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DATE	REV	ECO	REVISION RECORD	DWN.	CK.
9/20/10	1		Released for review and approval		

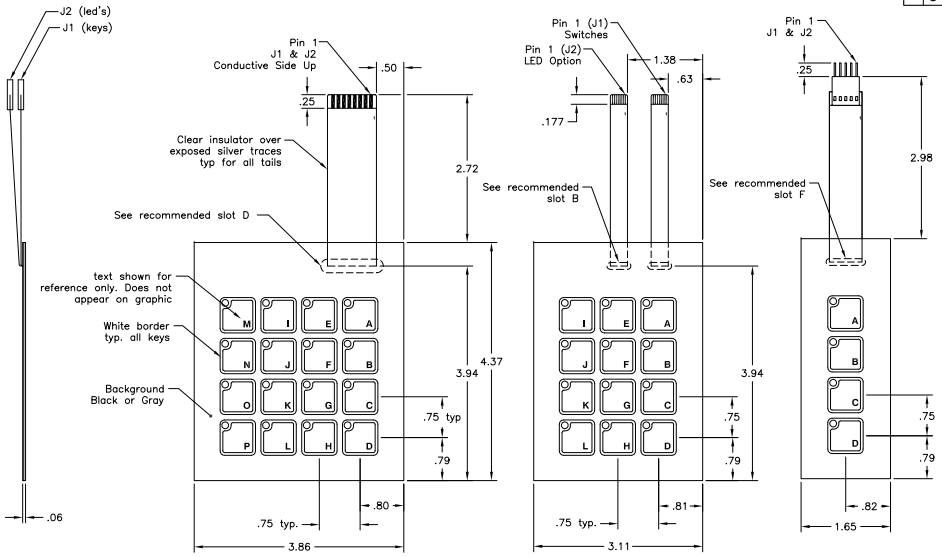
LED Matrix

J2 Pin numbers	M	I	E	A	N	J	F	B	O	K	G	C	P	L	H	D
1													A	A	A	A
2									A	A	A	A				
3					A	A	A	A								
4	A	A	A	A												
5					C			C				C				C
6			C				C				C				C	
7		C				C				C				C		
8	C				C				C				C			

A – Anode
C – Cathode

Switch Matrix

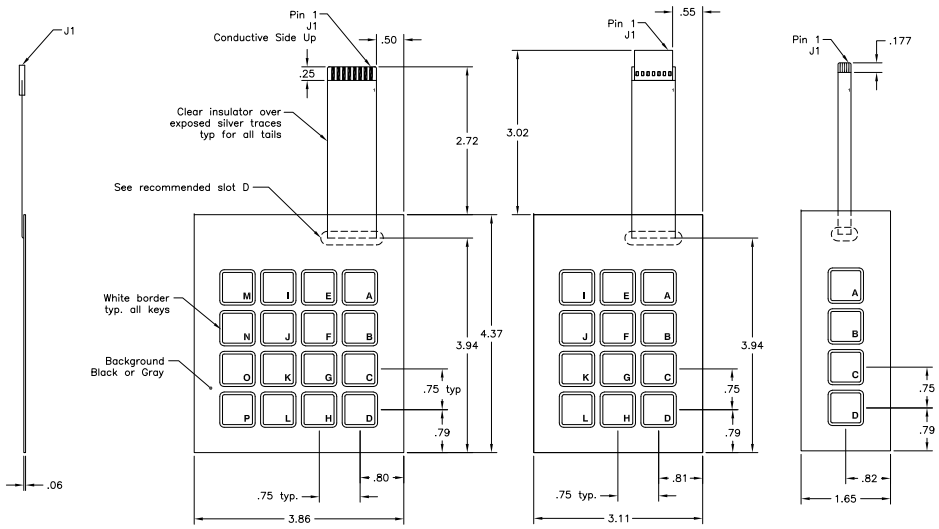
J1 PIN number	M	I	E	A	N	J	F	B	O	K	G	C	P	L	H	D
1													•	•	•	•
2									•	•	•	•				
3					•	•	•	•								
4	•	•	•	•												
5				•					•				•			•
6			•				•				•			•		
7		•				•				•					•	
8	•				•				•				•			



16 Key with LED option Shown with Tail Termination Option S

12 Key with LED Option Shown with Tail Termination Option Z

4 Key with LED Option Shown with Tail Termination Option M



16 Key Non-Illuminated Shown with Tail Termination Option S

12 Key Non-Illuminated Shown with Tail Termination Option F

4 Key Non-Illuminated Shown with Tail Termination Option Z

2909-X-XX-X-X-XX

Base Number

Background Color
B= Black
G= PMS 430 Gray

Number of Positions
04 = 4 position
12 = 12 position
16 = 16 position

Color of LEDS
G=Green
R=Red
Y=Yellow
W=White
B=Blue
0=Non-Illuminated

Tail Termination
Z = 1mm pitch ZIF or LIF
S=.100" pitch ZIF or LIF
F= .100" pitch Female pin header
M=.100" pitch Male pin header

ZIF – zero insertion force
LIF – low insertion force

Key Legends Color Code
WB=White key copy, Black background
WG=White key copy, Gray background
BW=Black key copy, White background
BG=Black key copy, Gray background
GW=Gray key copy, White background
GB=Gray key copy, Black background

7. Entire Assembly to be RoHS and NEMA4 compliant.

6. LED Ratings:
   Red = Forward Voltage 2.00V – 2.40V @20mA
   Yellow = Forward Voltage 2.00V – 2.40V @20mA
   Green = Forward Voltage 2.00V – 2.40V @20mA
   Blue = Forward Voltage 3.50V – 4.30V @20mA
   White = Forward Voltage 2.75V – 3.95V @20mA

5. Switch Ratings
   Power: 6VDC @ 250mA to 24VDC @ 20mA
   Contact Resistance: <100 Ohms
   Dielectric Strength: 250V AC minimum for 1 minute
   Operational Life: 1,000,000 actuations
   Contact Bounce: 10 Milliseconds max.
   Operating Temperature: –15°C to +50°C

4. (1) complete set of insert cards included per keypad.

3. Material: Graphic Overlay: Textured polyester.
   Rear Adhesive: .002" 3M 7952MP.
   Insert Cards: Polyester.

2. Domes: 12mm, 4 leg, 14 oz.

1. Termination: See Tail Termination table.

NOTES: Unless otherwise specified:

File Name:	Tool Location:
CUSTOMER: APEM Components	
Q.A. INSPECT. Δ DESIGNATES CRITICAL DIMENSION	APEM 63 Neck RD. Haverhill, MA 01835 Tel:978-372-1602 Fax:978-372-3534
DRN. BY: JPM	CHK. BY:
TOLERANCES (EXCEPT AS NOTED) .XX=±.02[0.5] .XXX=±.010[0.25] .XXXX=± ANGLE = ±0.5°	INCH (MM) / SHEET 1 OF 2 / SIZE C / SCALE 1:1 / THIRD ANGLE PROJECTION
JOB NO.	
DESCRIPTION Specifications, Generic Keypads	
DO NOT SCALE DRAWING	DATE 9/21/10 / PART NO. 2909-X-XX-X-X-XX / REV 1

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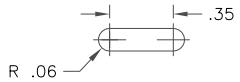
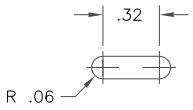
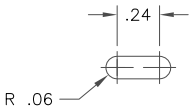
DATE	REV	ECO	REVISION RECORD	DWN.	CK.
			See Sheet 1 for revisions		



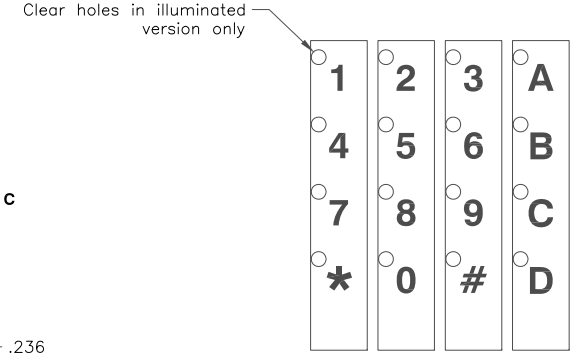
Recommended Slot A



Recommended Slot B

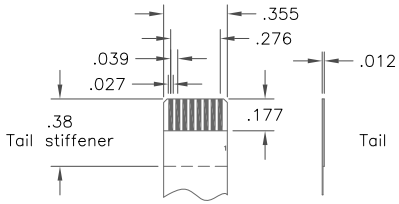


Recommended Slot C

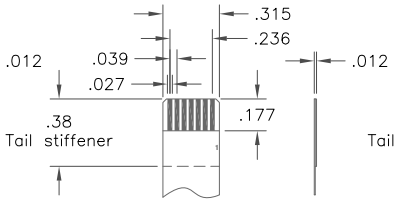


KEY LEGENDS COLOR CODE
WB=White key copy, Black key background
WG=White key copy, Gray key background
BW=Black key copy, White key background
BG=Black key copy, Gray key background
GW=Gray key copy, White key background
GB=Gray key copy, Black key background

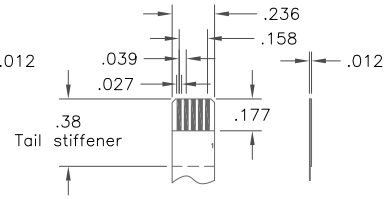
Custom inserts are available upon request. Contact a Technical Sales Representative at APEM Components for pricing and delivery.



16 Key
Z Tail Termination
Scale: 2/1

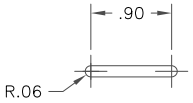


12 Key
Z Tail Termination
Scale: 2/1

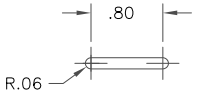


4 Key
Z Tail Termination
Scale: 2/1

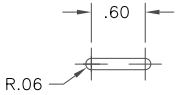
(All Z tail terminations are compatible with Molex brands 52089, 52207 & 52271 ZIF series connectors or equivalent)



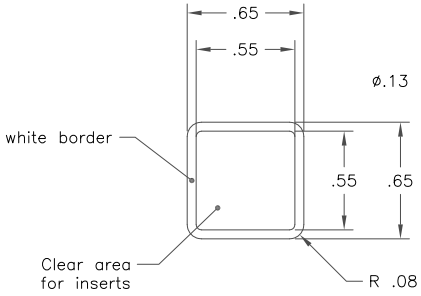
Recommended Slot D



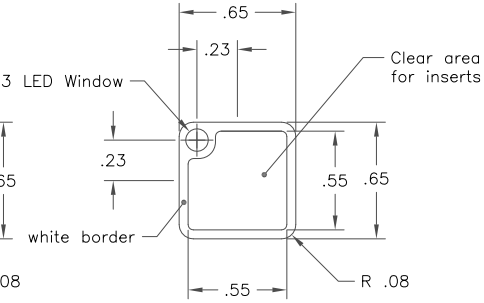
Recommended Slot E



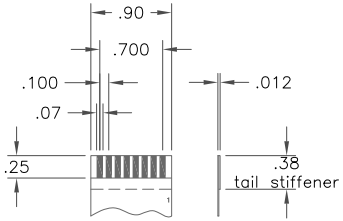
Recommended Slot F



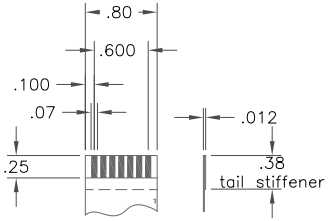
Non-Illuminated
Key Detail
Scale: 2/1



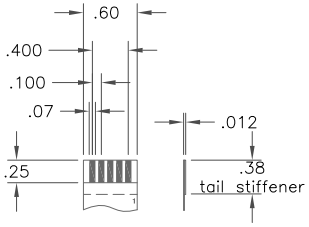
Illuminated
Key Detail
Scale: 2/1



16 Key
S Tail Termination
(tail stiffener not required for LIF termination)



12 Key
S Tail Termination
(tail stiffener not required for LIF termination)



4 Key
S Tail Termination
(tail stiffener not required for LIF termination)

(All S tail terminations are compatible with Molex series 5229 and Tyco "Triomate" series connectors or equivalent)

File Name: | Tool Location:

CUSTOMER: APEM Components

Q.A. INSPECT. Δ DESIGNATES CRITICAL DIMENSION

APEM 63 Neck RD. Haverhill, MA 01835 Tel:978-372-1602 Fax:978-372-3534

DRN. BY: JPM
CHK. BY:

TOLERANCES (EXCEPT AS NOTED) .XX=±.02[0.5] .XXX=±.010[0.25] .XXXX=± ANGLE = ±0.5°

INCH (MM)	SHEET	SIZE	SCALE	THIRD ANGLE PROJECTION
	2 of 2	C	1:1	

JOB NO.

DESCRIPTION: Specifications, Generic Keypads

DO NOT SCALE DRAWING

DATE	PART NO.	REV
9/21/10	2909-X-XX-X-X-XX	1