | 66.0 |
| <b>C0974A</b>  | 6            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.241        | 6.12 | 16.6                                  | 3.8   | 34.0                | 60.0 |
| <b>C0975A</b>  | 7            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.241        | 6.12 | 16.6                                  | 6.2   | 34.0                | 60.0 |
| <b>C0976A</b>  | 8            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.257        | 6.53 | 16.6                                  | 4.0   | 34.0                | 60.0 |
| <b>C0977A</b>  | 9            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.272        | 6.91 | 16.6                                  | 3.4   | 34.0                | 60.0 |
| <b>C0978A</b>  | 10           | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.291        | 7.39 | 16.6                                  | 3.6   | 34.0                | 60.0 |
| <b>C0979A</b>  | 15           | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.326        | 8.28 | 16.6                                  | 3.6   | 34.0                | 60.0 |
| <b>C0980A</b>  | 20           | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.357        | 9.07 | 16.6                                  | 3.9   | 34.0                | 60.0 |
| <b>C0981A</b>  | 25           | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.391        | 9.93 | 16.6                                  | 2.7   | 34.0                | 60.0 |

\*A – Capacitance between conductors

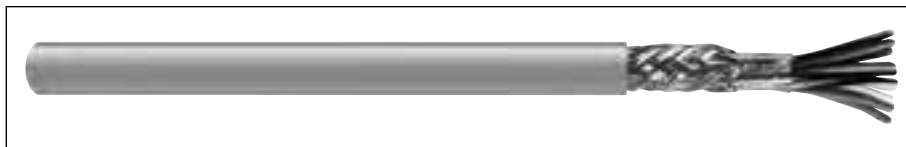
\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart Per ICEA

| NO. OF COND. | COLOR             | NO. OF COND. | COLOR             | NO. OF COND. | COLOR                   |
|--------------|-------------------|--------------|-------------------|--------------|-------------------------|
| <b>1</b>     | Black             | <b>10</b>    | Orange/Black      | <b>19</b>    | Light Blue/Red          |
| <b>2</b>     | White             | <b>11</b>    | Light Blue/Black  | <b>20</b>    | Red/Green               |
| <b>3</b>     | Red               | <b>12</b>    | Black/White       | <b>21</b>    | Orange/Green            |
| <b>4</b>     | Light Green       | <b>13</b>    | Red/White         | <b>22</b>    | Black/White/Red         |
| <b>5</b>     | Orange            | <b>14</b>    | Light Green/White | <b>23</b>    | White/Black/Red         |
| <b>6</b>     | Light Blue        | <b>15</b>    | Light Blue/White  | <b>24</b>    | Red/Black/White         |
| <b>7</b>     | White/Black       | <b>16</b>    | Black/Red         | <b>25</b>    | Light Green/Black/White |
| <b>8</b>     | Red/Black         | <b>17</b>    | White/Red         |              |                         |
| <b>9</b>     | Light Green/Black | <b>18</b>    | Orange/Red        |              |                         |

# Multi-Conductor, Foil/Braid Shield, Lo-Cap®

UL 2919, NEC Type CL2 or CM (UL) c(UL) CMH, CSA CMH



| CATALOG NUMBER | NO. OF COND. | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOMINAL DCR $\Omega$ /kft |       | NOMINAL CAP.* pF/ft |   |
|----------------|--------------|---------------------------|----|-----------------------|----|--------------|----|---------------------------|-------|---------------------|---|
|                |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | COND.                     | SHLD. | A                   | B |

## 28 AWG (7/36): CL2, CSA CMH

|               |    |       |      |       |      |       |      |      |     |     |      |
|---------------|----|-------|------|-------|------|-------|------|------|-----|-----|------|
| <b>C0530A</b> | 3  | 0.016 | 0.41 | 0.032 | 0.81 | 0.192 | 4.88 | 64.9 | 7.8 | 9.5 | 17.0 |
| <b>C0531A</b> | 4  | 0.016 | 0.41 | 0.032 | 0.81 | 0.205 | 5.21 | 64.9 | 5.9 | 9.5 | 17.0 |
| <b>C0532A</b> | 5  | 0.016 | 0.41 | 0.032 | 0.81 | 0.218 | 5.54 | 64.9 | 5.9 | 9.5 | 17.0 |
| <b>C0533A</b> | 6  | 0.016 | 0.41 | 0.032 | 0.81 | 0.232 | 5.89 | 64.9 | 6.2 | 9.0 | 16.0 |
| <b>C0534A</b> | 7  | 0.016 | 0.41 | 0.032 | 0.81 | 0.232 | 5.89 | 64.9 | 6.2 | 9.0 | 16.0 |
| <b>C0535A</b> | 8  | 0.016 | 0.41 | 0.032 | 0.81 | 0.247 | 6.27 | 64.9 | 4.8 | 9.0 | 16.0 |
| <b>C0536A</b> | 9  | 0.016 | 0.41 | 0.032 | 0.81 | 0.261 | 6.63 | 64.9 | 4.9 | 9.0 | 16.0 |
| <b>C0537A</b> | 10 | 0.016 | 0.41 | 0.032 | 0.81 | 0.279 | 7.09 | 64.9 | 5.2 | 9.0 | 16.0 |
| <b>C0538A</b> | 15 | 0.016 | 0.41 | 0.032 | 0.81 | 0.312 | 7.92 | 64.9 | 4.2 | 9.0 | 16.0 |

## 24 AWG (7/32): CM (UL) c(UL) CMH, AWM Style 2919

|               |    |       |      |       |      |       |      |      |     |      |      |
|---------------|----|-------|------|-------|------|-------|------|------|-----|------|------|
| <b>C0680A</b> | 3  | 0.016 | 0.41 | 0.032 | 0.81 | 0.211 | 5.36 | 25.7 | 3.8 | 11.9 | 21.5 |
| <b>C0681A</b> | 4  | 0.016 | 0.41 | 0.032 | 0.81 | 0.227 | 5.77 | 25.7 | 3.8 | 11.9 | 21.5 |
| <b>C0682A</b> | 5  | 0.016 | 0.41 | 0.032 | 0.81 | 0.242 | 6.15 | 25.7 | 3.8 | 11.9 | 21.5 |
| <b>C0683A</b> | 6  | 0.016 | 0.41 | 0.032 | 0.81 | 0.259 | 6.58 | 25.7 | 3.2 | 11.2 | 20.2 |
| <b>C0684A</b> | 7  | 0.016 | 0.41 | 0.032 | 0.81 | 0.259 | 6.58 | 25.7 | 3.2 | 11.2 | 20.2 |
| <b>C0685A</b> | 8  | 0.016 | 0.41 | 0.032 | 0.81 | 0.276 | 7.01 | 25.7 | 3.2 | 11.2 | 20.2 |
| <b>C0686A</b> | 9  | 0.016 | 0.41 | 0.032 | 0.81 | 0.293 | 7.44 | 25.7 | 3.6 | 11.2 | 20.2 |
| <b>C0687A</b> | 10 | 0.016 | 0.41 | 0.032 | 0.81 | 0.315 | 8.00 | 25.7 | 3.6 | 11.2 | 20.2 |
| <b>C0688A</b> | 15 | 0.016 | 0.41 | 0.032 | 0.81 | 0.354 | 8.99 | 25.7 | 3.6 | 11.2 | 20.2 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

Vp = 78%

Impedance:  $\approx 100 \Omega$

### Color Code Chart 1 - For cables up to and including 10 conductors

| NO. OF COND. | COLOR       | NO. OF COND. | COLOR      |
|--------------|-------------|--------------|------------|
| 1            | Black       | 6            | Light Blue |
| 2            | White       | 7            | Orange     |
| 3            | Red         | 8            | Yellow     |
| 4            | Light Green | 9            | Violet     |
| 5            | Brown       | 10           | Gray       |

### Color Code Chart 2 Per ICEA - For cables up to 15 conductors

| NO. OF COND. | COLOR             | NO. OF COND. | COLOR             |
|--------------|-------------------|--------------|-------------------|
| 1            | Black             | 10           | Orange/Black      |
| 2            | White             | 11           | Light Blue/Black  |
| 3            | Red               | 12           | Black/White       |
| 4            | Light Green       | 13           | Red/White         |
| 5            | Orange            | 14           | Light Green/White |
| 6            | Light Blue        | 15           | Light Blue/White  |
| 7            | White/Black       |              |                   |
| 8            | Red/Black         |              |                   |
| 9            | Light Green/Black |              |                   |

### Product Construction:

#### Conductor:

- 28 and 24 AWG fully annealed stranded tinned copper per ASTM B-33

#### Insulation:

- Premium grade foamed Lo-Cap® color coded polypropylene
- Color code: See chart below

#### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire
- 70% tinned copper braid

#### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

### Applications:

- High speed computers
- Industrial equipment
- Control circuits
- Designed for low capacitance applications
- Suitable for EIA RS-232 and RS-423 CAD/CAM applications
- Suggested voltage rating: 30 volts

### Features:

- Braid shield provides good flexibility
- Superior shielding where noise rejection is critical
- Assists system designers in meeting FCC Docket 20780 demands

### Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2919 (UL: 80°C, 30V)
- CSA CMH (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMH Flame Test

### Packaging:

- 1000' (305 m) spools or reels
- 500' (152 m) spools or reels
- Other put-ups available—consult Customer Service

**CAROL BRAND**

**UL** LISTED

**CSA** CMH Certified Canadian Standard Association

**UL**

Designed to Meet UL Vertical Tray Flame Test

Underwriters Laboratories Inc.

RoHS Compliant Directive 2002/95/EC

**General Cable**

# Multi-Paired, Foil Shield

UL 2464, NEC Type CMR (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded S-R PVC per UL 1061
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Features:

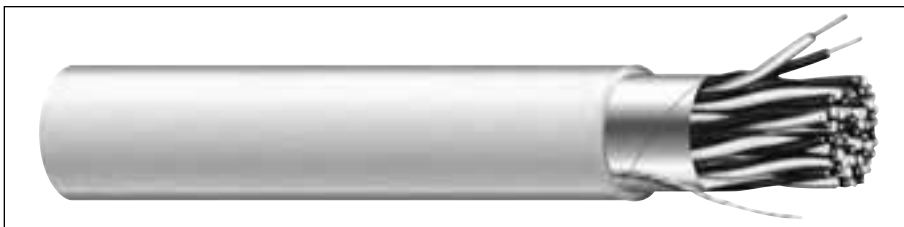
- Superior shielding where noise rejection is critical
- Assists system designers in meeting FCC Docket 20780 demands

## Compliances:

- NEC Article 800 Type CMR (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA, 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOMINAL INSULATION THICKNESS |      | NOMINAL JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR $\Omega$ /kft |       | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|------------------------------|------|--------------------------|------|--------------|-------|---------------------------|-------|---------------------|------|
|                |              |          |              | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm    | COND.                     | SHLD. | A                   | B    |
| C0600A         | 1            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.157        | 3.99  | 25.7                      | 7.2   | 19.7                | 21.5 |
| C0601A         | 2            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.214        | 5.44  | 25.7                      | 7.2   | 28.7                | 21.5 |
| C0602A         | 3            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.225        | 5.72  | 25.7                      | 7.2   | 25.7                | 21.5 |
| C0603A         | 4            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.245        | 6.23  | 25.7                      | 7.2   | 25.7                | 20.2 |
| C0604A         | 5            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.265        | 6.73  | 25.7                      | 7.2   | 25.7                | 20.2 |
| C0605A         | 6            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.287        | 7.29  | 25.7                      | 7.2   | 23.7                | 42.7 |
| C0606A         | 7            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.287        | 7.29  | 25.7                      | 7.2   | 23.7                | 42.7 |
| C0607A         | 8            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.309        | 7.85  | 25.7                      | 7.2   | 23.7                | 42.7 |
| C0608A         | 9            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.331        | 8.41  | 25.7                      | 7.2   | 23.7                | 42.7 |
| C0609A         | 10           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.359        | 9.12  | 25.7                      | 7.2   | 23.7                | 42.7 |
| C0610A         | 15           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.410        | 10.41 | 25.7                      | 7.2   | 23.7                | 42.7 |
| C0611A         | 19           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.432        | 10.97 | 25.7                      | 7.2   | 23.7                | 42.7 |
| C0612A         | 25           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.505        | 12.84 | 25.7                      | 7.2   | 23.7                | 42.7 |
| C0720A         | 1            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.169        | 4.29  | 16.6                      | 6.2   | 40.4                | 72.6 |
| C0721A         | 2            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.234        | 5.94  | 16.6                      | 6.2   | 32.3                | 58.1 |
| C0722A         | 3            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.246        | 6.25  | 16.6                      | 6.2   | 27.8                | 50.1 |
| C0723A         | 4            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.269        | 6.83  | 16.6                      | 6.2   | 27.8                | 50.1 |
| C0724A         | 5            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.292        | 7.42  | 16.6                      | 6.2   | 27.8                | 50.1 |
| C0725A         | 6            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.317        | 8.05  | 16.6                      | 6.2   | 25.5                | 45.9 |
| C0726A         | 9            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.367        | 9.32  | 16.6                      | 6.2   | 25.5                | 45.9 |
| C0728A         | 15           | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.457        | 11.62 | 16.6                      | 6.2   | 25.5                | 45.9 |
| C0729A         | 19           | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.482        | 12.24 | 16.6                      | 6.2   | 25.5                | 45.9 |
| C0730A         | 27           | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.576        | 14.36 | 16.6                      | 6.2   | 26.0                | 46.0 |

\*A – Capacitance between conductors

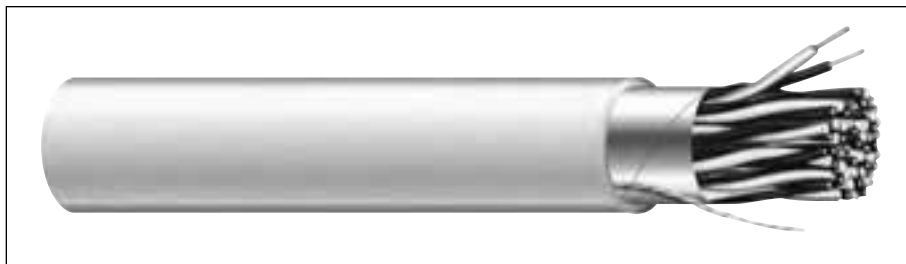
\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR             | NO. OF PAIRS | COLOR             |
|--------------|-------------------|--------------|-------------------|
| 1            | Black with Red    | 14           | Green with White  |
| 2            | Black with White  | 15           | Green with Blue   |
| 3            | Black with Green  | 16           | Green with Yellow |
| 4            | Black with Blue   | 17           | Green with Brown  |
| 5            | Black with Yellow | 18           | Green with Orange |
| 6            | Black with Brown  | 19           | White with Blue   |
| 7            | Black with Orange | 20           | White with Yellow |
| 8            | Red with White    | 21           | White with Brown  |
| 9            | Red with Green    | 22           | White with Orange |
| 10           | Red with Blue     | 23           | Blue with Yellow  |
| 11           | Red with Yellow   | 24           | Blue with Brown   |
| 12           | Red with Brown    | 25           | Blue with Orange  |
| 13           | Red with Orange   | 26           | Brown with Yellow |
|              |                   | 27           | Brown with Orange |

# Multi-Paired, Foil Shield, Lo-Cap®

UL 2448, NEC Type CM (UL) c(UL), CMH



## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded polyethylene
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Suitable for low capacitance applications
- Suggested voltage rating: 30 volts

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2448 (UL: 60°C, 30V)
- CSA CMH (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMH Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR $\Omega$ /kft |       | VEL. OF PROP., % | NOM. IMP., $\Omega$ | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|---------------------------|-------|------------------|---------------------|---------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | COND.                     | SHLD. |                  |                     | A                   | B    |
| C0890A         | 2            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.247        | 6.27  | 25.7                      | 7.20  | 66               | 100                 | 14.4                | 26.0 |
| C0901A         | 3            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.261        | 6.63  | 25.7                      | 7.20  | 66               | 100                 | 13.9                | 25.1 |
| C0893A         | 4            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.277        | 7.04  | 25.7                      | 7.20  | 66               | 100                 | 13.9                | 25.1 |
| C0894A         | 5            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.310        | 7.87  | 25.7                      | 7.20  | 66               | 100                 | 13.9                | 25.1 |
| C0899A         | 6            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.336        | 8.53  | 25.7                      | 7.20  | 66               | 100                 | 13.0                | 23.4 |
| C0896A         | 9            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.391        | 9.93  | 25.7                      | 7.20  | 66               | 100                 | 13.0                | 23.4 |
| C0897A         | 12.5         | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.97 | 0.459        | 11.66 | 25.7                      | 7.20  | 66               | 100                 | 13.0                | 23.4 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS                               | COLOR                     | NO. OF PAIRS | COLOR                                 |
|--------------------------------------------|---------------------------|--------------|---------------------------------------|
| 1                                          | Black paired with White   | 7            | White/Blue paired with Blue/White     |
| 2                                          | Red paired with Green     | 8            | White/Brown paired with Brown/White   |
| 3                                          | Brown paired with Blue    | 9            | White/Orange paired with Orange/White |
| 4                                          | Orange paired with Yellow | 10           | White/Green paired with Green/White   |
| 5                                          | Violet paired with Gray   | 11           | White/Red paired with Red/White       |
| 6                                          | Tan paired with Pink      | 12           | White/Black paired with Black/White   |
| Single Conductor: Green With Yellow Stripe |                           |              |                                       |

**CAROL BRAND**

UL LISTED

UL

Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Paired, Foil/Braid Shield

UL 2464, NEC Type CMR (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 22 and 24 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded S-R PVC per UL 1061
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- 65% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Suitable for EIA RS-232 applications
- Suggested voltage rating: 300 volts

## Features:

- Braid shield provides good flexibility
- Superior shielding where noise rejection is critical
- Assists system designers in meeting FCC Docket 20789 demands

## Compliances:

- NEC Article 800 Type CMR (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOMINAL INSULATION THICKNESS |      | NOMINAL JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR $\Omega$ /kft |       | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|------------------------------|------|--------------------------|------|--------------|-------|---------------------------|-------|---------------------|------|
|                |              |          |              | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm    | COND.                     | SHLD. | A                   | B    |
| C0620A         | 2            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.235        | 5.97  | 25.7                      | 5.4   | 29.5                | 53.0 |
| C0621A         | 3            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.231        | 5.87  | 25.7                      | 5.0   | 26.4                | 47.6 |
| C0622A         | 4            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.253        | 6.43  | 25.7                      | 4.5   | 26.4                | 47.6 |
| C0623A         | 5            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.278        | 7.06  | 25.7                      | 4.6   | 26.4                | 47.6 |
| C0624A         | 6            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.296        | 7.52  | 25.7                      | 2.9   | 24.4                | 43.9 |
| C0625A         | 7            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.313        | 7.95  | 25.7                      | 3.1   | 24.4                | 43.9 |
| C0626A         | 8            | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.336        | 8.53  | 25.7                      | 4.1   | 24.4                | 43.9 |
| C0628A         | 10           | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.357        | 9.07  | 25.7                      | 2.6   | 24.4                | 43.9 |
| C0630A         | 12.5         | 24       | 7/32         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.386        | 9.80  | 25.7                      | 3.6   | 24.4                | 43.9 |
| C0650A         | 2            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.229        | 5.82  | 16.6                      | 3.8   | 33.2                | 59.7 |
| C0651A         | 3            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.296        | 7.52  | 16.6                      | 4.1   | 28.6                | 51.5 |
| C0652A         | 4            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.320        | 8.13  | 16.6                      | 3.5   | 28.6                | 51.5 |
| C0653A         | 5            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.331        | 8.41  | 16.6                      | 3.9   | 28.6                | 51.5 |
| C0654A         | 6            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.348        | 8.84  | 16.6                      | 4.4   | 26.2                | 47.2 |
| C0655A         | 7            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.348        | 8.84  | 16.6                      | 5.0   | 26.2                | 47.2 |
| C0656A         | 8            | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.368        | 9.35  | 16.6                      | 3.8   | 26.2                | 47.2 |
| C0658A         | 10           | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.388        | 9.86  | 16.6                      | 4.1   | 26.2                | 47.2 |
| C0660A         | 12.5         | 22       | 7/30         | 0.010                        | 0.25 | 0.032                    | 0.81 | 0.429        | 10.90 | 16.6                      | 4.7   | 26.2                | 47.2 |
| C0663A         | 25           | 22       | 7/30         | 0.010                        | 0.25 | 0.058                    | 0.81 | 0.620        | 15.75 | 16.6                      | 2.1   | 26.2                | 46.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS                               | COLOR                    | NO. OF PAIRS | COLOR                    |
|--------------------------------------------|--------------------------|--------------|--------------------------|
| 1                                          | Black paired with Red    | 13           | Red paired with Orange   |
| 2                                          | Black paired with White  | 14           | White paired with Green  |
| 3                                          | Black paired with Green  | 15           | Blue paired with Green   |
| 4                                          | Black paired with Blue   | 16           | Yellow paired with Green |
| 5                                          | Black paired with Yellow | 17           | Brown paired with Green  |
| 6                                          | Black paired with Brown  | 18           | Orange paired with Green |
| 7                                          | Black paired with Orange | 19           | White paired with Blue   |
| 8                                          | Red paired with White    | 20           | White paired with Yellow |
| 9                                          | Red paired with Green    | 21           | White paired with Brown  |
| 10                                         | Red paired with Blue     | 22           | White paired with Orange |
| 11                                         | Red paired with Yellow   | 23           | Yellow paired with Blue  |
| 12                                         | Red paired with Brown    | 24           | Blue paired with Brown   |
|                                            |                          | 25           | Orange paired with Blue  |
| Single Conductor: Green with Yellow Stripe |                          |              |                          |

# Multi-Paired, Foil/Braid Shield, Lo-Cap®

UL 2919, NEC Type CM (UL) c(UL) CMH



## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded polyethylene
- Color code: See charts below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire
- 90% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Low capacitance requirements
- Suitable for EIA RS-485 applications
- Suggested voltage rating: 30 volts

## Features:

- Braid shield provides good flexibility
- Superior shielding where noise rejection is critical
- Assists system designers in meeting FCC Docket 20789 demands

## Compliances:

- NEC Article 800 Type CM/CMH (UL: 75°C)
- UL Style 2919 (UL: 80°C, 30V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMH Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOMINAL DCR $\Omega$ /kft |       | VEL. OF PROP., % | NOM. IMP., $\Omega$ | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|---------------------------|-------|------------------|---------------------|---------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | COND.                     | SHLD. |                  |                     | A                   | B    |
| C0841A         | 1            | 24       | 7/32         | 0.024                     | 0.61 | 0.032                 | 0.81 | 0.235        | 5.97 | 25.7                      | 2.9   | 66               | 120                 | 14.6                | 26.2 |
| C0842A         | 2            | 24       | 7/32         | 0.024                     | 0.61 | 0.032                 | 0.81 | 0.304        | 7.72 | 25.7                      | 2.3   | 66               | 120                 | 11.7                | 21.0 |
| C0843A         | 3            | 24       | 7/32         | 0.024                     | 0.61 | 0.032                 | 0.81 | 0.360        | 9.14 | 25.7                      | 2.3   | 66               | 120                 | 11.9                | 21.4 |
| C0844A         | 4            | 24       | 7/32         | 0.024                     | 0.61 | 0.032                 | 0.81 | 0.390        | 9.91 | 25.7                      | 2.1   | 66               | 120                 | 11.9                | 21.4 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart 1

| NO. OF PAIRS | COLOR                   |
|--------------|-------------------------|
| 1            | Black paired with Red   |
| 2            | Black paired with White |
| 3            | Black paired with Green |
| 4            | Black paired with Blue  |

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOMINAL DCR $\Omega$ /kft |       | VEL. OF PROP., % | NOM. IMP., $\Omega$ | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|---------------------------|-------|------------------|---------------------|---------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | COND.                     | SHLD. |                  |                     | A                   | B    |
| C4841A         | 1            | 24       | 7/32         | 0.024                     | 0.61 | 0.032                 | 0.81 | 0.235        | 5.97 | 25.7                      | 2.9   | 66               | 120                 | 14.6                | 26.2 |
| C4842A         | 2            | 24       | 7/32         | 0.024                     | 0.61 | 0.032                 | 0.81 | 0.304        | 7.72 | 25.7                      | 2.3   | 66               | 120                 | 11.7                | 21.0 |
| C4843A         | 3            | 24       | 7/32         | 0.024                     | 0.61 | 0.032                 | 0.81 | 0.360        | 9.14 | 25.7                      | 2.3   | 66               | 120                 | 11.9                | 21.4 |
| C4844A         | 4            | 24       | 7/32         | 0.024                     | 0.61 | 0.032                 | 0.81 | 0.390        | 9.91 | 25.7                      | 2.1   | 66               | 120                 | 11.9                | 21.4 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart 2

| NO. OF PAIRS | COLOR                                      | NO. OF PAIRS | COLOR                                    |
|--------------|--------------------------------------------|--------------|------------------------------------------|
| 1            | White-Blue Stripe<br>Blue-White Stripe     | 3            | White-Green Stripe<br>Green-White Stripe |
| 2            | White-Orange Stripe<br>Orange-White Stripe | 4            | White-Brown Stripe<br>Brown-White Stripe |

**CAROL BRAND**



Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.



# Multi-Paired, Foil/Braid Shield, Lo-Cap®

UL 2919, NEC Type CM (UL) c(UL) CMH

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded polyethylene
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire
- 90% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Low capacitance requirements
- Suitable for EIA RS-232 applications
- Suitable for EIA RS-422 applications
- Suggested voltage rating: 30 volts

## Features:

- Braid shield provides good flexibility
- Superior shielding where noise rejection is critical
- Assists system designers in meeting FCC Docket 20789 demands

## Compliances:

- NEC Article 800 Type CM/CMH (UL: 75°C)
- UL Style 2919 (UL: 80°C, 30V)
- CSA CMH (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMH Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR Ω/kft |       | VEL. OF PROP., % | NOM. IMP., Ω | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|-------------------|-------|------------------|--------------|---------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | COND.             | SHLD. |                  |              | A                   | B    |
| C0829A         | 2            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.257        | 6.53  | 25.7              | 2.7   | 66               | 100          | 14.8                | 26.7 |
| C0830A         | 3            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.289        | 7.34  | 25.7              | 2.6   | 66               | 100          | 14.2                | 25.5 |
| C0831A         | 4            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.313        | 7.95  | 25.7              | 3.2   | 66               | 100          | 14.2                | 25.5 |
| C0832A         | 5            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.338        | 8.59  | 25.7              | 1.9   | 66               | 100          | 14.2                | 25.5 |
| C0839A         | 6            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.364        | 9.24  | 25.7              | 2.4   | 66               | 100          | 13.2                | 23.8 |
| C0833A         | 7            | 24       | 7/32         | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.364        | 9.24  | 25.7              | 2.0   | 66               | 100          | 13.2                | 23.8 |
| C0835A         | 10           | 24       | 7/32         | 0.015                     | 0.38 | 0.038                 | 0.97 | 0.462        | 11.73 | 25.7              | 1.7   | 66               | 100          | 13.2                | 23.8 |
| C0836A         | 12           | 24       | 7/32         | 0.015                     | 0.38 | 0.038                 | 0.97 | 0.479        | 12.17 | 25.7              | 1.8   | 66               | 100          | 13.2                | 23.8 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR                    | NO. OF COND. | COLOR                    |
|--------------|--------------------------|--------------|--------------------------|
| 1            | Black paired with Red    | 7            | Black paired with Orange |
| 2            | Black paired with White  | 8            | Red paired with White    |
| 3            | Black paired with Green  | 9            | Red paired with Green    |
| 4            | Black paired with Blue   | 10           | Red paired with Blue     |
| 5            | Black paired with Yellow | 11           | Red paired with Yellow   |
| 6            | Black paired with Brown  | 12           | Red paired with Brown    |

# Multi-Paired, Foil/Braid Shield, Lo-Cap®

UL 2919, NEC Type CM (UL) c(UL) CMH



## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded Lo-Cap® foamed polypropylene
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire
- 65% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- High-speed computer interconnects
- CAD/CAM systems
- EIA RS-232 and RS-423 systems
- Control circuits
- Industrial equipment
- Low signal distortion data requirements
- Suggested voltage rating: 30 volts

## Features:

- Braid shield provides good flexibility
- Superior shielding where noise rejection is critical
- Assists system designers in meeting FCC Docket 20789 demands

## Compliances:

- NEC Article 800 Type CM/CMH (UL: 75°C)
- UL Style 2919 (UL: 80°C, 30V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR $\Omega$ /kft |       | VEL. OF PROP., % | NOM. IMP., $\Omega$ | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|---------------------------|-------|------------------|---------------------|---------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | COND.                     | SHLD. |                  |                     | A                   | B    |
| <b>C0515A</b>  | 2            | 24       | 7/32         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.276        | 7.01  | 25.7                      | 3.0   | 78               | 132                 | 10.2                | 18.4 |
| <b>C0516A</b>  | 3            | 24       | 7/32         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.290        | 7.37  | 25.7                      | 3.2   | 78               | 132                 | 9.9                 | 17.8 |
| <b>C0517A</b>  | 4            | 24       | 7/32         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.315        | 8.00  | 25.7                      | 3.3   | 78               | 132                 | 9.9                 | 17.8 |
| <b>C0518A</b>  | 5            | 24       | 7/32         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.340        | 8.64  | 25.7                      | 4.2   | 78               | 132                 | 9.9                 | 17.8 |
| <b>C0519A</b>  | 6            | 24       | 7/32         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.368        | 9.35  | 25.7                      | 3.6   | 78               | 141                 | 9.2                 | 16.6 |
| <b>C0520A</b>  | 7            | 24       | 7/32         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.370        | 9.40  | 25.7                      | 3.5   | 78               | 141                 | 9.2                 | 16.6 |
| <b>C0521A</b>  | 8            | 24       | 7/32         | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.397        | 10.08 | 25.7                      | 2.7   | 78               | 141                 | 9.2                 | 16.6 |
| <b>C0522A</b>  | 10           | 24       | 7/32         | 0.016                     | 0.41 | 0.038                 | 0.97 | 0.473        | 12.01 | 25.7                      | 2.4   | 78               | 141                 | 9.2                 | 16.6 |
| <b>C0523A</b>  | 12.5         | 24       | 7/32         | 0.016                     | 0.41 | 0.038                 | 0.97 | 0.486        | 12.34 | 25.7                      | 2.4   | 78               | 141                 | 9.2                 | 16.6 |
| <b>C0524A</b>  | 15           | 24       | 7/32         | 0.016                     | 0.41 | 0.048                 | 1.22 | 0.555        | 14.10 | 25.7                      | 2.6   | 78               | 141                 | 9.2                 | 16.6 |
| <b>C0525A</b>  | 18           | 24       | 7/32         | 0.016                     | 0.41 | 0.048                 | 1.22 | 0.585        | 14.86 | 25.7                      | 2.1   | 78               | 141                 | 9.2                 | 16.6 |
| <b>C0526A</b>  | 25           | 24       | 7/32         | 0.016                     | 0.41 | 0.048                 | 1.22 | 0.677        | 17.20 | 25.7                      | 2.0   | 78               | 141                 | 9.2                 | 16.6 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                                      | NO. OF PAIRS                               | COLOR                                        | NO. OF PAIRS | COLOR                                        |
|--------------|--------------------------------------------|--------------------------------------------|----------------------------------------------|--------------|----------------------------------------------|
| 1            | White-Blue Stripe<br>Blue-White Stripe     | 10                                         | Red-Gray Stripe<br>Gray-Red Stripe           | 18           | Yellow-Green Stripe<br>Green-Yellow Stripe   |
| 2            | White-Orange Stripe<br>Orange-White Stripe | 11                                         | Black-Blue Stripe<br>Blue-Black Stripe       | 19           | Yellow-Brown Stripe<br>Brown-Yellow Stripe   |
| 3            | White-Green Stripe<br>Green-White Stripe   | 12                                         | Black-Orange Stripe<br>Orange-Black Stripe   | 20           | Yellow-Gray Stripe<br>Gray-Yellow Stripe     |
| 4            | White-Brown Stripe<br>Brown-White Stripe   | 13                                         | Black-Green Stripe<br>Green-Black Stripe     | 21           | Violet-Blue Stripe<br>Blue-Violet Stripe     |
| 5            | White-Gray Stripe<br>Gray-White Stripe     | 14                                         | Black-Brown Stripe<br>Brown-Black Stripe     | 22           | Violet-Orange Stripe<br>Orange-Violet Stripe |
| 6            | Red-Blue Stripe<br>Blue-Red Stripe         | 15                                         | Black-Gray Stripe<br>Gray-Black Stripe       | 23           | Violet-Green Stripe<br>Green-Violet Stripe   |
| 7            | Red-Orange Stripe<br>Orange-Red Stripe     | 16                                         | Yellow-Blue Stripe<br>Blue-Yellow Stripe     | 24           | Violet-Brown Stripe<br>Brown-Violet Stripe   |
| 8            | Red-Green Stripe<br>Green-Red Stripe       | 17                                         | Yellow-Orange Stripe<br>Orange-Yellow Stripe | 25           | Violet-Gray Stripe<br>Gray-Violet Stripe     |
| 9            | Red-Brown Stripe<br>Brown-Red Stripe       | Single Conductor: Green with Yellow Stripe |                                              |              |                                              |

**CAROL BRAND**

**UL** LISTED

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Paired, Foil/Braid Shield, Lo-Cap®

UL 2960, NEC Type CL2

## Product Construction:

### Conductor:

- 28 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded polypropylene
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire
- 90% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

### Applications:

- Computers
- Industrial equipment
- Data transmission
- Control circuits
- Low capacitance requirements
- Suitable for EIA RS-232 applications
- Suitable for EIA RS-422 applications
- Suggested voltage rating: 30 volts

### Features:

- Braid shield provides good flexibility
- Superior shielding where noise rejection is critical
- Assists system designers in meeting FCC Docket 20789 demands

### Compliances:

- NEC Article 725 Type CL2 (UL: 75°C)
- UL Style 2960 (UL: 60°C, 30V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOMINAL DCR Ω/kft |       | VEL. OF PROP., % | NOM. IMP., Ω | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|-------------------|-------|------------------|--------------|---------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | COND.             | SHLD. |                  |              | A                   | B    |
| C0804A         | 2            | 28       | 7/36         | 0.009                     | 0.23 | 0.032                 | 0.81 | 0.194        | 4.93 | 67.5              | 4.0   | 66               | 100          | 14.8                | 26.6 |
| C0805A         | 3            | 28       | 7/36         | 0.009                     | 0.23 | 0.032                 | 0.81 | 0.194        | 4.93 | 67.5              | 4.2   | 66               | 100          | 14.0                | 25.3 |
| C0806A         | 4            | 28       | 7/36         | 0.009                     | 0.23 | 0.032                 | 0.81 | 0.211        | 5.36 | 67.5              | 3.3   | 66               | 100          | 14.0                | 25.3 |
| C0807A         | 5            | 28       | 7/36         | 0.009                     | 0.23 | 0.032                 | 0.81 | 0.226        | 5.74 | 67.5              | 3.5   | 66               | 100          | 14.0                | 25.3 |
| C0808A         | 7            | 28       | 7/36         | 0.009                     | 0.23 | 0.032                 | 0.81 | 0.253        | 6.43 | 67.5              | 2.9   | 66               | 100          | 13.1                | 23.5 |
| C0809A         | 9            | 28       | 7/36         | 0.009                     | 0.23 | 0.032                 | 0.81 | 0.286        | 7.26 | 67.5              | 2.9   | 66               | 100          | 13.1                | 23.5 |
| C0810A         | 10           | 28       | 7/36         | 0.009                     | 0.23 | 0.032                 | 0.81 | 0.285        | 7.24 | 67.5              | 2.9   | 66               | 100          | 13.1                | 23.5 |
| C0812A         | 12           | 28       | 7/36         | 0.009                     | 0.23 | 0.032                 | 0.81 | 0.294        | 7.47 | 67.5              | 3.3   | 66               | 100          | 13.1                | 23.5 |

\*A – Capacitance between conductors

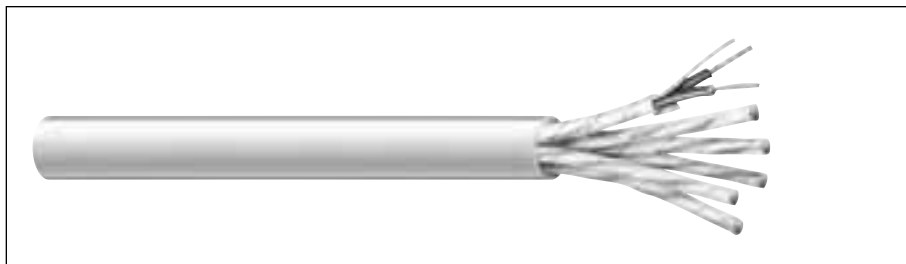
\*B – Capacitance between one conductor and other conductors connected to shield

### Color Code Chart

| NO. OF COND. | COLOR                    | NO. OF COND. | COLOR                    |
|--------------|--------------------------|--------------|--------------------------|
| 1            | Black paired with Red    | 7            | Black paired with Orange |
| 2            | Black paired with White  | 8            | Red paired with White    |
| 3            | Black paired with Green  | 9            | Red paired with Green    |
| 4            | Black paired with Blue   | 10           | Red paired with Blue     |
| 5            | Black paired with Yellow | 11           | Red paired with Yellow   |
| 6            | Black paired with Brown  | 12           | Red paired with Brown    |

# Multi-Paired, Individually Foil Shielded

NEC Type CL2 and CM (UL) c(UL)



| CATALOG<br>NUMBER | NO. OF<br>PAIRS | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.*<br>pF/ft |      |
|-------------------|-----------------|-------------|-----------------|------------------------------|------|--------------------------|------|--------------|------|---------------------|------|
|                   |                 |             |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | A                   | B    |
| <b>C1368A</b>     | 4               | 20          | 7/28            | 0.015                        | 0.38 | 0.032                    | 0.81 | 0.364        | 9.25 | 23.0                | 41.5 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF<br>PAIRS | COLOR                          |
|-----------------|--------------------------------|
| 1               | Red paired with White/Red      |
| 2               | Black paired with White/Black  |
| 3               | Green paired with White/Green  |
| 4               | White paired with White/Yellow |

## Product Construction:

### Conductor:

- 20 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded polypropylene
- Color code: See chart below

### Shield:

- Individually shielded pairs
- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing in
- Stranded tinned copper drain wire each pair

### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

## Applications:

- Applications for total isolation of signal
- Computers
- Control circuits
- Industrial equipment
- Suggested voltage rating: 300 volts

## Features:

- Individually shielded pairs for excellent signal isolation
- Excellent high frequency properties
- Mechanical durability

## Compliances:

- NEC Article 725 Type CL2 (UL: 75°C, 150V)
- NEC Article 800 Type CM (UL: 75°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL  
BRAND**



Designed to Meet  
UL Vertical Tray  
Flame Test

Underwriters Laboratories Inc.



**General Cable**

# Multi-Paired, Individually Foil Shielded

UL 2464, NEC Type CM (UL) c(UL), CSA CMG

## Product Construction:

### Conductor:

- 22 AWG fully annealed solid tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Shield:

- Individually shielded pairs
- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing in
- Solid tinned copper drain wire each pair

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Applications for total isolation of signal
- Computers
- Control circuits
- Industrial equipment
- Suggested voltage rating: 300 volts

## Features:

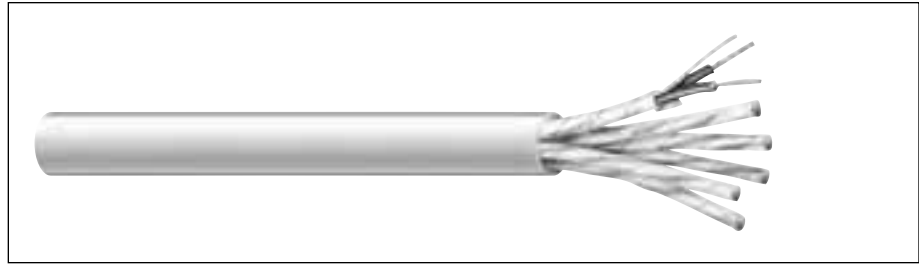
- Individually shielded pairs for excellent signal isolation
- Excellent high-frequency properties
- Mechanical durability

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2464 (UL: 80°C, 300V)
- CSA CMG (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMG Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR $\Omega$ /kft |       | NOMINAL IMPEDANCE $\Omega$ | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|---------------------------|-------|----------------------------|---------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | COND.                     | SHLD. |                            | A                   | B    |
| <b>C6035A</b>  | 3            | 22       | Solid        | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.304        | 7.72  | 16.5                      | 11.3  | 50                         | 38.6                | 69.4 |
| <b>C6036A</b>  | 6            | 22       | Solid        | 0.015                     | 0.38 | 0.032                 | 0.81 | 0.397        | 10.08 | 16.5                      | 11.3  | 50                         | 38.6                | 69.4 |

\*A – Capacitance between conductors

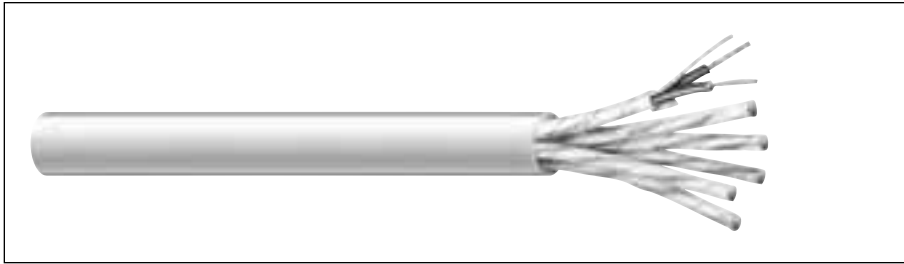
\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                   | NO. OF PAIRS | COLOR                    |
|--------------|-------------------------|--------------|--------------------------|
| <b>1</b>     | Black paired with Red   | <b>4</b>     | Black paired with Blue   |
| <b>2</b>     | Black paired with White | <b>5</b>     | Black paired with Yellow |
| <b>3</b>     | Black paired with Green | <b>6</b>     | Black paired with Brown  |

# Multi-Paired, Individually Foil Shielded

UL 2919, NEC Type CM, CSA CMH



## Product Construction:

### Conductor:

- 24 thru 18 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded polyethylene
- Color code: See chart below

### Shield:

- Individually shielded pairs
- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing in
- Stranded tinned copper drain wire each pair

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Applications for total isolation of signal
- Computers
- Control circuits
- Industrial equipment
- Suggested voltage rating: 30 volts

## Features:

- Individually shielded pairs for excellent signal isolation
- Excellent high frequency properties
- Mechanical durability

## Compliances:

- NEC Article 800 Type CM (UL: 75°C)
- UL Style 2919 (UL: 80°C, 30V)
- CSA CMH (CSA: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA CMH Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR Ω/kft |       | VEL. OF PROP., % | NOM. IMP., Ω | NOMINAL CAP.** pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|-------------------|-------|------------------|--------------|----------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | COND.             | SHLD. |                  |              | A                    | B    |
| C6065A         | 3            | 24       | 7/32         | 0.011                     | 0.28 | 0.032                 | 0.81 | 0.269        | 6.83  | 26.0              | 18.0  | 66               | 71           | 21.7                 | 39.0 |
| C6066A         | 6            | 24       | 7/32         | 0.011                     | 0.28 | 0.032                 | 0.81 | 0.349        | 8.86  | 26.0              | 18.0  | 66               | 71           | 21.7                 | 39.0 |
| C6067A         | 9            | 24       | 7/32         | 0.011                     | 0.28 | 0.032                 | 0.81 | 0.406        | 10.31 | 26.0              | 18.0  | 66               | 71           | 21.7                 | 39.0 |
| C6040A         | 3            | 22       | 7/30         | 0.011                     | 0.28 | 0.032                 | 0.81 | 0.292        | 7.42  | 16.5              | 11.3  | 66               | 63           | 24.4                 | 43.9 |
| C6041A         | 6            | 22       | 7/30         | 0.011                     | 0.28 | 0.032                 | 0.81 | 0.381        | 9.68  | 16.5              | 11.3  | 66               | 63           | 24.4                 | 43.9 |
| C6042A         | 9            | 22       | 7/30         | 0.011                     | 0.28 | 0.032                 | 0.81 | 0.445        | 11.30 | 16.5              | 11.3  | 66               | 63           | 24.4                 | 43.9 |
| C6043A         | 11           | 22       | 7/30         | 0.011                     | 0.28 | 0.032                 | 0.81 | 0.486        | 12.34 | 16.5              | 11.3  | 66               | 63           | 24.4                 | 43.9 |
| C6059A         | 12           | 22       | 7/30         | 0.011                     | 0.28 | 0.048                 | 1.22 | 0.533        | 13.54 | 16.5              | 11.3  | 66               | 63           | 24.4                 | 43.9 |
| C6044A         | 15           | 22       | 7/30         | 0.011                     | 0.28 | 0.048                 | 1.22 | 0.591        | 15.01 | 16.5              | 11.3  | 66               | 63           | 24.4                 | 43.9 |
| C6060A         | 17           | 22       | 7/30         | 0.011                     | 0.28 | 0.048                 | 1.22 | 0.622        | 15.80 | 16.5              | 11.3  | 66               | 63           | 24.4                 | 43.9 |
| C6045A         | 19           | 22       | 7/30         | 0.011                     | 0.28 | 0.048                 | 1.22 | 0.622        | 15.80 | 16.5              | 11.3  | 66               | 63           | 24.4                 | 43.9 |
| C6046A*        | 27           | 22       | 7/30         | 0.011                     | 0.28 | 0.048                 | 1.22 | 0.696        | 17.68 | 16.5              | 11.3  | 66               | 63           | 24.4                 | 43.9 |
| C6052A         | 3            | 20       | 7/28         | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.339        | 8.61  | 10.5              | 10.2  | 66               | 61           | 25.3                 | 45.6 |
| C6053A         | 6            | 20       | 7/28         | 0.013                     | 0.33 | 0.032                 | 0.81 | 0.446        | 11.33 | 10.5              | 10.2  | 66               | 61           | 25.3                 | 45.6 |
| C6054A         | 9            | 20       | 7/28         | 0.013                     | 0.33 | 0.048                 | 1.22 | 0.555        | 14.10 | 10.5              | 10.2  | 66               | 61           | 25.3                 | 45.6 |
| C6056A         | 12           | 20       | 7/28         | 0.013                     | 0.33 | 0.048                 | 1.22 | 0.623        | 15.82 | 10.5              | 10.2  | 66               | 61           | 25.3                 | 45.6 |
| C6058A         | 15           | 20       | 7/28         | 0.013                     | 0.33 | 0.048                 | 1.22 | 0.692        | 17.58 | 10.5              | 10.2  | 66               | 61           | 25.3                 | 45.6 |
| C6047A         | 3            | 18       | 16/30        | 0.016                     | 0.41 | 0.032                 | 0.81 | 0.395        | 10.03 | 7.2               | 8.3   | 66               | 60           | 25.7                 | 46.2 |
| C6048A         | 6            | 18       | 16/30        | 0.016                     | 0.41 | 0.048                 | 1.22 | 0.556        | 14.12 | 7.2               | 8.3   | 66               | 60           | 25.7                 | 46.2 |
| C6049A         | 9            | 18       | 16/30        | 0.016                     | 0.41 | 0.048                 | 1.22 | 0.649        | 16.48 | 7.2               | 8.3   | 66               | 60           | 25.7                 | 46.2 |
| C6050A         | 12           | 18       | 16/30        | 0.016                     | 0.41 | 0.048                 | 1.22 | 0.731        | 18.57 | 7.2               | 8.3   | 66               | 60           | 25.7                 | 46.2 |
| C6051A         | 15           | 18       | 16/30        | 0.016                     | 0.41 | 0.048                 | 1.22 | 0.776        | 19.71 | 7.2               | 8.3   | 66               | 60           | 25.7                 | 46.2 |

\*UL 2919, CSA CMH Only

\*\*A – Capacitance between conductors

\*\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                    | NO. OF PAIRS | COLOR                    | NO. OF PAIRS | COLOR                    |
|--------------|--------------------------|--------------|--------------------------|--------------|--------------------------|
| 1            | Black paired with Red    | 10           | Red paired with Blue     | 19           | White paired with Blue   |
| 2            | Black paired with White  | 11           | Red paired with Yellow   | 20           | White paired with Yellow |
| 3            | Black paired with Green  | 12           | Red paired with Brown    | 21           | White paired with Brown  |
| 4            | Black paired with Blue   | 13           | Red paired with Orange   | 22           | White paired with Orange |
| 5            | Black paired with Yellow | 14           | Green paired with White  | 23           | Blue paired with Yellow  |
| 6            | Black paired with Brown  | 15           | Green paired with Blue   | 24           | Blue paired with Brown   |
| 7            | Black paired with Orange | 16           | Green paired with Yellow | 25           | Blue paired with Orange  |
| 8            | Red paired with White    | 17           | Green paired with Brown  | 26           | Brown paired with Yellow |
| 9            | Red paired with Green    | 18           | Green paired with Orange | 27           | Brown paired with Orange |

**CAROL BRAND**

**UL** LISTED

**CSA** CMH Certified Canadian Standard Association

**UL**

Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Paired, Individually Foil Shielded, Lo-Cap®

UL 2493, NEC Type CM (UL) c(UL) CMH

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded foamed Lo-Cap® polypropylene
- Color code: See chart below

### Shield:

- Individually shielded pairs
- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing in
- Stranded tinned copper drain wire each pair

### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

## Applications:

- High-speed computers
- Industrial equipment
- Control circuits
- Suitable for low capacitance applications
- Suitable for EIA RS-422 CAD/CAM applications
- Suggested voltage rating: 300 volts

## Features:

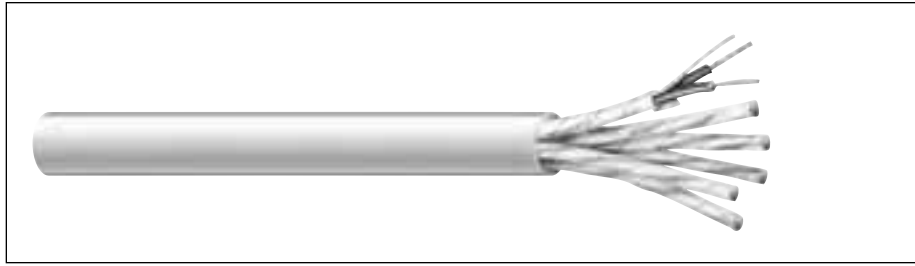
- Individually shielded pairs for excellent signal isolation
- Excellent high-frequency properties
- Mechanical durability

## Compliances:

- NEC Article 800 Type CM/CMH (UL: 75°C, 300V)
- UL Style 2493 (UL: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR Ω/kft |       | VEL. OF PROP., % | NOM. IMP., Ω | NOMINAL CAP.* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|-------------------|-------|------------------|--------------|---------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | COND.             | SHLD. |                  |              | A                   | B    |
| C0910A         | 2            | 24       | 7/32         | 0.022                     | 0.56 | 0.047                 | 1.19 | 0.283        | 7.19  | 26.0              | 18.0  | 78               | 100          | 14.8                | 26.7 |
| C0911A         | 3            | 24       | 7/32         | 0.022                     | 0.56 | 0.048                 | 1.22 | 0.381        | 9.68  | 26.0              | 18.0  | 78               | 100          | 14.8                | 26.7 |
| C0912A         | 4            | 24       | 7/32         | 0.022                     | 0.56 | 0.048                 | 1.22 | 0.416        | 10.57 | 26.0              | 18.0  | 78               | 100          | 14.8                | 26.7 |
| C0913A         | 6            | 24       | 7/32         | 0.022                     | 0.56 | 0.048                 | 1.22 | 0.492        | 12.50 | 26.0              | 18.0  | 78               | 100          | 14.8                | 26.7 |
| C0914A         | 9            | 24       | 7/32         | 0.022                     | 0.56 | 0.063                 | 1.60 | 0.601        | 15.27 | 26.0              | 18.0  | 78               | 100          | 14.8                | 26.7 |
| C0915A         | 11           | 24       | 7/32         | 0.022                     | 0.56 | 0.063                 | 1.60 | 0.652        | 16.56 | 26.0              | 18.0  | 78               | 100          | 14.8                | 26.7 |
| C0916A         | 12           | 24       | 7/32         | 0.022                     | 0.56 | 0.063                 | 1.60 | 0.672        | 17.08 | 26.0              | 18.0  | 78               | 100          | 14.8                | 26.7 |
| C0917A         | 15           | 24       | 7/32         | 0.022                     | 0.56 | 0.063                 | 1.60 | 0.743        | 18.87 | 26.0              | 18.0  | 78               | 100          | 14.8                | 26.7 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                    | NO. OF PAIRS | COLOR                   |
|--------------|--------------------------|--------------|-------------------------|
| 1            | Black paired with Red    | 9            | Red paired with Green   |
| 2            | Black paired with White  | 10           | Red paired with Blue    |
| 3            | Black paired with Green  | 11           | Red paired with Yellow  |
| 4            | Black paired with Blue   | 12           | Red paired with Brown   |
| 5            | Black paired with Yellow | 13           | Red paired with Orange  |
| 6            | Black paired with Brown  | 14           | Green paired with White |
| 7            | Black paired with Orange | 15           | Green paired with Blue  |
| 8            | Red paired with White    |              |                         |

# Multi-Paired, Individually Foil/Braid Shielded, Lo-Cap®

UL 2493, NEC Type CM (UL) c(UL) CMH



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOMINAL DCR** |      |     | VEL. OF PROP., % | NOM. IMP., Ω | NOMINAL CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|---------------|------|-----|------------------|--------------|---------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | C             | D    | E   |                  |              | A             | B    |
| <b>C0924A</b>  | 2            | 24       | 7/32         | 0.022                     | 0.56 | 0.048                 | 1.22 | 0.392        | 9.96  | 26.0          | 18.0 | 4.3 | 78               | 100          | 14.8          | 26.7 |
| <b>C0925A</b>  | 3            | 24       | 7/32         | 0.022                     | 0.56 | 0.048                 | 1.22 | 0.410        | 10.41 | 26.0          | 18.0 | 4.4 | 78               | 100          | 14.8          | 26.7 |
| <b>C0926A</b>  | 4            | 24       | 7/32         | 0.022                     | 0.56 | 0.048                 | 1.22 | 0.445        | 11.30 | 26.0          | 18.0 | 3.2 | 78               | 100          | 14.8          | 26.7 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

\*\*C – Conductor resistance

\*\*D – Individual shield resistance

\*\*E – Overall shield resistance

## Color Code Chart

| NO. OF PAIRS | COLOR                   |
|--------------|-------------------------|
| 2            | Black paired with White |
| 3            | Black paired with Green |
| 4            | Black paired with Blue  |

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded foamed Lo-Cap® polypropylene
- Color code: See chart below

### Shield:

- Individually shielded pairs
- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing in
- Stranded tinned copper drain wire, each pair
- 70% tinned copper braid, each pair

### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

## Applications:

- High-speed computers
- Industrial equipment
- Control circuits
- Designed for low capacitance applications
- Suitable for RS-422 CAD/CAM applications
- Suggested voltage rating: 300 volts

## Features:

- Individually shielded pairs for excellent signal isolation
- Excellent high-frequency properties
- Mechanical durability

## Compliances:

- NEC Article 800 Type CM/CMH (UL: 75°C, 300V)
- UL Style 2493 (UL: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



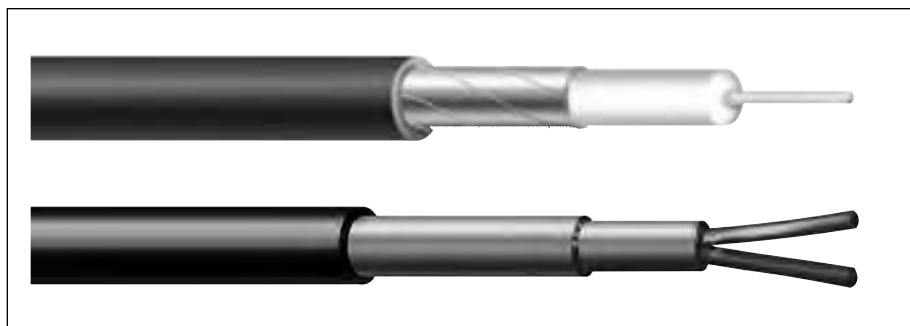
Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.



**General Cable**

# Coaxial Cable

5



To meet the needs of today's sophisticated, high-speed, wide bandwidth electronics over long distances, with minimum signal loss or degradation, General Cable Carol® Brand offers a wide range of coaxial and twinaxial designs in both unbalanced arrays and precision-balanced pairs. This offers the system designer a wide choice of cost-effective products that reflect the most recent changes in the standards set by UL, CSA and/or the FCC.

Included in this section are recommended Carol® Brand coaxial products for the CATV market. However, these constructions may differ in certain parts of the country.

Unlike other products in the electronic market, coaxial cable does not have one accepted standard construction.

General Cable recommends, in order to avoid installing an unacceptable coaxial cable for the CATV application in your area, the local CATV company should be consulted.

General Cable's Carol® Brand product mix encompasses standard RG/U-type coaxial constructions in the more popular 50, 75 and 93 ohm designs and miniature coaxial products for smaller high-speed applications.

The twinaxial products meet or exceed the stringent demands of today's precision-balanced pair systems. The minimization of capacitance unbalance is a necessary requirement for long distance data transmission.

| Index                   | Page    |
|-------------------------|---------|
| Coaxial Solutions Guide | 86-87   |
| RG 6/U Type             | 88-93   |
| RG 8/U Type             | 94-95   |
| RG 11/U Type            | 96-99   |
| RG 58/U Type            | 100     |
| RG 59/U Type            | 101-108 |
| RG 62/U Type            | 109     |
| RG 174/U Type           | 110     |
| RG 213/U Type           | 111     |
| Twinaxial Cables        | 112     |

# Coaxial Cable Solutions Guide

**CAROL BRAND**

**ELECTRONICS  
WIRE & CABLE**



General Cable offers a complete line of Carol® Brand Coaxial Cables for today's sophisticated high-speed, wide-bandwidth electronics products that run over long distances with minimal signal loss or degradation.

General Cable has the right coaxial cable to serve every application, including:

- CATV/MATV/DBS
- HDTV/SDI
- CCTV

The General Cable Coaxial Cable Solutions Guide is a quick-reference tool to make it easier to specify and sell the right cable for the required application—residential, commercial, entertainment and security. Whatever the application calls for, we have a coaxial cable that delivers the performance your customers need.

## CATV/MATV/DBS



Broadband signal, 5MHz–3GHz, VHF/UHF, is traditionally transmitted as an analog signal received directly off air (MATV) or delivered as a community access television (CATV) service and uses a 75 Ohm system.

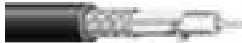
**Recommended Coaxial Cable Construction:** Copper clad steel (CCS) conductor with a foam polyethylene or Teflon® core, an aluminum/Mylar® foil, a minimum of 60% braid, which is typically aluminum (AL) for this application, and a PVC jacket.

For home use, a CM rated coax should be used. A commercial application may require a National Electrical Code (NEC 800 or 725) Riser (CMR) or Plenum (CMP) rated cable. Economical cable solutions use low smoke PVC (75°C) jackets. Teflon® (FEP) and other fluoropolymer materials (150°C) may be used to provide a more durable and higher-temperature cable alternative.

It is a common misconception that RG 6 coax is “better” than RG 59. While RG 6 has become the industry standard and is an excellent value, it is a larger cable than RG 59. RG 6 allows the same signal level to be delivered a greater distance. This is expressed as a decibel value at particular frequencies. For example, at 100 MHz, General Cable's Carol® Brand part number C5775 RG 6 coax cable has an attenuation value of 2.05 db/100'. A similar construction Carol® Brand part number C5782 RG 59 coax cable exhibits an attenuation value (loss) at 100 MHz frequency of 2.70db/100'. This may or may not be significant, depending on the input signal level and distance of the cable run.

For a longer cable run, or if the coax cable is planned for use as the backbone in a system, Carol® Brand part number C5039 RG 11 coax cable should be used, because its attenuation at 100 MHz frequency is 1.30 db/100'.

### CATV/MATV/DBS RG 59, RG 6 and RG 11 Ratings

| Coax Solution                                                                                                                        | Carol | Belden     | Genesis | West Penn | Commscope |
|--------------------------------------------------------------------------------------------------------------------------------------|-------|------------|---------|-----------|-----------|
|  RG 6 CCS/Foil/60% AL Braid CATV/CM               | C5775 | 9116/1829A | 5303    | 841       | 5726      |
|  RG 6 CCS/Foil/60% AL Braid CATVR/CMR             | C5886 | 9116R      | —       | —         | —         |
|  RG 6 CCS/Quad/Foil/60%/40% AL Braid CATV/CM      | C5785 | 1189A      | 5307    | Q841      | 5740      |
|  RG 6 CCS/Quad/Foil/60%/40% AL Braid CATVR/CMR    | C5889 | 1884A      | —       | —         | —         |
|  RG 6 CCS/Foil/60% AL Braid CMP - Plenum          | C3524 | 9116P      | —       | 25841     | 2275K     |
|  RG 6 CCS/Quad/Foil/60%/40% AL Braid CMP - Plenum | C3525 | 1189AP     | —       | 25Q841    | —         |
|  RG 11 CCS/Foil/60% AL Braid CATV/CM              | C5039 | 1525A      | —       | —         | 5913      |
|  RG 11 CCS/Foil/60% AL Braid CL2P/CMP - Plenum    | C3528 | 1523AP     | —       | —         | 2285K     |

\*Note: DuPont™ trademark

**CAROL BRAND**

**General Cable**

## HDTV/SDI

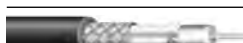
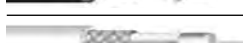
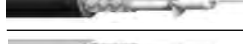


A DTV signal is a television signal provided in a digital form. Data bits, like in a computer, provide a dramatically better picture and better sound quality called High Definition TV (HDTV). HDTV is the highest quality of DTV and is only one of the available formats. In addition to enhanced picture quality, the DTV signal allows several program streams (multicasting) on one channel, providing more program potential, as well as interactive services.

Serial Digital Interface (SDI) is the standard for digital video transmission over coaxial cable. The SMPTE 295M standard provides maximum distances (300 meters; 140 meters for High Definition), typically at 270 Mbps with 540 Mbps possible over a coaxial cable.

**Recommended Coax Cable Construction:** Cable providing signal to and within the home/building will continue to be CCS construction (C5775, C5785). Cables with SBC conductors (395011, 495025) are recommended for the interconnect between the decoder box and other electronic devices (TV, DVD, DVR, CD, Blu-ray).

### HDTV/SDI—Interconnect Cables RG 59, RG 6 and RG 11 Ratings

| Coax Solution                                                                                                              | Carol  | Belden | Genesis | West Penn | Commscope |
|----------------------------------------------------------------------------------------------------------------------------|--------|--------|---------|-----------|-----------|
|  RG 59 SBC/Foil/95% TC Braid CMR          | 395025 | 1505A  | 5361    | 819       | 5553      |
|  RG 59 SBC/Foil/95% TC Braid CMP - Plenum | 495023 | 1506A  | —       | —         | —         |
|  RG 6 SBC/Foil/95% TC Braid CMR           | 395011 | 1694A  | —       | —         | 5765      |
|  RG 6 SBC/Foil/95% TC Braid CMP - Plenum  | 495025 | 1695A  | —       | —         | —         |
|  RG 11 SBC/Foil/95% TC Braid CMR          | 395029 | 7731A  | —       | —         | —         |
|  RG 11 SBC/Foil/95% TC Braid CMP - Plenum | 495027 | 7732A  | —       | —         | 2286K     |

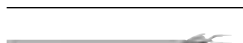
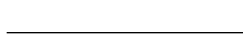
## CCTV



Closed Circuit TV (CCTV) signals are typically lower-frequency analog signals. Attenuation increases as frequency increases, therefore lower baseband signals are able to travel longer distances on an RG 59 type coaxial cable than a higher-frequency television signal. This is why RG 59 is the most common coax for CCTV. It is becoming more common for Unshielded Twisted Pair (UTP) products, like Category 5e and 6 cables, to be used for Closed Circuit over Twisted Pair (CCTP) or Web-enabled cameras implemented over a Power over Ethernet network architecture; however, these solutions require the use of specialized equipment.

**Recommended Coax Cable Construction:** Solid bare copper (SBC) conductor and a bare copper (BC) braid shield with coverage of 90-95% to minimize signal loss of both the horizontal and vertical sync signals. Stranded conductors are recommended for pan, zoom, tilt (PZT) cameras.

### CCTV RG 59 and RG 11 Ratings

| Coax Solution                                                                                                                                              | Carol  | Belden | Genesis | West Penn | Commscope |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|---------|-----------|-----------|
|  RG 59 SBC/95% BC Braid CM                                              | C1142  | 543945 | 5001    | —         | —         |
|  RG 59 Stranded (7/30) BC/95% BC Braid CM                               | C1103  | 9259   | —       | —         | —         |
|  RG 59 Stranded (7/30) BC/95% BC Braid + 22 AWG (7/30) Shielded Pair CM | C8025  | 9265   | —       | —         | —         |
|  RG 59 SBC/95% BC Braid + 18 AWG (7/26) Unshielded Pair CM              | C8028  | 549945 | —       | —         | —         |
|  RG 59 SBC/95% BC Braid + 18 AWG (7/26) Unshielded Pair CMP - Plenum    | C8030  | 649948 | —       | —         | —         |
|  RG 59 SBC/95% BC Braid CMP - Plenum                                    | 495028 | 643948 | 5351    | 25815     | 2037V     |
|  RG 11 SBC/95% BC Braid CM                                              | 395058 | 513945 | —       | 811       | 5905      |
|  RG 11 SBC/95% BC Braid CMP - Plenum                                    | 495015 | 613948 | —       | —         | 2286K     |
|  RG 6 BC/95% BC Braid CMP - Plenum                                      | 495035 | —      | —       | —         | 2277V     |

#### \*Abbreviation Key

AL - aluminum

SBC - solid bare copper

CCS- copper clad steel

BC - bare copper

TC - tinned copper

# RG 6/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3
- Copper-clad steel per ASTM B-869

### Insulation/Core:

- Foam polyethylene (PE) design

### Shield:

- Bare copper or aluminum braid
- Flexfoil® shield

## Jacket:

- Premium PVC compound

## Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- MATV
- CATV
- CCTV†
- HDTV
- Digital video
- Drop cable
- FM broadcast
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                                           | AWG<br>SIZE<br>NOM. DCR                                | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                     | NOMINAL<br>O.D. |      | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------|------|------------------------------------------------------------------------|-----------------|------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                                             |                                                        | INCHES                 | mm   |                                                                        | INCHES          | mm   | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C5760</b><br><b>RG 6/U Type</b><br>                                                                     | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>30 Ga. CCS<br>Spiral Served<br>Shield<br>30.0 Ω/Mft. | Black PVC       |      | 16.20                  | 53.15 | 82                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                             |                                                        | 0.180                  | 4.57 |                                                                        | 0.240           | 6.10 |                        |       |                                  |                            | 10                     | 0.81    |
| <b>C5761†</b><br><b>RG 6/U Type</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br>                      | 18 Ga.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft.           | Foam PE                |      | 100% Flexfoil®<br>+95%<br>Bare Copper<br>Braid<br>2.6 Ω/Mft.           | Black PVC       |      | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                             |                                                        | 0.180                  | 4.57 |                                                                        | 0.275           | 6.98 |                        |       |                                  |                            | 10                     | 0.81    |
| <b>C5775</b><br><b>RG 6/U Type</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br>                     | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+60%<br>Aluminum Braid<br>9.0 Ω/Mft.       | Black PVC       |      | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                             |                                                        | 0.180                  | 4.57 |                                                                        | 0.275           | 6.98 |                        |       |                                  |                            | 10                     | 0.81    |
| <b>C5886</b><br><b>RG 6/U Type</b><br><b>Riser</b><br><b>UL CL2R, CATVR, CMR</b><br><b>c(UL) CMR</b><br> | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+60%<br>Aluminum Braid<br>9.0 Ω/Mft.       | Black PVC       |      | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                             |                                                        | 0.180                  | 4.57 |                                                                        | 0.275           | 6.98 |                        |       |                                  |                            | 10                     | 0.81    |
| <b>C5776</b><br><b>RG 6/U Type</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br>                     | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+95%<br>Aluminum Braid<br>10.5 Ω/Mft.      | Black PVC       |      | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                             |                                                        | 0.180                  | 4.57 |                                                                        | 0.275           | 6.98 |                        |       |                                  |                            | 10                     | 0.81    |
|                                                                                                                                                                                             |                                                        |                        |      |                                                                        |                 |      |                        |       |                                  |                            | 50                     | 1.46    |
|                                                                                                                                                                                             |                                                        |                        |      |                                                                        |                 |      |                        |       |                                  |                            | 100                    | 2.05    |
|                                                                                                                                                                                             |                                                        |                        |      |                                                                        |                 |      |                        |       |                                  |                            | 200                    | 2.83    |
|                                                                                                                                                                                             |                                                        |                        |      |                                                                        |                 |      |                        |       |                                  |                            | 500                    | 4.53    |
|                                                                                                                                                                                             |                                                        |                        |      |                                                                        |                 |      |                        |       |                                  |                            | 1000                   | 6.59    |
|                                                                                                                                                                                             |                                                        |                        |      |                                                                        |                 |      |                        |       |                                  |                            | 1450                   | 8.10    |
|                                                                                                                                                                                             |                                                        |                        |      |                                                                        |                 |      |                        |       |                                  |                            | 1800                   | 8.80    |
|                                                                                                                                                                                             |                                                        |                        |      |                                                                        |                 |      |                        |       |                                  |                            | 2200                   | 10.10   |
|                                                                                                                                                                                             |                                                        |                        |      |                                                                        |                 |      |                        |       |                                  |                            | 3000                   | 11.79   |

# RG 6/U Type

## Product Construction:

### Conductors:

- Copper-clad steel per ASTM B-869

### Insulation/Core:

- Solid and foam polyethylene (PE) designs

### Shield:

- Tinned, bare copper or aluminum braid
- Flexfoil® shield

## Jacket:

- Premium PVC compound or PE compound

## Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- CATV
- MATV
- HDTV
- Digital video
- Direct burial
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                                                                | AWG<br>SIZE<br>NOM. DCR                                | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                                      | NOMINAL<br>O.D.     |                    | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------|------|-----------------------------------------------------------------------------------------|---------------------|--------------------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                                                                  |                                                        | INCHES                 | mm   |                                                                                         | INCHES              | mm                 | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C5785</b><br><b>RG 6/U Type</b><br><b>Quad-Shield</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br>                      | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | (2) 100% Flexfoil®<br>1st Bonded<br>(1) 60%<br>(2) 40%<br>Aluminum Braids<br>3.7 Ω/Mft. | Black PVC           |                    | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                                                  |                                                        | 0.180                  | 4.57 |                                                                                         | 0.292               | 7.42               |                        |       |                                  |                            | 10                     | 0.81    |
| <b>C5889</b><br><b>RG 6/U Type</b><br><b>Riser</b><br><b>Quad-Shield</b><br><b>UL CL2R, CATVR, CMR</b><br><b>c(UL) CM</b><br> | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | (2) 100% Flexfoil®<br>1st Bonded<br>(1) 60%<br>(2) 40%<br>Aluminum Braids<br>3.7 Ω/Mft. | Black PVC           |                    | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                                                  |                                                        | 0.180                  | 4.57 |                                                                                         | 0.292               | 7.42               |                        |       |                                  |                            | 10                     | 0.81    |
| <b>C5777</b><br><b>RG 6/U Type</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br>                                          | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+61%<br>Tinned Copper<br>Braid<br>6.5 Ω/Mft.                | Black PVC           |                    | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                                                  |                                                        | 0.180                  | 4.57 |                                                                                         | 0.275               | 6.98               |                        |       |                                  |                            | 10                     | 0.81    |
| <b>C5802</b><br><b>RG 6/U Type</b><br><b>Messengered,</b><br><b>Self-Supporting</b><br>                                       | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+60%<br>Aluminum Braid<br>9.0 Ω/Mft.                        | Black PVC           |                    | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                                                  |                                                        | 0.180                  | 4.57 |                                                                                         | 0.270<br>x<br>0.428 | 6.86<br>x<br>10.87 |                        |       |                                  |                            | 10                     | 0.81    |
| <b>C5804</b><br><b>RG 6/U Type</b><br><b>MoistureGuard™</b><br><b>Direct Burial, Flooded</b><br>                              | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+60%<br>Aluminum Braid<br>w/water block<br>9.0 Ω/Mft.       | Black PE            |                    | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                                                                  |                                                        | 0.180                  | 4.57 |                                                                                         | 0.275               | 6.98               |                        |       |                                  |                            | 10                     | 0.81    |

# RG 6/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3
- Copper-clad steel per ASTM B-869

### Insulation/Core:

- Foam polyethylene (PE) design

### Shield:

- Tinned copper or aluminum braid
- Flexfoil® shield

### Jacket:

- Premium PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- LAN cable
- HDTV
- CCTV†
- Digital video
- Direct broadcast satellite
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                           | AWG<br>SIZE<br>NOM. DCR                                | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                               | NOMINAL<br>O.D.     |                    | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------|------|------------------------------------------------------------------|---------------------|--------------------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                             |                                                        | INCHES                 | mm   |                                                                  | INCHES              | mm                 | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C5814†<br/>RG 6/U Type<br/>Digital Video/HDTV<br/>UL CL2, CATV, CM<br/>c(UL) CM</b><br> | 18 Ga.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft.           | Foam PE                |      | 100% Flexfoil®<br>+95%<br>Tinned Copper<br>Braid<br>2.7 Ω/Mft.   | Black PVC           |                    | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.20    |
|                                                                                                                                                                             |                                                        | 0.180                  | 4.57 |                                                                  | 0.275               | 6.98               |                        |       |                                  |                            | 10                     | 0.72    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 50                     | 1.48    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 100                    | 2.01    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 200                    | 2.79    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 500                    | 4.46    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 1000                   | 6.53    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 1450                   | 7.86    |
| <b>C5822<br/>RG 6/U Dual-Type<br/>DBS<br/>UL CL2, CATV, CM<br/>c(UL) CM</b><br>          | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+60%<br>Aluminum Braid<br>9.0 Ω/Mft. | Black PVC           |                    | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.26    |
|                                                                                                                                                                             |                                                        | 0.180                  | 4.57 |                                                                  | 0.267<br>x<br>0.595 | 6.86<br>x<br>15.11 |                        |       |                                  |                            | 10                     | 0.81    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 50                     | 1.46    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 100                    | 2.05    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 200                    | 2.83    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 500                    | 4.53    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 1000                   | 6.59    |
|                                                                                                                                                                             |                                                        |                        |      |                                                                  |                     |                    |                        |       |                                  |                            | 1450                   | 8.10    |
| 1800                                                                                                                                                                        | 8.80                                                   |                        |      |                                                                  |                     |                    |                        |       |                                  |                            |                        |         |
| 2200                                                                                                                                                                        | 10.10                                                  |                        |      |                                                                  |                     |                    |                        |       |                                  |                            |                        |         |
| 3000                                                                                                                                                                        | 11.79                                                  |                        |      |                                                                  |                     |                    |                        |       |                                  |                            |                        |         |

# RG 6/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3 or copper-clad steel per ASTM B-869
- Twisted pair color code: black and red

### Insulation/Core:

- Foam polyethylene (PE) design
- Foam fluoropolymer (FEP) design

### Shield:

- Tinned copper or aluminum braid
- Flexfoil® shield

### Jacket:

- Premium-grade PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- CATV
- CCTV†
- DBS
- Drop cable
- FM broadcast
- HDTV
- Digital video
- See Coax Connector Cross Reference, pages 192-199

| CATALOG NUMBER                                                                                                                                                                    | AWG SIZE<br>NOM. DCR                                   | INSULATION MATERIAL |       | SHIELD COVERAGE<br>NOM SHLD DCR                                              | NOMINAL O.D.              |       | NOMINAL CAPACITANCE |       | VELOCITY OF PROPAGATION,<br>% | NOMINAL IMPEDANCE,<br>Ω | NOMINAL ATTENUATION |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------|-------|------------------------------------------------------------------------------|---------------------------|-------|---------------------|-------|-------------------------------|-------------------------|---------------------|---------|
|                                                                                                                                                                                   |                                                        | INCHES              | mm    |                                                                              | INCHES                    | mm    | pF/ft               | pF/m  |                               |                         | MHz                 | dB/100' |
| <b>C5778</b><br>RG 6/U Type<br>UL CL2, CATV, CM<br>c(UL) CM<br>                                  | 18 Ga.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft.           | Foam PE             |       | 100% Flexfoil®<br>Bonded<br>+61%<br>Tinned Copper<br>Braid<br>6.5 Ω/Mft.     | Black PVC                 |       | 16.20               | 53.15 | 83                            | 75                      | 1                   | 0.26    |
|                                                                                                                                                                                   |                                                        | 0.180               | 4.57  |                                                                              | 0.275                     | 6.98  |                     |       |                               |                         | 10                  | 0.81    |
| <b>C3523</b><br>RG 6/U Type<br>Plenum<br>UL CL2P, CMP<br>c(UL) CMP<br>                           | 18 Ga.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft.           | Fluoropolymer       |       | 100% Flexfoil®<br>+80%<br>Tinned Copper<br>Braid<br>2.3 Ω/Mft.               | Flexguard® PVC<br>Natural |       | 16.40               | 52.50 | 83                            | 75                      | 1                   | 0.30    |
|                                                                                                                                                                                   |                                                        | 0.170               | 4.32  |                                                                              | 0.232                     | 5.89  |                     |       |                               |                         | 10                  | 0.66    |
| <b>C3521</b><br>RG 6/U Type<br>Plenum<br>UL CL2P, CMP<br>c(UL) CMP<br>                         | 18 Ga.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft.           | Fluoropolymer       |       | Flexfoil® Bonded<br>+95%<br>Tinned Copper<br>Braid<br>2.3 Ω/Mft.             | Flexguard® PVC<br>Natural |       | 16.00               | 52.50 | 83                            | 75                      | 1                   | 0.30    |
|                                                                                                                                                                                   |                                                        | 0.170               | 4.32  |                                                                              | 0.232                     | 5.89  |                     |       |                               |                         | 10                  | 0.66    |
| <b>C3524</b><br>RG 6/U Type<br>Plenum<br>UL CL2P, CMP<br>c(UL) CMP<br>                         | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.6 Ω/Mft. | Fluoropolymer       |       | Flexfoil® Bonded<br>+80%<br>Aluminum Braid<br>9.0 Ω/Mft.                     | Flexguard® PVC<br>Natural |       | 16.00               | 52.50 | 83                            | 75                      | 1                   | 0.30    |
|                                                                                                                                                                                   |                                                        | 0.170               | 4.32  |                                                                              | 0.232                     | 5.89  |                     |       |                               |                         | 10                  | 0.66    |
| <b>C3525</b><br>RG 6/U Type<br>Quad Shield<br>Plenum<br>UL CL2P, CMP<br>c(UL) CMP<br>          | 18 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>28.6 Ω/Mft. | Fluoropolymer       |       | (2) 100%<br>Flexfoil®<br>(1) 60%<br>(2) 40%<br>Aluminum Braids<br>5.3 Ω/Mft. | Flexguard® PVC<br>Natural |       | 16.00               | 52.50 | 83                            | 75                      | 1                   | 0.30    |
|                                                                                                                                                                                   |                                                        | 0.170               | 4.32  |                                                                              | 0.306                     | 7.77  |                     |       |                               |                         | 10                  | 0.66    |
| <b>C8029†</b><br>RG 6/U Type<br>+18 AWG<br>Unshielded Pair<br>UL CL2, CATV, CM<br>c(UL) CM<br> | 18 Ga.<br>Solid Bare<br>Copper Coax                    | Foam PE             |       | 100% Flexfoil®<br>95% Bare<br>Copper Braid<br>1.9 Ω/Mft.                     | Black PVC                 |       | 16.20               | 53.15 | 83                            | 75                      | 1                   | 0.20    |
|                                                                                                                                                                                   |                                                        | 0.180               | 4.57  |                                                                              | 0.270                     | 6.86  |                     |       |                               |                         | 10                  | 0.72    |
|                                                                                                                                                                                   | 18 AWG<br>(7/26)<br>Unshielded<br>Pair                 | Premium PVC         |       | Unshielded Pair                                                              | x                         | x     |                     |       |                               |                         | 50                  | 1.48    |
|                                                                                                                                                                                   |                                                        | 0.010               | 0.25  |                                                                              | 0.493                     | 12.52 |                     |       |                               |                         | 100                 | 2.01    |
| <b>C8031†</b><br>RG 6/U Type<br>+18 AWG<br>Unshielded Pair<br>UL CMP<br>c(UL) CMP<br>          | 18 AWG<br>Solid Bare<br>Copper Coax                    | Fluoropolymer       |       | 95% Bare<br>Copper<br>Braid<br>3.5 Ω/Mft.                                    | Natural PVC               |       | 16.30               | 53.48 | 83                            | 75                      | 1                   | 0.30    |
|                                                                                                                                                                                   |                                                        | 0.170               | 0.432 |                                                                              | 0.232                     | 5.89  |                     |       |                               |                         | 10                  | 0.66    |
|                                                                                                                                                                                   | 18 AWG<br>(7/26)<br>Unshielded<br>Pair                 | Halar               |       | Unshielded Pair                                                              | x                         | x     |                     |       |                               |                         | 50                  | 1.50    |
|                                                                                                                                                                                   |                                                        | 0.006               | 0.15  |                                                                              | 0.416                     | 10.57 |                     |       |                               |                         | 100                 | 2.10    |

# RG 6/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3

### Insulation/Core:

- Foam polyethylene (PE) design

### Shield:

- Tinned copper braid
- Flexfoil® shield

### Jacket:

- Premium-grade PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Broadcast grade headend
- Serial Digital Interface (SDI)
- CATV
- DBS
- Drop cable
- HDTV
- CCTV†
- Digital video
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                              | AWG<br>SIZE<br>NOM. DCR                      | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                | NOMINAL<br>O.D.        |      | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------|------|-------------------------------------------------------------------|------------------------|------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                |                                              | INCHES                 | mm   |                                                                   | INCHES                 | mm   | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| 395011<br>UL CMR<br>c(UL) CMG<br>             | 18 Ga.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft. | Foam PE                |      | Dual Foil<br>+ 95% Tinned<br>Copper Braid<br>Shield<br>2.8 Ω/Mft. | Flame-Retardant<br>PVC |      | 16.20                  | 53.10 | 83                               | 75                         | 1                      | 0.24    |
|                                                                                                                                |                                              | 0.180                  | 4.57 |                                                                   | 0.275                  |      |                        |       |                                  |                            | 3.6                    | 0.45    |
|                                                                                                                                |                                              |                        |      |                                                                   | 135                    | 2.10 |                        |       |                                  |                            |                        |         |
| 495035†<br>UL CMP<br>c(UL) CMP<br>75°C<br>    | 18 Ga.<br>Solid Bare<br>Copper<br>6.7 Ω/Mft. | Fluoropolymer          |      | 95% Bare<br>Copper Braid<br>2.0 Ω/Mft.                            | Plenum PVC             |      | 16.20                  | 52.50 | 83                               | 75                         | 1                      | 0.21    |
|                                                                                                                                |                                              | 0.170                  | 4.32 |                                                                   | 0.232                  |      |                        |       |                                  |                            | 10                     | 0.65    |
|                                                                                                                                |                                              |                        |      |                                                                   | 50                     | 1.46 |                        |       |                                  |                            |                        |         |
| 495036†<br>UL CMP<br>c(UL) CMP<br>105°C<br> | 18 Ga.<br>Solid Bare<br>Copper<br>6.7 Ω/Mft. | Fluoropolymer          |      | 95% Bare<br>Copper Braid<br>2.0 Ω/Mft.                            | PVDF                   |      | 16.10                  | 53.00 | 83                               | 75                         | 1                      | 0.21    |
|                                                                                                                                |                                              | 0.170                  | 4.32 |                                                                   | 0.232                  |      |                        |       |                                  |                            | 10                     | 0.65    |
|                                                                                                                                |                                              |                        |      |                                                                   | 50                     | 1.46 |                        |       |                                  |                            |                        |         |
| 495025<br>UL CMP<br>c(UL) CMP<br>           | 18 Ga.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft. | Fluoropolymer          |      | Dual Foil<br>+ 95% Tinned<br>Copper Braid<br>Shield<br>2.8 Ω/Mft. | Plenum PVC             |      | 16.10                  | 53.00 | 83                               | 75                         | 1                      | 0.24    |
|                                                                                                                                |                                              | 0.170                  | 4.32 |                                                                   | 0.232                  |      |                        |       |                                  |                            | 3.6                    | 0.45    |
|                                                                                                                                |                                              |                        |      |                                                                   | 135                    | 2.40 |                        |       |                                  |                            |                        |         |
|                                                                                                                                |                                              |                        |      |                                                                   |                        |      |                        |       |                                  |                            | 270                    | 2.75    |
|                                                                                                                                |                                              |                        |      |                                                                   |                        |      |                        |       |                                  |                            | 540                    | 4.00    |
|                                                                                                                                |                                              |                        |      |                                                                   |                        |      |                        |       |                                  |                            | 1500                   | 6.36    |
|                                                                                                                                |                                              |                        |      |                                                                   |                        |      |                        |       |                                  |                            | 2250                   | 11.60   |
|                                                                                                                                |                                              |                        |      |                                                                   |                        |      |                        |       |                                  |                            | 3000                   | 13.70   |

# RG 6/U Multi-Channel Digital/Precision, Riser Rated

## 75 Ohm High-End Coaxial Cables for Exacting Video, Analog, Digital & Monitor Applications

**Product Construction:****Conductors:**

- Copper per ASTM B-3

**Insulation/Core:**

- Foam polyethylene (PE) design

**Shield:**

- Dual Flexfoil® shield
- Tinned copper braid

**Jacket:**

- Outer jacket: black matte finish thermoplastic elastomer (TPE)
- Inner jacket: flame-retardant PVC; see color codes below

**Packaging:**

- Please contact Customer Service for packaging and color options

**Applications:**

- Analog/Digital Video Broadcast-Grade Monitor
- HDTV
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                      | AWG<br>SIZE<br>NOM. DCR                                 | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                   | NOMINAL<br>O.D.                                         |       | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION                 |                                              |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------|------|----------------------------------------------------------------------|---------------------------------------------------------|-------|------------------------|-------|----------------------------------|----------------------------|----------------------------------------|----------------------------------------------|
|                                                                                                                        |                                                         | INCHES                 | mm   |                                                                      | INCHES                                                  | mm    | pF/ft                  | pF/m  |                                  |                            | MHz                                    | dB/100'                                      |
| 395011-3<br>UL CMR<br>c(UL) CMG<br>   | 18 Ga.<br>3/Cond.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft. | Foam PE                |      | Bi-Metal Foil<br>+ 95% Tinned<br>Copper Braid<br>Shield<br>(2.8 Ohm) | Inner:<br>Flame-Retardant<br>PVC<br>Outer:<br>TPE matte |       | 16.20                  | 53.20 | 83                               | 75                         | 1<br>3.6<br>71.5<br>270<br>540<br>1500 | 0.24<br>0.45<br>1.60<br>2.97<br>4.25<br>7.33 |
|                                                                                                                        |                                                         | 0.180                  | 4.57 |                                                                      | 0.685                                                   | 17.40 |                        |       |                                  |                            |                                        |                                              |
| 395011-4<br>UL CMR<br>c(UL) CMG<br>  | 18 Ga.<br>4/Cond.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft. | Foam PE                |      | Bi-Metal Foil<br>+ 95% Tinned<br>Copper Braid<br>Shield<br>(2.8 Ohm) | Inner:<br>Flame-Retardant<br>PVC<br>Outer:<br>TPE matte |       | 16.20                  | 53.20 | 83                               | 75                         | 1<br>3.6<br>71.5<br>270<br>540<br>1500 | 0.24<br>0.45<br>1.60<br>2.97<br>4.25<br>7.33 |
|                                                                                                                        |                                                         | 0.180                  | 4.57 |                                                                      | 0.755                                                   | 19.18 |                        |       |                                  |                            |                                        |                                              |
| 395011-5<br>UL CMR<br>c(UL) CMG<br> | 18 Ga.<br>5/Cond.<br>Solid Bare<br>Copper<br>6.5 Ω/Mft. | Foam PE                |      | Bi-Metal Foil<br>+ 95% Tinned<br>Copper Braid<br>Shield<br>(2.8 Ohm) | Inner:<br>Flame-Retardant<br>PVC<br>Outer:<br>TPE matte |       | 16.20                  | 53.20 | 83                               | 75                         | 1<br>3.6<br>71.5<br>270<br>540<br>1500 | 0.24<br>0.45<br>1.60<br>2.97<br>4.25<br>7.33 |
|                                                                                                                        |                                                         | 0.180                  | 4.57 |                                                                      | 0.860                                                   | 21.85 |                        |       |                                  |                            |                                        |                                              |

### Inner Jacket Color Code Chart

| Ordering<br>Suffix | COLOR  |
|--------------------|--------|
| 1                  | Red    |
| 2                  | Green  |
| 3                  | Blue   |
| 4                  | White  |
| 5                  | Yellow |

Note: 395011-3 will have the first three colors,  
395011-4 will have the first four colors  
and 395011-5 will have all five colors.

# RG 8/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3

### Insulation/Core:

- Solid and cellular polyethylene designs

## Shield:

- Tinned or bare copper braid
- Flexfoil® shield

## Jacket:

- Premium PVC compound

## Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                    | AWG<br>SIZE<br>NOM. DCR                           | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                       | NOMINAL<br>O.D. |       | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------|------|--------------------------------------------------------------------------|-----------------|-------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                      |                                                   | INCHES                 | mm   |                                                                          | INCHES          | mm    | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C1108A</b><br><b>RG 8/U Mini Type</b><br><b>UL CL2, CM</b><br><b>CSA CMG</b><br> | 16 Ga.<br>(19/28)<br>Bare<br>Copper<br>4.2 Ω/Mft. | Foam PE                |      | 95% Bare<br>Copper Braid<br>3.3 Ω/Mft.                                   | Black PVC       |       | 25.30                  | 83.01 | 80                               | 50                         | 1                      | 0.26    |
|                                                                                                                                                                      |                                                   | 0.155                  | 3.94 |                                                                          | 0.242           | 6.15  |                        |       |                                  |                            | 10                     | 0.98    |
| <b>C1154</b><br><b>RG 8/U Type</b><br><b>JAN-C-17A TYPE</b><br>                     | 13 Ga.<br>(7/21)<br>Bare<br>Copper<br>1.9 Ω/Mft.  | Solid PE               |      | 95% Bare<br>Copper Braid<br>1.2 Ω/Mft.                                   | Black PVC       |       | 29.50                  | 96.79 | 66                               | 52                         | 1                      | 0.16    |
|                                                                                                                                                                      |                                                   | 0.285                  | 7.24 |                                                                          | 0.405           | 10.29 |                        |       |                                  |                            | 50                     | 0.56    |
| <b>C1198</b><br><b>RG 8/U Type</b><br>                                            | 11 Ga.<br>(19/24)<br>Bare<br>Copper<br>1.9 Ω/Mft. | Foam PE                |      | 95% Bare<br>Copper Braid<br>1.1 Ω/Mft.                                   | Black PVC       |       | 26.00                  | 85.31 | 78                               | 50                         | 1                      | 0.17    |
|                                                                                                                                                                      |                                                   | 0.285                  | 7.24 |                                                                          | 0.405           | 10.29 |                        |       |                                  |                            | 50                     | 0.57    |
| <b>C1180</b><br><b>RG 8/U Type</b><br>                                            | 9½ Ga.<br>Solid Bare<br>Copper<br>0.90 Ω/Mft.     | Semi-Solid PE          |      | 100% Flexfoil®<br>Bonded<br>+88%<br>Tinned Copper<br>Braid<br>1.8 Ω/Mft. | Black PVC       |       | 24.60                  | 80.71 | 84                               | 50                         | 1                      | 0.13    |
|                                                                                                                                                                      |                                                   | 0.285                  | 7.24 |                                                                          | 0.405           | 10.29 |                        |       |                                  |                            | 10                     | 0.40    |
|                                                                                                                                                                      |                                                   |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 50                     | 0.90    |
|                                                                                                                                                                      |                                                   |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 100                    | 1.30    |
|                                                                                                                                                                      |                                                   |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 200                    | 1.80    |
|                                                                                                                                                                      |                                                   |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 500                    | 3.00    |
|                                                                                                                                                                      |                                                   |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1000                   | 4.50    |

# RG 8/U Type Thicknet/Trunk Cable

50 Ohm IEEE 802.3 and ISO/IEC 8802.3 10 Base 5 LAN and Computer Cables

## Product Construction:

### Conductors:

- Copper per ASTM B-3

### Insulation/Core:

- Foam polyethylene (PE) design
- Foam fluoropolymer (FEP) design

### Shield:

- Tinned copper braid
- Flexfoil® shield

## Jacket:

- Premium PVC compound
- Premium fluoropolymer compound

## Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- LAN & data transmission computer cables
- Thicknet/trunk cable – IEEE 802.3 and ISO/IEC 8802.3 10 base 5 LAN computer cables
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                                               | AWG<br>SIZE<br>NOM. DCR                       | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                                                                           | NOMINAL<br>O.D.                  |    | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------|------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                                                 |                                               | INCHES                 | mm   |                                                                                                                              | INCHES                           | mm | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>397001</b><br><b>RG 8/U Type</b><br><b>THICKNET</b><br><b>DEC 17-000451-00</b><br><b>UL CM c(UL)</b><br>    | 12 Ga.<br>Solid Bare<br>Copper<br>1.42 Ω/Mft. | Foam PE                |      | Quad Shield<br>Dual Flexfoil®<br>94% Tinned<br>Copper Braid<br>+ Dual Flexfoil®<br>94% Tinned<br>Copper Braid<br>1.52 Ω/Mft. | Yellow<br>Flame-Retardant<br>PVC |    | 26.00                  | 85.30 | 78                               | 50                         | 1                      | 0.17    |
|                                                                                                                                                                                                 |                                               |                        |      |                                                                                                                              |                                  |    |                        |       |                                  |                            | 5                      | 0.37    |
|                                                                                                                                                                                                 |                                               | 10                     | 0.53 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 50                     | 1.20 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 100                    | 1.73 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 200                    | 2.50 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 400                    | 3.64 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 700                    | 4.97 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 900                    | 5.74 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 1000                   | 6.10 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
| <b>497001</b><br><b>RG 8/U Type</b><br><b>THICKNET</b><br><b>DEC 17-000324-00</b><br><b>UL CMP c(UL)</b><br> | 12 Ga.<br>Solid Bare<br>Copper<br>1.42 Ω/Mft. | Fluoropolymer          |      | Quad Shield<br>Dual Flexfoil®<br>94% Tinned<br>Copper Braid<br>+ Dual Flexfoil®<br>94% Tinned<br>Copper Braid<br>1.52 Ω/Mft. | Orange<br>PVDF                   |    | 25.00                  | 82.00 | 84                               | 50                         | 1                      | 0.16    |
|                                                                                                                                                                                                 |                                               |                        |      |                                                                                                                              |                                  |    |                        |       |                                  |                            | 5                      | 0.35    |
|                                                                                                                                                                                                 |                                               | 10                     | 0.51 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 50                     | 1.19 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 100                    | 1.75 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 200                    | 2.61 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 400                    | 3.97 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 700                    | 5.65 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 900                    | 6.67 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |
|                                                                                                                                                                                                 |                                               | 1000                   | 7.14 |                                                                                                                              |                                  |    |                        |       |                                  |                            |                        |         |

# RG 11/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3
- Copper-clad steel per ASTM B-869

### Insulation/Core:

- Solid and foam polyethylene (PE) designs

### Shield:

- Tinned, bare copper or aluminum braid
- Flexfoil® shield

### Jacket:

- Premium PVC compound or PE compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast digital video
- MATV
- CATV†
- Drop cable
- HDTV
- CCTV
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                       | AWG<br>SIZE<br>NOM. DCR                                | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                       | NOMINAL<br>O.D. |       | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------|------|--------------------------------------------------------------------------|-----------------|-------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                         |                                                        | INCHES                 | mm   |                                                                          | INCHES          | mm    | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C1160</b><br><b>RG 11/U Type</b><br><b>JAN-C-17A Type</b><br>                       | 18 Ga.<br>(7/26)<br>Tinned<br>Copper<br>6.1 Ω/Mft.     | Solid PE               |      | 95% Bare<br>Copper Braid<br>1.2 Ω/Mft.                                   | Black PVC       |       | 20.50                  | 67.26 | 66                               | 75                         | 1                      | 0.20    |
|                                                                                                                                                                         |                                                        | 0.285                  | 6.55 |                                                                          | 0.400           | 10.16 |                        |       |                                  |                            | 10                     | 0.70    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 50                     | 1.30    |
| <b>C5011†</b><br><b>RG 11/U Type</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br> | 14 Ga.<br>Solid<br>Bare<br>Copper<br>2.5 Ω/Mft.        | Foam PE                |      | 100% Flexfoil®<br>+95%<br>Bare Copper<br>Braid<br>1.2 Ω/Mft.             | Black PVC       |       | 16.20                  | 53.15 | 85                               | 75                         | 1                      | 0.13    |
|                                                                                                                                                                         |                                                        | 0.280                  | 7.11 |                                                                          | 0.395           | 10.03 |                        |       |                                  |                            | 10                     | 0.40    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 50                     | 0.90    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 100                    | 1.30    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 200                    | 1.90    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 500                    | 3.00    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1000                   | 4.40    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1450                   | 5.30    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1800                   | 5.90    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 2200                   | 6.53    |
| 3000                                                                                                                                                                    | 7.62                                                   |                        |      |                                                                          |                 |       |                        |       |                                  |                            |                        |         |
| <b>C5025</b><br><b>RG 11/U Type</b><br>                                              | 14 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>11.4 Ω/Mft. | Foam PE                |      | 97% Bare<br>Copper Braid<br>1.2 Ω/Mft.                                   | Black PE        |       | 16.20                  | 53.15 | 83                               | 75                         | 1                      | 0.30    |
|                                                                                                                                                                         |                                                        | 0.285                  | 7.24 |                                                                          | 0.405           | 10.29 |                        |       |                                  |                            | 10                     | 0.70    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 50                     | 1.00    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 100                    | 1.50    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 200                    | 2.20    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 500                    | 3.70    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1000                   | 5.30    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1450                   | 6.38    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1800                   | 7.11    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 2200                   | 7.86    |
| 3000                                                                                                                                                                    | 9.18                                                   |                        |      |                                                                          |                 |       |                        |       |                                  |                            |                        |         |
| <b>C5029</b><br><b>RG 11/U Type</b><br><b>UL CL2, CM</b><br><b>c(UL) CM</b><br>      | 14 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>11.4 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+61%<br>Tinned Copper<br>Braid<br>3.0 Ω/Mft. | Black PVC       |       | 16.20                  | 53.15 | 85                               | 75                         | 1                      | 0.30    |
|                                                                                                                                                                         |                                                        | 0.280                  | 7.11 |                                                                          | 0.395           | 10.03 |                        |       |                                  |                            | 10                     | 0.70    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 50                     | 0.90    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 100                    | 1.30    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 200                    | 1.90    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 500                    | 3.00    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1000                   | 4.40    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1450                   | 5.30    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1800                   | 5.90    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 2200                   | 6.53    |
| 3000                                                                                                                                                                    | 7.62                                                   |                        |      |                                                                          |                 |       |                        |       |                                  |                            |                        |         |
| <b>C5034</b><br><b>RG 11/U Type</b><br><b>UL 1354</b><br>                            | 14 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>11.4 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+40%<br>Aluminum Braid<br>5.3 Ω/Mft.         | Black PVC       |       | 16.20                  | 53.15 | 85                               | 75                         | 1                      | 0.30    |
|                                                                                                                                                                         |                                                        | 0.280                  | 7.11 |                                                                          | 0.395           | 10.03 |                        |       |                                  |                            | 10                     | 0.70    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 50                     | 0.90    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 100                    | 1.30    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 200                    | 1.90    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 500                    | 3.00    |
|                                                                                                                                                                         |                                                        |                        |      |                                                                          |                 |       |                        |       |                                  |                            | 1000                   | 4.40    |

# RG 11/U Type

## Product Construction:

### Conductor:

- Copper per ASTM B-3
- Copper-clad steel per ASTM B-3

### Insulation/Core:

- Foam polyethylene (PE) design
- Foam fluoropolymer (FEP) design

### Shield:

- Tinned, bare copper or aluminum braid
- Flexfoil® shield

### Jacket:

- Premium PVC compound, Flexguard® or PE compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast digital video
- MATV
- CATV
- Drop cable
- HDTV
- Direct burial
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                                                            | AWG<br>SIZE<br>NOM. DCR                                | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                                      | NOMINAL<br>O.D. |       | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------|------|-----------------------------------------------------------------------------------------|-----------------|-------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                                                              |                                                        | INCHES                 | mm   |                                                                                         | INCHES          | mm    | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C5039</b><br><b>RG 11/U Type</b><br><b>UL CL2, CATV, CM</b><br><b>CSA CMG</b><br><b>1354</b><br>                         | 14 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>11.4 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded<br>+60%<br>Aluminum Braid<br>4.6 Ω/Mft.                        | Black PVC       |       | 16.20                  | 53.15 | 85                               | 75                         | 1                      | 0.30    |
|                                                                                                                                                                                                              |                                                        | 0.280                  | 7.11 |                                                                                         | 0.395           | 10.03 |                        |       |                                  |                            | 10                     | 0.70    |
| <b>C5044</b><br><b>RG 11/U Type</b><br><b>Quad-Shield</b><br><b>UL CL2, CATV, CM</b><br><b>CSA CMG</b><br><b>1354</b><br> | 14 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>11.4 Ω/Mft. | Foam PE                |      | (2) 100% Flexfoil®<br>1st Bonded<br>(1) 61%<br>(2) 40%<br>Aluminum Braids<br>3.4 Ω/Mft. | Black PVC       |       | 16.20                  | 53.15 | 85                               | 75                         | 1                      | 0.30    |
|                                                                                                                                                                                                              |                                                        | 0.280                  | 7.11 |                                                                                         | 0.405           | 10.29 |                        |       |                                  |                            | 10                     | 0.70    |
| <b>C3528</b><br><b>RG 11/U Type</b><br><b>Plenum</b><br><b>UL CL2P, CMP</b><br><b>c(UL) CMP</b><br><b>CATVP</b><br>       | 14 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>11.4 Ω/Mft. | Fluoropolymer          |      | 100% Flexfoil®<br>+60%<br>Aluminum Braids<br>4.6 Ω/Mft.                                 | PVDF Jacket     |       | 16.00                  | 52.50 | 82                               | 75                         | 1                      | 0.15    |
|                                                                                                                                                                                                              |                                                        | 0.280                  | 7.11 |                                                                                         | 0.351           | 8.92  |                        |       |                                  |                            | 10                     | 0.47    |
|                                                                                                                                                                                                              |                                                        |                        |      |                                                                                         |                 |       |                        |       |                                  |                            | 50                     | 1.09    |
|                                                                                                                                                                                                              |                                                        |                        |      |                                                                                         |                 |       |                        |       |                                  |                            | 100                    | 1.49    |
|                                                                                                                                                                                                              |                                                        |                        |      |                                                                                         |                 |       |                        |       |                                  |                            | 200                    | 2.35    |
|                                                                                                                                                                                                              |                                                        |                        |      |                                                                                         |                 |       |                        |       |                                  |                            | 500                    | 3.94    |
|                                                                                                                                                                                                              |                                                        |                        |      |                                                                                         |                 |       |                        |       |                                  |                            | 1000                   | 6.19    |
|                                                                                                                                                                                                              |                                                        |                        |      |                                                                                         |                 |       |                        |       |                                  |                            | 1450                   | 7.45    |
|                                                                                                                                                                                                              |                                                        |                        |      |                                                                                         |                 |       |                        |       |                                  |                            | 1800                   | 8.30    |
|                                                                                                                                                                                                              |                                                        |                        |      |                                                                                         |                 |       |                        |       |                                  |                            | 2200                   | 9.18    |

# RG 11/U Type

## Product Construction:

### Conductor:

- Stranded or solid copper per ASTM B-3
- Copper-clad steel per ASTM B-869

### Insulation/Core:

- Foam polyethylene (PE) design
- Foam fluoropolymer (FEP) design

### Shield:

- Bare copper or aluminum braid
- Flexfoil® shield

### Jacket:

- Premium fluoropolymer compound or premium polyethylene (PE) compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast/digital video
- MATV
- CATV
- Drop cable
- HDTV
- Direct burial
- See Coax Connector Cross Reference, pages 192-199

| CATALOG NUMBER                                                                                                                                                                                                             | AWG SIZE<br>NOM. DCR                                           | INSULATION MATERIAL |      | SHIELD COVERAGE<br>NOM SHLD DCR                                                           | NOMINAL O.D. |       | NOMINAL CAPACITANCE |       | VELOCITY OF PROPAGATION, % | NOMINAL IMPEDANCE, $\Omega$ | NOMINAL ATTENUATION |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------|------|-------------------------------------------------------------------------------------------|--------------|-------|---------------------|-------|----------------------------|-----------------------------|---------------------|---------|
|                                                                                                                                                                                                                            |                                                                | INCHES              | mm   |                                                                                           | INCHES       | mm    | pF/ft               | pF/m  |                            |                             | MHz                 | dB/100' |
| <b>C3529</b><br><b>RG 11/U Type</b><br><b>Quad-Shield</b><br><b>Plenum</b><br><b>UL CL2P, CMP</b><br><b>c(UL) CMP</b><br><b>CATVP</b><br> | 14 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>11.4 $\Omega$ /Mft. | Fluoropolymer       |      | (2) 100% Flexfoil®<br>(1) 60%<br>(2) 40%<br>Aluminum Braids<br>3.4 $\Omega$ /Mft.         | PVDF Jacket  |       | 16.00               | 52.50 | 82                         | 75                          | 1                   | 0.15    |
|                                                                                                                                                                                                                            |                                                                | 0.280               | 7.11 |                                                                                           | 0.372        | 9.45  |                     |       |                            |                             | 10                  | 0.47    |
| <b>C5043</b><br><b>RG 11/U Type</b><br><b>MoistureGuard™</b><br><b>Direct Burial, Flooded</b><br>                                        | 14 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>11.4 $\Omega$ /Mft. | Foam PE             |      | 100% Flexfoil®<br>Bonded<br>+60%<br>Aluminum Braid<br>w/water block<br>5.3 $\Omega$ /Mft. | Black PE     |       | 16.20               | 53.15 | 85                         | 75                          | 1                   | 0.30    |
|                                                                                                                                                                                                                            |                                                                | 0.280               | 7.11 |                                                                                           | 0.395        | 10.03 |                     |       |                            |                             | 10                  | 0.70    |
|                                                                                                                                                                                                                            |                                                                |                     |      |                                                                                           |              |       |                     |       |                            |                             | 50                  | 0.90    |
|                                                                                                                                                                                                                            |                                                                |                     |      |                                                                                           |              |       |                     |       |                            |                             | 100                 | 1.30    |
|                                                                                                                                                                                                                            |                                                                |                     |      |                                                                                           |              |       |                     |       |                            |                             | 200                 | 1.90    |
|                                                                                                                                                                                                                            |                                                                |                     |      |                                                                                           |              |       |                     |       |                            |                             | 500                 | 3.00    |
|                                                                                                                                                                                                                            |                                                                |                     |      |                                                                                           |              |       |                     |       |                            |                             | 1000                | 4.40    |
|                                                                                                                                                                                                                            |                                                                |                     |      |                                                                                           |              |       |                     |       |                            |                             | 2200                | 9.18    |

# RG 11/U Type Serial Digital Interface (SDI) Precision Cable

Extended-Distance, 75 Ohm High-End Coaxial Cables for Exacting Video, Analog & Digital Applications

## Product Construction:

### Conductor:

- Copper per ASTM B-3

### Insulation/Core:

- Foam polyethylene (PE) design
- Foam fluoropolymer (FEP) design

### Shield:

- Bare copper or tinned copper
- Flexfoil® shield

## Jacket:

- Premium PVC compound or fluoropolymer

## Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast-grade Serial Digital Interface (SDI)
- Analog/digital video
- MATV
- CATV
- CCTV†
- Drop cable
- HDTV
- See Coax Connector Cross Reference, pages 192-199

| CATALOG NUMBER                                                                                                                        | AWG SIZE<br>NOM. DCR                         | INSULATION MATERIAL |      | SHIELD COVERAGE<br>NOM SHLD DCR                                        | NOMINAL O.D.           |       | NOMINAL CAPACITANCE |       | VELOCITY OF PROPAGATION,<br>% | NOMINAL IMPEDANCE,<br>Ω | NOMINAL ATTENUATION                                          |                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------|------|------------------------------------------------------------------------|------------------------|-------|---------------------|-------|-------------------------------|-------------------------|--------------------------------------------------------------|----------------------------------------------------------------------|
|                                                                                                                                       |                                              | INCHES              | mm   |                                                                        | INCHES                 | mm    | pF/ft               | pF/m  |                               |                         | MHz                                                          | dB/100'                                                              |
| 395058†<br>RG 11/U Type<br>UL CM<br>c(UL) CMG<br>    | 14 Ga.<br>Solid Bare<br>Copper<br>2.6 Ω/Mft. | Foam PE             |      | 95% Bare<br>Copper Braid<br>1.2 Ω/Mft.                                 | Flame-Retardant<br>PVC |       | 16.20               | 52.50 | 84                            | 75                      | 1                                                            | 0.17                                                                 |
|                                                                                                                                       |                                              | 0.285               | 7.24 |                                                                        | 0.405                  | 10.29 |                     |       |                               |                         | 10<br>50<br>100<br>200<br>400<br>540<br>1000<br>2250<br>3000 | 0.35<br>0.90<br>1.30<br>1.90<br>2.90<br>3.37<br>4.59<br>6.88<br>7.94 |
| 395029<br>RG 11/U Type<br>UL CMR<br>c(UL) CMG<br>  | 14 Ga.<br>Solid Bare<br>Copper<br>2.6 Ω/Mft. | Foam PE             |      | Dual Flexfoil®<br>+ 95% Tinned<br>Copper Braid<br>1.5 Ω/Mft.           | Flame-Retardant<br>PVC |       | 16.20               | 53.10 | 83                            | 75                      | 1                                                            | 0.15                                                                 |
|                                                                                                                                       |                                              | 0.280               | 7.11 |                                                                        | 0.405                  | 10.29 |                     |       |                               |                         | 3.6<br>135<br>270<br>540<br>1500<br>2250<br>3000             | 0.28<br>1.62<br>2.31<br>3.29<br>5.60<br>6.94<br>8.10                 |
| 495015†<br>RG 11/U Type<br>UL CMP<br>c(UL) CMP<br> | 14 Ga.<br>Solid Bare<br>Copper<br>2.6 Ω/Mft. | Fluoropolymer       |      | 95% Bare<br>Copper Braid<br>1.2 Ω/Mft.                                 | PVDF                   |       | 16.20               | 52.50 | 84                            | 75                      | 1                                                            | 0.17                                                                 |
|                                                                                                                                       |                                              | 0.280               | 7.11 |                                                                        | 0.351                  | 8.92  |                     |       |                               |                         | 10<br>50<br>100<br>200<br>400<br>540<br>1000<br>2250<br>3000 | 0.35<br>0.90<br>1.30<br>1.90<br>2.90<br>3.37<br>4.59<br>6.88<br>7.94 |
| 495016†<br>RG 11/U Type<br>UL CMP<br>c(UL) CMP<br> | 14 Ga.<br>Solid Bare<br>Copper<br>2.6 Ω/Mft. | Fluoropolymer       |      | Dual Flexfoil®<br>+ 60% AL Braid<br>3.0 Ω/Mft.                         | PVDF                   |       | 16.20               | 53.10 | 84                            | 75                      | 1                                                            | 0.15                                                                 |
|                                                                                                                                       |                                              | 0.280               | 7.11 |                                                                        | 0.351                  | 8.92  |                     |       |                               |                         | 10<br>50<br>100<br>200<br>400<br>540<br>1000<br>2250<br>3000 | 0.40<br>1.00<br>1.50<br>2.20<br>3.30<br>3.83<br>5.22<br>7.83<br>9.04 |
| 495027<br>RG 11/U Type<br>UL CMP<br>c(UL) CMP<br>  | 14 Ga.<br>Solid Bare<br>Copper<br>2.6 Ω/Mft. | Fluoropolymer       |      | Dual Flexfoil®<br>+ 95% Tinned<br>Copper Braid<br>Shield<br>1.5 Ω/Mft. | PVDF                   |       | 16.20               | 53.10 | 84                            | 75                      | 1                                                            | 0.12                                                                 |
|                                                                                                                                       |                                              | 0.280               | 7.11 |                                                                        | 0.348                  | 8.84  |                     |       |                               |                         | 3.6<br>135<br>270<br>540<br>1500<br>2250<br>3000             | 0.24<br>1.63<br>2.49<br>3.89<br>7.88<br>10.61<br>12.35               |

# RG 58/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3
- Tinned copper per ASTM B-33

### Insulation/Core:

- Solid and foam polyethylene (PE) designs
- Solid and foam fluoropolymer (FEP) design

### Shield:

- Tinned copper braid

### Jacket:

- Premium PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast
- LAN & data transmission
- See Coax Connector Cross Reference, pages 192-199

| CATALOG NUMBER                                                                                                                                                                         | AWG SIZE<br>NOM. DCR                                            | INSULATION MATERIAL |      | SHIELD COVERAGE<br>NOM SHLD DCR                  | NOMINAL O.D.                   |      | NOMINAL CAPACITANCE |        | VELOCITY OF PROPAGATION, % | NOMINAL IMPEDANCE, $\Omega$ | NOMINAL ATTENUATION |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------|------|--------------------------------------------------|--------------------------------|------|---------------------|--------|----------------------------|-----------------------------|---------------------|---------|
|                                                                                                                                                                                        |                                                                 | INCHES              | mm   |                                                  | INCHES                         | mm   | pF/ft               | pF/m   |                            |                             | MHz                 | dB/100' |
| <b>C1117</b><br><b>RG 58/U Type</b><br>                                                               | 20 Ga.<br>Solid Bare<br>Copper<br>10.1 $\Omega$ /Mft.           | Solid PE            |      | 70% Tinned<br>Copper Braid<br>6.0 $\Omega$ /Mft. | Black PVC                      |      | 28.50               | 93.51  | 66                         | 53                          | 1                   | 0.40    |
|                                                                                                                                                                                        |                                                                 | 0.116               | 2.95 |                                                  | 0.195                          | 4.95 |                     |        |                            |                             | 10                  | 1.20    |
| <b>C1155</b><br><b>RG 58 C/U Type</b><br><b>MIL-C-17G Type</b><br>                                    | 20 Ga.<br>(19/.0071)<br>Tinned<br>Copper<br>10.8 $\Omega$ /Mft. | Solid PE            |      | 95% Tinned<br>Copper Braid<br>4.3 $\Omega$ /Mft. | Non-Contaminating<br>Black PVC |      | 30.80               | 101.05 | 66                         | 50                          | 1                   | 0.42    |
|                                                                                                                                                                                        |                                                                 | 0.116               | 2.95 |                                                  | 0.195                          | 4.95 |                     |        |                            |                             | 10                  | 1.50    |
| <b>C1166</b><br><b>RG 58/U Type</b><br><b>JAN-C-17A Type</b><br><br>1354                            | 20 Ga.<br>Solid Bare<br>Copper<br>10.1 $\Omega$ /Mft.           | Solid PE            |      | 95% Tinned<br>Copper Braid<br>4.3 $\Omega$ /Mft. | Black PVC                      |      | 30.00               | 98.43  | 66                         | 50                          | 1                   | 0.40    |
|                                                                                                                                                                                        |                                                                 | 0.116               | 2.95 |                                                  | 0.195                          | 4.95 |                     |        |                            |                             | 10                  | 1.20    |
| <b>C1178</b><br><b>RG 58A/U Type</b><br><b>JAN-C-17A Type</b><br><br>1354                           | 20 Ga.<br>(19/.0071)<br>Tinned<br>Copper<br>10.8 $\Omega$ /Mft. | Solid PE            |      | 95% Tinned<br>Copper Braid<br>4.3 $\Omega$ /Mft. | Black PVC                      |      | 31.80               | 104.34 | 66                         | 50                          | 1                   | 0.42    |
|                                                                                                                                                                                        |                                                                 | 0.116               | 2.95 |                                                  | 0.195                          | 4.95 |                     |        |                            |                             | 10                  | 1.50    |
| <b>C1188</b><br><b>RG 58 A/U Type</b><br><b>UL CL2, CM</b><br><b>CSA CMG</b><br><br>1354            | 20 Ga.<br>(19/.0071)<br>Tinned<br>Copper<br>9.5 $\Omega$ /Mft.  | Foam PE             |      | 95% Tinned<br>Copper Braid<br>4.3 $\Omega$ /Mft. | Black PVC                      |      | 26.00               | 85.31  | 78                         | 50                          | 1                   | 0.45    |
|                                                                                                                                                                                        |                                                                 | 0.114               | 2.90 |                                                  | 0.195                          | 4.95 |                     |        |                            |                             | 10                  | 1.42    |
| <b>C3519</b><br><b>RG 58/U Type</b><br><b>Plenum</b><br><b>UL CL2P, CMP</b><br><b>c(UL) CMP</b><br> | 19 Ga.<br>Solid Bare<br>Copper<br>8.1 $\Omega$ /Mft.            | Fluoropolymer       |      | 95% Tinned<br>Copper Braid<br>2.9 $\Omega$ /Mft. | Flexguard® PVC<br>Natural      |      | 25.00               | 82.00  | 82                         | 50                          | 1                   | 0.40    |
|                                                                                                                                                                                        |                                                                 | 0.102               | 2.59 |                                                  | 0.161                          | 4.09 |                     |        |                            |                             | 10                  | 1.30    |

# RG 59/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3
- Copper-clad steel per ASTM B-869
- Twisted pair color code: black and red

### Insulation/Core:

- Solid and cellular polyethylene (PE) designs or foam fluoropolymer (FEP) design

### Shield:

- Bare copper braid

### Jacket:

- Premium PVC compound or PE compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- CATV
- MATV
- CCTV†
- Local Area Network
- Digital video
- Monitor/VDI display
- See Coax Connector Cross Reference, pages 192-199

| CATALOG NUMBER                                                                                                                                               | AWG SIZE<br>NOM. DCR                                  | INSULATION MATERIAL |      | SHIELD COVERAGE<br>NOM SHLD DCR     | NOMINAL O.D.                |      | NOMINAL CAPACITANCE |       | VELOCITY OF PROPAGATION,<br>% | NOMINAL IMPEDANCE,<br>Ω | NOMINAL ATTENUATION |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------|------|-------------------------------------|-----------------------------|------|---------------------|-------|-------------------------------|-------------------------|---------------------|---------|
|                                                                                                                                                              |                                                       | INCHES              | mm   |                                     | INCHES                      | mm   | pF/ft               | pF/m  |                               |                         | MHz                 | dB/100' |
| C1102<br>RG 59/U Type<br>                                                   | 20 Ga. Solid Copper-Clad Steel<br>45.9 Ω/Mft.         | Foam PE             |      | 95% Bare Copper Braid<br>3.5 Ω/Mft. | Black PE                    |      | 17.30               | 56.76 | 82                            | 75                      | 1                   | 0.26    |
|                                                                                                                                                              |                                                       | 0.146               | 3.71 |                                     | 0.242                       | 6.15 |                     |       |                               |                         | 10                  | 0.82    |
| C1104<br>RG 59/U Type<br>UL 1354<br>                                        | 22 Ga. Solid Copper-Clad Steel<br>73.4 Ω/Mft.         | Solid PE            |      | 95% Bare Copper Braid<br>2.6 Ω/Mft. | Black PVC                   |      | 20.50               | 67.26 | 66                            | 73                      | 50                  | 1.80    |
|                                                                                                                                                              |                                                       | 0.146               | 3.71 |                                     | 0.242                       | 6.15 |                     |       |                               |                         | 100                 | 2.60    |
| C1135<br>RG 59/U Type<br>UL CL2, CATV, CM<br>CSA CMG<br>UL 1354<br>       | 22 Ga. Solid Copper-Clad Steel<br>73.4 Ω/Mft.         | Foam PE             |      | 95% Bare Copper Braid<br>2.6 Ω/Mft. | Black PVC                   |      | 16.30               | 53.48 | 78                            | 80                      | 200                 | 3.70    |
|                                                                                                                                                              |                                                       | 0.146               | 3.71 |                                     | 0.242                       | 6.15 |                     |       |                               |                         | 500                 | 6.00    |
| C1103†<br>RG 59/U Type<br>UL CL2, CATV, CM<br>CSA CMG<br>UL 1354<br>      | 22 Ga. (7/30)<br>Bare Copper<br>14.8 Ω/Mft.           | Foam PE             |      | 95% Bare Copper Braid<br>2.6 Ω/Mft. | Black PVC                   |      | 17.00               | 55.78 | 78                            | 76                      | 1000                | 8.80    |
|                                                                                                                                                              |                                                       | 0.146               | 3.71 |                                     | 0.242                       | 6.15 |                     |       |                               |                         | 1450                | 10.60   |
| C1142†<br>RG 59/U Type<br>UL CL2, CATV, CM CSA<br>CMG<br>UL 1354<br>      | 20 Ga. Solid Bare Copper<br>10.1 Ω/Mft.               | Foam PE             |      | 95% Bare Copper Braid<br>2.6 Ω/Mft. | Black PVC                   |      | 16.20               | 53.15 | 78                            | 71                      | 1800                | 11.81   |
|                                                                                                                                                              |                                                       | 0.146               | 3.71 |                                     | 0.234                       | 5.94 |                     |       |                               |                         | 2200                | 13.05   |
| C1106<br>RG 59B/U Type<br>MIL-C-17D Type<br>UL 1354<br>                   | 23 Ga. Solid Copper-Clad Steel<br>68.5 Ω/Mft.         | Solid PE            |      | 95% Bare Copper Braid<br>2.6 Ω/Mft. | Non-Contaminating Black PVC |      | 21.00               | 68.90 | 66                            | 73                      | 3000                | 15.24   |
|                                                                                                                                                              |                                                       | 0.146               | 3.71 |                                     | 0.242                       | 6.15 |                     |       |                               |                         | 1                   | 0.41    |
| C8030†<br>RG 59/U Type<br>+18 AWG Unshielded Pair<br>UL CMP c(UL) CMP<br> | 20 AWG Solid BC Coax<br>18 AWG (7/26) Unshielded Pair | Fluoropolymer       |      | 95% Bare Copper Braid               | Natural PVC                 |      | 16.30               | 53.48 | 83                            | 75                      | 10                  | 0.78    |
|                                                                                                                                                              |                                                       | 0.135               | 3.43 |                                     | 0.200                       | 5.08 |                     |       |                               |                         | 50                  | 1.90    |
|                                                                                                                                                              |                                                       | PVC                 |      | Unshielded Pair                     | X                           | X    |                     |       |                               |                         | 100                 | 2.80    |
|                                                                                                                                                              |                                                       | 0.006               | 0.15 |                                     | 0.383                       | 9.73 |                     |       |                               |                         | 200                 | 4.10    |

# RG 59/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3
- Copper-clad steel per ASTM B-869
- Twisted pair color code: black and red

### Insulation/Core:

- Solid and foam polyethylene (PE) designs

### Shield:

- Tinned, bare copper or aluminum braid
- Flexfoil® shield

### Jacket:

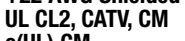
- Premium PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- MATV
- CATV
- CCTV†
- Local Area Network
- Monitor/VDT display
- Analog video
- Digital video
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                                                         | AWG<br>SIZE<br>NOM. DCR                                                    | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR     | NOMINAL<br>O.D. |            | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|------|----------------------------------------|-----------------|------------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                                                           |                                                                            | INCHES                 | mm   |                                        | INCHES          | mm         | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C1110</b><br><b>RG 59/U Type</b><br>                                                                                  | 22 Ga. Solid<br>Copper-Clad<br>Steel<br>73.4 Ω/Mft.                        | Solid PE               |      | 70% Bare<br>Copper Braid<br>4.5 Ω/Mft. | Black PVC       |            | 22.00                  | 72.18 | 66                               | 73                         | 1                      | 0.41    |
|                                                                                                                                                                                                           |                                                                            | 0.146                  | 3.71 |                                        | 0.242           | 6.15       |                        |       |                                  |                            | 10                     | 0.99    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 50                     | 2.38    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 100                    | 3.49    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 200                    | 5.09    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 500                    | 8.43    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 1000                   | 13.03   |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 1450                   | 15.69   |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 1800                   | 17.48   |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 2200                   | 19.33   |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 3000                   | 22.57   |
| <b>C1112</b><br><b>RG 59/U Type</b><br>                                                                                  | 22 Ga. Solid<br>Copper-Clad<br>Steel<br>73.4 Ω/Mft.                        | Foam PE                |      | 70% Bare<br>Copper Braid<br>4.5 Ω/Mft. | Black PVC       |            | 16.30                  | 53.48 | 78                               | 80                         | 1                      | 0.42    |
|                                                                                                                                                                                                           |                                                                            | 0.146                  | 3.71 |                                        | 0.242           | 6.15       |                        |       |                                  |                            | 10                     | 0.92    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 50                     | 2.10    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 100                    | 2.90    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 200                    | 4.10    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 500                    | 6.60    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 1000                   | 9.30    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 1450                   | 11.20   |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 1800                   | 12.48   |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 2200                   | 13.79   |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 3000                   | 16.11   |
| <b>C8025†</b><br><b>RG 59/U Type</b><br><b>+22 AWG Shielded Pair</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br> | 22 AWG<br>(7/30) Bare<br>Copper Coax<br><br>22 AWG (7/30)<br>Shielded Pair | Foam PE                |      | 95% Bare<br>Copper Braid               | Black PVC       |            | 17.00                  | 57.78 | 78                               | 76                         | 1                      | 0.26    |
|                                                                                                                                                                                                           |                                                                            | 0.144                  | 3.66 |                                        | 0.242<br>X      | 6.147<br>X |                        |       |                                  |                            | 10                     | 0.91    |
|                                                                                                                                                                                                           |                                                                            | Premium PVC            |      | 100% Flexfoil®<br>Al/PP Shielded       | 0.445           | 11.30      | 50                     | 2.90  |                                  |                            |                        |         |
|                                                                                                                                                                                                           |                                                                            | 0.013                  | 0.33 |                                        |                 |            | 100                    | 3.00  |                                  |                            |                        |         |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 200                    | 4.33    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 500                    | 7.03    |
|                                                                                                                                                                                                           |                                                                            |                        |      |                                        |                 |            |                        |       |                                  |                            | 1000                   | 10.64   |

# RG 59/U Type

## Product Construction:

### Conductors:

- Copper-clad steel per ASTM B-869

### Insulation/Core:

- Foam polyethylene (PE) design

### Shield:

- Aluminum braid
- Flexfoil® shield

## Jacket:

- Premium PVC compound

## Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- CATV
- MATV
- Drop cable
- Local Area Network
- Monitor/VDT display
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                                                            | AWG<br>SIZE<br>NOM. DCR                             | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                                     | NOMINAL<br>O.D. |      | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------|------|----------------------------------------------------------------------------------------|-----------------|------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                                                              |                                                     | INCHES                 | mm   |                                                                                        | INCHES          | mm   | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C5770</b><br><b>RG 59/U Type</b><br><b>UL CL2, CATV, CM</b><br><b>CSA CMG</b><br><b>1354</b><br>                         | 22 Ga. Solid<br>Copper-Clad<br>Steel<br>73.4 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded + 40%<br>Aluminum<br>Braid<br>11.0 Ω/Mft.                     | Black PVC       |      | 16.00                  | 52.50 | 78                               | 80                         | 1                      | 0.50    |
|                                                                                                                                                                                                              |                                                     | 0.144                  | 3.66 |                                                                                        | 0.231           | 5.87 |                        |       |                                  |                            | 10                     | 1.00    |
| <b>C5780</b><br><b>RG 59/U Type</b><br><b>MATV</b><br><b>UL CL2, CATV, CM</b><br><b>CSA CMG</b><br><b>1354</b><br>        | 20 Ga. Solid<br>Copper-Clad<br>Steel<br>45.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded + 40%<br>Aluminum<br>Braid<br>11.0 Ω/Mft.                     | Black PVC       |      | 16.20                  | 53.15 | 85                               | 75                         | 50                     | 1.95    |
|                                                                                                                                                                                                              |                                                     | 0.144                  | 3.66 |                                                                                        | 0.234           | 5.94 |                        |       |                                  |                            | 100                    | 2.70    |
| <b>C5830</b><br><b>RG 59/U Type</b><br><b>Tri-Shield</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br>                | 20 Ga. Solid<br>Copper-Clad<br>Steel<br>45.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>Bonded + 95%<br>Aluminum<br>Braid +<br>100% Flexfoil®<br>3.0 Ω/Mft.  | Black PVC       |      | 16.20                  | 53.15 | 85                               | 75                         | 100                    | 2.70    |
|                                                                                                                                                                                                              |                                                     | 0.144                  | 3.66 |                                                                                        | 0.242           | 6.15 |                        |       |                                  |                            | 200                    | 3.70    |
| <b>C5784</b><br><b>RG 59/U Type</b><br><b>Quad-Shield</b><br><b>UL CL2, CATV, CM</b><br><b>CSA CMG</b><br><b>1354</b><br> | 20 Ga. Solid<br>Copper-Clad<br>Steel<br>45.9 Ω/Mft. | Foam PE                |      | 100% Flexfoil®<br>1st Bonded<br>(1) 67%<br>(2) 46%<br>Aluminum<br>Braids<br>4.1 Ω/Mft. | Black PVC       |      | 16.20                  | 53.15 | 85                               | 75                         | 1000                   | 8.12    |
|                                                                                                                                                                                                              |                                                     | 0.144                  | 3.66 |                                                                                        | 0.270           | 6.86 |                        |       |                                  |                            | 3000                   | 14.06   |

# RG 59/U Type

## Product Construction:

### Conductors:

- Copper-clad steel per ASTM B-869
- Copper per ASTM B-3
- Twisted pair color code: black and red

### Insulation/Core:

- Foam polyethylene (PE) design

### Shield:

- Bare copper or aluminum braid
- Flexfoil® shield

### Jacket:

- Premium PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- MATV
- CATV
- CCTV†
- Local Area Network
- Monitor/VDI display
- Direct burial
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                                                                     | AWG<br>SIZE<br>NOM. DCR                                                       | INSULATION<br>MATERIAL |       | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                       | NOMINAL<br>O.D.           |       | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------|-------|--------------------------------------------------------------------------|---------------------------|-------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                                                                       |                                                                               | INCHES                 | mm    |                                                                          | INCHES                    | mm    | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C3526</b><br><b>RG 59/U Type</b><br><b>Plenum</b><br><b>UL CL2P, CMP</b><br><b>c(UL) CMP</b><br>                                  | 20 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>45.9 Ω/Mft.                        | Fluoropolymer          |       | 100% Flexfoil®<br>+65%<br>Aluminum Braid<br>10.7 Ω/Mft.                  | Flexguard®<br>Natural     |       | 16.00                  | 52.50 | 84                               | 75                         | 1                      | 0.34    |
|                                                                                                                                                                                                                       |                                                                               | 0.135                  | 3.429 |                                                                          | 0.202                     | 5.13  |                        |       |                                  |                            | 10                     | 1.07    |
| <b>C3527</b><br><b>RG 59/U Type</b><br><b>Quad-Shield Plenum</b><br><b>UL CL2P, CMP</b><br><b>c(UL) CMP</b><br>                     | 20 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>45.9 Ω/Mft.                        | Fluoropolymer          |       | (2) 100% Flexfoil®<br>(1) 60%<br>(2) 40%<br>Aluminum Braid<br>6.3 Ω/Mft. | Flexguard®<br>Natural     |       | 16.00                  | 52.50 | 84                               | 75                         | 1                      | 0.34    |
|                                                                                                                                                                                                                       |                                                                               | 0.135                  | 3.429 |                                                                          | 0.235                     | 5.97  |                        |       |                                  |                            | 10                     | 1.07    |
| <b>C3500</b><br><b>RG 59/U Type</b><br><b>Plenum</b><br><b>UL CL2P, CMP</b><br><b>c(UL) CMP</b><br>                                | 20 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>45.9 Ω/Mft.                        | Fluoropolymer          |       | 95% Bare<br>Copper Braid<br>1.9 Ω/Mft.                                   | Flexguard® PVC<br>Natural |       | 16.50                  | 54.14 | 83                               | 75                         | 1                      | 0.78    |
|                                                                                                                                                                                                                       |                                                                               | 0.145                  | 3.68  |                                                                          | 0.201                     | 5.11  |                        |       |                                  |                            | 10                     | 1.90    |
| <b>C8027†</b><br><b>RG 59/U Type</b><br><b>+18 AWG</b><br><b>Shielded Pair</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br>   | 22 AWG<br>(7/30) Bare<br>Copper Coax<br>18 AWG<br>(16/30)<br>Shielded Pair    | Foam PE                |       | 95% Bare<br>Copper Braid                                                 | Black PVC                 |       | 17.00                  | 55.78 | 78                               | 76                         | 1                      | 0.26    |
|                                                                                                                                                                                                                       |                                                                               | 0.144                  | 3.66  |                                                                          | 0.242                     | 6.15  |                        |       |                                  |                            | 10                     | 0.91    |
|                                                                                                                                                                                                                       |                                                                               | Premium PVC            |       | 125% Flexfoil®<br>Al/PP Shielded                                         | X<br>X                    |       |                        |       |                                  |                            | 100                    | 3.00    |
|                                                                                                                                                                                                                       |                                                                               | 0.016                  | 0.41  |                                                                          | 0.480                     | 12.19 |                        |       |                                  |                            | 200                    | 4.33    |
| <b>C8028†</b><br><b>RG 59/U Type</b><br><b>+18 AWG</b><br><b>Unshielded Pair</b><br><b>UL CL2, CATV, CM</b><br><b>c(UL) CM</b><br> | 20 AWG<br>Solid Bare<br>Copper Coax<br>18 AWG<br>(7/26)<br>Unshielded<br>Pair | Foam PE                |       | 95% Bare<br>Copper Braid                                                 | Black PVC                 |       | 16.20                  | 53.15 | 78                               | 71                         | 1                      | 0.25    |
|                                                                                                                                                                                                                       |                                                                               | 0.144                  | 3.66  |                                                                          | 0.238                     | 6.05  |                        |       |                                  |                            | 10                     | 0.78    |
|                                                                                                                                                                                                                       |                                                                               | Premium PVC            |       | Unshielded Pair                                                          | X<br>X                    |       |                        |       |                                  |                            | 100                    | 2.70    |
|                                                                                                                                                                                                                       |                                                                               | 0.010                  | 0.25  |                                                                          | 0.440                     | 11.18 |                        |       |                                  |                            | 200                    | 3.97    |

# RG 59/U Precision & Miniature Cable

75 Ohm High-End Coaxial Cables for Video, Analog and Digital Applications

## Product Construction:

### Conductors:

- Copper-clad steel per ASTM B-869
- Copper per ASTM B-3

### Insulation/Core:

- Solid polyethylene (PE) designs
- Foam fluoropolymer (FEP) design

### Shield:

- Bare or tinned copper, aluminum braid
- Flexfoil® shield

### Jacket:

- Premium PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast-grade
- MATV
- CATV
- CCTV†
- Precision video–analog/digital
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                               | AWG<br>SIZE<br>NOM. DCR                                              | INSULATION<br>MATERIAL |    | SHIELD<br>COVERAGE<br>NOM SHLD DCR               | NOMINAL<br>O.D. |      | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------|----|--------------------------------------------------|-----------------|------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                                                 |                                                                      | INCHES                 | mm |                                                  | INCHES          | mm   | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| <b>C1158</b><br><b>RG 59/U Type</b><br><b>Miniature Type</b><br>               | 27 Ga.<br>(7/35)<br>Stranded<br>Copper-Clad<br>Steel<br>120.0 Ω/Mft. | Solid PE               |    | 93% Tinned<br>Copper Braid<br>6.5 Ω/Mft.         | Black PVC       |      | 20.50                  | 67.26 | 66                               | 75                         | 1                      | 1.20    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 |      |                        |       |                                  |                            | 10                     | 2.40    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 |      |                        |       |                                  |                            | 50                     | 4.20    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 |      |                        |       |                                  |                            | 100                    | 5.70    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 |      |                        |       |                                  |                            | 200                    | 8.30    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 | 500  | 13.53                  |       |                                  |                            |                        |         |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 | 1000 | 20.00                  |       |                                  |                            |                        |         |
| <b>495028†</b><br><b>RG 59/U Type</b><br><b>UL CMP</b><br><b>c(UL) CMP</b><br> | 20 Ga.<br>Solid Bare<br>Copper<br>10.5 Ω/Mft.                        | Fluoropolymer          |    | 95% Bare<br>Copper Braid<br>Shield<br>2.7 Ω/Mft. | Plenum PVC      |      | 16.00                  | 52.50 | 84                               | 75                         | 1                      | 0.24    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 |      |                        |       |                                  |                            | 10                     | 1.41    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 |      |                        |       |                                  |                            | 50                     | 1.83    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 |      |                        |       |                                  |                            | 100                    | 2.64    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 |      |                        |       |                                  |                            | 200                    | 3.84    |
|                                                                                                                                                                 |                                                                      |                        |    |                                                  |                 | 400  | 5.64                   |       |                                  |                            |                        |         |

# RG 59 Serial Digital Interface Cable

75 Ohm High-End Coaxial Cables for Video, Analog & Digital Applications

## Product Construction:

### Conductors:

- Copper per ASTM B-3

### Insulation/Core:

- Foam polyethylene (PE) designs
- Foam fluoropolymer (FEP) design

### Shield:

- Tinned copper braid
- Flexfoil® shield

### Jacket:

- Premium PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast-grade
- MATV
- CATV
- Precision video-analog/digital
- Serial digital interface cable (SDI)
- See Coax Connector Cross Reference, pages 192-199

| CATALOG NUMBER                                                                                                                                                 | AWG SIZE<br>NOM. DCR                          | INSULATION MATERIAL |      | SHIELD COVERAGE<br>NOM SHLD DCR                                      | NOMINAL O.D.           |      | NOMINAL CAPACITANCE |       | VELOCITY OF PROPAGATION,<br>% | NOMINAL IMPEDANCE,<br>Ω | NOMINAL ATTENUATION |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------|------|----------------------------------------------------------------------|------------------------|------|---------------------|-------|-------------------------------|-------------------------|---------------------|---------|
|                                                                                                                                                                |                                               | INCHES              | mm   |                                                                      | INCHES                 | mm   | pF/ft               | pF/m  |                               |                         | MHz                 | dB/100' |
| <b>395025</b><br><b>RG 59/U Type</b><br><b>UL CMR</b><br><b>c(UL) CMG</b><br> | 20 Ga.<br>Solid Bare<br>Copper<br>10.5 Ω/Mft. | Foam PE             |      | Bi-Metal Foil<br>+95% Tinned<br>Copper Braid<br>Shield<br>3.5 Ω/Mft. | Flame-Retardant<br>PVC |      | 16.30               | 53.40 | 83                            | 75                      | 1                   | 0.29    |
|                                                                                                                                                                |                                               | 0.146               | 3.71 |                                                                      | 0.242                  | 6.15 |                     |       |                               |                         | 135                 | 2.70    |
| <b>495023</b><br><b>RG 59/U Type</b><br><b>UL CMP</b><br><b>c(UL) CMP</b><br> | 20 Ga.<br>Solid Bare<br>Copper<br>10.5 Ω/Mft. | Fluoropolymer       |      | Bi-Metal Foil<br>+95% Tinned<br>Copper Braid<br>Shield<br>3.2 Ω/Mft. | Plenum PVC             |      | 16.10               | 53.00 | 84                            | 75                      | 50                  | 1.88    |
|                                                                                                                                                                |                                               | 0.135               | 3.43 |                                                                      | 0.199                  | 5.05 |                     |       |                               |                         | 100                 | 2.50    |
|                                                                                                                                                                |                                               |                     |      |                                                                      |                        |      |                     |       |                               |                         | 200                 | 3.85    |
|                                                                                                                                                                |                                               |                     |      |                                                                      |                        |      |                     |       |                               |                         | 400                 | 5.53    |
|                                                                                                                                                                |                                               |                     |      |                                                                      |                        |      |                     |       |                               |                         | 540                 | 6.40    |
|                                                                                                                                                                |                                               |                     |      |                                                                      |                        |      |                     |       |                               |                         | 1000                | 8.56    |
|                                                                                                                                                                |                                               |                     |      |                                                                      |                        |      |                     |       |                               |                         | 2250                | 17.50   |
|                                                                                                                                                                |                                               |                     |      |                                                                      |                        |      |                     |       |                               |                         | 3000                | 21.90   |

# RG 59/U (RGB) Multi-Channel Digital/Precision Cable

75 Ohm High-End Coaxial Cables for Video, Analog & Monitor Applications

## Product Construction:

### Conductors:

- Solid bare copper per ASTM B-3

### Insulation/Core:

- Foam polyethylene (PE) design

### Shield:

- Tinned copper braid
- Flexfoil® shield

## Jacket:

- Outer jacket: matte finish thermoplastic elastomer (TPE)
- Inner jacket: flame-retardant PVC

## Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast
- HDTV
- Video-analog/digital
- Monitor applications
- See Coax Connector Cross Reference, pages 192-199

| CATALOG NUMBER | AWG SIZE<br>NOM. DCR | INSULATION MATERIAL |    | SHIELD COVERAGE<br>NOM SHLD DCR | NOMINAL O.D. |    | NOMINAL CAPACITANCE |      | VELOCITY OF PROPAGATION,<br>% | NOMINAL IMPEDANCE,<br>Ω | NOMINAL ATTENUATION |         |
|----------------|----------------------|---------------------|----|---------------------------------|--------------|----|---------------------|------|-------------------------------|-------------------------|---------------------|---------|
|                |                      | INCHES              | mm |                                 | INCHES       | mm | pF/ft               | pF/m |                               |                         | MHz                 | dB/100' |

### RG 59/U SERIAL DIGITAL INTERFACE (SDI), PRECISION COAX, RISER RATED

|                                                                                                                                                                     |                                                           |         |      |                                                                      |                                                             |       |       |       |    |    |      |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------|------|----------------------------------------------------------------------|-------------------------------------------------------------|-------|-------|-------|----|----|------|------|
| <b>395025-3</b><br><b>RG 59/U Type</b><br><b>UL CMR</b><br><b>c(UL) CMG</b><br>    | 20 Ga.<br>3/Cond.<br>Solid Bare<br>Copper<br>10.5 Ω/Mft.  | Foam PE |      | Bi-Metal Foil<br>+95% Tinned<br>Copper Braid<br>Shield<br>3.5 Ω/Mft. | Inner:<br>Flame-Retardant<br>PVC<br><br>Outer:<br>TPE Matte |       | 16.30 | 52.40 | 83 | 75 | 1    | 0.29 |
|                                                                                                                                                                     |                                                           | 0.146   | 3.71 |                                                                      | 0.610                                                       | 15.49 |       |       |    |    | 71.5 | 2.10 |
| <b>395025-4</b><br><b>RG 59/U Type</b><br><b>UL CMR</b><br><b>c(UL) CMG</b><br>   | 20 Ga.<br>4/Cond.<br>Solid Bare<br>Copper<br>10.5 Ω/Mft.  | Foam PE |      | Bi-Metal Foil<br>+95% Tinned<br>Copper Braid<br>Shield<br>3.5 Ω/Mft. | Inner:<br>Flame-Retardant<br>PVC<br><br>Outer:<br>TPE Matte |       | 16.30 | 52.40 | 83 | 75 | 1    | 0.29 |
|                                                                                                                                                                     |                                                           | 0.146   | 3.71 |                                                                      | 0.670                                                       | 17.04 |       |       |    |    | 71.5 | 2.10 |
| <b>395025-5</b><br><b>RG 59/U Type</b><br><b>UL CMR</b><br><b>c(UL) CMG</b><br>  | 20 Ga.<br>5/Cond.<br>Solid Bare<br>Copper<br>10.5 Ω/Mft.  | Foam PE |      | Bi-Metal Foil<br>+95% Tinned<br>Copper Braid<br>Shield<br>3.5 Ω/Mft. | Inner:<br>Flame-Retardant<br>PVC<br><br>Outer:<br>TPE Matte |       | 16.30 | 52.40 | 83 | 75 | 1    | 0.29 |
|                                                                                                                                                                     |                                                           | 0.146   | 3.71 |                                                                      | 0.745                                                       | 18.87 |       |       |    |    | 71.5 | 2.10 |
| <b>395025-10</b><br><b>RG 59/U Type</b><br><b>UL CMR</b><br><b>c(UL) CMG</b><br> | 20 Ga.<br>10/Cond.<br>Solid Bare<br>Copper<br>10.5 Ω/Mft. | Foam PE |      | Bi-Metal Foil<br>+95% Tinned<br>Copper Braid<br>Shield<br>3.5 Ω/Mft. | Inner:<br>Flame-Retardant<br>PVC<br><br>Outer:<br>TPE Matte |       | 16.30 | 52.40 | 83 | 75 | 1    | 0.29 |
|                                                                                                                                                                     |                                                           | 0.146   | 3.71 |                                                                      | 1.110                                                       | 28.19 |       |       |    |    | 71.5 | 2.10 |

### RG 59/U MINI SERIAL DIGITAL INTERFACE (SDI), PRECISION COAX, RISER RATED

|                                                                                                                                                                                   |                                                                                                     |         |      |                                                                                                                 |                                                                                                    |       |       |       |    |    |      |      |     |      |     |      |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------|------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------|-------|-------|----|----|------|------|-----|------|-----|------|-----|
| <div>395031-3</div> <div>RG 59/U Type</div> <div>UL CMR</div> <div>c(UL) CMG</div> <div></div> | <div>23 Ga.</div> <div>3/Cond.</div> <div>Solid Bare</div> <div>Copper</div> <div>20.1 Ω/Mft.</div> | Foam PE |      | <div>Bi-Metal Foil</div> <div>+95% Tinned</div> <div>Copper Braid</div> <div>Shield</div> <div>7.6 Ω/Mft.</div> | <div>Inner:</div> <div>Flame-Retardant</div> <div>PVC</div> <div>Outer:</div> <div>TPE Matte</div> |       | 16.50 | 54.10 | 83 | 75 | 1    | 0.39 |     |      |     |      |     |
|                                                                                                                                                                                   |                                                                                                     | 0.102   | 2.59 |                                                                                                                 | 0.415                                                                                              | 10.58 |       |       |    |    | 71.5 | 3.06 | 135 | 3.81 | 270 | 5.40 | 540 |
| <div>395031-5</div> <div>RG 59/U Type</div> <div>UL CMR</div> <div>c(UL) CMG</div> <div></div> | <div>23 Ga.</div> <div>5/Cond.</div> <div>Solid Bare</div> <div>Copper</div> <div>20.1 Ω/Mft.</div> | Foam PE |      | <div>Bi-Metal Foil</div> <div>+95% Tinned</div> <div>Copper Braid</div> <div>Shield</div> <div>7.6 Ω/Mft.</div> | <div>Inner:</div> <div>Flame-Retardant</div> <div>PVC</div> <div>Outer:</div> <div>TPE Matte</div> |       | 16.50 | 54.10 | 83 | 75 | 1    | 0.39 |     |      |     |      |     |
|                                                                                                                                                                                   |                                                                                                     | 0.102   | 2.59 |                                                                                                                 | 0.510                                                                                              | 12.95 |       |       |    |    | 71.5 | 3.06 | 135 | 3.81 | 270 | 5.40 | 540 |

# RG 59/U (RGB) Miniature Multi-Channel Precision Cable

75 Ohm High-End Coaxial Cables for Video, Analog & Monitor Applications

## Product Construction:

### Conductors:

- Solid bare copper per ASTM B-3

### Insulation/Core:

- Foam polyethylene (PE) design

### Shield:

- Tinned copper braid
- Flexfoil® shield

## Jacket:

- Outer jacket: matte finish thermoplastic elastomer (TPE)
- Inner jacket: flame-retardant PVC

## Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Broadcast
- HDTV
- Video-analog/digital
- Monitor applications
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                      | AWG<br>SIZE<br>NOM. DCR                                               | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR                                   | NOMINAL<br>O.D.                                         |      | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|------------------------|------|----------------------------------------------------------------------|---------------------------------------------------------|------|------------------------|-------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                                                        |                                                                       | INCHES                 | mm   |                                                                      | INCHES                                                  | mm   | pF/ft                  | pF/m  |                                  |                            | MHz                    | dB/100' |
| RG 59/U (RGB) RISER RATED                                                                                                              |                                                                       |                        |      |                                                                      |                                                         |      |                        |       |                                  |                            |                        |         |
| 395035-3<br>RG 59/U Type<br>UL CMR<br>c(UL) CMG<br>   | 26 Ga.<br>3/Cond.<br>Stranded<br>(7/34)<br>Bare Copper<br>39.7 Ω/Mft. | Foam PE                |      | Bi-Metal Foil<br>+95% Tinned<br>Copper Braid<br>Shield<br>8.6 Ω/Mft. | Inner:<br>Flame-Retardant<br>PVC<br>Outer:<br>TPE Matte |      | 17.30                  | 56.74 | 78                               | 75                         | 1                      | 0.56    |
|                                                                                                                                        |                                                                       | 0.089                  | 2.26 |                                                                      | 10                                                      | 1.48 |                        |       |                                  |                            |                        |         |
|                                                                                                                                        |                                                                       |                        |      |                                                                      | 50                                                      | 3.20 |                        |       |                                  |                            |                        |         |
|                                                                                                                                        |                                                                       |                        |      |                                                                      | 100                                                     | 5.18 |                        |       |                                  |                            |                        |         |
| 395035-4<br>RG 59/U Type<br>UL CMR<br>c(UL) CMG<br> | 26 Ga.<br>4/Cond.<br>Stranded<br>(7/34)<br>Bare Copper<br>39.7 Ω/Mft. | Foam PE                |      | Bi-Metal Foil<br>+95% Tinned<br>Copper Braid<br>Shield<br>8.6 Ω/Mft. | Inner:<br>Flame-Retardant<br>PVC<br>Outer:<br>TPE Matte |      | 17.30                  | 56.74 | 78                               | 75                         | 1                      | 0.56    |
|                                                                                                                                        |                                                                       | 0.089                  | 2.26 |                                                                      | 10                                                      | 1.48 |                        |       |                                  |                            |                        |         |
|                                                                                                                                        |                                                                       |                        |      |                                                                      | 50                                                      | 3.20 |                        |       |                                  |                            |                        |         |
|                                                                                                                                        |                                                                       |                        |      |                                                                      | 100                                                     | 5.18 |                        |       |                                  |                            |                        |         |
| 395035-5<br>RG 59/U Type<br>UL CMR<br>c(UL) CMG<br> | 26 Ga.<br>5/Cond.<br>Stranded<br>(7/34)<br>Bare Copper<br>39.7 Ω/Mft. | Foam PE                |      | Bi-Metal Foil<br>+95% Tinned<br>Copper Braid<br>Shield<br>8.6 Ω/Mft. | Inner:<br>Flame-Retardant<br>PVC<br>Outer:<br>TPE Matte |      | 17.30                  | 56.74 | 78                               | 75                         | 1                      | 0.56    |
|                                                                                                                                        |                                                                       | 0.089                  | 2.26 |                                                                      | 10                                                      | 1.48 |                        |       |                                  |                            |                        |         |
|                                                                                                                                        |                                                                       |                        |      |                                                                      | 50                                                      | 3.20 |                        |       |                                  |                            |                        |         |
|                                                                                                                                        |                                                                       |                        |      |                                                                      | 100                                                     | 5.18 |                        |       |                                  |                            |                        |         |
|                                                                                                                                        |                                                                       |                        |      |                                                                      |                                                         |      |                        |       |                                  |                            | 200                    | 6.95    |
|                                                                                                                                        |                                                                       |                        |      |                                                                      |                                                         |      |                        |       |                                  |                            | 400                    | 9.36    |
|                                                                                                                                        |                                                                       |                        |      |                                                                      |                                                         |      |                        |       |                                  |                            | 540                    | 10.88   |
|                                                                                                                                        |                                                                       |                        |      |                                                                      |                                                         |      |                        |       |                                  |                            | 1000                   | 15.79   |
|                                                                                                                                        |                                                                       |                        |      |                                                                      |                                                         |      |                        |       |                                  |                            | 2250                   | 23.69   |
|                                                                                                                                        |                                                                       |                        |      |                                                                      |                                                         |      |                        |       |                                  |                            | 3000                   | 27.35   |

# RG 62/U Type

## Product Construction:

### Conductors:

- Copper-clad steel per ASTM B-869

### Insulation/Core:

- Semi-solid polyethylene (PE) design
- Foam fluoropolymer (FEP) design

### Shield:

- Bare copper braid

### Jacket:

- Premium PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- Computer/networks
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                                                                               | AWG<br>SIZE<br>NOM. DCR                                        | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR             | NOMINAL<br>O.D.                |      | NOMINAL<br>CAPACITANCE |       | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>$\Omega$ | NOMINAL<br>ATTENUATION |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------------|------|------------------------------------------------|--------------------------------|------|------------------------|-------|----------------------------------|-----------------------------------|------------------------|---------|
|                                                                                                                                                                                                                                 |                                                                | INCHES                 | mm   |                                                | INCHES                         | mm   | pF/ft                  | pF/m  |                                  |                                   | MHz                    | dB/100' |
| <b>C1162</b><br><b>RG 62A/U Type</b><br><b>MIL-C-17G Type</b><br> <b>1354</b>                                                                  | 22 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>73.4 $\Omega$ /Mft. | Semi-Solid PE          |      | 95% Bare<br>Copper Braid<br>2.6 $\Omega$ /Mft. | Non-Contaminating<br>Black PVC |      | 13.60                  | 44.62 | 84                               | 93                                | 1                      | 0.38    |
|                                                                                                                                                                                                                                 |                                                                | 0.146                  | 3.71 |                                                | 0.242                          | 6.15 |                        |       |                                  |                                   | 10                     | 0.85    |
| <b>C1164</b><br><b>RG 62/U Type</b><br><b>Computer Cable</b><br><b>JAN-C-17A Type</b><br><b>UL CL2, CM</b><br><b>CSA CMG</b><br> <b>1354</b> | 22 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>73.4 $\Omega$ /Mft. | Semi-Solid PE          |      | 95% Bare<br>Copper Braid<br>2.6 $\Omega$ /Mft. | Black PVC                      |      | 13.60                  | 44.62 | 84                               | 93                                | 1                      | 0.38    |
|                                                                                                                                                                                                                                 |                                                                | 0.146                  | 3.66 |                                                | 0.242                          | 6.15 |                        |       |                                  |                                   | 10                     | 0.85    |
| <b>C3520</b><br><b>RG 62/U Type</b><br><b>Plenum</b><br><b>UL CL2P, CMP</b><br><b>c(UL) CMP</b><br>                                          | 22 Ga.<br>Solid<br>Copper-Clad<br>Steel<br>54.7 $\Omega$ /Mft. | Fluoropolymer          |      | 95% Bare<br>Copper Braid<br>1.9 $\Omega$ /Mft. | Flexguard® PVC<br>Natural      |      | 13.00                  | 42.65 | 84                               | 93                                | 1                      | 0.30    |
|                                                                                                                                                                                                                                 |                                                                | 0.145                  | 3.56 |                                                | 0.201                          | 5.11 |                        |       |                                  |                                   | 10                     | 0.90    |
|                                                                                                                                                                                                                                 |                                                                |                        |      |                                                |                                |      |                        |       |                                  |                                   | 50                     | 1.90    |
|                                                                                                                                                                                                                                 |                                                                |                        |      |                                                |                                |      |                        |       |                                  |                                   | 100                    | 2.70    |
|                                                                                                                                                                                                                                 |                                                                |                        |      |                                                |                                |      |                        |       |                                  |                                   | 200                    | 3.80    |
|                                                                                                                                                                                                                                 |                                                                |                        |      |                                                |                                |      |                        |       |                                  |                                   | 500                    | 5.90    |
|                                                                                                                                                                                                                                 |                                                                |                        |      |                                                |                                |      |                        |       |                                  |                                   | 1000                   | 8.34    |

# RG 174/U Type

## Product Construction:

### Conductors:

- Copper-clad steel per ASTM B-869

### Insulation/Core:

- Solid polyethylene (PE) design

### Shield:

- Tinned or bare copper braid

### Jacket:

- Premium PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

## Applications:

- Suitable for RF signal transmission
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                           | AWG<br>SIZE<br>NOM. DCR                                 | INSULATION<br>MATERIAL |    | SHIELD<br>COVERAGE<br>NOM SHLD DCR                  | NOMINAL<br>O.D. |      | NOMINAL<br>CAPACITANCE |        | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>Ω | NOMINAL<br>ATTENUATION |         |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------|----|-----------------------------------------------------|-----------------|------|------------------------|--------|----------------------------------|----------------------------|------------------------|---------|
|                                                                                                             |                                                         | INCHES                 | mm |                                                     | INCHES          | mm   | pF/ft                  | pF/m   |                                  |                            | MHz                    | dB/100' |
| C1156<br>RG 174/U Type<br> | 26 Ga.<br>(7/34)<br>Copper-Clad<br>Steel<br>97.0 Ω/Mft. | Solid PE               |    | 88% Tinned<br>Copper Braid<br>10.3 Ω/Mft.           | Black PVC       |      | 30.80                  | 101.05 | 66                               | 50                         | 1                      | 1.90    |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 10                     | 3.30    |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 50                     | 5.80    |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 100                    | 8.40    |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 200                    | 12.50   |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 500                    | 21.21   |
|                                                                                                             |                                                         |                        |    |                                                     |                 | 1000 | 34.00                  |        |                                  |                            |                        |         |
| 395027<br>RG 174/U<br>     | 26 Ga.<br>(7/34)<br>Copper-Clad<br>Steel<br>93.0 Ω/Mft. | Solid PE               |    | 88% Tinned<br>Copper Braid<br>Shield<br>10.7 Ω/Mft. | Black PVC       |      | 30.80                  | 101.05 | 66                               | 50                         | 1                      | 1.90    |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 10                     | 3.30    |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 50                     | 5.80    |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 100                    | 8.40    |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 200                    | 12.50   |
|                                                                                                             |                                                         |                        |    |                                                     |                 |      |                        |        |                                  |                            | 500                    | 21.21   |
|                                                                                                             |                                                         |                        |    |                                                     |                 | 1000 | 34.00                  |        |                                  |                            |                        |         |

# RG 213/U Type

## Product Construction:

### Conductors:

- Copper per ASTM B-3

### Insulation/Core:

- Solid polyethylene (PE) design

### Shield:

- Bare copper braid

### Jacket:

- Premium non-contaminating black PVC

### Packaging:

- Please contact Customer Service for packaging and color options

### Applications:

- Suitable for RF signal transmission
- See Coax Connector Cross Reference, pages 192-199

| CATALOG<br>NUMBER                                                                                                                                                  | AWG<br>SIZE<br>NOM. DCR                               | INSULATION<br>MATERIAL |      | SHIELD<br>COVERAGE<br>NOM SHLD DCR             | NOMINAL<br>O.D. |       | NOMINAL<br>CAPACITANCE |        | VELOCITY OF<br>PROPAGATION,<br>% | NOMINAL<br>IMPEDANCE,<br>$\Omega$ | NOMINAL<br>ATTENUATION |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------|------|------------------------------------------------|-----------------|-------|------------------------|--------|----------------------------------|-----------------------------------|------------------------|---------|
|                                                                                                                                                                    |                                                       | INCHES                 | mm   |                                                | INCHES          | mm    | pF/ft                  | pF/m   |                                  |                                   | MHz                    | dB/100' |
| <b>C1176A</b><br><b>RG 213/U Type</b><br><b>MIL-C-17G Type</b><br><b>1354</b><br> | 13 Ga.<br>(7/21)<br>Bare Copper<br>1.7 $\Omega$ /Mft. | Solid PE               |      | 95% Bare<br>Copper Braid<br>1.2 $\Omega$ /Mft. | Black PVC       |       | 30.80                  | 101.05 | 66                               | 50                                | 1                      | 0.18    |
|                                                                                                                                                                    |                                                       |                        |      |                                                |                 |       |                        |        |                                  |                                   | 10                     | 0.62    |
|                                                                                                                                                                    |                                                       |                        |      |                                                |                 |       |                        |        |                                  |                                   | 50                     | 1.50    |
|                                                                                                                                                                    |                                                       |                        |      |                                                |                 |       |                        |        |                                  |                                   | 100                    | 2.10    |
|                                                                                                                                                                    |                                                       |                        |      |                                                |                 |       |                        |        |                                  |                                   | 200                    | 3.00    |
|                                                                                                                                                                    |                                                       | 0.285                  | 7.24 |                                                | 0.405           | 10.29 |                        |        |                                  |                                   | 500                    | 5.03    |
|                                                                                                                                                                    |                                                       |                        |      |                                                |                 |       |                        |        |                                  |                                   | 1000                   | 8.20    |

# Twinaxial Cables

## Product Construction:

### Conductors:

- Copper per ASTM B-3
- Tinned copper per ASTM B-33

### Insulation/Core:

- Solid and foam polyethylene (PE) designs
- Lo-Cap® polypropylene (PPE) design

### Shield:

- Tinned copper braid
- Flexfoil® shield

### Jacket:

- Premium PVC compound

### Packaging:

- Please contact Customer Service for packaging and color options

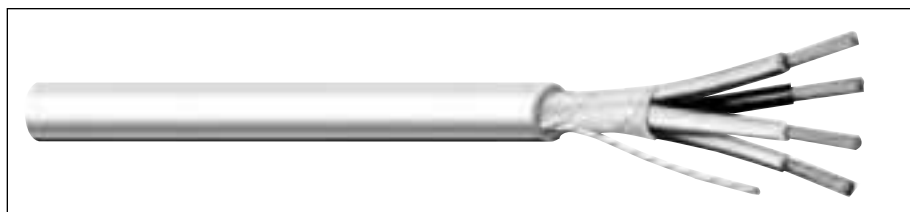
## Applications:

- Programmable Logic Controllers (PLC)
- Data transmission
- Broadcast
- Computer
- See Coax Connector Cross Reference, pages 192-199

| CATALOG NUMBER                                                                                                                                                                                     | AWG SIZE<br>NOM. DCR                                                    | INSULATION MATERIAL                                     |    | SHIELD COVERAGE<br>NOM SHLD DCR                                     | NOMINAL O.D. |      | NOMINAL CAPACITANCE |       | VELOCITY OF PROPAGATION,<br>% | NOMINAL IMPEDANCE,<br>Ω | NOMINAL ATTENUATION |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------|----|---------------------------------------------------------------------|--------------|------|---------------------|-------|-------------------------------|-------------------------|---------------------|---------|
|                                                                                                                                                                                                    |                                                                         | INCHES                                                  | mm |                                                                     | INCHES       | mm   | pF/ft               | pF/m  |                               |                         | MHz                 | dB/100' |
| <b>C8000</b><br><b>UL CL2</b><br><b>▲ 2498</b><br><b>80°C, 300V</b><br>                                           | 20 Ga.<br>(7/28)<br>(1) Tinned Copper,<br>(1) Bare Copper<br>9.5 Ω/Mft. | Solid PE<br>Coded:<br>Natural, Natural<br>0.022    0.56 |    | 100% Flexfoil®<br>+90%<br>Tinned Copper Braid<br>2.5 Ω/Mft.         | Black PVC    |      | 15.50               | 50.86 | 66                            | 100                     | 1                   | 0.40    |
|                                                                                                                                                                                                    |                                                                         |                                                         |    |                                                                     | 0.330        | 8.38 |                     |       |                               |                         | 10                  | 1.10    |
| <b>C8001</b><br><b>UL CL2, CM</b><br><b>C(UL) CM</b><br><b>▲ 2464</b><br><b>▲ 2582</b><br><b>60°C, 300V</b><br> | 20 Ga.<br>(7/28)<br>Tinned Copper<br>9.5 Ω/Mft.                         | Solid PE<br>Coded:<br>Natural, Blue<br>0.020    0.51    |    | 100% Flexfoil®<br>+57%<br>Tinned Copper Braid<br>4.1 Ω/Mft.         | Blue PVC     |      | 19.17               | 62.90 | 66                            | 78                      | 1                   | 0.60    |
|                                                                                                                                                                                                    |                                                                         |                                                         |    |                                                                     | 0.242        | 6.15 |                     |       |                               |                         | 10                  | 2.10    |
| <b>C8014</b><br><b>▲ 2668</b><br><b>60°C, 30V</b><br>                                                           | 22 Ga.<br>(19/34)<br>Tinned Copper<br>15.0 Ω/Mft.                       | Lo-Cap® PPE<br>Coded:<br>Black, Yellow<br>0.051    1.30 |    | 100% Flexfoil®<br>+22 AWG<br>Tinned Copper Drain Wire<br>6.3 Ω/Mft. | Black PVC    |      | 8.80                | 28.87 | 78                            | 150                     | 1                   | 0.40    |
|                                                                                                                                                                                                    |                                                                         |                                                         |    |                                                                     | 0.360        | 9.14 |                     |       |                               |                         | 10                  | 1.20    |
|                                                                                                                                                                                                    |                                                                         |                                                         |    |                                                                     |              |      |                     |       |                               |                         | 50                  | 2.65    |
|                                                                                                                                                                                                    |                                                                         |                                                         |    |                                                                     |              |      |                     |       |                               |                         | 100                 | 4.30    |
|                                                                                                                                                                                                    |                                                                         |                                                         |    |                                                                     |              |      |                     |       |                               |                         | 200                 | 6.20    |
|                                                                                                                                                                                                    |                                                                         |                                                         |    |                                                                     |              |      |                     |       |                               |                         | 400                 | 8.80    |

# Fire Alarm/Life Safety Cable

6



Fire alarm systems have expanded from a rather simple and unsophisticated business configured upon large, electro-mechanical devices to one relying upon the most modern technologies of microprocessor and chip technology.

More and more end users— industrial, commercial as well as consumer—are relying upon these emerging systems to protect both property and life. These systems are only as good as their weakest component, whether that component be a processor or interconnecting wire and cable.

It is General Cable's charter that all products supplied for use in these and any other systems shall be constructed of only the finest available materials, and provide the service and assurance that the end user not only needs, but requires.

Aside from the quality materials used in these designs, specifiers and end users of Carol® Brand wire and cable products have come to expect that these cables are registered and certified with the leading regulatory agencies such as Underwriters Laboratories ... and we haven't let you down!

These designs have proven themselves in the area of fire system security over time; all are fabricated with solid, bare copper conductors and insulations and jackets of premium-grade PVC. Offered both with and without shields, the former to protect these critical circuits from noise, these cables will provide the latest in available technology for the system installer and contractor.

General Cable Carol® Brand products are conveniently packaged in 1000' or 500' lengths to assist the installer.

| Index                                         | Page    |
|-----------------------------------------------|---------|
| Alarm and Security Solutions Guide            | 114-116 |
| Multi-Conductor, Unshielded, Non-Plenum       | 117     |
| Multi-Conductor, Unshielded, Non-Plenum (CSA) | 118     |
| Multi-Conductor, Shielded, Non-Plenum         | 119     |
| Multi-Conductor, Shielded, Non-Plenum (CSA)   | 120     |
| Multi-Conductor, Unshielded, Plenum           | 121-122 |
| Multi-Conductor, Shielded, Plenum             | 123-124 |
| Mid-Capacitance, Unshielded, Non-Plenum       | 125     |
| Mid-Capacitance, Shielded, Non-Plenum         | 126     |
| Mid-Capacitance, Unshielded, Plenum           | 127     |
| Mid-Capacitance, Shielded, Plenum             | 128     |
| Multi-Paired, Unshielded, Non-Plenum (CSA)    | 129     |

# Carol® Brand Alarm & Security Solutions

**General Cable's Carol® Brand is the right solution for alarm and security wire and cable.** Carol offers as broad an offering as anyone in the industry. Our Alarm and Security Solutions Guide makes it easier to specify and sell the right cables for every application in this ever-growing market.

There are five basic areas where alarm and security cables are used. General Cable has the right product to serve every application, including:

- Access Control
- Video Surveillance/CCTV
- Fire Alarm and Life Safety
- Home Theater and Burglar Alarms
- Data Communications

Our alarm and security cables offer solutions in all these major security applications markets, including:

- Commercial Buildings
- Residential Housing
- Business and Office Campus Environments
- Public Stadiums and Arenas
- Airport, Train, Bus and Other Transportation Hubs
- Schools, Colleges and Universities

**Many cables also available in ARMORED CONSTRUCTIONS for easy plenum installations**

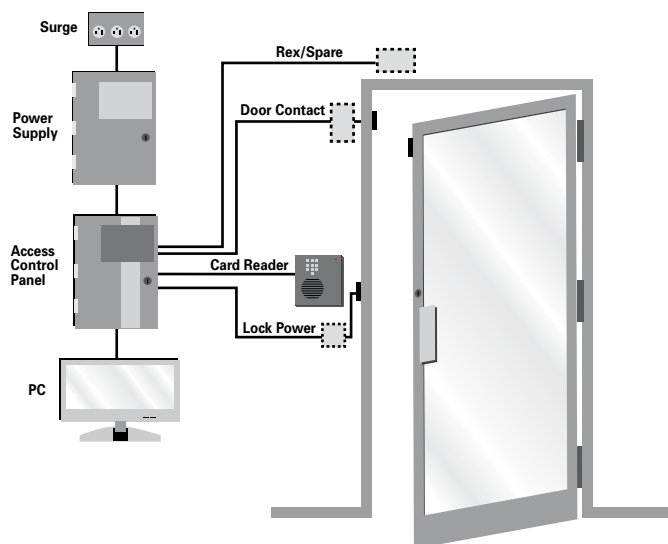
The General Cable Alarm and Security Solutions Guide provides a quick and easy reference tool to identify every Carol® Brand cable for the appropriate alarm and security application. Whatever the security application need calls for, we have a cable that delivers the performance you need.

## Access Control



### Applications:

Door Controllers  
Prox Sensors  
Key Pads  
Card Readers  
Gate Access



| Cable Solution | Description                                                |
|----------------|------------------------------------------------------------|
| 4EPL4S*        | 4 Shielded Elements Overall Jacket Access Control Plenum   |
| 4EPL1S*        | 4 Elements 1 Shielded Overall Jacket Access Control Plenum |
| 4ERS4S**       | 4 Shielded Elements Overall Jacket Access Control Riser    |
| 4ERS1S**       | 4 Elements 1 Shielded Overall Jacket Access Control Riser  |
| E2002S         | 22/2 Conductor Shielded Riser                              |
| E2004S         | 22/4 Conductor Shielded Riser                              |
| E2006S         | 22/6 Conductor Shielded Riser                              |
| E2008S         | 22/8 Conductor Shielded Riser                              |
| E2010S         | 22/10 Conductor Shielded Riser                             |
| E2012S         | 22/12 Conductor Shielded Riser                             |
| E2102S         | 22/2 Conductor Shielded Plenum                             |
| E2104S         | 22/4 Conductor Shielded Plenum                             |
| E2106S         | 22/6 Conductor Shielded Plenum                             |
| E2108S         | 22/8 Conductor Shielded Plenum                             |
| E2032S         | 18/2 Conductor Shielded Riser                              |
| E2034S         | 18/4 Conductor Shielded Riser                              |
| E2036S         | 18/6 Conductor Shielded Riser                              |
| E2038S         | 18/8 Conductor Shielded Riser                              |

| Cable Solution | Description                    |
|----------------|--------------------------------|
| E2202S         | 18/2 Conductor Shielded Plenum |
| E2204S         | 18/4 Conductor Shielded Plenum |
| E2206S         | 18/6 Conductor Shielded Plenum |
| E2208S         | 18/8 Conductor Shielded Plenum |

### Carol® Brand Composite Access Control Cable – Plenum\* (3) Multi-Conductors • (1) Multi-Pair • Overall Jacket 60°C 300 Volt (UL) & C(UL) Type CMP

| Catalog Number | Overall Nominal OD Inch (mm) | Component No. | Component Descriptions     | Conductors Color Code                      | Component Nominal OD Inch (mm) | Insulation Thickness Inch (mm) |
|----------------|------------------------------|---------------|----------------------------|--------------------------------------------|--------------------------------|--------------------------------|
| 4EPL4S         | 0.430                        | 1             | 4 Cond, 18 AWG, Shielded   | White, Black, Red, Green                   | 0.180 (4.572)                  | 0.008 (0.2032)                 |
|                |                              | 2             | 3 Pair, 22 AWG, Shielded   | White & Green, Orange & Brown, Red & Black | 0.195 (4.93)                   | 0.008 (0.2032)                 |
|                |                              | 3             | 2 Cond, 22 AWG, Shielded   | Red, Black                                 | 0.125 (3.175)                  | 0.008 (0.2032)                 |
|                |                              | 4             | 4 Cond, 22 AWG, Shielded   | White, Black, Red, Green                   | 0.145 (3.683)                  | 0.008 (0.2032)                 |
| 4EPL1S         | 0.420                        | 1             | 4 Cond, 18 AWG, Unshielded | White, Black, Red, Green                   | 0.180 (4.572)                  | 0.008 (0.2032)                 |
|                |                              | 2             | 3 Pair, 22 AWG, Shielded   | White & Green, Orange & Brown, Red & Black | 0.195 (4.93)                   | 0.008 (0.2032)                 |
|                |                              | 3             | 2 Cond, 22 AWG, Unshielded | Red, Black                                 | 0.125 (3.175)                  | 0.008 (0.2032)                 |
|                |                              | 4             | 4 Cond, 22 AWG, Unshielded | White, Black, Red, Green                   | 0.145 (3.683)                  | 0.008 (0.2032)                 |

### Carol® Brand Composite Access Control Cable – Riser\*\* (3) Multi-Conductors • (1) Multi-Pair • Overall Jacket 60°C 300 Volt (UL) & C(UL) Type CMR

| Catalog Number | Overall Nominal OD Inch (mm) | Component No. | Component Descriptions     | Conductors Color Code                      | Component Nominal OD Inch (mm) | Insulation Thickness Inch (mm) |
|----------------|------------------------------|---------------|----------------------------|--------------------------------------------|--------------------------------|--------------------------------|
| 4ERS4S         | 0.430                        | 1             | 4 Cond, 18 AWG, Shielded   | White, Black, Red, Green                   | 0.180 (4.572)                  | 0.008 (0.2032)                 |
|                |                              | 2             | 3 Pair, 22 AWG, Shielded   | White & Green, Orange & Brown, Red & Black | 0.195 (4.93)                   | 0.008 (0.2032)                 |
|                |                              | 3             | 2 Cond, 22 AWG, Shielded   | Red, Black                                 | 0.125 (3.175)                  | 0.008 (0.2032)                 |
|                |                              | 4             | 4 Cond, 22 AWG, Shielded   | White, Black, Red, Green                   | 0.145 (3.683)                  | 0.008 (0.2032)                 |
| 4ERS1S         | 0.420                        | 1             | 4 Cond, 18 AWG, Unshielded | White, Black, Red, Green                   | 0.180 (4.572)                  | 0.008 (0.2032)                 |
|                |                              | 2             | 3 Pair, 22 AWG, Shielded   | White & Green, Orange & Brown, Red & Black | 0.195 (4.93)                   | 0.008 (0.2032)                 |
|                |                              | 3             | 2 Cond, 22 AWG, Unshielded | Red, Black                                 | 0.125 (3.175)                  | 0.008 (0.2032)                 |
|                |                              | 4             | 4 Cond, 22 AWG, Unshielded | White, Black, Red, Green                   | 0.145 (3.683)                  | 0.008 (0.2032)                 |

**CAROL®  
BRAND**

**General Cable**

## Video Surveillance/CCTV



**Applications:**  
CCTV  
Satellites  
Digital Video  
Analog Video  
Switchers/Multiplexers  
Digital Recorders

### CATV/MATV/DBS RG 59, RG 6 and RG 11 Ratings

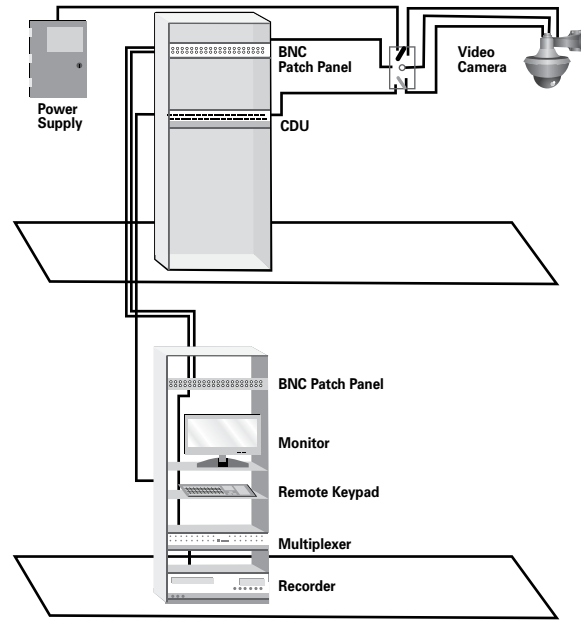
| Cable Solution | Description                                 |
|----------------|---------------------------------------------|
| C3521          | RG 6/U 18/1 FL + 95% TC CL2P                |
| C3523          | RG 6 SBC/Foil/61% TC Braid Plenum           |
| C3524          | RG 6 CCS/Foil/60% AL Braid Plenum           |
| C3525          | RG 6 CCS/Quad 60/40% AL Braid Plenum        |
| C5761          | RG 6 SBC Foil/95% BC Braid CATV/CM          |
| C5775          | RG 6 CCS/Foil/60% AL Braid CATV/CM          |
| C5785          | RG 6 CCS/Quad 60/40% AL Braid CATV/CM       |
| C5886          | RG 6 CCS/Foil/60% AL Braid CATV/CMR         |
| C5889          | RG 6 CCS/Quad 60/40% AL Braid CATV/CMR      |
| C3528          | RG 11 CCS/Foil/60%/AL Braid CATV/CMP Plenum |
| C5039          | RG 11 CCS/Foil/60%/AL Braid CATV/CM         |
| C5043          | RG 11/U CCS Burial FL 60% AL                |
| C5044          | RG 11/U CCS Quad Shield CL2/CM              |
| C1135          | RG 59/U CCS 95% BC Braid CM                 |
| C3500          | RG 59 CCS/95% BC Braid Plenum               |
| C3526          | RG 59/U CCS AMA/80% AL Braid CLP2/CMP       |

### HDTV/SDI—Interconnect Cables RG 59, RG 6 and RG 11 Ratings

| Cable Solution | Description                                         |
|----------------|-----------------------------------------------------|
| 395011         | RG 6 SBC/Foil/95% TC Braid CMR                      |
| 395014         | RG 6/U 18/1 SBC Quad Shield 60%/40% CMR             |
| 495025         | RG 6/U 18 AWG SBC 95% Dual Foil TC Braid CMP Plenum |
| 395025         | RG 59 SBC/Foil/95% TC Braid CMR                     |
| 395031         | RG 59 Single/Miniature/Foil/95% TC Braid CMR        |
| 495023         | RG 59/U SBC/Foil/95% TC Braid CMP Plenum            |

### Low Skew - 4 Pair UTP Cables for RGB Video

| Cable Solution | Description                         |
|----------------|-------------------------------------|
| E3842S         | Low Skew 24/4 UTP CMP for RGB Video |
| E1842S         | Low Skew 24/4 UTP CMR for RGB Video |
| E3843S         | Low Skew 23/4 UTP CMP for RGB Video |
| E1843S         | Low Skew 23/4 UTP CMR for RGB Video |



### CCTV RG 59 and RG 11 Ratings

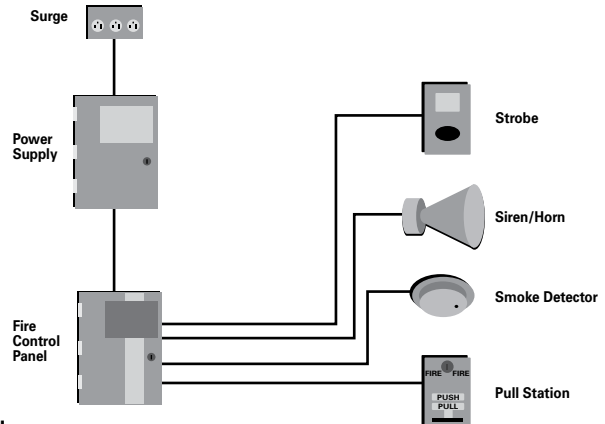
| Cable Solution | Description                                        |
|----------------|----------------------------------------------------|
| C8029          | RG 6 + 18/2 Unshielded CATV/CM                     |
| C8031          | RG 6/U SBC/95% + 18/2 Unshielded Pair CMP Plenum   |
| 495035         | RG 6/U 18 AWG SBC 95% BC CMP Plenum                |
| 395058         | RG 11 SBC/95% BC Braid CM                          |
| 495015         | RG 11 SBC/95% BC Braid CMP Plenum                  |
| C1103          | RG 59 BC/95% BC Braid CATV/CM                      |
| C1142          | RG 59 SBC/95% BC Braid CATV/CM                     |
| C8025          | RG 59/U STR (7/30) BC/95% + 22/2 SH Pair CCTV/CM   |
| C8027          | RG 59 + 18/2 Shielded CATV/CM                      |
| C8028          | RG 59 + 18/2 Unshielded CATV/CM                    |
| C8030          | RG 59/U SBC/95% + 18/2 Unshielded Pair CCTV Plenum |
| 495028         | RG 59 SBC/95% BC Braid CMP Plenum                  |

## Fire Alarm and Life Safety



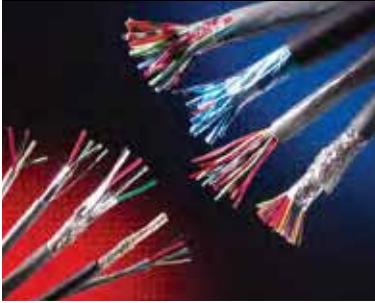
**Applications:**  
Smoke Detectors  
Strobes/Sirens  
Pull Stations  
Microprocessor/  
Addressable  
Controlled Systems

| Cable Solution | Description                        |
|----------------|------------------------------------|
| E1502S         | 18/2 Conductor Riser FPLR          |
| E1504S         | 18/4 Conductor Riser FPLR          |
| E1522S         | 14/2 Conductor Riser FPLR          |
| E1524S         | 14/4 Conductor Riser FPLR          |
| E2502S         | 18/2 Conductor Shielded Riser FPLR |
| E2504S         | 18/4 Conductor Shielded Riser FPLR |
| E2532S         | 14/2 Conductor Shielded Riser FPLR |
| E2534S         | 14/4 Conductor Shielded Riser FPLR |
| E3502S         | 18/2 Conductor Plenum FPLP         |
| E3504S         | 18/4 Conductor Plenum FPLP         |
| E3522S         | 14/2 Conductor Plenum FPLP         |
| E3524S         | 14/4 Conductor Plenum FPLP         |



| Cable Solution | Description                         |
|----------------|-------------------------------------|
| E3602S         | 18/2 Conductor Shielded Plenum FPLP |
| E3604S         | 18/4 Conductor Shielded Plenum FPLP |
| E3622S         | 14/2 Conductor Shielded Plenum FPLP |
| E3624S         | 14/4 Conductor Shielded Plenum FPLP |

## Home Theater and Burglar Alarms



### Applications:

Intercoms  
PA Systems  
Sound Systems  
Emergency Phones  
Speakers  
Burglar Alarms  
Home Theater

### Cable Solution Description

| Cable Solution | Description                        |
|----------------|------------------------------------|
| E1002S         | 22/2 Conductor Riser               |
| E1004S         | 22/4 Conductor Riser               |
| C4408          | 22/2 Solid Conductor CMR/CMX       |
| C4408ST        | 22/2 Stranded Conductor CMR/CMX    |
| C4412          | 22/4 Solid Conductor Solid CMR/CMX |
| C4412ST        | 22/4 Stranded Conductor CMR/CMX    |
| C4408.86.XX    | 22/2 Solid Conductor CM/CMX*       |
| C4408ST.86.XX  | 22/2 Stranded Conductor CM/CMX*    |
| C4412.86.XX    | 22/4 Solid Conductor CM/CMX*       |
| C4412ST.86.XX  | 22/4 Stranded Conductor CM/CMX*    |
| E1006S         | 22/6 Conductor Riser               |
| E1008S         | 22/8 Conductor Riser               |
| E1032S         | 18/2 Conductor Riser               |
| E1034S         | 18/4 Conductor Riser               |
| E1042S         | 16/2 Conductor Riser               |
| E1044S         | 16/4 Conductor Riser               |
| E1052S         | 14/2 Conductor Riser               |
| E1054S         | 14/4 Conductor Riser               |
| E1062S         | 12/2 Conductor Riser               |
| E1064S         | 12/4 Conductor Riser               |

\*Available Colors for Burglar Alarm Coil Packs  
XX= White Gray Green Beige Yellow Dark Blue

**Burglar Alarm Cable in 500' Coil Packs\***

### Cable Solution Description

| Cable Solution | Description                                                                    |
|----------------|--------------------------------------------------------------------------------|
| C1000          | Command® Series Twisted Pair Speaker, 22/2, 7x30 Stranding, 500' Reels         |
| C1001          | Command Series Twisted Pair Speaker, 20/2, 7x28 Stranding, 500' Reels          |
| C1002          | Command Series Twisted Pair Speaker, 18/2, 7x26 Stranding, 500' Reels          |
| C1003          | Command Series Twisted Pair Speaker, 16/2, 19x29 Stranding, 500' Reels         |
| C1004          | Command Series Twisted Pair Speaker, 14/2, 42x30 Stranding, 500' Reels         |
| C1005          | Command Series Twisted Pair Speaker, 12/2, 65x30 Stranding, 500' Reels         |
| C1362          | 22/2 Conductor Zip (not for inwall use)                                        |
| C1357          | 18/2 Conductor Zip (not for inwall use)                                        |
| C1458          | 16/2 Conductor Zip CL2                                                         |
| C1461          | 14/2 Conductor Zip CL2                                                         |
| C1463          | 12/2 Conductor Zip CL2                                                         |
| C1702          | 14/2 Command Series Home Grade Speaker                                         |
| C1703          | 14/4 Command Series Home Grade Speaker                                         |
| C1704          | 16/2 Command Series Home Grade Speaker                                         |
| C1705          | 16/4 Command Series Home Grade Speaker                                         |
| C1800          | Command Series "High Def" Speaker Type NEC, 12/2, 105x32 Stranding, 500' Reels |
| C1801          | Command Series "High Def" Speaker Type NEC, 12/4, 105x32 Stranding, 500' Reels |
| C1802          | Command Series "High Def" Speaker Type NEC, 14/2, 105x34 Stranding, 500' Boxes |
| C1803          | Command Series "High Def" Speaker Type NEC, 14/4, 105x34 Stranding, 500' Reels |
| C1804          | Command Series "High Def" Speaker Type NEC, 16/2, 65x34 Stranding, 500' Boxes  |
| C1805          | Command Series "High Def" Speaker Type NEC, 16/4, 65x34 Stranding, 500' Boxes  |
| 395031X3       | 23/3 Command Series RGB Cables, Solid BC, Foam PE, Dual Foil + 95% TC Braid    |
| 395031X5       | 23/5 Command Series RGB Cables, Solid BC, Foam PE, Dual Foil + 95% TC Braid    |

**Oxygen-Free + ETP High-Performance Home Theater Cables**

## Carol® Brand Helix/Hi-Temp® Data Communications



### Applications:

Telephones  
Cat 5e and 6 Connections  
Networking  
Workstations  
Video Conferencing  
Telco Closets  
Home Automation  
IP Cameras

### Cat 5e Pull-Pac® II

Standard packaging: 1000' Pull-Pac® II

| Jacket Color | Pull-Pac® II     |              |
|--------------|------------------|--------------|
|              | CMR (Non-Plenum) | CMP (Plenum) |
| Blue         | CR5.30.07        | CP5.30.07    |
| White        | CR5.30.02        | CP5.30.02    |
| Gray         | CR5.30.10        | CP5.30.10    |
| Green        | CR5.30.06        | CP5.30.06    |
| Yellow       | CR5.30.05        | CP5.30.05    |
| Red          | CR5.30.03        | CP5.30.03    |

### Cat 6 Pull-Pac® II

Standard packaging: 1000' Pull-Pac® II

| Jacket Color | Pull-Pac® II     |              |
|--------------|------------------|--------------|
|              | CMR (Non-Plenum) | CMP (Plenum) |
| Blue         | CR6.30.07        | CP6.30.07    |
| White        | CR6.30.02        | CP6.30.02    |
| Gray         | CR6.30.10        | CP6.30.10    |
| Green        | CR6.30.06        | CP6.30.06    |
| Yellow       | CR6.30.05        | CP6.30.05    |
| Red          | CR6.30.03        | CP6.30.03    |

### Cat 5e Spool-Pac®

Standard packaging: 1000' Spool-Pac®

| Jacket Color | Spool-Pac®       |              |
|--------------|------------------|--------------|
|              | CMR (Non-Plenum) | CMP (Plenum) |
| Blue         | CR5.A3.07        | CP5.A3.07    |
| White        | CR5.A3.02        | CP5.A3.02    |
| Gray         | CR5.A3.10        | CP5.A3.10    |
| Green        | CR5.A3.06        | CP5.A3.06    |
| Yellow       | CR5.A3.05        | CP5.A3.05    |
| Red          | CR5.A3.03        | CP5.A3.03    |

### Cat 6 Spool-Pac®

Standard packaging: 1000' Spool-Pac®

| Jacket Color | Spool-Pac®       |              |
|--------------|------------------|--------------|
|              | CMR (Non-Plenum) | CMP (Plenum) |
| Blue         | CR6.A3.07        | CP6.A3.07    |
| White        | CR6.A3.02        | CP6.A3.02    |
| Gray         | CR6.A3.10        | CP6.A3.10    |
| Green        | CR6.A3.06        | CP6.A3.06    |
| Yellow       | CR6.A3.05        | CP6.A3.05    |
| Red          | CR6.A3.03        | CP6.A3.03    |

**CAROL BRAND**

**General Cable**

# Multi-Conductor, Unshielded, Non-Plenum

## NEC Type FPLR

### Product Construction:

#### Conductor:

- 22 thru 12 AWG fully annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded S-R PVC
- Color code: See chart below

#### Jacket:

- Premium-grade, red PVC
- Suitable for use from -20°C to +75°C
- Round constructions have sequential footage markings to facilitate installation
- Includes ripcord on round constructions

### Applications:

- Wiring of fire alarms
- Smoke detectors
- Voice communications
- Burglar alarms
- Fire protective circuits
- Suggested voltage rating: 300 volts

### Compliances:

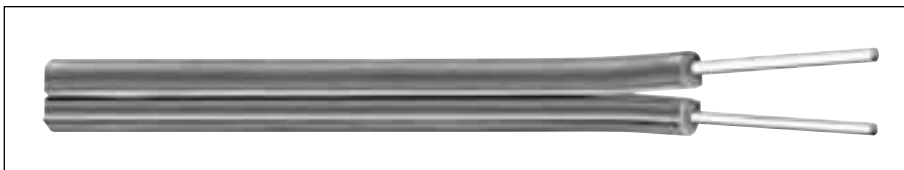
- NEC Article 760 Type FPLR (UL: 75°C, 300V)
- California State Fire Marshall Approved
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 1666 Flame Test

### Packaging:

- Please contact Customer Service for packaging and color options

### Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | Red    |
| 3            | Brown  |
| 4            | Blue   |
| 5            | Orange |
| 6            | Yellow |
| 7            | Violet |
| 8            | Gray   |



| CATALOG<br>NUMBER                    | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOMINAL O.D.  |             |
|--------------------------------------|-----------------|-------------|-----------------|------------------------------|------|---------------|-------------|
|                                      |                 |             |                 | INCHES                       | mm   | INCHES        | mm          |
| DUPLEX PARALLEL, RIBBED FOR POLARITY |                 |             |                 |                              |      |               |             |
| E2402S                               | 2               | 18          | Solid           | 0.032                        | 0.81 | 0.105 x 0.210 | 2.67 x 5.33 |
| E2404S                               | 2               | 16          | Solid           | 0.032                        | 0.81 | 0.115 x 0.230 | 2.92 x 5.84 |
| E2406S                               | 2               | 14          | Solid           | 0.032                        | 0.81 | 0.126 x 0.260 | 3.20 x 6.60 |



| CATALOG<br>NUMBER | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>WALL |      | NOMINAL O.D. |      |
|-------------------|-----------------|-------------|-----------------|------------------------------|------|---------------------|------|--------------|------|
|                   |                 |             |                 | INCHES                       | mm   | INCHES              | mm   | INCHES       | mm   |
| 22 AWG CONDUCTORS |                 |             |                 |                              |      |                     |      |              |      |
| E1482S            | 2               | 22          | Solid           | 0.010                        | 0.25 | 0.015               | 0.38 | 0.121        | 3.07 |
| E1484S            | 4               | 22          | Solid           | 0.010                        | 0.25 | 0.015               | 0.38 | 0.140        | 3.56 |
| E1486S            | 6               | 22          | Solid           | 0.010                        | 0.25 | 0.015               | 0.38 | 0.168        | 4.27 |

|                          |   |    |       |       |      |       |      |       |      |
|--------------------------|---|----|-------|-------|------|-------|------|-------|------|
| <b>18 AWG CONDUCTORS</b> |   |    |       |       |      |       |      |       |      |
| <b>E1502S</b>            | 2 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.150 | 3.81 |
| <b>E1503S</b>            | 3 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.160 | 4.06 |
| <b>E1504S</b>            | 4 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.175 | 4.45 |
| <b>E1505S</b>            | 5 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.193 | 4.90 |
| <b>E1506S</b>            | 6 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.210 | 5.33 |
| <b>E1508S</b>            | 8 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.230 | 5.84 |

|                          |   |    |       |       |      |       |      |       |      |
|--------------------------|---|----|-------|-------|------|-------|------|-------|------|
| <b>16 AWG CONDUCTORS</b> |   |    |       |       |      |       |      |       |      |
| <b>E1512S</b>            | 2 | 16 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.172 | 4.37 |
| <b>E1514S</b>            | 4 | 16 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.202 | 5.13 |

|                          |   |    |       |       |      |       |      |       |      |
|--------------------------|---|----|-------|-------|------|-------|------|-------|------|
| <b>14 AWG CONDUCTORS</b> |   |    |       |       |      |       |      |       |      |
| <b>E1522S</b>            | 2 | 14 | Solid | 0.013 | 0.33 | 0.015 | 0.38 | 0.210 | 5.33 |
| <b>E1524S</b>            | 4 | 14 | Solid | 0.013 | 0.33 | 0.015 | 0.38 | 0.248 | 6.30 |

|                          |   |    |       |       |      |       |      |       |      |
|--------------------------|---|----|-------|-------|------|-------|------|-------|------|
| <b>12 AWG CONDUCTORS</b> |   |    |       |       |      |       |      |       |      |
| <b>E1532S</b>            | 2 | 12 | Solid | 0.013 | 0.33 | 0.015 | 0.38 | 0.244 | 6.20 |
| <b>E1534S</b>            | 4 | 12 | Solid | 0.013 | 0.33 | 0.015 | 0.38 | 0.288 | 7.32 |

# Multi-Conductor, Unshielded, Non-Plenum

CSA FAS 105, FPL (UL), NEC Type PLTC



## Product Construction:

### Conductor:

- 22 thru 12 AWG fully annealed solid bare copper per ASTM B-3

### Insulation:

- Premium-grade PVC
- Color code: See page 229 for the CSA Fire Alarm Color Code Chart

### Jacket:

- Premium-grade, red PVC; brown as an option
- Temperature range: -20°C to +105°C
- TRU-Mark® print legend contains footage markings from 1000' to 0'

## Applications:

- Wiring of fire alarms
- Smoke alarms
- Voice communications
- Burglar alarms
- Fire protective circuits
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 725 PLTC (UL: 105°C, 300V)
- NEC Article 760 Type FPL (UL: 105°C, 300V)
- CSA FAS 105 (CSA: 105°C, 300V)
- C22.2 No. 208-03 (R2008)
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT-4 Vertical Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET WALL |      | NOMINAL O.D. |       |
|----------------|--------------|----------|--------------|---------------------------|------|------------------|------|--------------|-------|
|                |              |          |              | INCHES                    | mm   | INCHES           | mm   | INCHES       | mm    |
| C4300A         | 6            | 22       | Solid        | 0.012                     | 0.30 | 0.042            | 1.07 | 0.232        | 5.89  |
| C4301A         | 15           | 22       | Solid        | 0.012                     | 0.30 | 0.042            | 1.07 | 0.316        | 8.03  |
| C4302A         | 20           | 22       | Solid        | 0.012                     | 0.30 | 0.042            | 1.07 | 0.346        | 8.79  |
| C4304A         | 2            | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.225        | 5.71  |
| C4305A         | 3            | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.236        | 5.99  |
| C4306A         | 4            | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.255        | 6.47  |
| C4307A         | 5            | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.274        | 6.96  |
| C4308A         | 6            | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.296        | 7.52  |
| C4309A         | 7            | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.296        | 7.52  |
| C4310A         | 8            | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.317        | 8.05  |
| C4312A         | 9            | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.339        | 8.61  |
| C4313A         | 10           | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.366        | 9.30  |
| C4314A         | 11           | 18       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.366        | 9.30  |
| C4315A         | 15           | 18       | Solid        | 0.015                     | 0.38 | 0.053            | 1.35 | 0.437        | 11.10 |
| C4316A         | 20           | 18       | Solid        | 0.015                     | 0.38 | 0.053            | 1.35 | 0.480        | 12.19 |
| C4317A         | 21           | 18       | Solid        | 0.015                     | 0.38 | 0.053            | 1.35 | 0.480        | 12.19 |
| C4318A         | 30           | 18       | Solid        | 0.015                     | 0.38 | 0.053            | 1.35 | 0.558        | 14.17 |
| C4321A         | 2            | 16       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.246        | 6.25  |
| C4322A         | 3            | 16       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.258        | 6.55  |
| C4323A         | 4            | 16       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.280        | 7.11  |
| C4349A         | 5            | 16       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.302        | 7.67  |
| C4324A         | 2            | 14       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.272        | 6.91  |
| C4325A         | 3            | 14       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.286        | 7.26  |
| C4326A         | 4            | 14       | Solid        | 0.015                     | 0.38 | 0.042            | 1.07 | 0.311        | 7.90  |
| C4327A         | 2            | 12       | Solid        | 0.020                     | 0.51 | 0.042            | 1.07 | 0.326        | 8.28  |

# Multi-Conductor, Shielded, Non-Plenum

## NEC Type FPLR

### Product Construction:

#### Conductor:

- 22 thru 12 AWG fully annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded S-R PVC
- Color code: See chart below

#### Shield:

- Overall Flexfoil® polyester supported aluminum foil
- Stranded tinned copper drain wire

#### Jacket:

- Premium-grade, red PVC
- Temperature range: -20°C to +75°C
- Sequential footage markings to facilitate installation
- Includes ripcord

### Applications:

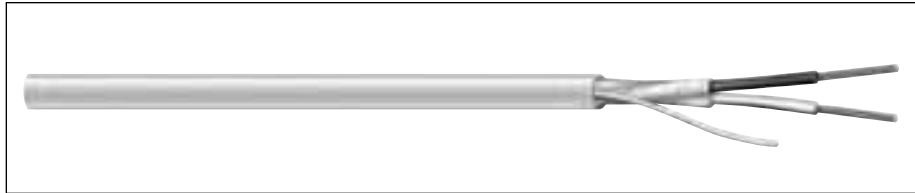
- Wiring of fire alarms
- Smoke alarms
- Voice communications
- Burglar alarms
- Fire protective circuits
- Suggested voltage rating: 300 volts

### Compliances:

- NEC Article 760 Type FPLR (UL: 75°C, 300V)
- California State Fire Marshall Approved
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 1666 Flame Test

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET WALL |    | NOMINAL O.D. |    |
|----------------|--------------|----------|--------------|---------------------------|----|------------------|----|--------------|----|
|                |              |          |              | INCHES                    | mm | INCHES           | mm | INCHES       | mm |

#### 22 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E2482S | 2 | 22 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.126 | 3.20 |
| E2484S | 4 | 22 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.145 | 3.68 |

#### 18 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E2502S | 2 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.158 | 4.01 |
| E2503S | 3 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.165 | 4.19 |
| E2504S | 4 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.183 | 4.65 |
| E2506S | 6 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.216 | 5.49 |
| E2508S | 8 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.235 | 5.97 |

#### 16 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E2522S | 2 | 16 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.180 | 4.57 |
| E2524S | 4 | 16 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.210 | 5.33 |

#### 14 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E2532S | 2 | 14 | Solid | 0.013 | 0.33 | 0.015 | 0.38 | 0.218 | 5.54 |
| E2534S | 4 | 14 | Solid | 0.013 | 0.33 | 0.015 | 0.38 | 0.253 | 6.43 |

#### 12 AWG CONDUCTORS

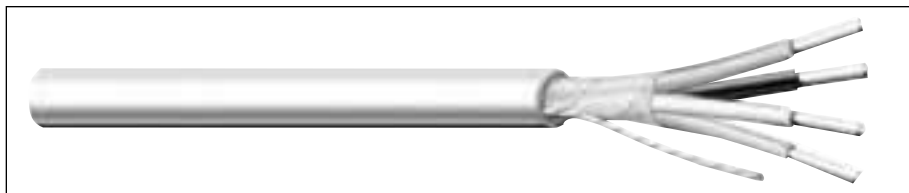
|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E2542S | 2 | 12 | Solid | 0.013 | 0.33 | 0.015 | 0.38 | 0.252 | 6.40 |
| E2544S | 4 | 12 | Solid | 0.013 | 0.33 | 0.015 | 0.38 | 0.293 | 7.44 |

### Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | Red    |
| 3            | Brown  |
| 4            | Blue   |
| 5            | Orange |
| 6            | Yellow |
| 7            | Violet |
| 8            | Gray   |

# Multi-Conductor, Shielded, Non-Plenum

CSA FAS 105, FPL (UL), NEC Type PLTC



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | DRAIN WIRE AWG | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       |
|----------------|--------------|----------|--------------|----------------|---------------------------|------|-----------------------|------|--------------|-------|
|                |              |          |              |                | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |
| C4334A         | 2            | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.230        | 5.84  |
| C4335A         | 3            | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.241        | 6.12  |
| C4336A         | 4            | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.260        | 6.60  |
| C4337A         | 5            | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.279        | 7.09  |
| C4338A         | 6            | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.301        | 7.65  |
| C4339A         | 7            | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.301        | 7.65  |
| C4340A         | 8            | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.322        | 8.18  |
| C4341A         | 9            | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.344        | 8.74  |
| C4342A         | 10           | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.371        | 9.42  |
| C4343A         | 30           | 18       | Solid        | 22             | 0.015                     | 0.38 | 0.053                 | 1.35 | 0.563        | 14.30 |
| C4344A         | 2            | 16       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.251        | 6.37  |
| C4345A         | 3            | 16       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.263        | 6.68  |
| C4346A         | 4            | 16       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.285        | 7.24  |
| C4350A         | 5            | 16       | Solid        | 22             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.307        | 7.80  |
| C4347A         | 2            | 14       | Solid        | 16             | 0.015                     | 0.38 | 0.042                 | 1.07 | 0.277        | 7.04  |
| C4348A         | 2            | 12       | Solid        | 16             | 0.020                     | 0.51 | 0.042                 | 1.07 | 0.331        | 8.41  |

## Product Construction:

### Conductor:

- 18-12 AWG fully annealed, solid bare copper per ASTM B-3

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See page 229 for the CSA Fire Alarm Color Code Chart

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- Premium-grade, red PVC; brown as an option
- Temperature range: -20°C to +105°C
- TRU-Mark® print legend contains footage markings from 1000' to 0'

## Applications:

- Wiring of fire alarms
- Smoke alarms
- Voice communications
- Burglar alarms
- Fire protective circuits
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 725 PLTC (UL: 105°C, 300V)
- NEC Article 760 Type FPL (UL: 105°C, 300V)
- CSA FAS 105 (CSA: 105°C, 300V)
- C22.2 No. 208-03 (R2008)
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT-4 Vertical Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

# Multi-Conductor, Unshielded, Plenum

## NEC Type FPLP

### Product Construction:

#### Conductor:

- 22 thru 12 AWG fully annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded Flexguard® PVC
- Color code: See chart below

#### Jacket:

- Premium-grade, red Flexguard® PVC
- Temperature range: 0°C to +75°C
- Sequential footage markings to facilitate installation
- Includes ripcord

### Applications:

- Wiring of fire alarms
- Smoke detectors
- Voice communications
- Burglar alarms
- Fire protective circuits
- Suggested voltage rating: 300 volts

### Compliances:

- NEC Article 760 Type FPLP (UL: 75°C, 300V)
- California State Fire Marshall Approved
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET WALL |    | NOMINAL O.D. |    |
|----------------|--------------|----------|--------------|---------------------------|----|------------------|----|--------------|----|
|                |              |          |              | INCHES                    | mm | INCHES           | mm | INCHES       | mm |

#### 22 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E3482S | 2 | 22 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.121 | 3.07 |
| E3484S | 4 | 22 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.137 | 3.47 |

#### 18 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E3502S | 2 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.155 | 3.81 |
| E3503S | 3 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.160 | 4.06 |
| E3504S | 4 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.175 | 4.45 |
| E3506S | 6 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.211 | 5.36 |

#### 16 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E3512S | 2 | 16 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.172 | 4.37 |
| E3514S | 4 | 16 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.202 | 5.13 |

#### 14 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E3522S | 2 | 14 | Solid | 0.012 | 0.30 | 0.015 | 0.38 | 0.205 | 5.21 |
| E3524S | 4 | 14 | Solid | 0.012 | 0.30 | 0.015 | 0.38 | 0.243 | 6.17 |

#### 12 AWG CONDUCTORS

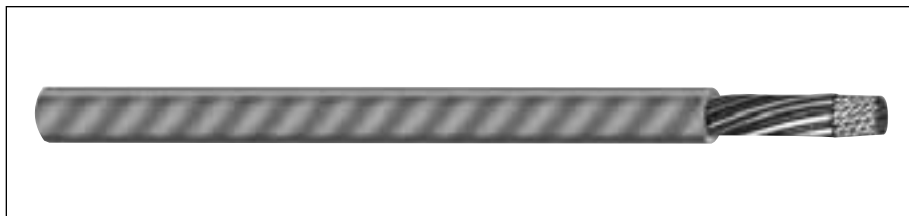
|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E3532S | 2 | 12 | Solid | 0.012 | 0.30 | 0.015 | 0.38 | 0.244 | 6.20 |
| E3534S | 4 | 12 | Solid | 0.012 | 0.30 | 0.015 | 0.38 | 0.284 | 7.21 |

### Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | Red    |
| 3            | Brown  |
| 4            | Blue   |
| 5            | Orange |
| 6            | Yellow |

# Multi-Conductor, Unshielded, Plenum

NEC Type FPLP, PVDF Jacketed



## Product Construction

### Conductor:

- 18 thru 12 AWG fully annealed solid bare copper to ASTM B-3

### Insulation:

- Premium-grade, color-coded Flexguard® PVC
- Color code: See chart below

### Jacket:

- Fluoropolymer, red
- Temperature range: -10°C to +75°C
- Includes ripcord

## Applications:

- Fire alarm systems
- Voice communications
- Smoke detectors
- Pull boxes
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 760 Type FPLP (UL: 75°C, 300V)
- California State Fire Marshall Approved
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Abrasion-, chemical- and water-resistant jacket
- Sequentially footage marked

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF COND | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM.* C-C CAP. pF/ft |
|----------------|-------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|----------------------|
|                |             |          |              | IN                        | mm   | IN                    | mm   | IN           | mm   |                      |
| <b>C3200</b>   | 2           | 18       | Solid        | 0.010                     | 0.23 | 0.010                 | 0.25 | 0.140        | 3.56 | 29.0                 |
| <b>C3201</b>   | 4           | 18       | Solid        | 0.010                     | 0.23 | 0.010                 | 0.25 | 0.156        | 3.96 | 29.0                 |
| <b>C3210</b>   | 2           | 16       | Solid        | 0.010                     | 0.23 | 0.010                 | 0.25 | 0.133        | 3.38 | 31.0                 |
| <b>C3211</b>   | 4           | 16       | Solid        | 0.010                     | 0.23 | 0.010                 | 0.25 | 0.186        | 4.72 | 31.0                 |
| <b>C3220</b>   | 2           | 14       | Solid        | 0.013                     | 0.31 | 0.010                 | 0.25 | 0.170        | 4.32 | 31.0                 |
| <b>C3223</b>   | 4           | 14       | Solid        | 0.013                     | 0.31 | 0.010                 | 0.25 | 0.224        | 5.69 | 31.0                 |
| <b>C3224</b>   | 2           | 12       | Solid        | 0.013                     | 0.31 | 0.010                 | 0.25 | 0.194        | 4.93 | 35.0                 |
| <b>C3225</b>   | 4           | 12       | Solid        | 0.013                     | 0.31 | 0.010                 | 0.25 | 0.261        | 6.63 | 35.0                 |

\*Capacitance between conductors

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | Brown |
| 4            | Blue  |

**CAROL BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Conductor, Shielded, Plenum

## NEC Type FPLP

### Product Construction:

#### Conductor:

- 22 thru 12 AWG fully annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded Flexguard® PVC
- Color code: See chart below

#### Shield:

- Overall Flexfoil® polyester supported aluminum foil
- Stranded tinned copper drain wire

#### Jacket:

- Premium-grade, red Flexguard® PVC
- Suitable for use from 0°C to +75°C
- Sequential footage markings to facilitate installation
- Includes ripcord

### Applications:

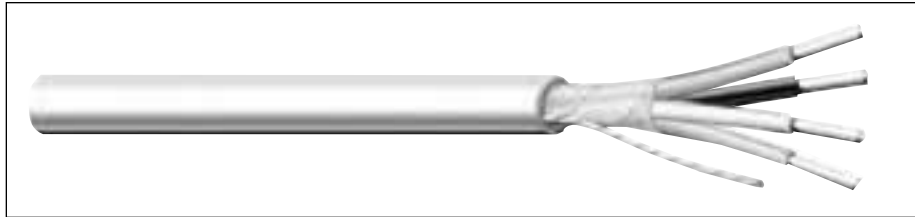
- Wiring of fire alarms
- Smoke detectors
- Voice communications
- Burglar alarms
- Fire protective circuits
- Suggested voltage rating: 300 volts

### Compliances:

- NEC Article 760 Type FPLP (UL: 75°C, 300V)
- California State Fire Marshall Approved
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET WALL |    | NOMINAL O.D. |    |
|----------------|--------------|----------|--------------|---------------------------|----|------------------|----|--------------|----|
|                |              |          |              | INCHES                    | mm | INCHES           | mm | INCHES       | mm |

#### 22 AWG CONDUCTORS

|               |   |    |       |       |      |       |      |       |      |
|---------------|---|----|-------|-------|------|-------|------|-------|------|
| <b>E3542S</b> | 2 | 22 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.126 | 3.20 |
|---------------|---|----|-------|-------|------|-------|------|-------|------|

#### 18 AWG CONDUCTORS

|               |   |    |       |       |      |       |      |       |      |
|---------------|---|----|-------|-------|------|-------|------|-------|------|
| <b>E3602S</b> | 2 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.158 | 4.01 |
| <b>E3603S</b> | 3 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.165 | 4.19 |
| <b>E3604S</b> | 4 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.183 | 4.65 |
| <b>E3606S</b> | 6 | 18 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.216 | 5.49 |

#### 16 AWG CONDUCTORS

|               |   |    |       |       |      |       |      |       |      |
|---------------|---|----|-------|-------|------|-------|------|-------|------|
| <b>E3612S</b> | 2 | 16 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.180 | 4.57 |
| <b>E3614S</b> | 4 | 16 | Solid | 0.010 | 0.25 | 0.015 | 0.38 | 0.210 | 5.33 |

#### 14 AWG CONDUCTORS

|               |   |    |       |       |      |       |      |       |      |
|---------------|---|----|-------|-------|------|-------|------|-------|------|
| <b>E3622S</b> | 2 | 14 | Solid | 0.012 | 0.30 | 0.015 | 0.38 | 0.210 | 5.33 |
| <b>E3624S</b> | 4 | 14 | Solid | 0.012 | 0.30 | 0.015 | 0.38 | 0.248 | 6.30 |

#### 12 AWG CONDUCTORS

|               |   |    |       |       |      |       |      |       |      |
|---------------|---|----|-------|-------|------|-------|------|-------|------|
| <b>E3632S</b> | 2 | 12 | Solid | 0.012 | 0.30 | 0.015 | 0.38 | 0.252 | 6.40 |
| <b>E3634S</b> | 4 | 12 | Solid | 0.012 | 0.30 | 0.015 | 0.38 | 0.300 | 7.62 |

### Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | Red    |
| 3            | Brown  |
| 4            | Blue   |
| 5            | Orange |
| 6            | Yellow |

# Multi-Conductor, Shielded, Plenum

NEC Type FPLP, PVDF Jacketed



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOMINAL CAP. * pF/ft |       |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|----------------------|-------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A                    | B     |
| <b>C3260</b>   | 2            | 18       | Solid        | 0.010                     | 0.25 | 0.010                 | 0.25 | 0.149        | 3.78 | 50.5                 | 90.8  |
| <b>C3261</b>   | 4            | 18       | Solid        | 0.010                     | 0.25 | 0.010                 | 0.25 | 0.168        | 4.27 | 44.5                 | 80.0  |
| <b>C3270</b>   | 2            | 16       | Solid        | 0.010                     | 0.25 | 0.010                 | 0.25 | 0.169        | 4.29 | 58.0                 | 104.0 |
| <b>C3271</b>   | 4            | 16       | Solid        | 0.010                     | 0.25 | 0.010                 | 0.25 | 0.194        | 4.93 | 50.0                 | 90.0  |
| <b>C3280</b>   | 2            | 14       | Solid        | 0.013                     | 0.33 | 0.010                 | 0.25 | 0.214        | 5.44 | 55.5                 | 100.0 |
| <b>C3284</b>   | 4            | 14       | Solid        | 0.013                     | 0.33 | 0.010                 | 0.25 | 0.245        | 6.22 | 48.0                 | 87.0  |
| <b>C3282</b>   | 2            | 12       | Solid        | 0.013                     | 0.33 | 0.010                 | 0.25 | 0.234        | 5.94 | 65.0                 | 116.0 |
| <b>C3283</b>   | 4            | 12       | Solid        | 0.013                     | 0.33 | 0.010                 | 0.25 | 0.284        | 7.21 | 55.0                 | 99.0  |

\*A - Capacitance between conductors

\*B - Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | Brown |
| 4            | Blue  |

## Product Construction

### Conductor:

- 18 thru 12 AWG fully annealed solid bare copper per ASTM B-3

### Insulation:

- Premium-grade, color-coded Flexguard® PVC
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester foil, 25% overlap, minimum
- Stranded tinned copper drain wire

### Jacket:

- Fluoropolymer, red
- Temperature range: -10°C to +75°C
- Includes ripcord

## Applications:

- Fire alarm systems
- Voice communications
- Smoke detectors
- Pull boxes
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 760 Type FPLP (UL: 75°C, 300V)
- California State Fire Marshall Approved

## Features:

- Abrasion-, chemical-resistant jacket
- Sequentially footage marked

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



**General Cable**

# Mid-Capacitance, Unshielded, Non-Plenum

## NEC Type FPL for Microprocessor-Controlled Systems

### Product Construction:

#### Conductor:

- 18 thru 12 AWG fully annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded polypropylene
- Color code: See chart below

#### Jacket:

- PVC, red
- Temperature range: -20°C to +60°C

### Applications:

- Addressable fire alarm systems
- Fire alarm systems
- Voice communications
- Smoke detectors
- Pull boxes
- Suggested voltage rating: 300 volts

### Compliances:

- NEC Article 760 Type FPL (UL: 60°C, 300V)
- California State Fire Marshall Approved
- RoHS Compliant Directive 2002/95/EC
- Passes UL 70,000 BTU Vertical Tray Flame Test

### Features:

- Red PVC jacket for easy critical circuit identification

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM.* C-C CAP. pF/ft |
|----------------|-------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|----------------------|
|                |             |          |              | IN                        | mm   | IN                    | mm   | IN           | mm   |                      |
| <b>C0471</b>   | 2           | 18       | Solid        | 0.014                     | 0.36 | 0.020                 | 0.51 | 0.177        | 4.50 | 16.5                 |
| <b>C0485</b>   | 4           | 18       | Solid        | 0.014                     | 0.36 | 0.020                 | 0.51 | 0.205        | 5.21 | 16.5                 |
| <b>C0473</b>   | 2           | 16       | Solid        | 0.016                     | 0.41 | 0.020                 | 0.51 | 0.206        | 5.23 | 17.5                 |
| <b>C0486</b>   | 4           | 16       | Solid        | 0.016                     | 0.41 | 0.020                 | 0.51 | 0.240        | 6.10 | 17.5                 |
| <b>C0491</b>   | 2           | 14       | Solid        | 0.018                     | 0.46 | 0.020                 | 0.51 | 0.240        | 6.10 | 18.0                 |
| <b>C0492</b>   | 2           | 12       | Solid        | 0.020                     | 0.51 | 0.020                 | 0.51 | 0.282        | 7.16 | 19.0                 |

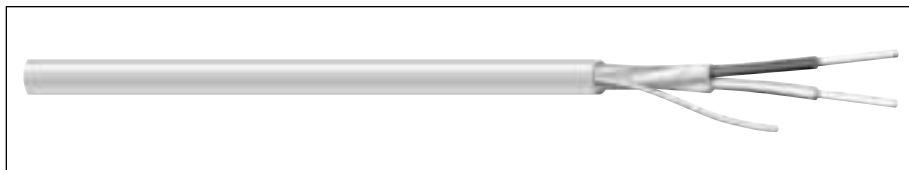
\*Capacitance between conductors

### Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| <b>1</b>     | Black |
| <b>2</b>     | Red   |
| <b>3</b>     | Brown |
| <b>4</b>     | Blue  |

# Mid-Capacitance, Shielded, Non-Plenum

## NEC Type FPL for Microprocessor-Controlled Systems



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOMINAL CAP. * pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|----------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A                    | B    |
| <b>C0472</b>   | 2            | 18       | Solid        | 0.014                     | 0.36 | 0.020                 | 0.51 | 0.182        | 4.88 | 27.0                 | 49.0 |
| <b>C0494</b>   | 4            | 18       | Solid        | 0.014                     | 0.36 | 0.020                 | 0.51 | 0.210        | 5.33 | 24.5                 | 44.0 |
| <b>C0474</b>   | 2            | 16       | Solid        | 0.016                     | 0.41 | 0.020                 | 0.51 | 0.214        | 5.44 | 29.0                 | 52.0 |
| <b>C0495</b>   | 4            | 16       | Solid        | 0.016                     | 0.41 | 0.020                 | 0.51 | 0.246        | 6.25 | 26.0                 | 46.5 |
| <b>C0475</b>   | 2            | 14       | Solid        | 0.018                     | 0.46 | 0.020                 | 0.51 | 0.245        | 6.22 | 31.0                 | 55.5 |
| <b>C0496</b>   | 4            | 14       | Solid        | 0.018                     | 0.46 | 0.020                 | 0.51 | 0.287        | 7.29 | 27.5                 | 49.5 |
| <b>C0476</b>   | 2            | 12       | Solid        | 0.020                     | 0.51 | 0.020                 | 0.51 | 0.287        | 7.29 | 33.0                 | 60.0 |
| <b>C0497</b>   | 4            | 12       | Solid        | 0.020                     | 0.51 | 0.020                 | 0.51 | 0.337        | 8.56 | 29.0                 | 52.5 |

\*A - Capacitance between conductors

\*B - Capacitance between one conductor and other conductors connected to shield

### Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | Brown |
| 4            | Blue  |

### Product Construction:

#### Conductor:

- 18 thru 12 AWG fully annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded polypropylene
- Color code: See chart below

#### Shield:

- 100% Flexfoil® aluminum/polyester, 25% overlap, minimum
- Stranded tinned copper drain wire

#### Jacket:

- PVC, red
- Temperature range: 0°C to +60°C

### Applications:

- Addressable fire alarm systems
- Fire alarm systems
- Voice communications
- Smoke detectors
- Pull boxes
- Suggested voltage rating: 300 volts

### Compliances:

- NEC Article 760 Type FPL (UL: 60°C, 300V)
- California State Fire Marshall Approved
- RoHS Compliant Directive 2002/95/EC
- Passes UL 70,000 BTU Vertical Tray Flame Test

### Features:

- Red PVC jacket for easy critical circuit identification

### Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



Designed to Meet  
UL Vertical Tray  
Flame Test

Underwriters Laboratories Inc.



# Mid-Capacitance, Unshielded, Plenum

## NEC Type FPLP for Microprocessor-Controlled Systems

### Product Construction:

#### Conductor:

- 18 thru 12 AWG fully annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded fluoropolymer
- Color code: See chart below

#### Jacket:

- Premium-grade, red Flexguard® PVC
- Temperature range: 0°C to +75°C
- Includes ripcord

### Applications:

- Addressable fire alarm systems
- Fire alarm systems
- Voice communications
- Smoke detectors
- Pull boxes
- Suggested voltage rating: 300 volts

### Compliances:

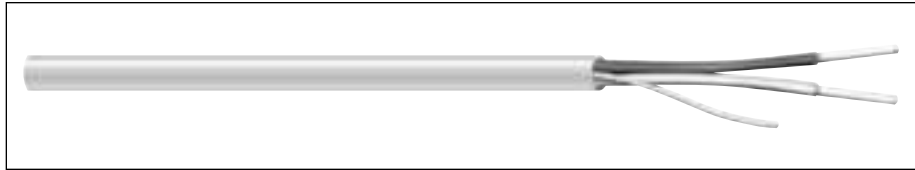
- NEC Article 760 Type FPLP (UL: 75°C, 300V)
- California State Fire Marshall Approved
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

### Features:

- Red PVC jacket for easy critical circuit identification

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM.* C-C CAP. pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|----------------------|
|                |              |          |              | IN                        | mm   | IN                    | mm   | IN           | mm   |                      |
| <b>C3240</b>   | 2            | 18       | Solid        | 0.014                     | 0.36 | 0.015                 | 0.38 | 0.172        | 4.37 | 19.0                 |
| <b>C3242</b>   | 4            | 18       | Solid        | 0.014                     | 0.36 | 0.015                 | 0.38 | 0.195        | 4.95 | 19.0                 |
| <b>C3241</b>   | 2            | 16       | Solid        | 0.016                     | 0.41 | 0.015                 | 0.38 | 0.196        | 4.98 | 20.0                 |
| <b>C3243</b>   | 4            | 16       | Solid        | 0.016                     | 0.41 | 0.015                 | 0.38 | 0.231        | 5.87 | 20.0                 |
| <b>C3244</b>   | 2            | 14       | Solid        | 0.018                     | 0.46 | 0.020                 | 0.51 | 0.242        | 6.15 | 20.0                 |
| <b>C3245</b>   | 4            | 14       | Solid        | 0.018                     | 0.46 | 0.020                 | 0.51 | 0.286        | 7.26 | 20.0                 |
| <b>C3246</b>   | 2            | 12       | Solid        | 0.020                     | 0.51 | 0.020                 | 0.51 | 0.282        | 7.16 | 22.0                 |
| <b>C3247</b>   | 4            | 12       | Solid        | 0.020                     | 0.51 | 0.020                 | 0.51 | 0.333        | 8.45 | 22.0                 |

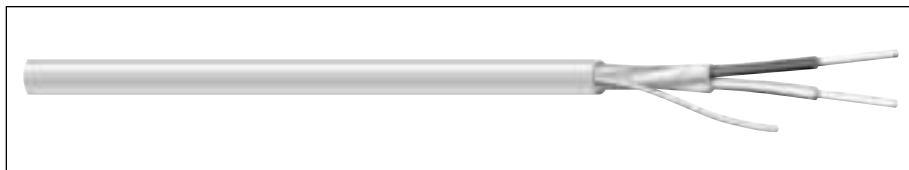
\*Capacitance between conductors

### Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| <b>1</b>     | Black |
| <b>2</b>     | Red   |
| <b>3</b>     | Brown |
| <b>4</b>     | Blue  |

# Mid-Capacitance, Shielded, Plenum

## NEC Type FPLP for Microprocessor-Controlled Systems



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOMINAL CAP. * pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|----------------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A                    | B    |
| <b>C3167</b>   | 2            | 18       | Solid        | 0.014                     | 0.36 | 0.015                 | 0.38 | 0.172        | 4.37 | 31.0                 | 56.0 |
| <b>C3170</b>   | 4            | 18       | Solid        | 0.014                     | 0.36 | 0.015                 | 0.38 | 0.202        | 5.13 | 28.0                 | 50.0 |
| <b>C3168</b>   | 2            | 16       | Solid        | 0.016                     | 0.41 | 0.015                 | 0.38 | 0.203        | 5.16 | 33.0                 | 59.0 |
| <b>C3171</b>   | 4            | 16       | Solid        | 0.016                     | 0.41 | 0.015                 | 0.38 | 0.238        | 6.05 | 29.0                 | 53.0 |
| <b>C3172</b>   | 2            | 14       | Solid        | 0.018                     | 0.46 | 0.020                 | 0.51 | 0.247        | 6.27 | 35.0                 | 63.0 |
| <b>C3173</b>   | 4            | 14       | Solid        | 0.018                     | 0.46 | 0.020                 | 0.51 | 0.289        | 7.34 | 30.0                 | 56.0 |
| <b>C3174</b>   | 2            | 12       | Solid        | 0.020                     | 0.51 | 0.020                 | 0.51 | 0.289        | 7.34 | 38.0                 | 68.0 |
| <b>C3175</b>   | 4            | 12       | Solid        | 0.020                     | 0.51 | 0.020                 | 0.51 | 0.340        | 8.64 | 33.0                 | 60.0 |

\*A - Capacitance between conductors

\*B - Capacitance between one conductor and other conductors connected to shield

### Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | Brown |
| 4            | Blue  |

### Product Construction

#### Conductor:

- 18 thru 12 AWG fully annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded fluoropolymer
- Color code: See chart below

#### Shield:

- 100% Flexfoil® aluminum/polyester foil, 25% overlap, minimum
- Stranded tinned copper drain wire

#### Jacket:

- Premium-grade, red Flexguard® PVC
- Temperature range: 0°C to +75°C
- Includes ripcord

### Applications:

- Addressable fire alarm systems
- Fire alarm systems
- Voice communications
- Smoke detectors
- Pull boxes
- Suggested voltage rating: 300 volts

### Compliances:

- NEC Article 760 Type FPLP (UL: 75°C, 300V)
- California State Fire Marshall Approved
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

### Features:

- Red PVC jacket for easy critical circuit identification

### Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.

**General Cable**

# Multi-Paired, Unshielded, Non-Plenum

CSA FAS 105, FPL (UL), NEC Type PLTC

## Product Construction

### Conductor:

- 22 and 18 AWG fully annealed solid bare copper per ASTM B-3

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See page 229 for the CSA Fire Alarm Color Code Chart

### Jacket:

- Premium-grade, red PVC; brown as an option
- Temperature range: -20°C to +105°C
- TRU-Mark® print legend contains footage markings from 1000' to 0'



## Applications:

- Wiring of fire alarms
- Smoke alarms
- Voice communications
- Burglar alarms
- Fire protection circuits
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 725 PLTC (UL: 105°C, 300V)
- NEC Article 760 Type FPL (UL: 105°C, 300V)
- CSA FAS 105 (CSA: 105°C, 300V)
- C22.2 No. 208-03 (R2008)
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT-4 Vertical Flame Test

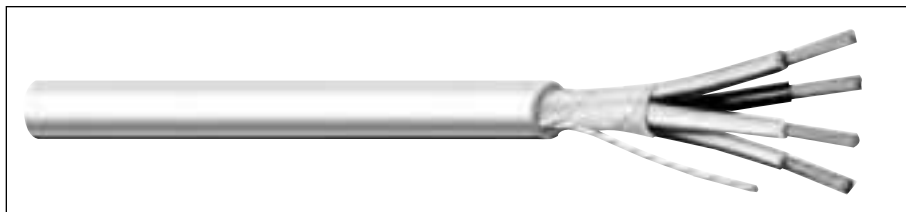
## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    |
| C4328A         | 3            | 22       | Solid        | 0.012                     | 0.30 | 0.042                 | 1.07 | 0.279        | 7.09  |
| C4329A         | 6            | 22       | Solid        | 0.012                     | 0.30 | 0.042                 | 1.07 | 0.350        | 8.89  |
| C4330A         | 12           | 22       | Solid        | 0.012                     | 0.30 | 0.053                 | 1.35 | 0.474        | 12.04 |
| C4331A         | 15           | 22       | Solid        | 0.012                     | 0.30 | 0.053                 | 1.35 | 0.523        | 13.28 |
| C4332A         | 27           | 22       | Solid        | 0.012                     | 0.30 | 0.063                 | 1.60 | 0.672        | 17.07 |
| C4333A         | 6            | 18       | Solid        | 0.015                     | 0.38 | 0.053                 | 1.35 | 0.487        | 12.37 |

# Sound, Alarm & Security Cable

7



The sound and security industry in the United States has grown from a simple and unsophisticated business, begun some 45 years ago, to one which has developed technology to the degree that specialized wires and cables are now much in demand.

No longer are the security and sound industries characterized by large electromechanical relays and large contactors; today these circuits incorporate the latest in microprocessors and solid state devices to not only improve functionality but also to guarantee performance.

As a major wire producer, our role is to ensure that the wires and cables that go into these systems are as reliable as the other components ... the net result is a fully integrated system which will provide peace of mind to the system user.

Also in this section are General Cable's Carol® Brand wire and cable designs suitable for a variety of applications, both in industrial and commercial

environments, including telephone systems, intercoms, burglar alarms, business machines and thermostats.

Aside from the quality materials used in these designs, specifiers and users of Carol® Brand wire and cable products have come to expect that these cables are registered and certified with the leading regulatory agencies such as Underwriters Laboratories ... and we haven't let you down!

Carol® Brand designs have proven themselves in the area of sound and security over time; most are fabricated with solid or stranded, bare copper conductors with insulations and jackets of premium grades of PVC. We offer both parallel and cabled designs both with and without shields. Sequential footage markings on the jackets are offered on all products.

General Cable Carol® Brand products are conveniently packaged in 1000' or 500' lengths to assist the installer.

| Index                                              | Page |
|----------------------------------------------------|------|
| Composite Access Control Cable                     | 131  |
| Composite Access Control Cable, Plenum             | 132  |
| Composite Access Control Cable, Riser              | 133  |
| Multi-Conductor, Unshielded, Riser                 | 134  |
| Multi-Conductor, Shielded, Riser                   | 135  |
| Multi-Conductor, Unshielded, Plenum                | 136  |
| Multi-Conductor, Shielded, Plenum                  | 137  |
| Telephone Station/Intercom & Speaker/Burglar Alarm | 138  |
| Antenna Rotor                                      | 139  |
| Low-Voltage Sprinkler Wire                         | 140  |
| Thermostat Wire Type LVT                           | 141  |
| Thermostat Wire Type CL2                           | 142  |
| Thermostat Wire, Unjacketed                        | 143  |
| Carol® Helix/Hi-Temp® Category 6 Cable             | 144  |
| Carol® Helix/Hi-Temp® Category 5e Cable            | 145  |

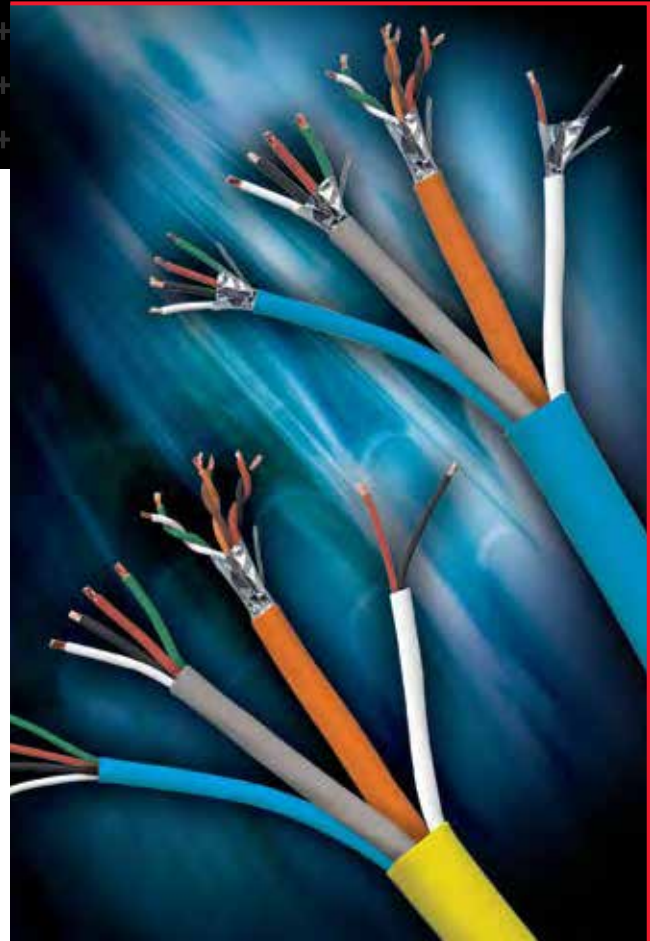
**CAROL  
BRAND****ELECTRONICS  
WIRE & CABLE**

## ■ Carol® Brand Composite Access Control Cable

General Cable's **Carol® Brand Composite Access Control Cable** is manufactured for use in Building Access & Control. The cable is designed to allow for a single cable run that incorporates the four components required for card readers, door contacts, locking power and retinal scanners in commercial buildings, distribution centers, manufacturing facilities and government buildings.

The cables are installer friendly, as they save time and money on installation. With multiple cables under one jacket, time is saved in preparation and setup, pulling and termination. The convenience of these cables at installation makes them a popular choice for multiple Access Control applications.

When your job requires Access Control cable, think of Carol® Brand cables first. Remember, you can always ***Demand Better...Expect More™*** with General Cable Carol® Brand Electronic Cables. We manufacture over 1,300 standard electronic cables that we can ship direct from stock, and we have the technical staff and design expertise to meet any custom cable requirement.



### Special Application Cable

Hook-Up Wire

Plenum Cable

Coaxial Cable

Microphone Cable

Computer Cable

General Purpose Cable

Multi-Conductor Communication  
& Control Cable

Multi-Paired Communication  
& Control Cable

Fire Alarm Cable

Sound & Security Cable

*For more information, contact your local General Cable representative.*

# Composite Access Control Cable, Plenum

NEC Type CMP, UL, c(UL)



## Product Construction:

### Conductor:

- Stranded bare copper

### Jacket:

- Flexguard® PVC
- Temperature range: 0°C to +60°C
- Individual elements marked for application (see diagram below)
- Yellow overall jacket

### Shields:

- Choice between all 4 elements shielded or just the 3-pair element shielded

## Applications:

- Security systems
- Access control
- Card reader
- Door control
- REX
- Power-limited controls

## Compliances:

- NEC Article 800 Type CMP (UL), c(UL)
- RoHS Compliant Directive 2002/95/EC

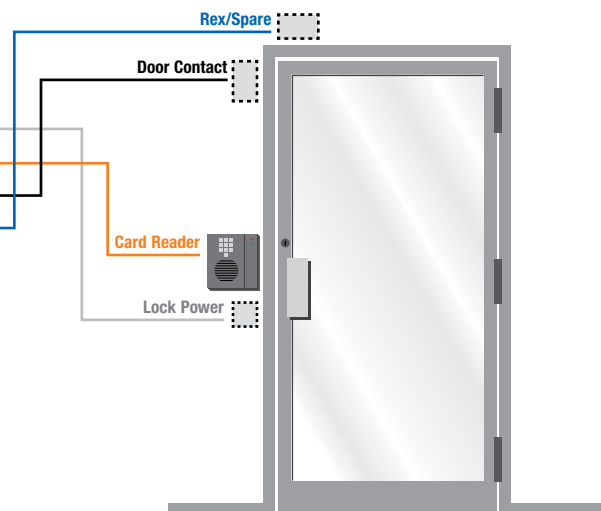
## Packaging:

- 500' and 1000' reels

| CATALOG NUMBER | OVERALL NOMINAL O.D. INCH (MM) | COMPONENT NO. | COMPONENT DESCRIPTIONS     | CONDUCTORS COLOR CODE                      | COMPONENT NOMINAL O.D. INCH (MM) | INSULATION THICKNESS INCH (MM) |
|----------------|--------------------------------|---------------|----------------------------|--------------------------------------------|----------------------------------|--------------------------------|
| 4EPL4S         | 0.430                          | 1             | 4 Cond, 18 AWG, Shielded   | White, Black, Red, Green                   | 0.180 (4.572)                    | 0.008 (0.2032)                 |
|                |                                | 2             | 3 Pair, 22 AWG, Shielded   | White & Green, Orange & Brown, Red & Black | 0.195 (4.593)                    | 0.008 (0.2032)                 |
|                |                                | 3             | 2 Cond, 22 AWG, Shielded   | Red, Black                                 | 0.125 (3.175)                    | 0.008 (0.2032)                 |
|                |                                | 4             | 4 Cond, 22 AWG, Shielded   | White, Black, Red, Green                   | 0.145 (3.683)                    | 0.008 (0.2032)                 |
| 4EPL1S         | 0.420                          | 1             | 4 Cond, 18 AWG, Unshielded | White, Black, Red, Green                   | 0.180 (4.572)                    | 0.008 (0.2032)                 |
|                |                                | 2             | 3 Pair, 22 AWG, Shielded   | White & Green, Orange & Brown, Red & Black | 0.195 (4.593)                    | 0.008 (0.2032)                 |
|                |                                | 3             | 2 Cond, 22 AWG, Unshielded | Red, Black                                 | 0.125 (3.175)                    | 0.008 (0.2032)                 |
|                |                                | 4             | 4 Cond, 22 AWG, Unshielded | White, Black, Red, Green                   | 0.145 (3.683)                    | 0.008 (0.2032)                 |

## Jacket Color Coding & Component Application

| Jacket Color | Component | Cable Type          | Application  |
|--------------|-----------|---------------------|--------------|
| Gray         | 1         | 4 Conductor, 18 AWG | Lock Power   |
| Orange       | 2         | 3 Pair, 22 AWG      | Card Reader  |
| White        | 3         | 2 Conductor, 22 AWG | Door Contact |
| Blue         | 4         | 4 Conductor, 22 AWG | Rex/Spare    |



**CAROL BRAND**

**UL**  
LISTED

**RoHS Compliant**  
Directive 2002/95/EC

**General Cable**

# Composite Access Control Cable, Riser

NEC Type CMR, UL, c(UL)

## Product Construction:

### Conductor:

- Stranded bare copper

### Jacket:

- PVC
- Temperature range: -20°C to +60°C
- Individual elements marked for application (see diagram below)
- Blue overall jacket

### Shields:

- Choice between all 4 elements shielded or just the 3-pair shielded

## Applications:

- Security systems
- Access control
- Card reader
- Door control
- REX
- Power-limited controls

## Compliances:

- NEC Article 800 Type CMR (UL), c(UL)
- RoHS Compliant Directive 2002/95/EC

## Packaging:

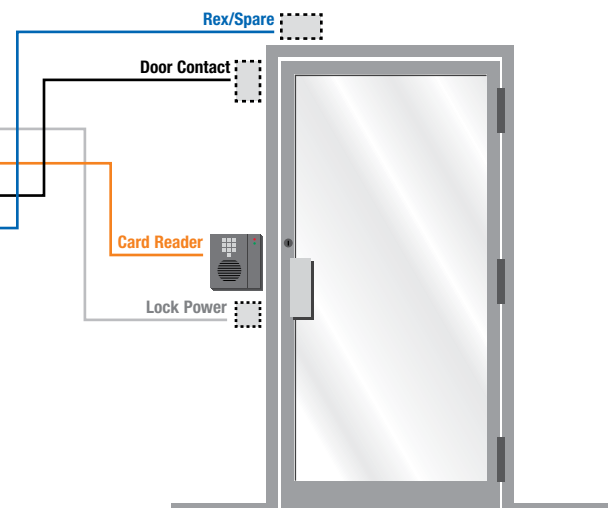
- 500' and 1000' reels



| CATALOG NUMBER | OVERALL NOMINAL O.D. INCH (MM) | COMPONENT NO. | COMPONENT DESCRIPTIONS     | CONDUCTORS COLOR CODE                      | COMPONENT NOMINAL O.D. INCH (MM) | INSULATION THICKNESS INCH (MM) |
|----------------|--------------------------------|---------------|----------------------------|--------------------------------------------|----------------------------------|--------------------------------|
| 4ERS4S         | 0.430                          | 1             | 4 Cond, 18 AWG, Shielded   | White, Black, Red, Green                   | 0.180 (4.572)                    | 0.008 (0.2032)                 |
|                |                                | 2             | 3 Pair, 22 AWG, Shielded   | White & Green, Orange & Brown, Red & Black | 0.195 (4.593)                    | 0.008 (0.2032)                 |
|                |                                | 3             | 2 Cond, 22 AWG, Shielded   | Red, Black                                 | 0.125 (3.175)                    | 0.008 (0.2032)                 |
|                |                                | 4             | 4 Cond, 22 AWG, Shielded   | White, Black, Red, Green                   | 0.145 (3.683)                    | 0.008 (0.2032)                 |
| 4ERS1S         | 0.420                          | 1             | 4 Cond, 18 AWG, Unshielded | White, Black, Red, Green                   | 0.180 (4.572)                    | 0.008 (0.2032)                 |
|                |                                | 2             | 3 Pair, 22 AWG, Shielded   | White & Green, Orange & Brown, Red & Black | 0.195 (4.593)                    | 0.008 (0.2032)                 |
|                |                                | 3             | 2 Cond, 22 AWG, Unshielded | Red, Black                                 | 0.125 (3.175)                    | 0.008 (0.2032)                 |
|                |                                | 4             | 4 Cond, 22 AWG, Unshielded | White, Black, Red, Green                   | 0.145 (3.683)                    | 0.008 (0.2032)                 |

## Jacket Color Coding & Component Application

| Jacket Color | Component | Cable Type          | Application  |
|--------------|-----------|---------------------|--------------|
| Gray         | 1         | 4 Conductor, 18 AWG | Lock Power   |
| Orange       | 2         | 3 Pair, 22 AWG      | Card Reader  |
| White        | 3         | 2 Conductor, 22 AWG | Door Contact |
| Blue         | 4         | 4 Conductor, 22 AWG | Rex/Spare    |



# Multi-Conductor, Unshielded, Riser

## NEC Type CMR and/or CL3R



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET WALL |    | NOMINAL O.D. |    |
|----------------|--------------|----------|--------------|---------------------------|----|------------------|----|--------------|----|
|                |              |          |              | INCHES                    | mm | INCHES           | mm | INCHES       | mm |

### 22 AWG CONDUCTORS

|        |    |    |       |       |      |       |      |       |      |
|--------|----|----|-------|-------|------|-------|------|-------|------|
| E1000S | 2  | 22 | Solid | 0.007 | 0.20 | 0.015 | 0.38 | 0.118 | 3.00 |
| E1001S | 4  | 22 | Solid | 0.007 | 0.20 | 0.015 | 0.38 | 0.126 | 3.20 |
| E1002S | 2  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.122 | 3.10 |
| E1003S | 3  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.141 | 3.58 |
| E1004S | 4  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.141 | 3.66 |
| E1006S | 6  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.164 | 4.17 |
| E1008S | 8  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.180 | 4.57 |
| E1010S | 10 | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.212 | 5.38 |
| E1012S | 12 | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.219 | 5.56 |

### 20 AWG CONDUCTORS

|        |   |    |      |       |      |       |      |       |      |
|--------|---|----|------|-------|------|-------|------|-------|------|
| E1022S | 2 | 20 | 7/28 | 0.007 | 0.18 | 0.015 | 0.38 | 0.134 | 3.40 |
| E1023S | 3 | 20 | 7/28 | 0.008 | 0.20 | 0.015 | 0.38 | 0.134 | 3.40 |
| E1024S | 4 | 20 | 7/28 | 0.008 | 0.20 | 0.015 | 0.38 | 0.142 | 3.60 |

### 18 AWG CONDUCTORS

|        |    |    |       |       |      |       |      |       |      |
|--------|----|----|-------|-------|------|-------|------|-------|------|
| E1030S | 2  | 18 | Solid | 0.008 | 0.20 | 0.015 | 0.38 | 0.144 | 3.66 |
| E1032S | 2  | 18 | 7/26  | 0.009 | 0.23 | 0.015 | 0.38 | 0.156 | 3.96 |
| E1033S | 3  | 18 | 7/26  | 0.009 | 0.23 | 0.015 | 0.38 | 0.166 | 4.22 |
| E1034S | 4  | 18 | 7/26  | 0.009 | 0.23 | 0.015 | 0.38 | 0.187 | 4.75 |
| E1036S | 6  | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.225 | 5.72 |
| E1038S | 8  | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.245 | 6.22 |
| E1040S | 10 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.282 | 7.16 |
| E1041S | 12 | 18 | 7/26  | 0.009 | 0.23 | 0.015 | 0.38 | 0.291 | 7.39 |

### 16 AWG CONDUCTORS

|        |   |    |          |       |      |       |      |       |      |
|--------|---|----|----------|-------|------|-------|------|-------|------|
| E1042S | 2 | 16 | 19/.0117 | 0.009 | 0.25 | 0.015 | 0.38 | 0.178 | 4.52 |
| E1043S | 3 | 16 | 19/.0117 | 0.009 | 0.25 | 0.015 | 0.38 | 0.193 | 4.90 |
| E1044S | 4 | 16 | 19/.0117 | 0.009 | 0.25 | 0.015 | 0.38 | 0.210 | 5.33 |

### 14 AWG CONDUCTORS

|         |   |    |          |       |      |       |      |       |      |
|---------|---|----|----------|-------|------|-------|------|-------|------|
| E1052S* | 2 | 14 | 19/.0147 | 0.013 | 0.33 | 0.015 | 0.38 | 0.224 | 5.69 |
| E1054S* | 4 | 14 | 19/.0147 | 0.013 | 0.33 | 0.015 | 0.38 | 0.264 | 6.71 |

### 12 AWG CONDUCTORS

|         |   |    |          |       |      |       |      |       |      |
|---------|---|----|----------|-------|------|-------|------|-------|------|
| E1062S* | 2 | 12 | 19/.0185 | 0.013 | 0.33 | 0.015 | 0.38 | 0.260 | 6.60 |
| E1064S* | 4 | 12 | 19/.0185 | 0.013 | 0.33 | 0.015 | 0.38 | 0.312 | 7.92 |

\* NEC CL3R only

### Product Construction:

#### Conductor:

- Stranded or solid bare copper per ASTM B-3, B-8 and B-286

#### Insulation:

- Premium-grade, color-coded S-R PVC
- Color code: See chart below

#### Jacket:

- Premium-grade, gray PVC
- Sequential footage markings to facilitate installation
- Temperature range: -20°C to +75°C
- Includes ripcord

### Applications:

- Power-limited control circuits
- Wiring of the following systems:
  - Intercom
  - Security
  - Audio
  - Background music
- Suggested voltage rating: 300 volts

### Compliances:

- NEC Article 725 Type CL3R (UL: 75°C, 150V)
- NEC Article 800 Type CMR (UL: 75°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- California State Fire Marshall Approved

### Packaging:

- Please contact Customer Service for packaging and color options

### Color Code Chart

| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| 1            | Black | 7            | Orange |
| 2            | Red   | 8            | Yellow |
| 3            | White | 9            | Violet |
| 4            | Green | 10           | Gray   |
| 5            | Brown | 11           | Pink   |
| 6            | Blue  | 12           | Tan    |

**CAROL BRAND**

**UL** LISTED



RoHS Compliant  
Directive 2002/95/EC

**General Cable**

# Multi-Conductor, Shielded, Riser

## NEC Type CMR and/or CL3R

### Product Construction:

#### Conductor:

- Stranded or solid bare copper per ASTM B-3, B-8 and B-286

#### Insulation:

- Premium-grade, color-coded S-R PVC
- Color code: See chart below

#### Shield:

- Overall Flexfoil® polyester supported aluminum foil
- Stranded tinned copper drain wire

#### Jacket:

- Premium-grade, gray PVC
- Sequential footage markings to facilitate installation
- Temperature range: -20°C to +75°C
- Includes ripcord

### Applications:

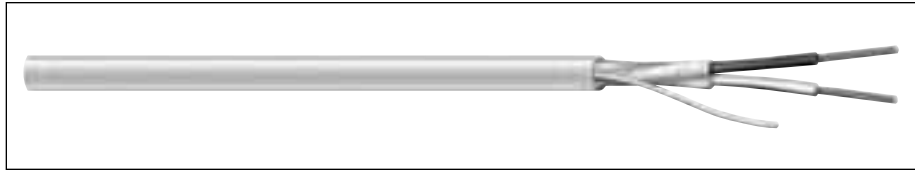
- Power-limited control circuits
- Wiring of the following systems:
  - Intercom
  - Security
  - Audio
  - Background music
- Suggested voltage rating: 300 volts

### Compliances:

- NEC Article 725 Type CL3R (UL: 75°C, 150V)
- NEC Article 800 Type CMR (UL: 75°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- California State Fire Marshall Approved

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET WALL |    | NOMINAL O.D. |    |
|----------------|--------------|----------|--------------|---------------------------|----|------------------|----|--------------|----|
|                |              |          |              | INCHES                    | mm | INCHES           | mm | INCHES       | mm |

#### 22 AWG CONDUCTORS

|        |    |    |       |       |      |       |      |       |      |
|--------|----|----|-------|-------|------|-------|------|-------|------|
| E2000S | 2  | 22 | Solid | 0.008 | 0.20 | 0.015 | 0.38 | 0.117 | 2.97 |
| E2002S | 2  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.132 | 3.35 |
| E2003S | 3  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.135 | 3.43 |
| E2004S | 4  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.147 | 3.73 |
| E2006S | 6  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.173 | 4.39 |
| E2008S | 8  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.195 | 4.95 |
| E2010S | 10 | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.218 | 5.54 |
| E2012S | 12 | 22 | 7/30  | 0.010 | 0.25 | 0.015 | 0.38 | 0.238 | 6.05 |

#### 20 AWG CONDUCTORS

|        |   |    |      |       |      |       |      |       |      |
|--------|---|----|------|-------|------|-------|------|-------|------|
| E2022S | 2 | 20 | 7/28 | 0.007 | 0.18 | 0.015 | 0.38 | 0.142 | 3.61 |
| E2023S | 3 | 20 | 7/28 | 0.008 | 0.20 | 0.015 | 0.38 | 0.151 | 3.84 |
| E2024S | 4 | 20 | 7/28 | 0.007 | 0.18 | 0.015 | 0.38 | 0.171 | 4.34 |

#### 18 AWG CONDUCTORS

|        |    |    |       |       |      |       |      |       |      |
|--------|----|----|-------|-------|------|-------|------|-------|------|
| E2030S | 2  | 18 | Solid | 0.009 | 0.20 | 0.015 | 0.38 | 0.147 | 3.73 |
| E2032S | 2  | 18 | 7/26  | 0.009 | 0.23 | 0.015 | 0.38 | 0.164 | 4.17 |
| E2033S | 3  | 18 | 7/26  | 0.009 | 0.23 | 0.015 | 0.38 | 0.172 | 4.37 |
| E2034S | 4  | 18 | 7/26  | 0.009 | 0.23 | 0.015 | 0.38 | 0.187 | 4.75 |
| E2036S | 6  | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.230 | 5.54 |
| E2038S | 8  | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.250 | 6.35 |
| E2040S | 10 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.287 | 7.29 |
| E2041S | 12 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.296 | 7.52 |

#### 16 AWG CONDUCTORS

|        |   |    |          |       |      |       |      |       |      |
|--------|---|----|----------|-------|------|-------|------|-------|------|
| E2042S | 2 | 16 | 19/.0117 | 0.009 | 0.23 | 0.015 | 0.38 | 0.189 | 4.80 |
| E2043S | 3 | 16 | 19/.0117 | 0.009 | 0.23 | 0.015 | 0.38 | 0.198 | 5.03 |
| E2044S | 4 | 16 | 19/.0117 | 0.009 | 0.23 | 0.015 | 0.38 | 0.219 | 5.56 |

#### 14 AWG CONDUCTORS

|         |   |    |          |       |      |       |      |       |      |
|---------|---|----|----------|-------|------|-------|------|-------|------|
| E2052S* | 2 | 14 | 19/.0147 | 0.013 | 0.33 | 0.015 | 0.38 | 0.245 | 6.22 |
| E2054S* | 4 | 14 | 19/.0147 | 0.013 | 0.33 | 0.015 | 0.38 | 0.269 | 6.83 |

#### 12 AWG CONDUCTORS

|         |   |    |          |       |      |       |      |       |      |
|---------|---|----|----------|-------|------|-------|------|-------|------|
| E2062S* | 2 | 12 | 19/.0185 | 0.013 | 0.33 | 0.015 | 0.38 | 0.281 | 7.14 |
| E2064S* | 4 | 12 | 19/.0185 | 0.013 | 0.33 | 0.015 | 0.38 | 0.312 | 7.92 |

\* NEC CL3R only

### Color Code Chart

| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| 1            | Black | 7            | Orange |
| 2            | Red   | 8            | Yellow |
| 3            | White | 9            | Violet |
| 4            | Green | 10           | Gray   |
| 5            | Brown | 11           | Pink   |
| 6            | Blue  | 12           | Tan    |

# Multi-Conductor, Unshielded, Plenum

NEC Type CMP and/or CL3P



## Product Construction:

### Conductor:

- Stranded or solid bare copper per ASTM B-3, B-8 and B-286

### Insulation:

- Premium-grade, color-coded Flexguard® PVC
- Color code: See chart below

### Jacket:

- Premium-grade natural Flexguard® PVC
- Sequential footage markings to facilitate installation
- Temperature range: 0°C to +75°C
- Ripcord available—consult Customer Service for details

## Applications:

- Power-limited control circuits
- Wiring of the following systems:  
Intercom  
Security  
Audio  
Background music
- Suggested voltage rating: 300 volts

## Compliances:

- NEC Article 725 Type CL3P (UL: 75°C, 150V)
- NEC Article 800 Type CMP (UL: 75°C, 300V)
- Designed to meet NFPA 262 Flame Test
- California State Fire Marshall Approved

## Packaging:

- Please contact Customer Service for packaging and color options

## Color Code Chart

| NO. OF COND. | COLOR | NO. OF COND. | COLOR  |
|--------------|-------|--------------|--------|
| 1            | Black | 7            | Orange |
| 2            | Red   | 8            | Yellow |
| 3            | White | 9            | Violet |
| 4            | Green | 10           | Gray   |
| 5            | Brown | 11           | Pink   |
| 6            | Blue  | 12           | Tan    |

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET WALL |    | NOMINAL O.D. |    |
|----------------|--------------|----------|--------------|---------------------------|----|------------------|----|--------------|----|
|                |              |          |              | INCHES                    | mm | INCHES           | mm | INCHES       | mm |

### 22 AWG CONDUCTORS

|        |    |    |       |       |      |       |      |       |      |
|--------|----|----|-------|-------|------|-------|------|-------|------|
| E3000S | 2  | 22 | Solid | 0.007 | 0.18 | 0.015 | 0.38 | 0.108 | 2.74 |
| E3001S | 4  | 22 | Solid | 0.007 | 0.18 | 0.015 | 0.38 | 0.124 | 3.15 |
| E3002S | 2  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.120 | 3.05 |
| E3003S | 3  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.127 | 3.23 |
| E3004S | 4  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.139 | 3.53 |
| E3006S | 6  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.164 | 4.17 |
| E3008S | 8  | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.178 | 4.52 |
| E3010S | 10 | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.194 | 4.92 |
| E3012S | 12 | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.211 | 5.36 |

### 20 AWG CONDUCTORS

|        |   |    |      |       |      |       |      |       |      |
|--------|---|----|------|-------|------|-------|------|-------|------|
| E3022S | 2 | 20 | 7/28 | 0.009 | 0.23 | 0.015 | 0.38 | 0.138 | 3.51 |
| E3023S | 3 | 20 | 7/28 | 0.009 | 0.23 | 0.015 | 0.38 | 0.146 | 3.71 |
| E3024S | 4 | 20 | 7/28 | 0.009 | 0.23 | 0.015 | 0.38 | 0.161 | 4.09 |

### 18 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E3030S | 2 | 18 | Solid | 0.008 | 0.20 | 0.015 | 0.38 | 0.142 | 3.61 |
| E3032S | 2 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.156 | 3.96 |
| E3033S | 3 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.166 | 4.22 |
| E3034S | 4 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.187 | 4.75 |
| E3036S | 6 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.216 | 5.49 |
| E3038S | 8 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.235 | 5.97 |

### 16 AWG CONDUCTORS

|        |   |    |          |       |      |       |      |       |      |
|--------|---|----|----------|-------|------|-------|------|-------|------|
| E3042S | 2 | 16 | 19/.0117 | 0.008 | 0.20 | 0.015 | 0.38 | 0.174 | 4.42 |
| E3043S | 3 | 16 | 19/.0117 | 0.008 | 0.20 | 0.015 | 0.38 | 0.185 | 4.70 |
| E3044S | 4 | 16 | 19/.0117 | 0.009 | 0.23 | 0.015 | 0.38 | 0.205 | 5.21 |

### 14 AWG CONDUCTORS

|         |   |    |          |       |      |       |      |       |      |
|---------|---|----|----------|-------|------|-------|------|-------|------|
| E3052S* | 2 | 14 | 19/.0147 | 0.011 | 0.28 | 0.015 | 0.38 | 0.216 | 5.49 |
| E3054S* | 4 | 14 | 19/.0147 | 0.011 | 0.28 | 0.015 | 0.38 | 0.255 | 6.48 |

### 12 AWG CONDUCTORS

|         |   |    |          |       |      |       |      |       |      |
|---------|---|----|----------|-------|------|-------|------|-------|------|
| E3062S* | 2 | 12 | 19/.0185 | 0.011 | 0.28 | 0.015 | 0.38 | 0.252 | 6.40 |
| E3064S* | 4 | 12 | 19/.0185 | 0.011 | 0.28 | 0.015 | 0.38 | 0.298 | 7.57 |

\* NEC CL3P only

**CAROL BRAND**

**UL**  
LISTED



**General Cable**

# Multi-Conductor, Shielded, Plenum

## NEC Type CMP and/or CL3P

### Product Construction:

#### Conductor:

- Stranded or solid bare copper per ASTM B-3, B-8 and B-286

#### Insulation:

- Premium-grade, color-coded Flexguard® PVC

#### Shield:

- Overall Flexfoil® polyester supported aluminum foil
- Stranded tinned copper drain wire

#### Jacket:

- Premium-grade natural Flexguard® PVC
- Sequential footage markings to facilitate installation
- Temperature range: 0°C to +75°C
- Ripcord available—consult Customer Service for details

### Applications:

- Power-limited control circuits
- Wiring of the following systems:
  - Intercom
  - Security
  - Audio
  - Background music
- Suggested voltage rating: 300 volts

### Compliances:

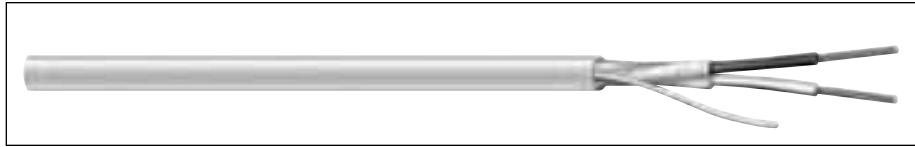
- NEC Article 725 Type CL3P (UL: 75°C, 150V)
- NEC Article 800 Type CMP (UL: 75°C, 300V)
- Designed to meet NFPA 262 Flame Test
- California State Fire Marshall Approved

### Packaging:

- Please contact Customer Service for packaging and color options

### Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | Red    |
| 3            | White  |
| 4            | Green  |
| 5            | Brown  |
| 6            | Blue   |
| 7            | Orange |
| 8            | Yellow |



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET WALL |    | NOMINAL O.D. |    |
|----------------|--------------|----------|--------------|---------------------------|----|------------------|----|--------------|----|
|                |              |          |              | INCHES                    | mm | INCHES           | mm | INCHES       | mm |

#### 22 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E2100S | 2 | 22 | Solid | 0.007 | 0.18 | 0.015 | 0.38 | 0.116 | 2.95 |
| E2102S | 2 | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.128 | 3.25 |
| E2103S | 3 | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.131 | 3.33 |
| E2104S | 4 | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.147 | 3.73 |
| E2106S | 6 | 22 | 7/30  | 0.008 | 0.20 | 0.015 | 0.38 | 0.176 | 4.47 |
| E2108S | 8 | 22 | 7/30  | 0.010 | 0.25 | 0.015 | 0.38 | 0.184 | 4.67 |

#### 20 AWG CONDUCTORS

|        |   |    |      |       |      |       |      |       |      |
|--------|---|----|------|-------|------|-------|------|-------|------|
| E2122S | 2 | 20 | 7/28 | 0.009 | 0.23 | 0.015 | 0.38 | 0.143 | 3.63 |
| E2123S | 3 | 20 | 7/28 | 0.009 | 0.23 | 0.015 | 0.38 | 0.151 | 3.84 |
| E2124S | 4 | 20 | 7/28 | 0.009 | 0.23 | 0.015 | 0.38 | 0.166 | 4.22 |

#### 18 AWG CONDUCTORS

|        |   |    |       |       |      |       |      |       |      |
|--------|---|----|-------|-------|------|-------|------|-------|------|
| E2200S | 2 | 18 | Solid | 0.008 | 0.20 | 0.015 | 0.38 | 0.148 | 3.76 |
| E2202S | 2 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.164 | 4.17 |
| E2203S | 3 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.169 | 4.29 |
| E2204S | 4 | 18 | 7/26  | 0.008 | 0.20 | 0.015 | 0.38 | 0.185 | 4.70 |
| E2206S | 6 | 18 | 7/26  | 0.010 | 0.25 | 0.015 | 0.38 | 0.230 | 5.84 |
| E2208S | 8 | 18 | 7/26  | 0.010 | 0.25 | 0.015 | 0.38 | 0.252 | 6.40 |

#### 16 AWG CONDUCTORS

|        |   |    |          |       |      |       |      |       |      |
|--------|---|----|----------|-------|------|-------|------|-------|------|
| E2242S | 2 | 16 | 19/.0117 | 0.008 | 0.20 | 0.015 | 0.38 | 0.179 | 4.55 |
| E2243S | 3 | 16 | 19/.0117 | 0.008 | 0.20 | 0.015 | 0.38 | 0.190 | 4.83 |
| E2244S | 4 | 16 | 19/.0117 | 0.008 | 0.20 | 0.015 | 0.38 | 0.209 | 5.31 |

#### 14 AWG CONDUCTORS

|         |   |    |          |       |      |       |      |       |      |
|---------|---|----|----------|-------|------|-------|------|-------|------|
| E2252S* | 2 | 14 | 19/.0147 | 0.008 | 0.20 | 0.015 | 0.38 | 0.207 | 5.26 |
| E2254S* | 4 | 14 | 19/.0147 | 0.008 | 0.20 | 0.015 | 0.38 | 0.260 | 6.60 |

#### 12 AWG CONDUCTORS

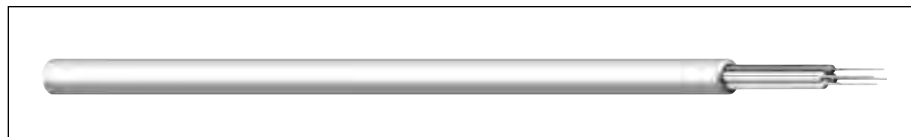
|         |   |    |          |       |      |       |      |       |      |
|---------|---|----|----------|-------|------|-------|------|-------|------|
| E2262S* | 2 | 12 | 19/.0185 | 0.008 | 0.20 | 0.015 | 0.38 | 0.244 | 6.20 |
| E2264S* | 4 | 12 | 19/.0185 | 0.008 | 0.20 | 0.015 | 0.38 | 0.288 | 7.32 |

\* NEC CL3P only

# Telephone Station/Intercom & Speaker/ Burglar Alarm

NEC Types CMR or CM/CL2 and CMX-Outdoor

**Burglar  
Alarm Cable  
also available  
in 500' Coil  
Packs\***



| CATALOG<br>NUMBER | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |    | NOM. JACKET<br>THICKNESS |    | NOMINAL O.D. |    |
|-------------------|-----------------|-------------|-----------------|------------------------------|----|--------------------------|----|--------------|----|
|                   |                 |             |                 | INCHES                       | mm | INCHES                   | mm | INCHES       | mm |

## INTERCOM, SPEAKER AND BURGLAR ALARM

|                 |   |    |         |       |      |       |      |       |      |
|-----------------|---|----|---------|-------|------|-------|------|-------|------|
| <b>C4408*</b>   | 2 | 22 | Solid   | 0.007 | 0.18 | 0.020 | 0.51 | 0.115 | 2.92 |
| <b>C4408ST*</b> | 2 | 22 | 7/.0096 | 0.007 | 0.18 | 0.020 | 0.51 | 0.125 | 3.18 |
| <b>C4410</b>    | 3 | 22 | Solid   | 0.007 | 0.18 | 0.016 | 0.41 | 0.118 | 3.00 |
| <b>C4412*</b>   | 4 | 22 | Solid   | 0.007 | 0.18 | 0.015 | 0.38 | 0.125 | 3.18 |
| <b>C4412ST*</b> | 4 | 22 | 7/.0096 | 0.007 | 0.18 | 0.015 | 0.38 | 0.135 | 3.43 |

## Color Code Chart

| NO. OF<br>PAIRS | COLOR | NO. OF<br>PAIRS | COLOR  |
|-----------------|-------|-----------------|--------|
| 1               | Red   | 3               | Yellow |
| 2               | Green | 4               | Black  |



## TELEPHONE STATION

## CATEGORY 3

| CATALOG<br>NUMBER | NO. OF<br>PAIRS | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D.     |                |
|-------------------|-----------------|-------------|-----------------|------------------------------|------|--------------------------|------|------------------|----------------|
|                   |                 |             |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES           | mm             |
| <b>C4413</b>      | 2               | 24          | Solid           | 0.007                        | 0.18 | 0.015                    | 0.38 | 0.145 x<br>0.095 | 3.68 x<br>2.41 |

**Note:** Outdoor rating allows cable to be exposed for short distances from the network interface device on the outside of the house to the point where the cable enters the house. This type of cable is not to be buried or direct buried.

## Color Code Chart (Bandmarked)

| NO. OF<br>PAIRS | COLOR                   | NO. OF<br>PAIRS | COLOR                       |
|-----------------|-------------------------|-----------------|-----------------------------|
| 1               | White-Blue Band<br>Blue | 2               | White-Orange Band<br>Orange |



## BURGLAR ALARM

| CATALOG<br>NUMBER | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOMINAL O.D. |      | NOM.*<br>C-C<br>CAP.<br>pF/ft |
|-------------------|-----------------|-------------|-----------------|------------------------------|------|--------------|------|-------------------------------|
|                   |                 |             |                 | INCHES                       | mm   | INCHES       | mm   |                               |
| <b>C6310</b>      | 2               | 22          | 7/30            | 0.024                        | 0.61 | 0.156        | 3.96 | 20.0                          |
| <b>C6311</b>      | 2               | 20          | 7/28            | 0.024                        | 0.61 | 0.172        | 4.37 | 22.5                          |
| <b>C6312</b>      | 2               | 18          | 7/0.015         | 0.024                        | 0.61 | 0.192        | 4.88 | 24.5                          |
| <b>C6313</b>      | 3               | 18          | 7/0.015         | 0.024                        | 0.61 | 0.202        | 5.13 | 28.5                          |

\*Capacitance between conductors

## Color Code Chart

| STOCK COLORS   | ORDERING<br>SUFFIX | STOCK COLORS   | ORDERING<br>SUFFIX |
|----------------|--------------------|----------------|--------------------|
| 1. White-White | 02                 | 3. Black-White | 96                 |
| 2. Brown-Brown | 08                 |                |                    |

**CAROL  
BRAND**



Designed to Meet  
UL Vertical Tray  
Flame Test  
Underwriters Laboratories Inc.

RoHS Compliant  
Directive 2002/95/EC

## Product Construction:

### Conductor:

- Solid or stranded bare copper per ASTM B-3

### Insulation:

- Semi-rigid, flame-retardant PVC
- Color code: See chart below

### Core:

- Conductors in a quad configuration (C4412)

### Jacket:

- Low-temperature, flame-retardant beige PVC (-20°C to +60°C)
- Sequential footage markings to facilitate installation
- Cables are suitable for installation with T-18 staples

## Applications:

- Intercom systems and speaker extension service
- Suggested voltage rating: 300 volts
- **C4413 only:** Product is in conformance with TIA 568C, TIA 570B standards and the FCC Part 68 ruling which requires telephone system cables for voice and data services into homes to be at minimum category 3, 2 pr. 22 AWG solid.

## Compliances:

- NEC Article 800 Type CMR/CMX-Indoor/Outdoor; UL Listed (60°C, 300V)
- Coil Packs (500') – NEC Article 800 Type CM/CMX-Indoor/Outdoor; ETL Listed
- Coil Packs (500') – NEC Article 725 Type CL2; ETL Listed
- C4413 only, Category 3
- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options

## Product Construction:

### Conductor:

- 22 thru 18 AWG one tinned/one bare fully annealed stranded copper
- Stranded bare copper per ASTM B-3 or stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Temperature range: -20°C to +60°C
- Color code: See chart below

## Applications:

- Burglar alarms
- Intercom systems
- Remote control circuits
- Suggested voltage rating: 150 volts

## Features:

- Polarity ridge for easy identification

## Compliances:

- NEC Article 725 Type CL2 (UL: 60°C, 150V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**General Cable**

# Antenna Rotor

## Product Construction:

### Conductor:

- 22 thru 18 AWG fully annealed stranded bare copper per ASTM B-3

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See charts below

### Jacket:

- Permaline® polyethylene, black
- Temperature range: -20°C to +60°C

### Applications:

- Rotor antenna controls
- Outdoor installations
- Direct burial
- Suggested voltage rating: 200 volts

### Features:

- Permaline® jackets resist deterioration
- Sunlight-resistant
- Moisture- and salt-resistant

### Compliances:

- RoHS Compliant Directive 2002/95/EC



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |
| <b>C5076</b>   | 4            | 22       | 7/30         | 0.010                     | 0.25 | 0.022                 | 0.56 | 0.165        | 4.19 |
| <b>C5086</b>   | 5            | 22       | 7/30         | 0.010                     | 0.25 | 0.022                 | 0.56 | 0.175        | 4.45 |
| <b>C5096</b>   | 8            | 22       | 7/30         | 0.010                     | 0.25 | 0.020                 | 0.51 | 0.205        | 5.21 |
| <b>C5078</b>   | 4            | 20       | 10/30        | 0.009                     | 0.23 | 0.023                 | 0.58 | 0.180        | 4.57 |
| <b>C5460†</b>  | 2            | 18       | 16/30        | 0.016                     | 0.25 | 0.020                 | 0.51 | 0.208        | 5.28 |
| <b>C5084</b>   | 4            | 18       | 16/30        | 0.016                     | 0.40 | 0.030                 | 0.76 | 0.245        | 6.22 |

†Color Code Black/Red

## Product Construction:

### Conductor:

- 22 thru 16 AWG fully annealed stranded bare copper per ASTM B-3

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Jacket:

- PVC, chrome gray or black (C4080, C4090)
- Temperature range: -20°C to +80°C

### Applications:

- Compatible with Alliance Ham/CB and TV rotors
- Suggested voltage rating: 200 volts

### Compliances:

- RoHS Compliant Directive 2002/95/EC

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |
| <b>C1118</b>   | 4            | 22       | 7/30         | 0.010                     | 0.25 | 0.020                 | 0.51 | 0.161        | 4.09 |
| <b>C1124</b>   | 5            | 22       | 7/30         | 0.010                     | 0.25 | 0.020                 | 0.51 | 0.175        | 4.45 |
| <b>C1130</b>   | 8            | 22       | 7/30         | 0.010                     | 0.25 | 0.020                 | 0.51 | 0.205        | 5.21 |
| <b>C1119</b>   | 4            | 20       | 10/30        | 0.010                     | 0.25 | 0.020                 | 0.51 | 0.180        | 4.57 |
| <b>C1126</b>   | 5            | 20       | 10/30        | 0.010                     | 0.25 | 0.020                 | 0.51 | 0.197        | 5.00 |
| <b>C1123</b>   | 4            | 18       | 16/30        | 0.016                     | 0.40 | 0.030                 | 0.76 | 0.255        | 6.48 |

### COMBINATION ROTOR CABLE

|              |   |              |                |                |              |       |      |       |      |
|--------------|---|--------------|----------------|----------------|--------------|-------|------|-------|------|
| <b>C4080</b> | 8 | 6-22<br>2-18 | 7/30<br>16/30  | 0.012<br>0.016 | 0.30<br>0.41 | 0.030 | 0.76 | 0.260 | 6.60 |
| <b>C4090</b> | 8 | 6-20<br>2-16 | 10/30<br>26/30 | 0.010<br>0.016 | 0.25<br>0.41 | 0.030 | 0.76 | 0.280 | 7.11 |

### Antenna Rotor Cable Color Code Chart

| NO. OF COND. | COLOR  |
|--------------|--------|
| 1            | Black  |
| 2            | White  |
| 3            | Red    |
| 4            | Green  |
| 5            | Yellow |
| 6            | Blue   |
| 7            | Brown  |
| 8            | Orange |

### Combination Rotor Cable Color Code Chart

| NO. OF COND.     | COLOR  |
|------------------|--------|
| <b>16/18 ga.</b> |        |
| 1                | Black  |
| 2                | Red    |
| <b>20/22 ga.</b> |        |
| 1                | White  |
| 2                | Green  |
| 3                | Yellow |
| 4                | Blue   |
| 5                | Brown  |
| 6                | Orange |

# Low-Voltage Sprinkler Wire

60°C 30 Volts UL



| CATALOG<br>NUMBER                          | NO. OF<br>COND. | AWG<br>SIZE | LENGTH<br>OF CORD<br>(FEET) | PACKAGE<br>TYPE | POWER RATING <sup>(1)</sup> |      |       | PKG<br>PER<br>CTN. | APPROX.<br>WEIGHT<br>PER<br>CTN (LBS)<br>(S) | CARTON<br>DIMENSIONS<br>(H x W x D) | UPC NUMBER   |
|--------------------------------------------|-----------------|-------------|-----------------------------|-----------------|-----------------------------|------|-------|--------------------|----------------------------------------------|-------------------------------------|--------------|
|                                            |                 |             |                             |                 | VOLTS                       | AMPS | WATTS |                    |                                              |                                     |              |
| LOW VOLTAGE SPRINKLER WIRE - 30 VOLTS - UL |                 |             |                             |                 |                             |      |       |                    |                                              |                                     |              |
| 23824-60-01                                | 4               | 18          | 100                         | Cuff            | 30                          | 15   | 450   | 6                  | 22                                           | 8.5 x 12.25 x 14                    | 079407238248 |
| 23804-18-01                                | 4               | 18          | 500                         | Spool           | 30                          | 15   | 450   | 1                  | 18                                           | 10.625 x 10.625 x 6.313             | 079407908047 |
| 23815-60-01                                | 5               | 18          | 50                          | Cuff            | 30                          | 15   | 450   | 6                  | 13                                           | 8.5 x 12.25 x 14                    | 079407238156 |
| 23825-60-01                                | 5               | 18          | 100                         | Cuff            | 30                          | 15   | 450   | 6                  | 27                                           | 9.5 x 14 x 17                       | 079407238255 |
| 23805-18-01                                | 5               | 18          | 500                         | Spool           | 30                          | 15   | 450   | 1                  | 22                                           | 10.625 x 10.625 x 6.313             | 079407908054 |
| 23817-60-01                                | 7               | 18          | 50                          | Cuff            | 30                          | 15   | 450   | 6                  | 18                                           | 8.5 x 12.25 x 14                    | 079407238170 |
| 23827-60-01                                | 7               | 18          | 100                         | Cuff            | 30                          | 15   | 450   | 6                  | 36                                           | 9.5 x 14 x 17                       | 079407238279 |
| 23807-18-01                                | 7               | 18          | 500                         | Spool           | 30                          | 15   | 450   | 1                  | 31                                           | 10.625 x 10.625 x 6.313             | 079407908078 |
| 23810-18-01                                | 10              | 18          | 500                         | Reel            | 30                          | 15   | 450   | 1                  | 44                                           | —                                   | 079407908108 |

(1) Amps and watts are offered ONLY as a guide to the end user.

(S) Actual shipping weight may vary.

## Color Code Chart

| NO. OF CONDUCTORS | COLOR  |
|-------------------|--------|
| 1                 | Black  |
| 2                 | White  |
| 3                 | Red    |
| 4                 | Green  |
| 5                 | Orange |
| 6                 | Yellow |
| 7                 | Blue   |
| 8                 | Brown  |
| 9                 | Gray   |
| 10                | Purple |

## Product Construction:

### Conductor:

- 18 AWG fully annealed solid bare copper per ASTM B-3

### Insulation:

- Premium-grade, color-coded PVC
- Premium-grade PE jacket, black
- Nylon rip cord to facilitate jacket removal
- Temperature range: -20°C to +60°C
- Color code: See chart at right

### Jacket Marking:

- CAROL (SIZE) 30V SPRINKLER SYSTEMS WIRE - DIRECT BURIAL E54567 (UL)

## Applications:

- Low-voltage golf course satellite sprinkler control
- Residential sprinkler solenoid control

## Compliances:

- UL Listed under a UL Miscellaneous Wire file
- UL Listed for outdoors applications
- UL Listed for direct burial applications

## Packaging:

- See tabular data above
- Please contact Customer Service for packaging and color options

# Thermostat Wire

60°C 30 Volt CSA Type LVT

## Product Construction:

### Conductors:

- 8 AWG annealed solid bare copper per ASTM B-3

### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

### Jacket:

- Polyvinylchloride (PVC), brown
- Temperature range: -20°C to +60°C

### Jacket Marking:

- CAROL (SIZE) CSA LL# TYPE LVT FT-4

## Applications:

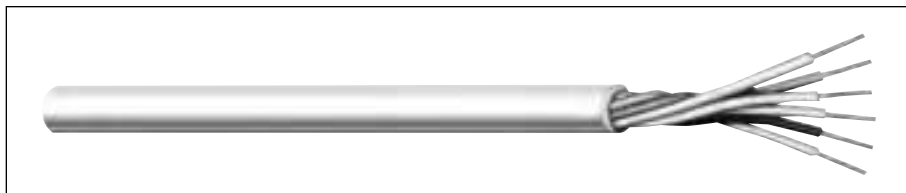
- Thermostat control
- Heating and air conditioning installations
- Touch-plate systems
- Burglar alarms
- Intercom systems
- Door bells
- Annunciator and bell systems
- Remote control units
- Signal systems
- Other low-voltage installations

## Compliances:

- CSA Type LVT
- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options

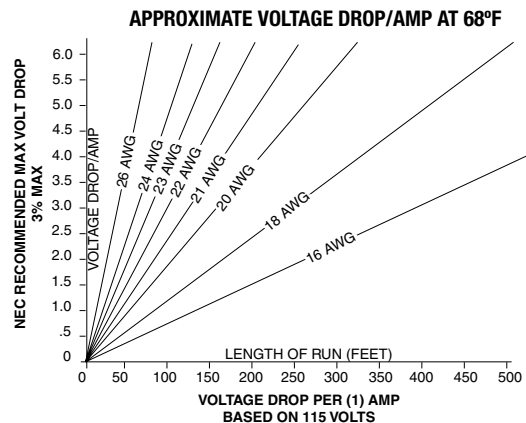


| CATALOG<br>NUMBER                               | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOMINAL O.D. |      | APPROX.<br>NET WEIGHT<br>LBS/m <sup>(S)</sup> | STD.<br>CTN. |
|-------------------------------------------------|-----------------|-------------|-----------------|------------------------------|------|--------------|------|-----------------------------------------------|--------------|
|                                                 |                 |             |                 | INCHES                       | mm   | INCHES       | mm   |                                               |              |
| 18 AWG THERMOSTAT WIRE – 30 VOLT – CSA TYPE LVT |                 |             |                 |                              |      |              |      |                                               |              |
| 05092                                           | 2               | 18          | Solid           | 0.017                        | 0.43 | 0.210        | 5.33 | 25                                            | 2000'        |
| 05093*                                          | 3               | 18          | Solid           | 0.017                        | 0.43 | 0.222        | 5.64 | 33                                            | 500'         |
| 05094                                           | 4               | 18          | Solid           | 0.017                        | 0.43 | 0.242        | 6.15 | 41                                            | 1000'        |
| 05095                                           | 5               | 18          | Solid           | 0.017                        | 0.43 | 0.262        | 6.65 | 50                                            | 1000'        |
| 05096*                                          | 6               | 18          | Solid           | 0.017                        | 0.43 | 0.280        | 7.11 | 60                                            | 1000'        |
| 05097*                                          | 7               | 18          | Solid           | 0.017                        | 0.43 | 0.285        | 7.24 | 65                                            | 1000'        |
| 05098*                                          | 8               | 18          | Solid           | 0.017                        | 0.43 | 0.304        | 7.75 | 74                                            | 1000'        |
| 05099*                                          | 9               | 18          | Solid           | 0.017                        | 0.43 | 0.328        | 8.33 | 83                                            | 1000'        |
| 05091*                                          | 10              | 18          | Solid           | 0.017                        | 0.43 | 0.360        | 9.14 | 92                                            | 250'         |

\*Non-stock item; minimum quantity purchase required.  
(S) Actual shipping weight may vary.

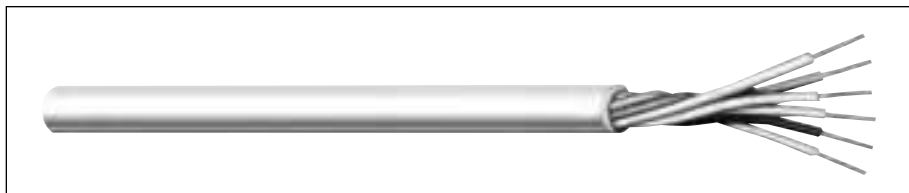
## Color Code Chart

| NO. OF CONDUCTORS | COLORS                                                              |
|-------------------|---------------------------------------------------------------------|
| 2                 | White, Red                                                          |
| 3                 | White, Red, Green                                                   |
| 4                 | White, Red, Green, Blue                                             |
| 5                 | White, Red, Green, Blue, Yellow                                     |
| 6                 | White, Red, Green, Blue, Yellow, Brown                              |
| 7                 | White, Red, Green, Blue, Yellow, Brown, Orange                      |
| 8                 | White, Red, Green, Blue, Yellow, Brown, Orange, Black               |
| 9                 | White, Red, Green, Blue, Yellow, Brown, Orange, Black, Purple       |
| 10                | White, Red, Green, Blue, Yellow, Brown, Orange, Black, Purple, Gray |



# Thermostat Wire

105°C 150 Volt UL Type CL2



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOMINAL O.D. |    | APPROX. NET WEIGHT LBS/m <sup>(S)</sup> | STD. CTN. |
|----------------|--------------|----------|--------------|---------------------------|----|--------------|----|-----------------------------------------|-----------|
|                |              |          |              | INCHES                    | mm | INCHES       | mm |                                         |           |

## 20 AWG THERMOSTAT WIRE – 150 VOLT – UL TYPE CL2

|       |    |    |       |       |       |       |      |    |       |
|-------|----|----|-------|-------|-------|-------|------|----|-------|
| 05482 | 2  | 20 | Solid | 0.008 | 0.203 | 0.128 | 3.25 | 11 | 1000' |
| 05483 | 3  | 20 | Solid | 0.008 | 0.203 | 0.135 | 3.43 | 16 | 1000' |
| 05484 | 4  | 20 | Solid | 0.008 | 0.203 | 0.144 | 3.66 | 19 | 500'  |
| 05485 | 5  | 20 | Solid | 0.008 | 0.203 | 0.158 | 4.01 | 24 | 500'  |
| 05486 | 6  | 20 | Solid | 0.008 | 0.203 | 0.177 | 4.46 | 27 | 500'  |
| 05487 | 7  | 20 | Solid | 0.008 | 0.203 | 0.175 | 4.45 | 31 | 500'  |
| 05488 | 8  | 20 | Solid | 0.008 | 0.203 | 0.186 | 4.72 | 35 | 500'  |
| 05489 | 9  | 20 | Solid | 0.008 | 0.203 | 0.210 | 5.33 | 40 | 500'  |
| 05481 | 10 | 20 | Solid | 0.008 | 0.203 | 0.235 | 5.97 | 45 | 250'  |

## 18 AWG THERMOSTAT WIRE – 150 VOLT – UL TYPE CL2

|       |    |    |       |       |       |       |      |    |       |
|-------|----|----|-------|-------|-------|-------|------|----|-------|
| 05582 | 2  | 18 | Solid | 0.009 | 0.203 | 0.155 | 3.94 | 16 | 1000' |
| 05583 | 3  | 18 | Solid | 0.009 | 0.203 | 0.164 | 4.17 | 22 | 1000' |
| 05584 | 4  | 18 | Solid | 0.009 | 0.203 | 0.180 | 4.57 | 28 | 500'  |
| 05585 | 5  | 18 | Solid | 0.009 | 0.203 | 0.200 | 5.08 | 36 | 500'  |
| 05586 | 6  | 18 | Solid | 0.009 | 0.203 | 0.215 | 5.46 | 42 | 500'  |
| 05587 | 7  | 18 | Solid | 0.009 | 0.203 | 0.215 | 5.46 | 48 | 500'  |
| 05588 | 8  | 18 | Solid | 0.009 | 0.203 | 0.235 | 5.97 | 54 | 500'  |
| 05589 | 9  | 18 | Solid | 0.008 | 0.203 | 0.245 | 6.22 | 61 | 500'  |
| 05581 | 10 | 18 | Solid | 0.008 | 0.203 | 0.300 | 7.62 | 69 | 250'  |

(S) Actual shipping weight may vary.

### Color Code Chart

| NO. OF CONDUCTORS | COLOR                                                               |
|-------------------|---------------------------------------------------------------------|
| 2                 | White, Red                                                          |
| 3                 | White, Red, Green                                                   |
| 4                 | White, Red, Green, Blue                                             |
| 5                 | White, Red, Green, Blue, Yellow                                     |
| 6                 | White, Red, Green, Blue, Yellow, Brown                              |
| 7                 | White, Red, Green, Blue, Yellow, Brown, Orange                      |
| 8                 | White, Red, Green, Blue, Yellow, Brown, Orange, Black               |
| 9                 | White, Red, Green, Blue, Yellow, Brown, Orange, Black, Purple       |
| 10                | White, Red, Green, Blue, Yellow, Brown, Orange, Black, Purple, Gray |

### Product Construction:

#### Conductors:

- 20 and 18 AWG annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded PVC
- Color code: See chart below

#### Jacket:

- Polyvinylchloride (PVC), white
- Temperature range: -20°C to +105°C

#### Jacket Marking:

- CAROL AWG TYPE CL2 E# (UL)
- 105°C SUNLIGHT RESISTANT - MADE IN USA

### Applications:

- Thermostat control
- Heating and air conditioning installations
- Touch-plate systems
- Burglar alarms
- Intercom systems
- Door bells
- Annunciator and bell systems
- Remote control units
- Signal systems
- Other low-voltage installations

### Industry Approvals:

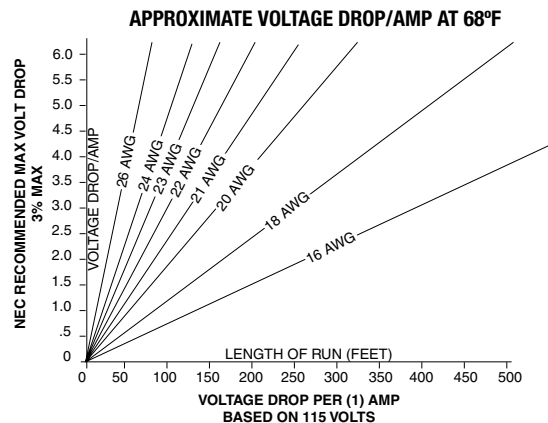
- UL Listed Type CL2

### Compliances:

- RoHS Compliant Directive 2002/95/EC

### Packaging:

- Please contact Customer Service for packaging and color options



# Thermostat Wire, Unjacketed

## 60°C Low Voltage and Intercom Cable

### Product Construction:

#### Conductors:

- 20 AWG annealed solid bare copper per ASTM B-3

#### Insulation:

- Premium-grade, color-coded PVC
- Temperature range: -20°C to +60°C
- Color code: See chart below

#### Jacket:

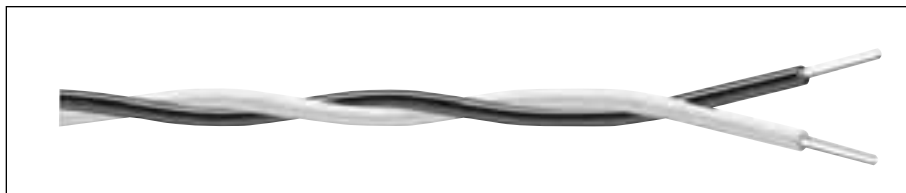
- This product is unjacketed

### Applications:

- Thermostat control
- Heating and air conditioning installations
- Touch-plate systems
- Burglar alarms
- Intercom systems
- Door bells
- Annunciator and bell systems
- Remote control units
- Signal systems
- Other low-voltage installations

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG<br>NUMBER                       | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |       | NOMINAL O.D. |      | APPROX.<br>NET WEIGHT<br>LBS/m <sup>(S)</sup> | STD.<br>CTN. |
|-----------------------------------------|-----------------|-------------|-----------------|------------------------------|-------|--------------|------|-----------------------------------------------|--------------|
|                                         |                 |             |                 | INCHES                       | mm    | INCHES       | mm   |                                               |              |
| 20 AWG – TWISTED CONDUCTORS – NO JACKET |                 |             |                 |                              |       |              |      |                                               |              |
| 05782                                   | 2               | 20          | Solid           | 0.008                        | 0.203 | 0.098        | 2.49 | 7.5                                           | 4000'        |
| 05783                                   | 3               | 20          | Solid           | 0.008                        | 0.203 | 0.106        | 2.69 | 11.0                                          | 2000'        |
| 05784*                                  | 4               | 20          | Solid           | 0.008                        | 0.203 | 0.119        | 3.01 | 15.0                                          | 2000'        |
| 05785*                                  | 5               | 20          | Solid           | 0.008                        | 0.203 | 0.133        | 3.38 | 18.5                                          | 1000'        |
| 05786*                                  | 6               | 20          | Solid           | 0.008                        | 0.203 | 0.147        | 3.73 | 22.0                                          | 1000'        |
| 05788*                                  | 8               | 20          | Solid           | 0.008                        | 0.203 | 0.162        | 4.11 | 30.0                                          | 1000'        |

\*Non-stock item; minimum quantity purchase required.  
(S) Actual shipping weight may vary.

### Color Code Chart

| NO. OF CONDUCTORS | COLOR                                                 |
|-------------------|-------------------------------------------------------|
| <b>2</b>          | White, Red                                            |
| <b>3</b>          | White, Red, Green                                     |
| <b>4</b>          | White, Red, Green, Blue                               |
| <b>5</b>          | White, Red, Green, Blue, Yellow                       |
| <b>6</b>          | White, Red, Green, Blue, Yellow, Brown                |
| <b>8</b>          | White, Red, Green, Blue, Yellow, Brown, Orange, Black |

# Carol® Helix/Hi-Temp® Category 6 Cable

## Standard-Compliant Solution



### PART NUMBERS

| JACKET COLOR | PULL-PAC® II     |              | SPOOL-PAC®       |              |
|--------------|------------------|--------------|------------------|--------------|
|              | CMR (NON-PLENUM) | CMP (PLENUM) | CMR (NON-PLENUM) | CMP (PLENUM) |
| Blue         | CR6.30.07        | CP6.30.07    | CR6.A3.07        | CP6.A3.07    |
| White        | CR6.30.02        | CP6.30.02    | CR6.A3.02        | CP6.A3.02    |
| Gray         | CR6.30.10        | CP6.30.10    | CR6.A3.10        | CP6.A3.10    |
| Green        | CR6.30.06        | CP6.30.06    | CR6.A3.06        | CP6.A3.06    |
| Yellow       | CR6.30.05        | CP6.30.05    | CR6.A3.05        | CP6.A3.05    |
| Red          | CR6.30.03        | CP6.30.03    | CR6.A3.03        | CP6.A3.03    |

### ELECTRICAL PERFORMANCE

| FREQUENCY MHZ | PSACR (MIN) | ACR (MIN) | ATTENUATION (MAX) | PSNEXT (MIN) | NEXT (MIN) | PSSELFXT (MIN) | ELFEXT (MIN) | RETURN LOSS (MIN) | LCL (MIN) | ELTCTL (MIN) |
|---------------|-------------|-----------|-------------------|--------------|------------|----------------|--------------|-------------------|-----------|--------------|
| 1             | 70.3        | 72.3      | 2.0               | 72.3         | 74.3       | 64.8           | 67.8         | 20.0              | 40.0      | 35.0         |
| 4             | 59.3        | 61.5      | 3.8               | 63.3         | 65.3       | 52.8           | 55.7         | 23.0              | 40.0      | 23.0         |
| 10            | 51.3        | 53.3      | 6.0               | 57.3         | 59.3       | 44.8           | 47.8         | 25.0              | 40.0      | 15.0         |
| 16            | 46.7        | 48.7      | 7.6               | 54.2         | 56.2       | 40.7           | 43.7         | 25.0              | 38.0      | 10.9         |
| 20            | 44.3        | 46.3      | 8.5               | 52.8         | 54.8       | 38.8           | 41.7         | 25.0              | 37.0      | 9.0          |
| 31.25         | 39.2        | 41.2      | 10.7              | 49.9         | 51.9       | 34.9           | 37.9         | 23.6              | 35.1      | 5.1          |
| 62.5          | 29.9        | 32.0      | 15.4              | 45.4         | 47.4       | 28.9           | 31.8         | 21.5              | 32.0      | 5.0          |
| 100           | 22.5        | 24.5      | 19.8              | 42.3         | 44.3       | 24.8           | 27.8         | 20.1              | 30.0      | 5.0          |
| 150           | 14.9        | 16.9      | 24.7              | 39.7         | 41.7       | 21.3           | 24.3         | 18.9              | 28.2      | 5.0          |
| 200           | 8.8         | 10.8      | 29.0              | 37.8         | 39.8       | 18.8           | 21.8         | 18.0              | 27.0      | 5.0          |
| 250           | 3.5         | 5.5       | 32.8              | 36.3         | 38.3       | 16.8           | 19.8         | 17.3              | 26.0      | 5.0          |
| 350           | —           | —         | 39.8              | 34.1         | 36.1       | 13.9           | 16.9         | 16.3              | —         | —            |
| 400           | —           | —         | 43.0              | 33.3         | 35.3       | 12.8           | 15.8         | 15.9              | —         | —            |
| 500           | —           | —         | 48.9              | 31.8         | 33.8       | 10.8           | 13.8         | 15.2              | —         | —            |

Notes: Values are expressed in dB per 100m (328 ft.) length. Values above 250 MHz are for informational purposes only.

### PHYSICAL DATA

|                                   | CMR (NON-PLENUM) | CMP (PLENUM) |
|-----------------------------------|------------------|--------------|
| Nominal Cable Diameter (in)       | 0.205            | 0.200        |
| Nominal Cable Weight (lbs/1000ft) | 28               | 28           |
| Minimum Bend Radius (in)          | 1.0              | 1.0          |
| Maximum Pulling Force (lbs)       | 32               | 32           |
| Temperature Rating (°C)           |                  |              |
| Installation:                     | 0 to +60         | 0 to +60     |
| Operation:                        | -20 to +75       | -20 to +75   |

### ELECTRICAL CHARACTERISTICS

|                                                  |                                                  |
|--------------------------------------------------|--------------------------------------------------|
| DC Resistance (max) Ohms/100m (328ft) @ 20°C     | 9.38                                             |
| DC Resistance Unbalance (max) Individual Pair %  | 4.0                                              |
| Delay Skew (max) ns/100m                         | 45                                               |
| Nom. Velocity of Propagation<br>% Speed of Light | CMP: 70<br>CMR: 68                               |
| Characteristic Impedance<br>Frequency (f):       | 1-250 MHz<br>Ohms<br>100 ± 15                    |
| Input Impedance<br>Frequency (f):                | 1-100 MHz<br>100 ± 15<br>100-250 MHz<br>100 ± 22 |

Data subject to change without notice.

### Product Construction:

#### Conductors:

- 23 AWG solid bare annealed copper

#### Separator

- Tape

#### Insulation

- Non-Plenum: Polyolefin
- Plenum: Fluoropolymer

#### Rip Cord

- Applied longitudinally under jacket

#### Jacket

- Non-Plenum: flame-retardant PVC
- Plenum: low-smoke, flame-retardant PVC
- TRU-Mark® print legend contains footage markings from 1000' to 0'

### Applications:

- IEEE 802.3: 1000 BASE-T (Gigabit Ethernet), 100 BASE-TX, 10 BASE-T
- ANSI/TIA/EIA 854: 1000 BASE-TX
- 155 Mp/s, 1.2 Gb/s ATM
- ANSI X3.263: 100 Mb/s
- IEEE 802.3af DTE Power (PoE)
- Digital video

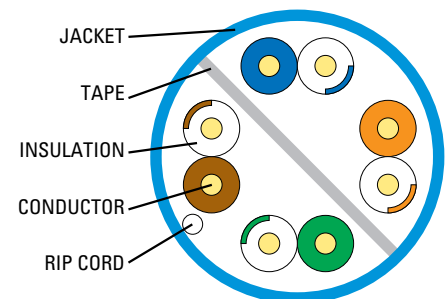
### Compliances:

- ANSI/TIA/EIA 568 B.2-1 (Category 6)
- ANSI/TIA/EIA 862 (Building Automation)
- ISO/IEC 11801 Ed. 2.0 (Class E)
- ICEA S-102-700 (Category 6)
- UL & c(UL) Type CMP (NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications)
- UL 444
- RoHS Compliant Directive 2002/95/EC
- Third-party verified for guaranteed performance

### Packaging:

- 1000' Pull-Pac® II
- 1000' Spool-Pac®

### CATEGORY 6 CROSS-SECTION



**CAROL  
BRAND**

**Helix/HiTemp®**



Designed to Meet  
NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests  
for Plenum Applications

Underwriters Laboratories Inc.



**General Cable**

# Carol® Helix/Hi-Temp® Category 5e Cable

## Enhanced Transmission Throughput

### Product Construction:

#### Conductors:

- 24 AWG solid bare annealed copper

#### Insulation

- Non-Plenum: Polyolefin
- Plenum: Fluoropolymer

#### Rip Cord

- Applied longitudinally under jacket

#### Jacket

- Non-Plenum: flame-retardant PVC
- Plenum: low-smoke, flame-retardant PVC
- TRU-Mark® print legend contains footage markings from 1000' to 0'

### Applications:

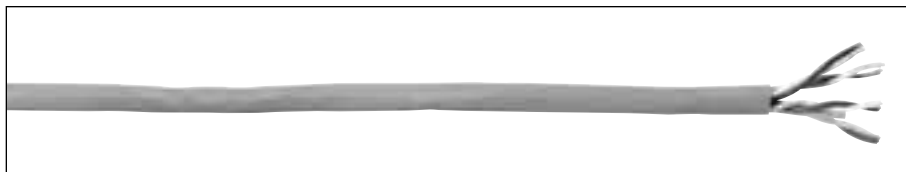
- IEEE 802.3: 1000 BASE-T (Gigabit Ethernet), 100 BASE-TX, 10 BASE-T
- 52/155 Mp/s ATM
- ANSI X3.263: 100 Mb/s
- 4/16 Mp/s token ring

### Compliances:

- ANSI/TIA/EIA 568 B.2 (Category 5e)
- ICEA S-90-661 (Category 5e)
- UL & c(UL) Type CMR (UL 1666) for Non-Plenum
- UL & c(UL) Type CMP (NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications)
- UL 444
- RoHS Compliant Directive 2002/95/EC
- Third-party verified for guaranteed performance

### Packaging:

- 1000' Pull-Pac® II
- 1000' Spool-Pac®



### PART NUMBERS

| JACKET COLOR | PULL-PAC® II     |              | SPOOL-PAC®       |              |
|--------------|------------------|--------------|------------------|--------------|
|              | CMR (NON-PLENUM) | CMP (PLENUM) | CMR (NON-PLENUM) | CMP (PLENUM) |
| Blue         | CR5.30.07        | CP5.30.07    | CR5.A3.07        | CP5.A3.07    |
| White        | CR5.30.02        | CP5.30.02    | CR5.A3.02        | CP5.A3.02    |
| Gray         | CR5.30.10        | CP5.30.10    | CR5.A3.10        | CP5.A3.10    |
| Green        | CR5.30.06        | CP5.30.06    | CR5.A3.06        | CP5.A3.06    |
| Yellow       | CR5.30.05        | CP5.30.05    | CR5.A3.05        | CP5.A3.05    |
| Red          | CR5.30.03        | CP5.30.03    | CR5.A3.03        | CP5.A3.03    |

### ELECTRICAL PERFORMANCE

| FREQUENCY MHZ | PSACR (MIN) | ACR (MIN) | ATTENUATION (MAX) | PSNEXT (MIN) | NEXT (MIN) | PSELFEXT (MIN) | ELFEXT (MIN) | RETURN LOSS (MIN) |
|---------------|-------------|-----------|-------------------|--------------|------------|----------------|--------------|-------------------|
| 1             | 60.3        | 63.3      | 2.0               | 62.3         | 65.3       | 60.8           | 63.8         | 20.0              |
| 4             | 49.2        | 52.2      | 4.1               | 53.3         | 56.3       | 48.7           | 51.7         | 23.0              |
| 10            | 40.8        | 43.8      | 6.5               | 47.3         | 50.3       | 40.8           | 43.8         | 25.0              |
| 16            | 36.0        | 39.0      | 8.2               | 44.2         | 47.2       | 36.7           | 39.7         | 25.0              |
| 20            | 33.5        | 36.5      | 9.3               | 42.8         | 45.8       | 34.7           | 37.7         | 25.0              |
| 25            | 30.9        | 33.9      | 10.4              | 41.3         | 44.3       | 32.8           | 35.8         | 24.3              |
| 31.25         | 28.2        | 31.2      | 11.7              | 39.9         | 42.9       | 30.9           | 33.9         | 23.6              |
| 62.5          | 18.4        | 21.4      | 17.0              | 35.4         | 38.4       | 24.8           | 27.8         | 21.5              |
| 100           | 10.3        | 13.3      | 22.0              | 32.3         | 35.3       | 20.8           | 23.8         | 20.1              |
| 155           | 1.4         | 4.4       | 28.1              | 29.4         | 32.4       | 16.9           | 19.9         | —                 |
| 200           | —           | —         | 32.4              | 27.8         | 30.8       | 14.7           | 17.7         | —                 |
| 250           | —           | —         | 36.9              | 26.3         | 29.3       | 12.8           | 15.8         | —                 |
| 350           | —           | —         | 44.9              | 24.1         | 27.1       | 9.9            | 12.9         | —                 |

Notes: Values are expressed in dB per 100m (328 ft.) length. Values above 250 MHz are for informational purposes only.

### PHYSICAL DATA

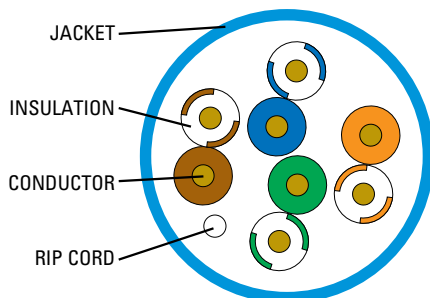
|                                   | CMR (NON-PLENUM) | CMP (PLENUM) |
|-----------------------------------|------------------|--------------|
| Nominal Cable Diameter (in)       | 0.200            | 0.180        |
| Nominal Cable Weight (lbs/1000ft) | 21               | 19           |
| Minimum Bend Radius (in)          | 1.0              | 1.0          |
| Maximum Pulling Force (lbs)       | 25               | 25           |
| Temperature Rating (°C)           |                  |              |
| Installation:                     | 0 to +60         | 0 to +60     |
| Operation:                        | -10 to +60       | -10 to +60   |

### ELECTRICAL CHARACTERISTICS

|                                                 |                    |
|-------------------------------------------------|--------------------|
| DC Resistance (max) Ohms/100m (328ft) @ 20°C    | 8.9                |
| DC Resistance Unbalance (max) Individual Pair % | 3.0                |
| Mutual Capacitance (nom) pF/ft @ 1 KHz          | 14                 |
| Delay Skew (max) ns/100m                        | 45                 |
| Nom. Velocity of Propagation % Speed of Light   | CMP: 72<br>CMR: 70 |
| Characteristic Impedance Frequency (f):         | Ohms<br>100 ± 15   |
|                                                 | 1-100 MHz          |

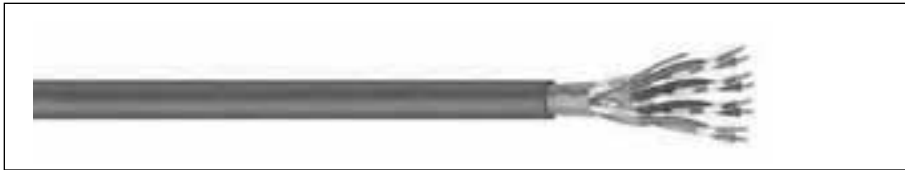
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### CATEGORY 5e CROSS-SECTION



# Audio/Video & Home Entertainment Cable

8



General Cable offers a variety of Carol® Brand wire and cable for audio/video and direct burial applications. From field production cable to microphone, snake, guitar and speaker cable, General Cable supports the increasingly demanding entertainment industry.

For extreme hard service, General Cable's rubber microphone cables offer the ultimate in performance and service life. The rubber designs are highly flexible and designed to lie flat on studio floors, as well as provide high impact and abrasion resistance.

For outdoor and cold weather applications, microphone cable jacketed with Carolprene® provides the ultimate protection against ozone, oil and ultraviolet radiation.

These technically sophisticated cables are required to contain sources of interference and to protect against difficulties where they are unavoidable. In addition to providing the needed electrical characteristics, the cables are properly designed to handle demanding conditions, such as microphone hum, handling noise, crosstalk, electrostatic hum, SCR noise and common ground noise—either on stage, in a studio or at a remote venue.

For more information on these cables or for other special applications, please contact your General Cable sales representative.

| Index                                                           | Page    |
|-----------------------------------------------------------------|---------|
| Command® Series<br>Home Entertainment<br>Cables Guide           | 147-148 |
| Command® Series<br>Cruise Ship Cables Guide                     | 149-150 |
| Command® Series<br>Speaker Cable                                | 151-155 |
| Speaker Wire                                                    | 156     |
| Superflex® Speaker Wire                                         | 157     |
| Pro Audio Speaker Wire                                          | 158     |
| Special Audio, Communication<br>& Instrumentation               | 159-161 |
| Low Skew 4-Pair UTP                                             | 162     |
| SmartWrap™ Bundled Cable                                        | 163     |
| Direct Burial, Audio<br>& Communication                         | 164-165 |
| Digital Audio Snake Cable                                       | 166     |
| Analog Audio Snake Cable                                        | 167-168 |
| Guitar/Instrument Cable                                         | 169     |
| Ultra Flexible, Low Impedance<br>2-Conductor Microphone Cable   | 170     |
| Multi-Conductor, Flexfoil® Shield                               | 171     |
| Multi-Conductor, Rubber,<br>Braid Shield Microphone Cable       | 172     |
| Multi-Conductor, Spiral Shield                                  | 173     |
| Multi-Conductor, Braid Shield                                   | 174     |
| Microphone Cable, Multi-Conductor,<br>Carolprene®, Braid Shield | 175     |
| SMPTE-311 Hybrid Fiber Optic/<br>Copper Camera Cable            | 176     |
| Electronic News Gathering/Field<br>Production Camera Cable      | 177     |

ELECTRONICS  
WIRE & CABLECAROL  
BRAND

# Command® Series Home Entertainment Cables



**Carol® Brand Command® Series Speaker Cables offer outstanding performance at an affordable price. The cables are highly flexible and available in a wide variety of options for in-wall use for home theaters as well as high definition applications.** Whether your choice of speaker cable is constructed with Oxygen-Free Copper (OFC) or the more universally accepted Tough Pitch Copper (ETP), your speaker system will perform as designed and to your expectations.

- OFC copper is defined as 99.95% pure. The refining process provides reduced oxygen content and other impurities.
- High Conductive Electrolytic Tough Pitch Copper is the most widely used refined copper within the electronic cable industry. It is defined as 99.9%-99.94% oxygen-free and provides the same level of conductivity as OFC.

**There are a number of considerations to be made when choosing the proper speaker cable:**

- Choose the proper AWG size for your system design (Speaker Impedance, 4 or 8 ohm) and acceptable loss for the required cable distance.
- Choose an acceptable stranding that will provide both ease of installation and flexibility.
- Choose a cable that is appropriate to the installation relative to any building standards or codes.
  1. UL/CSA
  2. NEC Riser, Plenum
- Select individual jacket colors as necessary to contribute to room or circuit identification.
- Most importantly, choose the cable that you feel comfortable with. If you are convinced that OFC provides a benefit that you can hear, select our OFC product. If you choose our speaker cables that utilize our high-conductive ETP, you will have selected a cable with the same resistance for equal cable run distances. The cable resistance is the primary selection criteria.

## Command® Series PREMIUM-Grade Speaker Cable NEC Type CL2

### Applications:

Digital audio with high strand, rope lay construction for superior flexibility

| Catalog No. | Conductors | AWG (Stranding) | Length     |
|-------------|------------|-----------------|------------|
| C1458.55.90 | 2          | 16 (105 x 36)   | 25' Coil   |
| C1458.56.90 | 2          | 16 (105 x 36)   | 50' Coil   |
| C1458.57.90 | 2          | 16 (105 x 36)   | 100' Coil  |
| C1458.15.90 | 2          | 16 (105 x 36)   | 250' Spool |
| C1461.55.90 | 2          | 14 (105 x 34)   | 25' Coil   |
| C1461.56.90 | 2          | 14 (105 x 34)   | 50' Coil   |
| C1461.57.90 | 2          | 14 (105 x 34)   | 100' Coil  |
| C1461.15.90 | 2          | 14 (105 x 34)   | 250' Spool |
| C1463.55.90 | 2          | 12 (259 x 36)   | 25' Coil   |
| C1463.56.90 | 2          | 12 (259 x 36)   | 50' Coil   |
| C1463.15.90 | 2          | 12 (259 x 36)   | 250' Spool |

## Command® Series Home Entertainment Speaker Cable NEC Type CL3, CM, AWM 1/11 A/B

### Applications:

In-wall speakers and home theater systems

| Catalog No. | Conductors | AWG (Stranding) | Length     |
|-------------|------------|-----------------|------------|
| C1700       | 2          | 12 (65 x 30)    | 500' Boxes |
| C1701       | 4          | 12 (65 x 30)    | 500' Boxes |
| C1702       | 2          | 14 (41 x 30)    | 500' Boxes |
| C1703       | 4          | 14 (41 x 30)    | 500' Boxes |
| C1704       | 2          | 16 (26 x 30)    | 500' Boxes |
| C1705       | 4          | 16 (26 x 30)    | 500' Boxes |

## Command® Series "HIGH DEF" Home Entertainment Speaker Cable NEC Type CL3, CM, AWM 1/11 A/B

### Applications:

High definition, flexible in-wall speakers and home theater systems

### Features:

Oxygen-Free Cu Conductors  
Semi-extruded jacket provides a uniform round cable construction

| Catalog No. | Conductors | AWG (Stranding) | Length     |
|-------------|------------|-----------------|------------|
| C1800       | 2          | 12 (105 x 32)   | 500' Reels |
| C1801       | 4          | 12 (105 x 32)   | 500' Reels |
| C1802       | 2          | 14 (105 x 34)   | 500' Boxes |
| C1803       | 4          | 14 (105 x 34)   | 500' Reels |
| C1804       | 2          | 16 (65 x 34)    | 500' Boxes |
| C1805       | 4          | 16 (65 x 34)    | 500' Boxes |

# Command® Series Home Entertainment Cables



ELECTRONICS  
WIRE & CABLE

## Command® Series Speaker Wire UL Listed (Wires, Misc)

### Applications:

Digital audio, stereo systems

| Catalog No. | Conductors | AWG (Stranding) | Length     |
|-------------|------------|-----------------|------------|
| C1356       | 2          | 24 (7 x 32)     | 500' Reels |
| C1362       | 2          | 22 (7 x 30)     | 500' Reels |
| C1360       | 2          | 20 (10 x 30)    | 500' Reels |
| C1357       | 2          | 18 (16 x 30)    | 500' Reels |
| C1358       | 2          | 16 (26 x 30)    | 500' Reels |
| C1361       | 2          | 14 (41 x 30)    | 500' Reels |
| C1363       | 2          | 12 (65 x 30)    | 500' Reels |

## Command® Series Twisted Pair Speaker Cable NEC Type CMR

### Applications:

Home theaters, home audio systems

| Catalog No. | Conductors | AWG (Stranding) | Length     |
|-------------|------------|-----------------|------------|
| C1000A      | 2          | 22 (7 x 30)     | 500' Reels |
| C1001A      | 2          | 20 (7 x 28)     | 500' Reels |
| C1002A      | 2          | 18 (7 x 26)     | 500' Reels |
| C1003A      | 2          | 16 (19 x 29)    | 500' Reels |
| C1004A      | 2          | 14 (42 x 30)    | 500' Reels |
| C1005A      | 2          | 12 (65 x 30)    | 500' Reels |

## Commercial-Grade Speaker Cables NEC Type CMR

### Applications:

Movie theaters, commercial sound installations

| Catalog No. | Conductors | AWG (Stranding) | Length     |
|-------------|------------|-----------------|------------|
| E1042S      | 2          | 16 (19/.0117)   | 500' Reels |
| E1044S      | 4          | 16 (19/.0117)   | 500' Reels |
| E1052S      | 2          | 14 (19/.0147)   | 500' Reels |
| E1054S      | 4          | 14 (19/.0147)   | 500' Reels |
| E1062S      | 2          | 12 (19/.0185)   | 500' Reels |
| E1064S      | 4          | 12 (19/.0185)   | 500' Reels |

## Rubber Jacketed Microphone Cable—High- and Low-Impedance

### Applications:

Low- and high-impedance microphones, broadcast and studio use, communication and audio systems, shielded power supplies, control circuits, video and audio interconnecting cables, suggested voltage rating of 300

| Catalog No. | Conductors | AWG           |
|-------------|------------|---------------|
| C1300       | 1          | #20 (26 x 34) |
| C1301       | 2          | #18 (41 x 34) |
| C1302       | 2          | #20 (26 x 34) |



# Command® Series Cruise Ship Cables

**CAROL  
BRAND**

**ELECTRONICS  
WIRE & CABLE**

**General Cable's Carol® Brand Command Series Cruise Ship Cables** are manufactured for use on cruise ships and yachts. These cables, which contain low smoke, zero halogen jackets, are designed to deliver premier audio, video and data communications capabilities aboard marine vessels.

**The Carol Brand Command Series Cruise Ship Cables are RoHS compliant and approved by the American Bureau of Shipping (ABS) for use in marine applications.**

ABS is the leading international organization committed to promoting the security of life, property and the natural environment primarily through the development and verification of standards for the design, construction and operational maintenance of marine-related facilities. Their stamp on Carol Brand Command Series Cruise Ship Cables means that our cables have been certified for product compliance and will perform reliably in marine and off-shore environments. For more information on ABS, please visit: [www.eagle.org](http://www.eagle.org)

**When your cruise ship or yacht project requires high-quality performance, think of Carol Brand Command Series Cruise Ship Cables.**

You can always *Demand Better...Expect More™* with General Cable Carol Brand Electronic cables. We manufacture over 1,300 standard electronic cables that we can ship direct from stock, and we have the technical staff and design expertise to meet any customer cable requirement.



#### Special Application Cable

Hook-Up Wire

Plenum Cable

Coaxial Cable

Microphone Cable

Computer Cable

General Purpose Cable

Multi-Conductor Communication  
& Control Cable

Multi-Paired Communication  
& Control Cable

Fire Alarm Cable

Sound & Security Cable



# Command® Series Cruise Ship Cables ABS Listed



## Carol® Brand Command® Series Audio Control & Instrumentation Cable–Multi-Pair, Foil Shield

| PART NUMBER     | NO. OF PAIRS | AWG SIZE | COND. STRAND.      | JACKET TYPE                                           | JACKET COLOR/TEMPERATURE | NOMINAL O.D. |      | INSULATION TYPE               | INSULATION THICKNESS |      | CONDUCTOR COLOR CODE                                  | NOM. CAP.* pF/FT |    |
|-----------------|--------------|----------|--------------------|-------------------------------------------------------|--------------------------|--------------|------|-------------------------------|----------------------|------|-------------------------------------------------------|------------------|----|
|                 |              |          |                    |                                                       |                          | INCHES       | mm   |                               | INCHES               | mm   |                                                       | A                | B  |
| <b>C2520ACS</b> | 1 Pair       | 22       | 7/30 Tinned Copper | Flame Retardant Low Smoke Halogen Free Polyolefin PVC | Black/-30°C +75°C        | 0.162        | 4.11 | -40°C to +105°C Polypropylene | 0.008                | 0.20 | Black - Red                                           | 35               | 67 |
| <b>C1352ACS</b> | 2 Pair       | 22       | 7/30 Tinned Copper | Flame Retardant Low Smoke Halogen Free Polyolefin PVC | Black/-30°C +75°C        | 0.196        | 4.98 | -40°C to +105°C Polypropylene | 0.008                | 0.20 | P1: Black - Red, P2: Green - White                    | 35               | 62 |
| <b>C6040ACS</b> | 3 Pair       | 22       | 7/30 Tinned Copper | Flame Retardant Low Smoke Halogen Free Polyolefin PVC | Black/-30°C +75°C        | 0.270        | 6.86 | -40°C to +105°C Polypropylene | 0.010                | 0.25 | P1: Black - Red, P2: Black - White, P3: Black - Green | 30               | 55 |

APPROVALS - (UL) c(UL) Listed Communication CableType CMG-LS 75°C, ABS Listed, & RoHS Compliant

\*A - Capacitance between conductors

\*B - Capacitance between one conductor and other conductors connected to the shield

## Carol® Brand Command® Series RG-6 Coaxial Cable

| PART NUMBER     | DESCRIPTION                                                         | JACKET TYPE                                           | JACKET COLOR/TEMPERATURE | NOMINAL O.D. |      | INSULATION TYPE                | INSULATION THICKNESS |      | NOM. IMP. (Ω) | NOMINAL VEL. OF PROP. | NOM. CAP.** pF/FT | NOMINAL ATTENUATION |           |      |           |
|-----------------|---------------------------------------------------------------------|-------------------------------------------------------|--------------------------|--------------|------|--------------------------------|----------------------|------|---------------|-----------------------|-------------------|---------------------|-----------|------|-----------|
|                 |                                                                     |                                                       |                          | INCHES       | mm   |                                | INCHES               | mm   |               |                       |                   | MHz                 | dB/100 FT | MHz  | dB/100 FT |
| <b>C5775ACS</b> | 18 AWG Solid Copper-Clad Steel, Dual Shielded, CATV Coaxial Cable   | Flame Retardant Low Smoke Halogen Free Polyolefin PVC | Black/-30°C +75°C        | 0.274        | 6.96 | Gas Injected Foam Polyethylene | 0.0700               | 1.78 | 75±3          | 83%                   | 16.2              | 5.00                | 0.67      | 550  | 4.71      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 55.00               | 1.60      | 750  | 5.59      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 211.00              | 2.87      | 870  | 6.00      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 270.00              | 3.24      | 1000 | 6.54      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 300.00              | 3.43      | 1450 | 8.30      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 350.00              | 3.72      | 1800 | 9.30      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 400.00              | 4.00      | 2250 | 10.60     |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 450.00              | 4.26      | 3000 | 11.90     |
| <b>C5814ACS</b> | 18 AWG Solid Bare Copper, Dual Shielded, Video Coaxial Cable        | Flame Retardant Low Smoke Halogen Free Polyolefin PVC | Black/-30°C +75°C        | 0.274        | 6.96 | Gas Injected Foam Polyethylene | 0.0700               | 1.78 | 75            | 82%                   | 16.2              | 1.00                | 0.24      | 270  | 2.97      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 3.58                | 0.45      | 360  | 3.43      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 5.00                | 0.54      | 540  | 4.25      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 7.00                | 0.63      | 720  | 4.95      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 10.00               | 0.72      | 750  | 5.00      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 67.50               | 1.57      | 1000 | 5.89      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 71.50               | 1.60      | 1500 | 7.33      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 88.50               | 1.75      | 2000 | 8.57      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 100.00              | 1.84      | 2250 | 9.14      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 135.00              | 2.10      | 3000 | 10.67     |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 143.00              | 2.16      | 4500 | 13.29     |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 180.00              | 2.42      | —    | —         |
| <b>C8029ACS</b> | Element 1 - 18 AWG Solid Bare Copper, Video Coaxial Cable           | Flame Retardant Low Smoke Halogen Free Polyolefin PVC | Black/-30°C +75°C        | 0.275        | 6.99 | Gas Injected Foam Polyethylene | 0.0700               | 1.78 | 75            | 83%                   | 16.3              | 1.00                | 0.20      | 200  | 3.00      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 5.00                | 0.45      | 400  | 4.30      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 10.00               | 0.64      | 700  | 5.80      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 50.00               | 1.46      | 900  | 6.70      |
|                 |                                                                     |                                                       |                          |              |      |                                |                      |      |               |                       |                   | 100.00              | 2.10      | 1000 | 7.10      |
|                 | Element 2 - 2 Cond. 18 AWG 7/0152" Stranded Bare Copper, Power Pair | Flame Retardant Low Smoke Halogen Free Polyolefin PVC | Black/-30°C +75°C        | 0.186        | 4.72 | -40°C to +105°C Polypropylene  | 0.0065               | 0.17 | —             | —                     | 24**              | —                   | —         | —    | —         |

APPROVALS - (UL) c(UL) Listed Communication CableType CMG-LS 75°C, ABS Listed, & RoHS Compliant

\*\* Capacitance between conductors

## Carol® Brand Command® Series Category 5e Cable

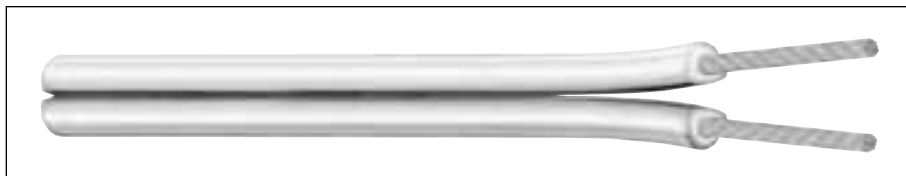
| PART NUMBER   | DESCRIPTION                                            | JACKET TYPE                                           | JACKET COLOR/TEMPERATURE | NOMINAL O.D. |      | INSULATION TYPE | INSULATION THICKNESS |      | CONDUCTOR COLOR CODE                                                                                     | INPUT IMP. (Ω) | FRE-QUENCY | PSCAR                                               | ACR  | ATTENUATION | PSNEXT | NEXT | PSELFEXT | ELFEXT | RL   |
|---------------|--------------------------------------------------------|-------------------------------------------------------|--------------------------|--------------|------|-----------------|----------------------|------|----------------------------------------------------------------------------------------------------------|----------------|------------|-----------------------------------------------------|------|-------------|--------|------|----------|--------|------|
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                |            | VALUES ARE EXPRESSED IN dB PER 100m (328 FT) LENGTH |      |             |        |      |          |        |      |
|               |                                                        |                                                       |                          | INCHES       | mm   |                 | INCHES               | mm   |                                                                                                          |                |            | MIN.                                                | MIN. | MAX.        | MIN.   | MIN. | MIN.     | MIN.   | MIN. |
| <b>CR5ACS</b> | 4 Pair 24 AWG Solid Bare Copper ScTP Category 5e Cable | Flame Retardant Low Smoke Halogen Free Polyolefin PVC | Black/-20°C +75°C        | 0.260        | 6.60 | Polyolefin      | 0.010                | 0.25 | P1: White/Blue - Blue<br>P2: White/Orange - Orange<br>P3: White/Green - Green<br>P4: White/Brown - Brown | 100±15         | 0.772      | 62.2                                                | 65.2 | 1.8         | 64.0   | 67.0 | 63.0     | 66.0   | —    |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 1.000      | 60.3                                                | 63.3 | 2.0         | 62.3   | 65.3 | 60.8     | 63.8   | 20.0 |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 4.000      | 49.2                                                | 52.2 | 4.1         | 53.3   | 56.3 | 48.7     | 51.7   | 23.0 |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 8.000      | 43.0                                                | 46.0 | 5.8         | 48.8   | 51.8 | 42.7     | 45.7   | 24.5 |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 10.000     | 40.8                                                | 43.8 | 6.5         | 47.3   | 50.3 | 40.8     | 43.8   | 25.0 |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 16.000     | 36.1                                                | 39.1 | 8.2         | 44.3   | 47.3 | 36.7     | 39.7   | 25.0 |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 20.000     | 33.5                                                | 36.5 | 9.3         | 42.8   | 45.8 | 34.7     | 37.7   | 25.0 |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 25.000     | 30.9                                                | 33.9 | 10.4        | 41.3   | 44.3 | 32.8     | 35.8   | 24.3 |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 31.250     | 28.2                                                | 31.2 | 11.7        | 39.9   | 42.9 | 30.9     | 33.9   | 23.6 |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 62.500     | 18.4                                                | 21.4 | 17.0        | 35.4   | 38.4 | 24.8     | 27.8   | 21.5 |
|               |                                                        |                                                       |                          |              |      |                 |                      |      |                                                                                                          |                | 100.000    | 10.3                                                | 13.3 | 22.0        | 32.3   | 35.3 | 20.8     | 23.8   | 20.1 |

APPROVALS - (UL) c(UL) Listed Communication CableType CMG-LS 75°C, ABS Listed, & RoHS Compliant



# Command® Series Premium Grade Speaker Cable

NEC Type CL2



## Product Description:

Command® Series Premium Grade Speaker Cable was designed to offer outstanding performance at an affordable price. The cables are highly flexible and can be used for in-wall installations, making them ideal for use in home theater systems.

The Premium Grade Speaker Cable is available in 250' spools for custom-cut lengths, and in 25-, 50- and 100-foot clamshells. The packaged cables are ideal for display on pegboard, gondolas or H-frame shelves.

## Product Construction:

### Conductor:

- 16 through 12 AWG fully annealed stranded bare copper conductor per ASTM B-3

### Insulation:

- Premium-grade, clear PVC
- Temperature range: -20°C to +60°C

### Applications:

- Digital audio
- Stereo systems
- In-wall speakers
- Home theater

## Features:

- High-strand, rope-lay conductors give the cable extra flexibility
- Convenient footage and polarity markers, at one-foot intervals to make installation easy
- Paintable to match any décor

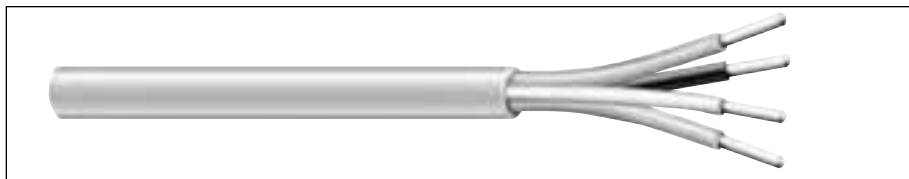
## Compliances:

- NEC Article 725 Type CL2
- RoHS Compliant Directive 2002/95/EC

| CATALOG NUMBER           | NO. OF COND. | AWG SIZE | COND. STRAND | LENGTH | COLOR OF JACKET | PACKAGE TYPE | PKG PER CARTON | CARTON WEIGHT (LBS) | CARTON DIMENSIONS (H x W x D) | CARTON CUBE | UPC NUMBER      |
|--------------------------|--------------|----------|--------------|--------|-----------------|--------------|----------------|---------------------|-------------------------------|-------------|-----------------|
| <b>16 AWG CONDUCTORS</b> |              |          |              |        |                 |              |                |                     |                               |             |                 |
| <b>C1458.55.90</b>       | 2            | 16       | 66/34        | 25'    | Clear           | Coil         | 6              | 6.4                 | 12.5 x 8.1 x 10.0             | 0.586       | 0 79407 76307 8 |
| <b>C1458.56.90</b>       | 2            | 16       | 66/34        | 50'    | Clear           | Coil         | 6              | 10.4                | 12.5 x 8.1 x 10.0             | 0.586       | 0 79407 76308 5 |
| <b>C1458.57.90</b>       | 2            | 16       | 66/34        | 100'   | Clear           | Coil         | 6              | 18.6                | 15.5 x 8.1 x 10.0             | 0.727       | 0 79407 76309 2 |
| <b>C1458.15.90</b>       | 2            | 16       | 66/34        | 250'   | Clear           | Spool        | 1              | 8.5                 | 6.6 x 6.6 x 6.3               | 0.159       | 0 79407 76273 6 |
| <b>14 AWG CONDUCTORS</b> |              |          |              |        |                 |              |                |                     |                               |             |                 |
| <b>C1461.55.90</b>       | 2            | 14       | 105/34       | 25'    | Clear           | Coil         | 6              | 8.5                 | 12.5 x 8.1 x 10.0             | 0.586       | 0 79407 76310 8 |
| <b>C1461.56.90</b>       | 2            | 14       | 105/34       | 50'    | Clear           | Coil         | 6              | 14.5                | 12.5 x 8.1 x 10.0             | 0.586       | 0 79407 76311 5 |
| <b>C1461.57.90</b>       | 2            | 14       | 105/34       | 100'   | Clear           | Coil         | 6              | 27.0                | 15.5 x 8.1 x 10.0             | 0.727       | 0 79407 76312 2 |
| <b>C1461.15.90</b>       | 2            | 14       | 105/34       | 250'   | Clear           | Spool        | 1              | 11.5                | 6.6 x 6.6 x 6.3               | 0.159       | 0 79407 76274 3 |
| <b>12 AWG CONDUCTORS</b> |              |          |              |        |                 |              |                |                     |                               |             |                 |
| <b>C1463.55.90</b>       | 2            | 12       | 259/36       | 25'    | Clear           | Coil         | 6              | 11.8                | 12.5 x 8.1 x 10.0             | 0.586       | 0 79407 76313 9 |
| <b>C1463.56.90</b>       | 2            | 12       | 259/36       | 50'    | Clear           | Coil         | 6              | 21.4                | 15.5 x 8.1 x 10.0             | 0.727       | 0 79407 76314 6 |
| <b>C1463.15.90</b>       | 2            | 12       | 259/36       | 250'   | Clear           | Spool        | 1              | 17.5                | 13.0 x 6.5 x 9.5              | 0.464       | 0 79407 76275 0 |

# Command® Series Home Entertainment Speaker Cable

NEC Type CL3, CSA, CMG, AWM I/II A/B



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION WALL |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      |
|----------------|--------------|----------|--------------|----------------------|------|-----------------------|------|--------------|------|
|                |              |          |              | INCHES               | mm   | INCHES                | mm   | INCHES       | mm   |
| <b>C1700†</b>  | 2            | 12       | 65/30        | 0.009                | 0.15 | 0.021                 | 0.53 | 0.254        | 6.45 |
| <b>C1701†</b>  | 4            | 12       | 65/30        | 0.009                | 0.15 | 0.021                 | 0.53 | 0.299        | 7.59 |
| <b>C1702†</b>  | 2            | 14       | 41/30        | 0.009                | 0.15 | 0.021                 | 0.53 | 0.220        | 5.59 |
| <b>C1703†</b>  | 4            | 14       | 41/30        | 0.009                | 0.15 | 0.021                 | 0.53 | 0.257        | 6.53 |
| <b>C1704</b>   | 2            | 16       | 26/30        | 0.009                | 0.15 | 0.021                 | 0.53 | 0.191        | 4.85 |
| <b>C1705</b>   | 4            | 16       | 26/30        | 0.009                | 0.15 | 0.021                 | 0.53 | 0.222        | 5.64 |

†CL3, CSA AWM I/II A/B only

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |
| 3            | White |
| 4            | Green |

## Product Construction:

### Conductor:

- 12, 14, 16, or 18 AWG fully annealed, stranded bare copper per ASTM B-8

### Insulation:

- Premium-grade, color-coded polypropylene
- Color code: See chart below

### Jacket:

- PVC, command blue
- Temperature range: -20°C to +60°C

## Applications:

- Digital audio
- Stereo systems
- In-wall speakers
- Home theater
- Remote control circuits
- Security systems
- Bi-amp speakers

## Features:

- Flexible

## Compliances:

- NEC Article 725 Type CL3 (UL: 60°C)
- CSA, CMG, AWM I/II A/B
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT-4 Vertical Flame Test

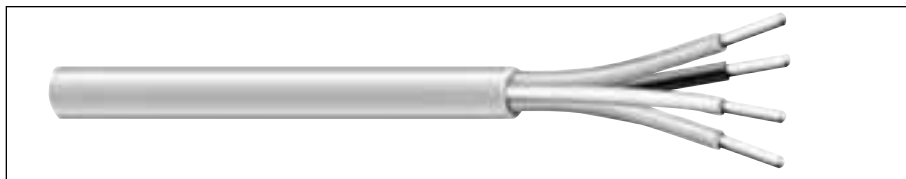
## Packaging:

- Please contact Customer Service for packaging and color options



# Command® Series OFHC Home Entertainment Speaker Cable

CL3 (UL), CM (UL) c(UL), CSA, CMG, CSA TYPE AWM



## Product Construction:

### Conductor:

- 16-12 AWG fully annealed, stranded oxygen-free high conductivity bare copper per ASTM B-170

### Insulation:

- Premium-grade, color-coded polypropylene

### Jacket:

- PVC, command blue
- Temperature range: -20°C to +60°C

## Applications:

- Digital audio
- Stereo systems
- In-wall speakers
- Home theater
- Remote control circuits
- Security systems
- Bi-amp speakers

## Features:

- Flexible
- High conductivity, oxygen-free

## Compliances:

- NEC Article 725 Type CL3 (UL: 60°C)
- NEC Article 800 Type CM (UL: 60°C)
- CSA, CMG, (CSA: 80°C, 600V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test
- Passes CSA FT-4 Vertical Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. C-C CAP* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|---------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |                     |
| <b>C1800**</b> | 2            | 12       | 105/32       | 0.009                     | 0.23 | 0.021                 | 0.53 | 0.264        | 6.71 | 25.5                |
| <b>C1801**</b> | 4            | 12       | 105/32       | 0.009                     | 0.23 | 0.021                 | 0.53 | 0.311        | 7.90 | 25.5                |
| <b>C1802**</b> | 2            | 14       | 105/34       | 0.009                     | 0.23 | 0.021                 | 0.53 | 0.226        | 5.74 | 23.8                |
| <b>C1803**</b> | 4            | 14       | 105/34       | 0.009                     | 0.23 | 0.021                 | 0.53 | 0.265        | 6.73 | 23.8                |
| <b>C1804</b>   | 2            | 16       | 64/34        | 0.009                     | 0.23 | 0.021                 | 0.53 | 0.196        | 4.98 | 22.1                |
| <b>C1805</b>   | 4            | 16       | 65/34        | 0.009                     | 0.23 | 0.021                 | 0.53 | 0.228        | 5.79 | 22.1                |

\*Capacitance between conductors

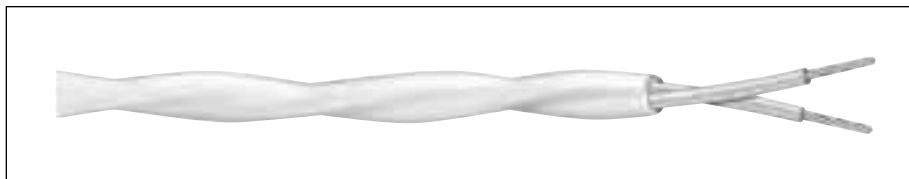
\*\*NEC Type CL3 and CSA Type AWM Only

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| <b>1</b>     | Black |
| <b>2</b>     | Red   |
| <b>3</b>     | White |
| <b>4</b>     | Green |

# Command® Series Twisted Pair Speaker Cable

CMR (UL) c(UL) or CL3 (UL), AWM Style 2587



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. C-C CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|----------------------|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm |                      |

## NEC Type CMR

|               |   |    |          |       |      |       |      |       |      |      |
|---------------|---|----|----------|-------|------|-------|------|-------|------|------|
| <b>C1000A</b> | 2 | 22 | 7/30     | 0.015 | 0.38 | 0.025 | 0.64 | 0.170 | 4.32 | 20.6 |
| <b>C1001A</b> | 2 | 20 | 7/28     | 0.013 | 0.33 | 0.025 | 0.64 | 0.178 | 4.52 | 24.5 |
| <b>C1002A</b> | 2 | 18 | 7/26     | 0.022 | 0.56 | 0.028 | 0.71 | 0.235 | 5.97 | 21.3 |
| <b>C1003A</b> | 2 | 16 | 19/.0117 | 0.023 | 0.58 | 0.032 | 0.81 | 0.274 | 6.96 | 23.5 |

## NEC Type CL3, UL Style 2587 (600V)

|                |   |    |       |       |      |       |      |       |      |      |
|----------------|---|----|-------|-------|------|-------|------|-------|------|------|
| <b>C1004A*</b> | 2 | 14 | 41/30 | 0.031 | 0.79 | 0.032 | 0.81 | 0.340 | 8.64 | 30.3 |
| <b>C1005A*</b> | 2 | 12 | 65/30 | 0.032 | 0.81 | 0.035 | 0.89 | 0.386 | 9.80 | 32.6 |

\*Capacitance between conductors.

### Color Code Chart C1000A-C1001A

| NO. OF COND. | COLORS |
|--------------|--------|
| 1            | Black  |
| 2            | Red    |

### C1002A-C1005A

| NO. OF COND. | COLORS |
|--------------|--------|
| 1            | Black  |
| 2            | White  |

### Product Construction:

#### Conductor:

- 22-12 AWG fully annealed stranded tinned copper per ASTM B-33

#### Insulation:

- Premium-grade, color-coded PVC
- Premium-grade, color-coded S-R PVC

#### Jacket:

- PVC, white
- Temperature range: -20°C to +75°C

### Applications:

- Digital audio
- Stereo systems
- In-wall speakers
- Suggested voltage rating: 300 volts

### Compliances:

- NEC Article 800 Type CMR (UL, c(UL): 75°C)
- NEC Article 725 Type CL3 (UL, c(UL): 105°C)
- UL, c(UL) AWM Style 2587 (UL, c(UL): 90°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

### Packaging and Jacket Colors:

- Please consult Customer Service for packaging and color options



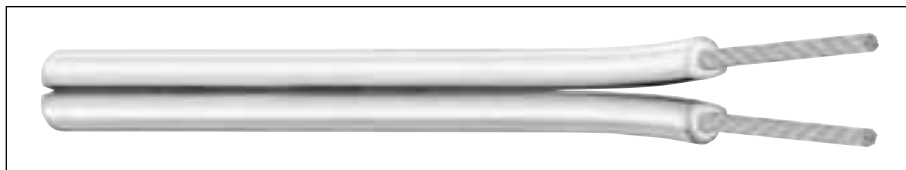
Designed to Meet  
UL Vertical Tray  
Flame Test

Underwriters Laboratories Inc.



# Command® Series Studio Grade Speaker Cable

NEC Type CL2



## Product Description:

Command® Series Studio Grade Speaker Cable brings sounds to life. It is engineered to deliver the true fidelity of a music signal from the source to the speaker—maintaining the highest signal integrity for ultimate clarity. It is the perfect speaker cable for the discriminating audiophile.

## Product Construction:

### Conductor:

- 16 through 12 AWG fully annealed stranded silver-plated conductor per ASTM B-3

### Insulation:

- Premium-grade, clear blue PVC
- Temperature range: 0°C to +60°C

### Applications:

- Digital audio
- Stereo systems
- In-wall speakers

## Features:

- Silver-plated conductor lowers electrical resistance for superior signal rendition
- High-strand, rope-lay conductors give the cable extra flexibility
- Convenient footage and polarity markers, at one-foot intervals to make installation easy
- Paintable to match any décor

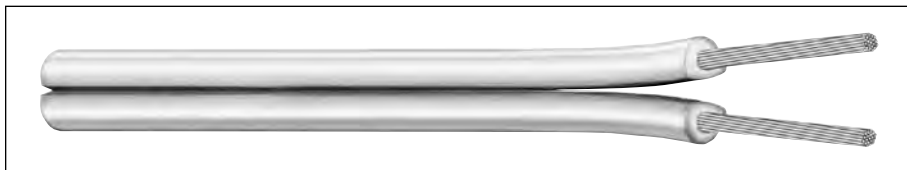
## Compliances:

- NEC Article 725 Type CL2
- RoHS Compliant Directive 2002/95/EC

| CATALOG NUMBER           | NO. OF COND. | AWG SIZE | COND. STRAND | LENGTH | COLOR OF JACKET | PACKAGE TYPE | PKG PER CARTON | CARTON WEIGHT (LBS) | CARTON DIMENSIONS (H x W x D) | CARTON CUBE | UPC NUMBER      |
|--------------------------|--------------|----------|--------------|--------|-----------------|--------------|----------------|---------------------|-------------------------------|-------------|-----------------|
| <b>16 AWG CONDUCTORS</b> |              |          |              |        |                 |              |                |                     |                               |             |                 |
| <b>C1558.15.92</b>       | 2            | 16       | 105/36       | 250'   | Clear Blue      | Spool        | 1              | 8.5                 | 6.6 x 6.6 x 6.3               | 0.159       | 0 79407 76276 7 |
| <b>14 AWG CONDUCTORS</b> |              |          |              |        |                 |              |                |                     |                               |             |                 |
| <b>C1561.15.92</b>       | 2            | 14       | 168/36       | 250'   | Clear Blue      | Spool        | 1              | 11.5                | 6.6 x 6.6 x 6.3               | 0.159       | 0 79407 76280 4 |
| <b>12 AWG CONDUCTORS</b> |              |          |              |        |                 |              |                |                     |                               |             |                 |
| <b>C1563.15.92</b>       | 2            | 12       | 259/36       | 250'   | Clear Blue      | Spool        | 1              | 17.5                | 13.0 x 6.5 x 9.5              | 0.464       | 0 79407 76280 4 |

# Speaker Wire

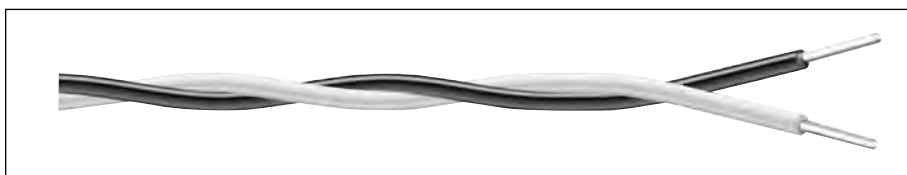
UL Listed or AWM Style 1007



| CATALOG<br>NUMBER | NUMBER<br>OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOMINAL O.D. |           |
|-------------------|-----------------------|-------------|-----------------|------------------------------|------|--------------|-----------|
|                   |                       |             |                 | INCHES                       | mm   | INCHES       | mm        |
| UL LISTED (60°C)  |                       |             |                 |                              |      |              |           |
| C1356             | 2                     | 24          | 7/32            | 0.016                        | 0.41 | 0.058x0.117  | 1.47x2.79 |
| C1362             | 2                     | 22          | 7/30            | 0.020                        | 0.51 | 0.070x0.145  | 1.77x3.68 |
| C1360             | 2                     | 20          | 10/30           | 0.020                        | 0.51 | 0.085x0.160  | 2.16x4.06 |
| C1357             | 2                     | 18          | 16/30           | 0.020                        | 0.51 | 0.083x0.181  | 2.11x4.60 |
| C1358             | 2                     | 16          | 26/30           | 0.020                        | 0.51 | 0.105x0.210  | 2.67x5.33 |
| C1361             | 2                     | 14          | 41/30           | 0.025                        | 0.64 | 0.125x0.235  | 3.18x5.69 |
| C1363             | 2                     | 12          | 65/30           | 0.025                        | 0.64 | 0.154x0.323  | 3.91x8.20 |

## Color Code Chart

| ORDERING SUFFIX | COLORS |
|-----------------|--------|
| <b>01</b>       | Black  |
| <b>02</b>       | White  |
| <b>08</b>       | Brown  |
| <b>10</b>       | Gray   |
| <b>90</b>       | Clear  |



| CATALOG<br>NUMBER            | NO. OF<br>COND. | AWG<br>SIZE | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOMINAL O.D. |      |
|------------------------------|-----------------|-------------|-----------------|------------------------------|------|--------------|------|
|                              |                 |             |                 | INCHES                       | mm   | INCHES       | mm   |
| AWM STYLE 1007 (80°C, 300 V) |                 |             |                 |                              |      |              |      |
| C7102A                       | 2               | 18          | 7/.0152         | 0.020                        | 0.51 | 0.172        | 4.37 |

## Color Code Chart

| ORDERING SUFFIX | STOCK COLOR |
|-----------------|-------------|
| <b>99</b>       | Black-White |

## Product Construction:

### Conductor:

- 24 thru 12 AWG fully annealed one bare, one tin stranded copper per ASTM B-174

### Insulation/Jacket:

- Premium-grade PVC
- Color code: See chart below

## Applications:

- Digital audio
- Hi-fi and stereo speaker wire
- Jukeboxes
- Not for in-wall use
- Home theater

## Compliances:

- UL Wires Misc.
- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options

## Product Construction:

### Conductor:

- 18 AWG tinned annealed stranded copper
- Stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded PVC
- Temperature range: -30°C to +80°C
- Color code: See chart below

## Applications:

- Audio systems
- Not for in-wall use

## Compliances:

- UL Style 1007 (UL: 80°C, 300 V)

## Packaging:

- 1000' (305 m) reels

# Superflex® Speaker Wire

UL Listed

## Product Construction:

### Conductor:

- 12 AWG fully annealed stranded bare copper conductor per ASTM B-3

### Insulation/Jacket:

- Premium-grade, clear Superflex® PVC
- Temperature range: -20°C to +60°C
- Color code: See chart below

## Applications:

- Digital audio
- Hi-fi and stereo speaker wire
- Jukeboxes
- Not for in-wall use

## Compliances:

- UL Misc. (UL: 120V)
- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NUMBER OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOMINAL O.D. |            |
|----------------|-----------------|----------|--------------|---------------------------|------|--------------|------------|
|                |                 |          |              | INCHES                    | mm   | INCHES       | mm         |
| <b>C1364</b>   | 2               | 12       | 7x37/36      | 0.060                     | 1.52 | 0.220x0.456  | 5.59x11.58 |

### Color Code Chart

| ORDERING SUFFIX | STOCK COLOR |
|-----------------|-------------|
| <b>90</b>       | Clear       |

## Product Construction:

### Conductor:

- 18 AWG, 1 tinned and 1 bare copper conductor per ASTM B-174

### Insulation:

- Premium-grade, clear PVC

### Jacket:

- PVC, clear
- Temperature range: -20°C to +60°C

## Applications:

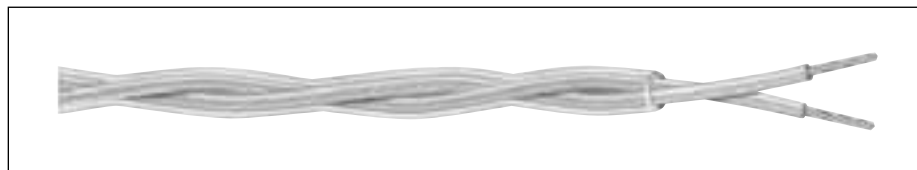
- Digital audio
- Hi-fi and stereo speaker wire
- Jukeboxes

## Compliances:

- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |
| <b>C6367</b>   | 2            | 18       | 16/30        | 0.016                     | 0.41 | 0.025                 | 0.64 | 0.210        | 5.33 |

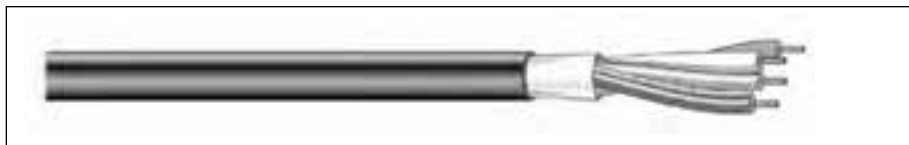
### Color Code Chart

| ORDERING SUFFIX | STOCK COLOR |
|-----------------|-------------|
| <b>90</b>       | Clear       |

# Pro Audio Speaker Wire



| CATALOG NUMBER | CONDUCTOR & O.D.                      | INSULATION & O.D. | JACKET & O.D.   | WEIGHT LBS/Mft |
|----------------|---------------------------------------|-------------------|-----------------|----------------|
| 740002         | 2/C 12 AWG Stranded 65/30 Bare Copper | PVC 0.136" Nom.   | PVC 0.365" Nom. | 100            |
| 740102         | 2/C 14 AWG Stranded 41/30 Bare Copper | PVC 0.118" Nom.   | PVC 0.295" Nom. | 75             |
| 740202         | 2/C 16 AWG Stranded 26/30 Bare Copper | PVC 0.102" Nom.   | PVC 0.295" Nom. | 60             |
| 740302         | 2/C 18 AWG Stranded 41/34 Bare Copper | PVC 0.079" Nom.   | PVC 0.235" Nom. | 38             |



| CATALOG NUMBER | CONDUCTOR & O.D.                      | INSULATION & O.D. | JACKET & O.D.   | WEIGHT LBS/Mft |
|----------------|---------------------------------------|-------------------|-----------------|----------------|
| 740004         | 4/C 12 AWG Stranded 65/30 Bare Copper | PVC 0.136" Nom.   | PVC 0.463" Nom. | 165            |
| 740104         | 4/C 14 AWG Stranded 41/30 Bare Copper | PVC 0.118" Nom.   | PVC 0.397" Nom. | 107            |
| 740204         | 4/C 16 AWG Stranded 26/30 Bare Copper | PVC 0.102" Nom.   | PVC 0.338" Nom. | 75             |
| 740304         | 4/C 18 AWG Stranded 41/34 Bare Copper | PVC 0.079" Nom.   | PVC 0.283" Nom. | 53             |

NOTE: Cabled with jute fillers and paper tape under jacket.

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | White |
| 3            | Red   |
| 4            | Green |

## Product Construction:

### Conductor:

- 12-18 AWG stranded bare copper
- Twisted pairs

### Insulation:

- PVC

### Jacket:

- PVC, matte black
- High flexibility

### Applications:

- Recording studios
- Commercial broadcast facilities
- Not for in-wall use

### Features:

- High durability and long-lasting service

### Packaging and Jacket Colors:

- Please consult Customer Service for packaging, color options and agency approvals

# Special Audio, Communication & Instrumentation

UL 2095, 2093

## Product Construction:

### Conductor:

- 24 thru 20 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded polyethylene (C1333A) or PVC (C1345A)
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

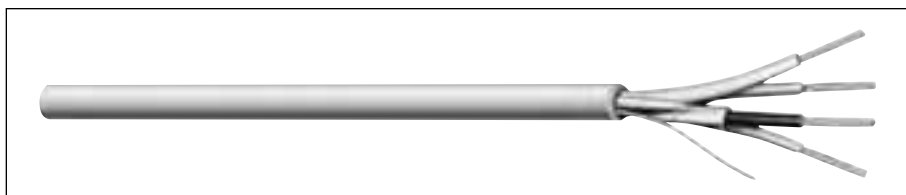
- Audio
- Communications
- EMI isolated circuits for instrumentation
- Suggested voltage rating: 300 volts

## Compliances:

- UL Style 2093 (UL: 60°C, 300V)
- UL Style 2095 (UL: 80°C, 300V)
- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG<br>NUMBER       | NO. OF<br>COND. | AWG<br>SIZE        | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | NOM. CAP:<br>pF/ft |      |
|-------------------------|-----------------|--------------------|-----------------|------------------------------|------|--------------------------|------|--------------|------|--------------------|------|
|                         |                 |                    |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | A                  | B    |
| UL Style 2093, 300 VOLT |                 |                    |                 |                              |      |                          |      |              |      |                    |      |
| C1333A                  | 3               | 2-20<br>Shielded   | 10/30           | 0.015                        | 0.38 | 0.028                    | 0.71 | 0.206        | 5.23 | 26.0               | 47.0 |
|                         |                 | 1-20<br>Unshielded | 7/28            | 0.016                        | 0.41 |                          |      |              |      |                    |      |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND.      | COLOR   |
|-------------------|---------|
| <b>Shielded</b>   |         |
| <b>1</b>          | Black   |
| <b>2</b>          | Red     |
| <b>Unshielded</b> |         |
| <b>1</b>          | Natural |



| CATALOG<br>NUMBER       | NO. OF<br>COND. | AWG<br>SIZE        | COND.<br>STRAND | NOM. INSULATION<br>THICKNESS |      | NOM. JACKET<br>THICKNESS |      | NOMINAL O.D. |      | NOM. CAP:<br>pF/ft |      |
|-------------------------|-----------------|--------------------|-----------------|------------------------------|------|--------------------------|------|--------------|------|--------------------|------|
|                         |                 |                    |                 | INCHES                       | mm   | INCHES                   | mm   | INCHES       | mm   | A                  | B    |
| UL Style 2095, 300 VOLT |                 |                    |                 |                              |      |                          |      |              |      |                    |      |
| C1345A                  | 6               | 4-24<br>Shielded   | 7/32            | 0.015                        | 0.38 | 0.025                    | 0.64 | 0.230        | 5.84 | 32.0               | 57.0 |
|                         |                 | 2-22<br>Unshielded | 7/30            |                              |      |                          |      |              |      |                    |      |

\*A – Capacitance between conductors

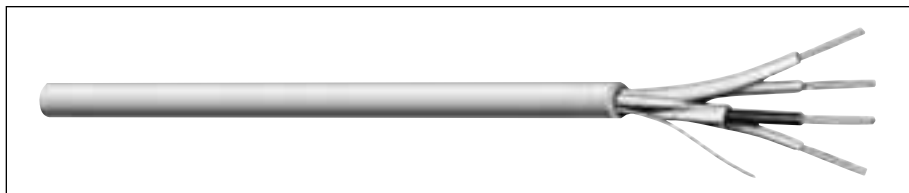
\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND.      | COLOR  |
|-------------------|--------|
| <b>Shielded</b>   |        |
| <b>1</b>          | Black  |
| <b>2</b>          | Red    |
| <b>3</b>          | Green  |
| <b>4</b>          | Yellow |
| <b>Unshielded</b> |        |
| <b>1</b>          | Blue   |
| <b>2</b>          | White  |

# Special Audio, Communication & Instrumentation

UL 2095, UL 2835, UL 2094, NEC Type CL2



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |    | NOM. JACKET THICKNESS |    | NOMINAL O.D. |    | NOM. CAP.* |   |
|----------------|--------------|----------|--------------|---------------------------|----|-----------------------|----|--------------|----|------------|---|
|                |              |          |              | INCHES                    | mm | INCHES                | mm | INCHES       | mm | A          | B |

## UL Style 2095, NEC Type CL2

|               |   |                                  |      |       |      |       |      |       |      |      |      |
|---------------|---|----------------------------------|------|-------|------|-------|------|-------|------|------|------|
| <b>C1331A</b> | 4 | 2-20 Shielded<br>2-20 Unshielded | 7/28 | 0.016 | 0.41 | 0.032 | 0.81 | 0.230 | 5.84 | 41.0 | 74.0 |
|---------------|---|----------------------------------|------|-------|------|-------|------|-------|------|------|------|

## UL Style 2835

|               |   |                                  |      |       |      |       |      |       |      |      |      |
|---------------|---|----------------------------------|------|-------|------|-------|------|-------|------|------|------|
| <b>C1340A</b> | 4 | 2-22 Shielded<br>2-22 Unshielded | 7/30 | 0.008 | 0.20 | 0.017 | 0.43 | 0.161 | 4.09 | 29.0 | 52.0 |
|---------------|---|----------------------------------|------|-------|------|-------|------|-------|------|------|------|

## UL Style 2094

|               |   |                                  |               |       |      |       |      |       |      |      |      |
|---------------|---|----------------------------------|---------------|-------|------|-------|------|-------|------|------|------|
| <b>C1343A</b> | 4 | 2-20 Shielded<br>2-18 Unshielded | 7/28<br>16/30 | 0.018 | 0.46 | 0.032 | 0.81 | 0.259 | 6.58 | 27.0 | 49.0 |
|---------------|---|----------------------------------|---------------|-------|------|-------|------|-------|------|------|------|

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND.      | COLOR |
|-------------------|-------|
| <b>Shielded</b>   |       |
| <b>1</b>          | Black |
| <b>2</b>          | Red   |
| <b>Unshielded</b> |       |
| <b>1</b>          | Green |
| <b>2</b>          | White |

## Product Construction:

### Conductor:

- 22 thru 18 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- C1331A - Premium-grade, color-coded PVC
- C1340A - Premium-grade, color-coded polypropylene
- C1343A - Premium-grade, color-coded polyethylene
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester over two conductors, 25% overlap, minimum, foil facing out
- Stranded tinned copper drain wire

### Jacket:

- PVC, gray
- Temperature range: -20°C to +80°C

## Applications:

- Audio
- Communications
- EMI isolated circuits for instrumentation

## Compliances:

- Nec Article 725 Type CL2 (UL: 75°C, 150V)
- C1331A - UL Style 2095 (UL: 80°C)
- C1340A - UL Style 2835 (UL: 60°C)
- C1343A - UL Style 2094 (UL: 60°C)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL 70,000 BTU Vertical Tray Flame Test

## Packaging:

- Please contact Customer Service for packaging and color options

**CAROL BRAND**



Designed to Meet  
UL Vertical Tray  
Flame Test

Underwriters Laboratories Inc.



**General Cable**

# Special Audio, Communication & Instrumentation

## UL 2094

### Product Construction:

#### Conductor:

- 22 AWG fully annealed stranded tinned copper per ASTM B-33

#### Insulation:

- Premium-grade, color-coded polyethylene
- Color code: See chart below

#### Shield:

- 64% tinned copper braid over one pair

#### Jacket:

- PVC, gray
- Temperature range: -20°C to +60°C

### Applications:

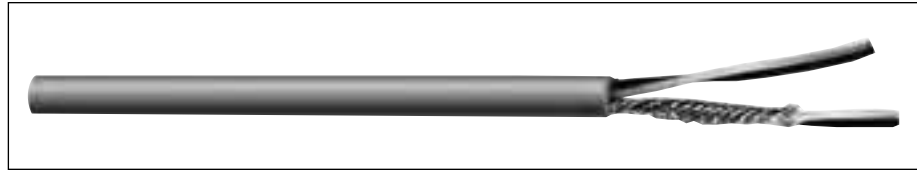
- Special audio
- Communication and control
- Instrumentation
- Applications where total isolation of signal is required
- Suggested voltage rating: 300 volts

### Compliances:

- UL Style 2094 (UL: 60°C, 300V)
- RoHS Compliant Directive 2002/95/EC
- Designed to meet UL VW-1 Vertical Wire Flame Test

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE                               | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------------------------------------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |                                        |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| <b>C1338A</b>  | 2            | 1-22<br>Shielded<br>1-22<br>Unshielded | 7/30         | 0.015                     | 0.38 | 0.030                 | 0.76 | 0.295        | 7.49 | 24.0       | 43.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

### Color Code Chart

| NO. OF PAIRS | COLOR         |
|--------------|---------------|
| <b>1</b>     | Black/Natural |
| <b>2</b>     | Black/Natural |

# Low Skew 4-Pair UTP

## NEC Type CMR/CMP (UL), c(UL)

### Product Construction:

#### Conductor:

- 23 or 24 AWG solid bare copper

#### Insulation:

- Fluorinated ethylene propylene (FEP)
- High density propylene (HDPE)

#### Jacket:

- Plenum - Flexguard® green
- Riser - PVC maroon

### Applications:

- Suitable for RGB video applications
- Digital CCTV cameras

### Compliances:

- NEC Article 800 Type CMR (UL), c(UL)
- NEC Article 800 Type CMP (UL), c(UL)

### Packaging:

- 1000' Pull-Pacs®
- Contact Customer Service for additional packaging options

### Color Code Chart

| NO. OF PAIRS | COLOR                          |
|--------------|--------------------------------|
| 1            | White/Blue Stripe and Blue     |
| 2            | White/Orange Stripe and Orange |
| 3            | White/Green Stripe and Green   |
| 4            | White/Brown Stripe and Brown   |

| CATALOG NUMBER                                                                                               | AWG SIZE                 | NOMINAL DCR | NOMINAL O.D. (INCHES) | INSULATION MATERIAL                  |    | NOMINAL IMPEDANCE OHMS | PROPAGATION DELAY SKEW | NOMINAL ATTENUATION |            | BELDEN PART NO. |
|--------------------------------------------------------------------------------------------------------------|--------------------------|-------------|-----------------------|--------------------------------------|----|------------------------|------------------------|---------------------|------------|-----------------|
|                                                                                                              |                          |             |                       | INCHES                               | mm |                        |                        | MHz                 | dB/328 ft. |                 |
| <b>E3842S<br/>CMP</b><br>   | 24 AWG Solid Bare Copper | 27.4 Ω/Mft  | 0.185                 | Fluorinated Ethylene Propylene (FEP) |    | 100                    | 2.2 ns/328 ft.         | 1                   | 2.0        | 7987P           |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 4                   | 4.1        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 8                   | 5.8        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 10                  | 6.5        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 16                  | 8.2        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 20                  | 9.3        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 25                  | 10.4       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 31.25               | 11.7       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 62.50               | 17.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 100                 | 22.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 155                 | 28.1       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 200                 | 32.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 250*                | 36.4       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 300*                | 41.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 350*                | 44.8       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        |                     |            |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        |                     |            |                 |
| <b>E1842S<br/>CMR</b><br> | 24 AWG Solid Bare Copper | 27.4 Ω/Mft  | 0.185                 | High Density Propylene (HDPE)        |    | 100                    | 2.2 ns/328 ft.         | 1                   | 2.0        | 7987R           |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 4                   | 4.1        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 8                   | 5.8        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 10                  | 6.5        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 16                  | 8.2        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 20                  | 9.3        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 25                  | 10.4       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 31.25               | 11.7       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 62.50               | 17.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 100                 | 22.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 155                 | 28.1       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 200                 | 32.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 250*                | 36.4       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 300*                | 41.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 350*                | 44.8       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        |                     |            |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        |                     |            |                 |
| <b>E3843S<br/>CMP</b><br> | 23 AWG Solid Bare Copper | 22.0 Ω/Mft  | 0.200                 | Fluorinated Ethylene Propylene (FEP) |    | 100                    | 2.2 ns/328 ft.         | 1                   | 2.0        | 7989P           |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 4                   | 3.8        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 8                   | 5.3        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 10                  | 6.0        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 16                  | 7.6        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 20                  | 8.5        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 25                  | 9.5        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 31.25               | 10.7       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 62.50               | 15.4       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 100                 | 19.8       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 155                 | 25.2       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 200                 | 29.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 250                 | 32.8       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 300*                | 35.2       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 350*                | 39.8       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        |                     |            |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        |                     |            |                 |
| <b>E1843S<br/>CMR</b><br> | 23 AWG Solid Bare Copper | 22.0 Ω/Mft  | 0.213                 | High Density Propylene (HDPE)        |    | 100                    | 2.2 ns/328 ft.         | 1                   | 2.0        | 7989R           |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 4                   | 3.8        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 8                   | 5.3        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 10                  | 6.0        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 16                  | 7.6        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 20                  | 8.5        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 25                  | 9.5        |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 31.25               | 10.7       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 62.50               | 15.4       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 100                 | 19.8       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 155                 | 25.2       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 200                 | 29.0       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 250                 | 32.8       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 300*                | 35.2       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        | 350*                | 39.8       |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        |                     |            |                 |
|                                                                                                              |                          |             |                       |                                      |    |                        |                        |                     |            |                 |

\*For information only.

**CAROL BRAND**

c **UL** US  
LISTED

**UL**  
Listed Type  
CM

**UL**  
Listed Type  
CMP

**General Cable**

# SmartWrap™ Bundled Cable

Multiple Cable Types Depending On Application Up to 6 Cables / Jacketed and Unjacketed

## Product Construction:

### Fiber:

- Multimode or singlemode fibers with easily strippable 900µm tight buffering colored per TIA/EIA 598
- Cabled with aramid yarn strength member and jacketed to meet appropriate standards

### Coax:

- Quad shield RG6 coax with copper-clad steel center conductor, either foamed PE (riser) or FEP (plenum) dielectric and overall PVC jacket

### Twisted Pair:

- Unshielded or shielded twisted pair that meets or exceeds all TIA/EIA 568 B-2 standards for Carol® Brand Cat 5e

### Binder:

- Helically wound polyester binder

### Overall Jacket (Optional):

- Riser-rated versions use a flame-retardant PVC

### Applications:

- SmartWrap™ cables are several different cables available with either helical binding or overall jacketing to allow simultaneous pulling of multiple cables. Configurations include combinations of Cat 5e UTP or ScTP, RG6 video/data quad shield coax and optical fiber cables. Plenum and riser versions available

### Features:

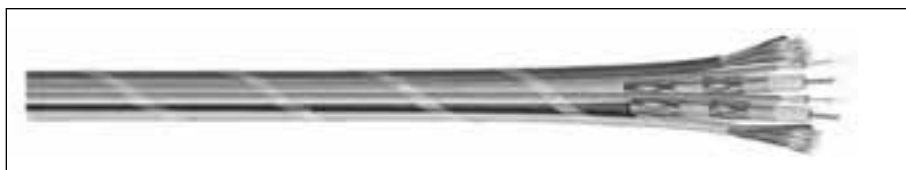
- Many cables can be pulled at once—faster installation
- TIA/EIA 568 B-2 Crosstalk-compliant
- Simplifies cable management
- Excellent for residential applications

### Compliances:

- NEC Article 800 CMR, CSA FT-4 riser
- NEC Article 800 CMP, CSA FT-6 plenum

### Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | SAFETY RATING | BINDING OR JACKET | CONSTRUCTION                                                                               |
|----------------|---------------|-------------------|--------------------------------------------------------------------------------------------|
| 710021         | Riser         | Binding           | 4 Carol® Brand Cat 5e UTP                                                                  |
| 810021         | Plenum        | Binding           | 4 Carol® Brand Cat 5e UTP                                                                  |
| 710022         | Riser         | Binding           | 6 Carol® Brand Cat 5e UTP                                                                  |
| 810022         | Plenum        | Binding           | 6 Carol® Brand Cat 5e UTP                                                                  |
| 710023         | Riser         | Binding           | 4 Carol® Brand Cat 5e ScTP                                                                 |
| 810023         | Plenum        | Binding           | 4 Carol® Brand Cat 5e ScTP                                                                 |
| 710024         | Riser         | Binding           | 6 Carol® Brand Cat 5e ScTP                                                                 |
| 810024         | Plenum        | Binding           | 6 Carol® Brand Cat 5e ScTP                                                                 |
| 710010         | Riser         | Jacket            | 2 Carol® Brand Cat 5e UTP and 2 RG6 Quad Smart Home coax                                   |
| 710011         | Riser         | Jacket            | 2 Carol® Brand Cat 5e UTP, 2 RG6 Quad Smart Home coax and 2 simplex multimode fiber cables |
| 710017         | Riser         | Binding           | 2 Carol® Brand Cat 5e UTP and 2 RG6 Quad Smart Home coax                                   |
| 710018         | Riser         | Binding           | 2 Carol® Brand Cat 5e UTP, 2 RG6 Quad Smart Home coax and 2 simplex multimode fiber cables |

The above listings are for stock cables. Custom configurations are available. Information is subject to change without notice. Consult Customer Service for a variety of alternate constructions for specific applications.

## DATA TRANSMISSION PERFORMANCE FOR CAT 5E CABLES

| FREQUENCY (MHZ) | INSERTION LOSS TYPICAL • MAX* (dB/100m) | NEXT TYPICAL • MIN* (dB) | PSNEXT TYPICAL • MIN* (dB) | ACR TYPICAL • MIN* (dB/100m) | PSACR TYPICAL • MIN* (dB/100m) | ELFEXT TYPICAL • MIN* (dB/100m) | PSNEXT TYPICAL • MIN* (dB/100m) | RETURN LOSS MIN (dB) |
|-----------------|-----------------------------------------|--------------------------|----------------------------|------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------|
| 1               | 19.3 • 22.0                             | 51.9 • 35.3              | 43.8 • 32.3                | 32.6 • 13.3                  | 24.5 • 10.3                    | 43.7 • 23.8                     | 38.8 • 20.8                     | 20.1                 |

\*Max/min measurements match TIA/EIA 568 B-2 standards

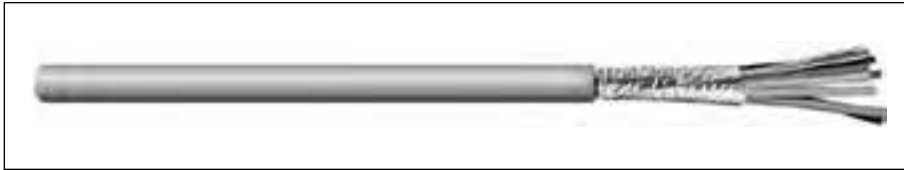
## ELECTRICAL CHARACTERISTICS FOR CAT 5E CABLES

|                    |                                             |                          |                               |
|--------------------|---------------------------------------------|--------------------------|-------------------------------|
| DC Resistance      | ≤9.38 Ohms/100 Meters • 28.6 Ohms/1000 Feet | Input Impedance          | 100 Ohms ± 15% @ 1 - 100 MHz  |
| DCR Unbalanced     | ≤5%                                         | Propagation Delay (Skew) | 45 nanoseconds/100 meters max |
| Mutual Capacitance | ≤55.8 pF/m • 17 pF/ft                       | Velocity of Propagation  | 72% plenum/69% riser          |

## ELECTRICAL CHARACTERISTICS FOR RG6 CABLES

|                          |                         |                         |                                 |
|--------------------------|-------------------------|-------------------------|---------------------------------|
| Capacitance              | ≤53.2 pF/m • 16.2 pF/ft | Attenuation (dB/100 ft) | 0.21@ 1 MHz • 6.04 dB @ 1000MHz |
| Characteristic Impedance | 75 Ohms                 | Velocity of Propagation | 83% riser                       |

# Direct Burial, Audio & Communication



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP* pF/ft |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|-----------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A               | B    |
| <b>C2509A</b>  | 2            | 20       | Solid        | 0.013                     | 0.33 | 0.037                 | 0.94 | 0.190        | 4.83 | 25.0            | 44.0 |
| <b>C2510A</b>  | 3            | 20       | Solid        | 0.013                     | 0.33 | 0.039                 | 0.99 | 0.205        | 5.21 | 22.0            | 40.0 |
| <b>C2511A</b>  | 10           | 20       | Solid        | 0.013                     | 0.33 | 0.039                 | 0.99 | 0.310        | 7.87 | 20.5            | 37.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Product Construction:

### Conductor:

- 20 AWG fully annealed solid tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded polypropylene

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing out
- Solid tinned copper drain wire

### Jacket:

- Permaline® high-density polyethylene, black
- Temperature range: -20°C to +80°C

## Applications:

- Suitable for direct burial
- Outdoor uses
- 100% shielded cable where RF shielding is required
- Suggested voltage rating: 350 volts

## Features:

- Permaline® jackets resist deterioration
- Sunlight-resistant
- Highly durable jacket

## Compliances:

- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options

# Direct Burial, Audio & Communication

## Product Construction:

### Conductor:

- 20 AWG fully annealed stranded tinned copper per ASTM B-33
- Twisted pairs

### Insulation:

- Premium-grade, color-coded polypropylene
- Color code: See chart below

### Shield:

- 100% Flexfoil® aluminum/polyester with 25% overlap, minimum, foil facing in
- Stranded tinned copper drain wire each pair
- Individually shielded pairs

### Jacket:

- Permaline® high-density polyethylene, black
- Temperature range: -20°C to +80°C

## Applications:

- Suitable for direct burial
- Outdoor uses
- Applications where total isolation of signal is required
- Suggested voltage rating: 350 volts

## Features:

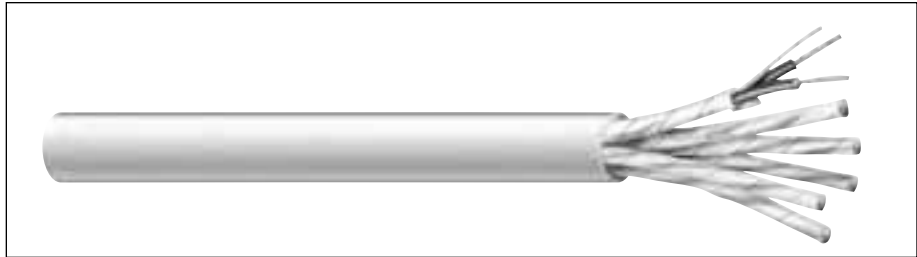
- Permaline® jackets resist deterioration
- Sunlight-resistant

## Compliances:

- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF PAIRS | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |       | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|-------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm    | A          | B    |
| <b>C6061A</b>  | 3            | 20       | 10/30        | 0.013                     | 0.33 | 0.047                 | 1.19 | 0.340        | 8.64  | 22.0       | 39.0 |
| <b>C6062A</b>  | 6            | 20       | 10/30        | 0.013                     | 0.33 | 0.047                 | 1.19 | 0.442        | 11.23 | 22.0       | 39.0 |

\*A – Capacitance between conductors

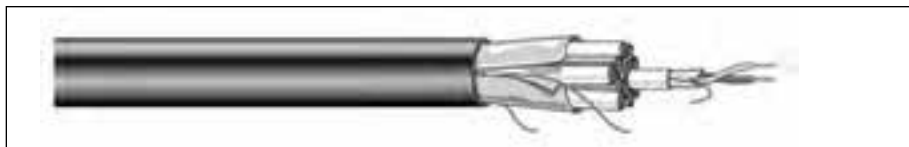
\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF PAIRS | COLOR                    |
|--------------|--------------------------|
| 1            | Black paired with Red    |
| 2            | Black paired with White  |
| 3            | Black paired with Green  |
| 4            | Black paired with Blue   |
| 5            | Black paired with Yellow |
| 6            | Black paired with Brown  |

# Digital Audio Snake Cable

AES/EBU 110 Ohm Multi-Pair Individually Shielded & Jacketed, NEC Type CM/CL2



| CATALOG NUMBER | CONDUCTOR                                | INSULATION & O.D.          | SHIELD (COV.)                                                   | JACKET & O.D.                   | WT. #/m | IMPED. OHMS | CAPAC. pF/ft. |
|----------------|------------------------------------------|----------------------------|-----------------------------------------------------------------|---------------------------------|---------|-------------|---------------|
| <b>740601</b>  | 1/PR 24 AWG Stranded 7/32 Tinned Copper  | HD-Cellular PE 0.066" Nom. | Individual Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.176" Nom. | 13.5    | 110         | 12.5          |
| <b>740604</b>  | 4/PR 24 AWG Stranded 7/32 Tinned Copper  | HD-Cellular PE 0.066" Nom. | Individual Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.525" Nom. | 100     | 110         | 12.5          |
| <b>740608</b>  | 8/PR 24 AWG Stranded 7/32 Tinned Copper  | HD-Cellular PE 0.066" Nom. | Individual Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.700" Nom. | 183     | 110         | 12.5          |
| <b>740612</b>  | 12/PR 24 AWG Stranded 7/32 Tinned Copper | HD-Cellular PE 0.066" Nom. | Individual Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.850" Nom. | 250     | 110         | 12.5          |
| <b>740616</b>  | 16/PR 24 AWG Stranded 7/32 Tinned Copper | HD-Cellular PE 0.066" Nom. | Individual Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 1.000" Nom. | 370     | 110         | 12.5          |
| <b>740620</b>  | 20/PR 24 AWG Stranded 7/32 Tinned Copper | HD-Cellular PE 0.066" Nom. | Individual Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 1.100" Nom. | 425     | 110         | 12.5          |

NOTE: General Cable manufactures the above cables in a wide range of alternate AWG sizes, pair counts and jacket colors. Please consult Customer Service for details.

## Product Construction:

### Conductor:

- 24 AWG stranded tinned copper
- Twisted pairs

### Insulation:

- High-density foamed polyethylene

### Shield:

- Individually shielded pairs with 24 AWG drain wire
- Overall foil shield with 18 AWG drain wire

### Jacket:

- PVC, matte black
- High-flex, flame-retardant

## Applications:

- Digital audio
- Interconnection and audio components for console board equipment used in recording studios, radio and television stations, and post-production facilities
- Sound system installations

## Features:

- High impedance, 78% velocity and low capacitance providing error-free transmissions over extended distances
- PVC jacketing compound for ultimate cosmetics, durability and flexibility
- Jacketed pairs can be split out of overall jacket for any length without use of heat-shrink tubing
- Individual pair jackets are color-coded and number-printed for easy identification

## Compliances:

- NEC Article 725 Type CL2
- NEC Article 800 Type CM
- Meets/exceeds requirements of Audio Engineering Society (AES) and European Broadcast Union (EBU)

## Packaging and Jacket Colors:

- Please consult Customer Service for packaging and color options

# Analog Audio Snake Cable

70 Ohm Low Capacitance Multi-Pair Individually Shielded & Jacketed, NEC Type CM/CL2

## Product Construction:

### Conductor:

- 24 AWG stranded tinned copper
- Twisted pairs

### Insulation:

- Polyolefin

### Shield:

- Individually shielded pairs with 24 AWG drain wire
- Overall foil shield 24 AWG drain wire

### Jacket:

- PVC, matte black
- High-flex, flame-retardant

## Applications:

- Analog audio
- Line level microphone
- Interconnection and audio components for console board equipment used in recording studios, radio and television stations, and post-production facilities
- Sound system installations

## Features:

- PVC jacketing compound for superior cosmetics, durability and flexibility
- Individually shielded and jacketed pairs with an overall shield
- Individual pair jackets alpha-numerically numbered for easy identification

## Compliances:

- NEC Article 725 Type CL2
- NEC Article 800 Type CM

## Packaging and Jacket Colors:

- Please consult Customer Service for packaging and color options



| CATALOG NUMBER      | CONDUCTOR                                | INSULATION & O.D.      | SHIELD (COV.)                                                | JACKET & O.D.                   | WT. #/m | IMPED. OHMS | CAPAC. pF/ft |
|---------------------|------------------------------------------|------------------------|--------------------------------------------------------------|---------------------------------|---------|-------------|--------------|
| STRANDED CONDUCTORS |                                          |                        |                                                              |                                 |         |             |              |
| 740501              | 1/PR 24 AWG Stranded 7/32 Tinned Copper  | Polyolefin 0.024" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.137" Nom. | 11      | 65          | 24           |
| 740504              | 4/PR 24 AWG Stranded 7/32 Tinned Copper  | Polyolefin 0.024" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.385" Nom. | 64      | 65          | 24           |
| 740508              | 8/PR 24 AWG Stranded 7/32 Tinned Copper  | Polyolefin 0.024" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.490" Nom. | 107     | 65          | 24           |
| 740512              | 12/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.024" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.610" Nom. | 160     | 65          | 24           |
| 740516              | 16/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.024" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.680" Nom. | 205     | 65          | 24           |
| 740520              | 20/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.024" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.700" Nom. | 248     | 65          | 24           |
| 740528              | 28/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.024" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.820" Nom. | 340     | 65          | 24           |
| 740542              | 42/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.024" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 1.050" Nom. | 485     | 65          | 24           |
| 740552              | 52/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.024" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 1.150" Nom. | 595     | 65          | 24           |

NOTE: General Cable manufactures the above cables in a wide range of alternate AWG sizes, pair counts and jacket colors. Please consult Customer Service for details.

# Analog Audio Snake Cable

70 Ohm Low Capacitance Multi-Pair Individually Shielded, NEC Type CM/CL2



| CATALOG NUMBER | CONDUCTOR                                | INSULATION & O.D.      | SHIELD (COV.)                                                | JACKET & O.D.                   | WT. #/m | IMPED. OHMS | CAPAC. pF/ft |
|----------------|------------------------------------------|------------------------|--------------------------------------------------------------|---------------------------------|---------|-------------|--------------|
| 740701         | 1/PR 24 AWG Stranded 7/32 Tinned Copper  | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.137" Nom. | 11      | 65          | 24           |
| 740704         | 4/PR 24 AWG Stranded 7/32 Tinned Copper  | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.280" Nom. | 39      | 65          | 24           |
| 740706         | 6/PR 24 AWG Stranded 7/32 Tinned Copper  | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.330" Nom. | 55      | 65          | 24           |
| 740708         | 8/PR 24 AWG Stranded 7/32 Tinned Copper  | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.350" Nom. | 69      | 65          | 24           |
| 740709         | 9/PR 24 AWG Stranded 7/32 Tinned Copper  | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.380" Nom. | 76      | 65          | 24           |
| 740712         | 12/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.425" Nom. | 96      | 65          | 24           |
| 740716         | 16/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.490" Nom. | 130     | 65          | 24           |
| 740720         | 20/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.540" Nom. | 158     | 65          | 24           |
| 740728         | 28/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.655" Nom. | 221     | 65          | 24           |
| 740742         | 42/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.775" Nom. | 327     | 65          | 24           |
| 740752         | 52/PR 24 AWG Stranded 7/32 Tinned Copper | Polyolefin 0.044" Nom. | Overall Foil w/ 24 AWG Drain<br>Overall Foil w/ 18 AWG Drain | FR-PVC Matte Finish 0.845" Nom. | 391     | 65          | 24           |

NOTE: General Cable manufactures the above cables in a wide range of alternate AWG sizes, pair counts and jacket colors. Please consult Customer Service for details.

## Product Construction:

### Conductor:

- 24 AWG stranded tinned copper
- Twisted pairs

### Insulation:

- Polyolefin

### Shield:

- Individually shielded pairs with 24 AWG drain wire
- Overall foil shield 24 AWG drain wire

### Jacket:

- PVC, matte black
- High-flex, flame-retardant

## Applications:

- Line level microphone
- Interconnection and audio components for console board equipment used in recording studios, radio and television stations, and post-production facilities
- Sound system installations

## Features:

- PVC jacketing compound for superior cosmetics, durability and flexibility
- Individually shielded pairs are color-coded for easy identification

## Compliances:

- NEC Article 725 Type CL2
- NEC Article 800 Type CM

## Packaging and Jacket Colors:

- Please consult Customer Service for packaging and color options

# Guitar/Instrument Cable

## Product Construction:

### Conductor:

- 20 or 24 AWG stranded bare copper

### Insulation:

- Dual layer of semi-conductive PVC over polyethylene

### Shield:

- 36 AWG bare copper braid or spiral

### Jacket:

- High quality audio (HQA) PVC, matte black
- Superior flexibility

## Applications:

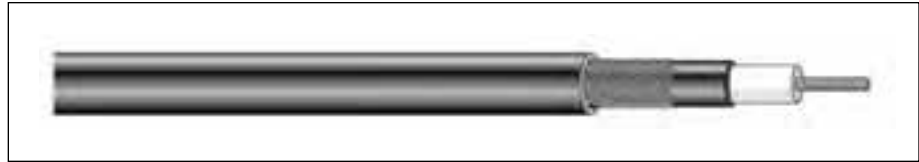
- Guitars
- Basses
- Keyboards and other instruments to amplifiers, mixers and effects pedals
- All outdoor signal processing gear

### Features:

- Low capacitance to provide excellent structural return loss characteristics
- Specially formulated vinyl sleeving reduces triboelectric charges which cause microphonic handling noise in high-gain amplification applications

## Packaging and Jacket Colors:

- Please consult Customer Service for packaging and color options



| CATALOG NUMBER | CONDUCTOR                             | INSULATION & O.D.                        | SHIELD (COV.)                      | JACKET & O.D.              | WT. #/m | IMPED. OHMS | CAPAC. pF/ft. |
|----------------|---------------------------------------|------------------------------------------|------------------------------------|----------------------------|---------|-------------|---------------|
| 743601         | 1/C 20 AWG Stranded 41/36 Bare Copper | 0.038" Poly 0.010" Semi Conductive Vinyl | 36 AWG 95% Nom. Bare Copper Braid  | "HQA" PVC 0.240 Nom. Black | 34      | 47          | 33            |
| 743602         | 1/C 20 AWG Stranded 41/36 Bare Copper | 0.038" Poly 0.010" Semi Conductive Vinyl | 36 AWG 65% Nom. Bare Copper Spiral | "HQA" PVC 0.240 Nom. Black | 34      | 47          | 33            |
| 743603         | 1/C 20 AWG Stranded 41/36 Bare Copper | 0.038" Poly 0.010" Semi Conductive Vinyl | 36 AWG 95% Nom. Bare Copper Braid  | "HQA" PVC 0.240 Nom. Black | 34      | 47          | 33            |
| 743604         | 1/C 20 AWG Stranded 22/34 Bare Copper | 0.025" Poly 0.010" Semi Conductive Vinyl | 36 AWG 65% Nom. Bare Copper Spiral | "HQA" PVC 0.235 Nom. Black | 36      | 47          | 33            |
| 743605         | 1/C 24 AWG Stranded 7/32 Bare Copper  | 0.040" Poly 0.010" Semi Conductive Vinyl | 36 AWG 95% Nom. Bare Copper Spiral | "HQA" PVC 0.235 Nom. Black | 30      | 47          | 33            |

# Ultra Flexible, Low Impedance 2-Conductor Microphone Cable



| CATALOG NUMBER | CONDUCTOR                              | INSULATION & O.D.        | SHIELD (COV.)              | JACKET & O.D.               | WT. #/m | IMPED. OHMS | CAPAC. pF/ft |
|----------------|----------------------------------------|--------------------------|----------------------------|-----------------------------|---------|-------------|--------------|
| 743701         | 2/C 24 AWG Stranded 105/44 Bare Copper | PVC 0.045" Nom.          | 80% Nom. Bare Copper Braid | "HQA" PVC 0.176" Nom. Black | 22      | 65          | 30           |
| 743704         | 2/C 24 AWG Stranded 41/40 Bare Copper  | Polyethylene 0.050" Nom. | 95% Tinned Copper Braid    | "HQA" PVC 0.194" Nom. Black | 23      | 80          | 20           |
| 743705         | 2/C 24 AWG Stranded 16/36 Bare Copper  | Polyethylene 0.050" Nom. | 95% Bare Copper Spiral     | "HQA" PVC 0.225" Nom. Black | 29      | 80          | 20           |
| 743706         | 2/C 22 AWG Stranded 26/36 Bare Copper  | Polyethylene 0.062" Nom. | 85% Bare Copper Braid      | "HQA" PVC 0.232" Nom. Black | 34      | 85          | 18           |
| 743707         | 2/C 20 AWG Stranded 41/36 Bare Copper  | Polyethylene 0.074" Nom. | 85% Bare Copper Braid      | "HQA" PVC 0.262" Nom. Black | 40      | 80          | 20           |

## Product Construction:

### Conductor:

- 20-24 AWG stranded bare copper
- Twisted pairs

### Insulation:

- PVC or polyethylene

### Shield:

- Braid or spiral, bare or tinned copper (choice of shielding configurations)

### Jacket:

- High quality audio (HQA) PVC, matte black
- Superior flexibility

## Applications:

- General-purpose audio applications
- Home entertainment
- Musical instruments

## Features:

- Twisted conductor construction minimizes effects of EMI
- Precise application of filler maintains mechanical durability to resist annoying handling noise
- Braid shield guards against crosstalk and EMI while minimizing capacitive reactance, which causes hum and buzz
- High strand conductor plus HQA jacket results in ultimate flexibility

## Packaging and Jacket Colors:

- Please consult Customer Service for packaging and color options

# Multi-Conductor, Flexfoil® Shield

## Product Construction:

### Conductor:

- 24 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded polypropylene
- Color code: See chart below

### Shield:

- Conductive tape applied over the core
- 100% Flexfoil® aluminum/polyester, 25% overlap, minimum, foil facing in
- Stranded tinned copper drain wire

### Jacket:

- PVC, black
- Temperature range: -20°C to +75°C

## Applications:

- Electronic circuits where RF shielding is required
- Radio transmitters
- Sound systems
- Recording studios
- Suggested voltage rating: 300 volts

## Features:

- Excellent shielding to reduce noise

## Compliances:

- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| <b>C1228A</b>  | 2            | 24       | 19/36        | 0.008                     | 0.20 | 0.022                 | 0.56 | 0.135        | 3.43 | 27.0       | 48.5 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | Black |
| 2            | Red   |

# Multi-Conductor, Rubber, Braid Shield Microphone Cable

## High and Low Impedance



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |                  |
| <b>C1300</b>   | 1            | 20       | 26/34        | 0.042                     | 1.07 | 0.035                 | 0.89 | 0.230        | 5.84 | 42.0             |
| <b>C1301</b>   | 1            | 18       | 41/34        | 0.040                     | 1.02 | 0.035                 | 0.89 | 0.240        | 6.10 | 46.0             |
| <b>C1302</b>   | 2            | 20       | 26/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.270        | 6.86 | 50.0             |

\*Capacitance between one conductor and other conductors connected to shield

### Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| <b>1</b>     | White |
| <b>2</b>     | Black |

### Product Construction:

#### Conductor:

- 18 and 20 AWG fully annealed stranded tinned copper per ASTM B-33

#### Insulation:

- Premium-grade, color-coded rubber insulation
- Color code: See chart below

#### Shield:

- Clear Mylar® wrap
- 80% tinned copper braid
- Cotton wrap

#### Jacket:

- Rubber, black
- Temperature range: -20°C to +60°C

### Applications:

#### C1300, C1301:

- High-impedance microphones
- Broadcast and studio use
- Communication and audio system
- Shielded power supplies
- Suggested voltage rating: 300 volts

#### C1302:

- Low-impedance microphones
- Studio use
- Control circuits
- Video and audio interconnecting cables
- Shielded power supplies
- Suggested voltage rating: 300 volts

### Features:

- Precision engineered to transmit clear, noise-free signals
- Minimizes electrical "hum"
- Braid shield provides extra flexibility

### Compliances:

- RoHS Compliant Directive 2002/95/EC

### Packaging:

- Please contact Customer Service for packaging and color options

# Multi-Conductor, Spiral Shield

## Product Construction:

### Conductor:

- 24 AWG annealed stranded bare copper per ASTM B-3

### Insulation:

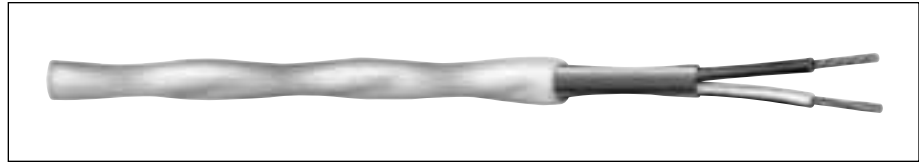
- Premium-grade, color-coded PVC
- Color code: See chart below

### Shield:

- 85% spiral-tinned copper

### Jacket:

- PVC, black
- Temperature range: -20°C to +90°C



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* |      |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------|------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   | A          | B    |
| <b>C1226A</b>  | 2            | 24       | 105/44       | 0.012                     | 0.30 | 0.030                 | 0.76 | 0.176        | 4.47 | 43.0       | 77.0 |

\*A – Capacitance between conductors

\*B – Capacitance between one conductor and other conductors connected to shield

## Applications:

- Electronic circuits where RF shielding is required
- Radio transmitters
- Sound systems
- Recording studios
- Suggested voltage rating: 300 volts

### Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | White |
| 2            | Green |

## Features:

- Spiral shield provides extra flexibility
- Excellent shielding to reduce noise

## Compliances:

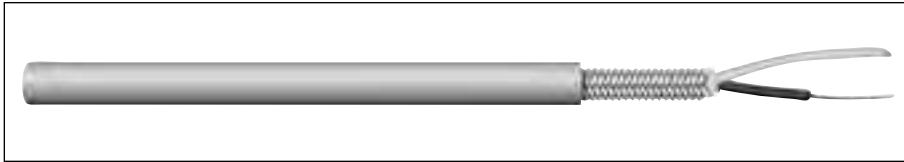
- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options

# Multi-Conductor, Braid Shield

Low Impedance



| CATALOG NUMBER | TYPE       | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* pF/ft |
|----------------|------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------------|
|                |            |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |                  |
| <b>C1322A</b>  | Low Imped. | 2            | 22       | 16/34        | 0.025                     | 0.64 | 0.025                 | 0.64 | 0.239        | 6.07 | 31.0             |

\*Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | White |
| 2            | Black |

## Product Construction:

### Conductor:

- 22 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded polyethylene
- Fillers where required
- Color code: See chart below

### Shield:

- 80% tinned copper braid

### Jacket:

- PVC, gray
- Temperature range: -20°C to +75°C

## Applications:

- Low-impedance microphones
- Suggested voltage rating: 1000 volts

## Features:

- Flexlife® jacket provides extreme flexibility
- High abrasion resistance
- Outstanding appearance

## Compliances:

- RoHS Compliant Directive 2002/95/EC

## Packaging:

- Please contact Customer Service for packaging and color options

# Microphone Cable, Multi-Conductor, Carolprene<sup>®</sup>, Braid Shield High and Low Impedance

## Product Construction:

### Conductor:

- 18 and 16 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- Premium-grade, color-coded rubber
- Color code: See chart below

### Shield:

- Clear Mylar<sup>®</sup> wrap
- 80% braid tinned copper
- Cotton wrap

### Jacket:

- Carolprene<sup>®</sup>, black
- Temperature range: -20°C to +60°C



| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND | NOM. INSULATION THICKNESS |      | NOM. JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. CAP.* pF/ft |
|----------------|--------------|----------|--------------|---------------------------|------|-----------------------|------|--------------|------|------------------|
|                |              |          |              | INCHES                    | mm   | INCHES                | mm   | INCHES       | mm   |                  |
| <b>C1201</b>   | 1            | 18       | 41/34        | 0.040                     | 1.02 | 0.035                 | 0.89 | 0.240        | 6.10 | 46.0             |
| <b>C1202</b>   | 2            | 18       | 41/34        | 0.020                     | 0.51 | 0.035                 | 0.89 | 0.295        | 7.49 | 61.0             |
| <b>C1602</b>   | 2            | 16       | 65/34        | 0.025                     | 0.64 | 0.035                 | 0.89 | 0.335        | 8.51 | 55.0             |

\*Capacitance between one conductor and other conductors connected to shield

## Applications:

### C1201:

- High-impedance microphones
- Broadcast and studio use
- Communication and audio systems
- Suggested voltage rating: 300 volts

### C1202, C1602:

- Low-impedance microphones
- Studio use
- Control circuits
- Video and interconnecting cables
- Shielded power supplies
- Suggested voltage rating: 300 volts

## Features:

- Precision engineered to transmit clear, noise-free signals
- Minimizes electrical "hum"
- Resistant to oil, acid, sunlight, abrasion and aging
- Excellent noise rejection

## Compliances:

- RoHS Compliant Directive 2002/95/EC

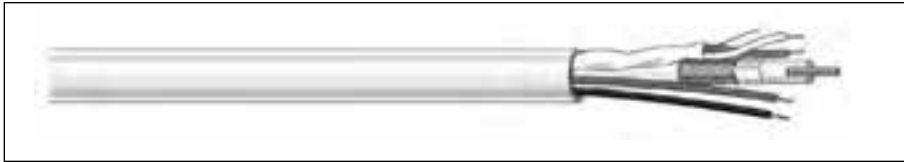
## Packaging:

- Please contact Customer Service for packaging and color options

## Color Code Chart

| NO. OF COND. | COLOR |
|--------------|-------|
| 1            | White |
| 2            | Black |

# SMPTE-311 Hybrid Fiber Optic/Copper Camera Cable



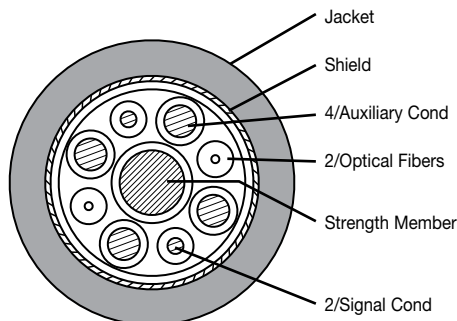
| CATALOG NUMBER | AUXILIARY CONDUCTOR                                                            | SIGNAL COND.                                                                  | OPTICAL FIBER              | STRENGTH MEMBER                      | SHIELD              | JACKET                                           |
|----------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------|--------------------------------------|---------------------|--------------------------------------------------|
| 742608         | (4) 20 AWG 26/34 Strand Tinned Cu High-density Polyethylene Insul. O.D. 0.060" | (2) 25 AWG 7/33 Strand Tinned Cu High-density Polyethylene Insul. O.D. 0.045" | (2) 9.5 Micron Single-Mode | 14 AWG 19/27 Strand Galvanized Steel | 95% Braid Tinned CU | Flexible PVC (HQA) Black 0.362" O.D. 9.20 mm     |
| 574608         | (4) 20 AWG 26/34 Strand Tinned Cu High-density Polyethylene Insul. O.D. 0.060" | (2) 25 AWG 7/33 Strand Tinned Cu High-density Polyethylene Insul. O.D. 0.045" | (2) 9.5 Micron Single-Mode | 14 AWG 19/27 Strand Galvanized Steel | 95% Braid Tinned CU | Ruggedized Outdoor TPR Black 0.362" O.D. 9.20 mm |

NOTE: General Cable manufactures the above cables in a wide range of alternate AWG sizes, pair counts and jacket colors. Please consult Customer Service for details.

## Cable Characteristics

| ELEMENT NUMBER        | (1) AUXILIARY CONDUCTORS       | (2) SIGNAL CONDUCTORS          | (3) SINGLEMODE FIBER OPTIC            |
|-----------------------|--------------------------------|--------------------------------|---------------------------------------|
| CONDUCTOR DCR         | 35.29Ω/Km max @20°C            | 97.5Ω/Km max @20°C             | <i>Mode Field Data</i> 9.5+/-1 Micron |
| DC LOOP RESISTANCE    | 43Ω/Km max @20°C               | 184Ω/Km max @20°C              | <i>Cladding Data</i> 125+/-1 Micron   |
| INSULATION RESISTANCE | 10,000Ω/Km max @20°C           | 10,000Ω/Km max @20°C           | <i>Buffer Material</i> Thermoplastic  |
| DIELECTRIC STRENGTH   | 1750V RMS@20°C, 60Hz for 1 min | 1750V RMS@20°C, 60Hz for 1 min |                                       |
| VOLTAGE RATING        | 300V Max                       | 300V Max                       |                                       |
| COLOR                 | C1, C3-Black<br>C2, C4-White   | C1-Red<br>C2-Gray              | C1-Blue<br>C2-Yellow                  |

## TYPICAL CROSS SECTION



## Product Construction:

### Conductor:

- Element #1: 4 auxiliary conductors (used as two)  
Size: 20 AWG; stranded tinned annealed copper  
Insulation: High-density polyethylene O.D.: 0.060" nom. (1.53mm)
- Element #2: 2 single conductors  
Size: 24 AWG; stranded tinned annealed copper  
Insulation: High-density polyethylene 0.045" nom. (1.12mm)
- Element #3: Singlemode fiber optic
- Element #4: Strength member in core  
Size: 16 AWG; stranded insulated galvanized steel cable  
Color: White  
O.D.: 0.083" nom. (2.1mm)

### Fillers:

- Fibrillated polypropylene as needed for roundness

### Binder:

- Paper tape with 25% overlap

### Braid Shield:

- Flexibly designed braid shield with 85% nom. coverage

### Jacket:

- Flexible PVC (HQA)
- Temperature range: -40°C to +75°C
- Humidity 0 to 95%
- TPR ruggedized outdoor version

### Jacket Marking:

- HELIX/HITEMP P/N XXXXXX\* SINGLE-MODE FIBER OPTIC/ELECTRICAL HD CAMERA CABLE (RU) AWM STYLE 21059 80C 300V VW-1

### Cable Weight:

- 87.6 lbs/Mft nom. (130.8Kg/KM)

### Performance:

- Meets/exceeds SMPTE-311 M-1998

### Connector:

- LEMO connector (call LEMO for more information at 800.444.5366)
- SMPTE standard 304 video connector

### Compliances:

- UL Subject 758
- AWM Style 21059

### Packaging:

- Please consult Customer Service for packaging and color options

\*XXXXXX - indicates part number

# Electronic News Gathering/Field Production Camera Cable

**Product Construction:**

**Applications:**

- Ideal for TV broadcast and CCTV applications
- Suited for controlling, powering and transmitting audio and video signals for TV cameras
- Additional uses include remote control, monitor and cue line systems

**Features:**

- Provides excellent circuit isolation
- Superior durability characteristics in a variety of environmental conditions

**Packaging and Jacket Colors:**

- Please contact Customer Service for packaging and color options



| CATALOG NUMBER | COAXIAL COMPONENT                                                                                                                       | SIGNAL PAIR                                                                                                  | POWER PAIR                                                                   | JACKET                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------|
| 742605         | 1/C 25 AWG Stranded 7/33 Bare Copper<br>High-density Polyethylene Insulation<br>90% Bare Copper Braid<br>PVC Jacket<br>O.D. 0.175" Nom. | 1/PR 24 AWG Stranded 19/36 Bare Copper<br>Polyethylene Insulation + Foil<br>24 AWG Drain<br>O.D. 0.140" Nom. | 1/PR 22 AWG Stranded 26/36 Bare Copper<br>PVC Insulation<br>O.D. 0.100" Nom. | Matte Black "HQA" PVC<br>O.D. .495" Nom. |

NOTE: General Cable manufactures the above cables in a wide range of alternate AWG sizes, pair counts and jacket colors. Please consult Customer Service for details.

# Specialty Cable



General Cable has a variety of wire and cable available for special applications. This section includes an array of products from our Fluorobus flat bus ground/power distribution cable to high-speed serial interface cable, known as Fire Wire, and computer cables.

For more information on these cables or for other special applications, please contact your General Cable sales representative.

| Index                              | Page    |
|------------------------------------|---------|
| Armored Electronics Products Guide | 179-180 |
| Wind Energy                        | 181     |
| Fluorobus Cable                    | 182     |
| Fire Wire                          | 183     |
| Computer Cable                     | 184     |
| Composite Data and Control Cable   | 185     |

**CAROL  
BRAND****ELECTRONICS  
WIRE & CABLE**

## ■ Armored Electronics Products

**General Cable now offers the capability to armor virtually any Carol® Brand Electronics cable.**

This rugged exterior and protection allows for the installation of almost any Electronics cable in markets with the toughest and most rigorous building code requirements. Cables placed in armor are not only acceptable for use in Riser applications, but according to NEC Article 300.22(B), these cables are acceptable in Plenum applications as well.

**The process to convert a standard Carol Brand Electronics cable to an armored cable is simple and is explained on the back of this bulletin.** All you really need to know is:

- 1) which cable you want to armor,
- 2) whether you want steel or aluminum interlock armor, and
- 3) what put-up lengths you would like to receive product on.

**General Cable continues to expand its Carol Brand Electronics product offering to allow our customers to participate in more diversified markets.** You can always *Demand Better...Expect More™* with General Cable Carol Brand Electronics cables. We manufacture over 1,300 standard electronic cables that we ship direct from stock, and we have the technical staff and design expertise to meet any customer cable requirement.



### Special Application Cable

Hook-Up Wire

Plenum Cable

Coaxial Cable

Microphone Cable

Computer Cable

General Purpose Cable

Multi-Conductor Communication  
& Control Cable

Multi-Paired Communication  
& Control Cable

Fire Alarm Cable

Sound & Security Cable

## HOW TO ARMOR YOUR ELECTRONICS

**Step 1 - Find a Carol Brand part # in the catalog that you want to armor.**

**Step 2 - Build your Carol Brand Armored part #**

### Carol® Brand Communication & Control Cable, Multi-Conductor, Unshielded

| CATALOG NUMBER | NO. OF COND. | AWG SIZE | COND. STRAND. | NOM. INSULATION THICKNESS |      | NOMINAL JACKET THICKNESS |      | NOMINAL O.D. |      | NOM. C-C CAP. pF/FT |
|----------------|--------------|----------|---------------|---------------------------|------|--------------------------|------|--------------|------|---------------------|
|                |              |          |               | INCHES                    | mm   | INCHES                   | mm   | INCHES       | mm   |                     |
| C2409A         | 2            | 14       | 19/0147       | 0.030                     | 0.81 | 0.032                    | 0.81 | 0.260        | 6.61 | 30.5                |

- 1 Pick the root part # you want to armor.
- 2 Pick the put-up length that you want.
- 3 Pick the color of jacket for the wire.
- 4 Pick the type of armor you want.

**C2409A**<sup>1</sup>

**Root #**

**41**<sup>2</sup>

**Put-Up**

**02**<sup>3</sup>

**Cable Jacket Color**

**A**<sup>4</sup>

**Armor Indicator**

**Armored Part # looks like: C2409A.41.02A**

Description is now: 14 AWG / 2 Conductor, Unshielded, White Jacket Communication Cable in Aluminum Armor on a 1000' Reel.

## Armor Codes & Charts

### Armor Sizing Chart

| CABLE DIAMETER | ARMOR STRIP WIDTH | CLEARANCE (IN) | ARMOR O.D. (IN) | ARMOR WEIGHT (LBS/MFT) |
|----------------|-------------------|----------------|-----------------|------------------------|
| 0.190          | 3/8"              | 0.060          | 0.350           | 29.000                 |
| 0.250          | 3/8"              | 0.100          | 0.450           | 38.600                 |
| 0.300          | 3/8"              | 0.100          | 0.500           | 43.400                 |
| 0.350          | 3/8"              | 0.100          | 0.550           | 48.300                 |
| 0.400          | 3/8"              | 0.100          | 0.600           | 53.100                 |
| 0.450          | 3/8"              | 0.100          | 0.650           | 57.900                 |
| 0.500          | 3/8"              | 0.100          | 0.700           | 62.700                 |
| 0.550          | 3/8"              | 0.100          | 0.750           | 67.600                 |
| 0.600          | 3/8"              | 0.100          | 0.800           | 72.400                 |
| 0.650          | 3/8"              | 0.100          | 0.850           | 77.200                 |
| 0.700          | 1/2"              | 0.100          | 0.900           | 109.400                |
| 0.750          | 1/2"              | 0.100          | 0.950           | 115.800                |
| 0.800          | 1/2"              | 0.100          | 1.000           | 122.300                |

### Wire Jacket Color

| CODE | COLOR        |
|------|--------------|
| 01   | BLACK        |
| 02   | WHITE        |
| 03   | RED          |
| 04   | ORANGE       |
| 05   | YELLOW       |
| 06   | GREEN        |
| 07   | DARK BLUE    |
| 08   | BROWN        |
| 09   | MAROON       |
| 10   | GRAY         |
| 11   | ANTIQUE GOLD |
| 12   | IVORY        |
| 13   | PINK         |

NOTE: Additional colors available

### Armor Codes

| TYPE     | CODE |
|----------|------|
| Aluminum | A    |
| Steel    | S    |

### Put-Up Codes

| SIZE  | CODE |
|-------|------|
| 250'  | 35   |
| 500'  | 38   |
| 1000' | 41   |

NOTE 1: Consult factory for additional put-up lengths  
NOTE 2: Product provided on reels

### Products in the Electronics Catalog that can be armored:

Section 2 - Communication & Control Cable, Multi-Conductor  
Section 3 - Communication & Control Cable, Multi-Paired  
Section 4 - Computer Cable  
Section 5 - Coaxial Cable

Section 6 - Fire Alarm / Life Safety Cable  
Section 7 - Sound, Alarm, & Security  
Section 8 - Audio / Home Entertainment Cable

# Delivering the renewable power of **Wind Energy**

Wind knows no boundaries,  
and neither does General Cable.

## **Answering the Call**

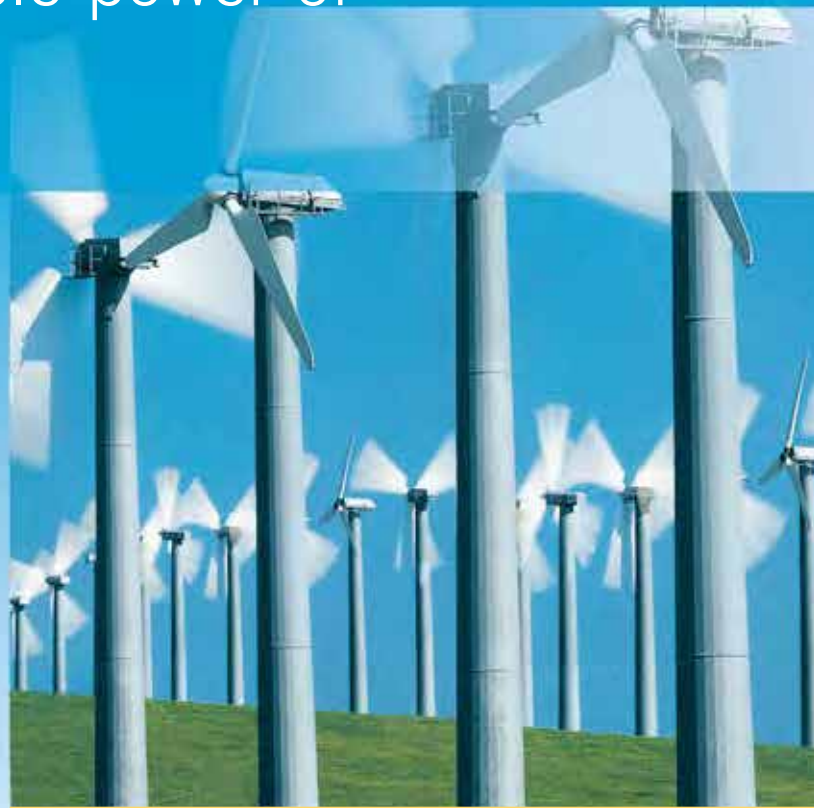
Wind. It's plentiful, renewable, and clean. That's why wind power has increased more than fivefold since the beginning of the 21st century, taking center stage as the fastest growing alternative energy source in the global arena. With increased energy demand and mounting political pressure, alternative energy mandates are cropping up all over the world, with many countries calling for significant growth in wind generation capacity over the next decade. General Cable has the experience, the innovation, and the global presence to answer that call.

Since the first modern wind turbine was developed in the 1980s, General Cable has been committed to delivering the renewable power of wind energy through ground-breaking wire and cable technologies. General Cable has developed cables that are flexible yet tough enough to withstand the continuous motion of today's wind turbines. Our commitment to providing the highest quality and reliable products lowers cost and extends turbine operating life by reducing failures and maintaining continuous power.

## **Knowing No Boundaries**

Wind knows no boundaries, and neither does General Cable. From Brazil, Mexico, and the U.S. to Germany, Spain, China, India, and Australia, initiatives are in place to increase wind power, with targets to support a significantly higher percentage of energy needs.

With a solid presence in North America, South America, Europe, Asia, Africa, the Middle East, and Oceania, General Cable has the geographical presence to focus on region-specific wind power needs and to meet domestic and global specifications. At the same time, General Cable's



*One Company* approach means we have a keen ability to unite and leverage our broad knowledge and shared resources to bring innovative solutions to the entire world.

## **Setting the Benchmark**

Whether it is terrestrial wind farms requiring direct buried cables or offshore wind farms requiring high-performance submarine cables, General Cable has one of the most diverse and expansive ranges of products to meet virtually every application in the wind power industry. From fiber optic and bare overhead conductors to underground URD and low-voltage power, control, and electronic cables, General Cable offers the full array of cables needed for wind turbines to generate, distribute, and transmit energy.

As the benchmark in the wire and cable industry, renowned for our engineering and material development capabilities, General Cable is positioned to rapidly respond to the needs of the evolving wind farm market with next-generation cabling systems.

Call us today at **888.593.3355** for additional information.

# Fluorobus Cable

## Flat Bus Ground / Power Distribution Cable

| CATALOG NUMBER      | CONDUCTOR                        | INSULATION        | FINISHED DIMENSIONS | DCR                              | POWER RATING                  |
|---------------------|----------------------------------|-------------------|---------------------|----------------------------------|-------------------------------|
| <b>SP00C0011010</b> | Flat Solid BC<br>0.010" x 0.987" | Tetzel®<br>(ETFE) | 0.028 x 1.022       | 0.82 Ohms per<br>1000 ft. @ 25°C | 32 Amps Nom.<br>100 Amps Max. |
| <b>SP00C0012010</b> | Flat Solid BC<br>0.020" x 0.987" | Tetzel®<br>(ETFE) | 0.037 x 1.022       | 0.41 Ohms per<br>1000 ft. @ 25°C | 64 Amps Nom.<br>100 Amps Max. |

Information is subject to change without notice.

### Applications:

- Ideally suited for low-voltage primary and secondary power distribution in electronic and data processing equipment. High-speed, solid-state circuits require relatively high currents with low voltage. For this reason, it is essential that DC power distribution lines have low inductance, low resistance and high capacitance. More important, tightly bundled or laminated flat cable source-and-return circuits deliver lower impedance and higher capacitance by one to two orders of magnitude, compared to round wire circuits with equal resistance.
- This system can serve as a low-cost flexible alternative to laminated bus bars. The Fluorobus low-profile routing capability is a useful packaging feature, and its large surface area (relative to round wire conductor of equal resistance) provides improved heat dissipation, minimizes voltage drop and results in a higher current rating.
- This flat conductor circuit delivers superior EMI/RFI performance, both as a source and as a receiver.

| Features            | Benefits                                                                   |
|---------------------|----------------------------------------------------------------------------|
| Low Profile:        | Conserves space                                                            |
| Flexible:           | Ease of routing                                                            |
| Large Surface Area: | Improved heat dissipation<br>minimizes voltage drop<br>High current rating |

### Temperature Rating:

- -50°C to +150°C

### Voltage Rating:

- 300 volts and 600 volts (AWM) available (consult Customer Service)

### Dielectric Constant:

- 2.6

### Dielectric Strength:

- 900 VRMS

### Packaging and Color:

- Please consult Customer Service for packaging and color options

# Fire Wire\*

## IEEE 1394 High-Speed Serial Interface

### Applications:

- Transport digital data for computers and for professional and consumer electronic products
- Personal computers
- Audio/image/video products
- Printers/scanners
- Disc arrays
- Digital video cameras/displays/recorders

### Compliances:

- UL: AWM 20276
- 80°C 30V VW-1
- CSA: PCC FT1

### Packaging and Jacket Colors:

- Please consult Customer Service for packaging and color options



#### CATALOG NUMBER

**Z028C0061110**

| SIGNAL PAIRS                                                                                                          | POWER CONDUCTOR                                                     | OVERALL SHIELDING                          | OVERALL JACKET | SIGNAL PR. IMPED. | SIGNAL PR. CAPAC. | NOM. MHz | ATTENUATION |      |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------|----------------|-------------------|-------------------|----------|-------------|------|
|                                                                                                                       |                                                                     |                                            |                |                   |                   |          | DB          | 100' |
| 2/C #22<br>7/36 TC<br><br>Foam Poly Insulation<br>Individual Foil & Braid<br>No. 1: Red, Green<br>No. 2: Blue, Orange | 2/C #22<br>7/36 TC<br><br>Polyolefin Insulation<br><br>Black, White | Aluminum/ Mylar® (Foil Out)<br>+ 95% Braid | Flexible PVC   | 110 Ohms          | 12.5 pF/ft        | 1000.0   | 37          | 55   |

\* Apple Computer trademark

# Computer Cable

Mainframes, Data Transfer, Tape Drives, File Servers, Disc Drives, Workstations, Disc Arrays, Personal Computers, etc.

| PART NUMBER         | APPLICATION   | DESCRIPTION                       |
|---------------------|---------------|-----------------------------------|
| <b>EO28P0501510</b> | HIPPI         | 50 Pair, 28 AWG, 105 Ohm          |
| <b>EO24C0045510</b> | Fiber Channel | 2 Pair "Quad", 24 AWG, 150 Ohm    |
| <b>EO26C0045510</b> | Fiber Channel | 2 Pair "Quad", 26 AWG, 150 Ohm    |
| <b>EO28C0045510</b> | Fiber Channel | 2 Pair "Quad", 28 AWG, 150 Ohm    |
| <b>EO30C0045510</b> | Fiber Channel | 2 Pair "Quad", 30 AWG, 150 Ohm    |
| <b>EO28P0181510</b> | IEEE-1284     | 18 Pair, 28 AWG, O/A Foil + Braid |

Test & Measurement, Data Transfer, Electronic Publishing, Video Conferencing, Sound Synthesizers, PC Workstations, Multi-Media, Consumer Electronics, Cable TV, Digital Cameras/Camcorders, etc.

| PART NUMBER         | APPLICATION           | DESCRIPTION                |
|---------------------|-----------------------|----------------------------|
| <b>ZO28C0066110</b> | IEEE-1394 (Fire Wire) | 2 Pair, 28 AWG, 2/C 22 AWG |

ISDN, CD-ROM Drives, Modems, Scanners, Printers, Audio I/O Devices, Keyboards, Telephone ISDN, etc.

| PART NUMBER         | APPLICATION          | DESCRIPTION                |
|---------------------|----------------------|----------------------------|
| <b>ZO28C0042010</b> | Universal Serial Bus | 1 Pair, 28 AWG, 2/C 20 AWG |
| <b>ZO28C0042210</b> | Universal Serial Bus | 1 Pair, 28 AWG, 2/C 22 AWG |
| <b>ZO28C0042410</b> | Universal Serial Bus | 1 Pair, 28 AWG, 2/C 24 AWG |
| <b>ZO28C0042610</b> | Universal Serial Bus | 1 Pair, 28 AWG, 2/C 26 AWG |
| <b>ZO28C0042810</b> | Universal Serial Bus | 1 Pair, 28 AWG, 2/C 28 AWG |

Video Monitors, CRTs, Workstations

| PART NUMBER         | APPLICATION  | DESCRIPTION               |
|---------------------|--------------|---------------------------|
| <b>ZO28C0101120</b> | Monitor 10/C | 3/Coax 28 AWG, 7/C 28 AWG |

## Applications:

- General Cable manufactures a diverse array of multiconductor cables for computers and the interconnection of their peripherals. Today's need for speed and signal capacity demands the most in cable materials and construction. Our state-of-the-art manufacturing allows us to control impedance, minimize signal skew and provide the proper shielding for applications from USB and Fire Wire right up through the latest Fiber Channel protocols. Whether your applications require parallel or serial signal transmission, General Cable has the technology to fill your needs.

## Packaging and Jacket Colors:

- Please consult Customer Service for packaging and color options

# Composite Data and Control Cable

NEC Type CMP (UL) c(UL)

## Product Construction:

### Conductor:

- 22 AWG and 18 AWG fully annealed stranded tinned copper per ASTM B-33

### Insulation:

- 22 AWG - foam FEP
- 18 AWG - plenum PVC
- Color code: See chart below

### Pair Shield (22 AWG):

- 100% Flexfoil® aluminum/polyester foil with 25% overlap, minimum
- Stranded tinned copper drain wire

### Jacket:

- Plenum PVC, natural or as requested
- Temperature range: -20°C to +75°C

## Applications:

- Multimedia systems
- Data and control circuits
- Suggested voltage rating: 300 volts

## Compliances:

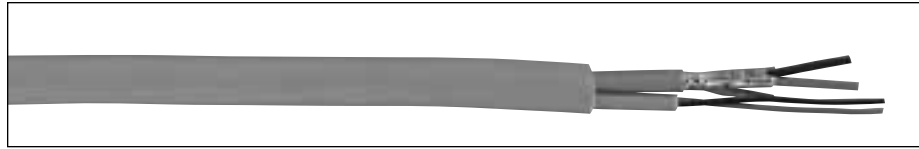
- NEC Article 800
- Designed to meet NFPA 262 and CSA FT-6 Steiner Tunnel Fire Tests for Plenum Applications

## Features:

- Fire-retardant, low-smoke jacket

## Packaging:

- Please contact Customer Service for packaging and color options



| CATALOG<br>NUMBER                                                   | NO. OF<br>PAIRS | AWG<br>SIZE | COND.<br>STRAND | NOM.<br>INSULATION<br>THICKNESS |       | NOM. JACKET<br>THICKNESS |       | NOMINAL O.D. |      | NOMINAL CAP. *<br>pF/ft |      |
|---------------------------------------------------------------------|-----------------|-------------|-----------------|---------------------------------|-------|--------------------------|-------|--------------|------|-------------------------|------|
|                                                                     |                 |             |                 | INCHES                          | mm    | INCHES                   | mm    | INCHES       | mm   | A                       | B    |
| 22 AWG SHIELDED PAIR AND 18 AWG UNSHIELDED PAIR WITH OVERALL JACKET |                 |             |                 |                                 |       |                          |       |              |      |                         |      |
| C8125                                                               | 1 each          | (22         | 7/30 TC         | 0.020                           | 0.51) | 0.015                    | 0.381 | 0.195        | 4.95 | 13 (22)                 | 35.0 |
|                                                                     |                 | (18         | 16/30 TC        | 0.009                           | 0.23) |                          |       |              |      | 30 (18)                 |      |

\*A - Capacitance between conductors

\*B - Capacitance between one conductor and other conductors connected to shield

## Color Code Chart

| AWG       | COLOR        |
|-----------|--------------|
| <b>22</b> | Blue & White |
| <b>18</b> | Black & Red  |

# Technical Information

10

As technology becomes more complex, specifying wire and cable products to meet system performance demands becomes more time-consuming and complex.

Today's system designer must be aware not only of the general transmission line types, but also of the myriad of materials available to meet specific environmental or electrical performance criteria.

This technical section is presented to aid in the selection of materials and designs which will best suit the combination of hardware and transmission media.

For technical questions regarding specific transmission designs or applications, please contact General Cable's Engineering Department.

| <b>Index</b>                                               | <b>Page</b> |
|------------------------------------------------------------|-------------|
| Insulation & Jacket Properties                             | 187         |
| Decimal Conversion Factors                                 | 188         |
| Unit Conversion Factors                                    | 189         |
| Temperature Conversion Chart                               | 190         |
| Conduit Capacity Chart                                     | 191         |
| Coax Connector Cross Reference                             | 192-199     |
| AWG Conductor Chart                                        | 200         |
| Cable Design Equations—Braid Shield                        | 201         |
| Coaxial Cable                                              | 202         |
| Balanced Pair                                              | 203         |
| Engineering Prefixes                                       | 204         |
| Glossary                                                   | 205-215     |
| Abbreviations & Acronyms                                   | 216-218     |
| Product Finders—Hook-Up Wire                               | 219         |
| Multi-Conductor Cable                                      | 220-222     |
| Multi-Paired Cable                                         | 223-225     |
| NEC/CEC Substitution Chart                                 | 226-227     |
| Agency Symbols                                             | 228         |
| Agency Approval Index                                      | 229         |
| Put-Ups and Color Codes                                    | 230         |
| Applications Index                                         | 231-233     |
| Belden-to-General Cable Carol® Brand Cross Reference Index | 234-239     |
| Part Number Index                                          | 240-246     |
| Notes                                                      | 247         |

# Insulation & Jacket Properties

## TYPICAL PROPERTIES OF COMMON INSULATING MATERIALS

| PARAMETER                                                        | PVC                | PE             | PP             | XLPE       | NYLON              | FEP           | TFE           | BUTYL RUBBER | SILICONE RUBBER      | TPR        |
|------------------------------------------------------------------|--------------------|----------------|----------------|------------|--------------------|---------------|---------------|--------------|----------------------|------------|
| Specific Gravity                                                 | 1.37               | 0.92           | 0.89           | 0.93-1.18  | 1.09               | 2.16          | 2.17          | 1.40         | 1.24                 | 1.16-1.20  |
| Dielectric Constant<br>(a) 60 Hz<br>(b) 1000 Hz                  | 6.0<br>5.0         | 2.26<br>2.26   | 2.6            | 3.0<br>3.0 | 4.6<br>4.5         | 2.15<br>2.15  | 2.1<br>2.1    | 4.1<br>4.0   | 3.3<br>3.1           | 2.8<br>2.8 |
| Dielectric Strength, v/mil<br>(a) 0.010" wall<br>(b) 0.040" wall | 1800<br>800        | 2100<br>1050   | 850<br>450     | -<br>700   | 1000<br>470        | 2000<br>950   | 2000<br>950   | 700<br>500   | 600<br>400           | 625        |
| Tensile Strength, PSI x 1000                                     | 1.5-3.8            | 1.4-2.4        | 2.9-4.5        | 1.8-2.5    | 8.8-11.9           | 2.3-3.1       | 2.0-6.0       | 0.5-1.5      | 0.6-1.2              | 2.3        |
| Service Temp, Range, °C                                          | -55/+105           | -90/+90        | -40/+105       | -80/+75    | -55/+105           | -90/+200      | -90/+260      | -40/+90      | -80/+200             | -55/+90    |
| Elongation, %                                                    | 200-375            | 350-550        | 700            | 250-400    | 150-380            | 200-330       | 200-500       | 200-400      | 125-400              | 500        |
| Water Absorption, % in 24 hr                                     | <0.75              | <0.02          | <0.02          | <0.01      | 2.5                | <0.01         | <0.01         | <1.0         | <1.0                 | <0.6       |
| Flame Resistance                                                 | Self Extinguishing | Supports Flame | Supports Flame | Slow Flame | Self Extinguishing | Non-Flammable | Non-Flammable | Slow Burning | Slow (Non-Cond. Ash) | Flammable  |
| Ozone Resistance                                                 | Excellent          | Good           | Excellent      | Good       | Good               | Excellent     | Excellent     | Excellent    | Excellent            | Excellent  |
| Flexibility                                                      | Good               | Good           | Good           | Good-Fair  | Good-Fair          | Good          | Good          | Excellent    | Excellent            | Excellent  |
| Abrasion Resistance                                              | Good               | Good           | Fair           | Excellent  | Excellent          | Excellent     | Excellent     | Poor         | Poor                 | Good-Fair  |
| Acid Resistance                                                  | Excellent          | Excellent      | Excellent      | Excellent  | Excellent          | Poor          | Excellent     | Excellent    | Good                 | Excellent  |
| Base Resistance                                                  | Excellent          | Excellent      | Excellent      | Excellent  | Excellent          | Excellent     | Excellent     | Good         | Good                 | Excellent  |
| Hydraulic Fluid Resistance                                       | Good-Fair          | Fair-Poor      | Fair           | Good-Fair  | Good-Fair          | Excellent     | Excellent     | Poor         | Fair-Poor            | Poor       |
| Organic Solvent Resistance                                       | Fair-Poor          | Poor           | Fair           | Fair       | Good-Fair          | Excellent     | Excellent     | Good-Fair    | Poor                 | Poor       |

NOTE: The above is representative of performance. For specific compound performance, consult Customer Service.

## TYPICAL PROPERTIES OF COMMON JACKETING MATERIALS

| PARAMETER                    | PVC                | PE             | NYLON     | FEP           | TFE           | SILICONE RUBBER           | NEOPRENE           | POLY-URETHANE | TPR       |
|------------------------------|--------------------|----------------|-----------|---------------|---------------|---------------------------|--------------------|---------------|-----------|
| Specific Gravity             | 1.37               | 0.92           | 1.09      | 2.16          | 2.17          | 1.24                      | 1.52               | 1.3           | 1.16-1.20 |
| Tensile Strength, PSI x 1000 | 1.5-3.8            | 1.4-2.4        | 8.8-11.9  | 2.3-3.1       | 2.0-6.0       | 0.6-1.2                   | 2.5-4.0            | >3.5          | 2.3       |
| Elongation, %                | 200-375            | 350-550        | 150-380   | 200-330       | 200-500       | 125-400                   | 300-500            | 540-700       | 500       |
| Service Temp, Range, °C      | -55/+105           | -80/+75        | -55/+105  | -90/+200      | -90/+200      | -80/+200                  | -65/+90            | -65/+75       | -55/+90   |
| Ozone Resistance             | Excellent          | Good           | Good      | Excellent     | Excellent     | Excellent                 | Excellent          | Good          | Excellent |
| Weatherability               | Good-Fair          | Excellent-Good | Fair-Poor | Excellent     | Excellent     | Excellent                 | Good               | Good          | Excellent |
| Flame Resistance             | Self Extinguishing | Supports Flame | Flammable | Non-Flammable | Non-Flammable | Slow-Burn (Non-Cond. Ash) | Self Extinguishing | Slow Burn     | Flammable |
| Flexibility                  | Good               | Good           | Good-Fair | Good          | Good          | Excellent                 | Excellent          | Excellent     | Excellent |
| Abrasion Resistance          | Good               | Good           | Excellent | Excellent     | Excellent     | Poor                      | Excellent          | Excellent     | Good-Fair |
| Acid Resistance              | Excellent          | Excellent      | Poor      | Excellent     | Excellent     | Poor                      | Good               | Fair          | Excellent |
| Base Resistance              | Excellent          | Excellent      | Excellent | Excellent     | Excellent     | Good                      | Good               | Fair          | Excellent |
| Hydraulic Fluid Resistance   | Good-Fair          | Fair-Poor      | Good-Fair | Excellent     | Excellent     | Fair-Poor                 | Good               | Poor          | Good      |
| Organic Solvent Resistance   | Fair-Poor          | Poor           | Good-Fair | Excellent     | Excellent     | Poor                      | Good               | Poor          | Poor      |
| Resistance to Tearing        | Good               | Good           | Excellent | Good          | Good          | Fair                      | Good               | Excellent     | Good-Fair |

NOTE: The above is representative of performance. For specific compound performance, consult Customer Service.

# Decimal Conversion Factors

FRACTIONS, DECIMALS AND MILLIMETER CONVERSION CHART

| FRACTIONS OF AN INCH |    |    |   |   |   | EQUIVALENTS |       |
|----------------------|----|----|---|---|---|-------------|-------|
| 64                   | 32 | 16 | 8 | 4 | 2 | DECIMALS    | mm    |
| 1                    |    |    |   |   |   | 0.016       | 0.40  |
| 2                    | 1  |    |   |   |   | 0.031       | 0.79  |
| 3                    |    |    |   |   |   | 0.047       | 1.19  |
| 4                    | 2  | 1  |   |   |   | 0.063       | 1.59  |
| 5                    |    |    |   |   |   | 0.078       | 1.98  |
| 6                    | 3  |    |   |   |   | 0.094       | 2.38  |
| 7                    |    |    |   |   |   | 0.109       | 2.78  |
| 8                    | 4  | 2  | 1 |   |   | 0.125       | 3.18  |
| 9                    |    |    |   |   |   | 0.141       | 3.57  |
| 10                   | 5  |    |   |   |   | 0.156       | 3.97  |
| 11                   |    |    |   |   |   | 0.172       | 4.37  |
| 12                   | 6  | 3  |   |   |   | 0.188       | 4.76  |
| 13                   |    |    |   |   |   | 0.203       | 5.16  |
| 14                   | 7  |    |   |   |   | 0.219       | 5.56  |
| 15                   |    |    |   |   |   | 0.234       | 5.95  |
| 16                   | 8  | 4  | 2 | 1 |   | 0.250       | 6.35  |
| 17                   |    |    |   |   |   | 0.266       | 6.75  |
| 18                   | 9  |    |   |   |   | 0.281       | 7.14  |
| 19                   |    |    |   |   |   | 0.297       | 7.54  |
| 20                   | 10 | 5  |   |   |   | 0.313       | 7.94  |
| 21                   |    |    |   |   |   | 0.328       | 8.33  |
| 22                   | 11 |    |   |   |   | 0.344       | 8.73  |
| 23                   |    |    |   |   |   | 0.359       | 9.13  |
| 24                   | 12 | 6  | 3 |   |   | 0.375       | 9.53  |
| 25                   |    |    |   |   |   | 0.391       | 9.92  |
| 26                   | 13 |    |   |   |   | 0.406       | 10.32 |
| 27                   |    |    |   |   |   | 0.422       | 10.72 |
| 28                   | 14 | 7  |   |   |   | 0.438       | 11.11 |
| 29                   |    |    |   |   |   | 0.453       | 11.51 |
| 30                   | 15 |    |   |   |   | 0.469       | 11.91 |
| 31                   |    |    |   |   |   | 0.484       | 12.30 |
| 32                   | 16 | 8  | 4 | 2 | 1 | 0.500       | 12.70 |

| FRACTIONS OF AN INCH |    |    |   |   |   | EQUIVALENTS |       |
|----------------------|----|----|---|---|---|-------------|-------|
| 64                   | 32 | 16 | 8 | 4 | 2 | DECIMALS    | mm    |
| 33                   |    |    |   |   |   | 0.516       | 13.10 |
| 34                   | 17 |    |   |   |   | 0.531       | 13.49 |
| 35                   |    |    |   |   |   | 0.547       | 13.89 |
| 36                   | 18 | 9  |   |   |   | 0.563       | 14.29 |
| 37                   |    |    |   |   |   | 0.578       | 14.68 |
| 38                   | 19 |    |   |   |   | 0.594       | 15.08 |
| 39                   |    |    |   |   |   | 0.609       | 15.48 |
| 40                   | 20 | 10 | 5 |   |   | 0.625       | 15.88 |
| 41                   |    |    |   |   |   | 0.641       | 16.27 |
| 42                   | 21 |    |   |   |   | 0.656       | 16.67 |
| 43                   |    |    |   |   |   | 0.672       | 17.07 |
| 44                   | 22 | 11 |   |   |   | 0.688       | 17.46 |
| 45                   |    |    |   |   |   | 0.703       | 17.86 |
| 46                   | 23 |    |   |   |   | 0.719       | 18.26 |
| 47                   |    |    |   |   |   | 0.734       | 18.65 |
| 48                   | 24 | 12 | 6 | 3 |   | 0.750       | 19.05 |
| 49                   |    |    |   |   |   | 0.766       | 19.45 |
| 50                   | 25 |    |   |   |   | 0.781       | 19.84 |
| 51                   |    |    |   |   |   | 0.797       | 20.24 |
| 52                   | 26 | 13 |   |   |   | 0.813       | 20.64 |
| 53                   |    |    |   |   |   | 0.828       | 21.03 |
| 54                   | 27 |    |   |   |   | 0.844       | 21.43 |
| 55                   |    |    |   |   |   | 0.859       | 21.83 |
| 56                   | 28 | 14 | 7 |   |   | 0.875       | 22.23 |
| 57                   |    |    |   |   |   | 0.891       | 22.62 |
| 58                   | 29 |    |   |   |   | 0.906       | 23.02 |
| 59                   |    |    |   |   |   | 0.922       | 23.42 |
| 60                   | 30 | 15 |   |   |   | 0.938       | 23.81 |
| 61                   |    |    |   |   |   | 0.953       | 24.21 |
| 62                   | 31 |    |   |   |   | 0.969       | 24.61 |
| 63                   |    |    |   |   |   | 0.984       | 25.00 |
| 64                   | 32 | 16 | 8 | 4 | 2 | 1.000       | 25.40 |

# Unit Conversion Factors

## CONVERSION FACTORS

| UNIT                                | X | CONSTANT    | = | UNIT                                   | UNIT                                               | X | CONSTANT        | = | UNIT                                         |
|-------------------------------------|---|-------------|---|----------------------------------------|----------------------------------------------------|---|-----------------|---|----------------------------------------------|
| British Thermal Unit (BTU)          |   | 778.0       |   | foot-pound (ft-lb)                     | gallons (gal)                                      |   | 3.785411        |   | liters (l)                                   |
| British Thermal Unit (BTU)          |   | 1054.35     |   | joules (j)                             | gallons (gal)                                      |   | 0.13368         |   | cubic foot (ft <sup>3</sup> )                |
| British Thermal Unit (BTU)          |   | 0.293       |   | watt-hours (w-hr)                      | gallons (gal)                                      |   | 231.0           |   | cubic inch (in <sup>3</sup> )                |
| centimeters (cm)                    |   | 0.032808    |   | feet (ft)                              | gallons (gal)                                      |   | 3785.411        |   | cubic centimeter (cm <sup>3</sup> )          |
| centimeters (cm)                    |   | 0.3937      |   | inches (in)                            | grams (g)                                          |   | 15.432          |   | grains                                       |
| centimeters (cm)                    |   | 0.00001     |   | kilometers (km)                        | gram/centimeter <sup>3</sup> (gm/cm <sup>3</sup> ) |   | 0.0361275       |   | pounds/in <sup>3</sup> (lb/in <sup>3</sup> ) |
| centimeters (cm)                    |   | 0.010       |   | meters (m)                             | horsepower (hp)                                    |   | 33013.26        |   | ft-lb/min                                    |
| centimeters (cm)                    |   | 10.0        |   | millimeters (mm)                       | horsepower (hp)                                    |   | 550.0           |   | ft-lb/sec                                    |
| circular mils (cmil)                |   | 0.00064516  |   | circular millimeters                   | horsepower (hp)                                    |   | 745.7           |   | watts (w)                                    |
| circular mils (cmil)                |   | 0.000007854 |   | inches <sup>2</sup> (in <sup>2</sup> ) | inch (in)                                          |   | 0.027178        |   | yards (yd)                                   |
| circular mils (cmil)                |   | 0.00050671  |   | square millimeters (mm <sup>2</sup> )  | inch (in)                                          |   | 0.083333        |   | feet (ft)                                    |
| circular mils (cmil)                |   | 0.7854      |   | mils <sup>2</sup>                      | inch (in)                                          |   | 0.00002540      |   | kilometer (km)                               |
| cubic centimeter (cm <sup>3</sup> ) |   | 0.000035314 |   | cubic foot (ft <sup>3</sup> )          | inch (in)                                          |   | 0.025400        |   | meter (m)                                    |
| cubic centimeter (cm <sup>3</sup> ) |   | 0.061023    |   | cubic inch (in <sup>3</sup> )          | inch (in)                                          |   | 2.54000514      |   | centimeter (cm)                              |
| cubic centimeter (cm <sup>3</sup> ) |   | 0.000001    |   | cubic meter (m <sup>3</sup> )          | inch (in)                                          |   | 25.4000514      |   | millimeter (mm)                              |
| cubic centimeter (cm <sup>3</sup> ) |   | 0.00026417  |   | gallons (gal)                          | inch (in)                                          |   | 1000.0          |   | mils                                         |
| cubic foot (ft <sup>3</sup> )       |   | 1728.0      |   | cubic in (in <sup>3</sup> )            | joules (j)                                         |   | 0.000948        |   | British Thermal Unit (BTU)                   |
| cubic foot (ft <sup>3</sup> )       |   | 28317.847   |   | cubic centimeter (cm <sup>3</sup> )    | joules (j)                                         |   | 10 <sup>7</sup> |   | ergs                                         |
| cubic inch (in <sup>3</sup> )       |   | 0.00057870  |   | cubic feet (ft <sup>3</sup> )          | liters (l)                                         |   | 61.02374        |   | cubic inch (in <sup>3</sup> )                |
| cubic inch (in <sup>3</sup> )       |   | 0.000016387 |   | cubic meter (m <sup>3</sup> )          | meters (m)                                         |   | 1.093611        |   | yard (yd)                                    |
| cubic inch (in <sup>3</sup> )       |   | 16.387064   |   | cubic centimeter (cm <sup>3</sup> )    | meters (m)                                         |   | 3.2808333       |   | feet (ft)                                    |
| cubic meter (m <sup>3</sup> )       |   | 1000000.0   |   | centimeter (cm)                        | meters (m)                                         |   | 39.37           |   | inch (in)                                    |
| cubic meter (m <sup>3</sup> )       |   | 35.314666   |   | cubic foot (ft <sup>3</sup> )          | meters (m)                                         |   | 100.0           |   | centimeter (cm)                              |
| cubic meter (m <sup>3</sup> )       |   | 264.17      |   | gallons (gal)                          | miles (mi)                                         |   | 1760.0          |   | yards (yd)                                   |
| feet (ft)                           |   | 0.00018939  |   | miles (mi)                             | miles (mi)                                         |   | 5280.0          |   | feet (ft)                                    |
| feet (ft)                           |   | 0.33333     |   | yards (yd)                             | miles (mi)                                         |   | 1.6093          |   | kilometer (km)                               |
| feet (ft)                           |   | 12          |   | inches (in)                            | millimeters (mm)                                   |   | 0.0032808       |   | feet (ft)                                    |
| feet (ft)                           |   | 0.00030480  |   | kilometer (km)                         | millimeters (mm)                                   |   | 0.03937         |   | inch (in)                                    |
| feet (ft)                           |   | 0.30480     |   | meters (m)                             | millimeters (mm)                                   |   | 0.001           |   | meters (m)                                   |
| feet (ft)                           |   | 30.480      |   | centimeters (cm)                       | millimeters (mm)                                   |   | 0.01            |   | centimeters (cm)                             |
| feet (ft)                           |   | 304.80      |   | millimeters (mm)                       | millimeters (mm)                                   |   | 39.3701         |   | mils                                         |
| feet/pound (ft/lb)                  |   | 0.00067197  |   | meters/grams (m/g)                     | millimeters (mm)                                   |   | 1000.0          |   | microns (μ)                                  |
| foot-pound (ft-lb)                  |   | 0.001285    |   | British Thermal Unit (BTU)             | watts (w)                                          |   | 44.25           |   | ft-lb/minute                                 |
| foot-pound (ft-lb)                  |   | 1.356       |   | joules (j)                             | watts (w)                                          |   | 0.737562        |   | ft-lb/sec                                    |
| foot-pound (ft-lb)                  |   | 0.1383      |   | kilogram/meter (kg/m)                  | watts (w)                                          |   | 0.001341        |   | horsepower                                   |
|                                     |   |             |   |                                        | watt-hours (w-hr)                                  |   | 3.414462        |   | British Thermal Unit (BTU)                   |

# Temperature Conversion Chart

To use this chart, find your known temperature (°F) in the shaded column.

| °C    | °F    | °C    | °F   | °C   | °F    | °C   | °F    | °C   | °F    |
|-------|-------|-------|------|------|-------|------|-------|------|-------|
| -45.0 | -49.0 | -17.2 | 1.0  | 10.6 | 51.0  | 38.3 | 101.0 | 66.1 | 151.0 |
| -44.4 | -48.0 | -16.7 | 2.0  | 11.1 | 52.0  | 38.9 | 102.0 | 66.7 | 152.0 |
| -43.9 | -47.0 | -16.1 | 3.0  | 11.7 | 53.0  | 39.4 | 103.0 | 67.2 | 153.0 |
| -43.3 | -46.0 | -15.6 | 4.0  | 12.2 | 54.0  | 40.0 | 104.0 | 67.8 | 154.0 |
| -42.8 | -45.0 | -15.0 | 5.0  | 12.8 | 55.0  | 40.6 | 105.0 | 68.3 | 155.0 |
| -42.2 | -44.0 | -14.4 | 6.0  | 13.3 | 56.0  | 41.1 | 106.0 | 68.9 | 156.0 |
| -41.7 | -43.0 | -13.9 | 7.0  | 13.9 | 57.0  | 41.7 | 107.0 | 69.4 | 157.0 |
| -41.1 | -42.0 | -13.3 | 8.0  | 14.4 | 58.0  | 42.2 | 108.0 | 70.0 | 158.0 |
| -40.6 | -41.0 | -12.8 | 9.0  | 15.0 | 59.0  | 42.8 | 109.0 | 70.6 | 159.0 |
| -40.0 | -40.0 | -12.2 | 10.0 | 15.6 | 60.0  | 43.3 | 110.0 | 71.1 | 160.0 |
|       |       |       |      |      |       |      |       |      |       |
| -39.4 | -39.0 | -11.7 | 11.0 | 16.1 | 61.0  | 43.9 | 111.0 | 71.7 | 161.0 |
| -38.9 | -38.0 | -11.1 | 12.0 | 16.7 | 62.0  | 44.4 | 112.0 | 72.2 | 162.0 |
| -38.3 | -37.0 | -10.6 | 13.0 | 17.2 | 63.0  | 45.0 | 113.0 | 72.8 | 163.0 |
| -37.8 | -36.0 | -10.0 | 14.0 | 17.8 | 64.0  | 45.6 | 114.0 | 73.3 | 164.0 |
| -37.2 | -35.0 | -9.4  | 15.0 | 18.3 | 65.0  | 46.1 | 115.0 | 73.9 | 165.0 |
| -36.7 | -34.0 | -8.9  | 16.0 | 18.9 | 66.0  | 46.7 | 116.0 | 74.4 | 166.0 |
| -36.1 | -33.0 | -8.3  | 17.0 | 19.4 | 67.0  | 47.2 | 117.0 | 75.0 | 167.0 |
| -35.6 | -32.0 | -7.8  | 18.0 | 20.0 | 68.0  | 47.8 | 118.0 | 75.6 | 168.0 |
| -35.0 | -31.0 | -7.2  | 19.0 | 20.6 | 69.0  | 48.3 | 119.0 | 76.1 | 169.0 |
| -34.4 | -30.0 | -6.7  | 20.0 | 21.1 | 70.0  | 48.9 | 120.0 | 76.7 | 170.0 |
|       |       |       |      |      |       |      |       |      |       |
| -33.9 | -29.0 | -6.1  | 21.0 | 21.7 | 71.0  | 49.4 | 121.0 | 77.2 | 171.0 |
| -33.3 | -28.0 | -5.6  | 22.0 | 22.2 | 72.0  | 50.0 | 122.0 | 77.8 | 172.0 |
| -32.8 | -27.0 | -5.0  | 23.0 | 22.8 | 73.0  | 50.6 | 123.0 | 78.3 | 173.0 |
| -32.2 | -26.0 | -4.4  | 24.0 | 23.3 | 74.0  | 51.1 | 124.0 | 78.9 | 174.0 |
| -31.7 | -25.0 | -3.9  | 25.0 | 23.9 | 75.0  | 51.7 | 125.0 | 79.4 | 175.0 |
| -31.1 | -24.0 | -3.3  | 26.0 | 24.4 | 76.0  | 52.2 | 126.0 | 80.0 | 176.0 |
| -30.6 | -23.0 | -2.8  | 27.0 | 25.0 | 77.0  | 52.8 | 127.0 | 80.6 | 177.0 |
| -30.0 | -22.0 | -2.2  | 28.0 | 25.6 | 78.0  | 53.3 | 128.0 | 81.1 | 178.0 |
| -29.4 | -21.0 | -1.7  | 29.0 | 26.1 | 79.0  | 53.9 | 129.0 | 81.7 | 179.0 |
| -28.9 | -20.0 | -1.1  | 30.0 | 26.7 | 80.0  | 54.4 | 130.0 | 82.2 | 180.0 |
|       |       |       |      |      |       |      |       |      |       |
| -28.3 | -19.0 | -0.6  | 31.0 | 27.2 | 81.0  | 55.0 | 131.0 | 82.8 | 181.0 |
| -27.8 | -18.0 | 0.0   | 32.0 | 27.8 | 82.0  | 55.6 | 132.0 | 83.3 | 182.0 |
| -27.2 | -17.0 | 0.6   | 33.0 | 28.3 | 83.0  | 56.1 | 133.0 | 83.9 | 183.0 |
| -26.7 | -16.0 | 1.1   | 34.0 | 28.9 | 84.0  | 56.7 | 134.0 | 84.4 | 184.0 |
| -26.1 | -15.0 | 1.7   | 35.0 | 29.4 | 85.0  | 57.2 | 135.0 | 85.0 | 185.0 |
| -25.6 | -14.0 | 2.2   | 36.0 | 30.0 | 86.0  | 57.8 | 136.0 | 85.6 | 186.0 |
| -25.0 | -13.0 | 2.8   | 37.0 | 30.6 | 87.0  | 58.3 | 137.0 | 86.1 | 187.0 |
| -24.4 | -12.0 | 3.3   | 38.0 | 31.1 | 88.0  | 58.9 | 138.0 | 86.7 | 188.0 |
| -23.9 | -11.0 | 3.9   | 39.0 | 31.7 | 89.0  | 59.4 | 139.0 | 87.2 | 189.0 |
| -23.3 | -10.0 | 4.4   | 40.0 | 32.2 | 90.0  | 60.0 | 140.0 | 87.8 | 190.0 |
|       |       |       |      |      |       |      |       |      |       |
| -22.8 | -9.0  | 5.0   | 41.0 | 32.8 | 91.0  | 60.6 | 141.0 | 88.3 | 191.0 |
| -22.2 | -8.0  | 5.6   | 42.0 | 33.3 | 92.0  | 61.1 | 142.0 | 88.9 | 192.0 |
| -21.7 | -7.0  | 6.1   | 43.0 | 33.9 | 93.0  | 61.7 | 143.0 | 89.4 | 193.0 |
| -21.1 | -6.0  | 6.7   | 44.0 | 34.4 | 94.0  | 62.2 | 144.0 | 90.0 | 194.0 |
| -20.6 | -5.0  | 7.2   | 45.0 | 35.0 | 95.0  | 62.8 | 145.0 | 90.6 | 195.0 |
| -20.0 | -4.0  | 7.8   | 46.0 | 35.6 | 96.0  | 63.3 | 146.0 | 91.1 | 196.0 |
| -19.4 | -3.0  | 8.3   | 47.0 | 36.1 | 97.0  | 63.9 | 147.0 | 91.7 | 197.0 |
| -18.9 | -2.0  | 8.9   | 48.0 | 36.7 | 98.0  | 64.4 | 148.0 | 92.2 | 198.0 |
| -18.3 | -1.0  | 9.4   | 49.0 | 37.2 | 99.0  | 65.0 | 149.0 | 92.8 | 199.0 |
| -17.8 | 0.0   | 10.0  | 50.0 | 37.8 | 100.0 | 65.6 | 150.0 | 93.3 | 200.0 |

## TEMPERATURE CONVERSION FORMULA

$$^{\circ}\text{C} = \frac{5}{9} (^{\circ}\text{F} - 32)$$

$$^{\circ}\text{F} = \frac{9}{5} ^{\circ}\text{C} + 32$$

# Conduit Capacity Chart

| Conduit Trade Size             | 1/2                        | 3/4                                                                                               | 1     | 1 1/4 | 1 1/2 | 2     | 2 1/2 | 3     | 3 1/2  | 4      |
|--------------------------------|----------------------------|---------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|--------|--------|
| I.D. Inches                    | 0.622                      | 0.824                                                                                             | 1.049 | 1.380 | 1.610 | 2.067 | 2.731 | 3.356 | 3.834  | 4.334  |
| Internal Area, In <sup>2</sup> | 0.304                      | 0.533                                                                                             | 0.864 | 1.496 | 2.036 | 3.356 | 5.858 | 8.846 | 11.545 | 14.753 |
| 1 Conductor (53% fill)         | 0.161                      | 0.283                                                                                             | 0.458 | 0.793 | 1.079 | 1.778 | 3.105 | 4.688 | 6.119  | 7.819  |
| 2 Conductors (31% fill)        | 0.094                      | 0.165                                                                                             | 0.268 | 0.464 | 0.631 | 1.040 | 1.816 | 2.742 | 3.579  | 4.573  |
| Conductors (40% fill)          | 0.122                      | 0.213                                                                                             | 0.346 | 0.598 | 0.814 | 1.342 | 2.343 | 3.538 | 4.618  | 5.901  |
| Cable OD Inches                | Cable Area In <sup>2</sup> | Numbers listed below are based on the 2008 NEC (40% fill ) for 3 or more non-lead covered cables. |       |       |       |       |       |       |        |        |
| 0.100                          | 0.008                      | 15                                                                                                | 26    | 43    | 76    | 104   | 170   | 244   | 375    | 504    |
| 0.125                          | 0.012                      | 9                                                                                                 | 17    | 27    | 48    | 66    | 109   | 156   | 240    | 322    |
| 0.150                          | 0.018                      | 6                                                                                                 | 11    | 19    | 33    | 46    | 75    | 108   | 166    | 224    |
| 0.175                          | 0.024                      | 5                                                                                                 | 8     | 14    | 24    | 34    | 55    | 79    | 122    | 164    |
| 0.200                          | 0.031                      | 3                                                                                                 | 6     | 10    | 19    | 26    | 42    | 81    | 93     | 126    |
| 0.225                          | 0.040                      | 3                                                                                                 | 5     | 8     | 15    | 20    | 33    | 48    | 74     | 99     |
| 0.250                          | 0.049                      | 1                                                                                                 | 4     | 6     | 12    | 16    | 27    | 39    | 60     | 80     |
| 0.275                          | 0.059                      | 1                                                                                                 | 3     | 5     | 10    | 13    | 22    | 32    | 49     | 66     |
| 0.300                          | 0.071                      | 1                                                                                                 | 2     | 4     | 8     | 11    | 18    | 27    | 41     | 56     |
| 0.325                          | 0.083                      | 1                                                                                                 | 1     | 4     | 7     | 9     | 16    | 23    | 35     | 47     |
| 0.350                          | 0.096                      | 1                                                                                                 | 1     | 3     | 6     | 8     | 13    | 19    | 30     | 41     |
| 0.375                          | 0.110                      | 1                                                                                                 | 1     | 3     | 5     | 7     | 12    | 17    | 26     | 35     |
| 0.400                          | 0.126                      | 1                                                                                                 | 1     | 2     | 4     | 6     | 10    | 15    | 23     | 31     |
| 0.425                          | 0.142                      | 1                                                                                                 | 1     | 1     | 4     | 5     | 9     | 13    | 20     | 27     |
| 0.450                          | 0.159                      | 1                                                                                                 | 1     | 1     | 3     | 5     | 8     | 12    | 18     | 24     |
| 0.475                          | 0.177                      | 0                                                                                                 | 1     | 1     | 3     | 4     | 7     | 10    | 17     | 22     |
| 0.500                          | 0.196                      | 0                                                                                                 | 1     | 1     | 3     | 4     | 6     | 9     | 15     | 20     |
| 0.525                          | 0.216                      | 0                                                                                                 | 1     | 1     | 2     | 3     | 6     | 8     | 13     | 18     |
| 0.550                          | 0.238                      | 0                                                                                                 | 1     | 1     | 1     | 3     | 5     | 8     | 12     | 16     |
| 0.575                          | 0.260                      | 0                                                                                                 | 1     | 1     | 1     | 3     | 5     | 7     | 11     | 15     |
| 0.600                          | 0.283                      | 0                                                                                                 | 0     | 1     | 1     | 2     | 4     | 6     | 10     | 14     |
| 0.625                          | 0.307                      | 0                                                                                                 | 0     | 1     | 1     | 2     | 4     | 6     | 9      | 12     |
| 0.650                          | 0.332                      | 0                                                                                                 | 0     | 1     | 1     | 1     | 4     | 5     | 8      | 11     |
| 0.675                          | 0.358                      | 0                                                                                                 | 0     | 1     | 1     | 1     | 3     | 5     | 8      | 11     |
| 0.700                          | 0.385                      | 0                                                                                                 | 0     | 1     | 1     | 1     | 3     | 5     | 7      | 10     |
| 0.725                          | 0.413                      | 0                                                                                                 | 0     | 1     | 1     | 1     | 3     | 4     | 7      | 9      |
| 0.750                          | 0.442                      | 0                                                                                                 | 0     | 1     | 1     | 1     | 3     | 4     | 6      | 8      |
| 0.775                          | 0.472                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 2     | 4     | 6      | 8      |
| 0.800                          | 0.503                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 2     | 3     | 5      | 7      |
| 0.825                          | 0.535                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 1     | 3     | 5      | 7      |
| 0.850                          | 0.567                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 1     | 3     | 5      | 6      |
| 0.875                          | 0.601                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 1     | 3     | 4      | 6      |
| 0.900                          | 0.636                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 1     | 3     | 4      | 6      |
| 0.925                          | 0.672                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 1     | 2     | 4      | 5      |
| 0.950                          | 0.709                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 1     | 2     | 4      | 5      |
| 0.975                          | 0.747                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 1     | 1     | 3      | 5      |
| 1.000                          | 0.785                      | 0                                                                                                 | 0     | 0     | 1     | 1     | 1     | 1     | 3      | 5      |
| 1.025                          | 0.825                      | 0                                                                                                 | 0     | 0     | 0     | 1     | 1     | 1     | 3      | 4      |
| 1.050                          | 0.866                      | 0                                                                                                 | 0     | 0     | 0     | 1     | 1     | 1     | 3      | 4      |
| 1.075                          | 0.908                      | 0                                                                                                 | 0     | 0     | 0     | 1     | 1     | 1     | 3      | 4      |

Notice: 1. The reader is cautioned to consult the 2008 NEC for specific information regarding conduit fill.  
 2. This Conduit Capacity Chart should only be used as a guide when attempting to estimate conduit fill.  
 3. For additional information, the reader should refer to the 2008 National Electrical Code, Chapter 9.

# Coax Connector Cross Reference

## BNC TYPE CONNECTORS

|                | CAMBRIDGE              | GEM                  | LRC         | RF INDUSTRIES  | TROMPETER      |
|----------------|------------------------|----------------------|-------------|----------------|----------------|
| CATALOG NUMBER | BNC CRIMP PLUG         | BNC COMPRESSION PLUG | SNAP-N-SEAL | BNC CRIMP PLUG | BNC CRIMP PLUG |
| <b>RG 6/U</b>  |                        |                      |             |                |                |
| <b>C3521</b>   | CPMC-68-36             | —                    | —           | RFB-1707-Q1    | 105-1516-9     |
| <b>C3523</b>   | CPMC-68-36             | 302-510CS            | —           | —              | 105-1516-9     |
| <b>C3524</b>   | CPMC-68-36             | 302-510CS            | —           | —              | 105-1516-9     |
| <b>C3525</b>   | CPMC-68-36             | —                    | —           | —              | 105-1516-9     |
| <b>C5760</b>   | CPMC-68-45             | —                    | —           | RFB-1707-Q1    | 105-1516-9     |
| <b>C5761</b>   | CPMC-68-45             | 302-5CSQS            | SNS6BNC     | —              | UPL20-34       |
| <b>C5775</b>   | CPMC-68-45             | 302-5CSQS            | SNS6BNC     | —              | 105-1153-9     |
| <b>C5776</b>   | CPMC-68-45             | —                    | SNS6BNC     | —              | 105-1153-9     |
| <b>C5777</b>   | CPMC-68-45             | —                    | SNS6BNC     | RFB-1707-Q     | 105-1153-9     |
| <b>C5778</b>   | CPMC-68-45             | —                    | SNS6BNC     | RFB-1707-Q     | 105-1153-9     |
| <b>C5785</b>   | CPFI-UG88-3 (TWIST ON) | 302-5CSQS            | SNS6QSBNC   | —              | UPL20-41       |
| <b>C5802</b>   | CPMC-68-45             | —                    | SNS6BNC     | RFB-1707-Q     | UPL20-41       |
| <b>C5804</b>   | CPMC-68-45             | —                    | SNS6BNC     | RFB-1707-Q     | UPL20-41       |
| <b>C5814</b>   | CPMC-68-45             | 302-5CSQS            | SNS6BNC     | RFB-1707-Q     | UPL20-41       |
| <b>C5822</b>   | CPMC-68-45             | 302-5CSQS            | SNS6BNC     | RFB-1707-Q     | UPL20-41       |
| <b>C5886</b>   | CPMC-68-45             | —                    | SNS6BNC     | RFB-1707-Q     | 105-1153-9     |
| <b>C5889</b>   | CPFI-UG88-3 (TWIST ON) | 302-5CSQS            | SNS6QSBNC   | —              | UPL20-41       |
| <b>C8029</b>   | CPMC-68-45             | 302-5CS              | SNS6BNC     | RFB-1707-Q     | UPL20-41       |
| <b>C8031</b>   | CPMC-68-36             | —                    | —           | RFB-1707-Q1    | 105-1516-9     |

|                | TROMPETER      |
|----------------|----------------|
| CATALOG NUMBER | BNC CRIMP PLUG |
| <b>RG 7/U</b>  |                |
| <b>C5851</b>   | PL20-48        |
| <b>C5853</b>   | 105-1677-1     |
| <b>C5856</b>   | PL20-48        |
| <b>C5857</b>   | PL20-48        |

|                | AMP        | CAMBRIDGE      | GEM            | KINGS ELECTRONICS | RF INDUSTRIES | TROMPETER      |
|----------------|------------|----------------|----------------|-------------------|---------------|----------------|
| CATALOG NUMBER | BNC PLUG   | BNC CRIMP PLUG | BNC CRIMP PLUG | BNC CRIMP PLUG    | BNC PLUG      | BNC CRIMP PLUG |
| <b>RG 8/U</b>  |            |                |                |                   |               |                |
| <b>C1108</b>   | —          | CPMC-88-17     | 305-17         | —                 | RFB-1107-1X   | PL20-52        |
| <b>C1154</b>   | 2-225295-1 | —              | —              | KC-59-577 MO6     | RFB-1101-1EN  | PL20-6A        |
| <b>C1180</b>   | —          | —              | —              | KC-59-642 MO6     | RFB-1101-1EN  | N/A            |
| <b>C1197</b>   | —          | —              | —              | —                 | RFB-1101-1SI  | PL20-6A        |
| <b>C1198</b>   | —          | —              | —              | —                 | RFB-1101-1SI  | PL20-6A        |

|                | CAMBRIDGE      | GEM            | RF INDUSTRIES  | TROMPETER      |
|----------------|----------------|----------------|----------------|----------------|
| CATALOG NUMBER | BNC CRIMP PLUG | BNC CRIMP PLUG | BNC CRIMP PLUG | BNC CRIMP PLUG |
| <b>RG 11/U</b> |                |                |                |                |
| <b>C1160</b>   | CPMC-88-26     | 305-26         | RFB-1707-R1    | UPL20-6A       |
| <b>C3528</b>   | CPMC-88-27     | —              | —              | UPL20-6A       |
| <b>C3529</b>   | CPMC-88-28     | —              | —              | UPL20-6A       |
| <b>C5011</b>   | CPMC-88-29     | —              | RFB-1707-R     | UPL20-6A       |
| <b>C5025</b>   | CPMC-88-30     | —              | RFB-1707-R     | UPL20-6A       |
| <b>C5029</b>   | CPMC-88-30     | —              | RFB-1707-R     | UPL20-6A       |
| <b>C5034</b>   | CPMC-88-32     | —              | RFB-1707-R     | UPL20-6A       |
| <b>C5039</b>   | CPMC-88-33     | —              | RFB-1707-R     | UPL20-6A       |
| <b>C5043</b>   | CPMC-88-35     | —              | RFB-1707-R     | UPL20-6A       |
| <b>C5044</b>   | CPMC-88-36     | —              | RFB-1707-R     | UPL20-6A       |

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 **General Cable**

# Coax Connector Cross Reference

## BNC TYPE CONNECTORS

|                | AMP       | CAMBRIDGE      | GEM            | IDEAL    | KINGS ELECTRONICS | RF INDUSTRIES  | TROMPETER      |
|----------------|-----------|----------------|----------------|----------|-------------------|----------------|----------------|
| CATALOG NUMBER | BNC PLUG  | BNC CRIMP PLUG | BNC CRIMP PLUG | BNC PLUG | BNC CRIMP PLUG    | BNC CRIMP PLUG | BNC CRIMP PLUG |
| <b>RG 58/U</b> |           |                |                |          |                   |                |                |
| <b>C1117</b>   | 22709-5   | CPMC-88-1      | 305-1          | IA-3620  | 755-115-5         | RFB-1106-2     | PL20-1         |
| <b>C1155</b>   | 22709-5   | CPMC-88-1      | 305-1          | IA-3620  | 755-115-5         | RFB-1106-2     | PL20-1         |
| <b>C1166</b>   | 22709-5   | CPMC-88-1      | 305-1          | IA-3620  | 755-115-5         | RFB-1106-2     | PL20-1         |
| <b>C1178</b>   | 22709-5   | CPMC-88-1      | 305-1          | IA-3620  | 755-115-5         | RFB-1106-2     | PL20-1         |
| <b>C1188</b>   | 22709-5   | CPMC-88-1      | 305-1          | IA-3620  | —                 | RFB-1106-2     | PL20-1         |
| <b>C3519</b>   | 6-22709-8 | CPMC-88-11     | 305-11         | —        | —                 | RFB-1707-7     | PL20-4         |
| <b>C3579</b>   | 6-22709-8 | CPMC-88-11     | 305-11         | IA-3623  | —                 | RFB-1707-7     | PL20-4         |
| <b>C5779</b>   | 6-22709-8 | CPMC-88-1      | 305-1          | —        | —                 | —              | 105-1598-1     |

|                | AMP      | CAMBRIDGE          | GEM                  | KINGS ELECTRONICS | LRC             | RF INDUSTRIES  | TROMPETER      |
|----------------|----------|--------------------|----------------------|-------------------|-----------------|----------------|----------------|
| CATALOG NUMBER | BNC PLUG | BNC CRIMP PLUG     | BNC COMPRESSION PLUG | BNC CRIMP PLUG    | SNAP-N-SEAL BNC | BNC CRIMP PLUG | BNC CRIMP PLUG |
| <b>RG 59/U</b> |          |                    |                      |                   |                 |                |                |
| <b>C1102</b>   | —        | CPMC-78-2          | 307-2 (Crimp)        | —                 | SNS59BNC        | RFB-1707-D1    | UPL20-2        |
| <b>C1103</b>   | —        | CPMC-78-2          | 307-2CS              | —                 | —               | RFB-1707-D1    | UPL20-2        |
| <b>C1104</b>   | —        | CPMC-78-2          | 307-2 (Crimp)        | —                 | SNS59BNC        | RFB-1707-D     | UPL20-2        |
| <b>C1106</b>   | —        | CPMC-78-2          | 307-2 (Crimp)        | —                 | SNS59BNC        | RFB-1707-D     | UPL20-2        |
| <b>C1110</b>   | —        | CPMC-78-2          | 307-2 (Crimp)        | —                 | SNS59BNC        | RFB-1707-D     | UPL20-2        |
| <b>C1112</b>   | —        | CPMC-78-2          | 307-2 (Crimp)        | —                 | SNS59BNC        | RFB-1707-D     | UPL20-2        |
| <b>C1135</b>   | —        | CPMC-78-2          | 307-2 (Crimp)        | —                 | SNS59BNC        | RFB-1707-D     | UPL20-2        |
| <b>C1142</b>   | —        | CPMC-68-35         | 307-2CS              | —                 | SNS59BNC        | RFB-1707-W     | UPL20-2A       |
| <b>C1158</b>   | —        | CPMC-78-18         | 307-18 (Crimp)       | —                 | —               | —              | UPL20-22       |
| <b>C3500</b>   | —        | CPMC-68-35         | 302-10CS             | —                 | —               | —              | 105-1287-9     |
| <b>C3526</b>   | —        | CPMC-68-50         | —                    | —                 | —               | —              | 105-1184-9     |
| <b>C3527</b>   | —        | CPMC-68-35         | —                    | —                 | —               | —              | UPL20-53       |
| <b>C5770</b>   | —        | CPMC-68-35         | 302-2CS              | —                 | —               | RFB-1707-W     | UPL20-2A       |
| <b>C5780</b>   | —        | CPMC-68-35         | 302-2CS              | —                 | SNS59BNC        | RFB-1707-W     | UPL20-2A       |
| <b>C5784</b>   | —        | CP-88-4 (TWIST ON) | —                    | —                 | —               | —              | 105-1558-9     |
| <b>C5830</b>   | —        | CPMC-78-2          | 307-2 (Crimp)        | —                 | SNS59BNC        | RFB-1707-D1    | UPL20-2        |
| <b>C8025</b>   | —        | CPMC-78-2          | 302-10CS             | —                 | —               | RFB-1707-D     | UPL20-2        |
| <b>C8027</b>   | —        | CPMC-78-2          | 302-10CS             | —                 | —               | —              | UPL20-2        |
| <b>C8028</b>   | —        | CPMC-78-2          | 307-2 (Crimp)        | —                 | SNS59BNC        | —              | UPL20-2        |
| <b>C8030</b>   | —        | CPMC-68-10         | —                    | —                 | —               | RFB-1707-D3    | 105-1287-9     |

|                | AMP       | CAMBRIDGE      | GEM            | KINGS ELECTRONICS | TROMPETER      |
|----------------|-----------|----------------|----------------|-------------------|----------------|
| CATALOG NUMBER | BNC PLUG  | BNC CRIMP PLUG | BNC CRIMP PLUG | BNC CRIMP PLUG    | BNC CRIMP PLUG |
| <b>RG 62/U</b> |           |                |                |                   |                |
| <b>C1162</b>   | 22709-7   | CPMC-78-2      | 307-2          | 755-155-5         | UPL20-2        |
| <b>C1164</b>   | 22709-7   | CPMC-78-2      | 307-2          | 755-155-5         | UPL20-2        |
| <b>C3520</b>   | 4-22709-9 | CPMC-68-2      | —              | —                 | 105-1287-1     |

|                 | AMP       | CAMBRIDGE      | GEM            | KINGS ELECTRONICS | RF INDUSTRIES  | TROMPETER      |
|-----------------|-----------|----------------|----------------|-------------------|----------------|----------------|
| CATALOG NUMBER  | BNC PLUG  | BNC CRIMP PLUG | BNC CRIMP PLUG | BNC CRIMP PLUG    | BNC CRIMP PLUG | BNC CRIMP PLUG |
| <b>RG 174/U</b> |           |                |                |                   |                |                |
| <b>C1156</b>    | 1-22709-6 | CPMC-88-19     | 305-19         | KC-59-557 M06     | RFB-1106-5     | PL20-5         |

|                  | AMP        | CAMBRIDGE      | GEM            | RF INDUSTRIES  | TROMPETER      |
|------------------|------------|----------------|----------------|----------------|----------------|
| CATALOG NUMBER   | BNC PLUG   | BNC CRIMP PLUG | BNC CRIMP PLUG | BNC CLAMP PLUG | BNC CLAMP PLUG |
| <b>RG 213 /U</b> |            |                |                |                |                |
| <b>C1176A</b>    | 2-225395-1 | CPMC-88-26     | 305-26         | RFB-1101-1SI   | PL20-6A        |



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# Coax Connector Cross Reference

## F-TYPE CONNECTORS

|                | CAMBRIDGE    | GEM                | GILBERT         |                    | IDEAL INDUSTRIES |
|----------------|--------------|--------------------|-----------------|--------------------|------------------|
| CATALOG NUMBER | F-TYPE CRIMP | F-TYPE COMPRESSION | F-TYPE CRIMP    | F-TYPE COMPRESSION | F-TYPE           |
| <b>RG 6/U</b>  |              |                    |                 |                    |                  |
| <b>C3521</b>   | CPF-56-ALM   | 0406-4 (Crimp)     | GF-6-AHS/USA    | Contact Gilbert    | –                |
| <b>C3523</b>   | CPF-56-ALM   | 0406-610CS         | NS-8101-15      | Contact Gilbert    | –                |
| <b>C3524</b>   | CPF-56-ALM   | 0406-610CS         | Contact Gilbert | Contact Gilbert    | –                |
| <b>C3525</b>   | CPF-56-ALM   | 0406-4 (Crimp)     | Contact Gilbert | Contact Gilbert    | –                |
| <b>C5760</b>   | CPF-56-ALM   | 0406-4 (Crimp)     | GF-6-AHS/USA    | GF-UR-6            | –                |
| <b>C5761</b>   | CPF-56-ALM   | 0406-6CSQS         | GF-6-AHS/USA    | GF-UR-6            | 85-037           |
| <b>C5775</b>   | CPF-56-ALM   | 0406-6CSQS         | GF-6-AHS/USA    | GF-UR-6            | 85-037           |
| <b>C5776</b>   | CPF-56-ALM   | 0406-4 (Crimp)     | GF-6-AHS/USA    | GF-UR-6            | 85-037           |
| <b>C5777</b>   | CPF-56-ALM   | 0406-4 (Crimp)     | GF-6-AHS/USA    | GF-UR-6            | 85-037           |
| <b>C5778</b>   | CPF-56-ALM   | 0406-4 (Crimp)     | GF-6-AHS/USA    | GF-UR-6            | –                |
| <b>C5785</b>   | CPF-56-ALM   | 0406-6CSQS         | GF-6-AHS/USA    | GF-UR-6            | 85-057           |
| <b>C5802</b>   | CPF-56-ALM   | 0406-4 (Crimp)     | GF-6-AHS/USA    | GF-UR-6            | 85-037           |
| <b>C5804</b>   | CPF-56-ALMWP | –                  | GF-6-AHS/USA    | GF-UR-6            | 85-037           |
| <b>C5814</b>   | CPF-56-ALM   | 0406-6CSQS         | GF-6-AHS/USA    | GF-UR-6            | 85-037           |
| <b>C5822</b>   | CPF-56-ALM   | 0406-6CSQS         | GF-6-AHS/USA    | GF-UR-6            | 85-037           |
| <b>C5886</b>   | CPF-56-ALM   | 0406-4 (Crimp)     | GF-6-AHS/USA    | GF-UR-6            | 85-037           |
| <b>C5889</b>   | CPF-56-ALS   | 0406-6CSQS         | GF-6-AHS/USA    | GF-UR-6            | 85-057           |
| <b>C8029</b>   | CPF-56-ALM   | 0406-6CS           | Contact Gilbert | Contact Gilbert    | –                |
| <b>C8031</b>   | CPF-56-ALM   | 0406-4 (Crimp)     | Contact Gilbert | Contact Gilbert    | –                |

|                       | LRC          |             | PPC                                |                                              |                      | TROMPETER    |
|-----------------------|--------------|-------------|------------------------------------|----------------------------------------------|----------------------|--------------|
| CATALOG NUMBER        | F-TYPE CRIMP | SNAP-N-SEAL | U SERIES<br>U-INDOOR<br>SU-OUTDOOR | UV SERIES<br>UV-INDOOR<br>SUV INDOOR/OUTDOOR | EX<br>INDOOR/OUTDOOR | F-TYPE CRIMP |
| <b>RG 6/U (cont.)</b> |              |             |                                    |                                              |                      |              |
| <b>C3521</b>          | –            | –           | CFS 6 PL                           | –                                            | EX6P or EX6XLP       | –            |
| <b>C3523</b>          | –            | –           | CFS 6 PL                           | –                                            | EX6P or EX6XLP       | –            |
| <b>C3524</b>          | –            | –           | CFS 6 PL                           | –                                            | EX6P or EX6XLP       | –            |
| <b>C3525</b>          | –            | –           | –                                  | –                                            | –                    | –            |
| <b>C5760</b>          | –            | –           | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | –            |
| <b>C5761</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5774</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5775</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | –            |
| <b>C5776</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5777</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5778</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5785</b>          | AMF6         | SNS6QS      | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | –            |
| <b>C5802</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5804</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5810</b>          | –            | –           | –                                  | –                                            | –                    | PL130SC-017  |
| <b>C5812</b>          | –            | –           | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | –            |
| <b>C5814</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5822</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5824</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5826</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5886</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | –            |
| <b>C5888</b>          | AMF6         | SNS6        | CFS 6 U (SU)                       | CFS 6 UV (SUV)                               | EX6 or EX6XLP        | PL130SC-020  |
| <b>C5889</b>          | AMF6         | SNS6QS      | –                                  | –                                            | –                    | –            |
| <b>C5890</b>          | AMF6         | SNS6        | –                                  | –                                            | –                    | PL130SC-020  |
| <b>C8029</b>          | AMF6         | SNS6        | –                                  | –                                            | –                    | PL130SC-020  |
| <b>C8031</b>          | –            | –           | –                                  | –                                            | –                    | –            |

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# Coax Connector Cross Reference

## F-TYPE CONNECTORS

| CATALOG NUMBER | GILBERT             |                    | LRC          |             | PPC                                |                                                     |                      |
|----------------|---------------------|--------------------|--------------|-------------|------------------------------------|-----------------------------------------------------|----------------------|
|                | F-TYPE CRIMP        | F-TYPE COMPRESSION | F-TYPE CRIMP | SNAP-N-SEAL | U SERIES<br>U-INDOOR<br>SU-OUTDOOR | PNU SERIES<br>PNU-INDOOR<br>PNSU INDOOR/<br>OUTDOOR | EX<br>INDOOR/OUTDOOR |
| <b>RG 7/U</b>  |                     |                    |              |             |                                    |                                                     |                      |
| <b>C5851</b>   | GAF-236/051-AHS/368 | GAF-UST-7          | AMF7         | SNS7B       | CFS 7 U (SU)                       | CFS 7 PNU (PNSU)                                    | EX 7                 |
| <b>C5853</b>   | GAF-236/051-AHS/368 | GAF-UST-7          | –            | –           | CFS 7 U (SU)                       | CFS 7 PNU (PNSU)                                    | EX 7                 |
| <b>C5856</b>   | GAF-236/051-AHS/368 | GAF-UST-7          | –            | –           | CFS 7 U (SU)                       | CFS 7 PNU (PNSU)                                    | EX 7                 |
| <b>C5857</b>   | GAF-236/051-AHS/398 | GAF-UST-7Q         | –            | –           | CFS 7 U (SU)                       | CFS 7 PNU (PNSU)                                    | –                    |

| CATALOG NUMBER | CAMBRIDGE    | GILBERT         |                    | LRC          |             | PPC                                |                                                  |                          |
|----------------|--------------|-----------------|--------------------|--------------|-------------|------------------------------------|--------------------------------------------------|--------------------------|
|                | F-TYPE CRIMP | F-TYPE CRIMP    | F-TYPE COMPRESSION | F-TYPE CRIMP | SNAP-N-SEAL | U SERIES<br>U-INDOOR<br>SU-OUTDOOR | UV SERIES<br>UV-INDOOR<br>SUB INDOOR/<br>OUTDOOR | EX<br>INDOOR/<br>OUTDOOR |
| <b>RG 11/U</b> |              |                 |                    |              |             |                                    |                                                  |                          |
| <b>C1160</b>   | CPF-11-ALM   | Contact Gilbert | Contact Gilbert    | –            | –           | –                                  | –                                                | –                        |
| <b>C3528</b>   | CPF-11-ALM   | Contact Gilbert | Contact Gilbert    | –            | –           | –                                  | –                                                | –                        |
| <b>C3529</b>   | CPF-11-ALM   | Contact Gilbert | Contact Gilbert    | –            | –           | –                                  | –                                                | –                        |
| <b>C5011</b>   | CPF-11-ALM   | GF-11-AHS/460   | GAF-UST-11         | AMF11        | SNS11AS     | CFS 11 U (SU)                      | CFS 11 PNU (PNSU)                                | EX 11                    |
| <b>C5025</b>   | CPF-11-ALM   | Contact Gilbert | Contact Gilbert    | –            | –           | CFS 11 U (SU)                      | CFS 11 PNU (PNSU)                                | EX 11                    |
| <b>C5029</b>   | CPF-11-ALM   | GF-11-AHS/460   | GAF-UST-11         | AMF11        | SNS11AS     | CFS 11 U (SU)                      | CFS 11 PNU (PNSU)                                | EX 11                    |
| <b>C5034</b>   | CPF-11-ALM   | GF-11-AHS/460   | GAF-UST-11         | AMF11        | SNS11AS     | CFS 11 U (SU)                      | CFS 11 PNU (PNSU)                                | EX 11                    |
| <b>C5039</b>   | CPF-11-ALM   | GF-11-AHS/460   | GAF-UST-11         | AMF11        | SNS11AS     | CFS 11 U (SU)                      | CFS 11 PNU (PNSU)                                | EX 11                    |
| <b>C5043</b>   | CPF-11-ALM   | GF-11-AHS/460   | GAF-UST-11         | AMF11        | SNS11AS     | CFS 11 U (SU)                      | CFS 11 PNU (PNSU)                                | EX 11                    |
| <b>C5044</b>   | –            | GF-11-AHS/480   | GAF-UST-11Q        | AMF11        | SNS11AS     | CFS 11 U (SU)                      | CFS 11 PNU (PNSU)                                | EX 11                    |

| CATALOG NUMBER | CAMBRIDGE    | GEM                | GILBERT         |                    | IDEAL INDUSTRIES | LRC          |             |
|----------------|--------------|--------------------|-----------------|--------------------|------------------|--------------|-------------|
|                | F-TYPE CRIMP | F-TYPE COMPRESSION | F-TYPE CRIMP    | F-TYPE COMPRESSION | F-TYPE           | F-TYPE CRIMP | SNAP-N-SEAL |
| <b>RG 59/U</b> |              |                    |                 |                    |                  |              |             |
| <b>C1102</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | GF-59-AHS/USA   | GF-UR-59           | 85-036           | AMF59        | SNS59       |
| <b>C1103</b>   | CPF-59-ALM   | 0459-2CS           | GF-59-AHS/USA   | GF-UR-59           | 85-036           | –            | –           |
| <b>C1104</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | GF-59-AHS/USA   | GF-UR-59           | 85-036           | AMF59        | SNS59       |
| <b>C1106</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | GF-59-AHS/USA   | GF-UR-59           | 85-036           | AMF59        | SNS59       |
| <b>C1110</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | GF-59-AHS/USA   | GF-UR-59           | 85-036           | AMF59        | SNS59       |
| <b>C1112</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | GF-59-AHS/USA   | GF-UR-59           | 85-036           | AMF59        | SNS59       |
| <b>C1135</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | GF-59-AHS/USA   | GF-UR-59           | 85-036           | AMF59        | SNS59       |
| <b>C1142</b>   | CPF-59-ALM   | 0459-2CS           | GF-59-AHS/USA   | GF-UR-59           | 85-036           | AMF59        | SNS59       |
| <b>C1158</b>   | –            | –                  | GF-1097-17      | Contact Gilbert    | –                | –            | –           |
| <b>C3500</b>   | –            | 0459-10CS          | Contact Gilbert | Contact Gilbert    | –                | –            | –           |
| <b>C3526</b>   | –            | –                  | Contact Gilbert | Contact Gilbert    | –                | –            | –           |
| <b>C3527</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | Contact Gilbert | Contact Gilbert    | –                | –            | –           |
| <b>C5770</b>   | CPF-59-ALM   | 0459-2CS           | Contact Gilbert | Contact Gilbert    | 85-036           | –            | –           |
| <b>C5780</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | GF-59-AHS/USA   | GF-UR-59           | 85-036           | AMF59        | SNS59       |
| <b>C5784</b>   | –            | –                  | GF-59-AHS/357   | Contact Gilbert    | 85-059           | –            | SNS59QS     |
| <b>C5830</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | GF-59-AHS/USA   | GF-UR-59           | 85-036           | AMF59        | SNS59       |
| <b>C8025</b>   | CPF-59-ALM   | 0459-10CS          | Contact Gilbert | Contact Gilbert    | –                | –            | –           |
| <b>C8027</b>   | CPF-59-ALM   | 0459-10CS          | Contact Gilbert | Contact Gilbert    | –                | –            | –           |
| <b>C8028</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | Contact Gilbert | Contact Gilbert    | –                | AMF59        | SNS59       |
| <b>C8030</b>   | CPF-59-ALM   | 0459-2M (Crimp)    | Contact Gilbert | Contact Gilbert    | –                | –            | –           |

# Coax Connector Cross Reference

## F-TYPE CONNECTORS

| CATALOG NUMBER         | PPC                                |                                                  |                      | TROMPETER    |
|------------------------|------------------------------------|--------------------------------------------------|----------------------|--------------|
|                        | U SERIES<br>U-INDOOR<br>SU-OUTDOOR | UV SERIES<br>UV-INDOOR<br>SUV INDOOR/<br>OUTDOOR | EX<br>INDOOR/OUTDOOR | F-TYPE CRIMP |
| <b>RG 59/U (cont.)</b> |                                    |                                                  |                      |              |
| <b>C1102</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-014  |
| <b>C1103</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-013  |
| <b>C1104</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-013  |
| <b>C1106</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-013  |
| <b>C1110</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-013  |
| <b>C1112</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-013  |
| <b>C1135</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-013  |
| <b>C1142</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-023  |
| <b>C1158</b>           | –                                  | –                                                | –                    | PL130SC-008  |
| <b>C3500</b>           | –                                  | –                                                | –                    | –            |
| <b>C3526</b>           | –                                  | –                                                | –                    | –            |
| <b>C3527</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-023  |
| <b>C5770</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-022  |
| <b>C5780</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-023  |
| <b>C5784</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | –            |
| <b>C5830</b>           | CFS 59 U (SU)                      | CFS 59 UV (SUV)                                  | EX59 or EX59XL       | PL130SC-013A |
| <b>C8025</b>           | –                                  | –                                                | –                    | PL130SC-013  |
| <b>C8027</b>           | –                                  | –                                                | –                    | PL130SC-013  |
| <b>C8028</b>           | –                                  | –                                                | –                    | PL130SC-013A |
| <b>C8030</b>           | –                                  | –                                                | –                    | –            |

| TROMPETER      |              |
|----------------|--------------|
| CATALOG NUMBER | F-TYPE CRIMP |
| <b>RG 62/U</b> |              |
| <b>C1162</b>   | PL130SC-013  |
| <b>C1164</b>   | PL130SC-013  |
| <b>C3520</b>   | –            |

| TROMPETER       |              |
|-----------------|--------------|
| CATALOG NUMBER  | F-TYPE CRIMP |
| <b>RG 174/U</b> |              |
| <b>C1156</b>    | PL130SC-004  |

# Coax Connector Cross Reference

## N-TYPE CONNECTORS

|                | TROMPETER         |
|----------------|-------------------|
| CATALOG NUMBER | N-TYPE CRIMP PLUG |
| <b>RG 6/U</b>  |                   |
| <b>C3521</b>   | —                 |
| <b>C3523</b>   | —                 |
| <b>C3524</b>   | —                 |
| <b>C3525</b>   | —                 |
| <b>C5760</b>   | —                 |
| <b>C5761</b>   | UPL95-34          |
| <b>C5775</b>   | —                 |
| <b>C5776</b>   | —                 |
| <b>C5777</b>   | —                 |
| <b>C5778</b>   | —                 |
| <b>C5785</b>   | —                 |
| <b>C5802</b>   | —                 |
| <b>C5804</b>   | —                 |
| <b>C5814</b>   | —                 |
| <b>C5822</b>   | UPL95-41          |
| <b>C5886</b>   | —                 |
| <b>C5889</b>   | UPL95-41          |
| <b>C8029</b>   | UPL95-41          |
| <b>C8031</b>   | —                 |

|                | TROMPETER         |
|----------------|-------------------|
| CATALOG NUMBER | N-TYPE CRIMP PLUG |
| <b>RG 7/U</b>  |                   |
| <b>C5851</b>   | PL95-48           |
| <b>C5853</b>   | N/A               |
| <b>C5856</b>   | PL95-48           |
| <b>C5857</b>   | PL95-48           |

|                | AMP              | CAMBRIDGE         | KINGS ELECTRONICS | LRC         | RF INDUSTRIES     | TROMPETER   |
|----------------|------------------|-------------------|-------------------|-------------|-------------------|-------------|
| CATALOG NUMBER | N-TYPE PLUG      | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG | N-TYPE PLUG | N-TYPE CRIMP PLUG | N-TYPE PLUG |
| <b>RG 8/U</b>  |                  |                   |                   |             |                   |             |
| <b>C1108</b>   | —                | —                 | —                 | —           | RFN-1007-2SX      | —           |
| <b>C1154</b>   | 225661-2 (Mil)   | CPN-68-8          | KN-59-176         | —           | RFN-1006-3E       | PL95-6A     |
|                | 415232-6         |                   |                   |             | RFN-1006-3E       |             |
| <b>C1180</b>   | —                | CPN-8/110         | 1205-4-9          | NM8HB10     | RFN-1006-3I       | —           |
| <b>C1198</b>   | 1-225661-6 (Mil) | CPN-68-8          | 1205-4-9          | —           | RFN-1006-3I       | PL95-6A     |
|                | 414160-4         |                   |                   |             |                   |             |

|                | CAMBRIDGE         | TROMPETER         |
|----------------|-------------------|-------------------|
| CATALOG NUMBER | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG |
| <b>RG 11/U</b> |                   |                   |
| <b>C1160</b>   | CPN-8             | UPL95-6A          |
| <b>C3528</b>   | CPN-8             | UPL95-6A          |
| <b>C3529</b>   | CPN-8             | UPL95-6A          |
| <b>C5011</b>   | CPN-8             | UPL95-6A          |
| <b>C5025</b>   | CPN-68-8          | UPL95-6A          |
| <b>C5029</b>   | CPN-8             | UPL95-6A          |
| <b>C5034</b>   | CPN-8             | UPL95-6A          |
| <b>C5039</b>   | CPN-8             | UPL95-6A          |
| <b>C5043</b>   | CPN-8             | UPL95-6A          |
| <b>C5044</b>   | CPN-68-8          | UPL95-6A          |

# Coax Connector Cross Reference

## N-TYPE CONNECTORS

|                | AMP              | CAMBRIDGE         | KINGS ELECTRONICS | RF INDUSTRIES     | TROMPETER         |
|----------------|------------------|-------------------|-------------------|-------------------|-------------------|
| CATALOG NUMBER | N-TYPE PLUG      | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG |
| <b>RG 58/U</b> |                  |                   |                   |                   |                   |
| <b>C1117</b>   | 1-225661-2 (Mil) | CPN-68-1          | 1205-19-5         | RFN-1005-3C       | PL95-1            |
|                | 415232-2         |                   |                   |                   |                   |
| <b>C1155</b>   | 1-225661-2 (Mil) | CPN-68-1          | 1205-19-5         | RFN-1005-3C       | PL95-1            |
|                | 415232-2         |                   |                   |                   |                   |
| <b>C1166</b>   | 1-225661-2 (Mil) | CPN-68-1          | 1205-19-5         | RFN-1005-3C       | PL95-1            |
|                | 415232-2         |                   |                   |                   |                   |
| <b>C1178</b>   | 1-225661-2 (Mil) | CPN-68-1          | 1205-19-5         | RFN-1005-3C       | PL95-1            |
|                | 415232-2         |                   |                   |                   |                   |
| <b>C1188</b>   | 1-225661-2 (Mil) | CPN-68-1          | —                 | RFN-1005-3C       | PL95-1            |
|                | 415232-2         |                   |                   |                   |                   |
| <b>C3519</b>   | —                | CPN-1             | —                 | —                 | PL95-4            |
| <b>C3579</b>   | —                | CPN-1             | —                 | —                 | PL95-4            |
| <b>C5779</b>   | —                | CPN-1             | —                 | —                 | —                 |

|                | AMP         | CAMBRIDGE         | GEM               | RF INDUSTRIES     | TROMPETER         |
|----------------|-------------|-------------------|-------------------|-------------------|-------------------|
| CATALOG NUMBER | N-TYPE PLUG | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG |
| <b>RG 59/U</b> |             |                   |                   |                   |                   |
| <b>C1102</b>   | —           | —                 | —                 | RFN-1907-2S       | UPL95-2           |
| <b>C1103</b>   | —           | CPN-2             | 400-2             | RFN-1907-2S       | UPL95-2           |
| <b>C1104</b>   | —           | CPN-2             | 400-2             | RFN-1907-2S       | UPL95-2           |
| <b>C1106</b>   | —           | CPN-2             | 400-2             | RFN-1907-2S       | UPL95-2           |
| <b>C1110</b>   | —           | CPN-2             | 400-2             | RFN-1907-2S       | UPL95-2           |
| <b>C1112</b>   | —           | CPN-2             | 400-2             | RFN-1907-2S       | UPL95-2           |
| <b>C1135</b>   | —           | CPN-2             | 400-2             | RFN-1907-2S       | UPL95-2           |
| <b>C1142</b>   | —           | —                 | —                 | —                 | UPL95-2A          |
| <b>C1158</b>   | —           | —                 | —                 | —                 | UPL95-22          |
| <b>C3500</b>   | —           | —                 | —                 | —                 | —                 |
| <b>C3526</b>   | —           | —                 | —                 | —                 | —                 |
| <b>C3527</b>   | —           | —                 | —                 | —                 | —                 |
| <b>C5770</b>   | —           | —                 | —                 | —                 | UPL95-2A          |
| <b>C5780</b>   | —           | —                 | —                 | —                 | UPL95-2A          |
| <b>C5784</b>   | —           | —                 | —                 | —                 | —                 |
| <b>C5830</b>   | —           | —                 | —                 | RFN-1907-2S       | UPL95-2           |
| <b>C8025</b>   | —           | CPN-2             | 400-2             | —                 | UPL95-2           |
| <b>C8027</b>   | —           | CPN-2             | 400-2             | —                 | UPL95-2           |
| <b>C8028</b>   | —           | —                 | —                 | —                 | UPL95-2           |
| <b>C8030</b>   | —           | —                 | —                 | —                 | —                 |

**CAROL  
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AMP  
Cambridge  
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www.tycoelectronics.com  
www.cambridgeconnectors.com  
www.gemelec.com  
www.idealindustries.com  
www.kingselectronics.com  
www.rfindustries.com  
www.trompeter.com

 **General Cable**

# Coax Connector Cross Reference

## N-TYPE CONNECTORS

|                | AMP         | CAMBRIDGE         | GEM               | TROMPETER   |
|----------------|-------------|-------------------|-------------------|-------------|
| CATALOG NUMBER | N-TYPE PLUG | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG | N-TYPE PLUG |
| <b>RG 62/U</b> |             |                   |                   |             |
| <b>C1162</b>   | —           | CPN-2             | 400-2             | UPL95-2     |
| <b>C1164</b>   | —           | CPN-2             | 400-2             | UPL95-2     |
| <b>C3520</b>   | —           | —                 | —                 | —           |

|                 | AMP         | RF INDUSTRIES | TROMPETER   |
|-----------------|-------------|---------------|-------------|
| CATALOG NUMBER  | N-TYPE PLUG | N-TYPE PLUG   | N-TYPE PLUG |
| <b>RG 174/U</b> |             |               |             |
| <b>C1156</b>    | —           | RFN-1005-B-03 | PL95-5      |

|                 | AMP              | CAMBRIDGE         | KINGS ELECTRONICS | RF INDUSTRIES | TROMPETER   |
|-----------------|------------------|-------------------|-------------------|---------------|-------------|
| CATALOG NUMBER  | N-TYPE PLUG      | N-TYPE CRIMP PLUG | N-TYPE CRIMP PLUG | N-TYPE PLUG   | N-TYPE PLUG |
| <b>RG 213/U</b> |                  |                   |                   |               |             |
| <b>C1176A</b>   | 1-227086-0 (MIL) | CPN-68-8          | KN-59-202         | RFN-1006-3I   | PL95-6A     |
|                 | 415232-6         |                   |                   |               |             |

## ONE-PIECE CONNECTORS

| GENERAL CABLE | WHITE SANDS ENGINEERING<br>ONE-PIECE CONNECTOR |
|---------------|------------------------------------------------|
| <b>RG 6/U</b> |                                                |
| 395025        | SLC59                                          |
|               | SLCUHEC2                                       |
| 395011        | SLC6/SLC6O                                     |
|               | SLC6Q/SLC6QO                                   |
| 395025        | BNCFP59                                        |
| 395025        | BNCFPSLC59                                     |
|               | BNCFPSLCHEC                                    |
| 395011        | BNCFP6                                         |
| 395011        | BNCFPSLC6/BNCFPSLC6G                           |
|               | BNCFPSLC6Q/BNCFPSLC6QG                         |
| 395025        | RCAFP59                                        |
| 395025        | RCAFPSLC59/RCAFPSLC59G                         |
| 395011        | RCAFPSLC6/RCAFPSLC6G                           |
|               | RCAFPSLC6QG                                    |

# AWG Conductor Chart

## COPPER CONDUCTOR DATA

The conductors used by General Cable meet the applicable requirements of ASTM specifications B-3, B-33, B-172, B-173, B-174 and B-286 and Federal Specification QQ-W-343.

The following data covers the more commonly used conductor constructions in the electrical and electronics industry. Special constructions, not shown, are available or can be designed to meet specific requirements. It is suggested that the General Cable Product Engineering Department be contacted before a specification is finalized.

| AWG | STRANDING              | TYPE<br>STRANDING <sup>(1)</sup> | DIAMETER <sup>(4)</sup> |                      | AREA              |                      | WEIGHT               |                      | D.C. RESISTANCE 20°C <sup>(2)</sup> |                         |                         |                         | BREAK STR.<br>LBS |
|-----|------------------------|----------------------------------|-------------------------|----------------------|-------------------|----------------------|----------------------|----------------------|-------------------------------------|-------------------------|-------------------------|-------------------------|-------------------|
|     |                        |                                  | in                      | mm                   | circ. mils        | sq. mm               | lbs/Mft              | kg/km                | TIN COATING <sup>(3)</sup>          |                         | BARE OF SILVER COATING  |                         |                   |
|     |                        |                                  |                         |                      |                   |                      |                      |                      | Ω/Mft                               | Ω/km                    | Ω/Mft                   | Ω/km                    |                   |
| 32  | 7/40                   | Co or Bu                         | .0096                   | .254                 | 100               | .051                 | .21                  | .31                  | 176.00                              | 577.00                  | 164.00                  | 538.00                  | 1.986             |
| 30  | Solid<br>7/38          | –<br>Bu                          | .010<br>.012            | .254<br>.305         | 100<br>112        | .051<br>.057         | .30<br>.35           | .45<br>.52           | 113.00<br>106.00                    | 371.00<br>348.00        | 104.00<br>92.60         | 340.00<br>303.00        | 3.157             |
| 28  | Solid<br>7/36          | –<br>Co                          | .01264<br>.015          | .321<br>.381         | 159<br>175        | .081<br>.089         | .48<br>.55           | .72<br>.82           | 70.80<br>67.50                      | 232.00<br>221.00        | 65.30<br>59.30          | 214.00<br>194.00        | 5.020             |
| 27  | Solid<br>7/35          | –<br>Co or Bu                    | .0142<br>.017           | .361<br>.432         | 202<br>220        | .102<br>.111         | .61<br>.69           | .91<br>1.04          | 55.60<br>53.80                      | 182.00<br>176.00        | 51.40<br>–              | 169.00<br>–             | 6.331             |
| 26  | Solid<br>7/34          | –<br>Co or Bu                    | .016<br>.019            | .404<br>.483         | 253<br>278        | .128<br>.141         | .77<br>.87           | 1.14<br>1.29         | 44.50<br>42.50                      | 146.00<br>139.00        | 41.00<br>37.30          | 135.00<br>122.00        | 7.983             |
|     | 10/36                  | Bu                               | .0193                   | .490                 | 250               | .127                 | .78                  | 1.15                 | 47.30                               | 155.00                  | 40.40                   | 133.00                  |                   |
|     | 19/38                  | Bu or Co                         | .021                    | .533                 | 304               | .154                 | .97                  | 1.44                 | 38.90                               | 128.00                  | 34.10                   | 112.00                  |                   |
|     |                        |                                  |                         |                      |                   |                      |                      |                      |                                     |                         |                         |                         |                   |
| 24  | Solid<br>7/32          | –<br>Co or Bu                    | .0201<br>.024           | .511<br>.610         | 404<br>448        | .205<br>.227         | 1.22<br>1.38         | 1.82<br>2.05         | 27.20<br>25.70                      | 89.20<br>84.20          | 25.70<br>23.10          | 84.20<br>75.90          | 12.690            |
|     | 16/36                  | Bu                               | .024                    | .610                 | 400               | .201                 | 1.25                 | 1.64                 | 29.50                               | 96.80                   | 27.50                   | 90.20                   |                   |
|     | 19/36                  | Co or Bu                         | .025                    | .635                 | 475               | .241                 | 1.48                 | 2.20                 | 24.90                               | 81.70                   | 21.80                   | 71.60                   |                   |
|     |                        |                                  |                         |                      |                   |                      |                      |                      |                                     |                         |                         |                         |                   |
| 22  | Solid<br>7/30<br>19/34 | –<br>Co or Bu<br>Bu or Eq        | .025<br>.030<br>.0315   | .643<br>.762<br>.800 | 643<br>700<br>754 | .324<br>.355<br>.382 | 1.94<br>2.19<br>2.35 | 2.89<br>3.26<br>3.50 | 16.70<br>16.60<br>15.50             | 54.80<br>54.40<br>50.80 | 16.20<br>14.80<br>13.80 | 53.20<br>48.60<br>45.10 | 19.430            |
| 20  | Solid<br>7/28          | –<br>Co or Bu                    | .032<br>.038            | .813<br>.965         | 1,020             | .519<br>.562         | 3.10<br>3.49         | 4.61<br>5.19         | 10.50<br>10.30                      | 34.40<br>33.80          | 10.10<br>9.33           | 33.20<br>30.60          | 30.890            |
|     | 10/30                  | Bu                               | .037                    | .940                 | 1,111             | .507                 | 3.14                 | 4.67                 | 11.40                               | 37.40                   | 10.40                   | 34.00                   |                   |
|     | 19/32                  | Co, Bu or Eq                     | .040                    | 1.02                 | 1,000             | .616                 | 3.84                 | 5.71                 | 9.48                                | 31.10                   | 8.53                    | 28.00                   |                   |
|     | 26/34                  | Bu                               | .039                    | .940                 | 1,216             | .523                 | 3.28                 | 4.88                 | 11.30                               | 37.10                   | –                       | –                       |                   |
|     |                        |                                  |                         |                      |                   |                      |                      |                      |                                     |                         |                         |                         |                   |
| 19  | Solid                  | –                                | .0359                   | .912                 | 1,032             | .653                 | 3.90                 | 5.80                 | –                                   | –                       | 8.05                    | 26.40                   | 38.950            |
| 18  | Solid<br>7/26          | –<br>Co or Bu                    | .0403<br>.048           | 1.024<br>1.22        | 1,290<br>1,620    | .823<br>.897         | 4.92<br>5.55         | 7.32<br>8.26         | 6.77<br>6.45                        | 22.20<br>21.20          | 6.39<br>5.55            | 21.00<br>19.20          | 49.120            |
|     | 16/30                  | Bu                               | .0475                   | 1.207                | 1,770             | .810                 | 5.01                 | 7.45                 | 7.15                                | 23.40                   | 6.48                    | 21.30                   |                   |
|     | 19/30                  | Co, Bu or Eq                     | .050                    | 1.27                 | 1,600             | .963                 | 5.95                 | 8.85                 | 6.10                                | 20.00                   | 5.46                    | 17.90                   |                   |
|     | 41/34                  | Bu                               | .049                    | 1.244                | 1,900             | .824                 | 5.09                 | 7.08                 | 7.08                                | 23.20                   | 6.60                    | 21.60                   |                   |
|     |                        |                                  |                         |                      |                   |                      |                      |                      |                                     |                         |                         |                         |                   |
| 16  | Solid<br>19/294        | –<br>Bu or Eq                    | .0508<br>.057           | 1.29<br>1.45         | 1,627<br>2,580    | 1.31<br>1.23         | 7.81<br>7.52         | 11.60<br>11.20       | 4.47<br>4.82                        | 14.70<br>15.80          | 4.16<br>4.27            | 13.60<br>14.00          | 78.100            |
|     | 19/.0117               | Bu                               | .0585                   | 1.50                 | 2,426             | 1.32                 | 8.02                 | 11.90                | 4.39                                | 14.40                   | 4.13                    | 13.50                   |                   |
|     | 26/30                  | Bu                               | .0606                   | 1.54                 | 2,601             | 1.32                 | 8.15                 | 12.10                | 4.39                                | 14.40                   | 3.99                    | 13.10                   |                   |
|     | 65/34                  | Bu                               | .060                    | 1.52                 | 2,600             | 1.31                 | 8.20                 | 11.90                | 4.47                                | 14.70                   | 4.16                    | 13.60                   |                   |
|     |                        |                                  |                         |                      |                   |                      |                      |                      |                                     |                         |                         |                         |                   |
| 14  | Solid<br>7/.0242       | –<br>Co                          | .0641<br>.073           | 1.63<br>1.85         | 2,581<br>4,110    | 2.08<br>2.08         | 12.4<br>12.7         | 18.50<br>18.90       | 2.68<br>–                           | 8.79<br>–               | 2.52<br>2.61            | 8.28<br>8.56            | 124.200           |
|     | 19/274                 | Co, Eq or Un                     | .071                    | 1.80                 | 4,100             | 1.94                 | 12.1                 | 18.00                | 3.05                                | 10.00                   | 2.71                    | 8.88                    |                   |
|     | 19/.0147               | Bu                               | .074                    | 1.88                 | 3,831             | 2.08                 | 12.7                 | 18.90                | 2.73                                | –                       | 2.61                    | 8.56                    |                   |
|     | 41/30                  | Bu                               | .077                    | 1.96                 | 4,106             | 2.08                 | 12.9                 | 19.20                | 2.81                                | 9.22                    | 2.53                    | 8.30                    |                   |
|     |                        |                                  |                         |                      |                   |                      |                      |                      |                                     |                         |                         |                         |                   |
| 12  | Solid<br>7/.0305       | –<br>Bu                          | .0808<br>.092           | 2.05<br>2.34         | 4,100<br>6,530    | 3.31<br>3.30         | 19.8<br>20.2         | 29.50<br>30.10       | 1.69<br>–                           | 5.54<br>–               | 1.59<br>1.64            | 5.21<br>5.38            | 197.500           |
|     | 19/254                 | Co, Eq or Un                     | .0905                   | 2.299                | 6,512             | 3.08                 | 19.4                 | 28.90                | 1.87                                | 6.13                    | 1.70                    | 5.59                    |                   |
|     | 19/.0185               | Cu                               | .0925                   | 2.35                 | 6,088             | 3.30                 | 20.2                 | 30.10                | –                                   | –                       | 1.64                    | 5.25                    |                   |
|     | 65/30                  | Bu                               | .094                    | 2.388                | 6,503             | 3.29                 | 20.8                 | 31.10                | 1.82                                | 5.97                    | 1.64                    | 5.25                    |                   |
|     |                        |                                  |                         |                      |                   |                      |                      |                      |                                     |                         |                         |                         |                   |
| 10  | Solid<br>7/.0385       | –<br>Co                          | .1019<br>.116           | 2.588<br>2.95        | 6,500<br>10,380   | 5.26<br>5.25         | 31.4<br>32.0         | 46.80<br>47.60       | –<br>–                              | –<br>–                  | 1.00<br>1.00            | 3.28<br>3.28            | 314.500           |
|     | 19/.0234               | Bu                               | .117                    | 2.97                 | 10,376            | 5.27                 | 32.0                 | 47.60                | –                                   | –                       | .98                     | 3.21                    |                   |
|     | 37/.0169               | Co                               | .112                    | 2.84                 | 10,404            | 4.74                 | 29.2                 | 43.40                | –                                   | –                       | 1.25                    | 4.10                    |                   |
|     | 105/30                 | Bu                               | .126                    | 3.20                 | 9,361             | 5.32                 | 33.8                 | 49.20                | 1.10                                | 3.61                    | .99                     | 3.24                    |                   |
|     |                        |                                  |                         |                      |                   |                      |                      |                      |                                     |                         |                         |                         |                   |
| 8   | 7/.0486                | Bu                               | .146                    | 3.71                 | 10,500            | 8.38                 | 50.1                 | 74.50                | –                                   | –                       | .65                     | 2.13                    |                   |
|     | 19/.0295               | Bu or Eq                         | .144                    | 3.66                 | 16,534            | 8.38                 | 50.0                 | 74.40                | –                                   | –                       | .65                     | 2.13                    |                   |
|     | 133/29                 | Ro 19 x 7/29                     | .169                    | 4.293                | 16,535            | 8.61                 | 54.0                 | 80.40                | .71                                 | 2.33                    | –                       | –                       |                   |
|     | 168/30                 | Ro 7 x 24/30                     | .174                    | 4.42                 | 16,983            | 8.51                 | 53.4                 | 79.00                | .70                                 | 2.30                    | –                       | –                       |                   |
| 6   | 19/.0374               | Bu                               | .188                    | 4.775                | 16,800            | 13.33                | 81.1                 | 121.00               | –                                   | –                       | .40                     | 1.30                    |                   |
|     | 133/27                 | Ro 19 x 7/27                     | .213                    | 5.41                 | 26,576            | 13.60                | 84.1                 | 125.00               | .43                                 | 1.41                    | –                       | –                       |                   |
|     | 266/30                 | Ro 7 x 38/30                     | .222                    | 5.64                 | 26,818            | 13.49                | 83.2                 | 124.00               | .44                                 | 1.44                    | –                       | –                       |                   |
| 4   | 133/25                 | Ro 19 x 7/25                     | .257                    | 6.53                 | 26,600            | 21.61                | 135.0                | 201.00               | .29                                 | .95                     | –                       | –                       |                   |
|     | 420/30                 | Ro 7 x 60/30                     | .270                    | 6.850                | 42,615            | 21.29                | 140.0                | 208.00               | .28                                 | .92                     | –                       | –                       |                   |
| 2   | 665/30                 | Ro 19 x 35/30                    | .338                    | 8.59                 | 42,000            | 33.72                | 213.0                | 317.00               | .18                                 | .59                     | –                       | –                       |                   |

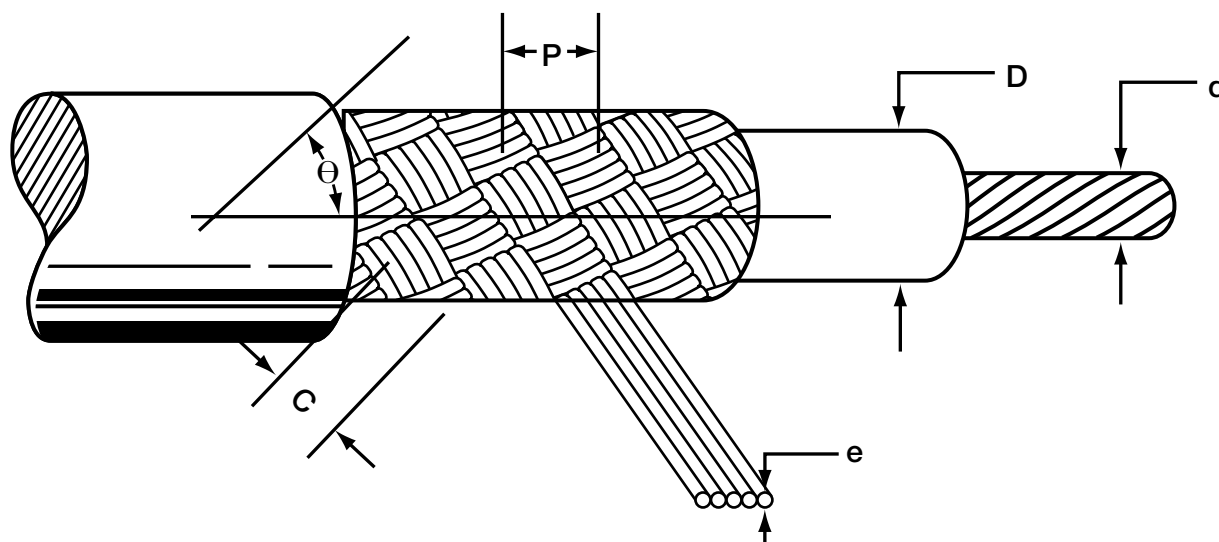
(1) Bu - Bunched; Co - Concentric; Eq - Equilay; Ro - Rope; Un - Unilay

(2) Typical DC resistance values for uninsulated wires. Multiply by 1.04 for typical values after insulation

(3) Values are for tinned, heavy tinned, prefused, overcoated or topcoated conductors

(4) Does not meet UL conductor stranding requirements

# Cable Design Equations—Braid Shield



## BRAID ANGLE:

$$\Theta = \tan^{-1} \left[ \frac{2\pi (D + 2e) P}{C} \right], \text{ DEGREES}$$

## BRAID PICKS PER INCH:

$$P = \frac{(C) (\tan \Theta)}{2\pi (M)}, \text{ PICKS/INCH}$$

## BRAID SHIELD WEIGHT:

$$W = \frac{(n) (C) (l)}{\cos \Theta}, \text{ LBS/M FT}$$

## BRAID SHIELD DC RESISTANCE:

$$R_{dc} = \cos \frac{r_{dc}}{(n) (C) (\cos \Theta)}, \Omega/\text{kft}$$

$$\% \text{ Coverage: } \%C = (2F - F^2) \times 100$$

| % Coverage Factor<br>for Common Coverage: |            |
|-------------------------------------------|------------|
| F                                         | % Coverage |
| 0.368                                     | 60         |
| 0.409                                     | 65         |
| 0.453                                     | 70         |
| 0.500                                     | 75         |
| 0.553                                     | 80         |
| 0.617                                     | 85         |

where:

- D = diameter under shield, inches
- d = diameter of center conductor, inches
- C = number of carriers
- e = diameter of end
- P = pick (measured in picks per linear inch)
- Θ = braid angle, degrees
- W = weight of shield, lbs/M ft
- n = number of ends in one carrier
- l = weight of one end in lbs/M ft
- M = D + build-up of braid on one shield wall, inches
- $R_{dc}$  = dc resistance of the braid shield,  $\Omega/\text{M ft}$
- $r_{dc}$  = dc resistance of one strand (end) of shield,  $\Omega/\text{M ft}$
- % C = percent braid coverage
- F = % coverage factor

# Cable Design Equations—Coaxial Cable

## COAXIAL CABLE CAPACITANCE:

$$C = \frac{7.36\varepsilon}{\text{LOG} \left( \frac{D}{fd} \right)}, \text{ pF/ft}$$

## COAXIAL CABLE VELOCITY OF PROPAGATION:

$$V_p = \frac{100}{\varepsilon^{1/2}}, \%$$

## COAXIAL CABLE INDUCTANCE:

$$L = 0.140 \text{ LOG} \left( \frac{D}{fd} \right), \mu\text{H/ft}$$

## COAXIAL CABLE TIME DELAY:

$$t_d = 1.016 \varepsilon^{1/2}, \text{ nsec/ft}$$

## COAXIAL CABLE IMPEDANCE:

$$Z_o = \frac{138}{\varepsilon^{1/2}} \text{ LOG} \left( \frac{D}{fd} \right), \Omega$$

## COAXIAL CABLE CUTOFF FREQUENCY:

$$f_{co} = \frac{7.50}{\varepsilon^{1/2} (D + fd)}, \text{ GHz}$$

where:

C = capacitance, pF/ft

$\varepsilon$  = insulation dielectric constant (see table below)

D = diameter under the shield, inches

d = diameter of the center conductor, inches

L = inductance,  $\mu\text{H/ft}$

f = strand factor (see Table II, page 194)

$Z_o$  = characteristic impedance,  $\Omega$

$V_p$  = velocity of propagation, %

$t_d$  = time delay, nsec/ft

$f_{co}$  = cutoff frequency, GHz

| MATERIAL               | $\varepsilon$ | POWER FACTOR, PF |
|------------------------|---------------|------------------|
| FEP Teflon® (Cellular) | 1.40          | 0.0002           |
| FEP Teflon® (Solid)    | 2.10          | 0.0003           |
| PE (Cellular)          | 1.56          | 0.0003           |
| PE (Solid)             | 2.26          | 0.0003           |
| PE (Semi-Solid)        | 1.29          | 0.0003           |

# Cable Design Equations—Balanced Pair

## CAPACITANCE (UNSHIELDED TWISTED PAIR):

$$C = \frac{2.2 \epsilon}{\text{LOG} \left[ \frac{1.3 (D)}{(f) (d)} \right]}, \text{ pF/ft}$$

## IMPEDANCE (UNSHIELDED TWISTED PAIR):

$$Z_o = \frac{1016 \epsilon^{1/2}}{C}, \Omega$$

## CAPACITANCE (SHIELDED TWISTED PAIR):

$$C = \frac{3.7 \epsilon}{\text{LOG} \left[ \frac{1.2 (D)}{(f) (d)} \right]}, \text{ pF/ft}$$

## IMPEDANCE (SHIELDED TWISTED PAIR):

$$Z_o = \frac{276}{\epsilon^{1/2}} \text{LOG} \left[ \frac{1.2 (D)}{(f) (d)} \right], \Omega$$

## CAPACITANCE (OVERALL SHIELDED & CABLED):

$$C = \frac{2.9 \epsilon}{\text{LOG} \left[ \frac{1.5 (D)}{(f) (d)} \right]}, \text{ pF/ft}$$

## IMPEDANCE (OVERALL SHIELDED & CABLED):

$$Z_o = \frac{347}{\epsilon^{1/2}} \text{LOG} \left[ \frac{1.5 (D)}{(f) (d)} \right], \Omega$$

where:

- C = mutual capacitance, pF/ft
- $\epsilon$  = insulation dielectric constant (see Table I)
- f = stranding factor (see Table II)
- d = diameter of the conductor, inches
- D = diameter over the insulation, inches
- $Z_o$  = characteristic impedance  $\Omega$

TABLE I

| DIELECTRIC CONSTANTS & $V_p$ OF INSULATIONS |            |           |
|---------------------------------------------|------------|-----------|
| MATERIAL                                    | $\epsilon$ | $V_p$ , % |
| ECTFE (Halar™)                              | 2.60       | 63        |
| FEP                                         | 2.15       | 68        |
| PFA Teflon®                                 | 2.15       | 68        |
| PVC                                         | 5.00       | 45        |
| PVC (Semi-rigid)                            | 3.60       | 53        |
| PVDF (Kynar™, SOLEF™)                       | 7.70       | 36        |
| Polyethylene                                | 2.29       | 66        |
| Polypropylene                               | 2.25       | 67        |
| Polyurethane                                | 6.50       | 39        |
| Rubber, butyl                               | 4.0        | 50        |
| Rubber, natural                             | 5.0        | 45        |
| Rubber, SBR                                 | 4.0        | 50        |
| Rubber, silicone                            | 3.1        | 57        |
| TFE Teflon®                                 | 2.1        | 69        |
| TPE                                         | 5.0        | 45        |
| Teflon®                                     | 2.10       | 69        |
| Tefzel®                                     | 2.6        | 62        |

TABLE II

| NO. OF STRANDS | f     |
|----------------|-------|
| 1              | 1.000 |
| 7              | 0.939 |
| 19             | 0.970 |
| 37             | 0.980 |
| 61             | 0.985 |
| 91             | 0.988 |

# Engineering Prefixes

| PREFIX | SYMBOL   | MULTIPLYING FACTOR |                      |
|--------|----------|--------------------|----------------------|
|        |          | SCIENTIFIC         | CONVENTIONAL         |
| tera   | T        | $10^{12}$          | 1,000,000,000,000    |
| giga   | G        | $10^9$             | 1,000,000,000        |
| mega   | M        | $10^6$             | 1,000,000            |
| kilo   | k        | $10^3$             | 1,000                |
| hecto  | h        | $10^2$             | 100                  |
| deca   | da       | $10^1$             | 10                   |
| deci   | d        | $10^{-1}$          | 0.1                  |
| centi  | c        | $10^{-2}$          | 0.01                 |
| milli  | m        | $10^{-3}$          | 0.001                |
| micro  | $\mu$    | $10^{-6}$          | 0.000001             |
| nano   | <i>n</i> | $10^{-9}$          | 0.000000001          |
| pico   | <i>p</i> | $10^{-12}$         | 0.000000000001       |
| femto  | <i>f</i> | $10^{-15}$         | 0.000000000000001    |
| atto   | <i>a</i> | $10^{-18}$         | 0.000000000000000001 |

# Glossary

**Abrasion Resistance:** Resistance to surface wear.

**AC Alternating Current (a.c.):** Current in which the charge-flow periodically reverses and is represented by:  $I = I_m \cos(2\pi f t - \phi)$  where,  $I$  is the current,  $I_m$  is the amplitude,  $f$  the frequency,  $\phi$  the phase angle.

**Accelerated Aging:** A test that attempts to duplicate long-time environmental aging in comparatively short time spans.

**Accelerator:** A chemical additive which hastens a chemical reaction under specific conditions.

**Accordion:** (1) A retractile cable with a series of equally-spaced transverse folds. (2) A connector contact with a "Z" shaped flat spring to permit high deflection without overstress.

**Adapter:** A device that enables any or all of the following 1) different sizes or types of plugs to mate with one another or to fit into a telecommunications outlet/connector; 2) the rearrangement of leads; 3) large cables with numerous wires to fan out into smaller groups of wires, 4) interconnection between cables.

**Adhesive Bonded:** Cables bonded by adding an adhesive coating to the surface of the cable components, then joining and curing the adhesive to form a cable. See *Bonded Cable*.

**Administration:** The method for labeling, identification, documentation and usage needed to implement moves, additions and changes of the telecommunications infrastructure.

**Admittance:** The measure of the ease with which an alternating current flows in a circuit. The reciprocal of impedance.

**Aerial Cable:** A cable suspended in the air on poles or other overhead structure.

**Aging:** The change in properties of a material with time under specific conditions.

**Air Core Cable:** A cable in which the interstices in the cable core are not filled with a moisture barrier.

**Air-Handling Plenum:** A designated area, closed or open, used for environmental air.

**Air Spaced Coaxial Cable:** One in which air is essentially the dielectric material. A spirally wound synthetic filament, beads or braided filaments may be used to center the conductor.

**All-Rubber Cable:** A cable in which all interstices between conductors are filled with rubber compound.

**Alligator Clip:** A mechanical device shaped like alligator jaws used as a temporary connection on the end of interconnections wire.

**Alloy:** A metal formed by combining two or more different metals to obtain desirable properties.

**Aluminum Conductor:** An aluminum wire or group of wires not suitably insulated to carry electrical current.

**Aluminum-Steel Conductor:** A composite conductor made up of a combination of aluminum and steel wires.

**Ambient Temperature:** The temperature of a medium (gas or liquid) surrounding an object.

**American Wire Gauge (AWG):** The standard system used for designating wire diameter. The lower the AWG number, the larger the diameter. Also called the Brown and Sharpe (B&S) wire gauges.

**Ampacity:** See *Current Carrying Capacity*.

**Ampere:** The unit of current. One ampere is the current flowing through one ohm of resistance at one volt potential.

**Analog:** A signaling format that uses continuous physical variables such as voltage amplitude or frequency variations to transmit information.

**Anneal:** Relief of mechanical stress through heat and gradual cooling. Annealing copper renders it less brittle.

**Annular Conductor:** A number of wires stranded in three reversed concentric layers around a core.

**Annunciator:** A signaling device, usually electrically operated, that gives an audible or visual signal (or both) when energized.

**Anti-Oxidant:** A substance which prevents or slows down oxidation of material exposed to air.

**Appliance Wire and Cable:** A classification covering insulated wire and cable for internal wiring of appliances and equipment.

**Arc Resistance:** The time required for an arc to establish a conductive path in a material.

**Armored Cable:** A cable provided with a wrapping of metal for mechanical protection.

**Attenuation:** The decrease in magnitude of the power of a signal in transmission between points. Attenuation is usually measured in decibels per unit length at a specific frequency.

**Attenuation to Crosstalk Ratio (ACR):** The difference between attenuation and crosstalk, measured in dB, at a given frequency. Important characteristic in networking transmission to assure that signal sent down a twisted pair is stronger at the receiving end, after being attenuated, than are any interference signals imposed on that same pair by crosstalk from other pairs, represented by NEXT.

**Audio Frequency:** The range of frequencies audible to the human ear. Usually 20-20,000 Hz.

**Backbone:** A facility (e.g. pathway, cable or conductors) between telecommunications closets or floor distribution terminals, the entrance facilities and the equipment rooms within or between buildings.

**Backbone Cable or Wire:** Cable or wire found in the backbone; see *Backbone*.

**Balanced Line:** A cable having two identical conductors which carry voltages opposite in polarity and equal in magnitude with respect to ground.

**Balun:** A device for matching an unbalanced coaxial transmission line to a balanced two-wire system.

**Band Marking:** A continuous circumferential band applied to a conductor at regular intervals for identification.

**Banded Cable:** Two or more cables banded together by stainless steel strapping.

**Bandwidth:** A continuous range of frequencies extending between two limiting frequencies. Also referred to as a frequency band.

**Barrel-Packed:** Method of coiling into a fiber drum for shipment.

**Baseband:** In data transmission, the use of a dedicated end-to-end connection to carry a single channel only.

**Beaded Coax:** Coaxial cable with a dielectric consisting of beads made of various materials.

**Belt:** Number of layers of insulation on a conductor, or number of layers of jacket on a cable.

**Belted-Type Cable:** Multiple conductor cable having a layer of insulation over the assembled insulated conductors.

**Bend Loss:** A form of increased attenuation caused by (1) having an optical fiber curved around a restrictive radius of curvature or (2) microbends caused by minute distortions in the fiber imposed by externally induced forces.

**Bend Radius:** Radius of curvature that a fiber optic or metallic cable can bend without any adverse effects.

**Bifilar:** A winding made non-inductive by winding together (as one wire) two wires carrying current in opposite directions.

**Billion Conductor Feet (BCF):** A quantity derived by multiplying the number of conductors in a cable by the amount of cable. Usually used to indicate plant capacity or an annual requirement.

**Bimetallic Wire:** A wire formed of two different metals joined together (not alloyed). It can include wire with a steel core clad wire, or plated or coated wire.

**Binder:** A spirally served tape or thread used for holding assembled cable components in place awaiting subsequent manufacturing operations.

**Binding Post:** A device for clamping or holding electrical conductors in a rigid position.

**Bit:** One binary (0 or 1) digit.

**Blown Jacket:** Outer cable covering applied by controlled inflation of the cured jacket tube then pulling the cable through it.

**Bond Strength:** Amount of adhesion between bonded surfaces, e.g. in cemented ribbon cable.

**Bondable Wire:** An insulated wire treated to facilitate adherence to materials such as potting compounds. Also, magnet wires used in making coils when bonding the turns together is desired.

**Bonded Cable:** Cable consisting of pre-insulated conductors or multiconductor components laid-in parallel and bonded into a flat cable. See *Solvent-Bonded*; *Adhesive-Bonded*; *Film-Bonded*.

**Bonded Construction:** An insulation construction in which the glass braid and nylon jacket are bonded together.

**Bonding:** The permanent joining of metallic parts to form an electrically conductive path that will assure electrical continuity and the capacity to conduct safely any current likely to be imposed on it.

**Booster:** A device inserted into a line (or cable) to increase the voltage.

**Boot:** (1) Protective covering over a cable, wire or connector in addition to the normal jacketing or insulation. (2) A form placed around wire termination of a multiple-contact connector to contain the liquid potting compound before it hardens.

**Braid:** A fibrous or metallic group of filaments interwoven in cylindrical form to form a covering over one or more wires.

**Braid Angle:** The smaller of the two angles formed by the shielding strand and in the axis of the cable being shielded.

**Braid Carrier:** A spool or bobbin on a braid which holds one group of strands or filaments consisting of a specific number of ends. The carrier revolves during braiding operations.

# Glossary

**Braid Ends:** The number of strands used to make up one carrier. The strands are wound side by side on the carrier bobbin and lie parallel in the finished braid.

**Braiding Machine:** Machine used to apply braids to wire and cable and to produce braided sleeving and braids for tying or lacing purposes. Braiding machines are identified by the number of carriers.

**Breakdown (Puncture):** A disruptive discharge through the insulation.

**Breakdown Voltage:** The voltage at which the insulation between two conductors breaks down.

**Breakout:** The point at which a conductor or group of conductors breaks out from a multiconductor cable to complete circuits at various points along the main cable.

**Bridge:** A device used to expand a local area network by forwarding frames between data link layers.

**Bridged Tap:** The multiple appearances of the same cable pair at several distribution points.

**British Standard Wire Gauge:** A modification of the Birmingham Wire Gauge and the legal standard of Great Britain for all wires. Also known as Standard Wire Gauge (SWG), New British Standard (NBS), English Legal Standard and Imperial Wire Guide.

**Broadband:** In data transmission, the use of a carrier signal, rather than direct modulation, to carry several simultaneous channels.

**Buffer:** (fiber optic) A soft material which mechanically isolates individual fibers in a fiber optic cable or bundle from small geometrical irregularities, distortions or roughness of adjacent surfaces.

**Buffing Stripper:** A motorized device for removing flat cable insulation by means of buffing wheels that melt the insulation and brush it away from the conductors. Also called Abrasion Stripper.

**Building Entrance Area:** See *Entrance Room* or *Space, Telecommunications*.

**Building Wire:** Wire used for light and power, 600 volts or less, usually not exposed to outdoor environment.

**Bunched Stranding:** A group of strands twisted together in a random manner and the same direction without regard to geometric arrangement of specific strands.

**Buncher:** A machine that twists wires together in random arrangement.

**Bundle:** (fiber optic) A number of fibers grouped together, usually carrying a common signal.

**Buried Cable:** A cable installed directly in the earth without use of underground conduit. Also called "direct burial cable."

**Bus:** Wire used to connect two terminals inside of an electrical unit.

**Bushing:** A mechanical device used as a lining for an opening to prevent abrasion to wire and cable.

**Butt:** Joining of two conductors end-to-end, with no overlap and with the axes in line.

**Butt Splice:** A splice wherein two wires from opposite ends butt against each other, or against a stop, in the center of a splice.

**Butt Wrap:** Tape wrapped around an object or conductor in an edge-to-edge condition.

**Byte:** Typically a group of eight binary digits.

**Cable:** A stranded conductor with or without insulation and other coverings (single-conductor cable), or a combination of conductors (multiple-conductor cable). In fiber optics, a jacketed fiber or jacketed bundle in a form which can be terminated.

**Cable Assembly:** Typically, the cable and associated connectors; ready to install.

**Cable Clamp:** A device used to give mechanical support to the wire bundle or cable at the rear of a plug or receptacle.

**Cable Clamp Adapter:** A mechanical adapter that attaches to the rear of a plug or receptacle to allow the attachment of a cable clamp.

**Cable Core:** The portion of an insulated cable lying under a protective covering.

**Cable Core Binder:** A wrapping of tapes or cords around the conductors of a multiple-conductor cable used to hold them together.

**Cable Filler:** The material used in multiple-conductor cables to occupy the interslices formed by the assembly of the insulated conductors, thus forming a cable core.

**Cable Rack:** The vertical or horizontal open support (usually made of aluminum or steel) that is attached to a ceiling or wall.

**Cable Sheath:** The overall protective covering applied to cables.

**Cable Tray:** A ladder, trough, solid-bottom or channel raceway system intended for, but not limited to, the support of telecommunications media (e.g., cable).

**Cable Vulcanizer:** Compression molding machine used to repair cable jacketing that has had a part removed for splicing, for adding connectors or other devices or for replacing damaged sections.

**Cabling:** (1) A combination of all cables, wire, cords and connecting hardware. (2) Twisting together two or more insulated conductors by machine to form a cable. In fiber optics, a method by which a group or bundle of fibers is mechanically assembled.

**Cabling Factor:** Used in the formula for calculating the diameter of an unshielded, unjacketed cable.  $D = Kd$ , where D is the cable diameter, K is the factor and d is the diameter of one insulated conductor.

**Campus:** The building and grounds of a complex (e.g. a university, college, industrial park or military establishment).

**Canadian Standards Association (CSA):** A non-profit independent organization which operates a listing service for electrical and electronic materials and equipment. The Canadian counterpart of the Underwriter's Laboratories.

**Capacitance:** The ratio of the electrostatic charge on a conductor to the potential difference between the conductors required to maintain that charge.

**Capacitance, Direct:** The capacitance measured from one conductor to another conductor through a single insulating layer.

**Capacitance, Mutual:** The capacitance between two conductors (typically of a pair) with all other conductors, including shield, short circuited to ground.

**Caroprene®:** Proprietary rubber compound.

**Carrier:** The woven element of a braid consisting of one or more ends (strands) which creates the interlaced effect. Also, a spindle, spool, tube, or bobbin (on a braiding machine) containing yarn or wire, employed as a braid.

**Cellular Plastics:** Expanded or "foam," consists of individual closed cells of inert gas suspended in a plastic medium, resulting in a desirable reduction of the dielectric constant.

**Central Office:** The place where communications common carriers terminate customer lines and locate switching equipment that interconnects those lines.

**Certificate of Compliance (C of C):** A written statement; normally generated by a quality control department, which states that the product being shipped meets customer's specifications.

**Certified Test Report (CTR):** A report reflecting actual test data on the cable shipped. Tests are normally conducted by the quality control department, and show that the product being shipped meets the required test specifications.

**Characteristic Impedance:** The impedance that, when connected to the output terminals of a transmission line of any length, makes the line appear indefinitely long.

**Chlorosulfonated Polyethylene (CSPE):** A rubbery polymer used for insulations and jackets. Manufactured by E.I. DuPont under the trade name of Hypalon®.

**Cigarette Wrap:** Tape insulation wrapped longitudinally instead of spirally over a conductor.

**Circuit:** A complete path over which electrons can flow from the negative terminals of a voltage source through parts and wires to the positive terminals of the same voltage source.

**Circuit Sizes:** A popular term for building wire sizes 14 through 10 AWG.

**Circular Mil:** The area of a circle one mil (.001") in diameter;  $7.854 \times 10^{-7}$  sq. in. Used in expressing wire cross sectional area.

**Cladding:** Method of applying a layer of metal over another metal whereby the junction of the two metals is continuously welded. In fiber optics, a sheathing intimately in contact with the core of a higher refractive index material which serves to provide optical insulation and protection to the reflection interface.

**Closed End Splice:** An insulated splice in which two or more wires overlap and enter the splice from the same end of the barrel.

**Closet, Telecommunications:** An enclosed space for housing telecommunications equipment, cable terminations and cross-connect cabling. The closet is the recognized location of the cross-connect between the backbone and horizontal facilities.

**Coaxial Cable:** A cable consisting of two cylindrical conductors with a common axis, separated by a dielectric.

**Coaxial Connector:** A connector that has a coaxial construction and is used with coaxial cable.

**Coherent Source:** (fiber optic) A light source which emits a very narrow, unidirectional beam of light of one wavelength (monochromatic).

**Coil Effect:** The inductive effect exhibited by a spiral-wrapped shield, especially above audio frequencies.

# Glossary

**Cold Flow:** Permanent deformation of the insulation due to mechanical force of pressure (not due to heat softening).

**Color Code:** A color system for wire or circuit identification by use of solid colors, tracers, braids, surface printing, etc.

**Commercial Building:** A building or portion thereof, that is intended for office use.

**Common Axis Cabling:** In multiple cable constructions, a twisting of all conductors about a "common axis" to result in smaller diameter constructions. Tends to result in greater susceptibility to electromagnetic and electrostatic interference.

**Compact Conductor:** Stranded conductor rolled to deform the round wires to fill the normal interstices between the wires in a strand.

**Composite (Clad) Wire:** A wire having a core of one metal with a fused outer shell of different metals.

**Composite Conductor:** Two or more strands of different metals assembled and operated in parallel.

**Compound:** An insulating or jacketing material made by mixing two or more ingredients.

**Compression Cable:** A pipe type cable in which the pressure medium is separated from the insulation by a membrane or sheath.

**Concentric:** A central core surrounded by one or more layers of helically wound strands in a fixed round geometric arrangement.

**Concentric-Lay Cable:** A concentric-lay conductor, or a multiple-conductor cable composed of a central core surrounded by one or more layers of helically laid insulated conductors.

**Concentric Strand:** A strand that consists of a central wire or core surrounded by one or more layers of spirally laid wires.

**Concentricity:** The measurement of the location of the center of the conductor with respect to the geometric center of the circular insulation.

**Conductance:** The ability of a conductor to carry an electric charge. The ratio of the current flow to the potential difference causing the flow. The reciprocal of resistance.

**Conductivity:** The capacity of a material to carry electrical current—usually expressed as a percentage of copper conductivity (copper being 100%).

**Conductor:** A wire (or combination of wires not insulated from one another) suitable for carrying electric current.

**Conduit:** A rigid or flexible metallic or nonmetallic raceway of circular cross-section through which cables can be pulled or housed.

**Connecting Hardware:** A device providing mechanical cable terminations.

**Connector:** A device used to provide rapid connect/disconnect service for electrical cable and wire terminations.

**Contact:** The part of a connector which actually carries the electrical current, and are touched together or separated to control the flow.

**Contact Inspection Hole:** A hole in the cylindrical rear portion of contact used to check the depth to which a wire has been inserted.

**Contact Size:** The largest size wire which can be used with the specific contact. Also, the diameter of the engagement end of the pin.

**Continuity Check:** A test to determine whether electrical current flows continuously throughout the length of a single wire or individual wires in a cable.

**Continuous Vulcanization:** Simultaneous extrusion and vulcanization of rubber-like wire coating materials.

**Contra-helical:** Cable spiralling in an opposite direction than the preceding layer within a wire or cable.

**Control Cable:** A multi-conductor cable made for operation in control of signal circuits.

**Controlled Impedance Cable:** Package of two or more insulated conductors where impedance measurements between respective conductors are kept essentially constant throughout the entire length.

**Copolymer:** A compound resulting from the polymerization of two different monomers.

**Copper-Clad:** Steel with a coating of copper welded to it before drawing as opposed to copper-plated. Synonymous with Copperweld.

**Copperweld:** The trade name of Flexo Wire Division (Copperweld Steel Corp.) for their copper-clad steel conductors.

**Cord:** A small, flexible insulated cable.

**Cord Set:** Portable cords fitted with a wiring device at one or both ends.

**Cord, Telecommunications:** A cable using stranded conductors for flexibility, as in distribution cords or line cords. Line cords can also use tinsel conductors.

**Core:** In cables, a component or assembly of components over which other materials are applied, such as additional components, shield, sheath or armor. In fiber optics, the transparent glass or plastic section with a high refractive index through which the light travels by internal reflections.

**Corona:** A discharge due to ionization of air around a conductor due to a potential gradient exceeding a certain critical value.

**Corona Resistance:** The time that the insulation will withstand a specified level of field-intensified ionization that does not result in the immediate complete breakdown of the insulation.

**Corrosion:** The destruction of the surface of a metal by chemical reaction.

**Coupling Loss:** (fiber optic) Signal losses due to small differences in numerical aperture, core diameter, core concentricity and tolerances in splicing connectors when two fibers are aligned. Also known as Splicing Loss and Transfer Loss.

**Coupling Ring:** A device used on cylindrical connectors to lock plug and receptacle together.

**Coverage:** The calculated percentage which defines the completeness with which a metal braid covers the underlying surface. The higher percentage of coverage, the greater the protection against external interference.

**Covering:** Textile braid or jacket of rubber, plastics or other materials applied over wire and cables to provide mechanical protection and identification.

**Crazing:** The minute cracks on the surface of plastic materials.

**Creep:** The dimensional change with time of a material under load.

**Creepage:** The conduction of electricity across the surface of a dielectric.

**Creepage Path:** The path across the surface of a dielectric between two conductors.

**Creepage Surface:** An insulating surface which provides physical separation as a form of insulation between two electrical conductors of different potential.

**Crimp:** Act of compressing a connector barrel around a cable in order to make an electrical connection.

**Crimp Termination:** Connection in which a metal sleeve is secured to a conductor by mechanically crimping the sleeve with pliers, presses or automated crimping machines.

**Cross-Connect:** A facility enabling the termination of cable elements and their interconnection, and/or cross-connection, primarily by means of a patch cord or jumper.

**Cross-Linked:** Inter-molecular bonds between long-chain thermoplastic polymers by chemical or electron bombardment means. The properties of the resulting thermosetting material are usually improved.

**Crosstalk:** Undesired electrical currents in conductors caused by electromagnetic or electrostatic coupling from other conductors or from external sources. Also, leakage of optical power from one optical conductor to another.

**CSA:** Canadian Standards Association.

**C-SJ:** Same as SJ except extra-flexible conductor.

**C-SJO:** Same as SJO except extra-flexible conductor.

**Cure:** To change the physical properties of a material by chemical reaction.

**Curing Cycle:** The time, temperature and pressure required for curing.

**Curl:** The degree to which a wire tends to form a circle after removal from a spool. An indication of the ability of the wire to be wrapped around posts in long runs.

**Current:** The rate of transfer of electricity. Practical unit is the ampere which represents the transfer of one coulomb per second. In a simple circuit, current (I) produced by a cell or electromotive force (E) when there is an external resistance (R) and internal resistance (r) is:

$$I = \frac{E}{R + r}$$

**Current Carrying Capacity:** The maximum current an insulated conductor can safely carry without exceeding its insulation and jacket temperature limitations.

**Customer Premises:** Building(s) with grounds and appurtenances (belongings) under the control of the customer.

**Cut-Through Resistance:** The ability of a material to withstand mechanical pressure, usually a sharp edge or small radius, without separation.

**Cycle:** The complete sequence including reversal of the flow of an alternating electric current.

**Decibel (dB):** A unit to express differences of power level. Used to express power gain in amplifiers or power loss in passive circuits or cables.

**Delay Line:** A cable made to provide very low velocity of propagation with long electrical delay for transmitted signals.

**Demarcation Point:** A point where the operational control or ownership changes.

# Glossary

**Depth of Crimp:** Thickness of the crimped portion of a connector measured between two opposite points on the crimped surface.

**Derating Factor:** A factor used to reduce the current carrying capacity of a wire when used in environments other than that for which the value was established.

**Detector:** (fiber optic) A device that picks up light from fiber and converts the information into an electrical signal.

**Device, As Related to a Work Station:** An item such as a telephone, personal computer or graphic or video terminal.

**Device, As Related to Protection:** A protector, a protector mount, a protector unit or a protector module.

**Dielectric:** An insulating medium which intervenes between two conductors and permits electrostatic attraction and repulsion to take place across it.

**Dielectric Breakdown:** The voltage required to cause an electrical failure or breakthrough of the insulation.

**Dielectric Constant (K):** The ratio of the capacitance of a condenser with dielectric between the electrodes to the capacitance when air is between the electrodes. Also called Permittivity and Specific Inductive Capacity.

**Dielectric Loss:** Power dissipated in an insulating medium as the result of the friction caused by molecular motion when an AC electric field is applied.

**Dielectric Strength:** The voltage which an insulation can withstand before breakdown occurs. Usually expressed as a voltage gradient (such as volts per mil).

**Dielectric Test:** A test in which a voltage higher than the rated voltage is applied for a specified time to determine the adequacy of the insulation under normal conditions.

**Digital:** Transmission data representative by discrete characters.

**Dip Coating:** An insulating coating applied to the conductor by passing the conductor through an applicator containing liquid insulating medium.

**Direct Burial Cable:** A cable installed directly in the earth.

**Direct Capacitance:** The capacitance measured directly from conductor to conductor through a single insulating layer.

**Direct Current (d.c.):** An electric current which flows in only one direction.

**Direct Current Resistance (DCR):** The resistance offered by any circuit to the flow of direct current.

**Direction of Lay:** The lateral direction in which the strands of a conductor run over the top of the cable conductor as they recede from an observer looking along the axis of the conductor or cable. Also applies to twisted cable.

**Discrete Wiring:** Wire or wires having distinct identity and purpose.

**Dispersion:** (fiber optic) The variation of the refractive index of a material with wavelength, causing light of different wavelengths to travel at different velocities in the material.

**Disruptive Discharge:** A sudden, large increase in current through an insulation medium due to the complete failure of the medium under the electrostatic stress.

**Dissipation Factor:** The tangent of the loss angle of the insulating material. (Also referred to as loss tangent,  $\tan \delta$ , and approximate power factor.)

**Distribution Cable:** In telecommunications and CATV systems, the transmission cable between the distribution amplifier and the drop wire.

**Distribution Frame:** A structure with terminations for connecting the permanent cabling of a facility in such a manner that interconnection or cross-connections may be readily made.

**Disturbed Conductor:** A conductor that receives energy generated by the field of another conductor or an external source such as a transformer.

**Drain Wire:** In a cable, the uninsulated wire laid over the component or components and used as a ground connection.

**Draw Feed Stock:** Rod or wire that is subsequently drawn to a smaller size.

**Drawing:** In wire manufacture, pulling the metal through a die or series of dies to reduce diameter to a specified size.

**Drop Ceiling:** See *False Ceiling*.

**Drop Wire:** In telecommunications and CATV systems, the transmission cable from the distribution cable to a dwelling.

**Dual Coaxial Cable:** Two individually insulated conductors laid parallel or twisted and placed within an overall shield and sheath.

**Duct:** 1) A single enclosed raceway for wires or cables. See also *Conduit*, *Raceway*; 2) a single enclosed raceway for wires or cables usually used in soil or concrete, 3) an enclosure in which air is moved. Generally part of the HVAC system of a building.

**Duplex:** Two way data transmission on a four-wire transmission line or two fiber.

**Duplex Cable:** (1) A cable composed of two insulated single-conductor cables twisted together. (2) A cable composed of two fibers, typically 62.5/125  $\mu\text{m}$  multimode, placed in parallel under a thermoplastic sheath.

**Duplex Parallel:** Typically used in the thermocouple industry to denote two parallel conductors of dissimilar metals insulated in parallel without twist and jacketed. Commonly applied to thermocouple grades and extension wires.

**Eccentricity:** Like concentricity, a measure of the center of a conductor's location with respect to the circular cross section of the insulation. Expressed as a percentage of displacement of one circle within the other.

**Eddy Current:** Circulating currents induced in conducting materials by varying magnetic fields.

**Elastomer:** A rubber or rubber-like material which will stretch repeatedly to 200 percent or more and return rapidly and with force to its approximate original shape.

**Electro-Tinned:** Electrolytic process of tinning wire using pure tin.

**Electrode:** A conductor through which a current enters or leaves a nonmetallic conductor.

**Electromagnetic Coupling:** Energy transfer by means of a varying magnetic field.

**Electromagnetic Field:** A rapidly moving electric field and its associated moving magnetic field.

**Electromagnetic Induction:** The production of a voltage in a coil due to a change in the number of magnetic lines of forces (flux linkages) passing through the coil.

**Electromagnetic Interference (EMI):** The interference in signal transmission or reception resulting from the radiation of electrical and magnetic fields. Synonym: Radio Frequency Interference.

**Electromotive Force (e.m.f.):** Pressure or voltage. The forces which cause current to flow in a circuit.

**Electronic Wire and Cable:** A length of conductive or semiconductive material used in an electronic application.

**Electrostatic:** Pertaining to static electricity, or electricity at rest. An electric charge, for example.

**Elongation:** The fractional increase in the length of a material stressed in tension.

**Embossing:** A marker identification by means of thermal indentation leaving raised lettering on the sheath material of cable.

**Emergency Overload:** Load which occurs when larger than normal currents are carried through a cable or wire over a certain period of time.

**Enameled Wire:** A conductor with a baked-on enamel film insulation. In addition to magnet wire, enameled insulation is used on thermocouple type wires and other wires.

**Ends:** In braiding, the number of essentially parallel wires of threads on a carrier.

**Energize:** To apply rated voltage to a circuit or device in order to activate it.

**Entrance Facility, Telecommunications:** An entrance to a building for both public and private network service cables (including antennae) including the entrance point at the building wall and continuing to the entrance room or space.

**Entrance Point, Telecommunications:** The point of emergence of telecommunications conductors through an exterior wall, a concrete floor slab or from a rigid metal conduit or intermediate metal conduit.

**Entrance Room or Space, Telecommunications:** A space in which the joining of inter- or intra-building telecommunications backbone facilities takes place. An entrance room may also serve as an equipment room.

**Equilay:** More than one layer of helically laid wires with the direction of lay reversed for successive layers, but with the length of lay the same for each layer.

**Equipment Room, Telecommunications:** A centralized space for telecommunications equipment that serves the occupants of the building. An equipment room is considered distinct from a telecommunications closet because of the nature of complexity or the equipment.

**Etched Wire:** A process applied to fluoroplastic wire in which the wire is passed through a sodium bath to create a rough surface to allow epoxy resin to bond the fluoroplastic.

**Exit Angle:** The angle between the output radiation vectors and the axis of the fiber or fiber bundle.

**External Interference:** The effects of electrical waves or fields which cause sounds other than the desired signal. Static.

# Glossary

**External Wiring:** Electronic wiring which interconnects subsystems within the system.

**Extruded Cable:** Cable with conductors which are uniformly insulated and formed by applying a homogeneous insulation material in a continuous extrusion process.

**Extrusion:** Method of continuously forcing plastic, rubber, or elastomer material through an orifice to apply insulation or jacketing over a conductor or cable core.

**False Ceiling:** A ceiling that creates an area or space between the ceiling material and the structure above the material. Synonym: *Drop Ceiling, Suspended Ceiling*.

**Farad:** A unit of electrical capacity.

**Fatigue Resistance:** Resistance to metal crystallization which leads to conductors or wires breaking from flexing.

**Feed-Through Insulators:** Insulators that carry a metal conductor through the chassis while preventing the "hot" lead from shorting to the ground chassis.

**Feedback:** Energy that is extracted from a high-level point in a circuit and applied to a lower level. Positive feedback reduces the stability of a device and is used to increase the sensitivity or produce oscillation in a system. Negative feedback, also called inverse feedback, increases the stability of a system as the feedback improves stability and fidelity.

**Feeder Cable:** In telecommunication or CATV systems, the transmission cable from the head end (signal pickup) to the trunk amplifier. Also called a trunk cable.

**Feedthrough:** (1) A conductor that connects patterns on opposite sides of a PCB. Also called Interfacial connection. (2) A connector or terminal block, usually having double-ended terminals which permit simple distribution and bussing of electrical circuits.

**Ferrous:** Composed of and/or containing iron. A ferrous metal exhibits magnetic characteristics.

**Ferrule:** A short tube used to make solderless connections to shielded or coaxial cable.

**Fiber:** A thread or threadlike structure. Also, a single discrete element used to transmit optical (light wave) information.

**Fiber Dispersion:** (fiber optic) Pulse spreading in a fiber caused by differing transit times of various modes.

**Fiber Optics:** A lightwave or optical communications system in which electrical information is converted to light energy, transmitted to another location through optical fibers, and is there converted back into electrical information.

**Fiber Tubing:** A loose, crush-resistant cylinder applied over individual fibers to provide mechanical protection.

**Field:** An area of influence around a magnet or electric charge.

**Field Coil:** A suitable insulated winding to be mounted on a field pole to magnetize it.

**Figure 8 Cable:** An aerial cable configuration in which the conductors and the steel strand which supports the cable are integrally jacketed. A cross-section of the finished cable approximates the figure "eight."

**Filament:** Fiber characterized by extreme length.

**Filled Cable:** A telephone cable construction in which the cable core is filled with a material that will prevent moisture from entering or passing through the cable.

**Filler:** (1) A material used in multiconductor cables to occupy large interstices formed by the assembled conductors. (2) An inert substance added to a compound to improve properties or decrease cost.

**Film:** A thin plastic sheet.

**Fine Stranded Wire:** Stranded wire with component strands of 36 AWG or smaller.

**Firestop:** A material, device or assembly of parts installed in a cable system in a fire-rated wall or floor to prevent passage of flame, smoke or gasses through the rated barrier.

**Flame Resistance:** The ability of a material not to propagate flame once the heat source is removed.

**Flammability:** The measure of the material's ability to support combustion.

**Flashover:** A disruptive discharge around or over the surface of a solid or liquid insulator.

**Flat Braid:** A woven braid of tinned copper strands rolled flat at time of manufacture to a specified width.

**Flat Cable:** A cable with two smooth or corrugated but essentially flat surfaces.

**Flat Conductor:** A wire having a rectangular cross-section as opposed to a round or square conductor.

**Flat Conductor Cable:** A cable with a plurality of flat conductors.

**Flexfoil®:** Proprietary aluminum laminated shielding tapes.

**Flex Life:** The measurement of the ability of a conductor or cable to withstand repeated bending.

**Flexibility:** The ease with which a cable may be bent.

**Flexible:** That quality of a cable or cable component which allows for bending under the influence of outside force, as opposed to impress which is bending due to the cable's own weight.

**Floating:** Referring to a circuit which has no connection to ground.

**Flux:** (1) The lines of force which make up an electrostatic field. (2) The rate of flow of energy across or through a surface. (3) A substance used to promote or facilitate fusion.

**FNC:** Federal Networking Council (formerly FRICC).

**Foamed Plastics:** See *Cellular Plastic*.

**Foil:** A thin, continuous sheet of metal.

**Free Connector:** A connector for attachment to the free end of a wire or cable.

**Frequency:** The number of times a periodic action occurs in a unit of time. The number of cycles that an electric current completes in one second.

**Frequency Response:** The characteristic of a device denoting the range of frequencies over which it may be used effectively.

**Funnel Entry:** Flared or widened entrance to a terminal or connector wire barrel.

**Fuse Wire:** Wire made from an alloy that melts at a relatively low temperature.

**Fused Coating:** A metallic coating which has been melted and solidified, forming a metallurgical bond to the base material.

**Fused Conductors:** Individual strands of heavy tinned copper wire stranded together and then bonded together by induction heating.

**Fused Spiral Tape:** A PTFE insulated hookup wire. The spiral wrapped conductor is passed through a sintering oven where overlaps are fused together.

**Gain:** The increase of voltage, current or power over a standard or previous reading. Usually expressed in decibels.

**Galvanometer:** An instrument for detecting or measuring small electrical current.

**Gas-Filled Cable:** A self-contained pressure cable in which the pressure medium is an inert gas having access to the insulation.

**Gauge:** A term used to denote the physical size of a wire.

**Giga:** A numerical prefix denoting one billion (10<sup>9</sup>).

**Gigahertz (GHz):** A unit of frequency equal to one billion hertz.

**Gimmick:** A short length of wire soldered onto a circuit component and used as a small adjustable capacitor.

**Graded-Index:** A type of optical fiber in which the refractive index of the core is in the form of a parabolic curve, decreasing toward the cladding. This type of fiber provides high bandwidth capabilities.

**Ground:** A conducting connection, whether intentional or accidental, between an electrical circuit (e.g. telecommunications) or equipment and the earth, or to some conducting body that serves in place of the earth.

**Ground Conductor:** A conductor in a transmission cable or line that is grounded.

**Ground Insulation:** The insulation used between a winding and the magnetic core or other structural parts, usually at ground potential.

**Ground Loop:** The generation of undesirable current flow within a ground conductor, owing to the circulation currents which originate from a second source of voltage.

**Ground Plane:** Expanded copper mesh which is laminated into some flat cable constructions as a shield.

**Ground Potential:** Zero potential with respect to the ground or earth.

**Hard Drawn Copper Wire:** Copper wire that has not been annealed after drawing.

**Harness:** An arrangement of wires and cables usually with many breakouts, which have been tied together or pulled into a rubber or plastic sheath, used to interconnect an electric circuit.

**Hash Mark Stripe:** A non-continuous helical stripe applied to a conductor for identification.

**Heat Distortion:** Distortion of flow of a material or configuration due to the application of heat.

**Heat Seal:** Method of sealing a tape wrap jacket by means of thermal fusion.

**Heater Cord:** Flexible stranded copper conductor, cotton wrapped, with rubber insulation and asbestos roving.

**Helical Stripe:** A continuous, colored, spiral stripe applied to a conductor for circuit identification.

**Helix:** Spiral winding.

**Henry:** The unit of inductance.

**Hertz (Hz):** A term replacing cycles-per-second as an indication of frequency.

**Heterogeneous Insulation:** A cable insulating system composed of two or more layers of different insulating materials.

# Glossary

**High-Temperature Wire and Cable:** Electrical wire and cables having thermal operating characteristics of 150°C and higher.

**High Voltage:** Generally, a wire or cable with an operating voltage of over 600 volts.

**Holding Strength:** Ability of a connector to remain assembled to a cable when under tension.

**Homogeneous Insulation:** A complete cable insulation structure whose components cannot be identified as layers of different materials.

**Hook-up Wire:** A wire used for low-current, low-voltage (under 1000 volts) applications within enclosed electronic equipment.

**Horizontal Cabling:** The wiring/cabling between the telecommunications outlet/connector and the horizontal cross-connect.

**Horizontal Cross-Connect:** A cross-connect of horizontal cabling to other cabling, e.g. horizontal, backbone or equipment.

**Hot Stamping:** Method of alpha numerical coding. Identification markings are made by pressing heated type and marking foil into softened insulation surfaces. See Surface Printing.

**Hot Tin Dip:** A process of passing bare wire through a bath of molten tin to provide a coating.

**Hybrid Cable:** An assembly of two or more cables (of the same or different types or categories) covered by one overall sheath.

**Hygroscopic:** Capable of absorbing moisture from the air.

**Hypalon®:** DuPont's trade name for their chlorosulfonated polyethylene, an ozone-resistant synthetic rubber.

**Impact Tool:** Device used to punch new conductor onto IDs. This tool is typically equipped with a cutting blade for either 66 or 110 blocks.

**Impedance:** The total opposition that a circuit offers to the flow of alternating current or any other varying current at a particular frequency. It is a combination of resistance R and reactance X, measured in  $\Omega$ .

**Impedance-Matching Transformer:** A transformer designed to match the impedance of one circuit to that of another (BALUN).

**Impulse:** A surge of unidirectional polarity.

**Impulse Strength:** The voltage breakdown of insulation under voltage surges on the order of microseconds in duration.

**Impulse Test:** An insulation test in which the voltage applied is an impulse voltage of specified wave shape.

**Incoherent Source:** (fiber optic) A light source which emits wide, diffuse beams of light of many wave lengths.

**Index-Matching Fluid:** (fiber optic) Fluid with refractive index same as fiber core; used to fill air gap between fiber ends at connectors.

**Index of Refraction:** The ratio of light velocity in a vacuum to its velocity in a given transmitting medium.

**Inductance:** The property of a circuit or circuit element that opposes a change in current flow, thus causing current changes to lag behind voltage changes. It is measured in henrys.

**Inductive Coupling:** Crosstalk resulting from the action of the electromagnetic field of one conductor on the other.

**Infrastructure, Telecommunications:** A collection of those telecommunications components, excluding equipment, that together provide the basic support for the distribution of all information within a building or campus.

**Insertion Loss:** As measure of the attenuation of a device by determining the output of a system before and after the device is inserted into the system.

**Insertion Tool:** A small, hand-held tool used to insert contacts into a connector.

**Insulated Wire:** A conductor of electricity covered with a non-conducting material.

**Insulating Joint:** A device which mechanically couples and electrically insulates the sheath and armor of contiguous lengths of cable.

**Insulation:** A material having high resistance to the flow of electric current. Often called a dielectric in radio frequency cable.

**Insulation Adhesion:** The degree of tightness of the insulation over the base conductor, measured in terms of force required to remove a specified length of insulation from the wire.

**Insulation Crimp:** The area of a terminal, splice or contact that has been formed around the insulation of the wire.

**Insulation Grip:** Extended cylinders at the rear of crimp-type contacts designed to accept the bared wire and a small length of its insulation.

**Insulation Piercing:** A method of crimping whereby lances cut the insulation of the wires and enter into the strands to make electrical contact.

**Insulation Resistance:** The ratio of the applied voltage to the total current between two electrodes in contact with a specific insulation, usually expressed in meg $\Omega$ -M feet.

**Insulation System:** All of the insulation materials used to insulate a particular electrical or electronic product.

**Integral Belt:** A layer of insulation or semiconductive material applied by extrusion over two or more insulated, twisted or parallel conductors, to form a round, smooth diameter.

**Interconnect:** A connection scheme that provides for the direct connection of individual cables to another cable or to an equipment cable without a patch cord.

**Interconnecting Cable:** The wiring between modules, between units or the larger portions of a system.

**Interconnecting Wire:** The physical wiring between components (outside a module), between modules, between units or between larger portions of a system or systems.

**Interconnection:** Mechanically joining devices together to complete an electrical circuit.

**Interface:** The two surfaces on the contact side of both halves of a multiple-contact connector which face each other when the connector is assembled.

**Intermediate Cross-Connect:** A cross-connect between 1st level and 2nd level backbone cabling.

**Internal Wiring:** Electronic wiring which interconnects components, usually within a sealed subsystem.

**Interstices:** Voids or valleys between individual strands in a conductor or between insulated conductors in a multiconductor cable.

**Ionization Voltage (Corona Level):** The minimum value of falling rms voltage which sustains electrical discharge within the vacuum or gas-filled spaces in the cable construction or insulation.

**Irradiation:** In insulations, the exposure of the material to high energy emissions for the purpose of favorably altering the molecular structure.

**Jack:** A plug-in type terminal widely used in an electronic apparatus for temporary connections.

**Jacket:** An outer protective sheath over primary insulation, braids, shields, cable components or over the cable itself. In fiber optics, a covering, over a fiber, bundle of fibers or cable which protects against the environment.

**JAN Specification:** Joint Army-Navy specification (replaced by current Military Specifications).

**Jumper:** An assembly of twisted pairs without connectors, used to join telecommunications circuits/links at the cross connect.

**Junction:** A point in a circuit where two or more wires are connected.

**Keying:** The mechanical feature of a connector system that guarantees correct orientation of a connection, or prevents the connection to a jack, or to an optical fiber adapter of the same type intended for another purpose.

**Kynar®:** Pennwalt trade name for polyvinylidene fluoride. Typically used as insulation for wire wrap wire.

**Lacing and Harnessing:** A method of grouping wires by securing them in bundles of designated patterns.

**Lacquer:** A liquid resin or compound applied to textile braid to prevent fraying, moisture absorption, etc.

**Laminated Tape:** A tape consisting of two or more layers of different materials bonded together.

**Laser Diode:** (fiber optic) A semiconductor diode that, when pulsed, a laser diode emits coherent light.

**Launch Angle:** (fiber optic) The angle between the radiation vector and the axis of the fiber or fiber bundle.

**Lay:** The length measured along the axis of a wire or cable required for a single strand (in stranded wire) or conductor (in cable) to make one complete turn about the axis of the conductor or cable.

**Layer:** Consecutive turns of a coil lying in a single plane.

**Leaching and Non-Leaching:** In a leaching wire, the plasticizer will migrate when exposed to heat. A non-leaching wire will retain its plasticizer under extreme temperature conditions and remain flexible after baking.

**Lead:** A wire, with or without terminals, that connects two points in a circuit.

**Lead-Cured:** A cable that is cured or vulcanized in a metallic lead mold.

**Lead Dress:** The placement or routing of wire and component leads in an electrical circuit.

**Lead-in:** The conductor or conductors that connect the antenna proper to electronic equipment.

**Leakage Current:** The undesirable flow of current through or over the surface of an insulation.

# Glossary

**Life Cycle:** A test to determine the length of time before failure in a controlled, usually accelerated, environment.

**Light Commercial Building:** A building or portion thereof that is intended for use with one to four (1-4) non-residential exchange access lines per tenant.

**Light-Intensity Ratio:** (fiber optic) Ratio of input light intensity to the output light intensity.

**Light Source:** (fiber optic) An object capable of emitting light. In fiber optics, the light source is normally an LED or a laser.

**Lightguide:** (fiber optic) A flexible bundle of fibers used to transmit light.

**Lightwave Communications:** (fiber optic) Communications using light to carry the information.

**Limits of Error:** The maximum deviation (in degrees of percent) of a thermocouple or thermocouple extension wire from standard emf-temperature to be measured.

**Limpres:** The ability of a cable to lay flat or conform to a surface.

**Line Balance:** The degree to which the conductors of a cable are alike in their electrical characteristics with respect to each other, to other conductors and to ground.

**Line Drop:** A voltage loss occurring between any two points in a transmission line, due to the resonance, reactance or leakage of the line.

**Line Loss:** The total of the various energy losses occurring in a transmission line.

**Line Voltage:** Voltage existing in a cable or circuit.

**Link:** An assembly of telecommunications facilities between two points, not including terminal equipment.

**Listed:** Equipment included in a list published by an organization, acceptable to the authority having jurisdiction, that maintains periodic inspection of production of listed equipment, and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

**Local Area Network (LAN):** A geographically limited communications network intended for the local transport of data, video and voice.

**Longitudinal Shield:** A tape shield, flat or corrugated, applied longitudinally with the axis of the core being shielded.

**Longitudinal Wrap:** Tape applied longitudinally with the axis of the core being covered.

**Loop Resistance:** The total resistance of two conductors measured round-trip from one end. Commonly used term in the thermocouple industry.

**Looping-in:** Wiring method which avoids tee joints by carrying the conductor or cable to and from the point to be supplied.

**Loss:** Energy dissipated without accomplishing useful work.

**Loss Factor:** The product of the dissipation and dielectric constant of an insulating material.

**Lossy Line:** A cable having large attenuation per unit of length.

**Low-Loss Dielectric:** An insulating material that has a relatively low dielectric loss, such as polyethylene or Teflon®.

**Low-Noise Cable:** Cable configuration specially constructed to eliminate spurious electrical disturbances caused by capacitance changes or self-generated noise induced by either physical abuse or adjacent circuitry.

**Low Tension:** Low voltage, as applied to ignition cable.

**Lug:** Termination, usually crimped or soldered to the conductor, with provision for screwing on to the terminal.

**m:** Meter.

**Magnet Wire:** Insulated wire intended for use in windings on motor, transformer and other coils for electromagnetic devices.

**Magnetic Field:** The region within which a body or current experiences magnetic force.

**Magnetic Flux:** The rate of flow of magnetic energy across or through a surface (real or imaginary).

**Magnetic Noise:** Caused by change in current level, e.g. ac powerline (creates magnetic field around the cable) this magnetic field causes the magnetic noise.

**Main Cross-Connect:** A cross-connect for 1st level backbone cables, entrance cables and equipment cables.

**Marker Tape:** A tape laid parallel to the conductors under the sheath in a cable, imprinted with the manufacturer's name and the specification to which the cable is made.

**Master Antenna Television (MATV):** A combination of components providing multiple television receiver operations from one antenna or group of antennas normally on a single building.

**Material Scattering Loss:** (fiber optics) Loss due to fluctuations in the refractive index and to inhomogeneities in material composition and temperature.

**Media, Telecommunications:** Wire, cable or conductors used for telecommunications.

**Megarad:** A unit for measuring radiation dosage.

**Messenger:** Supporting member, usually a high-strength steel wire, used to suspend aerial cable. The messenger may be an integral part of the cable, or exterior to it (lashed messenger).

**Microbending Loss:** (fiber optic) Loss due to small geometrical irregularities along the core-clad interface of the fiber.

**Microfarad:** One-millionth of a farad, commonly abbreviated m-F.

**Micromicrofarad:** One-millionth of a microfarad. (uuf, uufd, mmf, mmfd  $\mu$ " $\mu$  F are common abbreviations.)

**Microwave:** A short (usually less than 30 cm.) electrical wave.

**Mil:** A unit used in measuring diameter of a wire or thickness of insulation over a conductor. One-one thousandth of an inch (.001").

**Mineral-Insulated:** Cable and thermocouple wire consisting of one or more conductors surrounded by magnesium oxide insulation and enclosed in a liquid- and gas-tight metallic sheathing.

**Miniature Wire:** Insulated conductors of approximately 20-34 AWG.

**Mis-Match:** A termination having a different impedance than that for which a circuit or cable is designed.

**Mode:** One of the components of a general configuration of a propagating wave front.

**Modem:** Device which places and receives data signals over a common carrier's communication facility.

**Modular Jack:** This term is outmoded; see *Outlet/Connector, Telecommunications*.

**Modular Plug:** A telecommunications connector for wire or cords per the Part 68 Rules. A modular plug can have 6 or 8 contact positions, but not all the positions need be equipped with contacts.

**Modulation:** A process whereby certain characteristics of a wave, often called the carrier, are varied or selected in accordance with a modulating function.

**Modulus of Elasticity:** The ratio of stress to strain in an elastic material.

**Moisture Absorption:** The amount of moisture, in percentage, that a material will absorb under specified conditions.

**Moisture Resistance:** The ability of a material to resist absorbing moisture from the air or when immersed in water.

**Molded Plug:** A connector molded on either end of a cord or cable.

**Monomer:** The basic chemical unit used in building a polymer.

**Motor Lead Wire:** Wire which connects to the fragile magnet wire found in coils, transformers and stator or field windings.

**Multiconductor:** More than one conductor within a single cable complex.

**Multimode Optical Fiber:** An optical fiber that will allow many bound modes to propagate. The fiber may be either a graded-index or step-index fiber. See also: *Optical Fiber Cable*.

**Multiple Conductor Cable:** A combination of two or more conductors cabled together and insulated from one another and from sheath or armor where used.

**Multiple Conductor Concentric Cable:** An insulated central conductor with one or more tubular stranded conductors laid over it concentrically and insulated from one another.

**Multiplexing:** Simultaneous transmission of two or more messages over the same cable pair.

**Mutual Capacitance:** Capacitance between two conductors when all other conductors are connected together to shield and ground.

**Mylar®:** DuPont trademark for polyester film.

**Nanometer (nm):** One billionth of a meter ( $10^{-9}$  meter).

**Nanosecond:** One billionth of a second ( $10^{-9}$  seconds).

**National Electric Code (NEC):** A set of regulations governing construction and installation of electrical wiring and apparatus in the United States, established by the American National Board of Fire Underwriters.

**Neoprene:** A synthetic rubber with good resistance to oil, chemical and flame. Also called polychloroprene.

**Noise:** In a cable or circuit, any extraneous signal which tends to interfere with the signal normally present in or passing through the system.

**Nomex®:** DuPont trademark for a temperature-resistant, flame-retardant nylon.

**Non-Contaminating:** Type of PVC jacket material whose plasticizer will not migrate into the dielectric of a coaxial cable and thus avoids contaminating and destroying the dielectric.

# Glossary

**Nylon:** Thermoplastic with good chemical and abrasion resistance.

**NVP:** Nominal Velocity of Propagation.

**Off Center:** Conductor displaced within the cross-section of its insulation.

**Offgassing:** Percentage of a specified gas released during the combustion of insulation or jacketing material.

**Ohm:** A unit of electrical resistance.

**Oil Aging:** Cable aged in an accelerated manner by placement in an oil bath and heated to a pre-set temperature for a stated time.

**Oil-Filled Cable:** A self-contained pressure cable in which the pressure medium is low viscosity oil having access to the insulation.

**Opaque:** (fiber optic) Not permitting the passage of light.

**Open Cell:** Foamed or cellular material with cells which are generally interconnected.

**Optical Communication Cable:** (fiber optic) Fiber with a protective jacket around it.

**Optical Conductors:** (fiber optic) Materials which offer a low optical attenuation to transmission of light energy.

**Optical Fiber Cable:** An assembly consisting of one or more optical fibers.

**Optical Fiber Duplex Adapter:** A mechanical media termination device designed to align and join two duplex connectors.

**Optical Fiber Duplex Connector:** A mechanical media termination device designed to transfer optical power between two pairs of optical fibers.

**Optical Waveguide:** (fiber optic) A fiber used for optical communications. Analogous to a waveguide used for microwave communications.

**Oscillatory Surge:** A surge which includes both positive and negative polarity values.

**Outgassing:** The dissipation of gas from a dielectric evidencing decomposition.

**Outlet Box, Telecommunications:** A metallic or nonmetallic box mounted within a wall, floor or ceiling and used to hold telecommunications outlet/connectors or transition devices.

**Outlet/Connector, Telecommunications:** A connecting device in the work area on which horizontal cable terminates.

**Overall Diameter:** Finished diameter over wire or cable.

**Overcoat Conductor:** A stranded conductor made from individual strands of tin-coated wire stranded together, and then given an overall tin coat.

**Overlap:** The amount the trailing edge laps over the leading edge of a spiral tape wrap.

**Oxygen Index:** Percentage of oxygen necessary to support combustion in a gas mixture.

**Ozone:** Reactive form of oxygen, typically found around electrical discharges and present in the atmosphere in small quantities.

**Packing Fraction:** (fiber optic) The ratio of active cross-sectional area of fiber core, or cores, to the total end surface of the fiber, or fiber bundle.

**Pair:** Two insulated wires of a single circuit associated together, also known as a "balance" transmission line.

**Parallel Pair:** A duplex construction of two insulated conductors laid parallel and then covered overall with a braid or jacket.

**Parallel Stripe:** A stripe applied longitudinally on a wire or cable parallel to the axis of the conductor.

**Patch Cord:** A length of cable with connectors on one or both ends used to join telecommunications links/circuits at the cross-connect.

**Patch Cord Cable:** Bulk cable used in the manufacture of patch cords.

**Patch Panel:** A cross-connect system of mateable connectors that facilitates administration.

**Pathway:** A facility for the placement of telecommunications cable. Synonym: *Raceway*.

**Pay-Off:** The process of feeding a cable or wire from a bobbin, reel or other package.

**Percent Plating:** Quantity of plating on a conductor expressed as a percentage by weight.

**Percentage Conductivity:** Conductivity of a material expressed as a percentage of that of copper.

**Periodicity:** The uniformly spaced variations in the insulation diameter of a transmission cable that result in reflections of a signal, when its wavelength or a multiple thereof is equal to the distance between two diameter variations.

**Permittivity:** See *Dielectric Constant*.

**Phase:** An angular relationship between waves.

**Phase Shift:** A change in the phase relationship between two alternating quantities.

**Photodetector (Receiver):** Converts light energy to electrical energy.

**Pick:** Distance between two adjacent crossover points of braid filaments. The measurement in picks per inch indicates the degree of coverage.

**Picofarad:** One-millionth of one-millionth of a farad. A micromicrofarad or picofarad (abbreviation pf). (See  $\mu\mu F$ ).

**Pigtail Wire:** Fine-stranded, extra-flexible, rope-lay lead wire attached to a shield for terminating purposes.

**Pitch:** In flat cable, the nominal distance between the index edges of two adjacent conductors.

**Pitch Diameter:** Diameter of a circle passing through the center of the conductors in any layer of a multiconductor cable.

**Plain Conductor:** A conductor consisting of only one metal.

**Plain Weave:** A weave used on woven cables. Threads between the wires act as binders and give the cable lateral stiffness and linear flexibility. Also called Standard and Square Weave.

**Planetary Cabler:** A cabler capable of laying down any number of shielded, overbraided or jacketed singles, pairs, called groups, or any combination of them in sequence.

**Planetary Twister:** A twisting machine whose payoff spools are mounted in rotating cradles that hold the axis of the spool in a fixed direction as the spools are revolved so no twist is built up in each wire.

**Plastic Deformation:** Change in dimensions under load that is not recovered when the load is removed.

**Plasticizer:** A chemical agent added to plastics to make them softer and more pliable.

**Plenum:** The air return path of a central air handling system, either ductwork or open space over a suspended ceiling.

**Plenum Cable:** Cable approved by a recognized agency such as UL for installation in plenums without the need for conduit.

**Plug:** The part of the two mating halves of a connector which is moveable when not fastened to the other mating half.

**Ply:** The number of individual strands or filaments twisted together to form a single thread.

**Point-to-Point:** A type of connection established between two specific locations, as between two buildings.

**Point-to-Point Wiring:** An interconnecting technique wherein the connections between components are made by wires routed between connecting points.

**Polarization:** The orientation of a flat cable or a rectangular connector.

**Polishing:** (fiber optic) Act of smoothing ends of fibers to an 'optically smooth' finish, generally using abrasive.

**Polyester:** Polyethylene terephthalate, used extensively as a moisture-resistant cable core wrap.

**Polyethylene:** A thermoplastic material having excellent electrical properties.

**Polyhalocarbon:** A general name for polymers containing halogen atoms. The halogens are fluorine, chlorine, bromine and iodine.

**Polymer:** A material of high molecular weight formed by the chemical union of monomers.

**Polyolefin:** Any of the polymers and copolymers of the ethylene family of hydrocarbons.

**Polypropylene:** A thermoplastic similar to polyethylene but stiffer and having higher softening point (temperature); excellent electrical properties.

**Polyurethane:** Class of polymers known for good abrasion and solvent resistance (may be applied in solid or cellular form).

**Porosity:** Multiple voids in an insulation cross-section.

**Potting:** The sealing of a cable termination or other component with a liquid which thermosets into an elastomer.

**Power Cables:** Cables of various sizes, construction and insulation, single or multi-conductor designed to distribute primary power to various types of equipment.

**Power Factor:** The ratio of resistance to impedance. The ratio of the actual power of an alternating current to apparent power. Mathematically, the cosine of the angle between the voltage applied and the current resulting.

**Pre-Bond:** Stranded wire which has been fused, topcoat-tinned or overcoat-tinned.

**Prewiring:** Wiring installed

- Before walls are enclosed or finished.
- In anticipation of future use or need.

**Primary:** The transformer winding which receives the energy from a supply circuit.

**Primary Insulation:** The first layer of non-conductive material applied over a conductor, whose prime function is to act as electrical insulation.

**Primary Protection:** The minimum protection required on all exposed facilities to comply with NEC requirements.

**Primary Wiring:** A printed circuit intended to provide point-to-point electrical connections.

**Programming:** Ability to select various circuit patterns by interconnecting appropriate contacts on one side of a connector plug or panel.

**Propagation Delay:** Time delay between input and output of signal.

# Glossary

**Propagation Time:** Time required for a wave to travel between two points on a transmission line.

**Protocol:** A set of rules for communicating.

**Proximity Effect:** Nonuniform current distribution over the cross-section of a conductor caused by the variation of the current in a neighboring conductor.

**Pull Box:** A device to access a raceway used to facilitate placing of wire or cables.

**Pull Cord/Pull Wire:** Cord or wire placed within a raceway and used to pull wire and cable through the raceway.

**Pull Strength:** See *Pull Tension*.

**Pull Tension:** The maximum pulling force that can be safely applied to a cable without damage.

**Pulling Eye:** A device used to pull cable into or from a duct.

**Pulse:** Energy which changes abruptly from an intensity to another. May be light energy or electrical energy.

**Pulse Cable:** A type of coaxial cable constructed to transmit repeated high-voltage pulses without degradation.

**Polyvinyl Chloride (PVC):** A general-purpose thermoplastic widely used for wire and cable insulations and jackets.

**Quad:** A series of four separately insulated conductors, generally twisted together in pairs. Also, a series-parallel combination of transistors with increased reliability because failure of one transistor will not disable the entire circuit.

**Quadders:** Three-bay machines which can twist four wires together and cable braided and shielded wires with varying lay lengths.

**Raceway:** Any channel designed for holding wires or cables, e.g. conduit, electrical metallic tubing, sleeves, slots, underfloor raceways, cellular floors, surface raceways, lighting fixture raceways, wireways, cable troughs, busways, auxiliary gutters and ventilated flexible cableways. Synonym: *Pathway*.

**Rack:** See *Cable Rack*.

**Radio Frequency:** The frequencies in the electromagnetic spectrum that are used for radio communications.

**Random Winding:** A winding in rotating equipment wherein the wires do not lie in an even pattern.

**Reactance:** The opposition offered to the flow of alternating current by inductance or capacitance of a compound or circuit.

**Red Plaque:** A powdery, brown-red growth found on silvercoated copper conductors and shield braids.

**Redraw:** The consecutive drawing of wire through a series of dies to reach a desired wire size.

**Reducing Joint:** A joint between two lengths of cable where the conductors are not the same size.

**Reel:** A revolvable flanged device made of wood or metal, used for winding flexible metal wire or cable.

**Reflection:** (fiber optic) Change in direction of a light wave or ray.

**Reflection Loss:** The part of a signal which is lost due to reflection of power at a line discontinuity.

**Refraction:** (fiber optic) The bending of lightwaves or rays as they go from one material to another due to the difference in velocities in the materials.

**Reinforced Sheath:** The outermost covering of a cable that has cable sheath constructed in layers with the addition of a reinforcing material, usually a braided fiber, molded in place between layers.

**Remanence:** The magnetic induction that remains in a magnetic circuit after the removal of an applied magnetomotive force.

**Repeater:** A device which consists of a transmitter and a receiver or transmitter, used to regenerate a signal to increase the system transmission length.

**Resistance:** A measure of the difficulty in moving electrical current through a medium when voltage is applied. It is measured in  $\Omega$ .

**Resistive Conductor:** A conductor with high electric resistance.

**Retractable Cord:** A cord having specially treated insulation or jacket so that it will retract.

**Return Wire:** A ground wire or the negative wire in a direct-current circuit.

**Ribbon Cable:** A flat cable of individually insulated conductors lying parallel and held together by means of adhesive or woven textile yarn.

**Ridge Marker:** One or more ridges running laterally along the outer surface of a plastic-insulated wire for purposes of identification.

**Rigid Bay:** Cabling equipment that maintains component sequence, and can produce cables with distinct layers.

**Rigid Coaxial Cable:** Nonflexible coaxial cable, usually a metal tube armored coaxial cable.

**Ring Tongue:** A solderless terminal that connects wire to a stud.

**Ringing Out:** Locating or identifying specific conductive paths by passing current through selected conductors.

**Rip-Cord:** 1.) Two or more insulated conductors in a parallel configuration which may be separated to leave the insulation of each conductor intact. 2.) A small filament cord used to rip through the outer cable sheath.

**RoHS (Restriction on Hazardous Substances):** European Union directive that restricts use of heavy metal substances.

**Rope Concentric:** A group of standard conductors assembled in a concentric manner.

**Rope Lay Conductor:** A conductor composed of a central core surrounded by one or more layers of helically laid groups of wires.

**Rope Unilay:** A group of stranded conductors assembled in a unilay manner.

**Round Wire Shields:** Shields constructed from bare, tinned or silver-plated copper wire that include braided, spiral and reverse spiral.

**Routers:** A device that determines how to forward a packet toward its destination, based on tables that indicate the costs, congestion status and other factors associated with possible routes. Also called a level 3 relay or an intermediate system.

**Rubber (Wire Insulation):** Term used to describe wire insulations made of thermosetting elastomers; occurs naturally or may be made synthetically.

**Rulan®:** DuPont's trade name for their flame-retardant polyethylene insulating material.

**Screen:** A shield placed over the entire core.

**Secondary Insulation:** A nonconductive material that protects the conductor against abrasion and provides a second electrical barrier.

**Segmental Conductor:** A stranded conductor consisting of three or more stranded conducting elements, each element having approximately the shape of the sector of a circle, assembled to give a substantially circular cross-section.

**Selenium Cure:** Process used to cure neoprene and rubber jacketed wires and cables.

**Self-Extinguishing:** Characteristic of a material whose flame is extinguished after the igniting flame source is removed.

**Semi-Conducting Jacket:** A jacket having a sufficiently low resistance so that its outer surface can be kept at substantially ground potential.

**Semi-Rigid:** A cable containing a flexible inner core and a relatively inflexible sheathing.

**Semi-Solid:** An insulation cross-section having a partially open space between the conductor and the insulation perimeter.

**Separator:** A layer of insulating material which is placed between a conductor and its dielectric between a cable jacket and the components it covers, or between various components of a multiple-conductor cable.

**Series Circuit:** A circuit in which the components are arranged end to end to form a single path for current.

**Serve:** A filament or group of filaments such as fibers or wires, wound around a central core.

**Serving:** A wrapping applied over the core of a cable or over a wire.

**Sheath:** See *Cable Sheath*.

**Shield:** In cables, a metallic layer placed around a conductor or group of conductors to prevent electrostatic or electromagnetic interference between the enclosed wires or external fields.

**Shield Coverage:** Amount of outer cable covered by the shielding material.

**Shield Effectiveness:** The ability of a shield to screen out undesirable signals.

**Shielded Line:** A transmission line whose elements confine propagated radio waves to an essentially finite space inside a tubular conducting surface called the sheath, thus preventing the line from radiating radio waves.

**Shielded-Type Cable:** A cable in which the surface of the insulation is at ground potential.

**Shunt Wire:** A conductor joining two parts of an electric circuit to divert part of the current.

**Signal:** A current used to convey information, either digital, analog, audio or video.

**Silicone:** A material made from silicon and oxygen. Can be in thermosetting elastomer or liquid form. The thermosetting elastomer form is noted for high heat resistance.

**Silicone Treating:** A silicone liquid treatment applied to insulated conductors to allow for easy jacket stripping.

**Sine Wave:** A wave that can be expressed as the sine of a linear function of time, or space or both.

**Single-ended:** Unbalanced, such as grounding one side of a circuit or transmission line.

**Single-Faced Tape:** Fabric tape finished on one side with a rubber or synthetic compound.

**Singlemode Fiber:** A fiber wave guide in which only one mode will propagate. The fiber has a very small core diameter of approximately 8mm. It permits signal transmission at extremely high bandwidths and is generally used with laser diodes.

# Glossary

**Sizing:** Applying a material to a surface to fill pores.

**Skeleton Braid:** Widely separated braid of fiber copper or steel, used to hold core together, for reinforcing jacket or for shielding.

**Skew Rays:** A ray that does not intersect the fiber axis. Generally, a light ray that enters the fiber core at a very high angle.

**Skim Tape:** Filled tape coated on one or both sides with a thin film of uncured rubber or synthetic compound to produce a coating suitable for vulcanization.

**Skin Effect:** The tendency of alternating current, as its frequency increases, to travel only on the surface of a conductor.

**Sleeve:** A braided, knitted or woven tube used over wires or components as insulation tubing. Also called *Sleeving*.

**Solid Conductor:** A conductor consisting of a single wire.

**Source Coupling Loss:** (fiber optic) Loss of light intensity as light from source passes into fiber.

**Space, Telecommunications:** An area used for housing the installation and termination of telecommunications equipment and cable, e.g. telecommunications closets, work areas and manhole/handholes.

**Span:** (1.) In flat conductors, distance between the reference edge of the first and the last conductor. (2.) In round conductors, distance between centers of the first and last conductors. (3.) In aerial cable, the distance between poles or support clamps.

**Spark Test:** A test designed to locate pin-holes in the insulation of a wire or cable by application of a voltage for a very short period of time while the wire is being drawn through the electrode field.

**Specific Gravity:** The ratio of the density (mass per unit volume) of a material to that of water.

**Spectral Bandwidth:** The difference between wavelengths at which the radiant intensity of illumination is half its peak intensity.

**Spectral Response:** (fiber optic) The response of a detector (or a system) over different wavelengths.

**Spectrum:** Frequencies that exist in a continuous range and have a common characteristic.

**Speed of Light (c):**  $2.998 \times 10^8$  meters per second.

**Spiral Shield:** A metallic shield of fine-stranded wires applied spirally rather than braided.

**Spiral Stripe:** A color-coding stripe applied helically to the surface of an insulated wire or cable.

**Spiral Wrap:** The helical wrap of a tape or thread over a core.

**Splice:** A joining of conductors, generally from separate sheaths.

**Splice Closure:** A device used to protect a cable or wire splice.

**Spread Spectrum:** A modulation technique for multiple access, or for increasing immunity to noise and interference.

**Standing Wave:** The stationary pattern of waves produced by two waves of the same frequency traveling in opposite directions on the same transmission line.

**Standing Wave Ratio (SWR):** In a transmission line, waveguide, or analogous system, a figure of merit used to express the efficiency of the system in transmitting power.

**Star Topology:** A topology in which each telecommunications outlet/connector is directly cabled to the distribution device.

**Stay Cord:** A component of a cable used to anchor the cable ends at their points of termination and to keep any pull of the cable from being transferred to the electrical connections.

**Step Index Fiber:** (fiber optic) A multimode fiber consisting of a core of uniform refractive index surrounded by cladding of slightly lower refractive index.

**Strand:** One of the wires of any stranded conductor.

**Strand Lay:** The distance of advance of one strand of a spirally stranded conductor, in one turn, measured axially.

**Stranded Conductor:** A conductor composed of groups of wires twisted together.

**Strap:** Square- or rectangular-section bare conductor manufactured and used in coil form.

**Strip:** To remove insulation from a cable.

**Structural Return Loss:** Backward reflected energies from uneven parts of the cable structure causing impedance variations are termed structural return loss.

**Surface Resistivity:** The resistance of a material between two opposite sides of a unit square of its surface. It is usually expressed in  $\Omega$ .

**Surge:** A temporary and relatively large increase in the voltage or current in an electric circuit or cable. Also called *Transient*.

**Suspended Ceiling:** See *False Ceiling*.

**Sweep-test:** Pertaining to cable, the frequency response is verified by generating an rf voltage whose frequency is swept repeatedly through a given frequency range at a rapid constant rate while the cable response is observed.

**Take-Up:** The process of accumulating wire or cable onto a reel, bobbin or some other type of pack. Also, the device for pulling wire or cable through a piece of equipment or machine.

**Tank Test:** A voltage dielectric test in which the test sample is submerged in water and voltage is applied between the conductor and water as ground.

**Tape:** A relatively narrow woven or cut strip of fabric, paper or film material.

**Tape Cable:** A form of multiple conductor consisting of parallel metal strips imbedded in insulating material.

**Tape Wrap:** A spirally applied tape over an insulated or uninsulated wire.

**Taped Insulation:** Insulation of helically wound tapes applied over a conductor or over an assembled group of insulated conductors.

**Taping:** Process of insulating continuous length, large diameter wires with tape of non-extrudable materials.

**TB:** Terminal Block

**Tear Strength:** The force required to initiate or continue a tear in a material under specified conditions.

**Teflon®:** DuPont company trade name for fluorocarbon resins. FEP, PFA and TFE are typical materials.

**Tefzel®:** DuPont trade name for a fluorocarbon material typically used as a wire wrap insulation.

**Telecommunications:** The communication of information over some distance, including interbuilding and intrabuilding distances.

**Telecommunications Closet:** See *Closet, Telecommunications*.

**Telecommunications Entrance Facility:** See *Entrance Facility, Telecommunications*.

**Telecommunications Entrance Point:** See *Entrance Point, Telecommunications*.

**Telecommunications Entrance Room or Space:** See *Entrance Room or Space, Telecommunications*.

**Telecommunications Equipment Room:** See *Equipment Room, Telecommunications*.

**Telecommunications Grounding Busbar:** A common point of connection for telecommunications system and bonding to ground, which is located in the telecommunications closet or equipment room.

**Telecommunications Infrastructure:** See *Infrastructure, Telecommunications*.

**Telecommunications Outlet/Connector:** See *Outlet/Connector, Telecommunications*.

**Telemetry Cable:** Cable used for transmission of information from instruments to the peripheral recording equipment.

**Temperature Rating:** The maximum temperature at which an insulating material may be used in continuous operation without loss of its basic properties.

**Tensile Strength:** The pull stress required to break a given specimen.

**Tension Member:** A member included in a fiber cable to add tensile strength.

**Terminal:** (1) A point at which information may enter or leave a communications network; (2) the input-output associated equipment; or (3) a device by means of which wires may be connected to each other.

**Termination Hardware:** This term is outmoded. See *Connecting Hardware*.

**Test Lead:** A flexible, insulated lead wire used for making tests, connecting instruments to a circuit temporarily or for making temporary electrical connections.

**Textile Braid:** Any braid made from threads of cotton silk, or synthetic fibers.

**Thermal Aging:** Exposure to a thermal condition or programmed series of conditions for prescribed periods of time.

**Thermocouple Lead Wire:** An insulated pair of wires used from the couple to a junction box.

**Thermoplastic:** A material which softens when heated and becomes firm on cooling.

**Thermoset:** A material which hardens or sets when heat is applied, and which, once set, cannot be resoftened by heating. The application of heat is called "curing."

**Three-Phase Current:** Current delivered through three wires, with each wire serving as a return for the other two.

**Three-Phase Three-Wire System:** An alternating current supply system comprising three conductors over which three-phase power is sent.

**Three-Wire System:** A d-c or single-phase a-c system comprising three conductors, one of which is maintained at a potential midway between the potential of the other two.

**Tin Overcoat (TOC):** Tinned copper wire, stranded, then coated with pure tin.

# Glossary

**Tinsel Wire:** A low-voltage stranded wire, with each strand a very thin conductor ribbon spirally wrapped around a textile yarn.

**Topcoat:** Bare (untinned) copper wire, stranded then coated with pure tin.

**Topology:** The physical or logical arrangement of a telecommunications system.

**Tracer:** A means of identifying polarity.

**Transducer:** A device for converting mechanical energy to electrical energy.

**Transfer Impedance:** The ratio of the source voltage of the wires inside the cable to the shield current of the cable or connectorized cable assembly.

**Transition Point:** A location in the horizontal cabling where flat undercarpet cable connects to round cable.

**Transmission:** Transfer of electric energy from one location to another through conductors or by radiation or induction fields.

**Transmission Cable:** Two or more transmission lines. See *Transmission Line*.

**Transmission Line:** An arrangement of two or more conductors or a wave guide used to transfer signal energy from one location to another.

**Transmission Loss:** The decrease or loss in power during transmission of energy from one point to another. Usually expressed in decibels.

**Transmission Media:** The various types of wire and optical fiber cable used for transmitting voice or data signals. Typically, wire cable includes twisted pair, coaxial and twinaxial. Optical fiber cable includes single, dual, quad, stranded and ribbon (AI).

**Transmitter:** The electronic package that injects an electrical signal or light signal over the transmission medium.

**Transparent:** (fiber optic) Transmitting rays of light so that objects can be seen through the material.

**Transposition:** Interchanging the relative positions of wires to neutralize the effects of induction to or from other circuits or, to minimize interference pickup by the lead-in during reception.

**Tray Cable:** A factory-assembled multicore conductor or multipair control cable approved under the National Electrical Code for installation in trays.

**Triaxial:** A three-conductor cable with one conductor in the center, a second circular conductor shield concentric with the first, and third circular conductor shield insulated from and concentric with the first and second, usually with insulation, and over a braid or impervious sheath overall.

**Triboelectric Noise:** Noise generated in a shielded cable due to variations in capacitance between shielding and conductor as the cable is flexed.

**Triple Cable:** A cable composed of three insulated single conductors and one bare conductor, all twisted together. It may or may not have a common covering of binding.

**True Concentric:** A cable in which each successive layer has a reversed direction of lay from the preceding layer.

**Trunk Cable:** See *Feeder Cable*.

**Tubing:** A tube of extruded non-supported plastic material.

**Twin Cable:** A pair of insulated conductors twisted, sheathed or held together mechanically and not identifiable from each other in a common covering.

**Twin Coaxial:** A configuration containing two separate, complete coaxial cables laid parallel or twisted around each other in one complex.

**Twin Line:** A transmission line which has a solid insulating material, in which the two conductors are placed in parallel to each other.

**Twinner:** A device for twisting together two conductors.

**Twisted Pairs:** A cable composed of two small insulated conductors twisted together without a common covering.

**Unbalanced Line:** A transmission line in which voltages on the two conductors are unequal with respect to ground.

**Unidirectional Concentric Stranding:** A stranding where each successive layer has a different lay length, thereby retaining a circular form without migration of strands from one layer to another.

**Unidirectional Stranding:** A term denoting that in a stranded conductor, all layers have the same direction of lay.

**Unilay Strand:** A conductor constructed with a central core surrounded by more than one layer of helically-laid wires, with all layers having a common length and direction of lay.

**Velocity of Propagation (VP):** The speed of an electrical signal down a length of cable compared to speed in free space expressed as a percent. It is the reciprocal of the square root of the dielectric constant of the cable insulation.

**Volt:** A unit of electromotive force.

**Voltage:** The term most often used in place of electromotive force, potential difference or voltage drop to designate the electric pressure that exists between two points and is capable of producing a current when a closed circuit is connected between two points.

**Voltage Drop:** The voltage developed across a component or conductor by the current in the resistance or impedance of the component or conductor.

**Voltage Rating:** The highest voltage that may be continuously applied to a wire in conformance with standards or specifications.

**Voltage Standing Wave Ratio (VSWR):** The ratio of the maximum effective voltage to the minimum effective voltage measured along the length of a mis-matched radio frequency transmission line.

**Volume Resistivity (Specific Insulation Resistance):** The electrical resistance between opposite faces of a 1 cm. cube of insulating material, commonly expressed in  $\Omega$ /centimeter.

**Vulcanization:** A chemical reaction in which the physical properties of an elastomer are changed by reacting it with sulfur or other cross-linking agents.

**Wall Thickness:** The thickness of the applied insulation or jacket.

**Water Absorption:** A test to determine the water absorbed by a material after a given immersion period.

**Waterblocked Cable:** A cable constructed with no internal voids in order to allow no longitudinal water passage under a given pressure.

**Watt:** A unit of electric power.

**Wave Form:** A graphical representation of a varying quantity. Usually, time is represented on the horizontal axis, and the current or voltage value is represented on the vertical axis.

**Wave Length:** The distance, measured in the direction of propagation, of a repetitive electrical pulse or waveform between two successive points that are characterized by the same phase of vibration.

**Wicking:** The longitudinal flow of a liquid in a wire or cable due to capillary action.

**Wire:** A conductor, either bare or insulated.

**Wire and Cable Marker:** Device for identification marking of wire and cable.

**Wire and Cable Tying, Clamping, and Harnessing Devices:** Tying tapes, lacing cords and flexible sleeveings which are used for wire and cable bundling, harnessing and holding. Other devices include plastic ties or clamps, spiral-cut plastic tubing and plastic U-shaped trays or ducts.

**Wire and Lead Cutters:** Tools for cutting that range from plier-type cutters to semiautomatic or fully automatic machines integrated with other wire processing operations such as stripping, forming and terminating.

**Wire Gauge:** A system of numerical designation of wire sizes.

**Wire Nut:** A closed-end splice that is screwed on instead of crimped.

**Wire Wrapped Connection:** A solderless connection made by wrapping bare wire around a square or rectangular terminal with a power or hand tool.

**Wire Wrapping Tools:** Portable electric tools and automatic stationary machines used to make solderless wrapped connections of wires to terminals.

**Wiring Closet:** See *Telecommunications Closet*.

**Work Area (Work Station):** A building space where the occupants interact with telecommunications terminal equipment.

**Wrapper:** An insulating barrier applied as a sheet or tape wrapped around a coil periphery.

**Yield Strength:** The minimum stress at which a material will start to physically deform without increase in load.

**Zytel®:** DuPont's trade name for nylon resins.

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# Abbreviations & Acronyms

|                                                                                                                                                                                                                               |                                                                                                         |                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A-D:</b> Analog to digital conversion                                                                                                                                                                                      | <b>CEN:</b> European Committee for Standardization                                                      | <b>E:</b> Symbol for voltage. Usually used to represent direct voltage or the effective (root-mean-square) value of an alternating voltage           |
| <b>ac:</b> Alternating current                                                                                                                                                                                                | <b>CENELEC:</b> European Committee for Electrotechnical Standardization                                 | <b>EFTS:</b> Electronic funds transfer system                                                                                                        |
| <b>AC:</b> Armored Cable, NEC Article 333 Cable Designation                                                                                                                                                                   | <b>CFC:</b> Communications Flat Cable                                                                   | <b>EIA:</b> Electronic Industries Association                                                                                                        |
| <b>ACO:</b> Analog Central Office                                                                                                                                                                                             | <b>ckt:</b> Circuit                                                                                     | <b>EMF:</b> Electromotive Force                                                                                                                      |
| <b>ACR:</b> Attenuation to Crosstalk Ratio                                                                                                                                                                                    | <b>CLT or CLOS:</b> Closet                                                                              | <b>EMI:</b> Electromagnetic Interference                                                                                                             |
| <b>ADO:</b> Auxiliary Disconnect Outlet                                                                                                                                                                                       | <b>CL2:</b> Class 2 Circuit Cable, NEC Article 725 Cable Designation                                    | <b>EMT:</b> Electric Metallic Tubing                                                                                                                 |
| <b>AER:</b> Aerial                                                                                                                                                                                                            | <b>CL2P:</b> Class 2 Circuit Plenum Cable, NEC Article 725 Cable Designation                            | <b>EP:</b> Entrance point                                                                                                                            |
| <b>AF:</b> Audio frequency                                                                                                                                                                                                    | <b>CL2R:</b> Class 2 Circuit Riser Cable, NEC Article 725 Cable Designation                             | <b>EPDM:</b> Ethylene-propylene-diene monomer rubber                                                                                                 |
| <b>AIA:</b> American Institute of Architects                                                                                                                                                                                  | <b>CL2X:</b> Class 2 Circuit Limited Use Cable, NEC Article 725 Cable Designation                       | <b>EPOS:</b> Electronic Point-Of-Sale                                                                                                                |
| <b>ALPETH:</b> An aerial telephone cable having an aluminum shield and polyethylene jacket                                                                                                                                    | <b>CL3:</b> Class 3 Circuit Cable, NEC Article 725 Cable Designation                                    | <b>EPR:</b> Ethylene-propylene rubber                                                                                                                |
| <b>ALS:</b> A type of cable consisting of insulated conductors enclosed in a continuous, closely fitting aluminum tube                                                                                                        | <b>CL3P:</b> Class 3 Circuit Plenum Cable, NEC Article 725 Cable Designation                            | <b>ER:</b> Equipment room                                                                                                                            |
| <b>ALVYN:</b> An indoor, riser rated telephone cable having an aluminum shield and vinyl jacket (PVC)                                                                                                                         | <b>CL3R:</b> Class 3 Circuit Riser Cable, NEC Article 725 Cable Designation                             | <b>ESS:</b> Electronic Switching System                                                                                                              |
| <b>AM:</b> Amplitude Modulation                                                                                                                                                                                               | <b>CL3X:</b> Class 3 Circuit Limited Use Cable, NEC Article 725 Cable Designation                       | <b>ESTA:</b> Australian approval agency; Electricity Trust of South Australia                                                                        |
| <b>ANSI:</b> American National Standards Institute                                                                                                                                                                            | <b>CM:</b> Communications Cable, NEC Article 800 Cable Designation                                      | <b>ETPC:</b> Electrolytic Tough Pitch Copper                                                                                                         |
| <b>ARPANET:</b> Advanced Research Projects Agency Network                                                                                                                                                                     | <b>CMA:</b> Circular Mil Area                                                                           | <b>ETV:</b> Educational Television                                                                                                                   |
| <b>ASCII:</b> American Standard Code for Information Interchange                                                                                                                                                              | <b>CMP:</b> Communication Cable Plenum, NEC Article 800 Cable Designation                               | <b>E/W:</b> Equipped With                                                                                                                            |
| <b>ASME:</b> American Society of Mechanical Engineers                                                                                                                                                                         | <b>CMR:</b> Communications Cable Riser, NEC Article 800 Cable Designation                               | <b>EX or EXT:</b> Extension                                                                                                                          |
| <b>ASP:</b> A filled, direct burial telephone cable used in areas subject to rodent attack. It consists of a filled cable core, corrugated aluminum shield, corrugated steel tape, flooding compound and polyethylene jacket. | <b>CMX:</b> Communications Limited Use Cable, NEC Article 800 Cable Designation                         | <b>EXCH:</b> Exchange                                                                                                                                |
| <b>ASTA:</b> United Kingdom approval agency                                                                                                                                                                                   | <b>CO:</b> Central Office                                                                               | <b>f:</b> Frequency                                                                                                                                  |
| <b>ASTM:</b> American Society for Testing and Materials                                                                                                                                                                       | <b>codec:</b> Coder decoder                                                                             | <b>FAA:</b> Federal Aeronautics Administration                                                                                                       |
| <b>AWG:</b> American Wire Gauge                                                                                                                                                                                               | <b>COE:</b> Central Office Equipment                                                                    | <b>FCC:</b> (1) Federal Communications Commission (2) Flat Conductor Cable, NEC Article 328 Cable Designation                                        |
| <b>AWM:</b> Appliance wiring material                                                                                                                                                                                         | <b>COS:</b> Cooperation for Open Systems                                                                | <b>FDDI:</b> Fiber Distributed Data Interface                                                                                                        |
| <b>B &amp; S Gauge:</b> See American Wire Gauge (AWG)                                                                                                                                                                         | <b>COSINE:</b> Cooperation for Open Systems Interconnection Network in Europe                           | <b>FD:</b> Frequency-Division Multiplexing                                                                                                           |
| <b>B or BUR:</b> Buried                                                                                                                                                                                                       | <b>COT:</b> Central Office Terminal                                                                     | <b>FDR:</b> Feeder                                                                                                                                   |
| <b>AWM:</b> Appliance wiring material                                                                                                                                                                                         | <b>CPC:</b> Customer Premises Communication                                                             | <b>FEP:</b> Fluorinated ethylene propylene                                                                                                           |
| <b>BCF:</b> Billion Conductor Feet                                                                                                                                                                                            | <b>CPE:</b> (1) Chlorinated Polyethylene (2) Customer Premises Equipment or Customer Provided Equipment | <b>FEXT:</b> Far End Crosstalk                                                                                                                       |
| <b>BEF:</b> Building Entrance Facility                                                                                                                                                                                        | <b>CPU:</b> Central Processing Unit                                                                     | <b>FI:</b> Approval agency of Finland; Electrical Inspectorate                                                                                       |
| <b>BER:</b> Bit Error Rate                                                                                                                                                                                                    | <b>CRT:</b> Cathode Ray Tube                                                                            | <b>FIPS PUB:</b> Federal Information Processing Standard Publication                                                                                 |
| <b>BIC:</b> Building Industry Consultant                                                                                                                                                                                      | <b>CSMA/CD:</b> Carrier Sense Multiple Access/ Collision Detection                                      | <b>FM:</b> Frequency modulation                                                                                                                      |
| <b>BICSI:</b> Building Industry Consulting Service International                                                                                                                                                              | <b>CSPE:</b> Chlorosulfonated Polyethylene                                                              | <b>FOCIS:</b> Fiber Optic Connector Intermateability Standard                                                                                        |
| <b>BISDN:</b> Broadband Integrated Services Digital Network                                                                                                                                                                   | <b>CTR:</b> Certified Test Report                                                                       | <b>FOTP:</b> Fiber Optic Test Procedure                                                                                                              |
| <b>BTU:</b> British Thermal Unit                                                                                                                                                                                              | <b>CV:</b> Continuous vulcanization                                                                     | <b>FOTS:</b> Fiber Optics Transmission System                                                                                                        |
| <b>CA:</b> Cable                                                                                                                                                                                                              | <b>D-A:</b> Digital to analog conversion                                                                | <b>FPL:</b> Power Limited Fire Protective Signaling Circuit Cable, NEC Article 760 Cable Designation                                                 |
| <b>CATV:</b> (1) Community Antenna Television; Cable Access Television (2) CATV Cable, NEC Article 820 Cable Designation                                                                                                      | <b>DAF:</b> Dedicated Access Facility                                                                   | <b>FPLP:</b> Power Limited Fire Protective Signaling Circuit Plenum Cable, NEC Article 760 Cable Designation                                         |
| <b>CATVP:</b> CATV Plenum Cable, NEC Article 820 Cable Designation                                                                                                                                                            | <b>dB:</b> Decibel                                                                                      | <b>FPLR:</b> Power Limited Fire Protective Signaling Circuit Riser Cable, NEC Article 760 Cable Designation                                          |
| <b>CATVR:</b> CATV Riser Cable, NEC Article 820 Cable Designation                                                                                                                                                             | <b>DBS:</b> Direct Broadcast Satellite                                                                  | <b>FR-1:</b> A flammability rating established by Underwriter's Laboratories for wires and cables that pass a specially designed vertical flame test |
| <b>CATVX:</b> CATV Limited Use Cable, NEC Article 820 Cable Designation                                                                                                                                                       | <b>dc:</b> Direct current                                                                               | <b>freq:</b> Frequency                                                                                                                               |
| <b>CB:</b> Citizens band                                                                                                                                                                                                      | <b>DCE:</b> Data Circuit-Terminating Equipment                                                          | <b>FRICC:</b> Federal Research Internet Coordinating Committee (now FNC)                                                                             |
| <b>C-C:</b> Conductor to conductor capacitance                                                                                                                                                                                | <b>DCO:</b> Digital Central Office                                                                      | <b>FRPE:</b> Flame Retardant Polyethylene                                                                                                            |
| <b>CCITT:</b> The International Telegraph and Telephone Consultative Committee                                                                                                                                                | <b>DCR:</b> Direct Current Resistance                                                                   | <b>ft:</b> Foot                                                                                                                                      |
| <b>CCTV:</b> Closed-circuit television                                                                                                                                                                                        | <b>DD:</b> Distribution Designer or Distribution Device                                                 | <b>FTP:</b> Fire Transfer Protocol                                                                                                                   |
| <b>CDDI:</b> Copper Distributed Data Interface                                                                                                                                                                                | <b>DEMARC:</b> Demarcation point                                                                        | <b>ga:</b> Gauge                                                                                                                                     |
| <b>CDF:</b> Central Distribution Frame                                                                                                                                                                                        | <b>DEMKO:</b> Approval agency of Denmark                                                                | <b>gHz:</b> Gigahertz                                                                                                                                |
| <b>CDO:</b> Community Dial Office                                                                                                                                                                                             | <b>DGM:</b> Data Grade Medium                                                                           | <b>grd:</b> Ground                                                                                                                                   |
| <b>CEBEC:</b> Belgium approval agency; Commitee Electrotechnique Belge Service de la Marque                                                                                                                                   | <b>DISA:</b> Defense Information Systems Agency (formerly DCA)                                          | <b>GTO:</b> Gas tube sign and oil-burner ignition cable. 5,000V-15,000V.                                                                             |
| <b>CEE:</b> European standards agency; International Commission on Rules for the Approval of Electrical Equipment                                                                                                             | <b>DISI:</b> Directory Information Services Infrastructure                                              | <b>H:</b> Designation for intensity of magnetic energy                                                                                               |
|                                                                                                                                                                                                                               | <b>DIST:</b> District                                                                                   | <b>hc:</b> Handset combination (single-line telephone)                                                                                               |
|                                                                                                                                                                                                                               | <b>DRT:</b> Plastic range and dryer cord (CSA)                                                          | <b>HC:</b> Horizontal cross-connect                                                                                                                  |
|                                                                                                                                                                                                                               | <b>DTE:</b> Data Terminal Equipment                                                                     | <b>hck:</b> Handset combination; key (six-button telephone)                                                                                          |
|                                                                                                                                                                                                                               | <b>DVD:</b> Digital Versatile Disc                                                                      | <b>HDPE:</b> High Density Polyethylene                                                                                                               |
|                                                                                                                                                                                                                               | <b>DW:</b> Distribution Wire                                                                            | <b>HF:</b> High Frequency                                                                                                                            |

# Abbreviations & Acronyms

**hh:** Handhole

**Hi-Pot:** A test designed to determine the highest voltage that can be applied to a conductor without breaking through the insulation.

**HPD:** Rubber- and asbestos-insulated heater cord. No braid on individual conductors but with braid overall. Also made with neoprene insulation and no asbestos or PVC/NBC.

**HPN:** Two-conductor, neoprene-insulated heater cord. Parallel construction. For use in damp locations.

**HSJ:** Same as type HS but with #18, #16 and #14 conductors and differing thickness of jacket.

**HVAC:** Heating, ventilation and air conditioning

**H<sub>z</sub>:** Hertz

**i:** Symbol used to designate current

**IC:** Intermediate cross-connect

**ICEA:** Insulated Cable Engineers Association

**IDC:** Insulation Displacement Connector

**IEC:** International Electrotechnical Commission

**IEEE:** Institute of Electrical and Electronics Engineers

**IGS:** Integrated Gas Spacer Cable, NEC Article 325 Cable Designation

**IMSA:** International Municipal Signal Association

**in:** Inch

**IRSG:** Internet Research Steering Group

**IRTF:** Internet Research Task Force

**IS:** International Standard

**ISA:** Instrument Society of America

**ISDN:** Integrated Services Digital Network

**ISO:** International Organization for Standardization

**ISOC:** Internet Society

**ITCO:** Independent Telephone Company

**ITU-T:** International Telecommunications Union - Telecommunications Standardization Section

**IW (C):** Inside Wiring (cable)

**J:** Joule

**kcmil:** One thousand circular mils

**KEMA KEUR:** Approval agency of the Netherlands

**kft:** An abbreviation for 1000 ft.

**kH<sub>z</sub>:** KiloHertz

**Kilo:** A numerical prefix denoting 1000 (10<sup>3</sup>)

**km:** Kilometer

**KTS:** Key Telephone Service

**kV:** Kilovolt

**kVA:** Kilovolt Ampere

**kW:** Kilowatt

**LAN:** Local Area Network

**LASER:** Light Amplification by Stimulated Emission of Radiation

**LATA:** Local Access Transport Area

**lbf:** Pound force

**LBO:** Line Buildout

**LDPE:** Low Density Polyethylene

**LEC:** Local Exchange Carrier

**LED:** Light-Emitting Diode

**LLDPE:** Linear Low Density Polyethylene

**LOCA:** Loss of Coolant Accident

**locap:** Low-capacitance, low-loss paired cable

**MAC:** Moves, Adds and Changes

**MAP:** Manufacturing Automation Protocol

**MATV:** Master Antenna Television

**Mbps:** Megabits per second

**MC:** (1) main cross-connect (2) Metal Clad Cable, NEC Article 334 Cable Designation

**MCM:** One thousand circular mils

**MDF:** Main Distribution Frame

**MDPE:** Medium Density Polyethylene

**Meg or Mega:** A numerical prefix denoting 1,000,000 (10<sup>6</sup>)

**M/G:** Motor/Generator Set

**MH:** Manhole

**Mho:** The unit of conductivity. The reciprocal of an ohm.

**MHz:** Megahertz

**MI:** Mineral Insulated Cable, NEC Article 330 Cable Designation

**Micro:** A numerical prefix denoting one-millionth (10<sup>6</sup>)

**MIL STD:** Military Standard

**MILNET:** Military Network

**MLT:** Multi-Level Threshold

**mm:** Millimeter

**Modem:** Modulator demodulator

**MTT:** Main Telephone Terminal

**MTW:** Machine Tool Wire

**MV:** Medium Voltage Cable, NEC Article 326 Cable Designation

**MW:** Radio hookup wire with polyvinyl insulation and plain or nylon jacket or braid, or shield, 1000V

**N:** Newton

**NAIC:** Network Applications and Information Center

**NASA:** National Aeronautics and Space Administration

**NBR:** Natural butadiene-acrylonitrile copolymer rubber

**NBS:** National Bureau of Standards (now NIST)

**NEC:** National Electrical Code

**NEMA:** National Electrical Manufacturers Association

**NEMKO:** Approval agency of Norway

**NESC:** National Electrical Safety Code

**NEXT:** Near End Crosstalk

**nf:** Nanofarad

**NFPA:** National Fire Protection Association

**NI:** Network Interface

**NID:** Network Interface Device

**NIST:** National Institute of Standards and Technology (formerly NBS)

**NIU:** Network Interface Unit

**nm:** Nanometer

**NM & NMC:** Non Metallic Sheathed Cable, NEC Article 336 Cable Designation

**NPLF:** Non Power-Limited Fire Protective Signaling Circuit Cable, NEC Article 760 Cable Designation

**NPLFP:** Non Power-Limited Fire Protective Signaling Circuit Plenum Cable, NEC Article 760 Cable Designation

**NPLFR:** Non Power-Limited Fire Protective Signaling Circuit Plenum Cable, NEC Article 760 Cable Designation

**NRZ:** Non Return to Zero

**NRZI:** Non Return to Zero Inverted

**OC:** Optical Carrier

**ODC:** Ozone Depleting Chemical

**OP:** Outside Plant

**OPE:** Outside Plant Engineer

**OSHA:** Occupational Safety and Health Administration

**OSI:** Open Systems Interconnection

**OVE:** Approval agency of West Germany; Oesterreichischer Verband für Elektrotechnik

**PABX:** Private Automatic Branch Exchange

**PAM:** Pulse Amplitude Modulation

**PAP:** A commonly used term for air core (unfilled) direct burial telephone cable with a corrugated aluminum shield

**PBX:** Private Branch Exchange

**PC:** Personal Computer

**PCB:** Printed Circuit Board

**P-FEP:** General Cable proprietary dielectric material used in conjunction with FEP.

**PCM:** Pulse Code Modulation

**PCP:** A commonly used term for air core (unfilled) direct burial cable with a corrugated copper shield

**PE:** Polyethylene

**pf:** Picofarad

**PFA:** Polyfluoroalkoxy

**PIC:** A general term for any type of plastic insulated telephone cable

**Pico:** A numerical prefix denoting one-millionth of one-millionth (10<sup>-12</sup>)

**PL:** Private Lines

**PLSJ:** All-rubber, parallel-jacketed, two-conductor, light-duty cord for pendant or portable use in damp locations. 300V.

**PLT:** (1) Plant (2) Same as PLSJ except thermoplastic insulation

**PLTC:** Power Limited Tray Cable, NEC Article 725 Cable Designation

**PM:** Phase Modulation

**POI:** Point Of Interface

**POSJ:** All-rubber, parallel, light duty rip-cord for use on lamps and small appliances, 300V, 60°C

**POT:** Thermoplastic, parallel, light duty rip-cord. 300V, 60°C to 105°C.

**POTS:** Plain Old Telephone Service (colloquial)

**PP:** Polypropylene

**PR:** Pair

**PTFE:** Polytetrafluoroethylene

**PTSS:** Passive Transmission Sub-System

**PVC:** Polyvinyl Chloride

**PVDF:** Polyvinylidene Fluoride

**R:** Symbol for resistance

**R-F:** Radio-frequency

**RCDD:** Registered Communication Distribution Designer

**REA:** Rural Electrification Administration

**REP:** Repair

**RFQ:** Request for Quote

**RG/U:** General utility grade military coaxial cable

**RH:** Relative humidity

**RJ-45:** A specific pin-point assignment for an eight position modular telecommunications connector.

**RMS:** (1) rack mount space (2) Root Mean Squares

**RoHS:** Restriction on Hazardous Substances

**S:** Heavy-duty, rubber-insulated portable cord. Stranded copper conductors with separator and individual rubber insulation. Two or more color-coded conductors cabled with filler, wrapped with separator and rubber jacketed overall, 600 Volts.

**SAE:** Society of Automotive Engineers

**SANZ:** Standards Association of New Zealand

**SBR:** Styrene Butadiene Rubber

**ScTP:** Screened Twisted Pair

**SDN:** Switched Digital Network

# Abbreviations & Acronyms

|                                                                                                                                                              |                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SE:</b> Service Entrance Cable, NEC Article 338 Cable Designation                                                                                         | <b>SWR:</b> Standing Wave Ratio                                                                                                                                                 |
| <b>SEMKO:</b> Approval agency for Sweden                                                                                                                     | <b>SYS:</b> System                                                                                                                                                              |
| <b>SFTP:</b> Simple File Transfer Protocol                                                                                                                   | <b>TC:</b> (1) Power and Control Tray Cable, NEC Article 340 Cable Designation (2) Telecommunications Closet                                                                    |
| <b>SI:</b> System Internationale                                                                                                                             | <b>TCP:</b> Transmission Control Protocol                                                                                                                                       |
| <b>SJ:</b> Junior hard-service, rubber-insulated pendant or portable cord. Same construction as type S, but 300V. Jacket thickness different.                | <b>TDM:</b> Time-Division Multiplexing                                                                                                                                          |
| <b>SJO:</b> Same as SJ, but carolprene, oil-resistant compound outer jacket. Can also be made "water-resistant." 300V, 60°C.                                 | <b>TEL:</b> Telephone                                                                                                                                                           |
| <b>SJT:</b> Junior hard service thermoplastic or rubber-insulated conductors with overall thermoplastic jacket, 300V, 60°C to 105°C.                         | <b>TELCO:</b> Telephone Company                                                                                                                                                 |
| <b>SJTO:</b> Same as SJT but oil-resistant thermoplastic outer jacket. 60°C.                                                                                 | <b>TERM:</b> Terminal or termination                                                                                                                                            |
| <b>SMTP:</b> Simple Mail Transfer Protocol                                                                                                                   | <b>TEW:</b> Canadian Standard Association type appliance wires. Solid or stranded single conductor, plastic-insulated, 600V, 105°C.                                             |
| <b>SNA:</b> Systems Network Architecture                                                                                                                     | <b>TF:</b> Fixture wire, thermoplastic-covered solid or seven strands. 60°C.                                                                                                    |
| <b>SNM:</b> Shielded Non Metallic Sheathed Cable, NEC Article 337 Cable Designation                                                                          | <b>TFE:</b> Tetrafluoroethylene                                                                                                                                                 |
| <b>SNMP:</b> Simple Network Management Protocol                                                                                                              | <b>TFF:</b> Same as TF but flexible stranding. 60°C.                                                                                                                            |
| <b>SNR:</b> Signal to Noise Ratio                                                                                                                            | <b>THHN:</b> 90°C, 600V nylon jacketed building wire                                                                                                                            |
| <b>SO:</b> Hard-service cord, same construction as type S except oil-resistant carolprene jacket, 600V, 60° to 90°C.                                         | <b>THW:</b> Thermoplastic vinyl-insulated building wire. Flame-retardant, moisture- and heat-resistant. 75°C. Dry and wet locations.                                            |
| <b>SONET:</b> Synchronous Optical Network                                                                                                                    | <b>THWN:</b> Same as THW but with nylon jacket overall. 75°C.                                                                                                                   |
| <b>SP-1:</b> All rubber, parallel-jacketed, two-conductor light-duty cord for pendant or portable use in damp locations. 300V.                               | <b>TIA:</b> Telecommunications Industry Association                                                                                                                             |
| <b>SP-2:</b> Same as SP-1, but heavier construction, with or without third conductor for grounding purposes. 300V.                                           | <b>TOC:</b> Tin Overcoat                                                                                                                                                        |
| <b>SP-3:</b> Same as SP-23, but heavier construction for refrigerators or room air conditioners. 300V.                                                       | <b>TP:</b> Transport Protocol                                                                                                                                                   |
| <b>SPC:</b> Stored Program Control                                                                                                                           | <b>TP-PMD:</b> Twisted Pair-Physical Medium Dependent                                                                                                                           |
| <b>SPG:</b> Single Point Ground                                                                                                                              | <b>TPDDI:</b> Twisted Pair Distributed Data Interface                                                                                                                           |
| <b>SPT-1:</b> Same as SP-1, except all-thermoplastic. 300V. With or without third conductor for grounding.                                                   | <b>TSB:</b> Telecommunications System Bulletin                                                                                                                                  |
| <b>SPT-2:</b> Same as SP-2, except all-thermoplastic. 300V. With or without third conductor for grounding.                                                   | <b>TT:</b> Telephone Terminal                                                                                                                                                   |
| <b>SPT-3:</b> Same as SP-3, except all-thermoplastic. 300V. With or without third conductor for grounding.                                                   | <b>TTB:</b> Telephone Terminal Board                                                                                                                                            |
| <b>SRD:</b> Portable range or dryer cable. Three or four rubber-insulated conductors with rubber or neoprene jacket, flat or round construction. 300V, 60°C. | <b>TTY:</b> Text Telephones                                                                                                                                                     |
| <b>SRDT:</b> Same as SRD, except all-thermoplastic with a maximum temperature of 90°C.                                                                       | <b>TW:</b> Thermoplastic vinyl-jacketed building wire, moisture-resistant. 60°C.                                                                                                |
| <b>SRL:</b> Structural return loss                                                                                                                           | <b>UCC:</b> Uniform Code Council                                                                                                                                                |
| <b>ST:</b> Hard-service cord, jacketed, same as type S except all-plastic construction, 600V, 60°C to 105°C.                                                 | <b>UF:</b> Thermoplastic underground feeder and branch circuit cable                                                                                                            |
| <b>STA:</b> Station                                                                                                                                          | <b>UF:</b> Underground Feeder and Branch Circuit Cable, NEC Article 339 Cable Designation                                                                                       |
| <b>STO:</b> Same as ST but with oil-resistant thermoplastic outer jacket. 600V, 60°C.                                                                        | <b>UG:</b> Underground                                                                                                                                                          |
| <b>STP:</b> Shielded twisted pair                                                                                                                            | <b>UHF:</b> Ultra High Frequency, 300 to 3,000 MHz                                                                                                                              |
| <b>SV:</b> Vacuum cleaner cord, two or three-conductor, rubber-insulated. Overall rubber jacket. For light-duty in damp locations. 300V, 60°C.               | <b>UL:</b> Underwriter's Laboratories, Inc.                                                                                                                                     |
| <b>SVO:</b> Same as SV except carolprene jacket, 300V, 60°C.                                                                                                 | <b>µm:</b> Micron or micrometer                                                                                                                                                 |
| <b>SVT:</b> Same as SV except all-plastic construction. With or without third conductor for grounding purposes only. 300V, 60°C to 90°C.                     | <b>UPC:</b> Universal Packaging Code                                                                                                                                            |
| <b>SW:</b> Station Wire                                                                                                                                      | <b>UPS:</b> Uninterruptible Power Supply                                                                                                                                        |
| <b>SWB:</b> Switchboard                                                                                                                                      | <b>USE:</b> Underground Service Entrance Cable, NEC Article 338 Cable Designation                                                                                               |
|                                                                                                                                                              | <b>UTE:</b> Approval agency for France; Union Technique de l'Electricite                                                                                                        |
|                                                                                                                                                              | <b>UTP:</b> Unshielded twisted-pair                                                                                                                                             |
|                                                                                                                                                              | <b>V:</b> Volt                                                                                                                                                                  |
|                                                                                                                                                              | <b>VDE:</b> West Germany approval agency                                                                                                                                        |
|                                                                                                                                                              | <b>VHF:</b> Very High Frequency, 30 to 300 MHz                                                                                                                                  |
|                                                                                                                                                              | <b>VP:</b> Velocity of Propagation                                                                                                                                              |
|                                                                                                                                                              | <b>VSWR:</b> Volume Standing Wave Ratio                                                                                                                                         |
|                                                                                                                                                              | <b>VW-1:</b> A flammability rating established by Underwriters Laboratories for wires and cables that pass a specially designed vertical flame test, (formerly designated FR-1) |
|                                                                                                                                                              | <b>W:</b> Symbol for watt or wattage                                                                                                                                            |
|                                                                                                                                                              | <b>WA:</b> Work area                                                                                                                                                            |
|                                                                                                                                                              | <b>WP:</b> Waterproof Outlet                                                                                                                                                    |
|                                                                                                                                                              | <b>X:</b> Cross-connect                                                                                                                                                         |
|                                                                                                                                                              | <b>XLPE:</b> Crosslinked polyethylene                                                                                                                                           |
|                                                                                                                                                              | <b>Z:</b> Symbol for impedance                                                                                                                                                  |

# Hook-Up Wire Product Finder

| TEMP. °C | VOLTAGE | UL   | UL   | CSA   | MIL   | AWG | P/N    | STRAND TYPE | PAGE |
|----------|---------|------|------|-------|-------|-----|--------|-------------|------|
| 60       | 1500*   | —    | —    | —     | —     | 20  | C1326  | STRANDED    | 7    |
| 60       | 3000*   | —    | —    | —     | —     | 20  | C1319  | STRANDED    | 7    |
| 60       | 5000*   | —    | —    | —     | —     | 18  | C1320A | STRANDED    | 7    |
| 60       | 5000*   | —    | —    | —     | —     | 18  | C1321  | STRANDED    | 7    |
| 60       | 10000*  | —    | —    | —     | —     | 18  | C1318  | STRANDED    | 7    |
| 80       | 1000    | —    | —    | —     | W-76B | 24  | C7600A | STRANDED    | 4    |
| 80       | 1000    | —    | —    | —     | W-76B | 22  | C7602A | STRANDED    | 4    |
| 80       | 1000    | —    | —    | —     | W-76B | 20  | C7604A | STRANDED    | 4    |
| 80       | 1000    | —    | —    | —     | W-76B | 18  | C7606A | STRANDED    | 4    |
| 80       | 1000    | —    | —    | —     | W-76B | 16  | C7608A | STRANDED    | 4    |
| 80       | 1000    | —    | —    | —     | W-76B | 14  | C7610A | STRANDED    | 4    |
| 80       | 1000    | —    | —    | —     | W-76B | 12  | C7611A | STRANDED    | 4    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 24  | C2003A | SOLID       | 2    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 24  | C2015A | STRANDED    | 2    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 22  | C2004A | SOLID       | 2    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 22  | C2016A | STRANDED    | 2    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 20  | C2028A | SOLID       | 2    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 20  | C2040A | STRANDED    | 2    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 18  | C2052A | SOLID       | 2    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 18  | C2064A | STRANDED    | 2    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 16  | C2053A | SOLID       | 2    |
| 80/105   | 300     | 1007 | 1569 | TR-64 | —     | 16  | C2065A | STRANDED    | 2    |
| 105      | 600     | 1015 | —    | TEW   | —     | 24  | C2100A | STRANDED    | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 22  | C2101A | STRANDED    | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 22  | C2117A | SOLID       | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 20  | C2102A | STRANDED    | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 20  | C2118A | SOLID       | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 18  | C2103A | STRANDED    | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 18  | C2119A | SOLID       | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 16  | C2104A | STRANDED    | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 14  | C2105A | STRANDED    | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 12  | C2106A | STRANDED    | 3    |
| 105      | 600     | 1015 | —    | TEW   | —     | 10  | C2107A | STRANDED    | 3    |

\* For intermittent duty only

# Multi-Conductor Cable Product Finder

| NO.<br>COND. | STRAND<br>TYPE | AWG 28                                                                                                                   | AWG 24                                                                                                                                                                                                                        | AWG 22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | AWG 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | AWG 19          | AWG 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | AWG 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | AWG 14                                                                                                                                                                                                                                                                                                                                   | AWG 12                                                                                                                                                                                                                                                                                                           |
|--------------|----------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                | P/N SHIELD PAGE                                                                                                          | P/N SHIELD PAGE                                                                                                                                                                                                               | P/N SHIELD PAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | P/N SHIELD PAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | P/N SHIELD PAGE | P/N SHIELD PAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | P/N SHIELD PAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                            | P/N SHIELD PAGE                                                                                                                                                                                                                                                                                                                          | P/N SHIELD PAGE                                                                                                                                                                                                                                                                                                  |
| 1            | SOLID          |                                                                                                                          |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                  |
|              | STRANDED       |                                                                                                                          | 743605 B .....169                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 743601 B .....169<br>743602 B .....169<br>743603 B .....169<br>743604 B .....169<br>C1300 B,R .....172                                                                                                                                                                                                                                                                                                                                                                                   |                 | C1201 B,C .....175<br>C1301 B,R .....172                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                  |
| 2            | SOLID          |                                                                                                                          |                                                                                                                                                                                                                               | C2515A F .....23<br>C2676A B .....34<br>C4008A U .....9, 43<br>C4167A F .....29<br>C4408 U .....138<br>E1000S U .....134<br>E1482S U .....117<br>E2000S F .....135<br>E2100S F-P .....137<br>E2482S S .....119<br>E3000S U-P .....136<br>E3482S U-P .....121<br>E3542S F-P .....123                                                                                                                                                                                                                                                                                                        | C2509A F .....164<br>C4311A C .....9                                                                                                                                                                                                                                                                                                                                                                                                                                                     | C2754A .....9   | C0471 U .....125<br>C0472 F .....126<br>C3060 F-P .....28<br>C3110 U-P .....17<br>C3167 F-P .....128<br>C3200 U-P .....122<br>C3240 U-P .....127<br>C3260 F-P .....124<br>C4304A U .....118<br>C4334A F .....120<br>E1030S U .....134<br>E1502S U .....117<br>E2030S F .....135<br>E2200S F-P .....137<br>E2402S U .....117<br>E2502S F .....119<br>E3030S U-P .....136<br>E3502S U-P .....121<br>E3602S F-P .....123                                                                                                                                                                                                  | C0473 U .....125<br>C0474 F .....126<br>C3168 F-P .....128<br>C3210 U-P .....122<br>C3241 U-P .....127<br>C3270 F-P .....124<br>C4321A U .....118<br>C4344A F .....120<br>E1512S U .....117<br>E2404S U .....117<br>E2522S F .....119<br>E3512S U-P .....121<br>E3612S F-P .....123                                                                                                                                                                                        | C0475 U .....126<br>C0491 U .....125<br>C3172 F-P .....128<br>C3220 U-P .....122<br>C3224 U-P .....122<br>C3280 F-P .....124<br>C4163A F .....29<br>C4324A U .....118<br>C4347A F .....120<br>E1522S U .....117<br>E2406S U .....117<br>E2532S F .....119<br>E3522S U-P .....121<br>E3622S F-P .....123                                  | C0476 F .....126<br>C0492 U .....125<br>C3174 F-P .....128<br>C3224 U-P .....122<br>C3246 U-P .....127<br>C3282 F-P .....124<br>C4164A F .....29<br>C4327A U .....118<br>C4348A F .....120<br>E1532S U .....117<br>E2542S F .....119<br>E3532S U-P .....121<br>E3632S F-P .....123                               |
|              | STRANDED       | C6500A B .....37                                                                                                         | 743701 B .....170<br>743704 B .....170<br>743705 B .....170<br>C0740A F .....68<br>C1226A S .....173<br>C1228A F .....172<br>C1356 U .....156<br>C2461A U .....11<br>C2513A F .....23<br>C4152A F .....29<br>C4216A F .....31 | 743706 B .....170<br>C0431A U .....22<br>C0450A F .....32<br>C0760A F .....69<br>C1322A B .....174<br>C1362 U .....156<br>C2514A F .....23<br>C2516A F .....23<br>C2518A F .....23<br>C2520A F .....24<br>C2677A B .....36<br>C2679A B .....36<br>C2882A S .....33<br>C3105 U-P .....16<br>C3115 U-P .....17<br>C3154 F-P .....27<br>C3158 F-P .....28<br>C4100A U .....18<br>C4153A F .....29<br>C4168A F .....29<br>C4192A F .....30<br>C4210A F .....30<br>C6310 U .....138<br>C6348A U .....12<br>E1002S U .....134<br>E2002S F .....135<br>E2102S F-P .....137<br>E3002S U-P .....136 | 743707B .....170<br>C0433A U .....22<br>C0452A F .....32<br>C1302 B,R .....40, 172<br>C1360 U .....156<br>C1642A B .....35<br>C2519A F .....24<br>C2524A F .....23<br>C2540A F .....23<br>C2681A B .....36<br>C2888A S .....33<br>C3320 F-P .....27<br>C3602 U-R .....21<br>C4117A U .....19<br>C4154A F .....29<br>C4166A F .....30<br>C4211A F .....30<br>C6311 U .....138<br>C6351A U .....13<br>E1022S U .....134<br>E2022S F .....135<br>E2122S F-P .....137<br>E3022S U-P .....136 |                 | 740302 U .....158<br>C0435A U .....22<br>C0454A F .....32<br>C1202 B,C .....41, 175<br>C1357 U .....156<br>C2521A F .....24<br>C2534A F .....23<br>C2686A B .....23<br>C2830A U .....13<br>C2892A S .....33<br>C3062 F-P .....28<br>C3102 U-P .....16<br>C3112 U-P .....17<br>C3162 F-P .....27<br>C4114A U .....18<br>C4125A U .....19<br>C4155A F .....29<br>C4197A F .....30<br>C4212A F .....30<br>C5460 U .....139<br>C6312 U .....138<br>C6367 U .....157<br>C7102A U .....156<br>C8116 U-P .....45<br>C8122 U-P .....45<br>E1032S U .....134<br>E2032S F .....135<br>E2202S F-P .....137<br>E3032S U-P .....136 | 740202 U .....158<br>C0437A U .....22<br>C0456A F .....32<br>C1358 U .....158<br>C1602 B,C .....41, 175<br>C1704 U .....152<br>C2405A U .....14<br>C2536A F .....17<br>C2538A F .....17<br>C3126 U-P .....16<br>C3068 F-P .....28<br>C3127 U-P .....27<br>C3169 F-P .....16<br>C3193 U-P .....27<br>C4135A U .....20<br>C4162A F .....20<br>C4213A F .....30<br>C8111 FB-P .....39<br>E1042S U .....134<br>E2042S F .....134<br>E2242S F-P .....137<br>E3042S U-P .....136 | 740102 U .....158<br>C0439A U .....22<br>C0458A F .....32<br>C1361 U .....156<br>C1612 B,C .....41<br>C1702 U .....152<br>C2409A U .....14<br>C2538A F .....17<br>C3126 U-P .....16<br>C4146 U-P .....20<br>C4201A F .....30<br>C4215A F .....30<br>E1052S U .....134<br>E2052S F .....135<br>E2252S F-P .....137<br>E3052S U-P .....136 | 740002 U .....158<br>C0441A U .....22<br>C0460A F .....32<br>C1363 U .....156<br>C1364 U .....157<br>C1700 U .....152<br>C2410A U .....14<br>C2539A F .....17<br>C3129 U .....17<br>C4150A U .....20<br>C4202A F .....30<br>E1062S U .....134<br>E2062S F .....135<br>E2262S F-P .....137<br>E3062S U-P .....136 |
| 3            | SOLID          |                                                                                                                          |                                                                                                                                                                                                                               | C4410 U .....138                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | C2510A F .....164                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | C1201 B,C .....175<br>C1301 B,R .....172<br>C3114 U-P .....17<br>C4305A U .....118<br>C4335A F .....120<br>E1503S U .....117<br>E2503S S .....119<br>E3503S U-P .....121<br>E3603S F-P .....123                                                                                                                                                                                                                                                                                                                                                                                                                        | C4322A U .....118<br>C4345A F .....120                                                                                                                                                                                                                                                                                                                                                                                                                                     | C4325A U .....118                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                  |
|              | STRANDED       | C0530A FB .....72<br>C0741A F .....68<br>C0951A FB .....70<br>C2462A U .....11<br>C4217A F .....31<br>C8115 FB-P .....39 | C0680A FB .....72<br>C0741A F .....68<br>C0951A FB .....70<br>C2462A U .....11<br>C4217A F .....31<br>C8115 FB-P .....39                                                                                                      | C0432A U .....22<br>C0451A F .....32<br>C0761A F .....69<br>C0971A FB .....71<br>C1335A S .....33<br>C2517A F .....23<br>C2526A F .....23<br>C2678A B .....36<br>C3310 F-P .....27<br>C4062A U .....12<br>C4101A U .....18<br>C4156A F .....29<br>C4169A F .....29<br>C4193A F .....30<br>E1003S U .....154<br>E2003S F .....135<br>E2103S F-P .....137<br>E3003S U-P .....136                                                                                                                                                                                                             | C0434A U .....15<br>C0781A F .....69<br>C1304 B,R .....40<br>C1332A B .....36<br>C1333A B .....159<br>C1643A B .....35<br>C2525A F .....23<br>C2528A F .....23<br>C3321 F-P .....28<br>C3603 U-R .....21<br>C4118A U .....19<br>C4157A F .....29<br>C4158A F .....29<br>C6352A U .....13<br>E1023S U .....134<br>E2023S F .....135<br>E2123S F-P .....137<br>E3023S U-P .....136                                                                                                         |                 | C0436A U .....22<br>C0455A F .....32<br>C1203 B,C .....41<br>C2535A F .....23<br>C2768A S .....33<br>C2831A U .....13<br>C3064 F-P .....28<br>C3120 U-P .....27<br>C3164 F-P .....27<br>C3190 U-P .....16<br>C4126A U .....16<br>C4159A F .....29<br>C4198A F .....30<br>C8106 F-P .....26<br>C8107 FB-P .....39<br>E1033S U .....134<br>E2033S F .....135<br>E2203S F-P .....137<br>E3033S U-P .....136                                                                                                                                                                                                               | C0438A U .....22<br>C0457A F .....32<br>C1603 B,C .....41<br>C2406A U .....14<br>C2537A F .....23<br>C3194 U-P .....16<br>C3340 F-P .....27<br>C4136A U .....20<br>C4165A F .....29<br>C4200A F .....30<br>C8119 FB-P .....39<br>E1043S U .....134<br>E2043S F .....135<br>E2243S F-P .....137<br>E3043S U-P .....136                                                                                                                                                      | C0440A U .....22<br>C0459A F .....32                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                  |

\* For intermittent duty only

**CAROL  
BRAND**

B - BRAID SHIELD  
C - CAROLPRENE®  
F - FLEXFOIL® SHIELD  
FB - FLEXFOIL® /BRAID SHIELD  
I - INDIVIDUAL FLEXFOIL® SHIELD

IFB - INDIVIDUAL FLEXFOIL® + FLEXFOIL® /BRAID  
P - PLENUM  
R - RUBBER  
S - SPIRAL SHIELD  
U - NO SHIELD

UJ - UN-JACKETED

 **General Cable**

# Multi-Conductor Cable Product Finder

| NO.<br>COND. | STRAND<br>TYPE | AWG 28                                                     | AWG 24                                                                                                                 | AWG 22                                                                                                                                                                                                                                                                                                                                                                                                                     | AWG 20                                                                                                                                                                                                                                                                                                                                                                                                | AWG 19          | AWG 18                                                                                                                                                                                                                                                                                                                                                                                                                                           | AWG 16                                                                                                                                                                                                                                     | AWG 14                                                                                                                                                                                                                | AWG 12                                                                                                                                                                                          |
|--------------|----------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                | P/N SHIELD PAGE                                            | P/N SHIELD PAGE                                                                                                        | P/N SHIELD PAGE                                                                                                                                                                                                                                                                                                                                                                                                            | P/N SHIELD PAGE                                                                                                                                                                                                                                                                                                                                                                                       | P/N SHIELD PAGE | P/N SHIELD PAGE                                                                                                                                                                                                                                                                                                                                                                                                                                  | P/N SHIELD PAGE                                                                                                                                                                                                                            | P/N SHIELD PAGE                                                                                                                                                                                                       | P/N SHIELD PAGE                                                                                                                                                                                 |
| 4            | SOLID          |                                                            |                                                                                                                        | C4412 U .....138<br>E1001S U .....134<br>E1484S U .....117<br>E2484S F .....119<br>E3001S U-P .....136                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                       |                 | C0485 U .....125<br>C0494 F .....126<br>C3061 F-P .....28<br>C3111 U-P .....17<br>C3170 F-P .....128<br>C3201 U-P .....122<br>C3242 U-P .....127<br>C3261 F-P .....124<br>C4306A U .....118<br>C4336A F .....120<br>E1504S U .....117<br>E2504S F .....119<br>E3504S U-P .....121<br>E3604S F-P .....123                                                                                                                                         | C0486 U .....125<br>C3171 F-P .....128<br>C3211 U-P .....122<br>C3243 U-P .....127<br>C3271 F-P .....124<br>C4323A U .....118<br>C4346A F .....120<br>E1514S U .....117<br>E2524S F .....119<br>E3514S U-P .....121<br>E3614S F-P .....123 | C0496 F .....126<br>C3173 U-P .....128<br>C3223 U-P .....122<br>C3245 U-P .....127<br>C3284 F-P .....124<br>C4326A U .....118<br>E1524S U .....117<br>E2534S F .....119<br>E3524S U-P .....121<br>E3624S F-P .....123 | C0497 F .....126<br>C3175 F-P .....128<br>C3225 U-P .....122<br>C3247 U-P .....127<br>C3283 F-P .....124<br>E1534S U .....118<br>E2544S F .....119<br>E3534S U-P .....121<br>E3634S F-P .....12 |
|              | STRANDED       | C0531A FB .....72<br>C0940A FB .....70<br>C6502A B .....37 | C0681A FB .....72<br>C0742A F .....68<br>C0952A FB .....70<br>C2463A U .....11<br>C4218A F .....3                      | C0762A F .....69<br>C0972A FB .....71<br>C1118 U .....139<br>C1337A S .....33<br>C1340A F .....160<br>C2523A F .....23<br>C2680A B .....36<br>C3106 U-P .....16<br>C3116 U-P .....17<br>C3155 F-P .....27<br>C3159 F-P .....28<br>C4063A U .....12<br>C4102A U .....18<br>C4160A F .....29<br>C4194A F .....30<br>C5076 U .....139<br>E1004S U .....134<br>E2004S F .....135<br>E2104S F-P .....137<br>E3004S U-P .....136 | C0782A F .....69<br>C1119 U .....139<br>C1305 B.R .....40<br>C1331A F .....160<br>C1343A F .....160<br>C1644A B .....35<br>C2555A F .....23<br>C2683A B .....36<br>C3322 F-P .....27<br>C3604 U.R .....21<br>C4119A U .....19<br>C4161A F .....29<br>C4196A F .....30<br>C5078 U .....139<br>C6353A U .....13<br>E1024S U .....134<br>E2024S F .....135<br>E2124S F-P .....137<br>E3024S U-P .....136 |                 | 740304 U .....158<br>C0444A U .....22<br>C1123 U .....139<br>C1204 B.C .....41<br>C2404A U .....13<br>C2543A F .....25<br>C2688A B .....36<br>C3063 F-P .....28<br>C3103 U-P .....16<br>C3113 U .....17<br>C3163 F-P .....27<br>C4127A U .....19<br>C4204A F .....30<br>C5084 U .....139<br>C8102 U-P .....15<br>C8110 FB-P .....39<br>C8114 F-P .....26<br>E1034S U .....134<br>E2034S F .....135<br>E2204S F-P .....137<br>E3034S U-P .....136 | 740204 U .....158<br>C1604 B.C .....41<br>C1705 U .....152<br>C2425A U .....14<br>C3195 U-P .....16<br>C3341 F-P .....27<br>C4137A U .....20<br>E1054S U .....134<br>E2054S F .....135<br>E2254S F-P .....137<br>E3054S U-P .....136       | 740104 U .....158<br>C1614 B.C .....41<br>C1703 U .....152<br>C2430A U .....14<br>C4147A U .....20<br>E1054S U .....134<br>E2054S F .....135<br>E2254S F-P .....137<br>E3054S U-P .....136                            | 740004 U .....158<br>C1701 U .....152<br>C2440A U .....14<br>C4151A U .....20<br>E1064S U .....134<br>E2064S F .....135<br>E2264S F-P .....137<br>E3064S U-P .....136                           |
| 5            | SOLID          |                                                            |                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                       |                 | C3117 U-P .....17<br>C4307A U .....118<br>C4337A F .....120                                                                                                                                                                                                                                                                                                                                                                                      | C4349A U .....118<br>C4350A F .....120                                                                                                                                                                                                     |                                                                                                                                                                                                                       |                                                                                                                                                                                                 |
|              | STRANDED       | C0532A FB .....72<br>C0941A FB .....70                     | C0682A FB .....72<br>C0753A F .....68<br>C0953A FB .....70<br>C2464A U .....11<br>C4219A F .....31                     | C0973A FB .....71<br>C1124 U .....139<br>C4064A U .....12<br>C4103A U .....18<br>C5086 U .....139                                                                                                                                                                                                                                                                                                                          | C1126 U .....139<br>C1308 B.R .....40<br>C1645A B .....35<br>C3605 U.R .....21<br>C4120A U .....19<br>C6355A U .....13                                                                                                                                                                                                                                                                                |                 | C2420A U .....13<br>C4128A U .....19                                                                                                                                                                                                                                                                                                                                                                                                             | C2434A U .....14<br>C4138A U .....20                                                                                                                                                                                                       | C2437A U .....14<br>C4148A U .....20                                                                                                                                                                                  |                                                                                                                                                                                                 |
| 6            | SOLID          |                                                            |                                                                                                                        | C4300A U .....118                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                       |                 | C3118 U-P .....17<br>C4308A U .....118<br>C4338A F .....120<br>E1506S U .....117<br>E2506S F .....119<br>E3506S U-P .....121<br>E3606S F-P .....123                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                            |                                                                                                                                                                                                                       |                                                                                                                                                                                                 |
|              | STRANDED       | C0533A FB .....72<br>C0942A FB .....70<br>C6503A B .....37 | C0683A FB .....72<br>C0743A F .....68<br>C0954A FB .....70<br>C1345A F .....19<br>C2466A U .....11<br>C4220A F .....31 | C0763A F .....69<br>C0974A FB .....71<br>C1341A S .....33<br>C3311A F-P .....27<br>C4066 U .....12<br>C4104A U .....18<br>C4207A F .....30<br>E1006S U .....134<br>E2006S F .....135<br>E2106S F-P .....137<br>E3006S U-P .....136                                                                                                                                                                                         | C0783A F .....69<br>C1310 B.R .....40<br>C1646A B .....35<br>C3606 U.R .....21                                                                                                                                                                                                                                                                                                                        |                 | C1206 B.C .....41<br>C3065 F-P .....28<br>C3121 U-P .....17<br>C3166 F-P .....27<br>C3192 U-P .....16<br>C4205A F .....30<br>C4206A F .....19<br>C8120 FB-P .....39<br>E1036S U .....134<br>E2036S F .....135<br>E2206S F-P .....137<br>E3036S U-P .....136                                                                                                                                                                                      | C1606 B.C .....41<br>C8108 FB-P .....39                                                                                                                                                                                                    |                                                                                                                                                                                                                       |                                                                                                                                                                                                 |
| 7            | SOLID          |                                                            |                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                       |                 | C4309A U .....118<br>C4339A F .....120                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                            |                                                                                                                                                                                                                       |                                                                                                                                                                                                 |
|              | STRANDED       | C0534A FB .....72<br>C0943A FB .....70                     | C0684A FB .....72<br>C0754A F .....68<br>C0955A FB .....70<br>C2488A U .....11<br>C4221A F .....31                     | C0975A FB .....71<br>C4088A U .....12<br>C4105A U .....18                                                                                                                                                                                                                                                                                                                                                                  | C1312 B.R .....40<br>C3607 U.R .....21<br>C4121A U .....19<br>C6356A U .....13                                                                                                                                                                                                                                                                                                                        |                 | C2421A U-P .....13<br>C4129A U .....19                                                                                                                                                                                                                                                                                                                                                                                                           | C2426A U .....14<br>C4139A U .....20                                                                                                                                                                                                       | C2431A U .....14<br>C4149A U .....20                                                                                                                                                                                  |                                                                                                                                                                                                 |
| 8            | SOLID          |                                                            |                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                       |                 | C3119 F .....17<br>C4310A U .....118<br>C4340A F .....120<br>E1508S .....117<br>E2508S .....119                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                            |                                                                                                                                                                                                                       |                                                                                                                                                                                                 |
|              | STRANDED       | C0535A FB .....72<br>C0944A FB .....70<br>C6504A B .....37 | C0685A FB .....72<br>C0744A F .....68<br>C0956A FB .....70<br>C2465A U .....11<br>C4222A F .....31                     | C0764A F .....69<br>C0976A FB .....71<br>C1130A U .....139<br>C4065A U .....12<br>C4080 U .....139<br>C4106A U .....18<br>C4208A F .....30<br>C5096 U .....139<br>E1008S U .....134<br>E2008S F .....135<br>E2108S F-P .....137<br>E3008S U-P .....136                                                                                                                                                                     | C0784A F .....69<br>C1313 B.R .....40<br>C1648A FB .....38<br>C3608 U.R .....21<br>C4090 U .....139                                                                                                                                                                                                                                                                                                   |                 | C1208 B.C .....41<br>C3122 U-P .....17<br>C3180 F-P .....27<br>C3191 U-P .....16<br>E1038S U .....134<br>E2038S F .....135<br>E2208S F-P .....137<br>E3038S U-P .....136                                                                                                                                                                                                                                                                         | C1608 B.C .....41<br>C2443A U .....14<br>C4140A U .....20                                                                                                                                                                                  |                                                                                                                                                                                                                       |                                                                                                                                                                                                 |

# Multi-Conductor Cable Product Finder

| NO.<br>COND. | STRAND<br>TYPE | AWG 28                                                        | AWG 24                                                                                                  | AWG 22                                                                                                                        | AWG 20                                                       | AWG 19          | AWG 18                                                                                                                                               | AWG 16                                 | AWG 14          | AWG 12          |
|--------------|----------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------|-----------------|
|              |                | P/N SHIELD PAGE                                               | P/N SHIELD PAGE                                                                                         | P/N SHIELD PAGE                                                                                                               | P/N SHIELD PAGE                                              | P/N SHIELD PAGE | P/N SHIELD PAGE                                                                                                                                      | P/N SHIELD PAGE                        | P/N SHIELD PAGE | P/N SHIELD PAGE |
| 9            | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 | C4312A U ..... 118<br>C4341A F ..... 120                                                                                                             |                                        |                 |                 |
|              | STRANDED       | C0536A FB ..... 72<br>C0945A FB ..... 70                      | C0686A FB ..... 72<br>C0755A F ..... 68<br>C0957A FB ..... 70<br>C2470A U ..... 11<br>C4223A F ..... 31 | C0977A FB ..... 71<br>C4070A U ..... 12<br>C4107A U ..... 18                                                                  | C4122A U ..... 19<br>C6357A U ..... 13                       |                 | C2422A U ..... 13<br>C4130A U ..... 19                                                                                                               | C2435A U ..... 14<br>C4141A U ..... 20 |                 |                 |
| 10           | SOLID          |                                                               |                                                                                                         |                                                                                                                               | C2511A F ..... 164                                           |                 | C4313A U ..... 118<br>C4342A F ..... 120                                                                                                             |                                        |                 |                 |
|              | STRANDED       | C0537A FB ..... 72<br>C0946A FB ..... 70<br>C6505A B ..... 37 | C0687A FB ..... 72<br>C0745A F ..... 68<br>C0958A FB ..... 70<br>C2471A U ..... 11                      | C0765A F ..... 69<br>C0978A FB ..... 71<br>C4071A U ..... 12<br>C4108A U ..... 18<br>E1010S U ..... 134<br>E2010S F ..... 135 | C0785A F ..... 69<br>C3610 U,R ..... 21<br>C4123A U ..... 19 |                 | C1210 B,C ..... 41<br>C3178 U-P ..... 16<br>C3181 F-P ..... 27<br>E1040S U ..... 134<br>E2040S F ..... 135                                           |                                        |                 |                 |
| 11           | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 | C4314A U ..... 118                                                                                                                                   |                                        |                 |                 |
|              | STRANDED       |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
| 12           | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
|              | STRANDED       | C6506A B ..... 37                                             | C2467A U ..... 11                                                                                       | C4067A U ..... 12<br>C4109A U ..... 18<br>E1012S U ..... 134<br>E2012S F ..... 135                                            | C6360A U ..... 13                                            |                 | C1212 B,C ..... 41<br>C2412A U ..... 13<br>C3179 U-P ..... 16<br>C3182 F-P ..... 27<br>C4131A U ..... 19<br>E1041S U ..... 134<br>E2041S F ..... 135 | C2427A U ..... 14<br>C4142A U ..... 20 |                 |                 |
| 15           | SOLID          |                                                               |                                                                                                         | C4301A U ..... 118                                                                                                            |                                                              |                 | C4315A U ..... 118                                                                                                                                   |                                        |                 |                 |
|              | STRANDED       | C0538A FB ..... 72<br>C0947A FB ..... 70<br>C6507A B ..... 37 | C0688A FB ..... 72<br>C0746A F ..... 68<br>C0959A FB ..... 70<br>C2473A U ..... 11<br>C4225A F ..... 31 | C0766A F ..... 69<br>C0979A FB ..... 71<br>C4073A U ..... 12<br>C4110A U ..... 18                                             | C6358A U ..... 13<br>C0786A F ..... 69<br>C4124A U ..... 19  |                 | C2423A U ..... 13<br>C4132A U ..... 19                                                                                                               | C2428A U ..... 14<br>C4143A U ..... 20 |                 |                 |
| 18           | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
|              | STRANDED       |                                                               |                                                                                                         | C4111A U ..... 18                                                                                                             |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
| 19           | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
|              | STRANDED       |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 | C2424A U ..... 13<br>C4133A U ..... 19                                                                                                               | C2429A U ..... 14<br>C4144A U ..... 20 |                 |                 |
| 20           | SOLID          |                                                               |                                                                                                         | C4302A U ..... 118                                                                                                            |                                                              |                 | C4316A U ..... 118                                                                                                                                   |                                        |                 |                 |
|              | STRANDED       | C6508A B ..... 37                                             | C0747A F ..... 68<br>C0960A FB ..... 70<br>C4226A F ..... 31                                            | C0767A F ..... 69<br>C0980A FB ..... 71<br>C4075A U ..... 12<br>C4112A U ..... 18                                             | C0787A F ..... 69                                            |                 |                                                                                                                                                      |                                        |                 |                 |
| 21           | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 | C4317A U ..... 118                                                                                                                                   |                                        |                 |                 |
|              | STRANDED       |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
| 25           | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
|              | STRANDED       | C0948A FB ..... 41                                            | C0748A F ..... 68<br>C0961A FB ..... 70<br>C4227A F ..... 31                                            | C0768A F ..... 69<br>C0981A FB ..... 71<br>C4076A U ..... 12<br>C4113A U ..... 18                                             | C0788A F ..... 69                                            |                 | C2433A U ..... 13<br>C4134A U ..... 19                                                                                                               | C2436A U ..... 14<br>C4145A U ..... 20 |                 |                 |
| 30           | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 | C4318A U ..... 118<br>C4343A F ..... 120                                                                                                             |                                        |                 |                 |
|              | STRANDED       |                                                               | C0749A F ..... 68<br>C4228A F ..... 31                                                                  | C4077A U ..... 12<br>C4114A U ..... 18                                                                                        |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
| 40           | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
|              | STRANDED       |                                                               | C0750A F ..... 68<br>C4229A F ..... 31                                                                  | C4079A U ..... 12<br>C4116A U ..... 18                                                                                        |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
| 50           | SOLID          |                                                               |                                                                                                         |                                                                                                                               |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |
|              | STRANDED       |                                                               | C0751A F ..... 68<br>C4230A F ..... 31                                                                  | C4079A U ..... 12<br>C4116A U ..... 18                                                                                        |                                                              |                 |                                                                                                                                                      |                                        |                 |                 |

**CAROL  
BRAND**

B - BRAID SHIELD  
C - CAROLPRENE®  
F - FLEXFOIL® SHIELD  
FB - FLEXFOIL® /BRAID SHIELD  
I - INDIVIDUAL FLEXFOIL® SHIELD

IFB - INDIVIDUAL FLEXFOIL® + FLEXFOIL® /BRAID  
P - PLENUM  
R - RUBBER  
S - SPIRAL SHIELD  
U - NO SHIELD

UJ - UN-JACKETED

 **General Cable**

# Multi-Paired Cable Product Finder

| NO. PAIRS | STRAND TYPE | AWG 28         |        |      | AWG 24          |        |      | AWG 23         |        |      | AWG 22          |        |      | AWG 20         |        |      | AWG 18         |        |      |
|-----------|-------------|----------------|--------|------|-----------------|--------|------|----------------|--------|------|-----------------|--------|------|----------------|--------|------|----------------|--------|------|
|           |             | P/N            | SHIELD | PAGE | P/N             | SHIELD | PAGE | P/N            | SHIELD | PAGE | P/N             | SHIELD | PAGE | P/N            | SHIELD | PAGE | P/N            | SHIELD | PAGE |
| 1         | SOLID       |                |        |      |                 |        |      |                |        |      | C4008A U.....   | 9, 43  |      |                |        |      |                |        |      |
|           | STRANDED    |                |        |      | 740601 IF.....  | 166    |      |                |        |      | C3204 F-P.....  | 48     |      |                |        |      | C6101A U.....  | 44     |      |
|           |             |                |        |      | 740501 IF.....  | 167    |      |                |        |      | C0720A F.....   | 73     |      |                |        |      | C8101 F-P..... | 49     |      |
|           |             |                |        |      | 740701 IF.....  | 168    |      |                |        |      | C4183A F.....   | 54     |      |                |        |      | C8104 F-P..... | 49     |      |
|           |             |                |        |      | C0600A F.....   | 73     |      |                |        |      | C7104A F.....   | 46     |      |                |        |      | C8123 F-P..... | 51     |      |
|           |             |                |        |      | C0841A FB.....  | 76     |      |                |        |      | C7112A FB.....  | 66     |      |                |        |      |                |        |      |
|           |             |                |        |      | C4841A FB.....  | 76     |      |                |        |      | C8103 F-P.....  | 49     |      |                |        |      |                |        |      |
|           |             |                |        |      | C4170A F.....   | 53     |      |                |        |      | C8109 F-P.....  | 49     |      |                |        |      |                |        |      |
|           |             |                |        |      | C4209A F.....   | 53     |      |                |        |      | C8124 F-P.....  | 51     |      |                |        |      |                |        |      |
|           |             |                |        |      | C8117 FB-P..... | 57     |      |                |        |      | C8126 F-P.....  | 51     |      |                |        |      |                |        |      |
|           |             |                |        |      | C8127 F-P.....  | 51     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
| 2         | SOLID       |                |        |      | C4413 U.....    | 138    |      |                |        |      | C1670A F.....   | 46     |      |                |        |      |                |        |      |
|           |             |                |        |      |                 |        |      |                |        |      | C4010A U.....   | 43     |      |                |        |      |                |        |      |
|           | STRANDED    | C0804A FB..... |        | 79   | C0515A FB.....  | 78     |      |                |        |      | C0550A F.....   | 66     |      | C7106A IF..... | 58     |      | C0560A F.....  | 66     |      |
|           |             |                |        |      | C0601A F.....   | 73     |      |                |        |      | C0570A IF.....  | 65     |      |                |        |      | C0584A IF..... | 65     |      |
|           |             |                |        |      | C0620A FB.....  | 75     |      |                |        |      | C0650A FB.....  | 75     |      |                |        |      | C3362 F-P..... | 52     |      |
|           |             |                |        |      | C0829A FB.....  | 77     |      |                |        |      | C0721A F.....   | 73     |      |                |        |      | C6118A U.....  | 44     |      |
|           |             |                |        |      | C0842A FB.....  | 76     |      |                |        |      | C1338A B.....   | 161    |      |                |        |      |                |        |      |
|           |             |                |        |      | C0890A F.....   | 74     |      |                |        |      | C1350A IF.....  | 60     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0910A IF.....  | 83     |      |                |        |      | C1352A IF.....  | 58     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0924A IFB..... | 84     |      |                |        |      | C1353A IF.....  | 58     |      |                |        |      |                |        |      |
|           |             |                |        |      | C3028 F-P.....  | 56     |      |                |        |      | C3156 IF-P..... | 61     |      |                |        |      |                |        |      |
|           |             |                |        |      | C3150 F-P.....  | 48     |      |                |        |      | C3205 F-P.....  | 48     |      |                |        |      |                |        |      |
|           |             |                |        |      | C3214 F-P.....  | 55     |      |                |        |      | C3352 F-P.....  | 52     |      |                |        |      |                |        |      |
|           |             |                |        |      | C4171A F.....   | 53     |      |                |        |      | C4184A F.....   | 54     |      |                |        |      |                |        |      |
|           |             |                |        |      | C4842A F.....   | 76     |      |                |        |      | C4203A IF.....  | 59     |      |                |        |      |                |        |      |
|           |             |                |        |      | C8118 F-P.....  | 50     |      |                |        |      | C6010A U.....   | 43     |      |                |        |      |                |        |      |
|           |             |                |        |      | C8128 IF-P..... | 64     |      |                |        |      | C7114A FB.....  | 66     |      |                |        |      |                |        |      |
|           |             |                |        |      | C8129 FB-P..... | 57     |      |                |        |      | C8105 IF-P..... | 62     |      |                |        |      |                |        |      |
|           |             |                |        |      | C8134 IF-P..... | 62     |      |                |        |      | C8112 IF-P..... | 63     |      |                |        |      |                |        |      |
| 3         | SOLID       |                |        |      |                 |        |      |                |        |      | C4328A U.....   | 129    |      |                |        |      |                |        |      |
|           |             |                |        |      |                 |        |      |                |        |      | C6035A F.....   | 81     |      |                |        |      |                |        |      |
|           | STRANDED    | C0805A FB..... |        | 79   | C0516A FB.....  | 78     |      |                |        |      | C0551A F.....   | 66     |      | C6052A IF..... | 82     |      | C0561A F.....  | 66     |      |
|           |             |                |        |      | C0602A F.....   | 73     |      |                |        |      | C0571A IF.....  | 65     |      | C6061A IF..... | 165    |      | C0585A IF..... | 65     |      |
|           |             |                |        |      | C0621A FB.....  | 75     |      |                |        |      | C0651A FB.....  | 75     |      |                |        |      | C6047A IF..... | 82     |      |
|           |             |                |        |      | C0830A FB.....  | 77     |      |                |        |      | C0722A F.....   | 73     |      |                |        |      | C6103A U.....  | 44     |      |
|           |             |                |        |      | C0843A FB.....  | 76     |      |                |        |      | C3157 IF-P..... | 61     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0901A F.....   | 74     |      |                |        |      | C3206 F-P.....  | 48     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0911A IF.....  | 83     |      |                |        |      | C3353 F-P.....  | 52     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0925A IFB..... | 84     |      |                |        |      | C4185A F.....   | 54     |      |                |        |      |                |        |      |
|           |             |                |        |      | C3029 F-P.....  | 56     |      |                |        |      | C6014A U.....   | 43     |      |                |        |      |                |        |      |
|           |             |                |        |      | C3153 F-P.....  | 48     |      |                |        |      | C6040A IF.....  | 82     |      |                |        |      |                |        |      |
|           |             |                |        |      | C3215 F-P.....  | 55     |      |                |        |      | C7116A FB.....  | 66     |      |                |        |      |                |        |      |
|           |             |                |        |      | C4172A F.....   | 53     |      |                |        |      | C8131 IF-P..... | 62     |      |                |        |      |                |        |      |
|           |             |                |        |      | C4843A FB.....  | 76     |      |                |        |      | C8132 IF-P..... | 63     |      |                |        |      |                |        |      |
|           |             |                |        |      | C6065A IF.....  | 82     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           |             |                |        |      | C8113 F-P.....  | 51     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
| 4         | SOLID       |                |        |      | E1842S U.....   | 162    |      | E1843S U.....  | 162    |      | C1676A F.....   | 46     |      |                |        |      |                |        |      |
|           |             |                |        |      | E3842S UP.....  | 162    |      | E3843S UP..... | 162    |      | C4015A U.....   | 43     |      |                |        |      |                |        |      |
|           | STRANDED    | C0806A FB..... |        | 79   | 740604 IF.....  | 166    |      |                |        |      | C0552A F.....   | 66     |      | C1368A IF..... | 80     |      | C0562A F.....  | 66     |      |
|           |             |                |        |      | 740504 IF.....  | 167    |      |                |        |      | C0572A IF.....  | 65     |      |                |        |      | C0586A IF..... | 65     |      |
|           |             |                |        |      | 740704 IF.....  | 168    |      |                |        |      | C0652A FB.....  | 75     |      |                |        |      | C3364 F-P..... | 52     |      |
|           |             |                |        |      | C0517A FB.....  | 78     |      |                |        |      | C0723A F.....   | 73     |      |                |        |      | C6119 U.....   | 44     |      |
|           |             |                |        |      | C0603A F.....   | 73     |      |                |        |      | C3207 F-P.....  | 48     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0831A FB.....  | 77     |      |                |        |      | C3354 F-P.....  | 52     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0844A FB.....  | 76     |      |                |        |      | C4186A F.....   | 54     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0893A F.....   | 74     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           |             |                |        |      | C0912A IF.....  | 83     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           |             |                |        |      | C0926A IFB..... | 84     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           |             |                |        |      | C3030 F-P.....  | 56     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           |             |                |        |      | C3151 F-P.....  | 48     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           |             |                |        |      | C3216 F-P.....  | 55     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           |             |                |        |      | C4173A F.....   | 53     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           |             |                |        |      | C4844A FB.....  | 76     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
| 4.5       | SOLID       |                |        |      |                 |        |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           | STRANDED    |                |        |      | C3217 F-P.....  | 55     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
| 5         | SOLID       |                |        |      |                 |        |      |                |        |      |                 |        |      |                |        |      | C6120A U.....  | 31     |      |
|           | STRANDED    | C0807A FB..... |        | 79   | C0518A FB.....  | 78     |      |                |        |      | C0653A FB.....  | 75     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0604A F.....   | 73     |      |                |        |      | C0724A F.....   | 73     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0623A FB.....  | 75     |      |                |        |      | C4187A F.....   | 54     |      |                |        |      |                |        |      |
|           |             |                |        |      | C0832A FB.....  | 77     |      |                |        |      |                 |        |      |                |        |      |                |        |      |
|           |             |                |        |      | C4174A F.....   | 53     |      |                |        |      |                 |        |      |                |        |      |                |        |      |

B - BRAID SHIELD  
C - CAROLPRENE®  
F - FLEXFOIL® SHIELD  
FB - FLEXFOIL® /BRAID SHIELD  
I - INDIVIDUAL FLEXFOIL® SHIELD

IFB - INDIVIDUAL FLEXFOIL® + FLEXFOIL® /BRAID  
P - PLENUM  
R - RUBBER  
S - SPIRAL SHIELD  
U - NO SHIELD

UJ - UN-JACKETED



# Multi-Paired Cable Product Finder

| NO. PAIRS | STRAND TYPE | AWG 28            |        |      | AWG 24                                                                                                                                                                                                                                                 |        |      | AWG 23 |        |      | AWG 22                                                                                                                                                                                |                                         |                                                                                | AWG 20 |                                                                                |                   | AWG 18 |        |      |
|-----------|-------------|-------------------|--------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------|--------|--------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------|-------------------|--------|--------|------|
|           |             | P/N               | SHIELD | PAGE | P/N                                                                                                                                                                                                                                                    | SHIELD | PAGE | P/N    | SHIELD | PAGE | P/N                                                                                                                                                                                   | SHIELD                                  | PAGE                                                                           | P/N    | SHIELD                                                                         | PAGE              | P/N    | SHIELD | PAGE |
| 6         | SOLID       |                   |        |      |                                                                                                                                                                                                                                                        |        |      |        |        |      | C1671A F .....46<br>C4329A U .....129<br>C6036A IF .....81                                                                                                                            |                                         |                                                                                |        |                                                                                | C4333A U .....129 |        |        |      |
|           | STRANDED    |                   |        |      | 740706 IF .....168<br>C0519A FB .....78<br>C0605A F .....73<br>C0624A FB .....75<br>C0839A FB .....77<br>C0899A F .....74<br>C0913A IF .....83<br>C3031 F-P .....56<br>C3165 F-P .....48<br>C3218 F-P .....55<br>C4175A F .....53<br>C6066A IF .....82 |        |      |        |        |      | C0553A F .....66<br>C0573A IF .....65<br>C0654A FB .....75<br>C0725A F .....73<br>C3208 F-P .....48<br>C3356 F-P .....52<br>C4188A F .....54<br>C6017A U .....43<br>C6041A IF .....82 | C6053A IF .....82<br>C6062A IF .....165 | C0563A F .....66<br>C0587A IF .....65<br>C6048A IF .....82<br>C6106A U .....44 |        |                                                                                |                   |        |        |      |
| 7         | SOLID       |                   |        |      |                                                                                                                                                                                                                                                        |        |      |        |        |      |                                                                                                                                                                                       |                                         |                                                                                |        |                                                                                |                   |        |        |      |
|           | STRANDED    | C0808A FB .....79 |        |      | C0520A FB .....78<br>C0606A F .....73<br>C0625A FB .....75<br>C0833A FB .....77<br>C4176A F .....53                                                                                                                                                    |        |      |        |        |      | C0655A FB .....75                                                                                                                                                                     |                                         |                                                                                |        |                                                                                |                   |        |        |      |
| 8         | SOLID       |                   |        |      |                                                                                                                                                                                                                                                        |        |      |        |        |      |                                                                                                                                                                                       |                                         |                                                                                |        |                                                                                |                   |        |        |      |
|           | STRANDED    |                   |        |      | 740608 IF .....166<br>740508 F .....167<br>740708 IF .....168<br>C0521A FB .....78<br>C0607A F .....73<br>C0626A FB .....75<br>C4177A F .....53                                                                                                        |        |      |        |        |      | C0656A FB .....75                                                                                                                                                                     |                                         |                                                                                |        |                                                                                | C6121A U .....44  |        |        |      |
| 9         | SOLID       |                   |        |      |                                                                                                                                                                                                                                                        |        |      |        |        |      | C1672A F .....46                                                                                                                                                                      |                                         |                                                                                |        |                                                                                |                   |        |        |      |
|           | STRANDED    |                   |        |      | 740709 IF .....168<br>C0608A F .....73<br>C0914A IF .....83<br>C4178A F .....53<br>C6067A IF .....82                                                                                                                                                   |        |      |        |        |      | C0554A F .....66<br>C0574A IF .....65<br>C0726A F .....73<br>C4189A F .....54<br>C6042A IF .....82                                                                                    | C6054A IF .....82                       |                                                                                |        | C0564A F .....66<br>C0588A IF .....65<br>C6049A IF .....82<br>C6109A U .....44 |                   |        |        |      |
| 10        | SOLID       |                   |        |      |                                                                                                                                                                                                                                                        |        |      |        |        |      |                                                                                                                                                                                       |                                         |                                                                                |        |                                                                                |                   |        |        |      |
|           | STRANDED    | C0810A FB .....79 |        |      | C0522A FB .....78<br>C0609A F .....73<br>C0628A FB .....75<br>C0835A FB .....77<br>C4179A F .....53                                                                                                                                                    |        |      |        |        |      | C0658A FB .....75                                                                                                                                                                     |                                         |                                                                                |        |                                                                                |                   |        |        |      |
| 11        | SOLID       |                   |        |      |                                                                                                                                                                                                                                                        |        |      |        |        |      |                                                                                                                                                                                       |                                         |                                                                                |        |                                                                                |                   |        |        |      |
|           | STRANDED    |                   |        |      | C0915A IF .....83                                                                                                                                                                                                                                      |        |      |        |        |      | C6043A IF .....82                                                                                                                                                                     |                                         |                                                                                |        |                                                                                |                   |        |        |      |
| 12        | SOLID       |                   |        |      |                                                                                                                                                                                                                                                        |        |      |        |        |      | C4330A U .....129                                                                                                                                                                     |                                         |                                                                                |        |                                                                                |                   |        |        |      |
|           | STRANDED    | C0812A FB .....79 |        |      | 740512 IF .....167<br>740612 IF .....166<br>740712 IF .....168<br>C0836A FB .....77<br>C0916A IF .....83                                                                                                                                               |        |      |        |        |      | C6059A IF .....82                                                                                                                                                                     | C6056A IF .....82                       |                                                                                |        | C6050A IF .....82                                                              |                   |        |        |      |
| 12.5      | SOLID       |                   |        |      |                                                                                                                                                                                                                                                        |        |      |        |        |      |                                                                                                                                                                                       |                                         |                                                                                |        |                                                                                |                   |        |        |      |
|           | STRANDED    |                   |        |      | C0523A FB .....78<br>C0630A FB .....75<br>C0897A F .....74<br>C3152 F-P .....48                                                                                                                                                                        |        |      |        |        |      | C0660A FB .....75                                                                                                                                                                     |                                         |                                                                                |        |                                                                                |                   |        |        |      |
| 15        | SOLID       |                   |        |      |                                                                                                                                                                                                                                                        |        |      |        |        |      | C1673A F .....46<br>C4331A U .....129                                                                                                                                                 |                                         |                                                                                |        |                                                                                |                   |        |        |      |
|           | STRANDED    |                   |        |      | C0524A FB .....78<br>C0610A F .....73<br>C0917A IF .....83<br>C4180A F .....53                                                                                                                                                                         |        |      |        |        |      | C0728A F .....73<br>C4190A F .....54<br>C6044A IF .....82                                                                                                                             | C6058A IF .....82                       |                                                                                |        | C6051A IF .....82                                                              |                   |        |        |      |

**CAROL  
BRAND**

B - BRAID SHIELD  
C - CAROLPRENE®  
F - FLEXFOIL® SHIELD  
FB - FLEXFOIL® /BRAID SHIELD  
I - INDIVIDUAL FLEXFOIL® SHIELD

IFB - INDIVIDUAL FLEXFOIL® + FLEXFOIL® /BRAID  
P - PLENUM  
R - RUBBER  
S - SPIRAL SHIELD  
U - NO SHIELD

UJ - UN-JACKETED

 **General Cable**

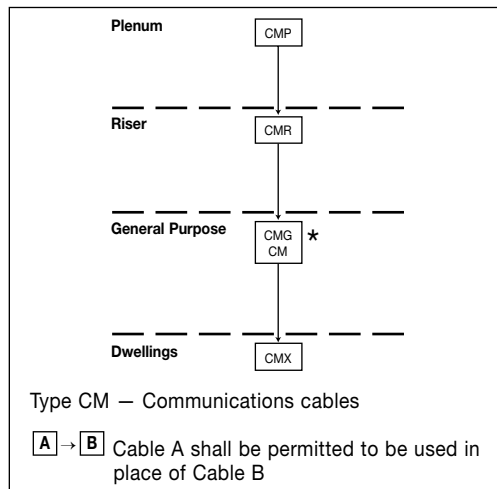
# Multi-Paired Cable Product Finder

| NO. PAIRS | STRAND TYPE | AWG 28 |        |      | AWG 24                                                      |        |      | AWG 23 |        |      | AWG 22           |        |      | AWG 20 |        |      | AWG 18 |        |      |
|-----------|-------------|--------|--------|------|-------------------------------------------------------------|--------|------|--------|--------|------|------------------|--------|------|--------|--------|------|--------|--------|------|
|           |             | P/N    | SHIELD | PAGE | P/N                                                         | SHIELD | PAGE | P/N    | SHIELD | PAGE | P/N              | SHIELD | PAGE | P/N    | SHIELD | PAGE | P/N    | SHIELD | PAGE |
| 16        | SOLID       |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      | 740516 IF.....167<br>740616 IF.....166<br>740716 IF.....168 |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
| 17        | SOLID       |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      |                                                             |        |      |        |        |      | C6060A IF.....82 |        |      |        |        |      |        |        |      |
| 18        | SOLID       |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      | C0525A FB.....78                                            |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
| 19        | SOLID       |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      | C0611A F.....73<br>C4181A F.....53                          |        |      |        |        |      | C6045A IF.....82 |        |      |        |        |      |        |        |      |
| 20        | SOLID       |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      | 740520 IF.....167<br>740620 IF.....166<br>740720 IF.....168 |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
| 25        | SOLID       |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      | C0526A FB.....78<br>C0612A F.....73<br>C4182A F.....53      |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
| 27        | SOLID       |        |        |      |                                                             |        |      |        |        |      | C4332A U.....129 |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      |                                                             |        |      |        |        |      | C6046A IF.....82 |        |      |        |        |      |        |        |      |
| 28        | SOLID       |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      | 740528 IF.....167<br>740728 IF.....168                      |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
| 42        | SOLID       |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      | 740542 IF.....167<br>740742 IF.....168                      |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
| 51        | SOLID       |        |        |      |                                                             |        |      |        |        |      | C6451A F.....47  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
| 52        | SOLID       |        |        |      |                                                             |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |
|           | STRANDED    |        |        |      | 740552 IF.....167<br>740742 IF.....168                      |        |      |        |        |      |                  |        |      |        |        |      |        |        |      |

# NEC/CEC Substitution Chart

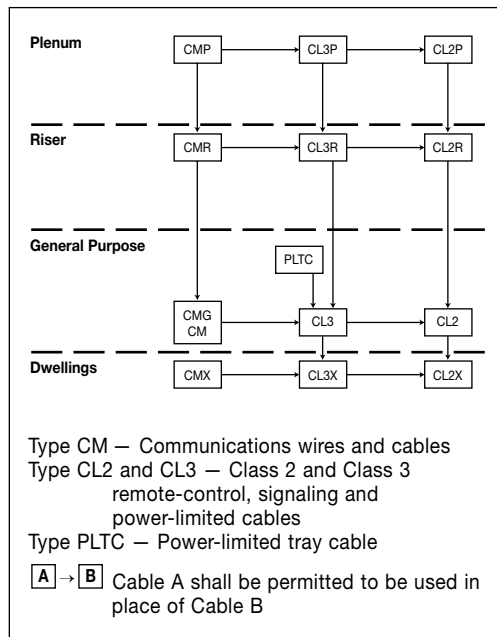
Communication wire and cable for premise installations in accordance with Article 800, and other applicable parts of the National Electrical Code (NEC), latest issue. Communication wire and cables for Canada are in accordance with the harmonized Canadian Standard Association C22.2 No. 214, Underwriters Laboratories UL 444, latest issue.

**Figure 800-53, Cable Substitution Hierarchy**



\*CMG can be substituted CM—CM can be substituted for CMG

**Figure 725-61, Cable Substitution Hierarchy**



| FREE RESISTANCE LEVEL                                 | TEST REQUIREMENT                                      | NEC ARTICLE |              |      |       |
|-------------------------------------------------------|-------------------------------------------------------|-------------|--------------|------|-------|
|                                                       |                                                       | 800         | 725          | 760  | 820   |
| <b>(Highest) Plenum Cables</b>                        | NFPA 262 (Steiner Tunnel)<br>CSA-CMP (Steiner Tunnel) | CMP         | CL3P<br>CL2P | FPLP | CATVP |
| <b>Riser Cables<br/>Multiple Floors</b>               | UL-16666 (Vertical Shaft)<br>CSA-CMG (Vertical Tray)  |             | CL3R<br>CL2R | FPLR | CATVR |
| <b>General-Purpose Cables</b>                         | UL-1581 (Vertical Tray)                               | CMG         | CL3          | FPL  | CATV  |
| <b>(Lowest) Residential<br/>Cables Restricted Use</b> | CSA-CMG (Vertical Tray)<br>UL-1581 VW-1               | CMX         | CL2<br>CL3X  |      | CATVX |

Notes: 1. Cables with a higher fire resistance level may be substituted for those with a lower fire resistance level.  
2. Non-fire rated outside plant telephone cables may not run outside of a rigid metal conduit more than 50 feet from the point of entrance into a building.  
3. Cables rated cmg or cm may be used in runs penetrating one floor. (nec 800-53)

## ARTICLE 800

**Table 800-53. Cable Uses and Permitted Substitutions**

| CABLE TYPE                      | USE                                  | REFERENCE  | PERMITTED SUBSTITUTIONS |
|---------------------------------|--------------------------------------|------------|-------------------------|
| <b>CMP (FT-6)</b>               | Communications plenum cable          | 800-53 (a) |                         |
| <b>CMR (FT-4)</b>               | Communications riser cable           | 800-53 (b) | CMP                     |
| <b>CMG (FT-4)<br/>CM (FT-1)</b> | Communications general purpose cable | 800-53 (c) | CMP, CMR, MPG, MP       |
| <b>CMX (FT-1)</b>               | Communications cable, limited use    | 800-53 (d) | CMP, CMR, CMG, CM       |

Note: See Figure 800-53, Cable Substitution Hierarchy

## ARTICLE 725

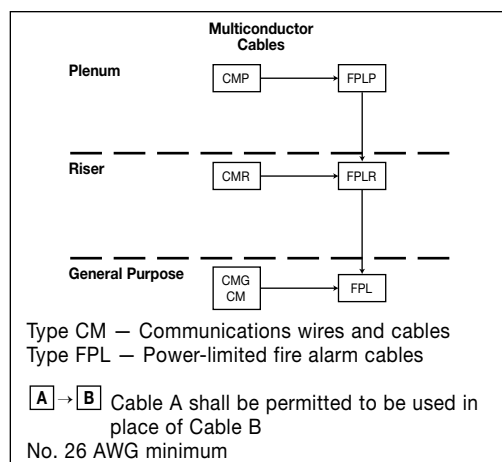
**Table 725-61. Cable Uses and Permitted Substitutions**

| CABLE TYPE  | USE                        | REFERENCE              | PERMITTED SUBSTITUTIONS                                              |
|-------------|----------------------------|------------------------|----------------------------------------------------------------------|
| <b>CL3P</b> | Class 3 plenum cable       | 725-61(a)              | CMP                                                                  |
| <b>CL2P</b> | Class 2 plenum cable       | 725-61(b)              | CMP, CL3P                                                            |
| <b>CL3R</b> | Class 3 riser cable        | 725-61(b)              | CMP, CL3P, CMR                                                       |
| <b>CL2R</b> | Class 2 riser cable        | 725-6 (b)              | CMP, CL3P, CL2P, CMR, CL3R                                           |
| <b>PLTC</b> | Power-limited tray cable   | 725-61(c) and (d)      |                                                                      |
| <b>CL3</b>  | Class 3 cable              | 725-61(b), (e) and (f) | CMP, CL3P, CMR, CL3R, CMG, CM, PLTC                                  |
| <b>CL2</b>  | Class 2 cable              | 725-61(b), (c) and (f) | CMP, CL3P, CL2P, CMR, CL3R, CL2R, CMG, CM, PLTC, CL3                 |
| <b>CL3X</b> | Class 3 cable, limited use | 725-61(b) and (e)      | CMP, CL3P, CMR, CL3R, CMG, CM, PLTC, CL3, CMX                        |
| <b>CL2X</b> | Class 2 cable, limited use | 725-61(b) and (e)      | CMP, CL3P, CL2P, CMR, CL3R, CL2R, CMG, CM, PLTC, CL3, CL2, CMX, CL3X |

Note: See Figure 725-61, Cable Substitution Hierarchy

# NEC/CEC Substitution Chart

**Figure 760-154 (D), Cable Substitution Hierarchy**



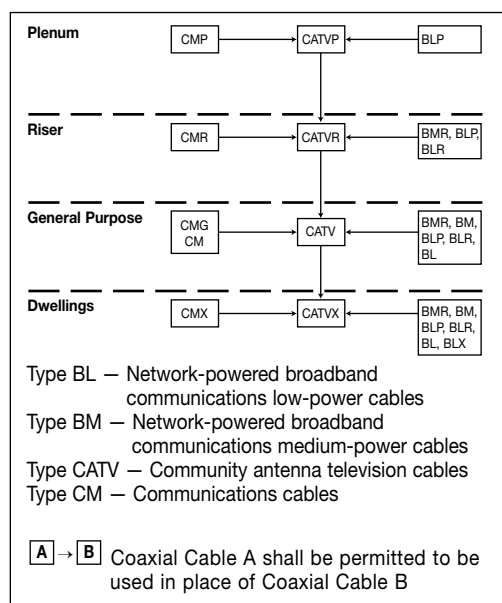
## Article 760

**Table 760-154 (D). Cable Uses and Permitted Substitutions**

| CABLE TYPE  | USE                                   | REFERENCES  | PERMITTED SUBSTITUTIONS       |
|-------------|---------------------------------------|-------------|-------------------------------|
|             |                                       |             | MULTICONDUCTOR                |
| <b>FPLP</b> | Power-limited fire alarm plenum cable | 760-154 (A) | CMP                           |
| <b>FPLR</b> | Power-limited fire alarm riser cable  | 760-154 (B) | CMP, FPLP, CMR                |
| <b>FPL</b>  | Power-limited fire alarm cable        | 760-154 (C) | CMP, FPLP, CMR, FPLR, CMG, CM |

Note: See Figure 760-154 (D), Cable Substitution Hierarchy

**Figure 820-154 (E), Cable Substitution Hierarchy**



## Article 820

**Table 820-154 (E). Coaxial Cable Uses and Permitted Substitutions**

| CABLE TYPE   | USE                           | REFERENCES  | PERMITTED SUBSTITUTIONS                                           |
|--------------|-------------------------------|-------------|-------------------------------------------------------------------|
| <b>CATVP</b> | Coaxial plenum cable          | 820-154 (A) | CMP, BLP                                                          |
| <b>CATVR</b> | Coaxial riser cable           | 820-154 (B) | CATVP, CMP, CMR, BMR, BLP, BLR                                    |
| <b>CATV</b>  | Coaxial general purpose cable | 820-154 (C) | CATVP, CMP, CATVR, CMR, CMG, CM, BMR, BM, BLP, BLR, BL            |
| <b>CATVX</b> | Coaxial cable, limited use    | 820-154 (C) | CATVP, CMP, CATVR, CMR, CATV, CMG, CM, BMR, BM, BLP, BLR, BL, BLX |

Note: See Figure 820-154 (E), Cable Substitution Hierarchy

# Agency Symbols



UL Listed Mark for the United States



CMP  
Certified  
Canadian Standard Association

CSA CMP



UL Listed Mark for Canada



CMG  
Certified  
Canadian Standard Association

CSA CMG



UL Listed Mark for Canada and  
the United States



CMH  
Certified  
Canadian Standard Association

CSA CMH



UL Recognized Component Mark for  
the United States



Underwriters Laboratories Inc.

NFPA 262 and CSA FT-6  
Steiner Tunnel Fire Tests



TIA/EIA 568A Cat. 3



Underwriters Laboratories Inc.

UL Vertical Tray Flame Test



TIA/EIA 568B Cat. 5e & Cat. 6



Underwriters Laboratories Inc.

UL 1666 Riser Flame Test



California State Fire Marshal



IMSA



RoHS Compliant Directive  
2002/95/EC

# Agency Approval Index

| AGENCY                  | PAGE(S)                                                                          |
|-------------------------|----------------------------------------------------------------------------------|
| CSA Type TEW .....      | 3, 5                                                                             |
| CSA TR-64 .....         | 2                                                                                |
| CSA Type LVT.....       | 141                                                                              |
| MIL-W-16878 TYPE B..... | 37                                                                               |
| MIL-W-76B.....          | 4                                                                                |
| UL Type AWM.....        | 5-6                                                                              |
| UL Type CL2.....        | 142                                                                              |
| UL Type MTW.....        | 5-6                                                                              |
| UL Type TFF .....       | 5                                                                                |
| UL Type THW .....       | 6                                                                                |
| UL Type 1007 .....      | 2, 156                                                                           |
| UL Type 1015 .....      | 3                                                                                |
| UL Type 1569 .....      | 2                                                                                |
| UL Type 2092 .....      | 23, 35                                                                           |
| UL Type 2093 .....      | 23, 35, 159                                                                      |
| UL Type 2094 .....      | 23, 35, 38, 160-161                                                              |
| UL Type 2095 .....      | 33, 36, 47, 159-160                                                              |
| UL Type 2106 .....      | 23                                                                               |
| UL Type 2107 .....      | 23                                                                               |
| UL Type 2448 .....      | 74                                                                               |
| UL Type 2464 .....      | 9-14, 18-20, 23, 25, 30-31,<br>43-44, 53-54, 58, 60, 65-66,<br>68-71, 73, 75, 81 |
| UL Type 2493 .....      | 83-84                                                                            |
| UL Type 2576 .....      | 11-13, 60                                                                        |
| UL Type 2587 .....      | 14                                                                               |
| UL Type 2717 .....      | 58                                                                               |
| UL Type 2835 .....      | 58, 160                                                                          |
| UL Type 2919 .....      | 72, 76-78, 82                                                                    |
| UL Type 2960 .....      | 79                                                                               |

## Jacket Color Code Chart

| CODE      | COLOR       |
|-----------|-------------|
| <b>1</b>  | BLACK       |
| <b>2</b>  | WHITE       |
| <b>3</b>  | RED         |
| <b>4</b>  | ORANGE      |
| <b>5</b>  | YELLOW      |
| <b>6</b>  | GREEN       |
| <b>7</b>  | DARK BLUE   |
| <b>8</b>  | BROWN       |
| <b>10</b> | GREY        |
| <b>13</b> | PINK        |
| <b>16</b> | LIGHT BLUE  |
| <b>19</b> | PURPLE      |
| <b>77</b> | WHT/BLK/BLU |

## Put-Ups

| CODE         | PACKAGING                        |
|--------------|----------------------------------|
| <b>R5/15</b> | 250' Spool                       |
| <b>R8/18</b> | 500' Spool                       |
| <b>21</b>    | 1000' Spool                      |
| <b>30</b>    | 1000' Spoolless Pull-Pac® Carton |
| <b>35</b>    | 250' Reel                        |
| <b>38</b>    | 500' Reel                        |
| <b>41</b>    | 1000' Reel                       |
| <b>44</b>    | 2500' Reel                       |
| <b>46</b>    | 5000' Reel                       |
| <b>85</b>    | 250' Coil                        |
| <b>99</b>    | Factory Reel                     |
| <b>A3</b>    | Spool-Pac® 1000'                 |

# Put-Ups and Color Codes

## PUT-UP CODES

| PUT-UP CODE | PACKAGING                | PUT-UP CODE | PACKAGING                   |
|-------------|--------------------------|-------------|-----------------------------|
| 03          | 3 ft Coax w/Connector HD | 58          | 12 ft Sleeve w/connectors   |
| 06          | 6 ft Coax w/Connector HD | 59          | 25 ft Sleeve w/connectors   |
| 11          | 50 ft Spool              | 60          | Cord Hanked, coil w/cuff    |
| 12          | 100 ft Spool             | 61          | Cord Set Box                |
| 13          | Clamshell                | 62          | Cord Set Bag                |
| 15          | 250 ft Spool             | 63          | Cord Set Sleeve             |
| 18          | 500 ft Spool             | 64          | 50 ft Sleeve w/connectors   |
| 20          | 900 ft Spool             | 65          | 100 ft Sleeve w/connectors  |
| 21          | 1000 ft Spool            | 66          | 50 ft Cuff                  |
| 24          | 2500 ft Spool            | 67          | 100 ft Cuff                 |
| 25          | 500 ft Pull-Pac          | 68          | 3500 ft Reel                |
| 26          | 5000 ft Spool            | 69          | Retail Spool-Pac            |
| 27          | 500 ft Pull-Pac          | 70          | Cord Hanked, coil w/cuff    |
| 30          | 1000 ft Pull-Pac         | 73          | Cord Set, long length       |
| 31          | 1000 ft Pull-Pac         | 74          | 12' Clamshell w/connectors  |
| 32          | 150 ft Reel              | 75          | 25' Clamshell w/connectors  |
| 33          | 100 ft Reel              | 76          | 50' Clamshell w/connectors  |
| 34          | 200 ft Coil              | 77          | 100' Clamshell w/connectors |
| 35          | 250 ft Reel              | 78          | 15,000 ft Reel              |
| 36          | 300 ft Reel              | 79          | 8,000 ft Reel               |
| 38          | 500 ft Reel              | 80          | Blister Pack w/connectors   |
| 39          | 500 Meter (1640')        | 85          | 250 ft Coil                 |
| 40          | Long Length Reel         | 86          | 500' Shrinkwrap coil        |
| 41          | 1000 ft Reel             | 88          | 12' Sleeve w/o connector    |
| 42          | 1500 ft Reel             | 89          | 25' Sleeve w/o connector    |
| 43          | 2000 ft Reel             | 90          | 50' Sleeve w/o connector    |
| 44          | 2500 ft Reel             | 91          | 75' Sleeve w/o connector    |
| 45          | 4000 ft Reel             | 92          | 100' Sleeve w/o connector   |
| 46          | 5000 ft Reel             | 93          | Bulk Reel                   |
| 47          | 7500 ft Reel             | 94          | Display                     |
| 48          | 10,000 ft Reel           | 96          | Wiring Device, Skin Pack    |
| 49          | 1600 ft Reel             | 99          | Factory Reel                |
| 50          | 1000 Meter (3280')       | XX          | Various Lengths             |
| 51          | 4500 ft Reel             |             |                             |
| 52          | 3000 ft Reel             | A1          | 250 ft Spool-Pac            |
| 53          | 25 ft Cuff               | A2          | 500 ft Spool-Pac            |
| 54          | 12 ft Clamshell          | A3          | 1000 ft Spool-Pac           |
| 55          | 25 ft Clamshell          | A4          | 2000 ft Spool-Pac           |
| 56          | 50 ft Clamshell          | R5          | 250 ft Spool, Retail        |
| 57          | 100 ft Clamshell         | R8          | 500 ft Spool, Retail        |

## JACKET COLOR CODES

| COLOR CODE | JACKET COLOR | COLOR CODE | JACKET COLOR          |
|------------|--------------|------------|-----------------------|
| 00         | Uninsulated  | 46         | Orange/Black          |
| 01         | Black        | 47         | Yellow/White          |
| 02         | White        | 48         | Yellow/Black          |
| 03         | Red          | 49         | Blue/White            |
| 04         | Orange       | 50         | Blue/Black            |
| 05         | Yellow       | 56         | Black w/White Trace   |
| 06         | Green        | 62         | Silver Gray (Lt Gray) |
| 07         | Dark Blue    | 66         | Light Green           |
| 08         | Brown        | 67         | Lime Green            |
| 09         | Maroon       | 68         | Birch                 |
| 10         | Gray         | 69         | Maple                 |
| 11         | Antique Gold | 70         | Walnut                |
| 12         | Ivory        | 71         | Wrought Iron          |
| 13         | Pink         | 72         | Copper                |
| 14         | Light Green  | 73         | White/Black/Red       |
| 15         | Clear Gold   | 74         | White/Black/Orange    |
| 16         | Light Blue   | 75         | White/Black/Yellow    |
| 17         | Beige        | 76         | White/Black/Green     |
| 18         | Light Brown  | 77         | White/Black/Blue      |
| 19         | Purple       | 78         | White/Black/Brown     |
| 20         | Clear Silver | 79         | White/Black/Violet    |
| 21         | Light Purple | 80         | White/Black/Gray      |
| 22         | Neon Green   | 81         | Black/Red/White       |
| 23         | Mint Green   | 82         | Orange/Green/Black    |
| 24         | Raspberry    | 86         | Natural               |
| 25         | Gold         | 88         | Tan                   |
| 31         | White/Black  | 90         | Clear                 |
| 33         | White/Red    | 91         | Clear Brown           |
| 34         | White/Orange | 92         | Clear Blue            |
| 35         | White/Yellow | 93         | Clear Red             |
| 36         | White/Green  | 96         | Twisted Cond. No Jkt  |
| 37         | White/Blue   | 97         | 1 Stripe              |
| 38         | White/Brown  | 98         | 2 Stripes             |
| 39         | White/Violet | 99         | Assorted Colors       |
| 40         | White/Gray   |            |                       |
| 41         | Red/Green    |            |                       |
| 42         | Green/White  |            |                       |
| 43         | Blue/Red     |            |                       |
| 44         | Blue/White   |            |                       |
| 45         | Orange/Red   |            |                       |

## CSA FIRE ALARM COLOR CODE CHART

| CONDUCTOR | COLOR                 | CONDUCTOR | COLOR                 | PAIR | COLOR          | PAIR | COLOR           |
|-----------|-----------------------|-----------|-----------------------|------|----------------|------|-----------------|
| 1st       | Black                 | 16th      | White w/Brown Stripe  | 1st  | Black & Red    | 16th | White & Brown   |
| 2nd       | Red                   | 17th      | Green w/Brown Stripe  | 2nd  | Black & White  | 17th | White & Orange  |
| 3rd       | Green                 | 18th      | Yellow w/Brown Stripe | 3rd  | Black & Grey   | 18th | Blue & Yellow   |
| 4th       | Blue                  | 19th      | White w/Orange Stripe | 4th  | Black & Blue   | 19th | Blue & Brown    |
| 5th       | Brown                 | 20th      | Black w/Orange Stripe | 5th  | Black & Yellow | 20th | Blue & Orange   |
| 6th       | Orange                | 21st      | Red w/Orange Stripe   | 6th  | Black & Brown  | 21st | Brown & Yellow  |
| 7th       | Black w/White Stripe  | 22nd      | Green w/Orange Stripe | 7th  | Black & Orange | 22nd | Brown & Orange  |
| 8th       | Red w/White Stripe    | 23rd      | Brown w/Orange Stripe | 8th  | Black & Purple | 23rd | Purple & Red    |
| 9th       | Green w/White Stripe  | 24th      | White w/Blue Stripe   | 9th  | Red & White    | 24th | Purple & White  |
| 10th      | Yellow w/White Stripe | 25th      | Red w/Blue Stripe     | 10th | Red & Blue     | 25th | Purple & Blue   |
| 11th      | Red w/Black Stripe    | 26th      | Yellow w/Blue Stripe  | 11th | Red & Yellow   | 26th | Purple & Brown  |
| 12th      | Green w/Black Stripe  | 27th      | Brown w/Blue Stripe   | 12th | Red & Brown    | 27th | Purple & Yellow |
| 13th      | Yellow w/Black Stripe | 28th      | Black w/Red Stripe    | 13th | Red & Orange   |      |                 |
| 14th      | Green w/Red Stripe    | 29th      | White w/Red Stripe    | 14th | White & Blue   |      |                 |
| 15th      | Yellow w/Red Stripe   | 30th      | Brown w/Red Stripe    | 15th | White & Yellow |      |                 |

# Applications Index

## A

Access control ..... 114, 131-133  
 Addressable Fire Alarm Systems ..... 125-128  
 Alliance Ham/CB and TV rotors compatibility ..... 139  
 Amplifiers ..... 152, 169  
 Analog video ..... 102, 115, 167  
 Analog/digital video ..... 99, 102, 115  
 Analog/digital video broadcast-grade monitors ..... 93  
 Annunciator systems ..... 141-143  
 Audio ..... 25, 39, 134-137, 159  
 Audio components ..... 166-168  
 Audio interconnects ..... 40-41  
 Audio systems ..... 15-17, 25, 27-28, 45-46, 148, 156, 172, 175  
 Audio/image/video products ..... 183  
 Automatic valve control systems ..... 22

## B

Background music ..... 16-17, 27-28, 134-137  
 Bases ..... 169  
 Bell systems ..... 141-143  
 Bi-amp speakers ..... 152-153  
 Broadcast ..... 94, 100, 107-108, 112  
 Broadcast and sound systems ..... 23, 25, 29-30  
 Broadcast and studio ..... 35, 38, 40-41  
 Broadcast and studio requirements ..... 21  
 Broadcast and studio use ..... 172, 175  
 Broadcast digital video ..... 96-98  
 Broadcast grade ..... 105-106  
 Broadcast-grade headend ..... 92  
 Broadcast/HDTV ..... 88-93, 96-99, 107-108  
 Broadcast/Serial Digital Interface (SDI) ..... 92, 106-107  
 Broadcast-grade Serial Digital Interface (SDI) ..... 99  
 Burglar alarms ..... 22, 32, 65-66, 116-121, 123, 129, 141-143  
 Business machines ..... 22, 32, 65-66

## C

Cable tray installations ..... 22, 32  
 CAD/CAM systems ..... 78  
 Card readers ..... 114  
 Cash registers ..... 22, 32, 65  
 Cat 5e ScTP ..... 163  
 Cat 5e UTP ..... 163  
 CATV ..... 86-92, 96-99, 101-106, 110-115, 150  
 CATV/headend ..... 92  
 CCTV ..... 86-88, 90-92, 96-99, 101-102, 104-105, 110, 114-115, 162, 177  
 Commercial broadcast facilities ..... 158  
 Communication and audio system ..... 148, 172, 175  
 Communication and control ..... 161

Communication circuits ..... 46  
 Communications ..... 66, 114, 116-129, 159-160  
 Computer and computer interconnections ..... 23-24, 26, 29, 31, 60, 68-69, 78  
 Computer interconnections ..... 24, 31, 60, 68-69, 78  
 Computer/networks ..... 109  
 Computers ..... 29, 39, 43-44, 49-51, 53-54, 57-59, 62-64, 70-77, 79-84, 95, 112, 183-184  
 Console board equipment ..... 166-168  
 Control circuits ..... 9, 11-21, 24, 26-28, 31, 39-41, 43-45, 48-64, 68-84, 134-138, 152-153, 172, 175, 185  
 Cue line systems ..... 177

## D

Data and signal transmission ..... 24  
 Data transmission ..... 31, 43-44, 53-54, 60, 68-71, 73-77, 79, 95, 100, 112, 163  
 DBS ..... 86, 90-92, 115  
 Digital audio ..... 147-148, 151, 157, 166  
 Digital audio interfaces ..... 153  
 Digital data transport ..... 183  
 Digital video cameras/displays/recorders ..... 183  
 Digital/audio ..... 147-148, 151-157, 166  
 Direct broadcast satellite ..... 90  
 Direct burial ..... 26, 89, 97-98, 104, 139-140, 164-165  
 Disc arrays ..... 183-184  
 Door bells ..... 141-143  
 Door control ..... 132-133  
 Drop cable ..... 88, 91-92, 96-99, 103

## E

EIA RS-232 circuits ..... 48, 52, 55-58  
 EIA RS-232 systems ..... 11-14, 18-20, 30-31, 43-44, 54-56, 68-73, 75, 77-79  
 EIA RS-422 circuits ..... 55-56, 77, 79, 83  
 EIA RS-423 systems ..... 72, 78  
 Effects pedals ..... 169  
 Electronic instrumentation control systems ..... 47  
 EMI isolated circuits for instrumentation ..... 159-160  
 Energy management systems ..... 21  
 Excellent shielding for noise reduction ..... 34-38  
 External wiring of machinery ..... 5-6

## F

Fire alarm control ..... 21  
 Fire alarm systems ..... 122, 124-129  
 Fire protective circuits ..... 117-121, 123  
 FM broadcast ..... 88, 91

## G

General-purpose audio applications ..... 170  
 Good flexibility ..... 23, 29-31, 34, 36-37, 53-54, 70-72, 75-79  
 Guitars ..... 169

# Applications Index

## H

HDTV ..... 86-93, 96-99, 107-108, 115  
 Heating and air conditioning installations ..... 141-143  
 Helical binding or overall jacketing ..... 163  
 Hi-fi and stereo speaker wire ..... 156-157  
 High speed computer interconnects ..... 78  
 High speed computers ..... 72, 83-84  
 High speed solid state circuits for  
   low-voltage applications ..... 182  
 High-end microphones ..... 148  
 High-impedance microphones ..... 172, 175  
 Home entertainment ..... 147-148, 151-156, 170  
 Home theater ..... 114, 116, 147-148, 151-153, 156

## I

Industrial control systems ..... 32  
 Industrial equipment ..... 43-44, 53-54, 58-59, 70-84  
 Industrial equipment control ..... 23, 29-31, 60, 68-69  
 IEEE 802.3 and ISO/IEC 8802.3  
   10 Base 5 LAN computer cables ..... 95  
 IEEE 802.3 and ISO/IEC 8802.3  
   10 Base 2 computer cables ..... 95  
 Instrumentation ..... 150, 159-161  
 Instrumentation and control use ..... 46  
 Instrumentation systems ..... 25, 47  
 Intercom systems ..... 16-17, 22, 27-28, 32, 47,  
   65-66, 138, 141-143  
 Intercoms ..... 9, 11-14, 18-20, 116  
 Interconnection components ..... 166-168  
 Internal telephones ..... 11-14, 18-20  
 Internal wiring, electrical/electronic equipment,  
   panels/meters ..... 2-5  
 In-wall speakers ..... 147, 151-155  
 Irrigation systems ..... 22

## J

Jukeboxes ..... 156-157

## K

Keyboards and other instruments to amplifiers,  
   mixers, and effects pedals ..... 169

## L

LAN and data transmission ..... 100  
 LAN and data transmission computer cables ..... 95  
 LAN cable ..... 90  
 Line level microphone ..... 167-168  
 Line level signals ..... 167-168  
 Local area network ..... 101-104  
 Low capacitance applications ..... 35, 38, 72, 74, 83-84, 166-169  
 Low capacitance requirements ..... 56, 76-77, 79  
 Low cost alternative to laminated bus bars ..... 182  
 Low inductance DC applications ..... 182

Low signal distortion data requirements ..... 78  
 Low-voltage installations ..... 141-143  
 Low-voltage power distribution, electronic  
   and data processing equipment ..... 182  
 Low-impedance microphones ..... 172, 174-175  
 Low-voltage golf course satellite sprinkler control ..... 140

## M

MATV ..... 86, 88-89, 96-99, 101-106, 110, 115  
 Mixers ..... 169  
 Monitor applications ..... 93, 107-108  
 Monitor systems ..... 177  
 Monitor/VDT display ..... 101-104  
 Motor and transformer lead ..... 5-6  
 Multiple cable pulls ..... 163  
 Musical instruments ..... 170

## N

Noise reduction shielding ..... 34-38  
 Non QPL ..... 4, 37  
 Not for in-wall use ..... 156-158

## O

Optical fiber cables ..... 163  
 Oscillators ..... 7  
 Outdoor installations ..... 139  
 Outdoor rated ..... 138-140, 176  
 Outdoor signal processing gear ..... 169  
 Outdoor use ..... 164-165

## P

Parallel or serial transmission ..... 184  
 Personal computers ..... 183-184  
 Petrochemical control systems ..... 66  
 Petrochemical refineries ..... 32  
 Plenum versions ..... 163  
 Point-of-sale systems ..... 61  
 Point-to-point wiring ..... 2-5  
 Power-limited circuits ..... 22, 32, 65-66  
 Power-limited control circuits ..... 16-17, 27-28, 48,  
   52, 55, 61, 134-137  
 Precision video – analog/digital ..... 105-106  
 Primary power distribution, electronic  
   and data processing equipment ..... 182  
 Process control and instrumentation ..... 15, 26, 39, 45,  
   48-52, 55-57, 61-64

Programmable Logic Controllers (PLC) ..... 112  
 Public address systems ..... 9-14, 18-20  
 Pull boxes ..... 122, 124-128

## R

Radio station components, interconnection and audio ..... 166-168  
 Radio transmitters ..... 33-34, 36, 171, 173  
 Radios ..... 33-34, 36, 171, 173

# Applications Index

Recording studios . . . . . 33-34, 36, 158, 166-168, 171, 173  
 Recording studios and sound stages . . . . . 23, 29-30  
 Recording studio components,  
   interconnection and audio . . . . . 166-168  
 Remote control circuits . . . . . 9, 11-15, 18-20, 26, 39, 45,  
   48-52, 55-57, 61-64, 138, 152-153  
 Remote control for studio equipment . . . . . 37  
 Remote control systems . . . . . 177  
 Remote control units . . . . . 141-143  
 Residential sprinkler solenoid control . . . . . 140  
 REX . . . . . 132-133  
 RF shielding . . . . . 24, 33-38, 164, 171, 173  
 RF signal transmission . . . . . 88, 91, 94, 96-111  
 RG6 video/data quad shield coax . . . . . 163  
 RGB video . . . . . 115, 162  
 Riser versions . . . . . 163  
 Rotor antenna controls . . . . . 139  
 RS-232 circuits . . . . . 48, 52, 55-56  
 RS-232 systems . . . . . 11-14, 18-20, 30-31, 43-44,  
   . . . . . 53-54, 68-73, 75, 77-79  
 RS-422 circuits . . . . . 55-56  
 RS-423 systems . . . . . 72, 78

**S**

Satellite actuator control . . . . . 101  
 Satellite receivers . . . . . 115  
 Secondary power distribution, electronic  
   and data processing equipment . . . . . 182  
 Security systems . . . . . 132-133, 152-153  
 Serial Digital Interface (SDI) . . . . . 87, 92, 99, 107  
 Shielded cable . . . . . 24, 164  
 Shielded power supplies . . . . . 148, 172, 175  
 Shielding, Fire Wire . . . . . 183-184  
 Shielding, noise reduction . . . . . 34-38  
 Shielding, SCSI . . . . . 184  
 Shielding, USB . . . . . 184  
 Signal isolation, total . . . . . 61-64, 80-84  
 Signal systems . . . . . 141-143  
 Smoke detectors . . . . . 115, 117, 121-128  
 Sound system installations . . . . . 166-168  
 Sound systems . . . . . 23, 25, 29-30, 33-38,  
   47, 116, 171, 173

Speaker extension service . . . . . 138  
 Special audio . . . . . 159-161  
 Stereo systems . . . . . 148, 151-155  
 Studio use . . . . . 148, 172, 175  
 Suggested voltage rating: 1000 volts . . . . . 174  
 Suggested voltage rating: 1000 volts (MIL-W 76B) . . . . . 4  
 Suggested voltage rating: 150 volts . . . . . 16-17, 27-28, 52, 138  
 Suggested voltage rating: 200 volts . . . . . 139  
 Suggested voltage rating: 30 volts . . . . . 72, 74, 76-79, 82  
 Suggested voltage rating: 300 or 600 volts . . . . . 18-20, 23,  
   29-31, 53-54, 59  
 Suggested voltage rating: 300 volts . . . . . 2, 9-15, 22, 24-26, 32-36,  
   38-41, 43-51, 55-58, 60-66, 68-71, 73,  
   75, 80-81, 83-84, 117-129, 134-138,  
   148, 154, 159, 161, 171-173, 175, 185  
 Suggested voltage rating: 350 volts . . . . . 21, 164-165  
 Suggested voltage rating: 600 volts . . . . . 3, 37  
 Suitable for EIA RS-232 and RS-423  
   CAD/CAM applications . . . . . 72  
 Suitable for EIA RS-232 applications . . . . . 11-14, 18-20, 30-31,  
   43-44, 53-54, 68-73, 75, 77-79  
 Suitable for EIA RS-422 applications . . . . . 77, 79  
 Suitable for EIA RS-422 CAD/CAM applications . . . . . 83  
 Suitable for EIA RS-485 applications . . . . . 76

## T

Television station components,  
   interconnection and audio . . . . . 166-168  
 Test equipment . . . . . 7  
 Thermostat control . . . . . 141-143  
 Thicknet/trunk cable . . . . . 95  
 Touch-plate systems . . . . . 141-143  
 Tray cable installations . . . . . 65-66  
 TV broadcast . . . . . 177  
 TV cameras . . . . . 177

## V

Video . . . . . 88-93, 96-98  
 Video and audio interconnecting cables . . . . . 172, 175  
 Video interconnect . . . . . 38, 38  
 Video – analog/digital . . . . . 99, 102, 105-108  
 Voice communications . . . . . 117-129

# Belden-to-General Cable Carol® Brand Cross Reference Index

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 1030A                 | C0456A                              | 32             |
| 1031A                 | C0457A                              | 32             |
| 1032A                 | C0454A                              | 32             |
| 1186A                 | C5784                               | 103            |
| 1189A                 | C5785                               | 89             |
| 1189AP                | C3525                               | 91             |
| 1190A                 | C5804                               | 89             |
| 1242A                 | E1001S                              | 134            |
| 1266A                 | E2022S                              | 135            |
| 1306SB                | C8029                               | 91             |
| 1307A                 | C1804                               | 153            |
| 1309A                 | C1802                               | 153            |
| 1426A                 | C1142                               | 101            |
| 1502A                 | 495023                              | 106            |
| 1502P                 | C8125                               | 185            |
| 1503A                 | C0600A                              | 73             |
| 1505A                 | 395025                              | 106            |
| 1506A                 | 495023                              | 106            |
| 1508A                 | C2513A                              | 23             |
| 1513A                 | C5776                               | 88             |
| 1523A                 | C5039                               | 97             |
| 1523AP                | C3528                               | 97             |
| 1525A                 | C5039                               | 97             |
| 1530A                 | C5776                               | 88             |
| 1583A                 | CR5                                 | N/A            |
| 1585A                 | CP5                                 | N/A            |
| 1617A                 | C5044                               | 97             |
| 1694A                 | 395011                              | 92             |
| 1694SB                | C5814                               | 90             |
| 1695A                 | 495025                              | 92             |
| 1841A                 | C5822                               | 90             |
| 1855A                 | 395031                              | 107            |
| 1861A                 | C1004A                              | 154            |
| 1883A                 | C0600A                              | 73             |
| 1884A                 | C5889                               | 89             |
| 1912A                 | 740512                              | 167            |
| 19352                 | 86013                               | N/A            |
| 3105A                 | C7112A                              | 66             |
| 3107A                 | C7114A                              | 66             |
| 3108A                 | C7116A                              | 66             |
| 5000FE                | E2062S                              | 135            |
| 5000UE                | E1062S                              | 134            |
| 5002UE                | E1064S                              | 134            |
| 5020FL                | E2542S                              | 119            |
| 5020UL                | E1532S                              | 117            |
| 5100FE                | E2052S                              | 135            |
| 5100UE                | E1052S                              | 134            |
| 5102A                 | E1054S                              | 134            |
| 5102UE                | E1054S                              | 134            |
| 5102UP                | C1803                               | 153            |
| 5120FJ                | C0475                               | 126            |
| 5120FL                | E2532S                              | 119            |
| 5120LL                | E2406S                              | 117            |
| 5120UL                | E1522S                              | 117            |

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 5122FL                | E2534S                              | 119            |
| 5122UL                | E1524S                              | 117            |
| 513945                | 395058                              | 99             |
| 5200FE                | E2042S                              | 135            |
| 5200UE                | E1042S                              | 134            |
| 5200UP                | C1804                               | 153            |
| 5201FE                | C2537A                              | 23             |
| 5201UE                | E1043S                              | 134            |
| 5202FE                | E2244S                              | 137            |
| 5202UE                | E1044S                              | 134            |
| 5220FL                | E2522S                              | 119            |
| 5220LL                | E2404S                              | 135            |
| 5220UL                | E1512S                              | 117            |
| 5222FL                | E2524S                              | 119            |
| 5222UL                | E1514S                              | 117            |
| 5300FE                | E2032S                              | 135            |
| 5300UE                | E1032S                              | 134            |
| 5301FE                | E2033S                              | 135            |
| 5301UE                | E1033S                              | 134            |
| 5302FE                | E2034S                              | 135            |
| 5302UE                | E1034S                              | 134            |
| 5304FE                | E2036S                              | 135            |
| 5304UE                | E1036S                              | 134            |
| 5306FE                | E2038S                              | 135            |
| 5306UE                | E1038S                              | 134            |
| 5308UE                | E1040S                              | 134            |
| 5309UE                | E1041S                              | 134            |
| 5300UE                | E1032S                              | 134            |
| 5320FE                | E2030S                              | 135            |
| 5320FL                | E2502S                              | 119            |
| 5320LL                | E2402S                              | 117            |
| 5320UE                | E1030S                              | 134            |
| 5320UL                | E1502S                              | 117            |
| 5321FL                | E2503S                              | 119            |
| 5321UL                | E1503S                              | 117            |
| 5322FL                | E2504S                              | 119            |
| 5322UL                | E1504S                              | 117            |
| 5324UL                | E1506S                              | 117            |
| 5341A                 | C0560A                              | 66             |
| 5342UE                | C6103A                              | 44             |
| 5400FE                | E2022S                              | 135            |
| 5400UE                | C6351A                              | 13             |
| 5401FE                | E2023S                              | 135            |
| 5401UE                | E1023S                              | 134            |
| 5402FE                | E2024S                              | 135            |
| 5402UE                | E1024S                              | 134            |
| 5400UE                | E1022S                              | 134            |
| 543945                | C1142                               | 101            |
| 549945                | C8028                               | 104            |
| 5500FE                | E2002S                              | 135            |
| 5500UE                | E1002S                              | 134            |
| 5501FE                | E2003S                              | 135            |
| 5501UE                | E1003S                              | 134            |
| 5502FE                | E2004S                              | 135            |



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# Belden-to-General Cable Carol® Brand Cross Reference Index

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 5502UE                | E1004S                              | 134            |
| 5504FE                | E2006S                              | 135            |
| 5504UE                | E1006S                              | 134            |
| 5506FE                | E2008S                              | 135            |
| 5506UE                | E1008S                              | 134            |
| 5508FE                | E2010S                              | 135            |
| 5508UE                | E1010S                              | 134            |
| 5509FE                | E2012S                              | 135            |
| 5509UE                | E1012S                              | 134            |
| 5500UE                | E1002S                              | 134            |
| 5520FE                | E2000S                              | 135            |
| 5520UE                | E1000S                              | 134            |
| 5522UE                | E1001S                              | 134            |
| 5522UL                | E1484S                              | 117            |
| 5545UE                | C6106A                              | 44             |
| 5562FE                | C0722A                              | 73             |
| 558AFS                | 4ERS4S                              | 133            |
| 558GMS                | 4ERS1S                              | 133            |
| 6000UC                | C3129                               | 17             |
| 6000UE                | E3062S                              | 136            |
| 6020FL                | E3632S                              | 123            |
| 6020UL                | E3532S                              | 121            |
| 6100FE                | E2252S                              | 137            |
| 6100UE                | E3052S                              | 136            |
| 6100UF                | C3128                               | 17             |
| 6102UE                | E3054S                              | 136            |
| 6120FL                | C3174                               | 128            |
| 6120UL                | E3522S                              | 121            |
| 6122FL                | E3624S                              | 123            |
| 6122UL                | E3524S                              | 121            |
| 6200FE                | E2242S                              | 27             |
| 6200UE                | E3042S                              | 17             |
| 6201FE                | E2243S                              | 137            |
| 6201UE                | E3043S                              | 136            |
| 6202FE                | C3341                               | 27             |
| 6202UE                | E3044S                              | 136            |
| 6220FL                | E3612S                              | 123            |
| 6220UL                | E3512S                              | 121            |
| 6222FL                | E3614S                              | 123            |
| 6222UL                | E3514S                              | 121            |
| 6300FE                | E2202S                              | 137            |
| 6300UE                | E3032S                              | 136            |
| 6301FE                | E2203S                              | 137            |
| 6301UE                | C3120                               | 17             |
| 6302FE                | E2204S                              | 137            |
| 6302UE                | C3113                               | 17             |
| 6304FE                | E2206S                              | 137            |
| 6304UE                | C3121                               | 17             |
| 6306FE                | E2208S                              | 137            |
| 6306UE                | C3122                               | 17             |
| 6320FE                | E2200S                              | 137            |
| 6320FL                | E3602S                              | 123            |
| 6320UE                | E3030S                              | 136            |
| 6320UL                | E3502S                              | 121            |

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 6321FL                | E3603S                              | 123            |
| 6321UL                | E3503S                              | 121            |
| 6322FL                | E3604S                              | 123            |
| 6322UL                | E3504S                              | 121            |
| 6324UL                | E3506S                              | 121            |
| 633948                | 495035                              | 92             |
| 6400FE                | E2122S                              | 137            |
| 6400UE                | E3022S                              | 136            |
| 6401FE                | E2123S                              | 137            |
| 6401UE                | E3023S                              | 136            |
| 6402FE                | E2124S                              | 137            |
| 6402UE                | E3024S                              | 136            |
| 643948                | 495028                              | 105            |
| 649948                | C8030                               | 101            |
| 6500FE                | E2102S                              | 137            |
| 6500UE                | E3002S                              | 136            |
| 6501FE                | E2103S                              | 137            |
| 6501UE                | E3003S                              | 136            |
| 6502FE                | E2104S                              | 137            |
| 6502UE                | E3004S                              | 136            |
| 6504FE                | E2106S                              | 137            |
| 6504UE                | E3006S                              | 136            |
| 6506FE                | E2108S                              | 137            |
| 6506UE                | E3008S                              | 136            |
| 6520FE                | E2100S                              | 137            |
| 6520UE                | E3000S                              | 136            |
| 6522UE                | E3001S                              | 136            |
| 6541FE                | C3205                               | 48             |
| 6543A                 | C3151                               | 48             |
| 6545FE                | C3208                               | 48             |
| 658AFS                | 4EPL4S                              | 132            |
| 658GMS                | 4EPL1S                              | 132            |
| 7731A                 | 395029                              | 99             |
| 7732A                 | 495027                              | 99             |
| 7987P                 | E3842S                              | 162            |
| 7987R                 | E1842S                              | 162            |
| 7989P                 | E3843S                              | 162            |
| 7989R                 | E1843S                              | 162            |
| 8102                  | C0515A                              | 78             |
| 8103                  | C0516A                              | 78             |
| 8104                  | C0517A                              | 78             |
| 8105                  | C0518A                              | 78             |
| 8106                  | C0519A                              | 78             |
| 8107                  | C0520A                              | 78             |
| 8108                  | C0521A                              | 78             |
| 8110                  | C0522A                              | 78             |
| 8112                  | C0523A                              | 78             |
| 8115                  | C0524A                              | 78             |
| 8118                  | C0525A                              | 78             |
| 8125                  | C0526A                              | 78             |
| 8162                  | C0924A                              | 84             |
| 8163                  | C0925A                              | 84             |
| 8164                  | C0926A                              | 84             |
| 8205                  | C6351A                              | 13             |

# Belden-to-General Cable Carol® Brand Cross Reference Index

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 8212                  | C1102                               | 101            |
| 8213                  | C5025                               | 96             |
| 8214                  | C1198                               | 94             |
| 8216                  | C1156                               | 110            |
| 8218                  | C1158                               | 105            |
| 8219                  | C1188                               | 100            |
| 8221                  | C1135                               | 101            |
| 82241                 | C3500                               | 104            |
| 82248                 | C3523                               | 91             |
| 82262                 | C3520                               | 109            |
| 8228                  | C5760                               | 88             |
| 8237                  | C1154                               | 94             |
| 8240                  | C1166                               | 100            |
| 82442                 | E3002S                              | 136            |
| 8248                  | C3521                               | 91             |
| 82489                 | C8102                               | 15             |
| 82503                 | C8113                               | 51             |
| 8259                  | C1178                               | 100            |
| 8261                  | C1160                               | 96             |
| 8262                  | C1155                               | 100            |
| 8263                  | C1106                               | 101            |
| 82641                 | C8127                               | 51             |
| 8267                  | C1176A                              | 111            |
| 82723                 | C8105                               | 62             |
| 82729                 | C8134                               | 62             |
| 82740                 | C8122                               | 45             |
| 82760                 | C8123                               | 51             |
| 82761                 | C8126                               | 51             |
| 82777                 | C8131                               | 62             |
| 82778                 | C8133                               | 62             |
| 82842                 | C8129                               | 57             |
| 8302                  | C0650A                              | 75             |
| 8303                  | C0651A                              | 75             |
| 8304                  | C0652A                              | 75             |
| 8305                  | C0653A                              | 75             |
| 8306                  | C0654A                              | 75             |
| 8307                  | C0655A                              | 75             |
| 8308                  | C0656A                              | 75             |
| 8310                  | C0658A                              | 75             |
| 8312                  | C0660A                              | 75             |
| 83206                 | C8101                               | 49             |
| 8325                  | C0663A                              | 75             |
| 8332                  | C0620A                              | 75             |
| 8333                  | C0621A                              | 75             |
| 8334                  | C0622A                              | 75             |
| 8335                  | C0623A                              | 75             |
| 8336                  | C0624A                              | 75             |
| 8337                  | C0625A                              | 75             |
| 8340                  | C0628A                              | 75             |
| 8342                  | C0630A                              | 75             |
| 83503                 | C8115                               | 39             |
| 83653                 | C8107                               | 39             |
| 83654                 | C8110                               | 39             |
| 83656                 | C8120                               | 39             |

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 83702                 | C8111                               | 39             |
| 83703                 | C8119                               | 39             |
| 83706                 | C8108                               | 39             |
| 8412                  | C1302                               | 40, 172        |
| 8418                  | C1313                               | 40             |
| 8422                  | C1322A                              | 174            |
| 8423                  | C1304                               | 40             |
| 8424                  | C1305                               | 40             |
| 8425                  | C1308                               | 40             |
| 8426                  | C1310                               | 40             |
| 8427                  | C1312                               | 40             |
| 8428                  | C1202                               | 41, 175        |
| 8437                  | C2676A                              | 34             |
| 8441                  | C2677A                              | 34             |
| 8442                  | C6348A                              | 12             |
| 8443                  | C4062A                              | 12             |
| 8444                  | C4063A                              | 12             |
| 8445                  | C4064A                              | 12             |
| 8446                  | C4081A                              | 10             |
| 8447                  | C4082A                              | 10             |
| 8448                  | C4083A                              | 10             |
| 8449                  | C4084A                              | 10             |
| 8450                  | C2515A                              | 23             |
| 8451                  | C2516A                              | 23             |
| 8456                  | C4071A                              | 12             |
| 8457                  | C4067A                              | 12             |
| 8458                  | C4073A                              | 12             |
| 8459                  | C4076A                              | 12             |
| 8460                  | C7102A                              | 156            |
| 8461                  | C2830A                              | 13             |
| 8465                  | C2420A                              | 13             |
| 8466                  | C2412A                              | 13             |
| 8467                  | C2421A                              | 13             |
| 8468                  | C2423A                              | 13             |
| 8469                  | C2422A                              | 13             |
| 8471                  | C2405A                              | 14             |
| 8473                  | C2409A                              | 14             |
| 8477                  | C2410A                              | 14             |
| 8486                  | C2754A                              | 9              |
| 8488                  | C1130                               | 139            |
| 8489                  | C2404A                              | 13             |
| 8520                  | C7610A                              | 4              |
| 8521                  | C7608A                              | 4              |
| 8522                  | C7606A                              | 4              |
| 8523                  | C7604A                              | 4              |
| 8524                  | C7602A                              | 4              |
| 8525                  | C7600A                              | 4              |
| 8527                  | C7611A                              | 66             |
| 8612                  | C3521                               | 91             |
| 8618                  | C2537A                              | 23             |
| 8619                  | C2424A                              | 13             |
| 8620                  | C2425A                              | 14             |
| 8621                  | C2426A                              | 14             |
| 8622                  | C2427A                              | 14             |



This cross reference guide should be used in conjunction with the product information in our catalog or on our website. It should be used for suggested alternative items which are functionally equal. Constructional differences are not indicated. General Cable is not responsible for variances due to competitor and industry constructional changes or agency updates.



# Belden-to-General Cable Carol® Brand Cross Reference Index

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 8623                  | C2428A                              | 14             |
| 8624                  | C2429A                              | 14             |
| 8627                  | C2430A                              | 14             |
| 8628                  | C2431A                              | 14             |
| 8641                  | C2513A                              | 23             |
| 8649                  | C1360                               | 156            |
| 8661                  | C2426A                              | 14             |
| 8690                  | C6103A                              | 44             |
| 8691                  | C6106A                              | 44             |
| 8692                  | C6109A                              | 44             |
| 8718                  | C2539A                              | 23             |
| 8719                  | C2536A                              | 23             |
| 8720                  | C2538A                              | 23             |
| 8722                  | C1331A                              | 160            |
| 8723                  | C1352A                              | 58             |
| 8723SB                | C1352ACS                            | N/A            |
| 8724                  | C1340A                              | 160            |
| 8725                  | C1368A                              | 80             |
| 8728                  | C1353A                              | 58             |
| 8729                  | C7110A                              | N/A            |
| 8732                  | C1338A                              | 161            |
| 8735                  | C2678A                              | 36             |
| 8737                  | C2882A                              | 33             |
| 8740                  | C4008A                              | 9, 43          |
| 8741                  | C4010A                              | 43             |
| 8742                  | C4014A                              | 43             |
| 8743                  | C4017A                              | 43             |
| 8747                  | C6017A                              | 43             |
| 8748                  | C6019A                              | 43             |
| 8749                  | C6026A                              | 43             |
| 8751                  | C6451A                              | 47             |
| 8757                  | C4015A                              | 43             |
| 8759                  | C2888A                              | 33             |
| 8760                  | C2534A                              | 23             |
| 8761                  | C2514A                              | 23             |
| 8762                  | C2524A                              | 23             |
| 8763                  | C1333A                              | 159            |
| 8767                  | C6035A                              | 81             |
| 8768                  | C6036A                              | 81             |
| 8769                  | C6045A                              | 82             |
| 8770                  | C2535A                              | 23             |
| 8771                  | C2526A                              | 23             |
| 8772                  | C2525A                              | 23             |
| 8773                  | C6046A                              | 82             |
| 8774                  | C6042A                              | 82             |
| 8775                  | C6043A                              | 82             |
| 8776                  | C6044A                              | 82             |
| 87760                 | C8104                               | 49             |
| 87761                 | C8103                               | 49             |
| 8777                  | C6040A                              | 82             |
| 8777SB                | C6040ACS                            | N/A            |
| 8778                  | C6041A                              | 82             |
| 8780                  | C2895A                              | 33             |
| 8782                  | C1356                               | 156            |

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 8786                  | C1345A                              | 159            |
| 8790                  | C2892A                              | 33             |
| 8791                  | C2768A                              | 33             |
| 8795                  | C4408                               | 138            |
| 88102                 | C8118                               | 50             |
| 88723                 | C8112                               | 63             |
| 88760                 | C8101                               | 49             |
| 88761                 | C8109                               | 49             |
| 88770                 | C8106                               | 26             |
| 8898                  | C1318                               | 7              |
| 8899                  | C1321                               | 7              |
| 8916                  | C2105A                              | 3              |
| 8917                  | C2104A                              | 3              |
| 8918                  | C2103A                              | 3              |
| 8919                  | C2102A                              | 3              |
| 8920                  | C2101A                              | 3              |
| 89418                 | C8114                               | 26             |
| 88778                 | C8132                               | 63             |
| 89729                 | C8128                               | 64             |
| 89740                 | C8116                               | 45             |
| 89841                 | C8117                               | 57             |
| 9011                  | C5034                               | 96             |
| 9066                  | C5804                               | 89             |
| 9116                  | C5775                               | 88             |
| 9116P                 | C3524                               | 91             |
| 9116R                 | C5886                               | 88             |
| 9116SB                | C5775ACS                            | N/A            |
| 9117                  | C5802                               | 89             |
| 9151                  | C1000A                              | 154            |
| 9151SB                | C2520                               | 24             |
| 9154                  | E2022S                              | 135            |
| 9155                  | C1343A                              | 160            |
| 9156                  | C6118A                              | 44             |
| 9157                  | C6119A                              | 44             |
| 9159                  | C6120A                              | 44             |
| 9161                  | C6121A                              | 44             |
| 9182                  | C8014                               | 112            |
| 9201                  | C1117                               | 100            |
| 9207                  | C8000                               | 112            |
| 9209                  | 395031                              | 107            |
| 9248                  | C5778                               | 91             |
| 9258                  | C1108A                              | 94             |
| 9259                  | C1103                               | 101            |
| 9265                  | C8025                               | 102            |
| 9269                  | C1164                               | 109            |
| 9291                  | C5770                               | 103            |
| 9302                  | C1670A                              | 46             |
| 9305                  | C1676A                              | 46             |
| 9306                  | C1671A                              | 46             |
| 9309                  | C1672A                              | 46             |
| 9312                  | C0460A                              | 32             |
| 9314                  | C0458A                              | 32             |
| 9315                  | C1673A                              | 46             |
| 9316                  | C0456A                              | 32             |

# Belden-to-General Cable Carol® Brand Cross Reference Index

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 9318                  | C0454A                              | 32             |
| 9320                  | C0452A                              | 32             |
| 9322                  | C0450A                              | 32             |
| 9328                  | C0570A                              | 65             |
| 9329                  | C0571A                              | 65             |
| 9330                  | C0572A                              | 65             |
| 9331                  | C0573A                              | 65             |
| 9332                  | C0574A                              | 65             |
| 9333                  | C0575A                              | 65             |
| 9363                  | C0451A                              | 32             |
| 9364                  | C0453A                              | 32             |
| 9365                  | C0455A                              | 32             |
| 9366                  | C0457A                              | 32             |
| 9367                  | C0459A                              | 32             |
| 9368                  | C0584A                              | 65             |
| 9369                  | C0585A                              | 65             |
| 9388                  | C0586A                              | 65             |
| 9389                  | C0587A                              | 65             |
| 9390                  | C0588A                              | 65             |
| 9391                  | C0589A                              | 65             |
| 9392                  | C0590A                              | 65             |
| 9397                  | C1226A                              | 173            |
| 9402                  | C7106A                              | 58             |
| 9406                  | C1350A                              | 60             |
| 9407                  | C0431A                              | 22             |
| 9408                  | C0433A                              | 22             |
| 9409                  | C0435A                              | 22             |
| 9410                  | C0437A                              | 22             |
| 9411                  | C0439A                              | 22             |
| 9412                  | C0441A                              | 22             |
| 9414                  | C6010A                              | 43             |
| 9418                  | C2543A                              | 25             |
| 9421                  | C4065A                              | 12             |
| 9423                  | C4070A                              | 12             |
| 9430                  | C4088A                              | 12             |
| 9431                  | C4075A                              | 12             |
| 9432                  | C4077A                              | 12             |
| 9433                  | C4078A                              | 12             |
| 9434                  | C4079A                              | 12             |
| 9438                  | C7108A                              | 7              |
| 9439                  | C6356A                              | 13             |
| 9444                  | C6353A                              | 13             |
| 9445                  | C6355A                              | 13             |
| 9451                  | C2520A                              | 24             |
| 9451P                 | C8124                               | 51             |
| 9451SB                | C2520A                              | 24             |
| 9452                  | C1228A                              | 171            |
| 9455                  | C6357A                              | 13             |
| 9457                  | C6360A                              | 13             |
| 9458                  | C6358A                              | 13             |
| 9460                  | C2521A                              | 24             |
| 9461                  | C2518A                              | 24             |
| 9462                  | C7104A                              | 46             |
| 9464                  | C2519A                              | 24             |

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 9491                  | C0432A                              | 22             |
| 9492                  | C0434A                              | 22             |
| 9493                  | C0436A                              | 22             |
| 9494                  | C0438A                              | 22             |
| 9495                  | C0440A                              | 22             |
| 9501                  | C0600A                              | 73             |
| 9502                  | C0601A                              | 73             |
| 9503                  | C0602A                              | 73             |
| 9504                  | C0603A                              | 73             |
| 9505                  | C0604A                              | 73             |
| 9506                  | C0605A                              | 73             |
| 9507                  | C0606A                              | 73             |
| 9508                  | C0607A                              | 73             |
| 9509                  | C0608A                              | 73             |
| 9510                  | C0609A                              | 73             |
| 9512                  | C0550A                              | 66             |
| 9513                  | C0551A                              | 66             |
| 9514                  | C0552A                              | 66             |
| 9515                  | C0610A                              | 73             |
| 9516                  | C0553A                              | 66             |
| 9519                  | C0611A                              | 73             |
| 9520                  | C0554A                              | 66             |
| 9521                  | C0555A                              | 66             |
| 9524                  | C0556A                              | 66             |
| 9525                  | C0612A                              | 73             |
| 9533                  | C0741A                              | 68             |
| 9534                  | C0742A                              | 68             |
| 9535                  | C0753A                              | 68             |
| 9536                  | C0743A                              | 68             |
| 9537                  | C0754A                              | 68             |
| 9538                  | C0744A                              | 68             |
| 9539                  | C0755A                              | 68             |
| 9540                  | C0745A                              | 68             |
| 9541                  | C0746A                              | 68             |
| 9542                  | C0747A                              | 68             |
| 9543                  | C0748A                              | 68             |
| 9544                  | C0749A                              | 68             |
| 9545                  | C0750A                              | 68             |
| 9546                  | C0751A                              | 68             |
| 9552                  | C0560A                              | 66             |
| 9553                  | C0561A                              | 66             |
| 9554                  | C0562A                              | 66             |
| 9556                  | C0563A                              | 66             |
| 9559                  | C0564A                              | 66             |
| 9565                  | C0566A                              | 66             |
| 9608                  | C0951A                              | 70             |
| 9609                  | C0952A                              | 70             |
| 9610                  | C0953A                              | 70             |
| 9611                  | C0954A                              | 70             |
| 9612                  | C0955A                              | 70             |
| 9613                  | C0956A                              | 70             |
| 9614                  | C0957A                              | 70             |
| 9615                  | C0958A                              | 70             |
| 9616                  | C0959A                              | 70             |

**CAROL  
BRAND**

This cross reference guide should be used in conjunction with the product information in our catalog or on our website. It should be used for suggested alternative items which are functionally equal. Constructional differences are not indicated. General Cable is not responsible for variances due to competitor and industry constructional changes or agency updates.

 **General Cable**

# Belden-to-General Cable Carol® Brand Cross Reference Index

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 9617                  | C0961A                              | 70             |
| 9620                  | C2434A                              | 14             |
| 9621                  | C2435A                              | 14             |
| 9622                  | C2436A                              | 14             |
| 9623                  | C2437A                              | 14             |
| 9626                  | C2433A                              | 13             |
| 9637                  | C0948A                              | 70             |
| 9708                  | C1357                               | 156            |
| 9712                  | C1362                               | 156            |
| 9716                  | C1358                               | 156            |
| 9717                  | C1361                               | 156            |
| 9718                  | C1363                               | 156            |
| 9721                  | C2443A                              | 14             |
| 9728                  | C0912A                              | 83             |
| 9729                  | C0910A                              | 83             |
| 9730                  | C0911A                              | 83             |
| 9731                  | C0913A                              | 83             |
| 9732                  | C0914A                              | 83             |
| 9733                  | C0915A                              | 83             |
| 9734                  | C0916A                              | 83             |
| 9735                  | C0917A                              | 83             |
| 9740                  | C6101A                              | 44             |
| 9742                  | C6111A                              | 44             |
| 9744                  | C6010A                              | 43             |
| 9745                  | C6014A                              | 43             |
| 9746                  | C6015A                              | 43             |
| 9747                  | C6023A                              | 43             |
| 9768                  | C6059A                              | 82             |
| 9769                  | C6060A                              | 82             |
| 9770                  | C2517A                              | 23             |
| 9773                  | C6047A                              | 82             |
| 9774                  | C6048A                              | 82             |
| 9775                  | C6049A                              | 82             |
| 9776                  | C6050A                              | 82             |
| 9777                  | C6051A                              | 82             |
| 9791                  | C0533A                              | 72             |
| 9794                  | E1004S                              | 134            |
| 9802                  | C2509A                              | 164            |
| 9803                  | C2510A                              | 164            |
| 9804                  | C0804A                              | 79             |
| 9805                  | C0805A                              | 79             |
| 9806                  | C0806A                              | 79             |
| 9807                  | C0807A                              | 79             |
| 9808                  | C0808A                              | 79             |
| 9809                  | C0809A                              | 79             |
| 9812                  | C0812A                              | 79             |
| 9829                  | C0829A                              | 77             |
| 9830                  | C0830A                              | 77             |
| 9831                  | C0831A                              | 77             |
| 9832                  | C0832A                              | 77             |
| 9833                  | C0833A                              | 77             |
| 9835                  | C0835A                              | 77             |
| 9836                  | C0836A                              | 77             |
| 9839                  | C0839A                              | 77             |

| BELDEN<br>PART NUMBER | GENERAL CABLE/<br>CAROL PART NUMBER | PAGE<br>NUMBER |
|-----------------------|-------------------------------------|----------------|
| 9841                  | C4841A                              | 76             |
| 9842                  | C4842A                              | 76             |
| 9843                  | C4843A                              | 76             |
| 9844                  | C4844A                              | 76             |
| 9862                  | C1162                               | 109            |
| 9863                  | C8000                               | 112            |
| 9873                  | C6052A                              | 82             |
| 9874                  | C6053A                              | 82             |
| 9875                  | C6054A                              | 82             |
| 9877                  | C6056A                              | 82             |
| 9879                  | C6058A                              | 82             |
| 9883                  | C6061A                              | 165            |
| 9886                  | C6062A                              | 165            |
| 9890                  | C2511A                              | 164            |
| 9899                  | C1320A                              | 7              |
| 9910                  | C2107A                              | 3              |
| 9912                  | C2106A                              | 3              |
| 9913                  | C1180                               | 94             |
| 9916                  | C2065A                              | 2              |
| 9918                  | C2064A                              | 2              |
| 9919                  | C2040A                              | 2              |
| 9921                  | C2016A                              | 2              |
| 9923                  | C2015A                              | 2              |
| 9924                  | C2100A                              | 3              |
| 9925                  | C0680A                              | 72             |
| 9927                  | C0681A                              | 72             |
| 9929                  | C0682A                              | 72             |
| 9931                  | C0683A                              | 72             |
| 9932                  | C0684A                              | 72             |
| 9933                  | C0685A                              | 72             |
| 9934                  | C0686A                              | 72             |
| 9935                  | C0687A                              | 72             |
| 9936                  | C0688A                              | 72             |
| 9939                  | C0971A                              | 71             |
| 9940                  | C0972A                              | 71             |
| 9941                  | C0973A                              | 71             |
| 9942                  | C0974A                              | 71             |
| 9943                  | C0975A                              | 71             |
| 9944                  | C0976A                              | 71             |
| 9945                  | C0977A                              | 71             |
| 9946                  | C0978A                              | 71             |
| 9947                  | C0979A                              | 71             |
| 9948                  | C0981A                              | 71             |
| 9990                  | C6065A                              | 82             |
| 9991                  | C6066A                              | 82             |
| 9992                  | C6067A                              | 82             |

# Part Number Index

| CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE |
|-------------------|------|-------------------|------|-------------------|------|-------------------|------|
| 4EPL1S .....      | 132  | 76822 .....       | 5    | 740501 .....      | 167  | C0438A .....      | 22   |
| 4EPL4S .....      | 132  | 76832 .....       | 5    | 740504 .....      | 167  | C0439A .....      | 22   |
| 4ERS1S .....      | 133  | 76843 .....       | 5    | 740508 .....      | 167  | C0440A .....      | 22   |
| 4ERS4S .....      | 133  | 76954 .....       | 6    | 740512 .....      | 167  | C0441A .....      | 22   |
| 05091 .....       | 141  | 76994 .....       | 6    | 740516 .....      | 167  | C0444A .....      | 22   |
| 05092 .....       | 141  | 395011 .....      | 92   | 740520 .....      | 167  | C0450A .....      | 32   |
| 05093 .....       | 141  | 395011-3 .....    | 93   | 740528 .....      | 167  | C0451A .....      | 32   |
| 05094 .....       | 141  | 395011-4 .....    | 93   | 740542 .....      | 167  | C0452A .....      | 32   |
| 05095 .....       | 141  | 395011-5 .....    | 93   | 740552 .....      | 167  | C0453A .....      | 32   |
| 05096 .....       | 141  | 395025 .....      | 106  | 740601 .....      | 166  | C0454A .....      | 32   |
| 05097 .....       | 141  | 395025-3 .....    | 107  | 740604 .....      | 166  | C0455A .....      | 32   |
| 05098 .....       | 141  | 395025-4 .....    | 107  | 740608 .....      | 166  | C0456A .....      | 32   |
| 05099 .....       | 141  | 395025-5 .....    | 107  | 740612 .....      | 166  | C0457A .....      | 32   |
| 05481 .....       | 142  | 395025-10 .....   | 107  | 740616 .....      | 166  | C0458A .....      | 32   |
| 05482 .....       | 142  | 395027 .....      | 110  | 740620 .....      | 166  | C0459A .....      | 32   |
| 05483 .....       | 142  | 395029 .....      | 99   | 740701 .....      | 168  | C0460A .....      | 32   |
| 05484 .....       | 142  | 395031-3 .....    | 107  | 740704 .....      | 168  | C0471 .....       | 125  |
| 05485 .....       | 142  | 395031-5 .....    | 107  | 740706 .....      | 168  | C0472 .....       | 126  |
| 05486 .....       | 142  | 395035-3 .....    | 108  | 740708 .....      | 168  | C0473 .....       | 125  |
| 05487 .....       | 142  | 395035-4 .....    | 108  | 740709 .....      | 168  | C0474 .....       | 126  |
| 05488 .....       | 142  | 395035-5 .....    | 108  | 740712 .....      | 168  | C0475 .....       | 126  |
| 05489 .....       | 142  | 395058 .....      | 99   | 740716 .....      | 168  | C0476 .....       | 126  |
| 05581 .....       | 142  | 397001 .....      | 95   | 740720 .....      | 168  | C0485 .....       | 125  |
| 05582 .....       | 142  | 495015 .....      | 99   | 740728 .....      | 168  | C0486 .....       | 125  |
| 05583 .....       | 142  | 495016 .....      | 99   | 740742 .....      | 168  | C0491 .....       | 125  |
| 05584 .....       | 142  | 495023 .....      | 106  | 740752 .....      | 168  | C0492 .....       | 125  |
| 05585 .....       | 142  | 495025 .....      | 92   | 742605 .....      | 177  | C0494 .....       | 126  |
| 05586 .....       | 142  | 495027 .....      | 99   | 742608 .....      | 176  | C0495 .....       | 126  |
| 05587 .....       | 142  | 495028 .....      | 105  | 743601 .....      | 169  | C0496 .....       | 126  |
| 05588 .....       | 142  | 495035 .....      | 92   | 743602 .....      | 169  | C0497 .....       | 126  |
| 05589 .....       | 142  | 495036 .....      | 92   | 743603 .....      | 169  | C0515A .....      | 78   |
| 05782 .....       | 143  | 497001 .....      | 95   | 743604 .....      | 169  | C0516A .....      | 78   |
| 05783 .....       | 143  | 574608 .....      | 176  | 743605 .....      | 169  | C0517A .....      | 78   |
| 05784 .....       | 143  | 710010 .....      | 163  | 743701 .....      | 170  | C0518A .....      | 78   |
| 05785 .....       | 143  | 710011 .....      | 163  | 743704 .....      | 170  | C0519A .....      | 78   |
| 05786 .....       | 143  | 710017 .....      | 163  | 743705 .....      | 170  | C0520A .....      | 78   |
| 05788 .....       | 143  | 710018 .....      | 163  | 743706 .....      | 170  | C0521A .....      | 78   |
| 23804-18-01 ..... | 140  | 710021 .....      | 163  | 743707 .....      | 170  | C0522A .....      | 78   |
| 23805-18-01 ..... | 140  | 710022 .....      | 163  | 810021 .....      | 163  | C0523A .....      | 78   |
| 23807-18-01 ..... | 140  | 710023 .....      | 163  | 810022 .....      | 163  | C0524A .....      | 78   |
| 23810-18-01 ..... | 140  | 710024 .....      | 163  | 810023 .....      | 163  | C0525A .....      | 78   |
| 23815-60-01 ..... | 140  | 740002 .....      | 158  | 810024 .....      | 163  | C0526A .....      | 78   |
| 23817-60-01 ..... | 140  | 740004 .....      | 158  | C0431A .....      | 22   | C0530A .....      | 72   |
| 23824-60-01 ..... | 140  | 740102 .....      | 158  | C0432A .....      | 22   | C0531A .....      | 72   |
| 23825-60-01 ..... | 140  | 740104 .....      | 158  | C0433A .....      | 22   | C0532A .....      | 72   |
| 23827-60-01 ..... | 140  | 740202 .....      | 158  | C0434A .....      | 22   | C0533A .....      | 72   |
| 76502 .....       | 5    | 740204 .....      | 158  | C0435A .....      | 22   | C0534A .....      | 72   |
| 76512 .....       | 5    | 740302 .....      | 158  | C0436A .....      | 22   | C0535A .....      | 72   |
| 76812 .....       | 5    | 740304 .....      | 158  | C0437A .....      | 22   | C0536A .....      | 72   |

# Part Number Index

| CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE |
|-------------------|------|-------------------|------|-------------------|------|-------------------|------|
| C0537A .....      | 72   | C0630A .....      | 75   | C0764A .....      | 69   | C0924A .....      | 84   |
| C0538A .....      | 72   | C0650A .....      | 75   | C0765A .....      | 69   | C0925A .....      | 84   |
| C0550A .....      | 66   | C0651A .....      | 75   | C0766A .....      | 69   | C0926A .....      | 84   |
| C0551A .....      | 66   | C0652A .....      | 75   | C0767A .....      | 69   | C0939A .....      | 70   |
| C0552A .....      | 66   | C0653A .....      | 75   | C0768A .....      | 69   | C0940A .....      | 70   |
| C0553A .....      | 66   | C0654A .....      | 75   | C0780A .....      | 69   | C0941A .....      | 70   |
| C0554A .....      | 66   | C0655A .....      | 75   | C0781A .....      | 69   | C0942A .....      | 70   |
| C0555A .....      | 66   | C0656A .....      | 75   | C0782A .....      | 69   | C0943A .....      | 70   |
| C0556A .....      | 66   | C0658A .....      | 75   | C0783A .....      | 69   | C0944A .....      | 70   |
| C0560A .....      | 66   | C0660A .....      | 75   | C0784A .....      | 69   | C0945A .....      | 70   |
| C0561A .....      | 66   | C0663A .....      | 75   | C0785A .....      | 69   | C0946A .....      | 70   |
| C0562A .....      | 66   | C0680A .....      | 72   | C0786A .....      | 69   | C0947A .....      | 70   |
| C0563A .....      | 66   | C0681A .....      | 72   | C0787A .....      | 69   | C0948A .....      | 70   |
| C0564A .....      | 66   | C0682A .....      | 72   | C0788A .....      | 69   | C0951A .....      | 70   |
| C0566A .....      | 66   | C0683A .....      | 72   | C0804A .....      | 79   | C0952A .....      | 70   |
| C0570A .....      | 65   | C0684A .....      | 72   | C0805A .....      | 79   | C0953A .....      | 70   |
| C0571A .....      | 65   | C0685A .....      | 72   | C0806A .....      | 79   | C0954A .....      | 70   |
| C0572A .....      | 65   | C0686A .....      | 72   | C0807A .....      | 79   | C0955A .....      | 70   |
| C0573A .....      | 65   | C0687A .....      | 72   | C0808A .....      | 79   | C0956A .....      | 70   |
| C0574A .....      | 65   | C0688A .....      | 72   | C0809A .....      | 79   | C0957A .....      | 70   |
| C0575A .....      | 65   | C0720A .....      | 73   | C0810A .....      | 79   | C0958A .....      | 70   |
| C0584A .....      | 65   | C0721A .....      | 73   | C0812A .....      | 79   | C0959A .....      | 70   |
| C0585A .....      | 65   | C0722A .....      | 73   | C0829A .....      | 77   | C0960A .....      | 70   |
| C0586A .....      | 65   | C0723A .....      | 73   | C0830A .....      | 77   | C0961A .....      | 70   |
| C0587A .....      | 65   | C0724A .....      | 73   | C0831A .....      | 77   | C0971A .....      | 71   |
| C0588A .....      | 65   | C0725A .....      | 73   | C0832A .....      | 77   | C0972A .....      | 71   |
| C0589A .....      | 65   | C0726A .....      | 73   | C0833A .....      | 77   | C0973A .....      | 71   |
| C0590A .....      | 65   | C0728A .....      | 73   | C0835A .....      | 77   | C0974A .....      | 71   |
| C0600A .....      | 73   | C0729A .....      | 73   | C0836A .....      | 77   | C0975A .....      | 71   |
| C0601A .....      | 73   | C0730A .....      | 73   | C0839A .....      | 77   | C0976A .....      | 71   |
| C0602A .....      | 73   | C0740A .....      | 68   | C0841A .....      | 76   | C0977A .....      | 71   |
| C0603A .....      | 73   | C0741A .....      | 68   | C0842A .....      | 76   | C0978A .....      | 71   |
| C0604A .....      | 73   | C0742A .....      | 68   | C0843A .....      | 76   | C0979A .....      | 71   |
| C0605A .....      | 73   | C0743A .....      | 68   | C0844A .....      | 76   | C0980A .....      | 71   |
| C0606A .....      | 73   | C0744A .....      | 68   | C0890A .....      | 74   | C0981A .....      | 71   |
| C0607A .....      | 73   | C0745A .....      | 68   | C0893A .....      | 74   | C1000A .....      | 154  |
| C0608A .....      | 73   | C0746A .....      | 68   | C0894A .....      | 74   | C1001A .....      | 154  |
| C0609A .....      | 73   | C0747A .....      | 68   | C0896A .....      | 74   | C1002A .....      | 154  |
| C0610A .....      | 73   | C0748A .....      | 68   | C0897A .....      | 74   | C1003A .....      | 154  |
| C0611A .....      | 73   | C0749A .....      | 68   | C0899A .....      | 74   | C1004A .....      | 154  |
| C0612A .....      | 73   | C0750A .....      | 68   | C0901A .....      | 74   | C1005A .....      | 154  |
| C0620A .....      | 75   | C0751A .....      | 68   | C0910A .....      | 83   | C1102 .....       | 101  |
| C0621A .....      | 75   | C0753A .....      | 68   | C0911A .....      | 83   | C1103 .....       | 101  |
| C0622A .....      | 75   | C0754A .....      | 68   | C0912A .....      | 83   | C1104 .....       | 101  |
| C0623A .....      | 75   | C0755A .....      | 68   | C0913A .....      | 83   | C1106 .....       | 101  |
| C0624A .....      | 75   | C0760A .....      | 69   | C0914A .....      | 83   | C1108A .....      | 94   |
| C0625A .....      | 75   | C0761A .....      | 69   | C0915A .....      | 83   | C1110 .....       | 102  |
| C0626A .....      | 75   | C0762A .....      | 69   | C0916A .....      | 83   | C1112 .....       | 102  |
| C0628A .....      | 75   | C0763A .....      | 69   | C0917A .....      | 83   | C1117 .....       | 100  |

# Part Number Index

| CATALOG<br>NUMBER | PAGE    | CATALOG<br>NUMBER | PAGE    | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE |
|-------------------|---------|-------------------|---------|-------------------|------|-------------------|------|
| C1118 .....       | 139     | C1335A .....      | 33      | C1673A .....      | 46   | C2428A .....      | 14   |
| C1119 .....       | 139     | C1337A .....      | 33      | C1676A .....      | 46   | C2429A .....      | 14   |
| C1123 .....       | 139     | C1338A .....      | 161     | C1700 .....       | 152  | C2430A .....      | 14   |
| C1124 .....       | 139     | C1340A .....      | 160     | C1701 .....       | 152  | C2431A .....      | 14   |
| C1126 .....       | 139     | C1341A .....      | 33      | C1702 .....       | 152  | C2433A .....      | 13   |
| C1130 .....       | 139     | C1343A .....      | 160     | C1703 .....       | 152  | C2434A .....      | 14   |
| C1135 .....       | 101     | C1345A .....      | 159     | C1704 .....       | 152  | C2435A .....      | 14   |
| C1142 .....       | 101     | C1350A .....      | 60      | C1705 .....       | 152  | C2436A .....      | 14   |
| C1154 .....       | 94      | C1352A .....      | 58      | C1800 .....       | 153  | C2437A .....      | 14   |
| C1155 .....       | 100     | C1353A .....      | 58      | C1801 .....       | 153  | C2440A .....      | 14   |
| C1156 .....       | 110     | C1356 .....       | 156     | C1802 .....       | 153  | C2443A .....      | 14   |
| C1158 .....       | 105     | C1357 .....       | 156     | C1803 .....       | 153  | C2461A .....      | 11   |
| C1160 .....       | 96      | C1358 .....       | 156     | C1804 .....       | 153  | C2462A .....      | 11   |
| C1162 .....       | 109     | C1360 .....       | 156     | C1805 .....       | 153  | C2463A .....      | 11   |
| C1164 .....       | 109     | C1361 .....       | 156     | C2003A .....      | 2    | C2464A .....      | 11   |
| C1166 .....       | 100     | C1362 .....       | 156     | C2004A .....      | 2    | C2465A .....      | 11   |
| C1176A .....      | 111     | C1363 .....       | 156     | C2015A .....      | 2    | C2466A .....      | 11   |
| C1178 .....       | 100     | C1364 .....       | 157     | C2016A .....      | 2    | C2467A .....      | 11   |
| C1180 .....       | 94      | C1368A .....      | 80      | C2028A .....      | 2    | C2470A .....      | 11   |
| C1188 .....       | 100     | C1458.15.90 ..... | 151     | C2040A .....      | 2    | C2471A .....      | 11   |
| C1198 .....       | 94      | C1458.55.90 ..... | 151     | C2052A .....      | 2    | C2473A .....      | 11   |
| C1201 .....       | 175     | C1458.56.90 ..... | 151     | C2053A .....      | 2    | C2488A .....      | 11   |
| C1202 .....       | 41, 175 | C1458.57.90 ..... | 151     | C2064A .....      | 2    | C2509A .....      | 164  |
| C1203 .....       | 41      | C1461.15.90 ..... | 151     | C2065A .....      | 2    | C2510A .....      | 164  |
| C1204 .....       | 41      | C1461.55.90 ..... | 151     | C2100A .....      | 3    | C2511A .....      | 164  |
| C1206 .....       | 41      | C1461.56.90 ..... | 151     | C2101A .....      | 3    | C2513A .....      | 23   |
| C1208 .....       | 41      | C1461.57.90 ..... | 151     | C2102A .....      | 3    | C2514A .....      | 23   |
| C1210 .....       | 41      | C1463.15.90 ..... | 151     | C2103A .....      | 3    | C2515A .....      | 23   |
| C1212 .....       | 41      | C1463.55.90 ..... | 151     | C2104A .....      | 3    | C2516A .....      | 23   |
| C1226A .....      | 173     | C1463.56.90 ..... | 151     | C2105A .....      | 3    | C2517A .....      | 23   |
| C1228A .....      | 171     | C1558.15.92 ..... | 155     | C2106A .....      | 3    | C2518A .....      | 24   |
| C1300 .....       | 172     | C1561.15.92 ..... | 155     | C2107A .....      | 3    | C2519A .....      | 24   |
| C1301 .....       | 172     | C1563.15.92 ..... | 155     | C2117A .....      | 3    | C2520A .....      | 24   |
| C1302 .....       | 40, 172 | C1602 .....       | 41, 175 | C2118A .....      | 3    | C2521A .....      | 24   |
| C1304 .....       | 40      | C1603 .....       | 41      | C2119A .....      | 3    | C2523A .....      | 23   |
| C1305 .....       | 40      | C1604 .....       | 41      | C2404A .....      | 13   | C2524A .....      | 23   |
| C1308 .....       | 40      | C1606 .....       | 41      | C2405A .....      | 14   | C2525A .....      | 23   |
| C1310 .....       | 40      | C1608 .....       | 41      | C2406A .....      | 14   | C2526A .....      | 23   |
| C1312 .....       | 40      | C1612 .....       | 41      | C2409A .....      | 14   | C2528A .....      | 23   |
| C1313 .....       | 40      | C1614 .....       | 41      | C2410A .....      | 14   | C2534A .....      | 23   |
| C1318 .....       | 7       | C1642A .....      | 35      | C2412A .....      | 13   | C2535A .....      | 23   |
| C1319 .....       | 7       | C1643A .....      | 35      | C2420A .....      | 13   | C2536A .....      | 23   |
| C1320A .....      | 7       | C1644A .....      | 35      | C2421A .....      | 13   | C2537A .....      | 23   |
| C1321 .....       | 7       | C1645A .....      | 35      | C2422A .....      | 13   | C2538A .....      | 23   |
| C1322A .....      | 174     | C1646A .....      | 35      | C2423A .....      | 13   | C2539A .....      | 23   |
| C1326 .....       | 7       | C1648A .....      | 38      | C2424A .....      | 13   | C2540A .....      | 23   |
| C1331A .....      | 160     | C1670A .....      | 46      | C2425A .....      | 14   | C2543A .....      | 25   |
| C1332A .....      | 36      | C1671A .....      | 46      | C2426A .....      | 14   | C2555A .....      | 23   |
| C1333A .....      | 159     | C1672A .....      | 46      | C2427A .....      | 14   | C2676A .....      | 34   |

# Part Number Index

| CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE  |
|-------------------|------|-------------------|------|-------------------|------|-------------------|-------|
| C2677A .....      | 34   | C3126 .....       | 16   | C3208 .....       | 48   | C3527 .....       | 104   |
| C2678A .....      | 36   | C3127 .....       | 17   | C3210 .....       | 122  | C3528 .....       | 97    |
| C2679A .....      | 36   | C3128 .....       | 17   | C3211 .....       | 122  | C3529 .....       | 98    |
| C2680A .....      | 36   | C3129 .....       | 17   | C3214 .....       | 55   | C3602 .....       | 21    |
| C2681A .....      | 36   | C3134 .....       | 16   | C3215 .....       | 55   | C3603 .....       | 21    |
| C2683A .....      | 36   | C3135 .....       | 16   | C3216 .....       | 55   | C3604 .....       | 21    |
| C2686A .....      | 36   | C3150 .....       | 48   | C3217 .....       | 55   | C3605 .....       | 21    |
| C2687A .....      | 36   | C3151 .....       | 48   | C3218 .....       | 55   | C3606 .....       | 21    |
| C2688A .....      | 36   | C3152 .....       | 48   | C3220 .....       | 122  | C3607 .....       | 21    |
| C2689A .....      | 36   | C3153 .....       | 48   | C3223 .....       | 122  | C3608 .....       | 21    |
| C2754A .....      | 9    | C3154 .....       | 27   | C3224 .....       | 122  | C3610 .....       | 21    |
| C2768A .....      | 33   | C3155 .....       | 27   | C3225 .....       | 122  | C4008A .....      | 9, 43 |
| C2830A .....      | 13   | C3156 .....       | 61   | C3240 .....       | 127  | C4010A .....      | 43    |
| C2831A .....      | 13   | C3157 .....       | 61   | C3241 .....       | 127  | C4014A .....      | 43    |
| C2882A .....      | 33   | C3158 .....       | 28   | C3242 .....       | 127  | C4015A .....      | 43    |
| C2888A .....      | 33   | C3159 .....       | 28   | C3243 .....       | 127  | C4017A .....      | 43    |
| C2892A .....      | 33   | C3162 .....       | 27   | C3244 .....       | 127  | C4062A .....      | 12    |
| C2895A .....      | 33   | C3163 .....       | 27   | C3245 .....       | 127  | C4063A .....      | 12    |
| C3028 .....       | 56   | C3164 .....       | 27   | C3246 .....       | 127  | C4064A .....      | 12    |
| C3029 .....       | 56   | C3165 .....       | 48   | C3247 .....       | 127  | C4065A .....      | 12    |
| C3030 .....       | 56   | C3166 .....       | 27   | C3260 .....       | 124  | C4066A .....      | 12    |
| C3031 .....       | 56   | C3167 .....       | 128  | C3261 .....       | 124  | C4067A .....      | 12    |
| C3060 .....       | 28   | C3168 .....       | 128  | C3270 .....       | 124  | C4070A .....      | 12    |
| C3061 .....       | 28   | C3169 .....       | 27   | C3271 .....       | 124  | C4071A .....      | 12    |
| C3062 .....       | 28   | C3170 .....       | 128  | C3280 .....       | 124  | C4073A .....      | 12    |
| C3063 .....       | 28   | C3171 .....       | 128  | C3282 .....       | 124  | C4075A .....      | 12    |
| C3064 .....       | 28   | C3172 .....       | 128  | C3283 .....       | 124  | C4076A .....      | 12    |
| C3065 .....       | 28   | C3173 .....       | 128  | C3284 .....       | 124  | C4077A .....      | 12    |
| C3068 .....       | 28   | C3174 .....       | 128  | C3310 .....       | 27   | C4078A .....      | 12    |
| C3102 .....       | 16   | C3175 .....       | 128  | C3311 .....       | 27   | C4079A .....      | 12    |
| C3103 .....       | 16   | C3178 .....       | 16   | C3320 .....       | 27   | C4080 .....       | 139   |
| C3105 .....       | 16   | C3179 .....       | 16   | C3321 .....       | 27   | C4081A .....      | 10    |
| C3106 .....       | 16   | C3180 .....       | 27   | C3322 .....       | 27   | C4082A .....      | 10    |
| C3110 .....       | 17   | C3181 .....       | 27   | C3340 .....       | 27   | C4083A .....      | 10    |
| C3111 .....       | 17   | C3182 .....       | 27   | C3341 .....       | 27   | C4084A .....      | 10    |
| C3112 .....       | 17   | C3183 .....       | 28   | C3352 .....       | 52   | C4088A .....      | 12    |
| C3113 .....       | 17   | C3184 .....       | 28   | C3353 .....       | 52   | C4090 .....       | 139   |
| C3114 .....       | 17   | C3190 .....       | 16   | C3354 .....       | 52   | C4100A .....      | 18    |
| C3115 .....       | 17   | C3191 .....       | 16   | C3356 .....       | 52   | C4101A .....      | 18    |
| C3116 .....       | 17   | C3192 .....       | 16   | C3362 .....       | 52   | C4102A .....      | 18    |
| C3117 .....       | 17   | C3193 .....       | 16   | C3364 .....       | 52   | C4103A .....      | 18    |
| C3118 .....       | 17   | C3194 .....       | 16   | C3500 .....       | 104  | C4104A .....      | 18    |
| C3119 .....       | 17   | C3195 .....       | 16   | C3519 .....       | 100  | C4105A .....      | 18    |
| C3120 .....       | 17   | C3200 .....       | 122  | C3520 .....       | 109  | C4106A .....      | 18    |
| C3121 .....       | 17   | C3201 .....       | 122  | C3521 .....       | 91   | C4107A .....      | 18    |
| C3122 .....       | 17   | C3204 .....       | 48   | C3523 .....       | 91   | C4108A .....      | 18    |
| C3123 .....       | 17   | C3205 .....       | 48   | C3524 .....       | 91   | C4109A .....      | 18    |
| C3124 .....       | 17   | C3206 .....       | 48   | C3525 .....       | 91   | C4110A .....      | 18    |
| C3125 .....       | 17   | C3207 .....       | 48   | C3526 .....       | 104  | C4111A .....      | 18    |

# Part Number Index

| CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE |
|-------------------|------|-------------------|------|-------------------|------|-------------------|------|
| C4112A .....      | 18   | C4161A .....      | 29   | C4210A .....      | 30   | C4331A .....      | 129  |
| C4113A .....      | 18   | C4162A .....      | 29   | C4211A .....      | 30   | C4332A .....      | 129  |
| C4114A .....      | 18   | C4163A .....      | 29   | C4212A .....      | 30   | C4333A .....      | 129  |
| C4115A .....      | 18   | C4164A .....      | 29   | C4213A .....      | 30   | C4334A .....      | 120  |
| C4116A .....      | 18   | C4165A .....      | 29   | C4214A .....      | 19   | C4335A .....      | 120  |
| C4117A .....      | 19   | C4166A .....      | 30   | C4215A .....      | 30   | C4336A .....      | 120  |
| C4118A .....      | 19   | C4167A .....      | 29   | C4216A .....      | 31   | C4337A .....      | 120  |
| C4119A .....      | 19   | C4168A .....      | 29   | C4217A .....      | 31   | C4338A .....      | 120  |
| C4120A .....      | 19   | C4169A .....      | 29   | C4218A .....      | 31   | C4339A .....      | 120  |
| C4121A .....      | 19   | C4170A .....      | 53   | C4219A .....      | 31   | C4340A .....      | 120  |
| C4122A .....      | 19   | C4171A .....      | 53   | C4220A .....      | 31   | C4341A .....      | 120  |
| C4123A .....      | 19   | C4172A .....      | 53   | C4221A .....      | 31   | C4342A .....      | 120  |
| C4124A .....      | 19   | C4173A .....      | 53   | C4222A .....      | 31   | C4343A .....      | 120  |
| C4125A .....      | 19   | C4174A .....      | 53   | C4223A .....      | 31   | C4344A .....      | 120  |
| C4126A .....      | 19   | C4175A .....      | 53   | C4224A .....      | 31   | C4345A .....      | 120  |
| C4127A .....      | 19   | C4176A .....      | 53   | C4225A .....      | 31   | C4346A .....      | 120  |
| C4128A .....      | 19   | C4177A .....      | 53   | C4226A .....      | 31   | C4347A .....      | 120  |
| C4129A .....      | 19   | C4178A .....      | 53   | C4227A .....      | 31   | C4348A .....      | 120  |
| C4130A .....      | 19   | C4179A .....      | 53   | C4228A .....      | 31   | C4349A .....      | 118  |
| C4131A .....      | 19   | C4180A .....      | 53   | C4229A .....      | 31   | C4350A .....      | 120  |
| C4132A .....      | 19   | C4181A .....      | 53   | C4230A .....      | 31   | C4408 .....       | 138  |
| C4133A .....      | 19   | C4182A .....      | 53   | C4300A .....      | 118  | C4408ST .....     | 138  |
| C4134A .....      | 19   | C4183A .....      | 54   | C4301A .....      | 118  | C4410 .....       | 138  |
| C4135A .....      | 20   | C4184A .....      | 54   | C4302A .....      | 118  | C4412 .....       | 138  |
| C4136A .....      | 20   | C4185A .....      | 54   | C4304A .....      | 118  | C4412ST .....     | 138  |
| C4137A .....      | 20   | C4186A .....      | 54   | C4305A .....      | 118  | C4413 .....       | 138  |
| C4138A .....      | 20   | C4187A .....      | 54   | C4306A .....      | 118  | C4841A .....      | 76   |
| C4139A .....      | 20   | C4188A .....      | 54   | C4307A .....      | 118  | C4842A .....      | 76   |
| C4140A .....      | 20   | C4189A .....      | 54   | C4308A .....      | 118  | C4843A .....      | 76   |
| C4141A .....      | 20   | C4190A .....      | 54   | C4309A .....      | 118  | C4844A .....      | 76   |
| C4142A .....      | 20   | C4191A .....      | 53   | C4310A .....      | 118  | C5011 .....       | 96   |
| C4143A .....      | 20   | C4192A .....      | 30   | C4311A .....      | 9    | C5025 .....       | 96   |
| C4144A .....      | 20   | C4193A .....      | 30   | C4312A .....      | 118  | C5029 .....       | 96   |
| C4145A .....      | 20   | C4194A .....      | 30   | C4313A .....      | 118  | C5034 .....       | 96   |
| C4146A .....      | 20   | C4195A .....      | 30   | C4314A .....      | 118  | C5039 .....       | 97   |
| C4147A .....      | 20   | C4196A .....      | 30   | C4315A .....      | 118  | C5043 .....       | 98   |
| C4148A .....      | 20   | C4197A .....      | 30   | C4316A .....      | 118  | C5044 .....       | 97   |
| C4149A .....      | 20   | C4198A .....      | 30   | C4317A .....      | 118  | C5076 .....       | 139  |
| C4150A .....      | 20   | C4199A .....      | 30   | C4318A .....      | 118  | C5078 .....       | 139  |
| C4151A .....      | 20   | C4200A .....      | 30   | C4321A .....      | 118  | C5084 .....       | 139  |
| C4152A .....      | 29   | C4201A .....      | 30   | C4322A .....      | 118  | C5086 .....       | 139  |
| C4153A .....      | 29   | C4202A .....      | 30   | C4323A .....      | 118  | C5096 .....       | 139  |
| C4154A .....      | 29   | C4203A .....      | 59   | C4324A .....      | 118  | C5460 .....       | 139  |
| C4155A .....      | 29   | C4204A .....      | 30   | C4325A .....      | 118  | C5760 .....       | 88   |
| C4156A .....      | 29   | C4205A .....      | 30   | C4326A .....      | 118  | C5761 .....       | 88   |
| C4157A .....      | 29   | C4206A .....      | 19   | C4327A .....      | 118  | C5770 .....       | 103  |
| C4158A .....      | 29   | C4207A .....      | 30   | C4328A .....      | 129  | C5775 .....       | 88   |
| C4159A .....      | 29   | C4208A .....      | 30   | C4329A .....      | 129  | C5776 .....       | 88   |
| C4160A .....      | 29   | C4209A .....      | 53   | C4330A .....      | 129  | C5777 .....       | 89   |

# Part Number Index

| CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE |
|-------------------|------|-------------------|------|-------------------|------|-------------------|------|
| C5778 .....       | 91   | C6118A .....      | 44   | C8030 .....       | 101  | CP6.30.06 .....   | 144  |
| C5780 .....       | 103  | C6119A .....      | 44   | C8031 .....       | 91   | CP6.30.07 .....   | 144  |
| C5784 .....       | 103  | C6120A .....      | 44   | C8101 .....       | 49   | CP6.30.10 .....   | 144  |
| C5785 .....       | 89   | C6121A .....      | 44   | C8102 .....       | 15   | CP6.A3.02 .....   | 144  |
| C5802 .....       | 89   | C6310 .....       | 138  | C8103 .....       | 49   | CP6.A3.03 .....   | 144  |
| C5804 .....       | 89   | C6311 .....       | 138  | C8104 .....       | 49   | CP6.A3.05 .....   | 144  |
| C5814 .....       | 90   | C6312 .....       | 138  | C8105 .....       | 62   | CP6.A3.06 .....   | 144  |
| C5822 .....       | 90   | C6313 .....       | 138  | C8106 .....       | 26   | CP6.A3.07 .....   | 144  |
| C5830 .....       | 103  | C6348A .....      | 12   | C8107 .....       | 39   | CP6.A3.10 .....   | 144  |
| C5886 .....       | 88   | C6351A .....      | 13   | C8108 .....       | 39   | CR5.30.02 .....   | 145  |
| C5889 .....       | 89   | C6352A .....      | 13   | C8109 .....       | 49   | CR5.30.03 .....   | 145  |
| C6010A .....      | 43   | C6353A .....      | 13   | C8110 .....       | 39   | CR5.30.05 .....   | 145  |
| C6014A .....      | 43   | C6355A .....      | 13   | C8111 .....       | 39   | CR5.30.06 .....   | 145  |
| C6015A .....      | 43   | C6356A .....      | 13   | C8112 .....       | 63   | CR5.30.07 .....   | 145  |
| C6017A .....      | 43   | C6357A .....      | 13   | C8113 .....       | 51   | CR5.30.10 .....   | 145  |
| C6019A .....      | 43   | C6358A .....      | 13   | C8114 .....       | 26   | CR5.A3.02 .....   | 145  |
| C6023A .....      | 43   | C6360A .....      | 13   | C8115 .....       | 39   | CR5.A3.03 .....   | 145  |
| C6026A .....      | 43   | C6367 .....       | 157  | C8116 .....       | 45   | CR5.A3.05 .....   | 145  |
| C6035A .....      | 81   | C6451A .....      | 47   | C8117 .....       | 57   | CR5.A3.06 .....   | 145  |
| C6036A .....      | 81   | C6500A .....      | 37   | C8118 .....       | 50   | CR5.A3.07 .....   | 145  |
| C6040A .....      | 82   | C6501A .....      | 37   | C8119 .....       | 39   | CR5.A3.10 .....   | 145  |
| C6041A .....      | 82   | C6502A .....      | 37   | C8120 .....       | 39   | CR6.30.02 .....   | 144  |
| C6042A .....      | 82   | C6503A .....      | 37   | C8122 .....       | 45   | CR6.30.03 .....   | 144  |
| C6043A .....      | 82   | C6504A .....      | 37   | C8123 .....       | 51   | CR6.30.05 .....   | 144  |
| C6044A .....      | 82   | C6505A .....      | 37   | C8124 .....       | 51   | CR6.30.06 .....   | 144  |
| C6045A .....      | 82   | C6506A .....      | 37   | C8125 .....       | 185  | CR6.30.07 .....   | 144  |
| C6046A .....      | 82   | C6507A .....      | 37   | C8126 .....       | 51   | CR6.30.10 .....   | 144  |
| C6047A .....      | 82   | C6508A .....      | 37   | C8127 .....       | 51   | CR6.A3.02 .....   | 144  |
| C6048A .....      | 82   | C7102A .....      | 156  | C8128 .....       | 64   | CR6.A3.03 .....   | 144  |
| C6049A .....      | 82   | C7104A .....      | 46   | C8129 .....       | 57   | CR6.A3.05 .....   | 144  |
| C6050A .....      | 82   | C7106A .....      | 58   | C8131 .....       | 62   | CR6.A3.06 .....   | 144  |
| C6051A .....      | 82   | C7108A .....      | 7    | C8132 .....       | 63   | CR6.A3.07 .....   | 144  |
| C6052A .....      | 82   | C7112A .....      | 66   | C8133 .....       | 62   | CR6.A3.10 .....   | 144  |
| C6053A .....      | 82   | C7114A .....      | 66   | C8134 .....       | 62   | E1000S .....      | 134  |
| C6054A .....      | 82   | C7116A .....      | 66   | CP5.30.02 .....   | 145  | E1001S .....      | 134  |
| C6056A .....      | 82   | C7600A .....      | 4    | CP5.30.03 .....   | 145  | E1002S .....      | 134  |
| C6058A .....      | 82   | C7602A .....      | 4    | CP5.30.05 .....   | 145  | E1003S .....      | 134  |
| C6059A .....      | 82   | C7604A .....      | 4    | CP5.30.06 .....   | 145  | E1004S .....      | 134  |
| C6060A .....      | 82   | C7606A .....      | 4    | CP5.30.07 .....   | 145  | E1006S .....      | 134  |
| C6061A .....      | 165  | C7608A .....      | 4    | CP5.30.10 .....   | 145  | E1008S .....      | 134  |
| C6062A .....      | 165  | C7610A .....      | 4    | CP5.A3.02 .....   | 145  | E1010S .....      | 134  |
| C6065A .....      | 82   | C7611A .....      | 4    | CP5.A3.03 .....   | 145  | E1012S .....      | 134  |
| C6066A .....      | 82   | C8000 .....       | 112  | CP5.A3.05 .....   | 145  | E1022S .....      | 134  |
| C6067A .....      | 82   | C8001 .....       | 112  | CP5.A3.06 .....   | 145  | E1023S .....      | 134  |
| C6101A .....      | 44   | C8014 .....       | 112  | CP5.A3.07 .....   | 145  | E1024S .....      | 134  |
| C6103A .....      | 44   | C8025 .....       | 102  | CP5.A3.10 .....   | 145  | E1030S .....      | 134  |
| C6106A .....      | 44   | C8027 .....       | 104  | CP6.30.02 .....   | 144  | E1032S .....      | 134  |
| C6109A .....      | 44   | C8028 .....       | 104  | CP6.30.03 .....   | 144  | E1033S .....      | 134  |
| C6111A .....      | 44   | C8029 .....       | 91   | CP6.30.05 .....   | 144  | E1034S .....      | 134  |

# Part Number Index

| CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER | PAGE | CATALOG<br>NUMBER  | PAGE |
|-------------------|------|-------------------|------|-------------------|------|--------------------|------|
| E1036S .....      | 134  | E2032S .....      | 135  | E2484S .....      | 119  | E3503S .....       | 121  |
| E1038S .....      | 134  | E2033S .....      | 135  | E2502S .....      | 119  | E3504S .....       | 121  |
| E1040S .....      | 134  | E2034S .....      | 135  | E2503S .....      | 119  | E3506S .....       | 121  |
| E1041S .....      | 134  | E2036S .....      | 135  | E2504S .....      | 119  | E3512S .....       | 121  |
| E1042S .....      | 134  | E2038S .....      | 135  | E2506S .....      | 119  | E3514S .....       | 121  |
| E1043S .....      | 134  | E2040S .....      | 135  | E2508S .....      | 119  | E3522S .....       | 121  |
| E1044S .....      | 134  | E2041S .....      | 135  | E2522S .....      | 119  | E3524S .....       | 121  |
| E1052S .....      | 134  | E2042S .....      | 135  | E2524S .....      | 119  | E3532S .....       | 121  |
| E1054S .....      | 134  | E2043S .....      | 135  | E2532S .....      | 119  | E3534S .....       | 121  |
| E1062S .....      | 134  | E2044S .....      | 135  | E2534S .....      | 119  | E3542S .....       | 123  |
| E1064S .....      | 134  | E2052S .....      | 135  | E2542S .....      | 119  | E3602S .....       | 123  |
| E1482S .....      | 117  | E2054S .....      | 135  | E2544S .....      | 119  | E3603S .....       | 123  |
| E1484S .....      | 117  | E2062S .....      | 135  | E3000S .....      | 136  | E3604S .....       | 123  |
| E1486S .....      | 117  | E2064S .....      | 135  | E3001S .....      | 136  | E3606S .....       | 123  |
| E1502S .....      | 117  | E2100S .....      | 137  | E3002S .....      | 136  | E3612S .....       | 123  |
| E1503S .....      | 117  | E2102S .....      | 137  | E3003S .....      | 136  | E3614S .....       | 123  |
| E1504S .....      | 117  | E2103S .....      | 137  | E3004S .....      | 136  | E3622S .....       | 123  |
| E1505S .....      | 117  | E2104S .....      | 137  | E3006S .....      | 136  | E3624S .....       | 123  |
| E1506S .....      | 117  | E2106S .....      | 137  | E3008S .....      | 136  | E3632S .....       | 123  |
| E1508S .....      | 117  | E2108S .....      | 137  | E3010S .....      | 136  | E3634S .....       | 123  |
| E1512S .....      | 117  | E2122S .....      | 137  | E3012S .....      | 136  | E3842S .....       | 162  |
| E1514S .....      | 117  | E2123S .....      | 137  | E3022S .....      | 136  | E3843S .....       | 162  |
| E1522S .....      | 117  | E2124S .....      | 137  | E3023S .....      | 136  | E024C0045510 ..... | 184  |
| E1524S .....      | 117  | E2200S .....      | 137  | E3024S .....      | 136  | E026C0045510 ..... | 184  |
| E1532S .....      | 117  | E2202S .....      | 137  | E3030S .....      | 136  | E028C0045510 ..... | 184  |
| E1534S .....      | 117  | E2203S .....      | 137  | E3032S .....      | 136  | E028P0181510 ..... | 184  |
| E1842S .....      | 162  | E2204S .....      | 137  | E3033S .....      | 136  | E028P0501510 ..... | 184  |
| E1843S .....      | 162  | E2206S .....      | 137  | E3034S .....      | 136  | E030C0045510 ..... | 184  |
| E2000S .....      | 135  | E2208S .....      | 137  | E3036S .....      | 136  | SP00C0011010 ..... | 182  |
| E2002S .....      | 135  | E2242S .....      | 137  | E3038S .....      | 136  | SP00C0012010 ..... | 182  |
| E2003S .....      | 135  | E2243S .....      | 137  | E3042S .....      | 136  | Z028C0061110 ..... | 183  |
| E2004S .....      | 135  | E2244S .....      | 137  | E3043S .....      | 136  | Z028C0066110 ..... | 184  |
| E2006S .....      | 135  | E2252S .....      | 137  | E3044S .....      | 136  | Z028C0042010 ..... | 184  |
| E2008S .....      | 135  | E2254S .....      | 137  | E3052S .....      | 136  | Z028C0042210 ..... | 184  |
| E2010S .....      | 135  | E2262S .....      | 137  | E3054S .....      | 136  | Z028C0042410 ..... | 184  |
| E2012S .....      | 135  | E2264S .....      | 137  | E3062S .....      | 136  | Z028C0042610 ..... | 184  |
| E2022S .....      | 135  | E2402S .....      | 117  | E3064S .....      | 136  | Z028C0042810 ..... | 184  |
| E2023S .....      | 135  | E2404S .....      | 117  | E3482S .....      | 121  | Z028C0101120 ..... | 184  |
| E2024S .....      | 135  | E2406S .....      | 117  | E3484S .....      | 121  |                    |      |
| E2030S .....      | 135  | E2482S .....      | 119  | E3502S .....      | 121  |                    |      |

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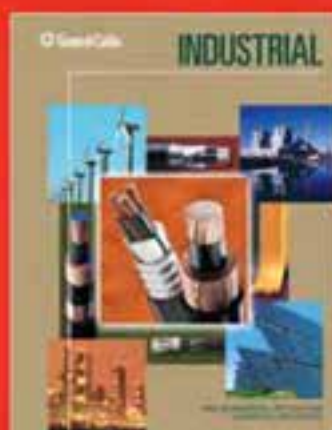
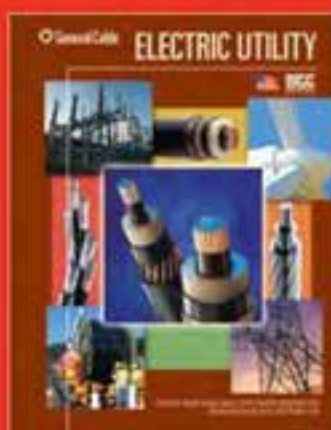
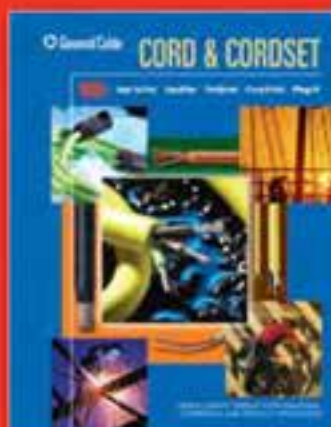
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