8D Series - MIL-DTL-38999 Series III

Introduction

This product family is in accordance with MIL-DTL-38999 K Serie III , EN 3645 and CECC standard for bronze shell

Proposed in aluminium, composite, stainless steel, titanium and bronze versions.
This family gives :
• A high contact density up to 128 contacts #22D.
• A quick screw coupling with self locking mechanism.
• 100% scoop proof offering polarising options by angular positioning of keys.
• EMI enhanced protection by shielding ring and shell to shell bottoming.

Moreover, composite connectors reach high performance in terms of:
• Resistance to salt spray (> 2000 hours)
• Endurance : (> 1500 mating / Unmating operations with specific contacts)

Its choice is recommended wherever weight is critical (typically –30% versus aluminium version) or particularly in harsh climatic and mechanical environments.

8D Titanium version is characterized by a very high and mechanical resistance:
• Weight saving as compared to stainless steel
• Unplated and nickel plated version available

8D / D38999 family has applications in:
• Aeronautics and military
• Marine and offshore
• Industrial.

For more informations or questions, please contact us to:

Contactmilaero@souriau.com

Overview

Standard series

QPL

Aluminium | Composite | Stainless steel

CECC

Bronze

A large panel of contacts and inserts available on whole product family.
Contacts: crimp : PC tails / Wire wrap / Coax / Triax / Power / Quadrax / Eliòo (Optical fiber)

Range extension series

Titanium

Quadrax

Reinforced sealing

Hermetic

Optical Elio cts

Power

USB

Technical characteristics

Characteristics

• **Shell:**
Aluminium, composite, stainless steel, bronze

• **Shells plating:**
Aluminium shell:
Cadmium olive drab (W)
Nickel (F)
Black zinc nickel (L)
Green zinc cobalt (Z)
Composite shell:
Cadmium olive drab (J)
Nickel (M)
Without plating (X)
Stainless steel shell:
Passivated (K)
Nickel (S)
Titanium shell:
Without plating (TT)
Nickel (TF)
Boîtier bronze:
Without plating

• **Insulator:** Thermoplastic or thermoset.

• **Grommet and interfacial seal:**
Silicone elastomer

• **Contacts:** Copper alloy

• **Contacts plating:** Gold over nickel plated

• **Endurance:**
- 500 mating / unmating operations whatever the material used
- 1500 mating / unmating operations with composite connectors + specifics contacts

• **Shock:**
300g, 3 ms according EN 2591-D2 method A

• **Vibration:**
Sinus:
10 à 2000 Hz, 3x12 hrs
(60g, 140 – 2000 Hz)
with temperature cycling
Random:
- 50 to 2000 Hz, 2x8 Hrs
(1g²/ Hz, 100 – 2000Hz) at T° max.
- 25 to 2000 Hz, 2x8 Hrs
(5g²/ Hz, 100 – 300Hz)
(at ambiant T°)
Test with accessories in acc with EN 2591-D3

• **Contacts retention:**

Contacts size	22	20	16	12	8	4
Min force in N	44	67	111	111	111	200

Weight comparison

Example for a plug shell size 15

Materials	Weight
Stainless steel	58.80 grs
Titanium	33.90 grs
Aluminium	20.35 grs
Composite	14.30 grs

40% lighter
42% lighter
30% lighter

Electrical

• **Test voltage rating (Vrms):**

Service	At sea level	At 21000 m
M	1 300	800
N	1 000	600
I	1 800	1 000
II	2 300	1 000

For Quadrax see page 418

• **Contact resistance:**

Contacts size	22	20	16	12	8	4
Cts resistance (mΩ)	14.6	7.3	3.8	3.5	3	2

• **Insulation resistance:**
≥ 5 000 MΩ (under 500 Vdc).

• **Contact rating:**

Contacts size	22	20	16	12	8	4
Contact rating (A)	5	7,5	13	23	45	80

• **Shell continuity**
Aluminium shell:
Cadmium olive drab (W): 2.5 mΩ
Nickel (F): 1 mΩ
Black zinc nickel (L): 2.5 mΩ
Green zinc nickel (Z): 2.5 mΩ
Composite shell:
Cadmium olive drab (J): 3 mΩ
Nickel (M): 3 mΩ
Stainless steel shell:
Passivated (K) : 10 mΩ
Nickel (S) : 1 mΩ
Titanium shell:
Without plating (TT) : 10 mΩ
Nickel (TF): 1 mΩ
Bronze shell:
Without plating: 5 mΩ

• **Shielding:**
Aluminium shell:
- 65 db at 10 GHz (F) – 50 db at 10 GHz (W)
- 85 db at 1 GHz (F)
- (L & Z): Consult us
Composite shell:
- 90 db at 10 GHz
- 85 db at 1 GHz
Stainless steel shell:
- 45 db at 10 Ghz (K)
- 65 db at 10 Ghz (S)
Titanium shell:
- 45 db at 10 Ghz (TT)
- 65 db at 10 Ghz (TF)
Bronze shell: 85 db at 10 Ghz

Technical characteristics

Climatics

• **Temperature range:**

Aluminium shell:

Cadmium olive drab (W): -65°C +175°C
Nickel (F): -65°C +200°C
Black zinc nickel (L): -65°C +200°C
Green zinc nickel (Z): -65°C +200°C

Composite shell:

Cadmium olive drab plating (J): -65°C +175°C
Nickel (M): -65°C +200°C
Without plating (X): -65°C +175°

Stainless steel shell:

Passivated (K): -65°C +200°C
Nickel (S): -65°C +200°C

Titanium shell:

Without plating (TT): -65°C +200°C
Nickel (TF): -65°C +200°C

Bronze shell:

No plating: -65°C +175°C

• **Sealing:**

Mated connectors meet altitude immersion requirements of MIL-DTL-38999.

• **Salt spray:**

Aluminium shell:

Cadmium olive drab (W): 500 Hrs
Nickel (F): 48 Hrs
Black Zinc nickel (L): 500 Hrs
Green zinc cobalt (Z): 500 Hrs

Composite shell:

Cadmium olive drab (J) : 2000 Hrs
Nickel (M): 2000 Hrs
Without plating (X): 2000 Hrs

Stainless steel shell:

Passivated (K): 500 Hrs
Nickel (S): 48 Hrs

Titanium shell:

Without plating (TT): 500 Hrs
Nickel (TF): 48 Hrs

Bronze shell:

No plating: 500 Hrs

Resistance to fluids

• **According to MIL-DTL-38999 standard.**

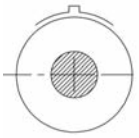
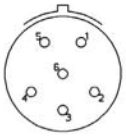
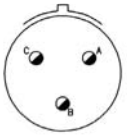
Gazoline: JP5 (OTAN F44)
Mineral hydrolic fluid: MIL-H-5606 (OTAN H515)
Synthetic hydraulic fluid: Skydrol 500 B4

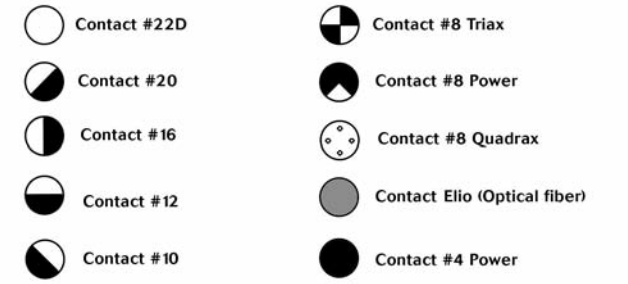
• **LD4 (SAE AS 1241).**

Mineral lubrificating: MIL-L-7870A (OTAN 0142)
Synthetic lubrificating: MIL-L-23699 (OTAN 0156), MIL-L-7808.
Cleaning fluid: MIL-DTL-25769 dilué/diluted
De-icing fluid: MIL-A-8243.
Extinguishing fluid: Chlorobrométhane
Cooling fluid: Coolanol

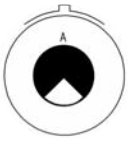
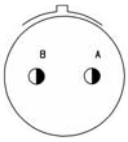
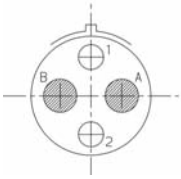
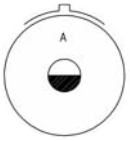
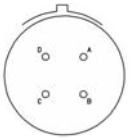
Contact layouts

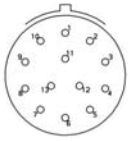
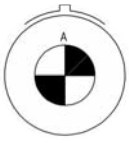
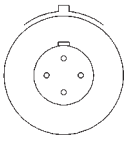
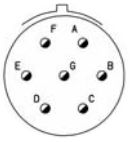
09 / A

01	35	98
		
1 Optical way	6#22D Service M	3#20 Service I

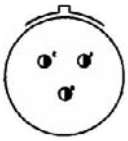
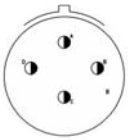
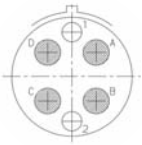
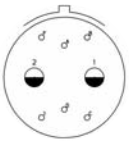
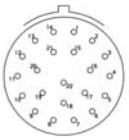


11 / B

01	01	02	02	04	05	12	22
							
1#12 Service II All series ex-cepted JVS	1#8 Service I only for JVS	2#16 Service I	2 Optical ways	4#20 Service I	5#20 Service I	1#12 Service II only for JVS	4#22D Service M

35	80	81	98	99
				
13#22D Service M	1#8 triax Service I	1#8 Quadrax	6#20 Service I	7#20 Service I

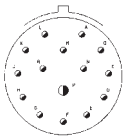
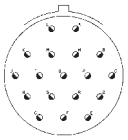
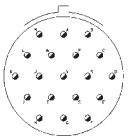
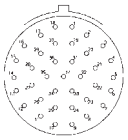
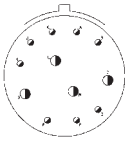
13 / C

03	04	04	08	26	35	98
						
3#16 Service I	4#16 Service I	4 Optical ways	8#20 Service I	2#12 6#22D Service M	22#22D Service M	10#20 Service I

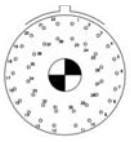
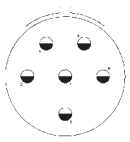
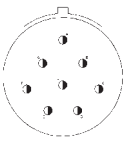
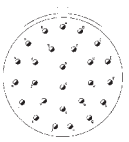
Elio fiber optics Ethernet Quadrax

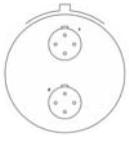
Contact layouts

15 / D

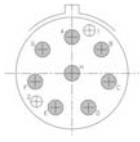
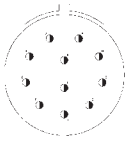
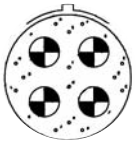
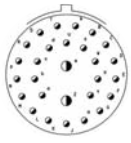
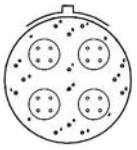
05	15	18	19	35	97
					
5#16 Service II	1#16 14#20 Service I	18#20 Service I	19#20 Service I	37#22D Service M	4#16 8#20 Service I

17 / E

02	06	08	20	22	26	35	75
							
38#22D 1#8 triax Service M	6#12 Service I	8#16 Service II	4#12 16#22D Service M	2#12 2#8 Triax Service M	26#20 Service I	55#22D Service M	2#8 triax Service M

80	81	82	99
			
2#12 2#8 Quadrax	38#22D 1#8 Quadrax	2 Quadrax	2#16 21#20 Service I

19 / F

08	11	18	28	32	35	84
						
8 Optical ways	11#16 Service II	14#22D 4#8 Triax Service M	26#20 2#16 Service I	32#20 Service I	66#22D Service M	66#22D Service M

Elio fiber optics Ethernet Quadrax

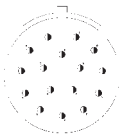
Contact layouts

21 / G

11

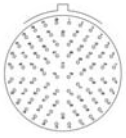
11#12
Service I

16



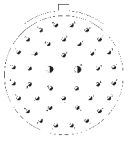
16#16
Service II

35



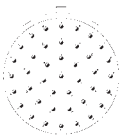
79#22D
Service M

39



2#16
37#20
Service I

41



41#20
Service I

42

2#4 power
Service I

48

4#8 power
Service I

59

55#22D
4#12
Service M

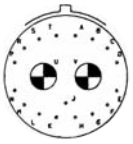
72

2#4 power
6#16
Service I

75

4#8 triax
Service M

78



17#22D
2#8 Coax
Service M

84

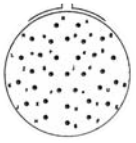
4 Quadrax

23 / H

21

21#16
Service II

32



32#20
Service I

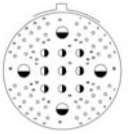
35

100#22D
Service M

53

53#20
Service I

54



4#12
9#16
40#22D
Service M

55

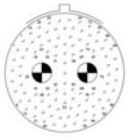
55#20
Service I

25 / J

04

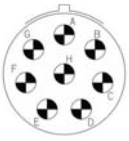
8#16
48#20
Service I

07



2#8 triax
97#22D
Service M

08



8#8 triax
Service M

11

2#20
9#10
Service N

19

19#12
Service I

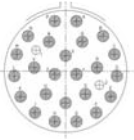
20(1)

10#20
4#12 coax
13#16
3#8 triax
Service N

24

12#16
12#12
Service II

24



24
Optical Ways

29

29#16
Service I

35

128#22D
Service M

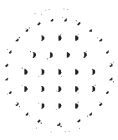
37

37#16
Service I

41

22#22D
3#20
11#16
2#12
3#8 triax
Service M

43



23#20
20#16
Service I

44

4#4 power
4#16
Service I

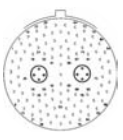
46

40#20
4#16
2#8 coax
Service I

61

61#20
Service I

82



97#22D
2#8 Quadrax

80

10#20 - 4#12 coax
13#16
3#8 Quadrax

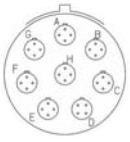
81

22#22D - 3#20
11#16 - 2#12
3#8 Quadrax

86

40#20
4#16
2#8 Quadrax

88



8 Quadrax

90

40#20
4#16
2#8 Twinax
Service I

(1) For classes F, W, K, S only.

Elio fiber optics

Ethernet Quadrax

Contact layouts

Shell Size	Layout	Service	MIL - DTL - 38999 (QPL) Alu	Stainless steel	Composite	8D Titanium	JVS (CECC) Bronze	Hermetics	Number of contacts	#22D	#20	#16	#12	#10	#8	#4 Power	Optical Way
09 / A	09 - 01	-							1								1
	09 - 05*	-							1						1 Quadrax		
	09 - 35	M					x		6	6							
	09 - 98	I					x		3		3						
11 / B	11 - 01	II							1				1				
	11 - 01	II					x		1						1 Coax		
	11 - 02	I					x		2			2					
	11 - 02	-							2								2
	11 - 04	I					x		4		4						
	11 - 05	I					x		5		5						
	11 - 12	I					x		1				1				
	11 - 22	M							4	4							
	11 - 35	M					x		13	13							
	11 - 80	I							1						1 Triax		
	11 - 81	-							1						1 Quadrax		
	11 - 98	I					x		6		6						
	11 - 99	I					x		7		7						
13 / C	13 - 04	I					x		4			4					
	13 - 04	-							4								4
	13 - 03	I							3								
	13 - 08	I					x		8		8						
	13 - 26	M					x		8	6			2				
	13 - 35	M					x		22	22							
	13 - 98	I					x		10		10						
15 / D	15 - 05	II					x		5			5					
	15 - 15	I					x		15		14	1					
	15 - 18	I					x		18		18						
	15 - 19	I					x		19		19						
	15 - 35	M					x		37	37							
	15 - 97	I					x		12		8	4					
17 / E	17 - 02	M							39	38					1 Triax		
	17 - 06	I					x		6		6						
	17 - 08	II					x		8			8					
	17 - 20	M							20	16			4				
	17 - 26	I					x		26		26						
	17 - 35	M					x		55	55							
	17 - 75	M					x		2						2 Triax		
	17 - 81	-							39	38					1 Quadrax		
	17 - 82	-							2						2 Quadrax		
	17 - 99	I					x		23		21	2					
19 / F	19 - 08	-							8								8
	19 - 11	II					x		11			11					
	19 - 18	M							18	14					4 Triax		
	19 - 28	I					x		28		26	2					
	19 - 32	I					x		32		32						
	19 - 35	M					x		66	66							
21 / G	21 - 11	I					x		11				11				
	21 - 16	II					x		16			16					
	21 - 35	M					x		79	79							
	21 - 39	I					x		39		37	2					
	21 - 41	I					x		41		41						
	21 - 42	I					x		2							2	
	21 - 48	I					x		4						4 Power		
	21 - 59	M							59	55			4				
	21 - 72	-					x		8							2	
	21 - 75	-					x		4						4 Triax		
	21 - 78	M							19	17					2 Coax		
	21 - 84	-							4						4 Quadrax		
23 / H	23 - 21	II					x		21			21					
	23 - 32	I							32		32						
	23 - 35	M					x		100	100							
	23 - 53	I					x		53		53						
	23 - 54	M							53	40		9	4				
	23 - 55	I					x		55		55						
25 / J	25 - 04	I							56		48	8					
	25 - 07	M							99	97					2 Triax		
	25 - 08	-					x(2)		8						8 Triax		
	25 - 11	N							11		2			9			
	25 - 19	I					x		19				19				
	25 - 20(1)	N					x		30		10	13	4		3 Triax		
	25 - 24	II					x		24			12	12				
	25 - 24	-							24								24
	25 - 29	I					x		29			29					
	25 - 35	M					x		128	128							
	25 - 37	I							37			37					
	25 - 41	N							41	22	3	11	2		3 Triax		
	25 - 43	I					x		43		23	20					
	25 - 44	I							8			4				4	
	25 - 46	I					x		46		40	4			2 Coax		
	25 - 61	I					x		61		61						
	25 - 80	N							30		10	13	4		3 Quadrax		
	25 - 81	N							41	22	3	11	2		3 Quadrax		
	25 - 82	M							99	97					2 Quadrax		
	25 - 86	I							46		40	4			2 Quadrax		
	25 - 88	-							8						8 Quadrax		
	25 - 90	-				x					40	4			2 Quadrax		

* Grounded Insert only - (1) For classes F, W, S, K only - (2) For CECC, Layout 25 - 08 only delivery without contact

Souriau's layout Layout according to MIL-DTL-38999 X = Layout according to CECC 75.201.00

MIL-DTL-38999 Series III

Connector part numbers

Basic Series	8D	0	-	11	J	35	P	N	-	-	L

Shell style:
- **0 :** Square flange receptacle
- **7 :** Jam nut receptacle
- **5 :** Plug with RFI shielding.

Type:
- **None :** Connectors with standard crimp contacts.
- **L :** Receptacle with long spill (male and female size #22D, #20).
- **C :** Receptacle with short spill (male and female #22D, #20, #16).
- **S :** Receptacle with specific spill (male et female #22D)
- **W :** Receptacle with male contacts #22D for wire wrap (3 wraps)
- **T :** Receptacle with male contacts #20 for wire wrap (2 wraps)
- **P :** Receptacle with solder cup (male and female size #22D ; male #16 & #12 ; female #16 & #12 and male female #20 please consult us)

Shell size : 09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

Plating:
- **K :** Passivated **S:** Nickel

Contact layout: See page 139 to 141

Contact type:
- **P :** Pin **A:** Connector supplied less pin contact or with specific contacts (Connector marking: A+ orientation)
- **S :** Socket **B:** Connector supplied less socket contact or with specific contacts (Connector marking: B+ orientation)

Orientation: N, A, B, C, D & E (See page 190)

Spécification :
- **046 :** Tinned straight spills
- **251 :** Connector provided with power contacts (layouts with contact #8)
- **022 :** Fuel tank

Special custom
- **None :** Standard plastic cap
- **M :** Antistatic plastic cap

L : For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation.

MIL-DTL 38999 part numbers*

Basic Series	D38999	20	K	B	35	P	N	L

Shell style:
- **20:** Square flange receptacle
- **24:** Jam nut receptacle
- **26:** Plug with RFI shielding.

Plating:
- **K:** Passivated
- **S:** Nickel

Shell size: A - B - C - D - E - F - G - H - J

Contact layout: See page 141 for layout according to MIL-DTL-38999

Contact type:
- **P:** Pin. **A:** Connector supplied less pin contact or with specific contacts (connector marking: A + orientation).
- **S:** Socket. **B:** Connector supplied less socket contact or with specific contacts (connector marking: B + orientation).

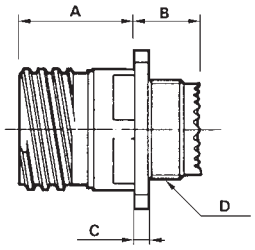
Orientation: N, A, B, C, D & E (see page 190)

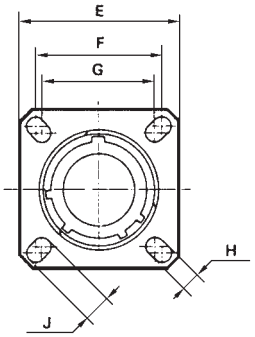
L: For P or S contact type only, connector delevired without contacts, connector marking P or S (without L)

*** Note:** To place an order of MIL connectors delivered without MIL removable crimp contacts and keep P or S plus orientation marking, it must be specify clearly on the order (by adding a suffix L at the end of the P / N or specified in comment).

Dimensions

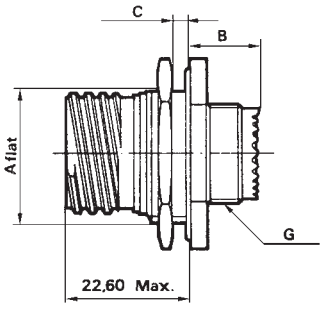
Receptacle type 0

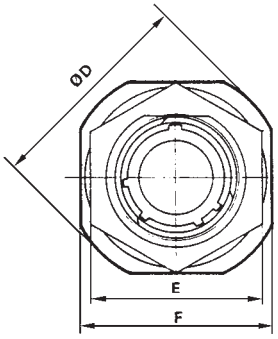




Shell size	A Max.	B Max.	C Max.	D thread	E ± 0,30	F	G	H ± 0,20	J ± 0,20
09 (A)	20.20	11.40	2.50	M12 x 1-6g	23.80	18.26	15.09	3.25	5.49
11 (B)	20.20	11.40	2.50	M15 x 1-6g	26.20	20.62	18.26	3.25	4.93
13 (C)	20.20	11.40	2.50	M18 x 1-6g	28.60	23.01	20.62	3.25	4.93
15 (D)	20.20	11.40	2.50	M22 x 1-6g	31.00	24.61	23.01	3.25	4.39
17 (E)	20.20	11.40	2.50	M25 x 1-6g	33.30	26.97	24.61	3.25	4.93
19 (F)	20.20	11.40	2.50	M28 x 1-6g	36.50	29.36	26.97	3.25	4.93
21 (G)	18.80	11.80	3.20	M31 x 1-6g	39.70	31.75	29.36	3.25	4.93
23 (H)	18.80	11.80	3.20	M34 x 1-6g	42.90	34.93	31.75	3.91	6.15
25 (J)	18.80	11.80	3.20	M37 x 1-6g	46.00	38.10	34.93	3.91	6.15

Receptacle type 7

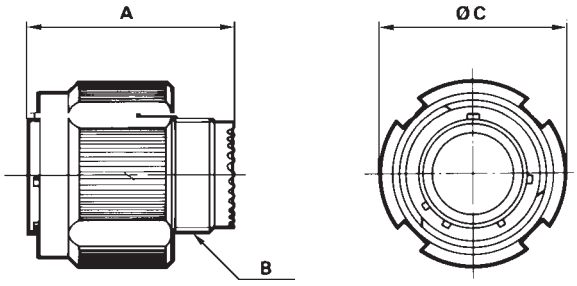




Shell size	A + 0.10 - 0.15	B Max.	C Max.	D Max.	E Max.	F ± 0.4	G thread
09 (A)	16.57	9.90	3.20	30.50	23.00	27.00	M12 x 1-6g
11 (B)	19.12	9.90	3.20	35.20	26.00	31.80	M15 x 1-6g
13 (C)	23.87	9.90	3.20	38.40	31.00	34.90	M18 x 1-6g
15 (D)	27.02	9.90	3.20	41.60	34.00	38.10	M22 x 1-6g
17 (E)	30.20	9.90	3.20	44.80	37.00	41.30	M25 x 1-6g
19 (F)	33.37	9.90	3.20	49.50	41.00	46.00	M28 x 1-6g
21 (G)	36.55	9.90	3.20	52.70	46.00	49.20	M31 x 1-6g
23 (H)	39.72	9.90	3.20	55.90	47.00	52.40	M34 x 1-6g
25 (J)	42.90	9.90	3.20	59.00	52.00	55.60	M37 x 1-6g

Dimensions in millimeters

Plug type 5



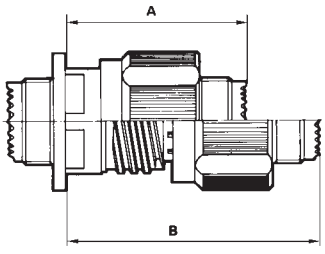
Shell size	A Max.	B thread	C Max.
09 (A)	31.00	M12 x 1-6g	21.80
11 (B)	31.00	M15 x 1-6g	25.00
13 (C)	31.00	M18 x 1-6g	29.40
15 (D)	31.00	M22 x 1-6g	32.50
17 (E)	31.00	M25 x 1-6g	35.70
19 (F)	31.00	M28 x 1-6g	38.50
21 (G)	31.00	M31 x 1-6g	41.70
23 (H)	31.00	M34 x 1-6g	44.90
25 (J)	31.00	M37 x 1-6g	48.00

Maximum coupling torque on panel for jam nut receptacle (type 7)

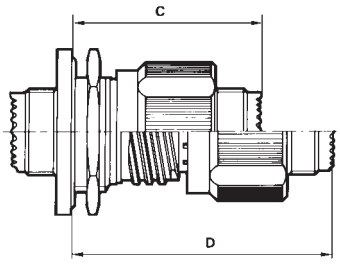
Shell	09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
Coupling torque (N.m)	6	8	10	13	20	23	25	26	28

Mated connectors dimensions

Type 0 with plug



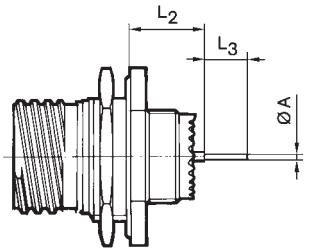
Type 7 with plug

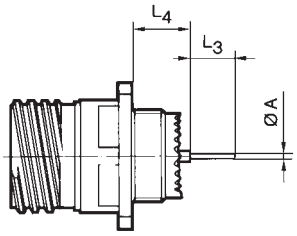


Shell size	A Max.	B Max.	C Max.	D Max.
09 (A)	37.00	52.30	38.30	53.60
11 (B)	37.00	52.30	38.30	53.60
13 (C)	37.00	52.30	38.50	53.80
15 (D)	37.00	52.30	38.50	53.80
17 (E)	37.00	52.30	38.50	53.80
19 (F)	37.00	52.30	38.50	53.80
21 (G)	36.00	51.30	38.50	53.80
23 (H)	36.00	51.30	38.50	53.80
25 (J)	36.00	51.30	38.50	53.80

Dimensions in millimeters

Receptacle with straight spill contacts





		Shell size			09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
		Contact size	Contact type	Spill type									
A		# 22D	M & F	L & C					0,70				
		# 22D	M & F	S					0.50				
		# 20	M & F	C					0.70				
		# 16	M & F	C					1.15				
L2	Min.	# 22D	M	L & C	10.52					10.34			
	Max.	# 22D	M	L & C	11.46					11.28			
	Min.	# 22D	F	L & C	10.19					10.01			
	Max.	# 22D	F	L & C	11.46					11.28			
	Min.	# 22D	M	S	10.69					10.51			
	Max.	# 22D	M	S	11.63					11.45			
	Min.	# 22D	F	S	10.36					10.18			
	Max.	# 22D	F	S	11.63					11.45			
	Min.	# 20	M	C	10.69					10.51			
	Max.	# 20	M	C	11.63					11.45			
	Min.	# 20	F	C	10.69					10.51			
	Max.	# 20	F	C	11.63					11.45			
	Min.	# 16	M	C	10.69					10.51			
	Max.	# 16	M	C	11.63					11.45			
	Min.	# 16	F	C	10.69					10.51			
	Max.	# 16	F	C	11.63					11.45			
L3		# 22D	M & F	L					8.50				
		# 22D	M & F	C					4.00				
		# 22D	M & F	S					5.10				
		# 20	M & F	C					5.10				
		# 16	M & F	C					5.10				
L4	Min.	# 22D	M	L & C					9.48			9.59	
	Max.	# 22D	M	L & C					10.58			10.69	
	Min.	# 22D	F	L & C					9.15			9.26	
	Max.	# 22D	F	L & C					10.58			10.69	
	Min.	# 22D	M	S					9.65			9.76	
	Max.	# 22D	M	S					10.75			10.86	
	Min.	# 22D	F	S					9.15			9.26	
	Max.	# 22D	F	S					10.75			10.86	
	Min.	# 20	M	C					9.65			9.76	
	Max.	# 20	M	C					10.75			10.86	
	Min.	# 20	F	C					9.65			9.76	
	Max.	# 20	F	C					10.75			10.86	
	Min.	# 16	M	C					9.65			9.76	
	Max.	# 16	M	C					10.75			10.86	
	Min.	# 16	F	C					9.65			9.76	
	Max.	# 16	F	C					10.75			10.86	

M : Male contact **F:** Female contact **L:** Long spill **C :** Short spill **S:** Specific spill

Dimensions in millimeters

Connectors weight

	With contacts						Without contact					
	Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)		Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
09-35	30.63	32.21	23.93	25.51	33.93	35.51	30.21	30.71	23.51	24.01	33.51	34.01
09-98	30.63	31.93	23.93	25.23	33.93	35.23	30.21	30.73	23.51	24.03	33.51	34.03
11-01	38.13	41.07	29.53	32.47	42.43	45.37	37.47	39.47	28.87	30.87	41.77	43.77
11-02	37.76	40.30	39.36	30.12	46.98	49.52	37.14	38.74	28.56	30.16	46.36	47.96
11-04	37.95	41.01	29.35	32.41	42.25	45.31	37.39	39.41	28.79	30.81	41.69	43.71
11-05	37.98	41.19	29.38	32.59	42.04	45.49	37.28	39.19	28.68	30.59	41.58	43.49
11-22	37.48	39.54	28.90	130.86	46.70	48.76	37.34	39.04	28.76	30.36	46.56	48.26
11-35	37.88	41.35	29.28	32.75	41.94	45.65	36.97	38.10	28.37	29.50	41.27	42.40
11-80	38.12	44.84	29.73	36.26	47.78	54.06	34.86	37.84	26.45	29.26	44.51	47.06
11-98	37.85	40.61	29.25	32.01	42.15	44.91	37.01	38.21	28.41	29.61	41.31	42.51
11-99	38.02	41.24	29.44	32.66	47.24	50.46	37.04	38.44	28.46	29.86	46.26	47.66
13-04	53.34	57.12	37.94	41.72	56.24	60.02	52.10	54.00	36.70	38.60	55.00	56.90
13-08	53.72	58.90	38.32	43.50	56.62	61.80	52.60	55.70	37.20	40.30	55.50	58.60
13-26	54.09	59.74	38.69	44.34	56.99	62.64	52.35	55.04	36.95	39.64	55.25	57.94
13-35	53.52	59.29	38.12	43.89	56.42	62.19	51.98	53.79	36.58	38.39	54.88	56.69
13-98	53.38	58.00	37.98	42.60	56.28	60.90	51.98	54.00	36.58	38.60	54.88	56.90
15-05	64.49	69.83	45.69	51.03	67.59	72.93	62.94	65.93	44.14	47.13	66.04	69.03
15-15	65.29	72.45	46.49	53.65	68.39	75.55	63.02	66.07	44.22	47.27	66.12	69.17
15-18	65.50	74.38	46.70	55.58	68.60	77.48	62.98	67.18	44.18	48.38	66.08	70.28
15-19	65.03	72.76	46.23	53.96	68.13	75.86	62.37	65.16	43.57	46.36	65.47	68.26
15-35	65.13	74.37	46.33	55.57	68.23	77.47	62.54	65.12	43.74	46.32	65.64	68.22
15-97	64.96	72.01	46.16	53.21	68.06	75.11	62.60	65.69	43.80	46.89	65.70	68.79
17-02	77.80	92.64	72.89	87.73	104.09	118.95	74.53	86.09	69.62	81.18	100.82	112.38
17-06	69.07	78.67	64.17	73.77	87.27	96.87	65.11	69.07	60.21	64.17	83.31	87.27
17-08	68.06	76.79	63.16	71.89	86.26	94.99	65.58	70.55	60.68	65.65	83.78	88.75
17-26	68.64	79.43	63.74	74.53	86.84	97.63	65.00	69.03	60.10	64.13	83.20	87.23
17-35	68.88	82.43	63.98	77.53	87.08	100.63	65.03	68.68	60.13	63.78	83.23	86.88
17-75	74.48	85.77	69.58	80.87	92.68	103.97	65.48	71.77	60.58	66.87	83.68	89.97
17-99	68.69	79.25	63.79	74.35	86.89	97.45	65.13	69.29	60.23	64.39	83.33	87.49
19-11	87.04	100.63	67.69	81.28	97.59	111.18	83.63	92.05	64.28	73.45	94.18	103.35
19-32	86.25	99.65	66.90	80.30	96.80	110.20	81.77	86.85	62.42	67.50	92.32	97.40
19-35	86.56	103.01	67.21	83.66	97.11	113.56	81.94	86.51	62.59	67.16	92.49	97.06
21-11	99.71	119.55	81.81	101.65	111.81	131.65	92.45	101.95	74.55	84.05	104.55	114.05
21-16	96.81	112.09	78.91	94.19	108.91	124.19	91.85	99.61	73.95	81.71	103.95	111.71
21-35	97.09	117.75	79.19	99.85	109.19	129.85	91.56	98.00	73.66	80.10	103.66	110.10
21-39	98.47	118.80	80.57	100.90	110.57	130.90	92.67	102.44	74.77	84.54	104.77	114.54
21-41	97.01	114.38	79.11	126.48	109.11	126.48	91.27	97.98	73.37	80.08	103.37	80.08
21-48	103.84	123.82	85.93	105.91	126.02	146.02	90.72	97.62	72.81	79.71	112.92	119.82
21-75	108.72	125.62	90.81	107.71	130.92	147.82	90.72	97.62	72.81	79.71	112.92	119.82
23-21	108.81	132.06	90.61	113.86	122.81	146.06	102.30	115.68	84.10	97.48	116.30	129.68
23-35	107.17	133.32	88.97	115.12	121.17	147.32	100.17	108.32	81.97	90.12	114.17	122.32
23-53	107.23	129.42	89.03	111.22	121.23	143.42	99.81	108.22	81.61	90.02	113.81	122.22
23-55	107.98	131.05	89.78	112.85	121.98	145.05	100.28	109.05	82.08	90.85	114.28	123.05
25-07	133.3	157.7	115.5	172.25	160.06	172.25	108.51	119.45	90.71	101.65	135.27	101.65
25-11	132.31	152.31	114.51	134.51	159.71	179.07	111.51	124.51	93.71	106.71	138.91	151.27
25-19	122.14	154.15	104.34	136.35	136.74	168.75	109.60	123.75	91.80	105.95	124.20	138.35
25-24	121.64	153.00	103.84	135.20	136.24	167.60	110.00	124.44	92.20	106.64	124.60	139.04
25-29	119.96	148.93	102.16	131.13	134.56	163.53	110.97	126.31	93.17	108.51	125.57	140.91
25-35	117.75	150.58	99.95	132.78	132.35	165.18	108.79	118.58	90.99	100.78	123.39	133.18
25-37	119.98	148.26	102.18	162.67	146.74	162.67	108.51	119.40	90.71	101.60	135.27	101.60
25-44	140.35	164.98	122.55	179.58	167.11	179.71	106.81	117.08	89.01	99.28	133.57	99.41
25-43	120.00	150.68	102.20	132.88	134.60	165.28	110.58	125.88	92.78	108.08	125.18	140.48
25-46	122.30	146.14	104.50	128.34	136.90	160.74	107.66	117.82	89.86	100.02	122.26	132.42
25-61	117.05	143.80	99.25	126.00	131.65	158.40	108.51	119.40	90.71	101.60	123.11	155.51
25-08	143.38	175.21	125.58	157.41	157.98	189.81	107.38	119.21	89.58	101.41	121.98	133.81
25-20	128.40	158.62	110.60	140.82	143.00	173.22	106.83	117.08	89.03	99.28	121.43	131.68
25-04	120.80	150.65	103.00	132.85	135.40	165.25	111.60	125.21	93.80	107.41	126.20	139.81

Weight in gram

Derived from: MIL-DTL-38999 Series III

Connector part numbers

Basic Series	8D	0	-	11	TT	35	S	N	-	-	L

Shell style:
- **0:** Square flange receptacle
- **7:** Jam nut receptacle
- **77:** Specific receptacle (please consult us)
- **5:** Plug with RFI shielding.

Type:
- **None :** Connectors with standard crimp contacts.
- **L :** Receptacle with long spill (male and female size #22D, #20).
- **C :** Receptacle with short spill (male and female #22D, #20, #16).
- **S :** Receptacle with specific spill (male et female #22D)
- **W :** Receptacle with male contacts #22D for wire wrap (3 wraps)
- **T :** Receptacle with male contacts #20 for wire wrap (2 wraps)
- **L :** Receptacle with solder cup (male and female size # 22D ; male #16 & #12 ; female #16 & #12 and male female #20 please consult us)

Shell size: 09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

Plating:
- **TT:** Unplated
- **TF:** Nickel plated

Contact layout: See page 139 to 141

Contact type:
- **P:** Pin **A:** Connector supplied less pin contact or with specific contacts (Connector marking: A+ orientation)
- **S:** Socket **B:** Connector supplied less socket contact or with specific contacts (Connector marking: B+ orientation)

Orientation: N, A, B, C, D & E (See page 190)

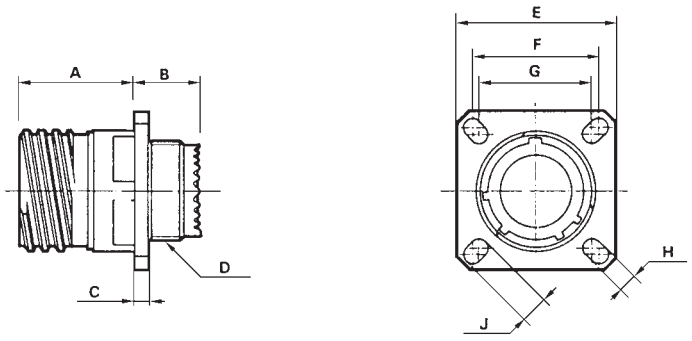
Spécification:
- **046:** tinned straight spills
- **251:** Connector provided with power contacts (layouts with contacts #8)
- **022:** Fuel Tank

Speciale custom :
- **None :** Standard plastic cap
- **M :** Antistatic plastic cap

L : For P or S contact only, connectors delivered without contacts, connectors marking P or S plus orientation.

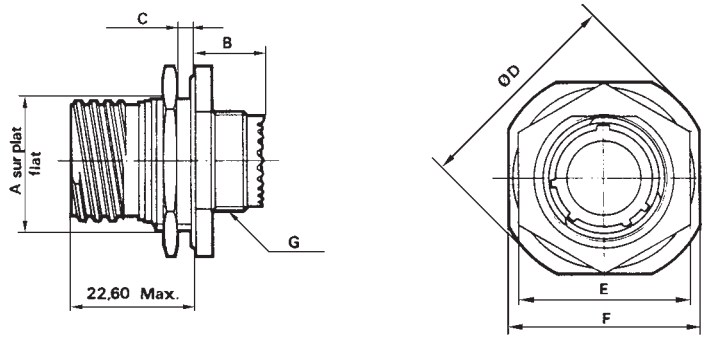
Dimensions

Receptacle type 0



Shell size	A Max.	B Max.	C Max.	D thread	E ± 0,30	F	G	H ± 0,20	J ± 0,20
09	20.20	11.40	2.50	M12 x 1-6g	23.80	18.26	15.09	3.25	5.49
11	20.20	11.40	2.50	M15 x 1-6g	26.20	20.62	18.26	3.25	4.93
13	20.20	11.40	2.50	M18 x 1-6g	28.60	23.01	20.62	3.25	4.93
15	20.20	11.40	2.50	M22 x 1-6g	31.00	24.61	23.01	3.25	4.39
17	20.20	11.40	2.50	M25 x 1-6g	33.30	26.97	24.61	3.25	4.93
19	20.20	11.40	2.50	M28 x 1-6g	36.50	29.36	26.97	3.25	4.93
21	18.80	11.80	3.20	M31 x 1-6g	39.70	31.75	29.36	3.25	4.93
23	18.80	11.80	3.20	M34 x 1-6g	42.90	34.93	31.75	3.91	6.15
25	18.80	11.80	3.20	M37 x 1-6g	46.00	38.10	34.93	3.91	6.15

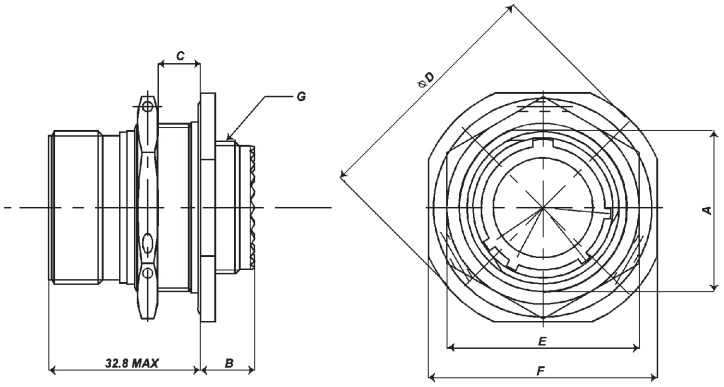
Receptacle type 7



Shell size	A + 0.10 - 0.15	B Max.	C Max.	D Max.	E Max.	F ± 0.4	G thread
09	16.57	9.90	3.20	30.50	23.00	27.00	M12 x 1-6g
11	19.12	9.90	3.20	35.20	26.00	31.80	M15 x 1-6g
13	23.87	9.90	3.20	38.40	31.00	34.90	M18 x 1-6g
15	27.02	9.90	3.20	41.60	34.00	38.10	M22 x 1-6g
17	30.20	9.90	3.20	44.80	37.00	41.30	M25 x 1-6g
19	33.37	9.90	3.50	49.50	41.00	46.00	M28 x 1-6g
21	36.55	9.90	3.50	52.70	46.00	49.20	M31 x 1-6g
23	39.72	9.90	3.50	55.90	47.00	52.40	M34 x 1-6g
25	42.90	9.90	3.50	59.00	52.00	55.60	M37 x 1-

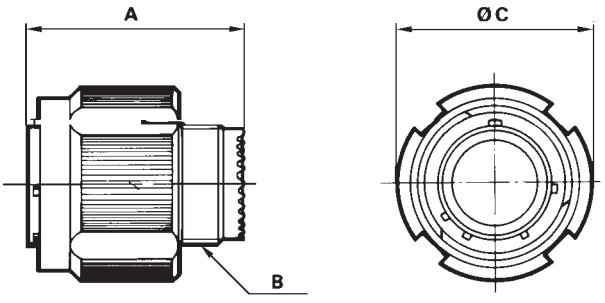
Dimensions in millimeters

Receptacle type 77



Shell size	A + 0.10 - 0.15	B Max.	C Max.	D Max.	E Max.	F ± 0.4	G thread
09	16.53	9.90	9.60	30.50	23.00	27.00	M12 x 1-6g
11	19.07	9.90	9.60	35.20	26.00	31.80	M15 x 1-6g
13	23.82	9.90	9.60	38.40	31.00	34.90	M18 x 1-6g
15	26.97	9.90	9.60	41.60	34.00	38.10	M22 x 1-6g
17	30.15	9.90	9.60	44.80	37.00	41.30	M25 x 1-6g
19	33.32	9.90	9.60	49.50	41.00	46.00	M28 x 1-6g
21	36.50	9.90	9.60	52.70	46.00	49.20	M31 x 1-6g
23	39.67	9.90	9.60	55.90	47.00	52.40	M34 x 1-6g
25	42.85	9.90	9.60	59.00	52.00	55.60	M37 x 1-

Plug type 5



Shell A size	Max.	B thread	C Max.
09	31.00	M12 x 1-6g	21.80
11	31.00	M15 x 1-6g	25.00
13	31.00	M18 x 1-6g	29.40
15	31.00	M22 x 1-6g	32.50
17	31.00	M25 x 1-6g	35.70
19	31.00	M28 x 1-6g	38.50
21	31.00	M31 x 1-6g	41.70
23	31.00	M34 x 1-6g	44.90
25	31.00	M37 x 1-6g	48.00

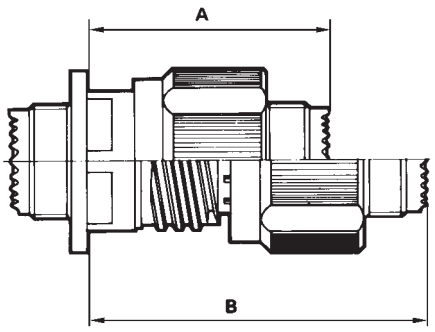
Dimensions in millimeters

Maximum coupling torque on panel for jam nut receptacle (type 7)

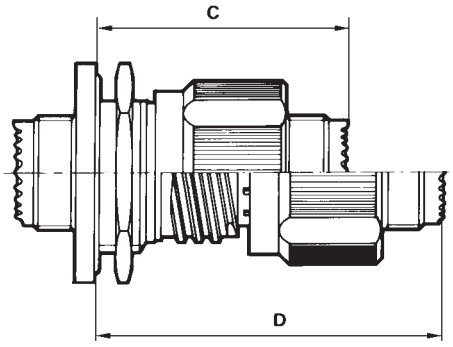
Shell 09		11	13	15	17	19	21	23	25
Coupling torque (N.m)	6	8	10	13	20	23	25	26	28

Mated connectors dimensions

Type 0 with plug



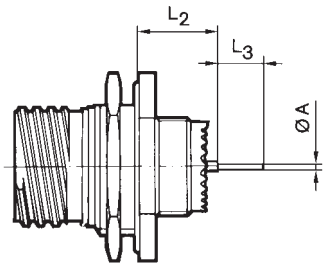
Type 7 with plug

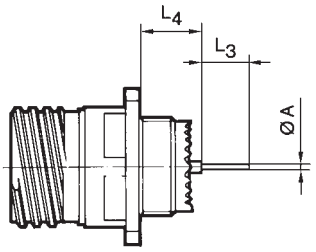


Shell A size	Max.	B Max.	C Max.	D Max.
09	37.00	52.30	38.30	53.60
11	37.00	52.30	38.30	53.60
13	37.00	52.30	38.50	53.80
15	37.00	52.30	38.50	53.80
17	37.00	52.30	38.50	53.80
19	37.00	52.30	38.50	53.80
21	36.00	51.30	38.50	53.80
23	36.00	51.30	38.50	53.80
25	36.00	51.30	38.50	53.80

Dimensions in millimeters

Receptacle with straight spill contacts





		Shell size			09	11	13	15	17	19	21	23	25
		Contact size	Contact type	Spill type									
A		# 22D	M & F	L & C	0,70								
		# 22D	M & F	S	0.50								
		# 20	M & F	C	0.70								
		# 16	M & F	C	1.15								
L2	Min.	# 22D	M	L & C	10.52		10.34						
	Max.	# 22D	M	L & C	11.46		11.28						
	Min.	# 22D	F	L & C	10.19		10.01						
	Max.	# 22D	F	L & C	11.46		11.28						
	Min.	# 22D	M	S	10.19		10.01						
	Max.	# 22D	M	S	11.46		11.28						
	Min.	# 22D	F	S	10.69		10.51						
	Max.	# 22D	F	S	11.63		11.45						
	Min.	# 20	M	C	10.36		10.18						
	Max.	# 20	M	C	11.63		11.45						
	Min.	# 20	F	C	10.69		10.51						
	Max.	# 20	F	C	11.63		11.45						
	Min.	# 16	M	C	10.69		10.51						
	Max.	# 16	M	C	11.63		11.45						
	Min.	# 16	F	C	10.69		10.51						
	Max.	# 16	F	C	11.63		11.45						
L3		# 22D	M & F	L	8.50								
		# 22D	M & F	C	4.00								
		# 22D	M & F	S	5.10								
		# 20	M & F	C	5.10								
		# 16	M & F	C	5.10								
L4	Min.	# 22D	M	L & C	9.48								
	Max.	# 22D	M	L & C	10.58						10.69		
	Min.	# 22D	F	L & C	9.15						9.26		
	Max.	# 22D	F	L & C	10.58						10.69		
	Min.	# 22D	M	S	9.65						9.76		
	Max.	# 22D	M	S	10.75						10.86		
	Min.	# 22D	F	S	9.15						9.26		
	Max.	# 22D	F	S	10.75						10.86		
	Min.	# 20	M	C	9.65						9.76		
	Max.	# 20	M	C	10.75						10.86		
	Min.	# 20	F	C	9.65						9.76		
	Max.	# 20	F	C	10.75						10.86		
	Min.	# 16	M	C	9.65						9.76		
	Max.	# 16	M	C	10.75						10.86		
	Min.	# 16	F	C	9.65						9.76		
	Max.	# 16	F	C	10.75						10.86		

M : Male contact **F:** Female contact **L:** Long spill **C :** Short spill **S:** Specific spill

Dimensions in millimeters

Connectors weight*

	With contacts						Without contact					
	Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)		Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
09-35	18.23	19.81	14.37	15.95	20.14	21.72	17.81	18.31	13.95	14.45	19.72	20.22
09-98	18.23	19.53	14.37	15.67	20.14	21.44	17.81	18.33	13.95	14.47	19.72	20.24
11-01	23.15	26.09	18.19	21.13	25.63	28.57	22.49	24.49	17.53	19.53	24.97	26.97
11-02	22.78	25.32	17.82	20.36	28.1	30.64	22.16	23.76	17.2	18.8	27.48	29.08
11-04	22.97	26.03	18.01	21.07	25.45	28.51	22.41	24.43	17.45	19.47	24.89	26.91
11-05	23.00	26.21	18.04	21.25	25.24	28.69	22.30	24.21	17.34	19.25	24.78	26.69
11-22	22.64	25.06	17.68	20.10	27.96	30.38	22.36	24.06	17.40	19.10	27.68	29.38
11-35	22.90	26.37	17.94	21.41	25.14	28.85	21.99	23.12	17.03	18.16	24.47	25.60
11-80	25.38	29.86	20.08	24.88	30.66	35.78	22.10	22.86	16.80	17.88	27.38	28.78
11-98	22.87	25.63	17.91	20.67	25.35	28.11	22.03	23.23	17.07	18.27	24.51	25.71
11-99	23.04	26.26	18.06	21.28	25.53	28.75	22.06	23.46	17.08	18.48	24.55	25.95
13-04	32.44	36.22	23.56	27.34	34.11	37.89	31.20	33.10	22.32	24.22	32.87	34.77
13-08	32.82	38.00	23.94	29.12	34.49	39.67	31.70	34.80	22.82	25.92	33.37	36.47
13-26	33.19	38.84	24.31	29.96	34.86	40.51	31.45	34.14	22.57	25.26	33.12	35.81
13-35	32.62	38.39	23.74	29.51	34.29	40.06	31.08	32.89	22.20	24.01	32.75	34.56
13-98	32.48	37.10	23.60	28.22	34.15	38.77	31.08	33.10	22.20	24.22	32.75	34.77
15-05	39.61	44.95	28.77	34.11	41.40	46.74	38.06	41.05	27.22	30.21	39.85	42.84
15-15	40.41	47.57	29.57	36.73	42.20	49.36	38.14	41.19	27.30	30.35	39.93	42.98
15-18	40.62	49.50	29.78	38.66	42.41	51.29	38.10	42.30	27.26	31.46	39.89	44.09
15-19	40.15	47.88	29.31	37.04	41.94	49.67	37.49	40.28	26.65	29.44	39.28	42.07
15-35	40.25	49.49	29.41	38.65	42.04	51.28	37.66	40.24	26.82	29.40	39.45	42.03
15-97	40.08	47.13	29.24	36.29	41.87	48.92	37.72	40.81	26.88	29.97	39.51	42.60
17-02	48.16	58.40	45.20	55.44	63.99	74.23	44.89	51.85	41.93	48.89	60.72	67.68
17-06	43.73	53.33	40.90	50.50	54.23	63.83	39.77	43.73	36.94	40.90	50.27	54.23
17-08	42.72	51.45	39.89	48.62	53.22	61.95	40.24	45.21	37.41	42.38	50.74	55.71
17-26	43.30	54.09	40.47	51.26	53.80	64.59	39.66	43.69	36.83	40.86	50.16	54.19
17-35	43.54	57.09	40.71	54.26	54.04	67.59	39.69	43.34	36.86	40.51	50.19	53.84
17-75	49.14	60.43	46.31	57.60	59.64	70.93	40.14	46.43	37.31	43.60	50.64	56.93
17-99	43.35	53.91	40.52	51.08	53.85	64.41	39.79	43.95	36.96	41.12	50.29	54.45
19-11	55.16	68.75	44.00	57.59	61.25	74.84	51.75	60.17	40.59	66.26	40.59	66.26
19-32	54.37	67.77	43.21	56.61	60.46	73.86	49.89	54.97	38.73	61.06	38.73	61.06
19-35	54.68	71.13	43.52	59.97	60.77	77.22	50.06	54.63	38.90	60.72	38.90	60.72
21-11	64.64	84.48	54.31	74.15	71.62	91.46	57.38	66.88	47.05	73.86	47.05	73.86
21-16	61.74	77.02	51.41	66.69	68.72	84.00	56.78	64.54	46.45	71.52	46.45	71.52
21-35	62.02	82.68	51.69	72.35	69.00	89.66	56.49	62.93	46.16	69.91	46.16	69.91
21-39	63.40	83.73	53.07	73.40	70.38	90.71	57.60	67.37	47.27	74.35	47.27	74.35
21-41	61.94	79.31	51.61	86.29	68.92	86.29	56.20	62.91	45.87	69.89	45.87	69.89
21-48	68.73	88.71	58.4	78.38	81.56	101.54	55.61	62.51	45.28	52.18	68.44	75.34
21-75	73.61	90.51	63.28	80.18	86.44	103.34	55.61	62.51	45.28	52.18	68.44	75.34
23-21	71.07	94.32	60.57	83.82	79.15	102.40	64.56	77.94	54.06	86.02	54.06	86.02
23-35	69.43	95.58	58.93	85.08	77.51	103.66	62.43	70.58	51.93	78.66	51.93	78.66
23-53	69.49	91.68	58.99	81.18	77.57	99.76	62.07	70.48	51.57	78.56	51.57	78.56
23-55	70.24	93.31	59.74	82.81	78.32	101.39	62.54	71.31	52.04	79.39	52.04	79.39
25-07	83.91	117.09	73.64	123.58	99.34	121.8	68.12	78.84	57.85	85.33	83.55	83.55
25-11	91.92	111.92	81.65	101.65	94.65	127.35	71.12	84.12	60.85	73.85	86.55	99.55
25-19	81.78	113.79	71.51	103.52	90.20	122.21	69.24	83.39	58.97	91.81	58.97	91.81
25-24	81.28	112.64	71.01	102.37	89.70	121.06	69.64	84.08	59.37	92.50	59.37	92.50
25-29	79.60	108.57	69.33	98.30	88.02	116.99	70.61	85.95	60.34	94.37	60.34	94.37
25-35	77.39	110.22	67.12	99.95	85.81	118.64	68.43	78.22	58.16	86.64	58.16	86.64
25-37	79.59	107.09	69.32	116.12	95.02	113.36	68.12	79.04	57.85	87.26	83.55	84.50
25-44	99.96	127.50	89.69	134.23	115.39	134.44	66.42	77.85	56.15	86.33	81.85	84.54
25-43	79.64	110.32	69.37	100.05	88.06	118.74	70.22	85.52	59.95	93.94	59.95	93.94
25-46	81.94	105.78	71.67	95.51	90.36	114.20	67.30	77.46	57.03	85.88	57.03	85.88
25-61	76.69	103.44	66.42	93.17	85.11	111.86	68.15	79.04	57.88	87.46	57.88	87.46
25-08	103.02	134.85	92.75	124.58	111.44	143.27	67.02	78.85	56.75	87.27	56.75	87.27
25-20	88.04	118.26	77.77	107.99	96.46	126.68	66.47	76.72	56.20	85.14	56.20	85.14
25-04	80.44	110.29	70.17	100.02	88.86	118.71	71.24	84.85	60.97	93.27	60.97	93.27

Weight in gram

* Please, consult us for weight of receptacles type 77.

CECC 75.201.00

Connector part numbers

Basic series	JVS	16	A	11	35	P	N	**

Shell style:
00: Square flange receptacle
07: Jam nut receptacle
16: Plug with RFI shielding

Material:
A: Bronze housing material.

Shell size 09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

Contact layout: See page 139 to 141

Contact type:
P: Pin **A:** Connector supplied less pin contact or with specific contacts (Connector marking: A+ orientation)
S: Socket **B:** Connector supplied less socket contact or with specific contacts (Connector marking: B+ orientation)

Orientations: N, A, B, C, D & E (See page 190)

Specification:
251: Connector provides with power contacts (layouts with contacts #8)
CI: Printed board mounting contacts.
LI: Receptacle with long spill (pin or socket #22D)
MW: Wire wrap contacts
022: Fuel tank
L: For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation.

CECC part numbers

Basic series	CECC 75 201-002	B	B98	M	C	N	A	0	1	G

Shell style:
A: Plug
B: Square flange receptacle.
C: Jam nut receptacle.

Shell size & layout:
A=09, **B**=11, **C**=13, **D**=15, **E**=17, **F**=19, **G**=21, **H**=23, **J**=25
(**B**=Shell size 11) (Layouts: see page 139 to 141)

Contact type:
M: Pin
F: Socket

Type of contact termination:
C: Crimp contact

Orientations N, A, B, C, D & E (See page 190)

Shell material:
A: Aluminium bronze

Supply code:
0= Connectors supplied with contacts
1= Connectors supplied without contacts

Assessment level:
1: Level 1

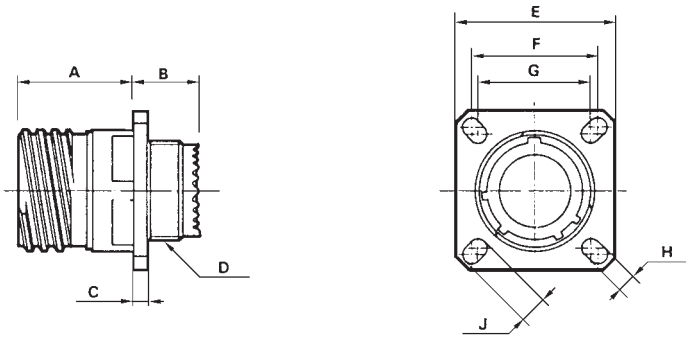
Performance level:
G: Level G

Example :
Abbreviated version :

C 752 002	B	B98	M	C	N	A	0	1	G

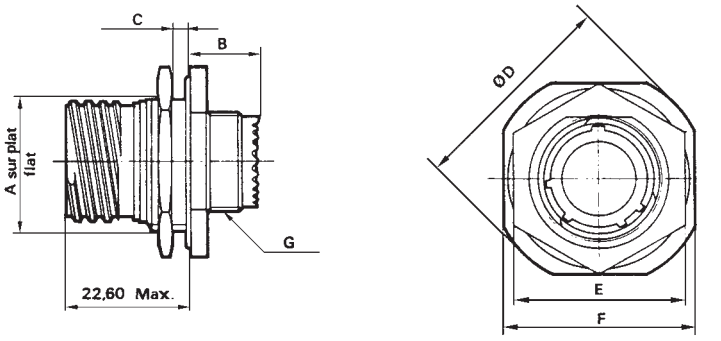
Dimensions

Receptacle type 00



Shell size	A Max.	B Max.	C Max.	D thread	E ± 0,30	F	G	H	J
09 (A)	20.20	11.40	2.50	M12 x 1-6g	23.80	18.26	15.09	3.25	5.49
11 (B)	20.20	11.40	2.50	M15 x 1-6g	26.20	20.62	18.26	3.25	4.93
13 (C)	20.20	11.40	2.50	M18 x 1-6g	28.60	23.01	20.62	3.25	4.93
15 (D)	20.20	11.40	2.50	M22 x 1-6g	31.00	24.61	23.01	3.25	4.39
17 (E)	20.20	11.40	2.50	M25 x 1-6g	33.30	26.97	24.61	3.25	4.93
19 (F)	20.20	11.40	2.50	M28 x 1-6g	36.50	29.36	26.97	3.25	4.93
21 (G)	18.80	11.80	3.20	M31 x 1-6g	39.70	31.75	29.36	3.25	4.93
23 (H)	18.80	11.80	3.20	M34 x 1-6g	42.90	34.93	31.75	3.91	6.15
25 (J)	18.80	11.80	3.20	M37 x 1-6g	46.00	38.10	34.93	3.91	6.15

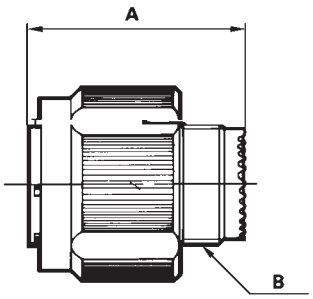
Receptacle type 07

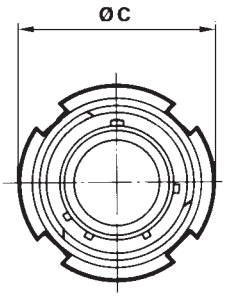


Shell size	A + 0.10 - 0.15	B Max.	C Max.	D Max.	E Max.	F ± 0.4	G thread
09 (A)	16.57	9.90	3.20	30.50	23.00	27.00	M12 x 1-6g
11 (B)	19.12	9.90	3.20	35.20	26.00	31.80	M15 x 1-6g
13 (C)	23.87	9.90	3.20	38.40	31.00	34.90	M18 x 1-6g
15 (D)	27.02	9.90	3.20	41.60	34.00	38.10	M22 x 1-6g
17 (E)	30.20	9.90	3.20	44.80	37.00	41.30	M25 x 1-6g
19 (F)	33.37	9.90	3.20	49.50	41.00	46.00	M28 x 1-6g
21 (G)	36.55	9.90	3.20	52.70	46.00	49.20	M31 x 1-6g
23 (H)	39.72	9.90	3.20	55.90	47.00	52.40	M34 x 1-6g
25 (J)	42.90	9.90	3.20	59.00	52.00	55.60	M37 x 1-6g

Dimensions in millimeters

Plug type 16





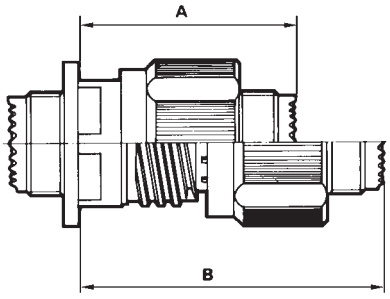
Shell A size	Max.	B thread	C Max.
09 (A)	31.00	M12 x 1-6g	21.10
11 (B)	31.00	M15 x 1-6g	23.80
13 (C)	31.00	M18 x 1-6g	28.20
15 (D)	31.00	M22 x 1-6g	31.40
17 (E)	31.00	M25 x 1-6g	36.50
19 (F)	31.00	M28 x 1-6g	39.30
21 (G)	31.00	M31 x 1-6g	42.50
23 (H)	31.00	M34 x 1-6g	45.30
25 (J)	31.00	M37 x 1-6g	48.40

Maximum coupling torque on panel for jam nut receptacle (type 7)

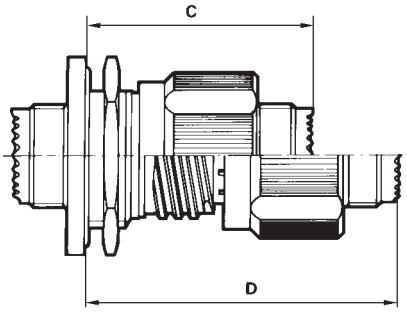
Shell	09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
Coupling torque (N.m)	6	8	10	13	20	23	25	26	28

Mated connectors dimensions

Type 00 with plug



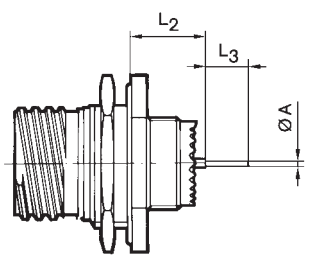
Type 7 with plug

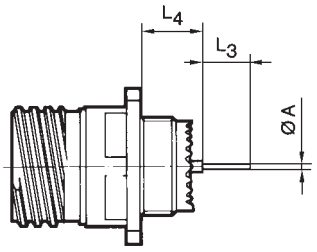


Shell A size	Max.	B Max.	C Max.	D Max.
09 (A)	37.00	52.30	38.30	53.60
11 (B)	37.00	52.30	38.30	53.60
13 (C)	37.00	52.30	38.30	53.60
15 (D)	37.00	52.30	38.30	53.60
17 (E)	37.00	52.30	38.30	53.60
19 (F)	37.00	52.30	38.30	53.60
21 (G)	36.00	51.30	38.30	53.60
23 (H)	36.00	51.30	38.30	53.60
25 (J)	36.00	51.30	38.30	53.60

Dimensions in millimeters

Receptacle with straight spill contacts





		Shell size			09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
		Contact size	Contact type	Spill type									
A		# 22D	M & F	Li					0.70				
		# 22D	M & F	Ci					0.50				
		# 20	M & F	Ci					0.70				
		# 16	M & F	Ci					1.15				
L2	Min.	# 22D	M	Li	10.52				10.34				
	Max.	# 22D	M	Li	11.46				11.28				
	Min.	# 22D	F	Li	10.19				10.01				
	Max.	# 22D	F	Li	11.46				11.28				
	Min.	# 22D	M	Ci	10.19				10.01				
	Max.	# 22D	M	Ci	11.46				11.28				
	Min.	# 22D	F	Ci	10.69				10.51				
	Max.	# 22D	F	Ci	11.63				11.45				
	Min.	# 20	M	Ci	10.36				10.18				
	Max.	# 20	M	Ci	11.63				11.45				
	Min.	# 20	F	Ci	10.69				10.51				
	Max.	# 20	F	Ci	11.63				11.45				
	Min.	# 16	M	Ci	10.69				10.51				
	Max.	# 16	M	Ci	11.63				11.45				
	Min.	# 16	F	Ci	10.69				10.51				
	Max.	# 16	F	Ci	11.63				11.45				
L3		# 22D	M & F	Li					8.50				
		# 22D	M & F	Ci					5.10				
		# 20	M & F	Ci					5.10				
		# 16	M & F	Ci					5.10				
L4	Min.	# 22D	M	Li					9.48				
	Max.	# 22D	M	Li					10.58			10.69	
	Min.	# 22D	F	Li					9.15			9.26	
	Max.	# 22D	F	Li					10.58			10.69	
	Min.	# 22D	M	Ci					9.65			9.76	
	Max.	# 22D	M	Ci					10.75			10.86	
	Min.	# 22D	F	Ci					9.15			9.26	
	Max.	# 22D	F	Ci					10.75			10.86	
	Min.	# 20	M	Ci					9.65			9.76	
	Max.	# 20	M	Ci					10.75			10.86	
	Min.	# 20	F	Ci					9.65			9.76	
	Max.	# 20	F	Ci					10.75			10.86	
	Min.	# 16	M	Ci					9.65			9.76	
	Max.	# 16	M	Ci					10.75			10.86	
	Min.	# 16	F	Ci					9.65			9.76	
	Max.	# 16	F	Ci					10.75			10.86	

M: Male contact **F:** Female contact **Ci:** Short spill **Li:** Long spill

Dimensions in millimeters

Bronze backshell part numbers (JVS)

Basic series	JVS	A	11	A	00	C	SB	...

Accessory style
A : Rear accesssory (backshell)

Shell size:
09-11-13-15-17-19-21-23-25

Accessory type:
A: Screened adaptor for use with compression spring or band strap
B: Adaptor with strain relief cable clamp
E: Screened adaptor with braid trap
F: Screened adaptor with pre-terminated braid
G: Environmental cone clamp screened adaptor
H: Heat shrink EMC adaptor
P: Adaptor for heat shrink boot
X: Cone clamp screened adaptor

Cable entry size
For B type:
00: Standard, by default choice
For H type:
05 to 24: Please refer to H Type table
For other types:
00: Standard, by default choice
03 to 32: Depending on backshell type, please refer to corresponding table

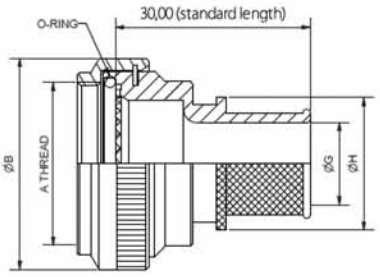
Angle
A: Straight backshell (orientation by default)
B: 45° backshell
C: 90° right angle backshell

Variant
For all types:
None: Supplied without any other accessory
For A type:
CS1 to CS5: Supplied with compression spring, please refer to table A Type
MB: Supplied with micro band
SB: Supplied with small band
For E, X and G type:
CC: Cable clamp variant
For H type:
SB: Screened boot

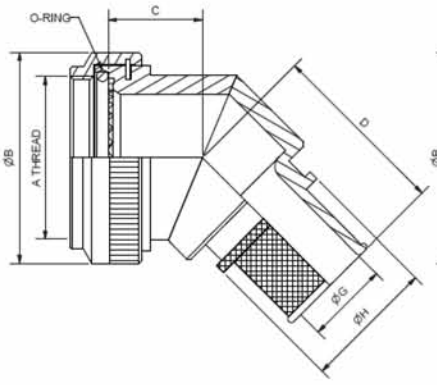
Specification length option (straight only)
For A, E and X type:
001: Length = 40mm
Note: for other specific length, please consult us

A Type - Screened adaptor for use with compression spring or band strap

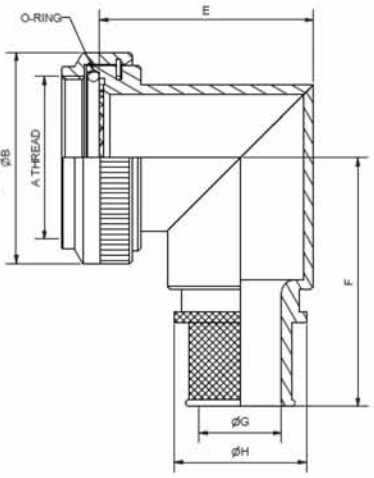
A Angle - straight



B Angle - 45°

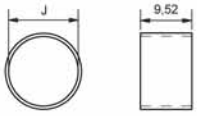


C Angle - 90°



Band ref.
SB - Standard band
MB - Micro Band
Omit for non band required

Spring option	J
CS1	7.34
CS2	9.22
CS3	14.50
CS4	18.50
CS5	25.00



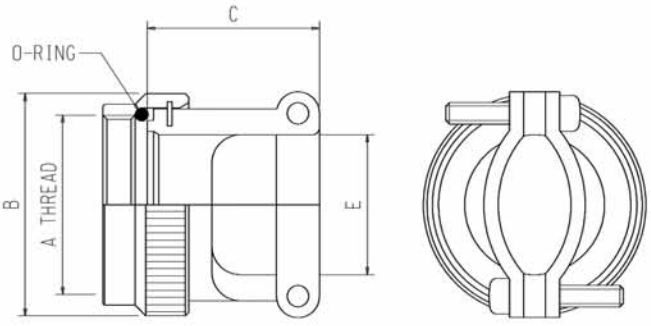
Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max	Max Entry*
09	M12 x 1.0	18.0	13.1	24.7	25.5	30.5	04
11	M15 x 1.0	21.0	13.9	25.9	26.5	32.2	06
13	M18 x 1.0	24.5	14.5	26.3	31.0	33.7	08
15	M22 x 1.0	29.0	15.5	27.2	37.0	35.2	10
17	M25 x 1.0	32.5	16.1	28.0	40.0	36.9	12
19	M28 x 1.0	35.5	16.8	28.3	44.5	38.5	13
21	M31 x 1.0	37.0	17.1	29.1	49.0	40.1	16
23	M34 x 1.0	40.0	17.7	29.5	51.5	41.6	18
25	M37 x 1.0	43.5	18.4	30.4	53.0	43.1	20

Entry Size	G	H Max	Spring option	Entry Size	G	H Max	Spring option
03	4.77	13.9	CS1	14	22.23	29.9	CS4
04	6.35	13.9	CS1	15	23.82	31.5	CS4
05	7.92	15.5	CS2	16	25.40	33.1	CS4
06	9.52	17.2	CS2	17	27.00	34.7	CS5
07	11.10	18.7	CS2	18	28.60	36.3	CS5
08	12.70	20.3	CS3	19	30.20	37.9	CS5
09	14.27	21.9	CS3	20	31.80	39.5	CS5
10	15.88	23.5	CS3	21	33.38	41.1	CS5
11	17.47	25.1	CS3	22	35.00	42.7	CS5
12	19.05	26.7	CS3	23	36.58	44.3	CS5
13	20.62	28.3	CS4	24	38.10	45.9	CS5

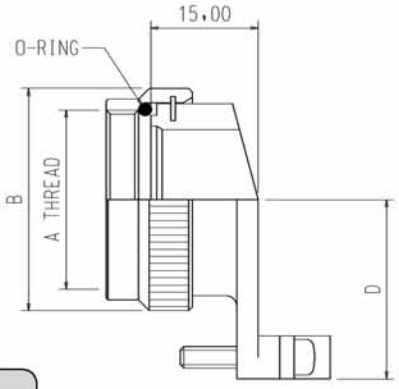
* Recommendation only, please consult us for outside entry size

B Type - Adaptor with strain relief cable clamp

A Angle - straight



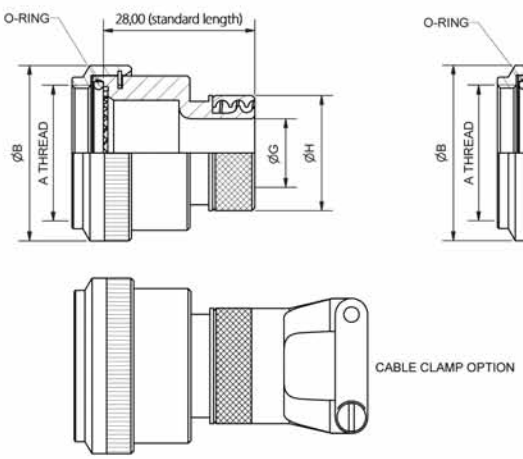
C Angle - 90°



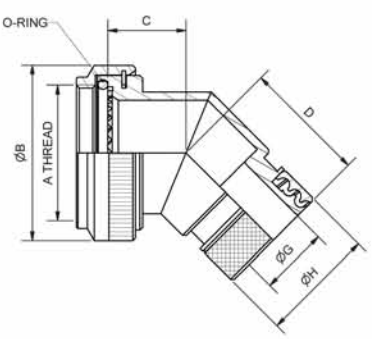
Shell Size	A Thread	B Max	C Max	D Max	E Max
09	M12 x 1.0	18.0	21.5	20.0	7.0
11	M15 x 1.0	21.0	21.5	21.0	10.5
13	M18 x 1.0	24.5	23.5	22.0	13.4
15	M22 x 1.0	27.5	23.5	23.0	16.5
17	M25 x 1.0	31.0	24.5	25.0	19.7
19	M28 x 1.0	34.0	27.5	27.5	22.2
21	M31 x 1.0	37.0	34.5	30.0	25.6
23	M34 x 1.0	40.0	37.5	31.5	28.5
25	M37 x 1.0	43.5	37.5	34.5	31.7

E Type - Screened adaptor with braid trap

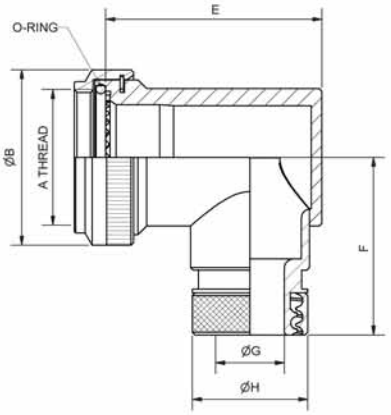
A Angle - straight



B Angle - 45°



C Angle - 90°

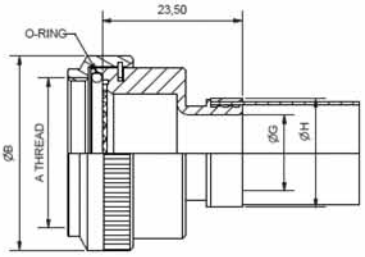


Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max	Max Entry
09	M12 x 1.0	18.0	13.1	24.7	25.5	30.5	04
11	M15 x 1.0	21.0	13.9	25.9	26.5	32.2	06
13	M18 x 1.0	24.5	14.5	26.3	31.0	33.7	08
15	M22 x 1.0	29.0	15.5	27.2	37.0	35.2	10
17	M25 x 1.0	32.5	16.1	28.0	40.0	36.9	12
19	M28 x 1.0	35.5	16.8	28.3	44.5	38.5	13
21	M31 x 1.0	37.0	17.1	29.1	49.0	40.1	16
23	M34 x 1.0	40.0	17.7	29.5	51.5	41.6	18
25	M38 x 1.0	43.5	18.4	30.4	53.0	43.1	19

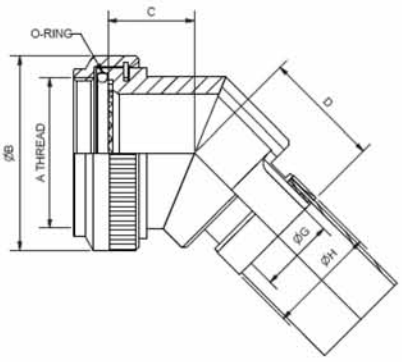
Entry Size	G	H Max	Entry Size	G	H Max
03	4.77	15.0	14	22.23	30.9
04	6.35	15.0	15	23.82	32.5
05	7.92	16.6	16	25.40	34.1
06	9.52	18.2	17	27.00	35.7
07	11.10	19.8	18	28.60	37.3
08	12.70	21.4	19	30.20	39.1
09	14.27	23.0	20	31.80	40.4
10	15.88	24.6	21	33.38	42.0
11	17.47	26.2	22	35.00	43.6
12	19.05	27.7	23	36.58	45.2
13	20.62	29.3	24	38.10	46.8

F Type - Screened adaptor with pre-terminated braid

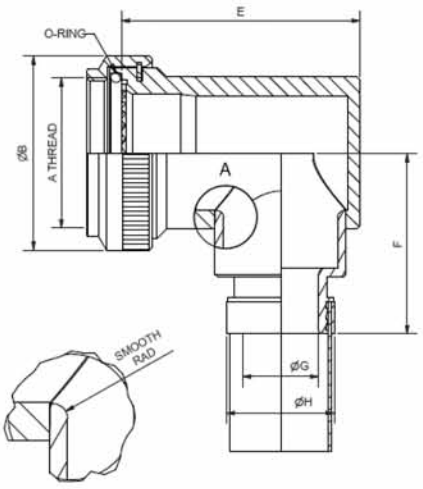
A Angle - straight



B Angle - 45°



C Angle - 90°

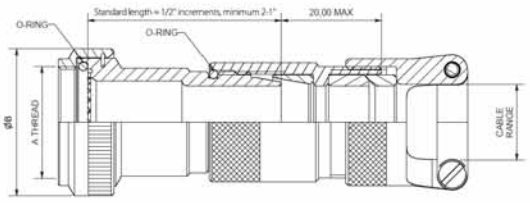


Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max
09	M12 x 1.0	18.0	13.1	16.7	25.7	24.0
11	M15 x 1.0	21.0	13.9	17.9	26.7	25.7
13	M18 x 1.0	24.5	14.5	18.3	31.2	27.2
15	M22 x 1.0	29.0	15.5	19.1	37.2	28.7
17	M25 x 1.0	32.5	16.1	20.0	40.2	30.4
19	M28 x 1.0	35.5	16.8	20.3	44.7	32.0
21	M31 x 1.0	37.0	17.1	21.2	49.2	33.6
23	M34 x 1.0	40.0	17.7	21.5	51.7	35.1
25	M37 x 1.0	43.5	18.4	22.4	53.2	36.6

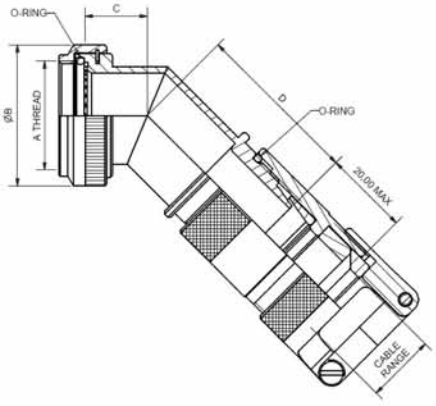
Entry Size	G	H Max	Entry Size	G	H Max
03	4.77	13.1	14	22.23	30.6
04	6.35	13.1	15	23.82	30.6
05	7.92	13.1	16	25.40	30.6
06	9.52	17.9	17	27.00	30.6
07	11.10	17.9	18	28.60	37.4
08	12.70	17.9	19	30.20	37.4
09	14.27	17.9	20	31.80	37.4
10	15.88	24.2	21	33.38	37.4
11	17.47	24.2	22	35.00	44.0
12	19.05	24.2	23	36.58	44.0
13	20.62	24.2	24	38.10	44.0

G Type - Environmental cone clamp screened adaptor

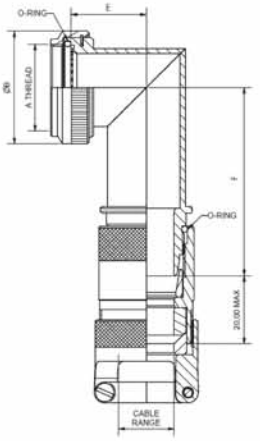
A Angle - straight



B Angle - 45°



C Angle - 90°

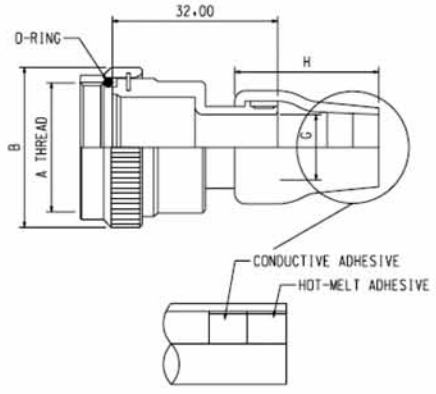


Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max	Max Entry
09	M12 x 1.0	18.0	14.0	30.5	15.8	39.2	-
11	M15 x 1.0	21.0	14.5	30.5	17.6	42.3	04
13	M18 x 1.0	24.5	15.0	32.5	19.0	42.8	06
15	M22 x 1.0	29.0	16.0	40.3	21.5	50.5	10
17	M25 x 1.0	32.5	17.0	43.1	23.1	52.8	12
19	M28 x 1.0	35.5	18.0	47.9	24.5	57.1	12
21	M31 x 1.0	37.0	18.5	47.9	25.3	57.1	16
23	M34 x 1.0	40.0	19.0	56.5	27.5	64.7	16
25	M37 x 1.0	43.5	19.5	56.5	28.3	64.7	16

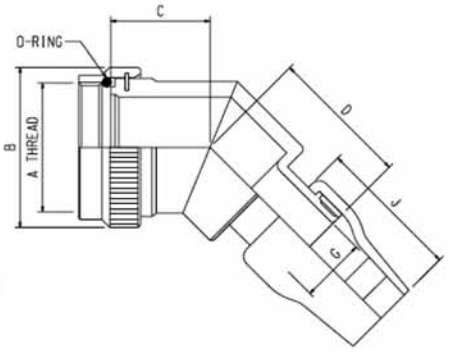
Entry Size	Cable Range
04	3.2 - 7.9
06	6.4 - 11.1
08	9.8 - 14.3
10	8.9 - 15.9
12	12.7 - 19.1
16	15.9 - 23.8
20	22.2 - 31.8
24	25.4 - 34.9
28	31.8 - 41.3
32	36.5 - 47.6

H Type - Heatshrink EMC adaptor

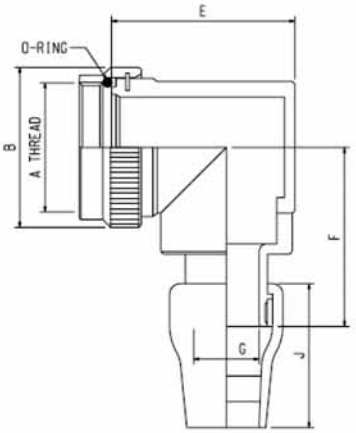
A Angle - straight



B Angle - 45°



C Angle - 90°

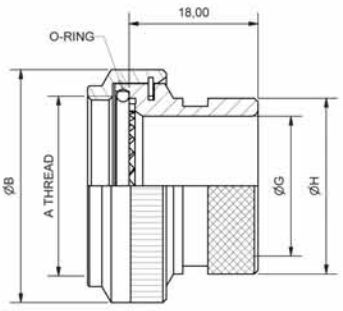


Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max
09	M12 x 1.0	18.0	13.1	24.8	22.7	28.5
11	M15 x 1.0	21.0	13.9	25.5	26.2	30.2
13	M18 x 1.0	24.5	14.5	26.1	29.2	31.7
15	M22 x 1.0	27.5	15.5	26.7	32.2	33.2
17	M25 x 1.0	31.0	16.1	27.5	35.7	34.9
19	M28 x 1.0	34.0	16.8	28.5	39.7	36.5
21	M31 x 1.0	37.0	17.1	28.8	42.2	38.1
23	M34 x 1.0	40.0	17.7	29.1	45.2	38.6
25	M37 x 1.0	43.5	18.4	30.0	48.2	41.1

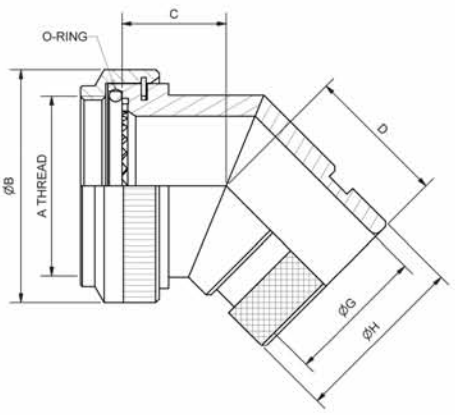
Entry Size	G	H length	J length	Cable DIA Range
05	7.92	60	40	4.5 - 9.0
08	12.70	60	40	6.0 - 12.0
10	15.88	72	48	7.5 - 15.0
12	19.05	72	48	9.0 - 18.0
16	25.40	95	55	10.0 - 25.0
20	31.80	125	70	12.5 - 30.0
24	38.10	125	70	15.0 - 36.0

P Type - Adaptor for heat shrink boot

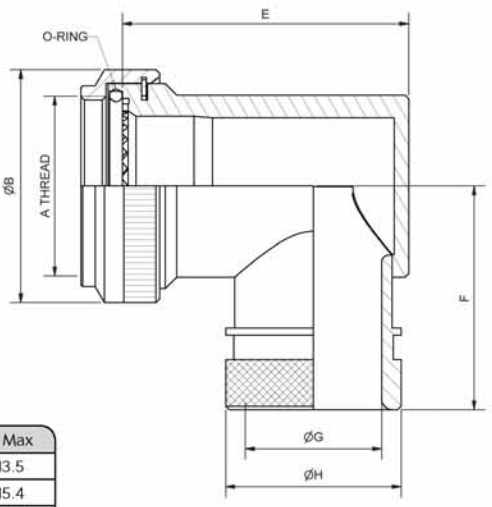
A Angle - straight



B Angle - 45°



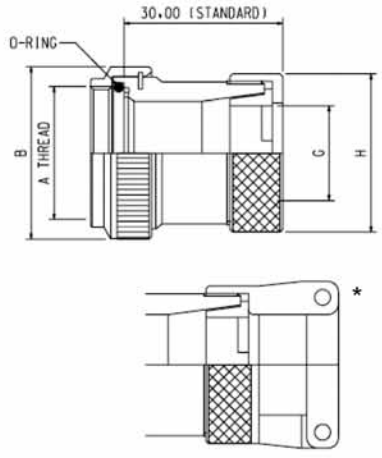
C Angle - 90°



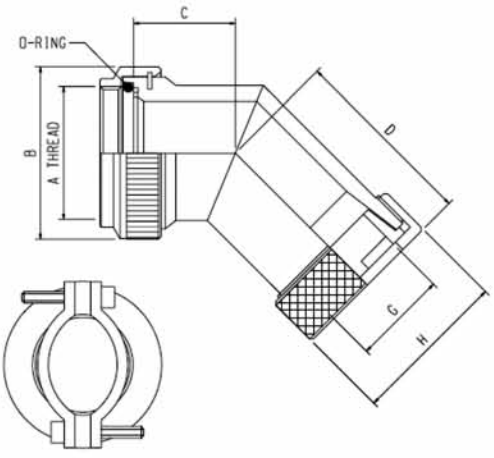
Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max	G Max	H Max
09	M12 x 1.0	18.0	13.1	17.6	25.7	25.0	7.0	13.5
11	M15 x 1.0	21.0	13.9	18.4	26.7	26.7	10.5	15.4
13	M18 x 1.0	24.5	14.5	19.3	31.2	28.2	13.8	19.7
15	M22 x 1.0	27.5	15.5	19.6	37.2	29.7	16.5	21.3
17	M25 x 1.0	31.0	16.1	20.4	40.2	31.4	19.7	24.5
19	M28 x 1.0	34.0	16.8	20.8	44.7	33.0	22.1	26.5
21	M31 x 1.0	37.0	17.1	21.6	49.2	34.6	25.4	31.0
23	M34 x 1.0	40.0	17.7	22.5	51.7	36.1	28.5	34.4
25	M37 x 1.0	43.5	18.4	22.9	53.2	37.6	31.7	36.6

X Type - Cone clamp screened adaptor

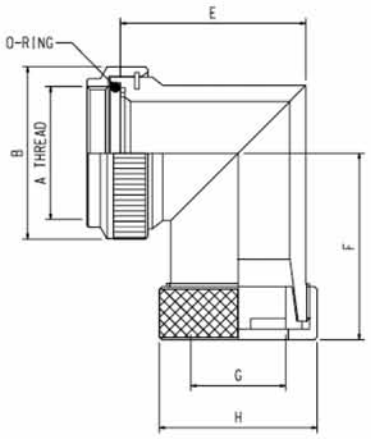
A Angle - straight



B Angle - 45°



C Angle - 90°



Shell Size	A Thread	B Max	C Max	D Max	E Max	F Max
09	M12 x 1.0	18.0	13.1	24.6	22.7	26.5
11	M15 x 1.0	21.0	13.9	25.4	26.2	28.2
13	M18 x 1.0	24.5	14.5	26.3	29.2	29.7
15	M22 x 1.0	27.5	15.5	26.7	32.2	31.2
17	M25 x 1.0	31.0	16.1	27.5	35.7	32.9
19	M28 x 1.0	34.0	16.8	27.8	39.7	34.5
21	M31 x 1.0	37.0	17.1	28.6	42.2	36.1
23	M34 x 1.0	40.0	17.7	29.5	45.2	37.6
25	M37 x 1.0	43.5	18.4	29.9	48.2	39.1

Entry Size	G	H Max
09	6.8	16.0
11	9.5	19.0
13	12.8	22.0
15	14.8	25.4
17	17.9	28.5
19	20.0	32.0
21	23.0	35.0
23	26.4	38.0
25	29.3	41.0

* Stainless steel clamp

Caps for bronze connectors (JVS)

Basic series	JVS	B	09	B	00	A

Accessory style:
B: Protective cap

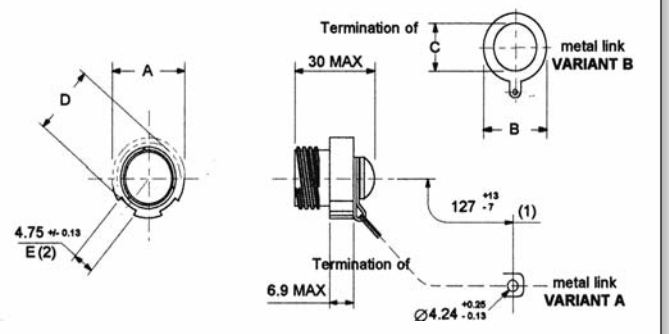
Shell size:
09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

Cap type:
A or B: Cap for plug (See drawing below)
C or D: Cap for receptacle (See drawing below)

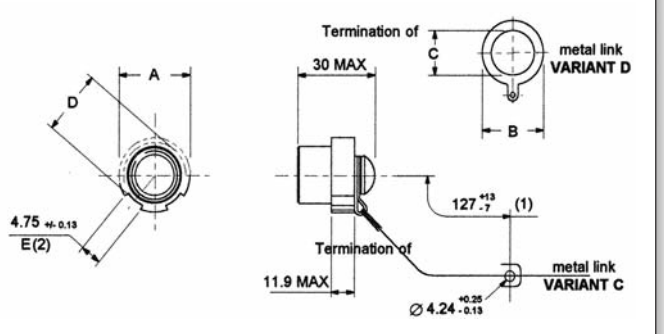
Sub variant:
Not applicable

Matière:
A: Bronze

Cap for plug



Cap for receptacle



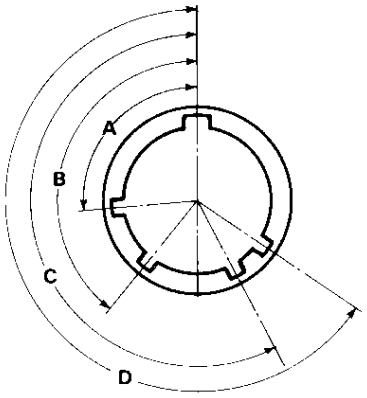
(1) Flexible metal link
(2) Number of notch on A diameter

Shell size	A Max.	Variant B B Max.	Variant B C Min.	Variant D B Max.	Variant D C Min.	D Max.	E
09	21.1	24.20	13.50	26.80	18.40	19.20	8
11	23.8	26.80	18.40	31.60	23.00	21.80	
13	28.2	30.50	19.80	36.90	26.20	26.10	10
15	31.4	31.60	23.00	40.10	29.40	29.30	
17	36.5	36.90	26.20	43.20	32.50	34.40	12
19	39.3	40.10	29.40	46.40	35.70	37.20	
21	42.5	43.20	32.50	49.20	39.10	40.50	16
23	45.3	46.40	35.70	52.80	42.10	43.10	
25	48.4	49.20	39.10	55.50	45.30	46.10	18

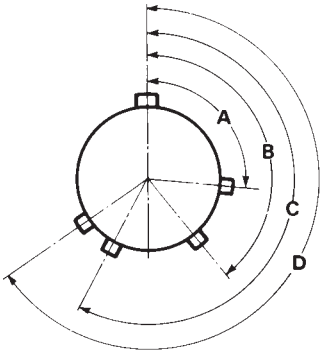
Dimensions in millimeters

Orientations

Viewed from face of receptacle



Viewed from front of plug

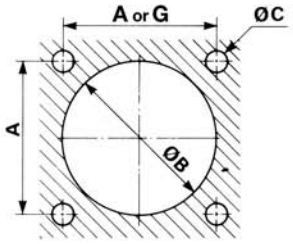


Shell size	Angles	N	A	B	C	D	E
09 (A)	A° B° C° D°	105 140 215 265	102 132 248 320	80 118 230 312	35 140 205 275	64 155 234 304	91 131 197 240
11 (B)	A° B° C° D°	95 141 208 236	113 156 182 292	90 145 195 252	53 156 220 255	119 146 176 298	51 141 184 242
13 (C)	A° B° C° D°	95 141 208 236	113 156 182 292	90 145 195 252	53 156 220 255	119 146 176 298	51 141 184 242
15 (D)	A° B° C° D°	95 141 208 236	113 156 182 292	90 145 195 252	53 156 220 255	119 146 176 298	51 141 184 242
17 (E)	A° B° C° D°	80 142 196 293	135 170 200 310	49 169 200 244	66 140 200 257	62 145 180 280	79 153 197 272
19 (F)	A° B° C° D°	80 142 196 293	135 170 200 310	49 169 200 244	66 140 200 257	62 145 180 280	79 153 197 272
21 (G)	A° B° C° D°	80 142 196 293	135 170 200 310	49 169 200 244	66 140 200 257	62 145 180 280	79 153 197 272
23 (H)	A° B° C° D°	80 142 196 293	135 170 200 310	49 169 200 244	66 140 200 257	62 145 180 280	79 153 197 272
25 (J)	A° B° C° D°	80 142 196 293	135 170 200 310	49 169 200 244	66 140 200 257	62 145 180 280	79 153 197 272

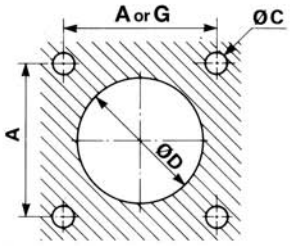
Panel cut-out

Square flange receptacle (type 0)

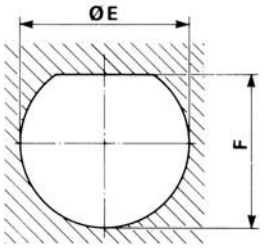
Rear Mounting



Front Mounting



Jam nut receptacle (type 7)



Shell size	9 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
A	18.26	20.62	23.01	24.61	26.97	29.36	31.75	34.93	38.10
G	15.09	18.26	20.62	23.01	24.61	26.97	29.36	31.75	34.94
B min.	16.66	20.22	23.42	26.59	30.96	32.94	36.12	39.29	42.47
C ± 0.13	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.91	3.91
D min.	13.11	15.88	19.05	23.01	25.81	28.98	32.16	34.93	37.69
E + 0.25	17.78	20.96	25.65	28.83	32.01	35.18	38.35	41.53	44.70
F 0	17.02	19.59	24.26	27.56	30.73	33.91	37.08	40.26	43.43

Max. thickness panel for receptacle : - type 0 : front mounting = 3,2 mm and Rear mounting 2,5 mm - type 7 : 3.2 mm -

(Dimensions in millimeters).

Gaskets

Shell size	Part numbers	
	Gasket for receptacles type 0* (ordered separately)	O ring for receptacle type 7
09 (A)	8599-5541	AS3582-019
11 (B)	8599-5542	AS3582-022
13 (C)	8599-5543	AS3582-024
15 (D)	8599-5544	AS3582-026
17 (E)	8599-5545	AS3582-028
19 (F)	8599-5546	AS3582-128
21 (G)	8599-5547	AS3582-130
23 (H)	8599-5548	AS3582-132
25 (J)	8599-5549	AS3582-134

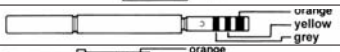
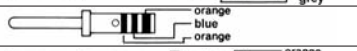
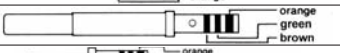
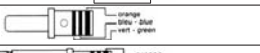
* For front mounting

Plastic protective caps*

Shell size	Part numbers		
	Caps for receptacles	Caps for plugs	Caps for composite plugs only(J and M)
9 (A)	70777	8500-5587 A	MS90376-12R
11 (B)	MS90376-12R	70198	8500-5598
13 (C)	MS90376-14R	8500-5600	8500-5600
15 (D)	MS90376-16R	8500-5601	8500-5601
17 (E)	70201	8500-5602	8500-5602
19 (F)	70209	8500-5592 A	8500-5592 A
21 (G)	MS90376-22R	8500-5593 A	8500-5593 A
23 (H)	MS90376-24R	8500-5593 A	70472
25 (J)	8500-5593 A	J599ABC6009A00	J599ABC6009A00

*Excepted 8D composite version (X): supplied without cap

Crimp contacts

Contact size	Contact type	Souriau P/N (without colour code)	MIL-DTL-38999 Contacts	
			Part number	Profile and colour code
#22D	Pin	8599-0702 JJ	M39029/58 360	
	Socket	8599-0706 900	M39029/56 348	
#20	Pin	8599-0703 SA	M39029/58 363	
	Socket	8599-0707 900	M39029/56 351	
#16	Pin	8599-0704 MJ	M39029/58 364	
	Socket	8599-0708 900	M39029/56 352	
#16 Coaxial	Pin	-	M39029/76 424	
	Socket	-	M39029/77 428	
#12	Pin	8599-0705 MJ	M39029/58 365	
	Socket	8599-0709 900	M39029/56 353	
#12 Coaxial	Pin	-	M39029/102 558	
	Socket	-	M39029/103 559	
	Pin	-	M39029/28 211	
	Socket	-	M39029/75 416	
#10 Power	Pin	-	M39029/58 528	
	Socket	-	M39029/56 527	
#8 Power	Pin	8599-7544(1)	-	
	Socket	8599-7541(1)	-	
	Pin	8599-7580	-	
	Socket	8599-7581	-	
	Boot	8599-4542	-	For wire #8
		8599-4547	-	For wire #10
	Reductor	8599-7645	-	
#8 Coaxial	Pin	-	M39029/60 367	
	Socket	-	M39029/59 366	
	Boot	8590-4571	-	
#8 Triaxial	Pin	-	M39029/90 529	
	Socket	-	M39029/91 530	
	Boot	8590-4571	-	
#4 Power	Pin	8599-7598 900*	-	For wire 25 mm²
	Socket	8599-7599 900*	-	
	Pin	8599-7534		For wire 21.15 mm²
	Socket	8599-7535		
	Boot for Cable 16 mm²	8599-4594	-	
	Boot for Cable 10 mm²	8599-4593	-	
	Reductor Cable 10 mm²	8400-2352A	-	
#4 Power with reduced barrel	Pin	8599-7528 900	-	Mating part #4 / Barrel #6
	Socket	8599 7529 900	-	
	Boot	8599-4593	-	

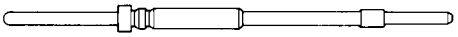
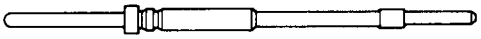
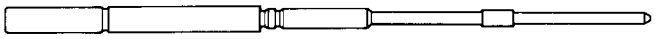
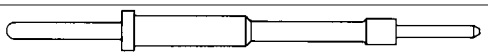
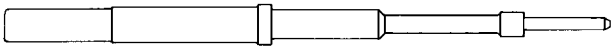
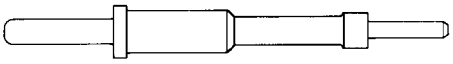
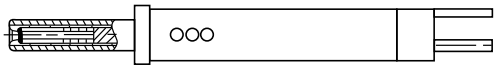
* Not included in connector P/N. Must be ordered separately.

(1) JVS•only

Crimp contacts

Contact size	Contact type	Contact Ø	Conductor section				External Ø over insulator	
			AWG		mm²			
			min	max	min	max	min	max
#22D	Pin	0.76	28	22	0.095	0.34	0.76	1.37
	Socket							
#20	Pin	1.00	24	20	0.21	0.60	1.02	2.11
	Socket							
#16	Pin	1.60	20	16	0.60	1.34	1.65	2.77
	Socket							
#16 Coaxial	Pin	1.60	RG 174 RG 179 RG 316				1.65	2.60
	Socket							
#12	Pin	2.40	14	12	1.91	3.18	2.46	3.61
	Socket							
#12 Coaxial	Pin		RG 174 RG 179 RG 316				2.40	2.60
	Socket							
	Pin							
	Socket							
#10 Power	Pin	3.20	Please consult us				-	2.95
	Socket							
#8 Power	Pin	3.64	-	8	-	8.98	-	-
	Socket							
	Boot		-	-	-	-	4.50	6.5
			-	-	-	-	2.50	4
	Reductor		-	-	-	-	-	-
#8 Coaxial	Pin		RG 188 A/U				-	2.80
	Socket							
	Boot							
#8 Triaxial	Pin	5.50	0,76MIL-C17/176 00002 FILECA F.2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002				3.15	3.40
	Socket							
	Boot							
#4 Power	Pin	5.74	-	(3)	-	25	-	-
	Socket							
	Pin		5	4	16	21.15	-	-
	Socket							
	Boot Available for 8599-7534 and 7535 contacts		-	-	-	-	6.35	7.50
			-	-	-	-	4	5.8
	Reductor Cable 10 mm		-	-	-	-	-	-
#4 Power with reduced barrel	Pin	5.74	6		13.3		-	-
	Socket							
	Boot		-		-		4	5.80

Straight spill contacts

Contact size	Contact type	Spill type	Part number	Profile
# 22D	Pin	L	8599 - 0720 900	
	Pin	L	8599 - 0750 900	
	Pin	M	8599 - 8028 900	
	Pin	C	8599 - 0730 900	
	Pin	S	8599 - 0796 900	
	Socket	L	8599 - 0721 900	
	Socket	C	8599 - 0731 900	
	Socket	S	8599 - 0797 900	
# 20	Pin	M	8599 - 0658 JJ	
	Socket	M	8599 - 0759 900	
	Pin	C	8599 - 0724 900	
	Socket	C	8599 - 0725 900	
	Pin	L	8599 - 0771 900	
	Socket	L	8599 - 0772 900	
# 16	Pin	C	8599 - 0726 900	
	Pin	C	8599 - 7482A 900	
	Socket	C	8599 - 0727 900	
Contact coaxial # 16	Pin	C	8599 - 1000 900	
# 12	Pin	C	8599 - 7929 900	
	Socket	C	8599 - 7932 900	
	Socket	C	8599 - 7485A 900	

S: Specific spill **L:** Long spill **C:** Short spill **M:** Medium spill

Coaxial contacts #12

Part Numbers	Designation
THA1-0151A	Coaxial socket solder #12
THA1-0152A	Coaxial pin solder #12
THA1-0155A	Coaxial pin crimp contact #12
THA1-0156A	Coaxial crimp contact #12

Solder cup

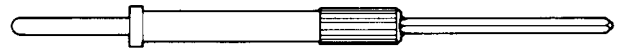
Contact size	Contact Type	Part number
# 22D	Pin	8599-0750 900
# 16	Pin	8599-7482A 900
# 12	Socket	8599-7485A 900

For other contacts type please consult us

Crimp contacts: 1500 mating

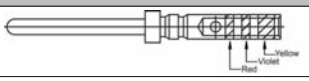
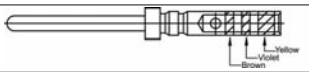
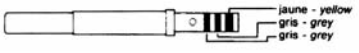
Contact size	MIL-DTL-38999 contacts		
	Contact type	Part number	Profile and colour code
#22 D	Pin (H)	M39029/107 620	Blue - Red - Black
	Socket (J)	M39029/106 614	Blue - Brown - Yellow
#20	Pin (H)	M39029/107 621	Blue - Red - Brown
	Socket (J)	M39029/106 615	Blue - Brown - Green
#16	Pin (H)	M39029/107 622	Blue - Red - Red
	Socket (J)	M39029/106 616	Blue - Brown - Blue
#12	Pin (H)	M39029/107 623	Blue - Red - orange
	Socket (J)	M39029/106 617	Blue - Brown - Gray

Wire wrap contacts

Contact size	Contact type	Part number	Profile
# 22D	Pin	8599 - 0790 JJ	
# 20	Pin	8599 - 0791 900	

Contact size	Contact type	Contact Ø (mm)	mm
# 22D	Pin	0.76	0.86
# 20	Pin	1	0.86

Thermocouple contacts

Contact size	Contact type	Souriau part numbers (without color code)	MIL-DTL-38999 contacts	
			Part numbers	Profile and colour code
# 22 D Chromel	Pin	-	M39029/87-472	
	Socket	-	M39029/88-484	
# 22 D Alumel	Pin	-	M39029/87-471	
	Socket	-	M39029/88-483	
# 20 Chromel	Pin	8599-0749 900	8599-0949 900	
	Socket	8599-0753 900	8599-0953 900	
# 20 Alumel	Pin	8599-0761 900	8599-0961 900	
	Socket	8599-0765 900	8599-0965 900	

Contact size	Ø Contact (mm)	Wire section Awg min	Awg max	mm² min	mm² max	Ø Over insulation mm min	mm max
# 22 D Chromel Alumel	0.75	28	22	0.095	0.34	0.76	1.37
# 20 Chromel Alumel	1	24	20	0.21	0.6	1.02	2.11

Crimping tools

Contact size	Contact type	Pliers						
		M22520/1-01 (Souriau 8365) Turret part number		M22520/2-01 (Souriau 8476-01) Locator part number		M300 BT Locator part number	M22520/23-01	
		Norme	Souriau	Norme	Souriau		Turret part number	Locator part number
# 22D	Pin	-	-	M22520/2-09	8476-09	-	-	-
	Socket	-	-	M22520/2-07	8476-07	-	-	-
# 20	Pin	M22520/1-04	8365-04	M22520/2-10	8476-10	-	-	-
	Socket				8476-10	-	-	-
# 16	Pin	M22520/1-04	8365-04	-	-	-	-	-
	Socket			-	-	-	-	-
# 12	Pin	M22520/1-04	8365-04	-	-	-	-	-
	Socket			-	-	-	-	-
# 8 Power	Pin	-	-	-	-	SP 593	M22520/23-02	8599-9601
	Socket	-	-	-	-			
# 4 Power	Pin	-	-	-	-	-	M22520/23-04	M22520/23-11
	Socket	-	-	-	-	-		

Contact size	Contact type	Pliers		
		M22520/2-01 (Souriau 8476-01) Locator part number	M22520/4-01 Locator part number	M22520/5-01 Locator part number
# 12 Coaxial	Inner	-	-	M22520/5-03
	Outer	-	-	
# 16 Coaxial	Inner	M22520/2-35	-	-
	Outer	-	M22520/4-02	-
# 8 Coaxial	Inner	M22520/2-31	-	-
	Outer	-	-	M22520/5-05
# 8 Triaxial	Inner	K709	-	-
	Middle	-	-	Y631 closure B
	Ferrule	-	-	Y631 closure A

* Pneumatic pliers

Nota: for the #10 contact's plier and locator, please consult us.

Insertion and extraction tools & Filler plugs

Contact size	Material	Part number		Insertion/extraction tools		Filler plugs		
		Specification	Souriau	Insertion	Extraction	Specification part number	Part number	Color
# 22D	Plastic	M81969/14-01	-	Green	White	MS27488-22	8660-212	Black
# 20	Plastic	M81969/14-10	-	Red	Orange	MS27488-20	8522-389 A	Red
# 16	Plastic	M81969/14-03	-	Blue		MS27488-16	8522-390 A	Blue
# 12	Plastic	M81969/14-04	-	Yellow	White	MS27488-12	8522-391 A	Yellow
# 10	Plastic	M81969/14-05	-	Grey	-	-	-	
# 8	Plastic	M81969/14-12	-	-	Red			
	Metallic	-	8660-197	-	-	-	-	-
# 4	Plastic	M81969/14-07	-	-	Blue			
	Metallic	-	8533-8175	-	-	-	-	-

Dummy contact size 8

Part number: 8599-0308

Dummy contact size 4

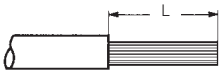
Part number: 8599-0310

Filler plugs

Direction of introduction in grommet

Wiring instruction

Cable preparation and wire stripping

Contact size	L min.	L Max.	
# 22D	3,58 *.14 .16*	3,99	
# 20	5,31 *.21 .23*	5,82	
# 16	5,31 *.21 .23*	5,82	
# 12	5,31 *.21 .23*	5,82	
# 8	12,5 *.49 .51*	13	
# 4	12,5 *.49*	13 *.51*	

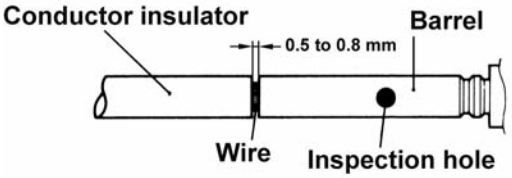
L = Length of wire stripping

Insertion of wire in contact barrel

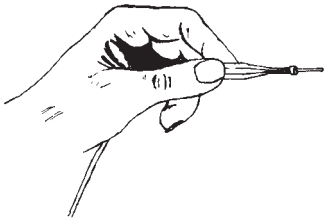
When inserting the stripped wire into the contact barrel check that no strands are left outside and that the wire is visible through the wire inspection hole in the barrel.

Important:

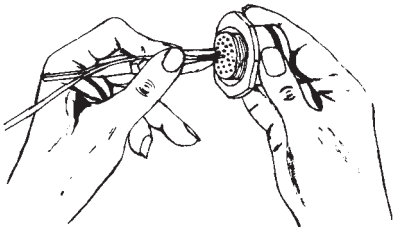
- Slide any accessories over wire strands before carrying out the following operations.
- Contacts are inserted and extracted from the rear of the connector.

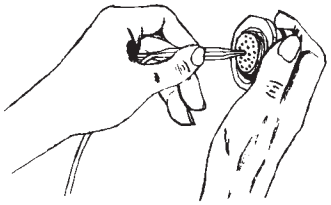


Insertion of the contacts



❶ Engage the crimp cable/contact assembly into the longitudinal slot of the plastic tool (coloured tip). Slide the tool down the cable until the tip of the tool touches the contact retention shoulder.



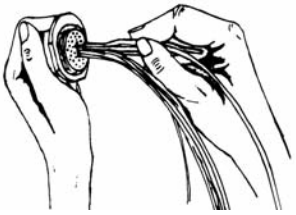


❷ Introduce the contact into the required contact cavity in the insulator, pushing tool axially, until the contact snaps into position in clip.

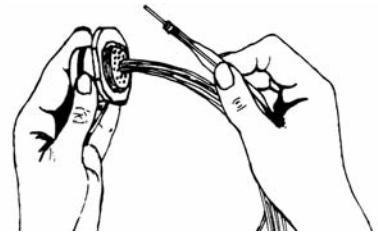
❸ Withdraw the tool (from rear). Check that the contact is firmly locked by pulling wire gently. When connector is fully loaded, check the position of contact tips. They should all be in the same plane.

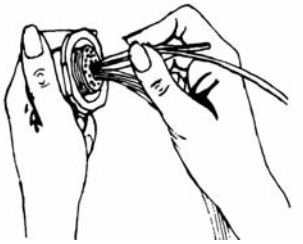
Nota: For larger sizes of cable which are stiff enough manual insertion without tool is preferable.

Extraction of the contacts



❶ Engage the appropriate cable into the longitudinal slot of the tool with the white tip towards connector.





❷ Slide the tool down towards the contact. Insert the tool in the insulator until it touches the contact shoulder.

❸ Holding the tool-contact and cable assembly together, remove them simultaneously.

Backshell tightening and slackening tools

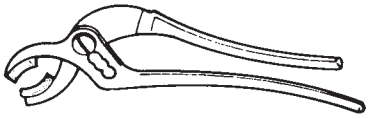
Backshell tightening pliers, part number: 8498-03

Square jaws, part number: 8500-1015 (order 2 jaws).

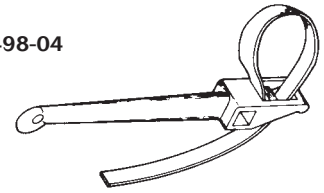
Strap clamp, part number: 8498-04

Spare strap, part number: 8498-103

8498-03

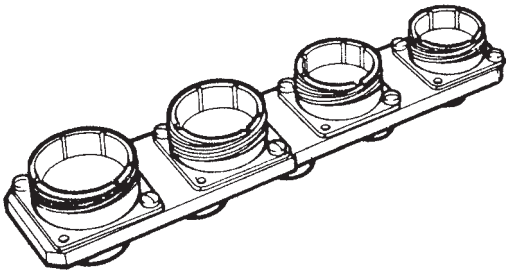


8498-04



Tightening support

Part number: 8599-0831
This tool is made up of dummy receptable housings of all 9 sizes for all key polarisation, and locates free connectors during wiring and fitting of rear accessories.



ELIO® Technology major Technical Features and Benefits

Versatility - One contact whatever the connector
- MIL DTL 38999
- ARINC 600
- EN 3545
- EN2997

Standard electrical cavity adaptor

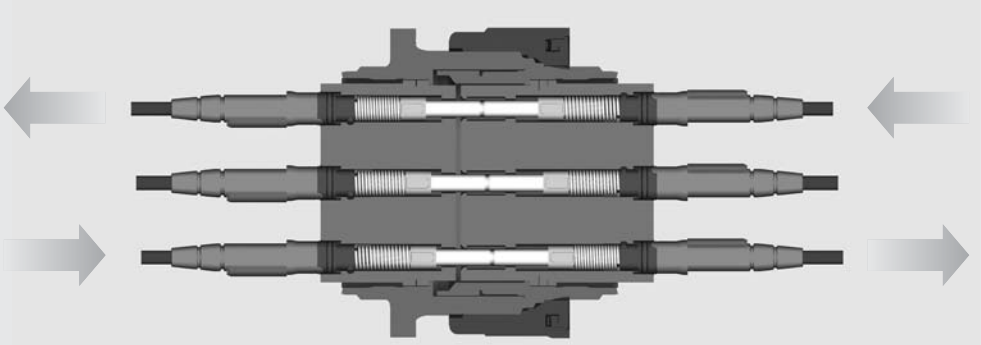
- Terminus can fit in any #8 Quadrax cavity using adaptors.

High-Density Version

- Specific ELIO® inserts are available in standard shell for high-density.

Anti-pistonning – spring-loaded terminus

- Pulling on one side does not affect the connection and the optical performance thanks to the spring of the termini.



When pulling on one side, the other side will move to keep the optical contact.

ELIO® Technology major Technical Features and Benefits

Sealed Technology

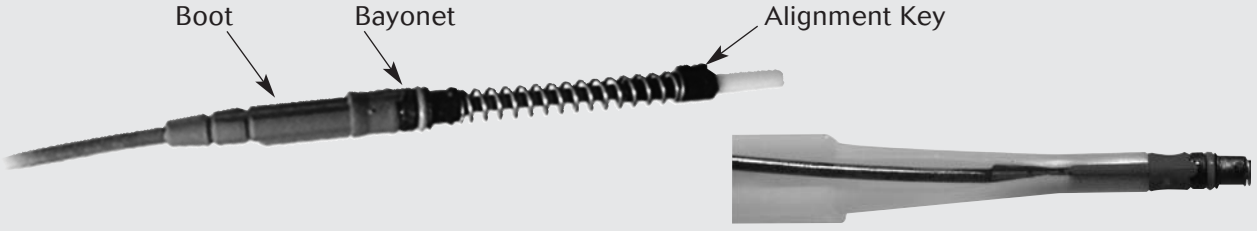
- ELIO® is a sealed contact.
- No backshell is needed.

Easy to clean – access from front face

- Terminus is easy to clean without removing it from the connector.

Easy to install – no specific tool

- Teminus is easy to install thanks to the bayonet-boot feature,
- A standard size 12 electrical tool can be fitted on the boot for installation in high density connector.



Terminus with standard electrical tool.

Easy to terminate – less than 5 minutes

- Terminus is hermaphroditic (same in receptacle and plug) – one termination procedure,
- ST® -like termination procedure,
- Standard ST® ferrule,
- Automatic polishing tools available.

Elio® Contact

Today's technology for Airborn and Military equipment is more and more complex, requiring the management of an increasing flow of information at greater speeds. In response to this need, SOURIAU offers a wide range of copper and fiber optic solutions for high speed network in harsh environments. These solutions can handle data speeds from several Mbit/s up to several Gbit/s using a wide array of communication protocols (Ethernet, ATM...).
Fiber optic is the best solution when high data-rate and large bandwith are required.

ARINC 801
EN 4531
ABS 1379

Technical characteristics
Butt-Joint optic connector for military and aerospace on-board equipment, wherever weight saving and severe climatic or mechanical resistance are requested.

Range of applications
Fiber optic connectors apply wherever robustness, high performance and easy maintenance are needed.

Main applications
Marine, Aerospace, Military, Geophysics, Railways...

Recommended cables
SOURIAU can offer a wide range of cables, from low cost to highly performing aeronautical cables.

Ordering information

Elio	09	N	G	L	A

Cable external diameter:
09: 0.9 mm or cable wider than 1.9mm with 0.9mm jacket inside
18: from 1.5mm to 1.9mm

Contact sealing:
W: waterproof (1.8mm +/- 0.1mm cable only)
N: non sealed

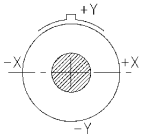
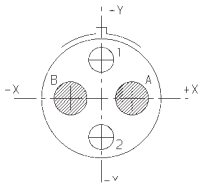
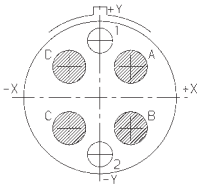
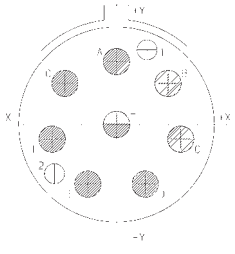
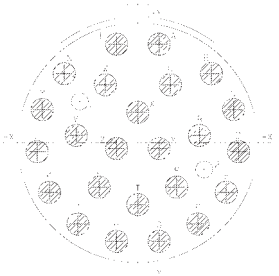
Fibre type:
G: 50 or 62,5/125 µm
E: 9/125 µm (PC ferrule)
D: 100/140 µm

Boot type:
L: long boot
S: short boot
N: no boot (non sealed version only)

Contact version index

MIL-DTL-38999 with ELIO® Contact

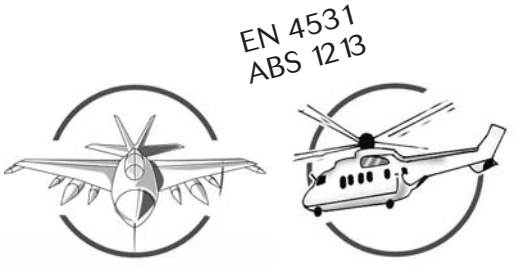
Available inserts - Table 1 (front face of male insert)

1 optical way	2 optical ways	4 optical ways	8 optical ways	24 optical ways
				
09-01	**11-02**	**13-04**	**19-08**	**25-24**

ELIO® C connector

Key features

- Standard MIL-DTL-38999 Serie IIIcomposite with specific high density ELIO® insert,
- Environmental performance as per MIL-DTL-38999 and EN 3645 standard,
- Only light weight RoHS connector resisting to more than 500 hours salt spray,
- Temperature range : -65°C + 125°C



Ordering information

	8D	5	E	11	J	02	A	N
Shell Type **5** - Plug **0** - Receptacle with 4 hole square flange fixing								
Designation **E** - ELIO® optical connector								
Shell Size 09 - 11 - 13 - 19								
Plating **J** - Olive green cadmium **M**- Nickel **X** - Without plating								
Insert Arrangement see table 1								
Male/Female insert **A** - Male insert **B** - Female insert with ceramic alignment sleeves								
Polarization N, A, B, C, D, E								

Applications

Fiber optic connector for military and aerospace on-board equipment, wherever weight saving and severe climatic or mechanical resistance are requested.

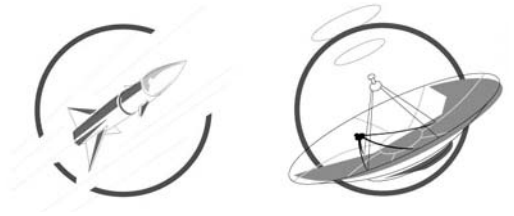
ELIO® Minum connector

Key features

- Standard MIL-DTL-38999 Serie IIIaluminium shell with specific high density ELIO® insert,
- Light and robust connector
- Environmental performance as per MIL-DTL-38999 and EN 3645 standard,
- Temperature range: -65°C + 125°C

Ordering information

	8D	5	E	11	W	02	A	N
Shell Type **5** - Plug **0** - Receptacle with 4-hole square flange fixing **7** - Receptacle with single hole jam nut fixing								
Designation **E** - ELIO® optical connector								
Shell Size 09 - 11 - 13 - 19 - 25								
Plating **W**- Olive green cadmium **F** - Nickel								
Insert Arrangement see table 1								
Male/Female insert **A** - Male insert **B** - Female insert with ceramic alignment sleeves								
Polarization N, A, B, C, D, E								



Applications

Fiber optic connector for all military and aeronautical purposes wherever severe vibration or mechanical resistance are requested.

ELIO® Steel connector

Key features

- Standard MIL-DTL-38999 Series III stainless steel class K or S shell with specific high density ELIO® insert,
- Very robust connector,
- Environmental performance as per MIL-DTL-38999 and EN 3645 standard,
- Temperature range: -65°C +150°C.

Ordering information

8D	5	E	11	K	02	A	N

Shell Type
5 - Plug
0 - Receptacle with 4-hole square flange fixing
7 - Receptacle with single hole jam nut fixing

Designation
E - ELIO® optical connector

Shell Size
09 - 11 - 13 - 19 - 25

Plating
K - Stainless Steel
S - Stainless Steel Nickel plated

Insert Arrangement see table 1

Male/Female insert
A - Male insert
B - Female insert with ceramic alignment sleeves

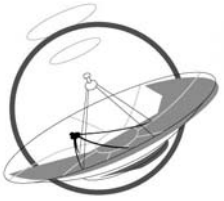
Polarization N, A, B, C, D, E

Applications
Fiber optic connector for all industrial, military and aerospace purposes wherever robustness and high temperature resistance are requested.

ELIO® Bronze connector

Key features

- Standard MIL-DTL-38999 Series III bronze shell with specific high density ELIO® insert,
- Very robust connector,
- Environmental performance as per MIL-DTL-38999,
- Temperature range: -65°C, +150°C.



Ordering information

JVS E	6	A	11	02	A	N	

Shell Style
6 - Plug
0 - Receptacle with 4-hole square flange fixing
7 - Receptacle with single hole jam nut fixing

Material
A - Bronze

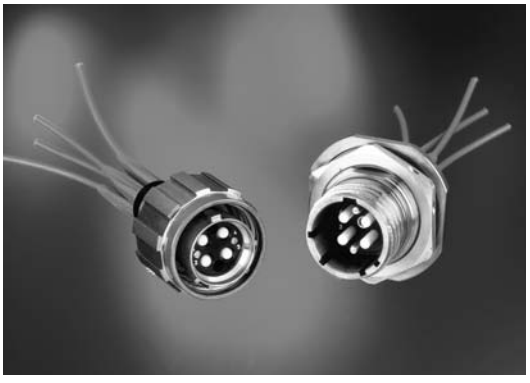
Shell Size
09 - 11 - 13 - 19 - 25

Insert Arrangement see table 1

Male/Female insert
A - Male insert
B - Female insert with ceramic alignment sleeves

Polarization N, A, B, C, D, E

Applications
Fiber optic connector for all military and aeronautical wherever sever vibration or mechanical resistance are requested.

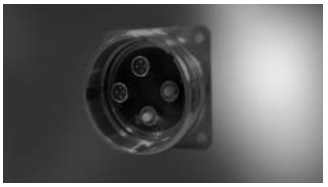


ELIO® 8 Adaptor: version for Quadrax # 8 cavity

EN 4626
ABS 1379

Key features

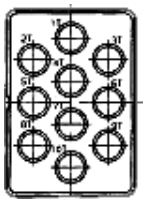
- ELIO® 8 is an adaptor to enable the ELIO® contact to fit any size 8 Quadrax cavities of ARINC 404/600, EN2997, EN3545 and EN3646 connectors. Therefore, any layout including size 8 Quadrax cavities can be implemented with the ELIO® fiber optic contact.
- Possibility to mix optical and electrical signals in the same insert,
- Temperature range -65°C + 125°C
- Designed to comply with ELIO® contact optical performances,



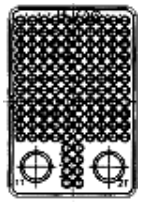
Insert proposals of ARINC 600

Cavity A, B, D, E of ARINC 600 size 2 and 3

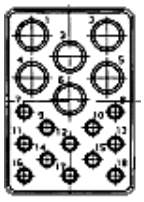
I - Q11*
11 cavities #8



I - Q10*
10 cavities #8



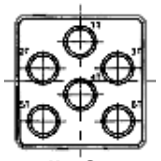
I - 118Q2
118 cavities #22
2 cavities #8



I - 1C12Q6*
12 cavities #12
6 cavities #8

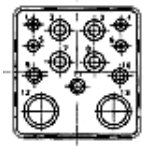
* Grounded metal

Cavity C, F of ARINC 600 size 2 and 3

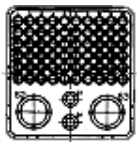


II - Q6
6 cavities #8

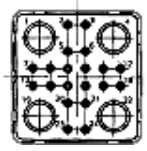
II - 68Q2
68 cavities #22
2 cavities #8



II - 11Q2
4 cavities #20
3 cavities #16
4 cavities #12
2 cavities #8

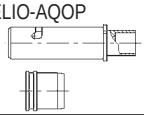
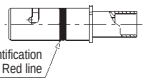


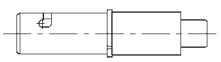
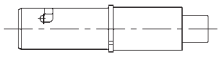
II - 62Q2
160 cavities #22
2 cavities #16
2 cavities #8



II - 20Q4
20 cavities #20
4 cavities #8

Ordering information of ELIO® adaptator

MALE INSERT	ELIO-AQOP 	ARINC 404 ARINC 600 Rear Release
	ELIO-AQ4P  Identification Red line	EN 2997 EN 3545 8525
	ELIO-AQ1P 	ARINC 404 ARINC 600 Front Release

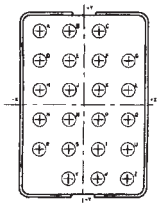
FEMALE INSERT	ELIO-AQOS 	ARINC 404 ARINC 600 EN 2997 8525
	ELIO-AQOS 	EN 3545
	ELIO-AQES 	

ELIO® 600 connector

Key features

- Standard ARINC 600 shell,
- High fiber optic density thanks to specificELIO® cavities
- Designed to comply with ELIO® contact opticalperformances
- Environmental performance as per MIL-DTL- 1344 standard,
- Temperature range -65°C + 125°C

Insert proposal



22 specific ELIO® contact cavities

Other: please consult us.

Technical Features and Benefits

An optimized high speed copper contact

- ✓ **Size 8** outer contact with 4 strategically spaced size 24 inner contacts forming two **100 or 150Ω** matched impedance with excellent 360° shielding,
- ✓ Equivalent to **two twinax contacts** with:
  - better performances (reduced cross talk),
  - shorter cabling time,
  - compact profile,
  - lighter weight.

- ✓ One contact completes a **full duplex 100 Mbps ethernet** link, and fulfills the ISO/IEC 11801 **categorie 6** requirements

A versatile technology

- ✓ Fit the major harsh environment **mil-aero connectors**:

Arinc 600

MIL-DTL-38999

EN2997

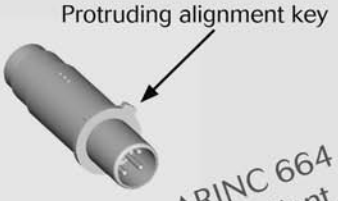
EN3646

- ✓ **Ground connection** of the cable braid to the connector shell on :
  - All Arinc 600 layouts
  - MIL-DTL-38999
  - EN2997 layouts 08-01 & 28-06

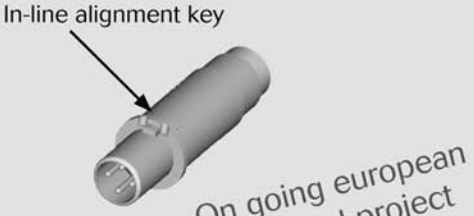
A standardized technology

- ✓ 2 designs for 2 standards:

- **Protruding alignment key** for Arinc 600, EN2997, EN3646



- **In line alignment key** for MIL-DTL-38999



Technical characteristics

Electrical

- **ISO/IEC 11801 category 6 compliant:**
  - Next (cross talk): > 46 dB at 250 MHz
  - Return loss: > 16dB at 250 MHz
  - Shield effectiveness: > 36dB at 80 MHz
- **Contact to shell continuity:**
  < 10 mΩ (ARINC 600)
- **Contact resistance** (low level):
  - initial 15 mΩ,
  - after tests 30 mΩ,

Electrical (continue)

- **Dielectric withstanding voltage**:

Altitude	Service I
Sea level 21 000 m	500 Vrms 125 Vrms

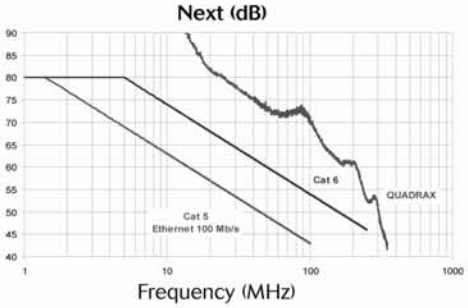
- **Insulation resistance:**

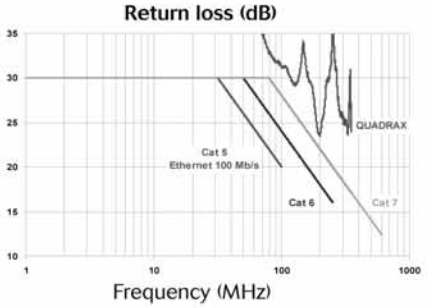
at ambient temperature:
> 5000 mΩ
at high temperature:
> 1000 mΩ

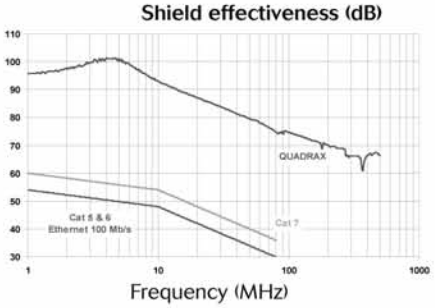
- **#24 contact cable size acceptance:**
AWG 22 to AWG 26

Mechanical

- **Operating temperature:**
-65°C + 200°C,
- **Inner contact:** copper alloy
- **Body:** copper alloy
- **Insulator:** thermoplastic
- **Contact plating:** gold over nickel







Ordering information

✓ ARINC 600, EN2997, EN3646 contacts
Protruding alignment key.

View	Contact type	Sealing	T° Max	Impedance	Release	Version	SOURIAU part number	ABS part number
	Male	Unsealed	200°C	100Ω	Rear	Crimp	ETH1-1100A	ABS0973 M08A
	Female	Unsealed	200°C	100Ω	Rear	Crimp	ETH1-1101A	ABS0974 F08A
	Male	Unsealed	200°C	100Ω	Front	PC tail L= 6.35 mm	ETH1-1110A	-
	Male	Unsealed	200°C	100Ω	Front	Tinned PC tail L= 6.35 mm	ETH1-1123A	-
	Male	Unsealed	260°C	100Ω	Rear	Crimp	ETH1-1126A	-
	Female	Unsealed	260°C	100Ω	Rear	Crimp	ETH1-1127A	-

✓ Sealing boot / Sealing plug

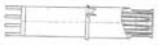
View	Type	Connector	Temperature	SOURIAU Part number
	Sealing boot	EN2997	200°C	8533 8236
		EN2997	260°C	8533 8307
		Arinc 600	200°C	8660 6053
	Sealing plug	EN2997	260°C	8533 8330

Quadrax Contact

✓ 38999 series I & 3 contacts

In line alignment key.

All contacts are delivered with a sealing boot.

View	Contact type	Sealing	Impedance	Release	Version	SOURIAU part number
	Male	Sealed	100Ω	Rear	Crimp	ETH1-1235A
	Female	Sealed	100Ω	Rear	Crimp	ETH1-1236A
	Male	Sealed	100Ω	Rear	PC tail	ETH1-1237A
	Female	Sealed	100Ω	Rear	PC tail	ETH1-1238A
	Male	Sealed	150Ω	Rear	PC tail	ETH1-1501A
	Female	Sealed	150Ω	Rear	PC tail	ETH1-1502A
	Male	Sealed	150Ω	Rear	Crimp	ETH1-1503A
	Female	Sealed	150Ω	Rear	Crimp	ETH1-1504A

✓ Quadrax tools

• Outer body: M22520/5-01 crimping tool and M22520/5-45 die set rep B,

crimping tool

• Signal contact: M22520/201 crimping tool and K709 positioner,

crimping tool & positioner

• Insertion/extraction tool (standard size 8 cavity tools): 8660-197 (metallic) or M81969/8-14 (plastic)

8660-197

M81969/8-14

Recommanded cable

Charactristic impedance	Reference	Cable type	Number of pairs
100	ABS 1503 KD23	Star quad	2

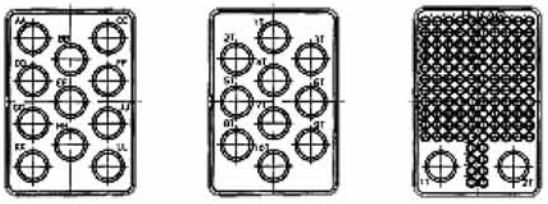
ARINC 600 with Quadrax Contact

Mechanical

ARINC 600 shell: alodine or nickel plated,
ARINC 600 insulator: thermoplastic, thermoset or metal,
Clip #8: copper alloy, gold over nickel plated,
Quadrax contact retention: 155N min,
Quadrax contact insertion force: 11N max,
Contact to shell conductivity <10mΩ,
Protruding alignment key,
Crimp and PC tail versions,
Fiber optic upgrade possible with Elio 8 adaptor and Elio fiber optic contact.

Layouts

Cavitiy A, B, D, E of ARINC 600 size 2 and 3



I - Q11* I - Q10* I - 118Q2

Cavitiy C,F of ARINC 600 size 2 and 3

II - Q6* II - 68Q2 II - 11Q2 II - 62Q2 II - 20Q4

* Grounded metal insert

Contact layouts

#8 «Quadrax» type cavities are compatible with all standard #8 coaxial, triaxial, ELIO 8 and Quadrax contacts.

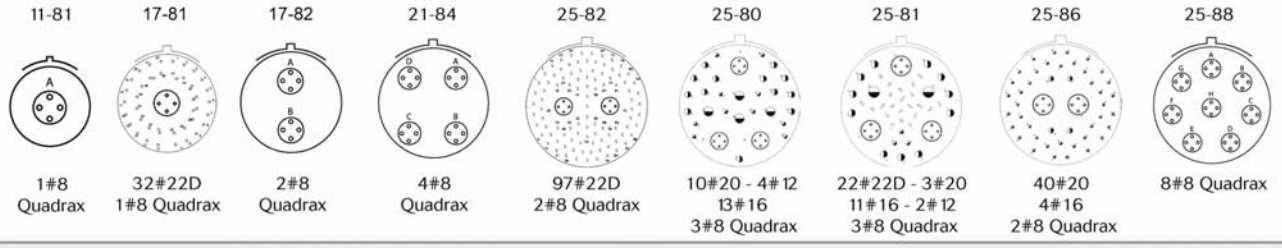
Insert name	ARINC 600 Cavity	Receptacle	Plug	Number of cavities				
		contact release	contact release	#22	#20	#16	#12	#8 «Quadrax» type
I-Q11	A, B, D, E	Front/Rear	Rear					11
I-Q10	A, B, D, E	Front/Rear	Rear					10
I-118Q2	A, B, D, E	Front	Rear	118				2
II-Q6	C, F	Front/Rear	Rear					6
II-68Q2	C, F	Front	Rear	68				2
II-11Q2	C, F	Front	Rear		4	3	4	2
II-62Q2	C, F	Front	Rear	60		2		2
II-20Q4	C, F	Front	Rear		20			4

MIL-DTL-38999 with Quadrax Contact

Mechanical

Standard D38999 shell,
Standard D38999 insulator (Thermoplastic, thermoset) or specific grounded metallic insert,
Clip #8: copper alloy (gold plated),
In-line alignment key.

Layouts



Ordering information

Basic series	8D	0	Q	21	W	84	P	N	308

Style
0 - square flange receptacle
5 - plug with RFI shielding
7 - Jam nut receptacle (except composite version)

Type
Q - crimp
C - PC tail

Shell size 11, 17, 21, 25

Plating

Aluminium:	**W** - olive green cadmium **Z** - green zinc cobalt	**F** - nickel	**L** - black zinc nickel
Composite:	**J** - olive green cadmium	**M** - nickel	**X** - without plating
Stainless steel:	**K** - corrosion resistant	**S** - nickel	
Titanium:	**TT** - without plating	**TF** - nickel	

Insert arrangement (see above)

Contact type
P - pin
S - socket
A - male connector supplied without quadrax contact
B - female connector supplied without quadrax contact

Orientation **N - A - B - C - D - E**

Specification
284* - quadrax grounded contact (100Ω)
308 - quadrax not grounded contact (100Ω)
384* - quadrax grounded contact (150Ω)
408 - quadrax not grounded contact (150Ω)

JVS bronze

Basic series	JVS	Q	00A	21	84	P	N	308

Type
Q - crimp
C - PC tail

Style
00A - square flange receptacle
07A - jam nut receptacle
16A - plug

Shell size 11, 17, 21, 25

Insert arrangement (see above)

Contact type
P - pin
S - socket
A - male connector supplied without quadrax contact
B - female connector supplied without quadrax contact

Orientation **N - A - B - C - D - E**

Specification
284* - quadrax grounded contact (100Ω)
308 - quadrax not grounded contact (100Ω)
384* - quadrax grounded contact (150Ω)
408 - quadrax not grounded contact (150Ω)

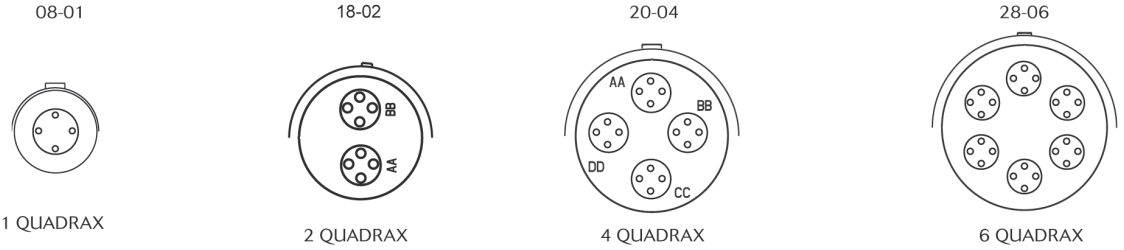
* Excepted mixte versions (17-81, 25-80, 25-81, 25-82, 25-86)

EN 2997 with Quadrax Contact

Mechanical

Robust EN2997 screw coupling system for high vibration applications,
Compliant with ABS 1340-1343, ABS 1426-1427,
Airbus qualified ABS 0973 and AB0974 crimp quadrax contacts,
Specific 260°C quadrax contact version available,
Protruding alignment key.

Layouts



Ordering information

	Layout	Circular plug		Square flange receptacle	
		SOURIAU PN	ABS PN	SOURIAU PN	ABS PN
Aluminium version	18-02	8533 3RS 1802PNL 8533 3RS 1802PN126 8533 3RS 1802SNL 8533 3RS 1802SN126	ABS 1343 C1802NF ABS 1343 P1802N ABS 1343 D1802NF ABS 1343 S1802N	8533 0RS 1802PNL 8533 0RS 1802PNL126 8533 0RS 1802SNL 8533 0RS 1802SN126	ABS 1426 C1802NF ABS 1426 P1802N ABS 1426 D1802NF ABS 1426 S1802N
	20-04	8533 3RS 2004PNL 8533 3RS 2004PN126 8533 3RS 2004SNL 8533 3RS 2004SN126	ABS 1343 C2004NF ABS 1343 P2004N ABS 1343 D2004NF ABS 1343 S2004N	8533 0RS 2004PNL 8533 0RS 2004PN126 8533 0RS 2004SNL 8533 0RS 2004SN126	ABS 1426 C2004NF ABS 1426 P2004N ABS 1426 D2004NF ABS 1426 S2004N
	28-06	8533 3RS 2806PNL 8533 3RS 2806PN126 8533 3RS 2806SNL 8533 3RS 2806SN126	ABS 1343 C2806NF ABS 1343 P2806N ABS 1343 D2806NF ABS 1343 S2806N	8533 0RS 2806PNL 8533 0RS 2806PN126 8533 0RS 2806SNL 8533 0RS 2806SN126	ABS 1426 C2806NF ABS 1426 P2806N ABS 1426 D2806NF ABS 1426 S2806N
Stainless steel version	08-01	8533 3ES 0801PN165 8533 3ES 0801PNL165 8533 3ES 0801SN165 8533 3ES 0801SNL165	ABS 1340 P0801N ABS 1340 P0801NF ABS 1340 S0801N ABS 1340 S0801NF	8533 0ES 0801PN165 8533 0ES 0801PNL165 8533 0ES 0801SN165 8533 0ES 0801SNL165	ABS 1427 P0801N ABS 1427 P0801 NF ABS 1427 S0801N ABS 1427 S0801NF
	18-02	8533 3ES 1802PNL 8533 3ES 1802PN126 8533 3ES 1802SNL 8533 3ES 1802SN126	ABS 1340 C1802NF ABS 1340 P1802N ABS 1340 D1802NF ABS 1340 S1802N	8533 0ES 1802PNL 8533 0ES 1802PN126 8533 0ES 1802SNL 8533 0ES 1802SN126	ABS 1427 C1802NF ABS 1427 P1802N ABS 1427 D1802NF ABS 1427 S1802N
	20-04	8533 3ES 2004PNL 8533 3ES 2004PN126 8533 3ES 2004SNL 8533 3ES 2004SN126	ABS 1340 C2004NF ABS 1340 P2004N ABS 1340 D2004NF ABS 1340 S2004N	8533 0ES 2004PNL 8533 0ES 2004PN126 8533 0ES 2004SNL 8533 0ES 2004SN126	ABS 1427 C2004NF ABS 1427 P2004N ABS 1427 D2004NF ABS 1427 S2004N
	28-06	8533 3ES 2806PNL 8533 3ES 2806PN126 8533 3ES 2806SNL 8533 3ES 2806SN126	ABS 1340 C2806NF ABS 1340 P2806N ABS 1340 D2806NF ABS 1340 S2806N	8533 0ES 2806PNL 8533 0ES 2806PN126 8533 0ES 2806SNL 8533 0ES 2806SN126	ABS 1427 C2806NF ABS 1427 P2806N ABS 1427 D2806NF ABS 1427 S2806N

EN 3646 with Quadrax Contact

Mechanical

Smallest harsh environments Quadrax connector,
Bayonet coupling,
Per Airbus ABS1054 and ABS1057 and per EN3646,
Black anodized aluminium shell size 8,
Airbus qualified ABS 0973 and ABS 0974 crimp quadrax contact,
Protruding alignment key.

Layouts

08-01

1 QUADRAX

Ordering information

	Layout	SOURIAU PN	ABS PN
Circular plug	0801 (8B01)	8525 16R8B01SNHL164	ABS 1054 A60801 BN + ABS 1057-08A01
		8525 16R8B01SNH164	ABS 1054 A60801 FN + ABS 1057-08A01
Square flange receptacle	08-01 (8B01)	8525 10R8B01PNHL164	ABS 1054 A00801 AN + ABS 1057-08A01
		8525 10R8B01PNH164	ABS 1054 A00801 MN + ABS 1057-08A01