Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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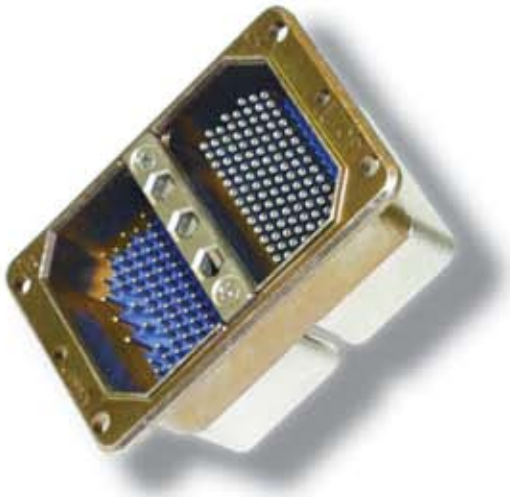
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

ITT

Electronic Components

Cannon
Filter Connectors



Engineered for life

ITT Electronic Components is a division of the multi-national ITT Corporation a $7.5 billion dollar global enterprise. Our connector portfolio remains the most extensive in the industry offering the most reliable and cost effective range of interconnect solutions. These innovations have enabled ITT to provide products and technologies to such markets as:

- 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.

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 know 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 EFI/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 discreet 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 intermateable 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/filter.

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

Table of Contents

	TD1* MIL-DTL-24308	TMDM MIL-C-83513	TPV MIL-C-26482	Chip-on-Flex MIL-DTL-38999	TKJ/TKJL/TKJA/TKJB MIL-DTL-38999	TDPX MIL-C-81659	TBKAD ARINC 600
							
Type	plug and socket	plug and socket	plug and socket	plug and socket	plug and socket	plug and socket	plug and socket
Current Rating	7.5A	3A	7.5A to 15A	5A to 20A	5A to 20A	5A to 20A	5A to 20A
Contact Resistance	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
Contact Material	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
Shell	metal	metal	metal	metal	metal	metal	metal
Shell Material	aluminum	aluminum	aluminum	aluminum	aluminum	aluminum	aluminum
Available Layouts	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
Configuration	Polarized D	Polarized D	Cyclindrical	Cyclindrical	Cyclindrical	Rack and Panel	Rack and Panel
RoHS	Available	Available	Available	Available	Available	Available	Available
Factory Terminated	Available	Available	Available	Available	Available	Available	Available
Space Applications	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Page Number	6	9	12	17	20	32	40

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

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

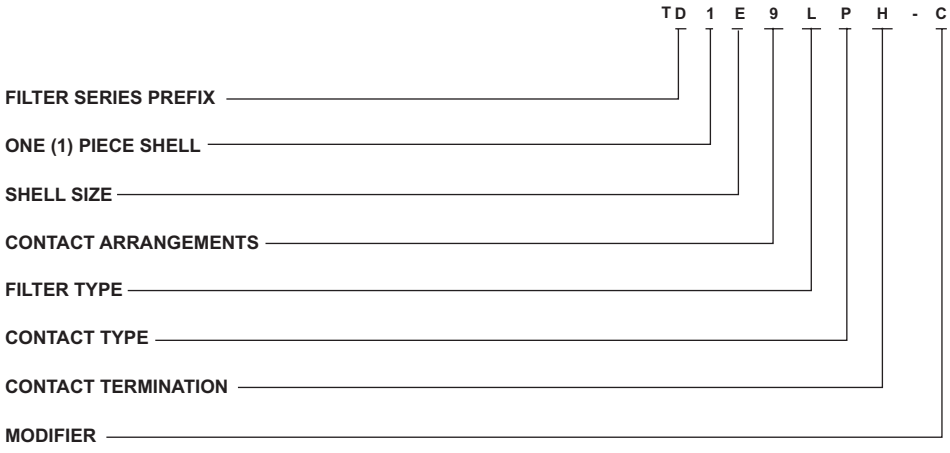
ELECTRICAL DATA

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



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

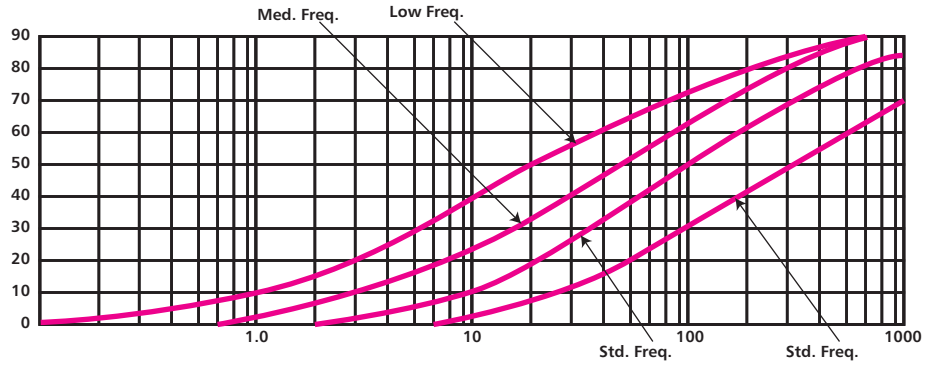
PRINTED CIRCUIT CONTACTS
Consult factory. Both 90˚ and straight types are available.

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

MODIFIER
C - Clinch nut

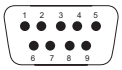
Dimensions shown in inch (mm)
Specifications and dimensions subject to change

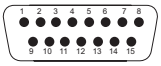
Typical Filter Performance

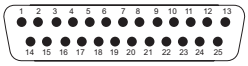


Contact Arrangements

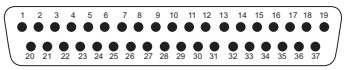
Face View Pin Insert

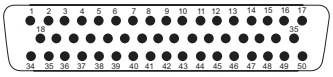






Shell Size	**E**	**A**	**B**
Contact Arrangement	**9**	**15**	**25**
Contact Size	**#20**	**#20**	**#20**

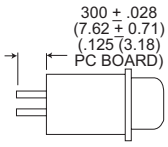




Shell Size	**C**	**D**
Contact Arrangement	**37**	**50**
Contact Size	**#20**	**#20**

Contacts

Straight Printed Circuit

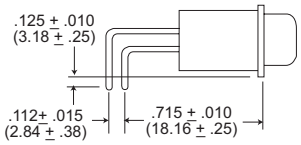


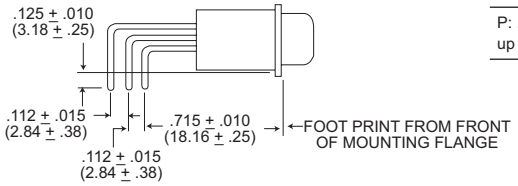
Modifier

H: .040 (1.02) 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



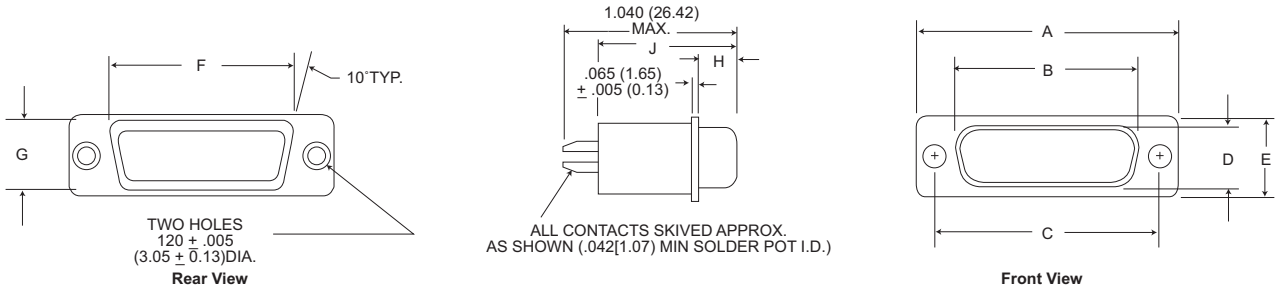


Modifier

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

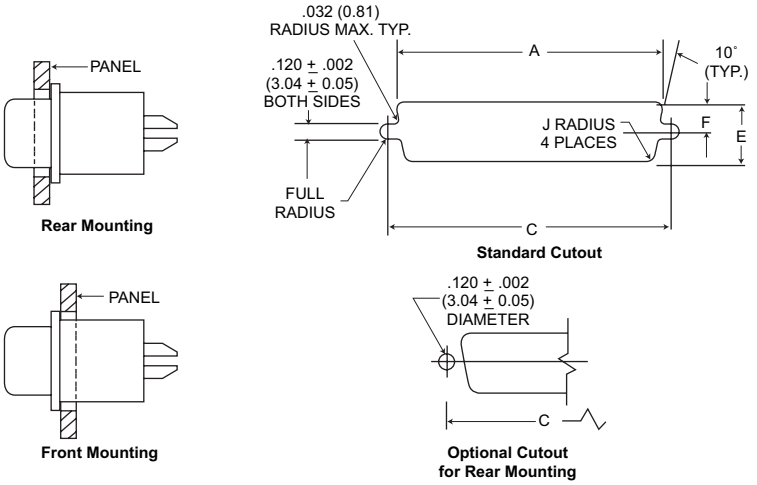
Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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)	.231 (5.87)	.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)

MIL-C-83513 Filter Connectors

TMDM

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

MATERIALS & FINISHES	
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
ELECTRICAL DATA	
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
MECHANICAL FEATURES	
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

TMDM – C1 15 S H 001 B- *

Series
Filter type
Number of contacts
Contact style
Termination type
Termination/modifier code
Mounting code
Modification code

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

www.ittcannon.com

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.**

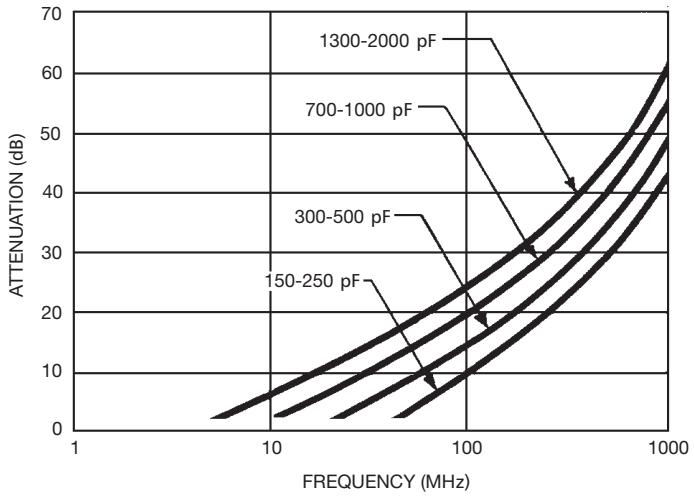
Harness Type (H) #26 AWG per
MIL-W-16878/4 Type E Teflon, stranded

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.

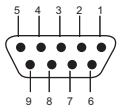
Code	Length
L61	.125 (.18)
L56	.150 (3.81)
L57	.190 (4.83)
L39	.250 (5.35)
L58	.375 (9.52)
L1	.500 (12.70)
L14	.750 (19.05)
L2	1.000 (25.40)
L7	1.500 (38.10)
L6	2.000 (50.80)
L6	2.500 (63.50)
L10	3.000 (76.20)

Typical Filter Performance

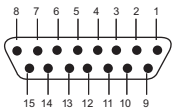


Contact Arrangements

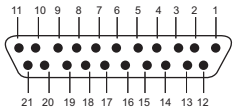
Face vew of socket insert - use reverse order for wiring side.



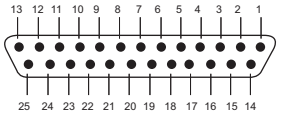
9 Contacts



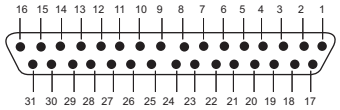
15 Contacts



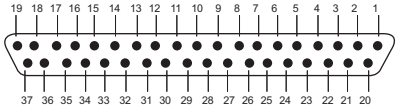
21 Contacts



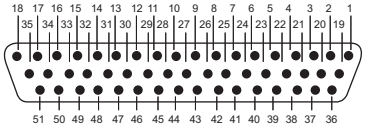
25 Contacts



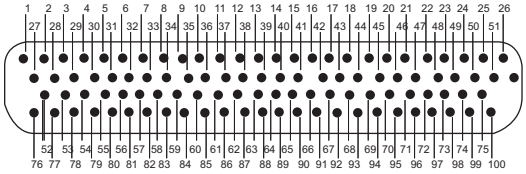
31 Contacts



37 Contacts



51 Contacts

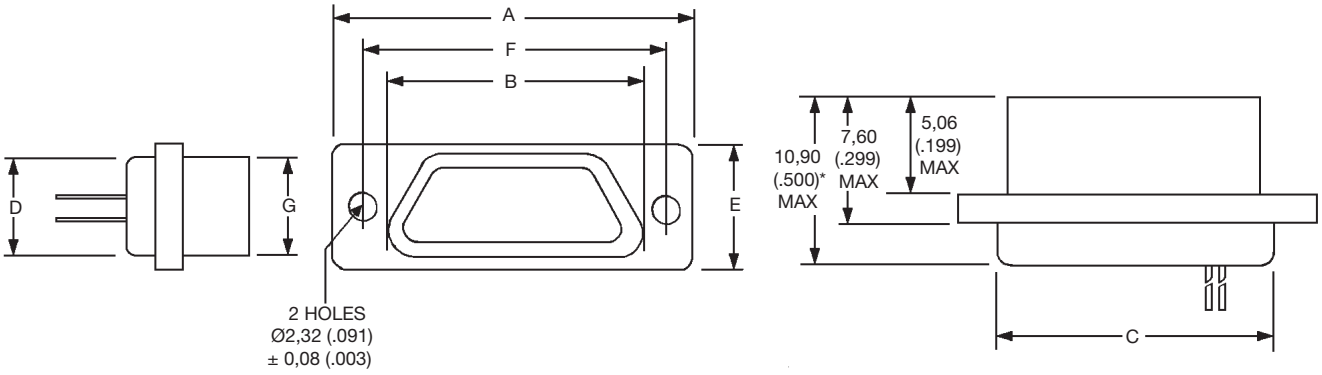


100 Contacts *

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

www.ittcannon.com

MIL-C-26482 Series 2/-83723 Series 1 Filter Connectors TPV

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 meet the applicable portions of military specifications 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

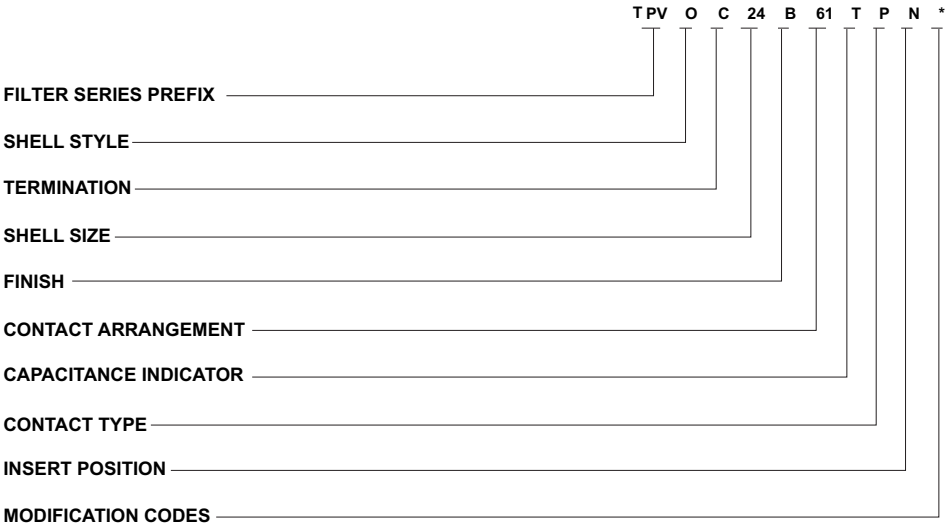
MATERIALS AND FINISHES

Jam Nut	Material:	Aluminum Alloy	
	Finish:	Class "B" Series Olive drab chromeplate over cadimium finish per QQ-P-416	Class "G" Series Electroless nickel plating Per MII-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 termperature plastic/epoxy	
	Finish:	none	
Interfacial and	Material:	Fluorosilicone rubber (ITT Cannon blend)	
Peripheral Seals	Finish:	none	
O ring	Material:	Silicone rubber (ITT Cannon blend)	
(Jam Nut Mounting Only)	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 45000	8000 12000	3300 5000	850 1300
	Freq. MHz				
Attenuation per MIL-STD-220 @ 25˚C with no applied voltage or current.	0.1	2 min.	-	-	-
	1.0	10 min.	2 min.	-	-
	2	16 min.	7 min.	2 min.	-
	10	40 min.	18 min.	8 min.	2 min.
	100	60 min.	55 min.	45 min.	30 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.					

How to Order



FILTER SERIES PREFIX
TPV - MIL-C-26482 Series 2, MIL-C-83723 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 - Electorless nickel finish (preferred)

CONTACT ARRANGEMENTS
See page 14

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

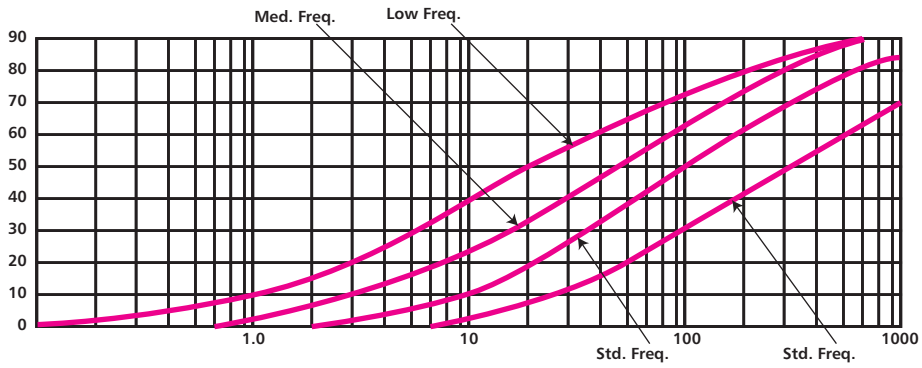
CONTACT TYPE
P - Pin contacts
S - Socket contacts

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

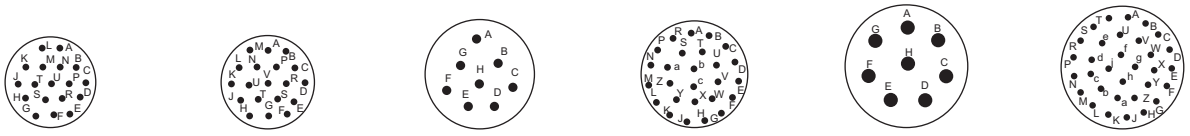


Dimensions shown in inch (mm)
Specifications and dimensions subject to change

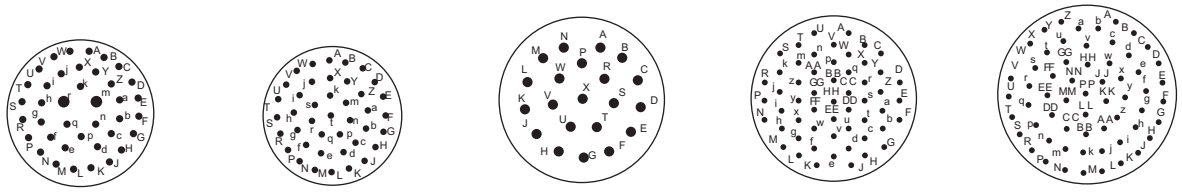
Contact Arrangements

(Face view, pin insert)

Shell Size/Arr. No.	10-6	12-8	12-10	14-5	14-21	14-15
No. of Contacts	6	8	10	5	4 B	1 14
Contacts Size	#20	#20	#20	#16	#16 #20	#16 #20



Shell Size/Arr. No.	14-18	14-19	16-8	16-26	18-8	18-32
No. of Contacts	18	19	8	26	8	32
Contacts Size	#20	#20	#16	#20	#12	#20



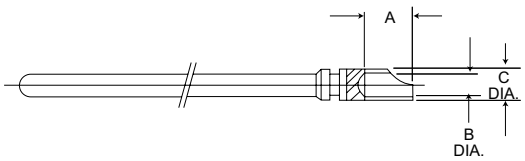
Shell Size/Arr. No.	20-39	20-41	22-21	22-55	24-61
No. of Contacts	2 37	41	21	55	61
Contacts Size	#16 #20	#20	#16	#20	#20

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

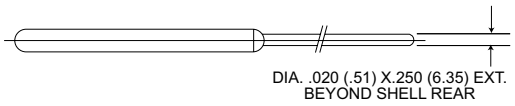
Contact - Pin and Socket

Standard Contact Terminations

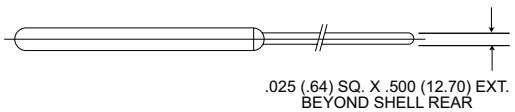
Finish: Gold plate per MIL-G-45204, Type 1, Class 1, over nickel plate per QQ-N-290.



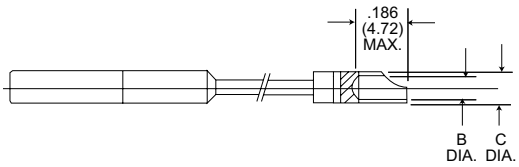
Pin/Solder Pot



Pin/Printed Circuit



Pin/Square Post



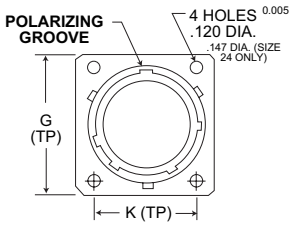
Socket/Solder Pot

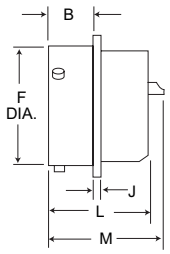
Contact Size	A	B Dia.	C Dia.
#20	.125 (3.18) .110 (2.79)	.049 (1.24) .045 (1.14)	.073 (1.85) .068 (1.73)
#16	.160 (4.06) .150 (3.81)	.077 (1.96) .068 (1.73)	.104 (2.64) .097 (2.46)

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

Flange Mounting Receptacle

TPV0

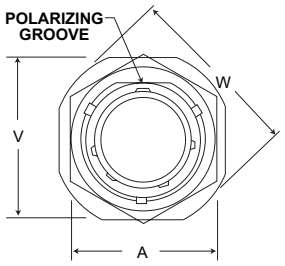


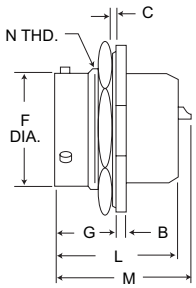


Shell Size	B Max.	F Max.	L Max.	M Max.	J Max.	K	G Max.
10	.462 (11.73)	.591 (15.01)	1.215 (30.86)	1.530 (38.86)	.078 (1.98)	.719 (18.26)	.954 (24.23)
12	.462 (11.73)	.751 (19.08)	1.215 (30.86)	1.530 (38.86)	.078 (1.98)	.812 (20.62)	1.047 (26.59)
14	.462 (11.73)	.876 (22.25)	1.215 (30.86)	1.530 (38.86)	.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

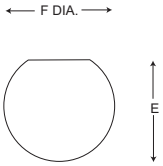




Shell Size	V Max.	A Max.	B Max.	F Max.	G ± .009 (0.23)	C Panel Thickness	L Max.	M Max.	W Dia.	N Thread Class 2A
10	1.078 (27.38)	.892 (22.66)	.113 (2.87)	.591 (15.01)	.698 (17.73)	.187 (4.75)	1.215 (30.86)	1.530 (38.86)	1.203 (30.56)	11/16-24UNEF
12	1.266 (32.16)	1.079 (27.41)	.113 (2.87)	.751 (19.08)	.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



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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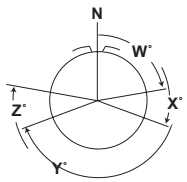
Alternate Polarizing Positions

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	ARRANGE-MENT	N	W	POS CODE X	Y	Z
8	33	0°	90°	-	-	-
	98	0°	-	-	-	-
10	6	0°	90°	-	-	-
12	3	0°	-	-	180°	-
	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°
	19	0°	30°	165°	315°	-
16	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°
	32	0°	85°	138°	222°	265°
20	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°

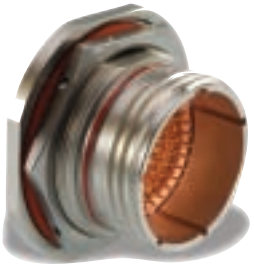
Special In-line Cable Filter Adapters

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 MIL-C-26482 and MIL-C-83723 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.



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 size 16 & 20		500 VDC	
Capacitance at 1 KHz, 0.1 V rms Picofarads		32,000 45,000	8,000 12,000	3300 5000	85 1,3
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.	2 m
	100	60 min.	55 min.	45 min.	30 n
	500 to 1000	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

C	F	K	J	A	0	E	*	N	*	L	P	N	P

Product Prefix (MIL-DTL-38999)

MIL-DTL-38999 Series
I - L
II - blank
III - A
IV - B (receptacles only)

Shell Style
0 - Front Wall Mount Receptacle
2 - Front Box Mount Receptacle
3 - Rear Wall Mount Receptacle
5 - Rear Box Mount Receptacle
7 - Jam Nut Mount Receptacle
6 - Plug - EMI Grounded
8 - In-line Adapter

(Note - styles 2, 3 and 5 for Series I & II only)

* Shell size and Insert Arrangements per MIL-DTL-38999.

Termination
E - pc tail, .250 extension, .25ø size 22, .035Ø size 20, .060ø size 16
C - solder pot, .250 extension
S - crimp piggy-back
W - wire wrap, .400 extension, .025 square size 22

Shell Size

Insert Arrangement

Finish
N - Electroless Nickel (prefered)
B - Olive Drab Chromate over Cadmium over Nickel
R - Zinc alloy over Ni (RoHS compliant)

Standard Capacitance Range
H - 1100pF ±20%
T - 4200pF ±20%
M - 10,100pF ±20%
L - 38,000pF ±20%

Contact Type
P - pin
S - socket
PS - adapter pin side @ receptacle end
SP - adapter socket side @ receptacle end

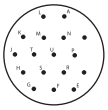
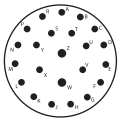
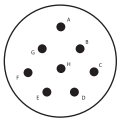
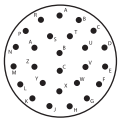
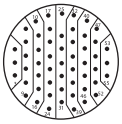
Polarization
N, A, B, C, D, E
per MIL-DTL-38999

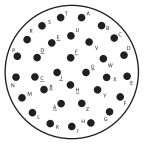
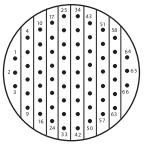
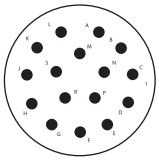
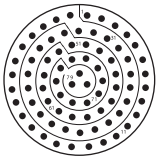
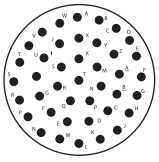
Filter Type
C - C filter
P - Pi filter
F - L filter

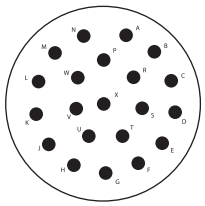
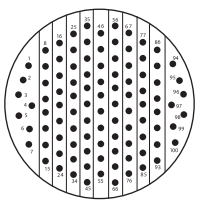
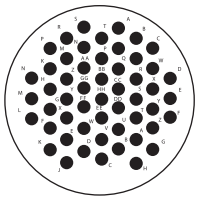
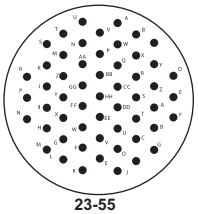
Contact Arrangements

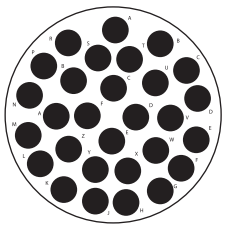
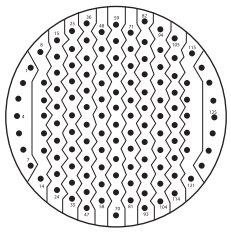
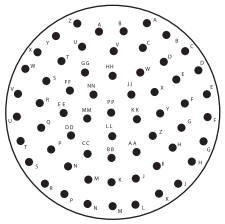
Engaging view, pin insert

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

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

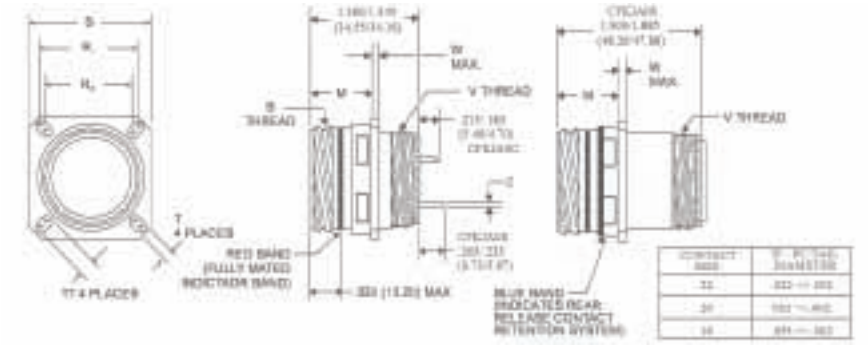
				
Series I, III & IV **Series II** **No. of Contacs** **Service Ratings**	**19-32** **18-32** **32 #20** **I**	**19-35** **18-35** **66 #22D** **M**	**21-16** **20-16** **16 #16** **II**	**21-35** **20-35** **79 #22D** **M**	**21-41** **20-41** **41- #20** **I**

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

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

Wall Mount Receptacle: MIL-DTL-38999 Series III

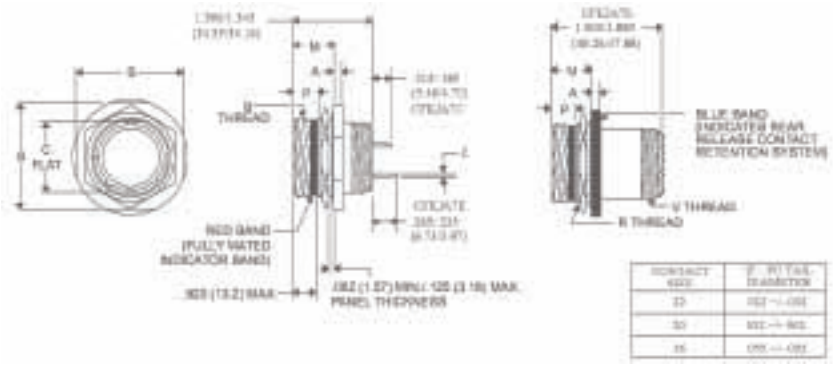
CFKJA0



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

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

TKJ L O C * A * L P N *

- TKJ — FILTER SERIES PREFIX
- L — MODIFIER
- O — SHELL STYLE
- C — TERMINATION
- * — SHELL SIZE
- A — HARDWARE FINISH
- * — CONTACT ARRANGEMENTS
- L — CAPACITANCE INDICATOR
- P — CONTACT TYPE
- N — ALTERNATE SHELL POSITION
- * — SPECIAL MODIFIERS

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

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

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.

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

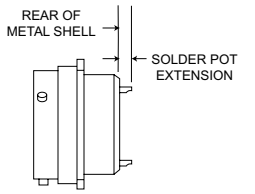
*Finish as noted in How to Order section.

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.	2 min.
	100	60 min.	55 min.	45 min.	30 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

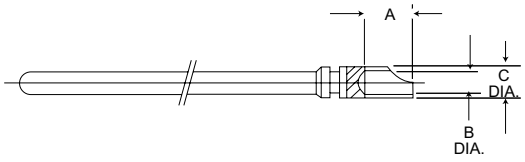


Note: Solder pot extension typically will be .200 (5.08) max. beyond shell rear.

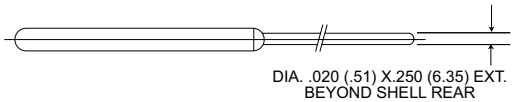
Contact - Pin and Sockets

Standard Contact Terminations

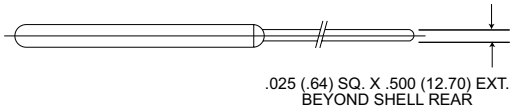
Finish: Gold plate per MIL-G-45204, Type 1, Class 1, over nickel plate per QQ-N-290.



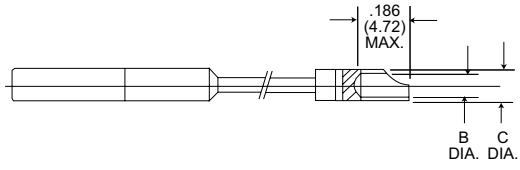
Pin/Solder Pot



Pin/Printed Circuit



Pin/Square Post



Socket/Solder Pot

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

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 Contacs	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 Contacs	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 Contacs	32 #20	66 #22D	16 #16	79 #22D	41- #20
Service Ratings	I	M	II	M	I

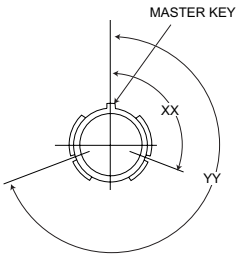
Series I, III & IV	23-21	23-35	23-53	23-55
Series II	22-21	22-35	22-53	22-55
No. of Contacs	21 #16	100 #22D	53 #20	55 #20
Service Ratings	II	M	I	I

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

Please consult factory for availability of layouts not shown.

Polarizing Positions

Series IV



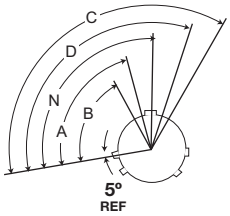
Front face of receptacle shown. Polarizing keys are external.

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.

Polarizing Positions

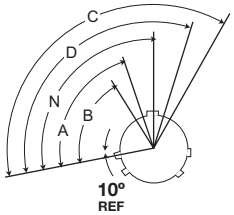
Series I



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°

Series II

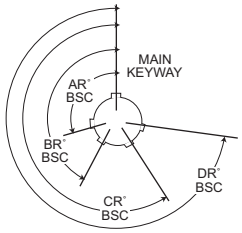


Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key-keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

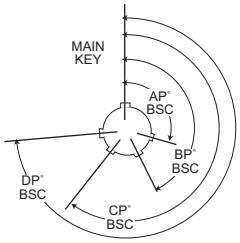
Shell Size	Angle of Rotation (Degrees) Normal	A	B	C	D
8	100°	82°			118°
10	100°	86°	72°	128°	114°
12	100°	80°	68°	132°	120°
14	100°	79°	66°	134°	121°
16	100°	82°	70°	130°	118°
18	100°	82°	70°	130°	118°
20	100°	82°	70°	130°	118°
22	100°	85°	74°	126°	115°
24	100°	85°	74°	126°	115°

Series III

RECEPTACLE
(Front face shown)



PLUG
(Front face shown)



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
	E	91	131	197	240
11 13 and 15	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
17 and 19	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
21 23 and 25	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272

NOTES

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

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.

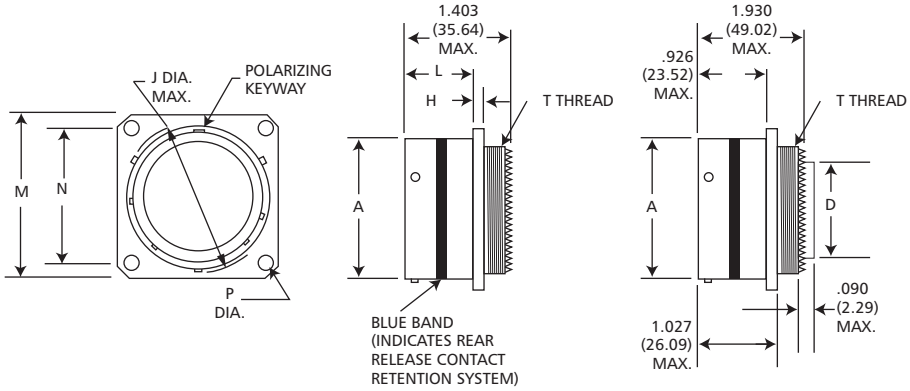
These adapters will mate with all MIL-DTL-38999 connectors having like contact arrangements. For proper performance both the mating receptacle and panel must have a conductive finish. Please contact Customer Service for dimensions.

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

TKJL0

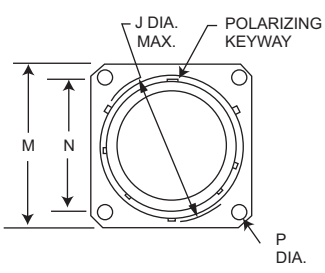


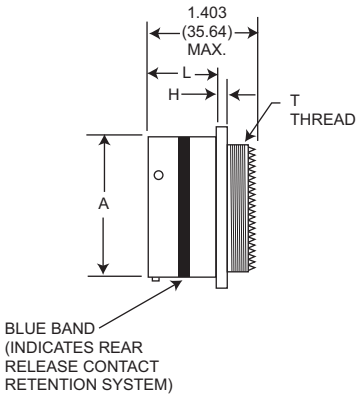
Crimp Piggyback

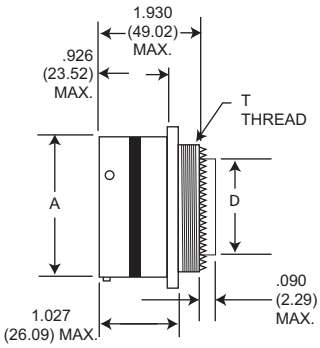
Shell Size	A Dia. Max.	D Dia. Max.	G Dia. Max.	H Max.	J Dia. Max.	L Max.	M Max.	N T.P.	P Dia. Max.	T Thread
9	.573 (14.55)	.299 (7.59)	.562 (14.27)	.100 (2.54)	.662 (16.81)	.632 (16.05)	.958 (24.33)	.719 (18.26)	.138 (3.51)	.5625-24UNEF-2A
11	.701 (17.81)	.427 (10.85)	.626 (15.90)	.100 (2.54)	.810 (20.57)	.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

Wall Mounting Receptacle (Back Panel)

TKJL3



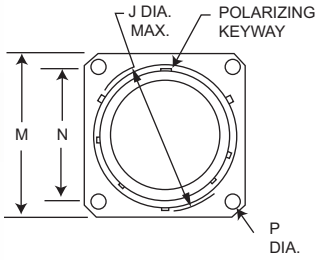


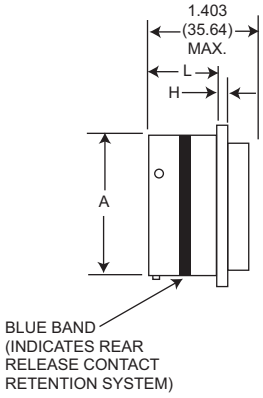


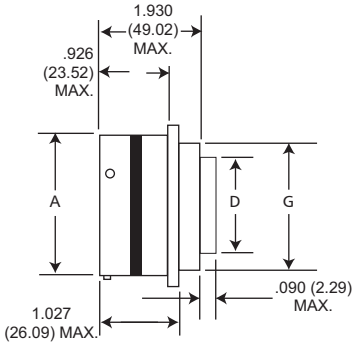
Crimp Piggyback

Box Mounting Receptacle (No Rear Threads)

TKJL5







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)	.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