



# ITT

## Electronic Components

### Cannon Filter Connectors



*Engineered for life*

## Cannon Filter Connectors

ITT's Cannon brand offers one of the most extensive portfolios of custom and off-the-shelf connector solutions in the industry. Our highly reliable and cost-effective range of harsh environment interconnect solutions is available across a variety of markets and applications worldwide including:

- Aerospace
- Computers Systems
- Defense Electronics
- Geophysical
- Industrial Automation
- Medical Electronics
- Network Systems
- Telecom Switching
- Underwater Systems
- Wireless

When you specify a Cannon Filter connector, you can rely on a product designed, developed, and manufactured to the highest quality and reliability standards in the industry. This tradition of excellence is based on ITT's corporate culture of operating its entire business under the principles of Six Sigma. At ITT, Six Sigma is not just a quality philosophy but a complete corporate culture that drives the entire business. Our Value Based Management and Value Based Product Development systems are two cornerstones of ITT that allows for the development of both leadership and product development principles, ensuring that the correct industry leading products are developed to the accepted market driven lead times. These principles have allowed ITT to become the market leader in all of our business portfolios.



## Six Sigma Manufacturing

ITT operates manufacturing facilities in the United States, France, Germany, Italy, Mexico, China, and the UK, all of which have particular product area strengths allowing ITT to offer a truly global footprint to our customers. Our facilities are world class and accommodate full vertical integration with the latest manufacturing technologies including: automated and robotic machining centers, Super Market manufacturing cells, Kanban pull systems, and automated electrical, mechanical, and optical test and inspection equipment. The combination of our manufacturing strength and our advanced manufacturing facilities allows ITT to offer products at market driven prices. Our capabilities, especially in robotics, computerized precision tooling, Kaizen Project Management, Six Sigma tools, and test labs, gives ITT the most optimized global manufacturing footprint in the interconnect industry.



Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

[www.ittcannon.com](http://www.ittcannon.com)

# Cannon Filter Connectors

## RoHS Compliance Information

ITT has implemented a strict parts control plan for all ITT electronics plants worldwide that allows the Cannon connector product portfolio to meet the requirements of European Union Directive 2002/95/EC better known as the Reduction of Hazardous Substances initiative.

Please consult Customer Service if RoHS part verification is required.

### Cannon Filter Connector Products

ITT's transverse monolith filter connectors provide more EMI/RFI shielding on one substrate than any other filter connector.



The Cannon filter connector takes up 78% less space than a standard connector with separate discrete filters. It also weighs up to 72% less. This tiny filter can stand up to 8,000 g's of pyrotechnic shock.



ITT's rugged filter connectors are the leading choice for the most demanding commercial, industrial, military and aerospace applications, including advanced weapon systems. Their superior filtering concept cuts off unwanted signals at optimum point and provides superior linearity. Gaps in performance are eliminated by the windowless ground plane in the connector itself.



In addition to substantial gains in electrical performance, the separate functions of a standard connector and a feed-thru filter are combined in a single unit. Without altering the normal function of a standard connector, the filter provides RFI suppression at frequencies above a prescribed point (low pass).



Three types of contacts are available for each contact position: filter contacts, power contacts or grounded contacts. Just about any combination of contacts can be used on the same connector to offer maximum circuit flexibility.

All of the Cannon filter connectors have the same layout pattern and contact spacing as their equivalent non-filtered connectors, and are intermate-able and intermountable with them. Filter connectors are longer than standard connectors in order to incorporate the capacitors and inductors. However, special shells can be designed by ITT engineers that move the flange to facilitate the available space to the front or rear of your enclosure specification.










For more information, visit [www.ittcannon.com](http://www.ittcannon.com)



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TMDM 83513-Style. . . . . 9  
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	<b>TD1*</b> <b>MIL-DTL-24308</b>	<b>TMDM</b> <b>83513-Style</b>	<b>TPV</b> <b>26482-Style</b>	<b>Chip-on-Flex</b> <b>MIL-DTL-38999</b>	<b>TKJ/TKJL/TKJA/TKJB</b> <b>MIL-DTL-38999</b>	<b>TDPX</b> <b>MIL-C-81659</b>	<b>TBKAD</b> <b>ARINC 600</b>
							
<b>Type</b>	plug and socket	plug and socket	plug and socket	plug and socket	plug and socket	plug and socket	plug and socket
<b>Current Rating</b>	7.5A	3A	7.5A to 15A	5A to 20A	5A to 20A	5A to 20A	5A to 20A
<b>Contact Resistance</b>	15 milli ohm max	15 milli ohm max	15 milli ohm max	15 milli ohm max	15 milli ohm max	15 milli ohm max	15 milli ohm max
<b>Contact Material</b>	gold plated copper alloy	gold plated copper alloy	gold plated copper alloy	gold plated copper alloy	gold plated copper alloy	gold plated copper alloy	gold plated copper alloy
<b>Shell</b>	metal	metal	metal	metal	metal	metal	metal
<b>Shell Material</b>	aluminum	aluminum	aluminum	aluminum	aluminum	aluminum	aluminum
<b>Available Layouts</b>	9 15 25 37 50	9 15 21,25 31 37, 51, 100	5 to 61 contacts	3 to 128 contacts	3 to 128 contacts	20 to 424 contacts	60 to 800 contacts
<b>Configuration</b>	Polarized D	Polarized D	Cylindrical	Cylindrical	Cylindrical	Rack and Panel	Rack and Panel
<b>RoHS</b>	Available	Available	Available	Available	Available	Available	Available
<b>Factory Terminated</b>	Available	Available	Available	Available	Available	Available	Available
<b>Space Applications</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Page Number</b>	6	9	12	17	20	32	40

Dimensions shown in inch (mm)  
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ITT developed a line of filter connectors to meet the industry’s demand for improved control of Radio Frequency and Electro-magnetic Interference (RFI/EMI). These TD1\* filter connectors, have been designed to combine the functions of a standard electrical connector and feed-thru filters into one compact package. In addition to offering greater design flexibility and system reliability, they are designed for applications where space and weight are prime considerations. These connectors are intermateable with all standard D-subminiature connectors. They are also intermateable with MIL-C-24308 types and meet applicable portions of that specification. All TD1\* filter contact assemblies are tested 100% during in-process and final inspection, for capacitance, insulation resistance and dielectric withstanding voltage. Attenuation is checked as required for each type of filter to assure performance to guaranteed levels.

Performance and Material Specifications

ELECTRICAL DATA

Available Filter	Low Freq.	Mid Freq.	Std Freq.	High Freq.	
Catalog Indication - letter	L	M	T	H	
Voltage Rating (working)	100 VDC		200 VDC		
Current Rating (amp DC)	7.5	7.5	7.5	7.5	
Insulation Resistance, 2 min. electrification time max. at 25° C, and 100 VDC	5000 megohms minimum	10,000 megohms minimum	10,000 megohms minimum	10,000 megohms minimum	
DWV, sea level, with 500 microamps max. charge/discharge	300 VDC	500 VDC	500 VDC	500 VDC	
Capacitance at 1 KHz, 0.1 V rms picofarads	50,000 minimum	7200, 12,000	3000, 5,000	780, 1,300	
	Freq. MHz	Attenuation (dB)			
Attenuation per MIL-STD-220 @ 25° C with no applied voltage or current.	0.1	2 min.	-	-	-
	1	15 min.	2 min.	-	-
	2	20 min.	5 min.	2 min.	
	10	35 min.	15 min.	9 min.	2 min.
	100	60 min.	55 min.	50 min.	30 min.
	500 to 1,000	65 min.	60 min.	55 min.	50 min.
Filter Type	Pi	Pi	Pi	Pi	

MATERIALS AND FINISHES

Description	Material	Finish
Contacts	Copper alloy	Gold plate per MIL-G-45204 Type 1, Class 1
Shell	Aluminum alloy 6061-T6 per QQ-A-225/8 or QQ-A-200/8	Electroless nickel per MIL-C-26074
Insulator: Socket	Polyphenylene Sulfide/ Epoxy	None
Pin	Epoxy	None
Ground Spring	Beryllium Copper	Gold plate

How to Order

TD 1 E 9 L P H - C



- FILTER SERIES PREFIX**  
TD - Miniature, rectangular, solder termination
- SHELL SIZE (one piece shell)**  
E, A, B, C, D
- CONTACT ARRANGEMENTS**  
See page 7

- FILTER TYPE**  
L - Low frequency  
M - Mid-range frequency  
T - Standard frequency  
H - High frequency
- CONTACT TYPE**  
P - Pin contacts  
S - Socket contacts

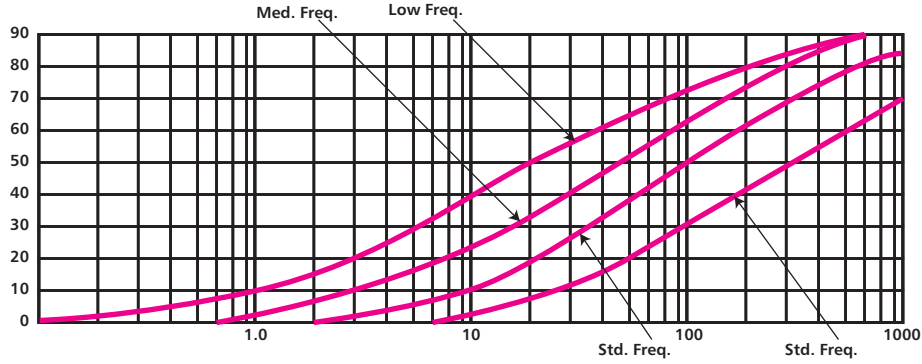
**PRINTED CIRCUIT CONTACTS**  
Consult factory. Both 90° and straight types are available.

**CONTACT TERMINATION**  
See page 7  
Lack of termination indicator signifies solder cup.

**MODIFIER**  
C - Clinch nut  
Dimensions shown in inch (mm)  
Specifications and dimensions subject to change



Typical Filter Performance



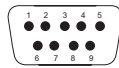
Contact Arrangements

Face View Pin Insert

Shell Size

Contact Arrangement

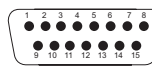
Contact Size



E

9

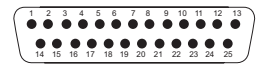
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A

15

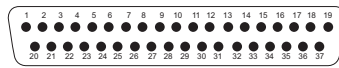
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B

25

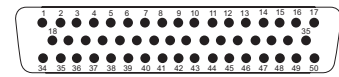
#20



C

37

#20



D

50

#20

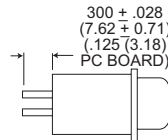
Shell Size

Contact Arrangement

Contact Size

Contacts

Straight Printed Circuit

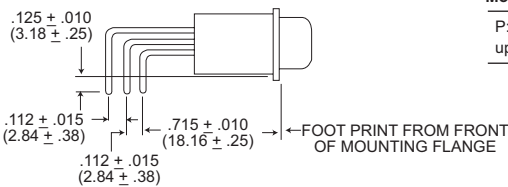
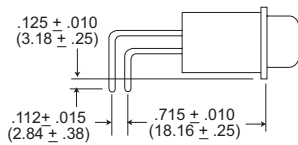


Modifier

H: .040 (.02) Dia. terminals and accommodates up to 1/8 Max. thick P.C. boards.

M: .030 (.76) Dia. terminals and accommodates up to 1/8 Max. thick P.C. boards.

Right Angle Printed Circuit



Modifier

P: .030 (.76) Dia. terminals and accommodates P.C. boards up to 3/32 Max. Thickness.

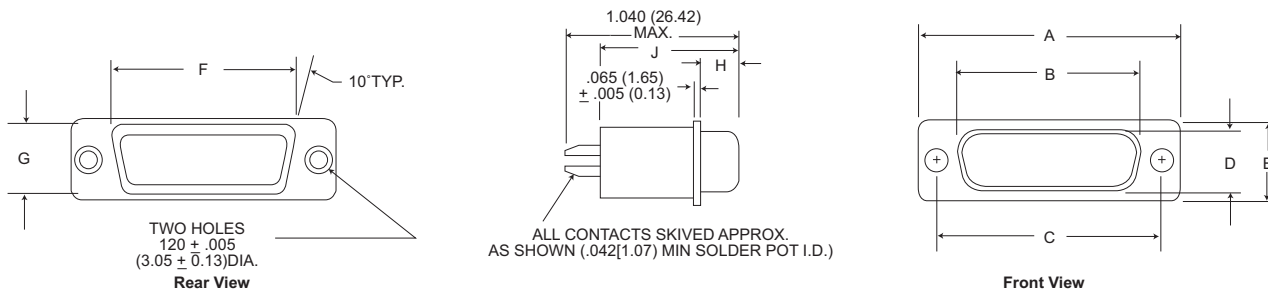
Dimensions shown in inch (mm)

Specifications and dimensions subject to change

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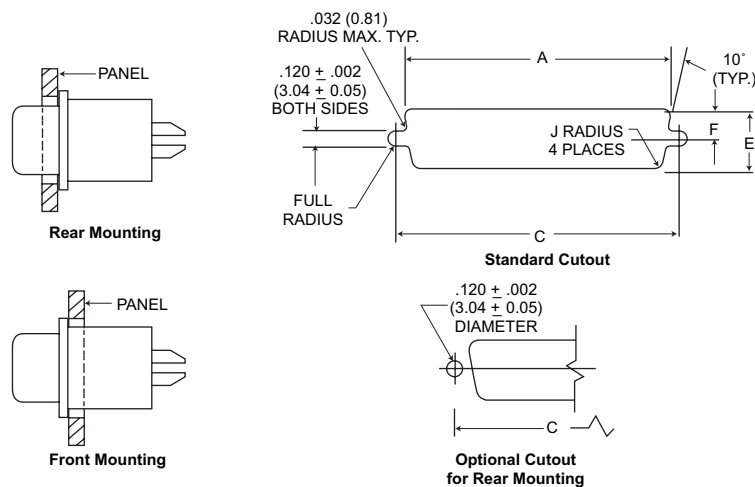


Standard Shell Dimensions



Shell Size	A ± .015 (0.38)	B ± .010 (0.25)	C ± .005 (0.13)	D ± .010 (0.25)	E ± .005 (0.13)	F ± .010 (0.25)	G ± .010 (0.25)	H ± .010 (0.25)	J ± .010 (0.25)
9P	1.213 (30.81)	.738 (18.75)	.984 (24.99)	.400 (10.16)	.502 (12.75)	.792 (20.12)	.469 (11.91)	.236 (5.99)	.841 (21.36)
9S	1.213 (30.81)	.642 (16.31)	.984 (24.99)	.310 (7.87)	.502 (12.75)	.792 (20.12)	.469 (11.91)	.243 (6.17)	.852 (21.64)
15P	1.541 (39.14)	1.066 (27.08)	1.312 (33.32)	.400 (10.16)	.502 (12.75)	1.116 (28.35)	.469 (11.91)	.236 (5.99)	.841 (21.36)
15S	1.541 (39.14)	.970 (24.64)	1.312 (33.32)	.310 (7.87)	.502 (12.75)	1.116 (28.35)	.469 (11.91)	.243 (6.17)	.852 (21.64)
25P	2.087 (53.01)	1.606 (40.79)	1.852 (47.04)	.400 (10.16)	.502 (12.75)	1.664 (42.27)	.469 (11.91)	.231 (5.87)	.841 (21.36)
25S	2.087 (53.01)	1.510 (38.35)	1.852 (47.04)	.310 (7.87)	.502 (12.75)	1.664 (42.27)	.469 (11.91)	.243 (6.17)	.852 (21.64)
37P	2.729 (69.32)	2.254 (57.25)	2.500 (63.50)	.400 (10.16)	.502 (12.75)	2.316 (58.83)	.469 (11.91)	.243 (6.17)	.841 (21.36)
37S	2.729 (69.32)	2.158 (54.81)	2.500 (63.50)	.310 (7.87)	.502 (12.75)	2.316 (58.83)	.469 (11.91)	.243 (6.17)	.852 (21.64)
50P	2.635 (66.93)	2.151 (54.64)	2.406 (61.11)	.512 (13.00)	.612 (15.54)	2.198 (55.83)	.576 (14.63)	.231 (5.87)	.841 (21.36)
50S	2.635 (66.93)	2.064 (52.43)	2.406 (61.11)	.422 (10.72)	.612 (15.54)	2.198 (55.83)	.576 (14.63)	.243 (6.17)	.852 (21.64)

Mounting Panel Cutout Dimensions



Connector	Mounting Method	A ± .005 (0.13)	C ± .005 (0.13)	E ± .005 (0.13)	F ± .005 (0.13)	J ± .005 (0.13)
TD1E	Front Mounting	.833 (21.16)	.984 (24.99)	.485 (12.32)	.243 (6.17)	.065 (1.65)
	Rear Mounting	.806 (20.47)	.984 (24.99)	.449 (11.40)	.225 (5.72)	.132 (3.35)
TD1A	Front Mounting	1.161 (29.49)	1.312 (33.32)	.485 (12.32)	.243 (6.17)	.065 (1.65)
	Rear Mounting	1.134 (28.80)	1.312 (33.32)	.449 (11.40)	.225 (5.72)	.132 (3.35)
TD1B	Front Mounting	1.700 (43.18)	1.852 (47.04)	.485 (12.32)	.243 (6.17)	.065 (1.65)
	Rear Mounting	1.674 (42.52)	1.852 (47.04)	.449 (11.40)	.225 (5.72)	.132 (3.35)
TD1C	Front Mounting	2.349 (59.66)	2.500 (63.50)	.485 (12.32)	.243 (6.17)	.065 (1.65)
	Rear Mounting	2.326 (59.08)	2.500 (63.50)	.449 (11.40)	.225 (5.72)	.132 (3.35)
TD1D	Front Mounting	2.254 (57.25)	2.406 (61.11)	.593 (15.06)	.297 (7.54)	.065 (1.65)
	Rear Mounting	2.218 (56.34)	2.406 (61.11)	.555 (14.09)	.278 (7.06)	.132 (3.35)





With an increasing number of MDM connectors being used in avionics and military equipment and with increasing emphasis being put on EMI, RFI and EMP shielding, Cannon have developed a range of filter connectors to suit most applications.

The TMDM receptacle accommodates from 8 to 37 sizes, 24 AWG socket contacts on 1,27 (.050) centres and mates with the standard MDM plugs.

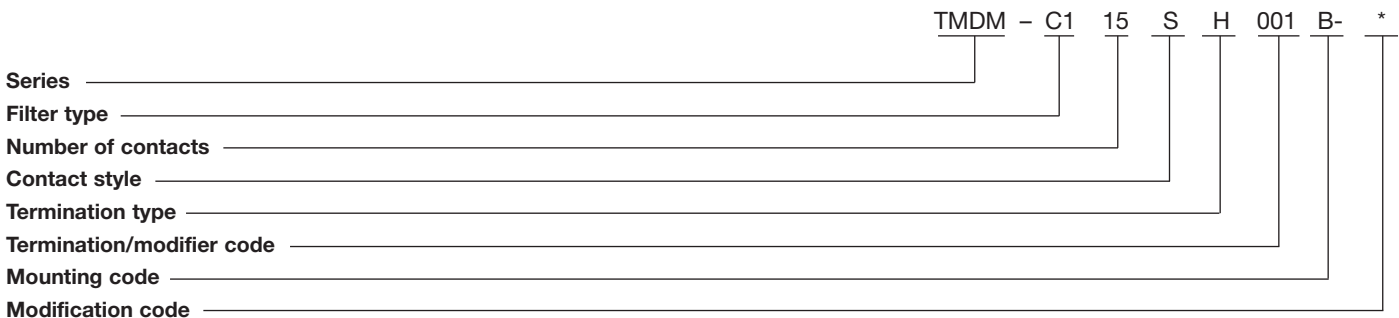
### Features

- Transverse monolith filter for EMI and RFI shielding.
- Rugged aluminum one piece shell.
- Silicone interfacial environmental seal.
- Glass filled diallyl phthalate insulator.
- A variety of filter types for each pin.

## Specifications

<b>MATERIALS &amp; FINISHES</b>	
Shell	Aluminum alloy per QQ-A-200/8 with electroless nickel finish per QQ-N-290
Insulator	Glass filled diallyl phthalate per MIL-M-14. Type SDGF
Contact, socket	Copper alloy, 50 microinch gold per MIL-G-45204, Type II, Class I
Interfacial seal	Silicone base rubber
<b>ELECTRICAL DATA</b>	
No. of contacts	9 to 37
Dielectric withstanding voltage	300 VAC
Insulation resistance	5000 Mohm at 100 VDC
Voltage rating (working)	100 VDC
Current rating	3 amps max.
Maximum capacitance	250, 500, 1000, 2000 picofarads
Filter type	C
<b>MECHANICAL FEATURES</b>	
Size or length	6 sizes
Coupling	Friction/jackscrews
Polarization	Keystone shaped shell
Contact spacing	.050 (1,27) centers
Shell style	Single piece receptacle

## How to Order



### Series:

Filter TMDM - Micro "D" - Metal housing

### Filter type:

"C" capacitor type

- C1 150 - 250 pF capacitance
- C2 300 - 500 pF capacitance
- C3 700 - 1000 pF capacitance
- C4 1300 - 2000 pF capacitance

### Number of contacts:

9, 15, 21, 25, 31, 37 only

### Contact style:

- S - socket (receptacle)
- P - Pin (plug)

### Termination type:

- H - harness, insulated solid or stranded wire
- L - lead, solid uninsulated wire

### Termination:

Consult standard wire termination code for lead material and lead length

### Mounting code:

- A - Flange mounting, Ø.125 (3,18) mounting holes
- B - Flange mounting, Ø.092 (2,34) mounting holes
- L - Low profile (slotted head)
- M2 - Allen head jackscrew assembly,

low profile

- M3 - Allen head jackscrew assembly, high profile
- M5 - Slot head jackscrew assembly, low profile
- M6 - Slot head jackscrew assembly, high profile
- M7 - Jacknut assembly
- P - Jackpost

### Modification code:

Shell finish MOD. Codes. \*  
To be assigned as required

\* No number = Standard tin/lead finish

Dimensions shown in inch (mm)

Specifications and dimensions subject to change

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## Guaranteed Minimum Attenuation

Filter designation	Capacitance range (pF)	Minimum Insertion Loss-decibels							
		10 MHz	15 MHz	30 MHz	50 MHz	100 MHz	200 MHz	500 MHz	1 GHz
C1	150 - 250				4	6	15	20	35
C2	300 - 500			3	6	12	18	25	40
C3	700 - 1000		3	7	13	17	25	38	48
C4	1300 - 2000	5	8	13	18	23	30	40	50

## Standard Wire Termination Codes

Cannon Modification Codes – (Not Mil Spec)

The following termination codes are listed for your information. **All wire lengths are minimum.**

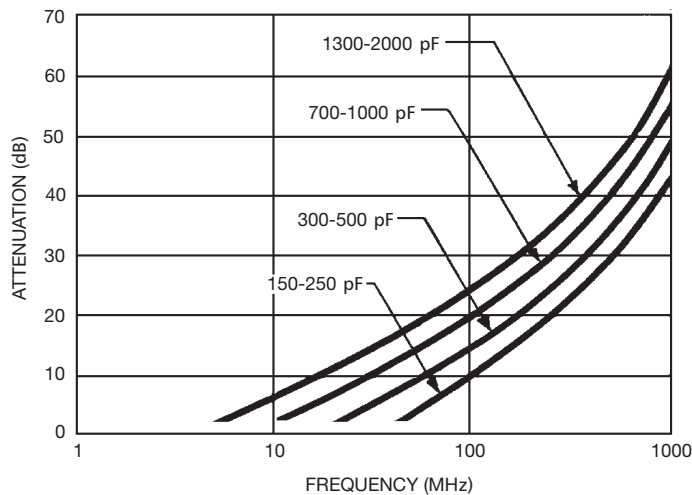
**Harness Type (H) #26 AWG per MIL-W-16878/4 Type E Teflon, stranded**

Length	All Yellow	Color Coded
3 (76.2)	H020	H027
6 (152.4)	H019	H016
8 (203.2)	H026	H034
10 (254.0)	H029	H025
12 (304.8)	H028	H002
18 (457.2)	H001	H003
20 (508.0)	H038	H023
24 (509.6)	H009	H004
30 (762.0)	H010	H005
36 (914.4)	H011	H006
48 (1219.2)	H013	H048
72 (1828.8)	H017	H046
120 (3048.0)	H042	H041

**Solid Uninsulated Type (L) #25 AWG gold plated copper.**

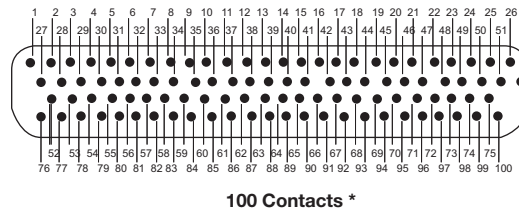
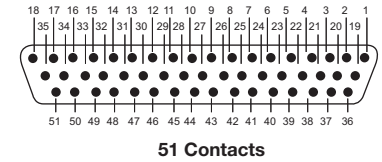
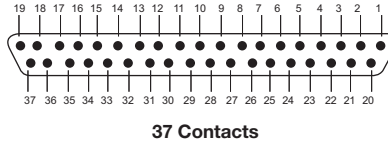
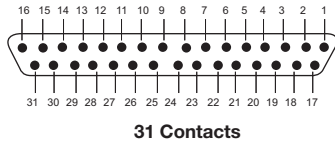
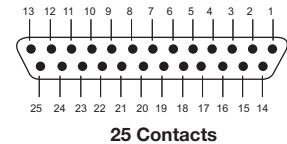
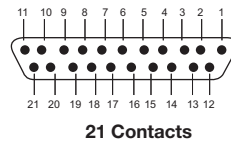
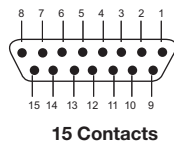
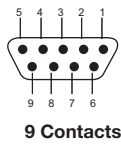
Code	Length
L61	.125 (.18)
L56	.150 (3.81)
L57	.190 (4.83)
L39	.250 (5.35)
L58	.375 (9.52)
L1	.500 (12.70)
L14	.750 (19.05)
L2	1.000 (25.40)
L7	1.500 (38.10)
L6	2.000 (50.80)
L6	2.500 (63.50)
L10	3.000 (76.20)

## Typical Filter Performance



## Contact Arrangements

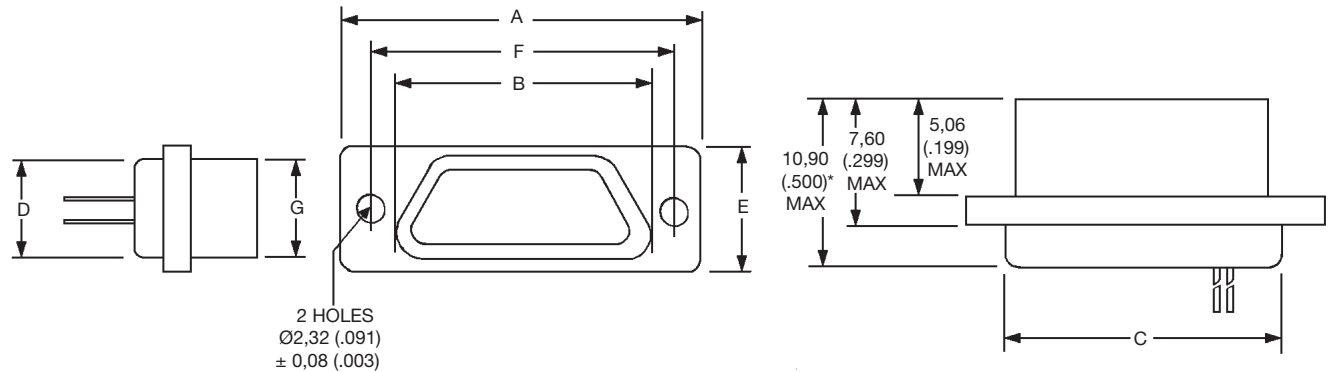
Face view of socket insert - use reverse order for wiring side.



Contact identification numbers are for reference only and do not appear on insulator or connector body

\* Contact Customer Service for availability.

## Shell Dimensions



\*.750 max for pre-wired versions (H modifier above)

Part Number by shell size	A max	B max	C max	D max	E max	F max ±0.13 (.005)	G max
TMDM-9S*	.785 (19,94)	.400 (10,16)	.400 (10,16)	.270 (6,86)	.308 (7,83)	.565 (14,36)	.251 (6,38)
TMDM-15S*	.935 (23,75)	.550 (13,97)	.550 (13,97)	.270 (6,86)	.308 (7,83)	.715 (18,17)	.251 (6,38)
TMDM-21S*	1.085 (27,60)	.700 (17,78)	.700 (17,78)	.270 (6,86)	.308 (7,83)	.865 (21,98)	.251 (6,38)
TMDM-25S*	1.185 (30,10)	.800 (20,32)	.800 (20,32)	.270 (6,86)	.308 (7,83)	.965 (24,52)	.251 (6,38)
TMDM-31S*	1.335 (33,90)	.950 (24,13)	.950 (24,13)	.270 (6,86)	.308 (7,83)	1.115 (28,30)	.251 (6,38)
TMDM-37S*	1.485 (37,70)	1.100 (28,00)	1.100 (28,00)	.270 (6,86)	.308 (7,83)	1.265 (32,20)	.251 (6,38)

\* Add Filter type, Lead Type and Length, see How to Order

- NOTE:
- 1) Potting extension of .250 (6.35) Max. required for insulated wire termination
  - 2) PC tails of .019 (0.48) ± .002 (.05) diameter are available. The PC tail length is to be specified from the rear of the shell to the end of the termination.

Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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These miniature circular filter connectors are designed to combine the functions of a standard electrical connector and a feed-thru filter into one compact package. TPV filter connectors are designed to be comparable MIL-C-26482 and MIL-C-83723. They are also intermateable with the NAS1599 and the NASA 40M39569 type connectors. These connectors feature three-point bayonet lock coupling, five keyway polarization and have contact arrangements that will accommodate up to 61 contacts in shell sizes, with both pin and socket contact versions available.

**Performance and Material Specification**

**MATERIALS AND FINISHES**

Jam Nut	Material:	Aluminum Alloy	
	Finish:	Class "B" Series	Class "G" Series
		Olive drab chromeplate over cadmium finish per QQ-P-416	Electroless nickel plating Per MIL-C-26074
Coupling Pins	Material:	Copper Alloy	
	Finish:	Passivated	
Contacts	Material:	Copper Alloy	
	Finish:	Gold plated per MIL-G-45204, Type 1 Class 1 with nickel underplate per QQ-N-290	
Insulator	Material:	Suitable high temperature plastic/epoxy	
	Finish:	none	
Interfacial and Peripheral Seals	Material:	Fluorosilicone rubber (ITT Cannon blend)	
	Finish:	none	
O ring (Jam Nut Mounting Only)	Material:	Silicone rubber (ITT Cannon blend)	
	Finish:	none	
Ground Spring	Material:	Beryllium Copper	
	Finish:	Gold Plated	

**ELECTRICAL (Size #16 and #20 Contacts)**

Filter Description	Low Freq.	Mid Freq.	Std. Freq.	High Freq.
Catalog Indicator	L	M	T	H
Voltage Rating	200 VDC - 120 VAC rms 400 Hz			
Current Rating (amp DC)	15 amp, size 16/7.5 amp, size 20			
Insulation Resistance, 2 min. electrification time max. at 25°C	5000, megohms min. @ 100 VDC			
DWV, sea level, with 500 microamps max. charge/discharge	500 VDC size 16 & 20		500 VDC	
Capacitance at 1 KHz 0.1V rms Picofarads	32000	8000	3300	850
	45000	12000	5000	1300
Attenuation per MIL-STD-220 @ 25°C with no applied voltage or current.	Freq. MHz			
	0.1	2 min.	-	-
	1.0	10 min.	2 min.	-
	2	16 min.	7 min.	2 min.
	10	40 min.	18 min.	8 min.
	100	60 min.	55 min.	45 min.
	500 to 1000	60 min.	60 min.	55 min.
Filter Type/Construction	Pi	Pi	Pi	Pi

Consult factory for higher or mixed attenuation values and higher voltage ratings.

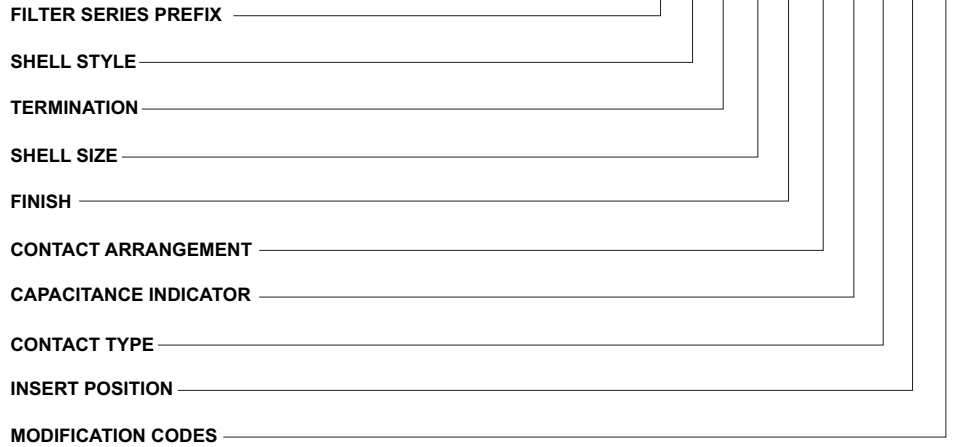


Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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How to Order

TPV O C 24 B 61 T P N \*



**FILTER SERIES PREFIX**

TPV - 26482-Style Series 2, 83723-Style Series 1 type filter connectors, solder termination. ITT Cannon designation.

**SHELL STYLE**

0 - Flange mounting receptacle  
7 - Jam nut mounting receptacle

**TERMINATION**

C - Solder Pot Termination  
E - P.C. Tail  
S - Crimp Piggyback  
W - Wire Wraps

**SHELL SIZE**

10, 12, 14, 16, 18, 20, 22, 24

**FINISH**

A - Bright cadmium over nickel plate  
B - Olive drab chromate over cadmium finish  
G - Ejectorless nickel finish (preferred)

**CONTACT ARRANGEMENTS**

See page 14

**CAPACITANCE INDICATOR**

M - Mid-range frequency  
L - Low frequency  
T - Standard frequency  
H - High frequency

**CONTACT TYPE**

P - Pin contacts  
S - Socket contacts

**INSERT POSITION**

N - (Normal); Alternates - W, X, Y, Z  
See page 16.

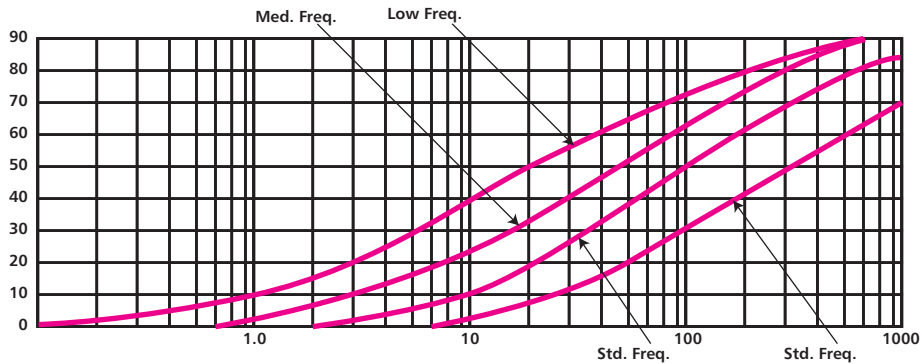
**MODIFICATION CODES**

For backshell assembly contact Customer Service.

**NOTES:**

- 1) Backshell threads and teeh - none provided.
- 2) Hermetic versions of the filter connectors can be provided. Contact Customer Service

Typical Filter Performance



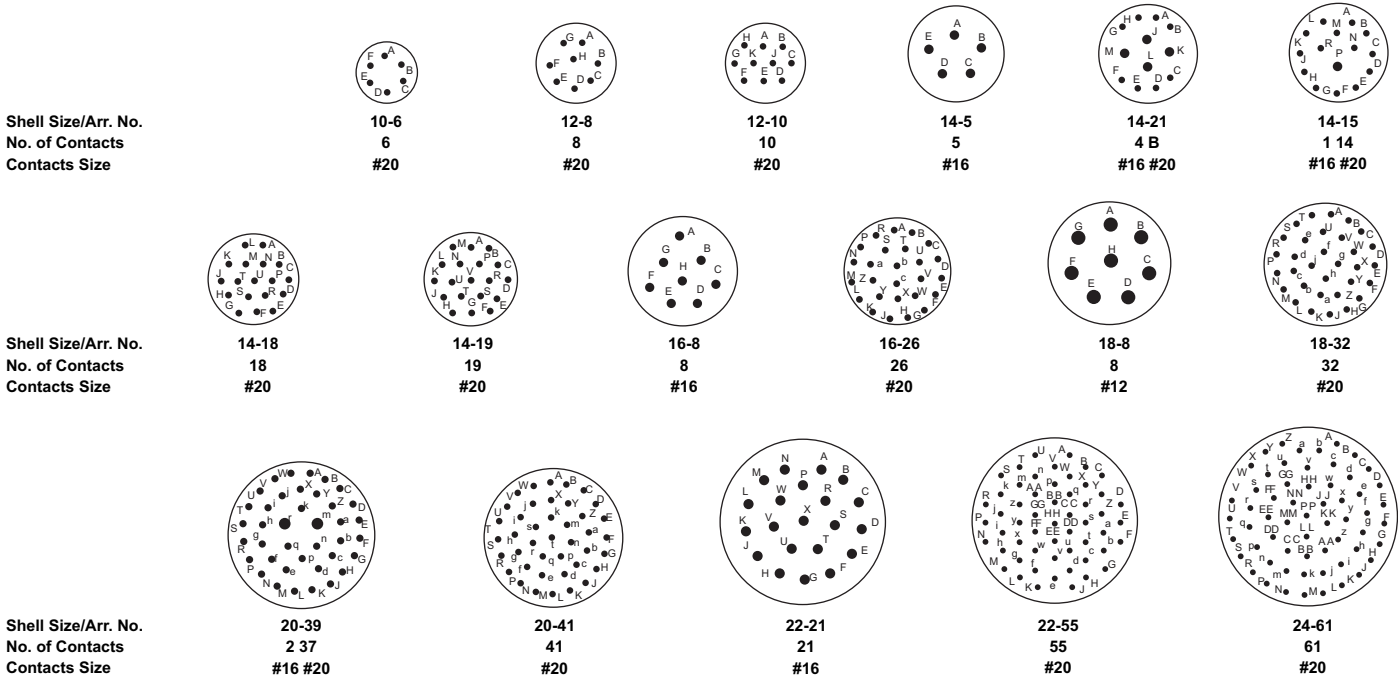
Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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Contact Arrangements

(Face view, pin insert)

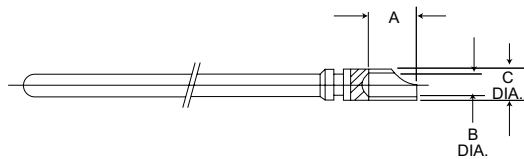


Consult factory for availability of other contact arrangements. Available for In-Line Adapters also.

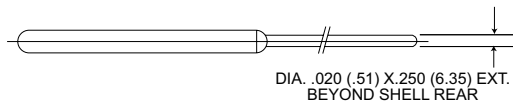
Contact - Pin and Socket

Standard Contact Terminations

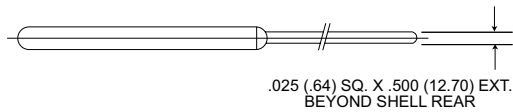
Finish: Gold plate per MIL-G-45204, Type 1, Class 1, over nickel plate per QQ-N-290.



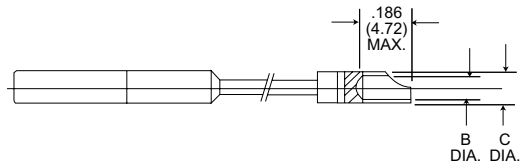
Pin/Solder Pot



Pin/Printed Circuit



Pin/Square Post



Socket/Solder Pot

Contact Size	A	B Dia.	C Dia.
#20	.125 (3.18)	.049 (1.24)	.073 (1.85)
	.110 (2.79)	.045 (1.14)	.068 (1.73)
#16	.160 (4.06)	.077 (1.96)	.104 (2.64)
	.150 (3.81)	.068 (1.73)	.097 (2.46)

Note: Solder pot extension typically will be .200 (5.08) max. beyond shell rear.

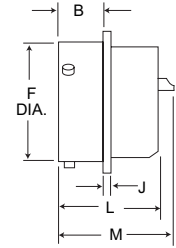
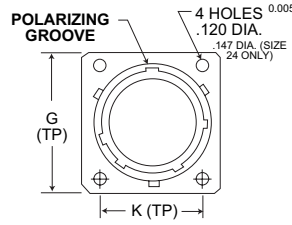


Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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Flange Mounting Receptacle

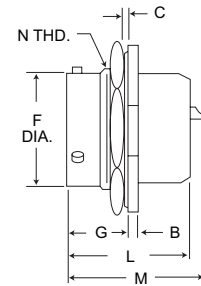
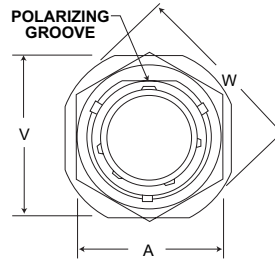
TPV0



Shell Size	B Max.	F Max.	L Max.	M Max.	J Max.	K	G Max.
10	.462 (11.73)	.591 (15.01)	1.215 (30.86)	1.530 (38.86)	.078 (1.98)	.719 (18.26)	.954 (24.23)
12	.462 (11.73)	.751 (19.08)	1.215 (30.86)	1.530 (38.86)	.078 (1.98)	.812 (20.62)	1.047 (26.59)
14	.462 (11.73)	.876 (22.25)	1.215 (30.86)	1.530 (38.86)	.078 (1.98)	.906 (23.01)	1.141 (28.98)
16	.462 (11.73)	1.001 (25.43)	1.215 (30.86)	1.530 (38.86)	.078 (1.98)	.969 (24.61)	1.234 (31.34)
18	.462 (11.73)	1.126 (28.60)	1.215 (30.86)	1.530 (38.86)	.078 (1.98)	1.062 (26.97)	1.328 (33.73)
20	.587 (14.91)	1.251 (31.78)	1.275 (32.39)	1.590 (40.38)	.110 (2.79)	1.156 (29.36)	1.453 (36.91)
22	.587 (14.91)	1.376 (34.95)	1.275 (32.39)	1.590 (40.38)	.110 (2.79)	1.250 (31.75)	1.578 (40.08)
24	.620 (15.75)	1.501 (38.13)	1.275 (32.39)	1.590 (40.38)	.110 (2.79)	1.375 (34.93)	1.703 (43.26)

Jam Nut Receptacle

TPV7

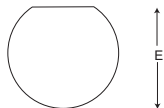


Shell Size	V Max.	A Max.	B Max.	F Max.	G ± .009 (0.23)	C Panel Thickness	L Max.	M Max.	W Dia.	N Thread Class 2A
10	1.078 (27.38)	.892 (22.66)	.113 (2.87)	.591 (15.01)	.698 (17.73)	.187 (4.75)	1.215 (30.86)	1.530 (38.86)	1.203 (30.56)	11/16-24UNEF
12	1.266 (32.16)	1.079 (27.41)	.113 (2.87)	.751 (19.08)	.698 (17.73)	.187 (4.75)	1.215 (30.86)	1.530 (38.86)	1.391 (35.33)	7/8-20 UNEF
14	1.391 (35.33)	1.205 (30.61)	.113 (2.87)	.876 (22.25)	.698 (17.73)	.187 (4.75)	1.215 (30.86)	1.530 (38.86)	1.516 (38.51)	1-20UNEF
16	1.516 (38.51)	1.329 (33.76)	.113 (2.87)	1.001 (25.43)	.698 (17.73)	.187 (4.75)	1.215 (30.86)	1.530 (38.86)	1.641 (41.68)	1-1/8-18UNEF
18	1.641 (41.68)	1.455 (36.96)	.113 (2.87)	1.126 (28.60)	.698 (17.73)	.187 (4.75)	1.215 (30.86)	1.530 (38.86)	1.766 (44.86)	1-1/4-18UNEF
20	1.828 (46.43)	1.579 (40.11)	.148 (3.76)	1.251 (31.78)	.763 (19.38)	.250 (6.35)	1.275 (32.39)	1.590 (40.39)	1.954 (49.63)	1-3/8-18UNEF
22	1.954 (49.63)	1.705 (43.31)	.148 (3.76)	1.376 (34.95)	.763 (19.38)	.250 (6.35)	1.275 (32.39)	1.590 (40.39)	2.078 (52.78)	1-1/2-18UNEF
24	2.078 (52.78)	1.829 (46.46)	.148 (3.76)	1.501 (38.13)	.763 (19.38)	.219 (5.56)	1.275 (32.39)	1.590 (40.39)	2.203 (55.96)	1-5/8-18UNEF

Panel Mounting

Single Hole Mount Jam Nut Receptacle

F DIA.



Shell Size	E ±.010 (0.25)	F Dia. ±.005 (0.13)
10	.661 (16.79)	.697 (17.70)
12	.824 (20.93)	.895 (22.73)
14	.948 (24.08)	1.010 (25.65)
16	1.072 (27.23)	1.135 (28.33)
18	1.197 (30.40)	1.260 (32.00)
20	1.322 (33.58)	1.385 (35.18)
22	1.447 (36.75)	1.510 (38.35)
24	1.572 (39.93)	1.635 (41.53)

Dimensions shown in inch (mm)

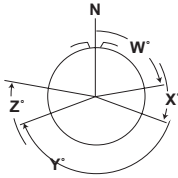
Specifications and dimensions subject to change

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Alternate Polarizing Positions

Face view, pin insert



Contact arrangements requiring reduced diameter for lead-in chamfer on outer row of contact cavities as indicated below.

Shell	Contact Arrangements	Contact Cavities
8	33, 38	A, B, C
12	10	C, G
14	12	A, B, C, D, E, F, G, and H
14	18	A, C, E, G, J, and L
14	19	B, D, F, H, K, and M
16	26	A, B, C, D, E, F, G, H, J, K, L, M, N, P, and R)
18	32	A, B, C, D, E, F, G, H, J, K, L, M, N, P, R, S, and T
22	41	A, B, C, D, E, F, G, H, J, K, L, M, N, P, R, S, T, U, V, W, X, and Y

SHELL SIZE	ARRANGEMENT	N	W	POS CODE		
				X	Y	Z
8	33	0°	90°	-	-	-
	98	0°	-	-	-	-
10	6	0°	90°	-	-	-
	3	0°	-	-	180°	-
12	8	0°	90°	112°	203°	292°
	10	0°	60°	155°	270°	295°
14	4	0°	45°	-	-	-
	5	0°	40°	92°	184°	273°
	12	0°	43°	90°	-	-
	15	0°	17°	110°	155°	234°
	18	0°	15°	90°	180°	270°
16	19	0°	30°	165°	315°	-
	8	0°	54°	152°	180°	331°
	23	0°	158°	270°	-	-
	26	0°	60°	-	275°	338°
18	8	0°	180°	-	-	-
	11	0°	62°	119°	241°	340°
20	32	0°	85°	138°	222°	265°
	16	0°	238°	318°	333°	347°
	39	0°	63°	144°	252°	333°
	41	0°	45°	126°	225°	-
22	21	0°	16°	135°	175°	349°
	41	0°	39°	135°	264°	-
	55	0°	30°	142°	226°	314°
24	19	0°	30°	165°	315°	-
	31	0°	90°	225°	225°	-
	61	0°	90°	180°	270°	324°

Special In-line Cable Filter Adapters



Filter adapters are designed to be engaged between connectors in an existing circuit to provide instant filtering without having to rewire. They have pin contacts in the plug end and socket contacts in the end that mates with the receptacle. The filter is concentric around the central pin-socket contact. Electrical and operating characteristics are the same as in the standard TPV file connectors.

These adapters will mate with all 26482-Style and 83723-Style connectors having like contact arrangements. For proper performance both the mating receptacle and panel must have conductive finish. Please contact Customer Service for dimensions.

Flange mounted in-line connectors, similar to MS3119, are also available. They are environmentally sealed and use the same filters as in regular TPV receptacles. Design permits engaging cable plugs to both ends.

Contact Customer Service for proper nomenclature and availability of the in-line cable adapters and in-line flange mounted TPV connectors.



Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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ITT's new light weight Cannon Chip-on-Flex filter connector technology provides a significant performance improvement in thermal shock and vibration. In the new Cannon Chip-on-Flex design, the internal thermal shock stresses have been virtually eliminated. The ceramic planar array capacitor block has been replaced by a flex circuit where individual chip capacitors are surface mounted on a pad adjacent to the feed thru contact. The result is a very robust filter connector with superior mechanical performance and improved reliability.

- up to 15% reduction in weight
- meets 25 cycles of thermal shock

Performance and Material Specifications

MATERIALS AND FINISHES

Shell	Aluminum alloy*
Insulator	High grade plastic/epoxy
Contacts	Copper alloy, gold plate
Grommet and Seal	Silicone base elastomer
Jam Nut	Aluminum alloy*
Grounding Spring	Beryllium copper, gold plate

\*Finish as noted in How to Order section.

PERFORMANCE

Vibration; Series III

- a). MIL-STD-1344, Method 2005, Condition VI, Letter J (Random, 8 hrs in 2 axis at high temp)
- b.) MIL-STD-1344, Method 2005, MIL-DTL-38999 Figure 25 (Random, 8 hrs in 2 axis, no weights)

Mechanical Shock

MIL-STD-1344, Method 2004, 300g half sinusoidal shocks

Thermal Shock

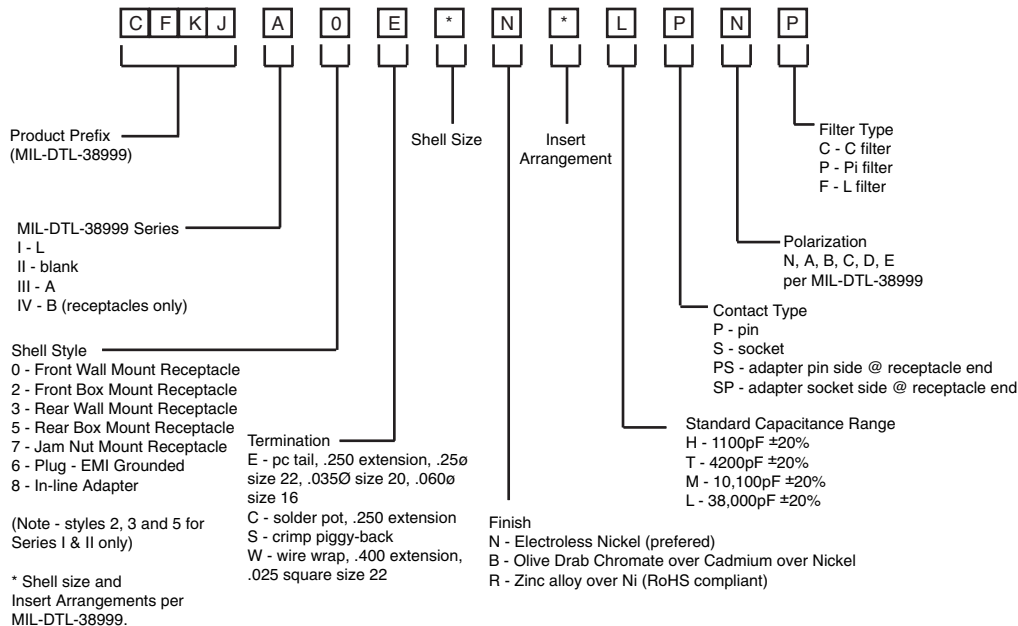
MIL-STD-1344, Method 2003, 25 cycles of temperature cycling

ELECTRICAL (Size #16, #20 and #22)

Filter Description	Low Freq.	Mid Freq.	Std. Freq.	High F
Catalog Indicator	L	M	T	H
Voltage Rating	200 VDC - 120 VAC rms 400 Hz			
Current Rating (amp DC)	15 amp - size 16/7.5 amp - size 20/5.0 amp, size 22			
Insulation Resistance, 2 min. electrification time max. at 25°C	5,000 megohms min. @ 100 VDC			
DWV, sea level, with 500 microamps max. charge/discharge	300 VDC size 22	500 VDC		
	500 VDC size 16 & 20			
Capacitance at 1 KHz, 0.1 V rms Picofarads	32,000	8,000	3300	85
	45,000	12,000	5000	1,30
	Freq. MHz			
	0.1	2 min.	-	-
	1	10 min.	2 min.	-
	2	16 min.	7 min.	2 min.
	10	40 min.	18 min.	8 min.
	100	60 min.	55 min.	45 min.
	500 to 1000	60 min.	60 min.	55 min.
	60 min.	60 min.	55 min.	50 n
Filter Type/Construction	Pi	Pi	Pi	Pi

Consult factory for higher or mixed attenuation values and higher voltage ratings.

How to Order - CFKJL/CFKJ/CFKJA/CFKJB



Contact Arrangements

Engaging view, pin insert

Series I, III & IV	9-35	11-5	11-98	11-35	13-8	13-98	13-35
Series II	8-35	10-5	10-98	10-35	12-8	12-98	12-35
No. of Contacts	6 #22D	5 #20	6 #20	13 #22D	8 #20	10 #20	22 #22D
Service Ratings	M	I	I	M	I	I	M

Series I, III & IV	15-5	15-18	15-19	15-35	-	17-8	17-26	17-35
Series II	14-5	14-18	14-19	14-35	16-99	16-8	16-26	16-35
No. of Contacts	5 #16	18 #20	19 #20	37 #22D	21 #20, 2 #16	8 #16	26 #20	55 #22D
Service Ratings	II	I	I	M	I	II	I	M

Series I, III & IV	19-32	19-35	21-16	21-35	21-41
Series II	18-32	18-35	20-16	20-35	20-41
No. of Contacts	32 #20	66 #22D	16 #16	79 #22D	41- #20
Service Ratings	I	M	II	M	I

Series I, III & IV	23-21	23-35	23-53	23-55
Series II	22-21	22-35	22-53	22-55
No. of Contacts	21 #16	100 #22D	53 #20	55 #20
Service Ratings	II	M	I	I

Series I, III & IV	25-29	25-35	25-61
Series II	24-29	24-35	24-61
No. of Contacts	29 #16	128 #22D	61 #20
Service Ratings	I	M	I

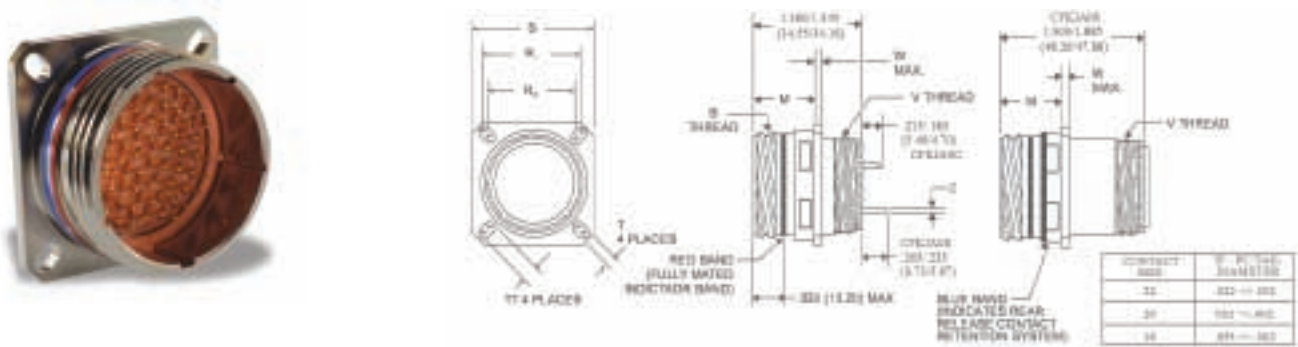


Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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Wall Mount Receptacle: MIL-DTL-38999 Series III

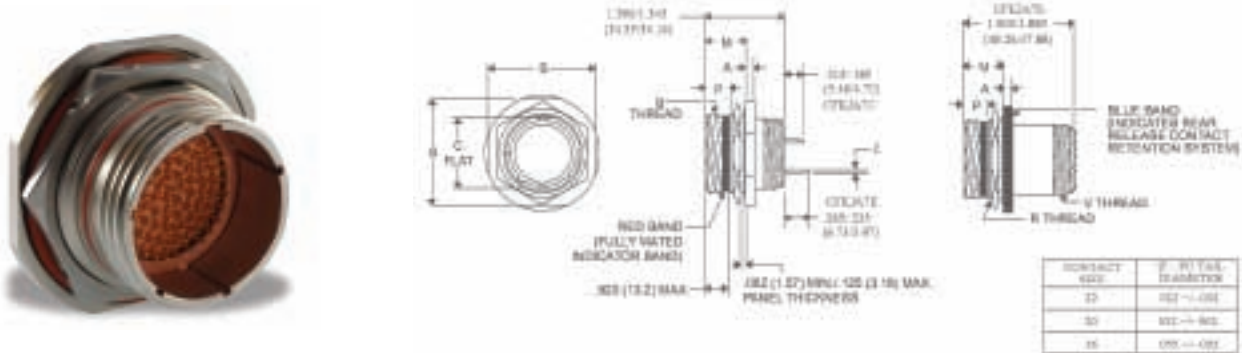
CFKJA0



Shell Size	MS Shell size Code	B Thread Class 2A (Plated)	M +.000 (.000) -.005 (.130)	R 1	R 2	S +_.012 (.300)	T +.004 (.100) -.002 (.050)	TT +.004 (.100) -.002 (.050)	Metric V Thread (Plated)	W Max.	Z +.005 (.130) -.010 (.250)
9	A	.6250-0.1P-0.3L-TS	.820 (20.83)	.719 (18.26)	.594 (15.09)	.938 (23.83)	.128 (3.25)	.216 (5.49)	M12X1-6g0.100R	.098 (2.50)	1.235 (31.36)
11	B	.7500-0.1P-0.3L-TS	.820 (20.83)	.812 (20.62)	.719 (18.26)	1.031 (26.19)	.128 (3.25)	.194 (4.93)	M15X1-6g0.100R	.098 (2.50)	1.235 (31.36)
13	C	.8750-0.1P-0.3L-TS	.820 (20.83)	.906 (23.01)	.812 (20.62)	1.125 (28.58)	.128 (3.25)	.194 (4.93)	M18X1-6g0.100R	.098 (2.50)	1.235 (31.36)
15	D	1.0000-0.1P-0.3L-TS	.820 (20.83)	.969 (24.61)	.906 (23.01)	1.219 (30.96)	.128 (3.25)	.173 (4.39)	M22X1-6g0.100R	.098 (2.50)	1.235 (31.36)
17	E	1.1875-0.1P-0.3L-TS	.820 (20.83)	1.062 (26.97)	.969 (24.61)	1.312 (33.32)	.128 (3.25)	.194 (4.93)	M25X1-6g0.100R	.098 (2.50)	1.235 (31.36)
19	F	1.2500-0.1P-0.3L-TS	.820 (20.83)	1.156 (29.36)	1.062 (26.97)	1.438 (36.53)	.128 (3.25)	.194 (4.93)	M28X1-6g0.100R	.098 (2.50)	1.235 (31.36)
21	G	1.3750-0.1P-0.3L-TS	.790 (20.07)	1.250 (31.75)	1.156 (29.36)	1.562 (39.67)	.128 (3.25)	.194 (4.93)	M31X1-6g0.100R	.126 (3.20)	1.235 (31.36)
23	H	1.5000-0.1P-0.3L-TS	.790 (20.07)	1.375 (34.92)	1.250 (31.75)	1.688 (42.88)	.154 (3.91)	.242 (6.15)	M34X1-6g0.100R	.126 (3.20)	1.235 (31.36)
25	J	1.6250-0.1P-0.3L-TS	.790 (20.07)	1.500 (38.10)	1.375 (34.92)	1.812 (46.02)	.154 (3.91)	.242 (6.15)	M37X1-6g0.100R	.126 (3.20)	1.235 (31.36)

Jam Nut Receptacle: MIL-DTL-38999 Series III

CFKJA7



Shell Size	MS Shell size Code	A +.010 (.250) -.005 (.130)	B Thread Class 2A (Plated)	C +.004 (.100) -.010 (.250)	Z +.005 (.130) -.040 (.100)	M +.005 (.130) -.004 (.100)	P +.016 (.410) -.004 (.100)	S	Metric R Thread (Plated)	Metric V Thread (Plated)
9	A	.104 (2.64)	.6250-0.1P-0.3L-TS	.651 (16.53)	1.243 (31.57)	.871 (22.12)	.555 (14.10)	1.062 (26.97)	M17X1-6g0.100R	M12X1-6g0.100R
11	B	.104 (2.64)	.7500-0.1P-0.3L-TS	.751 (19.07)	1.243 (31.57)	.871 (22.12)	.555 (14.10)	1.250 (31.75)	M20X1-6g0.100R	M15X1-6g0.100R
13	C	.104 (2.64)	.8750-0.1P-0.3L-TS	.938 (23.82)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.375 (34.92)	M25X1-6g0.100R	M18X1-6g0.100R
15	D	.104 (2.64)	1.0000-0.1P-0.3L-TS	1.062 (26.97)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.500 (38.10)	M28X1-6g0.100R	M22X1-6g0.100R
17	E	.104 (2.64)	1.1875-0.1P-0.3L-TS	1.187 (30.15)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.625 (41.28)	M32X1-6g0.100R	M25X1-6g0.100R
19	F	.135 (3.43)	1.2500-0.1P-0.3L-TS	1.312 (33.32)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.812 (46.02)	M35X1-6g0.100R	M28X1-6g0.100R
21	G	.135 (3.43)	1.3750-0.1P-0.3L-TS	1.437 (36.50)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	1.938 (49.23)	M38X1-6g0.100R	M31X1-6g0.100R
23	H	.135 (3.43)	1.5000-0.1P-0.3L-TS	1.562 (39.67)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	2.062 (52.37)	M41X1-6g0.100R	M34X1-6g0.100R
25	J	.135 (3.43)	1.6250-0.1P-0.3L-TS	1.687 (42.85)	1.243 (31.57)	.878 (22.30)	.563 (14.30)	2.188 (55.38)	M44X1-6g0.100R	M37X1-6g0.100R

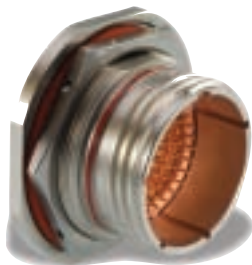
Note: Currently designed for MIL-DTL-38999 Series III. This can be provided for MIL-C-38999 I, II, and III. Please contact Customer Service.

Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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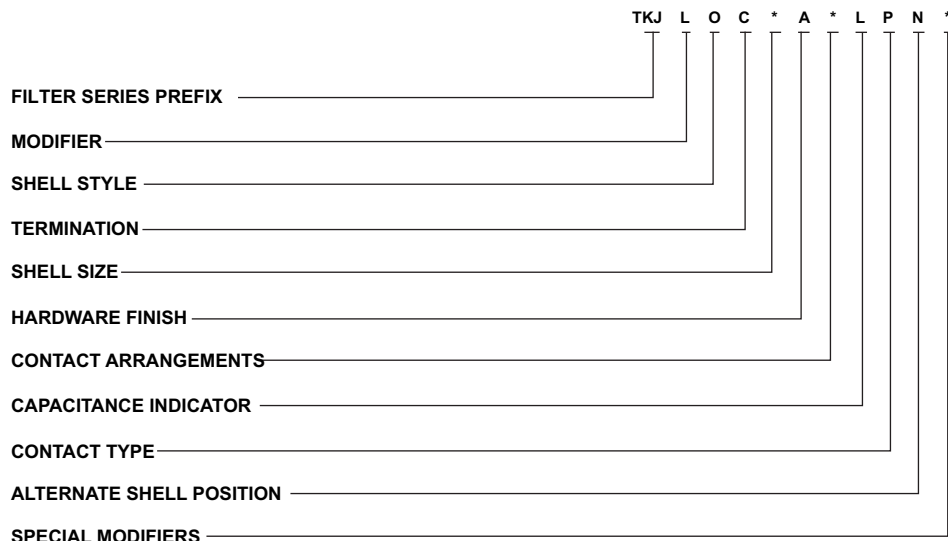


# MIL-DTL-38999 Series I, II, III, IV Filter Connectors



These miniature circular filter connectors are designed to combine the functions of a standard electrical connector and a feed-thru filter into one compact package. They are designed and can be provided with planar array capacitor or Chip-on-flex technology to meet the applicable portions of military specification MIL-DTL-38999 series I, II, III and IV. These connectors feature arrangements that will accommodate up to 12B contacts.

## How to Order - TKJL/TKJ/TKJA/TKJB



**FILTER SERIES PREFIX**  
TKJ - ITT Cannon prefix

**MODIFIER**  
L - Series I scoop-proof shell (omit if Series II desired)  
A - Series III Triple Start Thread (omit if Series II desired)  
B - Series IV - Available in receptacle only (omit if Series II desired)

**SHELL STYLE**  
0 - Wall mounting receptacle (front panel mounting)  
2 - Box mounting (front panel mounting)  
3 - Wall mounting (black panel mounting)  
5 - Box mounting receptacle (back panel mounting)  
7 - Jam nut receptacle

**NOTES:**  
1) Backshell thread and teeth. Series I and II - Provided only on shell types indicated on dimension sheets. Series III - No threads or teeth provided. Series IV - Provided with threads and teeth.  
2) Hermetic versions of the filter connectors can be provided. Contact Customer Service for availability.  
3) Series III and IV can only be shell style 0 or 7.

**TERMINATION**  
C - Solder pot termination  
E - P.C. tails  
S - Crimp Piggyback  
W - Wire wraps

**SHELL SIZE**  
Series I, III and IV:  
11, 13, 15, 17, 19, 21, 23, and 25  
Series II:  
10, 12, 14, 16, 18, 20, 22, and 24

**HARDWARE FINISH**  
A - Bright cadmium over nickel plate  
B - Olive drab cadmium over nickel plate  
N - Electroless nickel plate (preferred)

**CONTACT ARRANGEMENTS**  
See page 22.

**CAPACITANCE INDICATOR\***  
L - 32,000-45,000 PF  
M - 8,000-12,000 PF  
T - 3,300-5,000 PF  
H - 850- 1,300 PF

**CONTACT TYPE**  
P-pin;  
S-socket

**ALTERNATE SHELL POSITION**  
N (normal), A, B, C, D

**SPECIAL MODIFIERS**  
Consult Customer Service for definition and availability

# MIL-DTL-38999 Series I, II, III, IV Filter Connectors

## Performance and Material Specifications

### MATERIALS AND FINISHES

Shell	Aluminum alloy*
Insulator	High grade plastic/epoxy
Contacts	Copper alloy, gold plate
Grommet and Seal	Silicone base elastomer
Jam Nut	Aluminum alloy*
Grounding Spring	Beryllium copper, gold plate

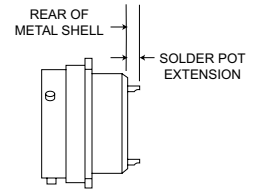
\*Finish as noted in How to Order section.

### ELECTRICAL (Size #16, #20 and #22)

Filter Description	Low Freq.	Mid Freq.	Std. Freq.	High Freq.
Catalog Indicator	L	M	T	H
Voltage Rating	200 VDC - 120 VAC rms 400 Hz			
Current Rating (amp DC)	15 amp - size 16/7.5 amp - size 20/5.0 amp, size 22			
Insulation Resistance, 2 min. electrification time max. at 25° C	5,000 megohms min. @ 100 VDC			
DWV, sea level, with 500 microamps max. charge/discharge	300 VDC size 22 500 VDC size 16 & 20		500 VDC	
Capacitance at 1 KHz, 0.1 V rms Picofarads	32,000 45,000	8,000 12,000	3300 5000	850 1,300
Attenuation per MIL-STD-220 at 25° C with no applied voltage or current.	Freq. MHz			
	0.1	2 min.	-	-
	1	10 min.	2 min.	-
	2	16 min.	7 min.	2 min.
	10	40 min.	18 min.	8 min.
	100	60 min.	55 min.	45 min.
500 to 1000	60 min.	60 min.	55 min.	50 min.
Filter Type/Construction	Pi	Pi	Pi	Pi

Consult factory for higher or mixed attenuation values and higher voltage ratings.

## Contact Extension - All Connectors

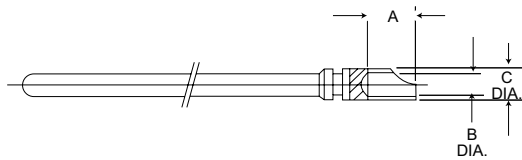


Note: Solder pot extension typically will be .200 (5.08) max. beyond shell rear.

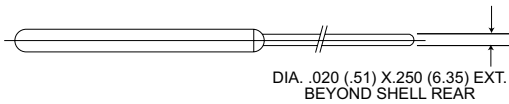
## Contact - Pin and Sockets

### Standard Contact Terminations

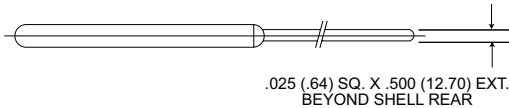
Finish: Gold plate per MIL-G-45204, Type 1, Class 1, over nickel plate per QQ-N-290.



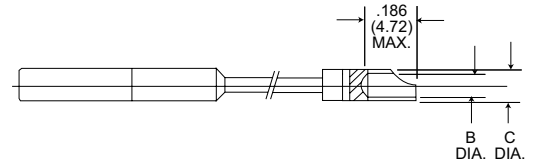
Pin/Solder Pot



Pin/Printed Circuit



Pin/Square Post



Socket/Solder Pot

Contact Size	A	B Dia.	C Dia.
#22	.115 (2.92)	.039 (0.97)	.056 (1.42)
	.095 (2.41)	.035 (0.89)	.051 (1.30)
#20	.125 (3.18)	.047 (1.19)	.066 (1.68)
	.110 (2.79)	.042 (1.07)	.061 (1.55)
#16	.170 (4.32)	.077 (1.96)	.104 (2.64)
	.150 (3.81)	.068 (1.73)	.097 (2.46)

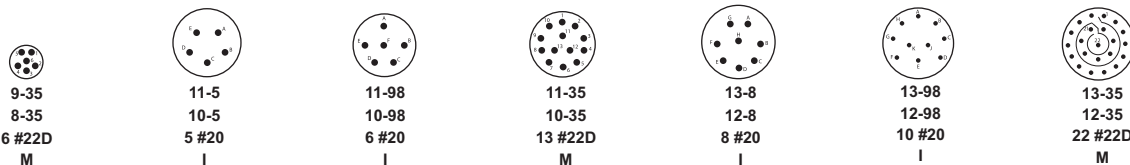


# MIL-DTL-38999 Series I, II, III, IV Filter Connectors

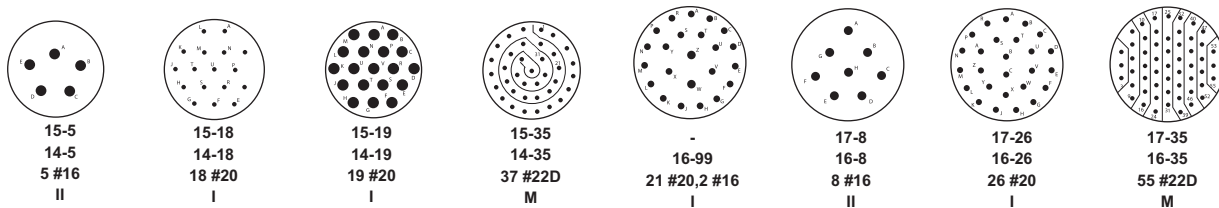
## Contact Arrangements

Engaging view, pin insert

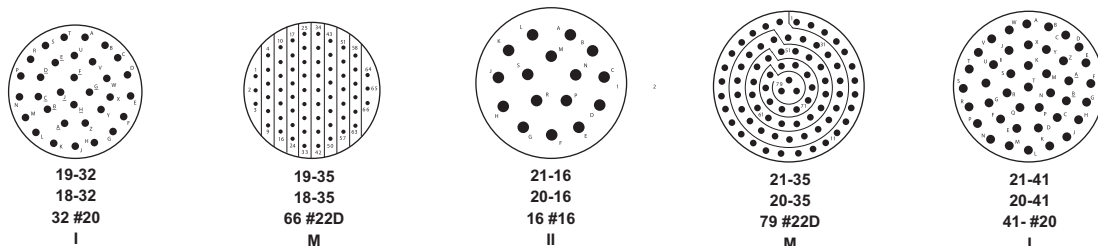
Series I, III & IV  
Series II  
No. of Contacts  
Service Ratings



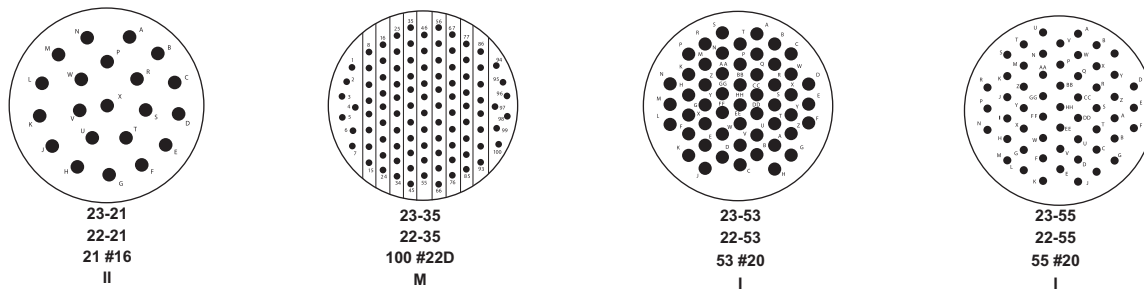
Series I, III & IV  
Series II  
No. of Contacts  
Service Ratings



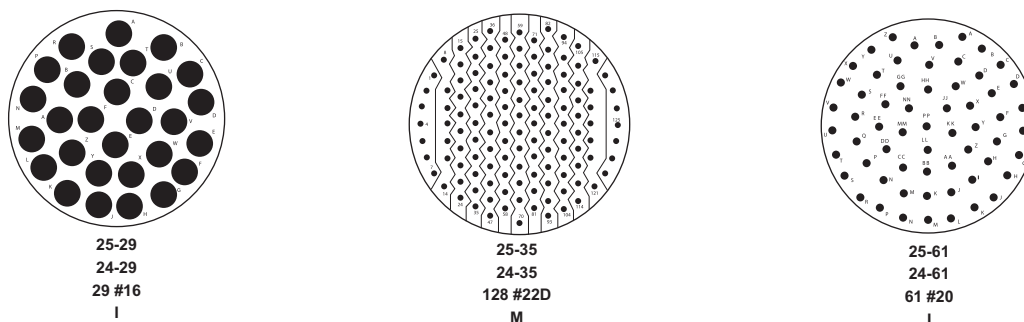
Series I, III & IV  
Series II  
No. of Contacts  
Service Ratings



Series I, III & IV  
Series II  
No. of Contacts  
Service Ratings

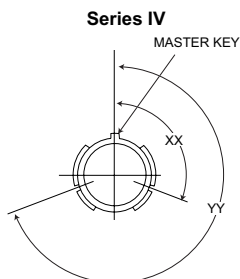


Series I, III & IV  
Series II  
No. of Contacts  
Service Ratings



Please consult factory for availability of layouts not shown.

## Polarizing Positions



Front face of receptacle shown. Polarizing keys are external.

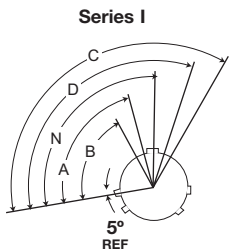
Key Arrangements	XX	YY
N	110°	250°
A	100°	260°
B	90°	270°
C	80°	280°
D	70°	290°

See page 24 for Series I, II and III polarization.



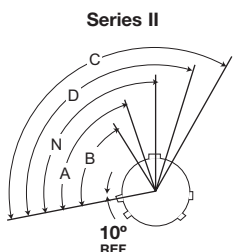
# MIL-DTL-38999 Series I, II, III, IV Filter Connectors

## Polarizing Positions



Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key-keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

Shell Size	Angle of Rotation (Degrees)				
	Normal	A	B	C	D
9	95°	77°			113°
11	95°	81°	67°	123°	109°
13	95°	75°	63°	127°	115°
15	95°	74°	61°	129°	116°
17	95°	77°	65°	125°	113°
19	95°	77°	65°	125°	113°
21	95°	77°	65°	125°	113°
23	95°	80°	69°	121°	110°
25	95°	80°	69°	121°	110°

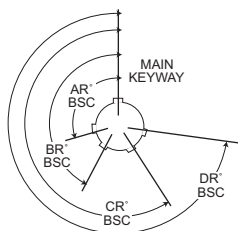


Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key-keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

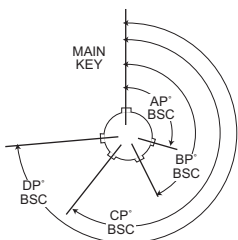
Shell Size	Angle of Rotation (Degrees)				
	Normal	A	B	C	D
8	100°	82°			118°
10	100°	86°	72°	128°	114°
12	100°	80°	68°	132°	120°
14	100°	79°	66°	134°	121°
16	100°	82°	70°	130°	118°
18	100°	82°	70°	130°	118°
20	100°	82°	70°	130°	118°
22	100°	85°	74°	126°	115°
24	100°	85°	74°	126°	115°

### Series III

**RECEPTACLE**  
(Front face shown)



**PLUG**  
(Front face shown)



#### NOTES

- All Angles are BSC
- The insert arrangement does not rotate with main key/keyway
- All minor keys are rotated to provide shell polarization, the master key remains fixed at twelve o'clock position.
- Polarization is different from Series I and II.

Shell Size	Key & Keyway Arrangement identification Letter	Key Locations				
		AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC	
9	N	105	140	215	265	
	A	102	132	248	320	
	B	80	118	230	312	
	C	35	140	205	275	
	D	64	155	234	304	
11	E	91	131	197	240	
	N	95	141	208	236	
	A	113	156	182	292	
	13 and 15	B	90	145	195	252
		C	53	156	220	255
17 and 19	D	119	146	176	298	
	E	51	141	184	242	
	N	80	142	196	293	
	A	135	170	200	310	
	B	49	169	200	244	
21 and 23	C	66	140	200	257	
	D	62	145	180	280	
	E	79	153	197	272	
	N	80	142	196	293	
	A	135	170	200	310	
25	B	49	169	200	244	
	C	66	140	200	257	
	D	62	145	180	280	
	E	79	153	197	272	



Special In-line Cable Filter Adapters



Filter adapters are designed to be engaged between connectors in an existing circuit to provide instant filtering without having to rewire. They are environmentally sealed and have pin contacts in the plug end and socket contacts in the end that mates with the receptacle. The filter is concentric around the central pin-socket contact. Electrical and operating characteristics are the same as in the standard TKJ file connectors.

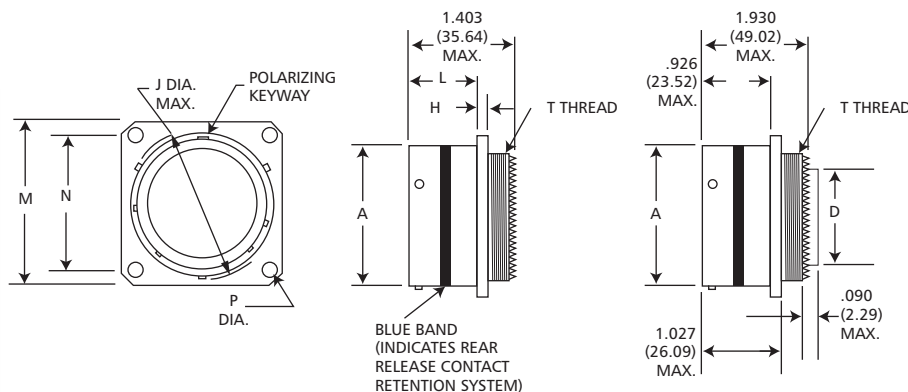
These adapters will mate with all MIL-DTL-38999 connectors having like contact arrangements. For proper performance both the mating receptacle and panel must have a conductive finish. Please contact Customer Service for dimensions.

Flange mounted in-line connectors, similar to MS27662, are also available. They are environmentally sealed and use the same filters as in regular TKJ receptacles. Design permits engaging cable plugs to both ends.

Contact Customer Service for proper nomenclature and availability of the in-line cable adapters and in-line flange mounted TKJ connectors.

Wall Mounting Receptacle

TKJLO



Crimp Piggyback

Shell Size	A Dia. Max.	D Dia. Max.	G Dia. Max.	H Max.	J Dia. Max.	L Max.	M Max.	N T.P.	P Dia. Max.	T Thread
9	.573 (14.55)	.299 (7.59)	.562 (14.27)	.100 (2.54)	.662 (16.81)	.632 (16.05)	.958 (24.33)	.719 (18.26)	.138 (3.51)	.5625-24UNEF-2A
11	.701 (17.81)	.427 (10.85)	.626 (15.90)	.100 (2.54)	.810 (20.57)	.632 (16.05)	1.051 (26.70)	.812 (20.62)	.138 (3.51)	11/16-24UNEF-2A
13	.851 (21.62)	.541 (13.74)	.751 (19.07)	.100 (2.54)	.960 (24.38)	.632 (16.05)	1.145 (29.08)	.906 (23.01)	.138 (3.51)	13/16-20UNEF-2A
15	.976 (24.79)	.666 (16.92)	.876 (22.25)	.100 (2.54)	1.085 (27.56)	.632 (16.05)	1.239 (31.47)	.969 (24.61)	.138 (3.51)	15/16-20UNEF-2A
17	1.101 (27.97)	.791 (20.09)	1.001 (25.42)	.100 (2.54)	1.210 (30.73)	.632 (16.05)	1.332 (33.83)	1.062 (26.97)	.138 (3.51)	1-1/16-18UNEF-2A
19	1.208 (30.68)	.888 (22.35)	1.063 (27.00)	.100 (2.54)	1.317 (33.45)	.632 (16.05)	1.458 (37.03)	1.156 (29.36)	.138 (3.51)	1-1/16-18UNEF-2A
21	1.333 (33.86)	1.005 (25.52)	1.188 (30.17)	.130 (3.30)	1.442 (36.63)	.602 (15.29)	1.582 (40.18)	1.250 (31.75)	.138 (3.51)	1-3/16-18UNEF-2A
23	1.458 (37.03)	1.130 (28.70)	1.313 (33.35)	.130 (3.30)	1.567 (39.80)	.602 (15.29)	1.708 (43.38)	1.375 (34.93)	.157 (3.99)	1-5/16-18UNEF-2A
25	1.583 (40.21)	1.255 (31.88)	1.438 (36.52)	.130 (3.30)	1.692 (42.98)	.602 (15.29)	1.832 (46.53)	1.500 (38.10)	.157 (3.99)	1-7/16-18UNEF-2A

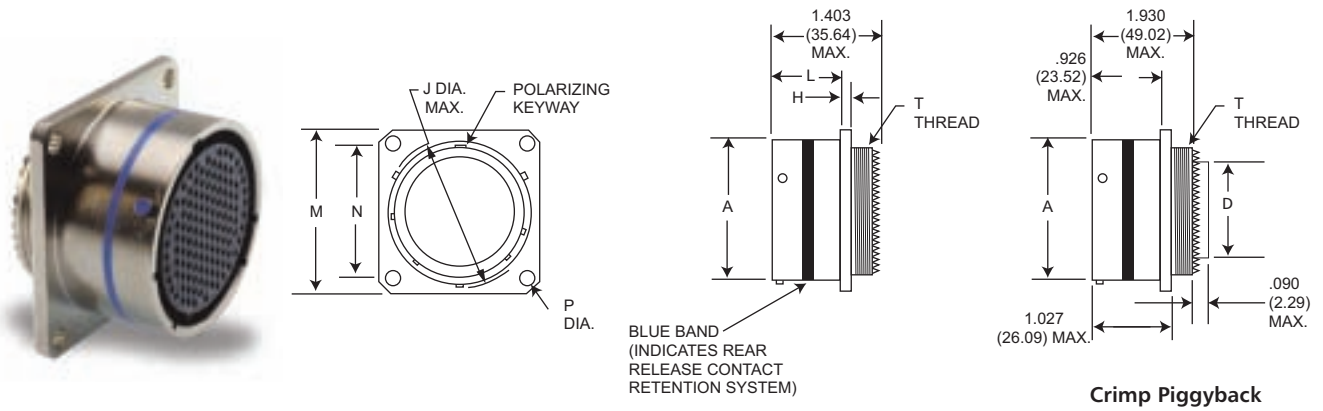


Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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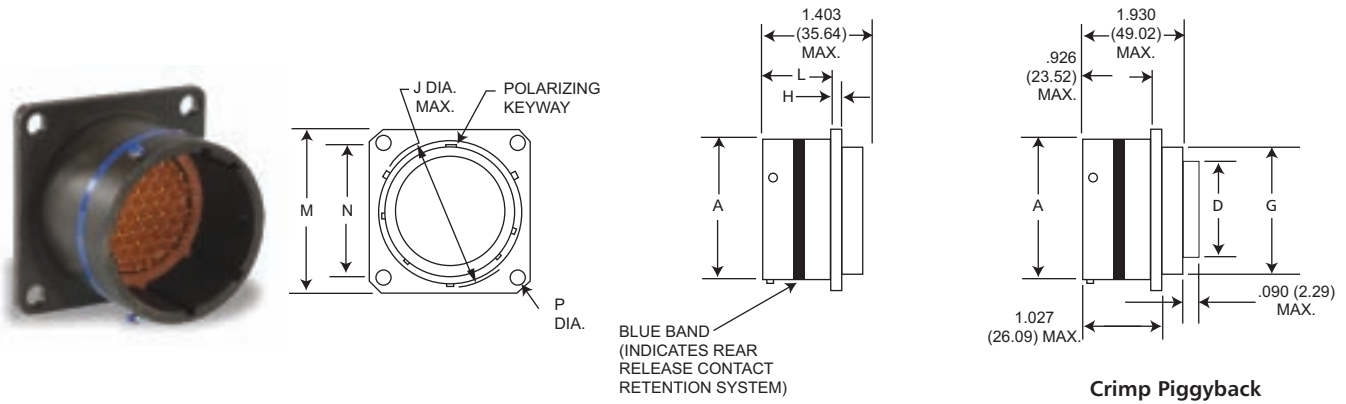
Wall Mounting Receptacle (Back Panel)

TKJL3



Box Mounting Receptacle (No Rear Threads)

TKJL5



Shell Size	A Dia. Max.	D Dia. Max.	G Dia. Max.	H Max.	J Dia. Max.	L Max.	M Max.	N T.P.	P Dia. Max.	T Thread
9	.573 (14.55)	.299 (7.59)	.562 (14.27)	.100 (2.54)	.662 (16.81)	.820 (20.83)	.958 (24.33)	.719 (18.26)	.138 (3.51)	.5625-24UNEF-2A
11	.701 (17.81)	.427 (10.85)	.594 (15.08)	.100 (2.54)	.810 (20.57)	.820 (20.83)	1.051 (26.70)	.812 (20.62)	.138 (3.51)	11/16-24UNEF-2A
13	.851 (21.62)	.541 (13.74)	.720 (18.28)	.100 (2.54)	.960 (24.38)	.820 (20.83)	1.145 (29.08)	.906 (23.01)	.138 (3.51)	13/16-20UNEF-2A
15	.976 (24.79)	.666 (16.92)	.844 (21.43)	.100 (2.54)	1.085 (27.56)	.820 (20.83)	1.239 (31.47)	.969 (24.61)	.138 (3.51)	15/16-20UNEF-2A
17	1.101 (27.97)	.791 (20.09)	.969 (24.61)	.100 (2.54)	1.210 (30.73)	.820 (20.83)	1.332 (33.83)	1.062 (26.97)	.138 (3.51)	1-1/16-18UNEF-2A
19	1.208 (30.68)	.880 (22.35)	1.063 (27.00)	.100 (2.54)	1.317 (33.45)	.820 (20.83)	1.458 (37.03)	1.156 (29.36)	.138 (3.51)	1-1/16-18UNEF-2A
21	1.333 (33.86)	1.005 (25.52)	1.188 (30.17)	.130 (3.30)	1.442 (36.63)	.790 (20.07)	1.582 (40.18)	1.250 (31.75)	.138 (3.51)	1-3/16-18UNEF-2A
23	1.458 (37.03)	1.130 (28.70)	1.313 (33.35)	.130 (3.30)	1.567 (39.80)	.790 (20.07)	1.708 (43.38)	1.375 (34.93)	.157 (3.99)	1-5/16-18UNEF-2A
25	1.583 (40.21)	1.255 (31.88)	1.438 (36.52)	.130 (3.30)	1.692 (42.98)	.790 (20.07)	1.832 (46.53)	1.500 (38.10)	.157 (3.99)	1-7/16-18UNEF-2A

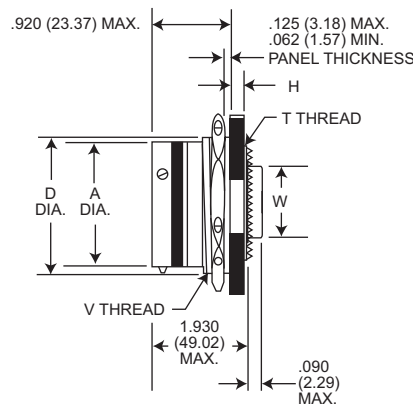
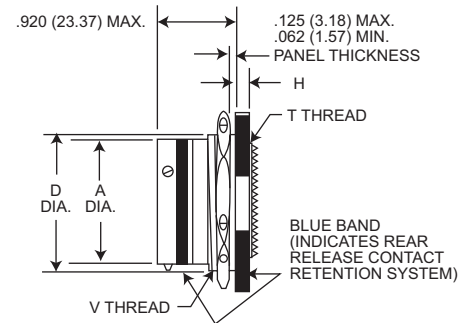
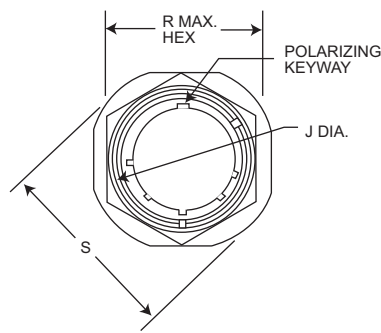
Dimensions shown in inch (mm)  
 Specifications and dimensions subject to change

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Jam Nut Receptacle

TKJL7



Crimp Piggyback

Shell Size	A Dia. Max.	D Max.	H Max.	J Dia. Max.	R Max. Hex.	S Dia. Max.	T Thread	V Thread Class 2A	W Dia. Max.
9	.573 (14.55)	.655 (16.64)	.120 (3.05)	.662 (16.81)	.892 (22.66)	1.204 (30.58)	.5625-24UNEF-2A	11/16-24UNEF	.299 (7.59)
11	.701 (17.81)	.755 (19.18)	.120 (3.05)	.810 (20.57)	1.017 (25.83)	1.391 (35.33)	11/16-24UNEF-2A	13/16-24UNEF	.427 (10.85)
13	.851 (21.62)	.942 (23.93)	.120 (3.05)	.960 (24.38)	1.205 (30.61)	1.516 (35.51)	13/16-20UNEF-2A	1-20UNEF	.541 (13.74)
15	.976 (24.79)	1.066 (27.08)	.120 (3.05)	1.085 (27.56)	1.329 (33.76)	1.641 (41.68)	15/16-20UNEF-2A	1-1/8-18UNEF	.666 (16.92)
17	1.101 (27.97)	1.191 (30.25)	.120 (3.05)	1.210 (30.73)	1.455 (36.96)	1.766 (44.86)	1-1/16-18UNEF-2A	1-1/4-18UNEF	.791 (20.09)
19	1.208 (30.68)	1.316 (33.43)	.151 (3.84)	1.317 (33.45)	1.579 (40.11)	1.954 (49.63)	1-1/16-18UNEF-2A	1-3/8-18UNEF	.880 (22.35)
21	1.333 (33.86)	1.441 (36.60)	.151 (3.84)	1.442 (36.63)	1.705 (43.31)	2.078 (52.78)	1-3/16-18UNEF-2A	1-1/2-18UNEF	1.005 (25.52)
23	1.458 (37.03)	1.566 (39.78)	.151 (3.84)	1.567 (39.80)	1.829 (46.46)	2.204 (55.98)	1-5/16-18UNEF-2A	1-5/8-18UNEF	1.130 (28.70)
25	1.583 (40.21)	1.691 (42.95)	.151 (3.84)	1.692 (42.98)	20.17 (51.23)	2.328 (59.13)	1-7/16-18UNEF-2A	1-3/4-18UNS	1.255 (31.88)

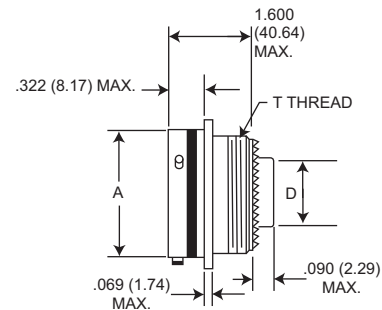
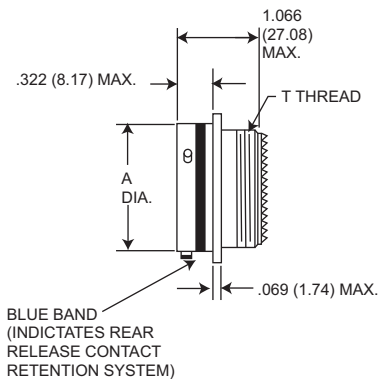
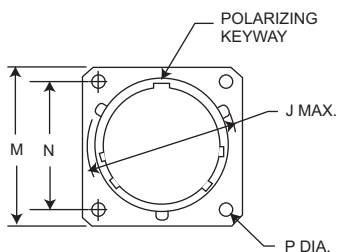


Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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Wall Mounting Receptacle

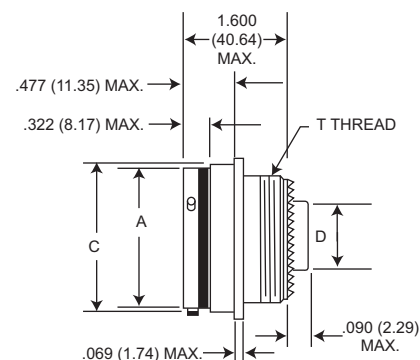
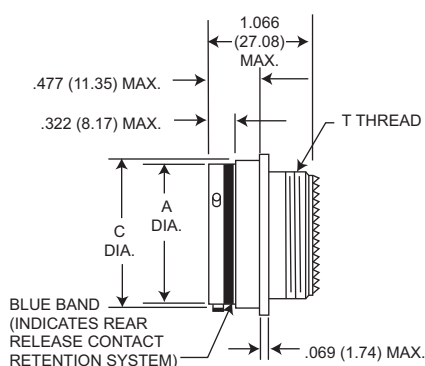
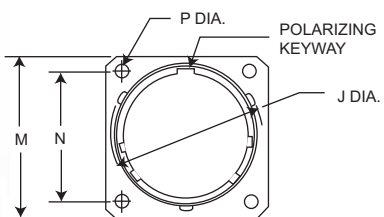
TKJ0



Crimp Piggyback

Wall Mounting Receptacle (Back Panel)

TKJ3



Crimp Piggyback

Shell Size	A Dia. Max.	C Dia. Max.	D Dia. Max.	G Dia. Max.	J Dia. Max.	M Max.	N T.P	P +.005 (0.13) -0.010 (0.25)	T Thread
8	.474 (12.04)	.547 (13.89)	.299 (7.59)	.562 (14.27)	.563 (14.30)	.828 (21.03)	.594 (15.09)	.125 (3.18)	.5625-24UNEF-2A
10	.591 (15.01)	.672 (17.06)	.427 (10.85)	.594 (15.08)	.680 (17.27)	.954 (24.23)	.719 (18.26)	.125 (3.18)	11/16-24UNEF-2A
12	.751 (19.08)	.844 (21.43)	.541 (13.74)	.720 (13.28)	.859 (21.82)	1.047 (26.59)	.812 (20.62)	.125 (3.18)	13/16-20UNEF-2A
14	.876 (22.25)	.969 (24.61)	.666 (16.92)	.844 (21.43)	.984 (24.99)	1.141 (28.98)	.906 (23.01)	.125 (3.18)	15/16-20UNEF-2A
16	1.001 (25.43)	1.094 (27.78)	.791 (20.09)	.969 (24.61)	1.108 (28.14)	1.234 (31.34)	.969 (24.61)	.125 (3.18)	1-1/16-18UNEF-2A
18	1.126 (28.60)	1.219 (30.96)	.880 (22.35)	1.063 (27.00)	1.233 (31.32)	1.328 (33.73)	1.062 (26.97)	.125 (3.18)	1-1/16-18UNEF-2A
20	1.251 (31.78)	1.344 (34.13)	1.005 (25.52)	1.188 (30.17)	1.358 (34.49)	1.453 (36.91)	1.156 (27.36)	.125 (3.18)	1-3/16-18UNEF-2A
22	1.376 (34.95)	1.469 (37.31)	1.130 (28.70)	1.313 (33.35)	1.483 (37.67)	1.578 (39.08)	1.250 (31.76)	.125 (3.18)	1-5/16-18UNEF-2A
24	1.501 (38.13)	1.594 (40.48)	1.255 (31.88)	1.438 (36.52)	1.610 (40.89)	1.703 (43.26)	1.375 (34.92)	.152 (3.86)	1-7/16-18UNEF-2A

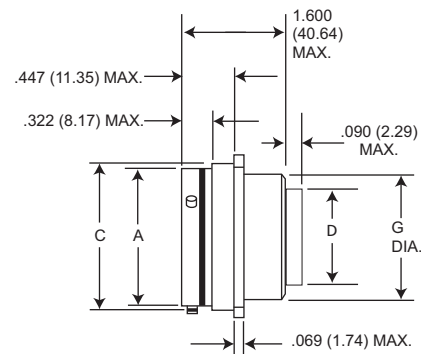
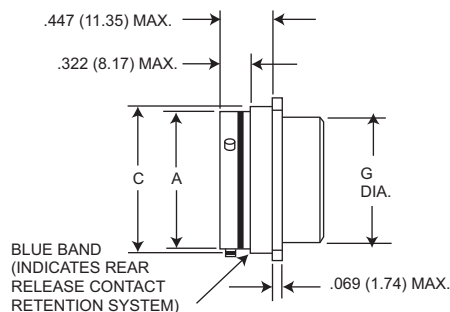
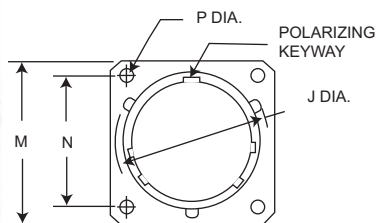
Dimensions shown in inch (mm)  
 Specifications and dimensions subject to change

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Box Mounting Receptacle (Back Panel, No Rear Threads)

TKJ5

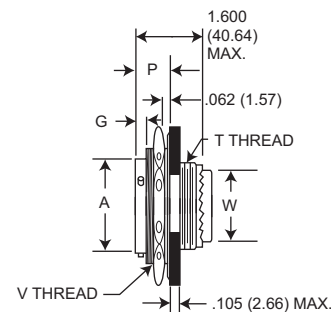
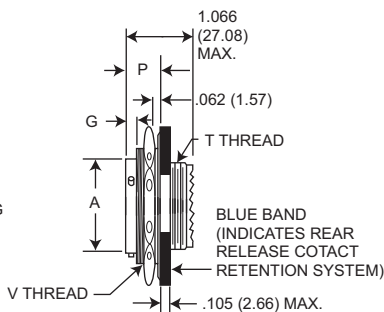
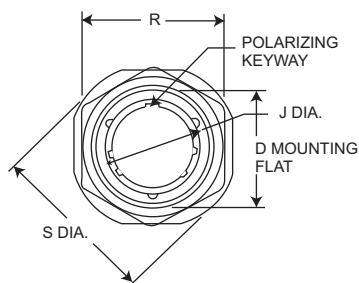


Crimp Piggyback

Shell Size	A Dia. Max.	C Dia. Max.	D Dia. Max.	G Dia. Max.	J Dia. Max.	M Max.	N T.P	P +.005 (0.13) - .010 (0.25)
8	.474 (12.04)	.547 (13.89)	.299 (7.59)	.562 (14.27)	.563 (14.30)	.828 (21.03)	.594 (15.09)	.125 (3.18)
10	.591 (15.01)	.672 (17.06)	.427 (10.85)	.594 (15.08)	.680 (17.27)	.954 (24.23)	.719 (18.26)	.125 (3.18)
12	.751 (19.08)	.844 (21.43)	.541 (13.74)	.720 (18.28)	.859 (21.82)	1.047 (26.59)	.812 (20.62)	.125 (3.18)
14	.876 (22.25)	.969 (24.61)	.666 (16.92)	.844 (21.43)	.984 (24.99)	1.141 (28.98)	.906 (23.01)	.125 (3.18)
16	1.001 (25.42)	1.094 (27.78)	.791 (20.09)	.969 (24.61)	1.108 (28.14)	1.234 (31.24)	.969 (24.61)	.125 (3.18)
18	1.126 (28.60)	1.219 (30.96)	.880 (22.35)	1.063 (27.00)	1.233 (31.32)	1.328 (33.73)	1.062 (26.97)	.125 (3.18)
20	1.251 (31.77)	1.344 (34.13)	1.005 (25.52)	1.188 (30.17)	1.358 (34.49)	1.453 (36.91)	1.156 (29.36)	.125 (3.18)
22	1.376 (34.95)	1.469 (37.31)	1.130 (28.70)	1.313 (33.35)	1.483 (37.67)	1.578 (40.08)	1.250 (31.75)	.125 (3.18)
24	1.501 (38.13)	1.594 (40.48)	1.255 (31.88)	1.438 (36.52)	1.610 (40.89)	1.703 (43.66)	1.375 (34.92)	.152 (3.86)

Jam Nut Receptacle

TKJ7



Crimp Piggyback

Shell Size	C Dia. Max.	D Max.	G Max.	J Max.	P Max.	R Max. Hex.	S Dia. Max.	T Thread	V Thread	W Dia. Max.
8	.474 (12.04)	.818 (20.78)	.145 (3.68)	.563 (14.30)	.443 (11.25)	1.079 (27.41)	1.381 (35.08)	.5625-24UNEF-2A	7/8-20UNEF-2A	.299 (7.59)
10	.591 (15.01)	.942 (23.93)	.145 (3.68)	.680 (17.27)	.443 (11.25)	1.205 (30.61)	1.506 (38.25)	11/16-24UNEF-2A	1-20UNEF-2A	.427 (10.85)
12	.751 (19.08)	1.066 (27.08)	.145 (3.68)	.859 (21.82)	.443 (11.25)	1.329 (33.76)	1.631 (41.43)	13/16-20UNEF-2A	1-1/8-18UNEF-2A	.541 (13.74)
14	.876 (22.25)	1.191 (30.25)	.145 (3.68)	.984 (24.99)	.443 (11.25)	1.455 (36.96)	1.756 (44.60)	15/16-20UNEF-2A	1-1/4-18UNEF-2A	.666 (16.92)
16	1.001 (25.43)	1.321 (33.55)	.145 (3.68)	1.108 (28.14)	.443 (11.25)	1.579 (40.11)	1.944 (49.38)	1-1/16-18UNEF-2A	1-3/8-18UNEF-2A	.791 (20.09)
18	1.126 (28.60)	1.441 (36.60)	.145 (3.68)	1.233 (31.32)	.443 (11.25)	1.705 (43.31)	2.022 (51.36)	1-1/16-18UNEF-2A	1-1/2-18UNEF-2A	.880 (22.35)
20	1.251 (31.78)	1.566 (39.78)	.171 (4.34)	1.358 (34.49)	.469 (11.91)	1.829 (46.46)	2.147 (54.53)	1-3/16-18UNEF-2A	1-5/8-18UNEF-2A	1.005 (25.52)
22	1.376 (33.95)	1.691 (42.95)	.171 (4.34)	1.483 (37.67)	.469 (11.91)	2.017 (51.23)	2.271 (57.68)	1-5/16-18UNEF-2A	1-3/4-18UNEF-2A	1.130 (28.70)
24	1.501 (38.13)	1.816 (46.13)	.171 (4.34)	1.610 (40.89)	.469 (11.91)	2.142 (54.41)	2.396 (60.86)	1-7/16-18UNEF-2A	1-7/8-18UNEF-2A	1.255 (31.88)

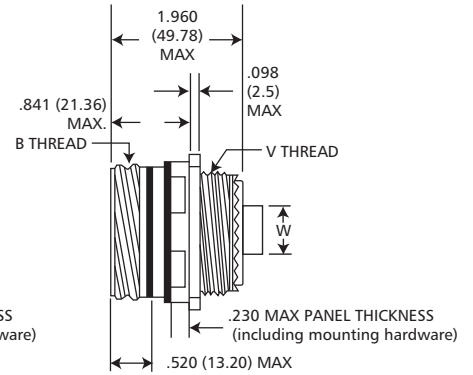
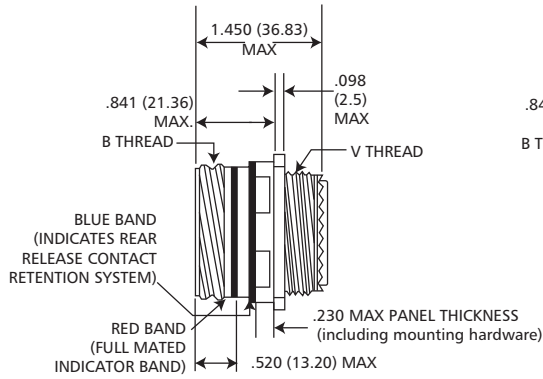
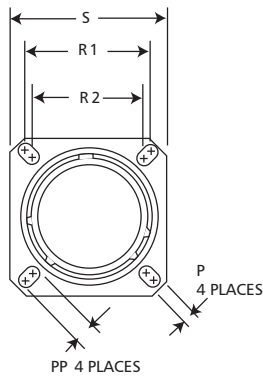


Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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Wall Mounting Receptacle (No Rear Threads)

TKJA0

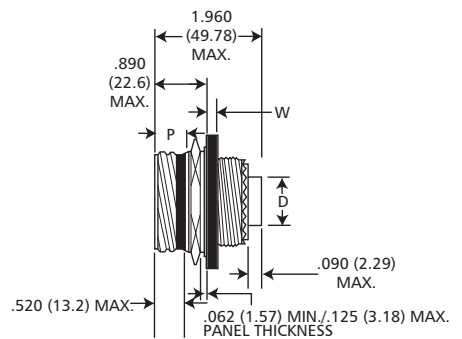
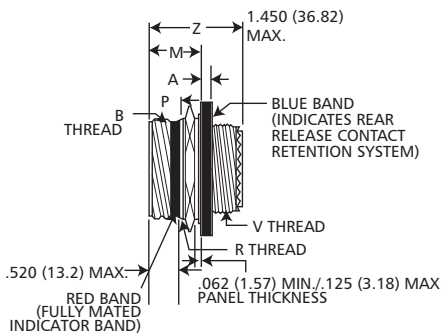
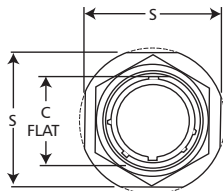


Crimp Piggyback

Shell Size	Shell size Code	P Dia. Max.	PP Max.	R <sub>1</sub>	R <sub>2</sub>	S Max.	W Max.	BB Thread
9	A	.132 (3.25)	.220 (5.59)	.719 (18.26)	.594 (15.09)	.949 (24.1)	.098 (2.50)	.6250 (15.88)
11	B	.132 (3.25)	.198 (5.03)	.812 (20.62)	.719 (18.26)	1.043 (26.5)	.098 (2.50)	.7500 (19.05)
13	C	.132 (3.25)	.198 (5.03)	.906 (23.01)	.812 (20.62)	1.138 (28.9)	.098 (2.50)	.8750 (22.23)
15	D	.132 (3.25)	.198 (5.03)	.969 (24.61)	.906 (23.01)	1.232 (31.3)	.098 (2.50)	1.000 (25.46)
17	E	.132 (3.25)	.198 (5.03)	1.062 (26.97)	.969 (24.61)	1.323 (33.6)	.098 (2.50)	1.1875 (30.16)
19	F	.132 (3.25)	.198 (5.03)	1.156 (29.36)	1.062 (26.97)	1.449 (36.8)	.098 (2.50)	1.2500 (31.75)
21	G	.132 (3.25)	.198 (5.03)	1.250 (31.75)	1.156 (29.36)	1.575 (40.0)	.126 (3.20)	1.375 (34.93)
23	H	.158 (4.01)	.246 (6.25)	1.375 (34.92)	1.250 (31.75)	1.701 (43.2)	.126 (3.20)	1.5000 (38.10)
25	J	.158 (4.01)	.246 (6.25)	1.500 (38.10)	1.375 (34.92)	1.823 (46.3)	.126 (3.20)	1.6250 (41.28)

Jam Nut Receptacle (No Rear Threads)

TKJA7



Crimp Piggyback

Shell Size	Shell size Code	A Dia. Max.	B Flat Max.	C Max.	D Dia. Max.	G Thread	P Max.	S Max.	W Max.	BB Thread
9	A	1.201 (30.5)	.655 (16.63)	.880 (22.31)	.299 (7.59)	M17	.571 (14.5)	1.079 (27.4)	.114 (2.9)	.6250 (15.88)
11	B	1.386 (35.2)	.755 (19.17)	.880 (22.31)	.427 (10.85)	M20	.571 (14.5)	1.268 (32.2)	.114 (2.9)	.7500 (19.05)
13	C	1.512 (38.4)	.942 (23.92)	.890 (22.6)	.541 (13.74)	M25	.579 (14.7)	1.390 (35.3)	.114 (2.9)	.8750 (22.23)
15	D	1.638 (41.6)	1.066 (27.07)	.890 (22.6)	.666 (16.92)	M28	.579 (14.7)	1.516 (38.5)	.114 (2.9)	1.000 (25.46)
17	E	1.764 (44.8)	1.191 (30.25)	.890 (22.6)	.791 (20.09)	M32	.579 (14.7)	1.642 (41.7)	.114 (2.9)	1.1875 (30.16)
19	F	1.949 (49.5)	1.316 (33.42)	.890 (22.6)	.880 (22.35)	M35	.579 (14.7)	1.827 (46.4)	.146 (3.7)	1.2500 (31.75)
21	G	2.075 (52.7)	1.441 (36.60)	.890 (22.6)	1.005 (25.52)	M38	.579 (14.7)	1.953 (49.6)	.146 (3.7)	1.375 (34.93)
23	H	2.201 (55.9)	1.566 (39.77)	.890 (22.6)	1.130 (28.70)	M41	.579 (14.7)	2.079 (52.8)	.146 (3.7)	1.5000 (38.10)
25	J	2.323 (59.0)	1.691 (42.95)	.890 (22.6)	1.255 (31.88)	M44	.579 (14.7)	2.205 (56.0)	.146 (3.7)	1.6250 (41.28)

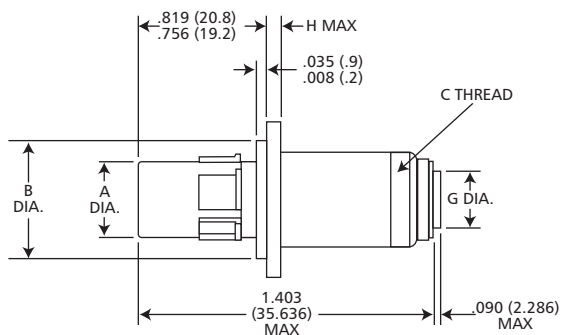
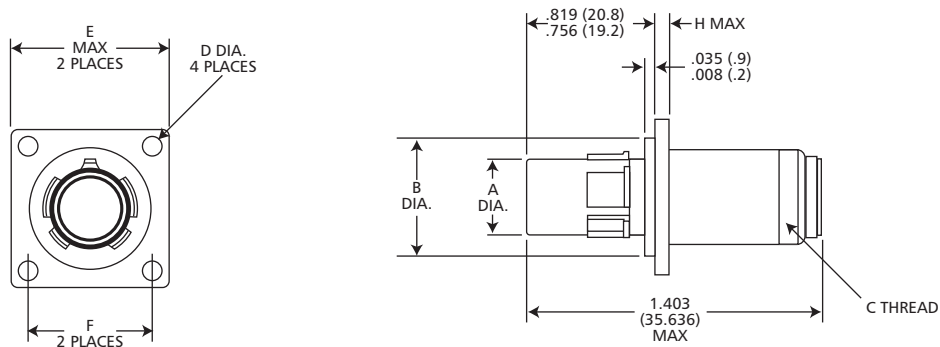
Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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Wall Mounting Receptacle

TKJB0



Crimp Piggyback

Shell Size	Shell size Code	A Dia. Max.	B Dia. Max.	C* Thread 1.0-6g 0.100 R	D ± .008 (.20) Dia.	E Dia. Max.	F Basic	G Dia. Max.	H Max
11	B	.509 (12.93)	.793 (20.15)	M15	.130 (3.3)	1.051 (26.7)	.812 (20.62)	.427 (10.85)	.102 (2.590)
13	C	.634 (16.10)	.919 (23.35)	M18	.130 (3.3)	1.146 (29.1)	.906 (23.02)	.541 (13.74)	.102 (2.590)
15	D	.759 (19.28)	1.044 (26.52)	M22	.130 (3.3)	1.240 (31.5)	.969 (24.62)	.666 (16.92)	.102 (2.590)
17	E	.885 (22.48)	1.170 (29.72)	M25	.130 (3.3)	1.335 (33.9)	1.062 (26.98)	.791 (20.09)	.102 (2.590)
19	F	1.009 (25.63)	1.294 (32.87)	M28	.130 (3.3)	1.461 (37.1)	1.156 (29.36)	.880 (22.35)	.102 (2.590)
21	G	1.134 (28.80)	1.419 (36.05)	M31	.130 (3.3)	1.583 (40.2)	1.250 (31.76)	1.005 (25.52)	.134 (3.403)
23	H	1.259 (31.98)	1.544 (39.22)	M34	.150 (3.8)	1.709 (43.4)	1.375 (34.92)	1.130 (28.70)	.134 (3.403)
25	J	1.384 (35.15)	1.669 (42.40)	M37	.150 (3.8)	1.835 (46.6)	1.500 (38.10)	1.255 (31.880)	.134 (3.403)

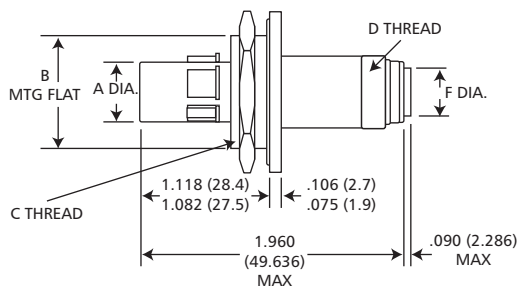
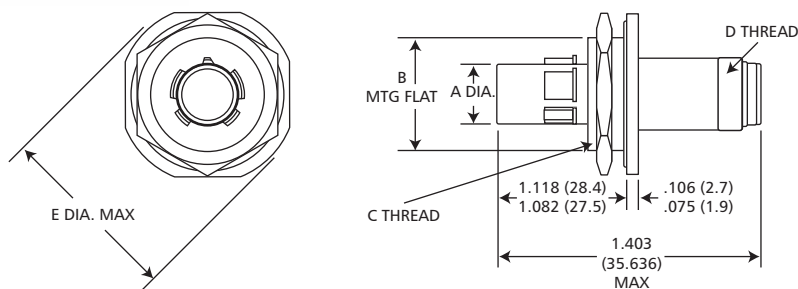


Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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Jam Nut Receptacle

TKJB7



Crimp Piggyback

Shell Size	Shell size Code	A Dia. Max.	B Mtg. Flat (Max.)	C* Thread 1.0-6g 0.100 R	D Thread 1.0-6g 0.100 R	E Dia. Max.	F Dia. Max.
11	B	.509 (12.93)	.942 (23.93)	25	15	1.520 (38.6)	.427 (10.85)
13	C	.634 (16.10)	1.066 (27.08)	28	18	1.642 (41.7)	.541 (13.74)
15	D	.759 (19.28)	1.191 (30.26)	31	22	1.768 (44.9)	.666 (16.92)
17	E	.885 (22.48)	1.321 (33.56)	34	25	1.957 (49.7)	.791 (20.09)
19	F	1.009 (25.63)	1.441 (36.61)	38	28	2.035 (51.7)	.880 (22.35)
21	G	1.134 (28.80)	1.566 (39.78)	41	31	2.157 (54.8)	1.005 (25.52)
23	H	1.259 (31.98)	1.691 (42.96)	44	34	2.283 (58.0)	1.130 (28.70)
25	J	1.384 (35.15)	1.816 (46.13)	47	37	2.409 (61.2)	1.255 (31.880)

Dimensions shown in inch (mm)  
 Specifications and dimensions subject to change

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TDPX filter connectors are used primarily on commercial and military aircraft for radio and instrumentation equipment and are available in single thru four gang version with standard ARINC shells and polarizing posts. They are interchangeable with the standard DPX connectors are available in 9 contact arrangements.

## Performance and Material Specifications

### MATERIALS AND FINISHES

Description	Material	Finish
Shell	Aluminum alloy	Cadmium plate (yellow chromate)
Contacts	Copper alloy	Gold over suitable underplate
Insulator	High grade plastic	none
Interfacial and Peripheral Seals	Neoprene rubber	none
Ground Spring	Beryllium copper	Gold plate
Polarizing Posts	Stainless steel	Passivate

### ELECTRICAL

Contacts Size	22	20, 16 & 22	16 & 20			
Available Filter	Low Freq.	Mid Freq.	Std. Freq.	High Freq.	Low Freq.	
Catalog Reference	L	M	T	H	L	
Voltage Rating	200 VDC - 120 VAC rms 400 Hz					
Current Rating (Amp DC)	5 amp	7.5 amp - size #20, 20 amp - size #16		20 amp		
Insulation Resistance, 2 min. electrification time max. at 25° C and 100 VDC	5,000 megohms minimum @ 100 VDC					
DWV, sea level, with 500 microamps max. charge/discharge current	300 VDC	500 VDC		500 VDC		
Capacitance at 1 KHz, 0.1 V rms picofarads	32,000	8,000	3,000	850	32,000	
	45,000	12,000	5,000	1,300	45,000	
Attenuation per MIL-STD-220 at 25° C with no applied voltage or current.	Freq. MHz		Attenuation (dB)			
	0.1	2 min.	-	-	-	2 min.
	1	15 min.	2 min.	-	-	15 min.
	2	20 min.	5 min.	2 min.	-	20 min.
	10	35 min.	20 min.	12 min.	2 min.	35 min.
	100	60 min.	55 min.	50 min.	30 min.	50 min.
500 to 10,000	60 min.	60 min.	55 min.	50 min.	50 min.	
Filter Type	Pi	Pi	Pi	Pi	Pi	

## How to Order - Single Gang

TDPX E B - 57 L 34 P - 00 01

FILTER SERIES PREFIX

ENVIRONMENTAL

SHELL STYLE

CONTACT ARRANGEMENT

CAPACITANCE INDICATOR

SHELL TYPE

CONTACT TYPE

MODIFICATION

POLARIZING POSITION

### FILTER SERIES PREFIX

TDPX - Single gang

### ENVIRONMENTAL

E - For interfacial (pin)  
Delete for standard

### SHELL STYLE

B - Polarized ARINC B shell (preferred)  
D - DPXA flange (less polarizing posts)

### CONTACT ARRANGEMENT

See page 35.

### CAPACITANCE INDICATOR

L - Low Frequency  
M - Mid Frequency  
T - Standard Frequency  
Note: Use of "T" omitted in past nomenclature.  
H - High Frequency  
N - No filters this gang. Standard DPX insert assembly.

### SHELL TYPE

33 - Male (plug)  
34 - Female (receptacle)

### CONTACT TYPE

P-Pin; S-Socket

### MODIFICATION

TDPXD  
None  
TDPXB  
03 - Mounting holes countersunk 100° to .230 (5.84) dia.  
23 - With floating eyelets.  
Consult factory.

### POLARIZING POSITION

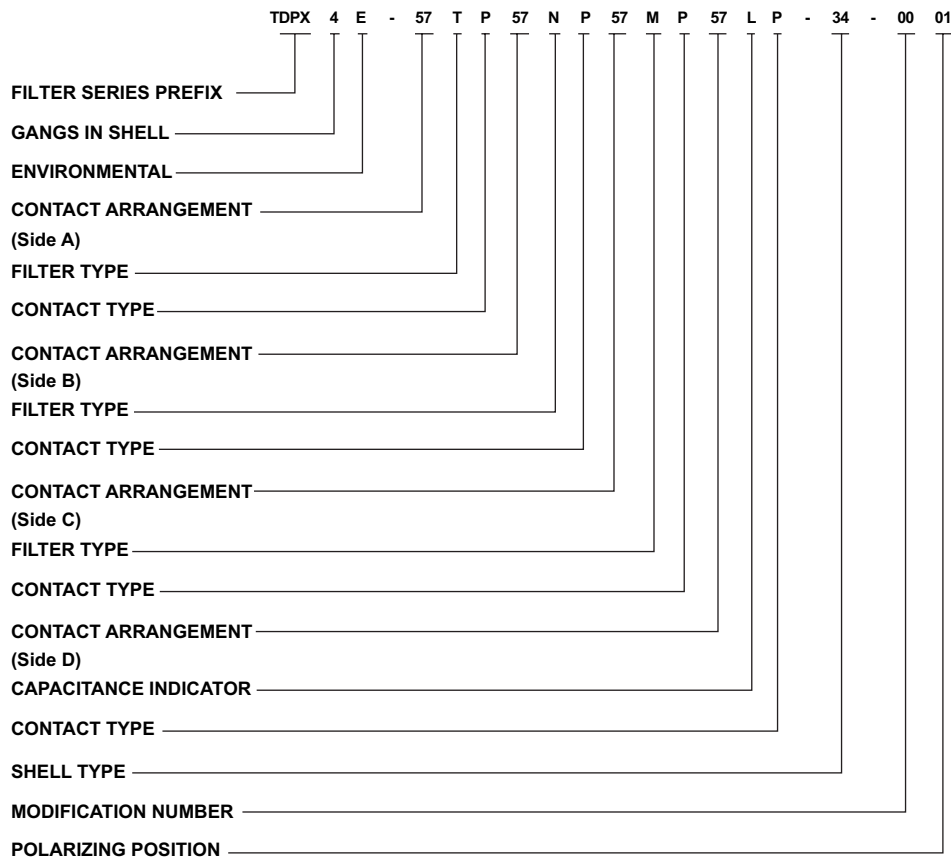
See pages 35-36.



Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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How to Order - Multiple Gang



**FILTER SERIES PREFIX**

TDPX - DPX series with solder termination.

**GANGS IN SHELL**

2, 3, and 4 gang

**ENVIRONMENTAL**

E - For interfacial (pin)  
Delete for standard.

**CONTACT ARRANGEMENT**

See page 31 for applicable arrangements. Please specify each arrangement number as indicated in ordering nomenclature for 2, 3, or 4 gang.

**CAPACITANCE INDICATOR (Each gang, as desired)\***

L - Low Frequency  
M - Mid Frequency  
T - Standard Frequency  
Note: Use of "T" omitted in past nomenclature  
H - High Frequency  
N - No filter this gang. Standard DPX insert assembly.

**CONTACT TYPE**

P for pin; S for socket. Designation follows each arrangement as ordered for 2, 3, or 4 gang versions. (Printed circuit contact/termination is available. Consult factory for specifications.)

**SHELL TYPE**

33B for male (ARINC B)  
34B for female (ARINC B)  
33 for male  
34 for female

Note: ARINC B specified for DPX2 only.

**POLARIZING POSITION (see pages 35-36)**

The last two digits in the four-digit dash number refer to the polarizing post position. When the last two digits are omitted, the polarizing posts will be assembled in position 01, but the position number is not stamped on the connector. This allows the customer to position the posts themselves and then stamp the appropriate number on the shell. If the last two digits are 00, the polarizing posts are deleted.

**MODIFICATION NUMBERS**

- 0001 indicates standard design for all styles.

**TDPX2-33B:**

- 0301 - Mounting holes .120 dia.  
Countersunk 100° to .230 dia.

**TDPX2-34:**

- 0101 - With #4-40 clinch nuts in mounting holes.

**TDPX3-34:**

- 0101 - With 6 #4-40 clinch nuts in mounting holes.

**TDPX4-34:**

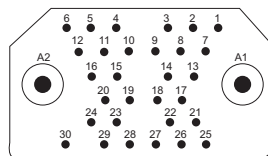
- 0101 - With 10 #4-40 clinch nuts in mounting holes.

Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

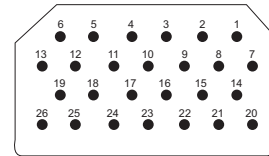


Contact Arrangements

Arrangement No.  
No. of Contacts & Wire Size

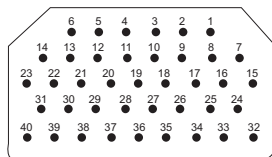


32C2  
30 #20, 2 coax

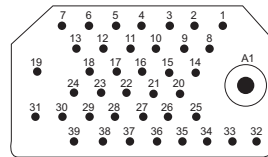


26  
26 #16

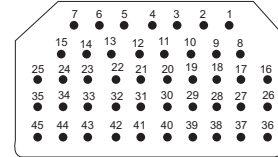
Arrangement No.  
No. of Contacts & Wire Size



40  
40 #20

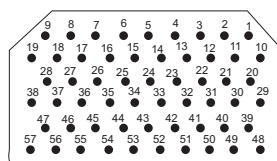


40C1  
39 #20, 1 coax

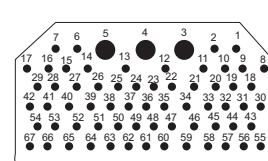


45  
45 #20

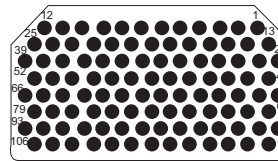
Arrangement No.  
No. of Contacts & Wire Size



57  
57 #20



67  
64 #20, 3 #16



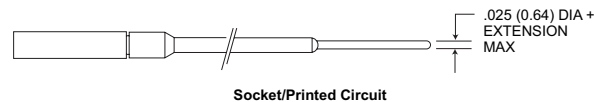
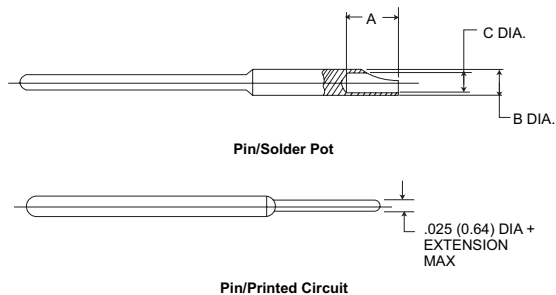
106\*  
106 #22

NOTE: Consult factory for part numbers for special combinations of filter, group contacts and power contacts, and for availability of filter socket contacts, for each contact arrangement.

Contacts - Pin and Socket

Standard Contact Terminations

Finish: Gold plate per MIL-G-45204, Type 1, Class 1, over nickel plate per QQ-N-290.



Contact Size	A	B	C	PC Tail Extension Max.
20	.125 (3.18)	.065 (1.65)	.048 (1.22)	.200 (5.08), .285 (7.24), .375 (9.52)
	.110 (2.79)	.061 (1.55)	.043 (1.09)	
16	.170 (4.32)	.103 (2.62)	.078 (1.98)	.200 (5.08), .285 (7.24), .375 (9.52)
	.150 (3.81)	.097 (2.46)	.069 (1.75)	
22	.115 (2.92)	.005 (1.40)	.040 (1.02)	.200 (5.08), .285 (7.24), .375 (9.52)
	.095 (2.41)	.051 (1.30)	.036 (0.91)	



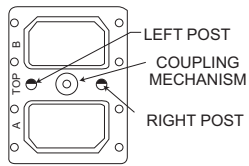
Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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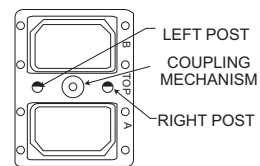
Polarization

Two Post Type

DPX2-33F  
or 33M



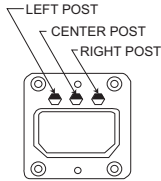
DPX2-34F  
or 34M



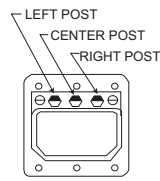
Face View of Engaging End

Three Post Type

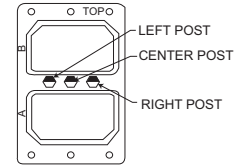
DPXB-33



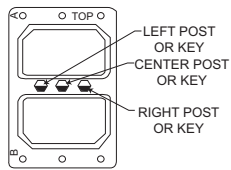
DPXB-34



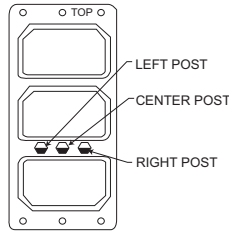
DPX2-33A or 33B



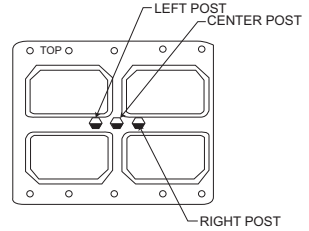
DPX2-34A or 34B



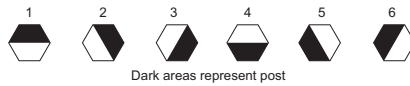
DPX3-33



DPX4-33



### Positions



Dark areas represent post

### Two Post Type

33 PLUG MALE SHELL						34 RECEPTACLE FEMALE SHELL					
Position	Left Post	Right Post	Position	Left Post	Right Post	Position	Left Post	Right Post	Position	Left Post	Right Post
01	4	4	09	3	3	01	1	1	09	2	2
02	5	4	10	4	2	02	1	6	10	3	1
03	6	4	11	2	2	03	1	5	11	3	3
04	2	4	12	3	2	04	1	3	12	3	2
05	3	4	13	2	1	05	1	2	13	4	3
06	4	3	14	3	1	06	2	1	14	4	2
07	5	3	15	2	6	07	2	6	15	5	3
08	2	3				08	2	3			

### Three Post Type

PLUG SHELL				RECEPTACLE SHELL											
Position	Left Post	Center Post	Right Post	Position	Left Post	Center Post	Right Post	Position	Left Post	Center Post	Right Post	Position	Left Post	Center Post	Right Post
01	1	1	1	51	3	2	5	01	4	4	4	51	6	3	2
02	2	1	1	52	4	2	5	02	4	4	3	52	6	3	1
03	3	1	1	53	5	2	5	03	4	4	2	53	6	3	6
04	4	1	1	54	6	2	5	04	4	4	1	54	6	3	5
05	5	1	1	55	1	2	4	05	4	4	6	55	1	3	4
06	6	1	1	56	2	2	4	06	4	4	5	56	1	3	3
07	1	1	6	57	3	2	4	07	5	4	4	57	1	3	2
08	2	1	6	58	4	2	4	08	5	4	3	58	1	3	1
09	3	1	6	59	5	2	4	09	5	4	2	59	1	3	6
10	4	1	6	60	6	2	4	10	5	4	1	60	1	3	5
11	5	1	6	61	1	2	3	11	5	4	6	61	2	3	4
12	6	1	6	62	2	2	3	12	5	4	5	62	2	3	3
13	1	1	5	63	3	2	3	13	6	4	4	63	2	3	2
14	2	1	5	64	4	2	3	14	6	4	3	64	2	3	1
15	3	1	5	65	5	2	3	15	6	4	2	65	2	3	6
16	4	1	5	66	6	2	3	16	6	4	1	66	2	3	5
17	5	1	5	67	1	2	2	17	6	4	6	67	3	3	4
18	6	1	5	68	2	2	2	18	6	4	5	68	3	3	3
19	1	1	4	69	3	2	2	19	1	4	4	69	3	3	2
20	2	1	4	70	4	2	2	20	1	4	3	70	3	3	1
21	3	1	4	71	5	2	2	21	1	4	2	71	3	3	6
22	4	1	4	72	6	2	2	22	1	4	1	72	3	3	5
23	5	1	4	73	1	3	1	23	1	4	6	73	4	2	4
24	6	1	4	74	2	3	1	24	1	4	5	74	4	2	3
25	1	1	3	75	3	3	1	25	2	4	4	75	4	2	2
26	2	1	3	76	4	3	1	26	2	4	3	76	4	2	1
27	3	1	3	77	5	3	1	27	2	4	2	77	4	2	6
28	4	1	3	78	6	3	1	28	2	4	1	78	4	2	5
29	5	1	3	79	1	3	6	29	2	4	6	79	5	2	4
30	6	1	3	80	2	3	6	30	2	4	5	80	5	2	3
31	1	1	2	81	3	3	6	31	3	4	4	81	5	2	2
32	2	1	2	82	4	3	6	32	3	4	3	82	5	2	1
33	3	1	2	83	5	3	6	33	3	4	2	83	5	2	6
34	4	1	2	84	6	3	6	34	3	4	1	84	5	2	5
35	5	1	2	85	1	3	5	35	3	4	6	85	6	2	4
36	6	1	2	86	2	3	5	36	3	4	5	86	6	2	3
37	1	2	1	87	3	3	5	37	4	3	4	87	6	2	2
38	2	2	1	88	4	3	5	38	4	3	3	88	6	2	1
39	3	2	1	89	5	3	5	39	4	3	2	89	6	2	6
40	4	2	1	90	6	3	5	40	4	3	1	90	6	2	5
41	5	2	1	91	1	3	4	41	4	3	6	91	1	2	4
42	6	2	1	92	2	3	4	42	4	3	5	92	1	2	3
43	1	2	6	93	3	3	4	43	5	3	4	93	1	2	2
44	2	2	6	94	4	3	4	44	5	3	3	94	1	2	1
45	3	2	6	95	5	3	4	45	5	3	2	95	1	2	6
46	4	2	6	96	6	3	4	46	5	3	1	96	1	2	5
47	5	2	6	97	1	3	3	47	5	3	6	97	2	2	4
48	6	2	6	98	2	3	3	48	5	3	5	98	2	2	3
49	1	2	5	99	3	3	3	49	6	3	4	99	2	2	2
50	2	2	5					50	6	3	3				

The last two digits in the DPX nomenclature (ex: DPXB-8-33B-0014) refer to the polarizing post position. When the last two digits are omitted it means the polarizing posts will not be assembled and position number is not stamped on the connector. This allows the customer to position the posts themselves and then stamp the appropriate number on the shell. If the last two digits are made 00 it means the polarizing posts are deleted.

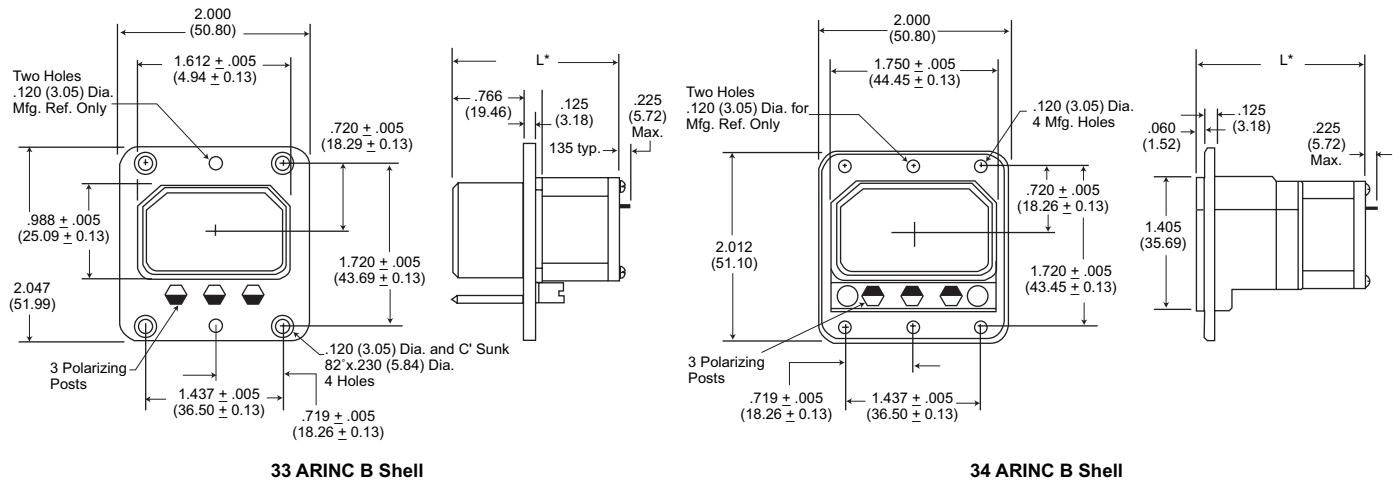


Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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Single Gang

TDPXB

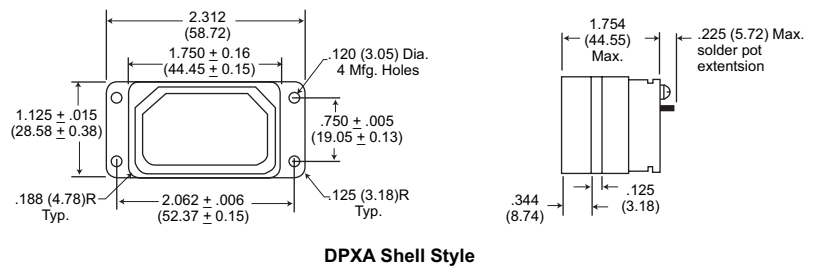


33 ARINC B Shell

34 ARINC B Shell

\* This length varies between the limits of 1.750 (44.45) and 1.437 (36.25) depending on the particular construction as determined by contact arrangement.

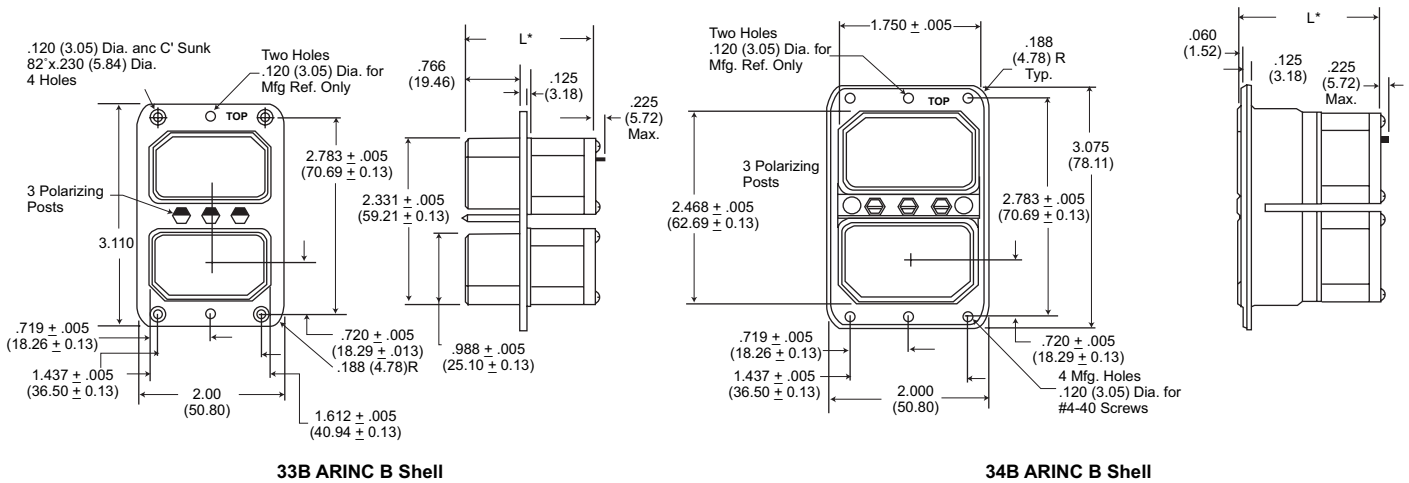
TDPXD



DPXA Shell Style

Two Gang

TDPX2



33B ARINC B Shell

34B ARINC B Shell

\* This length varies between the limits of 1.750 (44.45) and 1.437 (36.25) depending on the particular construction as determined by contact arrangement.

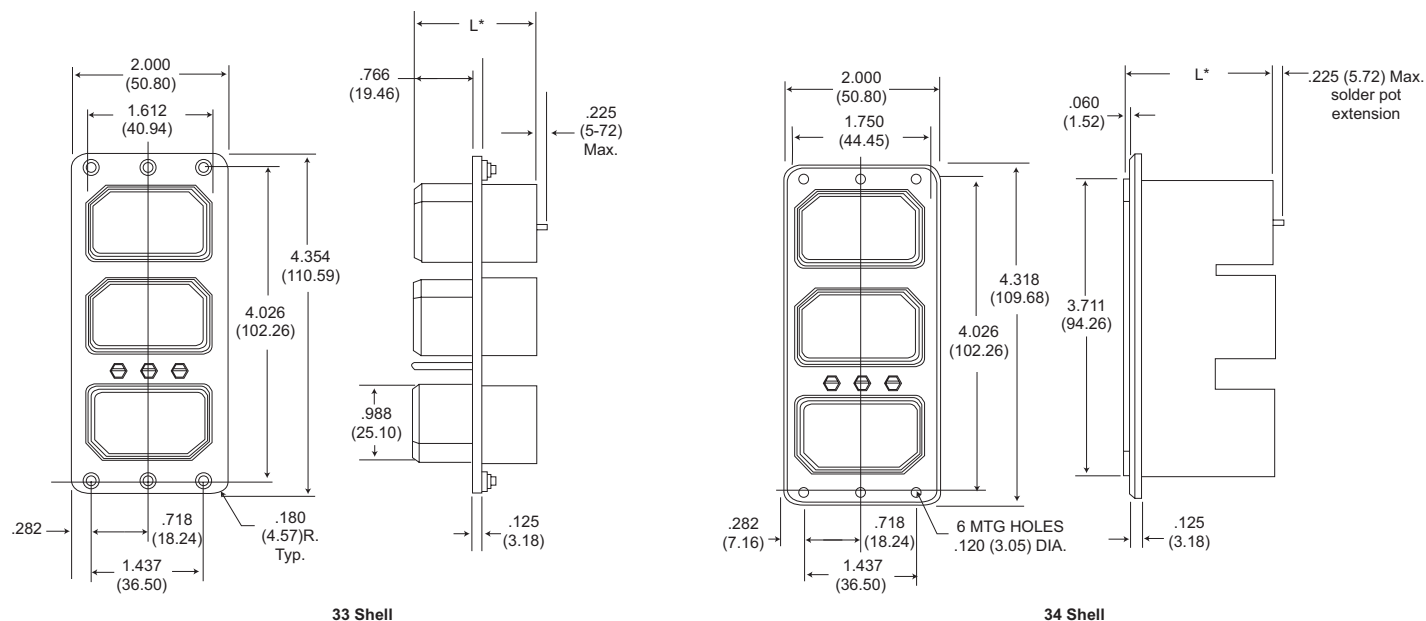
Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

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Three Gang

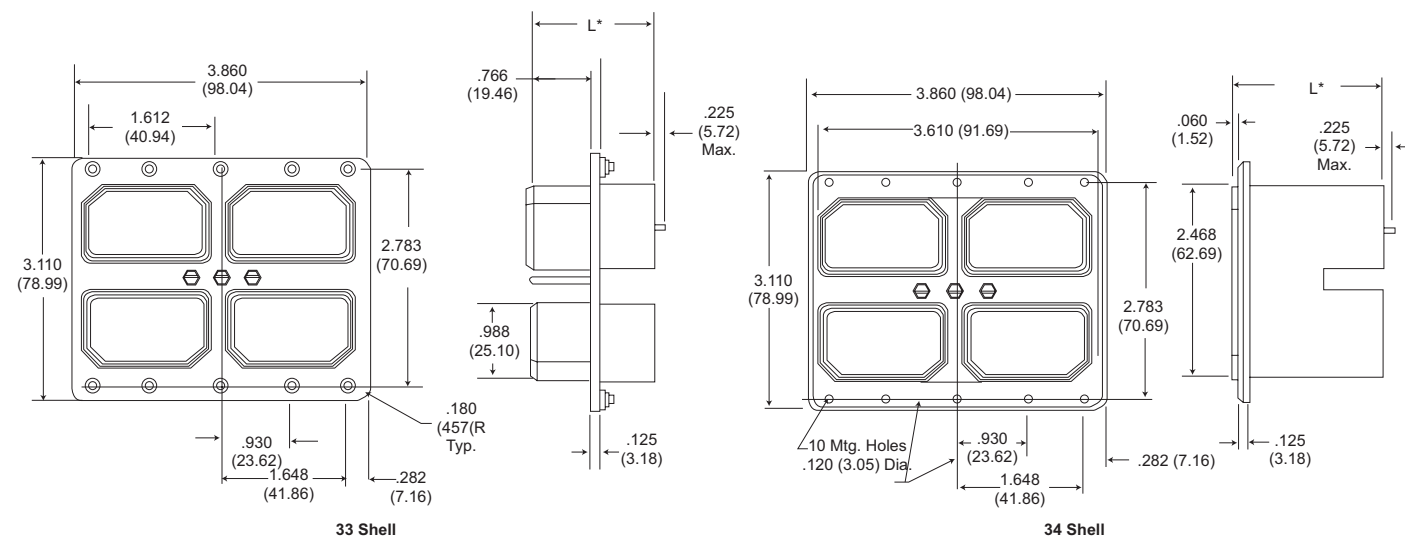
TDPX3



\* This length varies between the limits of 1.750 an 1.437 depending upon particular construction as determined by contact arrangement.

Four Gang

TDPX4



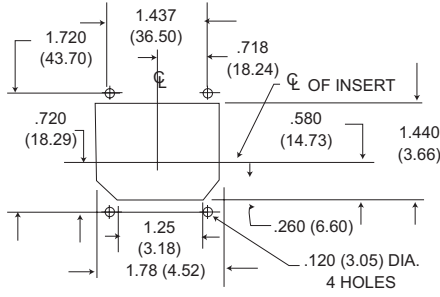
\* This length varies between the limits of 44.45 an 36.25 depending upon particular construction as determined by contact arrangement.

Panel Cutouts - Page 40.

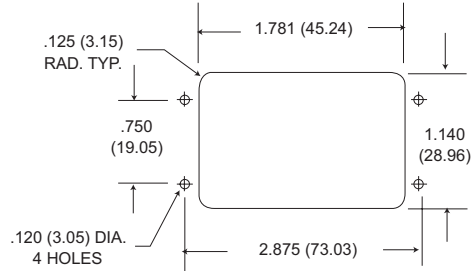


Panel Cutouts

TDPXB and TDPXD

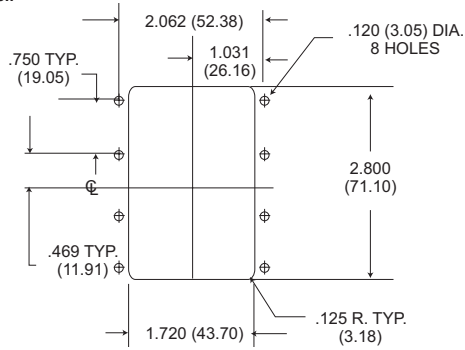


- 34 REAR MOUNT  
TDPXB

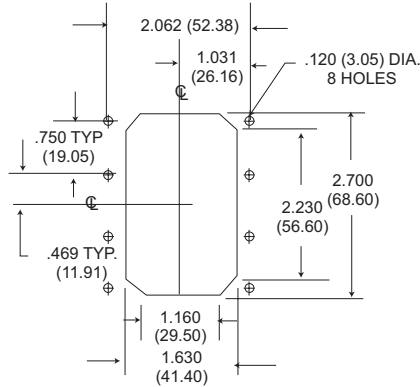


TDPXD

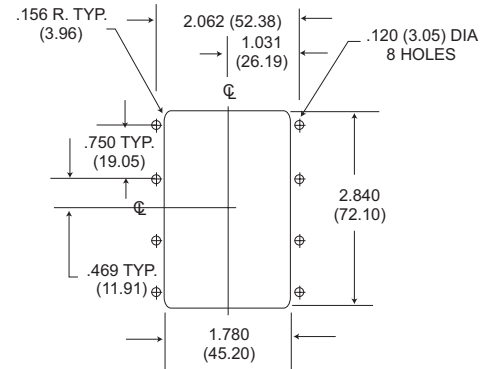
TDPX2  
Standard Shell



- 33 FRONT MOUNT

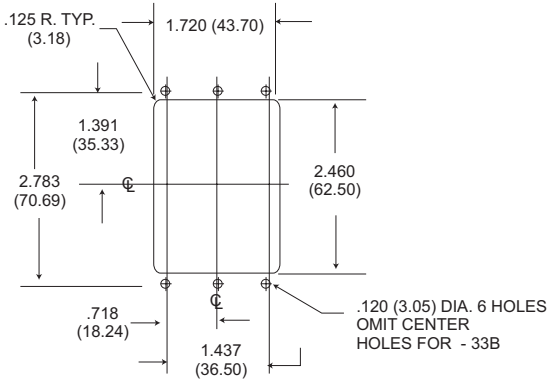


- 33 REAR MOUNT

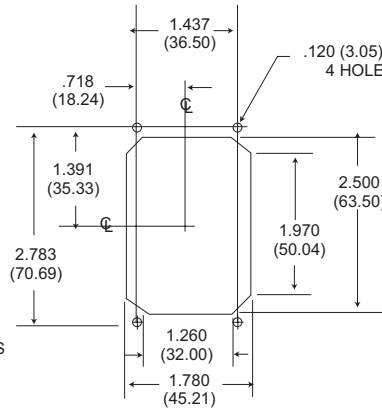


- 34 FRONT  
OR REAR MOUNT

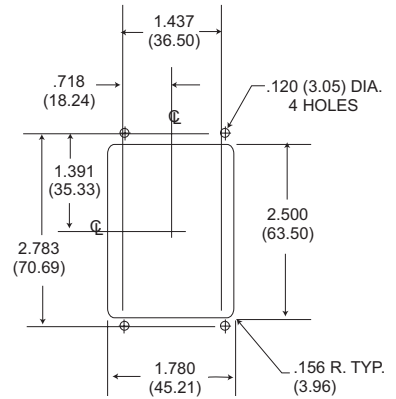
TDPX2-ARINC 'B' Shell



-33B FRONT MOUNT

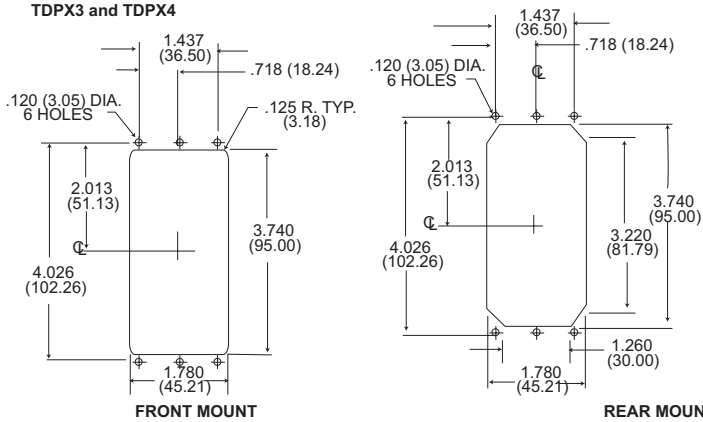


- 34B REAR MOUNT



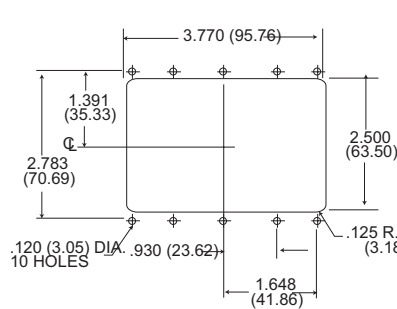
- 34B FRONT MOUNT

TDPX3 and TDPX4

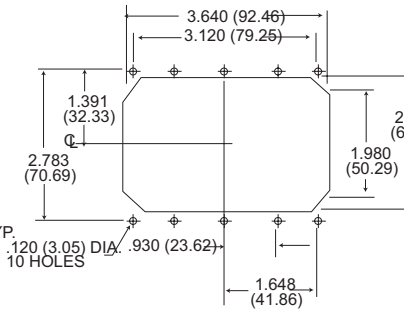


FRONT MOUNT

REAR MOUNT



FRONT MOUNT



REAR MOUNT



TBKAD/E connectors represent a major milestone in presenting a new rack and panel connector for support of the air transportation market.

High mating forces of pluggable modules in a rack have been reduced by approximately two-thirds. Filter adaptations include either single module of tandem (dual) module with crimp piggyback rear release contacts.

In the ARINC 600 connector series, size 22 contacts are the only size that utilize the Pos-Align connector construction feature. The hooded socket extends from its receptacle insulator in the filter design.

- Low insertion force contacts.
- Non-environmental versions.
- Polarizing posts that are removable from the mating face.
- Field replaceable inserts for size 22 and power contacts.
- Field replaceable filter modules with size 22 contacts.
- Up to 800 size 22 contacts in one connector.
- Crimp piggy back and pi contacts for filter module.
- Uses standard DPX crimp, insertion/extraction tooling.
- Waveguide connections available.

## Performance and Material Specifications

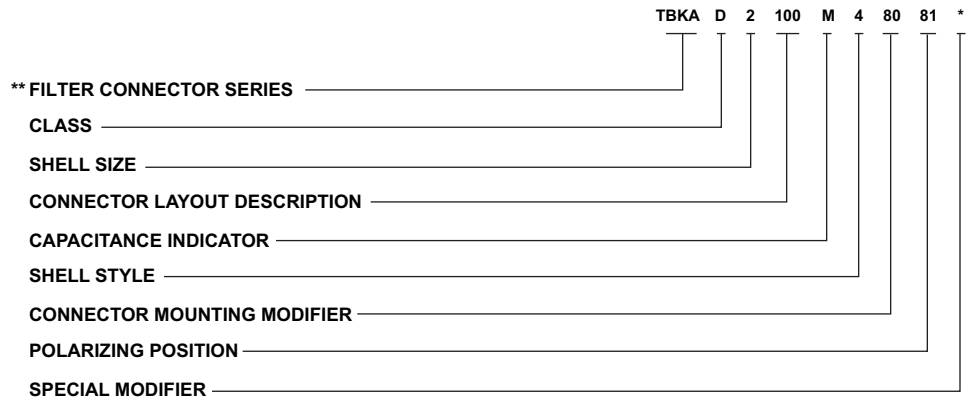
MATERIALS AND FINISHES		BKAD	SPECIFICATIONS
Shell	Material	Aluminum Alloy	QQ-A-591/A380
	Finish	Clear chromate over cadmium	QQ-P-416
Insulator	Material	Thermoplastic	N/A
	Material	Copper alloy	AA-C-533
Contacts	Finish	Gold over nickel	
	Termination	Crimp	N/A
	Material	Coper alloy	
Ground Spring	Material	Coper alloy	
	Finish	Gold	

## ELECTRICAL DATA (Size #16, Size #20 and Size #22)

Filter Description	Low Freq.	Mid Freq.	Std Freq.	High Freq.
Catalog Indicator	L	M	T	H
Voltage Rating	200 VDC-120 VAC rms 400 Hz			
Current Rating (amp DC)	15 amp size 16, 7.5 size 20, 5.0 amp size 22			
Insulation Resistance, 2 min. electrification time max. at 25° C	5,000 megohms min. @ 100 VDC			
DWV, sea level, with 500 microamps max. charge/discharge	300V DC size 22 500V DC size 16 & 20	500VDC	500VDC	500VDC
Capacitance at 1 KHz 0.1 V rms Picofarads	32000	8000	3300	850
	45000	12000	5000	1300
Attenuation per MIL-STD-220 @ 25° C with no applied voltage or current	Freq. MHz			
	0.1	2 min.	-	-
	1.0	10 min.	2 min.	-
	2	16 min.	7 min.	2 min.
	10	40 min.	18 min.	8 min.
	100	60 min.	55 min.	45 min.
	500 to 1000	60 min.	60 min.	55 min.
Filter Type/Construction	Pi	Pi	Pi	Pi

Consult factory for higher or mixed attenuation values and higher voltage ratings.

## How to Order



### FILTER CONNECTOR SERIES

TBKA (Per ARINC 600)  
 \* \* Consult factory for availability.

### CLASS

D - Non-environmental  
 (rear release, crimp contacts)

### CONNECTOR LAYOUT DESCRIPTION

Three digit number contained within the shell layout indicates total number of contacts available

Connector Layout	Shell Size	Shell Cavity Identification					
		A	B	C	D	E	F
-060	1	-	60	-	-	-	-
-A060	1	60	-	-	-	-	-
-120	1	60	60	-	-	-	-
-100	2	-	-	100	-	-	-
-300	2	150	150	-	-	-	-
-400	2	150	150	100	-	-	-
-600	3	150	150	-	150	150	-
-800	3	150	150	100	150	150	100

### SHELL SIZE

1-Max. contact capacity - 125  
 2-Max. contact capacity - 400  
 3-Max. contact capacity - 800

### CAPACITANCE INDICATOR

L - 32,000-45,000 PF  
 M - 8,000-12,000 PF  
 T - 3,300-5,000 PF  
 H -850-1,300 PF

### SHELL STYLE

3-Plug (rack side) consult factory  
 4-Receptacle (box side)

### CONNECTOR MOUNTING MODIFIER

00-Standard design .148 dia. holes  
 01-With #6-32 ESMA (#12 NCFMA2-62) clinch nuts

Connector Size	# of Clinch Nuts Receptacle
1	4
2	6
3	10

02-Size 1 receptacle only - less 3 printed circuit board mounting lugs  
 03-With #4-40 ESMA (#22 NCFMA2-40) clinch nuts

Connector Size	# of Clinch Nuts Receptacle
1	4
2	6
3	10

08-Size 2 and 3 receptacle only-with #4-40 ESMA (#22 NCFMA2-40) clinch nuts (all mounting holes)

09-Size 2 and 3 receptacle only-with #6-32 ESMA (#12 NCFMA2062) clinch nuts (all mounting holes)

23-with floating eyelets (.048 min. radial float)  
 4 corner holes per connector

Consult factory if other modifications are required.

### POLARIZING POSITION

01 thru 99 (per ARINC 600)  
 Blank-Polarizing posts or keys not installed but supplied with connector

### SPECIAL MODIFIER

Consult factory

## Typical Filter Performance



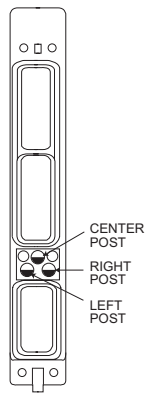
Dimensions shown in inch (mm)  
 Specifications and dimensions subject to change

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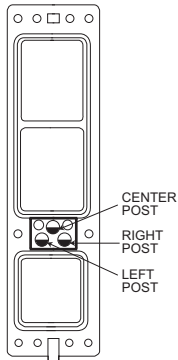
Polarization (Engaging End)

BAK\*1



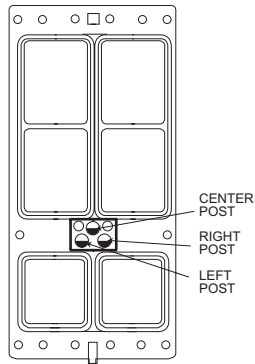
RECEPTACLE

BAK\*2

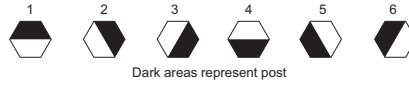


RECEPTACLE

BAK\*3



RECEPTACLE

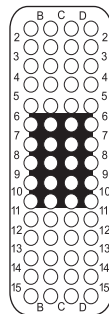


RECEPTACLE SHELL

Position	Left Post	Center Post	Right Post	Position	Left Post	Center Post	Right Post
01	4	4	4	51	6	3	2
02	4	4	3	52	6	3	1
03	4	4	2	53	6	3	6
04	4	4	1	54	6	3	5
05	4	4	6	55	1	3	4
06	4	4	5	56	1	3	3
07	5	4	4	57	1	3	2
08	5	4	3	58	1	3	1
09	5	4	2	59	1	3	6
10	5	4	1	60	1	3	5
11	5	4	6	61	2	3	4
12	5	4	5	62	2	3	3
13	6	4	4	63	2	3	2
14	6	4	3	64	2	3	1
15	6	4	2	65	2	3	6
16	6	4	1	66	2	3	5
17	6	4	6	67	3	3	4
18	6	4	5	68	3	3	3
19	1	4	4	69	3	3	2
20	1	4	3	70	3	3	1
21	1	4	2	71	3	3	6
22	1	4	1	72	3	3	5
23	1	4	6	73	4	2	4
24	1	4	5	74	4	2	3
25	2	4	4	75	4	2	2
26	2	4	3	76	4	2	1
27	2	4	2	77	4	2	6
28	2	4	1	78	4	2	5
29	2	4	6	79	5	2	4
30	2	4	5	80	5	2	3
31	3	4	4	81	5	2	2
32	3	4	3	82	5	2	1
33	3	4	2	83	5	2	6
34	3	4	1	84	5	2	5
35	3	4	6	85	6	2	4
36	3	4	5	86	6	2	3
37	4	3	4	87	6	2	2
38	4	3	3	88	6	2	1
39	4	3	2	89	6	2	6
40	4	3	1	90	6	2	5
41	4	3	6	91	1	2	4
42	4	3	5	92	1	2	3
43	5	3	4	93	1	2	2
44	5	3	3	94	1	2	1
45	5	3	2	95	1	2	6
46	5	3	1	96	1	2	5
47	5	3	6	97	2	2	4
48	5	3	5	98	2	2	3
49	6	3	4	99	2	2	2
50	6	3	3				

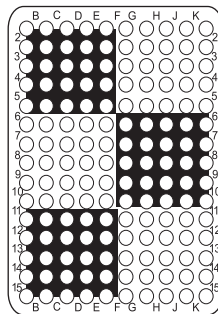
Contact Arrangements (Receptacle-Engaging Face Shown)

Size 1

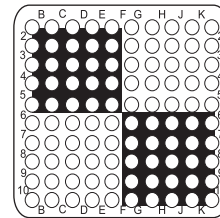


60  
60 #22  
SHELL CAVITY A or B  
NOT TOOLED

Sizes 2 & 3



150  
150 #22  
SHELL CAVITY A, B, D, or E

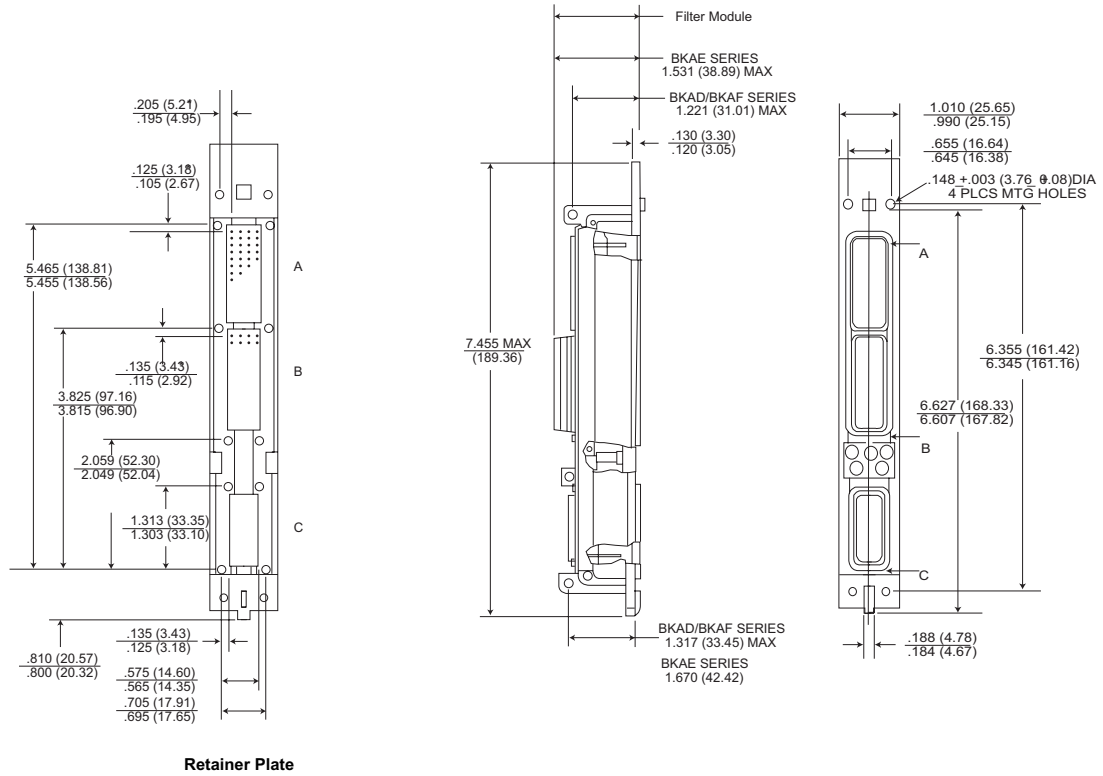


100  
100 #22  
SHELL CAVITY C or F  
NOT TOOLED

Dimensions shown in inch (mm)  
Specifications and dimensions subject to change

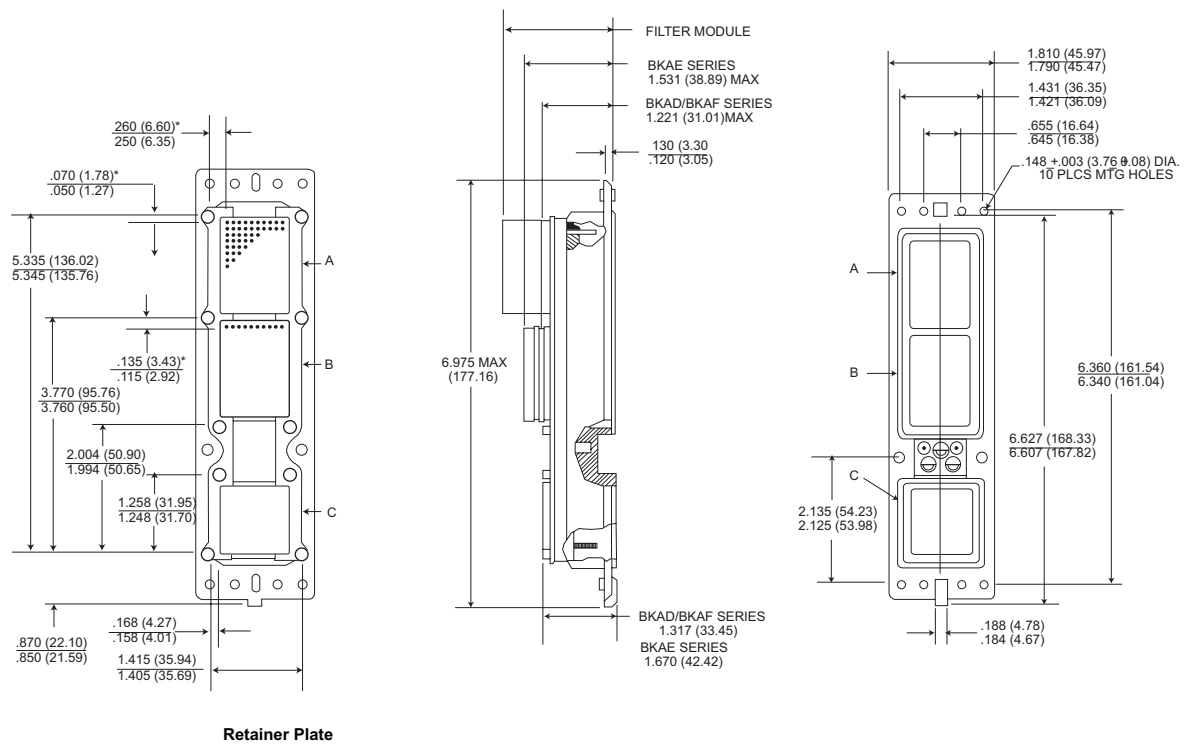


Size 1 Receptacle



\* This dimension indicates distance from centerline of retaining screw to the centerline of first contact cavity.

Size 2 Receptacle



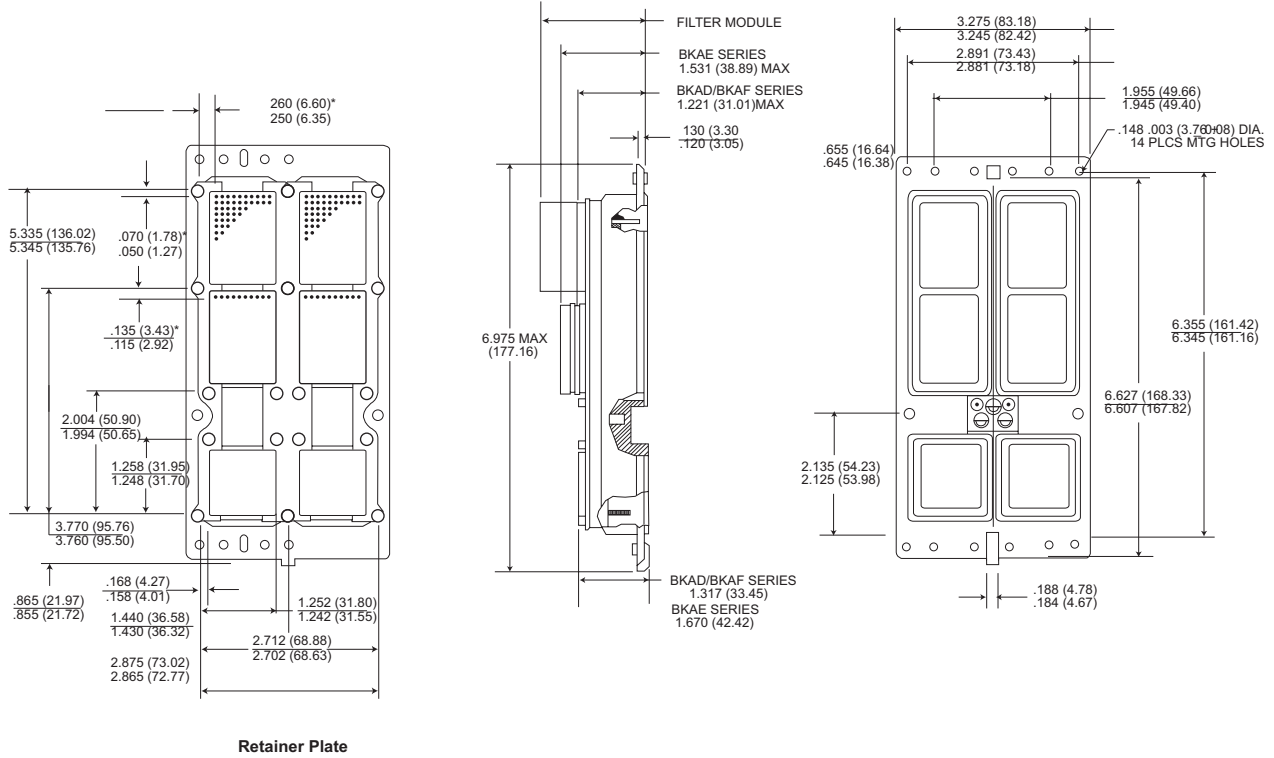
\* This dimension indicates distance from centerline of retaining screw to the centerline of first contact cavity.

Dimensions shown in inch (mm)  
 Specifications and dimensions subject to change

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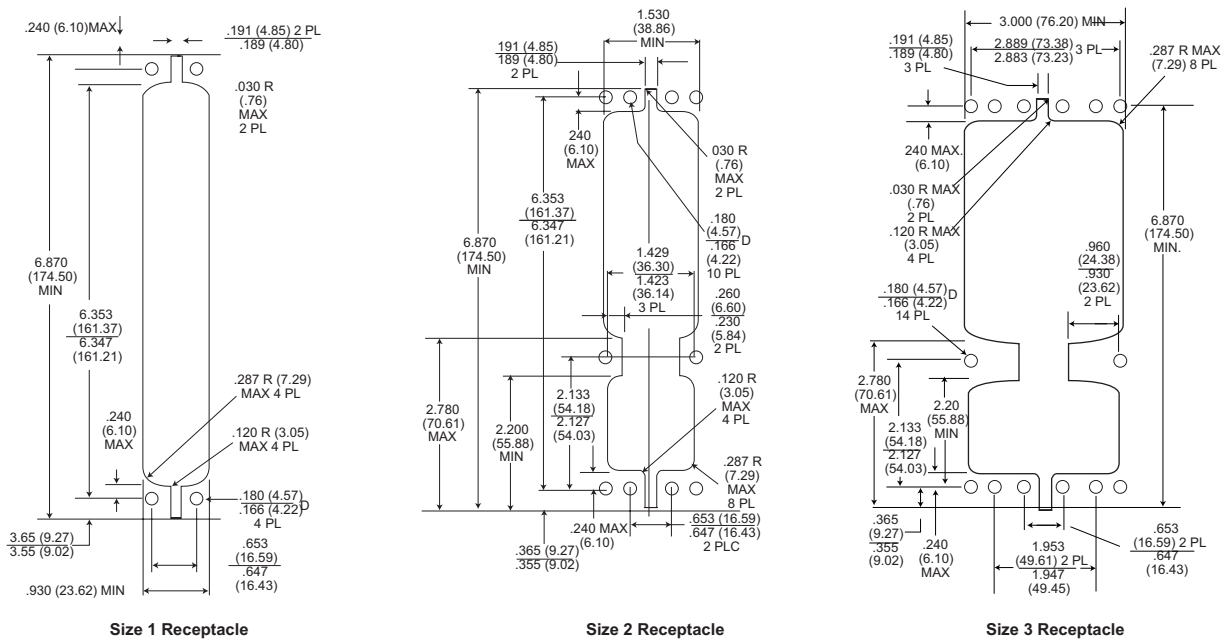


Size 3 Receptacle



\* This dimension indicates distance from centerline of retaining screw to the centerline of first contact cavity.

Panel Cutouts



**THIS NOTE MUST BE READ IN CONJUNCTION WITH THE PRODUCT DATA SHEET/CATALOG. FAILURE TO OBSERVE THE ADVICE IN THIS INFORMATION SHEET AND THE OPERATING CONDITIONS SPECIFIED IN THE PRODUCT DATA SHEET/ CATALOG COULD RESULT IN HAZARDOUS SITUATIONS.**

## 1. MATERIAL CONTENT AND PHYSICAL FORM

Electrical connectors do not usually contain hazardous materials. They contain conducting and non-conducting materials and can be divided into two groups.

- a) Printed circuit types and low cost audio types which employ all plastic insulators and casings.
- b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials. Contact materials vary with type of connector and also application and are usually manufactured from either: Copper, copper alloys, nickel, alumel, chromel or steel. In special applications, other alloys may be specified.

## 2. FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD

**There is no fire hazard when the connector is correctly wired and used within the specified parameters. Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionization and burning.** Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g. cracked or deformed contacts, broken strands of wire. Local overheating may also result from the use of the incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and hence electric shock. If heating is allowed to continue it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires and leakage currents through carbonization of insulation and tracking paths. Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

## 3. HANDLING

Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers. Electrical connectors may be damaged in transit to the customers, and damage may result in creation of hazards. Products should therefore be examined prior to installation/use and rejected if found to be damaged.

## 4. DISPOSAL

Incineration of certain materials may release noxious or even toxic fumes.

## 5. APPLICATION

Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector. Voltages in excess of 30 V ac or 42.5 V dc are potentially hazardous and care should be taken to ensure that such voltages cannot be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be checked, before making live, to have no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles. Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths. Always use the correct application tools as specified in the Data Sheet/Catalog. Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

## IMPORTANT GENERAL INFORMATION

**(i) Air and creepage paths/Operating voltage.** The admissible operating voltages depend on the individual applications and the valid national and other applicable safety regulations.

For this reason the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.

### (ii) Temperature

All information given are temperature limits. The operation temperature depends on the individual application.

### (iii) Other important information

Cannon continuously endeavors to improve their products. Therefore, Cannon products may deviate from the description, technical data and shape as shown in this catalog and data sheets.

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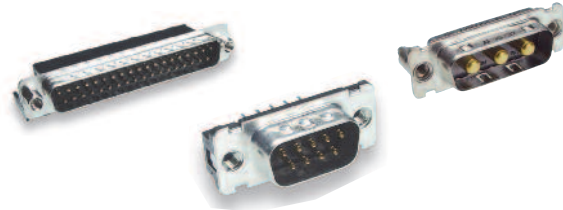
## Circular/Filter/Hermetic Connectors

As a world leader in circular, filter, and hermetic connectors, ITT Cannon can leverage its design and manufacturing expertise to fit virtually any application. Our expertise includes fast positive mating for a wide range of military applications, as well as numerous sizes and contact configurations for various harsh environments.



## D-Subminiature Connectors

Cannon invented D-sub connectors in 1952. Our family of D-Subs now includes combinations of signal, power and RF, as well as severe service sealed connectors. Cannon D-Subs are available with an extensive line of backshells and accessories and are one of the most economical shielded connector solutions available.



## Fiber Optic Connectors and Cable Assemblies

Cannon fiber optic solutions provide an excellent performance/cost value. Performance may be tailored to the end system, with our use of superior materials and bonding agents providing highly effective solutions. Our wide variety of products include fiber optic hybrid contacts, multi-channel, rack and panel and hi-rel assemblies.



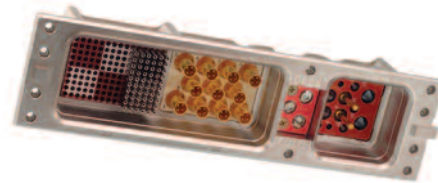
## Microminiature Connectors

Developed first by Cannon in the 1960s, Microminiature Connectors offer high performance and reliability with exceptional versatility. Available in rectangular, circular and strip-style configurations for countless applications, many of our highly engineered Microminiature connector products meet critical customer demands in multiple applications across the Aerospace & Defense industry.



## Rack and Panel Connectors

Pioneered by Cannon during the 1930s, our Rack & Panel Connectors offer an unmatched variety of shell configurations and insert arrangements, as well as materials, plating and contact options. Today, we are recognized as an industry leader, offering an unparalleled range of off-the-shelf and custom Rack & Panel products to align with customer needs.



## RF Connectors

ITT Cannon has been providing interconnect products to the Microwave and RF industry since 1963 (formerly The Sealectro Corporation). The RF 50 & 75 Ohm product lines cover UHF band through Ku band requirements. These connectors and cable assemblies are available with a thread type, snap type, bayonet type or slide on coupling method. The frequencies range from DC to 18+ GHz.



ITT Cannon is a leading global manufacturer of connector products serving international customers in the aerospace and defense, medical, energy, transportation and industrial end markets. Whether delivering critical specs to aircraft pilots, streaming data through communications satellites or enabling ultrasound technology that gives an expectant mother the first glimpse of her unborn child, Cannon connects the world's most important information with the people who need it. **To learn more, visit [www.ittcannon.com](http://www.ittcannon.com)**





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Our facility is not currently certified by the DLA and this product is not covered by the QPL/QML.

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