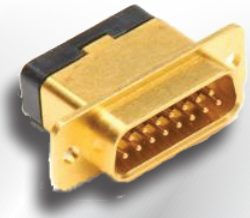
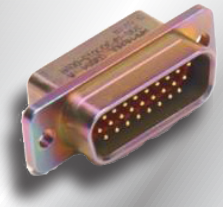
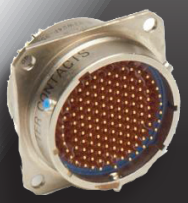
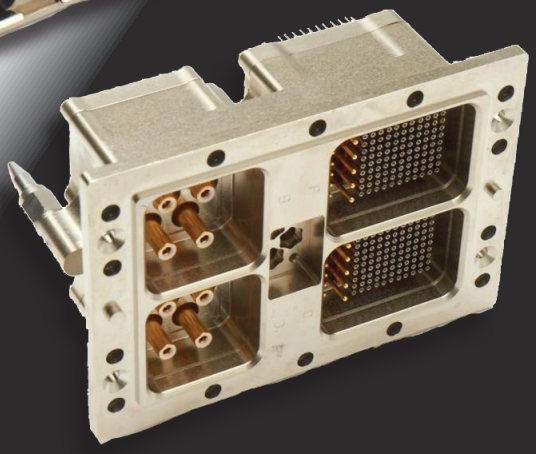
Amphenol
Filter Connectors









Signal Integrity
is our Business!

Amphenol Canada Corp
www.amphenolcanada.com

About Us

Headquartered in Toronto Canada and with subsidiaries in Belleville Canada and Nogales Mexico, Amphenol Canada Corp (ACC), a division of Amphenol Corporation has been an international leader in the interconnect industry. From design and manufacturing through quality inspection and shipping, Amphenol Canada has over 50 years of experience in the Military/Aerospace and Commercial markets.

Amphenol Canada (ACC) has pioneered many unique technologies to address the interconnect needs of increasingly demanding applications, including Filtered Connectors and Interconnect devices for EMI and EMP protection, Ruggedized connectors for Harsh Environments, industry-leading High Speed signal connectors for use in the rapidly growing In-flight Entertainment industry of Commercial Aviation.

With markets including Military and Commercial Aerospace and Defense, our expertise in understanding and supporting our many customers' interconnect needs has earned Amphenol Canada a reputation of quality and excellence among the world's leading users of electronic components.

Mission Statement

In order to optimize our performance, we at Amphenol Canada (ACC) are committed to the following:

* TO OUR CUSTOMERS we will provide service and quality products on time at the lowest cost, engineered with maximum innovation.

* TO OUR EMPLOYEES we will provide a safe environment in which to work, opportunities for training and advancement and equitable compensation for their efforts.

* TO OUR SUPPLIERS we will provide opportunities to participate in our business successes and will work with them on our goal of continuous improvement.

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Table of Contents

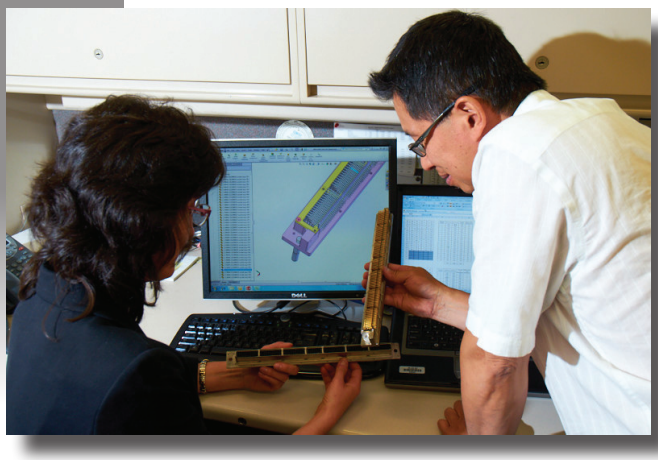
Amphenol Canada

FILTERED AND RECTANGULAR CONNECTORS

Telephone: (416) 291-4401 Fax: (416) 292-0647 www.amphenolcanada.com

Vertical Integration

Amphenol Canada's (ACC) facility is vertically integrated with the most up to date manufacturing and test capabilities. ACC can take your requirements for a high quality interconnect solution from initial concept through design, manufacturing and testing to deliver to your unique specification.



Engineering

Assembly

Machine Shop

Capacitor Manufacturing

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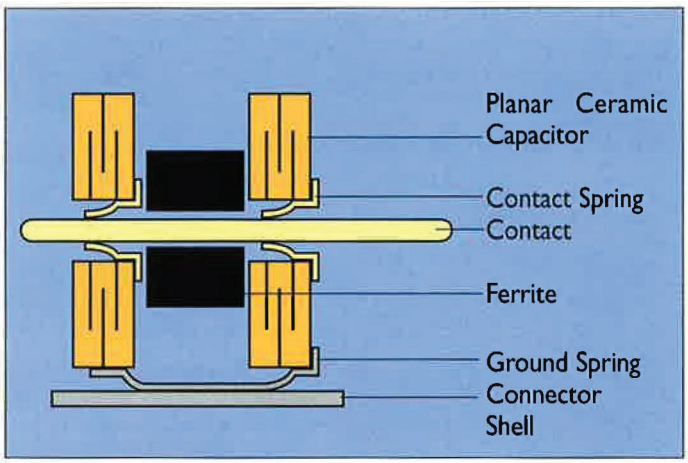
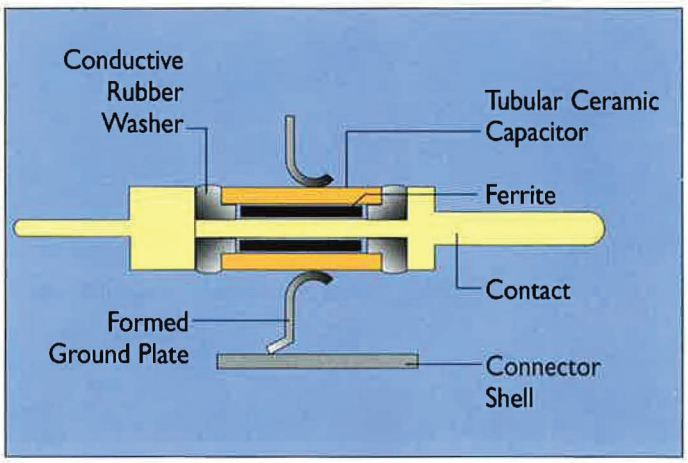
Filter Connector Technical Data

Advantages of Filter Connectors
The integration of the filter elements into the connector, rather than a board level solution, results in many advantages to the user:
- reduction in space and weight
- reduction in inspection and assembly labour
- improved high frequency EMI performance by elimination of parasitic effects associated with board level filters
- superior shielding effectiveness

Filter Connector Design
Filter connectors have been used for over thirty years to provide cost and space effective solutions to EMI problems in a wide range of military and commercial applications including avionics systems, satellites, missiles, communications, control systems and tempest equipment. A low pass filter connector incorporates capacitors and ferrite inductors into the connector body. The two capacitor types commonly used in filter connectors for military or avionics applications are planar arrays and tubular capacitors. Each of these capacitor types is an efficient filter at high frequencies (> 1 GHz) and has been proven to be extremely reliable when suitably assembled into a connector. Both planar and tubular designs feature Amphenol's unique solderless construction which reduces stress on the ceramic elements and results in superior physical and thermal shock capabilities.



Planar Array
Amphenol Canada's planar design consists of planar ceramic capacitor arrays and discrete ferrite inductors assembled concentrically over the contacts and into the connector shell. The planars are compressed between rubber gaskets and have contact springs in each position which form a stress isolated connection with the contact body. The planars are grounded to the shell via a ground spring.



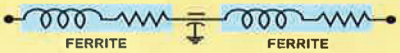
Tubular Capacitor
Amphenol Canada's tubular design consists of a ferrite bead and ceramic tubular capacitor assembled onto a machined contact. The filter tube is connected to the contact with conductive rubber washers to provide a stress-isolated contact assembly. Grounding is achieved via a ground plate. These are typically used when the filter elements within the connection require more than a single dielectric material ie. NPO and X7R.

Filter Connector Technical Data

Filter Connector Selection

Selection of a particular filter circuit will depend on the required insertion loss characteristics and the system source and load impedances. By arranging the capacitive and inductive elements in a variety of combinations a number of equivalent circuits may be attained. The ferrite elements always face the low impedance side of the filter. These filter types are available in a wide range of capacitance and voltage values and may be selected in virtually any combination within the connector insert. In addition to filter contacts, insulated contacts, ground contacts and sealing plugs are available.

The following factors may affect the filter performance, and should be considered when selecting a filter connector and Amphenol Canada takes these into account when designing your filter solution.

Filter Circuit		Best Filtering Application
PI		Unknown or medium source and load impedance
LRC		Low source and high load impedance
CLR		High source and low load impedance
C		High source and high load impedance
T		Low source and low load impedance

High source or load impedance >100ohms

Low source or load impedance <10ohms

Operating Voltage

As a DC voltage is applied across a capacitor, the dielectric constant decreases, resulting in a capacitance decrease and a reduction in filter performance. The magnitude of the change is dependent upon the type of ceramic material used, the dielectric thickness and the magnitude of the voltage applied.

Operating Currents

Operating currents cause magnetic saturation of inductive elements (ferrites). Therefore filters with ferrite inductors (Pi, CLR, LRC and T) will perform much like C filters as the ferrite approaches saturation. The saturation point can vary by ferrite characteristics and size but typically occurs above 0.1 mA.

Operating Temperature Range

Capacitance and insertion loss performance are shown at 25˚C. Depending on the type of ceramic material being used, capacitance can drop based on dielectric being used at temperature extremes. However, commonly used dielectrics have temperature coefficients of +/- 15% from -55˚C to +125˚C.

Transient Voltage Requirements

Some transient voltage requirements may necessitate the addition of diodes or MOV's to the PCB or in the connector.

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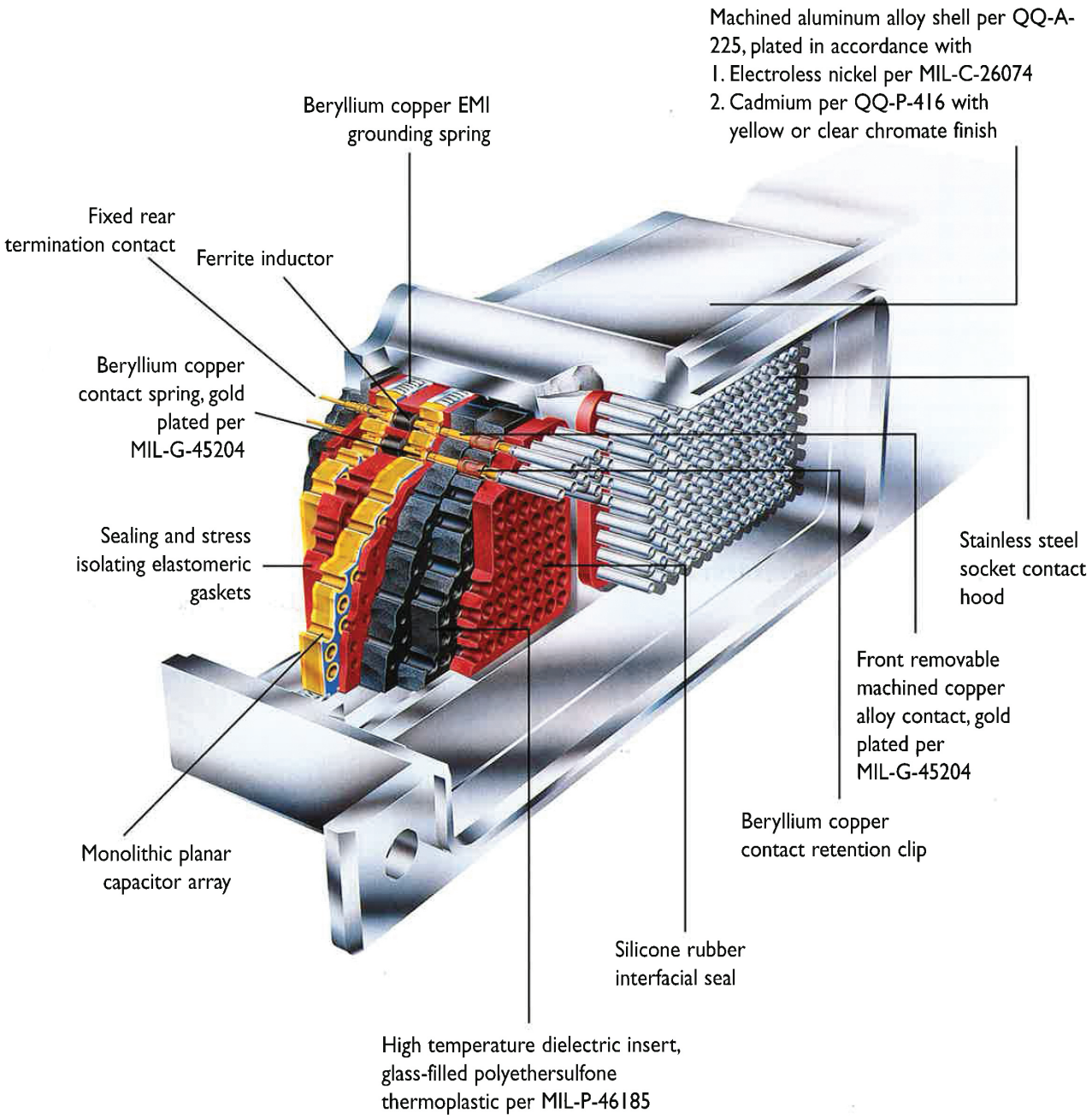
Filter Connector Construction and Material Specifications

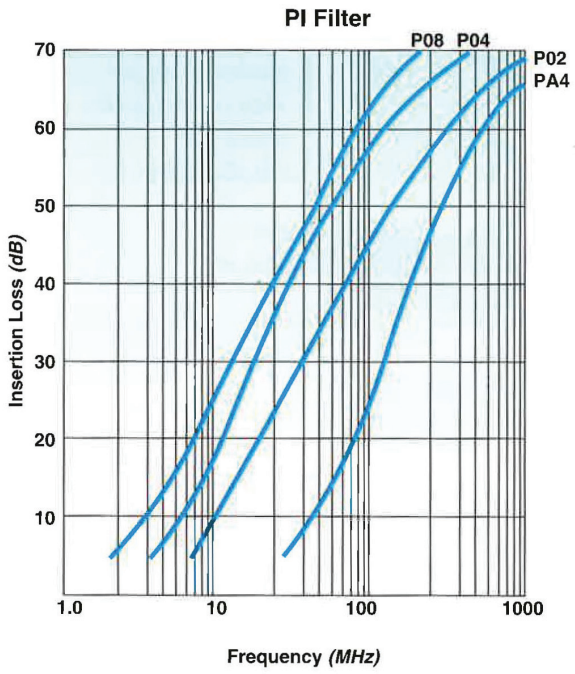


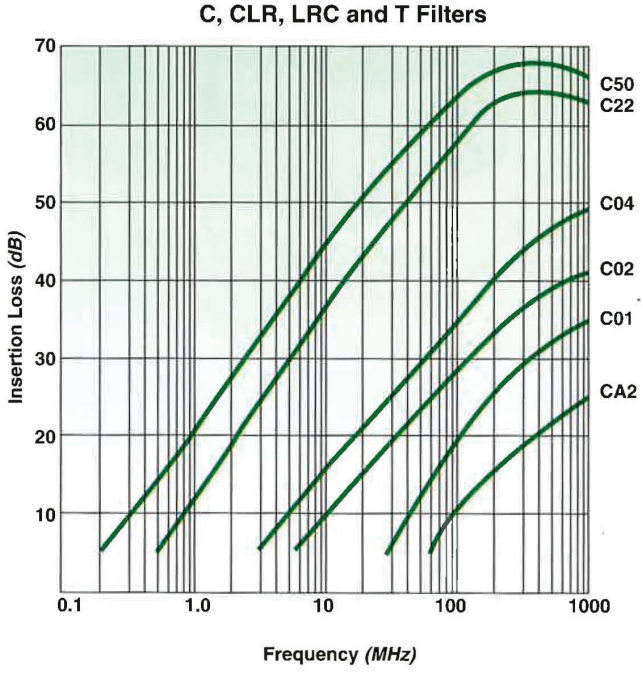
Electrical Characteristics

Filter Circuit		PI				C,CLR,LRC,T					
Filter Type		**PA4**	**P02**	**P04**	**P08**	**CA2**	**C01**	**C02**	**C04**	**C22**	**C50**
Capacitance (pF) (@ 25°C, 1kHz & 1.0 VRMS)		400 to 800	1800 to 3600	4000 to 8000	8000 to 16000	200 to 400	900 to 1800	1800 to 3600	4000 to 8000	22000 to 40000	50000 to 100000
Insertion Loss* (dB min.) (per MIL-STD-220 at 25°C & no load)	.1 MHz	–	–	–	–	–	–	–	–	–	3
	1 MHz	–	–	2	5	–	–	–	–	10	15
	10 MHz	2	10	15	18	–	4	8	13	26	35
	100 MHz	20	38	50	55	10	20	25	33	45	50
	1000 MHz	58	60	60	63	25	35	40	50	50	52
Working Voltage (VDC) (@ 25°C & sea level)		200								100	
Dielectric Withstanding Voltage (VDC) (@ 25°C & 50 mA max. charging current)		500								300	
Insulation Resistance (Gohms)(min) (@ 25°C & working voltage)		10									
Current Rating by Contact Size (continuous max., DC amperes)		#22 = 5 Amps #20 = 7.5 Amps				#16 = 13 Amps #12 = 23 Amps					
Filter RF Current Rating (amperes) (max. @ any frequency)		3									

Note: Other capacitance values, mixed capacitance arrangements, ground and insulated contacts are available.
Consult the factory for your particular application.
* Acceptance testing performed to 500MHz maximum

Typical Insertion Loss Performance (per MIL-STD-220)





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Quality and Testing Capabilities

Amphenol Canada's (ACC) standard of quality is unsurpassed by anyone within the interconnect industry. We maintain focus on meeting and exceeding both our own and our customer's quality expectations. ACC's goal is to provide our customers with a quality Interconnect solution, on-time and at a reasonable price. The need for quality is a top down philosophy at ACC and is ingrained in all of our employees. Pride in workmanship along with maintaining growth is a key factor in ACC's success.

Test Capabilities
Insertion Loss
Capacitance, IR, DWV, Resistance
Eye Pattern and Differential TDR
Others including Qual testing

Quality Standards
ISO9001/2000
AS9100

CERTIFICATE
OF REGISTRATION

This is to certify that

Amphenol Canada Corp.

operates a

Quality Management System

which complies with the requirements of

ISO 9001:2008 + AS9100C

for the following scope of registration

Design, manufacture, sale and support of a broad spectrum of filter connectors and interconnect products to the commercial, industrial, military and aerospace markets worldwide.

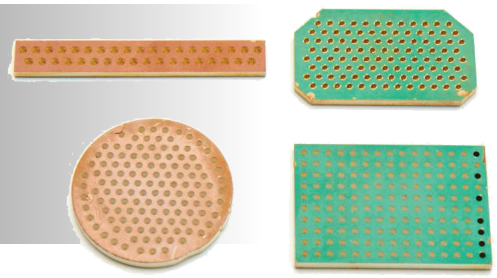
Registered Sites:	605 Milner Ave. Toronto, Ontario M1B 5X6 Canada	45 Lahr Drive Belleville, Ontario K8N 5S2 Canada	**Amphenol Optimize Mexico, S.A. de C.V.** Los Gavilanes No 51 Parque Industrial San Ramon Nogales, Sonora 84090 México
Certificate Number:	CERT-0058743	CERT-0058743	CERT-0058743
File Number:	1015430	1056916	1057222
Issue Date:	May 17, 2012	May 17, 2012	May 17, 2012
Original Certification Date:	August 23, 2006	August 23, 2006	January 22, 2007
Current Certification Date:	May 16, 2012	May 16, 2012	May 16, 2012
Certificate Expiry Date:	February 17, 2014	February 17, 2014	February 17, 2014

Chris Jouppi
President,
QMI-SAI Canada Limited

Guillaume Gignac, ing.f
Vice President, Corporate Operations, Accreditation & Quality
QMI-SAI Canada Limited

AS9100C

SAI GLOBAL
INFORM. INSPIRE. IMPROVE.



Planar Array Capacitor

Filtering the interconnect I/O path has become the mainstay of meeting RTCA/DO-160 for high end military systems. The heart of that filtering is the placing of a capacitor network inside the connector. This allows for a complete solution for the LRU to meet both conducted and radiated emissions as required in most systems. In the late 1980's the development of the planar array capacitor allowed the user to be able to meet stringent attenuation requirements and also comply with the higher operating voltages that the signals were subjected to.

The planar array is a multi-layer multi-hole capacitor where each individual hole represents a capacitor that shares a common ground to the connector shell. The use of X7R ceramics allows ACC to manufacture a filter connector with capacitance from 100pF to 100nF within the same planar array in a 'C' circuit at operating voltages of 200VDC or higher up to 1000VDC.

There are very few limits to what can be achieved with the planar array. We can manufacture them with mixed capacitance, various hole diameters to suit the many insert arrangements of military connectors and the addition of insulated and ground lines. This allows our customers' designers to pick a filter connector from ACC that helps them comply with their systems' needs while being able to use a fewer number of I/O connectors making the overall box size smaller.

The planar is stacked by alternating ceramic with active electrodes to come up with the desired capacitance and the necessary working voltage. The electrodes are perpendicular to the contact so we can increase the thickness and thereby increase either capacitance or working voltage. The line to line dimensions in most insert arrangements dictate the electrical parameters but in the case of the planar array, this limitation is less of a factor.

ACC is one of the few filter connector companies that has an in-house capability to manufacture this key element in filter connector technology. This allows for the best in process control as well as being to able to meet our customers short term needs for new designs.

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Tubular Capacitor

The need for a tubular capacitor in a filter connector is based on the need for programmability and extreme variations in capacitance. Some customers have needs that will require the filter connector to use more than one dielectric material. For instance, the need for some 60 pF lines and some 10,000 lines in the same connector. This can not be achieved with a planar array as the low capacitance lines require an NPO ceramic material and the 10,000 lines require an X7R material so we use tubular capactors to achieve this.

The other instance is for programmability such as our 481 and 482 series of programmable filter connectors. The filter lines can be removed and new filter pins inserted to try different capacitance values to ensure that a box meets EMC requirements while in the test chamber.

The downside for tubular capacitors in a filter connector is that there are limitations on the capacitance versus voltage based on the density of the connectors insert arrangement. In tubular capacitors the electrodes run parallel to the contact and there is a need for an external ground plane. This means that the capacitance is highly limited to the pin to pin spacing and as such very high capacitance such as 50nF or higher are not possible with tubular capacitors in filter connectors.

The tubular capacitor is found mostly in commercial applications as the vibration and mechanical shock requirements are not as severe and so a more rugged component such as a planar array is not required.

Chip Capacitor

ACC has the ability to use chip capacitor designs for filter connectors. This technology is not as prevalent in high end programs but can work well and where the insertion loss is required mostly at specific frequencies or where cost is a driver. This design is best for filter connectors with a ‘C’ circuit where the current eliminates the need for an in-line ferrite bead. In most cases the ferrite is not effective in filter circuits once current is supplied on the line, as the current increases past a few mA the ferrite bead saturates and the ferrite no longer contributes to the filter schematic making the Pi Network act like a C network.

Transient Suppression for Lightning and EMP Applications

Designing for Lightning Induced Transient Susceptibility

In addition to designing for control of steady state electromagnetic interference (EMI/EMC), modern avionics engineers must also design for the recent advent of much stricter requirements for immunity to lightning induced transient susceptibility. These requirements vary by equipment type and environmental area and are defined by a variety of military and commercial specifications including RTCA/DO-160 Section 22. The nature of the transient event ranges from very low level disturbances, requiring little or no protection, to high frequency and high energy events that can be disruptive or destructive to the avionics equipment. In general, practices which are good for control of EMI/EMC will also serve to mitigate the effects of lightning induced transients, but further measures must often be taken to ensure proper system operation and survivability. One of the more effective methods available is the inclusion of circuit protective devices in the circuit at the input of the LRU. The most common types of devices employed are Zener suppression diodes and metal oxide varistors (MOV's). These non-linear V-I devices conduct very little current at low voltage levels, but once above the breakdown voltage, the voltage across the device remains fairly constant.

Filter Connectors with Transient Suppressors

While conventional EMI filter connectors have been shown to be effective in providing protection against low energy transients, they offer little protection from high voltage/high energy transients that may result from lightning, load switching, electrostatic discharge (ESD) or electromagnetic pulse (EMP). For those applications requiring protection of sensitive circuitry from such overvoltage events, Zener suppression diodes or MOV's can be incorporated into the connector body in combination with EMI filtering or alone. Combining the transient suppression device into the connector provides several advantages:

- saves space and weight versus placing discrete components onto a PCB
- reduces system design time
- reduces number of components
- improves voltage clamping performance by eliminating parasitic lead resistance and inductance of board level components
- allows for retrofit of existing equipment requiring lightning or EMP hardening
- improves system repairability and maintenance logistics

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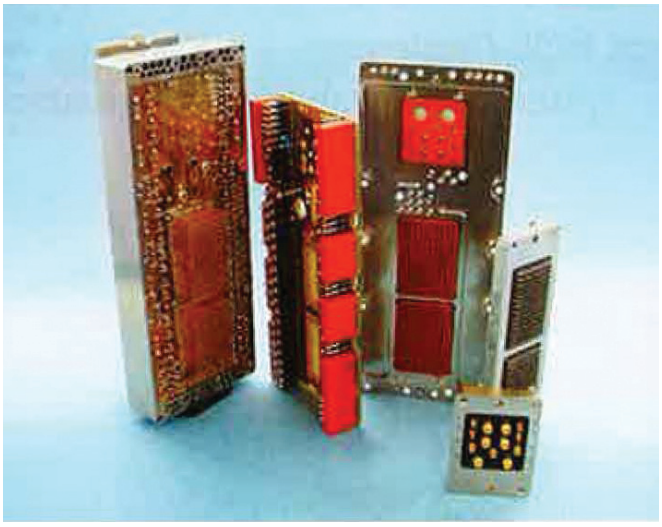
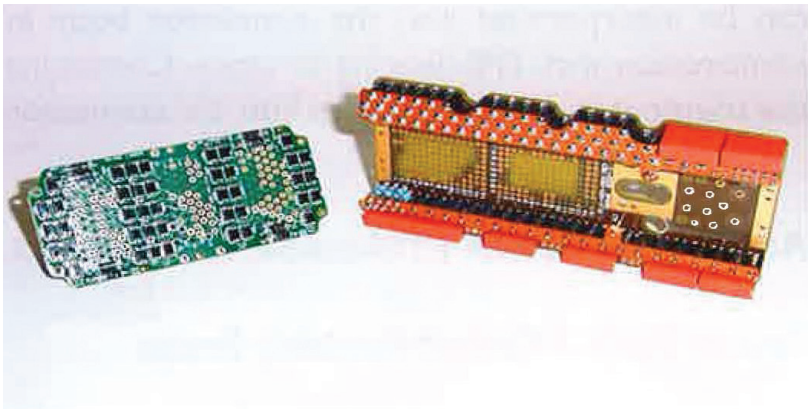
Amphenol Canada/Diode Protected Connectors

Custom Diode / Contact Assembly Design

In this approach a custom diode/contact assembly is installed into an insert with a ground plate. This leaded assembly installed on each contact in the connector is ideal for environments requiring clamping of an extremely fast rise time transient. This design also allows for easy removal and replacement of the front socket contacts. In addition, each diode is individually replaceable at the factory in the event that repair is necessary.

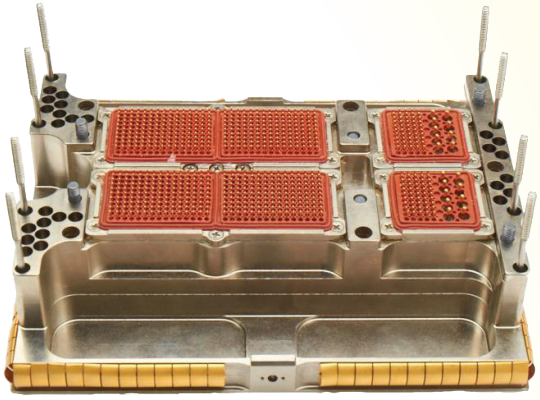


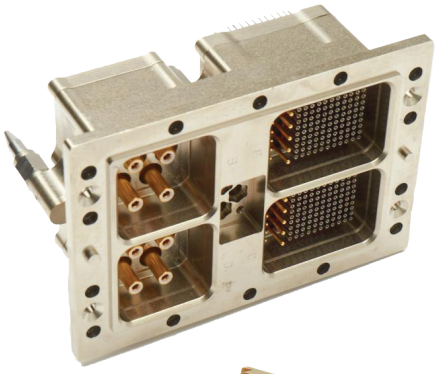


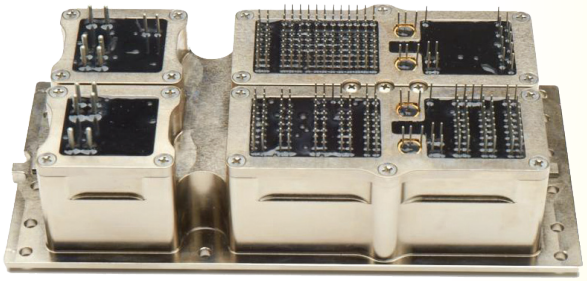
This approach incorporates diode protection by populating a printed circuit board with surface mount and/or thru hole mount components. The components can be zener diodes, varistors, inductors, etc and can be selected from commercially available parts. This cost effective design still allows for easy removal and replacement of front socket contacts as well as individual replacement and repair of mounted components at the factory.

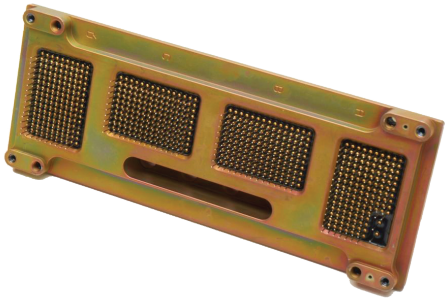
Amphenol Canada
Filter Connectors

Filter Rack and Panel Connectors









Amphenol

FILTERED AND RECTANGULAR CONNECTORS

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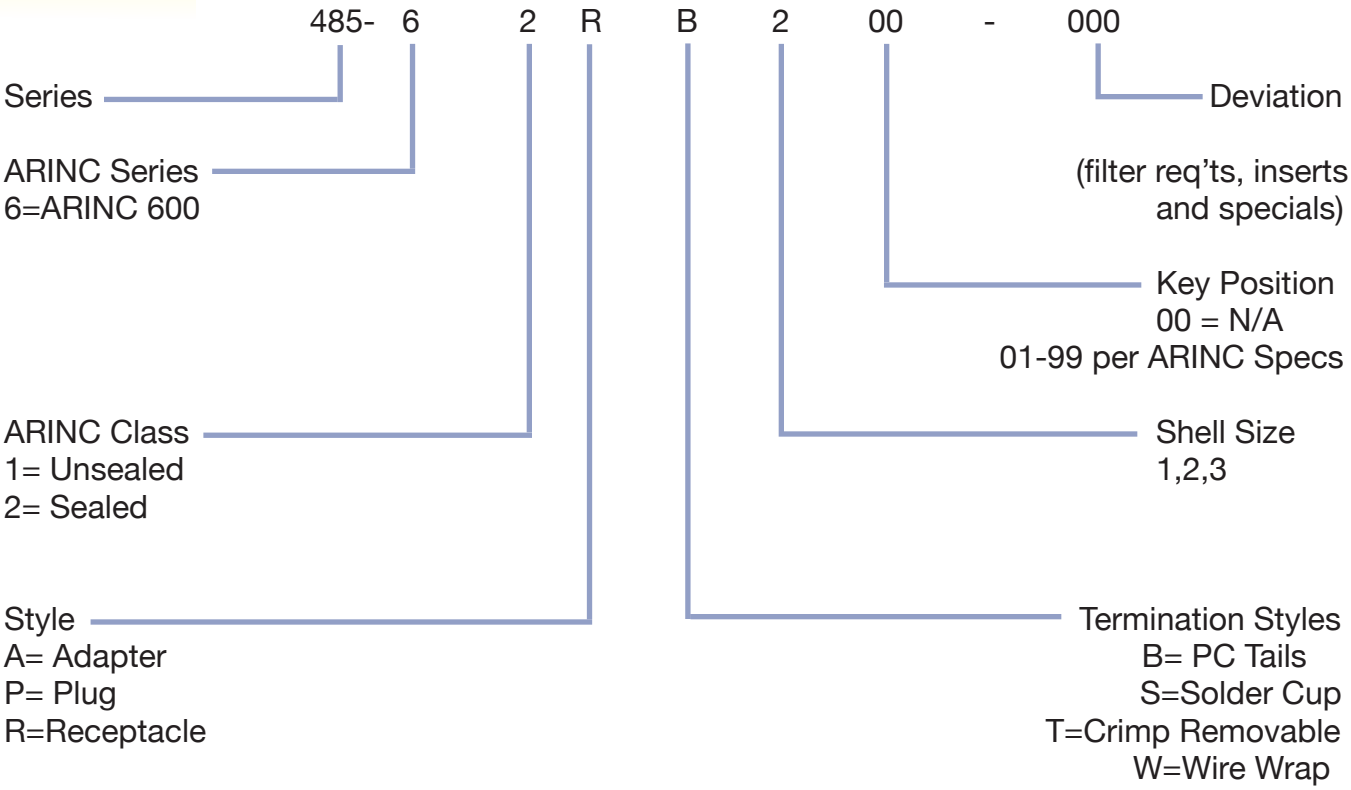
ARINC 600 Filter Connectors

ARINC 600 connectors are the recognized standard rack and panel interconnect system for use in commercial avionics. These connectors come in 3 sizes that can hold up to 800 individual contacts. Amphenol ACC is the world leader in the filtering of this series and has many capabilities to meet our customers varied requirements. This includes, but is not limited to, Pi, C, LC, T filters as well as the addition of transient suppression diodes to allow for the successful EMC test requirements of DO-160.

Materials and Plating

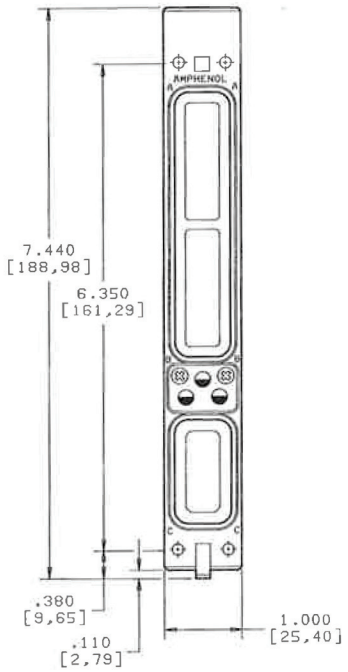
Shell – Aluminum alloy
Polarizing Keys – Aluminum alloy electroless nickel
Insulators – Glass filled plastic
Seals – Silicone/fluorosilicone elastomer blend
Contacts – copper alloy gold plate

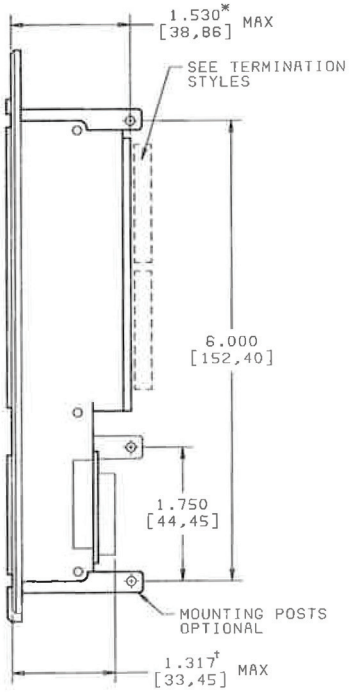
Part Numbering System

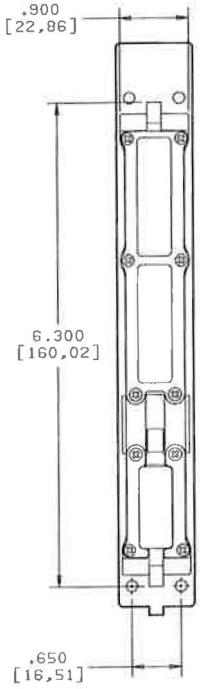


ARINC 600 Style Filter Connectors

Receptacle Shell Size 1







*ARINC 600 Cavity C and F and MIL-DTL-C-83527 Cavity B and D dimensions are shown unfiltered.

* This dimension is for all filter styles with PCB, wire wrap or solder cup terminations. For environmental class connectors with rear release contacts, add .600” (15,24mm). Shorter length designs are available. Consult the factory for details.

Note: Size 22D contacts are supplied installed and are removable with Amphenol insertion/ removal tool 485-905. Cavity C and F power contacts are packaged separately. Coax and triax contacts may be ordered separately.

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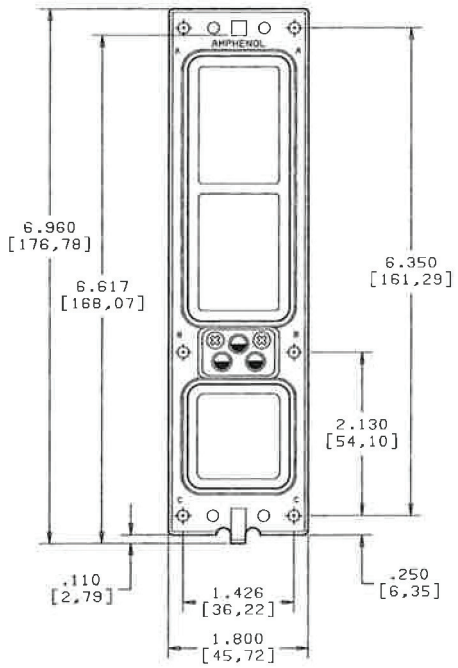
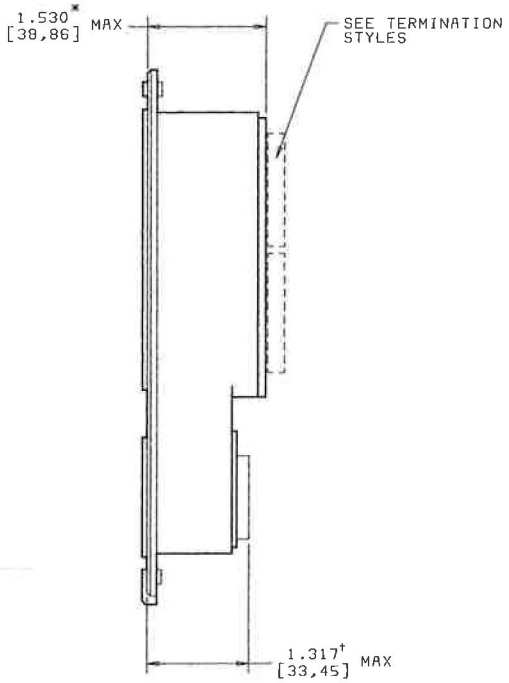
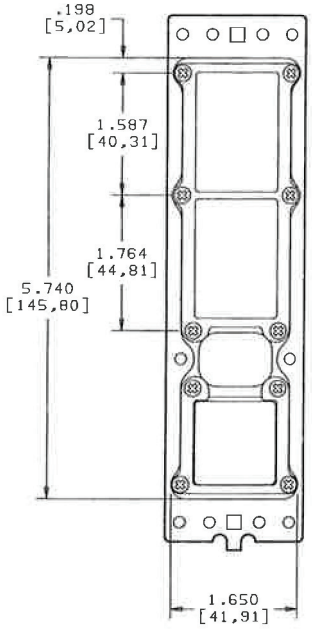
ARINC 600 Style Filter Connectors

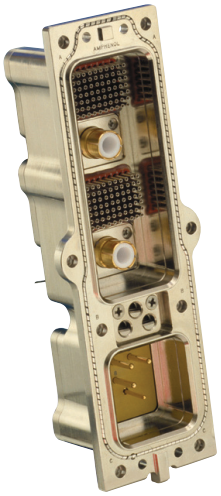
Receptacle Shell Size 2







*Cavity C dimension is shown unfiltered.

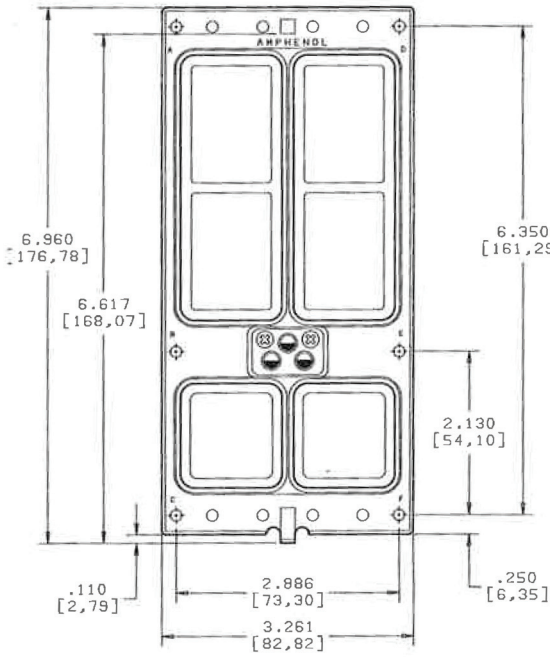


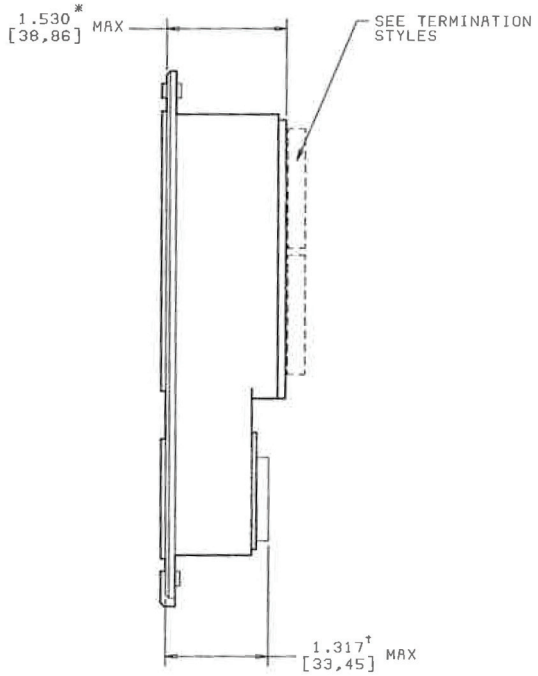
* This dimension is for all filter styles with PCB, wire wrap or solder cup terminations. For environmental class connectors with rear release contacts, add .600" (15,24mm). Shorter length designs are available. Consult the factory for details.

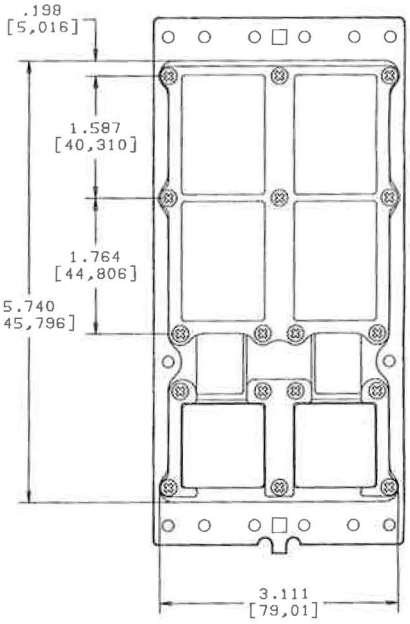
Note: Size 22D contacts are supplied installed and are removable with Amphenol insertion/removal tool 485-905. Cavity C and F power contacts are packaged separately. Coax and triax contacts may be ordered separately.

ARINC 600 Style Filter Connectors

Receptacle Shell Size 3







*Cavity C dimension is shown unfiltered.

* This dimension is for all filter styles with PCB, wire wrap or solder cup terminations. For environmental class connectors with rear release contacts, add .600” (15,24mm). Shorter length designs are available. Consult the factory for details.

Note: Size 22D contacts are supplied installed and are removable with Amphenol insertion/removal tool 485-905. Cavity C and F power contacts are packaged separately. Coax and triax contacts may be ordered separately.

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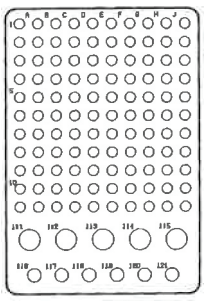
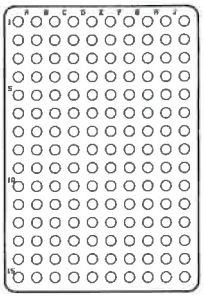
ARINC 600 Insert Arrangements

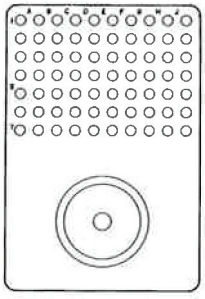
Shell Size 2 or 3, Cavity A, B, D or E



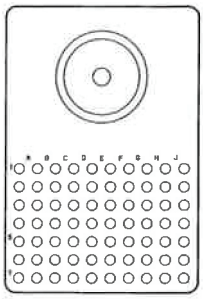
Insert 121
110 #22 Contacts
5 #16 Contacts
6 #20 Contacts



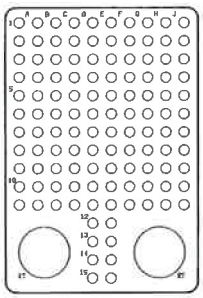
Insert 150
150 #22 Contacts



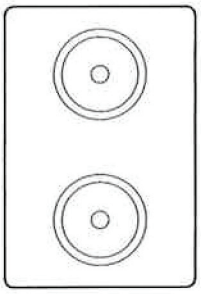
Insert 71C1
70 #22 Contacts
1 #1 Coax Contacts



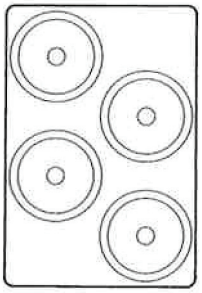
Insert 71C1A
70 #22 Contacts
1 #1 Coax Contacts



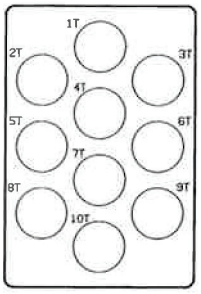
Insert 120T2
118 #22 Contacts
2 #8 Triax/Coax Contacts



Insert C2
2 #1 Coax Contacts

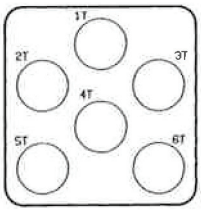


Insert C4
4 #1 Coax Contacts

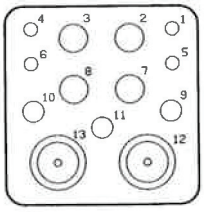


Insert 10T10
10 #8 Triax/Coax Contacts

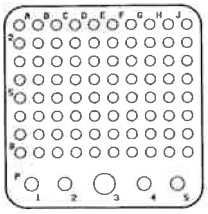
Shell Size 2 or 3, Cavity C or F



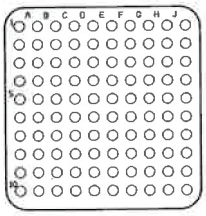
Insert 6T6
6 #8 Triax/Coax Contacts



Insert 13C2
4 #12 Contacts
3 #16 Contacts
4 #20 Contacts
2 #5 Coax Contacts



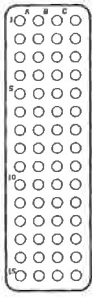
Insert 85
80 #22 Contacts
4 #20 Contacts
1 #16 Contacts



Insert 100
100 #22 Contacts

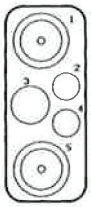
Shell Size 1

Cavity A or B



Insert 60
60 #22 Contacts

Cavity C



Insert 5C2
1 #12 Contacts
2 #16 Contacts
2 #5 Coax Contacts

Note: Consult the factory for other insert patterns.

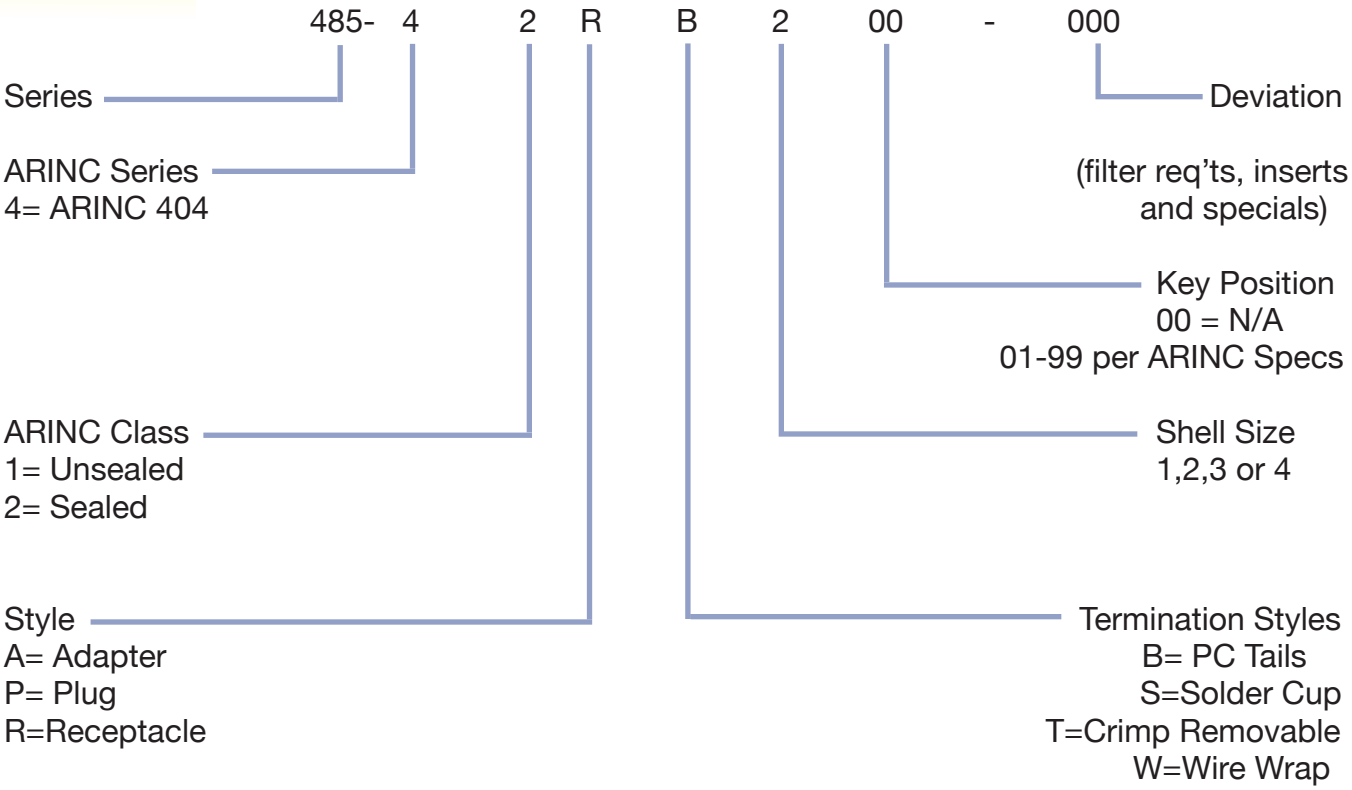
ARINC 404 and MIL-DTL-81659 Filter Connectors

ARINC 404 connectors and the Military equivalent MIL-DTL-81659 are a long time standard in both military and commercial aviation LRU's. These connectors come in 4 sizes that can hold up to 424 individual contacts. Amphenol ACC is the world leader in the filtering of this series and has many capabilities to meet our customers varied requirements. This includes, but is not limited to, Pi, C, LC, T filters as well as the addition of transient suppression diodes to allow for the successful EMC test requirements of DO-160.

Materials and Plating

Shell – Aluminum alloy
Polarizing Keys – Aluminum alloy electroless nickel
Insulators – Glass filled plastic
Seals – Silicone/fluorosilicone elastomer blend
Contacts – Copper alloy gold plate

Part Numbering System



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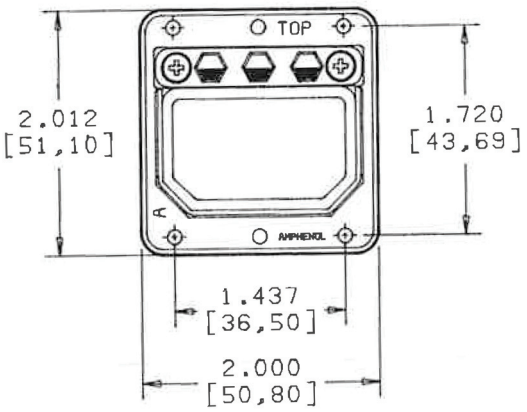
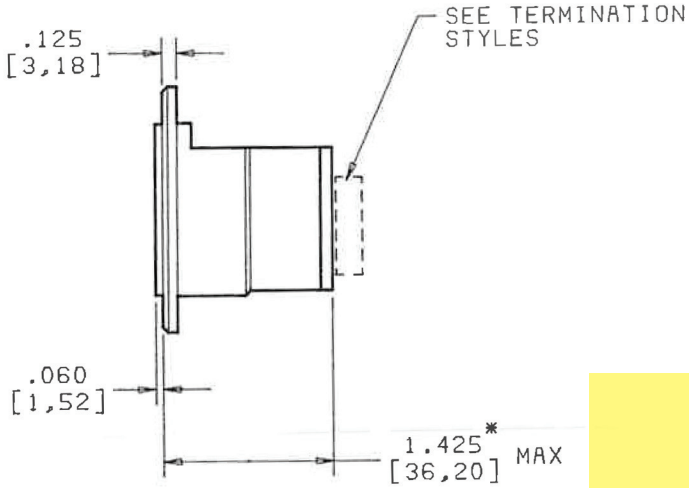
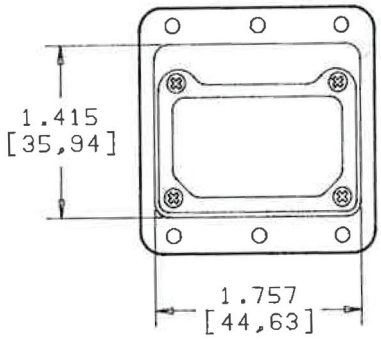
ARINC 404 and MIL-DTL-81659 Filter Connectors

Receptacle Shell Size 1





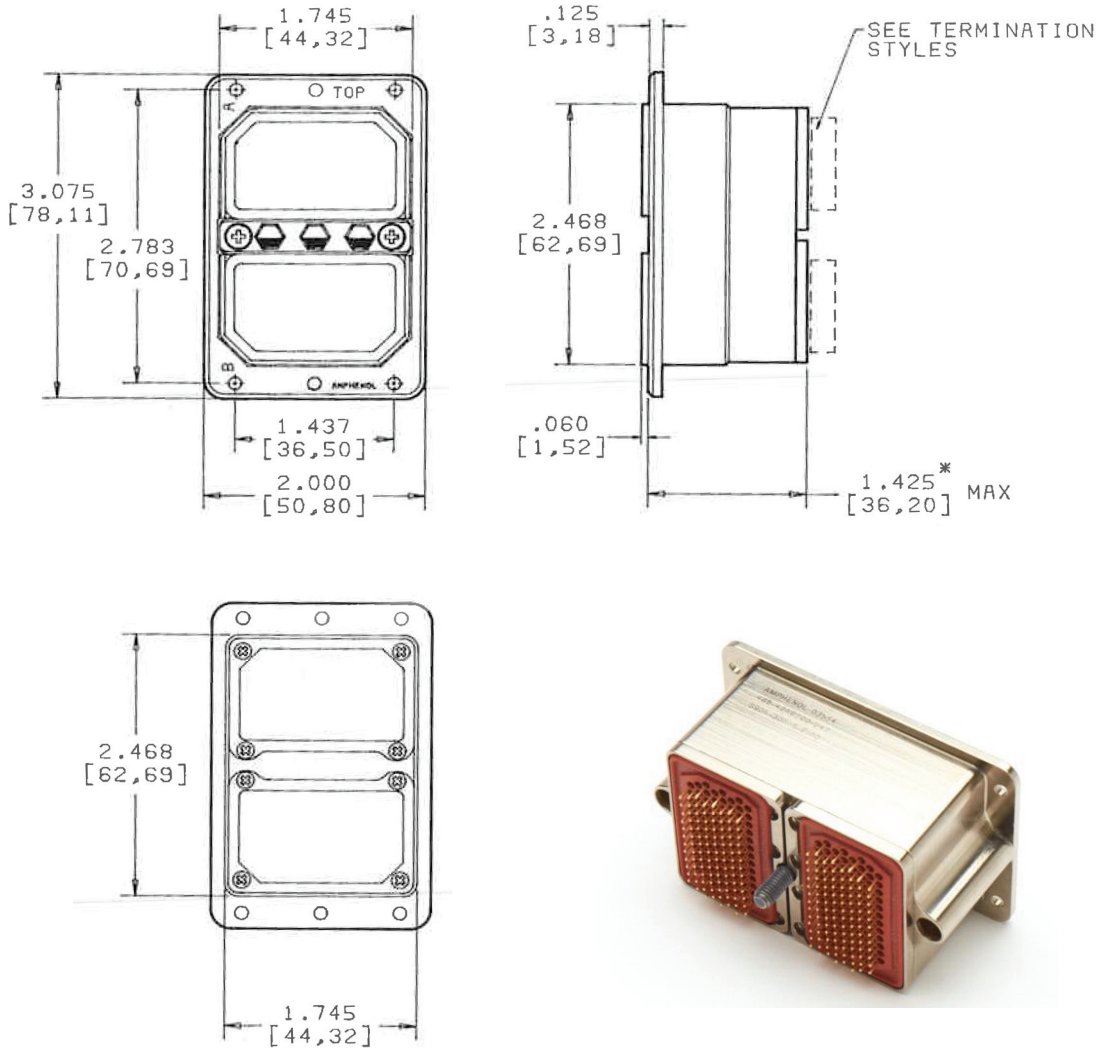


* This dimension is for all filter styles with PCB, wire wrap or solder cup terminations. For environmental class connectors with rear release contacts, add .600” (15,24mm). Shorter length designs are available. Consult the factory for details.

Note: Size 22D contacts are supplied installed and are removable with Amphenol insertion/removal tool 485-905. Pin contacts are not removable. Coax and triax contacts may be ordered separately.

ARINC 404 and MIL-DTL-81659 Filter Connectors

Receptacle Shell Size 2



* This dimension is for all filter styles with PCB, wire wrap or solder cup terminations. For environmental class connectors with rear release contacts, add .600" (15,24mm). Shorter length designs are available. Consult the factory for details.

Note: Size 22D contacts are supplied installed and are removable with Amphenol insertion/removal tool 485-905. Pin contacts are not removable. Coax and triax contacts may be ordered separately.

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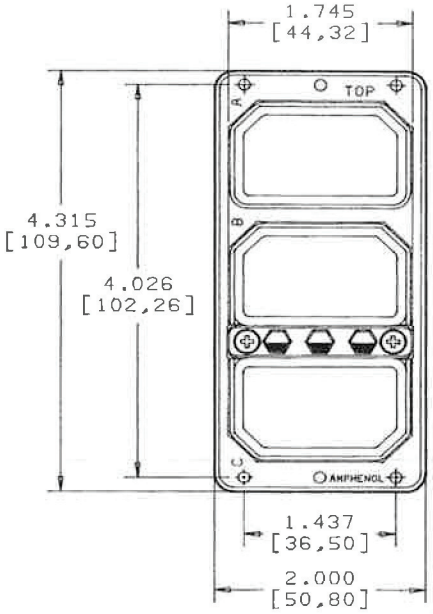
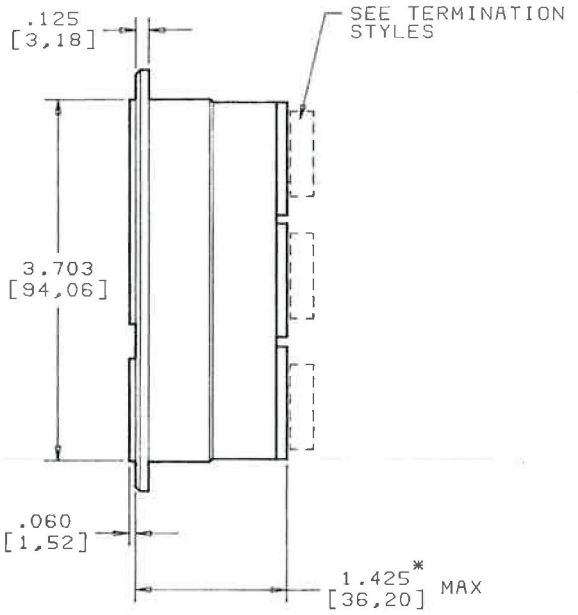
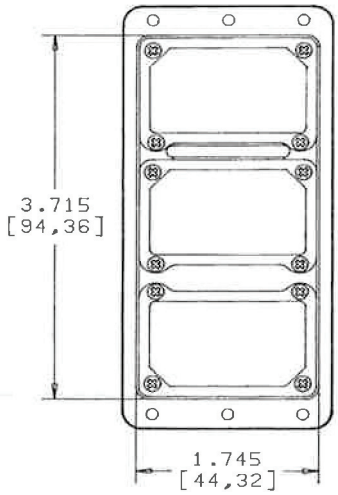
ARINC 404 and MIL-DTL-81659 Filter Connectors

Receptacle Shell Size 3





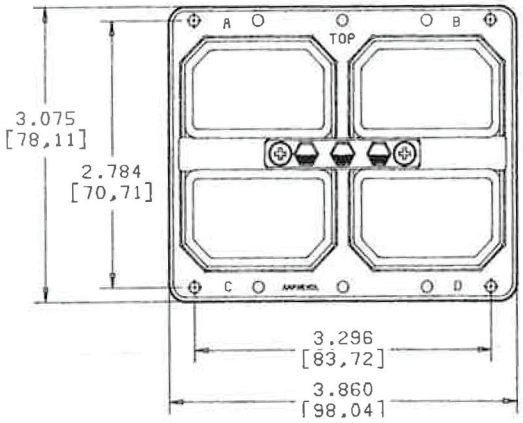


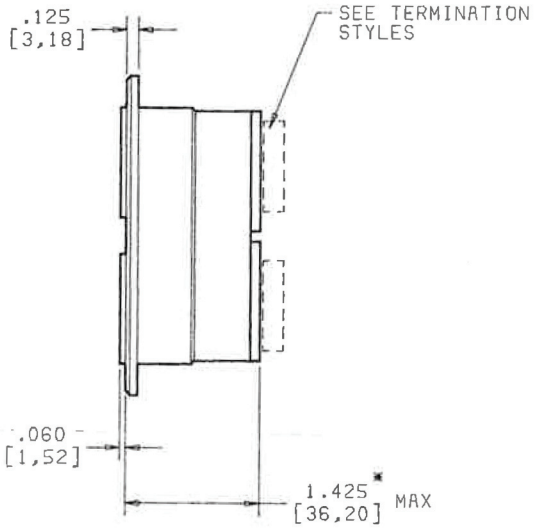
* This dimension is for all filter styles with PCB, wire wrap or solder cup terminations. For environmental class connectors with rear release contacts, add .600" (15,24mm). Shorter length designs are available. Consult the factory for details.

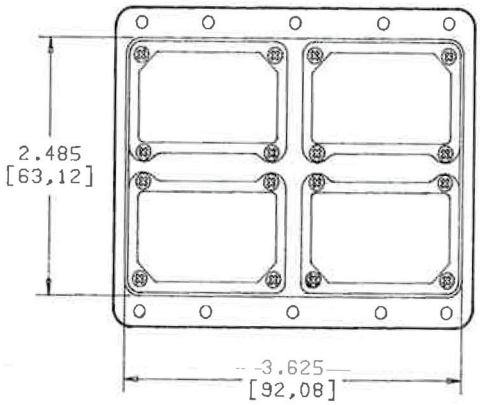
Note: Size 22D contacts are supplied installed and are removable with Amphenol insertion/removal tool 485-905. Pin contacts are not removable. Coax and triax contacts may be ordered separately.

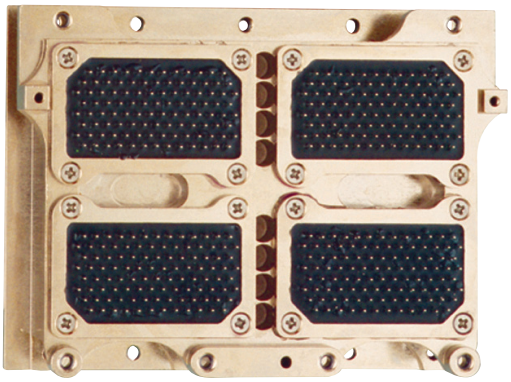
ARINC 404 and MIL-DTL-81659 Filter Connectors

Receptacle Shell Size 4









* This dimension is for all filter styles with PCB, wire wrap or solder cup terminations. For environmental class connectors with rear release contacts, add .600" (15,24mm). Shorter length designs are available. Consult the factory for details.

Note: Size 22D contacts are supplied installed and are removable with Amphenol insertion/removal tool 485-905. Pin contacts are not removable. Coax and triax contacts may be ordered separately.

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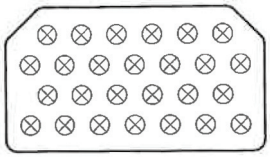
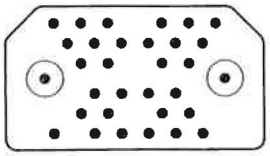
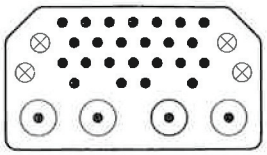
ARINC 404 and MIL-DTL-81659 Insert Arrangements



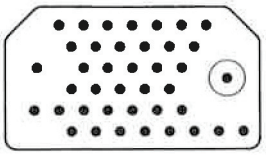
Insert 26
26 #16 Contacts



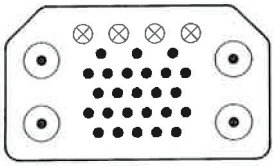
Insert 32C2
30 #20 Contacts
2 #5 Coax Contacts



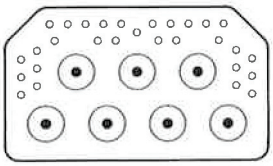
Insert 32C4
24 #20 Contacts
4 #16 Contacts
4 #5 Coax Contacts



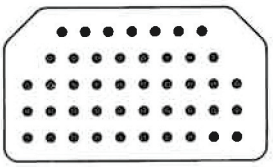
Insert 40C1
39 #20 Contacts
1 #5 Coax Contacts



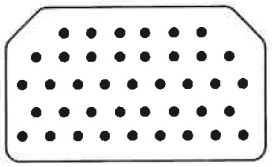
Insert 33C4
25 #20 Contacts
4 #16 Contacts
4 #5 Coax Contacts



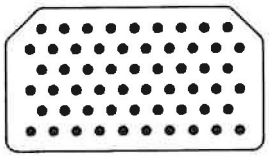
Insert 36C7
29 #22 Contacts
7 #5 Coax Contacts



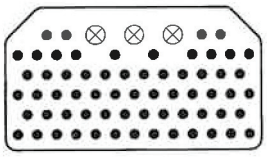
Insert 45
45 #20 Contacts



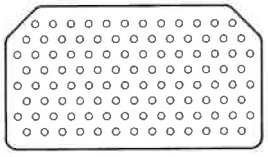
Insert 40
40 #20 Contacts



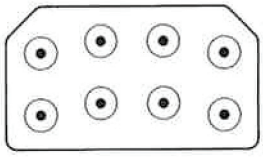
Insert 57
57 #20 Contacts



Insert 67
64 #20 Contacts
3 #16 Contacts



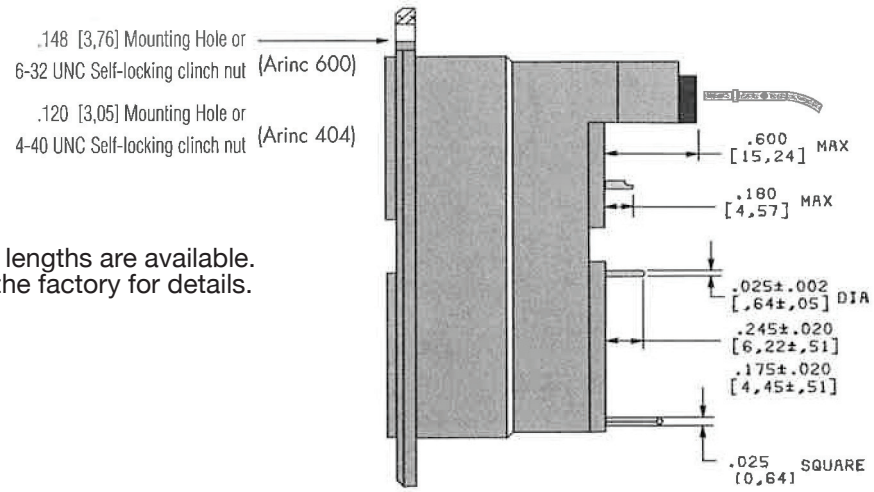
Insert 106
106 #22 Contacts



Insert C8
8 #9 Coax Contacts

Note: Consult the factory for other insert patterns.

ARINC 404 and 600 Termination Styles



Rear Crimp Removable

Solder Cup

Printed Circuit Tail

Wire Wrap Tail*

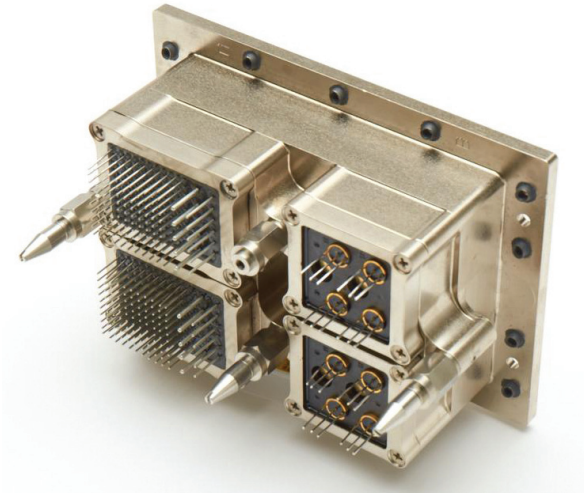
* Various lengths are available. Consult the factory for details.

MIL-DTL-83527 Filter Connectors

MIL-DTL-83527 is a rack and panel blind mate series designed for the rugged applications found mostly in military applications. Amphenol Canada's filtered MIL-DTL-83527 series is intermateable and interchangeable with all non-filtered versions of the same specification. This series has numerous insert arrangements to house signal, high speed RF, Twinax and quadrax ethernet lines and we can combine these with filter and EMP requirements to support our customers many applications.

485 - 8 2 R B 2 00 000

- Series: 485
- ARINC Series: 8 = MIL-DTL-83527
- ARINC Class: 1 = Unsealed; 2 = Sealed
- Style: A = Adapter; P = Plug; R = Receptacle
- Termination Styles: B = PC Tails; S = Solder Cup; T = Crimp Removable; W = Wire Wrap
- Shell Size: 2, 3, 4 or 6
- Key Position: 00 = N/A; 01 - 99 per ARINC Specs
- Deviation: (filter req'ts, inserts and specials)



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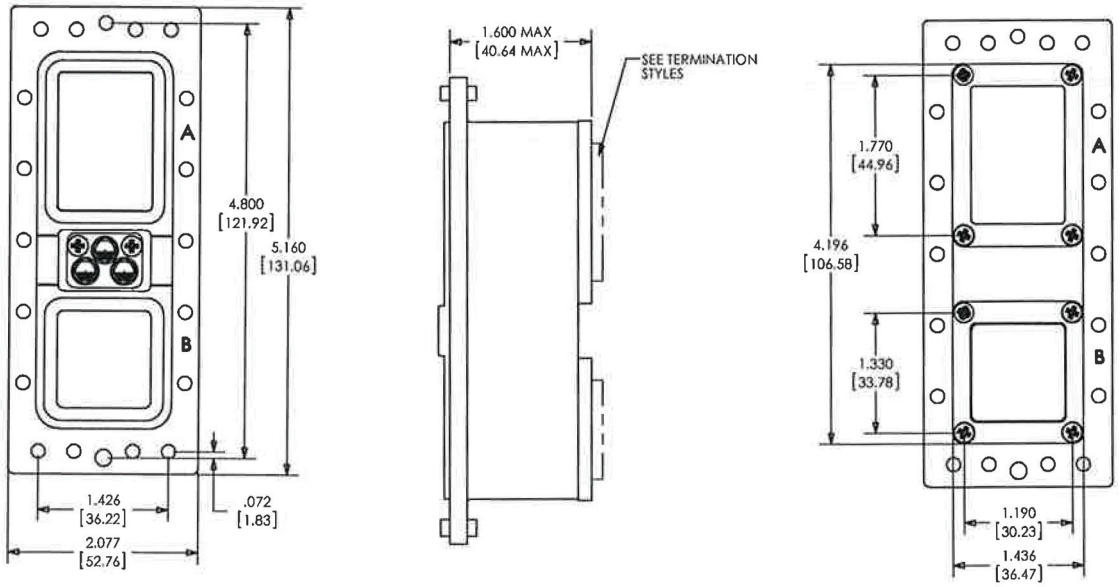
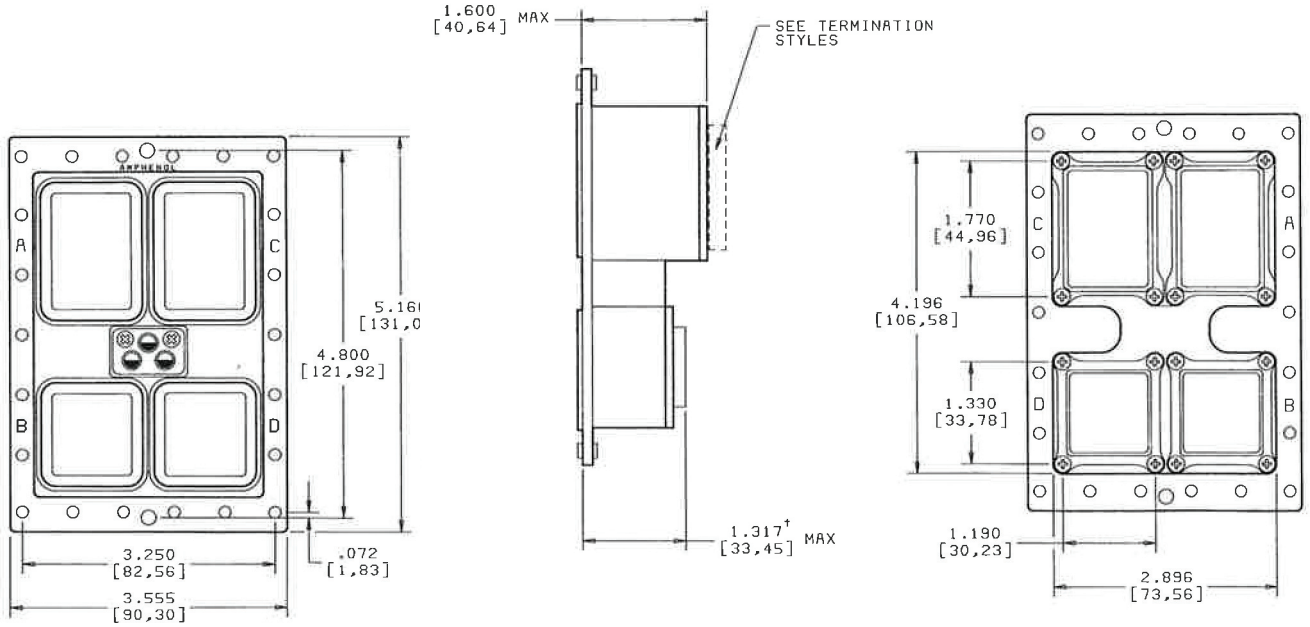
MIL-DTL-83527 Filter Connectors

Receptacle Shell Size 2

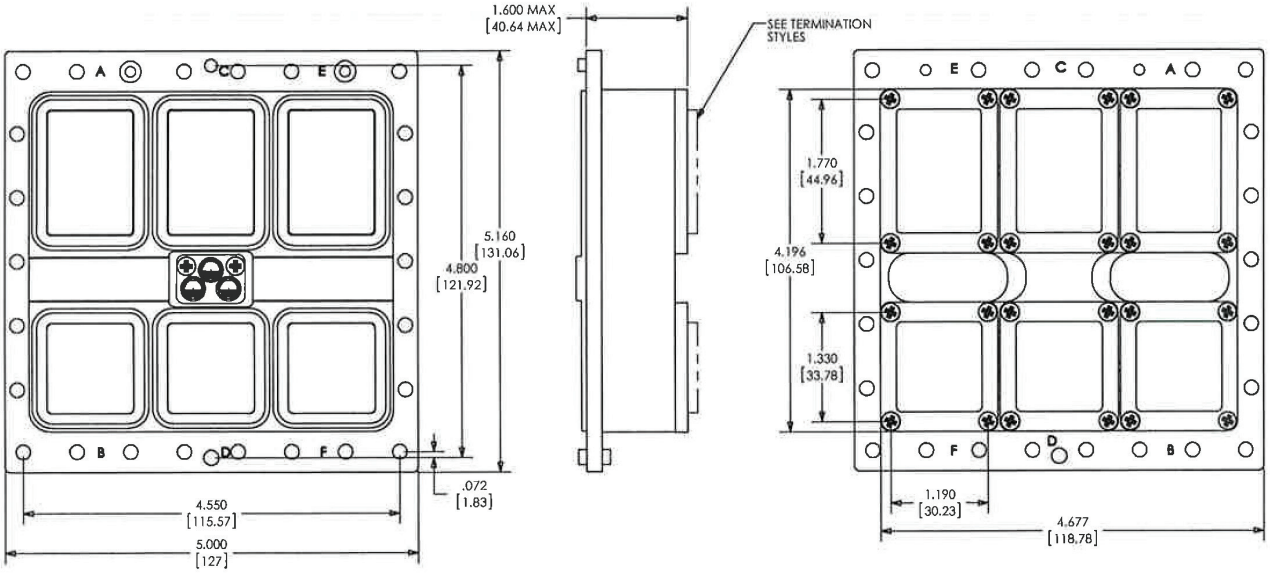


Receptacle Shell Size 3

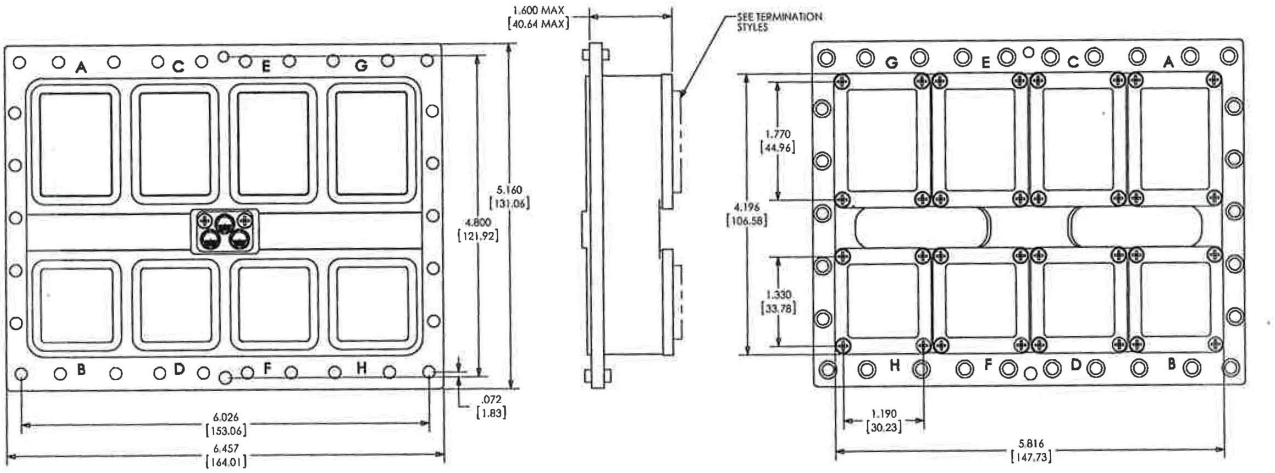


MIL-DTL-83527 Filter Connectors

Receptacle Shell Size 4



Receptacle Shell Size 6



* This dimension is for all filter styles with PCB, wire wrap or solder cup terminations. For environmental class connectors with rear release contacts, add .600” (15,24mm). Shorter length designs are available. Consult the factory for details.

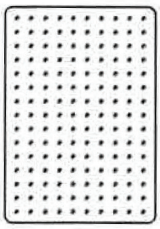
Note: Size 22D contacts are supplied installed and are removable with Amphenol insertion/removal tool 485·905. Cavity C and F power contacts are packaged separately. Coax and triax contacts may be ordered separately.

ARINC 600 Cavity C and F and MIL-C·83527 Cavity B and D dimensions are shown unfiltered.

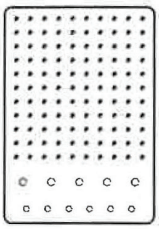
Amphenol Canada **Telephone: (416) 291-4401 Fax: (416) 292-0647**
www.amphenolcanada.com

MIL-DTL-83527 Insert Arrangements

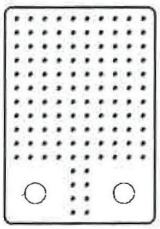
SIGNAL INSERT CAVITIES A, C, E & G



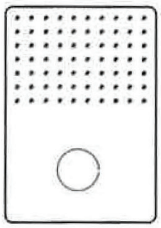
INSERT 150
(150) SIZE 22



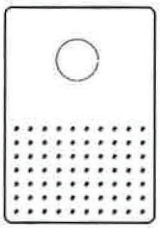
INSERT 121
(110) SIZE 22
(6) SIZE 20
(5) SIZE 16



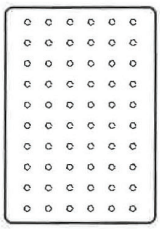
INSERT 120T2*
(118) SIZE 22
(2) SIZE 8 TWINAX



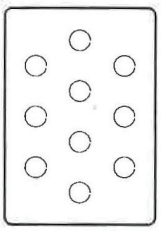
INSERT 71C1
(70) SIZE 22
(1) SIZE 1 COAX



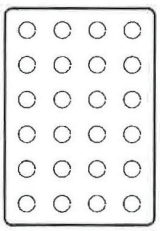
INSERT 71W1A
(70) SIZE 22
(1) SIZE 1 COAX



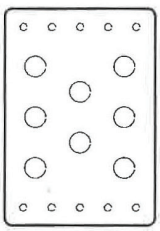
INSERT 60
(60) SIZE 20



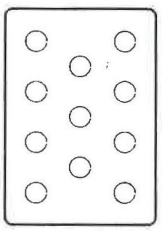
INSERT 10T10 (METAL)*
(10) SIZE 8 TRIAX/COAX



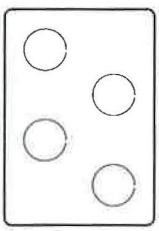
INSERT 24
(24) SIZE 12



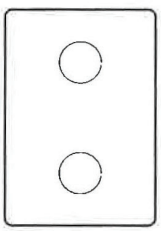
INSERT 18T8
(10) SIZE 16
(8) SIZE 8 TWINAX



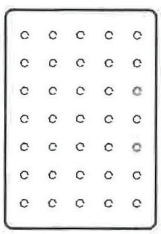
INSERT Q11 (METAL)*
(11) SIZE 8 QUADRAX



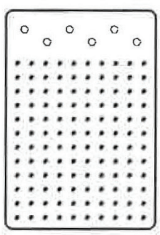
INSERT 4W4 (METAL)
(4) SIZE 1 COAX



INSERT 2W2 (METAL)
(2) SIZE 1 COAX



INSERT 35
(35) SIZE 16

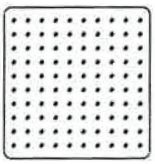


INSERT 126
(120) SIZE 22
(6) SIZE 16

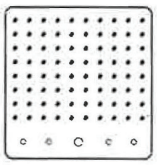
BLANK
SIGNAL INSERT

†Consult factory for further availability of insert combinations.
* Available with Quadrax or Triax/Coax

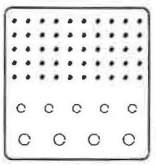
POWER INSERT CAVITIES B, D, F & H



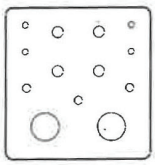
INSERT 100
(100) SIZE 22



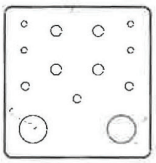
INSERT 85
(80) SIZE 22
(4) SIZE 20
(1) SIZE 16



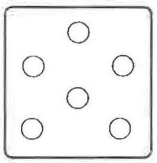
INSERT 59
(50) SIZE 22
(5) SIZE 16
(4) SIZE 12



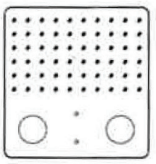
INSERT 13W2
(4) SIZE 20
(3) SIZE 16
(4) SIZE 12
(2) SIZE 5 COAX



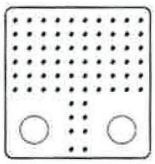
INSERT 1102*
(4) SIZE 20
(3) SIZE 16
(4) SIZE 12
(2) SIZE 8 QUADRAX



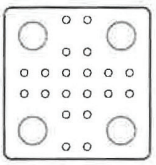
INSERT 6T6 (METAL)*
(6) SIZE 8 TWINAX/COAX



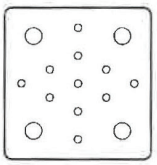
INSERT 62Q2*
(60) SIZE 22
(2) SIZE 16
(2) SIZE 8 QUADRAX



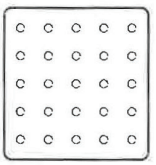
INSERT 68Q2*
(68) SIZE 22
(2) SIZE 8 QUADRAX



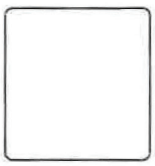
INSERT 20Q2*
(20) SIZE 20
(4) SIZE 8 QUADRAX



INSERT 11C4
(11) SIZE 16
(4) SIZE 12



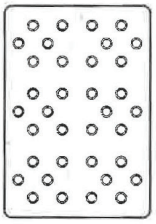
INSERT 25
(25) SIZE 16



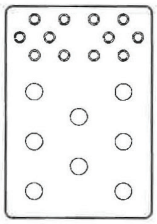
BLANK
POWER INSERT

FIBRE OPTIC INSERTS

CAVITIES A, C, E & G

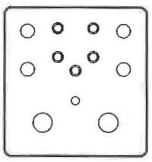


INSERT 36F36
(36) SIZE 16 FIBRE OPTIC

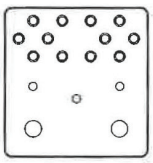


INSERT 20F12T8
(12) SIZE 16 FIBRE OPTIC
(8) SIZE 8 TWINAX/QUADRAX

CAVITIES B, D, F & H



INSERT 12F5C2
(5) SIZE 16 FIBRE OPTIC
(1) SIZE 16
(4) SIZE 12
(2) SIZE 5 COAX



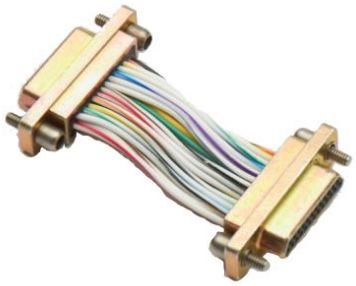
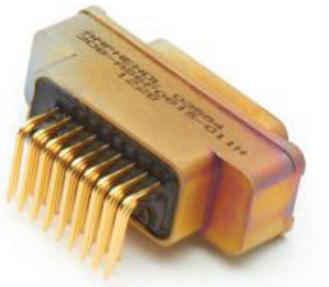
INSERT 17F12Q2
(12) SIZE 16 FIBRE OPTIC
(3) SIZE 16
(2) SIZE 8 QUADRAX

CONTACT LEGEND

1	5	8	12	16	16	20	22
COAX	COAX	COAX TWINAX TRIAX QUADRAX	COAX	FIBRE			

Amphenol Canada
Filter Connectors

Filter Rectangular Connectors
D-Subminiature and Micro D-Subminiature


Amphenol

FILTERED AND RECTANGULAR CONNECTORS

Telephone: (416) 291-4401 Fax: (416) 292-0647 www.amphenolcanada.com

MIL-DTL-24308 Filter D-Subminiature Connectors

Amphenol Canada's Filtered D-subminature connectors for high reliability applications uses a stress isolated design without incorporating solder to allow for the rugged transfer of shock and vibration waveforms without damage to the filter elements. All sizes and termination styles are available with short lead times to meet the military and commercial aviation markets.

308 - B P 1 P 08 1 1 - 000H

Series
Planar D-Sub

Shell Size
E(1), A(2), B(3), C(4), D(5),6

Contact
P = Pin
S = Socket

Termination Style
1 - .025" (,64mm) diameter PCB
2 - .020" (,51 mm) diameter PCB
3 - Solder cup
4 - .900" (22,86mm) footprint right angle
6 - .590" (14,g9mm) footprint right angle
8 - .025" (,64mm) diameter PCB with short connector body
9 - Crimp, non-removable

Filter Circuit
P = Pi
C = Capacitive
L = LRC
R = CLR
T = T Style

Capacitance (pF)
Pi
A4 = 400 to 800
02 = 1800 to 3600
04 = 4000 to 8000
08 = 8000 to 16000
16 = 16000 to 32000

C,CLR, LRC,T
A2 = 200 to 400
A4 = 400 to 620
01 = 900 to 1800
02 = 1800 to 3600
04 = 4000 to 8000
10 = 10000 to 15000
16 = 16000 to 32000
22 = 22000 to 40000
50 = 50000 to 100000

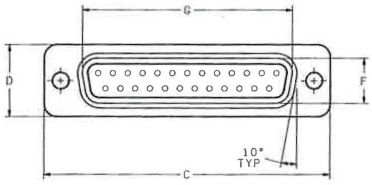
Mounting Style
1 - .120" (3,04mm) mounting hole
2 - 4-40 threaded clinch nut
3 - Right Angle mounting bracket
4 - Right Angle mounting bracket with 4-40 threaded clinch nut

Shell Plating
1 = Electroless Nickel
2 = Tin
3 = Cadmium (clear)
4 = Gold
5 = Zinc Nickel

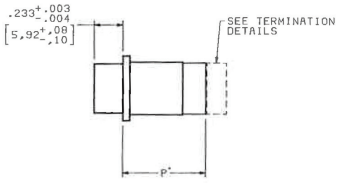
Deviation
000 = Standard

Density
H High Density
Blank if medium

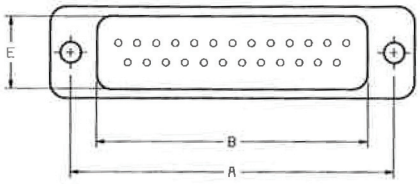
308 Series Plug Dimensions
D-Subminiature Filter Connectors



Front View



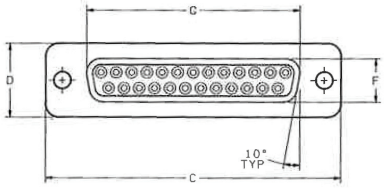
Side View



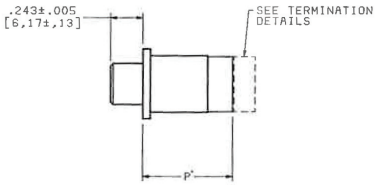
Rear View

Shell Size	Number of Contacts	Dimension													
		A		B Max		C		D Max		E Max		F		G	
		±.005"	±,13mm	inches	mm	± .015"	±,38 mm	inches	mm	inches	mm	± .005"	±,13mm	± .005"	±,13mm
E	9 or 15	0.984	24,99	0.685	17,34	1.213	30,81	0.534	13,56	0.434	11,02	0.329	8,36	0.666	16,92
A	15 or 26	1.312	33,32	1.009	25,63	1.541	39,14	0.534	13,56	0.434	11,02	0.329	8,36	0.994	25,25
B	25 or 44	1.852	47,04	1.557	39,55	2.088	53,04	0.534	13,56	0.434	11,02	0.329	8,36	1.534	38,96
C	37 or 62	2.500	63,50	2.205	56,01	2.729	69,32	0.534	13,56	0.434	11,02	0.329	8,36	2.182	55,42
D	50 or 78	2.406	61,11	2.110	53,59	2.635	66,93	0.641	16,28	0.541	13,74	0.441	11,20	2.079	52,81
6	104	2.500	63,50	2.255	57,28	2.729	69,32	0.680	17,27	0.640	16,26	0.503	12,77	2.212	56,18

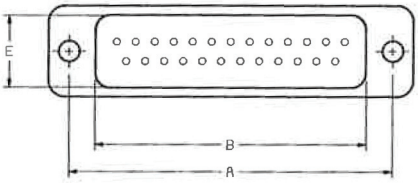
308 Series Receptacle Dimensions



Front View



Side View



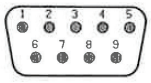
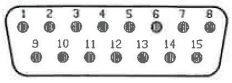
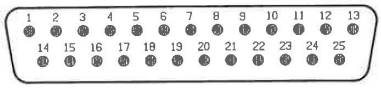
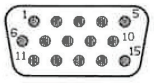
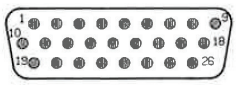
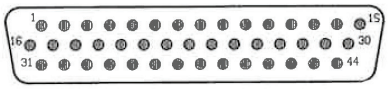
Rear View

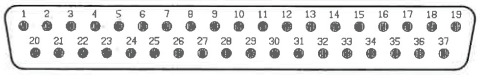
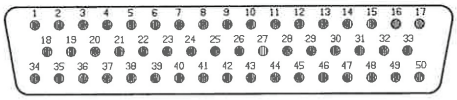
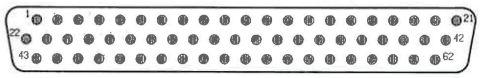
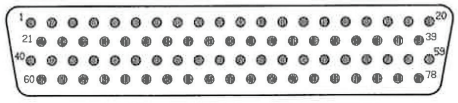
Shell Size	Number of Contacts	Dimension													
		A		B Max		C		D Max		E Max		F		G	
		±.005"	±,13mm	inches	mm	± .015"	±,38 mm	inches	mm	inches	mm	± .005"	±,13mm	± .005"	±,13mm
E	9 or 15	0.984	24,99	0.685	17,34	1.213	30,81	0.534	13,56	0.434	11,02	0.311	7,90	0.643	16,33
A	15 or 26	1.312	33,32	1.009	25,63	1.541	39,14	0.534	13,56	0.434	11,02	0.311	7,90	0.971	24,66
B	25 or 44	1.852	47,04	1.557	39,55	2.088	53,04	0.534	13,56	0.434	11,02	0.311	7,90	1.511	38,38
C	37 or 62	2.500	63,50	2.205	56,01	2.729	69,32	0.534	13,56	0.434	11,02	0.311	7,90	2.159	54,84
D	50 or 78	2.406	61,11	2.110	53,59	2.635	66,93	0.641	16,28	0.541	13,74	0.423	10,74	2.064	52,43
6	104	2.500	63,50	2.255	57,28	2.729	69,32	0.680	17,27	0.640	16,26	0.485	12,32	2.189	55,60

Amphenol Canada Telephone: (416) 291-4401 Fax: (416) 292-0647
www.amphenolcanada.com

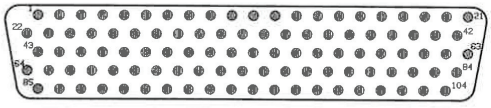
308 Series Insert Arrangements

Pin Engaging Face Shown

	Shell Size 1 (E)	Shell Size 2 (A)	Shell Size 3 (B)
Medium Density			
	9 #20 Contacts	15 #20 Contacts	25 #20 Contacts
High Density			
	15 #22 Contacts	26 #22 Contacts	44 #22 Contacts

	Shell Size 4 (C)	Shell Size 5 (D)
Medium Density		
	37 #20 Contacts	50 #20 Contacts
High Density		
	62 #22 Contacts	78 #22 Contacts

Shell Size 6

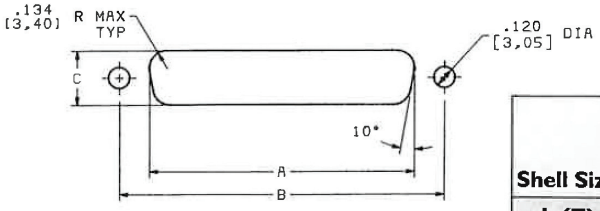


104 #22 Contacts

Note: Consult the factory for other insert patterns.

Recommended Panel Cutout

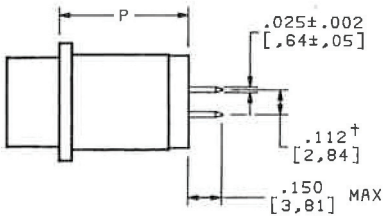
Front and Rear Mounting



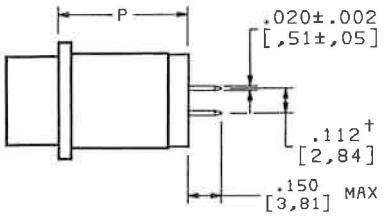
Shell Size	Dimension					
	A min		B		C min	
	inches	mm	±.005"	±,13mm	inches	mm
1 (E)	0.801	20,35	0.984	24,99	0.449	11,40
2 (A)	1.129	28,68	1.312	33,32	0.449	11,40
3 (B)	1.669	42,39	1.852	47,04	0.449	11,40
4 (C)	2.321	58,95	2.500	63,50	0.449	11,40
5 (D)*	2.213	56,21	2.406	61,11	0.555	14,09
5 (D)+	2.250	57,15	2.406	61,11	0.585	14,86
6 *	2.360	59,94	2.500	63,50	0.630	16,00

* Rear mounting dimensions.
\+ Front mounting dimensions.

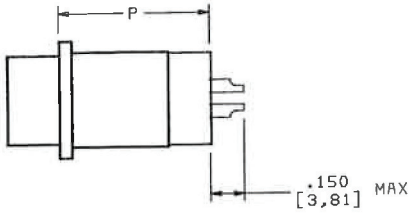
308 Series Termination Styles



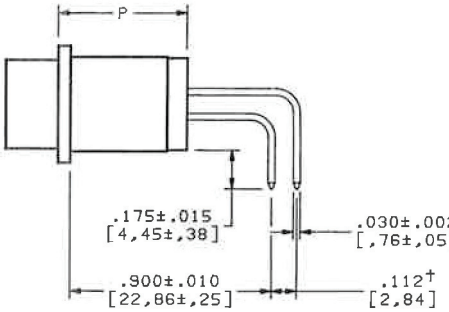
Termination Style 1



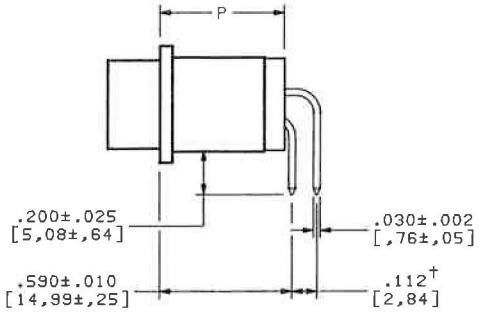
Termination Style 2



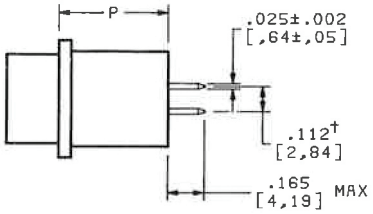
Termination Style 3



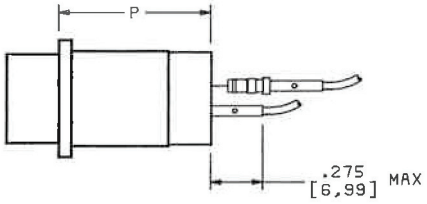
Termination Style 4



Termination Style 6



Termination Style 8



Termination Style 9

This dimension is 0.078" (1,98) for high density arrangements.

Filter Circuit	Termination Style and Shell Length (P Max dimension)													
	1 and 2		3		4		6		7		8		9	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
PI,LRC,CLR,T	0.575	14,61	0.695	17,65	0.575	14,61	0.575	14,61	N/A	N/A	0.470	11,94	0.695	17,65
C	0.450	11,43	0.570	14,48	0.450	11,43	0.450	11,43	0.400	10,16	0.370	9,40	0.570	14,48

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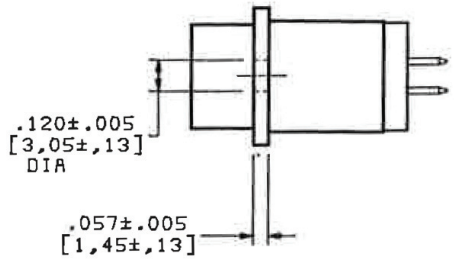
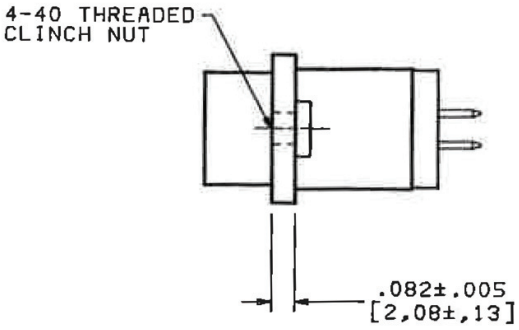
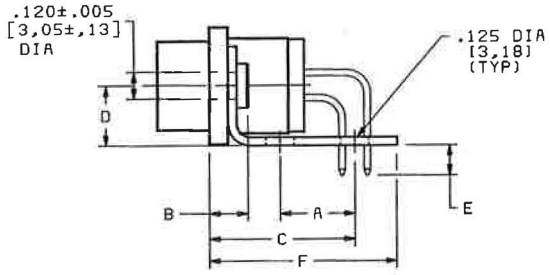
308 Series Mounting Styles



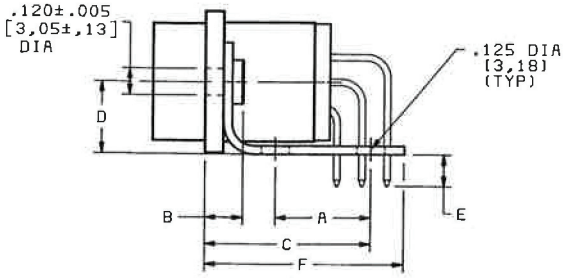
Mounting Style 1



Mounting Style 2



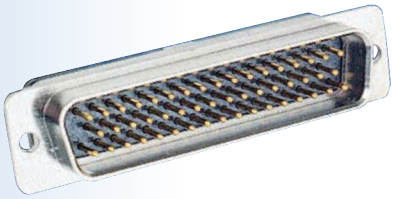
Mounting Style 3 (two row)



Mounting Style 3 (three row)

Shell Size	Number of Contacts	Dimension											
		A		B Max		C		D		E		F Max	
		±.004"	±,11mm	inches	mm	±.015"	±,39mm	± .008"	±,21mm	±.020"	±,51mm	inches	mm
E	9 or 15	0.331	8,41	0.250	6,35	0.647	16,43	0.270	6,86	0.149	3,79	0.855	21,72
A	15 or 26	0.331	8,41	0.250	6,35	0.647	16,43	0.270	6,86	0.149	3,79	0.855	21,72
B	25 or 44	0.331	8,41	0.250	6,35	0.647	16,43	0.270	6,86	0.149	3,79	0.855	21,72
C	37 or 62	0.331	8,41	0.250	6,35	0.647	16,43	0.270	6,86	0.149	3,79	0.855	21,72
D	50 or 78	0.387	9,83	0.250	6,35	0.703	17,86	0.324	8,23	0.149	3,79	0.910	23,12

Industrial Grade Filter D



Amphenol Canada's FD308 connectors are available in the full range of standard and high-density arrangements, either pin or socket, These connectors are supplied with fixed screw machine contacs and are available in Solder Cup, Straight or Right Angle PCB terminations.

Applictions:
- Computers and Peripheral Equipment
- Ideal for Retrofit Applications or Late Design-In

Specifications

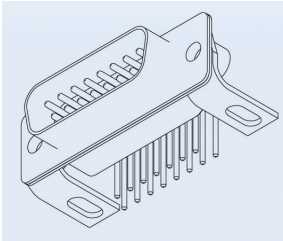
Product Features:
- Hi reliability filtering in multi row arrangements
- Stamped and formed shells
- Screw machine contacts and hi reliability inserts
- Available in all hi-density insert patterns
- Mates with MIL-DTL-24308 D-Subs

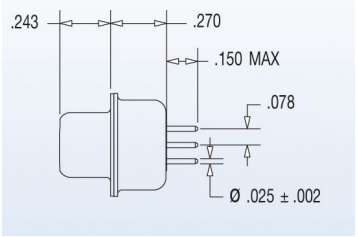
Electrical Ratings:

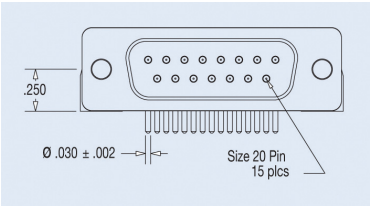
Current	5 A
Insulation Resistance	5 GΩ @ 200 Vdc
Working Voltage	200 Vdc
D.W.V.	500 Vdc PIN-PIN/PIN-Shell
Capacitance	+/- 20%
Temperature	-55˚C/+125˚C

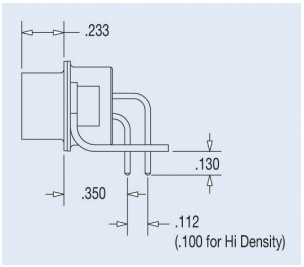
Materials and Platings:

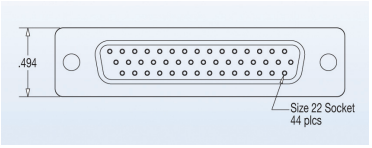
Shells	Stamped steel shell, tin plated
Inserts	High temperature resistant polyethersulfone per MIL-P-46185
Contacts	Machined copper alloy, 20µ" gold over nickel
Capacitor	Barium titanate ceramic array











FD308 - B44 S A 1 A2 - 000

Size & Number of Contacts
STD Density E09, A15, B25, C37, D50
High Density E15, A26, B44, C62, D78, 6104

Contact Type
S = Socket Contact (Receptacle)
P = Pin Contact (Plug)

Termination Style
A = Right Angle PCB
B = Vertical PCB
C = Solder Cup

000 = Standard part
other deviations as required

Capacitance Code
A2 = 200 pF
01 = 1000 pF
05 = 5000 pF
A4 = 400 pF
02 = 2000 pF

Mounting Type
1 = 4-40 Clinch Nut
2 = Ø.120 thru hole
3 = R/A Mounting Bracket
4 = 4-40 Clinch Nut with R/A Mounting Bracket

Amphenol Canada Telephone: (416) 291-4401 Fax: (416) 292-0647
www.amphenolcanada.com

MIL-DTL-83513 Filter Connectors

FEATURES

Amphenol Canada's M13 connector series is a range of filtered MIL-DTL-83513 Micro-D products for military and aerospace applications. These extremely small filter connectors employ monolithic planar capacitors in a rugged, high density package ideally suited for applications where space and weight is restricted. Available in a vaiety of filter types and mechanical configurations including wired harnesses and PCB terminations. The M13 series are fully intermateable with all standard MIL-DTL-83513 connectors and meet the applicable performance and environmental requirements.

M13 21 P 1 2 P T C 1 1 - 000

Connector Series
M13 = Filtered micro-d

Connector Size (number of contacts)
09, 15, 21, 25, 31 and 37

Connector Type
P = Plug (pin)
S = Receptacle (socket)

Termination Type
1 = vertical PCB "BS"
2 = vertical PCB "C6"
4 = right angle PCB "CBR"
5 = solid wire straight
6 = stranded wire

Wire / Lead Length (inches)
1 = .109 +/- .015
2 = .140 +/- .015
3 = .172 +/- .015
4 = .250 +/- .015
For Termination Type 6 (inches +1.00/-0.00):
A = 18.00 per M22759/11-26 (mil-std-681, system 1)
B = 36.00 per M22759/11-26 (mil-std-681, system 1)
C = 72.00 per M22759/11-26 (mil-std-681, system 1)

Mounting Hardware
A = .093" diameter mounting hole
B = .125" diameter mounting hole
L = Jackpost (loose)
P = Jackpost (fixed)

Insert Option
T = Threaded Insert (PCB terminations only)
Omit if not used

Filter Type
P = Pi-Filter
C = C-Filter
0 = non-filtered equivalent part

Filter Value (pF +100%/-0%)
A = 200
B = 400
C = 800
1 = 1000
2 = 2000
4 = 4000
8 = 8000
T = 10,000
H = 16,000
0 = MIXED CAP

Plating
1 = Electroless Nickel
2 = Tin
3 = Cadmium (Clear Chromate)
4 = Gold
5 = Zn Ni

Deviation
XXX (000 is standard part)

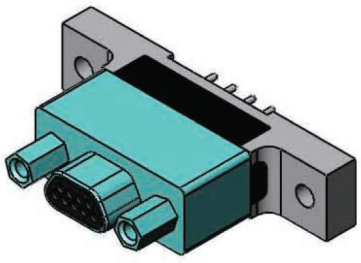
MIL-DTL-83513 Filter Connectors

C-FILTER SPECIFICATIONS

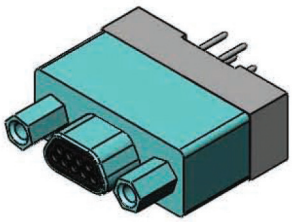
Filter Circuits		C, CLR, LRC					
Capacitance (pF) (@ 25 C, 1 kHz and 1.0 VRMS)		150 TO 300	300 TO 500	600 T0 1200	1200 TO 3200	4000 TO 8000	8000 TO 16000
Insertion Loss (dB min.)	.1 MHz	-	-	-	-	-	-
(per MIL-STD-220	1 MHz	-	-	-	-	-	-
@ 25 C and no load)	10 MHz	-	-	2	5	13	18
	100 MHz	6	12	17	24	33	40
	1000 MHz	25	31	38	43	54	60
Working Voltage (VDC) (@ 25 C & sea level)		100					
Dielectric Withstanding Voltage (VDC) (@ 25 C and 50 mA max. charging current)		300					
Insulation Resistance (Gohms)							
(@ 25 C and working voltage)		5					
Contact Current Rating (continuous max. DC amperes)		3					
Filter RF Current Rating (amperes) (max. @ any frequency)		0.3					

PI-FILTER SPECIFICATIONS

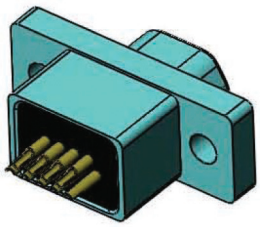
Filter Circuits		Pi					
Capacitance (pF) (@ 25 C, 1 kHz and 1.0 VRMS)		150 TO 300	300 TO 500	600 T0 1200	1200 TO 3200	4000 TO 8000	8000 TO 16000
Insertion Loss (dB min.)	.1 MHz	-	-	-	-	-	-
(per MIL-STD-220	1 MHz	-	-	-	-	-	3
@ 25 C and no load)	10 MHz	-	-	2	5	13	18
	100 MHz	7	12	18	26	45	57
	1000 MHz	30	42	53	60	60	60
Working Voltage (VDC) (@ 25 C & sea level)		100					
Dielectric Withstanding Voltage (VDC) (@ 25 C and 50 mA max. charging current)		300					
Insulation Resistance (Gohms)							
(@ 25 C and working voltage)		5					
Contact Current Rating (continuous max. DC amperes)		3					
Filter RF Current Rating (amperes) (max. @ any frequency)		0.3					



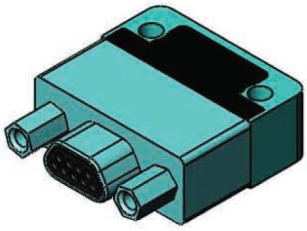
TERMINATION TYPE 1
VERTICAL PCB “BS”



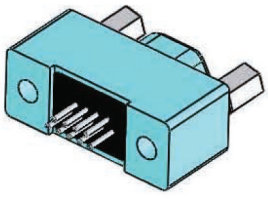
TERMINATION TYPE 2
VERTICAL PCB “C6”



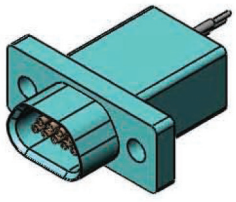
TERMINATION TYPE 3
SOLDER CUP



TERMINATION TYPE 4
RIGHT ANGLE PCB
“CBR”



TERMINATION TYPE 5
SOLID WIRE STRAIGHT



TERMINATION TYPE 6
STRANDED WIRE

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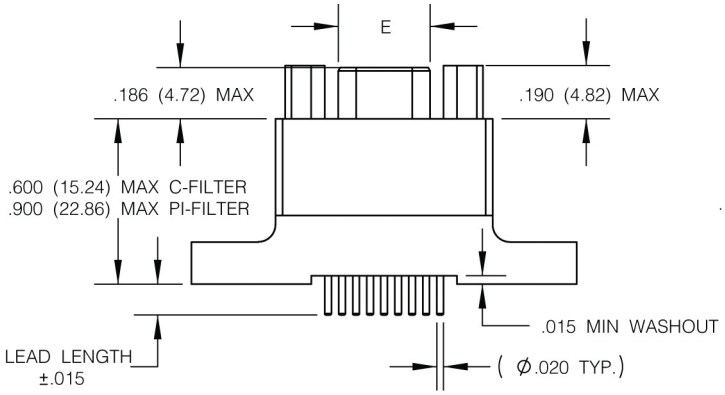
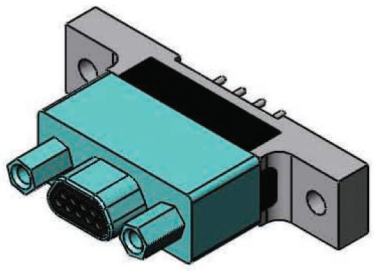
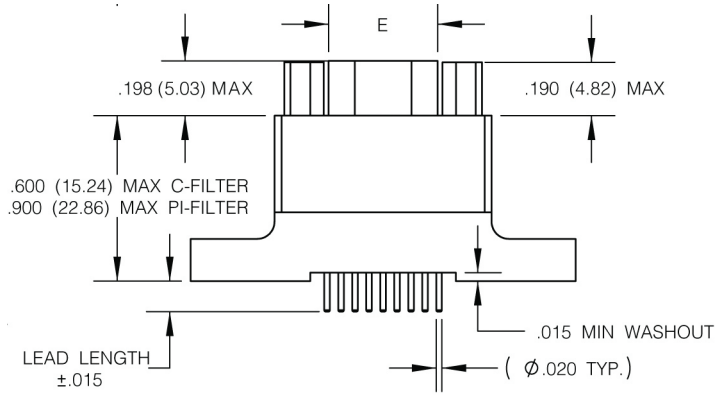
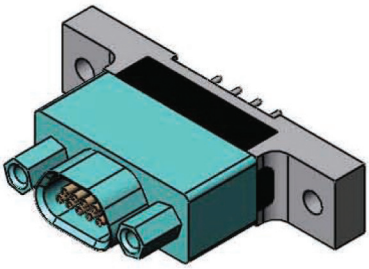
MIL-DTL-83513 Filter Connectors



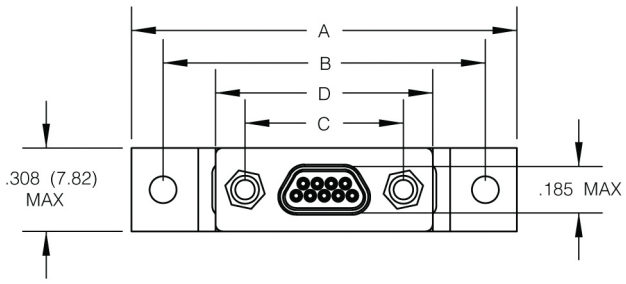


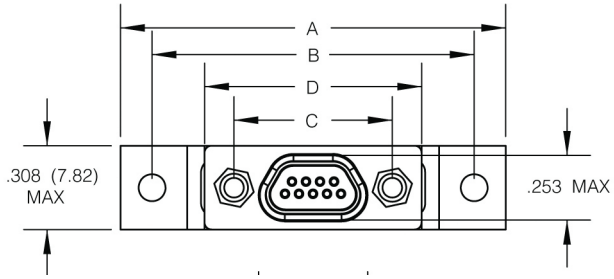
PLUG





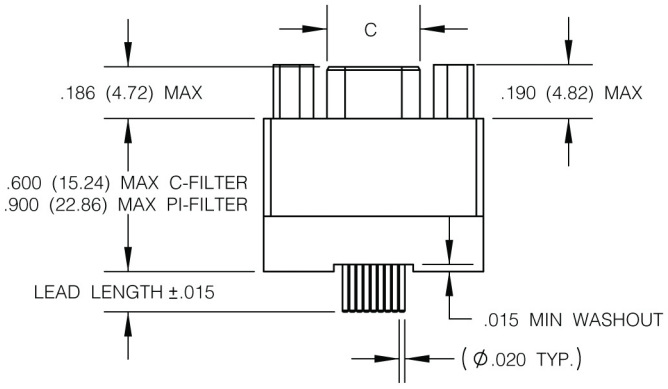
RECEPTACLE
* INTERFACIAL SEAL INCLUDED

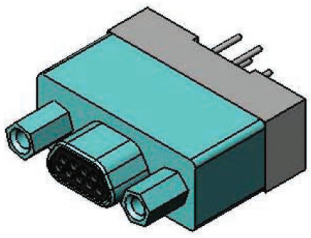




SIZE	A MAX	B ±.005 (0.13)	C ±.005 (0.13)	D MAX	E MAX	
					PLUG	RCPT
09	1.390 (35.31)	1.150 (29.21	.565 (14.35)	.785 (19.84)	.334 (8.48)	.402 (10.21)
15	1.390 (35.31)	1.150 (29.21)	.715 (18.16)	.935 (23.75)	.484 (12.29)	.552 (13.97)
21	1.690 (43.93)	1.450 (36.83)	.865 (21.97)	1.085 (27.56)	.634 (16.10)	.702 (17.83)
25	1.740 (44.20)	1.500 (38.10)	.965 (24.51)	1.185 (30.10)	.734 (18.64)	.802 (20.37)
31	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	1.335 (33.91)	.884 (22.45)	.952 (24.18)
37	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.485 (37.72)	1.034 (26.26)	1.102 (27.99)

MIL-DTL-83513 Filter Connectors





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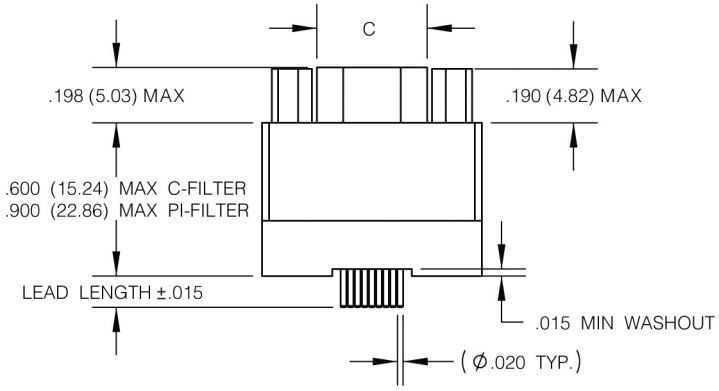
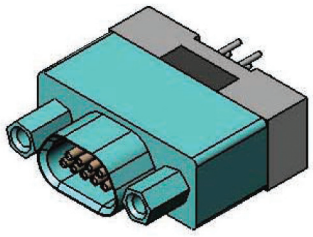
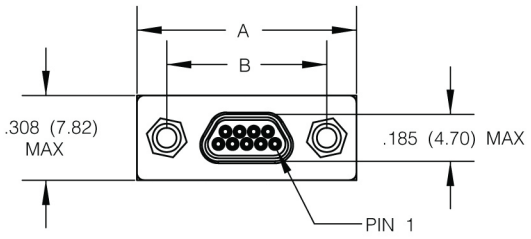
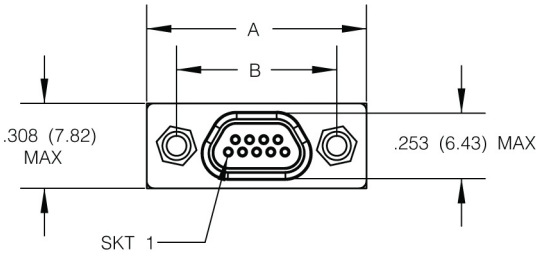




RECEPTACLE
* INTERFACIAL SEAL INCLUDED





SIZE	A MAX	B ±.005 (0.13)	C MAX	
			PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)

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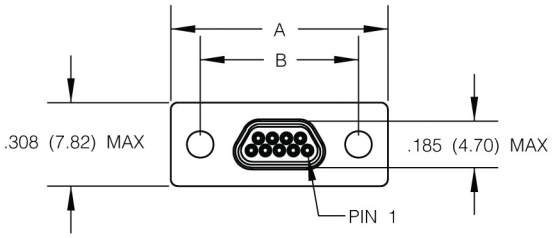
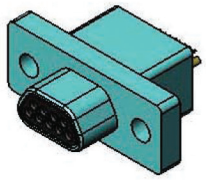
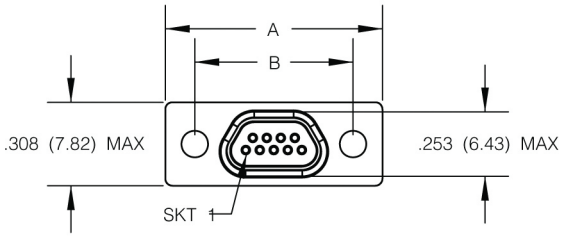
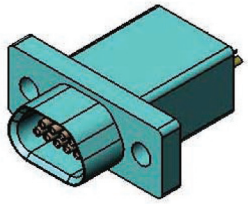
MIL-DTL-83513 Filter Connectors



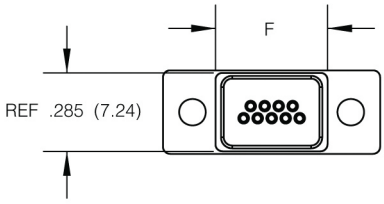


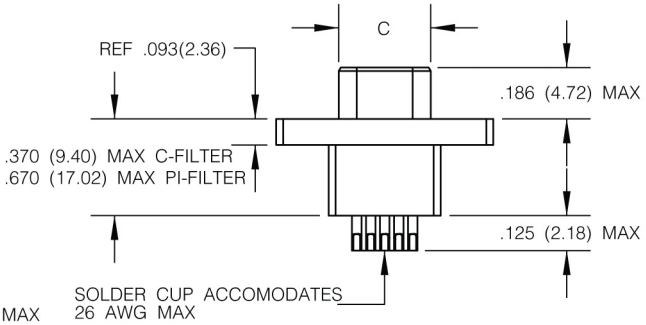
PLUG

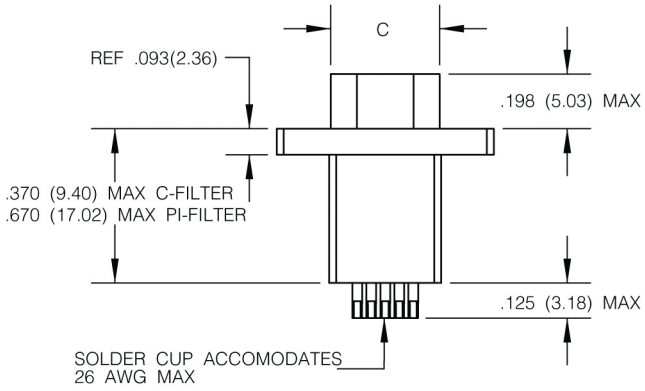


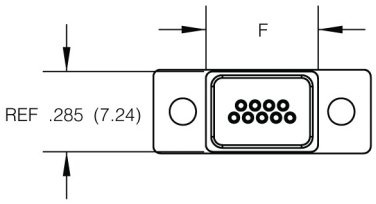


RECEPTACLE
* INTERFACIAL SEAL INCLUDED



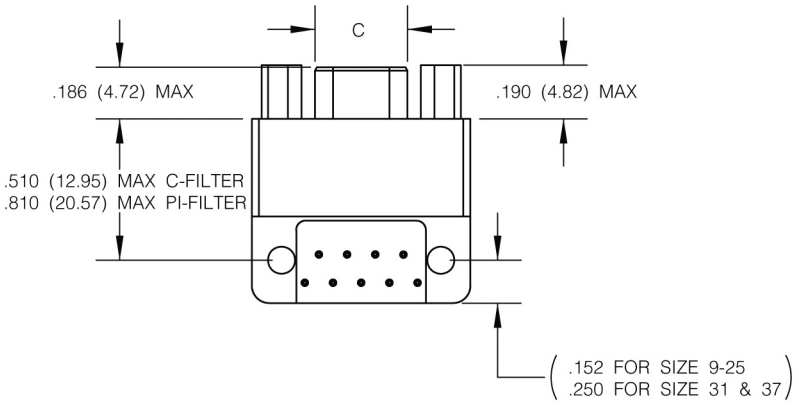


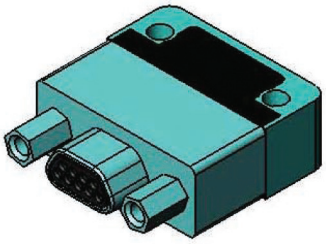




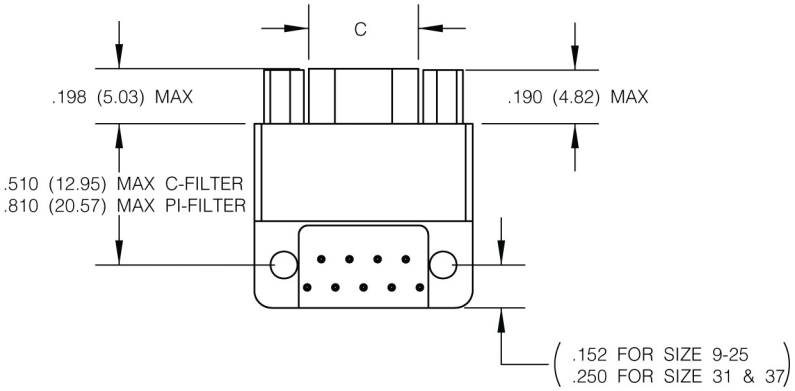
SIZE	A MAX	B ±.005 (0.13)	C MAX		F MAX
			PLUG	RCPT	
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.400 (10.16)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.550 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.700 (17.78)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.800 (20.32)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.950 (24.13)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	1.100 (27.94)

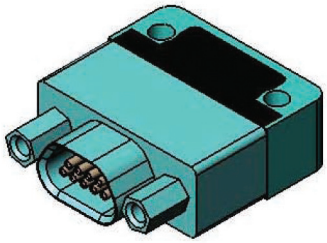
MIL-DTL-83513 Filter Connectors



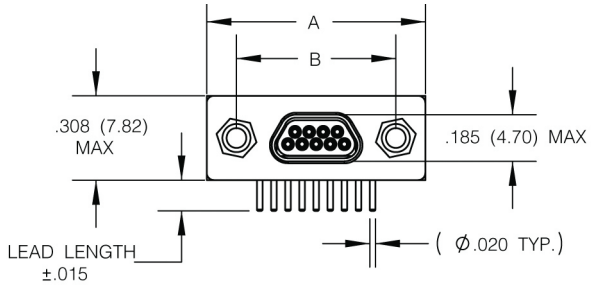


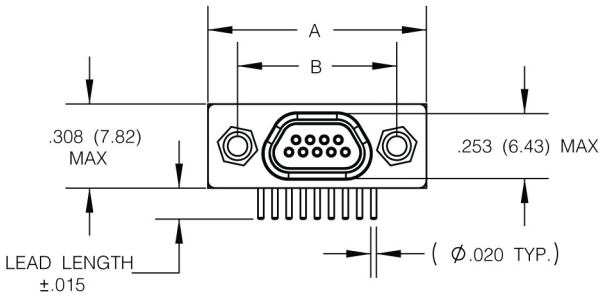
PLUG

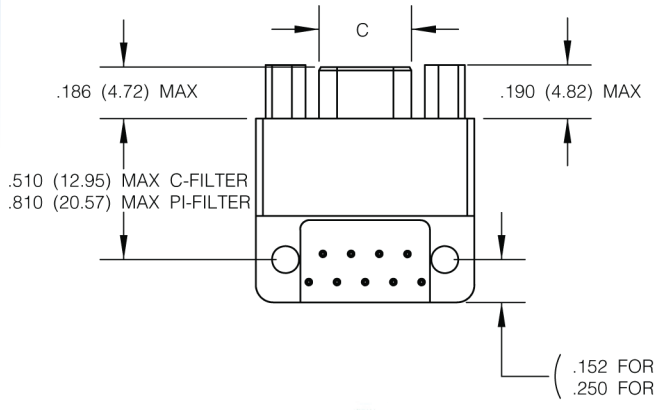




RECEPTACLE
* INTERFACIAL SEAL INCLUDED







SIZE	A MAX	B ±.005 (0.13)	C MAX	
			PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)

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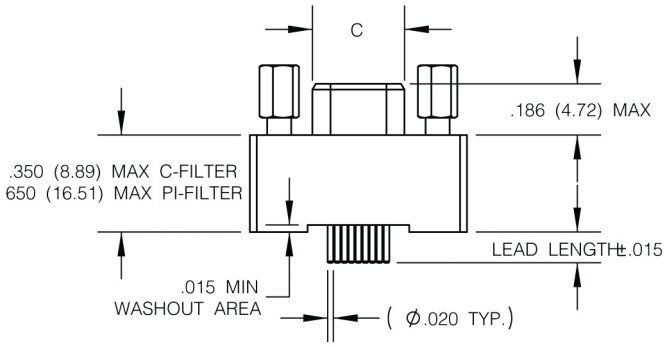
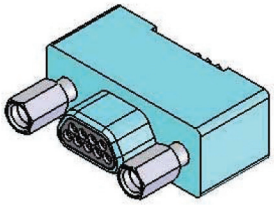
MIL-DTL-83513 Filter Connectors





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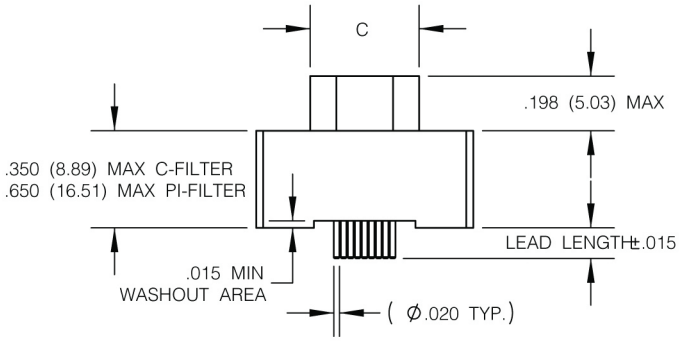
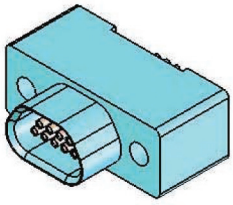
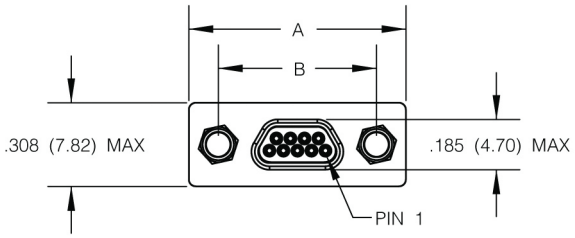
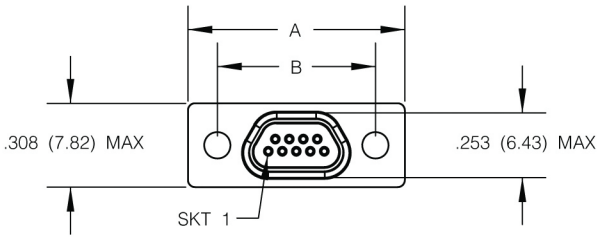
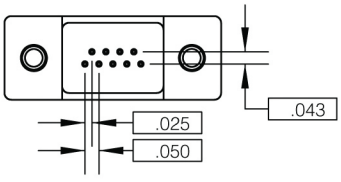


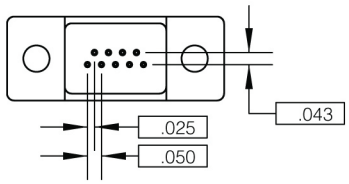


RECEPTACLE
* INTERFACIAL SEAL INCLUDED









SIZE	A MAX	B ±.005 (0.13)	C MAX	
			PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)

Amphenol Canada
Filter Connectors

Filter Circular Connectors

Amphenol

FILTERED AND RECTANGULAR CONNECTORS

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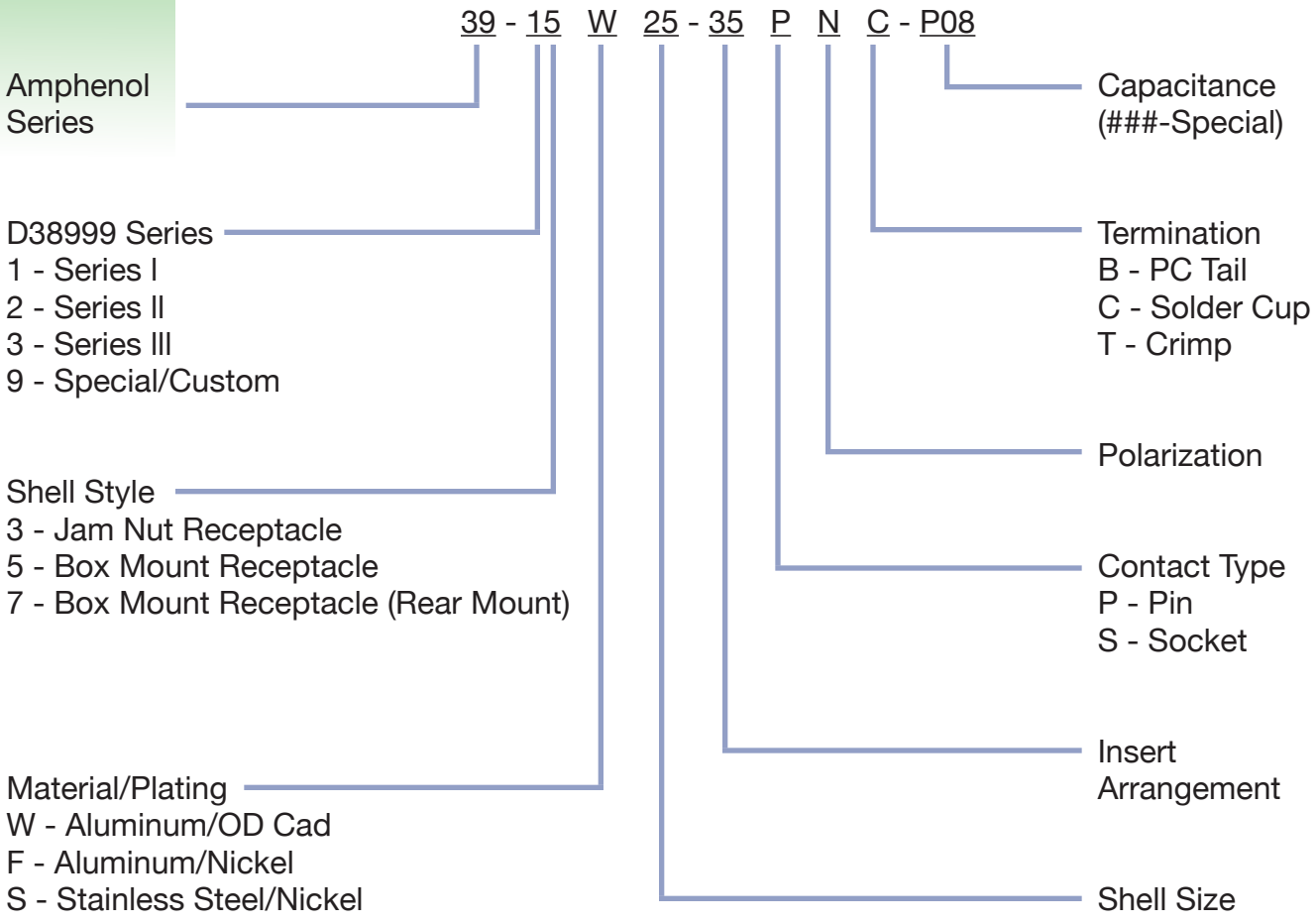
MIL-DTL-38999 Filter Connectors

MIL-DTL-38999 filter connectors from Amphenol Canada are designed and manufactured to meet or exceed the requirements of Series I, II, III and IV. All ACC filter connectors are intermateable and interchangeable with standard non-filtered MIL-DTL-38999 connectors unless otherwise specified.

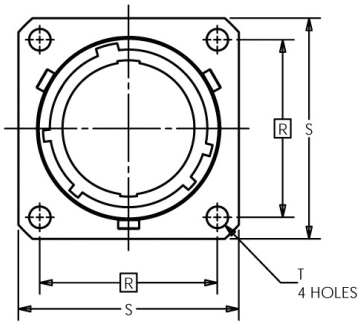
Material and Finishes

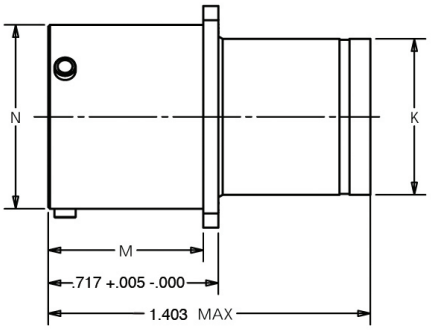
Shell – Aluminum alloy/ Stainless Steel
Insulator – High grade plastic
Contacts – Copper alloy, gold plate
Grommets and Seal – Silicone based elastomer



MIL-DTL-38999 Series I

MS27466 Box Mount Receptacle





Shell Size	K Dia. =.001 -.006	M =.000 -.006	N Dia. =.001 -.005	R (TP)	S =.011 -.010	T Dia. ±.005
9	.436	.632	.572	.719	.938	.128
11	.560	.632	.700	.812	1.031	.128
13	.686	.632	.850	.906	1.125	.128
15	.810	.632	.975	.969	1.219	.128
17	.936	.632	1.100	1.062	1.312	.128
19	1.060	.632	1.207	1.156	1.438	.128
21	1.186	.602	1.332	1.250	1.562	.128
23	1.310	.602	1.457	1.375	1.688	.147
25	1.436	.602	1.582	1.500	1.812	.147

All dimensions for reference only.

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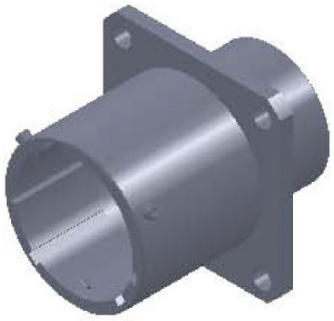
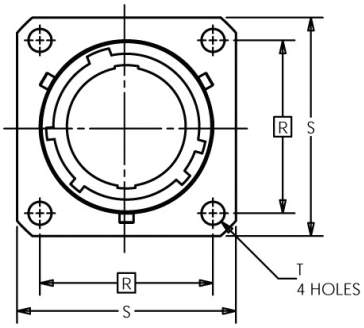
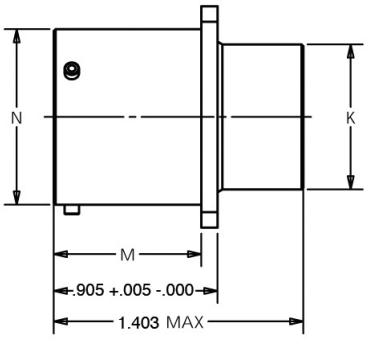
MIL-DTL-38999 Series I

MS27505 Box Mount Rear Mount Receptacle





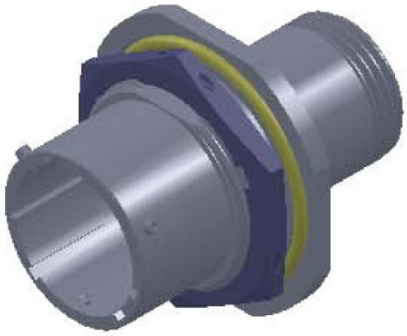


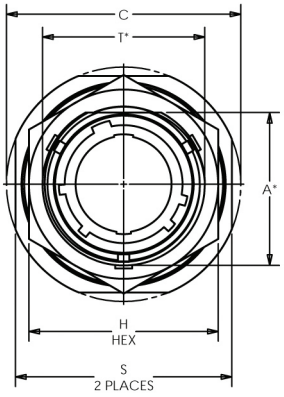
Shell Size	M +.000 =.006	N Dia. +.001 -.005	R (TP)	S +.011 -.010	T Dia. ±.005	V Thread UNEF-2A (Plated)
9	.632	.572	.719	.938	.128	.4375-28
11	.632	.700	.812	1.031	.128	.5625-24
13	.632	.850	.906	1.125	.128	.6875-24
15	.632	.975	.969	1.219	.128	.8125-20
17	.632	1.100	1.062	1.312	.128	.9375-20
19	.632	1.207	1.156	1.438	.128	1.0625-18
21	.602	1.332	1.250	1.562	.128	1.1875-18
23	.602	1.457	1.375	1.688	.147	1.3125-18
25	.602	1.582	1.500	1.812	.147	1.4375-18

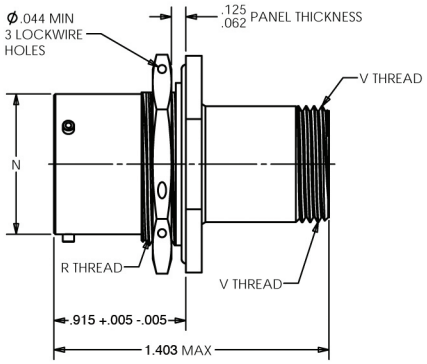
All dimensions for reference only.

MIL-DTL-38999 Series I

MS27468 Jam Nut Receptacle







Shell Size	A* Flat +.000 -.010	C Dia. +.011 -.010	H Hex +.017 -.016	N Dia. +.001 -.005	R Thread (Plated) Class -2A	S +.016 -.015	T* Dia. +.010 -.000	V Thread UNEF-2A (Plated)
9	.669	1.188	.875	.572	.6875-24UNEF	1.062	.697	.4375-28
11	.769	1.375	1.000	.700	.8125-20UNEF	1.250	.822	.5625-24
13	.955	1.500	1.188	.850	1.0000-20UNEF	1.375	1.007	.6875-24
15	1.084	1.625	1.312	.975	1.1250-18UNEF	1.500	1.134	.8125-20
17	1.208	1.750	1.438	1.100	1.2500-18UNEF	1.625	1.259	.9375-20
19	1.333	1.938	1.562	1.207	1.3750-18UNEF	1.812	1.384	1.0625-18
21	1.459	2.062	1.688	1.332	1.5000-18UNEF	1.938	1.507	1.1875-18
23	1.580	2.188	1.812	1.457	1.6250-18UNEF	2.062	1.634	1.3125-18
25	1.709	2.312	2.000	1.582	1.7500-18UNS	2.188	1.759	1.4375-18

All dimensions for reference only.

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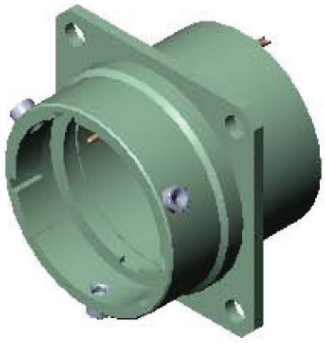
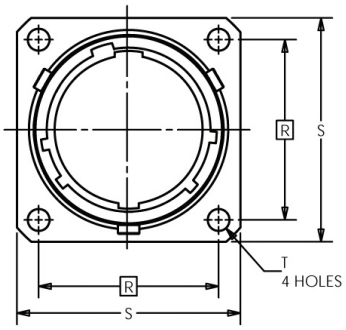
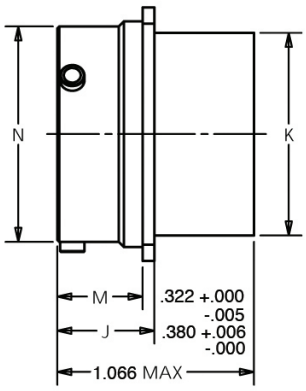
MIL-DTL-38999 Series II

MS27499 Box Mount Receptacle





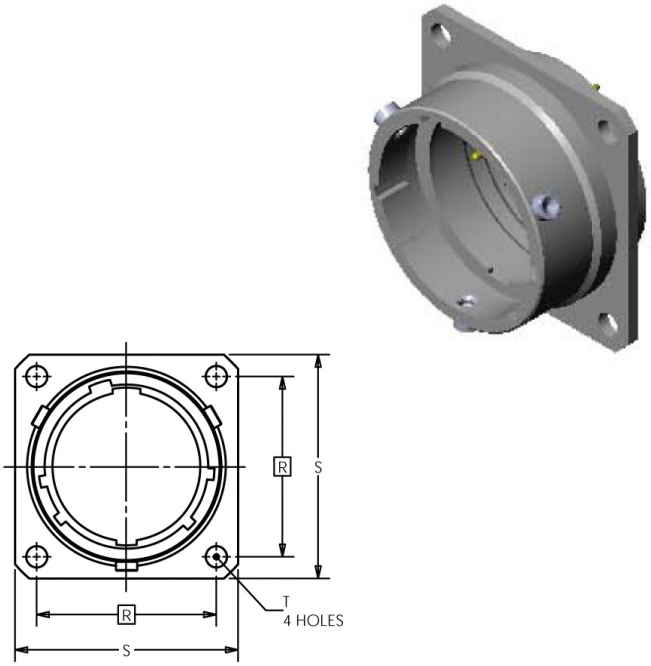


Shell Size	N Dia. +.001 -.005	P* Max.	R (TP)	S +.011 -.010	T* Dia. ±.005	V Thread UNEF-2A (Plated)
8	.473	.022	.594	.812	.120	.4375-28
10	.590	.027	.719	.938	.120	.5625-24
12	.750	.027	.812	1.031	.120	.6875-24
14	.875	.027	.906	1.125	.120	.8125-20
16	1.000	.027	.969	1.219	.120	.9375-20
18	1.125	.027	1.062	1.312	.120	1.0625-18
20	1.250	.054	1.156	1.438	.120	1.1875-18
22	1.375	.054	1.250	1.562	.120	1.3125-18
24	1.500	.054	1.375	1.688	.147	1.4375-18

All dimensions for reference only.

MIL-DTL-38999 Series II

MS27508 Box Mount Receptacle, Rear Mount



Shell Size	K Dia. +.000 -.007	N Dia. +.001 -.005	P Max. Panel Thickness	R (TP)	S +.011 -.010	T Dia. ±.005	W Dia. +.001 -.005	M +.000 -.005	J +.006 -.000
8	.438	.473	.147	.594	.812	.120	.516	.322	.505
10	.562	.590	.152	.719	.938	.120	.633	.322	.505
12	.688	.750	.152	.812	1.031	.120	.802	.322	.505
14	.812	.875	.152	.906	1.125	.120	.927	.322	.505
16	.938	1.000	.152	.969	1.219	.120	1.052	.322	.505
18	1.062	1.125	.152	1.062	1.312	.120	1.177	.322	.505
20	1.188	1.250	.179	1.156	1.438	.120	1.302	.322	.505
22	1.312	1.375	.179	1.250	1.562	.120	1.427	.322	.505
24	1.438	1.500	.179	1.375	1.688	.147	1.552	.322	.505

All dimensions for reference only.

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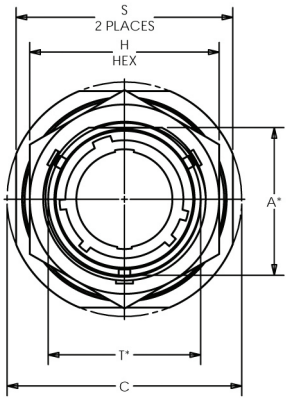
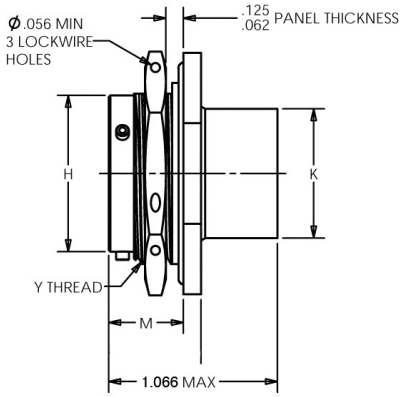
MIL-DTL-38999 Series II

MS27474 Jam Nut Receptacle



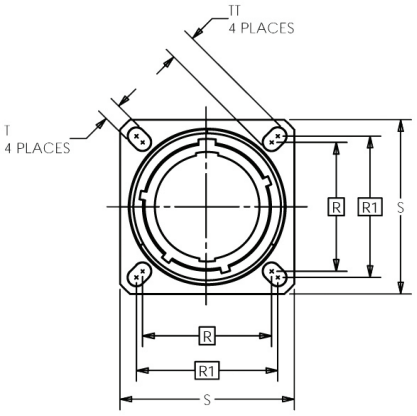


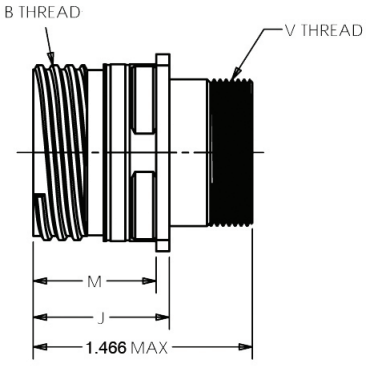
Shell Size	A* Flat +.000 -.010	C Dia. +.011 -.010	H Hex +.017 -.016	M ±.005	N Dia. +.001 -.005	R Thread (Plated) Class -2A	S ±.010	T* Dia. +.010 -.000	V Thread UNEF-2A (Plated)
8	.830	1.375	1.062	.438	.473	.8750-20UNEF	1.250	.884	.4375-28
10	.955	1.500	1.188	.438	.590	1.0000-20UNEF	1.375	1.007	.5625-24
12	1.084	1.625	1.312	.438	.750	1.1250-18UNEF	1.500	1.134	.6875-24
14	1.208	1.750	1.438	.438	.875	1.2500-18UNEF	1.625	1.259	.8125-20
16	1.333	1.938	1.562	.438	1.000	1.3750-18UNEF	1.781	1.384	.9375-20
18	1.459	2.016	1.688	.438	1.125	1.5000-18UNEF	1.890	1.507	1.0625-18
20	1.576	2.141	1.812	.464	1.250	1.6250-18UNEF	2.016	1.634	1.1875-18
22	1.701	2.265	2.000	.464	1.375	1.7500-18UNS	2.140	1.759	1.3125-18
24	1.826	2.390	2.125	.464	1.500	1.8750-16UN	2.265	1.884	1.4375-18

All dimensions for reference only.

MIL-DTL-38999 Series III

D38999/20 Box Mount Receptacle





Shell Size	B Thread Class 2A 0.1P-0.3L-TS (Plated)	M +.000 -.005	J +.006 -.000	R_1 TP	R_2 TP	S Max	T +.008 -.006	V Thread Metric (Plated)	TT +.008 -.006
9	.6250	.820	.905	.719	.594	.948	.128	M12X1-6g0.100R	.216
11	.7500	.820	.905	.812	.719	1.043	.128	M15X1-6g0.100R	.194
13	.8750	.820	.905	.906	.812	1.137	.128	M18X1-6g0.100R	.194
15	1.0000	.820	.905	.969	.906	1.232	.128	M22X1-6g0.100R	.173
17	1.1875	.820	.905	1.062	.969	1.323	.128	M25X1-6g0.100R	.194
19	1.2500	.820	.905	1.156	1.062	1.449	.128	M28X1-6g0.100R	.194
21	1.3750	.790	.905	1.250	1.156	1.575	.128	M31X1-6g0.100R	.194
23	1.5000	.790	.905	1.375	1.250	1.701	.154	M34X1-6g0.100R	.242
25	1.6250	.790	.905	1.500	1.375	1.823	.154	M37X1-6g0.100R	.242

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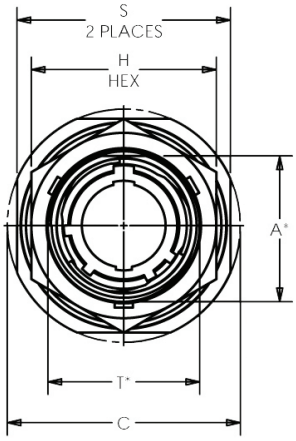
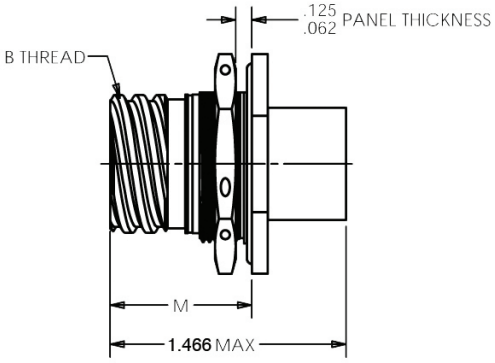
MIL-DTL-38999 Series III

D38999/24 Jam Nut Receptacle



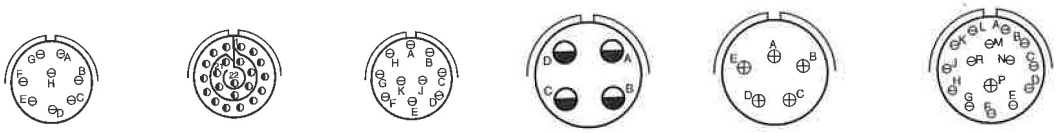


Shell Size	A Dia* Max	B Thread Class 2A 0.1P-0.3L-TS (Plated)	H Hex +.017 -.016	R Thread Metric (Plated)	S ±0.10	T*Dia +.010 -.000	V Thread Metric (Plated)	M +.011 -.010	Z* Flat +.000 -.010
9	1.199	.6250	.875	M17X1-6g0.100R	1.062	.697	M12X1-6g0.100R	.871	.669
11	1.386	.7500	1.000	M20X1-6g0.100R	1.250	.822	M15X1-6g0.100R	.871	.769
13	1.511	.8750	1.188	M25X1-6g0.100R	1.375	1.007	M18X1-6g0.100R	.878	.955
15	1.636	1.0000	1.312	M28X1-6g0.100R	1.500	1.134	M22X1-6g0.100R	.878	1.084
17	1.761	1.1875	1.438	M32X1-6g0.100R	1.625	1.259	M25X1-6g0.100R	.878	1.208
19	1.949	1.2500	1.562	M35X1-6g0.100R	1.812	1.384	M28X1-6g0.100R	.878	1.333
21	2.073	1.3750	1.688	M38X1-6g0.100R	1.938	1.507	M31X1-6g0.100R	.878	1.459
23	2.199	1.5000	1.812	M41X1-6g0.100R	2.062	1.634	M34X1-6g0.100R	.878	1.575
25	2.323	1.6250	2.000	M44X1-6g0.100R	2.188	1.759	M37X1-6g0.100R	.878	1.709

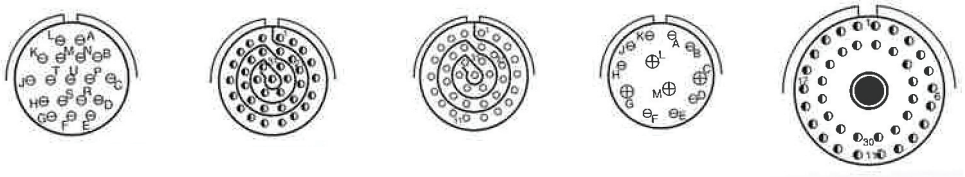
All dimensions for reference only.

MIL-DTL-38999 Series I, II, III
Insert Arrangements

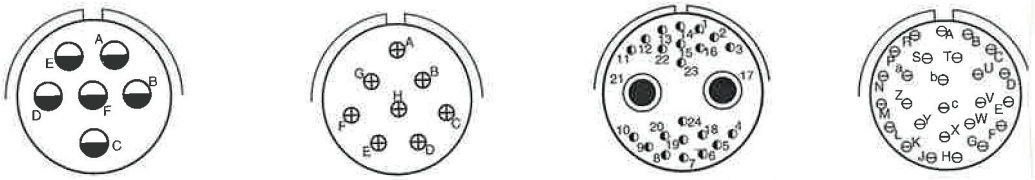
Shell Size & Insert Arrg.	9-35	9-98	11-2	11-4	11-5	11-35	11-98	11-99
Service Rating	M	I	I	I	I	M	I	I
Number of Contacts	6	3	2	4	5	13	6	7
Contact Size	22D	20	16	20	20	22D	20	20



Shell Size & Insert Arrg.	13-8	13-35	13-98	15-4	15-5	15-15
Service Rating	I	M	I	I	II	I
Number of Contacts	8	22	10	4	5	14 1
Contact Size	20	22D	20	12	16	20 16



Shell Size & Insert Arrg.	15-18	15-35	15-37	15-97	17-2
Service Rating	I	M	M	I	M
Number of Contacts	18	37	37	8 4	38 1
Contact Size	20	22D	22M	20 16	22D 8 Twinax



Shell Size & Insert Arrg.	17-6	17-8	17-25	17-26
Service Rating	I	II	M	I
Number of Contacts	6	8	22 2	26
Contact Size	12	16	22D 8 Coax	20

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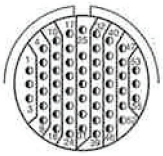
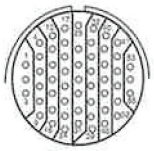
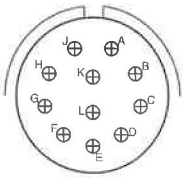
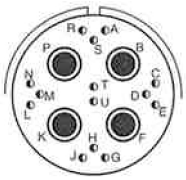
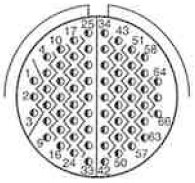
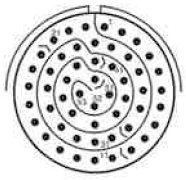
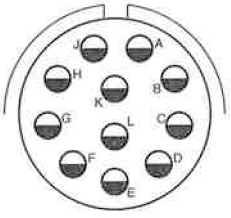
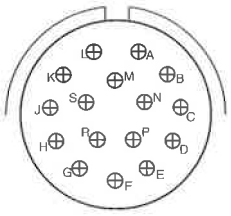
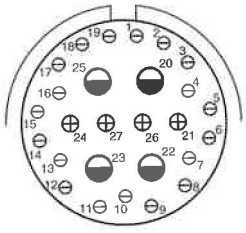
MIL-DTL-38999 Series I, II, III
Insert Arrangements

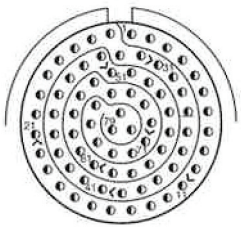
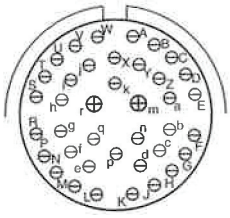
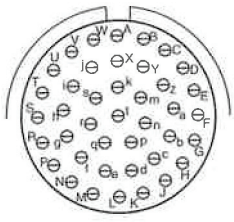
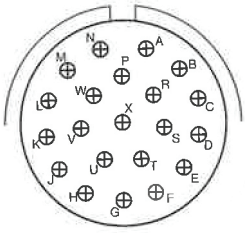



Shell Size & Insert Arrg.	17-35	17-55	17-99	19-11	19-18	19-35
Service Rating	M	M	I	II	M	M
Number of Contacts	55	55	21 2	11	14 4	66
Contact Size	22D	22M	20 16	16	22D 8 Twinax	22D

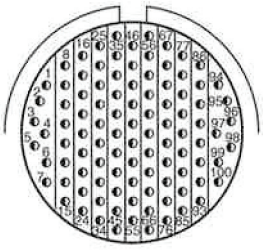





Shell Size & Insert Arrg.	19-53	21-11	21-16	21-29
Service Rating	M	I	II	I
Number of Contacts	53	11	16	19 4 4
Contact Size	22	12	16	20 16 12

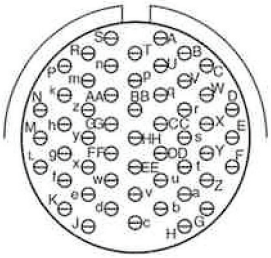





Shell Size & Insert Arrg.	21-35	21-39	21-41	23-21
Service Rating	M	I	I	II
Number of Contacts	79	37 2	41	21
Contact Size	22D	20 16	20	16

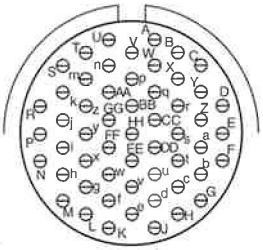
MIL-DTL-38999 Series I, II, III
Insert Arrangements



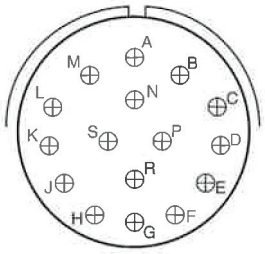
Shell Size & Insert Arrg.	23-35
Service Rating	M
Number of Contacts	100
Contact Size	22D



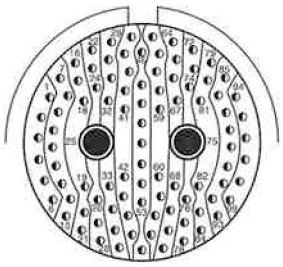
Shell Size & Insert Arrg.	23-53
Service Rating	I
Number of Contacts	53
Contact Size	20



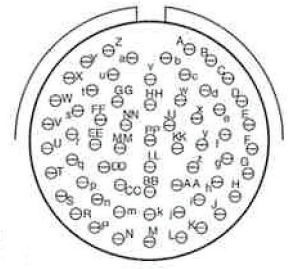
Shell Size & Insert Arrg.	23-55
Service Rating	I
Number of Contacts	55
Contact Size	20



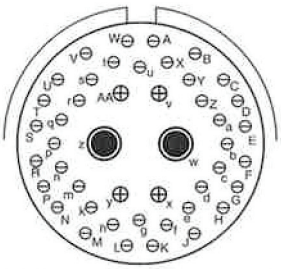
Shell Size & Insert Arrg.	23-97
Service Rating	II
Number of Contacts	16
Contact Size	16



Shell Size & Insert Arrg.	25-7	
Service Rating	M	
Number of Contacts	97	2
Contact Size	22D	8 Twinax



Shell Size & Insert Arrg.	25-61
Service Rating	I
Number of Contacts	61
Contact Size	20



Shell Size & Insert Arrg.	25-90		
Service Rating	I		
Number of Contacts	40	4	2
Contact Size	20	16	8 Twinax

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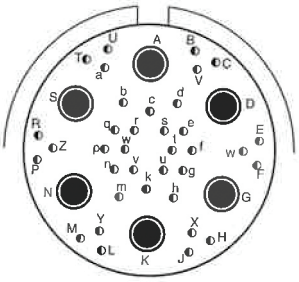
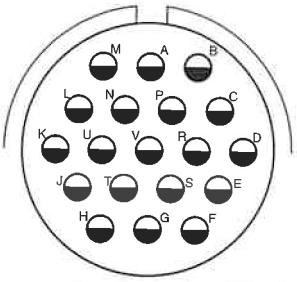
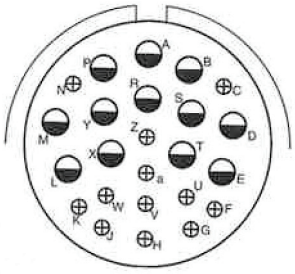
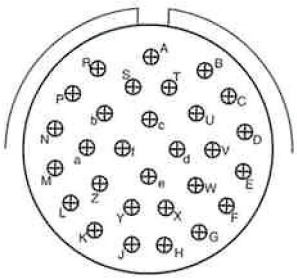
MIL-DTL-38999 Series I, II, III
Insert Arrangements

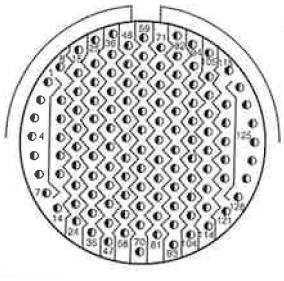


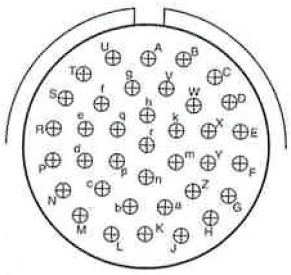




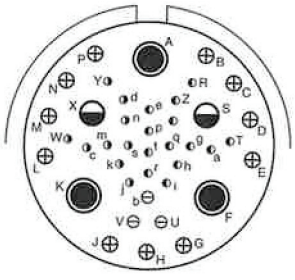
Shell Size & Insert Arrg.	25-17	25-19	25-24
Service Rating	M	I	I
Number of Contacts	36 6	19	12 12
Contact Size	22D 8 Twinax	12	16 12

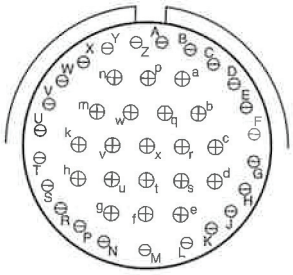


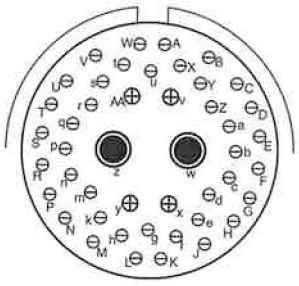




Shell Size & Insert Arrg.	25-29	25-35	25-37
Service Rating	I	M	I
Number of Contacts	29	128	37
Contact Size	16	22D	16







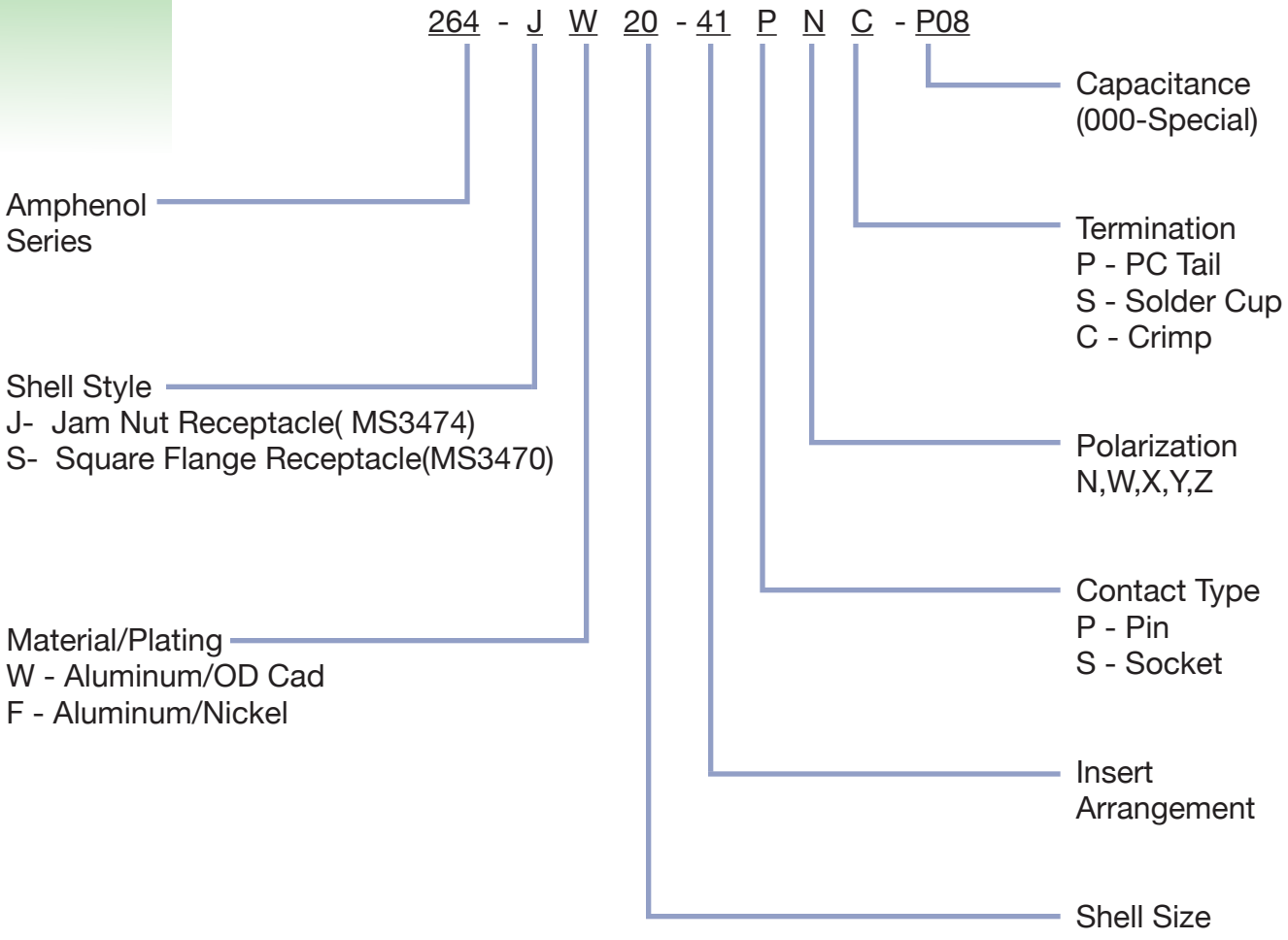
Shell Size & Insert Arrg.	25-41	25-43	25-46
Service Rating	N/Inst.	I	I
Number of Contacts	22 3 11 2 3	23 20	40 4 2
Contact Size	22D 20 16 12 Coax 8 Twinax	20 16	20 16 8 Coax

MIL-C-26482 Series II Filter Connectors

MIL-C-26482 Series II Filter Connectors

MIL-C-26482 Series II filter connectors from Amphenol Canada are designed and manufactured to meet or exceed the requirements of the Military Specification. All ACC filter connectors are intermateable and interchangeable with standard non-filtered MIL-C-26482 Series II connectors unless otherwise specified.

Materials and Finishes
Shell – Aluminum alloy
Insulator – High grade plastic
Contacts – Copper alloy, gold plate
Grommet and seal – Silicone based elastomer



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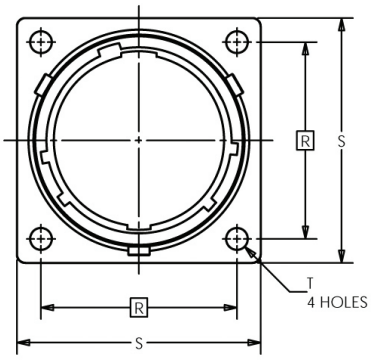
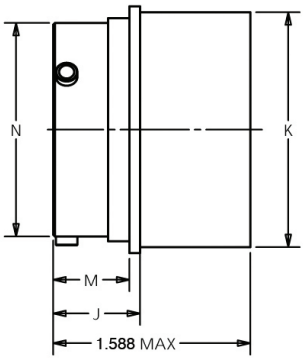
MIL-DTL-26482 Series II

MS3470 Box Mount Receptacle



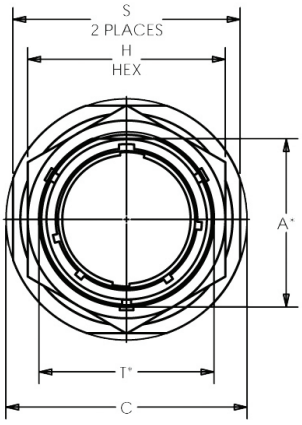


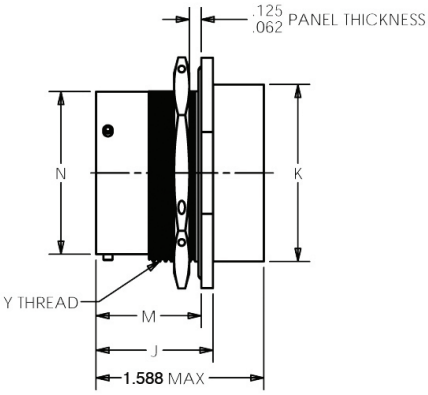
Shell Size	J +.021 -.010	K Dia. +.011 -.000	M +.010 -.000	N Dia. +.001 -.005	P* Max.	R (TP)	S +.011 -.010	T Dia. ±.005
8	.493	.438	.431	.473	.087	.594	.812	.120
10	.493	.562	.431	.590	.087	.719	.938	.120
12	.493	.688	.431	.750	.087	.812	1.031	.120
14	.493	.812	.431	.875	.087	.906	1.125	.120
16	.493	.938	.431	1.000	.087	.969	1.219	.120
18	.493	1.062	.431	1.125	.087	1.062	1.312	.120
20	.650	1.188	.556	1.250	.212	1.156	1.438	.120
22	.650	1.312	.556	1.375	.212	1.250	1.562	.120
24	.683	1.438	.589	1.500	.212	1.375	1.688	.147

All dimensions for reference only.

MIL-DTL-26482 Series II

MS3474 Jam Nut Receptacle





Shell Size	A* Flat +.000 -.010	C Dia. +.011 -.010	H Hex +.017 -.016	J +.006 -.005	K Dia. +.011 -.000	M ±.005	N Dia. +.001 -.005	S ±.010	T* Dia. +.010 -.000	Y Thread UNEF-2A (Plated)
8	.542	1.062	.750	.821	.438	.696	.473	.938	.572	.5625-24
10	.669	1.188	.875	.821	.562	.696	.590	1.062	.697	.6875-24
12	.830	1.375	1.062	.821	.688	.696	.750	1.250	.884	.8750-20
14	.955	1.500	1.188	.821	.812	.696	.875	1.375	1.009	1.0000-20
16	1.084	1.625	1.312	.821	.938	.696	1.000	1.500	1.134	1.1250-18
18	1.208	1.750	1.438	.821	1.062	.696	1.125	1.625	1.259	1.2500-18
20	1.333	1.938	1.562	1.040	1.188	.884	1.250	1.812	1.384	1.3750-18
22	1.459	2.062	1.688	1.040	1.312	.884	1.375	1.938	1.509	1.5000-18
24	1.575	2.188	1.812	1.073	1.438	.917	1.500	2.062	1.634	1.6250-18

All dimensions for reference only.

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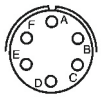
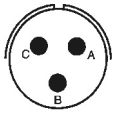
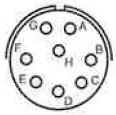
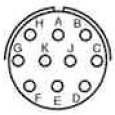
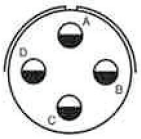
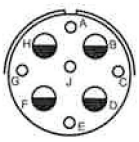
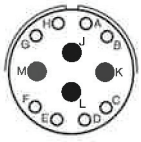
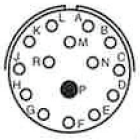
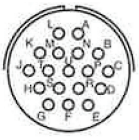
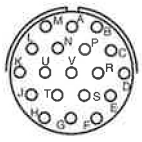
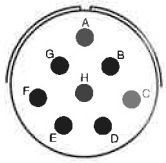
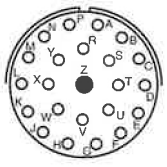
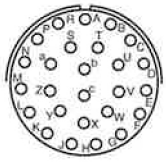
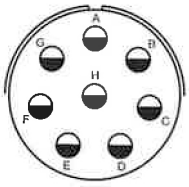
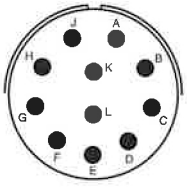
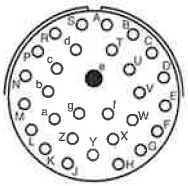
MIL-DTL-26482 Series II
Insert Arrangements

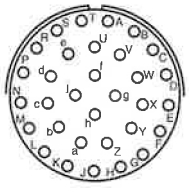
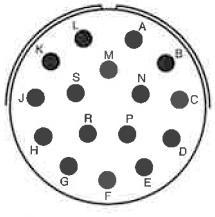
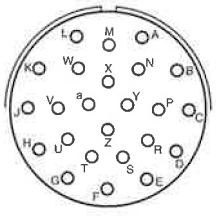
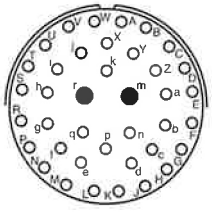
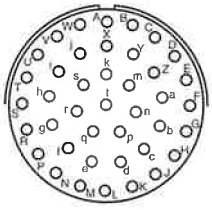

Insert Arrangement	8-98	10-06	12-03	12-08	12-10	14-04	14-05
Service Rating	I	I	II	I	I	I	II
Number of Contacts	3	6	3	8	10	4	5
Contact Size	20	20	16	20	20	12	16

Insert Arrangement	14-09		14-12		14-15		14-18	14-19	16-08
Service Rating	I		I		I		I	I	II
Number of Contacts	5	4	8	4	14	1	18	19	8
Contact Size	20	12	20	16	20	16	20	20	16

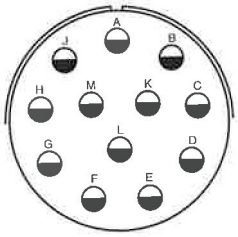






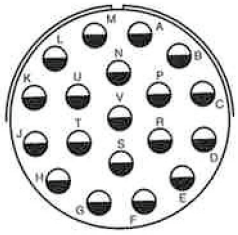
Insert Arrangement	16-23		16-26	18-08	18-11	18-30	
Service Rating	I		I	I	II	I	
Number of Contacts	22	1	26	8	11	29	1
Contact Size	20	16	20	12	16	20	16

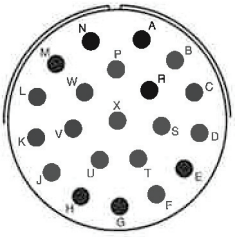






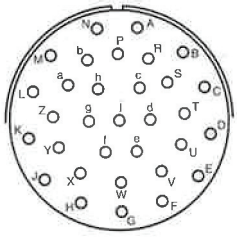
Insert Arrangement	18-32	20-16	20-24	20-39		20-41
Service Rating	I	II	I	I		I
Number of Contacts	32	16	24	37	2	41
Contact Size	20	16	20	20	16	20

MIL-DTL-26482 Series II
Insert Arrangements

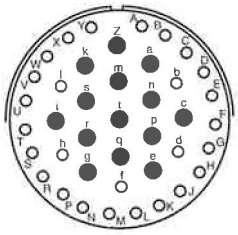


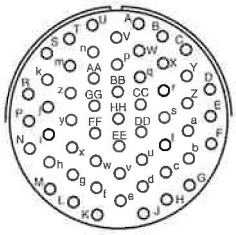


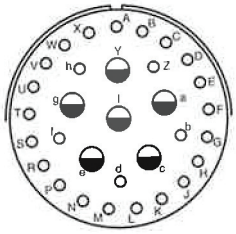


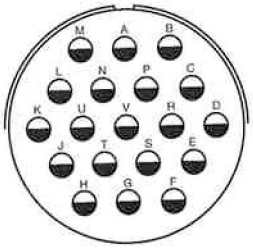


Insert Arrangement	22-12	22-19	22-21	22-32
Service Rating	I	I	II	I
Number of Contacts	12	19	21	32
Contact Size	12	12	16	20

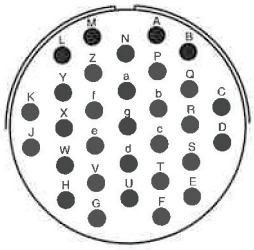


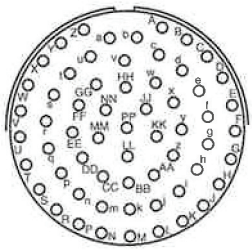






Insert Arrangement	22-41		22-55	22-95		24-19
Service Rating	I		I	I		II
Number of Contacts	27	14	55	26	6	19
Contact Size	20	16	20	20	12	12





Insert Arrangement	24-31	24-61
Service Rating	I	I
Number of Contacts	31	61
Contact Size	16	20

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MIL-C-55116 Filter Audio Connectors

164 F Series Filter audio connectors meet or exceed all MIL-C-55116 requirements, including mating durability, environmental sealing, and thermal cycling. They mate to standard plugs, with screw machined contacts, passivated stainless steel shell, and high grade thermoplastic inserts, and the patented Amphenol solderless stress-isolation design, resulting in a shorter, lighter connector with superior thermal and physical shock capabilities.

CUSTOMIZATION OPTIONS:

- Pin numbers and sizes
- Grounded pins
- Filtering topology
- Lightning protection
- Ultra-high sealing capabilities
- Alternate cable/wire/board termination styles
- Alternate materials and plating
- Value-added construction and harnessing

164F - 1836S - A02

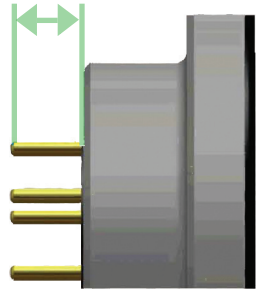
# of contacts
5 or 6

Contact Termination
B = PCB tail
S = solder cup
H = wire lead
(customer-specified length & configuration)

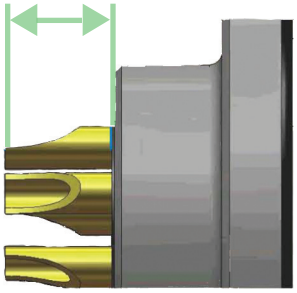
Consult factory for custom options.

Deviation/Filtering Code
01 = 2,000 pF - 3,000 pF C
02 = 8,000 pF - 16,000 pF C
03 = 24,000 pF min. Pi
04 = 72,000 pF min. Pi
(xx = custom designs) and Pi Filters

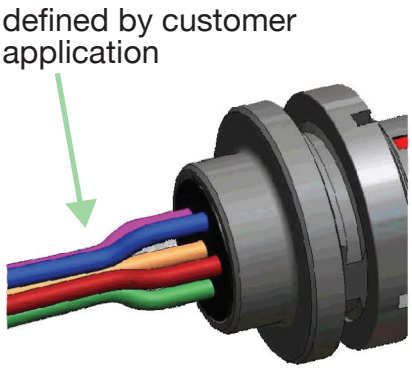
Shell Style
A = medium body (L=1.131”)
B = medium body, reverse mount
C = short body (L=0.910”)
(-01 filter only)
D = short body, reverse mount
E = long body (L = 1.405”)
F = long body, reverse mount



164F-1836B-xxx
PCB tail termination



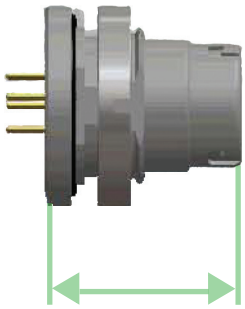
164F-1836S-xxx
Solder cup
termination



164F-1836H-xxx
Wire lead /
harnessed termination

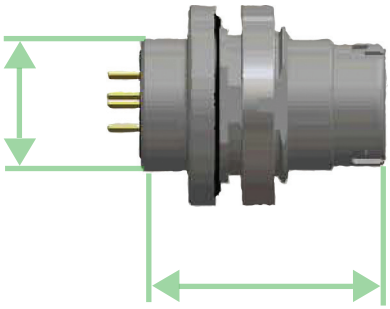
MIL-C-55116 Filter Audio Connectors

- Interface and environmental performance of MIL-C-55116/9, -/10
- Operating temperature range -55°C to +125°C
- DWV = 500 VDC
- IR = 1,000 MΩ (sea level)
- Typical working voltage = 60 VDC
- Current rating = 0.5 A
- Spring loaded contacts with minimum mating durability of 3000 cycles
- Fully sealed to water ingress up to 20m immersion depth



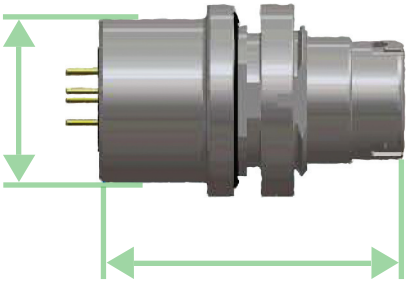
L = 0.910”

164F-1836B-3xx
Short body



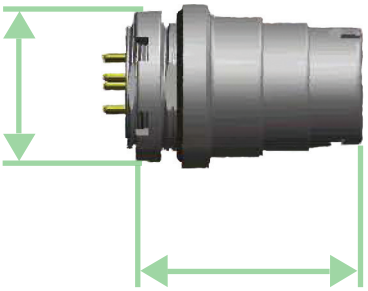
L = 1.131”

164F-1836B-1xx
Medium body



L = 1.405”

164F-1836B-5xx
Long body



L = 1.131”

164F-1836B-2xx
Medium body,
Reverse mount

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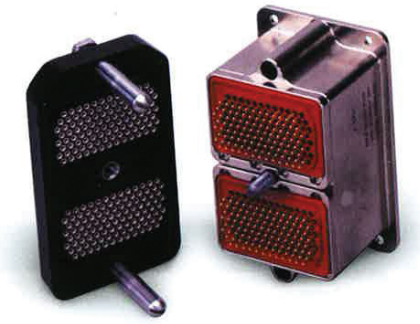
Termination Modules

A termination module is a removable extension of the connector which is recommended for use with ARINC connectors which have transient suppression devices or which are difficult to attach to a flex or pcb. The engagement side of the termination module is designed to mate to the rear of the connector and the termination end is designed to attach to the PCB or wire harness (PC tails, soldercups, wire-wrap or crimp). Proper engagement of the connector and termination module is guaranteed by guide posts in the connector and front or rear activated jack screws. Sealing is accomplished with a rubber interfacial gasket.

Connectors designed to engage to a termination module are designed with one-piece front removable socket contacts to minimize the number of interconnects.

The use of a termination module provides several advantages:
- simplifies the assembly process by soldering to the lighter weight termination module rather than to the connector itself
- facilitates repair and rework procedures due to easy installation and removal from the motherboard

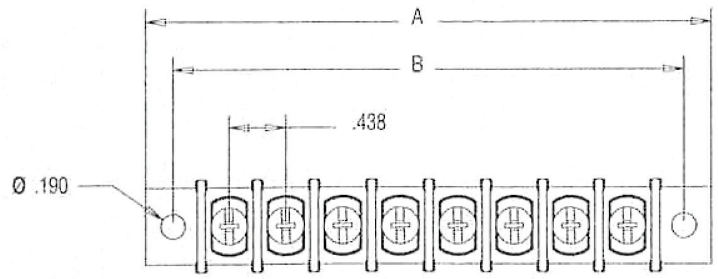
Features:
- Guide posts and front or rear activated jack screws
- Easy installation and removal from motherboard
- One piece front removable socket contact in filter connector
- Rubber interfacial seal

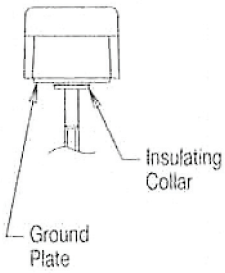


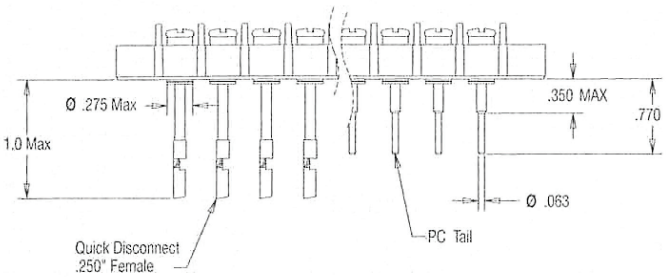
Benefits:
- Guarantees proper installation
- Facilitates repair and rework
- Eliminates exposure of filter connector to soldering and cleaning processes
- Protects filter connector from environment
- Allows for easy repair of damaged socket contacts
- Minimizes total number of interconnects

*Consult factory for a termination module suitable to your needs.

Filter Terminal Blocks







# Terminals	Dim 'A'±.020	Dim 'B'
2	1.730	1.312
3	2.170	1.750
4	2.610	2.187
5	3.050	2.625
6	3.480	3.062
7	3.920	3.500
8	4.360	3.937
9	4.800	4.375
10	5.230	4.812
11	5.670	5.250
12	6.110	5.687

FXL - 06 C252 10 0 - 000

DEVIATION
000 = Standard Part
other deviations are required

MOUNTING STYLE
0= Thru Hole
9 = Special

TERMINATION STYLE
03 = Solder Cup
04 = P.C. Tail
08 = Press Fit
09 = Male Quick Disconnect (.250 Blade)
10 = Female Quick Disconnect (.250 Blade)
11 = Wire Harness

NUMBER OF TERMINALS
02 - 12

CAPACITANCE CODE
C101 = 100pF (+100%/ -0%)
C252 = 2500pF
C503 = 5000pF
(Last digit of code is the number of zeros after first 2 digits)

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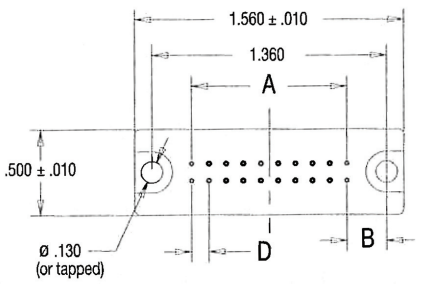
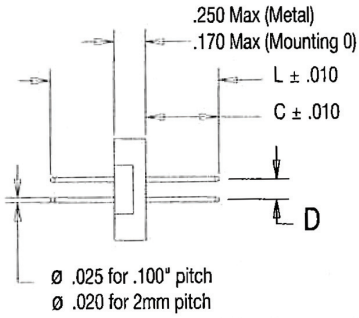
FXH Bolt-In Filtered Header

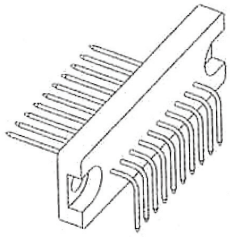
This header is tougher than the average filtered array. Ceramic filter elements are isolated from mating and handling loads, which means your assembly works the first time, every time.

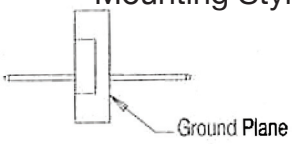
Economical, non-metallic designs are also available in the same footprint.

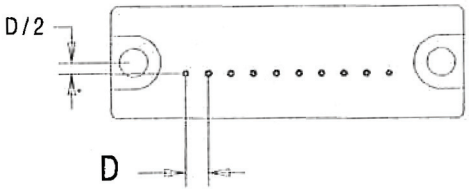




Mounting Style 0







Terminal Styles	Dim 'L'	Dim 'C'
1,4	0.825	0.360
2, 5	1.100	0.550
3	Consult factory	

Terminals per row	Terminal Styles 1, 2 & 3			Terminal Styles 3, 4 & 5 [mm]		
	'A'	'B'	'D'	'A'	'B'	'D'
4	0.300	0.530		6.0	14.27	
5	0.400	0.430		8.0	12.27	
6	0.500	0.430		10.0	12.27	
7	0.600	0.330	0.100	12.0	10.27	2.0
8	0.700	0.330		14.0	10.27	
9	0.800	0.230		16.0	8.27	
10	0.900	0.230		18.0	8.27	
11	---	---		20.0	6.27	
12	---	---		22.0	6.27	

FXH - 20 C252 D 2 0 - 000

DEVIATION
000 = Standard Part
other deviations are required

MOUNTING STYLE
0 = Thru Hole
1 = Metal Body thru Hole
2 = Metal Body 4-40 UNC
3 = Metal Body M3 x 0.5
9 = Snap-In Header

TERMINATION STYLE
1 = Straight, 0 .025, 0.825 Long
2 = Straight, 0 .025, 1.100 Long
3 = Right Angle bend, built to suit
4 = Straight, 2mm, 0 .20, .825 Long
5 = Straight, 2mm, 0 .020, 1.100 Long

NUMBER OF TERMINALS
04 - 24

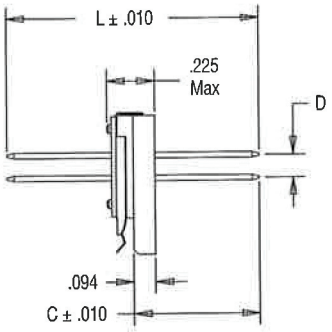
CAPACITANCE CODE
C101 = 100pF (+100%/ -0%)
C252 = 2500pF
C402 = 4000pF
(Last digit of code is the number of zeros after first 2 digits)

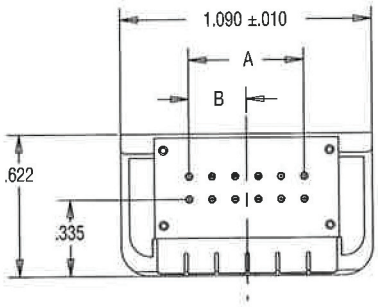
Rows of Contacts
S = Single Row
D = Double Row

FXH Snap-In Filtered Header

Protect your Board-to-Board signals against radiated and conducted EMI.

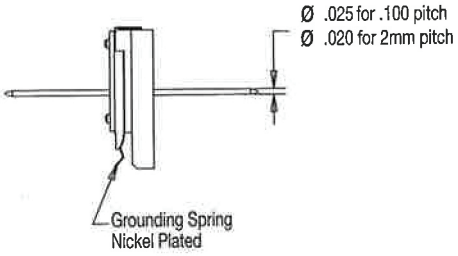
This header snaps into place without assembly tools and saves real estate.

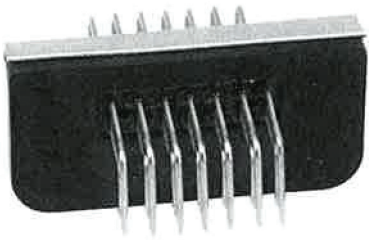




SPECIFICATIONS

PRODUCT FEATURES:
- Compact, connector-like assembly
- Stress isolated filters
- .100” or 2mm pitch



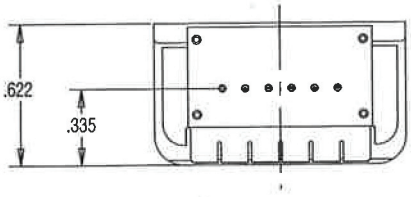


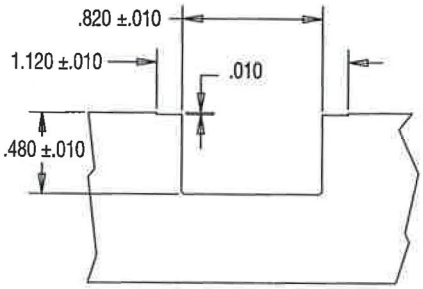
MATERIALS AND PLATINGS:

Insulators	UL94V-0 thermoplastic
Grounding spring	Copper alloy, nickel plated
Contacts	Copper alloy, gold over nickel

ELECTRICAL RATINGS:

DWV	500 Vdc
Insulation Resistance	5 G q at 200 vdc
Capacitance	+ 100/-0%
Current Rating	3 A
Temperature	- 55”C / 125”C





Panel Cutout
.057 ± .002 Thickness

Terminals per row	Terminal Styles 1, 2 & 3			Terminal Styles 3, 4 & 5 [mm]		
	'A'	'B'	'D'	'A'	'B'	'D'
3	0.200	0.150	0.100	4.0	2.0	2.0
4	0.300	0.150		6.0	4.0	
5	0.400	0.250		8.0	4.0	
6	0.500	0.250		10.0	6.0	
7	---	---		12.0	6.0	

Terminal Styles	Dim ‘L’	Dim ‘C’
1,4	0.825	0.400
2, 5	1.100	0.550
3	Consult factory	

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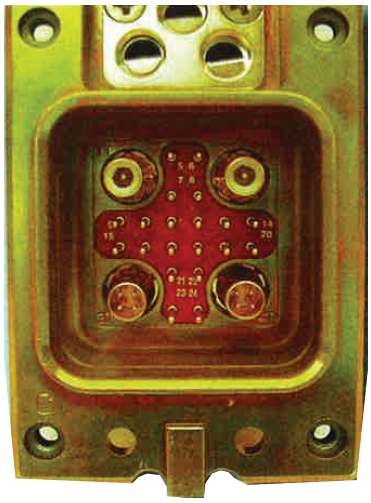
Quadrax Connectors and Contacts

DESCRIPTION

- Quadrax contacts offer the best copper technology solution for high speed data requirements.
- Consists of 4 size 24 inner contacts forming two matched impedance differential pairs within a size 8 outer contact.

PRODUCT FEATURES

- Designed to the requirements of Arinc 600, supplement 14.
- Available in crimp and PCB tail versions
- Crimp version Outer contact designed to use standard size 8 crimp tools, M22520/5-01 and/or M22520/5-45
- Crimp version Inner contacts designed to use standard size 24 crimp tools M22520/2-01
- Compatible with various quadrax cables (see table 1)



APPLICATIONS

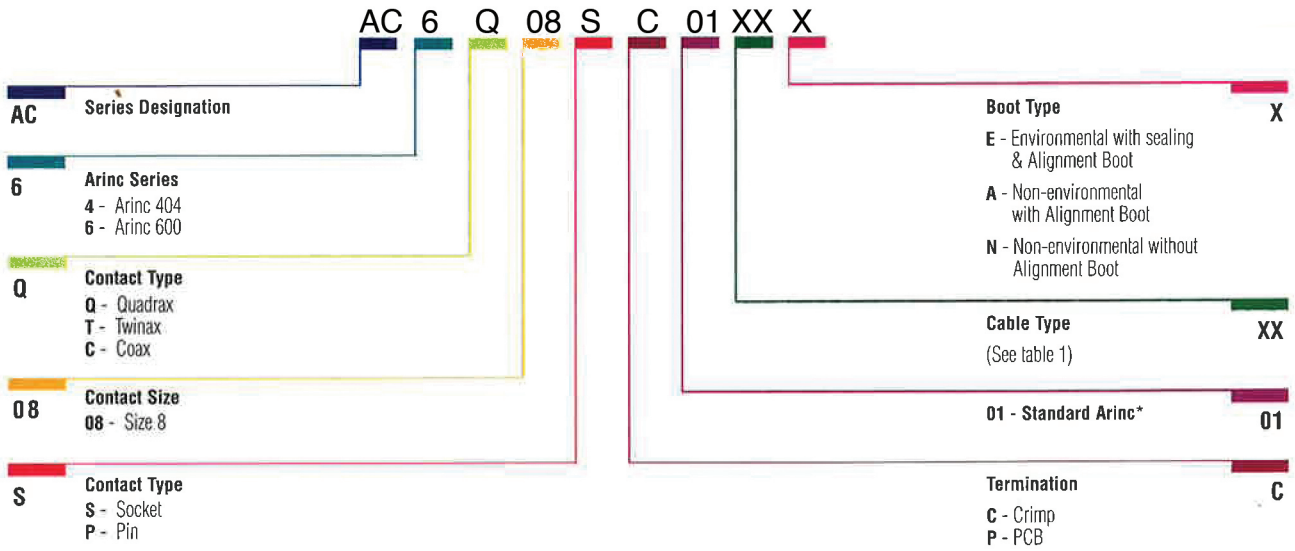
- Ethernet 100Base -T-100 ohm Fiber channel-150 ohm and IEEE 1394B fire-wire I 10 ohm applications
- Commercial Avionics Systems
- In-Flight Entertainment Systems
- Military Avionics Systems

TYPICAL ELECTRICAL PERFORMANCE

- Bandwidth: Up to 3 Gigahertz
- Data Rate: Exceeding 2 Gbits/sec
- Voltage Rating: 500 Vrms max. @ sea level
- Dielectric Withstanding Voltage:
  1000 VAC rms between all inner contacts at sea level
  500 VAC rms between inner and outer contacts @ sea level.

Quadrax Contact

Part Numbering Information

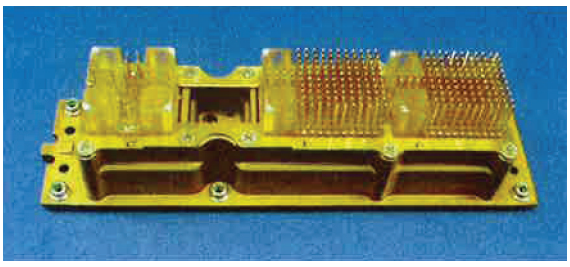


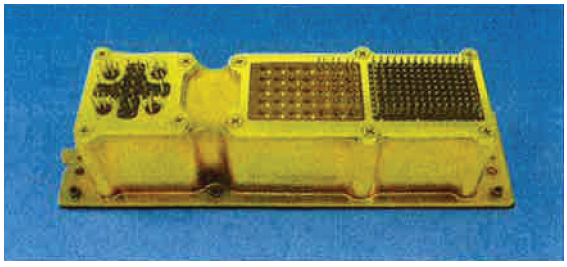
* Contact to meet the requirements of attachment 20 figure 20-2.1.1A of supplement 14 to Arinc 600.

Table 1 - Quadrax Contact Part Numbers

Socket Part Number	Pin Part Number	Cable Type	Impedance
AC-6Q08SC01-01N	AC-6Q08PC01-01N*	DRAKA FILICA F4703-3 & F4704-4	100 ohm
AC-6Q08SC01-01A	AC-6Q08PC01-01A		
AC-6Q08SC01-01E	AC-6Q08PC01-01E		
AC-6Q08SC01-02N	AC-6Q08PC01-02N*	TENSOLITE NF24Q100	100 ohm
AC-6Q08SC01-02A	AC-6Q08PC01-02A		
AC-6Q08SC01-02E	AC-6Q08PC01-02E		
AC-6Q08SC01-03N	AC-6Q08PC01-03N*	TENSOLITE 26473102006X-4(LD) or GORE RCN8328	150 ohm
AC-6Q08SC01-03A	AC-6Q08PC01-03A		
AC-6Q08SC01-03E	AC-6Q08PC01-03E		
---	AC-6Q08PP01-XX	N/A	100 ohm

* Quadrax Pin Contact P/N's AC-6Q08PC01-XXN do not conform to Supplement 14 to Arinc 600. Supplement 14 to Arinc 600 requires that Quadrax Pin Contacts be supplied with an alignment boot.





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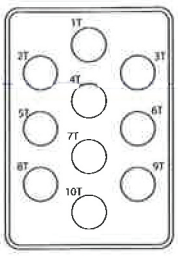
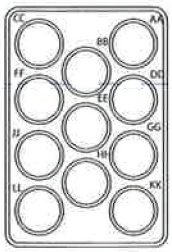
Quadrax Connector Insert Arrangements



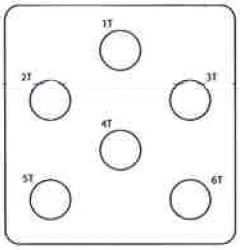
Insert Q10
10#8 Quadrax
Contacts

Q10



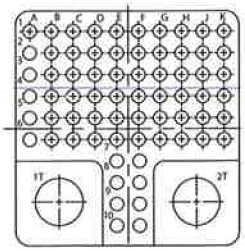
Insert Q11
11#8 Quadrax
Contacts

Q11



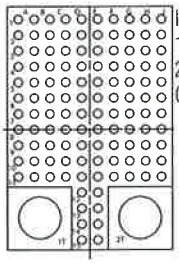
Insert Q6
6#8 Quadrax
Contacts

Q6



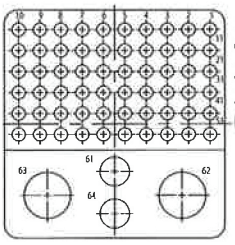
Insert 68Q2
68#22 Contacts
2 # 8 Quadrax
Contacts

68Q2



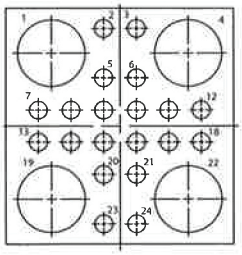
Insert 118Q2
118#22 Contacts
2#8 Quadrax
Contacts

118Q2



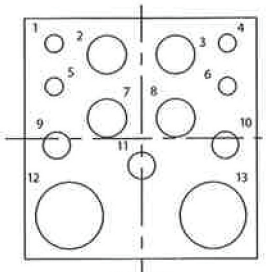
Insert 62Q2
60#22 Contacts
2#16 Contacts
2#8 Quadrax
Contacts

62Q2



Insert 20Q4
20#16 Contacts
4#8 Quadrax
Contacts

20Q4

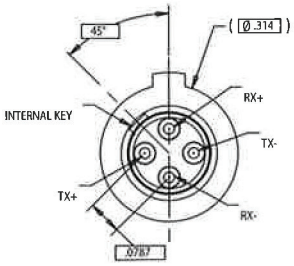


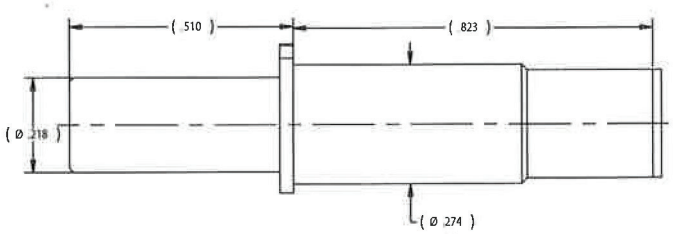
Insert 11Q2
4#12 Contacts
3#16 Contacts
4#20 Contacts
2#8 Quadrax
Contacts

11Q2

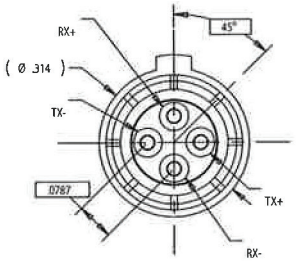
- Grounding continuity per Arinc 600 specification available on all size 8 cavities.
- Contact Factory for other insert arrangements

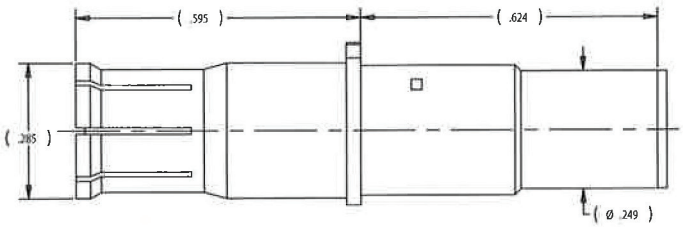
CRIMP PIN Quadrax Contact



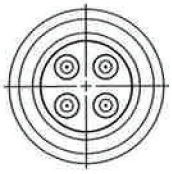


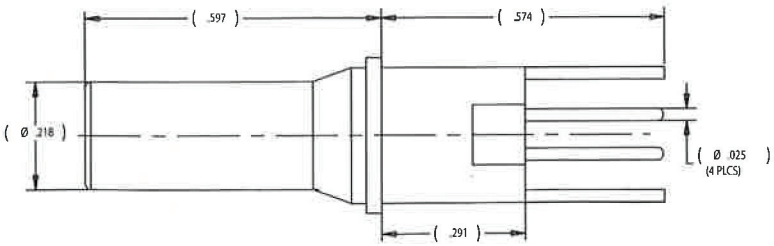
CRIMP SOCKET Quadrax Contact





PCB PIN Quadrax Contact





Additional Product

Quadrax

Amphenol Canada can put high speed ethernet differential quadrax contacts into any of our connectors. These offer 100 ohm differential impedance in 2 twinax for transmit and receive 1 gigabit ethernet signals. The quadrax can be cable termination or PC tail versions and the intergrated quadrax technology of Amphenol Canada reduces the cost of these specialty contacts.

SD308 Connectors (Sealed)

The SD308 series of D-Subminiature connectors is designed specifically for applications where advanced sealing is required. These connectors have unique sealed bodies and blind inserts to meet stringent immersions requirements. Along with those sealing techniques a special flange to incorporate a sealing gasket can provide additional sealing from connector to chassis.

Amphenol Canada Telephone: (416) 291-4401 Fax: (416) 292-0647
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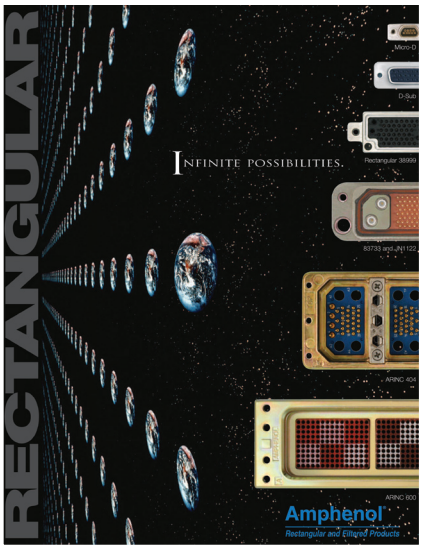

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Specifications subject to change without notice
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