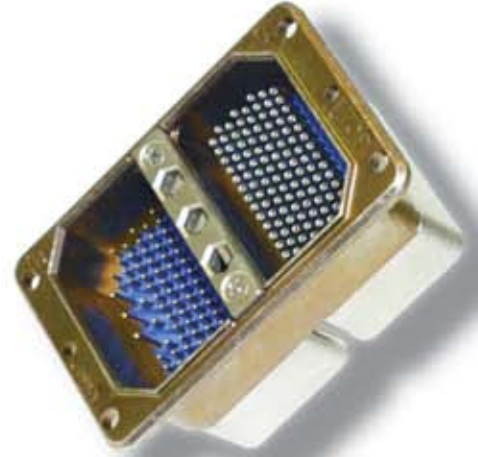




ITT

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

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



Product Overview Guide. 5
TD1* 24308-Style..... 6
TMDM 83513-Style. 9
TPV 26482-Style..... 12
Chip-on-Flex. 17
TKJ/TKJL/TKJA/TKJB (38999-Style)..... 20
TDPX (MIL-C-81659) 32
TBKAD (ARINC 600) 40
Product Warranty 46



| | TD1* MIL-DTL-24308 | TMDM 83513-Style | TPV 26482-Style | 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 | Cylindrical | Cylindrical | Cylindrical | 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

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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

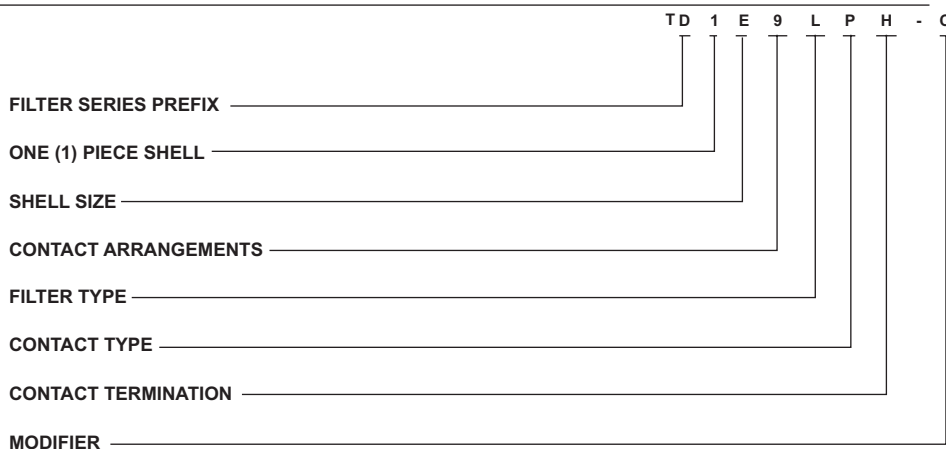
ELECTRICAL DATA

| 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. |
| | 100 | 60 min. | 55 min. | 50 min. |
| | 500 to 1,000 | 65 min. | 60 min. | 55 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



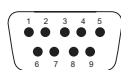
Typical Filter Performance



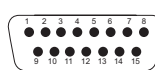
Contact Arrangements

Face View Pin Insert

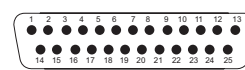
Shell Size
Contact Arrangement
Contact Size



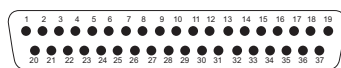
E
9
#20



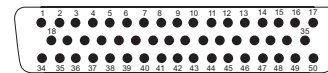
A
15
#20



B
25
#20



C
37
#20

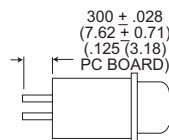


D
50
#20

Shell Size
Contact Arrangement
Contact Size

Contacts

Straight Printed Circuit

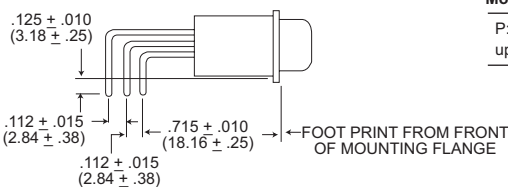
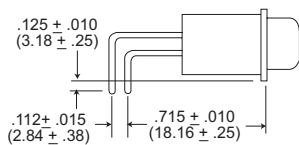


Modifier

H: .040 (.102) 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

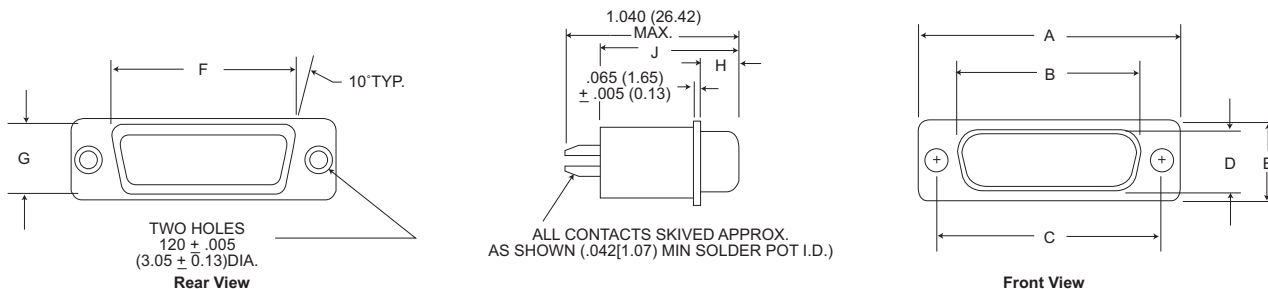
P: .030 (.76) Dia. terminals and accommodates P.C. boards up to 3/32 Max. Thickness.

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

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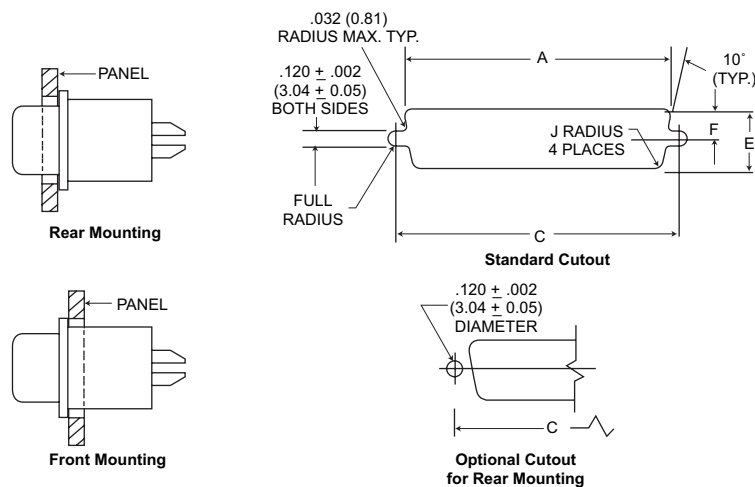


Standard Shell Dimensions



| 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 (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) |





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.

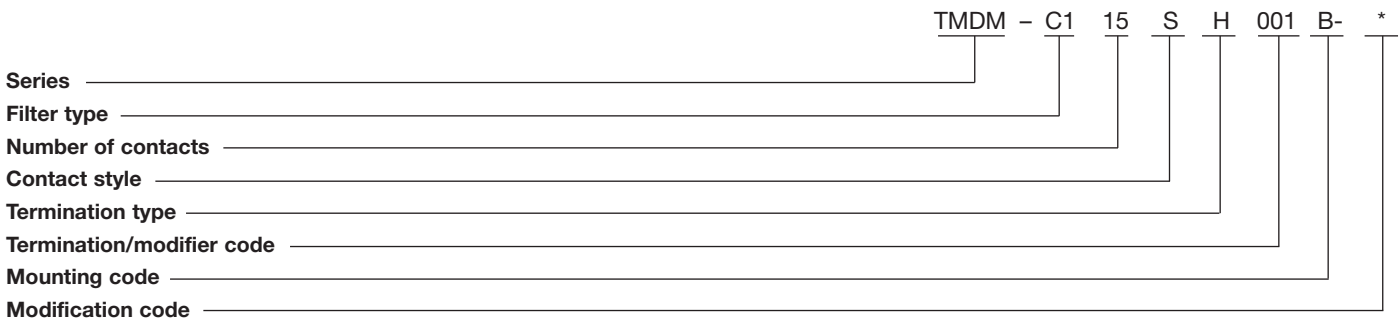
Features

- 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



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.**

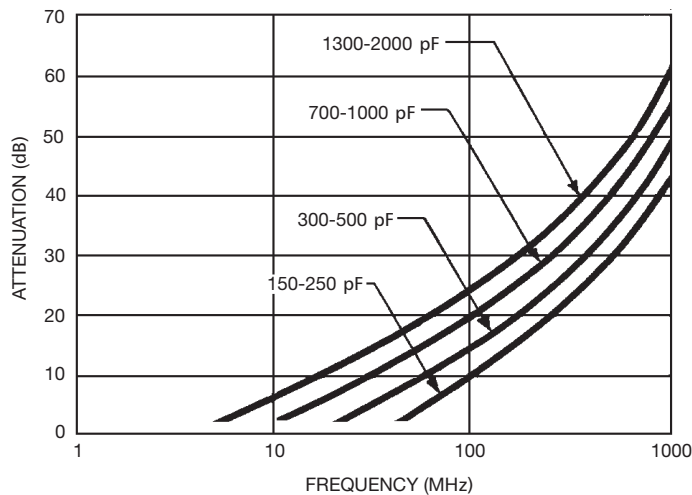
Harness Type (H) #26 AWG per MIL-W-16878/4 Type E Teflon, stranded

| 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.

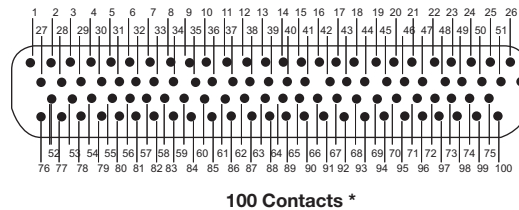
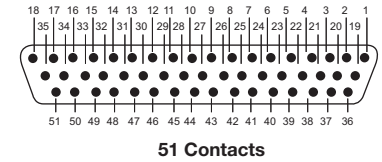
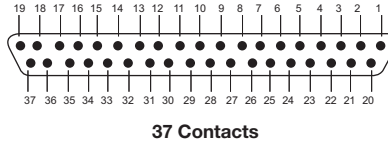
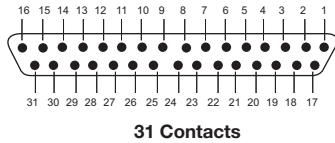
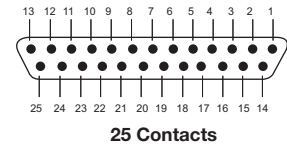
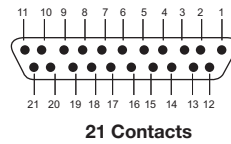
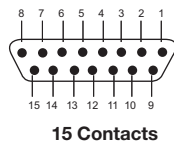
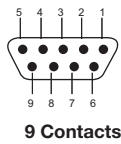
| Code | Length |
|------|---------------|
| L61 | .125 (.18) |
| L56 | .150 (3.81) |
| L57 | .190 (4.83) |
| L39 | .250 (5.35) |
| L58 | .375 (9.52) |
| L1 | .500 (12.70) |
| L14 | .750 (19.05) |
| L2 | 1.000 (25.40) |
| L7 | 1.500 (38.10) |
| L6 | 2.000 (50.80) |
| L6 | 2.500 (63.50) |
| L10 | 3.000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

Typical Filter Performance



Contact Arrangements

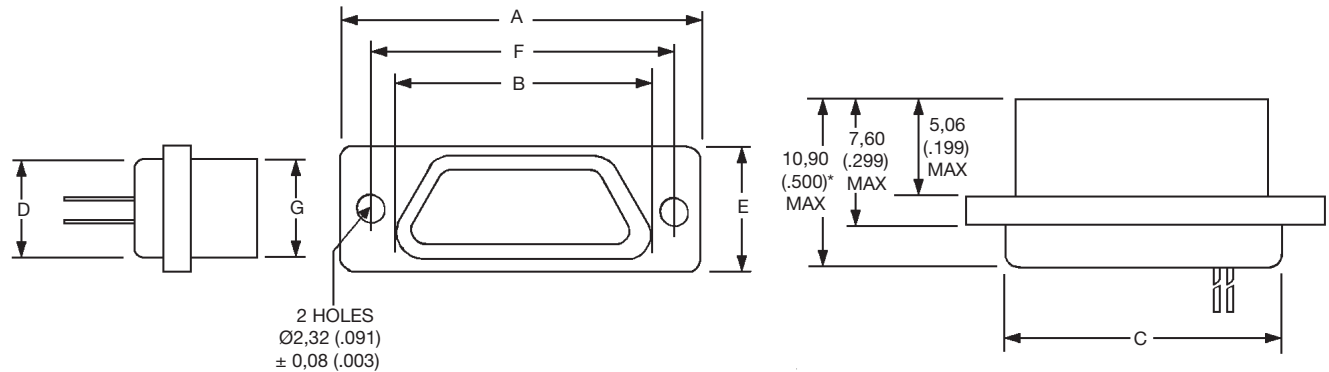
Face view of socket insert - use reverse order for wiring side.



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 |

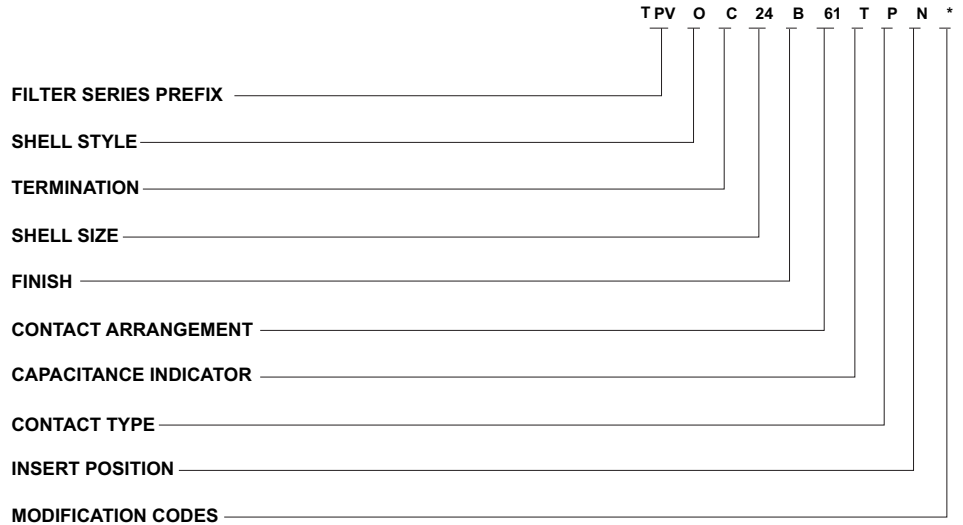
Consult factory for higher or mixed attenuation values and higher voltage ratings.



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

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How to Order



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 - Electroless 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.

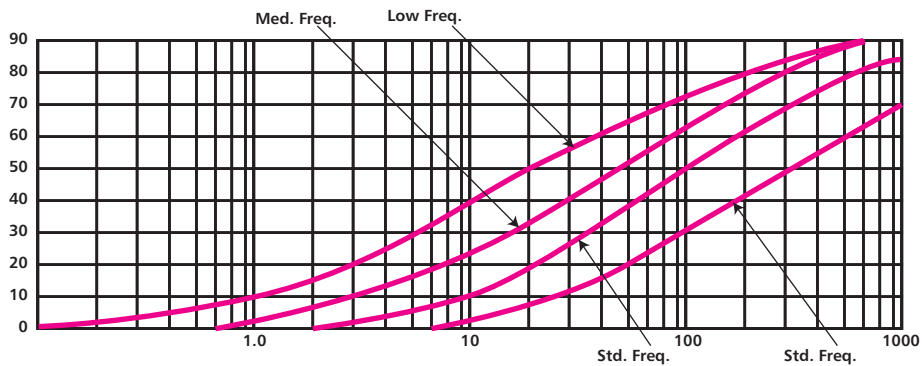
MODIFICATION CODES

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



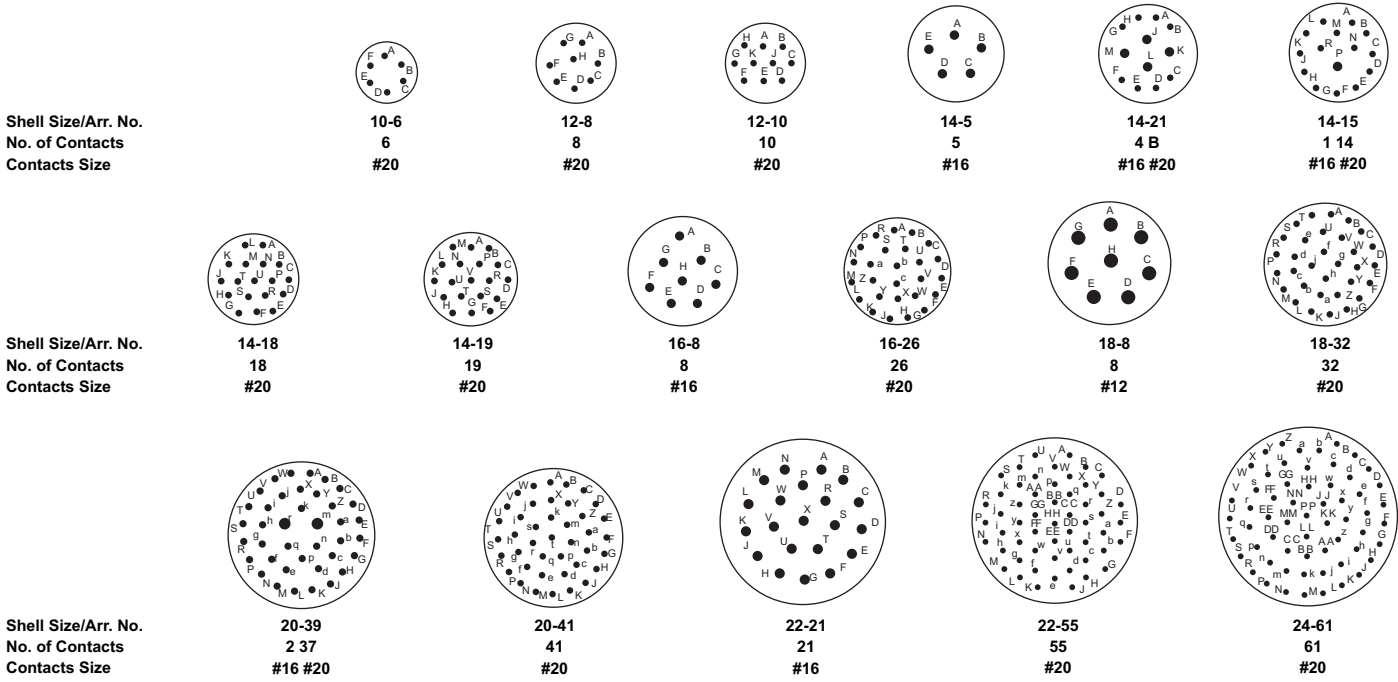
Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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Contact Arrangements

(Face view, pin insert)

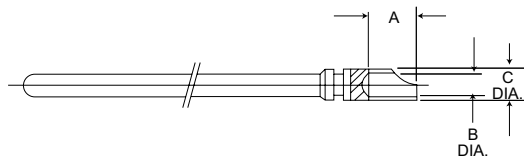


Consult factory for availability of other contact arrangements. Available for In-Line Adapters also.

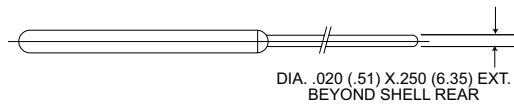
Contact - Pin and Socket

Standard Contact Terminations

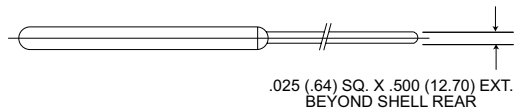
Finish: Gold plate per MIL-G-45204, Type 1, Class 1, over nickel plate per QQ-N-290.



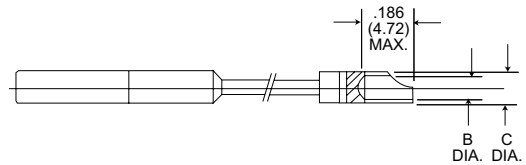
Pin/Solder Pot



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.

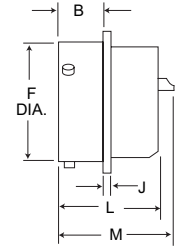
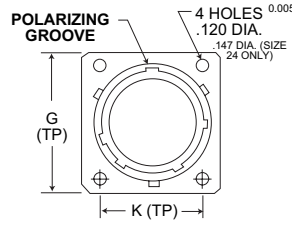


Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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Flange Mounting Receptacle

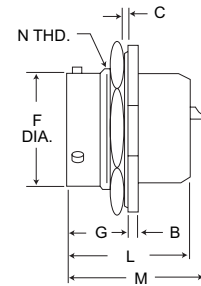
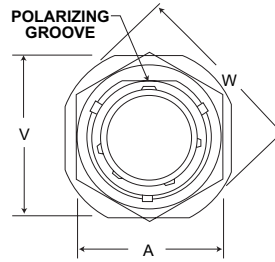
TPV0



| 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

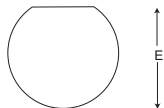


| Shell Size | V Max. | A Max. | B Max. | F Max. | G ± .009 (0.23) | C Panel Thickness | L Max. | M Max. | W Dia. | N Thread Class 2A |
|------------|---------------|---------------|-------------|---------------|-----------------|-------------------|---------------|---------------|---------------|-------------------|
| 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)

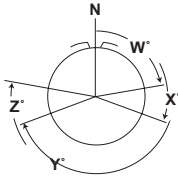
Specifications and dimensions subject to change

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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.



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

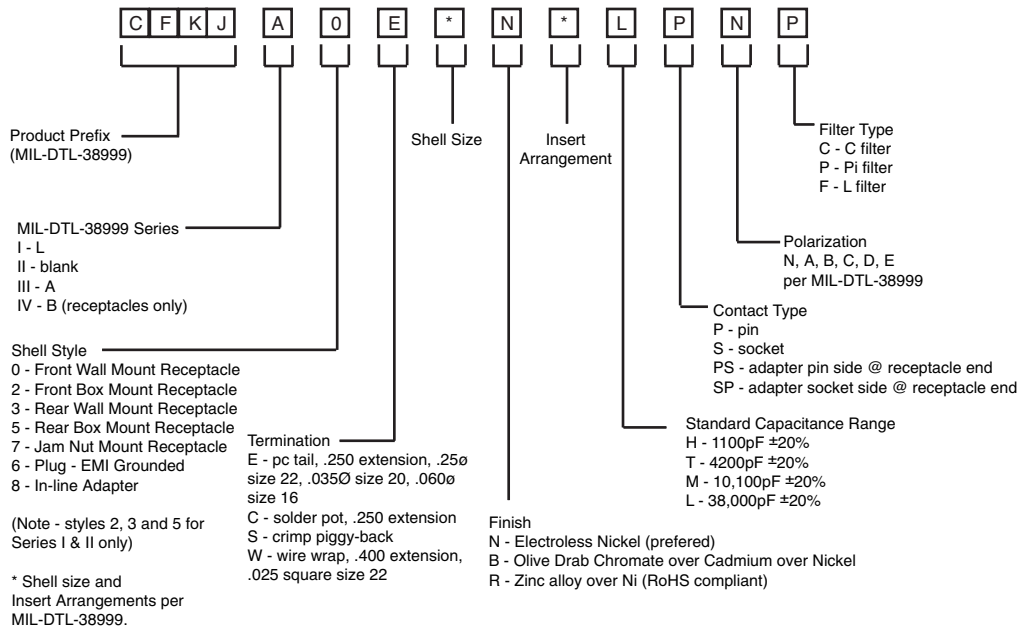
MIL-STD-1344, Method 2003, 25 cycles of temperature cycling

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. |
| | 50 n | 30 n | 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 |

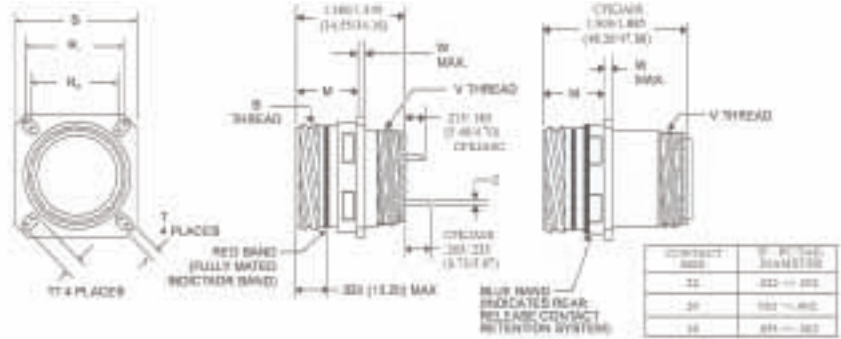


Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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Wall Mount Receptacle: MIL-DTL-38999 Series III

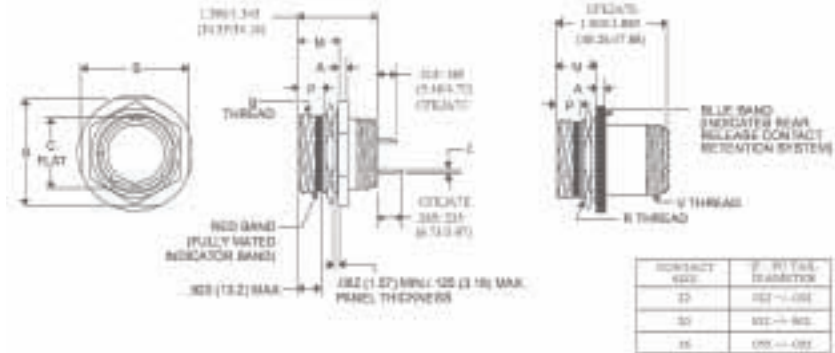
CFKJA0



| 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 |

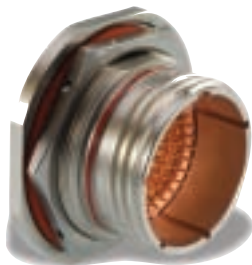
Note: Currently designed for MIL-DTL-38999 Series III. This can be provided for MIL-C-38999 I, II, and III. Please contact Customer Service.

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

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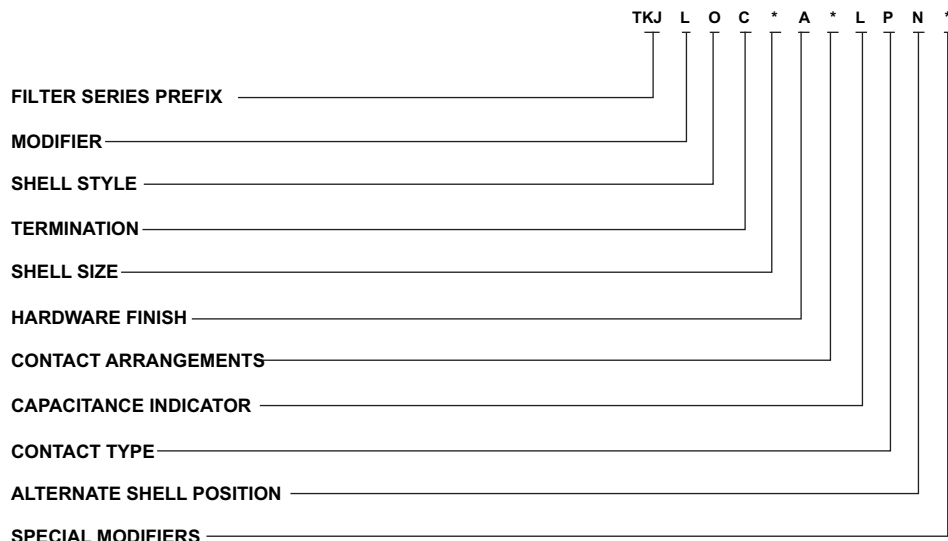


MIL-DTL-38999 Series I, II, III, IV Filter Connectors



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 |

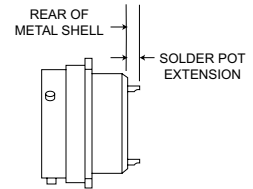
*Finish as noted in How to Order section.

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

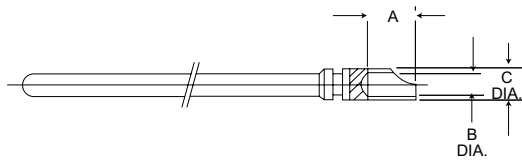


Note: Solder pot extension typically will be .200 (5.08) max. beyond shell rear.

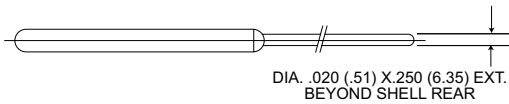
Contact - Pin and Sockets

Standard Contact Terminations

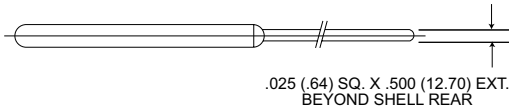
Finish: Gold plate per MIL-G-45204, Type 1, Class 1, over nickel plate per QQ-N-290.



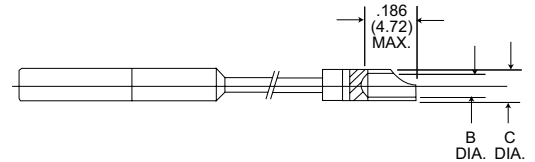
Pin/Solder Pot



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) |

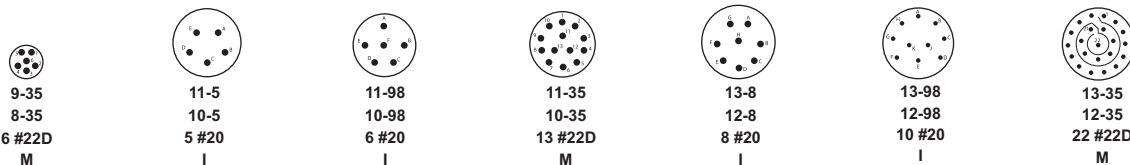


MIL-DTL-38999 Series I, II, III, IV Filter Connectors

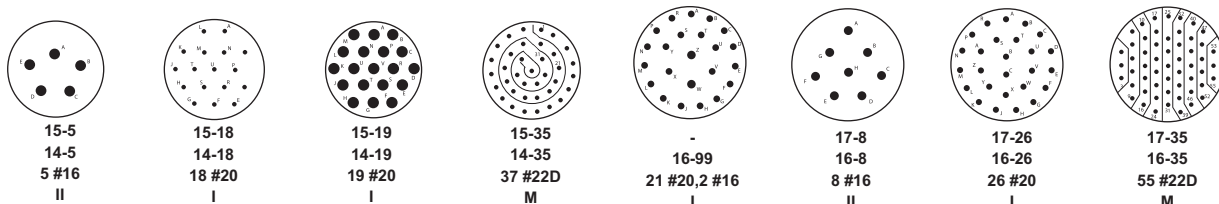
Contact Arrangements

Engaging view, pin insert

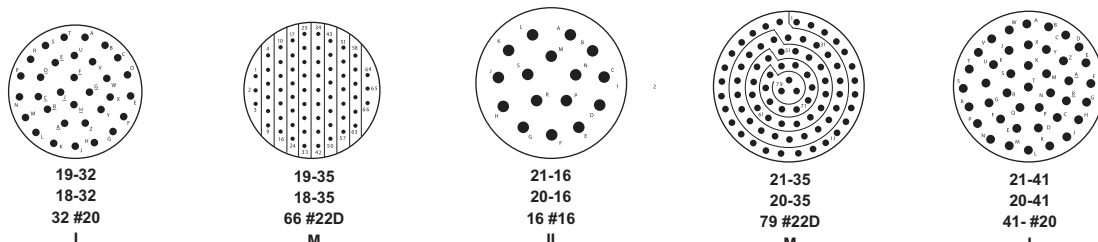
Series I, III & IV
Series II
No. of Contacts
Service Ratings



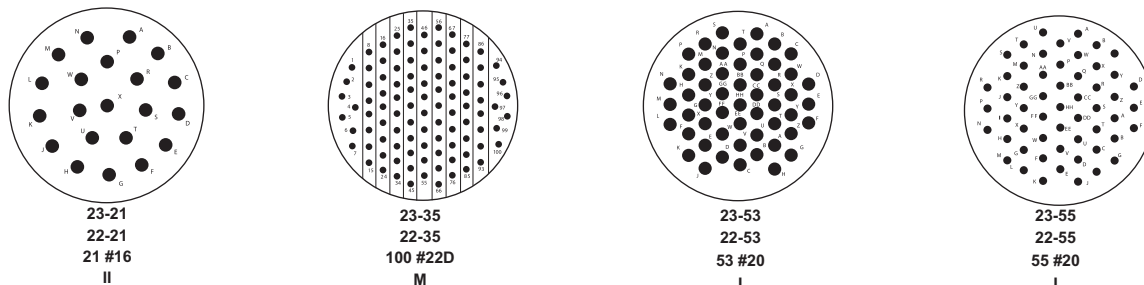
Series I, III & IV
Series II
No. of Contacts
Service Ratings



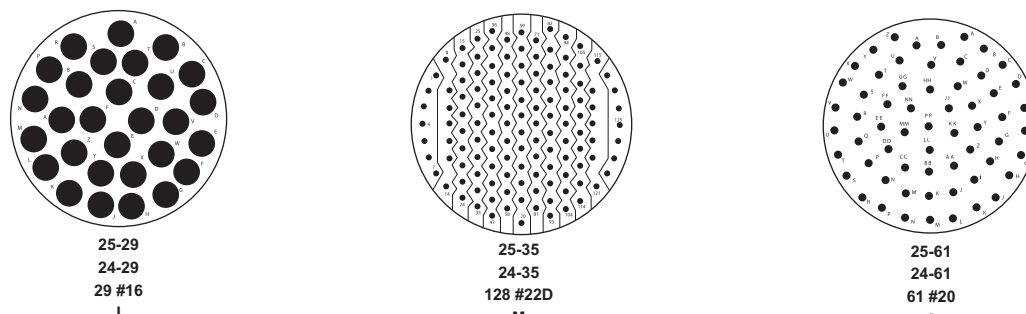
Series I, III & IV
Series II
No. of Contacts
Service Ratings



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

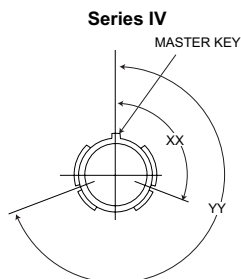


Series I, III & IV
Series II
No. of Contacts
Service Ratings



Please consult factory for availability of layouts not shown.

Polarizing Positions



Front face of receptacle shown. Polarizing keys are external.

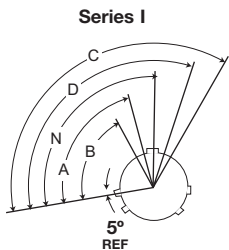
| Key Arrangements | XX | YY |
|------------------|------|------|
| N | 110° | 250° |
| A | 100° | 260° |
| B | 90° | 270° |
| C | 80° | 280° |
| D | 70° | 290° |

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



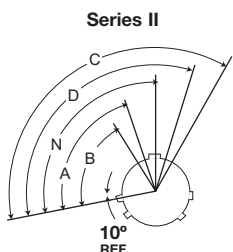
MIL-DTL-38999 Series I, II, III, IV Filter Connectors

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° |

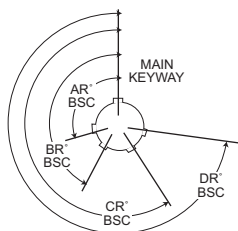


Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key-keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

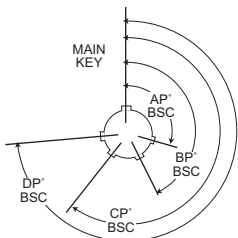
| Shell Size | Angle of Rotation (Degrees) | | | | |
|------------|-----------------------------|-----|-----|------|------|
| | Normal | A | B | C | D |
| 8 | 100° | 82° | | | 118° |
| 10 | 100° | 86° | 72° | 128° | 114° |
| 12 | 100° | 80° | 68° | 132° | 120° |
| 14 | 100° | 79° | 66° | 134° | 121° |
| 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.

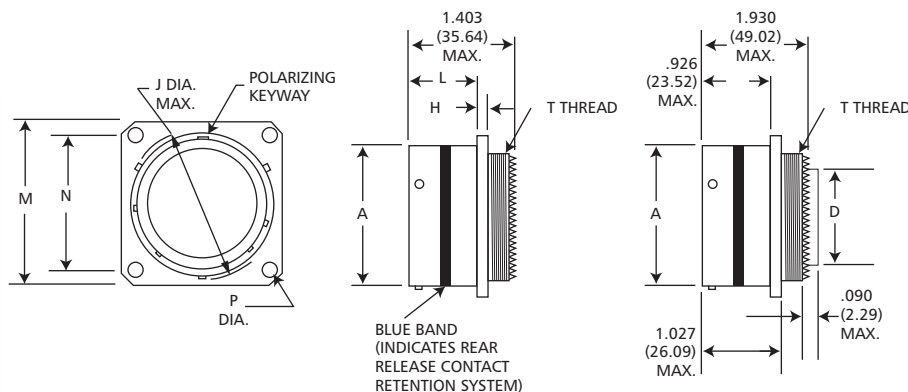
These adapters will mate with all MIL-DTL-38999 connectors having like contact arrangements. For proper performance both the mating receptacle and panel must have a conductive finish. Please contact Customer Service for dimensions.

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 |

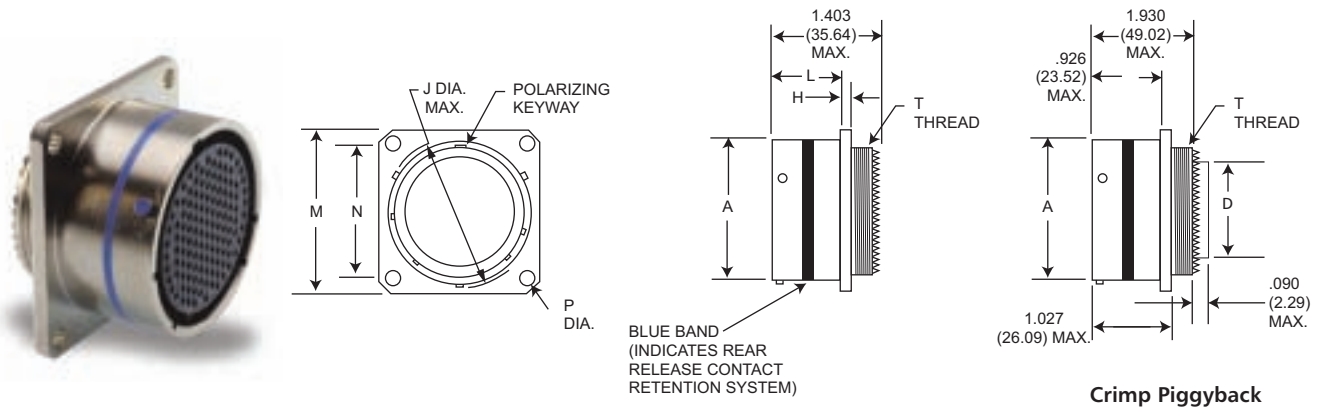


Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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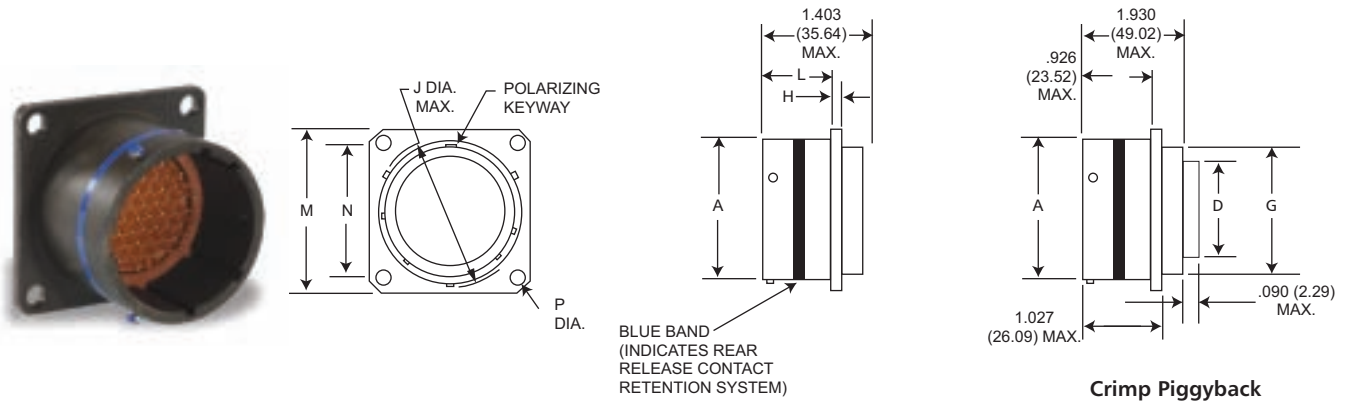
Wall Mounting Receptacle (Back Panel)

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 |

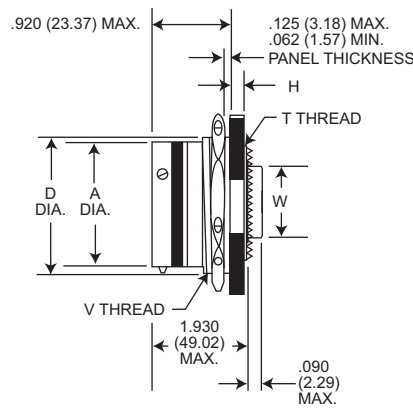
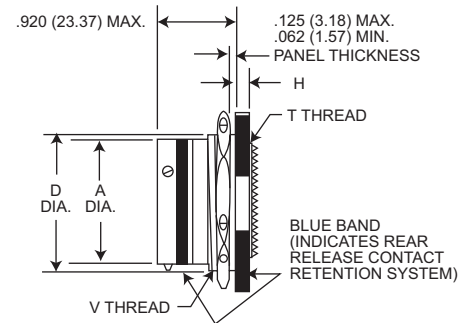
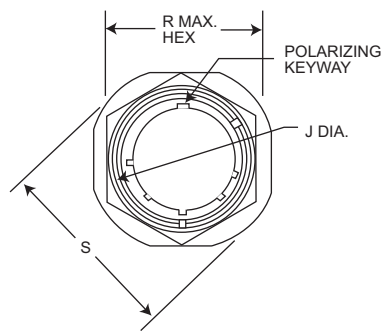
Dimensions shown in inch (mm)
 Specifications and dimensions subject to change

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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) | 2.017 (51.23) | 2.328 (59.13) | 1-7/16-18UNEF-2A | 1-3/4-18UNS | 1.255 (31.88) |

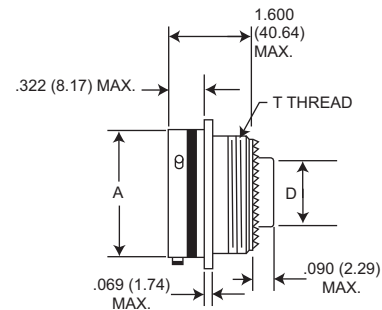
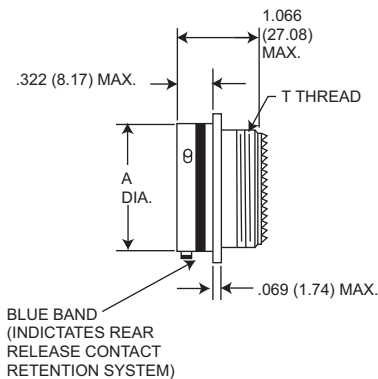
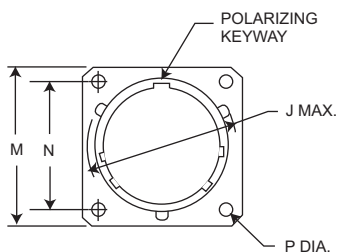


Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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Wall Mounting Receptacle

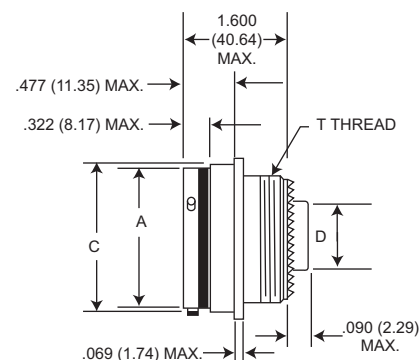
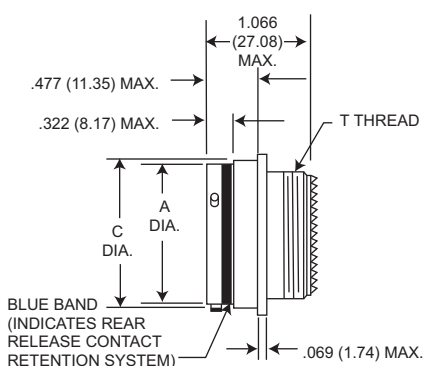
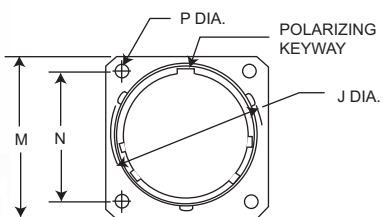
TKJ0



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) -.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 |

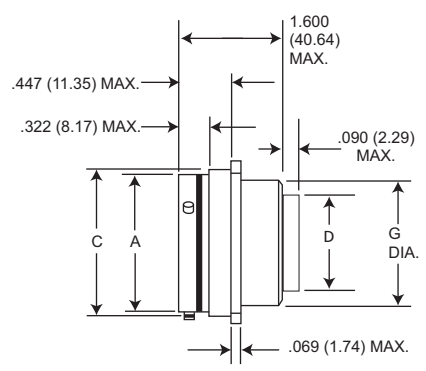
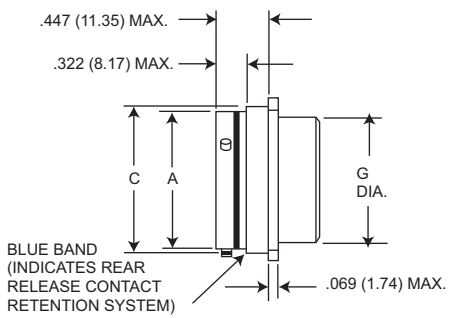
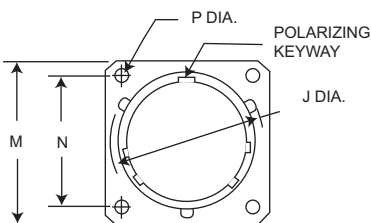
Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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Box Mounting Receptacle (Back Panel, No Rear Threads)

TKJ5

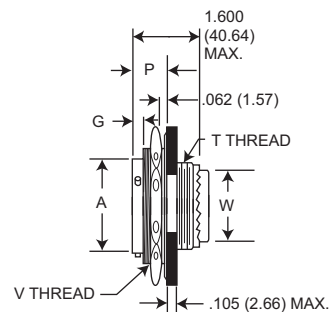
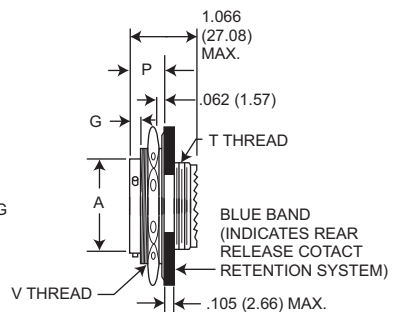
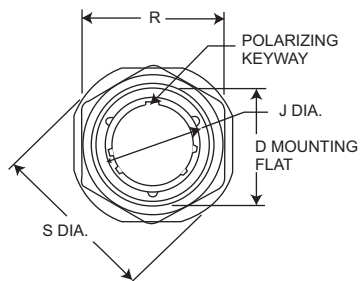


Crimp Piggyback

| 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) |

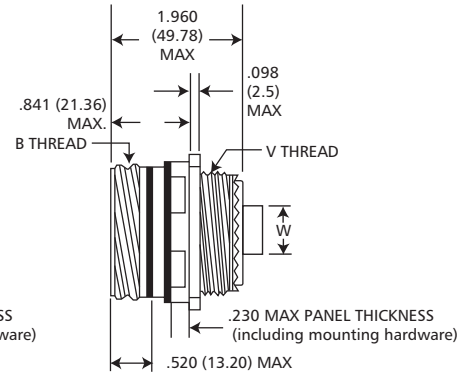
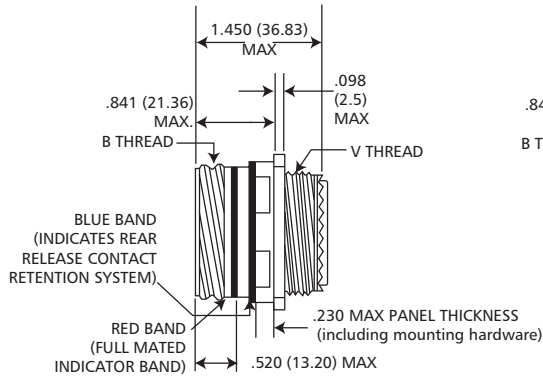
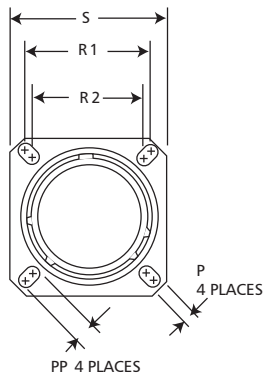


Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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Wall Mounting Receptacle (No Rear Threads)

TKJA0

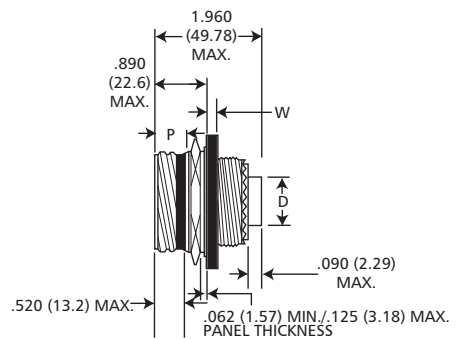
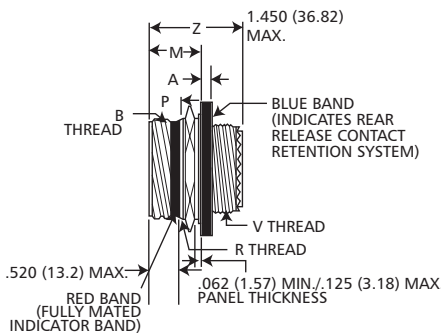
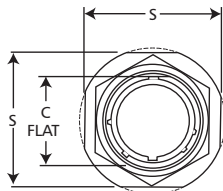


Crimp Piggyback

| Shell Size | Shell size Code | P Dia. Max. | PP Max. | R ₁ | R ₂ | 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) |

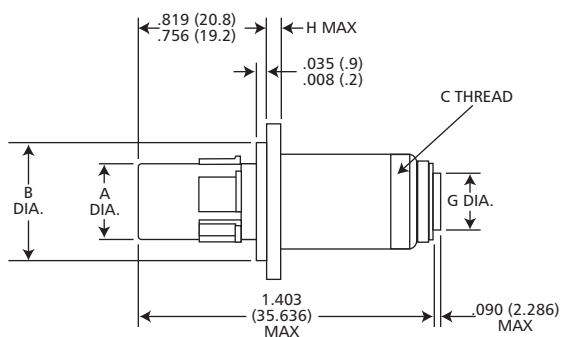
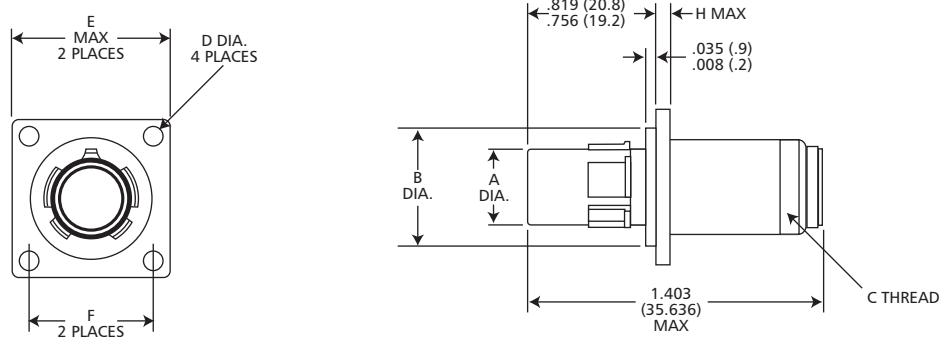
Dimensions shown in inch (mm)
Specifications and dimensions subject to change

www.ittcannon.com



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) |

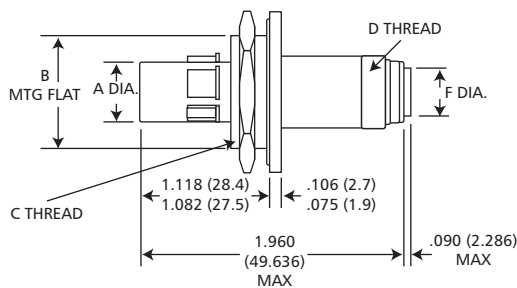
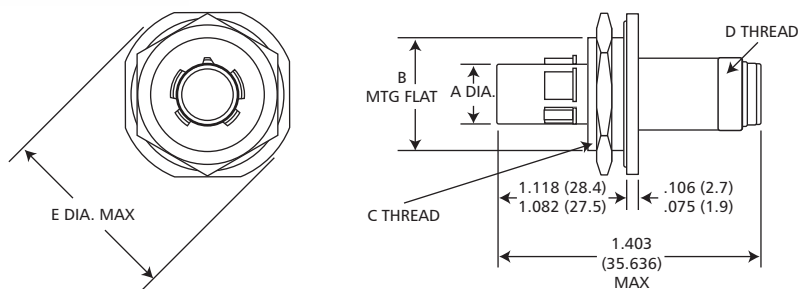


Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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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

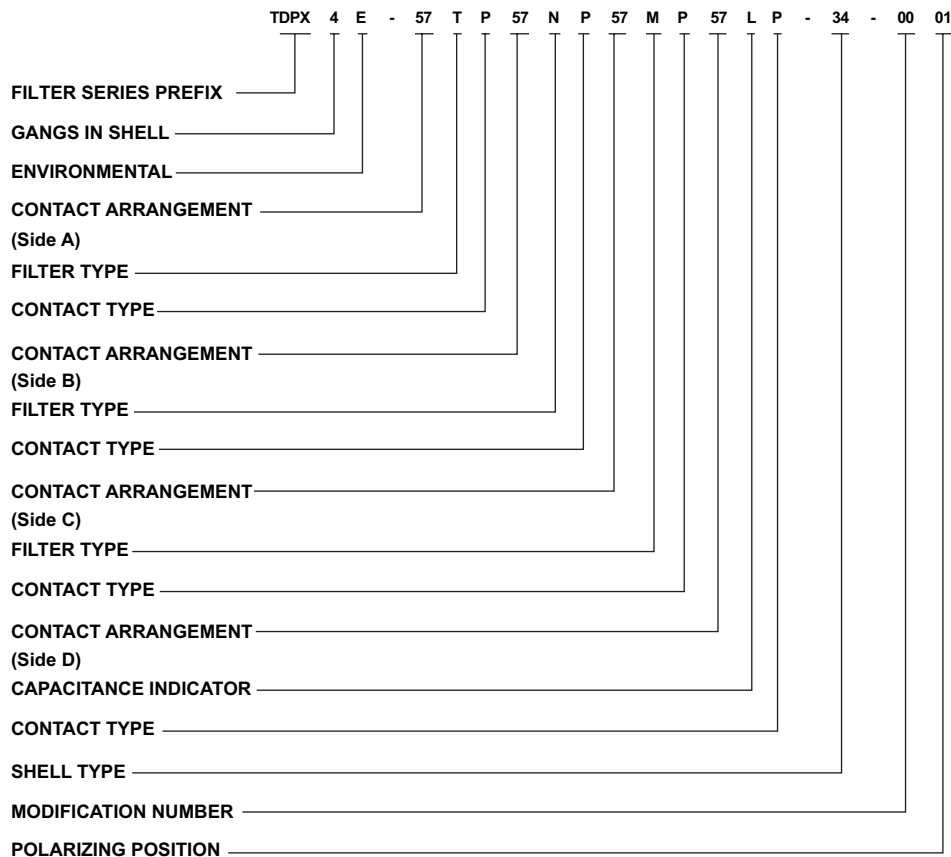
See pages 35-36.



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:

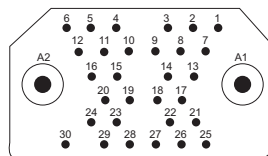
- 0101 - With 10 #4-40 clinch nuts in mounting holes.

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

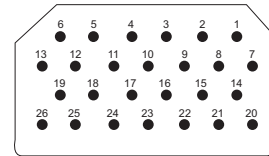


Contact Arrangements

Arrangement No.
No. of Contacts & Wire Size

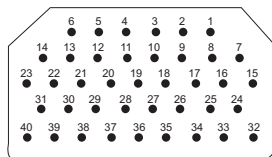


32C2
30 #20, 2 coax

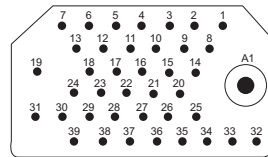


26
26 #16

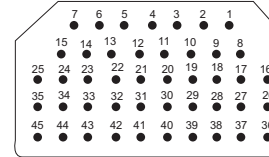
Arrangement No.
No. of Contacts & Wire Size



40
40 #20

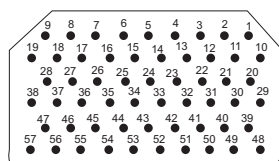


40C1
39 #20, 1 coax

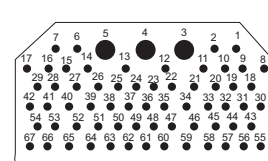


45
45 #20

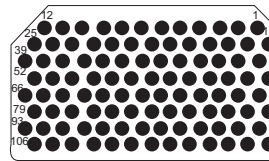
Arrangement No.
No. of Contacts & Wire Size



57
57 #20



67
64 #20, 3 #16



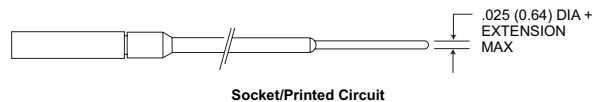
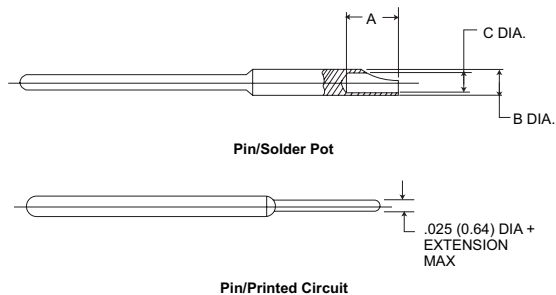
106*
106 #22

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) | |



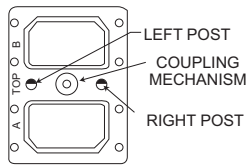
Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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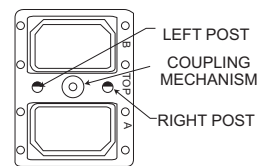
Polarization

Two Post Type

DPX2-33F
or 33M



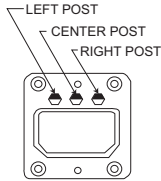
DPX2-34F
or 34M



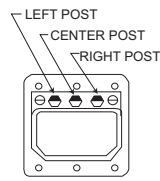
Face View of Engaging End

Three Post Type

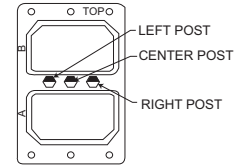
DPXB-33



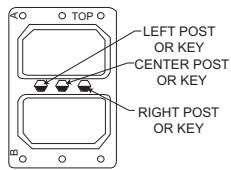
DPXB-34



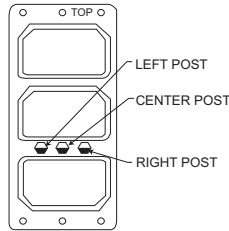
DPX2-33A or 33B



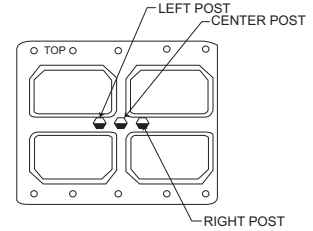
DPX2-34A or 34B



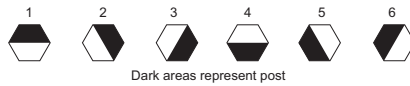
DPX3-33



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.

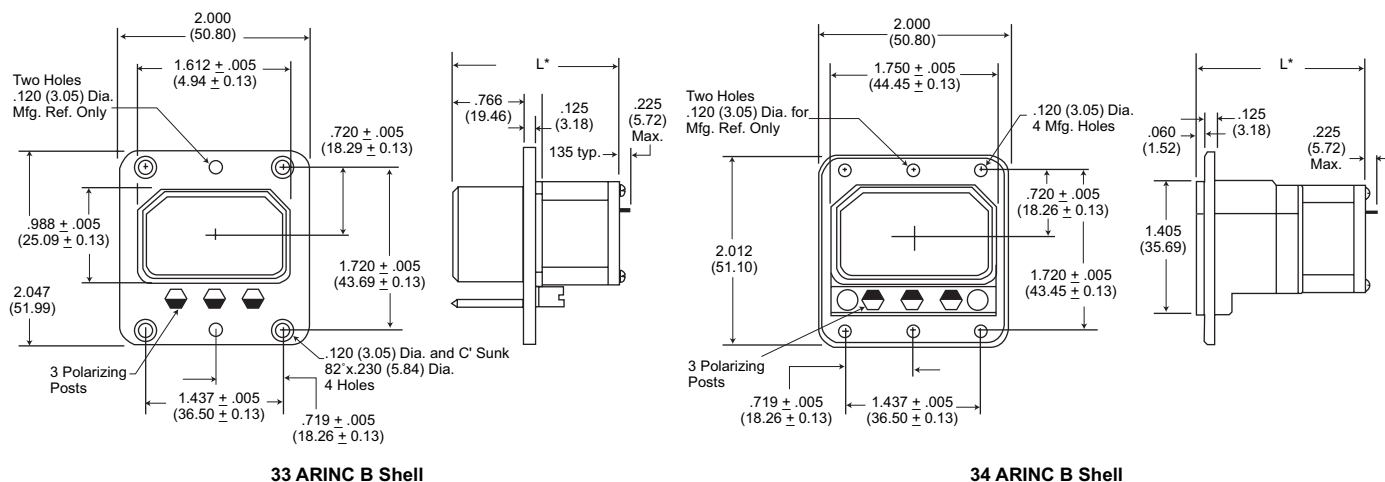


Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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Single Gang

TDPXB

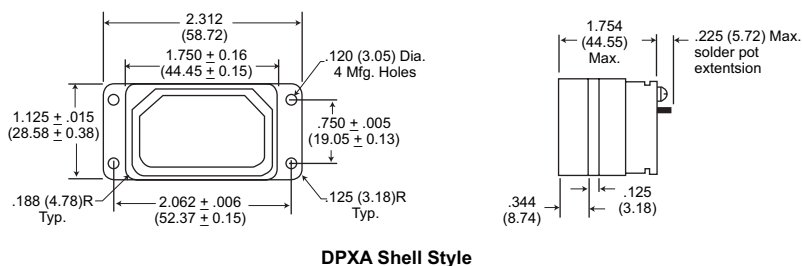


33 ARINC B Shell

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.

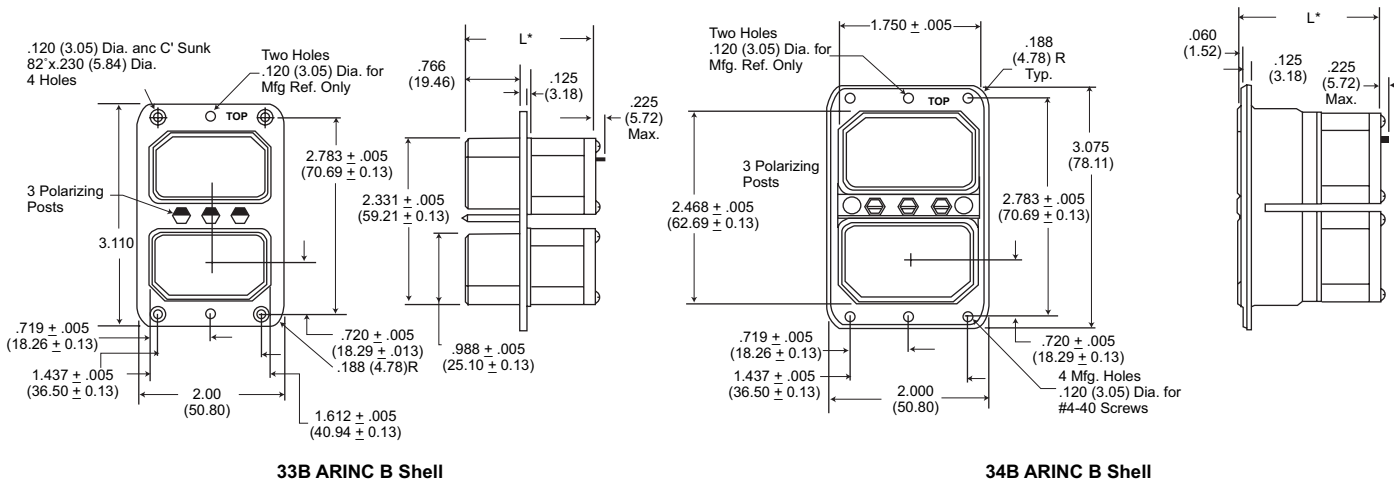
TDPXD



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.

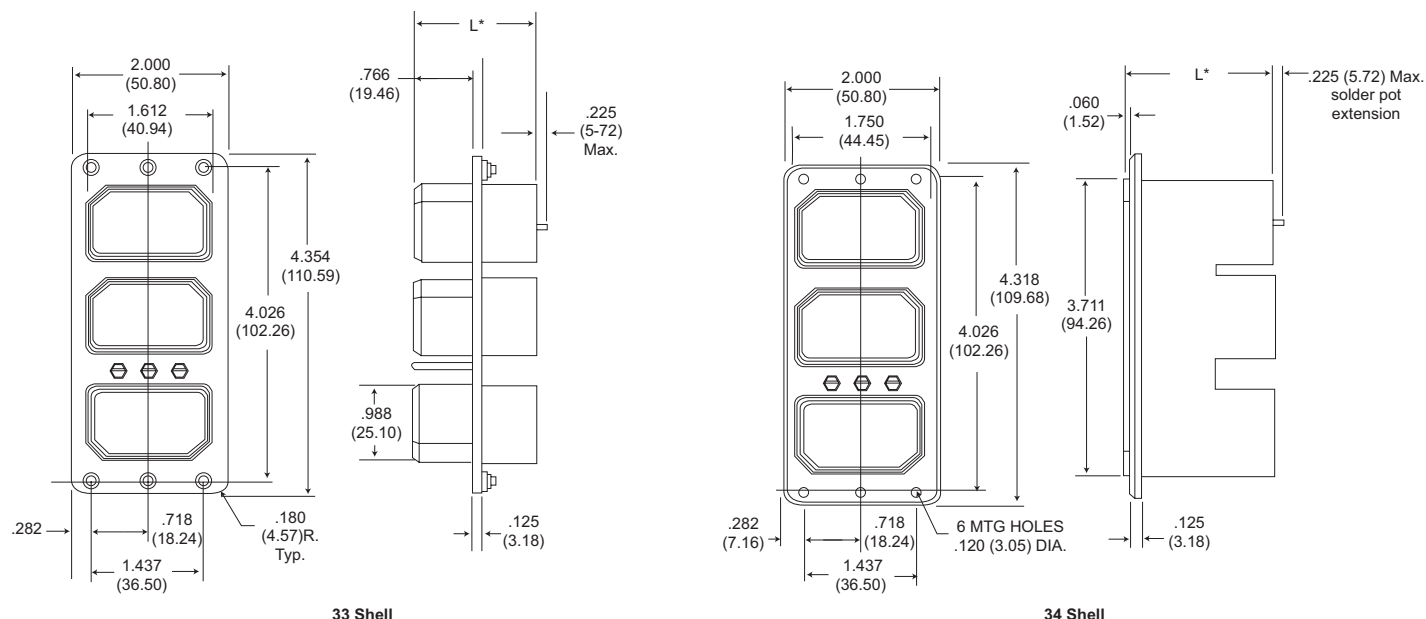
Dimensions shown in inch (mm)
Specifications and dimensions subject to change

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Three Gang

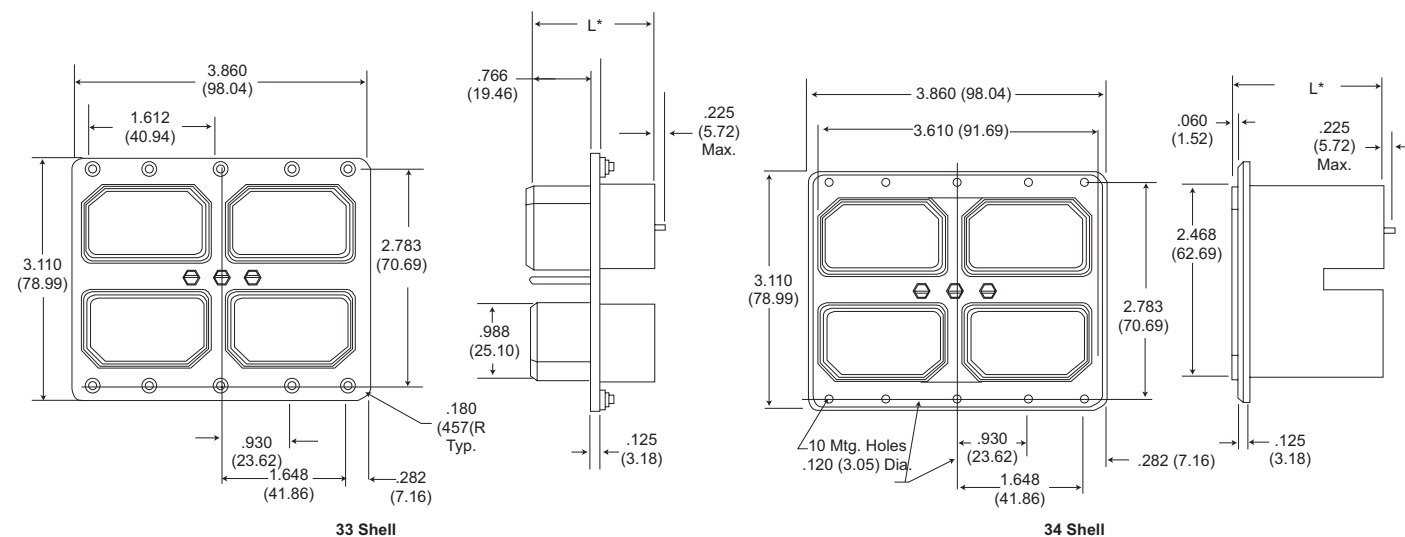
TDPX3



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

Four Gang

TDPX4



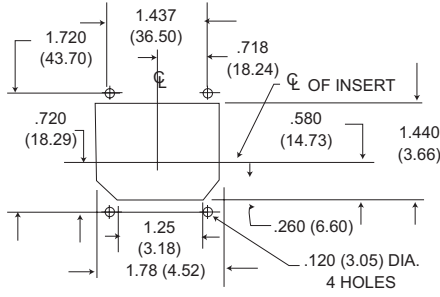
* This length varies between the limits of 44.45 an 36.25 depending upon particular construction as determined by contact arrangement.

Panel Cutouts - Page 40.

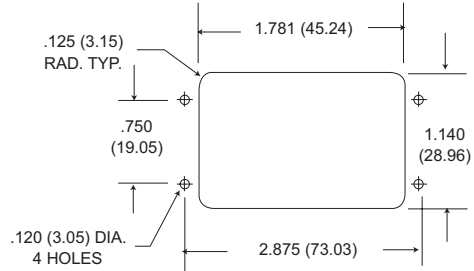


Panel Cutouts

TDPXB and TDPXD

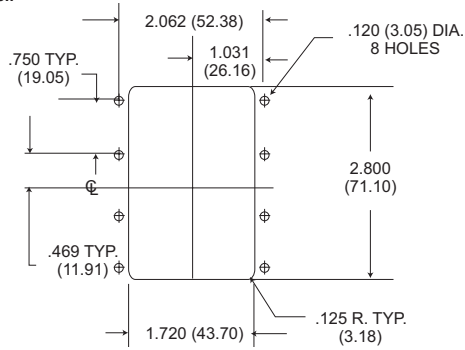


- 34 REAR MOUNT
TDPXB

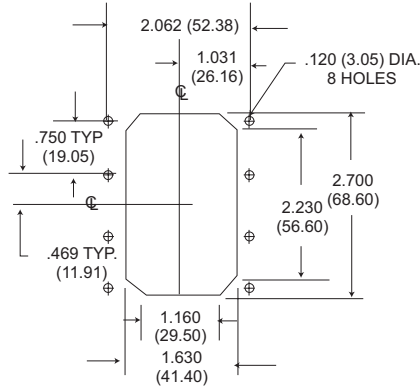


TDPXD

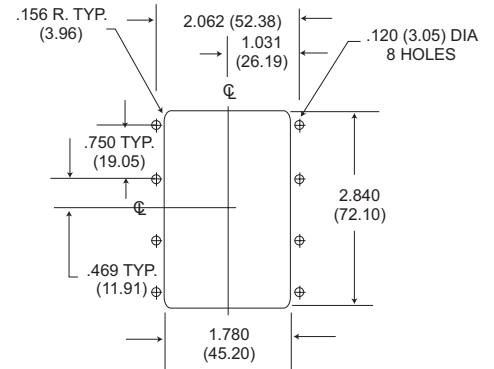
TDPX2
Standard Shell



- 33 FRONT MOUNT

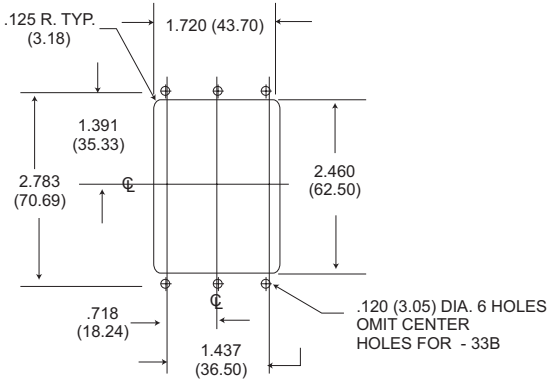


- 33 REAR MOUNT

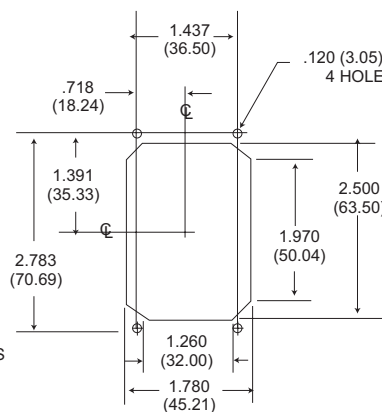


- 34 FRONT
OR REAR MOUNT

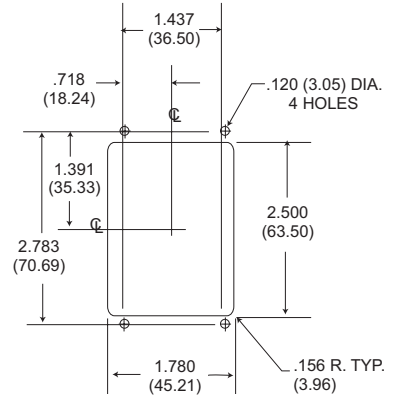
TDPX2-ARINC 'B' Shell



-33B FRONT MOUNT

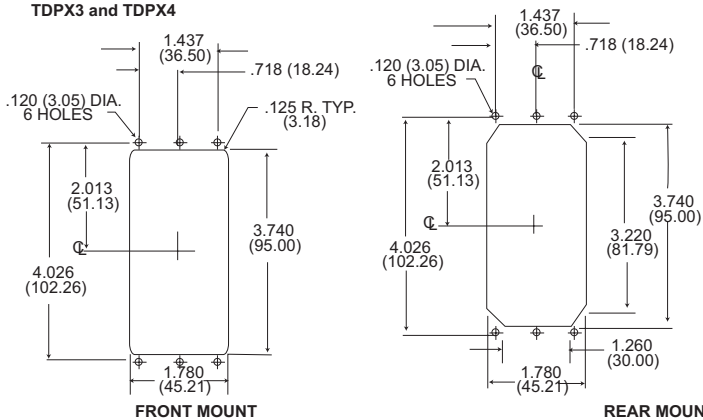


- 34B REAR MOUNT

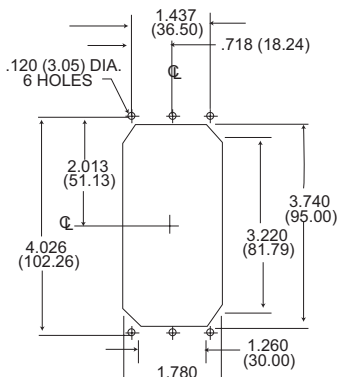


- 34B FRONT MOUNT

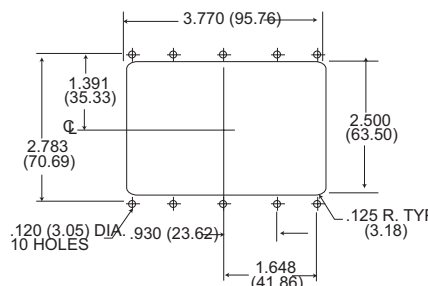
TDPX3 and TDPX4



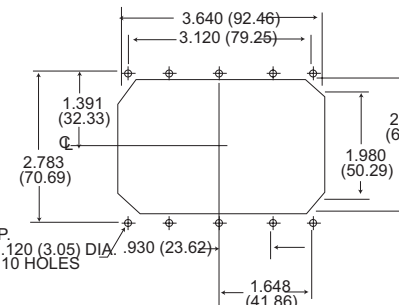
FRONT MOUNT



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

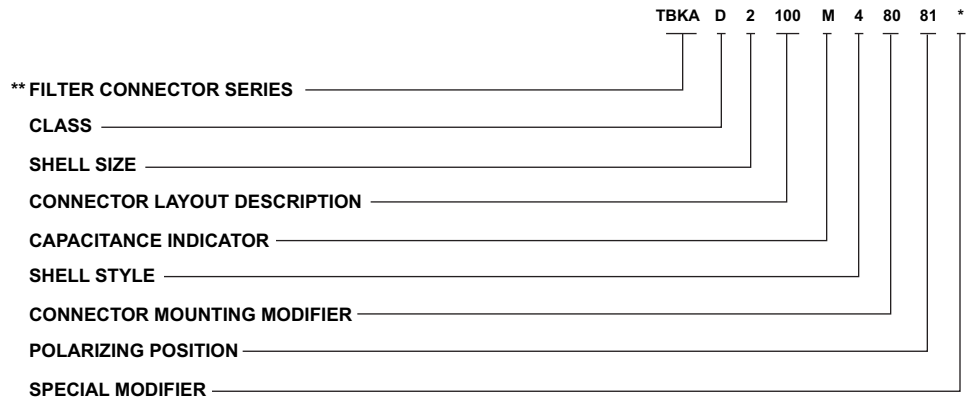
| MATERIALS AND FINISHES | | BKAD | SPECIFICATIONS |
|------------------------|-------------|-----------------------------|----------------|
| Shell | Material | Aluminum Alloy | QQ-A-591/A380 |
| | Finish | Clear chromate over cadmium | QQ-P-416 |
| Insulator | Material | Thermoplastic | N/A |
| | Material | 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



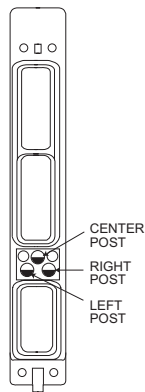
Dimensions shown in inch (mm)
 Specifications and dimensions subject to change

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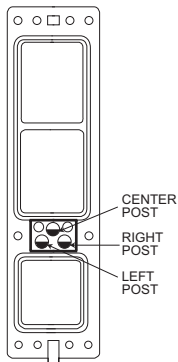
Polarization (Engaging End)

BAK*1



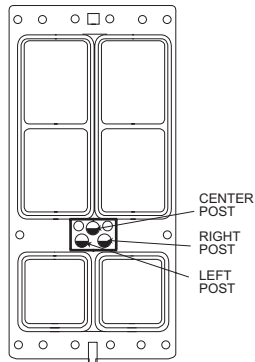
RECEPTACLE

BAK*2

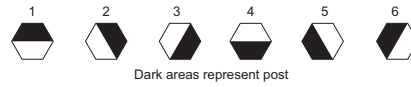


RECEPTACLE

BAK*3



RECEPTACLE

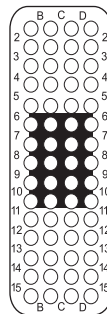


RECEPTACLE SHELL

| 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 | | | | |

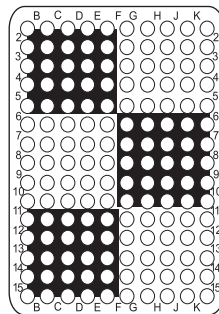
Contact Arrangements (Receptacle-Engaging Face Shown)

Size 1

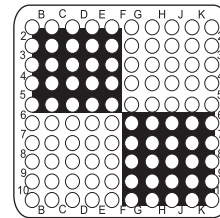


60 #22 SHELL CAVITY A or B NOT TOOLED

Sizes 2 & 3



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

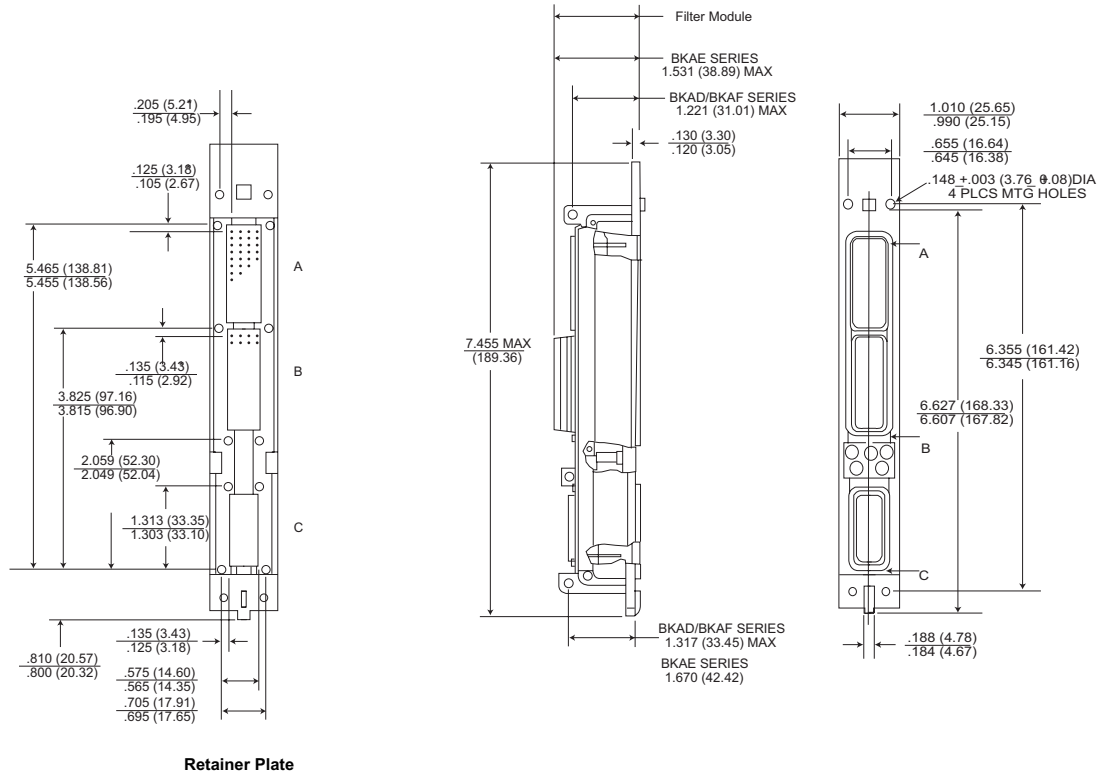


100 #22 SHELL CAVITY C or F

NOT TOOLED Dimensions shown in inch (mm)
Specifications and dimensions subject to change

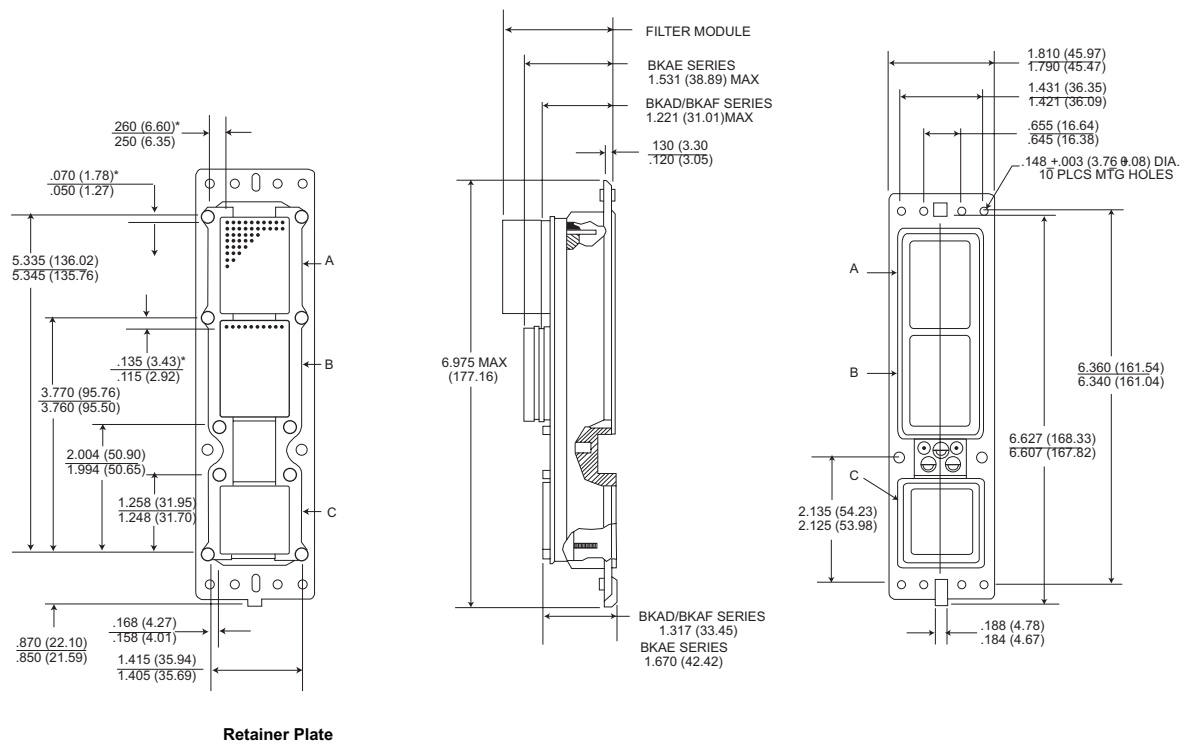


Size 1 Receptacle



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

Size 2 Receptacle



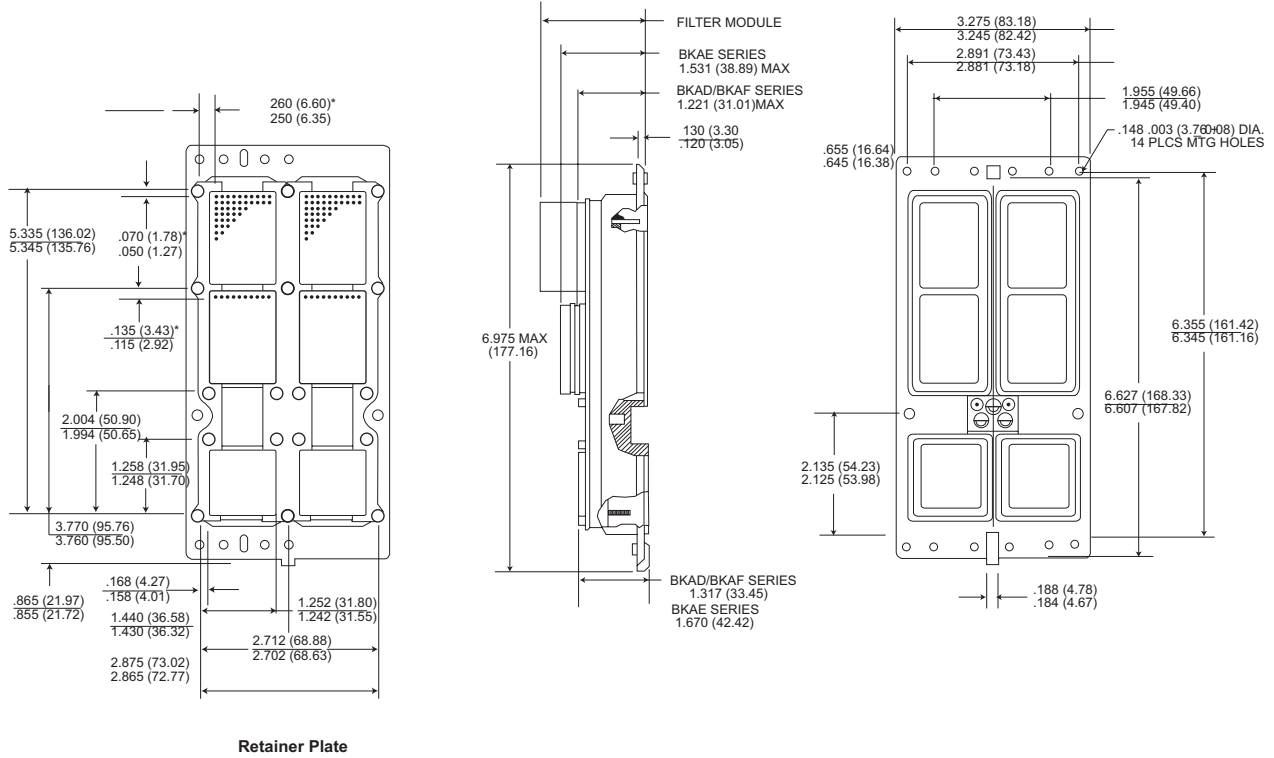
* This dimension indicates distance from centerline of retaining screw to the centerline of first contact cavity.

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

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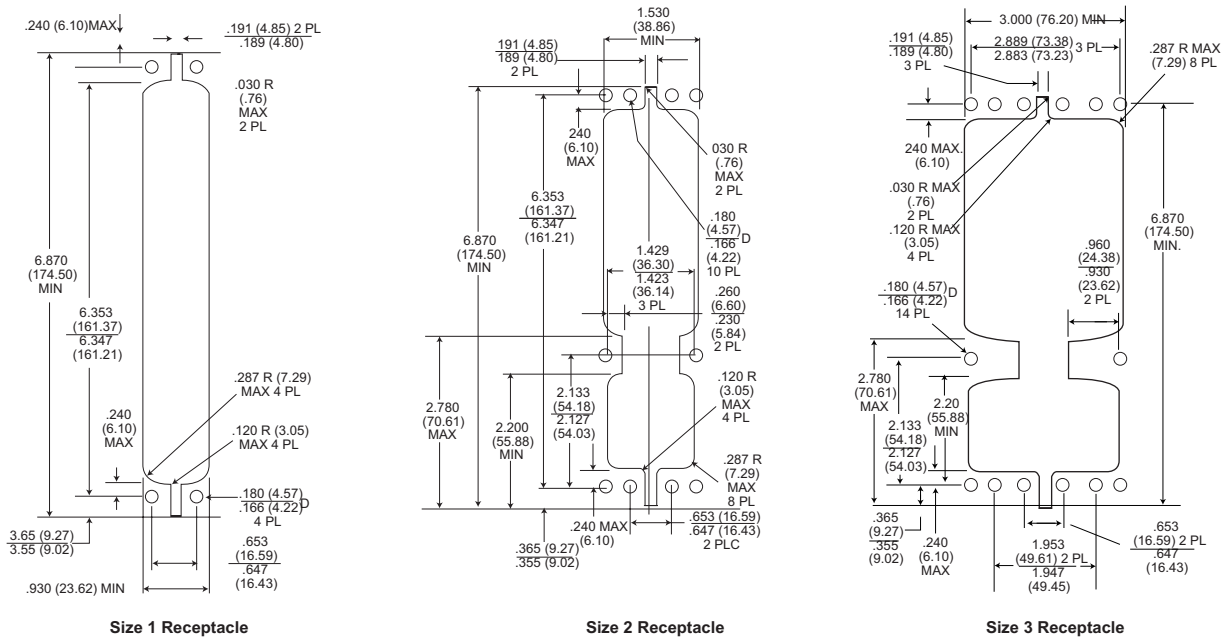


Size 3 Receptacle



* 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

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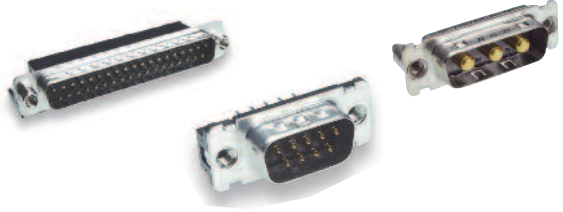
Circular/Filter/Hermetic Connectors

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.



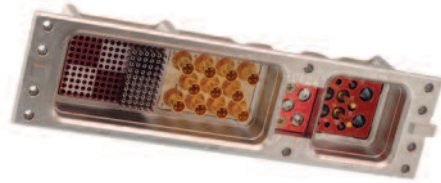
Microminiature Connectors

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 Sealelectro 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**





ITT

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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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