

# EMI/EMP Filter Connectors

*High-Reliability Military Standard and  
Commercial Connectors for EMI Suppression*

United States ■ United Kingdom ■ Germany ■ France ■ Nordic ■ Italy ■ Spain ■ Japan

**2nd Edition • September 2008**



# 1000 Hour Grey™

## The Advanced Formula Ni-PTFE Plating Process for EMC Applications



**New Cadmium Free  
RoHS Compliant  
Plating Process Breaks  
1000 Hour Corrosion  
Protection Barrier!**

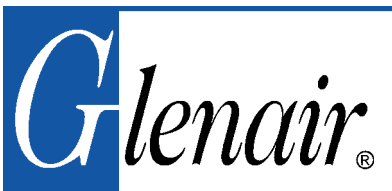
*The MIL-DTL-38999 Rev. L detail specification establishes several new cadmium-free conductive plating options including high-performance nickel-fluorocarbon polymer. The Glenair advanced formula **1000 Hour Grey™** plating process (Ni-PTFE) meets all D38999 performance requirements including a shell-to-shell conductivity maximum 2.5 millivolt drop potential.*

***1000 Hour Grey™** delivers outstanding performance in a broad range of land, sea, air and space interconnect applications. The non-reflective, non-magnetic, gun-metal gray surface finish is an ideal choice for tactical military systems with extraordinary corrosion protection and EMC requirements.*

### **Advanced Durability, Lubricity Plus Outstanding Temperature Resistance!**

*The mechanical, electrical and environmental performance of **1000 Hour Grey™** is truly outstanding, far surpassing that of other metal alloy/fluorocarbon polymer plating solutions:*

- |                                       |                                 |
|---------------------------------------|---------------------------------|
| ■ 1000+ Hrs. Salt Spray               | ■ Hexavalent Chromium Free      |
| ■ Max 2.5 Millivolt Drop Potential    | ■ Potassium Formate Resistant   |
| ■ -65°C to 175°C Temp. Rating         | ■ Low Shell-to-Shell Resistance |
| ■ 336+ Hrs. Sulfur Dioxide Resistance | ■ Adheres to Composite Plastic  |
| ■ Non-Magnetic                        | ■ 500+ Mating Cycles            |
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| ■ Low Coefficient of Friction         | ■ Available Now!                |



**Glenair, Inc.**

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# Open for Business:

## Glenair's Class 10,000 Filter Array Clean Room



When Glenair launched its filter connector offering in 2005, we already had plenty of in-house capacity for the manufacture of standard environmental and hermetic connectors. But we were completely dependent on outside suppliers for an essential component part in EMI/EMP filters: the actual multi-layer planar array filter element.

So, starting in 2008, we began to manufacture our own filter arrays. The filter array manufacturing process is not a simple one: First, chemists and technicians in our class 10,000 clean room mix a ceramic slurry and cast it onto Mylar tape. A computer-controlled machine then cuts and stacks thin ceramic layers and screen prints each layer with metallic film for perfect capacitance. The “layer-cakes” are then cured for sizing, machined for contact alignment and positioning, fired for hardness, and plated for conductivity. Finally, specially trained assemblers use micro-soldering techniques to affix contacts within the arrays, often consisting of multiple ceramic capacitor discs.

Our new planar array facility allows us to provide extremely fast deliveries of EMI/EMP filter connectors with outstandingly high levels of quality. Our vertically integrated facility is open for business. Please call the factory for a quote.



# *A World of* Interconnect Solutions

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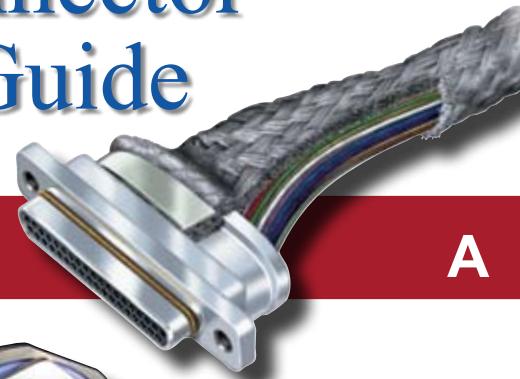
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# EMI/EMP Filter Connector Product Selection Guide

**A** Introduction to Filter Connectors



**A**

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**B**

**C** Series 80 "Mighty Mouse" Filter Connectors



**C**

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**D**

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**E**

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**H**

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## A

# Practical Solutions for Electromagnetic Compatibility

**D**esigning interconnect systems which deliver clean data streams, undistorted by electromagnetic interference or pulses (EMI/EMP) is an enormous challenge. Electromagnetic Compatibility (EMC) requirements have been established to insure that the performance of an individual electronic device is not degraded due to its proximity to high-frequency electromagnetic interference, and also to prevent the device itself from becoming a potential source of EMI. Sensitive electronic devices also need to be protected from voltage spikes generated during transient states or static discharges in the overall system.

Protecting sensitive devices and achieving electromagnetic compatibility in an interconnect environment, such as an aircraft avionics bay, is typically achieved through the application of EMI/EMP screening, grounding and filtering technologies. Interconnect industry techniques for achieving effective EMC include:

- Reflecting the signals outright,
- Reducing line-of-sight entry points in equipment and cable shields,
- Absorbing the interference in permeable material and dissipating it as heat,
- Conducting the EMI along the skin of the device/cable and taking it to ground,
- Filtering out interference at the point of interconnection, using specialized connectors which provide EMI suppression, and/or,
- Adding transient voltage suppression diodes to clamp voltage spikes.

In most applications, EMI management is not accomplished through the use of a single technique such as filtering, but rather through the combined use of various EMC technologies. While black box device manufacturers may incorporate a filter connector as a universal

prophylactic against future, unknown levels of EMI, the final integration of the device into a complex application environment typically requires the use of additional EMC technologies. At the most practical level this includes grounding conductively plated equipment housings with studs and straps, shielding cable conductors with metallic braiding, tape or conduit, and eliminating line-of-sight entry points through which electromagnetic waves can penetrate or escape the equipment. This later step is commonly performed by backshell devices which provide a reliable grounding platform for cable shielding and mechanically mask the conductor-to-contact termination from noisy waves of EMI.



***Cross-sectional view of a Micro-D connector assembly optimized for EMI noise suppression. Note the use of braided shielding, shield termination band and EMI ground spring. Effective EMI noise suppression may be accomplished solely with the use of filter connectors, but many designers prefer to augment the noise suppression provided by filters with accessory hardware such as banding backshells, conductive gaskets, grounding studs and cable shielding.***

The frequency of the interfering signal is a critical concern when selecting EMI shielding devices. Low frequency magnetic waves in the 1 to 30 KHz range, for example, are most effectively shielded by absorbing the signals in permeable material. High frequency signals (30 KHz and above) are most effectively shielded by reducing entry windows and by insuring adequate surface conductivity to ground.



# Introduction to Filter Connectors Application Checklist



## Specification Reference:

- ☐ MIL-DTL-38999   ☐ Ser. 79 Micro-Crimp  
☐ MIL-DTL-5015   ☐ Ser. 80 Mighty Mouse  
☐ MIL-C-26482   ☐ MIL-C-28840  
☐ MIL-DTL-83723   ☐ MIL-DTL-24308  
☐ MIL-DTL-83513   ☐ ARINC 600

## Series and/or Slash Sheet:

## Shell Style:

- ☐ Jam-Nut Receptacle   ☐ Plug  
☐ Flange Mount Receptacle  
☐ Dual Flange PCB Receptacle  
☐ Solder Mount Receptacle  
☐ Connector Adapter (Sav-Con®)

## Shell Size/Arrangement:

## Pin Count:

## Contact Gender:

- ☐ Pin  
☐ Socket

## Hermetic:

- ☐ Yes  
☐ No

## Shell Rotation Position:

## Shell Material and Finish:

## Termination (PC Tail, Solder Cup, Piggyback Crimp, etc.):

## Temperature Tolerance:

Operating: - \_\_\_\_ °C to + \_\_\_\_ °C  
 Storage: - \_\_\_\_ °C to + \_\_\_\_ °C

## Operating Frequency Range of Effected Equipment:

## Filter Capacitance:

| PIN POSITION<br>(Or Group of Pins) | FILTER VALUE*<br>[pF] ± 20% |
|------------------------------------|-----------------------------|
| 1                                  |                             |
| 2                                  |                             |
| 3                                  |                             |
| 4                                  |                             |

\*1KHz, 25°C

## Desired Filter Circuit Type:

- ☐ C Filter   ☐ C-L Filter  
☐ L-C Filter   ☐ Pi Filter

## Labeling and Marking Instructions:

## Insertion Loss:

|         | FREQUENCY<br>[MHz] | ATTENUATION<br>[dB] |
|---------|--------------------|---------------------|
| GROUP 1 |                    |                     |
| GROUP 2 |                    |                     |
| GROUP 3 |                    |                     |
| GROUP 4 |                    |                     |

## IR:

\_\_\_\_ Volts

## DWV:

\_\_\_\_ Volts

## Capacitor Array Code:

| Capacitor Array Code/Capacitance Range |                   |                  |
|----------------------------------------|-------------------|------------------|
| Class                                  | Pi-Circuit (pF)   | C-Circuit (pF)   |
| X                                      | 160,000 - 240,000 | 80,000 - 120,000 |
| Y                                      | 80,000 - 120,000  | 40,000 - 60,000  |
| Z                                      | 60,000 - 91,000   | 30,000 - 45,500  |
| A                                      | 38,000 - 56,000   | 19,000 - 28,000  |
| B                                      | 32,000 - 45,000   | 16,000 - 22,500  |
| C                                      | 18,000 - 33,000   | 9,000 - 16,500   |
| D                                      | 8,000 - 12,000    | 4,000 - 6,000    |
| E                                      | 3,300 - 5,000     | 1,650 - 2,500    |
| F                                      | 800 - 1,300       | 400 - 600        |
| G                                      | 400 - 600         | 200 - 300        |

Note: For any capacitor array code listed, we can accommodate both C circuit and Pi circuit capacitance values.





## A

## EMC Materials and Technologies

In interconnect cable assemblies, conductive wires and cables act as antennas to pick up and/or radiate noise. Cables can couple electrical or magnetic fields, or even radiated energy from another cable (known as “crosstalk”). The most basic of all material requirements is therefore to apply a conductive shielding around cable conductors to take electrical and magnetic field voltages to ground. Braided shielding provides the cable assembly with strength, durability and flexibility with just a slight sacrifice to effectiveness (compared to a solid conduit, conductive tape or other material). But at higher frequencies, braided shielding can lose effectiveness as the windows in the braid can become relatively larger compared to the wavelength of the EMI. This is why other materials, such as metal-core conduit, conductive junction boxes, conductive gaskets, and so on also play important roles in EMC applications.

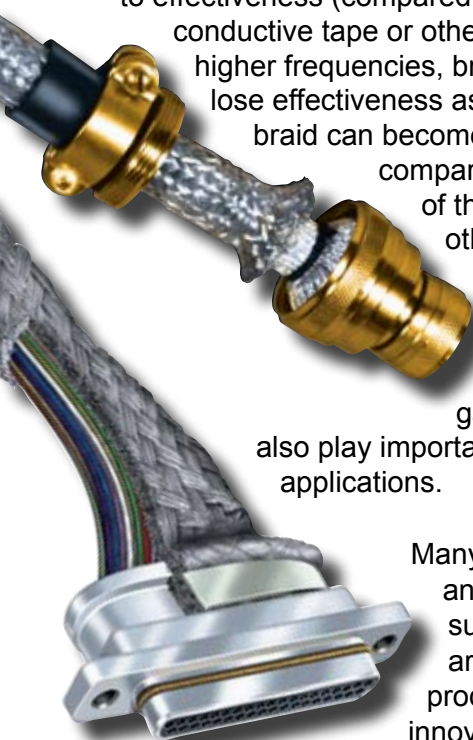
Many of the EMC materials and technologies supplied by Glenair are full-fledged product lines. Others are innovative techniques we can apply to a broad range of interconnect products. External and internal grounding springs are one such example. These gold-plated springs offer lower shell-to-shell resistance and are compatible with standard mating receptacles. Most of the connectors produced by Glenair can be equipped with grounding fingers for improved EMI shielding and grounding.

Most military grade interconnect devices and equipment housings are made of materials that accept conductive plating to provide some EMI protection outright and simultaneously facilitate grounding through the use of attached metallic or metallized textile studs and straps. While plated aluminum is the most common material for EMC applications, plated composite thermoplastic offers the ability to reduce weight and corrosion while still maintaining an effective ground path. The following section describes the many individual Glenair materials and technologies used for effective EMC.

### Conductive Braided Shielding

Low frequency waves in the 1 to 30 kHz range can be absorbed into permeable conductive materials, such as shielding placed around individual conductors within a cable assembly or wire harness. This shielding material either captures the EMI taking it to ground or dissipates it as heat. Metallic braids and high-tech plated fabrics also shield cable conductors from line-of-sight penetration or escape, again by taking EMI to ground.

A wide range of cable shield termination technologies are available—the effectiveness of each style, and the complete shielding solution, can be measured using a transfer impedance test to evaluate the cable shield performance against electrostatic discharge and radiated emissions at various frequencies up to the gigahertz range. Shielding effectiveness can be calculated for a range of frequencies by taking the ratio of transfer impedance for an unprotected device or system





compared to transfer impedance of a protected device or system, with the result expressed in decibels. Glenair cable shielding is manufactured in a wide range of designs and configurations. Materials include tin-plated copper, nickel-plated copper and tin-plated iron/copper. AmberStrand® is metallized composite thermoplastic material that matches metal shield performance at a fraction of the weight. Each material has specific performance advantages ranging from strength, to conductivity and corrosion protection.

Braided shields provide exceptional structural integrity while maintaining good flexibility and flex life. They also minimize low-frequency interference at audio and RF ranges. The material's ability to contribute to EMI reduction

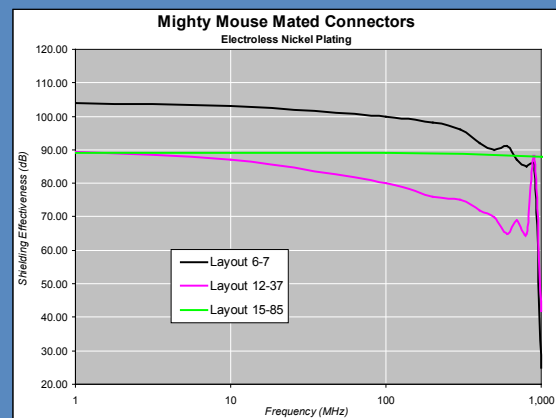


depends on the signal amplitude and frequency in relation to braid mesh count, wire diameter and material. Generally, the tighter the mesh and the higher the percentage of braid coverage, the more effective the shield is against high-frequency emissions. An alternative is to use more than one braid shield.

Metal Braid is offered in Tubular or Flat configurations in a variety of sizes from 1/32 inch (0.8 mm) to 2-1/2 inches (63.5 mm), and can easily be slipped over convoluted tubing and conduit as well as wire bundles, cables or similar constructions. Glenair's in-house braiding production capacity is truly impressive: More

## Series 80 "Mighty Mouse"

Glenair produces a miniaturized connector family called the Series 80 "Mighty Mouse." It is a smaller and lighter equivalent connector to the popular MIL-DTL-38999. A critical aspect of EMC is to ensure the integrity of the ground when connectors are mated. Shell-to-shell conductivity tests measure this integrity in terms of a voltage drop across the mated pair initially, and following various stressors.



Well designed and engineered connectors will meet the requirements of EIA-364-83 for shell-to-shell conductivity in the initial condition, following salt spray, following 500 mating cycles, and following shock and vibration. In the case of the Series 80 "Mighty Mouse" the mated pair did not exceed the 10 millivolt maximum voltage drop as required under EIA-364-83.

The "Mighty Mouse" is also equipped with an integrated banding platform on the connector shell, facilitating the termination of braided shielding without the use of an accessory backshell.

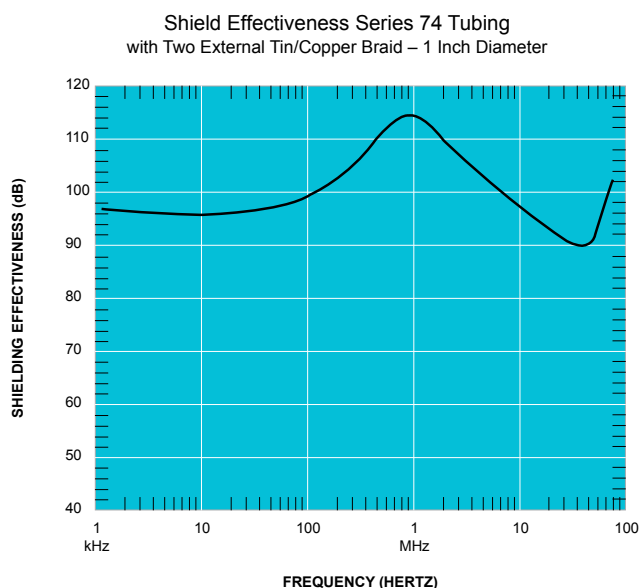
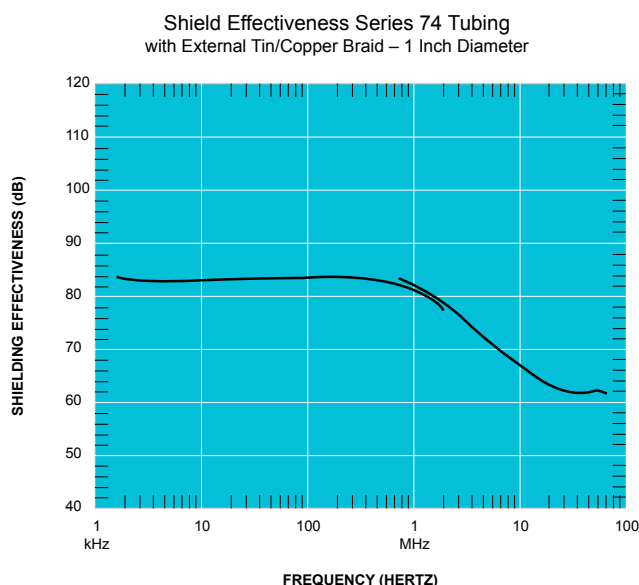




## Introduction to Filter Connectors EMC Materials and Technologies

A

than 50 braiders, ranging from 16 to 96 carriers, provide the capability to produce large quantities of precise metal and non-metallic braid and expandable sleeving in tubular, tapered, and flat configurations.



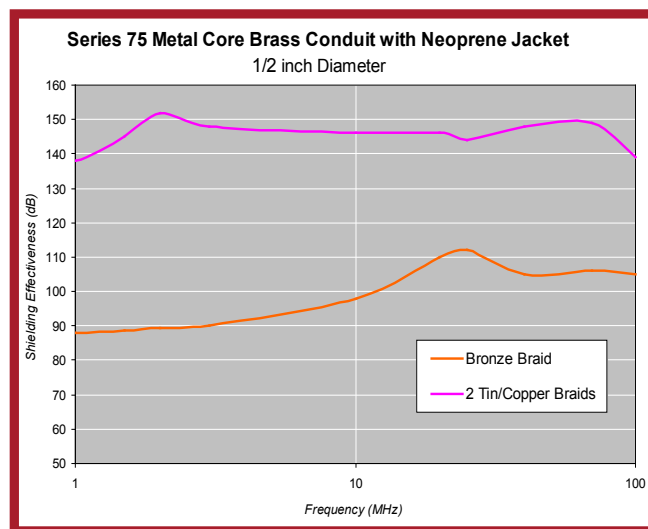
An alternative to braided shielding, foil shields are made from aluminum laminated to a polyester or polypropylene film. Foil shields provide 100 percent cable coverage, improving

protection against radiated emission and ingress at audio and radio frequencies. Because of their small size, foil shields are commonly used to shield individual pairs in multi-conductor cable to reduce crosstalk. Foil shields may also be bonded to a coaxial cable insulation or cable jacket with a layer of adhesive, allowing for faster, easier and more reliable termination.

### Metal-Core Conduit Solutions for Advanced EMC Applications

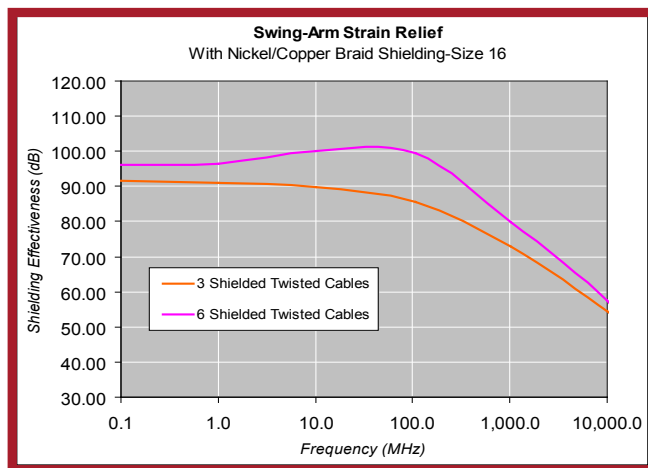
Glenair Series 75 Metal-Core Conduit is the “Cadillac” of EMI shielding. Helically-wound metal conduit provides extremely high levels of EMI protection across all radiation fields and frequencies. Metal-Core Conduit is the material of choice for TEMPEST secure communications and other applications involving sensitive electronic equipment and intense levels of EMI.

Metal-core materials include brass, nickel/iron and stainless steel, generally specified with one or more overbraids of bronze or plated copper for additional pull-strength and strain-relief as well as with rubber jacketing. The choice to use Metal-Core Conduit depends on the sensitivity of the equipment under consideration and other mechanical, thermal and environmental requirements.



### Swing-Arm Shield Sock Backshells

The selection of an appropriate shield termination backshell depends on many factors, including ease of assembly, cost, repairability, shield type and construction, cable diameter and type, cable jacket thickness, weight and corrosion resistance. Often the choice boils down simply to customer preference, although certainly



cable construction, i.e., type of shielding and other mechanical factors is the most significant technical consideration.

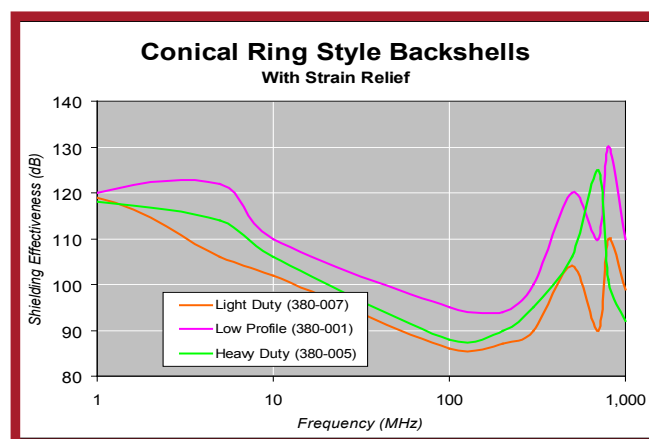


As there is no single shield termination technology or methodology that will meet every customer requirement, Glenair supports every popular shield termination method with the full range of sizes and materials. Currently Glenair is able to produce an innovative backshell product, called the Swing-Arm that resolves a significant number of design problems—including

EMC. The composite thermoplastic Swing-Arm features an integrated EMI shield sock and configurable cable clamp—available with nickel/copper or metallized composite thermoplastic shielding. The articulating arm can be configured to straight, 45° or 90° positions, reducing stock keeping requirements. The Swing-Arm also offers extremely fast, simple and trouble-free shield terminations.

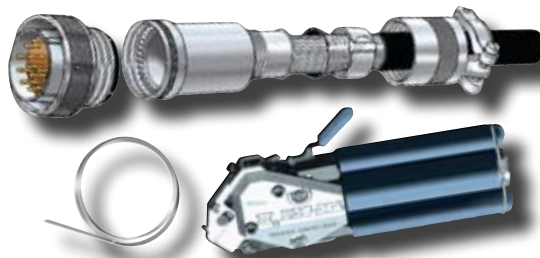
### Conical Ring Style Backshells

Glenair EMI/RFI conical ring backshells provide reliable individual and overall shield termination by securing the shield under pressure between a conically shaped backshell and ground ring.



### Glenair Band-It® Termination System

The unique low profile and smooth inside diameter of the Band-It® steel clamping band virtually eliminates EMI leakage paths, providing reliable and repairable shield terminations. Cylindrical banding backshells are available for all Military Standard type connectors.



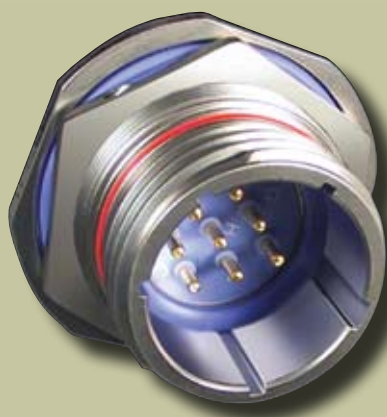




## A

# EMI/EMP Filter Connector Overview

Filtering or suppression of electromagnetic noise within the connector package is reliably accomplished through the integration of capacitors and diodes into the connector to segregate interfering high-frequency or high voltage noise from the desired lower frequency signals. The capacitors strip off the interfering noise from the signal as it passes through the filter device. While various types of capacitor filters are available, perhaps the most widely applied is the Planar Array type. Planar Arrays are extremely effective at filtering high-frequency interference. Planar Array designs utilize ceramic capacitor arrays and ferrite inductors which externally surround each contact, and may be supplied in a single monolithic block to fit into any connector size or shape. Planar arrays may be fabricated with different capacitive values on individual pins for additional flexibility in achieving the desired level of EMC. Diodes are used to clamp the voltage below a certain value, thereby protecting the electronic circuitry. They are typically integrated into the connector using a small printed circuit board.



*Ferrite elements and capacitors can be integrated into any connector package envelope.*

Using filter technology has certain advantages to the electrical system engineer, most especially improved signal integrity as well as size and weight reduction. In addition, filters can be incorporated into an interconnect system late in the research and development process; for example after an unforeseen emission problem has been detected. In every filter application the signal levels and frequency bands must be well understood in order to select the appropriate mode or type of filter technology.

For example, electronic equipment used by avionic systems typically spans the electromagnetic spectrum from a few kilohertz to several gigahertz. At the low end, Omega Navigation, which is used to fix aircraft position within a network of ground based transmitters, operates in the frequency range of 10 to 14 kHz. VHF Omnidirectional Range Finders (VOR) are radio beacons used in point-to-point navigation. They operate from 108 to 118 MHz. Glideslope Systems used during landings operate in the 328 to 335 MHz range. Distance-Measuring Equipment (DME), which gauges the space between the aircraft and ground-based transponders operate at just over 1 GHz.

Clearly, potential EMI in the application environment described above covers a broad range of frequencies. Filter modes and types are consequently specified according to the EMI frequency ranges which are the source of the actual signal degradation and the operating frequency of the affected device. Certain electrical circuit criteria are also germane to filter selection, including:

- Capacitance Value
- Working Voltage
- Surge Voltage
- Dielectric Withstand Voltage
- Insulation Resistance
- Transient Protection

## Introduction to Filter Connectors

### EMI/EMP Filter Connector Overview



Filter connectors appropriate for use in applications such as those referenced above are broadly identified as 'low-pass' filters (i.e. they let low frequency signals pass through and attenuate higher frequencies). The attenuation curve can be shaped using different filter types (different configurations of capacitors and inductors). These types include: Pi Filter, L-C or C-L Filter, and C Filter. These filter connector types are characterized by their relative abilities to filter noise according to capacitance, voltage values and load impedances. The simplest design is the "C", which consists of a single capacitor inserted between the signal line and ground.

While most EMI filter connectors can be used in a working temperature environment from -55 to 125° C, selected designs are optimized for higher operating temperatures. Hermetic Filter connectors provide the ultimate protection—ensuring system hermeticity while the added filter/diode elements safeguard electrical signals passing through the connector.

Prior to shipping a filtered connector, Glenair offers extensive testing, qualification and burn-in options. Tests range from a simple capacitance (C), insulation resistance (IR), and dielectric withstanding voltage (DWV), to more elaborate options such as RF insertion loss, dissipation factor, Zener/TVS diode test, ground resistance, voltage conditioning and thermal shock.

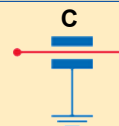
The Glenair factory, provided with the system attenuation and frequency values, relevant electrical specifications, and connector configuration details can design an effective filter device for every application (to get started, use the application checklist on the last page of this introduction). Glenair is able to supply filter technology in every cylindrical connector standard we produce including our Series 80 "Mighty Mouse" as well as MIL-C-38999, Mil-C-5015, MIL-DTL-83513, Mil-C-24308, and so on. Custom circular and rectangular styles are also available. Hybrid electrical/optical filter connectors are a specialty.

### COMMON FILTER CONNECTOR TYPES

Glenair supplies filter connectors in the following electrical configurations: C, L-C, C-L, and Pi. The following general values may be used in type selection: Single element filter connectors sporting either a single capacitor or inductor yield an insertion loss characteristic of 20dB per decade, dual element filters (capacitor plus an inductor) 40dB per decade, and triple element filters 60dB per decade. Selection is based primarily on source and load impedances but may also be influenced by the level of attenuation required at various frequencies. Please consult the factory for assistance in evaluating insertion loss values. All insertion loss values quoted for a 50 Ohm impedance.

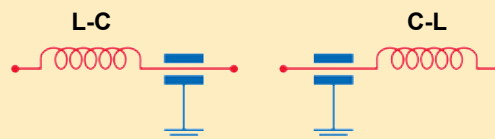
#### C Circuit Filter

Single capacitor with low self inductance. This configuration is generally used to attenuate high frequency signals. The simple design allows high-frequency EMI to discharge to ground via the surrounding electromagnetic field.



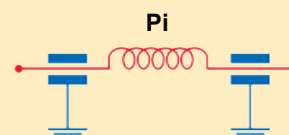
#### L-C or C-L Circuit Filter

Single capacitor combined with an inductive element. It is commonly used in a circuit with both a low impedance source and a high impedance load or a low impedance load and a high impedance source. The inductive element should face the low impedance.



#### Pi Circuit Filter

Dual capacitors with a single inductive element positioned between them. The Pi filter provides exceptional high-frequency performance due to its sharper rolloff and is typically used when both source and load impedances are high.





## Introduction to Filter Connectors

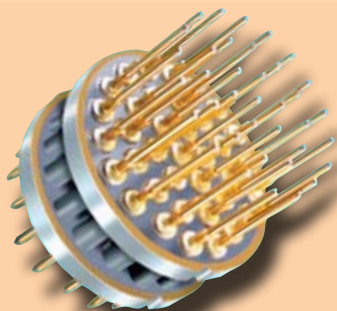
### Multilayer Ceramic Planar Capacitor Arrays

#### A

#### Multilayer Ceramic Planar Capacitor Arrays

Planar, multi-layer ceramic capacitive filters offer reduced size and improved performance compared to discrete discoidal or tubular capacitors. Planar array filter devices have the advantage, especially when compared to capacitive filters integrated at the circuit board level, of being bidirectionally effective at attenuating unwanted noise travelling into and out of equipment enclosures.

As mentioned above, the planar array can be designed with different capacitive values on individual pins, and pin groupings, and can also be selectively equipped with surge protection diodes. The ability to accommodate such Transient Voltage Suppressions (TVS) diodes to protect against voltage spikes from transient sources such as EMP, lightning or Electrostatic Discharge (ESD) is an additional strength of the planar array design. The planar array package can also easily accommodate ferrite elements to add inductance to the filter device. For these reasons and more, the planar array is the most common filter type specified in military aerospace and other high-performance applications.



*Multipin planar array filter device, assembled with its ferrite elements and connector contacts, ready for insertion into the connector shell. The flexible design allows for different capacitive values on individual pins as well as the integration of hybrid contacts such as optical termini.*

The metal electrodes are plated on alternate ceramic layers with a 'hot' or ground electrode to match the contact pattern of the chosen connector. This results in a discrete capacitance value per hole—ultimately determining the EMI attenuation properties of the assembled filter device. After the layer-cake of dielectric materials and conductive elements is assembled, it is fired at high temperature to create a unified, monolithic structure.

As the figure below illustrates, the planar array is fabricated such that the capacitor positions align exactly to the pin layout positions of the connector. When combined with inductive ferrite elements, TVS diodes or other special circuitry, the final assembly is ready for insertion into the connector shell. The incorporation of filter elements into a standard cylindrical or rectangular connector will necessarily increase the overall length of the package. The extra real estate is usually added to the inside-the-box (non-mating) side of the connector receptacle. Another approach is to attach a connector adapter, or go-between, outfitted with the filter device, to the connector plug. This approach has the advantage of not requiring any dimensional changes in box design or receptacle connector package.

Typically, custom-configured planar arrays, with unique capacitive elements and values, are required to effectively address complex EMI problems such as might be encountered in an avionics bay or in the body of a missile. For this reason, planar array fabrication is accomplished using the most advanced CAD software and CNC machine tools. As critical EMI problems are often discovered late in the development process—perhaps only after equipment has been installed for use—it is critical that turnaround times in design and fabrication of custom designs are kept to a minimum. Glenair is committed to meeting the most aggressive delivery requirements for planar array type filter connectors.



# EMI Filter and Transient Voltage Suppression Packaging

A

The packaging of EMI and TVS elements in standard connectors is an important element in effective EMC design. EMI/EMP connectors typically come in Mil-Spec packaging for easy intermating with Mil-Spec circular, D-sub, Micro-D and other standard formats. Such connectors are broadly identified as ‘low-pass’ filters (i.e., they let low frequency signals pass through and attenuate higher frequencies). The attenuation curve can be shaped using different filter types (different configurations of capacitors and inductors).

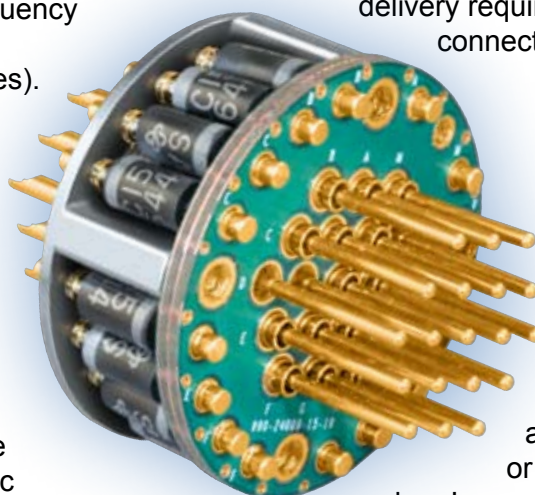
While the exterior of these very special connectors look normal enough, inside is another story—a planar array made of multiple layers of ceramic dielectric, separated by sheets of ceramic tape and screen printed with a pattern of metal electrodes to create a capacitor used to suppress or attenuate unwanted noise. Capacitance at each electrode protects against EMI, while carefully placed transient voltage suppression diodes guard against damage from lightning strike and other voltage surges.

Planar, multi-layer ceramic capacitive filters offer reduced size and improved performance compared to discrete discoidal chips or tubular capacitors. Planar array filter devices have the advantage, especially when compared to capacitive filters integrated at the circuit board level, of being bidirectionally effective at attenuating unwanted noise travelling into and out of equipment enclosures.

As critical EMI problems are often discovered late in the development process—perhaps only after equipment has been installed for use—it is critical that turnaround times in design and fabrication of both standard and non-standard designs are kept to a minimum. Glenair is committed to meeting the most aggressive delivery requirements for planar array type filter connectors.

## Glenair's Growing Filter Connector Availability

Applications requiring filtered connectors generally call for specific plating, mounting style, keying, shell size, contact layout, contact gender, termination, and frequency filtration. Typically, the filtered connector is either replacing an existing non-filtered receptacle, or it must mate with an existing cable plug. In some cases the filtering element is built into a connector go-between or saver. Whatever the packaging requirement, Glenair is committed to a “no gaps” product availability model whereby we can quickly build and ship any possible filter connector configuration for industry standard connector families such as MIL-DTL-38999, MIL-DTL-83513 and our own Series 80 “Mighty Mouse.”



| Shell Size and Contact Count | Capacitance Codes |
|------------------------------|-------------------|
| 9                            | A, B, D, F        |
| 15                           | A, D              |
| 21                           | A, C, D           |
| 25                           | B, D, F           |
| 31                           | D                 |
| 37                           | B, D, F           |



## Introduction to Filter Connectors

### EMI Filters and Transient Voltage Suppression Packaging

A

We currently stock some finished filtered connector parts in our Same Day inventory, and we will continue to add to this stock. More importantly, we have placed into inventory a wide range of the longest lead time component—ceramic planar filter arrays—in the most popular capacitance values. This filter array stocking program enables Glenair to provide the industry's fastest delivery of finished filtered connectors. In addition, we now have built the in-house capability to manufacture our own ceramic planar capacitor arrays. This vertical integration will allow us to continue to add to component stock and reduce lead times even further.

Listed below are the current filtered connector families available for the fastest delivery in the industry. For any capacitor array code listed, we can accommodate both C-Section and Pi-Section capacitance values.

| Shell Size Layout | Contact Count and Size | Capacitor Array Codes |
|-------------------|------------------------|-----------------------|
| 11-35             | 13 #22D                | B                     |
| 13-35             | 22 #22D                | D, E, F               |
| 15-35             | 37 #22D                | E, X                  |
| 17-8              | 8 #16                  | A                     |
| 17-35             | 55 #22D                | D, E, F               |
| 21-35             | 79 #22D                | G                     |
| 23-21             | 21 #16                 | X                     |
| 23-35             | 100 #22D               | G                     |
| 25-29             | 29 #16                 | D                     |
| 25-35             | 128 #22                | D                     |
| 25-43             | 20 #16, 23#20          | C                     |

MIL-DTL-38999 series I, II, III, and IV connectors in any plug or receptacle style, along with any material, plating, or filtration in the size and contact layouts with the capacitor codes listed below. These listed filter arrays make more than 142,000 D38999 finished parts. And more D38999 filter array layouts are being added to stock every day!

| Shell Size | Contact Count and Size | Capacitance Codes |
|------------|------------------------|-------------------|
| 5          | 3 #23                  | A                 |
| 6          | 4 #23                  | A, D              |
| 6          | 7 #23                  | A, D              |
| 7          | 10 #23                 | A, D              |
| 8          | 13 #23                 | D                 |
| 9          | 19 #23                 | A                 |
| 10         | 26 #23                 | A, D              |
| 13         | 37 #23                 | A                 |
| 16         | 55 #23                 | A                 |
| 17         | 85 #23                 | A                 |

"Mighty Mouse" Series 801, 804, and 805 in plug or any receptacle style, material, plating, or filtration are available in the size and contact layouts with the capacitor codes listed above. These listed filter arrays can make more than 29,000 "Mighty Mouse" finished parts and more "Mighty Mouse" filter array layouts are being added to stock every day!

Micro-D Connectors in Solder Cup, Pre-Wired Pigtailed, Vertical Printed Circuit Boards, Right Angle Printed Circuit Boards and In-Line Adapters in any material, plating, or filtration are available in the size and contact counts with the capacitor codes listed below. These listed filter arrays can make almost 35,000 Micro-D finished parts (along with an essentially infinite number of pigtail Micro-D part numbers pre-wired to any length). Again, more Micro-D filter array layouts are being added to stock every day!

In addition to standard catalog products, Glenair filter connector designs may be customized for use in a wide range of application environments including avionic systems, down-hole drilling and logging devices, naval and marine platforms, network-centric ground warfare systems, and missile and satellite/space applications. Please call the factory or visit our website for more information.

### EMP and TVS Defined

Electromagnetic Pulse (EMP) refers to the intense radio frequency pulses produced by nuclear explosions at high altitudes. Other names for this include Nuclear EMP (NEMP) and High-Altitude EMP (HEMP). Similarly, System Generated EMP (SGEMP) refers to electrical noise resultant from large amounts of composite skin used in satellites, aircraft and helicopters that discharge over time. Like other forms of electromagnetic interference, EMP can have a destructive effect on sensitive electronic devices, particularly those used in mission-critical military applications. This occurs if and when the EMP couples to an antenna or an unshielded cable and passes unmolested into an electronic device. EMP hardened equipment is designed to protect vital communications at a time when unhardened devices are likely to fail. Thus it is a standard requirement for many military applications to proactively protect certain devices from EMP via the integration of Transient Voltage Suppression technologies into the connectors that service the device.

Transient Voltage Suppression (TVS) technologies are designed to shunt voltage transients directly to ground before such surges can damage sensitive electronic equipment. Individual TVS diodes as well as diode modules may be incorporated directly into the filter connector package to provide optimal protection for either individual contacts or groups of contacts without significant increases in connector size or weight. Individual circuit protection diodes and diode modules are available for all connector types and are routinely stocked by Glenair to reduce lead-times. Field maintenance and repair of damaged diodes is also possible as both individual diodes and diode modules are easily removed from the connector package. RTCA DO-160 and other electrical performance standards now define acceptable benchmarks for withstanding electromagnetic pulse, lightning strike, or other induced voltage surges. Glenair designs all TVS equipped filter connectors to conform to the RTCA DO-160 standard.

### Hermetic Packaging

Hermetic connectors are specified for applications as divergent as submarines and orbiting satellites. They are deployed to resist moisture ingress in underground applications and to withstand pressure differentials in vacuum chambers, laboratory equipment and commercial and military aircraft. Hermetic connectors, such as the MIL-DTL-38999 Series I, II, III and IV supplied by Glenair, are principally designed for use in military aerospace—in fact, the requirement for connector hermeticity was originally driven by military electronic applications. But the products are equally at home in commercial applications such as oil-patch logging equipment or medical devices.

Hermetic connectors are constructed from a core component-set that includes the connector shell, a vitreous glass insert and the selected contacts. Shells may be machined from stainless steel or Kovar®, an iron-nickel-cobalt alloy with a co-efficient of expansion closely balanced to the glass inserts. Contacts used in hermetic connectors must be fabricated from high-grade iron/nickel materials that can withstand high-heat, and bond effectively to the vitreous glass seal.

As with other connector families, hermetic customers may specify the connector coupling style (threaded, bayonet, etc.), pin or socket gender and layout, contact termination type (solder cup or PCB termination), conductive or non-conductive finish, polarization and so on. Glenair's complete in-house hermetic capability affords us the ability to produce a wide-range of special purpose hermetic connectors designed to meet individual and unique customer specifications—such as EMI/EMP filtering.

Hermetic class EMI/EMP filter connectors are available throughout our complete range of filtered connector products in both Pi and C from 400 pF to 56000 pF. Connector platings and materials are offered in class H2 (stainless steel, electroless nickel).



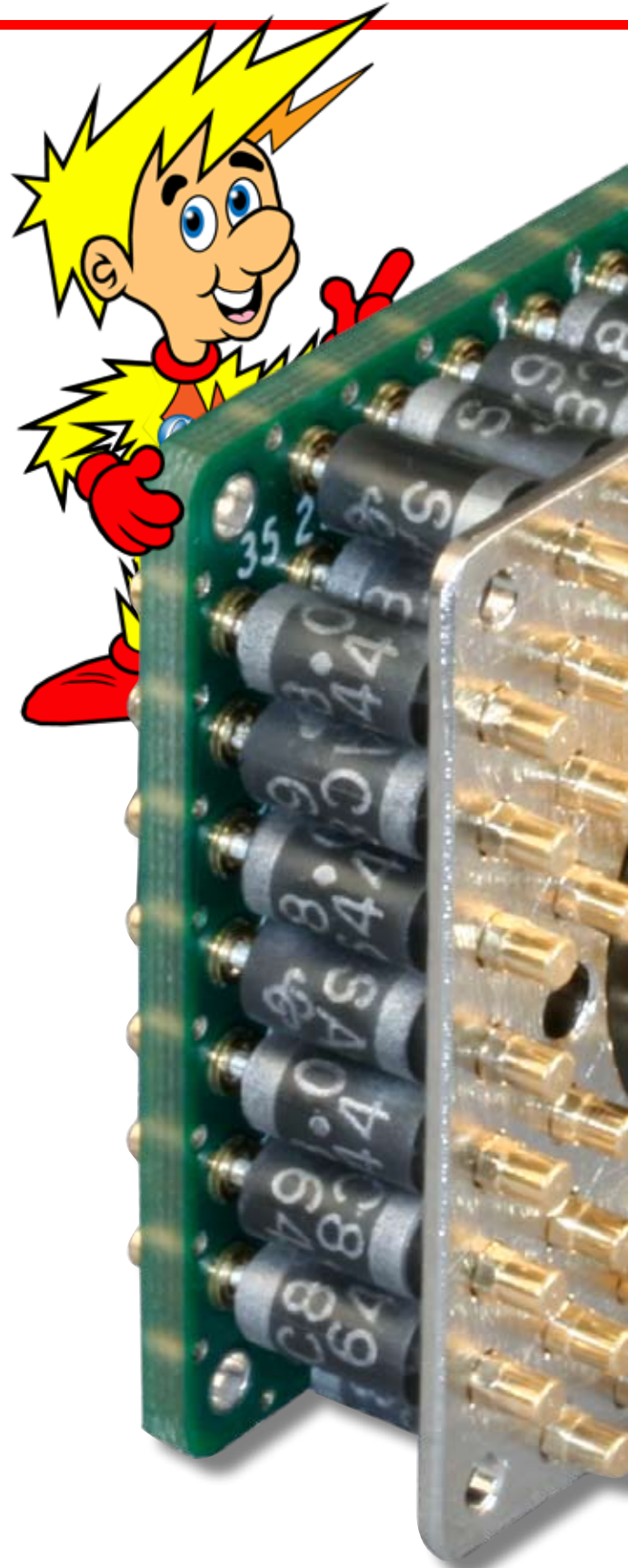
# Transient Voltage Suppression



Designers must protect systems from transient over-voltages as a result of nearby lightning strikes. Placing transient suppression diodes within the system—preferably inside a connector instead of some ad hoc location—is one of the most effective ways to protect electronic systems from lightning strikes and other sources of electromagnetic pulse.



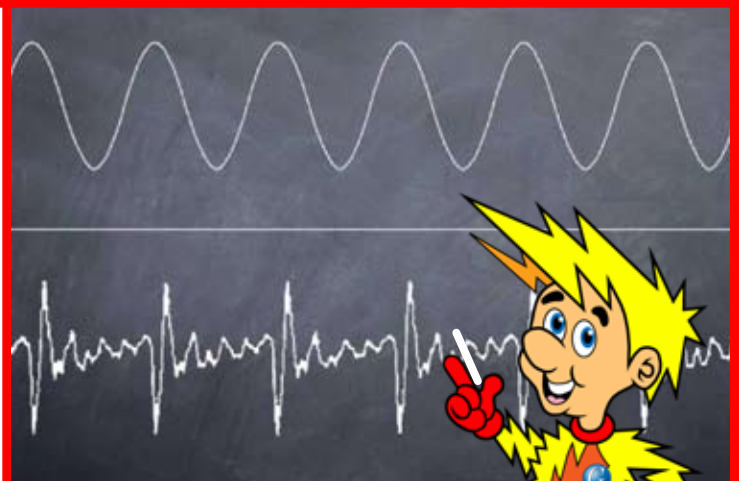
Diodes work something like a pressure valve on a home water heater—if the pressure within the chamber exceeds a certain value, the valve opens, allowing steam and liquid to escape. Similarly, diodes in electronic systems protect components within the circuit by shorting to ground transient spikes that exceed the diode's clamp voltage.



# Workshop with Serge Gigawatt



Since lightning strikes can be positively or negatively charged, special bi-directional diodes are available. If a system does not already have transient suppression diodes somewhere "in the box," Glenair can include diodes on EMI filtered or non-filtered connectors.



When specifying transient voltage suppression for a given lightning strike waveform (or "shape") and level (or magnitude), diodes must be compatible with EMI filter dielectric withstanding voltage (DWV) rating.



Diode power is rated in watts for a given pulse shape and pulse duration. Typically the reference values are given for a 10/1000 $\mu$ s pulse. This means that the diode can absorb the peak power rated for a pulse with 10 $\mu$ s rise time and 1000 $\mu$ s fall time. If the system is subjected to a different pulse shape or duration the value must be adjusted accordingly. The table on the following page does just that for RTCA DO/60 lightning strike.

For high speed applications, diode capacitance and trace inductance are critical. Glenair engineers will recommend a suitable design for each application. This may involve using extremely compact surface mount diodes within the pin field of the connector, as shown below.





## Introduction to Filter Connectors

### Transient Voltage Suppression

### Diode Selection Guide

A

#### Diode Power Selection for Lightning Strike Waveform Threats

| DO 160 Waveform                                    | Level | Open Circuit Voltage/<br>Short Circuit Current<br>V/A | Diode Peak<br>Voltage (V <sub>wm</sub> ) | Diode Clamp<br>Voltage (V <sub>c</sub> ) | Recommended<br>Diode Power<br>(Watts) |
|----------------------------------------------------|-------|-------------------------------------------------------|------------------------------------------|------------------------------------------|---------------------------------------|
| 1 MHz Damped<br>Ringing Sine<br><br>3              | 1     | 100/4                                                 | 5 to 60                                  | 9.2 to 96.8                              | 600                                   |
|                                                    | 2     | 250/10                                                | 5 to 150                                 | 9.2 to 243                               | 600                                   |
|                                                    | 3     | 600/24                                                | 5 to 170                                 | 9.2 to 275                               | 600                                   |
|                                                    | 4     | 1500/60                                               | 5 to 54                                  | 9.2 to 87.1                              | 600                                   |
|                                                    |       |                                                       | 58 to 150                                | 93.6 to 243                              | 1500                                  |
|                                                    |       |                                                       | 160 to 170                               | 259 to 275                               | 3000                                  |
|                                                    | 5     | 3200/128                                              | 5 to 22                                  | 9.2 to 35.5                              | 600                                   |
|                                                    |       |                                                       | 24 to 60                                 | 38.9 to 96.8                             | 1500                                  |
|                                                    |       |                                                       | 64 to 130                                | 103 to 209                               | 3000                                  |
|                                                    |       |                                                       | 150 to 170                               | 243 to 275                               | 5000                                  |
| Double Exponential<br>6.4 x 70 $\mu$ sec<br><br>4  | 1     | 50/10                                                 | 5 to 30                                  | 9.2 to 48.4                              | 600                                   |
|                                                    | 2     | 125/25                                                | 5 to 75                                  | 9.2 to 121                               | 600                                   |
|                                                    | 3     | 300/60                                                | 5 to 17                                  | 9.2 to 27.6                              | 600                                   |
|                                                    |       |                                                       | 18 to 26                                 | 29.2 to 42.1                             | 3000                                  |
|                                                    |       |                                                       | 28 to 110                                | 45.4 to 177                              | 5000                                  |
|                                                    |       |                                                       | 120 to 170                               | 193 to 275                               | 15000                                 |
|                                                    | 4     | 750/150                                               | 5 to 8.5                                 | 9.2 to 14.4                              | 3000                                  |
|                                                    |       |                                                       | 9 to 60                                  | 15.4 to 96.8                             | 5000                                  |
|                                                    |       |                                                       | 64 to 170                                | 103 to 275                               | 15000                                 |
|                                                    | 5     | 1600/320                                              | 5 to 24                                  | 9.2 to 38.9                              | 5000                                  |
|                                                    |       |                                                       | 26 to 78                                 | 42.1 to 126                              | 15000                                 |
| Double Exponential<br>40 x 120 $\mu$ sec<br><br>5A | 1     | 50/50                                                 | 5 to 30                                  | 9.2 to 48.4                              | 1500                                  |
|                                                    | 2     | 125/125                                               | 5 to 75                                  | 9.2 to 121                               | 3000                                  |
|                                                    | 3     | 300/300                                               | 5 to 15                                  | 9.2 to 24.4                              | 3000                                  |
|                                                    |       |                                                       | 17 to 170                                | 26.7 to 275                              | 15000                                 |
|                                                    |       |                                                       | 180                                      | 291                                      | 30000                                 |
|                                                    | 4     | 750/750                                               | 17 to 22                                 | 26.7 to 35.5                             | 15000                                 |
|                                                    |       |                                                       | 30 to 48                                 | 55.2 to 77.4                             | 30000                                 |
|                                                    | 5     | 1600/1600                                             | None                                     |                                          |                                       |



# Introduction to Filter Connectors

## Transient Voltage Suppression

### Diode Selection Guide



Tables for the selection of diodes and recommended DWV for a specified waveform voltage threat.

1. Determine the specification threat waveform and level.
2. Determine the maximum clamping voltage that the system can tolerate (this may be a different value for each pin of the connector).
3. Move down the table to the waveform and Voc/Isc (Open Circuit Voltage/ Short Circuit Current) that is covered in the specification.
4. Move across the table left to right and select the recommended diode power level.
5. If the application is a high frequency data line, a low capacitance diode will be needed. There is no difference in the power rating.
6. High speed data lines, Ethernet or USB, cannot tolerate much capacitance at all. These will need a special diode and no filter can be used.
7. If a filter is to be used in the application, consult EMI Filter Rating table (below) to determine the minimum DWV voltage needed to protect the selected filter capacitance.
8. The filter DWV rating applies with or without a diode.



**EMI Filter Rating in Dielectric Withstanding Voltage (DWV)  
For Compatibility with Transient Suppressing Diodes**

| DO 160<br>Waveform                               | Level | Waveform<br>(Voc) | Capacitance pF Minimum |       |      |      |      |      |      |
|--------------------------------------------------|-------|-------------------|------------------------|-------|------|------|------|------|------|
|                                                  |       |                   | 19000                  | 16000 | 9000 | 4000 | 1650 | 400  | 200  |
| 1 MHz<br>Damped<br>Ringing Sine<br><br>3         | 1     | 100               | 500                    | 500   | 500  | 500  | 500  | 500  | 500  |
|                                                  | 2     | 250               | 500                    | 500   | 500  | 500  | 500  | 500  | 500  |
|                                                  | 3     | 600               | 500                    | 500   | 500  | 670  | 720  | 720  | 720  |
|                                                  | 4     | 1500              | 740                    | 840   | 1210 | 1660 | 1800 | 1800 | 1800 |
|                                                  | 5     | 3200              | 1580                   | 1790  | 2580 | 3530 | 3840 | 3840 | 3840 |
| Double<br>Exponential<br>6.4 x70 µsec<br><br>4   | 1     | 50                | 500                    | 500   | 500  | 500  | 500  | 500  | 500  |
|                                                  | 2     | 125               | 500                    | 500   | 500  | 500  | 500  | 500  | 500  |
|                                                  | 3     | 300               | 500                    | 500   | 500  | 500  | 500  | 500  | 500  |
|                                                  | 4     | 750               | 820                    | 850   | 900  | 900  | 900  | 900  | 900  |
|                                                  | 5     | 1600              | 1920                   | 1920  | 1920 | 1920 | 1920 | 1920 | 1920 |
| Double<br>Exponential<br>40 x 120 µsec<br><br>5A | 1     | 50                | 500                    | 500   | 500  | 500  | 500  | 500  | 500  |
|                                                  | 2     | 125               | 500                    | 500   | 500  | 500  | 500  | 500  | 500  |
|                                                  | 3     | 300               | 500                    | 500   | 500  | 500  | 500  | 500  | 500  |
|                                                  | 4     | 750               | 900                    | 900   | 900  | 900  | 900  | 900  | 900  |
|                                                  | 5     | 1600              | 1920                   | 1920  | 1920 | 1920 | 1920 | 1920 | 1920 |

Recommended Dielectric Withstanding Voltage

## Introduction to Filter Connectors

### Insertion Loss and Capacitance Values

A

C



#### INSERTION LOSS

| Frequency      | Insertion Loss, dB Minimum, 25°C |    |    |    |    |    |    |    |    |    |
|----------------|----------------------------------|----|----|----|----|----|----|----|----|----|
|                | X                                | Y  | Z  | A  | B  | C  | D  | E  | F  | G  |
| 1 MHz          | 22                               | 16 | 13 | 6  | 5  | 3  | —  | —  | —  | —  |
| 10 MHz         | 41                               | 36 | 33 | 24 | 23 | 16 | 8  | 4  | —  | —  |
| 100 MHz        | 56                               | 53 | 52 | 41 | 39 | 35 | 28 | 21 | 10 | 5  |
| 500 - 1000 MHz | 60                               | 57 | 57 | 50 | 49 | 46 | 41 | 34 | 23 | 17 |

#### CAPACITANCE

| Filter Class | Capacitance         |
|--------------|---------------------|
| X            | 80000 – 120000 [pF] |
| Y            | 40000 – 60000 [pF]  |
| Z            | 30000 – 45000 [pF]  |
| A            | 19000 – 28000 [pF]  |
| B            | 16000 – 22500 [pF]  |
| C            | 9000 – 16500 [pF]   |
| D            | 4000 – 6000 [pF]    |
| E            | 1650 – 2500 [pF]    |
| F            | 400 – 650 [pF]      |
| G            | 200 – 300 [pF]      |

Pi



#### INSERTION LOSS

| Frequency      | Insertion Loss, dB Minimum, 25°C |     |     |    |    |    |    |    |    |     |
|----------------|----------------------------------|-----|-----|----|----|----|----|----|----|-----|
|                | X                                | Y   | Z   | A  | B  | C  | D  | E  | F  | G   |
| 1 MHz          | 23                               | 19  | 17  | 10 | 8  | 5  | 1  | —  | —  | —   |
| 10 MHz         | 70                               | 55  | 52  | 40 | 35 | 25 | 14 | 8  | 2  | 0.8 |
| 100 MHz        | 75+                              | 75+ | 75+ | 62 | 60 | 57 | 50 | 40 | 15 | 13  |
| 500 - 1000 MHz | 75+                              | 75+ | 75+ | 66 | 62 | 60 | 58 | 52 | 32 | 22  |

#### CAPACITANCE

| Filter Class | Capacitance            |
|--------------|------------------------|
| X            | 1600000 – 2400000 [pF] |
| Y            | 80000 – 120000 [pF]    |
| Z            | 60000 – 90000 [pF]     |
| A            | 38000 – 56000 [pF]     |
| B            | 32000 – 45000 [pF]     |
| C            | 18000 – 33000 [pF]     |
| D            | 8000 – 12000 [pF]      |
| E            | 3300 – 5000 [pF]       |
| F            | 800 – 1300 [pF]        |
| G            | 400 – 600 [pF]         |

#### APPLICATION NOTES

- Standard voltage rating is 500 V DWV.
- Insertion loss values quoted are for 50Ω impedance and no load condition.
- Classes X, Y and Z are 250 V DWV. Consult factory for additional information.
- Some shell configurations may require extra length for classes X, Y and Z.
- Other configurations available. Consult factory.

### Insertion Loss Evaluation

Insertion loss is an important specification to consider in the selection of filter connectors. Insertion loss is a measure of the degradation experienced by a signal when a device, such as a connector, is inserted into the transmission path.

When a filter element performs its job of stripping signal noise from a transmission line, it may attenuate a portion of the desired signal as well. Measured in decibels (dB), insertion loss should be minimized in sensitive electronic systems which may operate at extremely low current levels. Typically, some amount of insertion loss is considered acceptable to accomplish the necessary signal selectivity, since the signal can always be re-amplified post-filtering. However, in many applications, too large a loss may ultimately result in the unacceptable degradation of system performance.

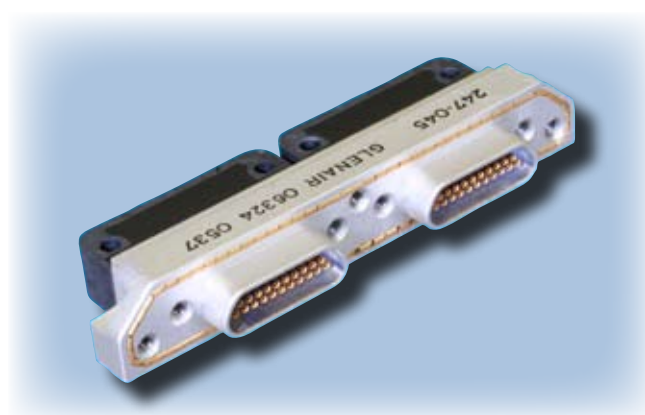
The evaluation of insertion loss is performed over a specific frequency range—i.e. a spectrum that extends from one limiting frequency to another. The intent being to measure signal degradation for each filter type across the actual operating frequencies of the equipment under consideration. Note that each filter type may yield different (theoretical and actual) insertion loss values depending on the specific capacitance and inductance [pF] ratings of the filter elements. Effective EMI/EMP filtering is, therefore, a balance between the purposeful attenuation of signal noise and the unfortunate degradation of signal strength—both conditions directly attributable to the insertion of the filter device into the system. Sensible EMC design should, as a consequence, always incorporate conventional grounding and shielding of interconnect cabling and equipment housings in anticipation of unexpected EMI problems. The tables on the opposite page explain predictable insertion loss [dB] for each filter type (C, L, and Pi), at the available capacitance ratings [pF] across a common frequency range [MHz].

### Custom Options in Filtered Connectors

Glenair filter connector designs may be optimized for use in a wide range of application environments including avionic systems, down-hole drilling and logging devices, naval and marine platforms, network-centric ground warfare systems, and missile and satellite/space applications. Common electrical customizations include unique capacitance values on individual lines, electrostatic discharge designs, transient voltage suppression diodes, grounded holes and feed-throughs, as well as the incorporation of customer-specified filter architectures including Pi, C, L-C, C-L and T configurations.

Mechanical packaging options in EMI/EMP filter connectors include:

- Hybrid Fiber Optic/Electrical Contacts
- Hermetic Sealing
- Dual-Flange PCB Mount Designs
- Composite Thermoplastic Shell Materials
- Variable Length PCB Tails
- Piggy-Back Crimp Contacts
- EMI Grounding Fingers and Gaskets
- In-Line, Feed-Through, Plug and Other Shell Styles



*Custom dual plan Micro-D filter connector with EMI gasket and right angle PCB mounting. Glenair can apply a broad range of custom shell configurations, filter values, TVS technologies—even hybrid fiber optic contacts—into any standard connector package.*





## Introduction to Filter Connectors

### Space Grade Applications, Soldering and Lightning Strike

# A

### Space Grade Applications

Nonmetallic materials such as rubber, plastic, adhesives and potting compounds can give off gasses when subjected to a vacuum or high heat. For space grade applications, Glenair is able to offer both both an 8 hour 400° bakeout process as well as a 24 hour 125° thermal vacuum outgassing process to insure our filter connector products do not give off gaseous molecules that might harm sensitive optical or electronic equipment.

The space industry has adopted a standardized test procedure, ASTM E 595, to evaluate outgassing properties of products that contain polymer materials. In the ASTM test, material samples are heated to 125° C at a vacuum of  $5 \times 10^{-5}$  torr for 24 hours. The test sample is then weighed to calculate the Total Mass Loss (TML), which may not exceed 1.00% of the total initial mass. Likewise the quantity of outgassed matter is weighed to determine the Collected Volatile Condensable Material (CVCM), which may not exceed 0.10% of the original specimen mass.

Glenair routinely performs both bakeout and thermal vacuum outgassing procedures on connector products that must conform to NASA screening or other outgassing standards. Our experience has been that the simpler bakeout process is more than adequate to meet the ASTM E 595 benchmark of 1.00% TML and 0.10% CVCM. Glenair is well versed in supplying filter connector products that are optimized for use in space grade applications, and we supply filter connectors compliant to EEE-INST-002, Table 2G, the recognized standard for spacegrade filter connectors.

### Soldering

Our filter connector engineers are frequently asked about any special handling procedures that are required when soldering PC Tail and Solder-cup contacts. At issue is the potential to damage filter elements due to the high heat of the soldering process. The short answer is that any trained and qualified operator can complete the operation without any special precautions.

While it certainly can't hurt to take some basic precautions such as preheating the connector or utilizing a heat sink on individual contacts, our tests have revealed that, under normal conditions, the temperature of the ceramic filter array is not radically raised during solder termination of the contacts. Even in tests where we used a solder iron temperature of 350°C and an extremely long 'touch time' of 90 seconds, no adverse effects were observed. In fact, temperature at the ceramic remained well below 100°C at all times.

***While special precautions are not required for soldering, filter connectors should be cleaned only in a mated condition. Use a metal protective cover to protect the filter connector's sensitive components from cleaning fluid. In addition, limit bakeout temperatures to +125 C.***

### Composite Connectors and Lightning Strike

Composite thermoplastic materials, such as the 30% glass filled polyetherimide (PEI) used in Glenair's MIL-DTL-38999 Series III Wall Mount Receptacle Connector (240-011) have been tested for mechanical and electrical survivability to direct and indirect lightning strike. At issue is the ability of the composite connector shell to maintain its electrical continuity in the event of an intense voltage surge resulting from lightning strike.

In testing in accordance with MIL-STD-1344, items are subjected to waveform 1 and 5B using a high current generator. Items must remain functional without degradation of the unit's electrical performance, including filtering elements and TVS diodes and modules. Waveform 1 and 5B are applied starting at 3kA increasing to 20kA checking continuity measurements at set intervals. Waveform 1 is additionally subjected to an oscillatory wave starting at 30kA and increasing in 10kA steps until failure in continuity is measured.

While larger composite connector shell sizes (12 to 24) conform to MIL-STD-1344, smaller sizes (8 and 10) fail the test. Customers should select alternative materials, aluminum or stainless steel, when specifying small connector shell sizes in applications subject to lightning strike.

**Absorption Loss:** That part of shielding effectiveness dealing with energy absorption through a metal barrier.

**Attenuation:** Reduction in the quality or magnitude of an electrical signal. Suppression of EMI noise in the interconnect transmission path.

**Aperture Leakage:** Compromise in shielding effectiveness from holes, slits, and slots from braid, windows, cooling openings, and joints of metal boxes where EMI can get in or out.

**Bandwidth:** The frequency interval between the upper and lower 3 dB down response of a receiver.

**Broadband EMI:** Electrical disturbances whose frequency spectrum cover several octaves or decades in the frequency spectrum or exceed the receiver bandwidth.

**Capacitance:** The measure or ability of a multilayer ceramic planar array to capture and store electrical energy.

**Common Mode (CM):** As applied to two or more wires, all currents flowing therein with the same polarity.

**Conducted Interference:** EMI transmitted along an unshielded conductor or cable.

**Coupling Path:** The conducted or radiated path by which interfering energy gets from a source to a victim.

**Cross Modulation:** Energy from one transmitter that causes the modulation to change on a received signal from another transmitter.

**Crosstalk:** Electromagnetic energy bleed across dielectric materials, for example, in twisted pair cable sets or across adjacent connector contacts, disrupting the electrical signals in each respective circuit.

**Differential Mode (DM):** Voltages or currents on a wire pair that are of opposite polarity.

**Dielectric Withstanding Voltage (DWV):** Rating, expressed in volts at a given frequency at ambient temperature defining the maximum voltage a dielectric material can withstand before failing.

**Drain:** path by which charges absorbed by a conductor move to ground in a properly grounded system.

**Electric Field:** A radiated wave's potential gradient in volts per meter (V/m).

**Electrical Gasket:** A compressible bond used between two mating metal members to secure a low-impedance path between them.

**EMC:** Electromagnetic compatibility, the conditions under which all components of a system do not interfere with each other or with their environment.

**EMI:** Electromagnetic interference (opposite of EMC). Electromagnetic disturbance that degrades performance of electronic equipment.

**EMP:** Electromagnetic pulse. A broadband, high-intensity, short-duration burst of electromagnetic energy such as might occur as a result of a nuclear explosion.

**ESD:** Electrostatic discharge. A momentary (and unwanted) discharge of built-up electrical energy, usually from an electrically insulated object to an object with a different electrical potential.

**Emission:** Unwanted electromagnetic signal emanating from a piece of equipment.

**Ferrite:** Powdered magnetic material in form of beads, rods, and rings used to absorb EMI on wires and cables.

**Field Strength:** Radiated voltage or current per meter corresponding to electric or magnetic fields.

**Filter:** A device to block the flow of EMI while passing the desired signal frequencies.

**Grounding:** A conductive path to earth designed to eliminate electrical shock by shunting away dangerous currents.

**Impulse Noise:** A transient electrical disturbance, usually repetitive.

**Inductors:** Used with capacitors to form tuned circuits to filter out specific signal frequencies.

**Magnetic Field:** A radiated wave's current gradient, expressed in amperes per meter (A/m).

**Multilayer Planar Array:** Multi-layer ceramic EMI filter device housed in a connector. The most widely applied type of EMI filter.

**Narrowband:** EMI Interference whose emission bandwidth is less than the bandwidth of the EMI measuring receiver or spectrum analyzer.



## Introduction to Filter Connectors EMI/EMP Glossary

### A

**Power Conditioning:** Reduction of EMI pollution on power mains by inserting filters, isolators, regulators, or an uninterruptible power supply (UPS).

**Radiated Interference:** EMI or noise transmitted from any electrical system, from power-lines to mobile telephones.

**Radio Frequency Interference (RFI):** A special class of electromagnetic interference in which radio frequency transmissions cause unintentional problems in equipment operation.

**Reflection Loss:** Shielding effectiveness due to energy reflection from impedance mismatch between incident field and metal barrier.

**Roll-Off:** The frequency in an attenuation curve at which a filter begins to reduce the quality or magnitude of an electrical signal.

**Shielding Effectiveness (SE):** The ratio of field strengths (absorption and reflection losses) before and after installing a shield.

**Shot Noise:** The noise caused by random fluctuations in the motion of charge carriers such as electrons in a conductor.

**Skin Depth:** The calculated metal layer thickness through which some 63 percent of the surface current flows.

**Surge:** A sudden voltage increase on the power mains.

**TEMPEST:** Transient Electromagnetic Pulse Surveillance Technology.

**Transfer Impedance ( $Z_t$ ):** The quality of cable shield performance calculated by the ratio of the coupled voltage to the surface current, in ohms per meter ( $\Omega/m$ ).

**Transient:** A short-duration voltage surge due to a lightning strike or other dynamic event.

**UPS:** Uninterruptible power supply.

**Waveform:** For lightning events, measure of electrical transient exposure level and surge severity.

### Filter Module Elements

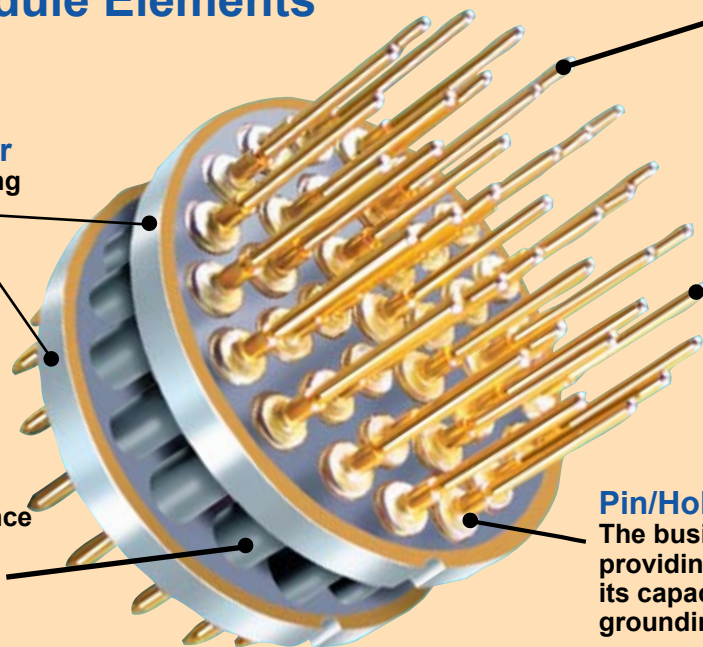
**Multilayer Ceramic Planar Array:** Containing a network of capacitors, feedthrus and ground lines.

**Inductors:** Ferrite Beads to provide inductance and increase insertion loss

**Contact Types:** Choose from Solder Cup, PC Tail or Piggy-Back Crimp (Consult Factory for PC Tail Length Options).

**Contact Material:** Gold Plated Copper Alloy.

**Pin/Hole Intersection:** The business-end of the filter, providing each contact with its capacitance value and grounding.





# Introduction to Filter Connectors

## RoHS Compliance and

### Preference for Domestic Specialty Metals Statement



#### Glenair Statement on RoHS Compliance

European Union Directive 2002/95/EC on Restriction of the use of certain Hazardous Substances ("RoHS") states that certain types of OEM equipment (primarily consumer electronic products such as personal computers) shall not contain lead, mercury, cadmium, hexavalent chromium, PBB's or PBDE's. For the record, Glenair does not produce any OEM products of this type. Furthermore, our interconnect components are either free of the substances RoHS controls, or specifically intended for use in military-aerospace applications that are exempt. Accordingly, Glenair will continue to offer cadmium and chromate finishes in accordance with DoD and aerospace specifications and as required by these customers. Makers of consumer products should refer to RoHS guidelines to insure interconnect components are correctly specified when used in in RoHS regulated electronic equipment. Consumer product manufacturers may also refer to the following table to insure any products they may specify from this catalog are equipped with RoHS compliant materials and finishes. Going forward, Glenair will gladly employ substitutes to current military-aerospace materials and finishes as they are proven reliable and as military standards permit.

| CONNECTOR AND BACKSHELL PLATING:<br>RoHS COMPLIANCE                                   |                                                                                     |                                                                                                                        |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Plating Type                                                                          | RoHS Compliance                                                                     | Notes                                                                                                                  |
| Cadmium with yellow or olive drab chromate conversion coating over electroless nickel | No                                                                                  | Electroless nickel is the preferred alternate.                                                                         |
| Electroless nickel                                                                    |  | First choice for RoHS compliance. Good corrosion resistance, excellent conductivity, M83513 approved, always in stock. |
| Stainless steel shell, passivated                                                     |  | Higher cost but unsurpassed corrosion resistance, not conductive enough for typical EMI needs. Build-to-order.         |
| Gold over aluminum                                                                    |  | Low volume, higher cost, excellent conductivity. Build-to-order.                                                       |
| Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer                                |  | Conductive, CAD-Free, 1000 hr. salt spray plating offers outstanding corrosion protection. MIL-DTL-38999 Rev. L        |
| Chem film                                                                             | No                                                                                  | Electroless nickel is the preferred alternate.                                                                         |

#### Preference for Domestic Specialty Metals Statement

For parts we make and sell, we comply with the Preference for Domestic Specialty Metals requirements (as modified by Alternate 1, Deviation 20008-00002) that, additionally, are required to meet US Military Specifications, Federal Specifications, or ASTM (or other industry) Specifications. Vendors certify (and are audited) to adherence with these requirements with each purchase order fulfilled. Glenair parts are in compliance with DFARS 252.225-7014, Alternate 1, Deviation 20008-00002, "Preference for Domestic Specialty Metals."

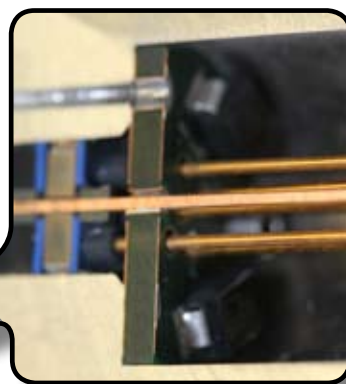
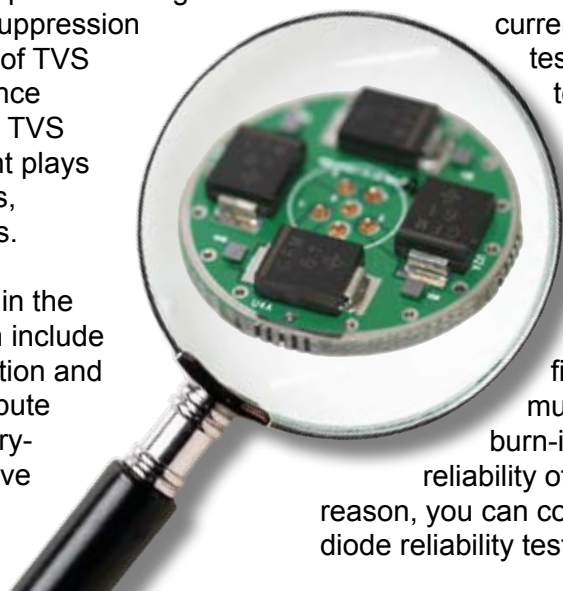


A

## Glenair Diode Burn-In Services: Fast, Reliable and Comprehensive

In addition to complete system design for EMI/RFI filtering applications and transient over-voltage suppression, Glenair offers in-house high temperature reverse bias (HTRB) diode burn-in services—a screening process designed to ensure Transient Voltage Suppression diode reliability. The reliability of TVS devices is of extreme importance due to the mission-critical role TVS protected electronic equipment plays in aerospace, communications, command and control systems. Failure of a diode is generally attributed to a physical defect in the part. Diode failure modes can include thermal fatigue, contact migration and other factors which can contribute to a short-circuit mode. Industry-standard qualification tests have been developed with stress levels matched to application

requirements. The HTRB test is used to monitor off-state leakage currents to reveal any failure modes prior to final assembly. In general, semiconductor manufacturers can take weeks to deliver tested diodes, whereas Glenair currently takes only days. Our test lab has the capabilities to test surface mount or leaded diodes. Leakage current is monitored throughout the burn-in process. Other labs may just take readings only before and after cycling, potentially missing weak diodes that could fail in the field. Glenair takes and records multiple reading throughout the burn-in process to ensure highest reliability of HTRB services. For this reason, you can count on Glenair for unparalleled diode reliability testing.



*Glenair's state-of-the-art diode burn in process tests leaded and surface mount diodes with leakage current monitored throughout the entire test procedure, ensuring field reliability.*

**Military Standard Type  
Circular Filtered Connectors**  
MIL-DTL-38999, MIL-DTL-26482, and MIL-DTL-83723



**PRODUCT FEATURES**

- All Filter Connector Styles Meet or Exceed Applicable Military Standards
- C and Pi Circuit Filters from 400 pF to 240,000 pF
- All Connector Series are Intermateable with Standard (Non-Filtered) Plugs and Connector Adapters
- Broadest Range of Insert Arrangements for MIL-DTL-38999 Series I, II, III and IV
- PC Tail, Solder Cup and Crimp-Contact Versions
- Space-Grade Bake-Out Processing Available
- Transient Voltage Suppression Diodes Available

## The Industry's Best Short Lead-Time Source for Planar Array Type EMI/EMP Filter Connectors

### Military Standard Type Series

Glenair's family of circular military standard type EMI/EMP filter connectors is designed to meet stringent military/aerospace performance requirements. Each connector series is offered with standard low-pass Pi or C filter arrays, or with customized filters to meet specific frequency and capacitance requirements. Thermally conductive epoxy protects the filter package from mechanical and heat stress and also provides a waterproof seal. All filtered receptacles are intermateable with standard plugs and connector savers, and each respective series of connectors is supplied with a range of shell styles in both environmental and hermetic configurations. Please see the "How to Order" page for available styles for each series:

|                               |      |                              |      |
|-------------------------------|------|------------------------------|------|
| MIL-DTL-38999 Series I.....   | B-2  | MIL-DTL-38999 Series IV..... | B-38 |
| MIL-DTL-38999 Series II.....  | B-12 | MIL-DTL-26482 Series II..... | B-44 |
| MIL-DTL-38999 Series III..... | B-20 | MIL-DTL-83723.....           | B-52 |

### MATERIAL AND FINISHES

|                                               |                                                                                                                                                                                                 |                                                                                   |  |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|
| Contacts                                      | Beryllium Copper Alloy, 50 μ Inch Gold Plated per ASTM B488 Type 3, Code C, Class 1,27 over Nickel Underplate per QQ-N-290 Class 2. Socket Contact Hood: Corrosion Resistant Steel, Passivated. |                                                                                   |  |
| Insulator                                     | Liquid Crystal Polymer (LCP) per MIL-M-24519 GLP-30F, 30% Glass-Filled                                                                                                                          |                                                                                   |  |
| Interfacial Seal, O-Ring, and Peripheral Seal | Flourosilicone Elastomer per A-A-59588, Color Blue                                                                                                                                              |                                                                                   |  |
| Shell, Jam Nut Material                       | Aluminum Alloy per ASTM B 211 or ASTM B 221 or Corrosion Resistant Steel per AMS-QQ-S-763                                                                                                       |                                                                                   |  |
| Shell and Jam Nut Finish                      | Code M:                                                                                                                                                                                         | Electroless Nickel per AMS-C-26074 (96 Hour Salt Spray)                           |  |
|                                               | Code NF:                                                                                                                                                                                        | Olive Drab Cadmium per AMS-QQ-P-416 over Electroless Nickel (500 Hour Salt Spray) |  |
|                                               | Code P:                                                                                                                                                                                         | Stainless Steel with Electro-Deposited Nickel                                     |  |
|                                               | Code MT:                                                                                                                                                                                        | Ni-PTFE 1000 Hour Grey™ (Nickel Fluorcarbon Polymer) per MIL-DTL-38999 Rev. L     |  |
| Potting Compound                              | Thermally Conductive Epoxy                                                                                                                                                                      |                                                                                   |  |





# Glenair MIL-DTL-38999 Series I Type Scoop-Proof Filter Connector with Bayonet Coupling

Master How to Order • Part Number Breakdown

B

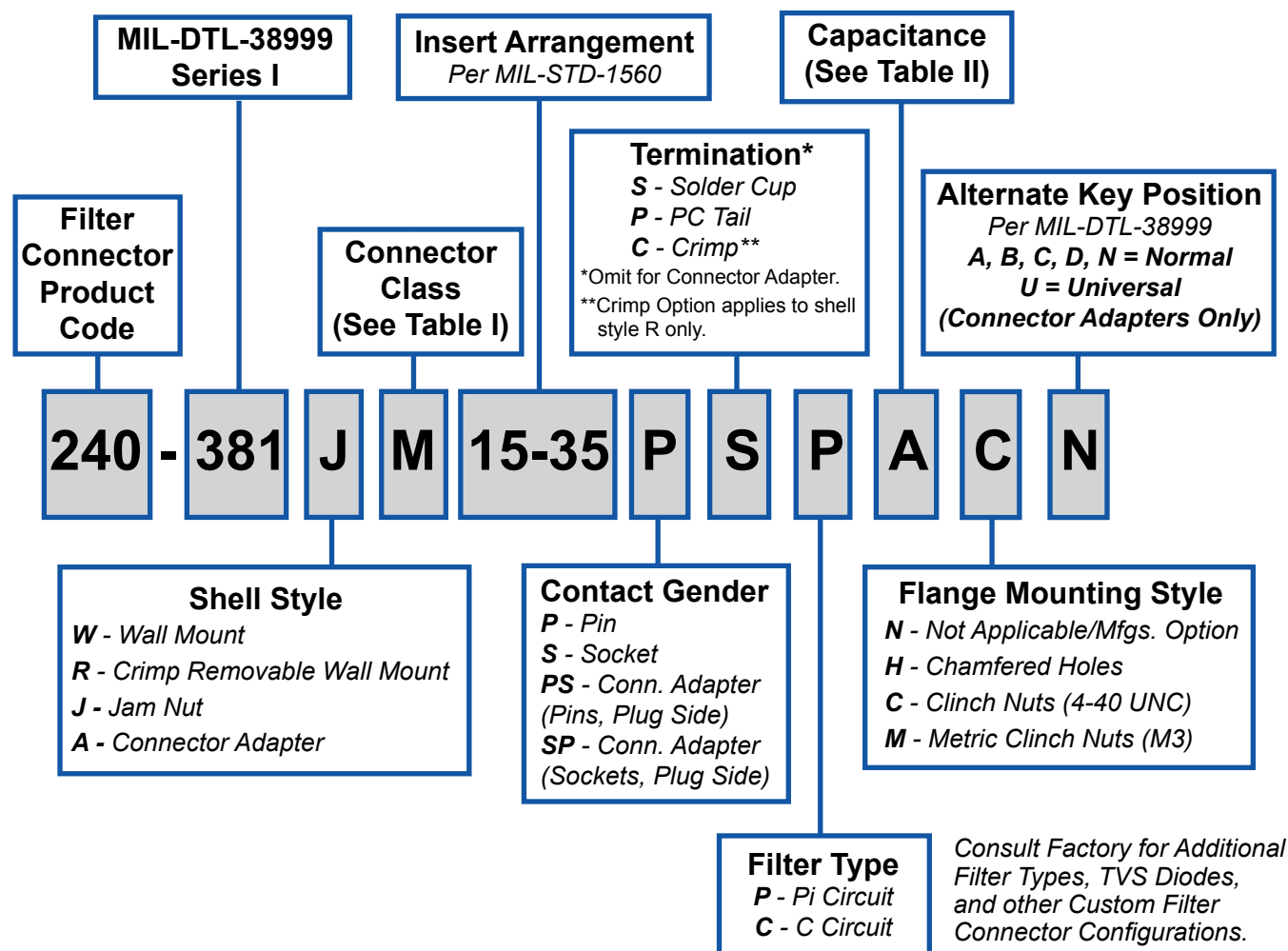


TABLE I: CONNECTOR CLASS

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |

TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE

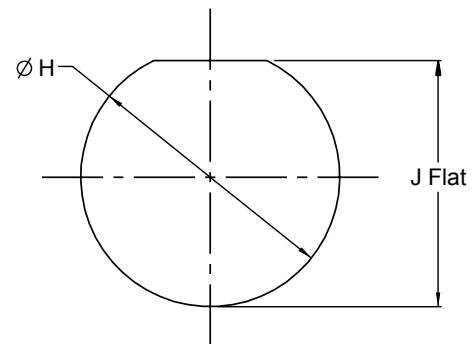
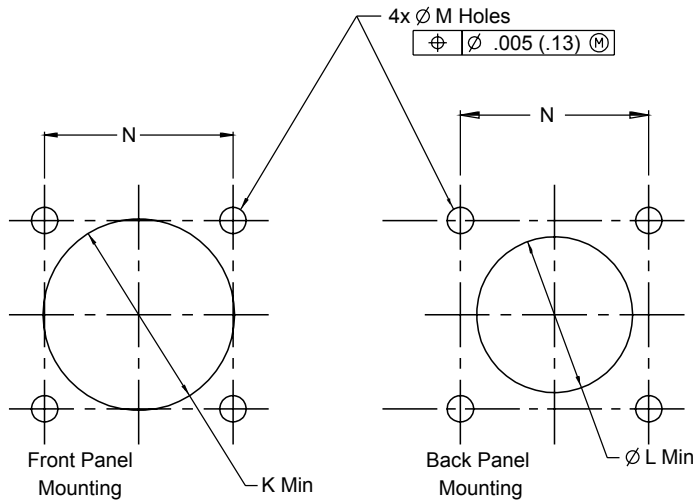
| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV - Please consult factory.

# Glenair MIL-DTL-38999 Series I Type Scoop-Proof Filter Connector with Bayonet Coupling Reference Information



MIL-DTL-38999  
Connectors



| MIL-DTL-38999 Series I<br>Square Flange Panel Cutouts |            |              |              |                          |              |
|-------------------------------------------------------|------------|--------------|--------------|--------------------------|--------------|
| Shell Size Code                                       | Shell Size | ø K Min      | ø L Min      | M Holes                  | N BSC        |
| A                                                     | 09         | .656 (16.7)  | .516 (13.1)  | .133 (3.4)<br>.123 (3.1) | .719 (18.3)  |
| B                                                     | 11         | .796 (20.2)  | .625 (15.9)  | .133 (3.4)<br>.123 (3.1) | .812 (20.6)  |
| C                                                     | 13         | .922 (23.4)  | .750 (19.1)  | .133 (3.4)<br>.123 (3.1) | .906 (23.0)  |
| D                                                     | 15         | 1.047 (26.6) | .906 (23.0)  | .133 (3.4)<br>.123 (3.1) | .969 (24.6)  |
| E                                                     | 17         | 1.219 (31.0) | 1.016 (25.8) | .133 (3.4)<br>.123 (3.1) | 1.062 (27.0) |
| F                                                     | 19         | 1.297 (32.9) | 1.141 (29.0) | .133 (3.4)<br>.123 (3.1) | 1.156 (29.4) |
| G                                                     | 21         | 1.422 (36.1) | 1.266 (32.2) | .133 (3.4)<br>.123 (3.1) | 1.250 (31.8) |
| H                                                     | 23         | 1.547 (39.3) | 1.375 (34.9) | .159 (4.0)<br>.149 (3.8) | 1.375 (34.9) |
| J                                                     | 25         | 1.672 (42.5) | 1.484 (37.7) | .155 (3.9)<br>.145 (3.7) | 1.500 (38.1) |

| MIL-DTL-38999 Series I<br>Jam Nut Panel Cutout |            |                              |                              |
|------------------------------------------------|------------|------------------------------|------------------------------|
| SHELL SIZE CODE                                | SHELL SIZE | ø H                          | J                            |
| A                                              | 09         | .710 (18.0)<br>.700 (17.8)   | .670 (17.0)<br>.660 (16.8)   |
| B                                              | 11         | .835 (21.2)<br>.825 (21.0)   | .771 (19.6)<br>.761 (19.3)   |
| C                                              | 13         | 1.020 (25.9)<br>1.010 (25.7) | .955 (24.3)<br>.945 (24.0)   |
| D                                              | 15         | 1.145 (29.1)<br>1.135 (28.8) | 1.085 (27.6)<br>1.075 (27.3) |
| E                                              | 17         | 1.270 (32.3)<br>1.260 (32.0) | 1.210 (30.7)<br>1.200 (30.5) |
| F                                              | 19         | 1.395 (35.4)<br>1.385 (35.2) | 1.335 (33.9)<br>1.325 (33.7) |
| G                                              | 21         | 1.520 (38.6)<br>1.510 (38.4) | 1.460 (37.1)<br>1.450 (36.8) |
| H                                              | 23         | 1.645 (41.8)<br>1.635 (41.5) | 1.585 (40.3)<br>1.575 (40.0) |
| J                                              | 25         | 1.770 (45.0)<br>1.760 (44.7) | 1.710 (43.4)<br>1.700 (43.2) |

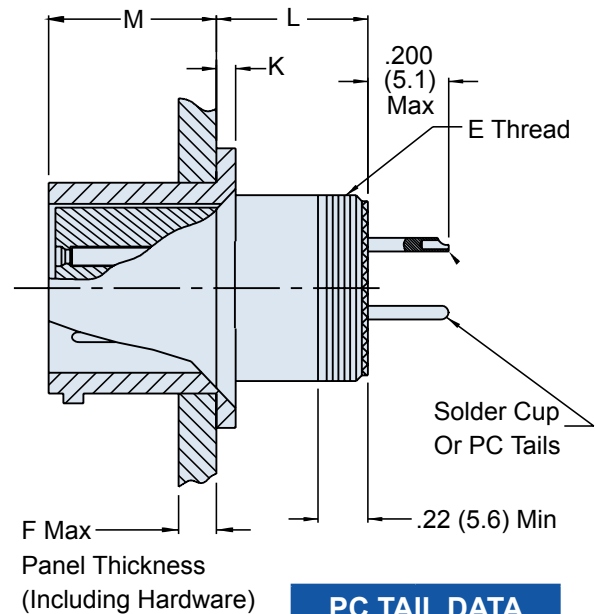
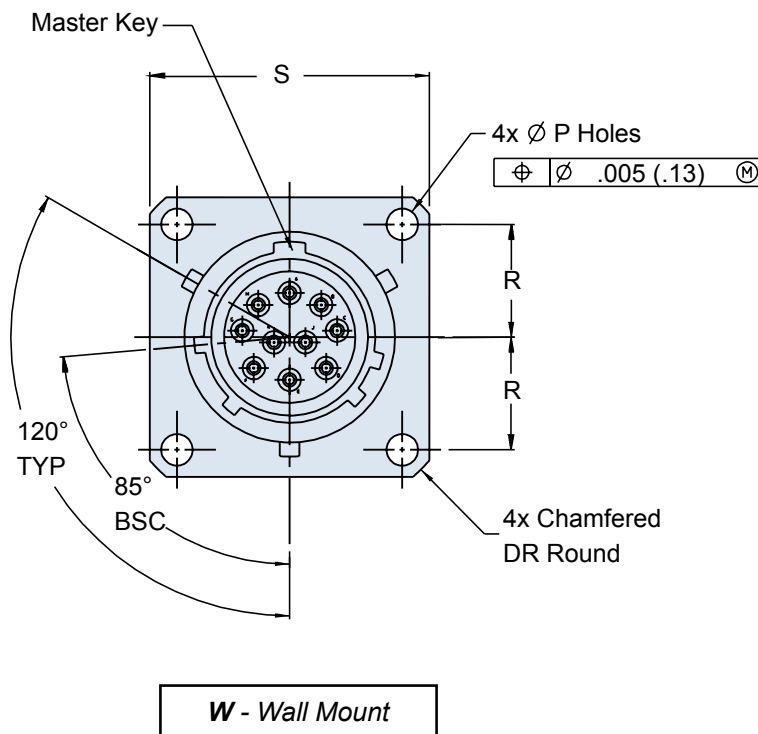
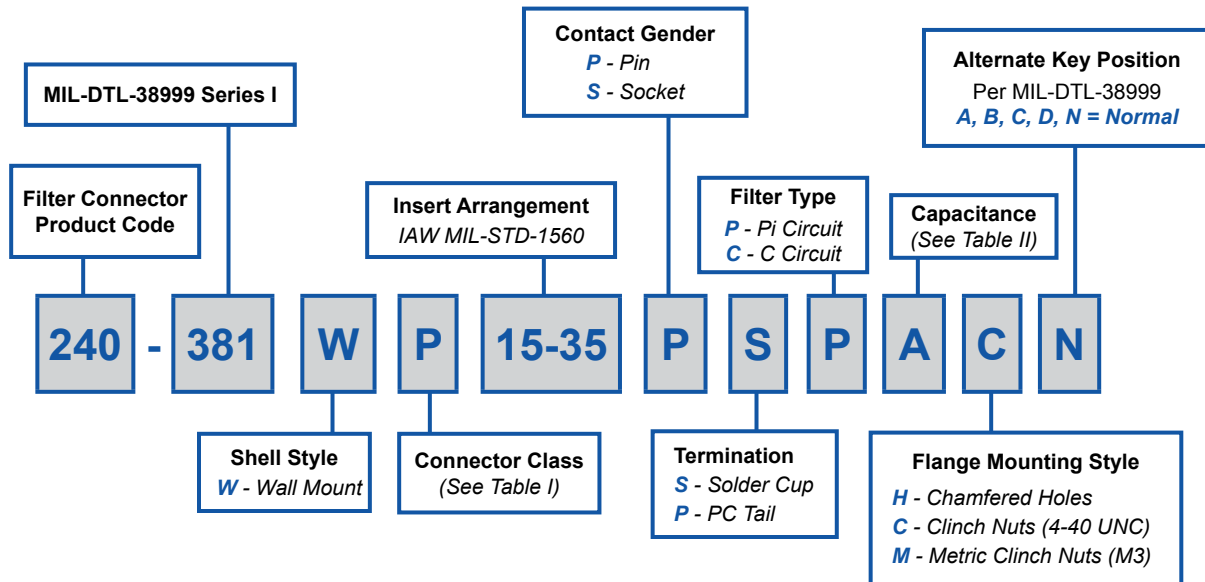
## APPLICATION NOTES

- Materials/Finishes: Shells, Barrel, Coupling Nut, Jam Nut - See Table I  
Insulators - high grade rigid dielectric/N.A.  
Seals - Fluorosilicone  
PC Tail & Solder Cup contacts: 50µ" Gold over 50µ" Nickel
- Assembly to be identified with Glenair's name, part number, and date code - space permitting.
- Insert Arrangement in accordance with MIL-STD-1560.  
(Arrangement shown for reference only)
- EMI Circular Filter Receptacle connector designed to meet requirements of MIL-STD-2120 and MIL-DTL-38999, Series I.
- All contacts to have identical filter value. Other filter arrangements available, contact factory.
- Electrical Ratings: DWV- 500 VDC Min.; Standard Operating Voltage 200 Volts DC; Current Rating 5 Amps (size 22);
- Insulation Resistance: 5000 MegOhms Min. at 200 VDC.
- Operating Temperature -55°C to +125°C (Env Class Connectors)
- Other filter styles (C-L, L-C, Unbalanced PI, Multi-Stage, Multi-Value) are available, please consult the factory.
- Metric Dimensions (mm) are indicated in parentheses.



# 240-381W MIL-DTL-38999 Series I Type Filter Connector Wall Mount Receptacle

B



| PC TAIL DATA |              |
|--------------|--------------|
| Contact Size | PC Tail Ø    |
| 22D          | .020<br>.018 |
| 20           | .024<br>.029 |
| 16           | .038<br>.042 |



# 240-381W

## MIL-DTL-38999 Series I Type Filter Connector

### Wall Mount Receptacle

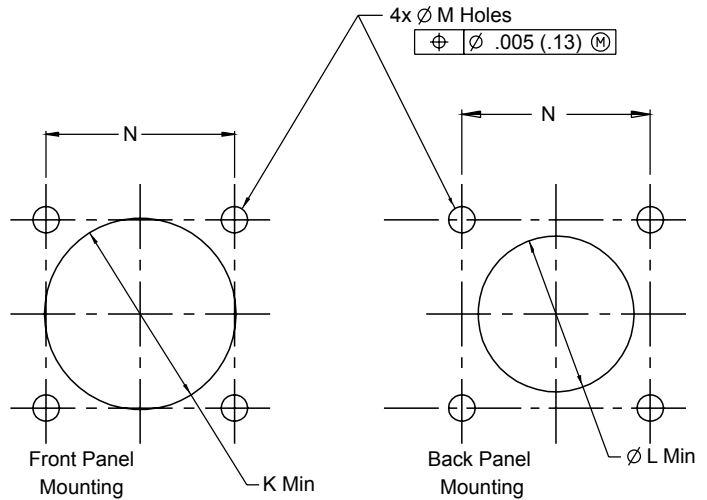


MIL-DTL-38999  
Connectors

B

**MIL-DTL-38999 Series I  
Square Flange Panel Cutouts**

| Shell Size Code | Shell Size | Ø K Min      | Ø L Min      | M Holes                  | N BSC        |
|-----------------|------------|--------------|--------------|--------------------------|--------------|
| A               | 09         | .656 (16.7)  | .516 (13.1)  | .133 (3.4)<br>.123 (3.1) | .719 (18.3)  |
| B               | 11         | .796 (20.2)  | .625 (15.9)  | .133 (3.4)<br>.123 (3.1) | .812 (20.6)  |
| C               | 13         | .922 (23.4)  | .750 (19.1)  | .133 (3.4)<br>.123 (3.1) | .906 (23.0)  |
| D               | 15         | 1.047 (26.6) | .906 (23.0)  | .133 (3.4)<br>.123 (3.1) | .969 (24.6)  |
| E               | 17         | 1.219 (31.0) | 1.016 (25.8) | .133 (3.4)<br>.123 (3.1) | 1.062 (27.0) |
| F               | 19         | 1.297 (32.9) | 1.141 (29.0) | .133 (3.4)<br>.123 (3.1) | 1.156 (29.4) |
| G               | 21         | 1.422 (36.1) | 1.266 (32.2) | .133 (3.4)<br>.123 (3.1) | 1.250 (31.8) |
| H               | 23         | 1.547 (39.3) | 1.375 (34.9) | .159 (4.0)<br>.149 (3.8) | 1.375 (34.9) |
| J               | 25         | 1.672 (42.5) | 1.484 (37.7) | .155 (3.9)<br>.145 (3.7) | 1.500 (38.1) |



**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |

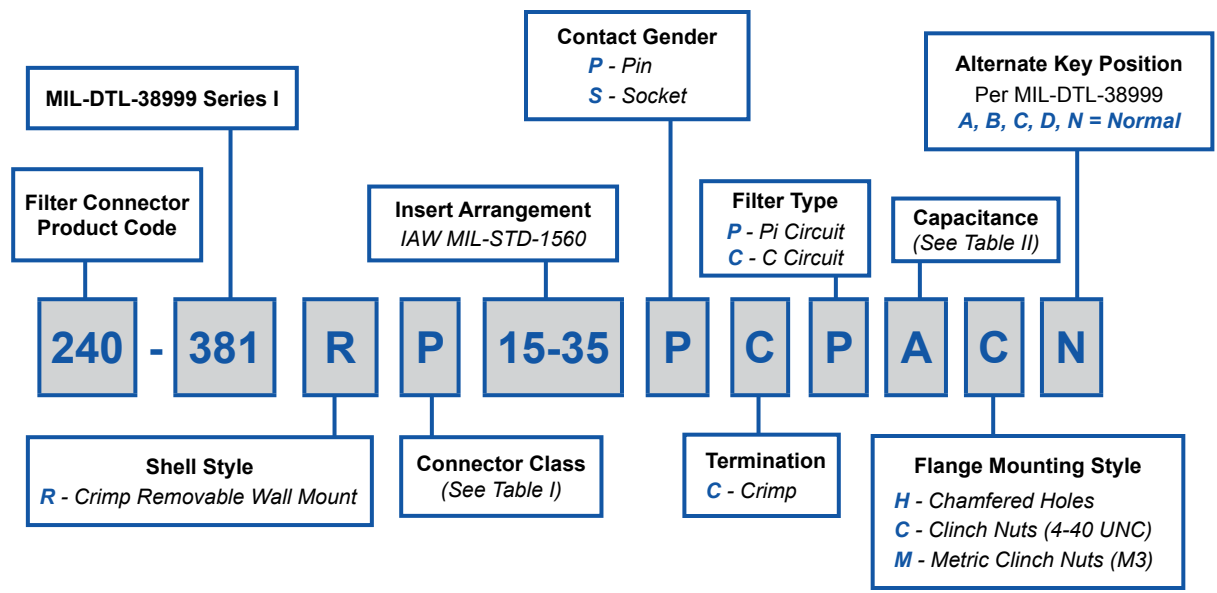
**DIMENSIONS**

| SHELL SIZE | E THREADS         | F MAX      | K<br>+ .015 (.4)<br>- .000 (0) | L MAX       | M<br>+ .000 (0)<br>- .005 (.13) | Ø P<br>+ .010 (.3)<br>- .005 (.13) | R<br>BSC     | S<br>+/- .020 (5.1) |
|------------|-------------------|------------|--------------------------------|-------------|---------------------------------|------------------------------------|--------------|---------------------|
| 9          | .6875-24 UNEF-2A  | .234 (5.9) | .085 (2.2)                     | .469 (11.9) | .820 (20.8)                     | .128 (3.3)                         | .3595 (9.1)  | .938 (23.8)         |
| 11         | .8125-20 UNEF-2A  | .234 (5.9) | .085 (2.2)                     | .469 (11.9) | .820 (20.8)                     | .128 (3.3)                         | .406 (10.3)  | 1.031 (26.2)        |
| 13         | .9375-20 UNEF-2A  | .234 (5.9) | .085 (2.2)                     | .469 (11.9) | .820 (20.8)                     | .128 (3.3)                         | .453 (11.5)  | 1.125 (28.6)        |
| 15         | 1.0625-18 UNEF-2A | .234 (5.9) | .085 (2.2)                     | .469 (11.9) | .820 (20.8)                     | .128 (3.3)                         | .4845 (12.3) | 1.219 (31.0)        |
| 17         | 1.1875-18 UNEF-2A | .234 (5.9) | .085 (2.2)                     | .469 (11.9) | .820 (20.8)                     | .128 (3.3)                         | .531 (13.5)  | 1.312 (33.3)        |
| 19         | 1.3125-18 UNEF-2A | .234 (5.9) | .085 (2.2)                     | .469 (11.9) | .820 (20.8)                     | .128 (3.3)                         | .578 (14.7)  | 1.438 (36.5)        |
| 21         | 1.4375-10 UNEF-2A | .204 (5.2) | .115 (2.9)                     | .500 (12.7) | .820 (20.8)                     | .128 (3.3)                         | .625 (15.9)  | 1.562 (39.7)        |
| 23         | 1.5625-18 UNEF-2A | .204 (5.2) | .115 (2.9)                     | .500 (12.7) | .790 (20.1)                     | .147 (3.7)                         | .6875 (17.5) | 1.688 (42.9)        |
| 25         | 1.6875-18 UNEF-2A | .193 (4.9) | .115 (2.9)                     | .500 (12.7) | .790 (20.1)                     | .147 (3.7)                         | .750 (19.1)  | 1.688 (42.9)        |

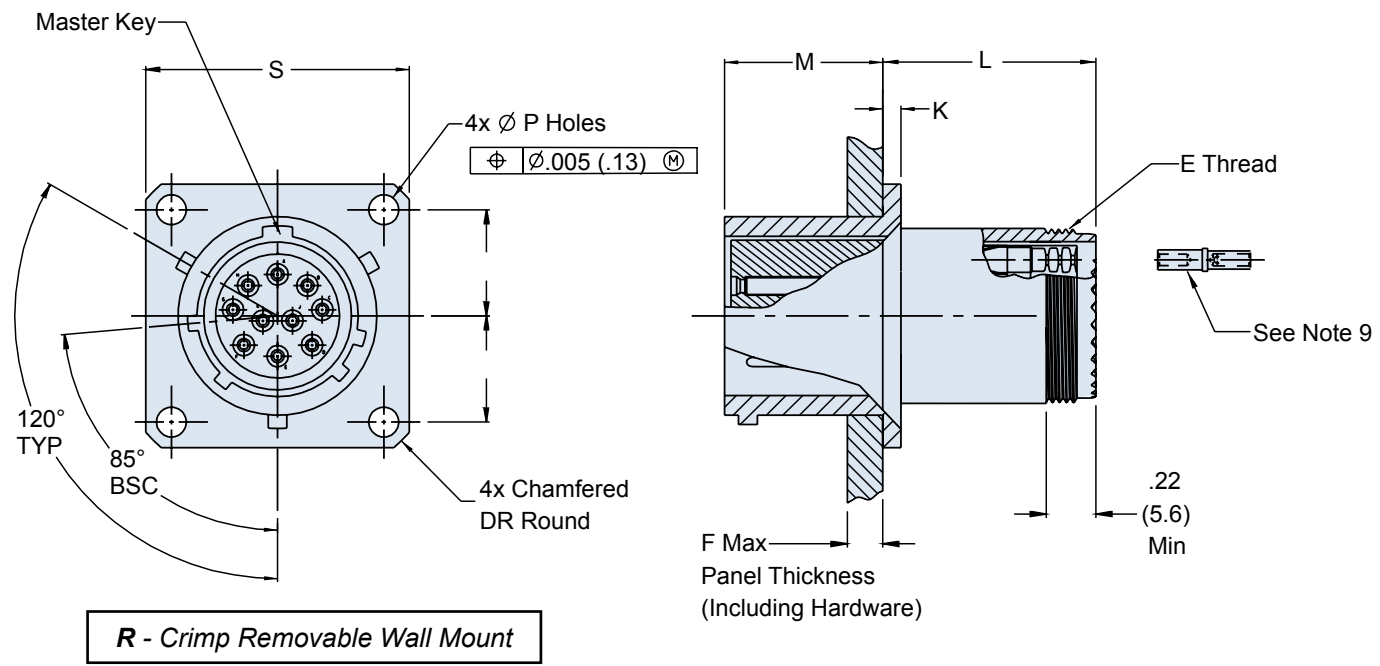


# 240-381R MIL-DTL-38999 Series I Type Filter Connector Wall Mount Receptacle with Crimp Removable Contacts

B



**NOTE:** Crimp removable contacts to conform to MIL-C-39029/57-358, Size 16, MIL-C-39029/57-357 Size 20, and MIL-C-39029/57-354 Size 22D (Supplied loose).



**240-381R**  
**MIL-DTL-38999 Series I Type Filter Connector**  
**Wall Mount Receptacle**  
**with Crimp Removable Contacts**

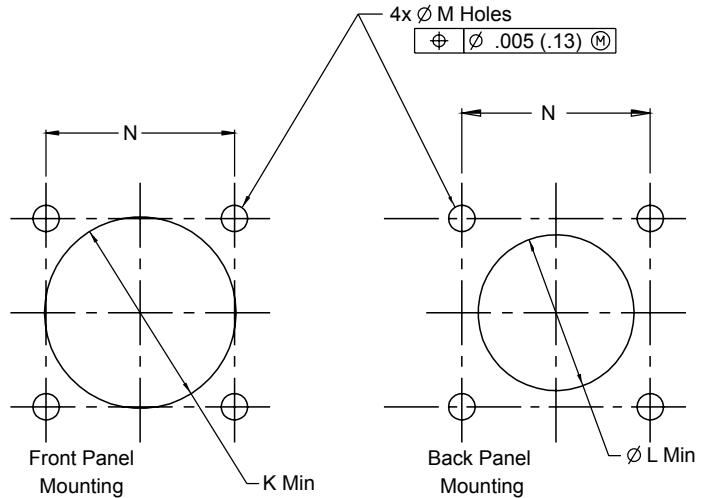


MIL-DTL-38999  
Connectors

**B**

**MIL-DTL-38999 Series I**  
**Square Flange Panel Cutouts**

| Shell Size Code | Shell Size | Ø K Min      | Ø L Min      | M Holes                  | N BSC        |
|-----------------|------------|--------------|--------------|--------------------------|--------------|
| A               | 09         | .656 (16.7)  | .516 (13.1)  | .133 (3.4)<br>.123 (3.1) | .719 (18.3)  |
| B               | 11         | .796 (20.2)  | .625 (15.9)  | .133 (3.4)<br>.123 (3.1) | .812 (20.6)  |
| C               | 13         | .922 (23.4)  | .750 (19.1)  | .133 (3.4)<br>.123 (3.1) | .906 (23.0)  |
| D               | 15         | 1.047 (26.6) | .906 (23.0)  | .133 (3.4)<br>.123 (3.1) | .969 (24.6)  |
| E               | 17         | 1.219 (31.0) | 1.016 (25.8) | .133 (3.4)<br>.123 (3.1) | 1.062 (27.0) |
| F               | 19         | 1.297 (32.9) | 1.141 (29.0) | .133 (3.4)<br>.123 (3.1) | 1.156 (29.4) |
| G               | 21         | 1.422 (36.1) | 1.266 (32.2) | .133 (3.4)<br>.123 (3.1) | 1.250 (31.8) |
| H               | 23         | 1.547 (39.3) | 1.375 (34.9) | .159 (4.0)<br>.149 (3.8) | 1.375 (34.9) |
| J               | 25         | 1.672 (42.5) | 1.484 (37.7) | .155 (3.9)<br>.145 (3.7) | 1.500 (38.1) |



**TABLE II: CAPACITOR ARRAY CODE**  
**CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |

**DIMENSIONS**

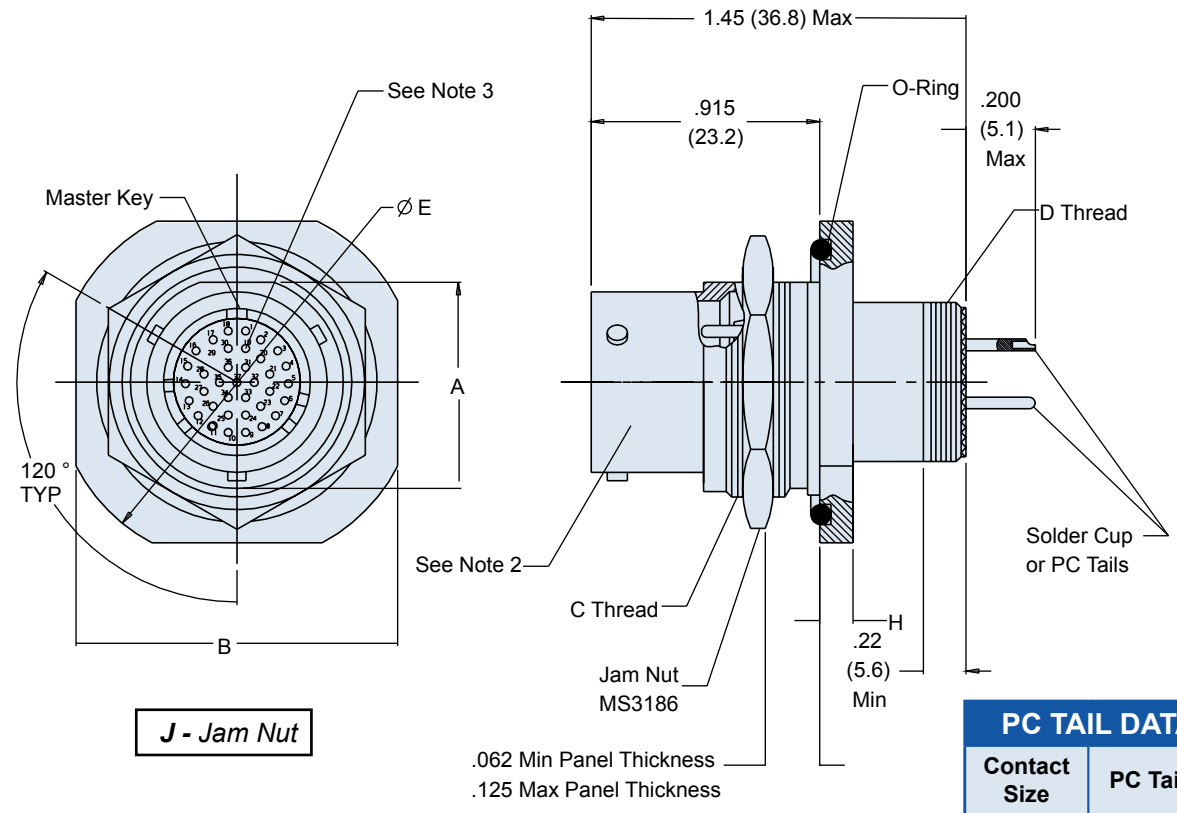
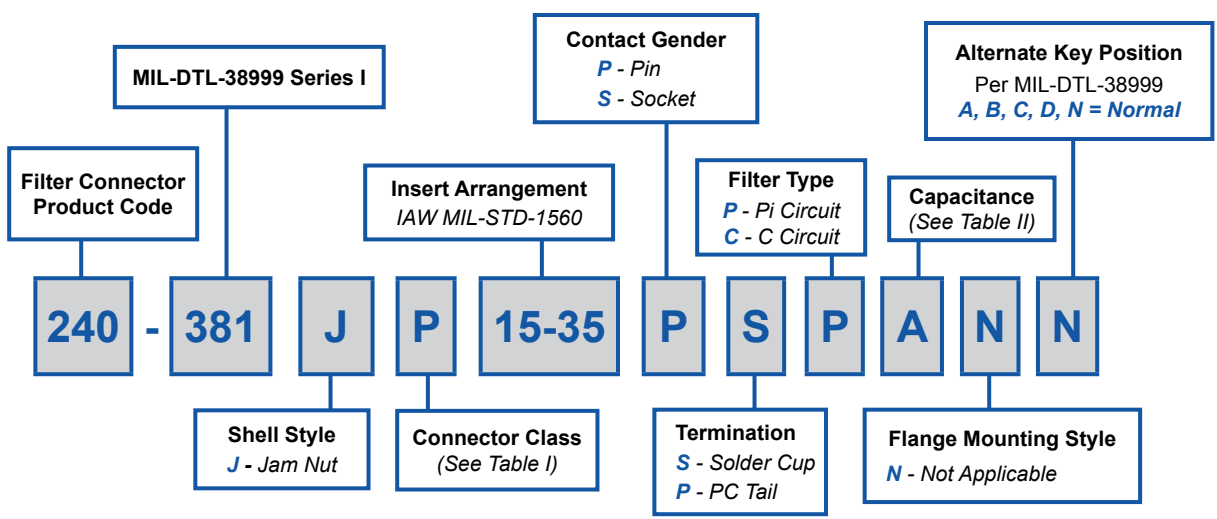
| SHELL SIZE | E THREADS         | F MAX      | K<br>+ .015 (.4)<br>- .000 (0) | L MAX         | M<br>+ .000 (0)<br>- .005 (.13) | Ø P<br>+ .010 (.3)<br>- .005 (.13) | R<br>BSC     | S<br>+/- .020 (5.1) |
|------------|-------------------|------------|--------------------------------|---------------|---------------------------------|------------------------------------|--------------|---------------------|
| 9          | .6875-24 UNEF-2A  | .234 (5.9) | .085 (2.2)                     | 1.170 (29.7)  | .820 (20.8)                     | .128 (3.3)                         | .3595 (9.1)  | .938 (23.8)         |
| 11         | .8125-20 UNEF-2A  | .234 (5.9) | .085 (2.2)                     | 1.170 (29.7)  | .820 (20.8)                     | .128 (3.3)                         | .406 (10.3)  | 1.031 (26.2)        |
| 13         | .9375-20 UNEF-2A  | .234 (5.9) | .085 (2.2)                     | 1.170 (29.7)  | .820 (20.8)                     | .128 (3.3)                         | .453 (11.5)  | 1.125 (28.6)        |
| 15         | 1.0625-18 UNEF-2A | .234 (5.9) | .085 (2.2)                     | 1.170 (29.7)  | .820 (20.8)                     | .128 (3.3)                         | .4845 (12.3) | 1.219 (31.0)        |
| 17         | 1.1875-18 UNEF-2A | .234 (5.9) | .085 (2.2)                     | 1.170 (29.7)  | .820 (20.8)                     | .128 (3.3)                         | .531 (13.5)  | 1.312 (33.3)        |
| 19         | 1.3125-18 UNEF-2A | .234 (5.9) | .085 (2.2)                     | 1.170 (29.7)  | .820 (20.8)                     | .128 (3.3)                         | .578 (14.7)  | 1.438 (36.5)        |
| 21         | 1.4375-10 UNEF-2A | .204 (5.2) | .115 (2.9)                     | 1.200 (30.48) | .820 (20.8)                     | .128 (3.3)                         | .625 (15.9)  | 1.562 (39.7)        |
| 23         | 1.5625-18 UNEF-2A | .204 (5.2) | .115 (2.9)                     | 1.200 (30.48) | .790 (20.1)                     | .147 (3.7)                         | .6875 (17.5) | 1.688 (42.9)        |
| 25         | 1.6875-18 UNEF-2A | .193 (4.9) | .115 (2.9)                     | 1.200 (30.48) | .790 (20.1)                     | .147 (3.7)                         | .750 (19.1)  | 1.688 (42.9)        |





# 240-381J MIL-DTL-38999 Series I Type Filter Connector Jam Nut Receptacle

B



J - Jam Nut

| PC TAIL DATA |              |
|--------------|--------------|
| Contact Size | PC Tail Ø    |
| 22D          | .020<br>.018 |
| 20           | .024<br>.029 |
| 16           | .038<br>.042 |

# 240-381J

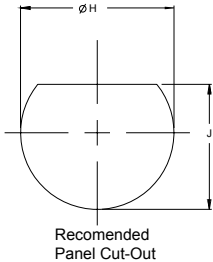
## MIL-DTL-38999 Series I Type Filter Connector

### Jam Nut Receptacle



MIL-DTL-38999  
Connectors

B



**TABLE II: CAPACITOR ARRAY CODE CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV - Please consult factory.

**MIL-DTL-38999 Series I  
Jam Nut Panel Cutout**

| SHELL SIZE CODE | SHELL SIZE | Ø H                          | J                            |
|-----------------|------------|------------------------------|------------------------------|
| A               | 09         | .710 (18.0)<br>.700 (17.8)   | .670 (17.0)<br>.660 (16.8)   |
| B               | 11         | .835 (21.2)<br>.825 (21.0)   | .771 (19.6)<br>.761 (19.3)   |
| C               | 13         | 1.020 (25.9)<br>1.010 (25.7) | .955 (24.3)<br>.945 (24.0)   |
| D               | 15         | 1.145 (29.1)<br>1.135 (28.8) | 1.085 (27.6)<br>1.075 (27.3) |
| E               | 17         | 1.270 (32.3)<br>1.260 (32.0) | 1.210 (30.7)<br>1.200 (30.5) |
| F               | 19         | 1.395 (35.4)<br>1.385 (35.2) | 1.335 (33.9)<br>1.325 (33.7) |
| G               | 21         | 1.520 (38.6)<br>1.510 (38.4) | 1.460 (37.1)<br>1.450 (36.8) |
| H               | 23         | 1.645 (41.8)<br>1.635 (41.5) | 1.585 (40.3)<br>1.575 (40.0) |
| J               | 25         | 1.770 (45.0)<br>1.760 (44.7) | 1.710 (43.4)<br>1.700 (43.2) |

**TABLE I: CONNECTOR CLASS**

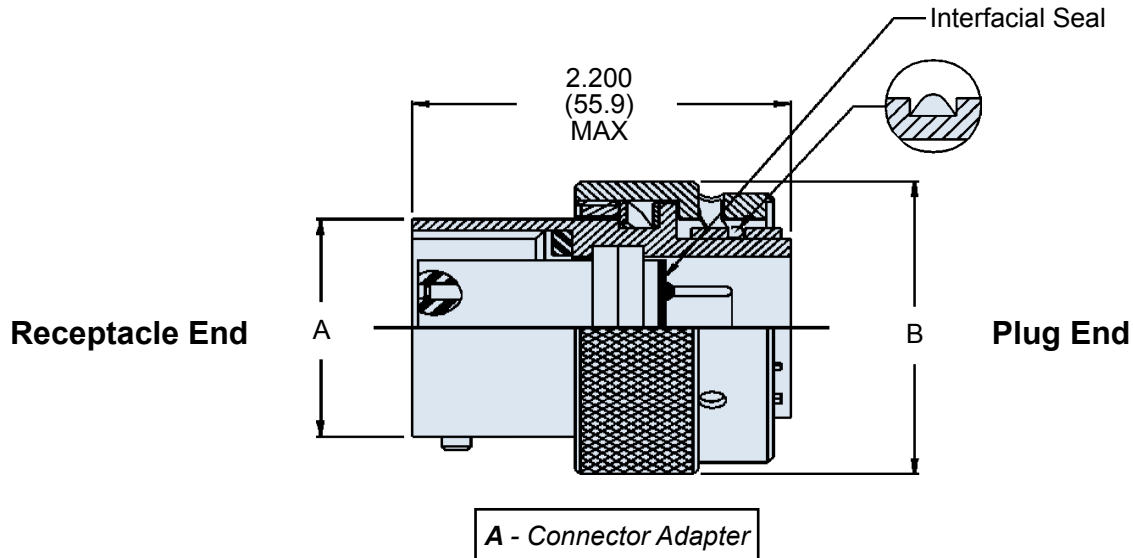
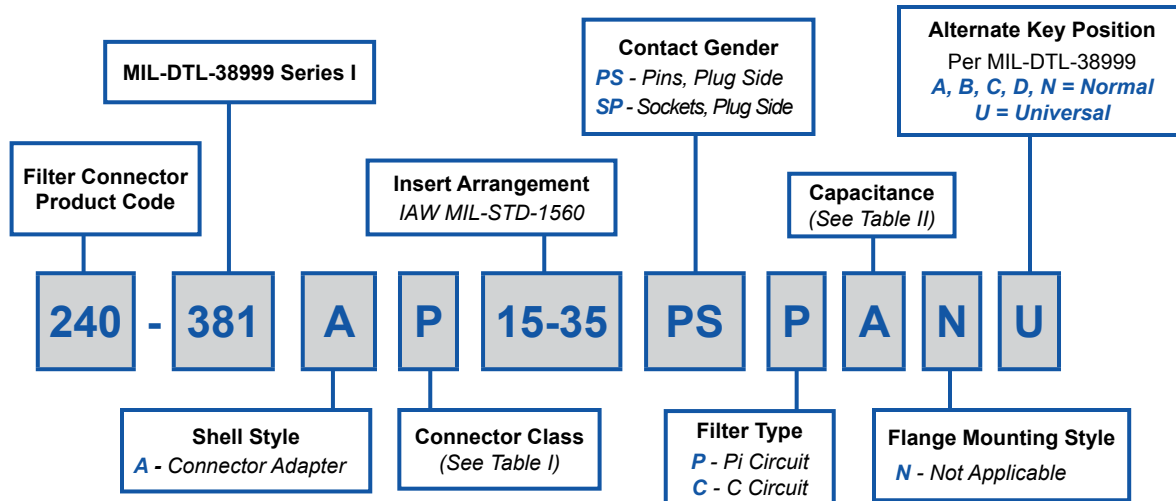
| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |

**DIMENSIONS**

| SHELL SIZE | A                            | B                            | C THREAD CLASS 2A UNEF PLATED | D THREAD CLASS 2A UNEF PLATED | E DIA        | F                            | G DIA                        | H                        |
|------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--------------|------------------------------|------------------------------|--------------------------|
| 9          | .855 (21.7)<br>.645 (16.4)   | 1.078 (27.4)<br>1.046 (26.6) | .6875-24                      | .4375-28                      | 1.188 (30.2) | .670 (17.0)<br>.661 (16.8)   | .709 (18.0)<br>.700 (17.8)   | .120 (3.0)<br>.100 (2.5) |
| 11         | .755 (19.2)<br>.745 (18.9)   | 1.266 (32.2)<br>1.234 (31.3) | .8125-20                      | .5625-24                      | 1.375 (34.9) | .771 (19.6)<br>.762 (19.4)   | .834 (21.2)<br>.825 (21.0)   | .120 (3.0)<br>.100 (2.5) |
| 13         | .942 (23.9)<br>.932 (23.7)   | 1.391 (35.3)<br>1.359 (34.5) | 1.0000-20                     | .8875-24                      | 1.500 (38.1) | .955 (24.3)<br>.946 (24.0)   | 1.019 (25.9)<br>1.010 (25.7) | .120 (3.0)<br>.100 (2.5) |
| 15         | 1.066 (27.1)<br>1.056 (26.8) | 1.516 (38.5)<br>1.484 (37.7) | 1.1250-18                     | .8125-20                      | 1.625 (41.3) | 1.085 (27.6)<br>1.076 (27.3) | 1.144 (29.1)<br>1.135 (28.8) | .120 (3.0)<br>.100 (2.5) |
| 17         | 1.191 (30.3)<br>1.181 (30.0) | 1.641 (41.7)<br>1.609 (40.9) | 1.2500-18                     | .9375-20                      | 1.750 (44.5) | 1.210 (30.7)<br>1.201 (30.5) | 1.269 (32.2)<br>1.260 (32.0) | .120 (3.0)<br>.100 (2.5) |
| 19         | 1.316 (33.4)<br>1.306 (33.2) | 1.828 (46.4)<br>1.796 (45.6) | 1.3750-18                     | 1.0625-18                     | 1.938 (49.2) | 1.335 (33.9)<br>1.326 (33.7) | 1.394 (35.4)<br>1.385 (35.2) | .151 (3.8)<br>.130 (3.3) |
| 21         | 1.441 (36.6)<br>1.431 (36.3) | 1.954 (49.6)<br>1.922 (48.8) | 1.5000-18                     | 1.1875-18                     | 2.062 (52.4) | 1.460 (37.1)<br>1.451 (36.9) | 1.519 (38.6)<br>1.510 (38.4) | .151 (3.8)<br>.130 (3.3) |
| 23         | 1.566 (39.8)<br>1.556 (39.5) | 2.078 (52.8)<br>2.046 (52.0) | 1.6250-18                     | 1.3125-18                     | 2.188 (55.6) | 1.585 (40.3)<br>1.578 (40.1) | 1.644 (41.8)<br>1.635 (41.5) | .151 (3.8)<br>.130 (3.3) |
| 25         | 1.691 (43.0)<br>1.681 (42.7) | 2.204 (56.0)<br>2.172 (55.2) | 1.7500-18                     | 1.4375-18                     | 2.312 (58.7) | 1.710 (43.4)<br>1.701 (43.2) | 1.769 (44.9)<br>1.760 (44.7) | .151 (3.8)<br>.130 (3.3) |



# 240-381A MIL-DTL-38999 Series I Filter Connector Connector Adapter



\* Please consult factory for Pin/Pin and/or Socket/Socket contact arrangements.

# 240-381A MIL-DTL-38999 Series I Filter Connector Connector Adapter



MIL-DTL-38999  
Connectors

B

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                      |
|-----|---------------|-----------------|---------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                      |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer) |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                    |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                                |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                     |

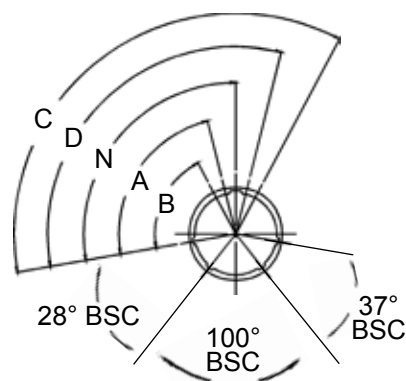
**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

**SHELL DIAMETER**

| Shell Size | A Max        | B Max        |
|------------|--------------|--------------|
| 09         | .573 (14.6)  | .910 (23.1)  |
| 11         | .701 (17.8)  | 1.035 (26.3) |
| 13         | .851 (21.6)  | 1.210 (30.7) |
| 15         | .976 (24.8)  | 1.330 (33.8) |
| 17         | 1.101 (28.0) | 1.455 (37.0) |
| 19         | 1.208 (30.7) | 1.570 (39.9) |
| 21         | 1.333 (33.9) | 1.695 (43.1) |
| 23         | 1.458 (37.0) | 1.800 (45.7) |
| 25         | 1.583 (40.2) | 1.925 (48.9) |



**MASTER KEY POSITION**

| NORMAL | A°  | B°  | C°   | D°   |
|--------|-----|-----|------|------|
| 100°   | 79° | 66° | 134° | 121° |





# Glenair MIL-DTL-38999 Series II Type Low-Profile Filter Connector with Bayonet Coupling

Master How to Order • Part Number Breakdown

B

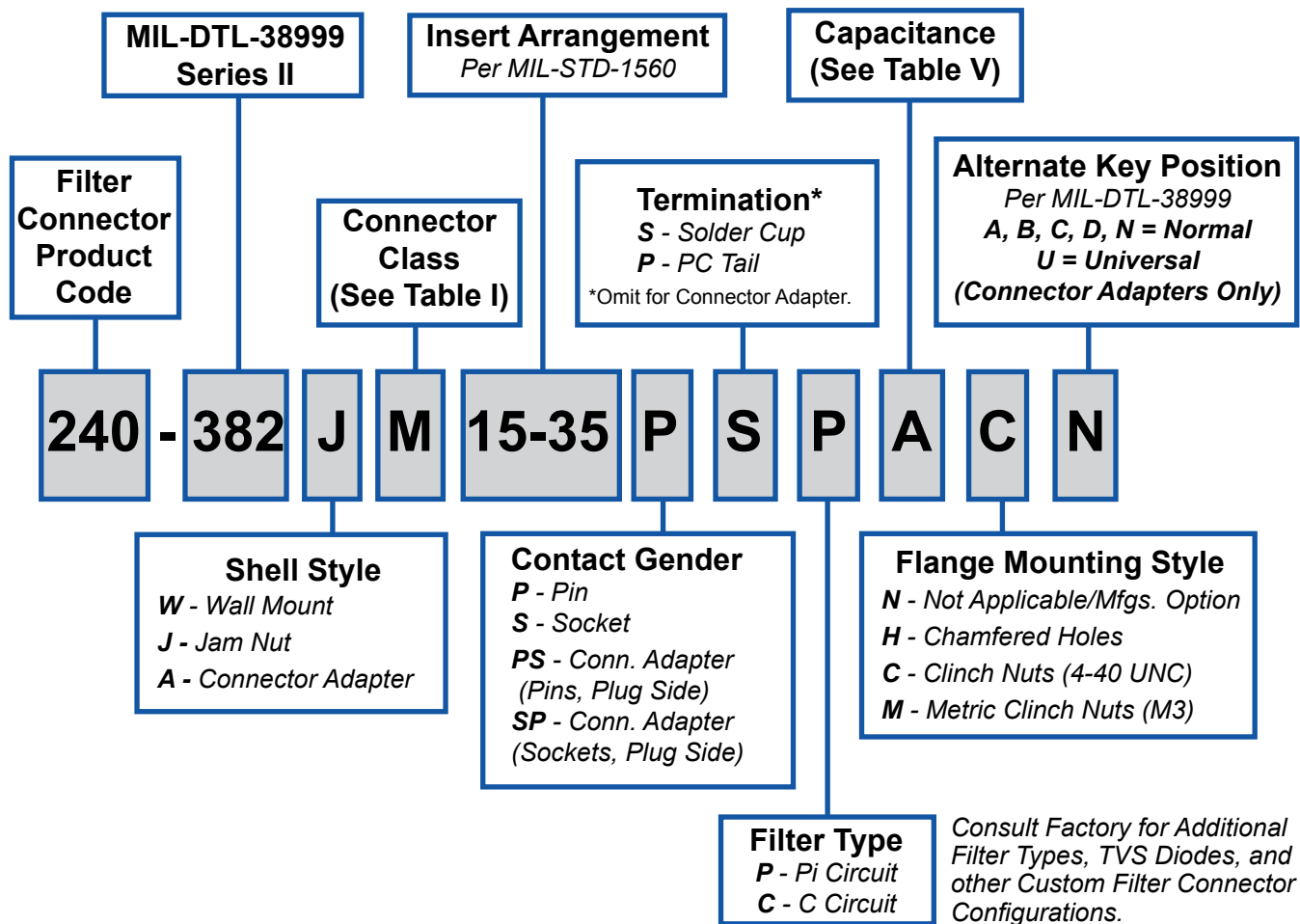


TABLE I: CONNECTOR CLASS

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                                     |

TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

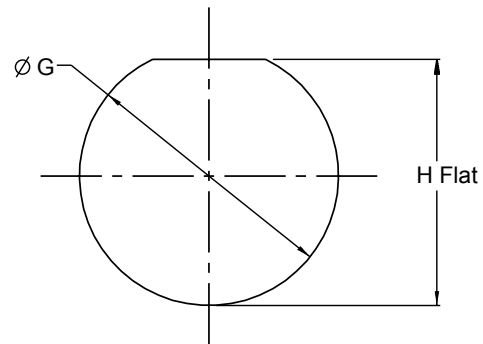
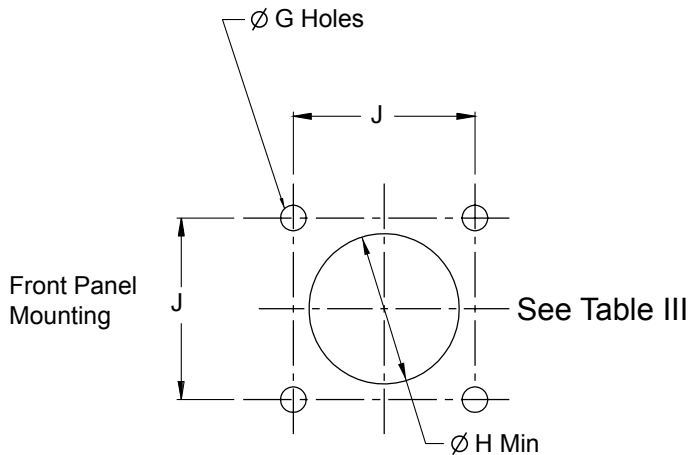
\* Reduced DWV - Please consult factory.

# Glenair MIL-DTL-38999 Series II Type Low-Profile Filter Connector with Bayonet Coupling Reference Information



MIL-DTL-38999  
Connectors

B



**TABLE III: SQUARE FLANGE  
PANEL CUT-OUTS**

| Shell Size | Ø G Holes  | Ø H Min | Ø J BSC |
|------------|------------|---------|---------|
| 8          | .133 (3.4) | .570    | .594    |
|            | .123 (3.1) | (14.5)  | (15.1)  |
| 10         | .133 (3.4) | .690    | .719    |
|            | .123 (3.1) | (17.5)  | (18.3)  |
| 12         | .133 (3.4) | .820    | .812    |
|            | .123 (3.1) | (20.8)  | (20.6)  |
| 14         | .133 (3.4) | .940    | .906    |
|            | .123 (3.1) | (23.9)  | (23.0)  |
| 16         | .133 (3.4) | 1.070   | .969    |
|            | .123 (3.1) | (27.2)  | (24.6)  |
| 18         | .133 (3.4) | 1.190   | 1.062   |
|            | .123 (3.1) | (30.2)  | (27.0)  |
| 20         | .133 (3.4) | 1.320   | 1.156   |
|            | .123 (3.1) | (33.5)  | (29.4)  |
| 22         | .159 (4.0) | 1.440   | 1.250   |
|            | .149 (3.8) | (36.6)  | (31.8)  |
| 24         | .159 (4.0) | 1.570   | 1.375   |
|            | .149 (3.8) | (39.9)  | (34.9)  |

**PANEL IV: JAM-NUT  
PANEL CUT-OUTS**

| SHELL SIZE | Ø G          | H Flat       |
|------------|--------------|--------------|
| 08         | .894 (22.7)  | .833 (21.2)  |
|            | .884 (22.5)  | .823 (20.9)  |
| 10         | 1.020 (25.9) | .957 (24.3)  |
|            | 1.010 (25.7) | .947 (24.1)  |
| 12         | 1.144 (29.1) | 1.081 (27.5) |
|            | 1.134 (28.8) | 1.071 (27.2) |
| 14         | 1.269 (32.2) | 1.206 (30.6) |
|            | 1.259 (32.0) | 1.196 (30.4) |
| 16         | 1.394 (35.4) | 1.336 (33.9) |
|            | 1.384 (35.2) | 1.326 (33.7) |
| 18         | 1.520 (38.6) | 1.456 (37.0) |
|            | 1.510 (38.4) | 1.446 (36.7) |
| 20         | 1.645 (41.8) | 1.581 (40.2) |
|            | 1.635 (41.5) | 1.571 (39.9) |
| 22         | 1.750 (44.5) | 1.706 (43.3) |
|            | 1.740 (44.2) | 1.696 (43.1) |
| 24         | 1.895 (48.1) | 1.831 (46.5) |
|            | 1.885 (47.9) | 1.821 (46.3) |

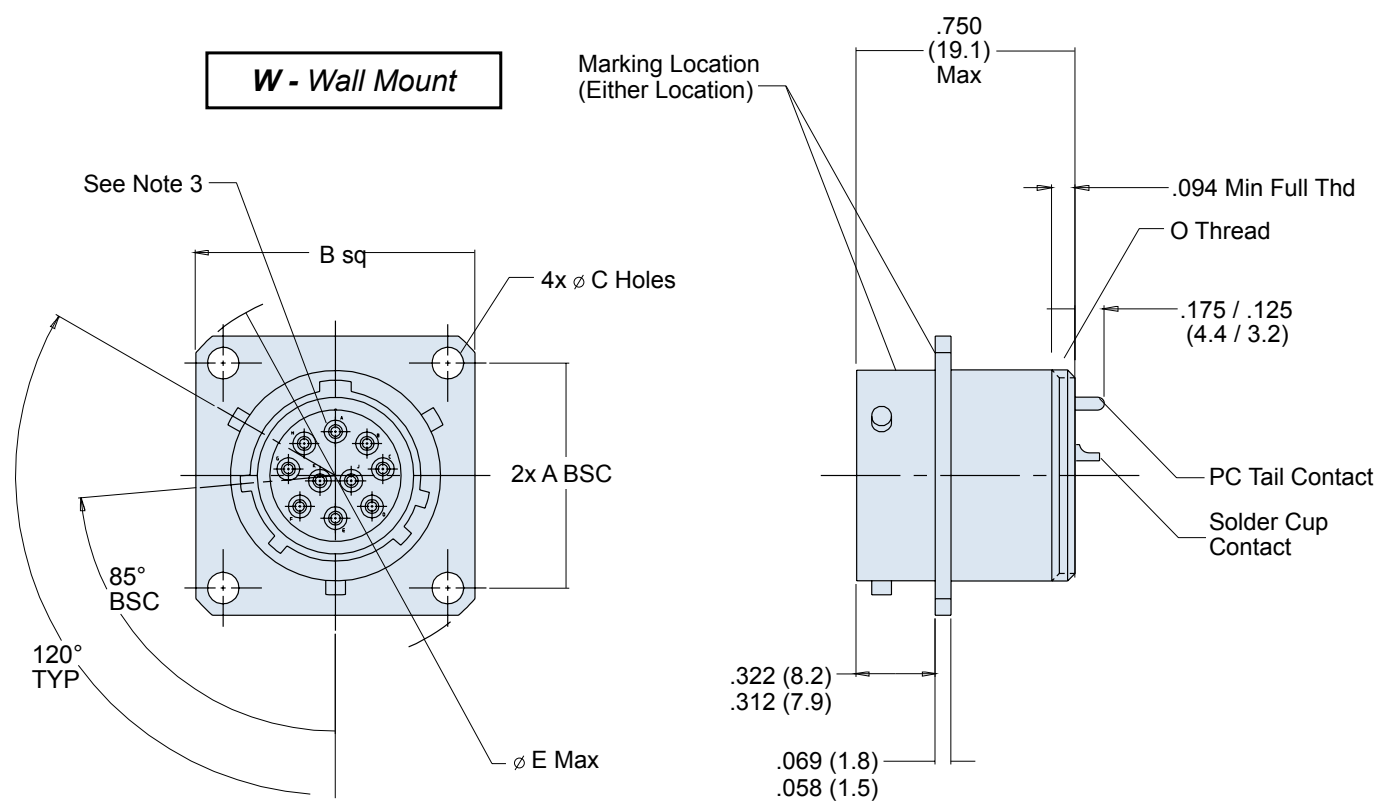
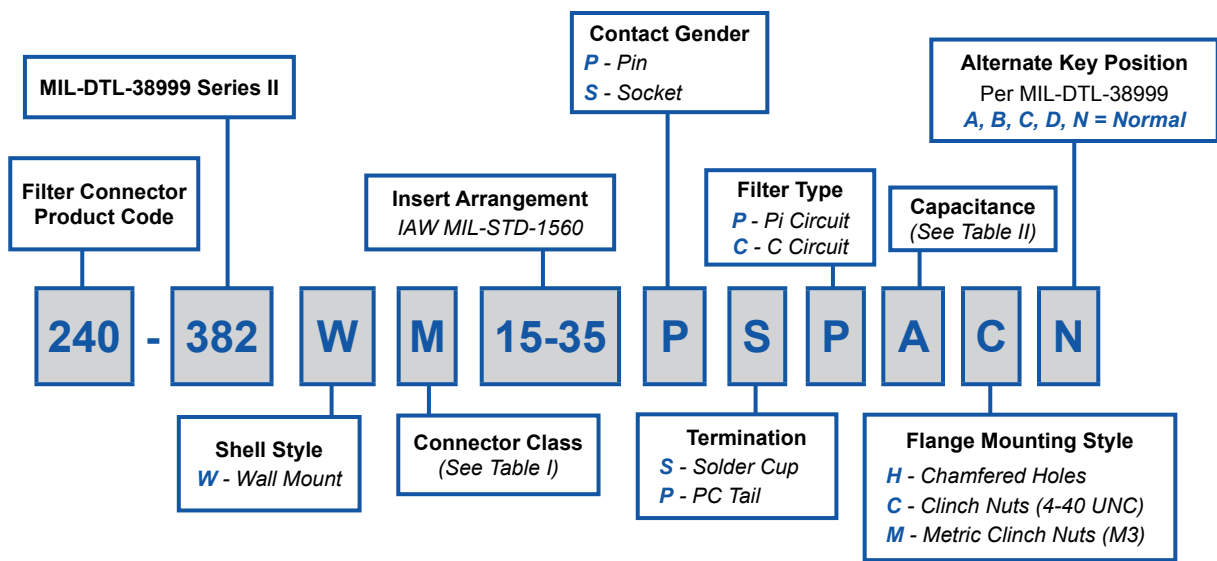
## APPLICATION NOTES

- Materials/Finishes: Shells, Barrel, Coupling Nut, Jam Nut - See Table I  
Insulators - high grade rigid dielectric/N.A.  
Seals - Fluorosilicone  
PC Tail & Solder Cup contacts: 50µ" Gold over 50µ" Nickel
- Assembly to be identified with Glenair's name, part number, and date code - space permitting.
- Insert Arrangement in accordance with MIL-STD-1560.  
(Arrangement shown for reference only)
- EMI Circular Filter Receptacle connector designed to meet requirements of MIL-STD-2120 and MIL-DTL-38999, Series II.
- All contacts to have identical filter value. Other filter arrangements available, contact factory.
- Electrical Ratings: DWW- 500 VDC Min.; Standard Operating Voltage 200 Volts DC; Current Rating 5 Amps (size 22);
- Insulation Resistance: 5000 MegOhms Min. at 200 VDC.
- Operating Temperature -55°C to +125°C (Env Class Connectors)
- Other filter styles (C-L, L-C, Unbalanced PI, Multi-Stage, Multi-Value) are available, please consult the factory.
- Metric Dimensions (mm) are indicated in parentheses.



**240-382W**  
**MIL-DTL-38999 Series II Filter Connector**  
**Wall Mount Receptacle**

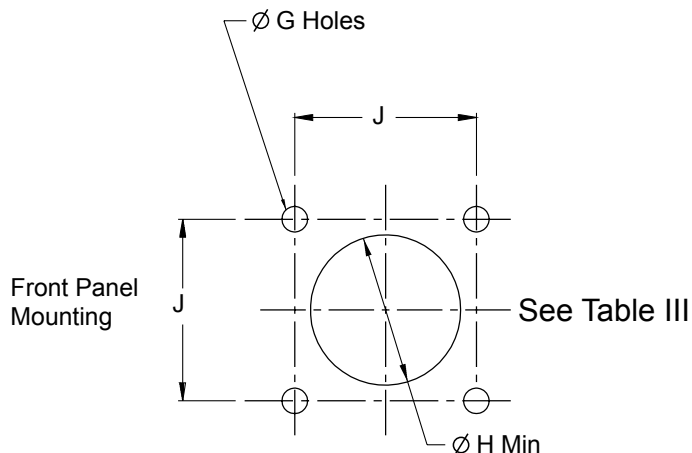
**B**



**240-382W**  
**MIL-DTL-38999 Series II Filter Connector**  
**Wall Mount Receptacle**



MIL-DTL-38999  
Connectors



**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |

**TABLE II: CAPACITOR ARRAY CODE CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

*Consult Factory for Additional Filter Types, TVS Diodes, and other Custom Filter Connector Configurations.*

**TABLE III: SQUARE FLANGE PANEL CUT-OUTS**

| Shell Size | Ø G Holes  | Ø H Min | Ø J BSC |
|------------|------------|---------|---------|
| <b>8</b>   | .133 (3.4) | .570    | .594    |
|            | .123 (3.1) | (14.5)  | (15.1)  |
| <b>10</b>  | .133 (3.4) | .690    | .719    |
|            | .123 (3.1) | (17.5)  | (18.3)  |
| <b>12</b>  | .133 (3.4) | .820    | .812    |
|            | .123 (3.1) | (20.8)  | (20.6)  |
| <b>14</b>  | .133 (3.4) | .940    | .906    |
|            | .123 (3.1) | (23.9)  | (23.0)  |
| <b>16</b>  | .133 (3.4) | 1.070   | .969    |
|            | .123 (3.1) | (27.2)  | (24.6)  |
| <b>18</b>  | .133 (3.4) | 1.190   | 1.062   |
|            | .123 (3.1) | (30.2)  | (27.0)  |
| <b>20</b>  | .133 (3.4) | 1.320   | 1.156   |
|            | .123 (3.1) | (33.5)  | (29.4)  |
| <b>22</b>  | .159 (4.0) | 1.440   | 1.250   |
|            | .149 (3.8) | (36.6)  | (31.8)  |
| <b>24</b>  | .159 (4.0) | 1.570   | 1.375   |
|            | .149 (3.8) | (39.9)  | (34.9)  |

**TABLE IV: CONNECTOR DIMENSIONS**

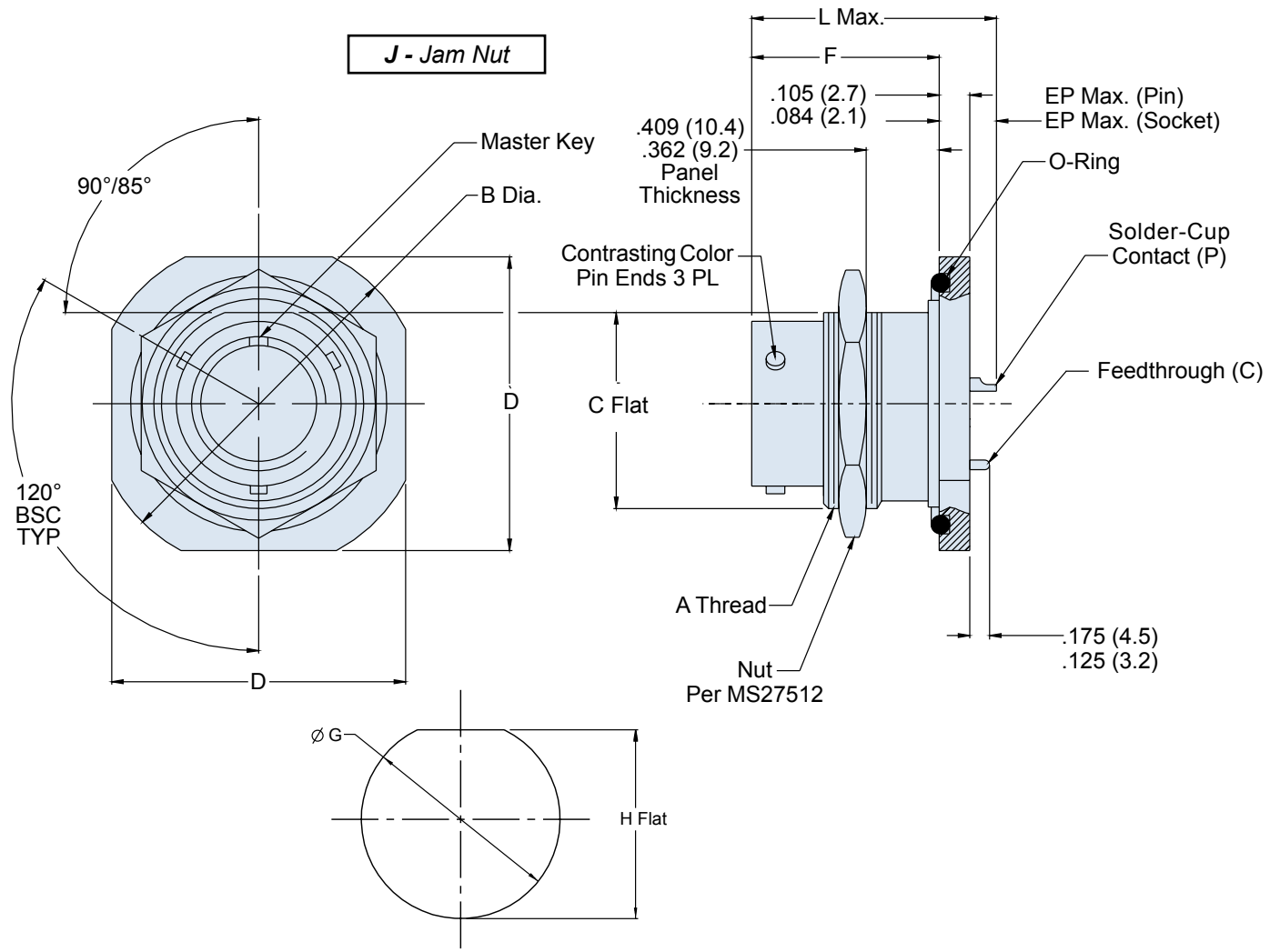
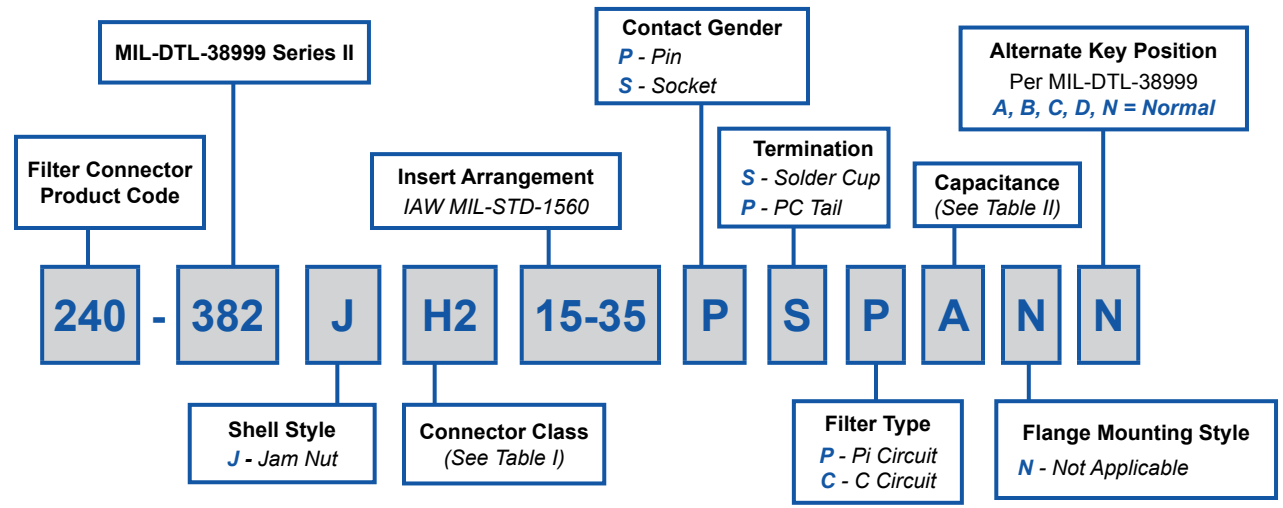
| Shell Size | A BSC        | B SQ Max     | Ø C Holes                | D Threads         | Ø E Max      |
|------------|--------------|--------------|--------------------------|-------------------|--------------|
| <b>8</b>   | 0.594 (15.1) | 0.828 (21.0) | .130 (3.3)<br>.115 (2.9) | .5625-24 UNEF-2A  | 1.078 (27.4) |
|            |              |              |                          |                   |              |
| <b>10</b>  | 0.719 (18.3) | 0.954 (24.2) | .130 (3.3)<br>.115 (2.9) | .6875-24 UNEF-2A  | 1.256 (31.9) |
|            |              |              |                          |                   |              |
| <b>12</b>  | 0.812 (20.6) | 1.047 (26.6) | .130 (3.3)<br>.115 (2.9) | .8125-20 UNEF-2A  | 1.391 (35.3) |
|            |              |              |                          |                   |              |
| <b>14</b>  | 0.906 (23.0) | 1.141 (29.0) | .130 (3.3)<br>.115 (2.9) | .9375-20 UNEF-2A  | 1.516 (38.5) |
|            |              |              |                          |                   |              |
| <b>16</b>  | 0.969 (24.6) | 1.234 (31.3) | .130 (3.3)<br>.115 (2.9) | 1.0625-18 UNEF-2A | 1.641 (41.7) |
|            |              |              |                          |                   |              |
| <b>18</b>  | 1.062 (27.0) | 1.328 (33.7) | .130 (3.3)<br>.115 (2.9) | 1.1875-18 UNEF-2A | 1.766 (44.9) |
|            |              |              |                          |                   |              |
| <b>20</b>  | 1.156 (29.4) | 1.453 (36.9) | .130 (3.3)<br>.115 (2.9) | 1.3125-18 UNEF-2A | 1.891 (48.0) |
|            |              |              |                          |                   |              |
| <b>22</b>  | 1.25 (31.8)  | 1.578 (40.1) | .130 (3.3)<br>.115 (2.9) | 1.4375-10 UNEF-2A | 2.016 (51.2) |
|            |              |              |                          |                   |              |
| <b>24</b>  | 1.375 (34.9) | 1.703 (43.3) | .157 (4.0)<br>.142 (3.6) | 1.5625-18 UNEF-2A | 2.204 (56.0) |
|            |              |              |                          |                   |              |





# 240-382J (Hermetic Version Shown) MIL-DTL-38999 Series II Filter Connector Jam Nut Receptacle

B



# 240-382J (Hermetic Version Shown) MIL-DTL-38999 Series II Filter Connector Jam Nut Receptacle



MIL-DTL-38999  
Connectors

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                                     |

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

*Consult Factory  
for Additional  
Filter Types,  
TVS Diodes,  
and other  
Custom Filter  
Connector  
Configurations.*

**PANEL IV: JAM-NUT  
PANEL CUT-OUTS**

| SHELL<br>SIZE | Ø G                          | H Flat                       |
|---------------|------------------------------|------------------------------|
| 08            | .894 (22.7)<br>.884 (22.5)   | .833 (21.2)<br>.823 (20.9)   |
| 10            | 1.020 (25.9)<br>1.010 (25.7) | .957 (24.3)<br>.947 (24.1)   |
| 12            | 1.144 (29.1)<br>1.134 (28.8) | 1.081 (27.5)<br>1.071 (27.2) |
| 14            | 1.269 (32.2)<br>1.259 (32.0) | 1.206 (30.6)<br>1.196 (30.4) |
| 16            | 1.394 (35.4)<br>1.384 (35.2) | 1.336 (33.9)<br>1.326 (33.7) |
| 18            | 1.520 (38.6)<br>1.510 (38.4) | 1.456 (37.0)<br>1.446 (36.7) |
| 20            | 1.645 (41.8)<br>1.635 (41.5) | 1.581 (40.2)<br>1.571 (39.9) |
| 22            | 1.750 (44.5)<br>1.740 (44.2) | 1.706 (43.3)<br>1.696 (43.1) |
| 24            | 1.895 (48.1)<br>1.885 (47.9) | 1.831 (46.5)<br>1.821 (46.3) |

\* Reduced DWV – Please consult factory.

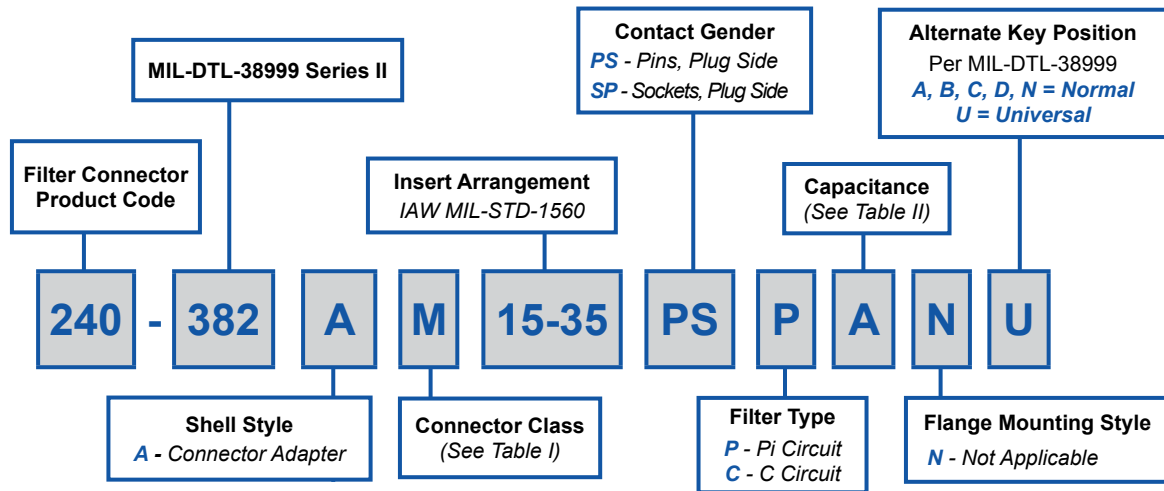
**TABLE III**

| SHELL<br>SIZE | A THREAD<br>.1P- .03L-TS | B DIA.                       | C FLAT                       | D A/F                        | EP MAX.    | ES MAX.    | F                          | G DIA.                       | H                            | L MAX.          |
|---------------|--------------------------|------------------------------|------------------------------|------------------------------|------------|------------|----------------------------|------------------------------|------------------------------|-----------------|
| 08            | .875-20 UNEF             | 1.391 (35.3)<br>1.359 (34.5) | .818 (20.8)<br>.811 (20.6)   | 1.266 (32.2)<br>1.234 (31.3) | .281 (7.1) | .359 (9.1) | .743 (18.9)<br>.733 (18.6) | .894 (22.7)<br>.884 (22.5)   | .833 (21.2)<br>.823 (20.9)   | 1.024<br>(26.0) |
| 10            | 1.000-20 UNEF            | 1.516 (38.5)<br>1.484 (37.7) | .942 (23.9)<br>.935 (23.7)   | 1.391 (35.3)<br>1.359 (34.5) | .281 (7.1) | .359 (9.1) | .743 (18.9)<br>.733 (18.6) | 1.020 (25.9)<br>1.010 (25.7) | .957 (24.3)<br>.947 (24.1)   | 1.024<br>(26.0) |
| 12            | 1.125-18 UNEF            | 1.641 (41.7)<br>1.609 (40.9) | 1.066 (27.1)<br>1.059 (26.9) | 1.516 (38.5)<br>1.484 (37.7) | .281 (7.1) | .359 (9.1) | .743 (18.9)<br>.733 (18.6) | 1.144 (29.1)<br>1.134 (28.8) | 1.081 (27.5)<br>1.071 (27.2) | 1.024<br>(26.0) |
| 14            | 1.250-18 UNEF            | 1.766 (44.9)<br>1.734 (44.0) | 1.191 (30.3)<br>1.184 (30.1) | 1.641 (41.7)<br>1.609 (40.9) | .281 (7.1) | .359 (9.1) | .743 (18.9)<br>.733 (18.6) | 1.269 (32.2)<br>1.259 (32.0) | 1.206 (30.6)<br>1.196 (30.4) | 1.024<br>(26.0) |
| 16            | 1.375-18 UNEF            | 1.954 (49.6)<br>1.922 (48.8) | 1.321 (33.6)<br>1.314 (33.4) | 1.797 (45.6)<br>1.765 (44.8) | .281 (7.1) | .359 (9.1) | .743 (18.9)<br>.733 (18.6) | 1.394 (35.4)<br>1.384 (35.2) | 1.336 (33.9)<br>1.326 (33.7) | 1.024<br>(26.0) |
| 18            | 1.500-18 UNEF            | 2.032 (51.6)<br>2.000 (50.8) | 1.441 (36.6)<br>1.434 (36.4) | 1.906 (48.4)<br>1.874 (47.6) | .281 (7.1) | .359 (9.1) | .743 (18.9)<br>.733 (18.6) | 1.520 (38.6)<br>1.510 (38.4) | 1.456 (37.0)<br>1.446 (36.7) | 1.024<br>(26.0) |
| 20            | 1.625-18 UNEF            | 2.157 (54.8)<br>2.125 (54.0) | 1.566 (39.8)<br>1.559 (39.6) | 2.032 (51.6)<br>2.000 (50.8) | .250 (6.4) | .344 (8.7) | .769 (19.5)<br>.759 (19.3) | 1.645 (41.8)<br>1.635 (41.5) | 1.581 (40.2)<br>1.571 (39.9) | 1.019<br>(25.9) |
| 22            | 1.750-18 UNS             | 2.281 (57.9)<br>2.249 (57.1) | 1.691 (43.0)<br>1.684 (42.8) | 2.156 (54.8)<br>2.124 (53.9) | .250 (6.4) | .344 (8.7) | .769 (19.5)<br>.759 (19.3) | 1.750 (44.5)<br>1.740 (44.2) | 1.706 (43.3)<br>1.696 (43.1) | 1.019<br>(25.9) |
| 24            | 1.875-16 UN              | 2.406 (61.1)<br>2.374 (60.3) | 1.816 (46.1)<br>1.809 (45.9) | 2.281 (57.9)<br>2.249 (57.1) | .250 (6.4) | .344 (8.7) | .769 (19.5)<br>.759 (19.3) | 1.895 (48.1)<br>1.885 (47.9) | 1.831 (46.5)<br>1.821 (46.3) | 1.019<br>(25.9) |

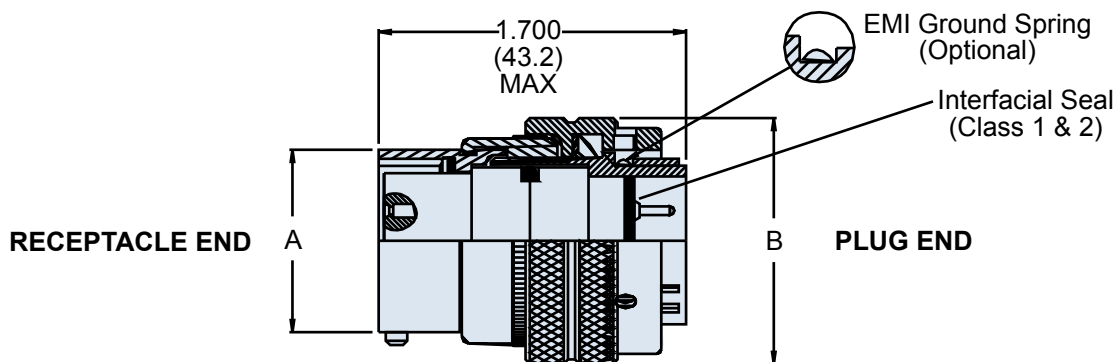
\*Some dimensions do not apply. Consult factory



**240-382A**  
**MIL-DTL-38999 Series II Filter Connector**  
**Connector Adapter**



**A - Connector Adapter**

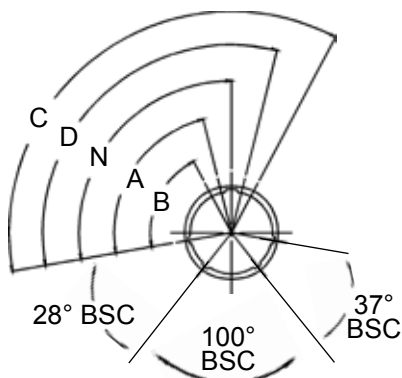


\* Please consult factory for Pin/Pin and/or Socket/Socket contact arrangements.

**240-382A**  
**MIL-DTL-38999 Series II Filter Connector**  
**Connector Adapter**



MIL-DTL-38999  
Connectors



**B**

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |

**SHELL DIAMETER**

| Shell Size | A Max        | B Max        |
|------------|--------------|--------------|
| 08         | .474 (12.0)  | .750 (19.1)  |
| 10         | .591 (15.0)  | .859 (21.8)  |
| 12         | .751 (19.1)  | 1.031 (26.2) |
| 14         | .875 (22.2)  | 1.156 (29.4) |
| 16         | 1.001 (25.4) | 1.281 (32.5) |
| 18         | 1.126 (28.6) | 1.391 (35.3) |
| 20         | 1.251 (31.8) | 1.531 (38.9) |
| 22         | 1.376 (35.0) | 1.656 (42.1) |
| 24         | 1.501 (38.1) | 1.777 (45.1) |

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

*Consult Factory for  
Additional Filter Types,  
TVS Diodes, and other  
Custom Filter Connector  
Configurations.*

**MASTER KEY POSITION**

| NORMAL | A°  | B°  | C°   | D°   |
|--------|-----|-----|------|------|
| 100°   | 79° | 66° | 134° | 121° |

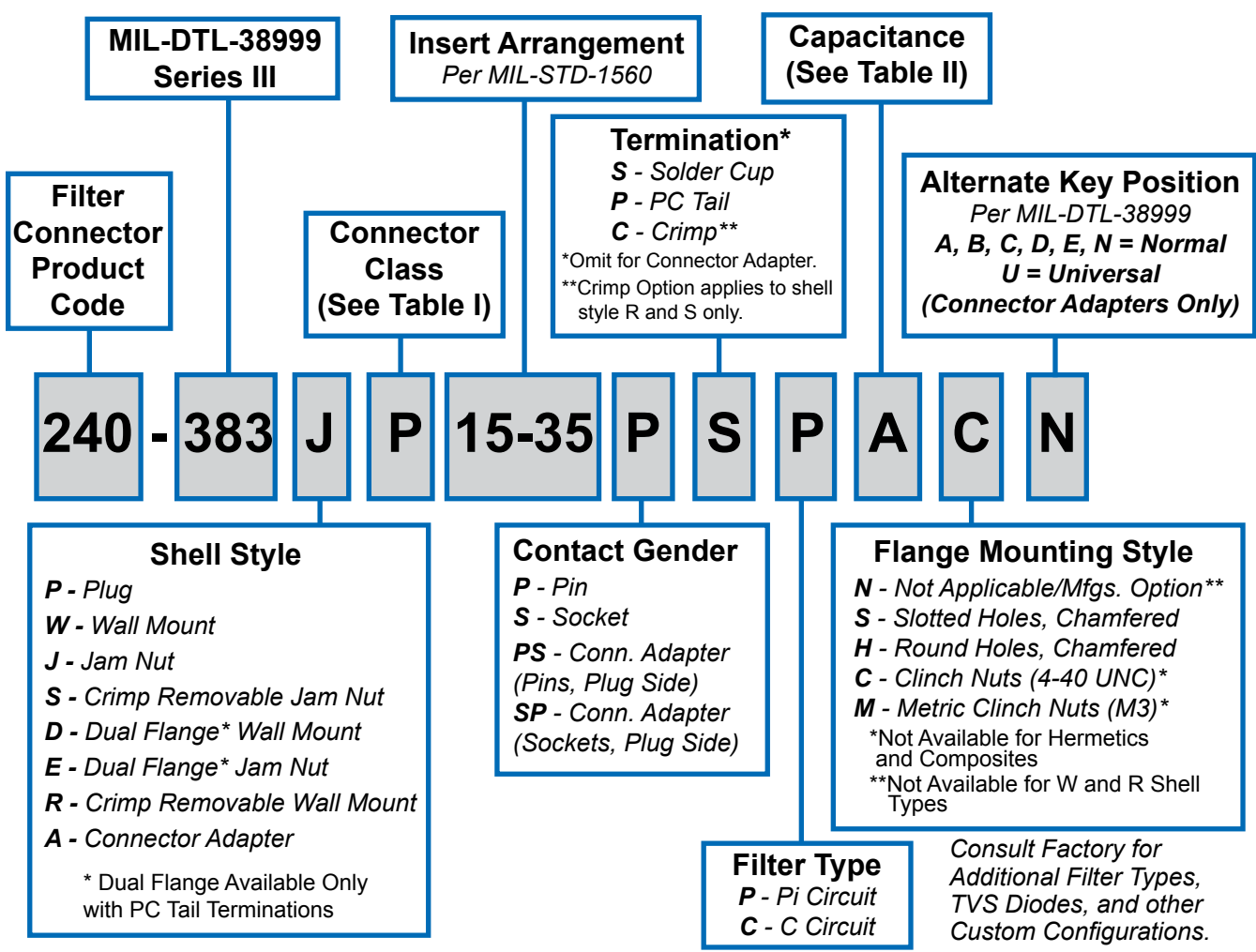
\* Reduced DWV – Please consult factory.





**Glenair MIL-DTL-38999 Series III Type  
Filter Connector with Threaded Coupling**  
Master How to Order • Part Number Breakdown

**B**



| TABLE II: CAPACITOR ARRAY CODE CAPACITANCE RANGE |                   |                  |
|--------------------------------------------------|-------------------|------------------|
| CLASS                                            | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
| X*                                               | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*                                               | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*                                               | 60,000 - 90,000   | 30,000 - 45,000  |
| A                                                | 38,000 - 56,000   | 19,000 - 28,000  |
| B                                                | 32,000 - 45,000   | 16,000 - 22,500  |
| C                                                | 18,000 - 33,000   | 9,000 - 16,500   |
| D                                                | 8,000 - 12,000    | 4,000 - 6,000    |
| E                                                | 3,300 - 5,000     | 1,650 - 2,500    |
| F                                                | 800 - 1,300       | 400 - 650        |
| G                                                | 400 - 600         | 200 - 300        |

| TABLE I: CONNECTOR CLASS |               |           |                                       |
|--------------------------|---------------|-----------|---------------------------------------|
| SYM                      | CLASS         | MATERIAL  | FINISH DESCRIPTION                    |
| M                        | Environmental | Aluminum  | Electroless Nickel                    |
| MT                       | Environmental | Aluminum  | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| NF                       | Environmental | Aluminum  | Cad. O.D. Over Electroless Nickel     |
| P                        | Environmental | Stainless | Electro-Deposited Nickel              |
| XM                       | Environmental | Composite | Electroless Nickel                    |
| XMT                      | Environmental | Composite | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| XW                       | Environmental | Composite | Cad. O.D. Over Electroless Nickel     |
| ZN                       | Environmental | Aluminum  | Zinc-Nickel Over Electroless Nickel   |
| H2*                      | Hermetic      | Stainless | Electroless Nickel                    |

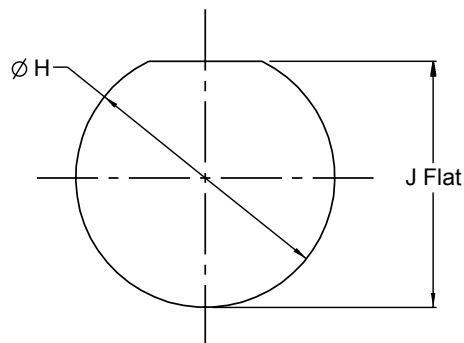
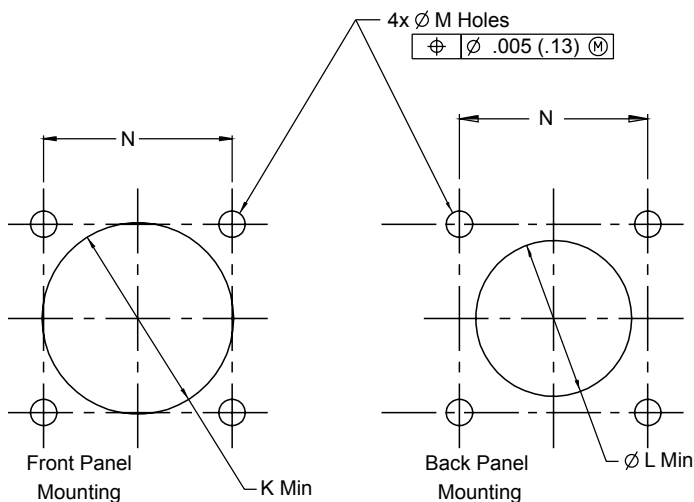
\* Some dimensions do not apply, see sales drawing 240-383JH2

\* Reduced DWV – Please consult factory.

# Glenair MIL-DTL-38999 Series III Type Filter Connector with Threaded Coupling Reference Information



MIL-DTL-38999  
Connectors



| MIL-DTL-38999 Series III<br>Square Flange Panel Cutouts |               |              |              |                          |              |
|---------------------------------------------------------|---------------|--------------|--------------|--------------------------|--------------|
| Shell<br>Size<br>Code                                   | Shell<br>Size | Ø K Min      | Ø L Min      | M Holes                  | N BSC        |
| A                                                       | 09            | .656 (16.7)  | .516 (13.1)  | .133 (3.4)<br>.123 (3.1) | .719 (18.3)  |
| B                                                       | 11            | .796 (20.2)  | .625 (15.9)  | .133 (3.4)<br>.123 (3.1) | .812 (20.6)  |
| C                                                       | 13            | .922 (23.4)  | .750 (19.1)  | .133 (3.4)<br>.123 (3.1) | .906 (23.0)  |
| D                                                       | 15            | 1.047 (26.6) | .906 (23.0)  | .133 (3.4)<br>.123 (3.1) | .969 (24.6)  |
| E                                                       | 17            | 1.219 (31.0) | 1.016 (25.8) | .133 (3.4)<br>.123 (3.1) | 1.062 (27.0) |
| F                                                       | 19            | 1.297 (32.9) | 1.141 (29.0) | .133 (3.4)<br>.123 (3.1) | 1.156 (29.4) |
| G                                                       | 21            | 1.422 (36.1) | 1.266 (32.2) | .133 (3.4)<br>.123 (3.1) | 1.250 (31.8) |
| H                                                       | 23            | 1.547 (39.3) | 1.375 (34.9) | .159 (4.0)<br>.149 (3.8) | 1.375 (34.9) |
| J                                                       | 25            | 1.672 (42.5) | 1.484 (37.7) | .155 (3.9)<br>.145 (3.7) | 1.500 (38.1) |

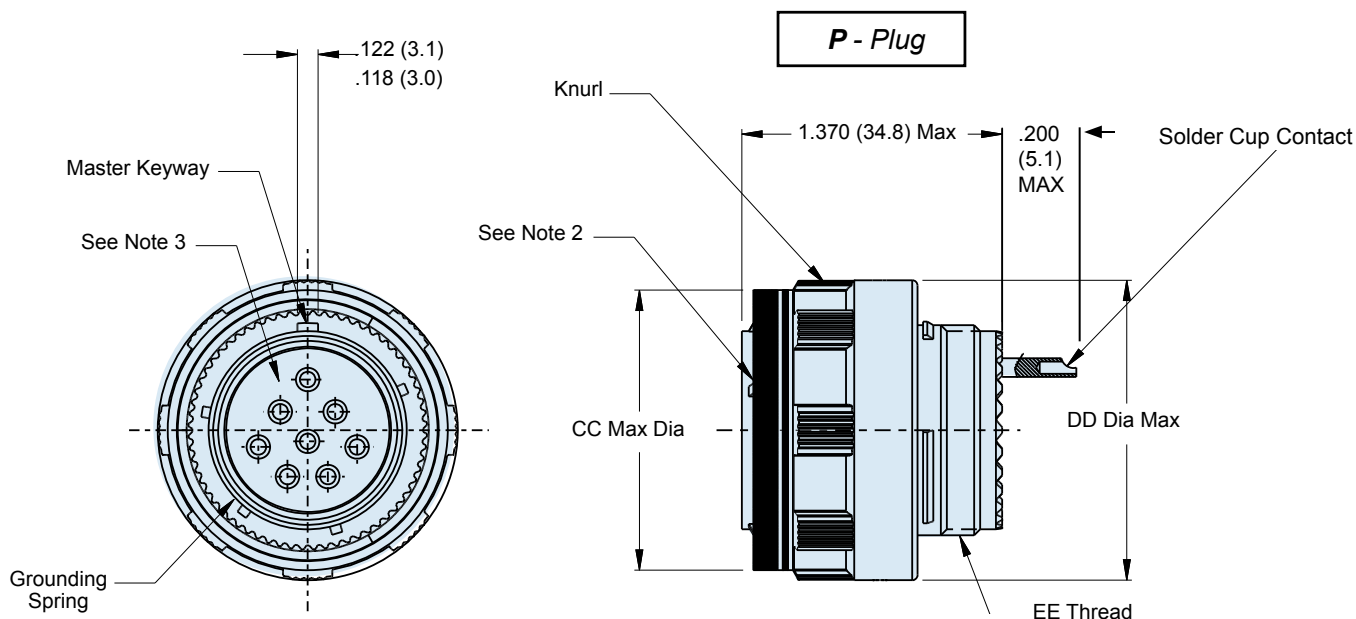
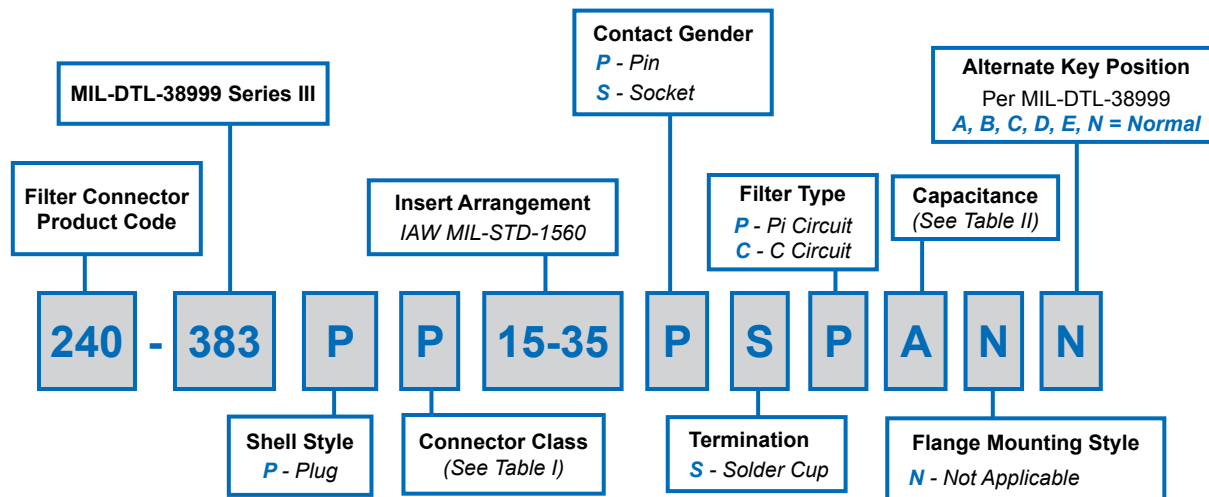
MIL-DTL-38999 Series III  
Jam Nut Panel Cutout

| SHELL<br>SIZE<br>CODE | SHELL<br>SIZE | Ø H                          | J                            |
|-----------------------|---------------|------------------------------|------------------------------|
| A                     | 09            | .710 (18.0)<br>.700 (17.8)   | .670 (17.0)<br>.660 (16.8)   |
| B                     | 11            | .835 (21.2)<br>.825 (21.0)   | .771 (19.6)<br>.761 (19.3)   |
| C                     | 13            | 1.020 (25.9)<br>1.010 (25.7) | .955 (24.3)<br>.945 (24.0)   |
| D                     | 15            | 1.145 (29.1)<br>1.135 (28.8) | 1.085 (27.6)<br>1.075 (27.3) |
| E                     | 17            | 1.270 (32.3)<br>1.260 (32.0) | 1.210 (30.7)<br>1.200 (30.5) |
| F                     | 19            | 1.395 (35.4)<br>1.385 (35.2) | 1.335 (33.9)<br>1.325 (33.7) |
| G                     | 21            | 1.520 (38.6)<br>1.510 (38.4) | 1.460 (37.1)<br>1.450 (36.8) |
| H                     | 23            | 1.645 (41.8)<br>1.635 (41.5) | 1.585 (40.3)<br>1.575 (40.0) |
| J                     | 25            | 1.770 (45.0)<br>1.760 (44.7) | 1.710 (43.4)<br>1.700 (43.2) |

## APPLICATION NOTES

- Materials/Finishes: Shells, Barrel, Coupling Nut, Jam Nut - See Table I  
Insulators - high grade rigid dielectric/N.A.  
Seals - Fluorosilicone  
PC Tail & Solder Cup contacts: 50µ" Gold over 50µ" Nickel
- Assembly to be identified with Glenair's name, part number, and date code - space permitting.
- Insert Arrangement in accordance with MIL-STD-1560.  
(Arrangement shown for reference only)
- EMI Circular Filter Receptacle connector designed to meet requirements of MIL-STD-2120 and MIL-DTL-38999, Series III.
- All contacts to have identical filter value. Other filter arrangements available, contact factory.
- Electrical Ratings: DWV- 500 VDC Min.; Standard Operating Voltage 200 Volts DC; Current Rating 5 Amps (size 22);
- Insulation Resistance: 5000 MegOhms Min. at 200 VDC.
- Operating Temperature -55°C to +125°C (Env Class Connectors)
- Other filter styles (C-L, L-C, Unbalanced PI, Multi-Stage, Multi-Value) are available, please consult the factory.
- Metric Dimensions (mm) are indicated in parentheses.

# 240-383P MIL-DTL-38999 Series III Filter Connector Plug



# 240-383P MIL-DTL-38999 Series III Filter Connector Plug



MIL-DTL-38999  
Connectors

B

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL  | FINISH DESCRIPTION                    |
|-----|---------------|-----------|---------------------------------------|
| M   | Environmental | Aluminum  | Electroless Nickel                    |
| MT  | Environmental | Aluminum  | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum  | Cad. O.D. Over Electroless Nickel     |
| P   | Environmental | Stainless | Electro-Deposited Nickel              |
| XM  | Environmental | Composite | Electroless Nickel                    |
| XMT | Environmental | Composite | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| XW  | Environmental | Composite | Cad. O.D. Over Electroless Nickel     |
| ZN  | Environmental | Aluminum  | Zinc-Nickel Over Electroless Nickel   |
| H2* | Hermetic      | Stainless | Electroless Nickel                    |

\* Some dimensions do not apply, see sales drawing 240-383JH2

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

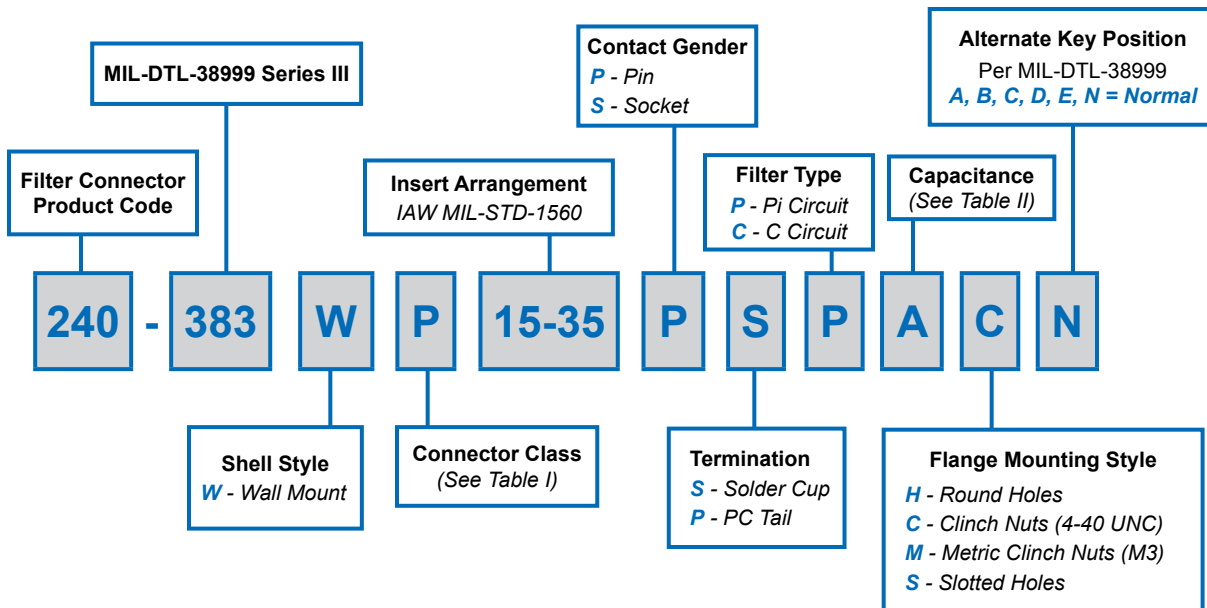
\* Reduced DWV – Please consult factory.

**DIMENSIONS**

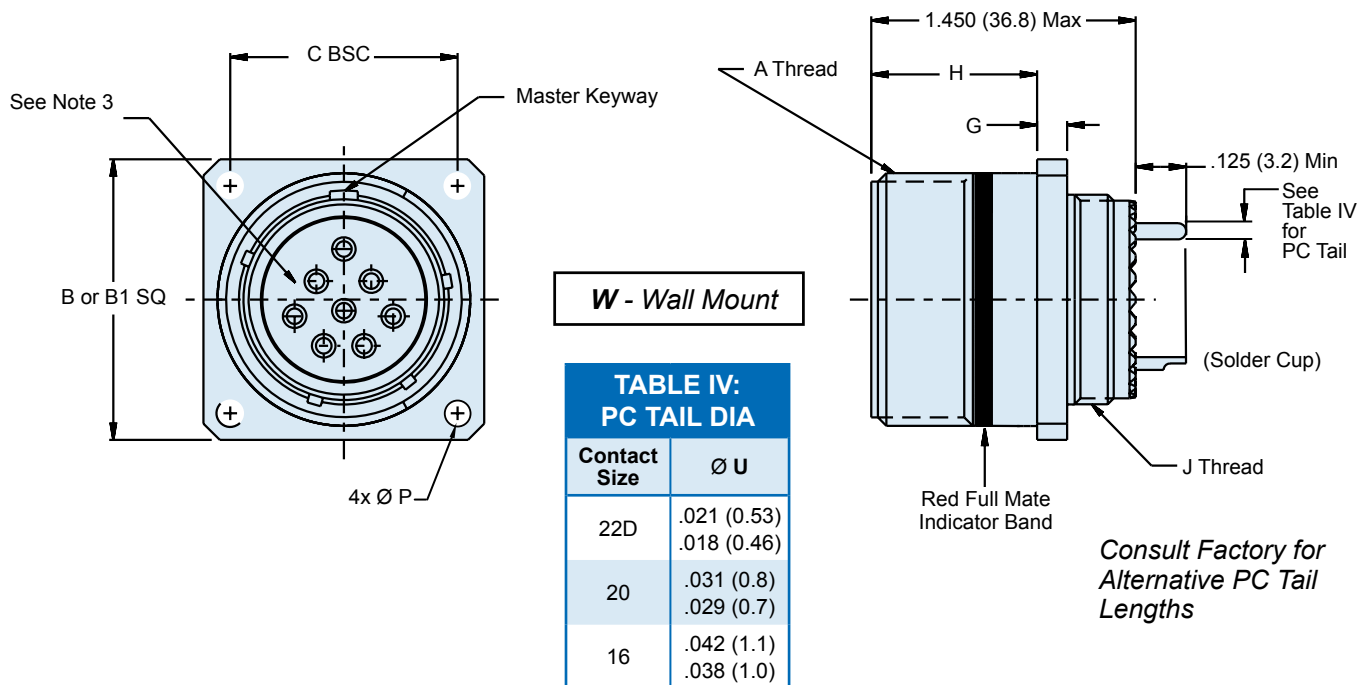
| SHELL<br>SIZE<br>CODE | SHELL<br>SIZE | CC Dia<br>Max | DD Dia<br>Max | EE THREAD           |
|-----------------------|---------------|---------------|---------------|---------------------|
| B                     | 11            | .929 (23.6)   | .984 (25.0)   | M15 X 1.0-6g 0.100R |
| C                     | 13            | 1.110 (28.2)  | 1.157 (29.4)  | M18 X 1.0-6g 0.100R |
| D                     | 15            | 1.232 (31.3)  | 1.280 (32.5)  | M22 X 1.0-6g 0.100R |
| E                     | 17            | 1.358 (34.5)  | 1.406 (35.7)  | M25 X 1.0-6g 0.100R |
| F                     | 19            | 1.469 (37.3)  | 1.516 (38.5)  | M28 X 1.0-6g 0.100R |
| G                     | 21            | 1.594 (40.5)  | 1.642 (41.7)  | M31 X 1.0-6g 0.100R |
| H                     | 23            | 1.720 (43.7)  | 1.768 (44.9)  | M34 X 1.0-6g 0.100R |
| J                     | 25            | 1.843 (46.8)  | 1.890 (48.0)  | M37 X 1.0-6g 0.100R |

*Consult Factory for Additional Filter Types, TVS  
Diodes, and other Custom Configurations.*





**Clinch Nuts and Metric Clinch Nuts Not Available for Composites.**  
**Helicoils and Threaded Inserts/Specials Available Upon Request.**



# 240-383W

## MIL-DTL-38999 Series III Filter Connector

### Wall Mount Receptacle



MIL-DTL-38999  
Connectors

TABLE I: CONNECTOR CLASS

| SYM | CLASS         | MATERIAL  | FINISH DESCRIPTION                    |
|-----|---------------|-----------|---------------------------------------|
| M   | Environmental | Aluminum  | Electroless Nickel                    |
| MT  | Environmental | Aluminum  | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum  | Cad. O.D. Over Electroless Nickel     |
| P   | Environmental | Stainless | Electro-Deposited Nickel              |
| XM  | Environmental | Composite | Electroless Nickel                    |
| XMT | Environmental | Composite | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| XW  | Environmental | Composite | Cad. O.D. Over Electroless Nickel     |
| ZN  | Environmental | Aluminum  | Zinc-Nickel Over Electroless Nickel   |
| H2* | Hermetic      | Stainless | Electroless Nickel                    |

\* Some dimensions do not apply, see sales drawing 240-383WH2

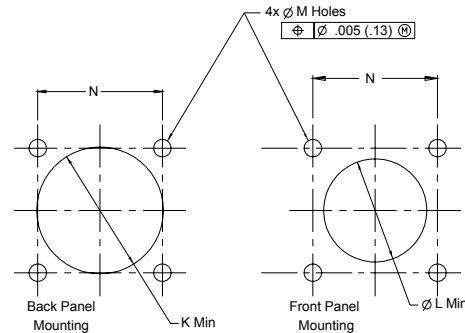


TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV - Please consult factory.

TABLE III: MIL-DTL-38999 Series III  
Square Flange Panel Cutouts

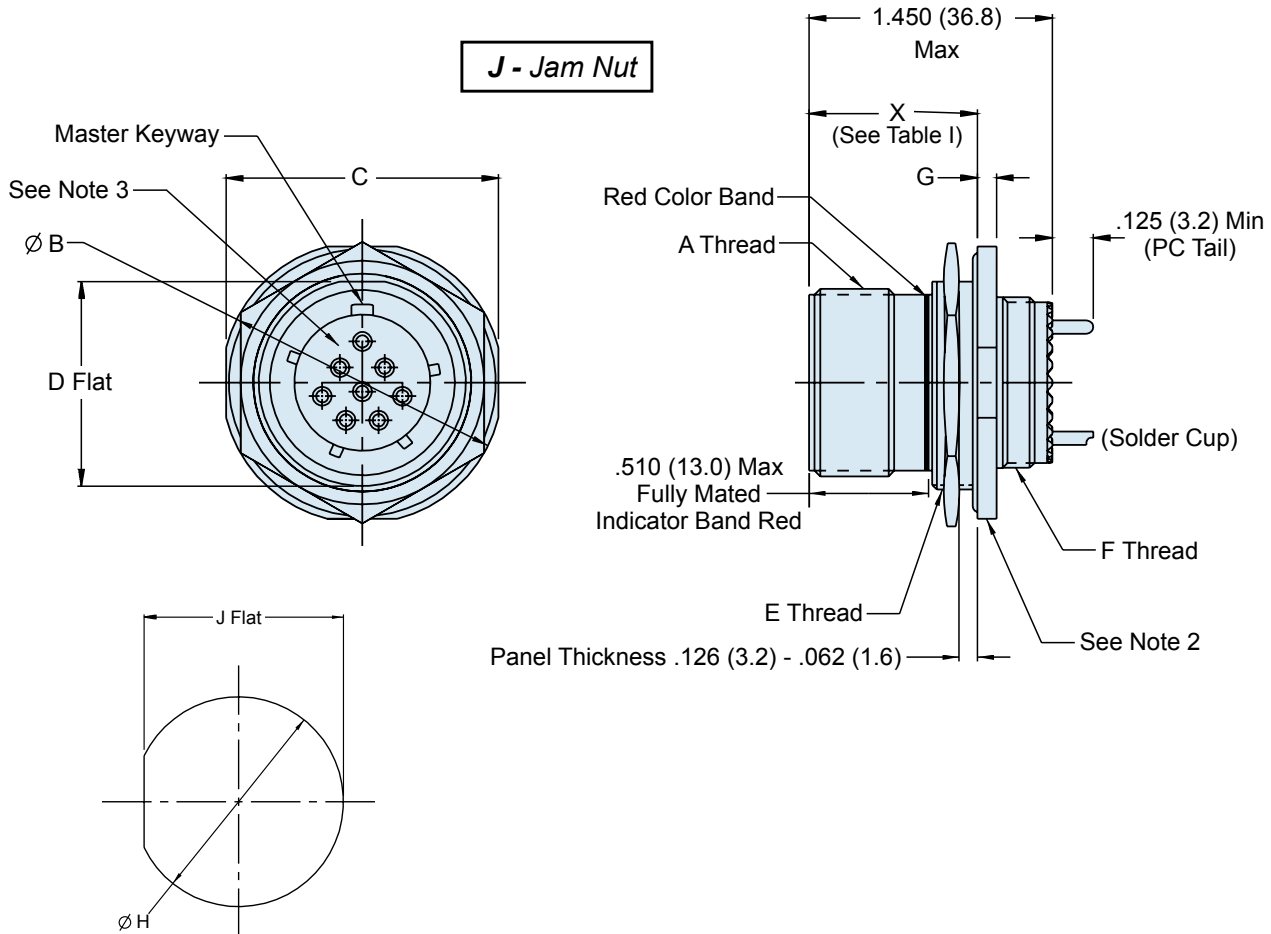
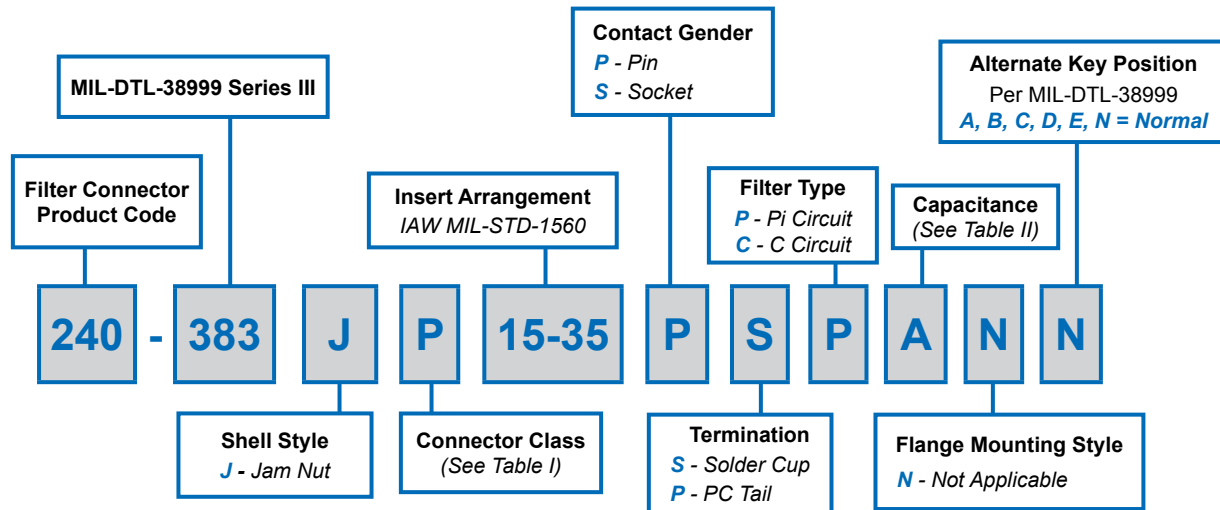
| Shell Size Code | Shell Size | Ø K Min Back Panel | Ø L Min Front Panel | M Holes                  | N BSC        | P Ø ± .010 |
|-----------------|------------|--------------------|---------------------|--------------------------|--------------|------------|
| A               | 09         | .656 (16.7)        | .516 (13.1)         | .133 (3.4)<br>.123 (3.1) | .719 (18.3)  | .128 (3.3) |
| B               | 11         | .796 (20.2)        | .625 (15.9)         | .133 (3.4)<br>.123 (3.1) | .812 (20.6)  |            |
| C               | 13         | .922 (23.4)        | .750 (19.1)         | .133 (3.4)<br>.123 (3.1) | .906 (23.0)  |            |
| D               | 15         | 1.047 (26.6)       | .906 (23.0)         | .133 (3.4)<br>.123 (3.1) | .969 (24.6)  |            |
| E               | 17         | 1.219 (31.0)       | 1.016 (25.8)        | .133 (3.4)<br>.123 (3.1) | 1.062 (27.0) |            |
| F               | 19         | 1.297 (32.9)       | 1.141 (29.0)        | .133 (3.4)<br>.123 (3.1) | 1.156 (29.4) | .156 (4.0) |
| G               | 21         | 1.422 (36.1)       | 1.266 (32.2)        | .133 (3.4)<br>.123 (3.1) | 1.250 (31.8) |            |
| H               | 23         | 1.547 (39.3)       | 1.375 (34.9)        | .159 (4.0)<br>.149 (3.8) | 1.375 (34.9) |            |
| J               | 25         | 1.672 (42.5)       | 1.484 (37.7)        | .155 (3.9)<br>.145 (3.7) | 1.500 (38.1) |            |

TABLE V: WALL MOUNT

| SHELL SIZE CODE | SHELL SIZE | A THREAD             | B SQ                         | CLINCH NUT FLANGE B1 SQ | C BSC        | D BSC        | E                        | F                        | G                        | H                          | J THREAD            |
|-----------------|------------|----------------------|------------------------------|-------------------------|--------------|--------------|--------------------------|--------------------------|--------------------------|----------------------------|---------------------|
| A               | 09         | .6250-.1P-.3L-TS-2A  | 0.949 (24.1)<br>0.925 (23.5) | 1.019 (25.9)            | .719 (18.3)  | .594 (15.1)  | .136 (3.5)<br>.120 (3.0) | .224 (5.7)<br>.208 (5.3) | .144 (3.7)<br>.083 (2.1) | .820 (20.8)<br>.771 (19.6) | M12 X 1.0-6g 0.100R |
| B               | 11         | .7500-.1P-.3L-TS-2A  | 1.043 (26.5)<br>1.019 (25.9) | 1.112 (28.2)            | .812 (20.6)  | .719 (18.3)  | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) |                          | .820 (20.8)<br>.771 (19.6) | M15 X 1.0-6g 0.100R |
| C               | 13         | .8750-.1P-.3L-TS-2A  | 1.138 (28.9)<br>1.114 (28.3) | 1.206 (30.6)            | .906 (23.0)  | .812 (20.6)  | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) |                          | .820 (20.8)<br>.771 (19.6) | M18 X 1.0-6g 0.100R |
| D               | 15         | 1.000-.1P-.3L-TS-2A  | 1.232 (31.3)<br>1.208 (30.7) | 1.269 (32.2)            | .969 (24.6)  | .906 (23.0)  | .136 (3.5)<br>.120 (3.0) | .181 (4.6)<br>.165 (4.2) |                          | .820 (20.8)<br>.771 (19.6) | M22 X 1.0-6g 0.100R |
| E               | 17         | 1.1875-.1P-.3L-TS-2A | 1.323 (33.6)<br>1.299 (33.0) | 1.362 (34.6)            | 1.062 (27.0) | .969 (24.6)  | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) |                          | .820 (20.8)<br>.771 (19.6) | M25 X 1.0-6g 0.100R |
| F               | 19         | 1.2500-.1P-.3L-TS-2A | 1.449 (36.8)<br>1.425 (36.2) | 1.456 (37.0)            | 1.156 (29.4) | 1.062 (27.0) | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) | .171 (4.3)<br>.083 (2.1) | .820 (20.8)<br>.771 (19.6) | M28 X 1.0-6g 0.100R |
| G               | 21         | 1.3750-.1P-.3L-TS-2A | 1.575 (40.0)<br>1.551 (39.4) | 1.562 (39.7)            | 1.250 (31.8) | 1.156 (29.4) | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) |                          | .790 (20.1)<br>.741 (18.8) | M31 X 1.0-6g 0.100R |
| H               | 23         | 1.5000-.1P-.3L-TS-2A | 1.701 (43.2)<br>1.677 (42.6) | 1.719 (43.7)            | 1.375 (34.9) | 1.250 (31.8) | .162 (4.1)<br>.146 (3.7) | .250 (6.4)<br>.234 (5.9) |                          | .790 (20.1)<br>.741 (18.8) | M34 X 1.0-6g 0.100R |
| J               | 25         | 1.6250-.1P-.3L-TS-2A | 1.823 (46.3)<br>1.799 (45.7) | 1.844 (46.8)            | 1.500 (38.1) | 1.375 (34.9) | .162 (4.1)<br>.146 (3.7) | .250 (6.4)<br>.234 (5.9) |                          | .790 (20.1)<br>.741 (18.8) | M37 X 1.0-6g 0.100R |



# 240-383J MIL-DTL-38999 Series III Filter Connector Jam Nut Receptacle



# 240-383J

## MIL-DTL-38999 Series III Filter Connector

### Jam Nut Receptacle



MIL-DTL-38999  
Connectors

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL  | FINISH DESCRIPTION                    | X                          |
|-----|---------------|-----------|---------------------------------------|----------------------------|
| M   | Environmental | Aluminum  | Electroless Nickel                    | .880 (22.4)<br>.874 (22.2) |
| MT  | Environmental | Aluminum  | Nickel Fluorocarbon Polymer (Ni-PTFE) |                            |
| NF  | Environmental | Aluminum  | Cad. O.D. Over Electroless Nickel     |                            |
| P   | Environmental | Stainless | Electro-Deposited Nickel              |                            |
| XM  | Environmental | Composite | Electroless Nickel                    | .857 (21.8)<br>.847 (21.5) |
| XMT | Environmental | Composite | Nickel Fluorocarbon Polymer (Ni-PTFE) |                            |
| XW  | Environmental | Composite | Cad. O.D. Over Electroless Nickel     |                            |
| ZN  | Environmental | Aluminum  | Zinc-Nickel Over Electroless Nickel   | .880 (22.4)<br>.874 (22.2) |
| H2* | Hermetic      | Stainless | Electroless Nickel                    |                            |

\* Some dimensions do not apply, see sales drawing 240-383JH2

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV - Please consult factory.

**MIL-DTL-38999 Series III  
Jam Nut Panel Cutout**

| SHELL<br>SIZE<br>CODE | SHELL<br>SIZE | Ø H                          | J                            |
|-----------------------|---------------|------------------------------|------------------------------|
| A                     | 09            | .710 (18.0)<br>.700 (17.8)   | .670 (17.0)<br>.660 (16.8)   |
| B                     | 11            | .835 (21.2)<br>.825 (21.0)   | .771 (19.6)<br>.761 (19.3)   |
| C                     | 13            | 1.020 (25.9)<br>1.010 (25.7) | .955 (24.3)<br>.945 (24.0)   |
| D                     | 15            | 1.145 (29.1)<br>1.135 (28.8) | 1.085 (27.6)<br>1.075 (27.3) |
| E                     | 17            | 1.270 (32.3)<br>1.260 (32.0) | 1.210 (30.7)<br>1.200 (30.5) |
| F                     | 19            | 1.395 (35.4)<br>1.385 (35.2) | 1.335 (33.9)<br>1.325 (33.7) |
| G                     | 21            | 1.520 (38.6)<br>1.510 (38.4) | 1.460 (37.1)<br>1.450 (36.8) |
| H                     | 23            | 1.645 (41.8)<br>1.635 (41.5) | 1.585 (40.3)<br>1.575 (40.0) |
| J                     | 25            | 1.770 (45.0)<br>1.760 (44.7) | 1.710 (43.4)<br>1.700 (43.2) |

*Consult Factory for  
Additional Filter Types,  
TVS Diodes, and other  
Custom Configurations.*

**JAM NUT MOUNT**

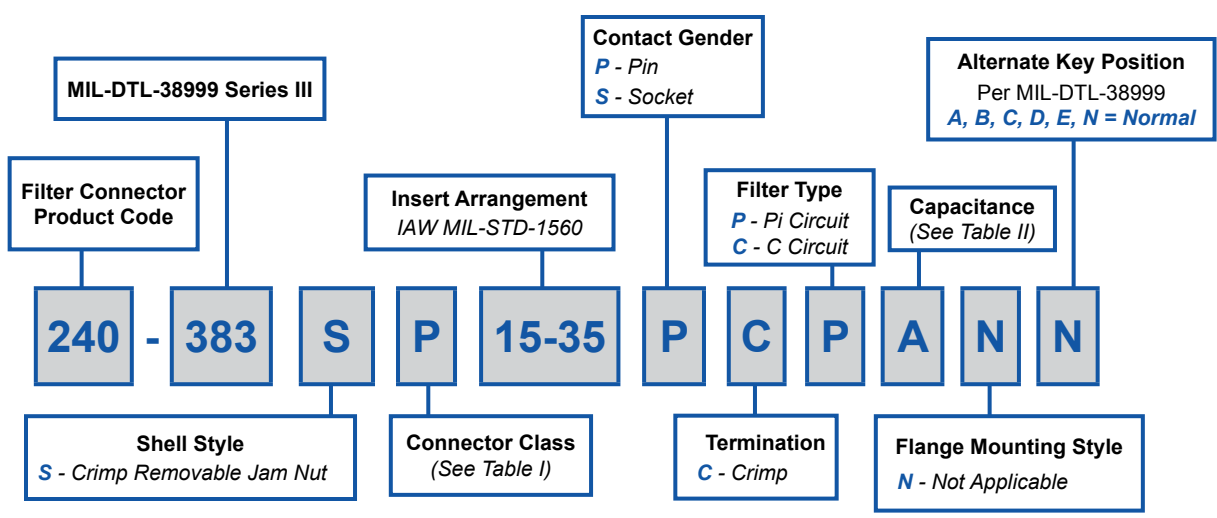
| SHELL<br>SIZE<br>CODE | SHELL<br>SIZE | A THREAD               | Ø B                          | C                            | D                            | E THREAD            | F THREAD            | G                        |
|-----------------------|---------------|------------------------|------------------------------|------------------------------|------------------------------|---------------------|---------------------|--------------------------|
| A                     | 09            | .6250- .1P- .3L-TS-2A  | 1.262 (32.1)<br>1.177 (29.9) | 1.079 (27.4)<br>1.047 (26.6) | .655 (16.6)<br>.645 (16.4)   | M17 X 1.0-6g 0.100R | M12 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| B                     | 11            | .7500- .1P- .3L-TS-2A  | 1.386 (35.2)<br>1.362 (34.6) | 1.268 (32.2)<br>1.236 (31.4) | .755 (19.2)<br>.745 (18.9)   | M20 X 1.0-6g 0.100R | M15 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| C                     | 13            | .8750- .1P- .3L-TS-2A  | 1.512 (38.4)<br>1.488 (37.8) | 1.390 (35.3)<br>1.358 (34.5) | .942 (23.9)<br>.932 (23.7)   | M25 X 1.0-6g 0.100R | M18 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| D                     | 15            | 1.000- .1P- .3L-TS-2A  | 1.638 (41.6)<br>1.614 (41.0) | 1.516 (38.5)<br>1.484 (37.7) | 1.068 (27.1)<br>1.058 (26.8) | M28 X 1.0-6g 0.100R | M22 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| E                     | 17            | 1.1875- .1P- .3L-TS-2A | 1.764 (44.8)<br>1.740 (44.2) | 1.642 (41.7)<br>1.610 (40.9) | 1.191 (30.3)<br>1.181 (30.0) | M32 X 1.0-6g 0.100R | M25 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| F                     | 19            | 1.2500- .1P- .3L-TS-2A | 1.949 (49.5)<br>1.925 (48.9) | 1.827 (46.4)<br>1.795 (45.6) | 1.316 (33.4)<br>1.306 (33.2) | M35 X 1.0-6g 0.100R | M28 X 1.0-6g 0.100R | .154 (3.9)<br>.114 (2.9) |
| G                     | 21            | 1.3750- .1P- .3L-TS-2A | 2.075 (52.7)<br>2.051 (52.1) | 1.953 (49.6)<br>1.921 (48.8) | 1.441 (36.6)<br>1.431 (36.3) | M38 X 1.0-6g 0.100R | M31 X 1.0-6g 0.100R | .154 (3.9)<br>.114 (2.9) |
| H                     | 23            | 1.5000- .1P- .3L-TS-2A | 2.201 (55.9)<br>2.177 (55.3) | 2.079 (52.8)<br>2.047 (52.0) | 1.566 (39.8)<br>1.556 (39.5) | M41 X 1.0-6g 0.100R | M34 X 1.0-6g 0.100R | .154 (3.9)<br>.114 (2.9) |
| J                     | 25            | 1.6250- .1P- .3L-TS-2A | 2.323 (59.0)<br>2.299 (58.4) | 2.205 (56.0)<br>2.173 (55.2) | 1.691 (43.0)<br>1.681 (42.7) | M44 X 1.0-6g 0.100R | M37 X 1.0-6g 0.100R | .154 (3.9)<br>.114 (2.9) |



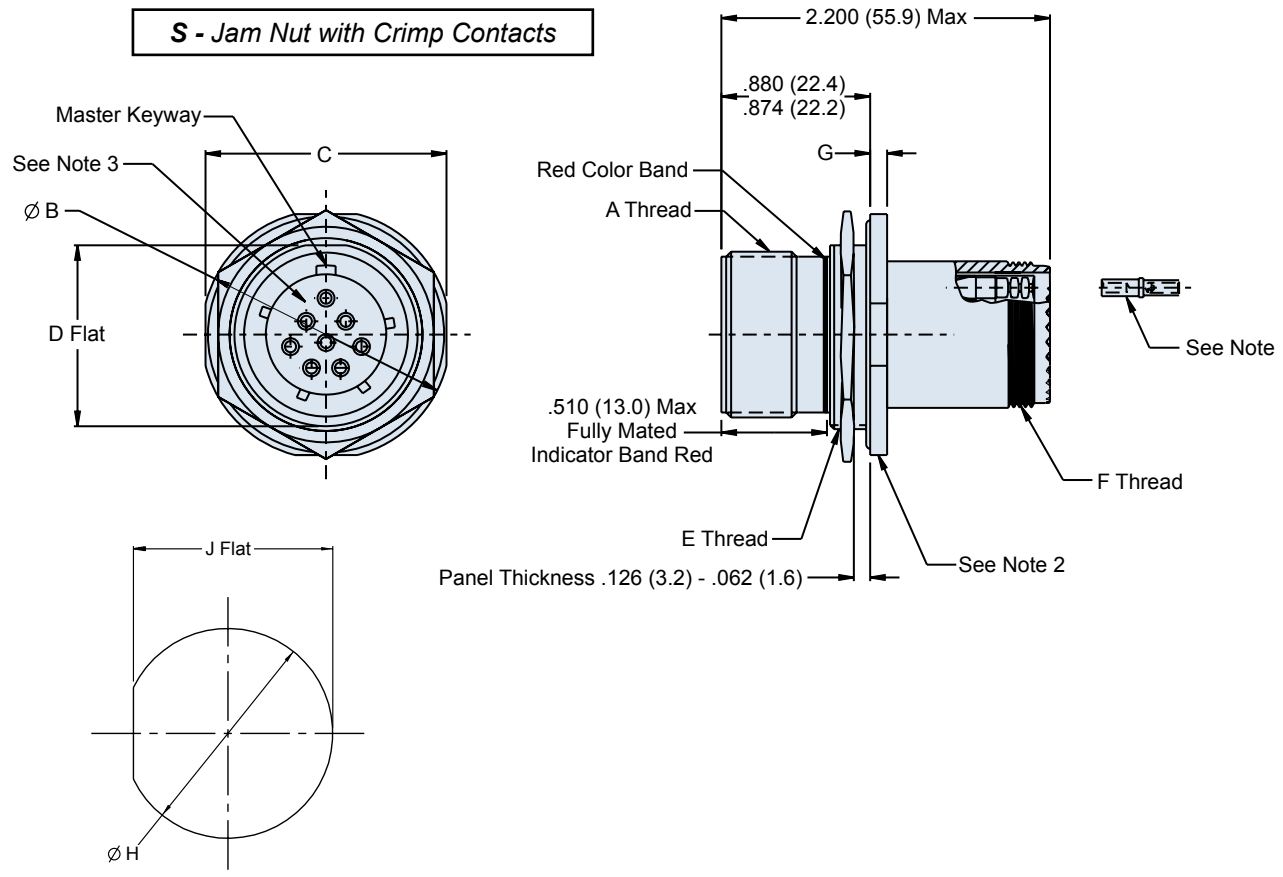


**240-383S**  
**MIL-DTL-38999 Series III Filter Connector**  
**Jam Nut Receptacle**  
**with Crimp Removable Contacts**

**B**



**NOTE:** Crimp removable contacts to conform to MIL-C-39029/57-358, Size 16, MIL-C-39029/57-357 Size 20, and MIL-C-39029/57-354 Size 22D (Supplied loose).



**240-383S**  
**MIL-DTL-38999 Series III Filter Connector**  
**Jam Nut Receptacle**  
**with Crimp Removable Contacts**



**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL  | FINISH DESCRIPTION                    |
|-----|---------------|-----------|---------------------------------------|
| M   | Environmental | Aluminum  | Electroless Nickel                    |
| MT  | Environmental | Aluminum  | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum  | Cad. O.D. Over Electroless Nickel     |
| P   | Environmental | Stainless | Electro-Deposited Nickel              |
| XM  | Environmental | Composite | Electroless Nickel                    |
| XMT | Environmental | Composite | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| XW  | Environmental | Composite | Cad. O.D. Over Electroless Nickel     |
| ZN  | Environmental | Aluminum  | Zinc-Nickel Over Electroless Nickel   |
| H2* | Hermetic      | Stainless | Electroless Nickel                    |

\* Some dimensions do not apply, see sales drawing 240-383JH2

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

**MIL-DTL-38999 Series III  
Jam Nut Panel Cutout**

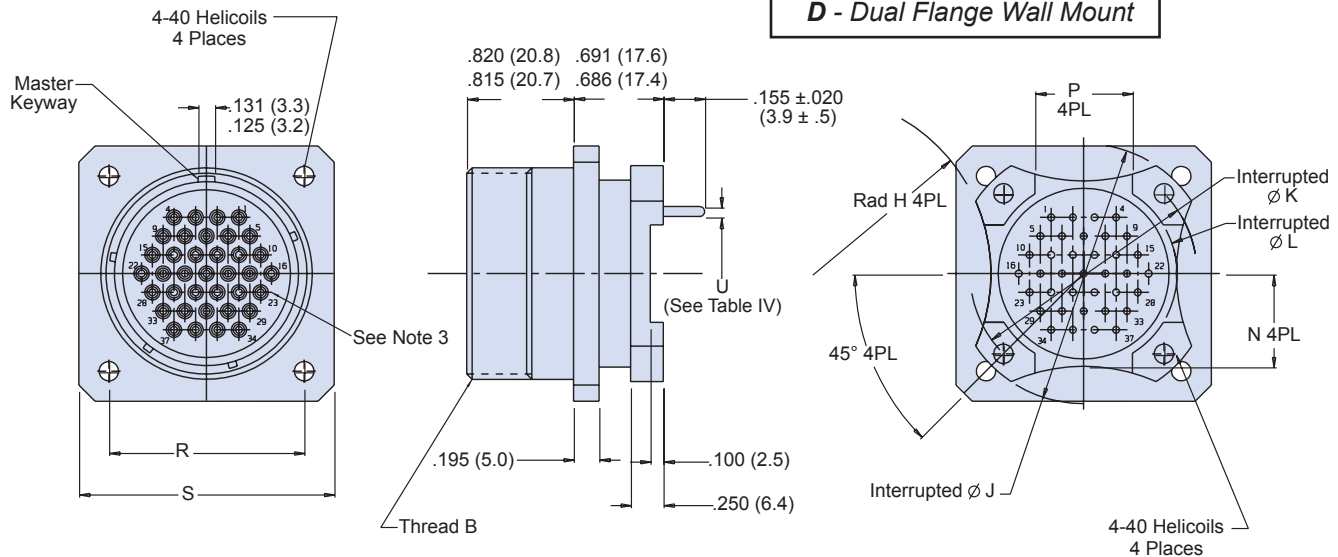
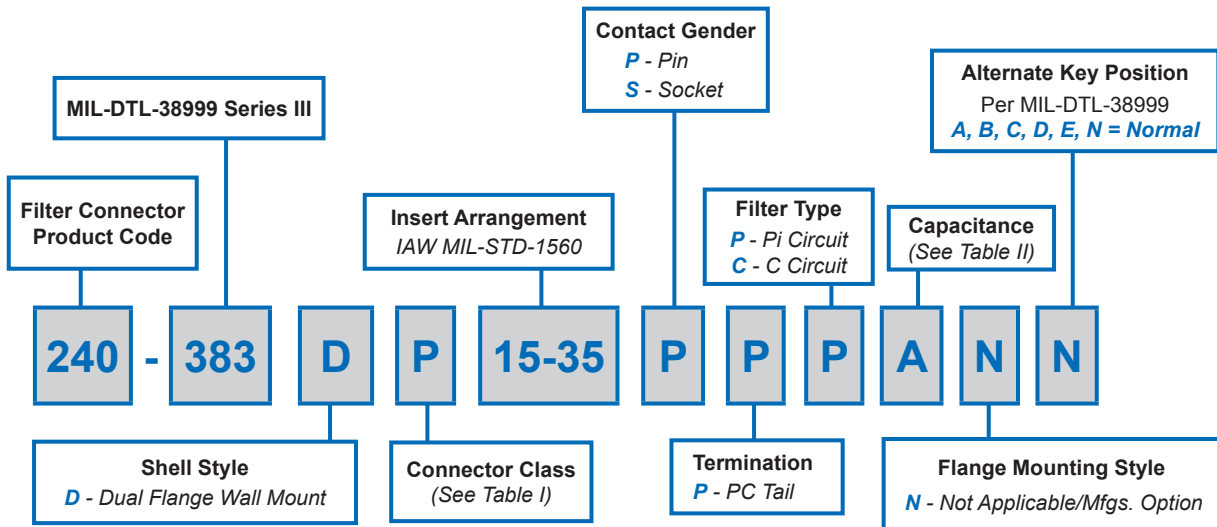
| SHELL<br>SIZE<br>CODE | SHELL<br>SIZE | Ø H                          | J                            |
|-----------------------|---------------|------------------------------|------------------------------|
| A                     | 09            | .710 (18.0)<br>.700 (17.8)   | .670 (17.0)<br>.660 (16.8)   |
| B                     | 11            | .835 (21.2)<br>.825 (21.0)   | .771 (19.6)<br>.761 (19.3)   |
| C                     | 13            | 1.020 (25.9)<br>1.010 (25.7) | .955 (24.3)<br>.945 (24.0)   |
| D                     | 15            | 1.145 (29.1)<br>1.135 (28.8) | 1.085 (27.6)<br>1.075 (27.3) |
| E                     | 17            | 1.270 (32.3)<br>1.260 (32.0) | 1.210 (30.7)<br>1.200 (30.5) |
| F                     | 19            | 1.395 (35.4)<br>1.385 (35.2) | 1.335 (33.9)<br>1.325 (33.7) |
| G                     | 21            | 1.520 (38.6)<br>1.510 (38.4) | 1.460 (37.1)<br>1.450 (36.8) |
| H                     | 23            | 1.645 (41.8)<br>1.635 (41.5) | 1.585 (40.3)<br>1.575 (40.0) |
| J                     | 25            | 1.770 (45.0)<br>1.760 (44.7) | 1.710 (43.4)<br>1.700 (43.2) |

*Consult Factory for  
Additional Filter Types,  
TVS Diodes, and other  
Custom Configurations.*

**JAM NUT MOUNT**

| SHELL<br>SIZE<br>CODE | SHELL<br>SIZE | A THREAD               | Ø B                          | C                            | D                            | E THREAD            | F THREAD            | G                        |
|-----------------------|---------------|------------------------|------------------------------|------------------------------|------------------------------|---------------------|---------------------|--------------------------|
| A                     | 09            | .6250- .1P- .3L-TS-2A  | 1.262 (32.1)<br>1.248 (31.7) | 1.079 (27.4)<br>1.047 (26.6) | .655 (16.6)<br>.645 (16.4)   | M17 X 1.0-6g 0.100R | M12 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| B                     | 11            | .7500- .1P- .3L-TS-2A  | 1.386 (35.2)<br>1.362 (34.6) | 1.268 (32.2)<br>1.236 (31.4) | .755 (19.2)<br>.745 (18.9)   | M20 X 1.0-6g 0.100R | M15 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| C                     | 13            | .8750- .1P- .3L-TS-2A  | 1.512 (38.4)<br>1.488 (37.8) | 1.390 (35.3)<br>1.358 (34.5) | .942 (23.9)<br>.932 (23.7)   | M25 X 1.0-6g 0.100R | M18 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| D                     | 15            | 1.000- .1P- .3L-TS-2A  | 1.638 (41.6)<br>1.614 (41.0) | 1.516 (38.5)<br>1.484 (37.7) | 1.068 (27.1)<br>1.058 (26.9) | M28 X 1.0-6g 0.100R | M22 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| E                     | 17            | 1.1875- .1P- .3L-TS-2A | 1.764 (44.8)<br>1.740 (44.2) | 1.642 (41.7)<br>1.610 (40.9) | 1.191 (30.3)<br>1.181 (30.0) | M32 X 1.0-6g 0.100R | M25 X 1.0-6g 0.100R | .122 (3.1)<br>.083 (2.1) |
| F                     | 19            | 1.2500- .1P- .3L-TS-2A | 1.949 (49.5)<br>1.925 (48.9) | 1.827 (46.4)<br>1.795 (45.6) | 1.316 (33.4)<br>1.306 (33.2) | M35 X 1.0-6g 0.100R | M28 X 1.0-6g 0.100R | .154 (3.9)<br>.114 (2.9) |
| G                     | 21            | 1.3750- .1P- .3L-TS-2A | 2.075 (52.7)<br>2.051 (52.1) | 1.953 (49.6)<br>1.921 (48.8) | 1.441 (36.6)<br>1.431 (36.3) | M38 X 1.0-6g 0.100R | M31 X 1.0-6g 0.100R | .154 (3.9)<br>.114 (2.9) |
| H                     | 23            | 1.5000- .1P- .3L-TS-2A | 2.201 (55.9)<br>2.177 (55.3) | 2.079 (52.8)<br>2.047 (52.0) | 1.566 (39.8)<br>1.556 (39.5) | M41 X 1.0-6g 0.100R | M34 X 1.0-6g 0.100R | .154 (3.9)<br>.114 (2.9) |
| J                     | 25            | 1.6250- .1P- .3L-TS-2A | 2.323 (59.0)<br>2.299 (58.4) | 2.205 (56.0)<br>2.173 (55.2) | 1.691 (43.0)<br>1.681 (42.7) | M44 X 1.0-6g 0.100R | M37 X 1.0-6g 0.100R | .154 (3.9)<br>.114 (2.9) |

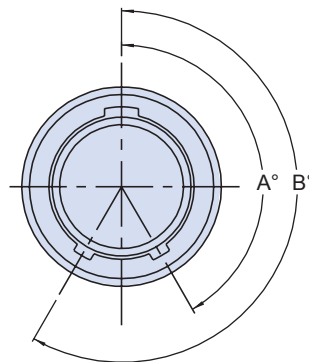
**240-383D**  
**MIL-DTL-38999 Series III Filter Connector**  
**Dual Flange Wall Mount Receptacle with P.C.Tails**



**TABLE IV**

**ALTERNATE KEY AND  
KEYWAY POSITION**

| Position | A°   | B°   |
|----------|------|------|
| A        | 150° | 210° |
| B        | 75°  | 210° |
| C        | 95°  | 230° |
| D        | 140° | 275° |



Normal and Alternate Position  
Key Rotation

**TABLE V:  
PC TAIL DIAMETER**

| Contact Size | ØU                       |
|--------------|--------------------------|
| 22D          | .018/.021<br>(0.46/0.53) |
| 20           | .029/.031<br>(0.7/0.8)   |
| 16           | .038/.042<br>(1.0/1.1)   |

# 240-383D

## MIL-DTL-38999 Series III Filter Connector

### Dual Flange Wall Mount Receptacle with P.C.Tails



MIL-DTL-38999  
Connectors

TABLE I: CONNECTOR CLASS

| SYM | CLASS         | MATERIAL  | FINISH DESCRIPTION                     |
|-----|---------------|-----------|----------------------------------------|
| M   | Environmental | Aluminum  | Electroless Nickel                     |
| ME  | Environmental | Aluminum  | Electroless Nickel, 16 Hrs. Salt Spray |
| MT  | Environmental | Aluminum  | Nickel Fluorocarbon Polymer (Ni-PTFE)  |
| NF  | Environmental | Aluminum  | Cad. O.D. Over Electroless Nickel      |
| P   | Environmental | Stainless | Electro-Deposited Nickel               |
| XM  | Environmental | Composite | Electroless Nickel                     |
| XMT | Environmental | Composite | Nickel Fluorocarbon Polymer (Ni-PTFE)  |
| XW  | Environmental | Composite | Cad. O.D. Over Electroless Nickel      |
| ZN  | Environmental | Aluminum  | Zinc-Nickel Over Electroless Nickel    |
| H2* | Hermetic      | Stainless | Electroless Nickel                     |

Consult Factory for Additional Filter Types, TVS Diodes, and other Custom Configurations.

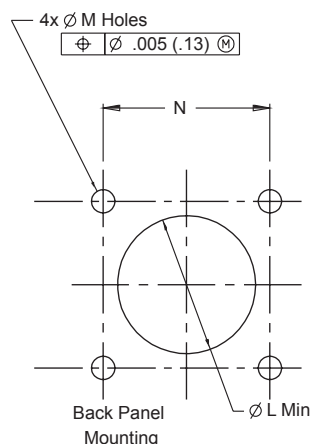
TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV - Please consult factory.

TABLE III: DIMENSIONS

| SHELL SIZE | B THREAD (PLATED)    | P<br>+/- .01 (.25) | R<br>BSC     | S<br>+/- .012 (.3) | ØJ<br>+/- .005 (.13) | ØK<br>BSC    | ØL<br>+/- .005 (.13) | H<br>+/- .020 (.51) | N<br>+/- .020 (.51) |
|------------|----------------------|--------------------|--------------|--------------------|----------------------|--------------|----------------------|---------------------|---------------------|
| 9          | .625-.1P-.3L-TS-2A   | .225 (5.7)         | .719 (18.3)  | .937 (23.8)        | 1.016 (25.8)         | .752 (19.1)  | .532 (13.5)          | .225 (5.7)          | .275 (7.0)          |
| 11         | .7500-.1P-.3L-TS-2A  | .250 (6.4)         | .812 (20.6)  | 1.181 (30.0)       | 1.062 (27.0)         | .850 (21.6)  | .595 (15.1)          | .250 (6.4)          | .290 (7.4)          |
| 13         | .8750-.1P-.3L-TS-2A  | .250 (6.4)         | .906 (23.0)  | 1.277 (32.4)       | 1.250 (31.8)         | .994 (25.2)  | .720 (18.3)          | .375 (9.5)          | .370 (9.4)          |
| 15         | 1.000-.1P-.3L-TS-2A  | .325 (8.2)         | .969 (24.6)  | 1.371 (34.8)       | 1.375 (34.9)         | 1.119 (28.4) | .843 (21.4)          | .438 (11.1)         | .440 (11.2)         |
| 17         | 1.1875-.1P-.3L-TS-2A | .375 (9.5)         | 1.062 (27.0) | 1.462 (37.1)       | 1.500 (38.1)         | 1.237 (31.4) | 1.000 (25.4)         | .562 (14.3)         | .495 (12.6)         |
| 19         | 1.2500-.1P-.3L-TS-2A | .500 (12.7)        | 1.156 (29.4) | 1.588 (40.3)       | 1.625 (41.3)         | 1.379 (35.0) | 1.125 (28.6)         | .875 (22.2)         | .540 (13.7)         |
| 21         | 1.3750-.1P-.3L-TS-2A | .562 (14.3)        | 1.250 (31.8) | 1.714 (43.5)       | 1.750 (44.5)         | 1.489 (37.8) | 1.240 (31.5)         | 1.170 (29.7)        | .625 (15.9)         |
| 23         | 1.5000-.1P-.3L-TS-2A | .688 (17.5)        | 1.375 (34.9) | 1.840 (46.7)       | 1.875 (47.6)         | 1.619 (41.1) | 1.328 (33.7)         | 1.250 (31.8)        | .660 (16.8)         |
| 25         | 1.6250-.1P-.3L-TS-2A | .750 (19.1)        | 1.500 (38.1) | 1.962 (49.8)       | 2.000 (50.8)         | 1.744 (44.3) | 1.453 (36.9)         | 1.375 (34.9)        | .740 (18.8)         |



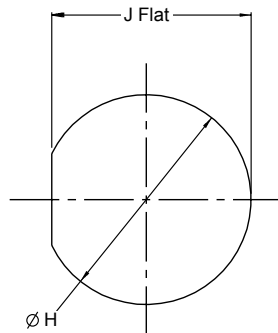
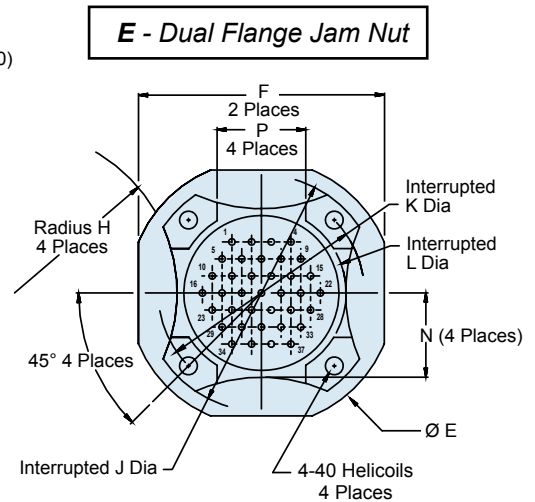
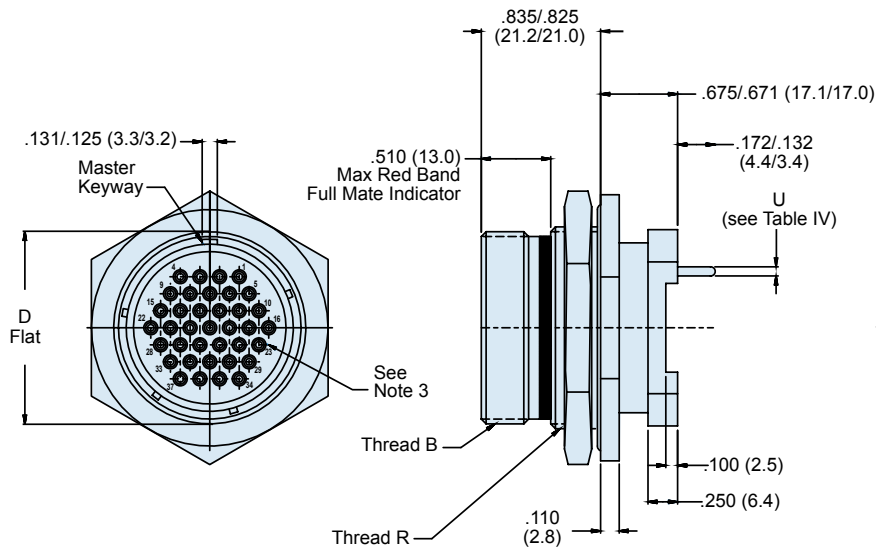
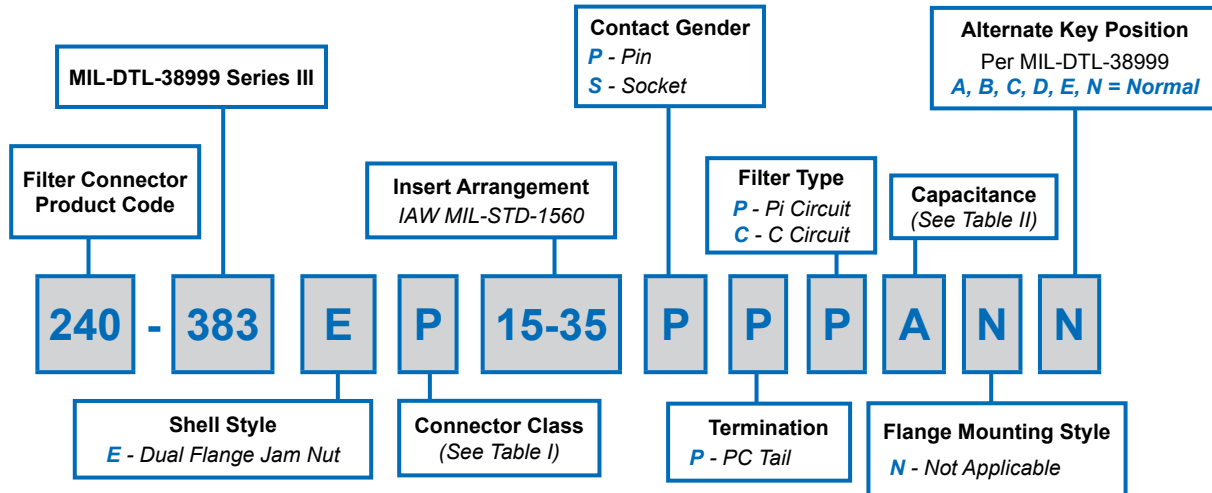
Panel Cutout Dimensions

| Shell Size | Ø L Min      | M Holes                  | N BSC        |
|------------|--------------|--------------------------|--------------|
| 09         | .656 (16.7)  | .133 (3.4)<br>.123 (3.1) | .719 (18.3)  |
| 11         | .792 (20.2)  | .133 (3.4)<br>.123 (3.1) | .812 (20.6)  |
| 13         | .922 (23.4)  | .133 (3.4)<br>.123 (3.1) | .906 (23.0)  |
| 15         | 1.047 (26.6) | .133 (3.4)<br>.123 (3.1) | .969 (24.6)  |
| 17         | 1.219 (31.0) | .133 (3.4)<br>.123 (3.1) | 1.062 (27.0) |
| 19         | 1.297 (32.9) | .133 (3.4)<br>.123 (3.1) | 1.156 (29.4) |
| 21         | 1.422 (36.1) | .133 (3.4)<br>.123 (3.1) | 1.250 (31.8) |
| 23         | 1.547 (39.3) | .159 (4.0)<br>.149 (3.8) | 1.375 (34.9) |
| 25         | 1.672 (42.5) | .155 (3.9)<br>.145 (3.7) | 1.500 (38.1) |



# 240-383E MIL-DTL-38999 Series III Filter Connector Dual Flange Jam Nut Receptacle

B



| TABLE V:<br>PC TAIL DIAMETER |                          |
|------------------------------|--------------------------|
| Contact Size                 | ØU                       |
| 22D                          | .018/.021<br>(0.46/0.53) |
| 20                           | .029/.031<br>(0.7/0.8)   |
| 16                           | .038/.042<br>(1.0/1.1)   |

**240-383E**  
**MIL-DTL-38999 Series III Filter Connector**  
**Dual Flange Jam Nut Receptacle**



MIL-DTL-38999  
Connectors

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL  | FINISH DESCRIPTION                     |
|-----|---------------|-----------|----------------------------------------|
| M   | Environmental | Aluminum  | Electroless Nickel                     |
| ME  | Environmental | Aluminum  | Electroless Nickel, 16 Hrs. Salt Spray |
| MT  | Environmental | Aluminum  | Nickel Fluorocarbon Polymer (Ni-PTFE)  |
| NF  | Environmental | Aluminum  | Cad. O.D. Over Electroless Nickel      |
| P   | Environmental | Stainless | Electro-Deposited Nickel               |
| XM  | Environmental | Composite | Electroless Nickel                     |
| XMT | Environmental | Composite | Nickel Fluorocarbon Polymer (Ni-PTFE)  |
| XW  | Environmental | Composite | Cad. O.D. Over Electroless Nickel      |
| ZN  | Environmental | Aluminum  | Zinc-Nickel Over Electroless Nickel    |
| H2* | Hermetic      | Stainless | Electroless Nickel                     |

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

**MIL-DTL-38999 Series III  
Jam Nut Panel Cutout**

| SHELL SIZE | Ø H                          | J                            |
|------------|------------------------------|------------------------------|
| 09         | .710 (18.0)<br>.700 (17.8)   | .670 (17.0)<br>.660 (16.8)   |
| 11         | .835 (21.2)<br>.825 (21.0)   | .771 (19.6)<br>.761 (19.3)   |
| 13         | 1.020 (25.9)<br>1.010 (25.7) | .955 (24.3)<br>.945 (24.0)   |
| 15         | 1.145 (29.1)<br>1.135 (28.8) | 1.085 (27.6)<br>1.075 (27.3) |
| 17         | 1.270 (32.3)<br>1.260 (32.0) | 1.210 (30.7)<br>1.200 (30.5) |
| 19         | 1.395 (35.4)<br>1.385 (35.2) | 1.335 (33.9)<br>1.325 (33.7) |
| 21         | 1.520 (38.6)<br>1.510 (38.4) | 1.460 (37.1)<br>1.450 (36.8) |
| 23         | 1.645 (41.8)<br>1.635 (41.5) | 1.585 (40.3)<br>1.575 (40.0) |
| 25         | 1.770 (45.0)<br>1.760 (44.7) | 1.710 (43.4)<br>1.700 (43.2) |

*Consult Factory for  
Additional Filter Types,  
TVS Diodes, and other  
Custom Configurations.*

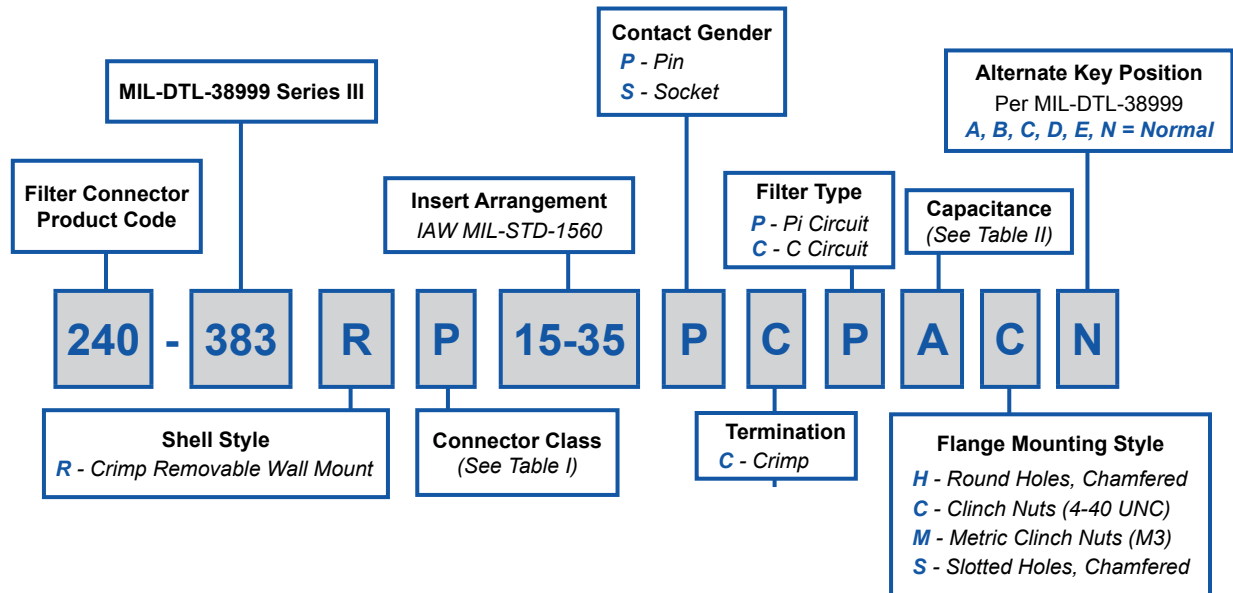
**TABLE III: DIMENSIONS**

| SHELL SIZE | B Thread (Plated)      | D<br>± .005     | Ø E<br>± .012   | F<br>± .016     | P<br>± .010<br>(0.25) | R Thread<br>Metric<br>(Plated) | J Dia<br>± .005<br>(0.13) | K Dia<br>Basic  | L Dia<br>± .005<br>(0.13) | H<br>± .020<br>(0.51) | N<br>± .020<br>(0.51) |
|------------|------------------------|-----------------|-----------------|-----------------|-----------------------|--------------------------------|---------------------------|-----------------|---------------------------|-----------------------|-----------------------|
| 9          | .625- .1P- .3L-TS-2A   | .651 (16.5)     | 1.250<br>(31.8) | 1.063<br>(27.0) | .225 (5.7)            | M17 x 1-6g-0.10R               | 1.016<br>(25.8)           | .752 (19.1)     | .532 (13.5)               | .225 (5.7)            | .275 (7.0)            |
| 11         | .7500- .1P- .3L-TS-2A  | .751 (19.1)     | 1.377<br>(35.0) | 1.259<br>(32.0) | .250 (6.4)            | M20 x 1-6g-0.10R               | 1.062<br>(27.0)           | .850 (21.6)     | .595 (15.1)               | .250 (6.4)            | .290 (7.4)            |
| 13         | .8750- .1P- .3L-TS-2A  | .937 (23.8)     | 1.500<br>(38.1) | 1.374<br>(34.9) | .250 (6.4)            | M25 x 1-6g-0.10R               | 1.250<br>(31.8)           | .994 (25.2)     | .720 (18.3)               | .375 (9.5)            | .370 (9.4)            |
| 15         | 1.0000- .1P- .3L-TS-2A | 1.063<br>(27.0) | 1.625<br>(41.3) | 1.500<br>(38.1) | .325 (8.2)            | M28 x 1-6g-0.10R               | 1.375<br>(34.9)           | 1.119 (28.4)    | .843 (21.4)               | .438 (11.1)           | .440<br>(11.2)        |
| 17         | 1.8750- .1P- .3L-TS-2A | 1.187<br>(30.2) | 1.750<br>(44.5) | 1.625<br>(41.3) | .375 (9.5)            | M32 x 1-6g-0.10R               | 1.500<br>(38.1)           | 1.237<br>(31.4) | 1.000<br>(25.4)           | .562 (14.3)           | .495<br>(12.6)        |
| 19         | 1.2500- .1P- .3L-TS-2A | 1.311<br>(33.3) | 1.937<br>(49.2) | 1.822<br>(46.3) | .500<br>(12.7)        | M35 x 1-6g-0.10R               | 1.625<br>(41.3)           | 1.379<br>(35.0) | 1.125<br>(28.6)           | .875 (22.2)           | .540<br>(13.7)        |
| 21         | 1.3750- .1P- .3L-TS-2A | 1.434<br>(36.4) | 2.063<br>(52.4) | 1.940<br>(49.3) | .562<br>(14.3)        | M38 x 1-6g-0.10R               | 1.750<br>(44.5)           | 1.489<br>(37.8) | 1.240<br>(31.5)           | 1.170<br>(29.7)       | .625<br>(15.9)        |
| 23         | 1.5000- .1P- .3L-TS-2A | 1.561<br>(39.7) | 2.190<br>(55.6) | 2.073<br>(52.7) | .688<br>(17.5)        | M41 x 1-6g-0.10R               | 1.875<br>(47.6)           | 1.619<br>(41.1) | 1.328<br>(33.7)           | 1.250<br>(31.8)       | .660<br>(16.8)        |
| 25         | 1.6250- .1P- .3L-TS-2A | 1.687<br>(42.9) | 2.311<br>(58.7) | 2.189<br>(55.6) | .750<br>(19.1)        | M44 x 1-6g-0.10R               | 2.000<br>(50.8)           | 1.744<br>(44.3) | 1.453<br>(36.9)           | 1.375<br>(34.9)       | .740<br>(18.8)        |



240-383R  
MIL-DTL-38999 Series III Filter Connector  
Wall Mount Receptacle  
with Crimp Removable Contacts

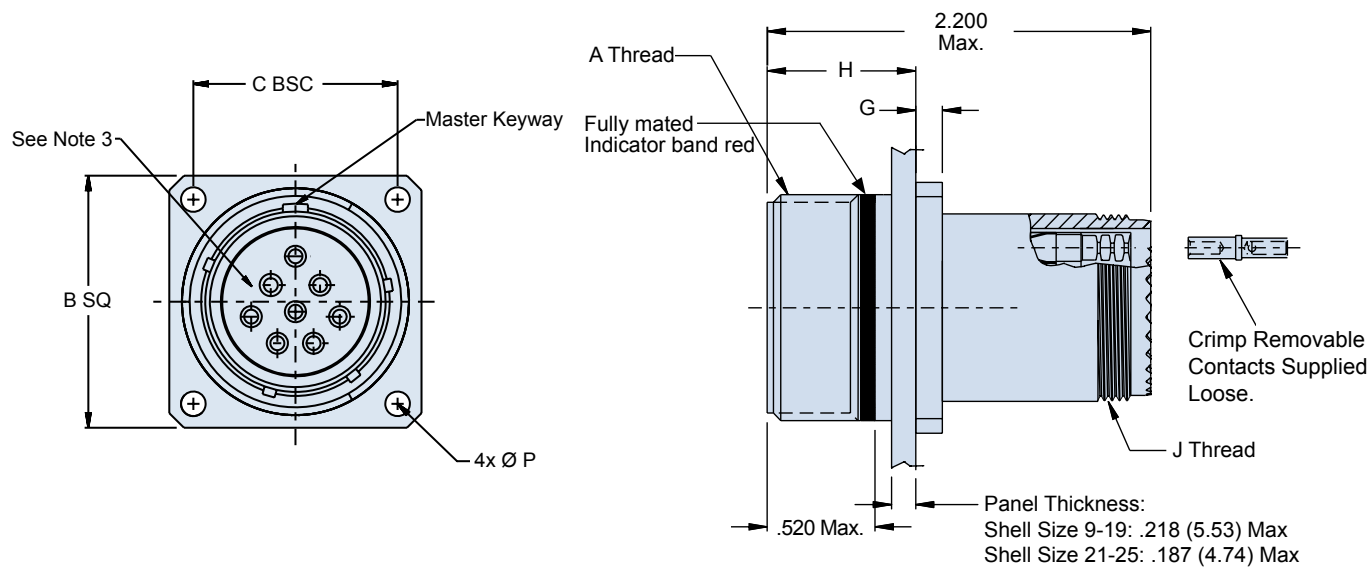
B



**NOTE:** Crimp removable contacts to conform to MIL-C-39029/57-358, Size 16, MIL-C-39029/57-357 Size 20, and MIL-C-39029/57-354 Size 22D (Supplied loose).

Clinch Nuts and Metric Clinch Nuts Not Available for Composites

R - Wall Mount with Crimp Removable Contacts



# 240-383R MIL-DTL-38999 Series III Filter Connector Wall Mount Receptacle with Crimp Removable Contacts

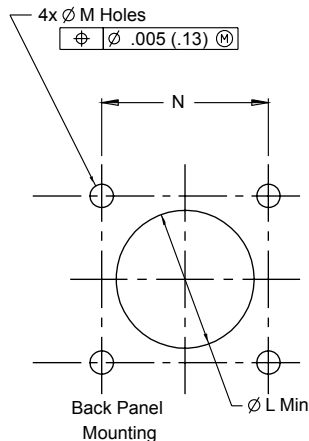


MIL-DTL-38999  
Connectors

B

Panel Cutout Dimensions

| Shell Size | Ø L Min      | M Holes                  | N BSC        |
|------------|--------------|--------------------------|--------------|
| 09         | .656 (16.7)  | .133 (3.4)<br>.123 (3.1) | .719 (18.3)  |
| 11         | .792 (20.2)  | .133 (3.4)<br>.123 (3.1) | .812 (20.6)  |
| 13         | .922 (23.4)  | .133 (3.4)<br>.123 (3.1) | .906 (23.0)  |
| 15         | .047 (26.6)  | .133 (3.4)<br>.123 (3.1) | .969 (24.6)  |
| 17         | .219 (31.0)  | .133 (3.4)<br>.123 (3.1) | 1.062 (27.0) |
| 19         | 1.297 (32.9) | .133 (3.4)<br>.123 (3.1) | 1.156 (29.4) |
| 21         | 1.422 (36.1) | .133 (3.4)<br>.123 (3.1) | 1.250 (31.8) |
| 23         | 1.547 (39.3) | .159 (4.0)<br>.149 (3.8) | 1.375 (34.9) |
| 25         | 1.672 (42.5) | .155 (3.9)<br>.145 (3.7) | 1.500 (38.1) |



Consult Factory for  
Additional Filter Types,  
TVS Diodes, and other  
Custom Configurations.

TABLE I: CONNECTOR CLASS

| SYM | CLASS         | MATERIAL  | FINISH DESCRIPTION                    |
|-----|---------------|-----------|---------------------------------------|
| M   | Environmental | Aluminum  | Electroless Nickel                    |
| MT  | Environmental | Aluminum  | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum  | Cad. O.D. Over Electroless Nickel     |
| P   | Environmental | Stainless | Electro-Deposited Nickel              |
| XM  | Environmental | Composite | Electroless Nickel                    |
| XMT | Environmental | Composite | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| XW  | Environmental | Composite | Cad. O.D. Over Electroless Nickel     |
| ZN  | Environmental | Aluminum  | Zinc-Nickel Over Electroless Nickel   |
| H2* | Hermetic      | Stainless | Electroless Nickel                    |

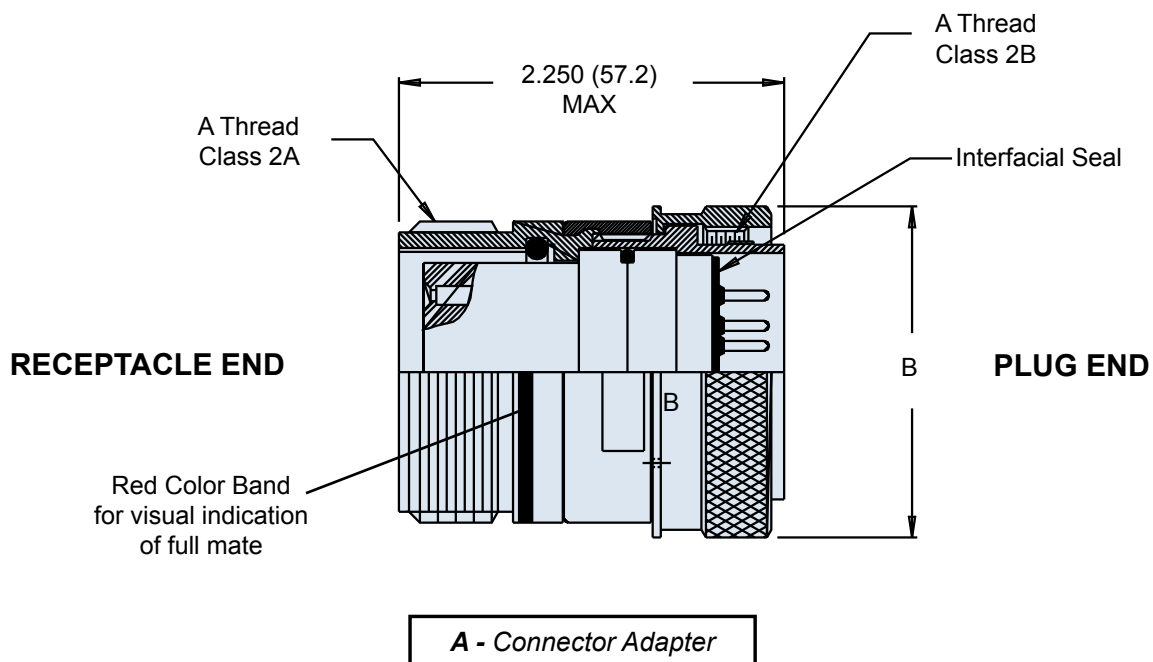
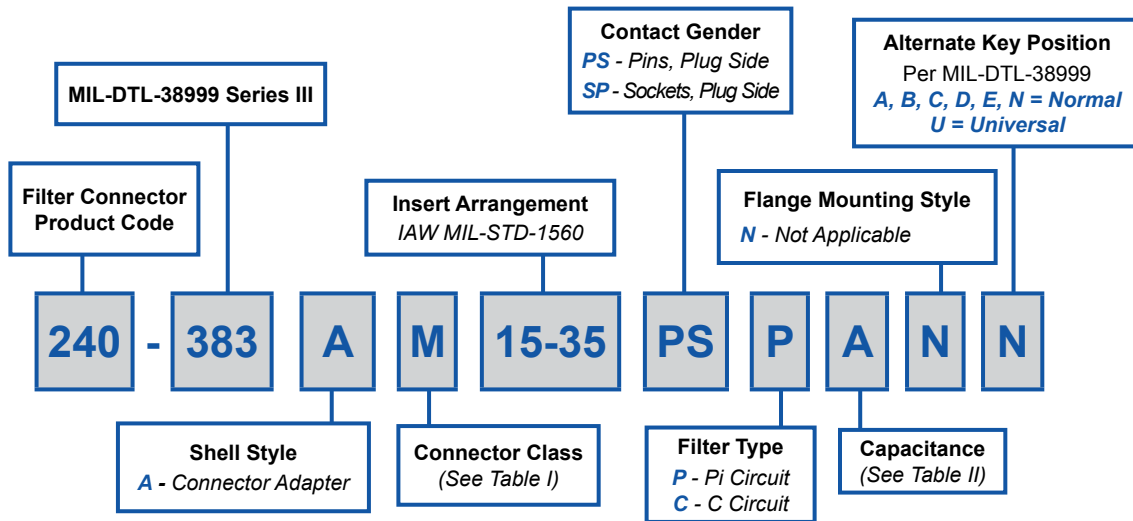
TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV - Please consult factory.

WALL MOUNT WITH CRIMP CONTACTS

| SHELL SIZE CODE | SHELL SIZE | A THREAD             | B SQ                         | C BSC        | D BSC        | E                        | F                        | G                        | H                          | J THREAD               | PØ ± .010  |
|-----------------|------------|----------------------|------------------------------|--------------|--------------|--------------------------|--------------------------|--------------------------|----------------------------|------------------------|------------|
| A               | 09         | .6250-.1P-.3L-TS-2A  | 0.949 (24.1)<br>0.925 (23.5) | .719 (18.3)  | .594 (15.1)  | .136 (3.5)<br>.120 (3.0) | .224 (5.7)<br>.208 (5.3) |                          | .820 (20.8)<br>.771 (19.6) | M12 X 1.0-6g<br>0.100R |            |
| B               | 11         | .7500-.1P-.3L-TS-2A  | 1.043 (26.5)<br>1.019 (25.9) | .812 (20.6)  | .719 (18.3)  | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) |                          | .820 (20.8)<br>.771 (19.6) | M15 X 1.0-6g<br>0.100R |            |
| C               | 13         | .8750-.1P-.3L-TS-2A  | 1.138 (28.9)<br>1.114 (28.3) | .906 (23.0)  | .812 (20.6)  | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) | .143 (3.6)               | .820 (20.8)<br>.771 (19.6) | M18 X 1.0-6g<br>0.100R |            |
| D               | 15         | 1.000-.1P-.3L-TS-2A  | 1.232 (31.3)<br>1.208 (30.7) | .969 (24.6)  | .906 (23.0)  | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) | .083 (2.1)               | .820 (20.8)<br>.771 (19.6) | M22 X 1.0-6g<br>0.100R | .128 (3.3) |
| E               | 17         | 1.1875-.1P-.3L-TS-2A | 1.323 (33.6)<br>1.299 (33.0) | 1.062 (27.0) | .969 (24.6)  | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) |                          | .820 (20.8)<br>.771 (19.6) | M25 X 1.0-6g<br>0.100R |            |
| F               | 19         | 1.2500-.1P-.3L-TS-2A | 1.449 (36.8)<br>1.425 (36.2) | 1.156 (29.4) | 1.062 (27.0) | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) |                          | .820 (20.8)<br>.771 (19.6) | M28 X 1.0-6g<br>0.100R |            |
| G               | 21         | 1.3750-.1P-.3L-TS-2A | 1.575 (40.0)<br>1.551 (39.4) | 1.250 (31.8) | 1.156 (29.4) | .136 (3.5)<br>.120 (3.0) | .202 (5.1)<br>.186 (4.7) |                          | .790 (20.1)<br>.741 (18.8) | M31 X 1.0-6g<br>0.100R |            |
| H               | 23         | 1.5000-.1P-.3L-TS-2A | 1.701 (43.2)<br>1.677 (42.6) | 1.375 (34.9) | 1.250 (31.8) | .162 (4.1)<br>.146 (3.7) | .250 (6.4)<br>.083 (2.1) | .171 (4.3)<br>.083 (2.1) | .790 (20.1)<br>.741 (18.8) | M34 X 1.0-6g<br>0.100R | .156 (4.0) |
| J               | 25         | 1.6250-.1P-.3L-TS-2A | 1.823 (46.3)<br>1.799 (45.7) | 1.500 (38.1) | 1.375 (34.9) | .162 (4.1)<br>.146 (3.7) | .250 (6.4)<br>.083 (2.1) |                          | .790 (20.1)<br>.741 (18.8) | M37 X 1.0-6g<br>0.100R |            |



\* Please consult factory for Pin/Pin and/or Socket/Socket contact arrangements.



# 240-383A MIL-DTL-38999 Series III Filter Connector Connector Adapter



MIL-DTL-38999  
Connectors

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL  | FINISH DESCRIPTION                    |
|-----|---------------|-----------|---------------------------------------|
| M   | Environmental | Aluminum  | Electroless Nickel                    |
| MT  | Environmental | Aluminum  | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum  | Cad. O.D. Over Electroless Nickel     |
| P   | Environmental | Stainless | Electro-Deposited Nickel              |
| ZN  | Environmental | Aluminum  | Zinc-Nickel Over Electroless Nickel   |
| H2* | Hermetic      | Stainless | Electroless Nickel                    |

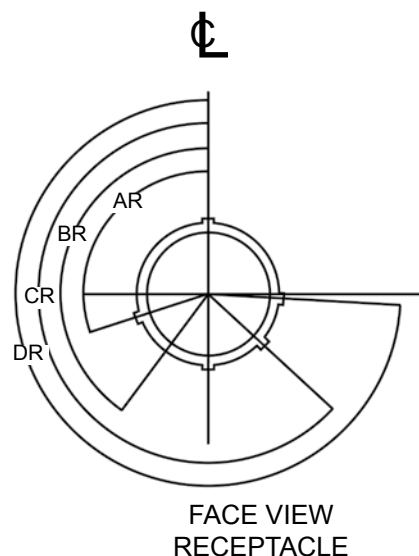
*Consult Factory for  
Additional Filter Types,  
TVS Diodes, and other  
Custom Configurations.*

\* Some dimensions do not apply, see sales drawing 240-383JH2

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV - Please consult factory.



**DIMENSIONS**

| SHELL<br>SIZE<br>CODE | SHELL<br>SIZE | A THREAD CLASS 2       | B DIA. MAX   |
|-----------------------|---------------|------------------------|--------------|
| A-1                   | 09            | .6250- .1P- .3L-TS-2A  | .858 (21.8)  |
| B-1                   | 11            | .7500- .1P- .3L-TS-2A  | .984 (25.0)  |
| C-1                   | 13            | .8750- .1P- .3L-TS-2A  | 1.157 (29.4) |
| D-1                   | 15            | 1.000- .1P- .3L-TS-2A  | 1.280 (32.5) |
| E-1                   | 17            | 1.1875- .1P- .3L-TS-2A | 1.406 (35.7) |
| F-1                   | 19            | 1.2500- .1P- .3L-TS-2A | 1.516 (38.5) |
| G-1                   | 21            | 1.3750- .1P- .3L-TS-2A | 1.642 (41.7) |
| H-1                   | 23            | 1.5000- .1P- .3L-TS-2A | 1.768 (44.9) |
| J-1                   | 25            | 1.6250- .1P- .3L-TS-2A | 1.890 (48.0) |



# Glenair MIL-DTL-38999 Series IV Type Filter Connector with Breech-Lock Coupling

Master How to Order • Part Number Breakdown

B

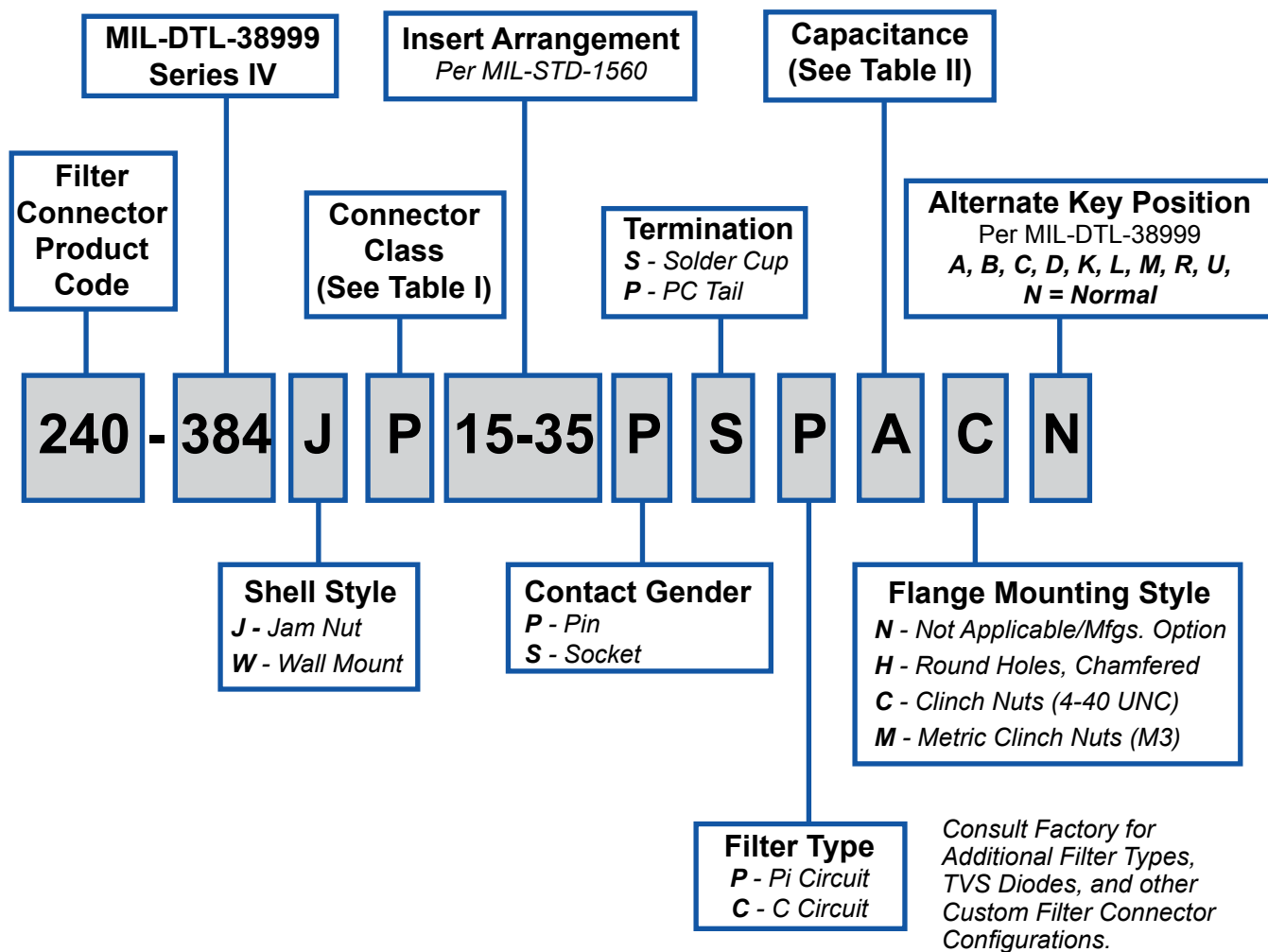


TABLE I: CONNECTOR CLASS

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                    |
|-----|---------------|-----------------|---------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                    |
| MT  | Environmental | Aluminum        | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel  |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel              |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel   |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                    |

# Glenair MIL-DTL-38999 Series IV Type Filter Connector with Breech-Lock Coupling Reference Information



MIL-DTL-38999  
Connectors

B

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

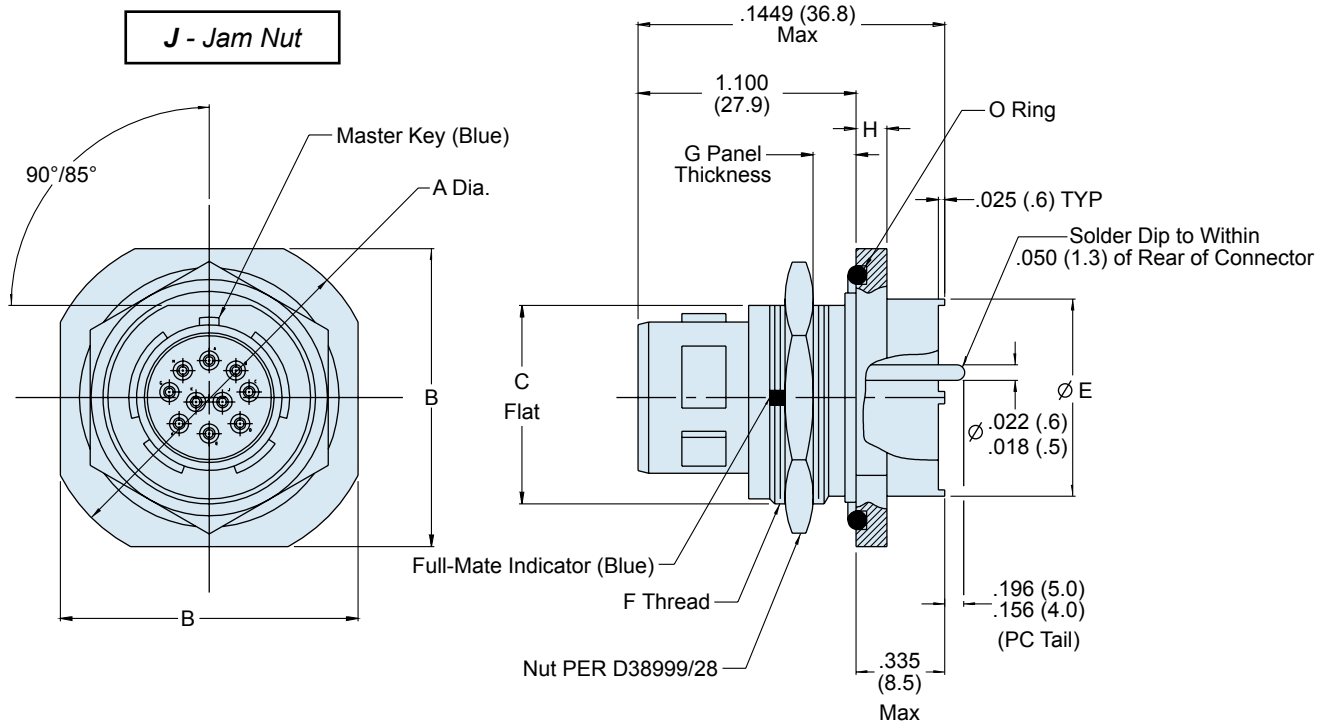
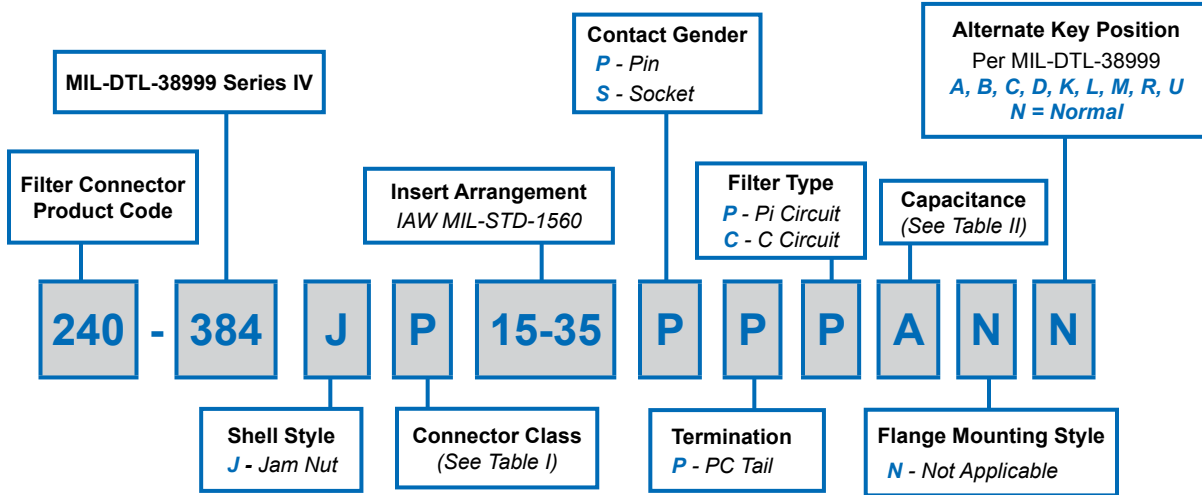
| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

## APPLICATION NOTES

1. Materials/Finishes: Shells, Barrel, Coupling Nut, Jam Nut - See Table I  
Insulators - high grade rigid dielectric/N.A.  
Seals - Fluorosilicone  
PC Tail & Solder Cup contacts: 50μ" Gold over 50μ" Nickel
2. Assembly to be identified with Glenair's name, part number, and date code - space permitting.
3. Insert Arrangement in accordance with MIL-STD-1560.  
(Arrangement shown for reference only)
4. EMI Circular Filter Receptacle connector designed to meet requirements of MIL-STD-2120 and MIL-DTL-38999, Series IV.
5. All contacts to have identical filter value. Other filter arrangements available, contact factory.
6. Electrical Ratings: DWV- 500 VDC Min.; Standard Operating Voltage 200 Volts DC; Current Rating 5 Amps (size 22);
7. Insulation Resistance: 5000 MegOhms Min. at 200 VDC.
8. Operating Temperature -55°C to +125°C (Env Class Connectors)
9. Other filter styles (C-L, L-C, Unbalanced PI, Multi-Stage, Multi-Value) are available, please consult the factory.
10. Metric Dimensions (mm) are indicated in parentheses.

**240-384J**  
**MIL-DTL-38999 Series IV Filter Connector**  
**Jam Nut Receptacle**



**240-384J**  
**MIL-DTL-38999 Series IV Filter Connector**  
**Jam Nut Receptacle**



**MIL-DTL-38999  
Connectors**

**B**

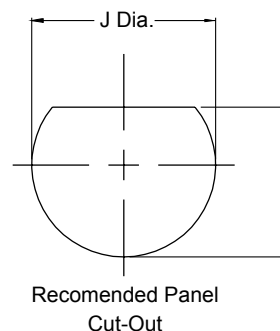
**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                    |
|-----|---------------|-----------------|---------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                    |
| MT  | Environmental | Aluminum        | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel  |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel              |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel   |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                    |

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

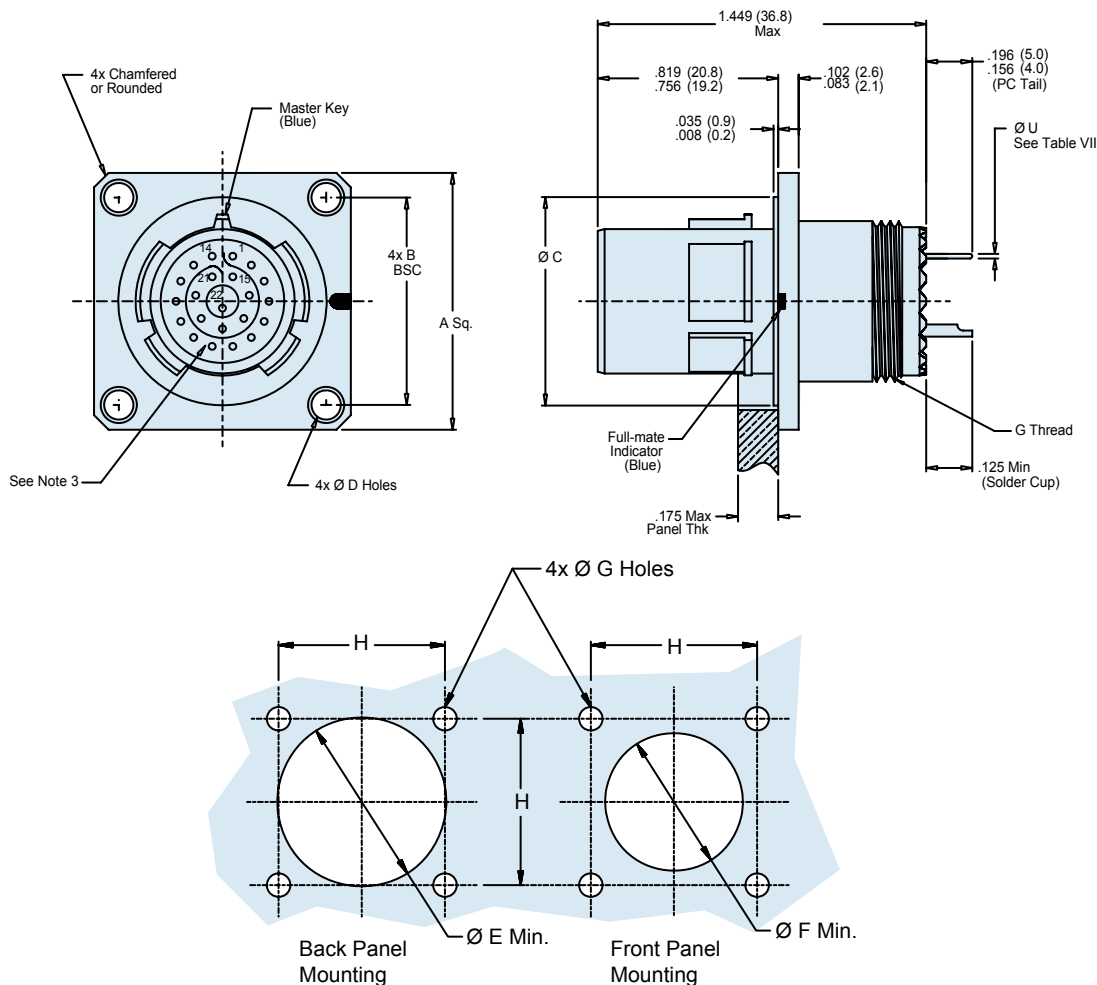
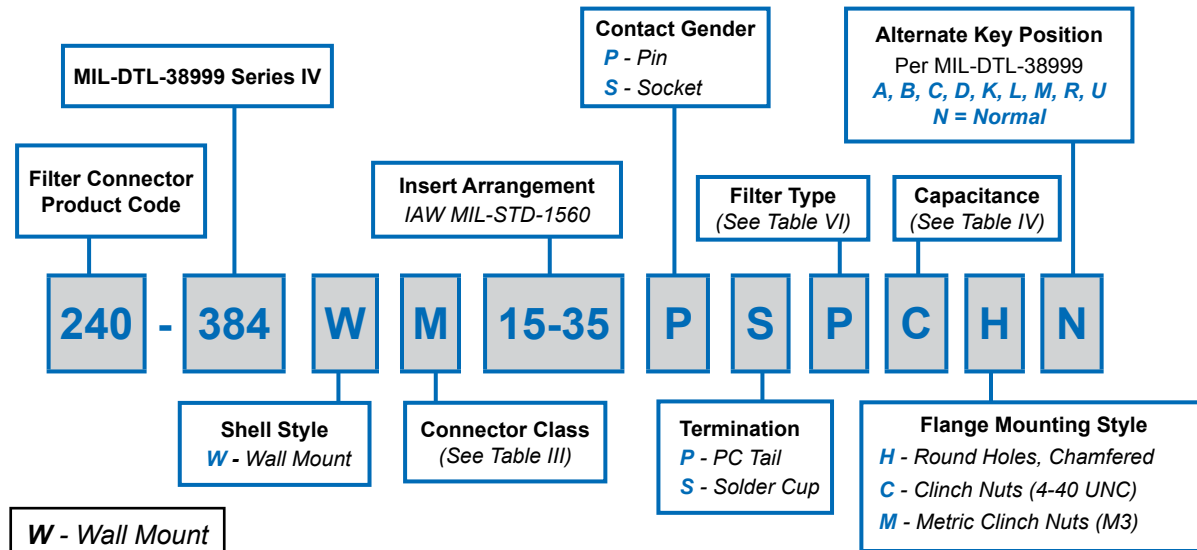
\* Reduced DWV - Please consult factory.



**TABLE III: DIMENSIONS**

| SHELL<br>SIZE<br>CODE | SHELL<br>SIZE | A<br>Diameter                | B                            | C<br>FLAT                    | E<br>DIAMETER                | F THREAD<br>ISO METRIC | G                        | H                        | J<br>Diameter                | K                            |
|-----------------------|---------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------|--------------------------|--------------------------|------------------------------|------------------------------|
| B                     | 11            | 1.385 (35.2)<br>1.362 (34.6) | 1.267 (32.2)<br>1.232 (31.3) | .754 (19.2)<br>.745 (18.9)   | .779 (19.8)<br>.759 (19.3)   | M20 X 1.0-6g           | .125 (3.2)<br>.059 (1.5) | .118 (3.0)<br>.094 (2.4) | .832 (21.1)<br>.822 (20.9)   | .769 (19.5)<br>.759 (19.3)   |
| C                     | 13            | 1.511 (38.4)<br>1.488 (37.8) | 1.393 (35.4)<br>1.358 (34.5) | .941 (23.9)<br>.932 (23.7)   | .909 (23.1)<br>.889 (22.6)   | M25 X 1.0-6g           | .125 (3.2)<br>.059 (1.5) | .118 (3.0)<br>.094 (2.4) | 1.017 (25.8)<br>1.007 (25.6) | .955 (24.3)<br>.945 (24.0)   |
| D                     | 15            | 1.637 (41.6)<br>1.614 (41.0) | 1.519 (38.6)<br>1.484 (37.7) | 1.065 (27.1)<br>1.056 (26.8) | 1.035 (26.3)<br>1.015 (25.8) | M28 X 1.0-6g           | .125 (3.2)<br>.059 (1.5) | .118 (3.0)<br>.094 (2.4) | 1.144 (29.1)<br>1.134 (28.8) | 1.084 (27.5)<br>1.074 (27.3) |
| E                     | 17            | 1.763 (44.8)<br>1.740 (44.2) | 1.641 (41.7)<br>1.606 (40.8) | 1.190 (30.2)<br>1.181 (30.0) | 1.157 (29.4)<br>1.137 (28.9) | M32 X 1.0-6g           | .125 (3.2)<br>.059 (1.5) | .118 (3.0)<br>.094 (2.4) | 1.271 (32.3)<br>1.261 (32.0) | 1.208 (30.7)<br>1.198 (30.4) |
| F                     | 19            | 1.948 (49.5)<br>1.925 (48.9) | 1.830 (46.5)<br>1.795 (45.6) | 1.316 (33.4)<br>1.306 (33.2) | 1.283 (32.6)<br>1.263 (32.1) | M35 X 1.0-6g           | .125 (3.2)<br>.059 (1.5) | .149 (3.8)<br>.125 (3.2) | 1.394 (35.4)<br>1.384 (35.2) | 1.333 (33.9)<br>1.323 (33.6) |
| G                     | 21            | 2.074 (52.7)<br>2.051 (52.1) | 1.956 (49.7)<br>1.921 (48.8) | 1.441 (36.6)<br>1.431 (36.3) | 1.409 (35.8)<br>1.389 (35.3) | M38 X 1.0-6g           | .125 (3.2)<br>.059 (1.5) | .149 (3.8)<br>.125 (3.2) | 1.517 (38.5)<br>1.507 (38.3) | 1.459 (37.1)<br>1.449 (36.8) |
| H                     | 23            | 2.200 (55.9)<br>2.177 (55.3) | 2.078 (52.8)<br>2.043 (51.9) | 1.565 (39.8)<br>1.556 (39.5) | 1.535 (39.0)<br>1.515 (38.5) | M41 X 1.0-6g           | .125 (3.2)<br>.059 (1.5) | .149 (3.8)<br>.125 (3.2) | 1.644 (41.8)<br>1.634 (41.5) | 1.580 (40.1)<br>1.570 (39.9) |
| J                     | 25            | 2.326 (59.1)<br>2.299 (58.4) | 2.204 (56.0)<br>2.169 (55.1) | 1.692 (43.0)<br>1.681 (42.7) | 1.657 (42.1)<br>1.637 (41.6) | M44 X 1.0-6g           | .125 (3.2)<br>.059 (1.5) | .149 (3.8)<br>.125 (3.2) | 1.769 (44.9)<br>1.759 (44.7) | 1.709 (43.4)<br>1.699 (43.2) |





**240-384W**  
**MIL-DTL-38999 Series IV Filter Connector**  
**Wall Mount Receptacle**



MIL-DTL-38999  
Connectors

**TABLE I: DIMENSIONS**

| SHELL<br>SIZE<br>CODE | SHELL<br>SIZE | A<br>Sq        | B<br>BSC | C<br>Dia       | D<br>Dia     | Ø E<br>Min. | Ø F<br>Min. | G Thread<br>Metric | Ø H<br>Holes | J              |
|-----------------------|---------------|----------------|----------|----------------|--------------|-------------|-------------|--------------------|--------------|----------------|
| B                     | 11            | 1.051<br>1.008 | .812     | .793<br>.778   | .138<br>.122 | .796        | .625        | M15X1.0-6g 0.100R  | .133<br>.123 | .817<br>.807   |
| C                     | 13            | 1.145<br>1.102 | .906     | .919<br>.904   | .138<br>.122 | .922        | .750        | M18X1.0-6g 0.100R  | .133<br>.123 | .911<br>.901   |
| D                     | 15            | 1.240<br>1.197 | .969     | 1.044<br>1.029 | .138<br>.122 | 1.047       | .906        | M22X1.0-6g 0.100R  | .133<br>.123 | .973<br>.963   |
| E                     | 17            | 1.334<br>1.291 | 1.062    | 1.170<br>1.155 | .138<br>.122 | 1.219       | 1.016       | M25X1.0-6g 0.100R  | .133<br>.123 | 1.067<br>1.057 |
| F                     | 19            | 1.460<br>1.417 | 1.156    | 1.294<br>1.279 | .138<br>.122 | 1.297       | 1.142       | M28X1.0-6g 0.100R  | .133<br>.123 | 1.161<br>1.151 |
| G                     | 21            | 1.583<br>1.539 | 1.250    | 1.419<br>1.404 | .138<br>.122 | 1.422       | 1.266       | M31X1.0-6g 0.100R  | .133<br>.123 | 1.255<br>1.245 |
| H                     | 23            | 1.709<br>1.665 | 1.375    | 1.544<br>1.529 | .157<br>.142 | 1.547       | 1.375       | M34X1.0-6g 0.100R  | .159<br>.149 | 1.380<br>1.370 |
| J                     | 25            | 1.835<br>1.791 | 1.500    | 1.670<br>1.654 | .157<br>.142 | 1.672       | 1.484       | M37X1.0-6g 0.100R  | .159<br>.149 | 1.505<br>1.495 |

**TABLE VII**

| Contact<br>Size | PC Tail<br>Diameter<br>(ØU) |
|-----------------|-----------------------------|
| 22D             | .018/.021<br>(0.5/0.5)      |
| 20              | .029/.031<br>(0.7/.08)      |
| 16              | .038/.042<br>(1.0/1.1)      |

**TABLE III: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                    |
|-----|---------------|-----------------|---------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                    |
| MT  | Environmental | Aluminum        | Nickel Fluorocarbon Polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel  |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel              |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel   |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                    |

**TABLE IV: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* DWV - 500 VDC Min. Filter Class X, Y & Z are 250 DWV Min.

**TABLE V**

| SYM | Flange<br>Mounting       |
|-----|--------------------------|
| N   | Not<br>Applicable        |
| H   | Chamfered<br>Holes       |
| C   | Clinch Nut<br>(4-40 UNC) |

**TABLE VI**

| SYM | Filter Type |
|-----|-------------|
| P   | PI-Section  |
| C   | C Only      |

**TABLE III: CONNECTOR CLASS**

| PATTERN | 22D | 20 | 16 | 12 | 10 |
|---------|-----|----|----|----|----|
| 11-2    |     |    | 2  |    |    |
| 11-4    |     | 4  |    |    |    |
| 11-5    |     | 5  |    |    |    |
| 11-35   | 13  |    |    |    |    |
| 11-98   |     | 6  |    |    |    |
| 11-99   |     | 7  |    |    |    |
| 13-4    |     |    | 4  |    |    |
| 13-8    |     | 8  |    |    |    |
| 13-35   | 22  |    |    |    |    |
| 13-98   |     | 10 |    |    |    |
| 15-5    |     |    | 5  |    |    |
| 15-18   |     | 18 |    |    |    |
| 15-35   | 37  |    |    |    |    |
| 15-97   |     | 8  | 4  |    |    |
| 17-6    |     |    |    | 6  |    |
| 17-8    |     |    | 8  |    |    |
| 17-26   |     | 26 |    |    |    |
| 17-35   | 55  |    |    |    |    |
| 19-11   |     |    | 11 |    |    |
| 19-31   |     | 32 |    |    |    |
| 19-35   | 66  |    |    |    |    |
| 21-11   |     |    |    | 11 |    |
| 21-16   |     |    | 16 |    |    |
| 21-35   | 79  |    |    |    |    |
| 21-39   |     | 37 | 2  |    |    |
| 21-41   |     | 41 |    |    |    |
| 23-21   |     |    | 21 |    |    |
| 23-35   | 100 |    |    |    |    |
| 23-55   |     | 55 |    |    |    |
| 25-4    |     | 48 | 8  |    |    |
| 25-19   |     |    |    | 19 |    |
| 25-29   |     |    | 29 |    |    |
| 25-35   | 128 |    |    |    |    |
| 25-43   |     | 23 | 20 |    |    |
| 25-61   |     | 61 |    |    |    |



# Glenair MIL-DTL-26482 Series II Type Filter Connector with Bayonet Coupling

Master How to Order • Part Number Breakdown

B

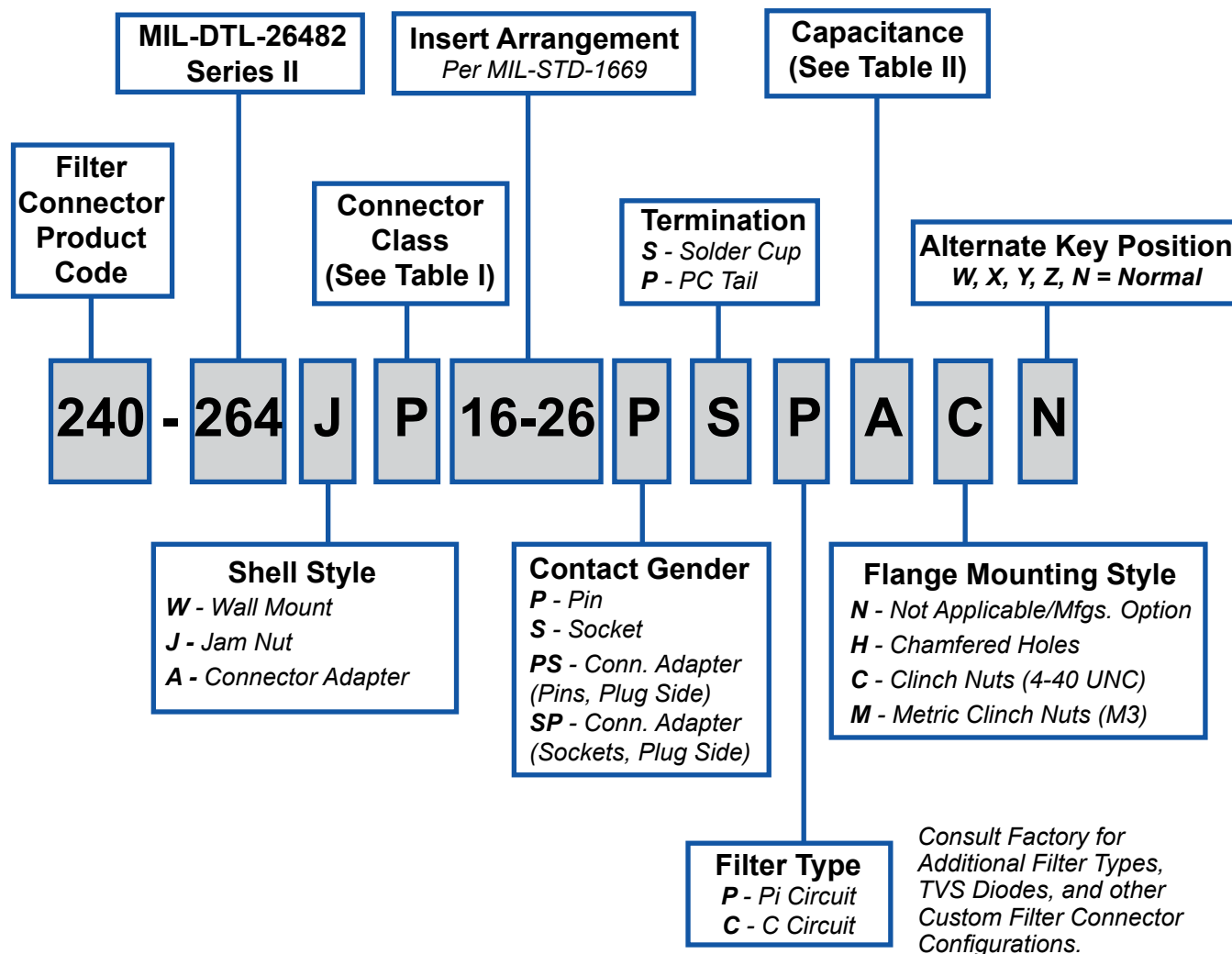


TABLE I: CONNECTOR CLASS

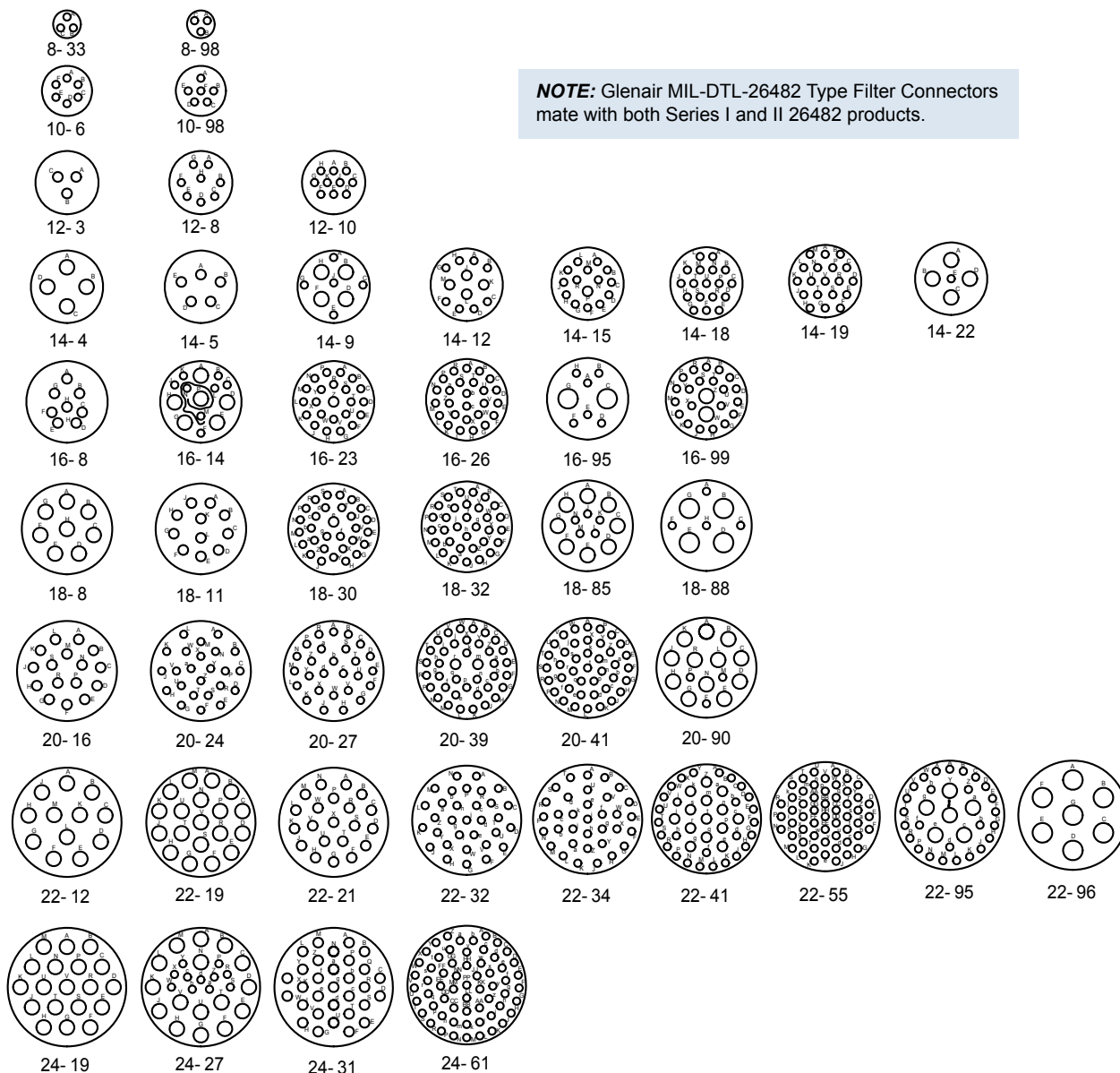
| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                                     |

TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV - Please consult factory.

# Glenair MIL-DTL-26482 Series II Type Filter Connector with Bayonet Coupling Reference Information



**NOTE:** Glenair MIL-DTL-26482 Type Filter Connectors mate with both Series I and II 26482 products.

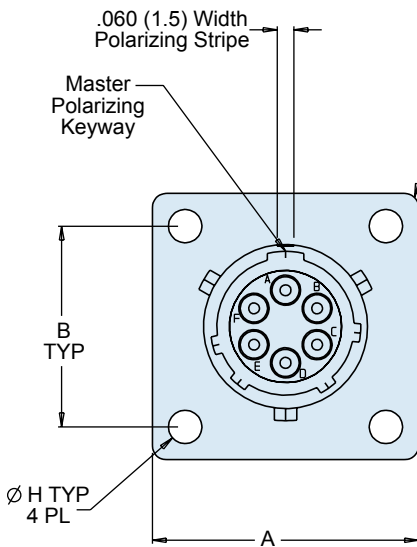
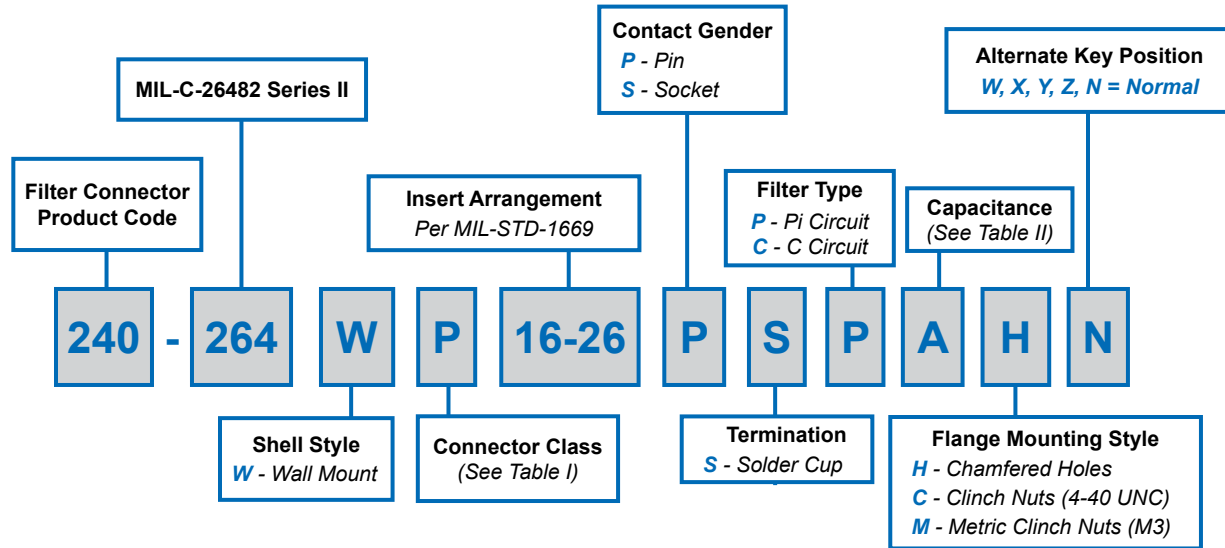
B

## APPLICATION NOTES

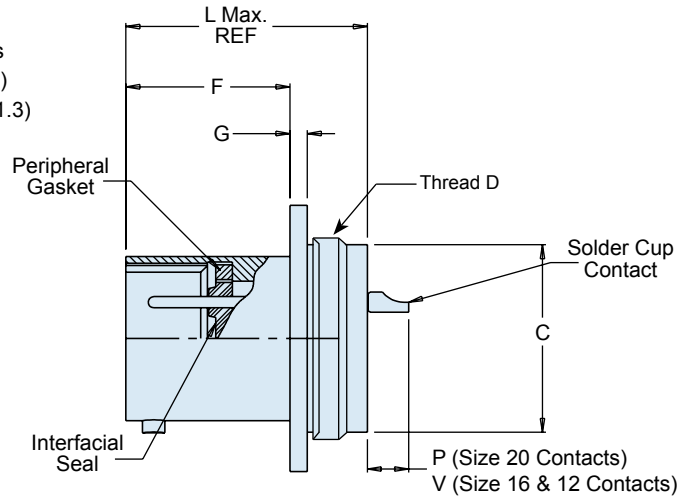
1. Materials/Finishes: Shells, Barrel, Coupling Nut, Jam Nut - See Table I  
Insulators - high grade rigid dielectric/N.A.  
Seals - Fluorosilicone  
PC Tail & Solder Cup contacts: 50µ" Gold over 50µ" Nickel
2. Assembly to be identified with Glenair's name, part number, and date code - space permitting.
3. Insert Arrangement in accordance with MIL-STD-1669.  
(Arrangement shown for reference only)
4. EMI Circular Filter Receptacle connector designed to meet requirements of MIL-C-26482.
5. All contacts to have identical filter value. Other filter arrangements available, contact factory.
6. Electrical Ratings: DWV- 500 VDC Min.; Standard Operating Voltage 200 Volts DC; Current Rating 5 Amps (size 22);
7. Insulation Resistance: 5000 MegOhms Min. at 200 VDC.
8. Operating Temperature -55°C to +125°C (Env Class Connectors)
9. Other filter styles (C-L, L-C, Unbalanced PI, Multi-Stage, Multi-Value) are available, please consult the factory.
10. Metric Dimensions (mm) are indicated in parentheses.

# 240-264W MIL-DTL-26482 Series II Type Wall Mount Receptacle

B



Min. Edge Distance  
Relative to Mounting Holes  
Shell Sizes 8-18 = .035 (.9)  
Shell Sizes 20-24 = .050 (1.3)



W - Wall Mount



**240-264W**  
**MIL-DTL-26482 Series II Type**  
**Wall Mount Receptacle**



MIL-DTL-26482  
Connectors

**B**

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                                     |

**TABLE II: CAPACITOR ARRAY CODE CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

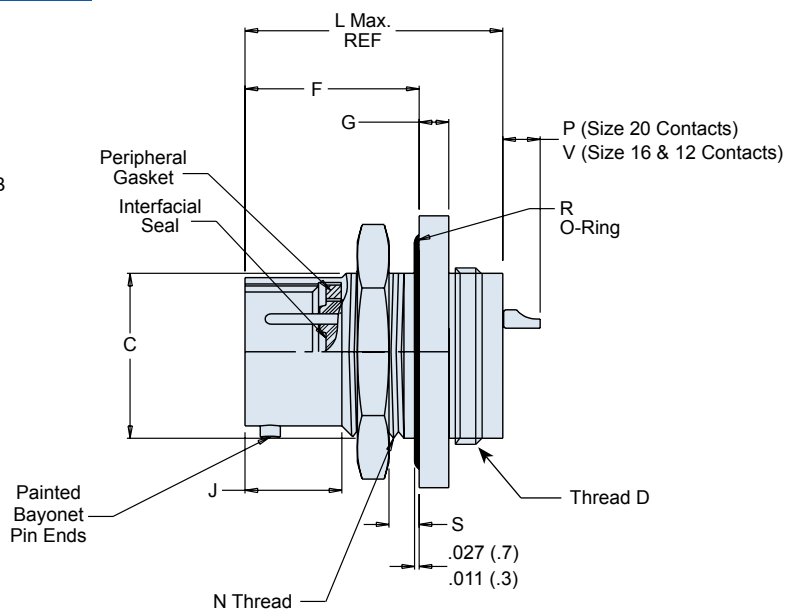
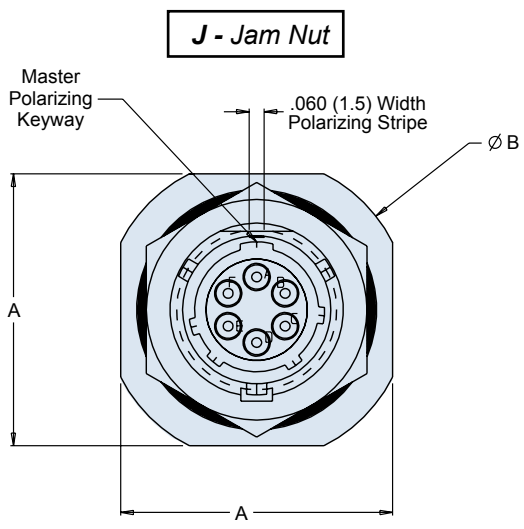
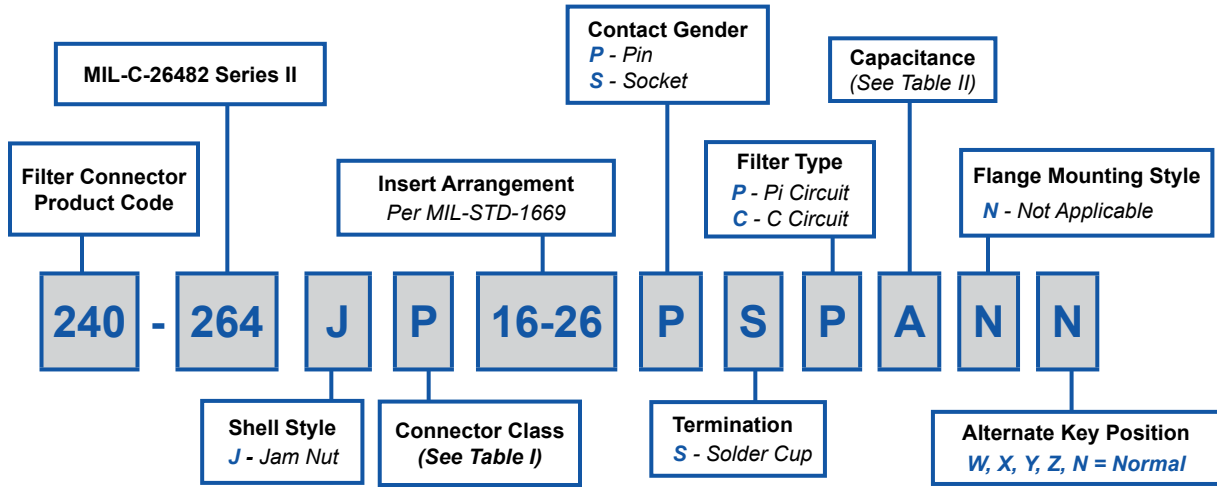
**TABLE III: DIMENSIONS**

| SHELL SIZE | A            | B            | C Ø<br>MOUNTING LOCATOR      | D<br>THREAD (CLASS 2) | F                          | G                        | H          | L (Max)     | P                        | V                        | PANEL CUT-OUT Ø | MAX. WEIGHT (Lbs.) |
|------------|--------------|--------------|------------------------------|-----------------------|----------------------------|--------------------------|------------|-------------|--------------------------|--------------------------|-----------------|--------------------|
| 8          | .828 (21.0)  | .594 (15.1)  | .563 (14.3)<br>.557 (14.1)   | .500-20 UNF           | .431 (10.9)<br>.462 (11.7) | .078 (2.0)<br>.046 (1.2) | .120 (3.0) | 1.38 (35.1) | .178 (4.5)<br>.188 (4.8) | .248 (6.3)<br>.188 (4.8) | .570 (14.5)     | .038               |
| 10         | .954 (24.2)  | .719 (18.3)  | .673 (17.1)<br>.667 (16.9)   | .625-24 UNEF          |                            | .078 (2.0)<br>.046 (1.2) | .120 (3.0) | 1.38 (35.1) | .178 (4.5)<br>.188 (4.8) | .248 (6.3)<br>.188 (4.8) | .680 (17.3)     | .044               |
| 12         | 1.047 (26.6) | .812 (20.6)  | .782 (19.9)<br>.776 (19.7)   | .750-20 UNEF          |                            | .078 (2.0)<br>.046 (1.2) | .120 (3.0) | 1.38 (35.1) | .178 (4.5)<br>.188 (4.8) | .248 (6.3)<br>.188 (4.8) | .789 (20.0)     | .052               |
| 14         | 1.141 (29.0) | .906 (23.0)  | .907 (23.0)<br>.901 (22.9)   | .875-20 UNEF          |                            | .078 (2.0)<br>.046 (1.2) | .120 (3.0) | 1.38 (35.1) | .178 (4.5)<br>.188 (4.8) | .248 (6.3)<br>.188 (4.8) | .914 (23.2)     | .070               |
| 16         | 1.234 (31.3) | .969 (24.6)  | 1.032 (26.2)<br>1.026 (26.1) | 1.000-20 UNEF         |                            | .078 (2.0)<br>.046 (1.2) | .120 (3.0) | 1.38 (35.1) | .178 (4.5)<br>.188 (4.8) | .248 (6.3)<br>.188 (4.8) | 1.039 (6.4)     | .085               |
| 18         | 1.328 (33.7) | 1.062 (27.0) | 1.157 (29.4)<br>1.151 (29.2) | 1.0625-18 UNEF        |                            | .078 (2.0)<br>.046 (1.2) | .120 (3.0) | 1.38 (35.1) | .178 (4.5)<br>.188 (4.8) | .248 (6.3)<br>.188 (4.8) | 1.164 (29.6)    | .098               |
| 20         | 1.453 (36.9) | 1.156 (29.4) | 1.251 (31.8)<br>1.245 (31.6) | 1.1875-18 UNEF        | .556 (14.1)<br>.587 (14.9) | .110 (2.8)<br>.078 (2.0) | .120 (3.0) | 1.44 (36.6) | .178 (4.5)<br>.188 (4.8) | .248 (6.3)<br>.188 (4.8) | 1.258 (32.0)    | .110               |
| 22         | 1.578 (40.1) | 1.250 (31.8) | 1.376 (35.0)<br>1.371 (34.8) | 1.3125-18 UNEF        |                            | .110 (2.8)<br>.078 (2.0) | .120 (3.0) | 1.44 (36.6) | .178 (4.5)<br>.188 (4.8) | .216 (5.5)<br>.156 (4.0) | 1.383 (35.1)    | .150               |
| 24         | 1.703 (43.3) | 1.375 (34.9) | 1.501 (38.1)<br>1.495 (38.0) | 1.4375-18 UNEF        | .589 (15.0)<br>.620 (15.7) | .110 (2.8)<br>.078 (2.0) | .147 (3.7) | 1.44 (36.6) | .178 (4.5)<br>.188 (4.8) | .216 (5.5)<br>.156 (4.0) | 1.508 (38.3)    | .280               |



# 240-264J MIL-DTL-26482 Series II Type Filter Connector Jam Nut Receptacle

B



| TABLE II: CAPACITOR ARRAY CODE CAPACITANCE RANGE |                   |                  |
|--------------------------------------------------|-------------------|------------------|
| CLASS                                            | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
| X*                                               | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*                                               | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*                                               | 60,000 - 90,000   | 30,000 - 45,000  |
| A                                                | 38,000 - 56,000   | 19,000 - 28,000  |
| B                                                | 32,000 - 45,000   | 16,000 - 22,500  |
| C                                                | 18,000 - 33,000   | 9,000 - 16,500   |
| D                                                | 8,000 - 12,000    | 4,000 - 6,000    |
| E                                                | 3,300 - 5,000     | 1,650 - 2,500    |
| F                                                | 800 - 1,300       | 400 - 650        |
| G                                                | 400 - 600         | 200 - 300        |

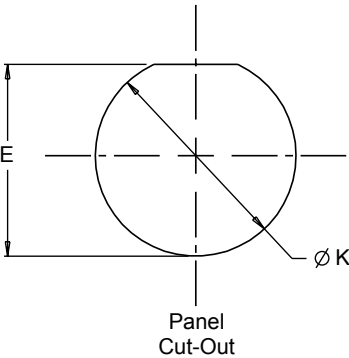
\* Reduced DWV - Please consult factory.

| TABLE I: CONNECTOR CLASS |               |                 |                                                     |
|--------------------------|---------------|-----------------|-----------------------------------------------------|
| SYM                      | CLASS         | MATERIAL        | FINISH DESCRIPTION                                  |
| M                        | Environmental | Aluminum        | Electroless Nickel                                  |
| MT                       | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™ Nickel Fluorocarbon Polymer |
| NF                       | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                |
| P                        | Environmental | Stainless Steel | Electro-Deposited Nickel                            |
| ZN                       | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                 |
| H2                       | Hermetic      | Stainless Steel | Electroless Nickel                                  |

**240-264J**  
**MIL-DTL-26482 Series II Type Filter Connector**  
**Jam Nut Receptacle**



MIL-DTL-26482  
Connectors



**TABLE III: DIMENSIONS**

| SHELL SIZE | A<br>+.000 (0)<br>-.031 (.8)<br>LENGTH | B<br>+.000 (0)<br>-.031 (.8)<br>ACROSS<br>FLANGE<br>CORNER | C<br>+.000 (0)<br>-.010 (.3)<br>MTG.<br>FLAT | D<br>THREAD<br>(CLASS 2) | E<br>PANEL FLAT<br>LOCATION | F<br>MOUNTING<br>FLANGE<br>LOCATION | G<br>MOUNTING<br>FLANGE<br>THICKNESS |
|------------|----------------------------------------|------------------------------------------------------------|----------------------------------------------|--------------------------|-----------------------------|-------------------------------------|--------------------------------------|
| 8          | .954<br>(24.2)                         | 1.078<br>(27.4)                                            | .530<br>(13.5)                               | .500-20 UNF              | .536(13.6)                  | .707 (18.0)<br>.691 (17.6)          | .113 (2.9)<br>.097 (2.5)             |
| 10         | 1.078<br>(27.4)                        | 1.203<br>(30.6)                                            | .655<br>(16.6)                               | .625-24 UNEF             | .661 (16.8)                 | .707 (18.0)<br>.691 (17.6)          | .113 (2.9)<br>.097 (2.5)             |
| 12         | 1.266<br>(32.2)                        | 1.391<br>(35.3)                                            | .818<br>(20.8)                               | .750-20 UNEF             | .824 (20.9)                 | .707 (18.0)<br>.691 (17.6)          | .113 (2.9)<br>.097 (2.5)             |
| 14         | 1.391<br>(35.3)                        | 1.516<br>(38.5)                                            | .942<br>(23.9)                               | .875-20 UNEF             | .948 (24.1)                 | .707 (18.0)<br>.691 (17.6)          | .113 (2.9)<br>.097 (2.5)             |
| 16         | 1.516<br>(38.5)                        | 1.641<br>(41.7)                                            | 1.062<br>(27.0)                              | 1.000-20 UNEF            | 1.072 (27.2)                | .707 (18.0)<br>.691 (17.6)          | .113 (2.9)<br>.097 (2.5)             |
| 18         | 1.641<br>(41.7)                        | 1.766<br>(44.9)                                            | 1.191<br>(30.3)                              | 1.0625-18 UNEF           | 1.197 (30.4)                | .707 (18.0)<br>.691 (17.6)          | .113 (2.9)<br>.097 (2.5)             |
| 20         | 1.828<br>(46.4)                        | 1.954<br>(49.6)                                            | 1.316<br>(33.4)                              | 1.1875-18 UNEF           | 1.322 (33.6)                | .772 (19.6)<br>.754 (19.2)          | .148 (3.8)<br>.128 (3.3)             |
| 22         | 1.954<br>(49.6)                        | 2.078<br>(52.8)                                            | 1.441<br>(36.6)                              | 1.3125-18 UNEF           | 1.447 (36.8)                | .772 (19.6)<br>.754 (19.2)          | .148 (3.8)<br>.128 (3.3)             |
| 24         | 2.078<br>(52.8)                        | 2.203<br>(56.0)                                            | 1.566<br>(39.8)                              | 1.4375-18 UNEF           | 1.572 (39.9)                | .803 (20.4)<br>.785 (20.0)          | .148 (3.8)<br>.128 (3.3)             |

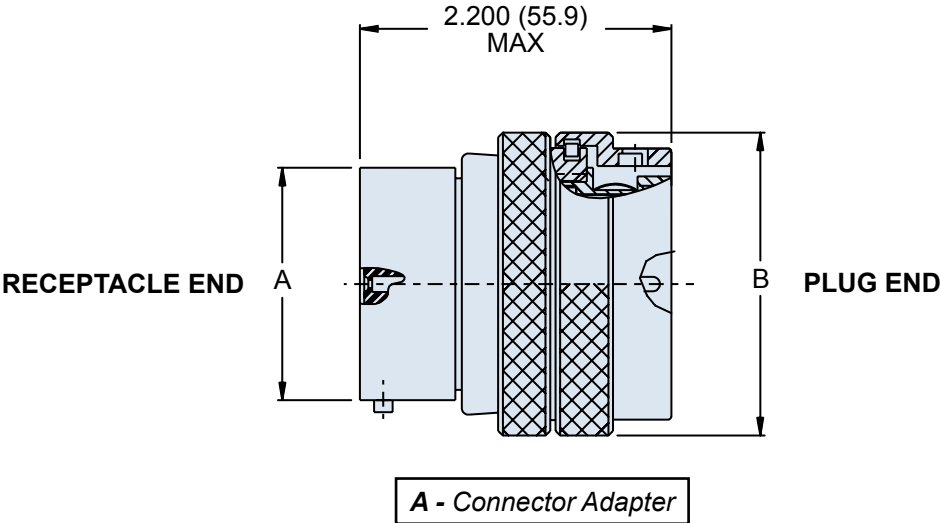
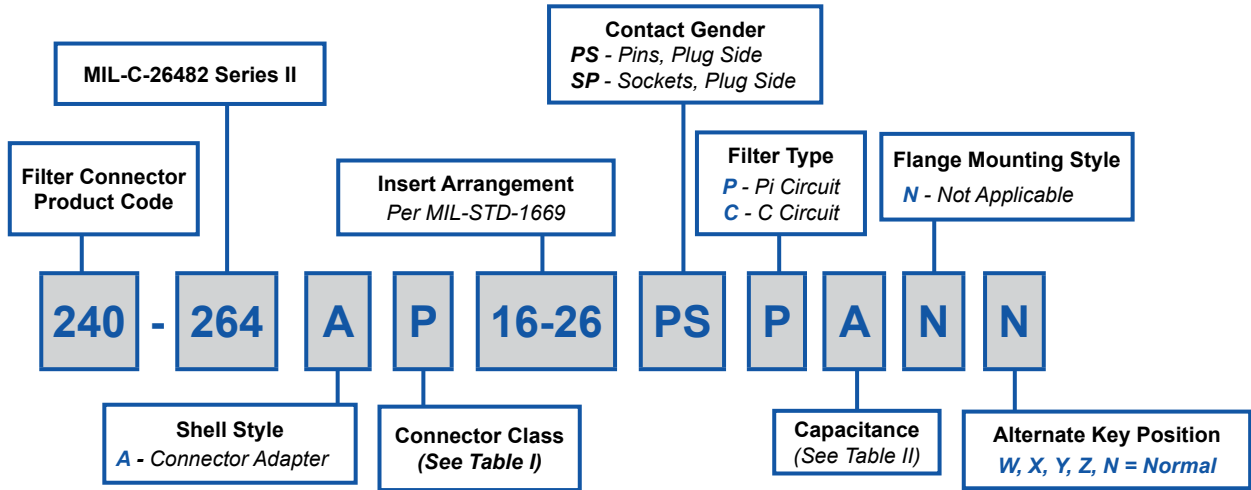
**TABLE III: DIMENSIONS (CONTINUED)**

| SHELL SIZE | J<br>+/- .010 (.3)<br>TO THREAD<br>CHAMFER | K<br>+.010 (.3)<br>-.005 (.1)<br>PANEL<br>MOUNTING<br>HOLE | L<br>OVERALL<br>LENGTH | N<br>UNEF-2A<br>MOUNTING<br>THREAD | P                        | S<br>PANEL THICK-<br>NESS |               | V                        | MAX<br>WEIGHT<br>(Lbs.) |
|------------|--------------------------------------------|------------------------------------------------------------|------------------------|------------------------------------|--------------------------|---------------------------|---------------|--------------------------|-------------------------|
|            |                                            |                                                            |                        |                                    |                          | MIN.                      | MAX.          |                          |                         |
| 8          | .368 (9.3)                                 | .572 (14.5)                                                | 1.38 (35.1)            | .5625-24                           | .134 (3.4)<br>.074 (1.9) | .062<br>(1.6)             | .187<br>(4.8) | .204 (5.2)<br>.144 (3.7) | .0430<br>(1.1)          |
| 10         | .368 (9.3)                                 | .697 (17.7)                                                | 1.38 (35.1)            | .6875-24                           | .134 (3.4)<br>.074 (1.9) | .062<br>(1.6)             | .187<br>(4.8) | .204 (5.2)<br>.144 (3.7) | .0610<br>(1.5)          |
| 12         | .368 (9.3)                                 | .885 (22.5)                                                | 1.38 (35.1)            | .875-20                            | .134 (3.4)<br>.074 (1.9) | .062<br>(1.6)             | .187<br>(4.8) | .204 (5.2)<br>.144 (3.7) | .0880<br>(2.2)          |
| 14         | .368 (9.3)                                 | 1.010 (25.7)                                               | 1.38 (35.1)            | 1.000-20                           | .134 (3.4)<br>.074 (1.9) | .062<br>(1.6)             | .187<br>(4.8) | .204 (5.2)<br>.144 (3.7) | .1100<br>(2.8)          |
| 16         | .368 (9.3)                                 | 1.135 (28.8)                                               | 1.38 (35.1)            | 1.125-18                           | .134 (3.4)<br>.074 (1.9) | .062<br>(1.6)             | .187<br>(4.8) | .204 (5.2)<br>.144 (3.7) | .1310<br>(3.3)          |
| 18         | .368 (9.3)                                 | 1.260 (32.0)                                               | 1.38 (35.1)            | 1.250-18                           | .134 (3.4)<br>.074 (1.9) | .062<br>(1.6)             | .187<br>(4.8) | .204 (5.2)<br>.144 (3.7) | .1720<br>(4.4)          |
| 20         | .368 (9.3)                                 | 1.385 (35.2)                                               | 1.44 (36.6)            | 1.375-18                           | .099 (2.5)<br>.039 (1.0) | .062<br>(1.6)             | .250<br>(6.4) | .169 (4.3)<br>.109 (2.8) | .2110<br>(5.4)          |
| 22         | .368 (9.3)                                 | 1.510 (38.4)                                               | 1.44 (36.6)            | 1.500-18                           | .099 (2.5)<br>.039 (1.0) | .062<br>(1.6)             | .250<br>(6.4) | .169 (4.3)<br>.109 (2.8) | .2420<br>(6.1)          |
| 24         | .395 (10.0)                                | 1.635 (41.5)                                               | 1.44 (36.6)            | 1.625-18                           | .099 (2.5)<br>.039 (1.0) | .062<br>(1.6)             | .250<br>(6.4) | .169 (4.3)<br>.109 (2.8) | .2930<br>(7.4)          |



240-264A  
Glenair MIL-DTL-26482 Series II Type  
Connector Adapter

B



**240-264A**  
**Glenair MIL-DTL-26482 Series II Type**  
**Connector Adapter**



MIL-DTL-26482  
Connectors

**B**

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                                     |

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

**TABLE III: SHELL SIZE**

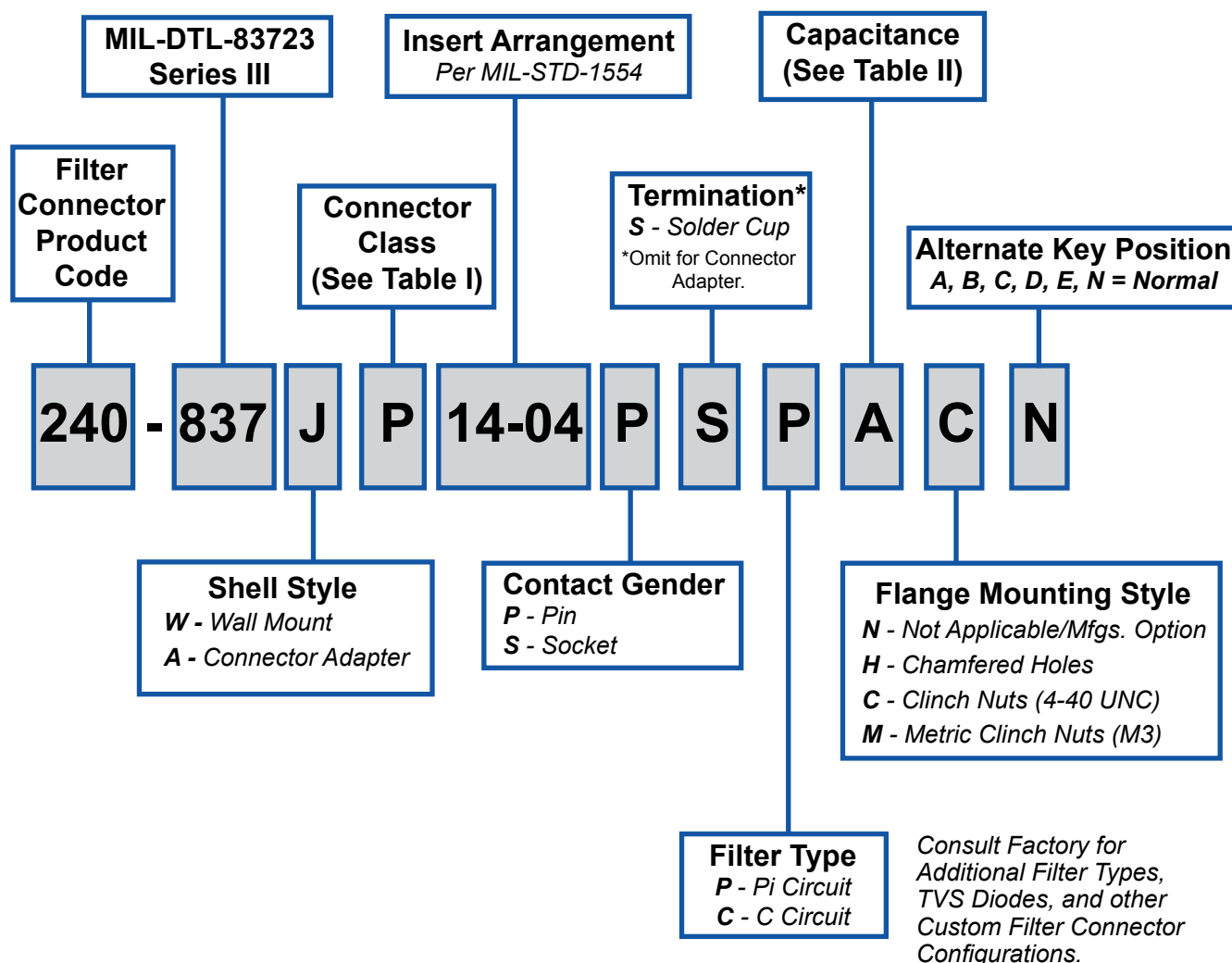
| SHELL SIZE | A MAX        | B MAX        |
|------------|--------------|--------------|
| 08         | .474 (12.0)  | .750 (19.1)  |
| 10         | .591 (15.0)  | .859 (21.8)  |
| 12         | .751 (19.1)  | 1.031 (26.2) |
| 14         | .875 (22.2)  | 1.156 (29.4) |
| 16         | 1.001 (25.4) | 1.281 (32.5) |
| 18         | 1.126 (28.6) | 1.391 (35.3) |
| 20         | 1.251 (31.8) | 1.531 (38.9) |
| 22         | 1.376 (35.0) | 1.656 (42.1) |
| 24         | 1.501 (38.1) | 1.777 (45.1) |





# Glenair MIL-DTL-83723 Series III Type Filter Connector with Threaded Coupling Master How to Order • Part Number Breakdown

B



**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                                     |
|-----|---------------|-----------------|--------------------------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                                     |
| MT  | Environmental | Aluminum        | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel                   |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel                               |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel                    |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                                     |

# MIL-DTL-83723 Series III Filter Connectors Insert Arrangements



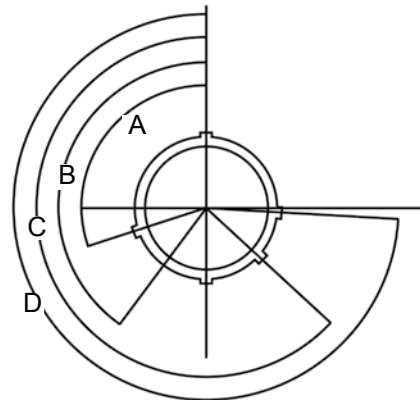
## ALTERNATE KEYWAY POSITIONS

|          | Size 8 |     |     |     | Size 10 |     |     |     | Sizes 12 thru 24 |     |     |     | Insert Position |
|----------|--------|-----|-----|-----|---------|-----|-----|-----|------------------|-----|-----|-----|-----------------|
|          | A°     | B°  | C°  | D°  | A°      | B°  | C°  | D°  | A°               | B°  | C°  | D°  |                 |
| N=Normal | 105    | 140 | 210 | 265 | 105     | 140 | 215 | 265 | 105              | 140 | 215 | 265 | 0               |
| 1        | -      | -   | -   | -   | 105     | 140 | 215 | 265 | 105              | 140 | 215 | 265 | 10              |
| 2        | -      | -   | -   | -   | 105     | 140 | 215 | 265 | 105              | 140 | 215 | 265 | 20              |
| 3        | -      | -   | -   | -   | 105     | 140 | 215 | 265 | 105              | 140 | 215 | 265 | 30              |
| 4        | -      | -   | -   | -   | 105     | 140 | 215 | 265 | 105              | 140 | 215 | 265 | 40              |
| 5        | -      | -   | -   | -   | 105     | 140 | 215 | 265 | 105              | 140 | 215 | 265 | 50              |
| 6        | 102    | 132 | 248 | 320 | 102     | 132 | 248 | 320 | 18               | 149 | 192 | 259 | 0               |
| 7        | 80     | 118 | 230 | 312 | 80      | 118 | 230 | 312 | 92               | 152 | 222 | 342 | 0               |
| 8        | 35     | 140 | 205 | 275 | 35      | 140 | 205 | 275 | 84               | 152 | 204 | 334 | 0               |
| 9        | 64     | 155 | 234 | 304 | 64      | 155 | 234 | 304 | 24               | 135 | 199 | 240 | 0               |
| 10       | -      | -   | -   | -   | 25      | 115 | 220 | 270 | 98               | 152 | 268 | 336 | 0               |

## INSERT ARRANGEMENTS

| Shell Size Design | Insert Arrangement Dash No. | Contact Size: Quantity |    |    |
|-------------------|-----------------------------|------------------------|----|----|
|                   |                             | 20                     | 16 | 12 |
| 08                | 08-02                       | 2                      |    |    |
|                   | 08-03                       | 3                      |    |    |
|                   | 08-98                       | 3                      |    |    |
| 10                | 10-05                       | 5                      |    |    |
|                   | 10-02                       | 2                      |    |    |
|                   | 10-06                       | 6                      |    |    |
|                   | 10-20                       | 2                      |    |    |
| 12                | 12-03                       |                        | 3  |    |
|                   | 12-12                       | 12                     |    |    |
| 14                | 14-04                       |                        | 7  | 4  |
|                   | 14-07                       |                        | 3  |    |
|                   | 14-12                       | 9                      |    |    |
|                   | 14-15                       | 15                     |    |    |
| 16                | 16-10                       |                        | 10 |    |
|                   | 16-24                       | 24                     |    |    |
| 18                | 18-08                       |                        |    | 8  |
|                   | 18-14                       |                        | 14 |    |
|                   | 18-31                       | 31                     |    |    |
| 20                | 20-16                       |                        | 16 |    |
|                   | 20-25                       | 19                     |    | 6  |
|                   | 20-28                       | 24                     |    | 4  |
|                   | 20-39                       | 37                     | 2  |    |
|                   | 20-41                       | 41                     |    |    |
| 22                | 22-12                       |                        |    | 12 |
|                   | 22-19                       |                        | 19 |    |
|                   | 22-32                       | 26                     |    | 6  |
|                   | 22-39                       | 27                     | 12 |    |
|                   | 22-35                       | 55                     |    |    |
| 24                | 24-19                       |                        |    | 19 |
|                   | 24-43                       | 23                     | 20 |    |
|                   | 24-57                       | 55                     |    | 2  |
|                   | 24-61                       | 61                     |    |    |

In alternate positions, the pin insert rotates clockwise while the socket insert rotates counterclockwise the same number of degrees relative to the center line of the master key or keyway.

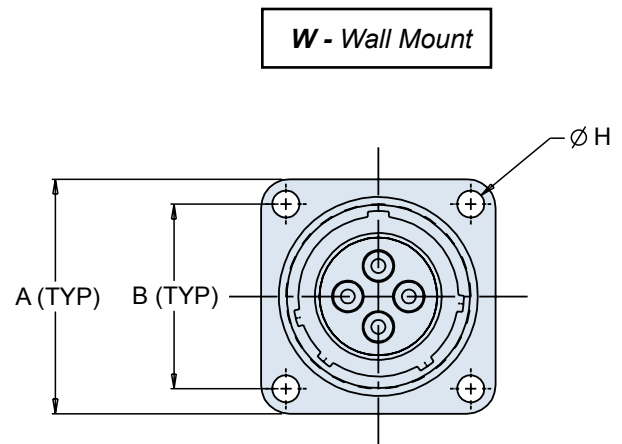
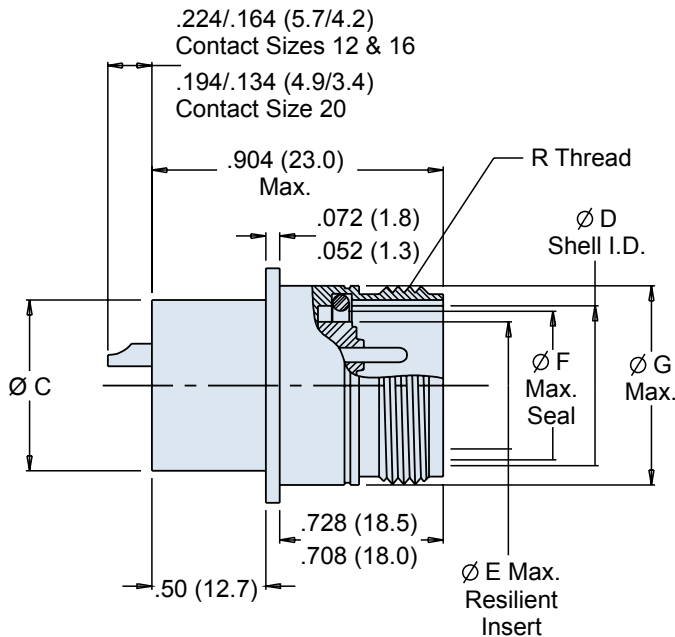
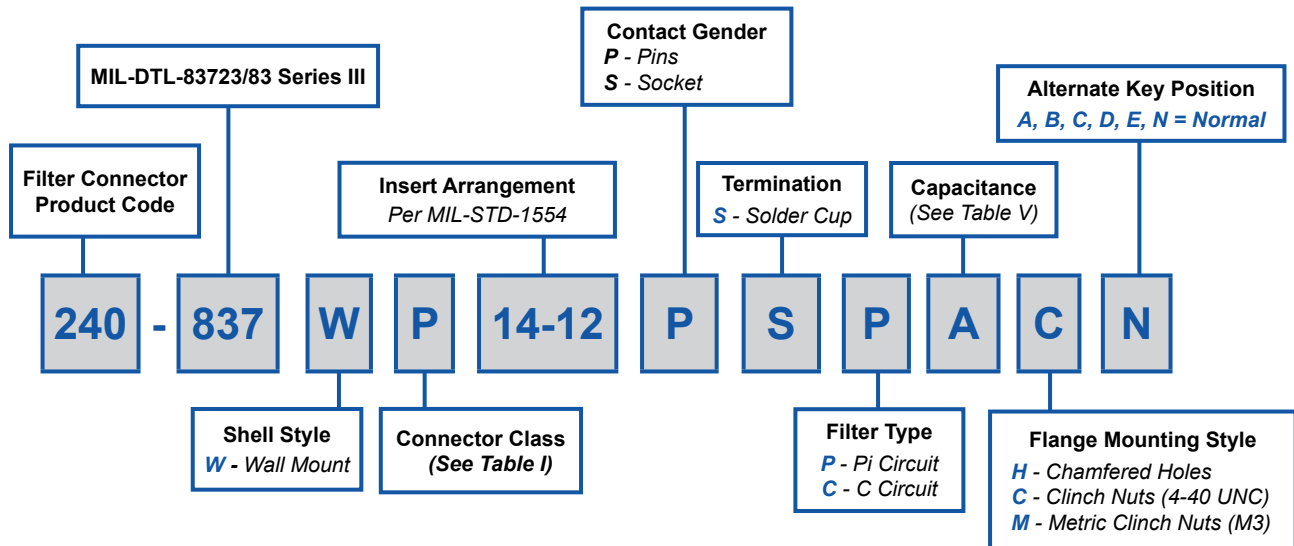


FACE VIEW RECEPTACLE  
POSITION N, 6 THRU 10



# 240-837W MIL-DTL-83723/83 Series III Filter Receptacle Wall Mount Receptacle

B



**240-837W**  
**MIL-DTL-83723/83 Series III Filter Receptacle**  
**Wall Mount Receptacle**



**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                    |
|-----|---------------|-----------------|---------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                    |
| MT  | Environmental | Aluminum        | Nickel Fluorocarbon polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel  |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel              |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel   |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                    |

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| X*    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

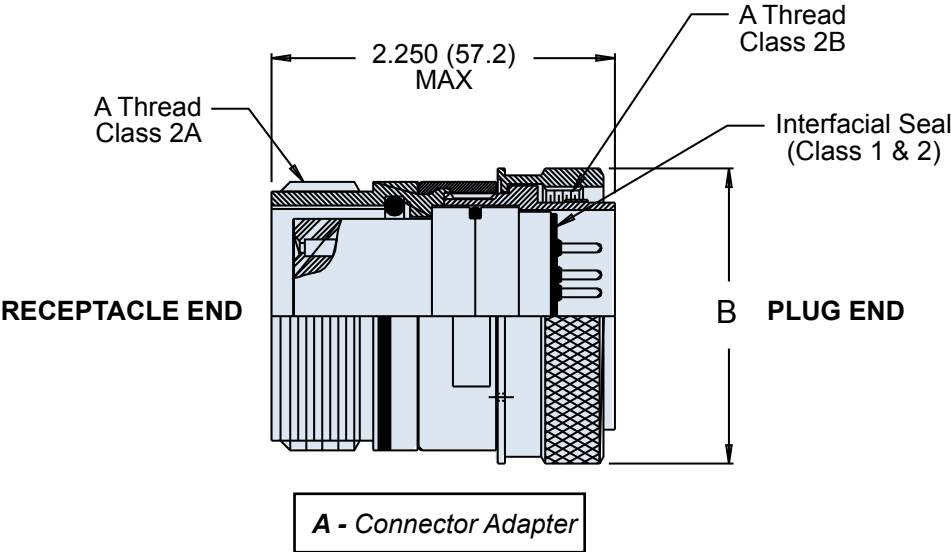
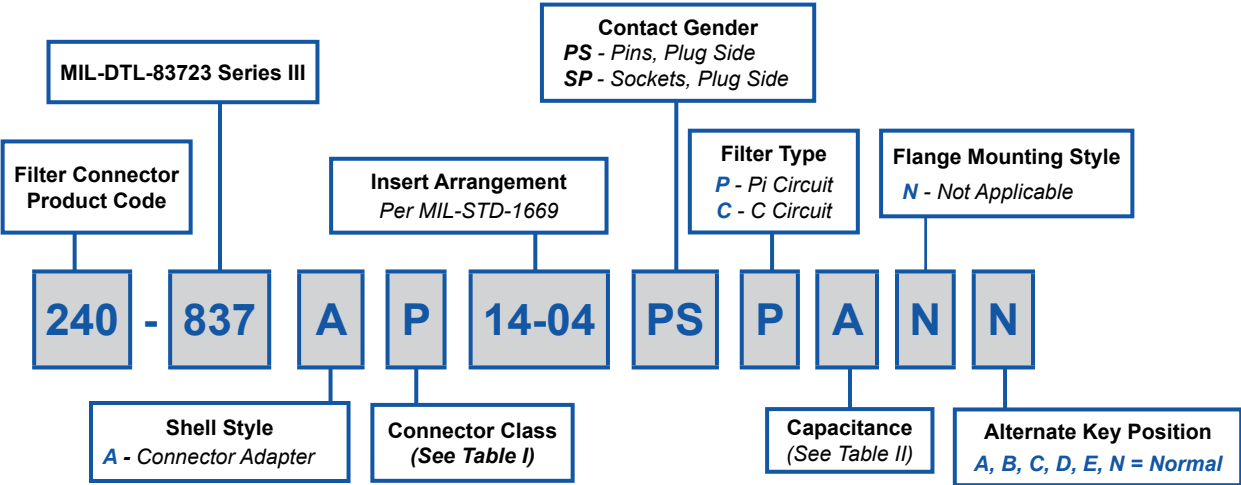
**TABLE III: DIMENSIONS**

| SHELL SIZE | A            | B            | C Ø          | D Ø<br>SHELL I.D.            | E Ø<br>RESILIENT INSERT | F Ø<br>MAX. SEAL | G Ø<br>MAX.  | H Ø<br>THROUGH 4 PL      | R<br>COUPLING THREAD UNEF-2A | PANEL CUT-OUT Ø |
|------------|--------------|--------------|--------------|------------------------------|-------------------------|------------------|--------------|--------------------------|------------------------------|-----------------|
| 8          | .812 (20.6)  | .594 (15.1)  | .500 (12.7)  | .418 (10.6)<br>.413 (10.5)   | .290 (7.4)              | .394 (10.0)      | .562 (14.3)  | .125 (3.2)<br>.116 (2.9) | .562-24                      | .572 (14.5)     |
| 10         | .937 (23.8)  | .719 (18.3)  | .560 (14.2)  | .535 (13.6)<br>.530 (13.5)   | .388 (9.9)              | .515 (13.1)      | .696 (17.7)  | .125 (3.2)<br>.116 (2.9) | .688-24                      | .706 (17.9)     |
| 12         | 1.031 (26.2) | .812 (20.6)  | .750 (19.1)  | .705 (17.9)<br>.700 (17.8)   | .558 (14.2)             | .685 (17.4)      | .875 (22.2)  | .125 (3.2)<br>.116 (2.9) | .875-20                      | .885 (22.5)     |
| 14         | 1.125 (28.6) | .906 (23.0)  | .810 (20.6)  | .774 (19.7)<br>.769 (19.5)   | .627 (15.9)             | .754 (19.2)      | .936 (23.8)  | .125 (3.2)<br>.116 (2.9) | .938-20                      | .946 (24.0)     |
| 16         | 1.250 (31.8) | .969 (24.6)  | .930 (23.6)  | .901 (22.9)<br>.896 (22.8)   | .772 (19.6)             | .881 (22.4)      | 1.062 (27.0) | .125 (3.2)<br>.116 (2.9) | 1.062-18                     | 1.072 (27.2)    |
| 18         | 1.343 (34.1) | 1.062 (27.0) | 1.060 (26.9) | 1.007 (25.6)<br>1.002 (25.5) | .860 (21.8)             | .987 (25.1)      | 1.187 (30.1) | .125 (3.2)<br>.116 (2.9) | 1.188-18                     | 1.197 (30.4)    |
| 20         | 1.437 (36.5) | 1.156 (29.4) | 1.180 (30.0) | 1.132 (28.8)<br>1.125 (28.6) | .985 (25.0)             | 1.112 (28.2)     | 1.312 (33.3) | .125 (3.2)<br>.116 (2.9) | 1.312-18                     | 1.322 (33.6)    |
| 22         | 1.562 (39.7) | 1.250 (31.8) | 1.310 (33.3) | 1.257 (31.9)<br>1.252 (31.8) | 1.110 (28.2)            | 1.237 (31.4)     | 1.437 (36.5) | .125 (3.2)<br>.116 (2.9) | 1.438-18                     | 1.447 (36.8)    |
| 24         | 1.703 (43.3) | 1.375 (34.9) | 1.430 (36.3) | 1.382 (35.1)<br>1.377 (35.0) | 1.235 (31.4)            | 1.362 (34.6)     | 1.562 (39.7) | .154 (3.9)<br>.145 (3.7) | 1.562-18                     | 1.572 (39.9)    |



240-837A  
Glenair MIL-DTL-83723 Series III Type  
Connector Adapter

B





**240-837A**  
**Glenair MIL-DTL-83723 Series III Type**  
**Connector Adapter**



**MIL-DTL-83723**  
**Connectors**

**B**

**TABLE I: CONNECTOR CLASS**

| SYM | CLASS         | MATERIAL        | FINISH DESCRIPTION                    |
|-----|---------------|-----------------|---------------------------------------|
| M   | Environmental | Aluminum        | Electroless Nickel                    |
| MT  | Environmental | Aluminum        | Nickel Fluorocarbon polymer (Ni-PTFE) |
| NF  | Environmental | Aluminum        | Cadmium O.D. Over Electroless Nickel  |
| P   | Environmental | Stainless Steel | Electro-Deposited Nickel              |
| ZN  | Environmental | Aluminum        | Zinc-Nickel Over Electroless Nickel   |
| H2  | Hermetic      | Stainless Steel | Electroless Nickel                    |

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**CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
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| Y*    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z*    | 60,000 - 90,000   | 30,000 - 45,000  |
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

\* Reduced DWV – Please consult factory.

**TABLE III: DIMENSIONS**

| SHELL SIZE | A THREAD           | B DIA. MAX   |
|------------|--------------------|--------------|
| 08         | 9/16 - 24 UNEF-2   | .776 (19.7)  |
| 10         | 11/16 - 24 UNEF-2  | .906 (23.0)  |
| 12         | 7/8 - 24 UNEF-2    | 1.078 (27.4) |
| 14         | 15/16 - 24 UNEF-2  | 1.141 (29.0) |
| 16         | 1 1/16 - 18 UNEF-2 | 1.266 (32.2) |
| 18         | 1 3/16 - 18 UNEF-2 | 1.375 (34.9) |
| 20         | 1 5/16 - 18 UNEF-2 | 1.510 (38.4) |
| 22         | 1 7/16 - 18 UNEF-2 | 1.625 (41.3) |
| 24         | 1 9/16 - 18 UNEF-2 | 1.760 (44.7) |

# Too Fat to Fly?



*"Phenomenal  
Performance;  
Itty-Bitty Package"*

## Maybe. But Not Too Big To Be Saved by a Mouse.

One of the biggest challenges facing designers of armored cars, MRAP's and other rapid deployment combat vehicles is the requirement to build systems which are transportable by air. In critical weight-reduction applications such as these, literally every ounce counts. That's why Glenair invented the Series 80 "Mighty Mouse," an ultraminiature connector

with all the performance characteristics of standard Mil-Spec products, but just half the size and weight. The "Mighty Mouse" is being used in ground, air and sea applications where extreme levels of weight reduction are not just an option but a necessity. So, if your system is too fat to fly, consider a switch to the Glenair "Mighty Mouse": Phenomenal Performance, Itty-Bitty Package.



1211 Air Way

Glendale, California 91201-2497

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

## Series 80 "Mighty Mouse" EMI/EMP Filter Connectors



Series 80  
Mighty Mouse



### PRODUCT FEATURES

- Compact Weight-Saving Design with #23 Contacts
- C and Pi Circuit Filters from 400 pF to 56000 pF
- 3 Through 85 Contacts
- Low-Pass Multilayer Ceramic Planar Array
- PC Tail, Solder Cup and Crimp-Contact Versions
- Fully Sealed with Thermally Conductive Epoxy
- Space-Grade Bake-Out Processing Available
- Threaded, Bayonet and Push-Pull Versions

C

## Ultra Small and Lightweight EMI/EMP Filter Connectors

### Glenair Series 80 "Mighty Mouse"

Glenair's filtered Series 80 "Mighty Mouse" connector family provide significant size and weight savings compared to larger "MS" connectors. The high density #23 contacts provide almost double the density of D38999. Designed to meet stringent aerospace performance requirements, these connectors are offered with standard low pass Pi or C circuit filter arrays, or with customized filters to meet your specific needs. Thermally conductive epoxy protects the filter package from mechanical and heat stress and also provides a waterproof seal. These filtered receptacles mate to Series 801 stub ACME threaded, Series 804 Push-Pull and Series 805 Triple-Start, and are available in jam nut or square flange versions.

### SPECIFICATIONS

|                                 |                                                |
|---------------------------------|------------------------------------------------|
| Current Rating                  | #23 5 AMPS, #20HD 7.5 A., #16 13 A., #12 23 A. |
| Dielectric Withstanding Voltage | 300 VDC                                        |
| Insulation Resistance           | 5000 megohms minimum @ 200 VDC                 |
| Operating Temperature           | -55° C. to +125° C.                            |
| Shock                           | 300 g.                                         |
| Vibration                       | 37 g.                                          |
| Shielding Effectiveness         | 50 dB minimum from 100MHz to 1000MHz.          |

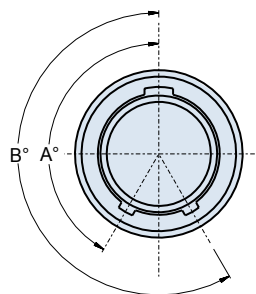
### MATERIALS AND FINISHES

|                                                 |                                              |
|-------------------------------------------------|----------------------------------------------|
| Shells, Jam Nuts                                | Aluminum alloy or stainless steel            |
| Contacts                                        | Beryllium copper alloy, 50 µinch gold plated |
| Insulators                                      | Liquid crystal polymer (LCP)                 |
| Interfacial Seal, O-rings, Wire Sealing Grommet | Fluorosilicone rubber                        |

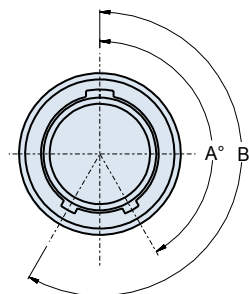
# Series 80 "Mighty Mouse" Filter Connector Normal and Alternate Key Positions and Panel Cut-Out Dimensions

**A** — Normal Keying    **B** — Alternate #1    **C** — Alternate #2    **D** — Alternate #3

*Plug Key Positions*



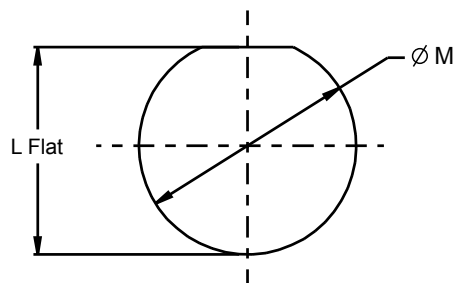
*Receptacle Key Positions*



|          | A°   | B°   |          | A°   | B°   |
|----------|------|------|----------|------|------|
| <b>A</b> | 150° | 210° | <b>A</b> | 150° | 210° |
| <b>B</b> | 75°  | 210° | <b>B</b> | 75°  | 210° |
| <b>C</b> | 95°  | 230° | <b>C</b> | 95°  | 230° |
| <b>D</b> | 140° | 275° | <b>D</b> | 140° | 275° |

## PANEL CUTOUTS

| L FLAT       | Ø M          |
|--------------|--------------|
| .362 (9.2)   | .385 (9.8)   |
| .358 (9.1)   | .385 (9.8)   |
| .422 (10.7)  | .448 (11.4)  |
| .418 (10.6)  | .448 (11.4)  |
| .553 (14.0)  | .573 (14.6)  |
| .549 (13.9)  | .573 (14.6)  |
| .553 (14.0)  | .573 (14.6)  |
| .549 (13.9)  | .573 (14.6)  |
| .611 (15.5)  | .635 (16.1)  |
| .607 (15.4)  | .635 (16.1)  |
| .673 (17.1)  | .698 (17.7)  |
| .669 (17.0)  | .698 (17.7)  |
| .861 (21.9)  | .885 (22.5)  |
| .857 (21.8)  | .885 (22.5)  |
| 1.040 (26.4) | 1.075 (27.3) |
| 1.036 (26.3) | 1.075 (27.3) |
| 1.113 (28.3) | 1.135 (28.8) |
| 1.109 (28.2) | 1.135 (28.8) |

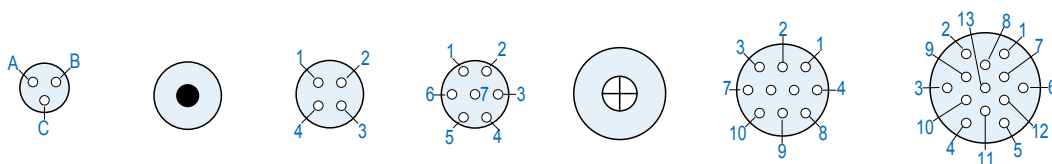


# Series 80 "Mighty Mouse" Filter Connector Contact Arrangements



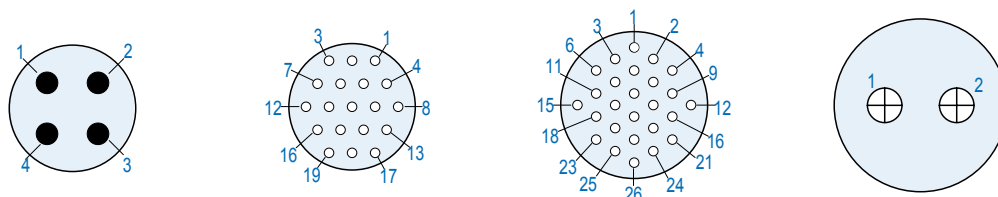
The contact arrangements on this page apply to filtered versions of Series 801, 804 and 805 only. The size #23 contacts are rated at 5 amps current and accept #22 to #28 AWG wire.

## Mating Face View of Pin Insert, Socket Cavity Numbers are Reversed

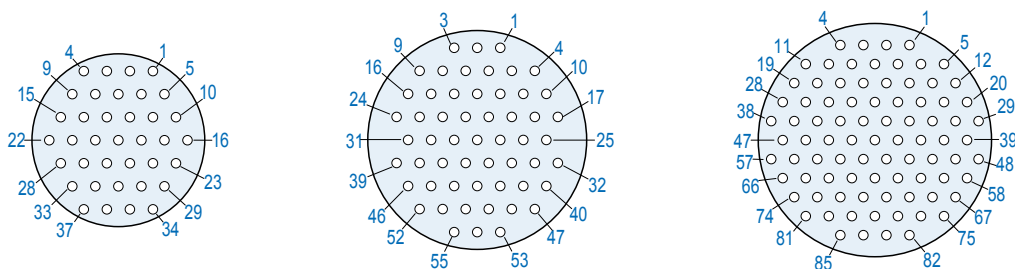


|                    |            |     |     |     |     |      |       |
|--------------------|------------|-----|-----|-----|-----|------|-------|
| Series 801         | 5-3        | 6-1 | 6-4 | 6-7 | 7-1 | 7-10 | 8-13  |
| Series 804         | 5-3        | 6-1 | 6-4 | 6-7 | 7-1 | 7-10 | 8-13  |
| Series 805         | Not Avail. | 8-1 | 8-4 | 8-7 | 9-1 | 9-10 | 10-13 |
| Number of Contacts | 3          | 1   | 4   | 7   | 1   | 10   | 13    |
| Contact Size       | #23        | #16 | #23 | #23 | #12 | #23  | #23   |

C



|                    |      |       |       |      |
|--------------------|------|-------|-------|------|
| Series 801         | 9-4  | 9-19  | 10-26 | 13-2 |
| Series 804         | 9-4  | 9-19  | 10-26 | 12-2 |
| Series 805         | 11-4 | 11-19 | 12-26 | 15-2 |
| Number of Contacts | 4    | 19    | 26    | 2    |
| Contact Size       | #16  | #23   | #23   | #12  |



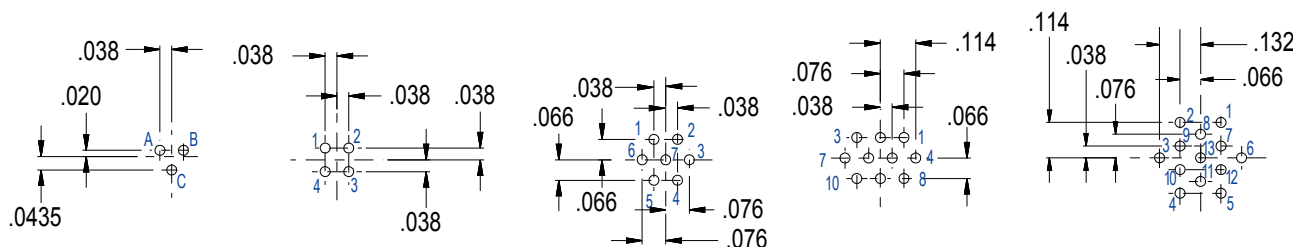
|                    |       |       |       |
|--------------------|-------|-------|-------|
| Series 801         | 13-37 | 16-55 | 17-85 |
| Series 804         | 12-37 | 14-55 | 15-85 |
| Series 805         | 15-37 | 18-55 | 19-85 |
| Number of Contacts | 37    | 55    | 85    |
| Contact Size       | #23   | #23   | #23   |



**Series 80 “Mighty Mouse” Filter Connector  
Printed Circuit Board Layouts - Pin Connectors  
Series 801, 804 and 805 Straight PC Tails**

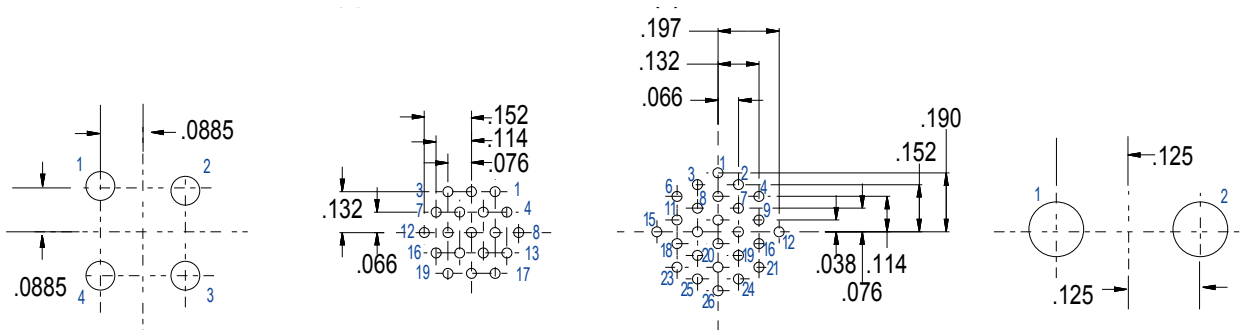
### Contact Tail Diameters

Size #23 contacts : .022 Maximum; Size #16 contacts: .064 Maximum; Size #12 contacts: .096 Maximum

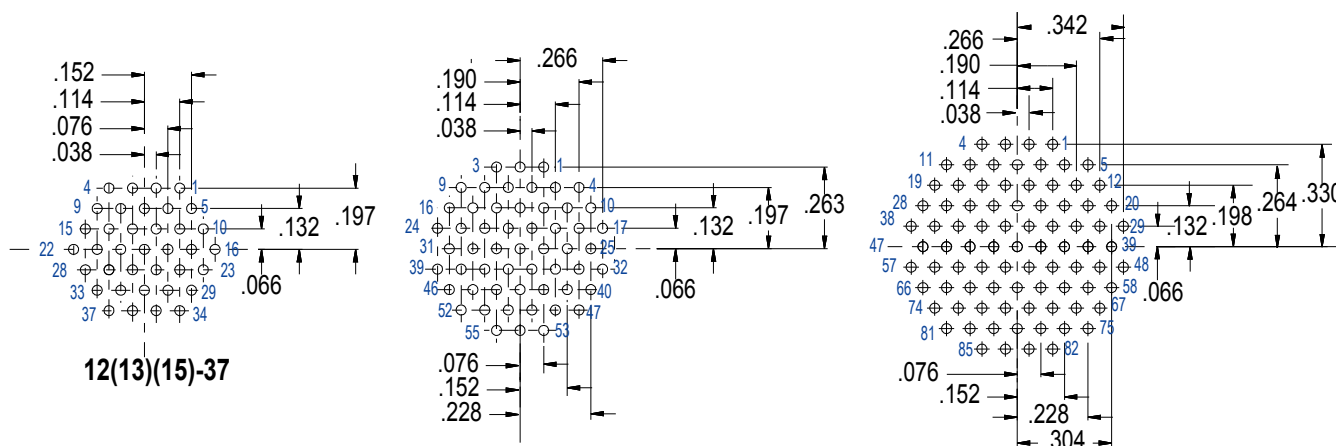


|            |     |     |     |      |       |
|------------|-----|-----|-----|------|-------|
| Series 801 | 5-3 | 6-4 | 6-7 | 7-10 | 8-13  |
| Series 804 | 5-3 | 6-4 | 6-7 | 7-10 | 8-13  |
| Series 805 | N/A | 8-4 | 8-7 | 9-10 | 10-13 |

C



|            |      |       |       |      |
|------------|------|-------|-------|------|
| Series 801 | 9-4  | 9-19  | 10-26 | 12-2 |
| Series 804 | 9-4  | 9-19  | 10-26 | 13-2 |
| Series 805 | 11-4 | 11-19 | 12-26 | 15-2 |



|            |       |       |       |
|------------|-------|-------|-------|
| Series 801 | 13-37 | 16-55 | 17-85 |
| Series 804 | 12-37 | 14-55 | 15-85 |
| Series 805 | 15-37 | 18-55 | 19-85 |

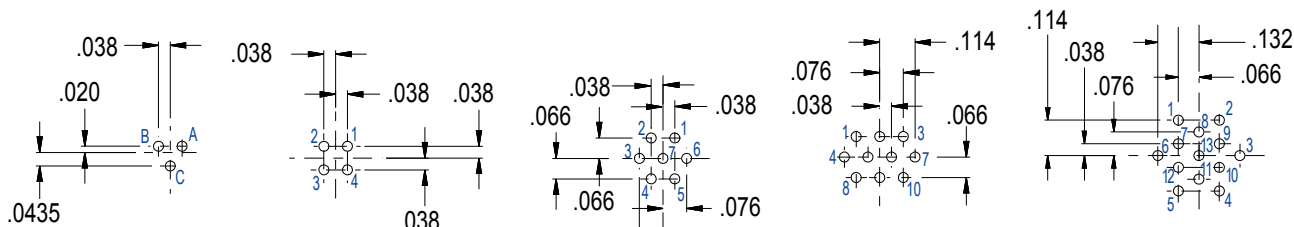
# Series 80 "Mighty Mouse" Filter Connector Printed Circuit Board Layouts - Socket Connectors Series 801, 804 and 805 Straight PC Tails



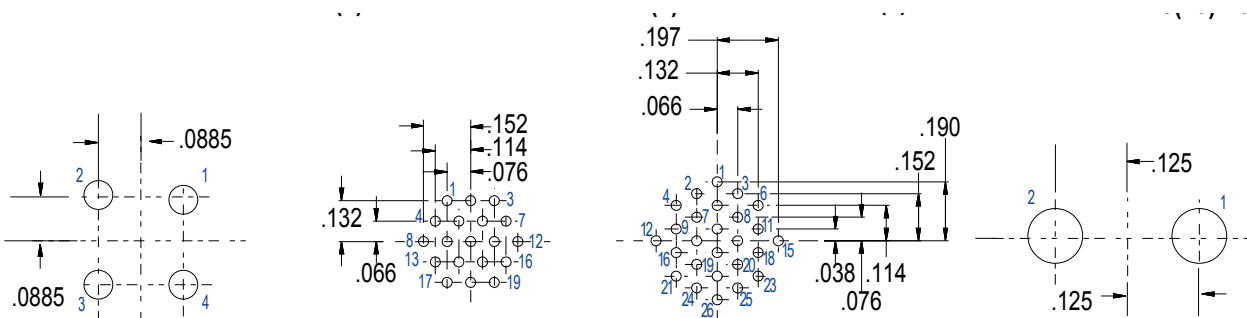
Series 80  
Mighty Mouse

## Contact Tail Diameters

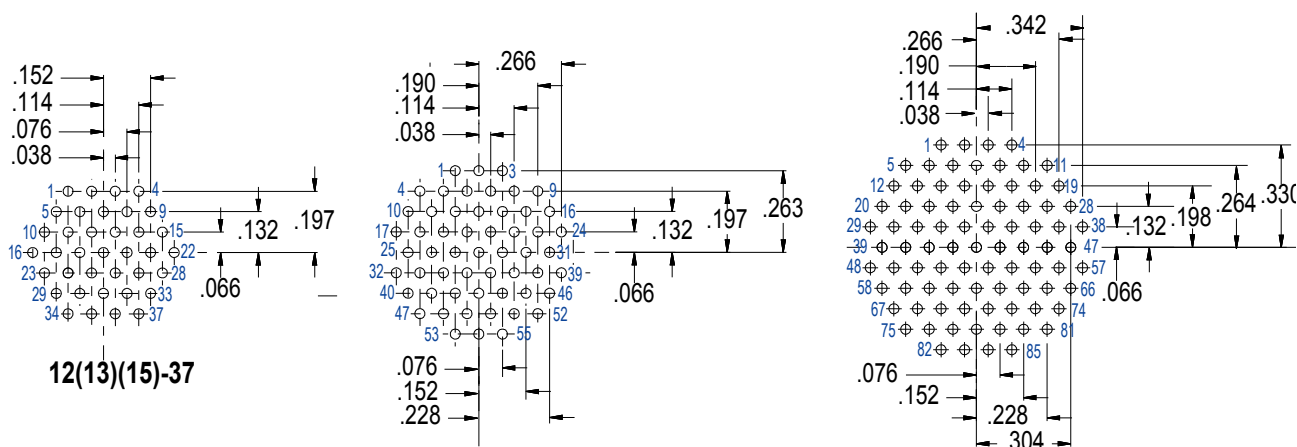
Size #23 contacts : .022 Maximum; Size #16 contacts: .064 Maximum; Size #12 contacts: .096 Maximum



|            |     |     |     |      |       |
|------------|-----|-----|-----|------|-------|
| Series 801 | 5-3 | 6-4 | 6-7 | 7-10 | 8-13  |
| Series 804 | 5-3 | 6-4 | 6-7 | 7-10 | 8-13  |
| Series 805 | N/A | 8-4 | 8-7 | 9-10 | 10-13 |



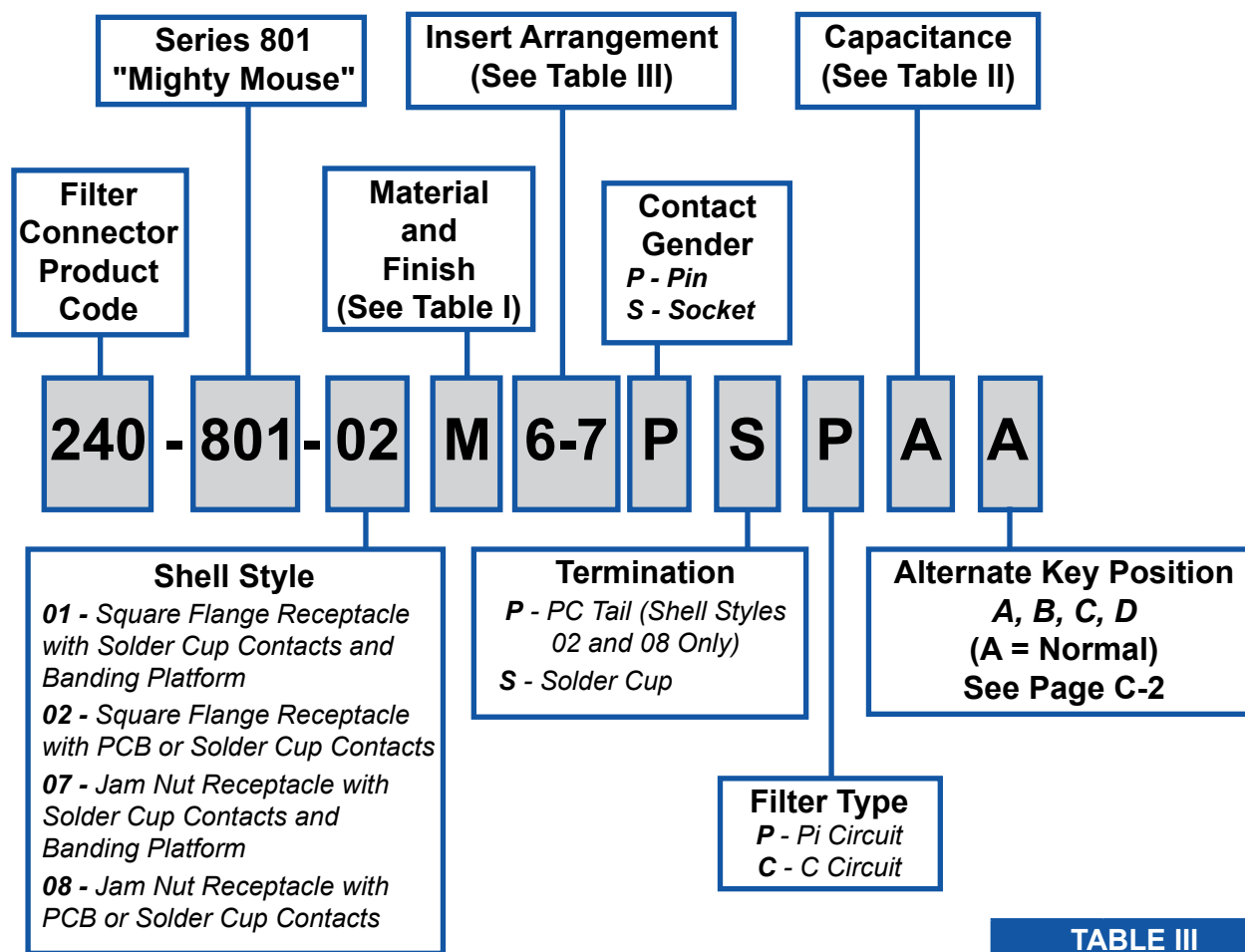
|            |      |       |       |      |
|------------|------|-------|-------|------|
| Series 801 | 9-4  | 9-19  | 10-26 | 12-2 |
| Series 804 | 9-4  | 9-19  | 10-26 | 13-2 |
| Series 805 | 11-4 | 11-19 | 12-26 | 15-2 |



|            |       |       |       |
|------------|-------|-------|-------|
| Series 801 | 13-37 | 16-55 | 17-85 |
| Series 804 | 12-37 | 14-55 | 15-85 |
| Series 805 | 15-37 | 18-55 | 19-85 |



## 240-801 "Mighty Mouse" Filter Connector Heavy Duty Double-Start Coupling Master How to Order • Part Number Breakdown



**TABLE I: MATERIALS AND FINISH**

| SYM | MATERIAL        | FINISH DESCRIPTION                                    |
|-----|-----------------|-------------------------------------------------------|
| M   | Aluminum        | Electroless Nickel                                    |
| MT  | Aluminum        | Ni-PTFE 1000 Hour Grey™ (Nickel Fluorocarbon Polymer) |
| NF  | Aluminum        | Cadmium O.D. Over Electroless Nickel                  |
| P   | Stainless Steel | Electro-Deposited Nickel                              |
| ZN  | Aluminum        | Zinc-Nickel Over Electroless Nickel                   |

**TABLE II: CAPACITOR ARRAY CODE CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

**TABLE III  
INSERT ARRANGEMENTS**

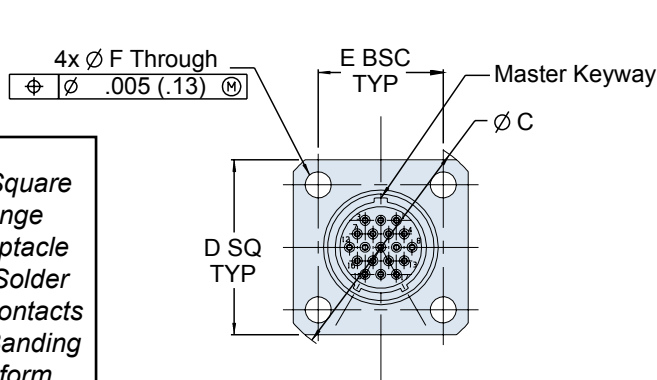
| Arr. No. | Contact Size | Contact Qty. |
|----------|--------------|--------------|
| 5-3      | 23           | 3            |
| 6-1      | 16           | 1            |
| 6-4      | 23           | 4            |
| 6-7      | 23           | 7            |
| 7-1      | 12           | 1            |
| 7-10     | 23           | 10           |
| 8-13     | 23           | 13           |
| 9-4      | 16           | 4            |
| 9-19     | 23           | 19           |
| 10-26    | 23           | 26           |
| 13-2     | 12           | 2            |
| 13-37    | 23           | 37           |
| 16-55    | 23           | 55           |
| 17-85    | 23           | 85           |

**240-801-01 and -07**  
**"Mighty Mouse" Filter Connector**  
 Heavy Duty Double-Start Coupling  
 Banding Platform Versions with Solder Cup Contacts

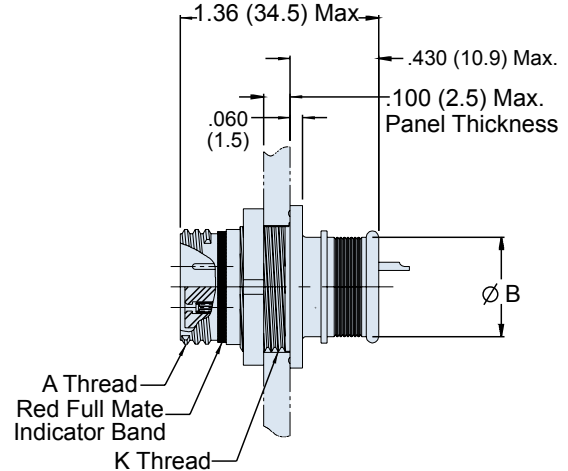
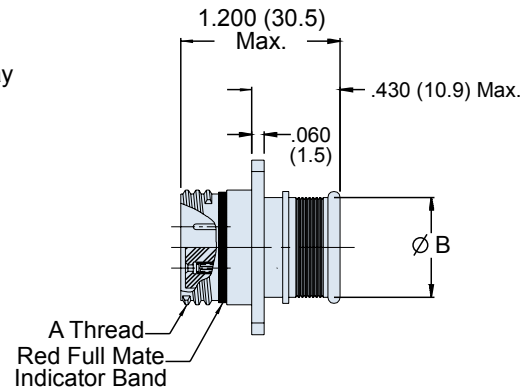
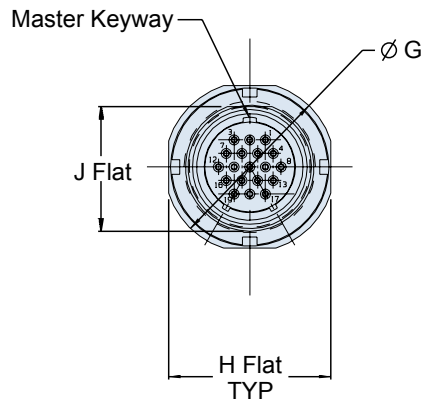


Series 80  
Mighty Mouse

**01 - Square Flange Receptacle with Solder Cup Contacts and Banding Platform**



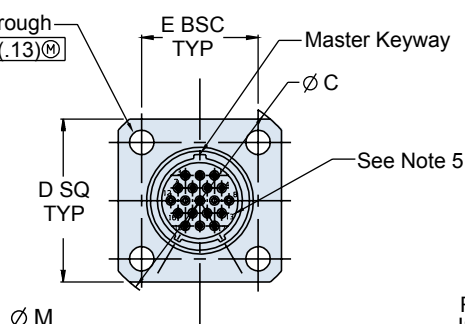
**07 - Jam Nut Receptacle with Solder Cup Contacts and Banding Platform**



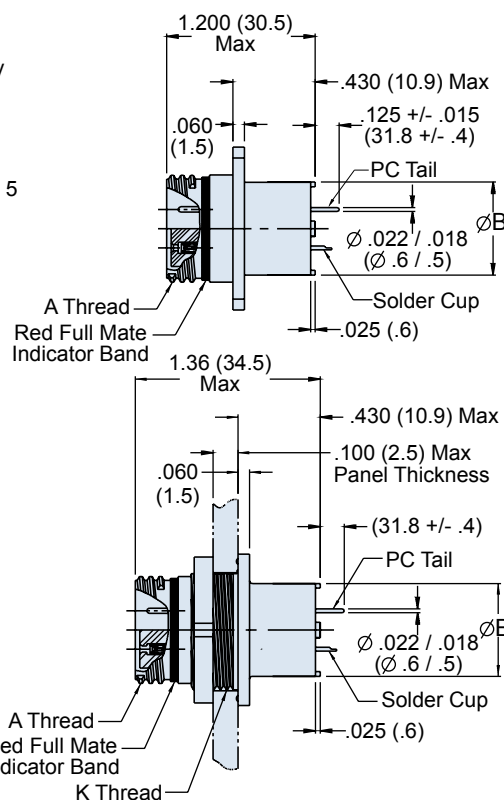
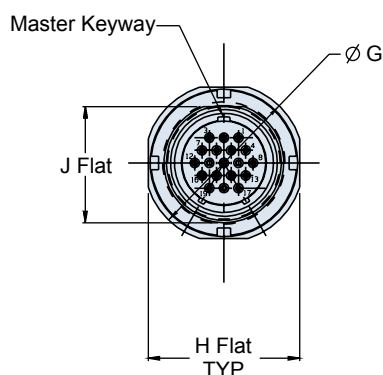
**TABLE I: DIMENSIONS**

| SHELL SIZE | A THREAD          | Ø B         | Ø C          | D SQ         | E BSC        | F HOLES                  | Ø G          | H FLAT       | J FLAT       | K THREAD         |
|------------|-------------------|-------------|--------------|--------------|--------------|--------------------------|--------------|--------------|--------------|------------------|
| 5          | .3125-.05P-.1L-2A | .365 (9.3)  | .680 (17.3)  | .530 (13.5)  | .363 (9.2)   | .096 (2.4)<br>.091 (2.3) | .575 (14.6)  | .545 (13.8)  | .350 (8.9)   | .3750-28 UN-2A   |
| 6          | .3750-.05P-.1L-2A | .409 (10.4) | .750 (19.1)  | .590 (15.0)  | .423 (10.7)  |                          | .635 (16.1)  | .595 (15.1)  | .410 (10.4)  | .4375-28 UNEF-2A |
| 7          | .4375-.05P-.1L-2A | .500 (12.7) | .850 (21.6)  | .650 (16.5)  | .483 (12.3)  |                          | .755 (19.2)  | .723 (18.4)  | .536 (13.6)  | .5625-32 UN-2A   |
| 8          | .5000-.05P-.1L-2A | .522 (13.3) | .938 (23.8)  | .712 (18.1)  | .545 (13.8)  |                          | .755 (19.2)  | .723 (18.4)  | .536 (13.6)  | .5625-32 UN-2A   |
| 9          | .5625-.05P-.1L-2A | .558 (14.2) | 1.125 (28.6) | .850 (21.6)  | .607 (15.4)  |                          | .830 (21.1)  | .790 (20.1)  | .596 (15.1)  | .6250-28 UN-2A   |
| 10         | .6250-.05P-.1L-2A | .652 (16.6) | 1.188 (30.2) | .890 (22.6)  | .670 (17.0)  | .130 (3.3)<br>.126 (3.2) | .890 (22.6)  | .855 (21.7)  | .658 (16.7)  | .6875-28 UN-2A   |
| 13         | .8125-.1P-.2L-2A  | .707 (18.0) | 1.375 (34.9) | 1.030 (26.2) | .812 (20.6)  |                          | 1.078 (27.4) | 1.044 (26.5) | .845 (21.5)  | .875-28 UN-2A    |
| 16         | 1.000-.1P-.2L-2A  | .871 (22.1) | 1.625 (41.3) | 1.219 (31.0) | .981 (24.9)  |                          | 1.264 (32.1) | 1.230 (31.2) | 1.022 (26.0) | 1.0625-20 UN-2A  |
| 17         | 1.062-.1P-.2L-2A  | .965 (24.5) | 1.700 (43.2) | 1.280 (32.5) | 1.060 (26.9) |                          | 1.325 (33.7) | 1.290 (32.8) | 1.096 (27.8) | 1.125-28 UN-2A   |

**02 - Square Flange  
Receptacle with  
Printed Circuit Board  
Contacts**



**08 - Jam Nut  
Receptacle with  
Printed Circuit Board  
Contacts**

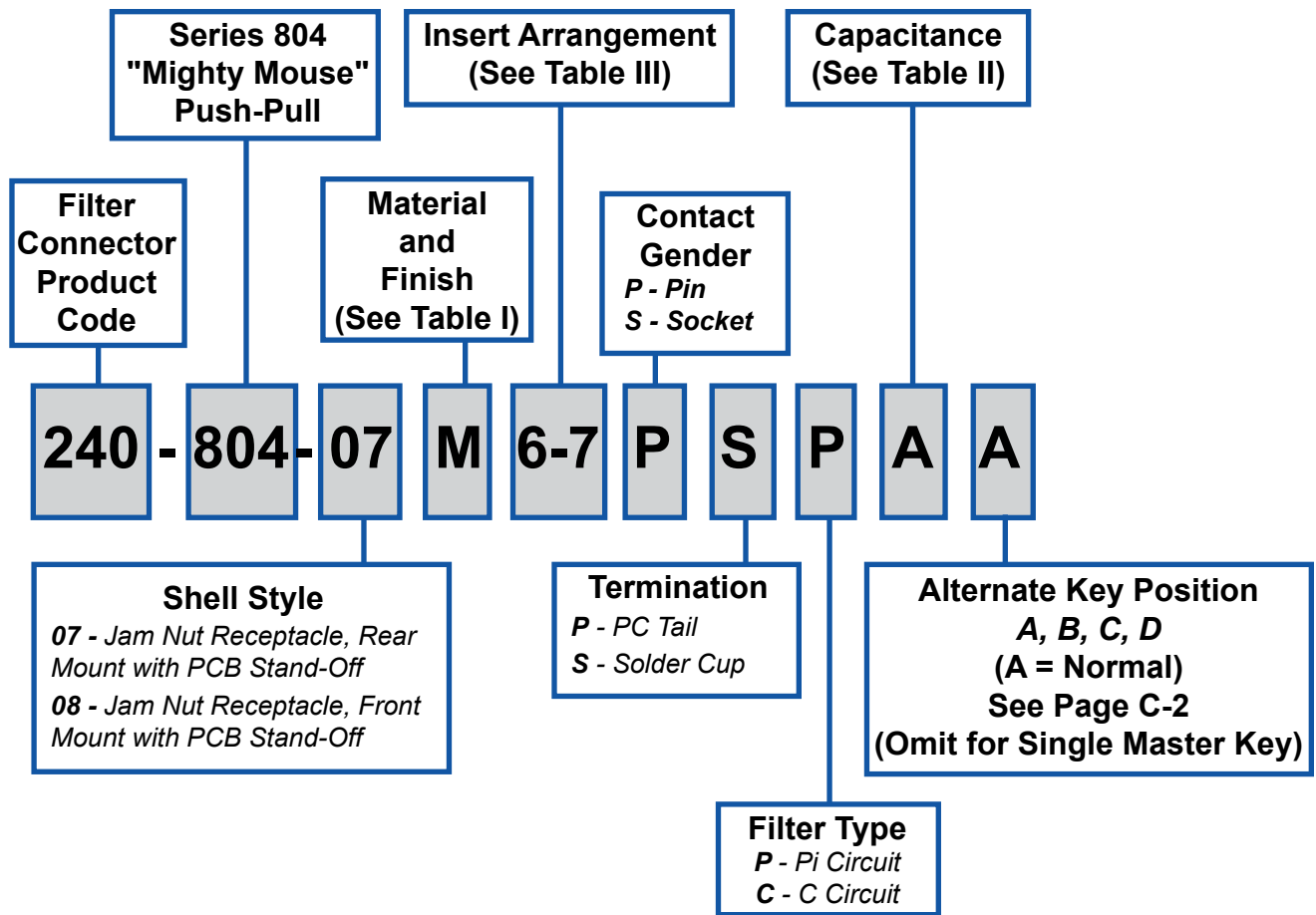


**TABLE I: DIMENSIONS**

| SHELL SIZE | A THREAD          | Ø B            | Ø C             | D SQ            | E BSC           | F HOLES                  | Ø G             | H FLAT          | J FLAT          | K THREAD         |
|------------|-------------------|----------------|-----------------|-----------------|-----------------|--------------------------|-----------------|-----------------|-----------------|------------------|
| 5          | .3125-.05P-.1L-2A | .245<br>(6.2)  | .680<br>(17.3)  | .530<br>(13.5)  | .363<br>(9.2)   | .096 (2.4)<br>.091 (2.3) | .575<br>(14.6)  | .545<br>(13.8)  | .350<br>(8.9)   | .3750-28 UN-2A   |
| 6          | .3750-.05P-.1L-2A | .330<br>(8.4)  | .750<br>(19.1)  | .590<br>(15.0)  | .423<br>(10.7)  | .096 (2.4)<br>.091 (2.3) | .635<br>(16.1)  | .595<br>(15.1)  | .410<br>(10.4)  | .4375-28 UNEF-2A |
| 7          | .4375-.05P-.1L-2A | .442<br>(11.2) | .850<br>(21.6)  | .650<br>(16.5)  | .483<br>(12.3)  | .096 (2.4)<br>.091 (2.3) | .755<br>(19.2)  | .723<br>(18.4)  | .536<br>(13.6)  | .5625-32 UN-2A   |
| 8          | .5000-.05P-.1L-2A | .493<br>(12.5) | .938<br>(23.8)  | .712<br>(18.1)  | .545<br>(13.8)  | .096 (2.4)<br>.091 (2.3) | .755<br>(19.2)  | .723<br>(18.4)  | .536<br>(13.6)  | .5625-32 UN-2A   |
| 9          | .5625-.05P-.1L-2A | .551<br>(14.0) | 1.125<br>(28.6) | .850<br>(21.6)  | .607<br>(15.4)  | .130 (3.3)<br>.126 (3.2) | .830<br>(21.1)  | .790<br>(20.1)  | .596<br>(15.1)  | .6250-28 UN-2A   |
| 10         | .6250-.05P-.1L-2A | .620<br>(15.7) | 1.188<br>(30.2) | .890<br>(22.6)  | .670<br>(17.0)  | .130 (3.3)<br>.126 (3.2) | .890<br>(22.6)  | .855<br>(21.7)  | .658<br>(16.7)  | .6875-28 UN-2A   |
| 13         | .8125-.1P-.2L-2A  | .703<br>(17.9) | 1.375<br>(34.9) | 1.030<br>(26.2) | .812<br>(20.6)  | .130 (3.3)<br>.126 (3.2) | 1.078<br>(27.4) | 1.044<br>(26.5) | .845<br>(21.5)  | .875-28 UN-2A    |
| 16         | 1.000-.1P-.2L-2A  | .863<br>(21.9) | 1.625<br>(41.3) | 1.219<br>(31.0) | .981<br>(24.9)  | .130 (3.3)<br>.126 (3.2) | 1.264<br>(32.1) | 1.230<br>(31.2) | 1.022<br>(26.0) | 1.0625-20 UN-2A  |
| 17         | 1.0625-.1P-.2L-2A | .912<br>(23.2) | 1.700<br>(43.2) | 1.280<br>(32.5) | 1.060<br>(26.9) | .130 (3.3)<br>.126 (3.2) | 1.325<br>(33.7) | 1.290<br>(32.8) | 1.096<br>(27.8) | 1.125-28 UN-2A   |



**Series 240-804 "Mighty Mouse" Filter Connector**  
**Push-Pull Quick Disconnect**  
**Master How to Order • Part Number Breakdown**

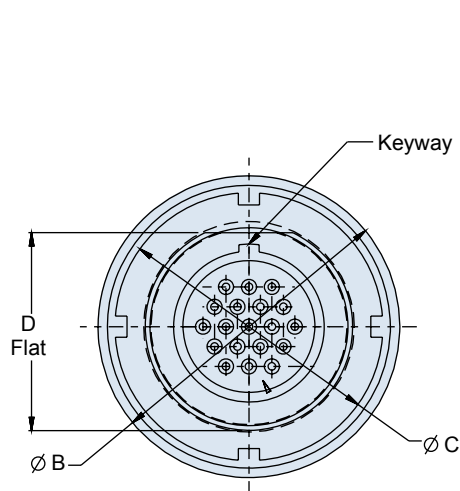


C

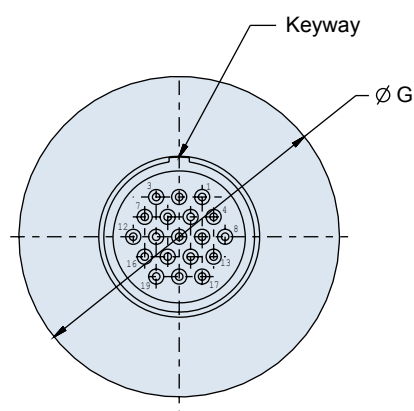
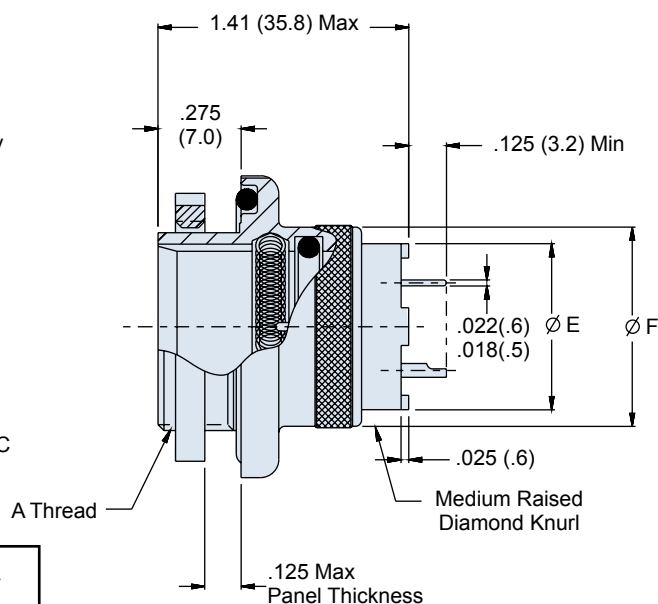
| TABLE I: MATERIALS AND FINISH |                 |                                                       |
|-------------------------------|-----------------|-------------------------------------------------------|
| SYM                           | MATERIAL        | FINISH DESCRIPTION                                    |
| M                             | Aluminum        | Electroless Nickel                                    |
| MT                            | Aluminum        | Ni-PTFE 1000 Hour Grey™ (Nickel Fluorocarbon Polymer) |
| NF                            | Aluminum        | Cadmium O.D. Over Electroless Nickel                  |
| P                             | Stainless Steel | Electro-Deposited Nickel                              |
| ZN                            | Aluminum        | Zinc-Nickel Over Electroless Nickel                   |

| TABLE II: CAPACITOR ARRAY CODE CAPACITANCE RANGE |                   |                  |
|--------------------------------------------------|-------------------|------------------|
| CLASS                                            | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
| A                                                | 38,000 - 56,000   | 19,000 - 28,000  |
| B                                                | 32,000 - 45,000   | 16,000 - 22,500  |
| C                                                | 18,000 - 33,000   | 9,000 - 16,500   |
| D                                                | 8,000 - 12,000    | 4,000 - 6,000    |
| E                                                | 3,300 - 5,000     | 1,650 - 2,500    |
| F                                                | 800 - 1,300       | 400 - 650        |
| G                                                | 400 - 600         | 200 - 300        |

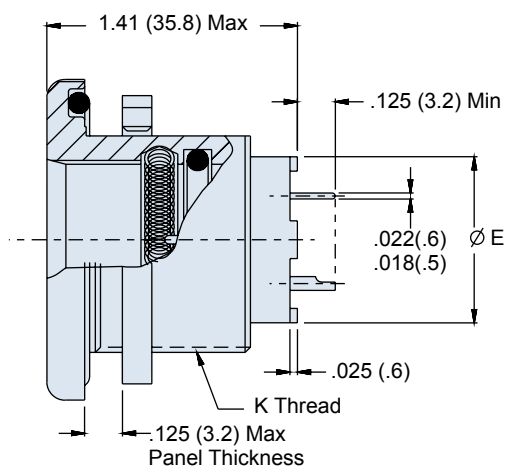
| TABLE III<br>INSERT ARRANGEMENTS |              |              |
|----------------------------------|--------------|--------------|
| Arr. No.                         | Contact Size | Contact Qty. |
| 5-3                              | 23           | 3            |
| 6-1                              | 16           | 1            |
| 6-4                              | 23           | 4            |
| 6-7                              | 23           | 7            |
| 7-1                              | 12           | 1            |
| 7-10                             | 23           | 10           |
| 8-13                             | 23           | 13           |
| 9-4                              | 16           | 4            |
| 9-19                             | 23           | 19           |
| 10-26                            | 23           | 26           |
| 12-2                             | 12           | 2            |
| 12-37                            | 23           | 37           |
| 14-55                            | 23           | 55           |
| 15-85                            | 23           | 85           |



**07 - Jam Nut Receptacle, Rear Mount, with PCB Stand-Off**



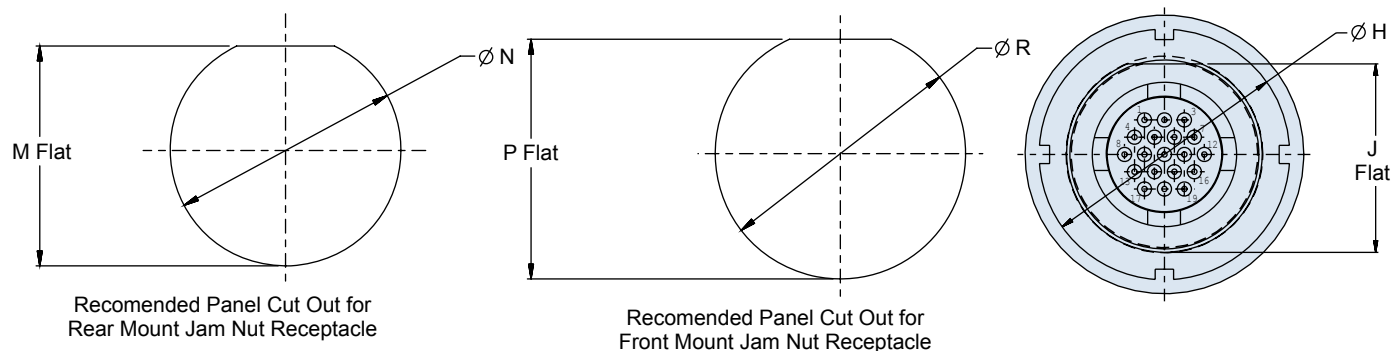
**08 - Jam Nut Receptacle, Front Mount, with PCB Stand-Off**



**240-804-07 and -08**  
**"Mighty Mouse" Filter Connector**  
 Push-Pull Quick Disconnect  
 Printed Circuit Board Versions with PCB or Solder Cup Contacts



Series 80  
Mighty Mouse



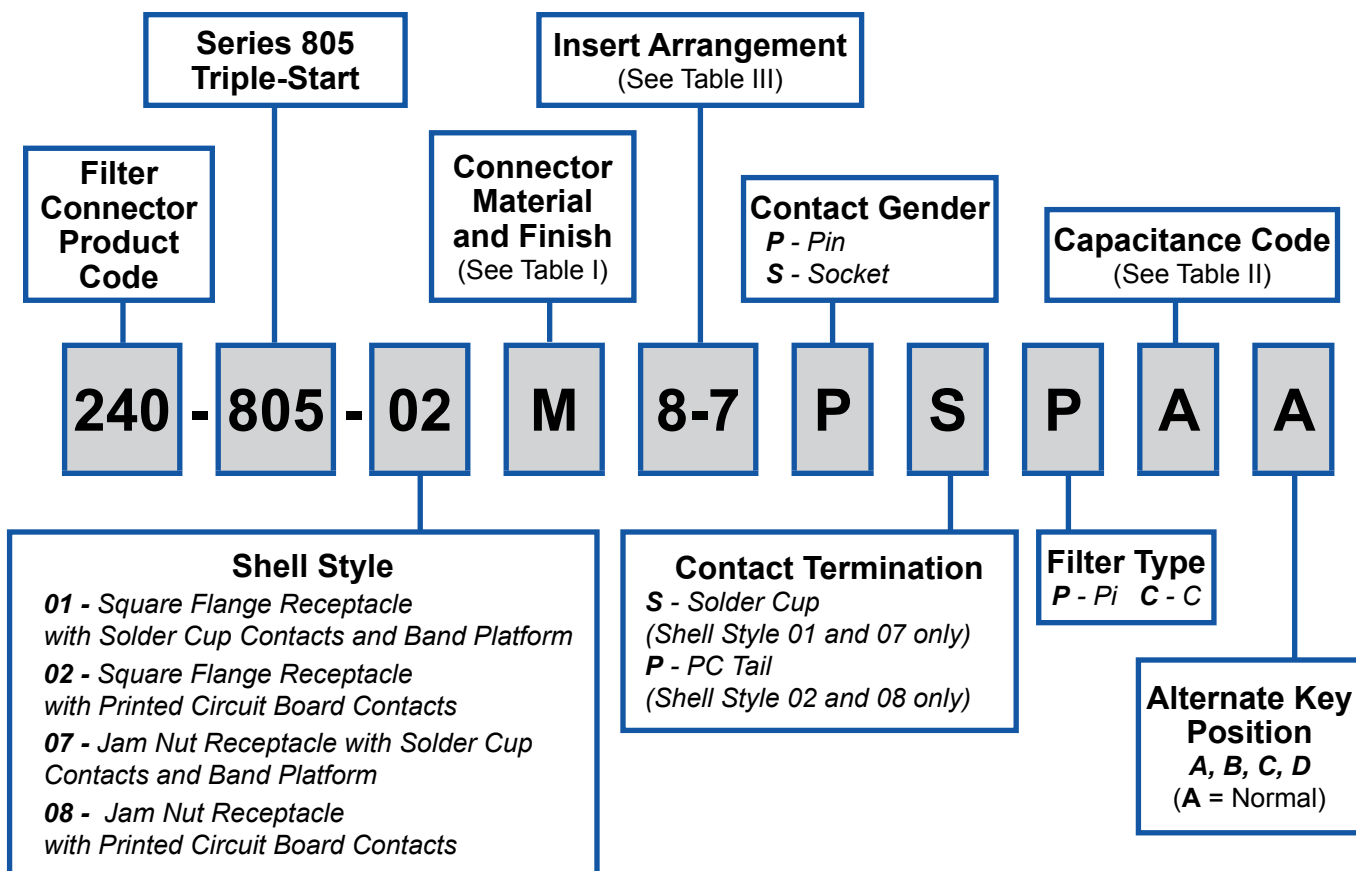
C

**TABLE II: DIMENSIONS**

| SHELL SIZE | A THREAD        | Ø B             | Ø C             | D FLAT          | Ø E            | Ø F             | Ø G             | Ø H             | J FLAT          | K THREAD       | M FLAT                       | Ø N             | P FLAT                       | Ø R             |
|------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|----------------|------------------------------|-----------------|------------------------------|-----------------|
| 5          | .4375-32 UN-2A  | .790<br>(20.1)  | .660<br>(16.8)  | .415<br>(10.5)  | .348<br>(8.8)  | .450<br>(11.4)  | .830<br>(21.1)  | 0.730<br>(18.5) | .470<br>(11.9)  | .5000-32 UN-2A | .427 (10.8)<br>.423 (10.7)   | .448<br>(11.4)  | .482 (12.2)<br>.478 (12.1)   | .510<br>(13.0)  |
| 6          | .5000-32 UN-2A  | .830<br>(21.1)  | .720<br>(18.3)  | .467<br>(11.9)  | .413<br>(10.5) | .520<br>(13.2)  | .885<br>(22.5)  | .780<br>(19.8)  | .530<br>(13.5)  | .5625-28 UN-2A | .479 (12.2)<br>.475 (12.1)   | .510<br>(13.0)  | .542 (13.8)<br>.538 (13.7)   | .575<br>(14.6)  |
| 7          | .6250-28 UN-2A  | .910<br>(23.1)  | .835<br>(21.2)  | .594<br>(15.1)  | .461<br>(11.7) | .580<br>(14.7)  | .995<br>(25.3)  | .920<br>(23.4)  | .663<br>(16.8)  | .6875-28 UN-2A | .606 (15.4)<br>.601 (15.3)   | .635<br>(16.1)  | .676 (17.2)<br>.671 (17.0)   | .698<br>(17.7)  |
| 8          | .6250-28 UN-2A  | .955<br>(24.3)  | .836<br>(21.2)  | .594<br>(15.1)  | .493<br>(12.5) | .603<br>(15.3)  | .995<br>(25.3)  | .920<br>(23.4)  | .663<br>(16.8)  | .6875-28 UN-2A | .606 (15.4)<br>.602 (15.3)   | .635<br>(16.1)  | .676 (17.2)<br>.671 (17.0)   | .698<br>(17.7)  |
| 9          | .6875-32 UN-2A  | 1.000<br>(25.4) | .900<br>(22.9)  | .655<br>(16.6)  | .551<br>(14.0) | .695<br>(17.7)  | 1.075<br>(27.3) | .970<br>(24.6)  | .720<br>(18.3)  | .7500-28 UN-2A | .667 (16.9)<br>.663 (16.8)   | .695<br>(17.7)  | .732 (18.6)<br>.728 (18.5)   | .760<br>(19.3)  |
| 10         | .7500-28 UN-2A  | 1.085<br>(27.6) | .950<br>(24.1)  | .721<br>(18.3)  | .655<br>(16.6) | .735<br>(18.7)  | 1.140<br>(29.0) | 1.040<br>(26.4) | .788<br>(20.0)  | .8125-28 UN-2A | .734 (18.6)<br>.729 (18.5)   | .760<br>(19.3)  | .801 (20.3)<br>.796 (20.2)   | .822<br>(20.9)  |
| 12         | .8750-28 UN-2A  | 1.180<br>(30.0) | 1.080<br>(27.4) | .843<br>(21.4)  | .703<br>(17.9) | .880<br>(22.4)  | 1.340<br>(34.0) | 1.230<br>(31.2) | .970<br>(24.6)  | 1.000-28 UN-2A | .855 (21.7)<br>.851 (21.6)   | .885<br>(22.5)  | .982 (24.9)<br>.978 (24.8)   | 1.010<br>(25.7) |
| 14         | 1.0000-28 UN-2A | 1.325<br>(33.7) | 1.210<br>(30.7) | .968<br>(24.6)  | .863<br>(21.9) | 1.010<br>(25.7) | 1.390<br>(35.3) | 1.280<br>(32.5) | 1.020<br>(25.9) | 1.062-20 UN-2A | .980 (24.9)<br>.976 (24.8)   | 1.010<br>(25.7) | 1.032 (26.2)<br>1.028 (26.1) | 1.075<br>(27.3) |
| 15         | 1.125-28 UN-2A  | 1.390<br>(35.3) | 1.280<br>(32.5) | 1.029<br>(26.1) | .912<br>(23.2) | 1.060<br>(26.9) | 1.450<br>(36.8) | 1.340<br>(34.0) | 1.093<br>(27.8) | 1.125-28 UN-2A | 1.041 (26.4)<br>1.037 (26.3) | 1.070<br>(27.2) | 1.015 (25.8)<br>1.011 (25.7) | 1.135<br>(28.8) |



## 240-805 "Mighty Mouse" Filter Connector Triple-Start ACME Coupling Threads Master How to Order • Part Number Breakdown



| TABLE I: MATERIALS AND FINISH |                 |                                                       |
|-------------------------------|-----------------|-------------------------------------------------------|
| SYM                           | MATERIAL        | FINISH DESCRIPTION                                    |
| M                             | Aluminum        | Electroless Nickel                                    |
| MT                            | Aluminum        | Ni-PTFE 1000 Hour Grey™ (Nickel Fluorocarbon Polymer) |
| NF                            | Aluminum        | Cadmium O.D. Over Electroless Nickel                  |
| P                             | Stainless Steel | Electro-Deposited Nickel                              |
| ZN                            | Aluminum        | Zinc-Nickel Over Electroless Nickel                   |

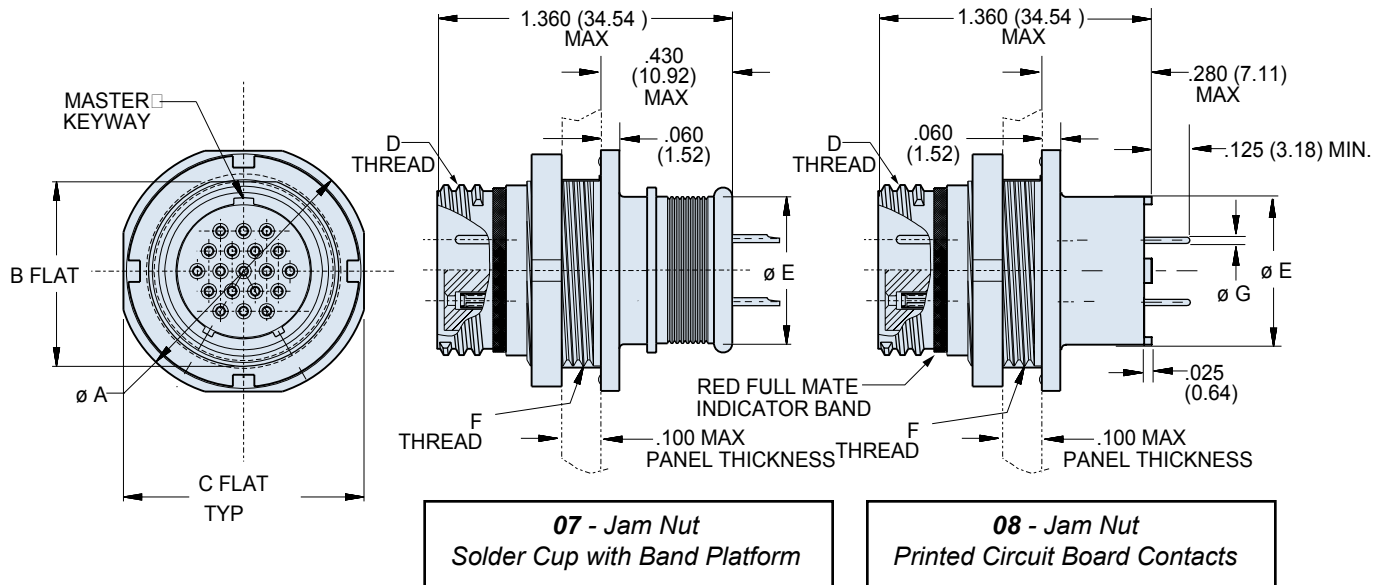
| TABLE II: CAPACITANCE CODE |                   |                  |
|----------------------------|-------------------|------------------|
| CODE                       | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
| A                          | 38,000 - 56,000   | 19,000 - 28,000  |
| B                          | 32,000 - 45,000   | 16,000 - 22,500  |
| C                          | 18,000 - 33,000   | 9,000 - 16,500   |
| D                          | 8,000 - 12,000    | 4,000 - 6,000    |
| E                          | 3,300 - 5,000     | 1,650 - 2,500    |
| F                          | 800 - 1,300       | 400 - 650        |
| G                          | 400 - 600         | 200 - 300        |

| TABLE III<br>INSERT ARRANGEMENTS |              |              |
|----------------------------------|--------------|--------------|
| Arr. No.                         | Contact Size | Contact Qty. |
| 8-1                              | 16           | 1            |
| 8-4                              | 23           | 4            |
| 8-7                              | 23           | 7            |
| 9-1                              | 12           | 1            |
| 9-10                             | 23           | 10           |
| 10-13                            | 23           | 13           |
| 11-4                             | 16           | 4            |
| 11-19                            | 23           | 19           |
| 12-26                            | 23           | 26           |
| 15-2                             | 12           | 2            |
| 15-37                            | 23           | 37           |
| 18-55                            | 23           | 55           |
| 19-85                            | 23           | 85           |

**240-805-07 and -08**  
**"Mighty Mouse" Filter Connector**  
 Triple-Start ACME Coupling Threads  
 Jam Nut Receptacle Versions



Series 80  
Mighty Mouse



**DIMENSIONS**

| Shell Size | Ø A   |       | B     |       | C     |       | D Threads            | Ø E  |       | F Threads        | Ø G Tail Dia.                   |
|------------|-------|-------|-------|-------|-------|-------|----------------------|------|-------|------------------|---------------------------------|
|            | In.   | mm.   | In.   | mm.   | In.   | mm.   |                      | In.  | mm.   |                  |                                 |
| 8          | .760  | 19.30 | .535  | 13.59 | .730  | 18.54 | .5000-.1P-.3L-TS-2A  | .413 | 10.49 | .5625-28 UNEF-2A | #23<br>.018/.022<br>(0.46/0.56) |
| 9          | .880  | 22.35 | .661  | 16.79 | .850  | 21.59 | .5625-.1P-.3L-TS-2A  | .500 | 12.70 | .6875-28 UN-2A   |                                 |
| 10         | .880  | 22.35 | .661  | 16.79 | .850  | 21.59 | .6250-.1P-.3L-TS-2A  | .530 | 13.46 | .6875-28 UN-2A   |                                 |
| 11         | .955  | 24.26 | .721  | 18.31 | .925  | 23.50 | .6875-.1P-.3L-TS-2A  | .558 | 14.17 | .7500-28 UN-2A   |                                 |
| 12         | 1.060 | 26.92 | .784  | 19.91 | 1.035 | 26.29 | .7500-.1P-.3L-TS-2A  | .655 | 16.51 | .8125-28 UN-2A   |                                 |
| 15         | 1.203 | 30.56 | .970  | 24.64 | 1.173 | 29.79 | .9375-.1P-.3L-TS-2A  | .708 | 17.98 | 1.000-28 UN-2A   |                                 |
| 18         | 1.389 | 35.28 | 1.147 | 29.13 | 1.359 | 34.52 | 1.1250-.1P-.3L-TS-2A | .871 | 22.12 | 1.187-28 UN-2A   |                                 |
| 19         | 1.450 | 36.83 | 1.221 | 31.01 | 1.420 | 36.07 | 1.1870-.1P-.3L-TS-2A | .972 | 24.67 | 1.250-28 UN-2A   |                                 |

**PANEL CUTOUTS**

| Shell Size | A     |       | Ø B         |             |
|------------|-------|-------|-------------|-------------|
|            | In.   | mm.   | In.         | mm.         |
| 8          | .545  | 13.84 | .575/.571   | 14.61/14.50 |
| 9          | .671  | 17.04 | .700/.696   | 17.78/17.68 |
| 10         | .671  | 17.04 | .700/.696   | 17.78/17.68 |
| 11         | .731  | 18.57 | .762/.758   | 19.35/19.25 |
| 12         | .794  | 20.17 | .825/.821   | 20.96/20.85 |
| 15         | .980  | 24.89 | 1.012/1.008 | 25.70/25.60 |
| 18         | 1.157 | 29.39 | 1.200/1.196 | 30.48/30.38 |
| 19         | 1.231 | 31.27 | 1.262/1.258 | 32.05/31.95 |



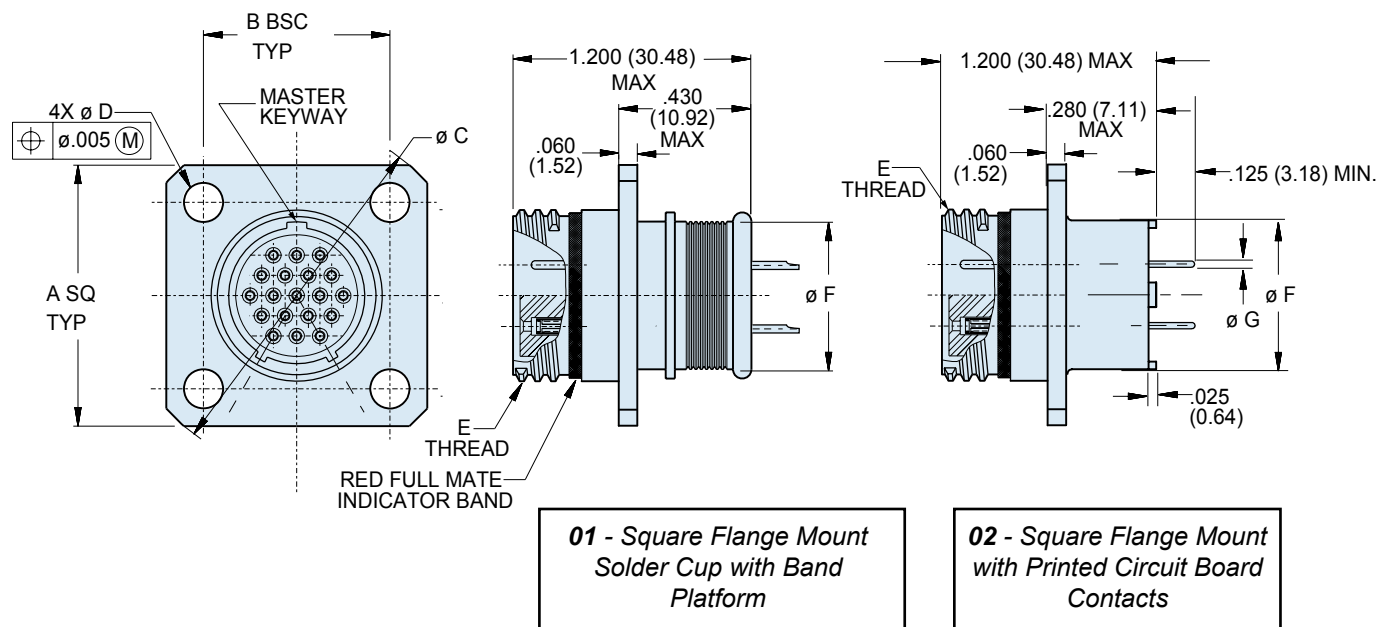


# 240-805-01 and -02

## "Mighty Mouse" Filter Connector

### Triple-Start ACME Coupling Threads

### Square Flange Receptacle Versions



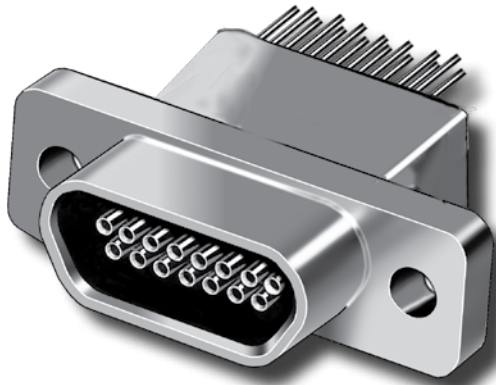
## DIMENSIONS

| Shell Size | A     |       | B     |       | ØC    |       | ØD         |           | E Threads            | Ø F  |       | Ø G Tail Dia.                   |
|------------|-------|-------|-------|-------|-------|-------|------------|-----------|----------------------|------|-------|---------------------------------|
|            | In.   | mm.   | In.   | mm.   | In.   | mm.   | In. ± .003 | mm. ± .08 |                      | In.  | mm.   |                                 |
| 8          | .850  | 21.59 | .660  | 16.76 | 1.150 | 29.21 | .094       | 2.39      | .5000-.1P-.3L-TS-2A  | .413 | 10.49 | #23<br>.018/.022<br>(0.46/0.56) |
| 9          | .913  | 23.19 | .723  | 18.36 | 1.230 | 31.24 | .094       | 2.39      | .5625-.1P-.3L-TS-2A  | .500 | 12.70 |                                 |
| 10         | .975  | 24.77 | .785  | 19.94 | 1.330 | 33.78 | .094       | 2.39      | .6250-.1P-.3L-TS-2A  | .530 | 13.46 |                                 |
| 11         | 1.039 | 26.39 | .848  | 21.54 | 1.410 | 35.81 | .094       | 2.39      | .6875-.1P-.3L-TS-2A  | .558 | 14.17 |                                 |
| 12         | 1.099 | 27.91 | .909  | 23.09 | 1.500 | 38.10 | .094       | 2.39      | .7500-.1P-.3L-TS-2A  | .655 | 16.51 |                                 |
| 15         | 1.288 | 32.74 | 1.058 | 26.87 | 1.750 | 44.45 | .128       | 3.25      | .9375-.1P-.3L-TS-2A  | .708 | 17.98 |                                 |
| 18         | 1.475 | 37.47 | 1.255 | 31.88 | 2.000 | 50.80 | .128       | 3.25      | 1.1250-.1P-.3L-TS-2A | .871 | 22.12 |                                 |
| 19         | 1.537 | 71.06 | 1.327 | 33.71 | 2.094 | 53.19 | .128       | 3.25      | 1.1870-.1P-.3L-TS-2A | .972 | 24.67 |                                 |

## MIL-DTL-83513 Type Micro-D Subminiature Filter Connectors



Micro-D  
Connectors



### PRODUCT FEATURES

**Glenair's Filtered Solder Cup Micro-D's** provide EMI solutions in a miniaturized M83513 type connector. These connectors feature ceramic capacitor planar arrays and ferrite inductors. Solder cups accept #26 thru #30 AWG wire, or specify oversize contacts for #24 gage wire.

**Choose Pi or C Filter Arrays** in seven filter classes and eight layouts. Glenair filtered Micro-D connectors comply with applicable MIL-DTL-83513 requirements and are 100% intermateable with standard connectors.

**Choose 9 to 67 Contacts**, with standard cadmium or nickel plating on the connector housing or choose optional finishes such as gold or chem film. Sometimes a standard part just won't do. For these situations Glenair welcomes your custom requirements. Whatever the need, we can propose a solution and back it up with rapid design and prototyping.

## The World's Only Short Lead-Time Source for Filtered Micro-D Subminiature Connectors

### Filter With Solder Cup Contacts

Available in 9, 15, 21, 25, 31, and 37 contacts, these aluminum shell filtered Micro-D connectors are backfilled with thermally conductive epoxy to allow soldering without heat damage to sensitive filter elements.

### Pre-Wired Pigtail Filter Connector

These pre-wired connectors save labor and provide added reliability. Choose from 9 to 37 contacts. Mates to standard M83513 type Micro-D connectors.

### Vertical Printed Circuit Board Micro-D Filter

Featuring a one piece aluminum shell, these thru-hole board mount connectors can be ordered with jackposts or with jackscrews for flex-to-board applications. PC terminals are .018" (0.46 mm.) diameter and are spaced .050" (1.27 mm.) apart.

### 90° Printed Circuit Board Micro-D Filter

These right angle thru-hole headers replicate the popular "CBR" .100" by .100" terminal spacing. Filter elements are housed in a wider shell. A molded rear tray withstands soldering heat and is impervious to chemicals. Terminals are encapsulated in epoxy.

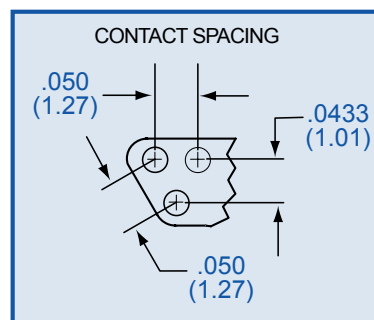
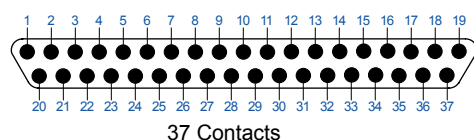
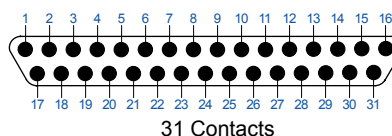
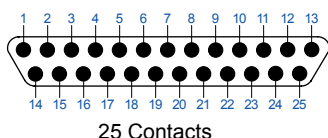
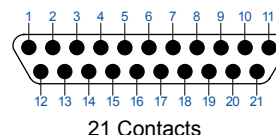
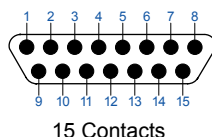
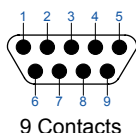
### In-Line Filter Adapter

Avoid costly redesign with pin/socket feed-thru adapters. These adapters plug into any standard M83513 connector. Simply unplug your existing cable, install the filter adapter and reconnect the cable.



## Micro-D Filter Connectors Contact Arrangements, Materials and Performance Specifications

### Contact Arrangements (Face View Pin Connector)



#### PERFORMANCE SPECIFICATIONS

|                                                                        |                               |
|------------------------------------------------------------------------|-------------------------------|
| Current Rating                                                         | 3 AMP                         |
| Dielectric Withstanding Voltage                                        | 250 VDC                       |
| Working Voltage                                                        | 100 VDC                       |
| Insulation Resistance                                                  | 5000 Megohms Minimum          |
| Contact Resistance                                                     | 8 Milliohms Maximum           |
| Low Level Contact Resistance                                           | 32 Milliohms Maximum          |
| Magnetic Permeability                                                  | 2 $\mu$ Maximum               |
| Operating Temperature                                                  | -55° C. to +125° C.           |
| Shock                                                                  | 50 g.                         |
| Vibration                                                              | 20 g.                         |
| Mating Force                                                           | (10 Ounces) X (# of Contacts) |
| Capacitance and Attenuation                                            | (See Table on Preceding Page) |
| For additional performance requirements, please refer to MIL-DTL-83513 |                               |

#### MATERIALS AND FINISHES

|                                       |                                                                                                                                                                                     |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connector Shell (Aluminum Alloy 6061) | Plating Code 1: Cadmium With Yellow Chromate<br>Plating Code 2: Electroless Nickel<br>Plating Code 33: Ni-PTFE 1000 Hour Grey™<br>Plating Code 5: Gold<br>Plating Code 6: Chem Film |
| Insulator                             | Liquid Crystal Polymer (LCP)                                                                                                                                                        |
| Seals                                 | Fluorosilicone Rubber, Blue                                                                                                                                                         |
| Pin Contact                           | Beryllium Copper With 50 Microinches Gold over Nickel Plating                                                                                                                       |
| Socket Contact                        | Copper Alloy With 50 Microinches Gold Over Nickel Plating                                                                                                                           |
| Hardware                              | 300 Series Stainless Steel                                                                                                                                                          |
| PCB Terminals                         | Gold-Plated Copper Alloy, Solder Dipped                                                                                                                                             |
| Capacitors                            | Planar Ceramic Array                                                                                                                                                                |
| Inductors                             | Ferrite                                                                                                                                                                             |
| EMI Ground Spring                     | Beryllium Copper, Gold Plated                                                                                                                                                       |
| Encapsulant                           | Thermally Conductive Epoxy                                                                                                                                                          |

# Micro-D Filter Connectors

## Filter Classes and Performance



| INSERTION LOSS                   |    |    |    |    |    |    |    |
|----------------------------------|----|----|----|----|----|----|----|
| Insertion Loss, dB Minimum, 25°C |    |    |    |    |    |    |    |
| Frequency                        | A  | B  | C  | D  | E  | F  | G  |
| 1 MHz                            | 6  | 5  | 3  | –  | –  | –  | –  |
| 10 MHz                           | 24 | 23 | 16 | 8  | 4  | –  | –  |
| 100 MHz                          | 41 | 39 | 35 | 28 | 21 | 10 | 5  |
| 500 -1000 MHz                    | 50 | 49 | 46 | 41 | 34 | 23 | 17 |

| CAPACITANCE  |                    |
|--------------|--------------------|
| Filter Class | Capacitance        |
| A            | 19000 – 28000 [pF] |
| B            | 16000 – 22500 [pF] |
| C            | 9000 – 16500 [pF]  |
| D            | 4000 – 6000 [pF]   |
| E            | 1650 – 2500 [pF]   |
| F            | 400 – 650 [pF]     |
| G            | 200 – 300 [pF]     |

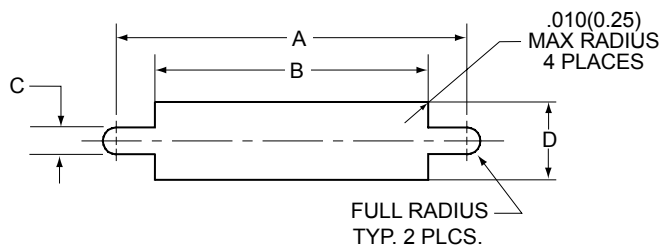


| INSERTION LOSS                   |    |    |    |    |    |    |     |
|----------------------------------|----|----|----|----|----|----|-----|
| Insertion Loss, dB Minimum, 25°C |    |    |    |    |    |    |     |
| Frequency                        | A  | B  | C  | D  | E  | F  | G   |
| 1 MHz                            | 10 | 8  | 5  | 1  | –  | –  | –   |
| 10 MHz                           | 40 | 35 | 25 | 14 | 8  | 2  | 0.8 |
| 100 MHz                          | 62 | 60 | 57 | 50 | 40 | 15 | 13  |
| 500 - 1000 MHz                   | 66 | 62 | 60 | 58 | 52 | 32 | 22  |

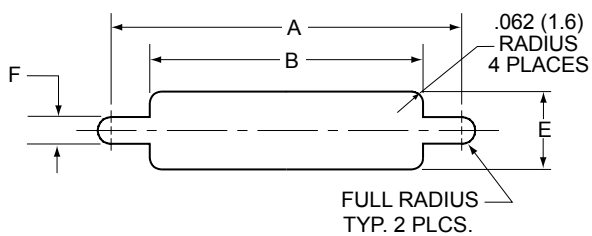
| CAPACITANCE  |                    |
|--------------|--------------------|
| Filter Class | Capacitance        |
| A            | 38000 – 56000 [pF] |
| B            | 32000 – 45000 [pF] |
| C            | 18000 – 33000 [pF] |
| D            | 8000 – 12000 [pF]  |
| E            | 3300 – 5000 [pF]   |
| F            | 800 – 1300 [pF]    |
| G            | 400 – 600 [pF]     |

Contact factory for other configurations.

# Micro-D Filter Connectors Recommended Panel Cutouts



**Front Panel Mounting**



**Rear Panel Mounting**

## METAL SHELL MWDM CONNECTORS

| Layout    | A             |               | B             |               | C             |               | D             |               | E             |               | F             |               |
|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|           | In.<br>± .003 | mm.<br>± 0.08 | In.<br>± .002 | mm.<br>± 0.05 | In.<br>± .002 | mm.<br>± 0.05 | In.<br>± .002 | mm.<br>± 0.05 | In.<br>± .005 | mm.<br>± 0.13 | In.<br>± .002 | mm.<br>± 0.05 |
| <b>9</b>  | .565          | 14.35         | .410          | 10.41         | .091          | 2.31          | .290          | 7.37          | .256          | 6.50          | .126          | 3.20          |
| <b>15</b> | .715          | 18.16         | .560          | 14.22         | .091          | 2.31          | .290          | 7.37          | .256          | 6.50          | .126          | 3.20          |
| <b>21</b> | .865          | 21.97         | .710          | 18.03         | .091          | 2.31          | .290          | 7.37          | .256          | 6.50          | .126          | 3.20          |
| <b>25</b> | .965          | 24.51         | .810          | 20.57         | .091          | 2.31          | .290          | 7.37          | .256          | 6.50          | .126          | 3.20          |
| <b>31</b> | 1.115         | 28.32         | .960          | 24.38         | .091          | 2.31          | .290          | 7.37          | .256          | 6.50          | .126          | 3.20          |
| <b>37</b> | 1.265         | 32.13         | 1.110         | 28.19         | .091          | 2.31          | .290          | 7.37          | .256          | 6.50          | .126          | 3.20          |

Note: For front panel mounting, filtered connectors require a larger cut-out than standard MIL-DTL-83513 connectors.



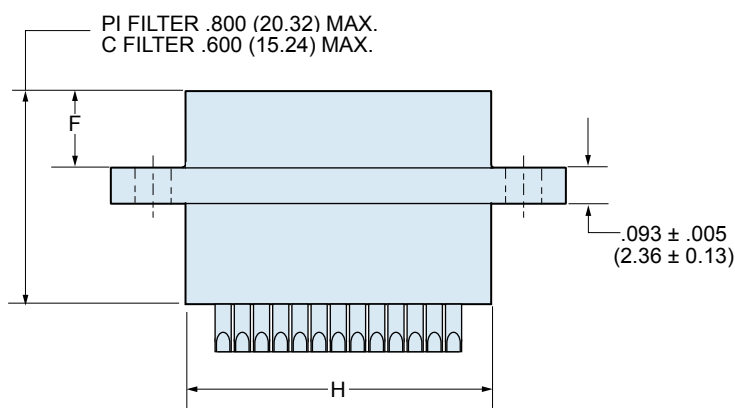
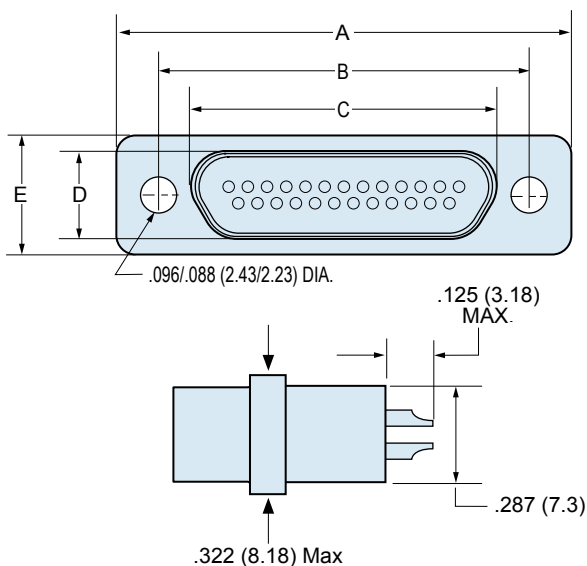
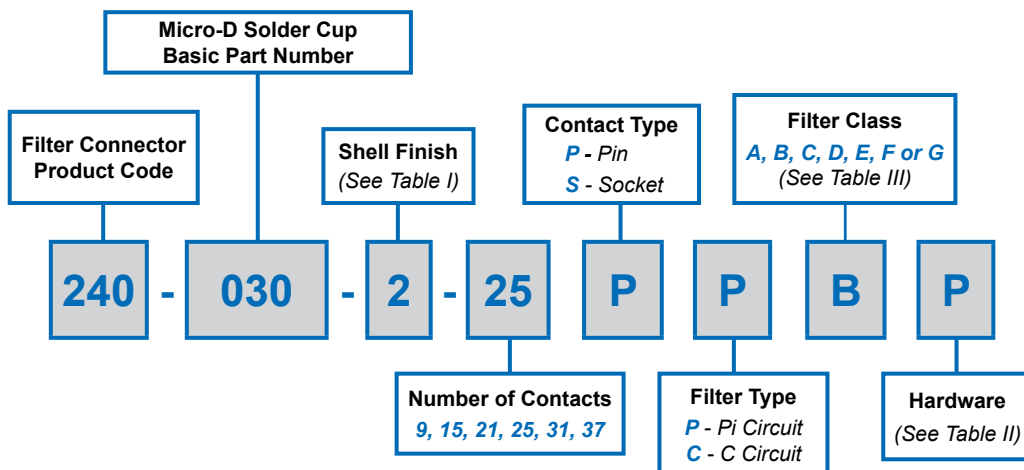
# MIL-STD-681 Color Code Chart



## MIL-STD-681 COLOR CODE CHART FOR MICRO-D CONNECTORS

| PIN NO. | MIL-STD-681 NUMBER | Base Color | First Stripe | Second Stripe | PIN NO. | MIL-STD-681 NO. | Base Color | First Stripe | Second Stripe | Third Stripe |
|---------|--------------------|------------|--------------|---------------|---------|-----------------|------------|--------------|---------------|--------------|
| 1       | 0                  | BLK        |              |               | 51      | 957             | WHT        | GRN          | VIO           |              |
| 2       | 1                  | BRN        |              |               | 52      | 958             | WHT        | GRN          | GRY           |              |
| 3       | 2                  | RED        |              |               | 53      | 967             | WHT        | BLU          | VIO           |              |
| 4       | 3                  | ORN        |              |               | 54      | 968             | WHT        | BLU          | GRY           |              |
| 5       | 4                  | YEL        |              |               | 55      | 978             | WHT        | VIO          | GRY           |              |
| 6       | 5                  | GRN        |              |               | 56      | 9012            | WHT        | BLK          | BRN           | RED          |
| 7       | 6                  | BLU        |              |               | 57      | 9013            | WHT        | BLK          | BRN           | ORN          |
| 8       | 7                  | VIO        |              |               | 58      | 9014            | WHT        | BLK          | BRN           | YEL          |
| 9       | 8                  | GRY        |              |               | 59      | 9015            | WHT        | BLK          | BRN           | GRN          |
| 10      | 9                  | WHT        |              |               | 60      | 9016            | WHT        | BLK          | BRN           | BLU          |
| 11      | 90                 | WHT        | BLK          |               | 61      | 9017            | WHT        | BLK          | BRN           | VIO          |
| 12      | 91                 | WHT        | BRN          |               | 62      | 9018            | WHT        | BLK          | BRN           | GRY          |
| 13      | 92                 | WHT        | RED          |               | 63      | 9023            | WHT        | BLK          | RED           | ORN          |
| 14      | 93                 | WHT        | ORN          |               | 64      | 9024            | WHT        | BLK          | RED           | YEL          |
| 15      | 94                 | WHT        | YEL          |               | 65      | 9025            | WHT        | BLK          | RED           | GRN          |
| 16      | 95                 | WHT        | GRN          |               | 66      | 9026            | WHT        | BLK          | RED           | BLU          |
| 17      | 96                 | WHT        | BLU          |               | 67      | 9027            | WHT        | BLK          | RED           | VIO          |
| 18      | 97                 | WHT        | VIO          |               | 68      | 9028            | WHT        | BLK          | RED           | GRY          |
| 19      | 98                 | WHT        | GRY          |               | 69      | 9034            | WHT        | BLK          | ORN           | YEL          |
| 20      | 901                | WHT        | BLK          | BRN           | 70      | 9035            | WHT        | BLK          | ORN           | GRN          |
| 21      | 902                | WHT        | BLK          | RED           | 71      | 9036            | WHT        | BLK          | ORN           | BLU          |
| 22      | 903                | WHT        | BLK          | ORN           | 72      | 9037            | WHT        | BLK          | ORN           | VIO          |
| 23      | 904                | WHT        | BLK          | YEL           | 73      | 9038            | WHT        | BLK          | ORN           | GRY          |
| 24      | 905                | WHT        | BLK          | GRN           | 74      | 9045            | WHT        | BLK          | YEL           | GRN          |
| 25      | 906                | WHT        | BLK          | BLU           | 75      | 9046            | WHT        | BLK          | YEL           | BLU          |
| 26      | 907                | WHT        | BLK          | VIO           | 76      | 9047            | WHT        | BLK          | YEL           | VIO          |
| 27      | 908                | WHT        | BLK          | GRY           | 77      | 9048            | WHT        | BLK          | YEL           | GRY          |
| 28      | 912                | WHT        | BRN          | RED           | 78      | 9056            | WHT        | BLK          | GRN           | BLU          |
| 29      | 913                | WHT        | BRN          | ORN           | 79      | 9057            | WHT        | BLK          | GRN           | VIO          |
| 30      | 914                | WHT        | BRN          | YEL           | 80      | 9058            | WHT        | BLK          | GRN           | GRY          |
| 31      | 915                | WHT        | BRN          | GRN           | 81      | 9067            | WHT        | BLK          | BLU           | VIO          |
| 32      | 916                | WHT        | BRN          | BLU           | 82      | 9068            | WHT        | BLK          | BLU           | GRY          |
| 33      | 917                | WHT        | BRN          | VIO           | 83      | 9078            | WHT        | BLK          | VIO           | GRY          |
| 34      | 918                | WHT        | BRN          | GRY           | 84      | 9123            | WHT        | BRN          | RED           | ORN          |
| 35      | 923                | WHT        | RED          | ORN           | 85      | 9124            | WHT        | BRN          | RED           | YEL          |
| 36      | 924                | WHT        | RED          | YEL           | 86      | 9125            | WHT        | BRN          | RED           | GRN          |
| 37      | 925                | WHT        | RED          | GRN           | 87      | 9126            | WHT        | BRN          | RED           | BLU          |
| 38      | 926                | WHT        | RED          | BLU           | 88      | 9127            | WHT        | BRN          | RED           | VIO          |
| 39      | 927                | WHT        | RED          | VIO           | 89      | 9128            | WHT        | BRN          | RED           | GRY          |
| 40      | 928                | WHT        | RED          | GRY           | 90      | 9134            | WHT        | BRN          | ORN           | YEL          |
| 41      | 934                | WHT        | ORN          | YEL           | 91      | 9135            | WHT        | BRN          | ORN           | GRN          |
| 42      | 935                | WHT        | ORN          | GRN           | 92      | 9136            | WHT        | BRN          | ORN           | BLU          |
| 43      | 936                | WHT        | ORN          | BLU           | 93      | 9137            | WHT        | BRN          | ORN           | VIO          |
| 44      | 937                | WHT        | ORN          | VIO           | 94      | 9138            | WHT        | BRN          | ORN           | GRY          |
| 45      | 938                | WHT        | ORN          | GRY           | 95      | 9145            | WHT        | BRN          | YEL           | GRN          |
| 46      | 945                | WHT        | YEL          | GRN           | 96      | 9146            | WHT        | BRN          | YEL           | BLU          |
| 47      | 946                | WHT        | YEL          | BLU           | 97      | 9147            | WHT        | BRN          | YEL           | VIO          |
| 48      | 947                | WHT        | YEL          | VIO           | 98      | 9148            | WHT        | BRN          | YEL           | GRY          |
| 49      | 948                | WHT        | YEL          | GRY           | 99      | 9156            | WHT        | BRN          | GRN           | BLU          |
| 50      | 956                | WHT        | GRN          | BLU           | 100     | 9157            | WHT        | BRN          | GRN           | VIO          |

## 240-030 Micro-D Filter Connectors Solder Cup



***Glenair's Filtered Solder Cup Micro-D's*** provide EMI solutions in a miniaturized M83513 type connector. These connectors feature ceramic capacitor planar arrays and ferrite inductors. Solder cups accept #26 thru #30 AWG wire, or specify oversize contacts for #24 gage wire.

**Choose Pi or C Filter Arrays** in seven filter classes and eight layouts. Glenair filtered Micro-D connectors comply with applicable MIL-DTL-83513 requirements and are 100% intermateable with standard connectors.

**Choose 9 to 67 Contacts**, with standard cadmium or nickel plating on the connector housing or choose optional finishes such as gold or chem film.

240-030  
Micro-D Filter Connectors  
Solder Cup



Micro-D  
Connectors

TABLE I: SHELL FINISH

| SYM | MATERIAL | FINISH DESCRIPTION      |
|-----|----------|-------------------------|
| 1   | Aluminum | Cadmium                 |
| 2   | Aluminum | Nickel                  |
| 5   | Aluminum | Gold                    |
| 6   | Aluminum | Chem Film               |
| 33  | Aluminum | Ni-PTFE 1000 Hour Grey™ |

TABLE III: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE

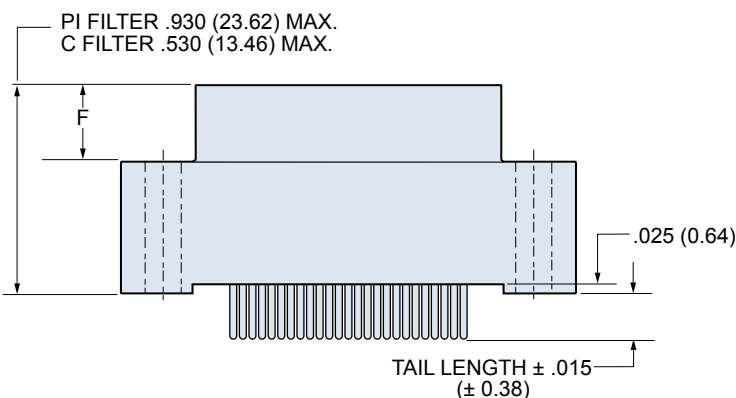
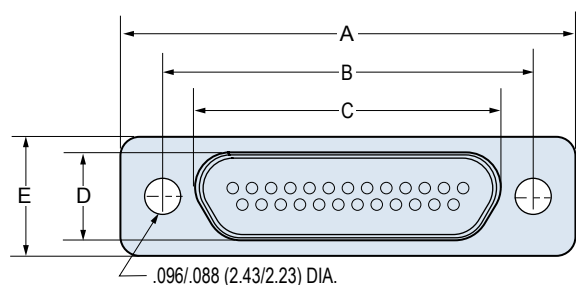
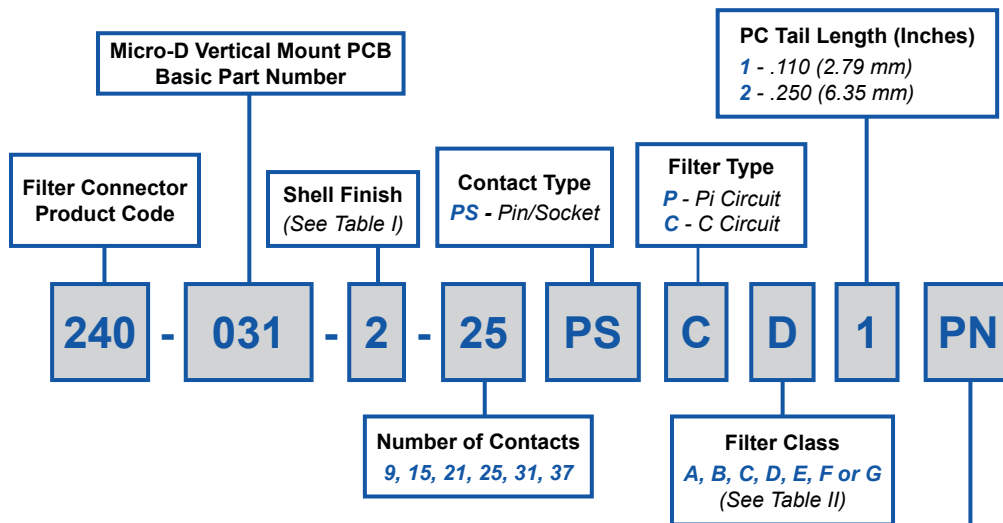
| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

TABLE II: MICRO-D MOUNTING HARDWARE

| B                                             | P                                                    | M                                             | M1                                                     | S                                              | S1                                                      | L                                          | K                                                    | F                                              | R                                             |
|-----------------------------------------------|------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------|------------------------------------------------|---------------------------------------------------------|--------------------------------------------|------------------------------------------------------|------------------------------------------------|-----------------------------------------------|
|                                               |                                                      |                                               |                                                        |                                                |                                                         |                                            |                                                      |                                                |                                               |
| <b>Thru-Hole</b><br>Order Hardware Separately | <b>Jackpost</b><br>Removable Includes Nut and Washer | <b>Jackscrew</b><br>Hex Head Removable E-ring | <b>Jackscrew</b><br>Hex Head Removable E-ring Extended | <b>Jackscrew</b><br>Slot Head Removable E-ring | <b>Jackscrew</b><br>Slot Head Removable E-ring Extended | <b>Jackscrew</b><br>Hex Head Non-Removable | <b>Jackscrew</b><br>Slot Head Non-Removable Extended | <b>Float Mount</b><br>For Front Panel Mounting | <b>Float Mount</b><br>For Rear Panel Mounting |

MICRO-D FILTER SOLDER CUP DIMENSIONS

| Layout | A Max. |       | B          |            | C Max. |       | D Max. |      | E Max. |      | F          |            | H Max. |       |
|--------|--------|-------|------------|------------|--------|-------|--------|------|--------|------|------------|------------|--------|-------|
|        | In.    | mm.   | In. ± .003 | mm. ± 0.08 | In.    | mm.   | In.    | mm.  | In.    | mm.  | In. ± .004 | mm. ± 0.10 | In.    | mm.   |
| 9P     | .785   | 19.94 | .565       | 14.35      | .333   | 8.46  | .184   | 4.67 | .310   | 7.87 | .183       | 4.65       | .400   | 10.16 |
| 9S     | .785   | 19.94 | .565       | 14.35      | .400   | 10.16 | .250   | 6.35 | .310   | 7.87 | .195       | 4.95       | .400   | 10.16 |
| 15P    | .935   | 23.75 | .715       | 18.16      | .483   | 12.27 | .184   | 4.67 | .310   | 7.87 | .183       | 4.65       | .550   | 13.97 |
| 15S    | .935   | 23.75 | .715       | 18.16      | .551   | 14.00 | .250   | 6.35 | .310   | 7.87 | .195       | 4.95       | .550   | 13.97 |
| 21P    | 1.085  | 27.56 | .865       | 21.97      | .633   | 16.08 | .184   | 4.67 | .310   | 7.87 | .183       | 4.65       | .700   | 17.78 |
| 21S    | 1.085  | 27.56 | .865       | 21.97      | .701   | 17.81 | .250   | 6.35 | .310   | 7.87 | .195       | 4.95       | .700   | 17.78 |
| 25P    | 1.185  | 30.01 | .965       | 24.51      | .733   | 18.62 | .184   | 4.67 | .310   | 7.87 | .183       | 4.65       | .800   | 20.32 |
| 25S    | 1.185  | 30.01 | .965       | 24.51      | .801   | 20.35 | .250   | 6.35 | .310   | 7.87 | .195       | 4.95       | .800   | 20.32 |
| 31P    | 1.335  | 33.91 | 1.115      | 28.32      | .883   | 22.43 | .184   | 4.67 | .310   | 7.87 | .183       | 4.65       | .950   | 24.13 |
| 31S    | 1.335  | 33.91 | 1.115      | 28.32      | .951   | 24.16 | .250   | 6.35 | .310   | 7.87 | .195       | 4.95       | .950   | 24.13 |
| 37P    | 1.485  | 37.72 | 1.265      | 32.13      | 1.033  | 26.24 | .184   | 4.67 | .310   | 7.87 | .183       | 4.65       | 1.100  | 27.94 |
| 37S    | 1.485  | 37.72 | 1.265      | 32.13      | 1.101  | 27.96 | .250   | 6.35 | .310   | 7.87 | .195       | 4.95       | 1.100  | 27.94 |



**Hardware Option**

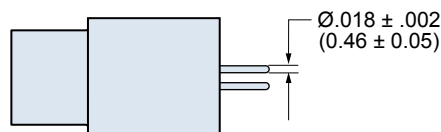
**NN** - No Jackpost, No Threaded Insert  
**PN** - Extended Jackpost for .062" (1.6) PCB, No Threaded Insert  
**RN** - Extended Jackpost for .196" (5.0) PCB, No Threaded Insert  
**NU** - Threaded Insert Only, No Jackposts  
**PU** - Short Jackpost and Threaded Insert

**Rear Panel Jackposts with Threaded Insert:**

**R6U** - 0.125" (3.2) Panel  
**R5U** - 0.094" (2.4) Panel  
**R4U** - 0.062" (1.6) Panel  
**R3U** - 0.047" (1.2) Panel  
**R2U** - 0.031" (0.8) Panel

**Jack screw Options:**

**M** - Hex Head Jackscrews  
**S** - Slot Head Jackscrews



**Printed Circuit Board Micro-D Filter Connectors.** These vertical mount PCB connectors are ideal for flexible circuit or motherboard applications.

**Integral Board Standoffs and Pre-Tinned Tails**—These connectors are solder dipped (63/37 SnPb) and feature a full complement of mounting hardware options.

**240-031**  
**Micro-D Filter Connectors**  
**Vertical Mount Printed Circuit Board**



**TABLE I: SHELL FINISH**

| SYM | MATERIAL | FINISH DESCRIPTION      |
|-----|----------|-------------------------|
| 1   | Aluminum | Cadmium                 |
| 2   | Aluminum | Nickel                  |
| 5   | Aluminum | Gold                    |
| 6   | Aluminum | Chem Film               |
| 33  | Aluminum | Ni-PTFE 1000 Hour Grey™ |

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE\***

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

**MICRO-D FILTER PIGTAIL DIMENSIONS**

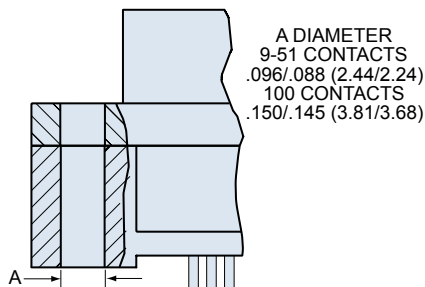
| Layout     | A Max. |       | B             |               | C Max. |       | D Max. |      | E Max. |      | F             |               |
|------------|--------|-------|---------------|---------------|--------|-------|--------|------|--------|------|---------------|---------------|
|            | In.    | mm.   | In.<br>± .003 | mm.<br>± 0.08 | In.    | mm.   | In.    | mm.  | In.    | mm.  | In.<br>± .004 | mm.<br>± 0.10 |
| <b>9P</b>  | .785   | 19.94 | .565          | 14.35         | .333   | 8.46  | .184   | 4.67 | .310   | 7.87 | .183          | 4.65          |
| <b>9S</b>  | .785   | 19.94 | .565          | 14.35         | .400   | 10.16 | .250   | 6.35 | .310   | 7.87 | .195          | 4.95          |
| <b>15P</b> | .935   | 23.75 | .715          | 18.16         | .483   | 12.27 | .184   | 4.67 | .310   | 7.87 | .183          | 4.65          |
| <b>15S</b> | .935   | 23.75 | .715          | 18.16         | .551   | 14.00 | .250   | 6.35 | .310   | 7.87 | .195          | 4.95          |
| <b>21P</b> | 1.085  | 27.56 | .865          | 21.97         | .633   | 16.08 | .184   | 4.67 | .310   | 7.87 | .183          | 4.65          |
| <b>21S</b> | 1.085  | 27.56 | .865          | 21.97         | .701   | 17.81 | .250   | 6.35 | .310   | 7.87 | .195          | 4.95          |
| <b>25P</b> | 1.185  | 30.01 | .965          | 24.51         | .733   | 18.62 | .184   | 4.67 | .310   | 7.87 | .183          | 4.65          |
| <b>25S</b> | 1.185  | 30.01 | .965          | 24.51         | .801   | 20.35 | .250   | 6.35 | .310   | 7.87 | .195          | 4.95          |
| <b>31P</b> | 1.335  | 33.91 | 1.115         | 28.32         | .883   | 22.43 | .184   | 4.67 | .310   | 7.87 | .183          | 4.65          |
| <b>31S</b> | 1.335  | 33.91 | 1.115         | 28.32         | .951   | 24.16 | .250   | 6.35 | .310   | 7.87 | .195          | 4.95          |
| <b>37P</b> | 1.485  | 37.72 | 1.265         | 32.13         | 1.033  | 26.24 | .184   | 4.67 | .310   | 7.87 | .183          | 4.65          |
| <b>37S</b> | 1.485  | 37.72 | 1.265         | 32.13         | 1.101  | 27.96 | .250   | 6.35 | .310   | 7.87 | .195          | 4.95          |



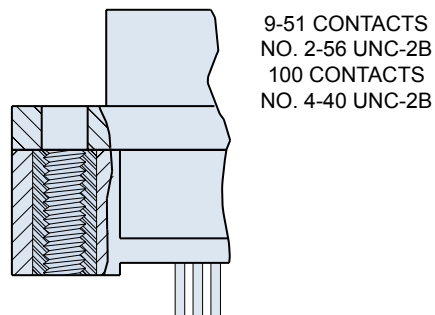
# 240-031 Micro-D Filter Connectors Vertical Mount PCB Hardware Options

Connector Supplied Without Hardware

Connector Supplied With Threaded Inserts



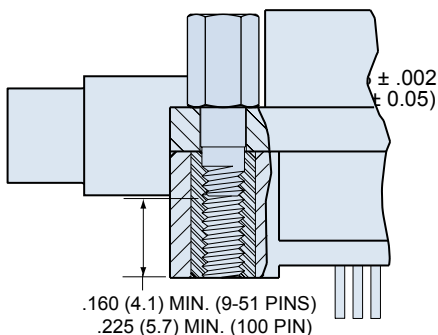
**NN Style**  
Thru-Hole, No Hardware



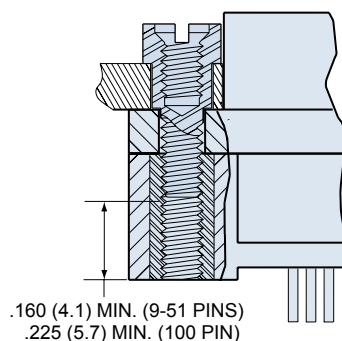
**NU Style**  
Threaded Insert

Jackpost and Threaded Insert

Rear Panel Jackpost and Threaded Insert



**PU Style**  
Jackpost with Threaded Insert

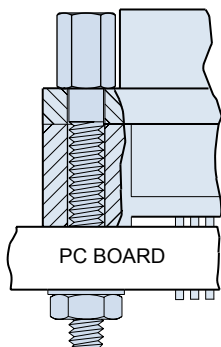


**RU Style**  
Rear Panel Jackpost with Threaded Insert

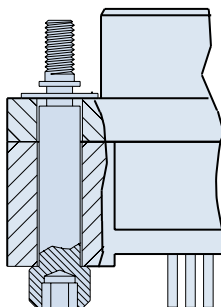
Extended Jackpost

Jackscrew, Hex

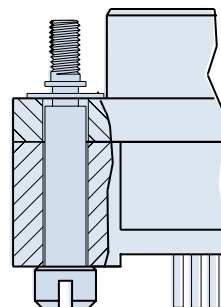
Jackscrew, Slot



**PN Style for .062" PCB**  
**RN Style for .196" PCB**



**M Style**  
Hex Head Jackscrew with E-Ring



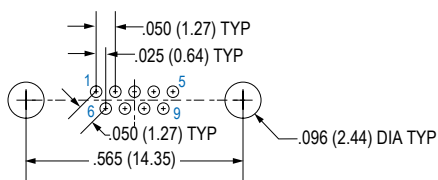
**S Style**  
Slot Head Jackscrew with E-Ring



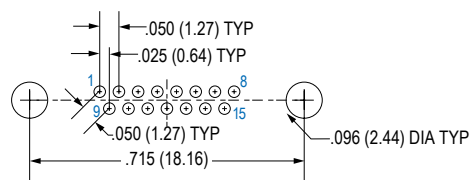
**240-031**  
**Micro-D Filter Connectors**  
**Vertical Mount PCB Pin Connector Layouts**



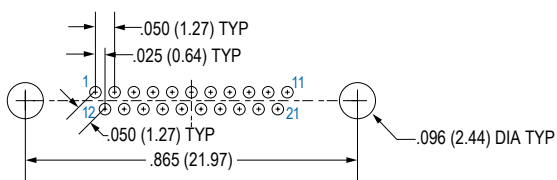
**PC Tail Diameter  $.018 \pm .002$  ( $0.46 \pm 0.05$ )**  
**Contact numbers shown are for pin connectors. Reverse for socket.**



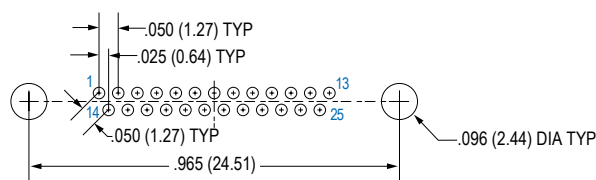
**9 Contacts**



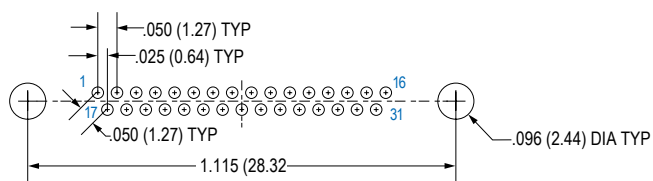
**15 Contacts**



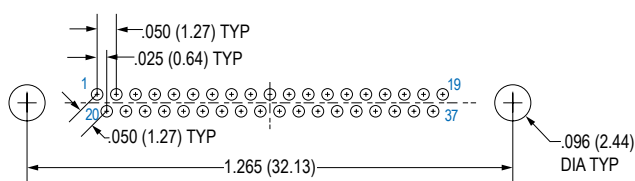
**21 Contacts**



**25 Contacts**



**31 Contacts**

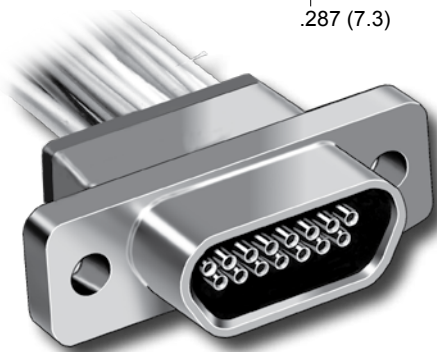
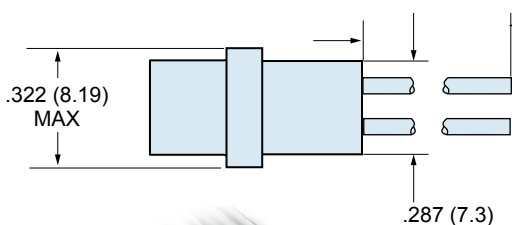
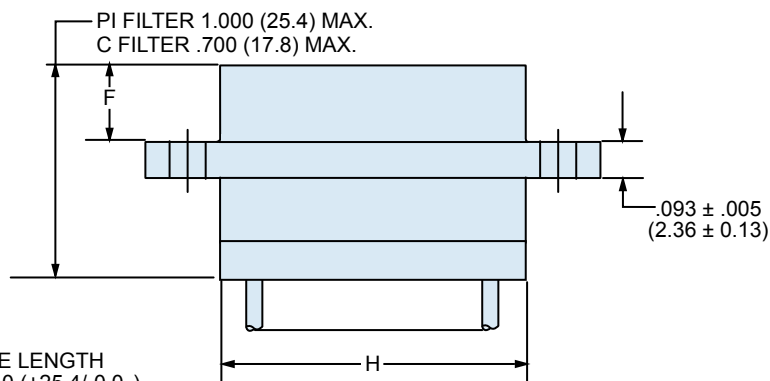
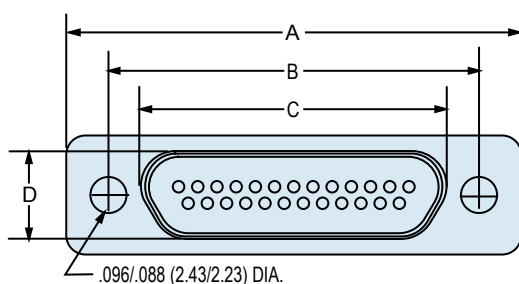
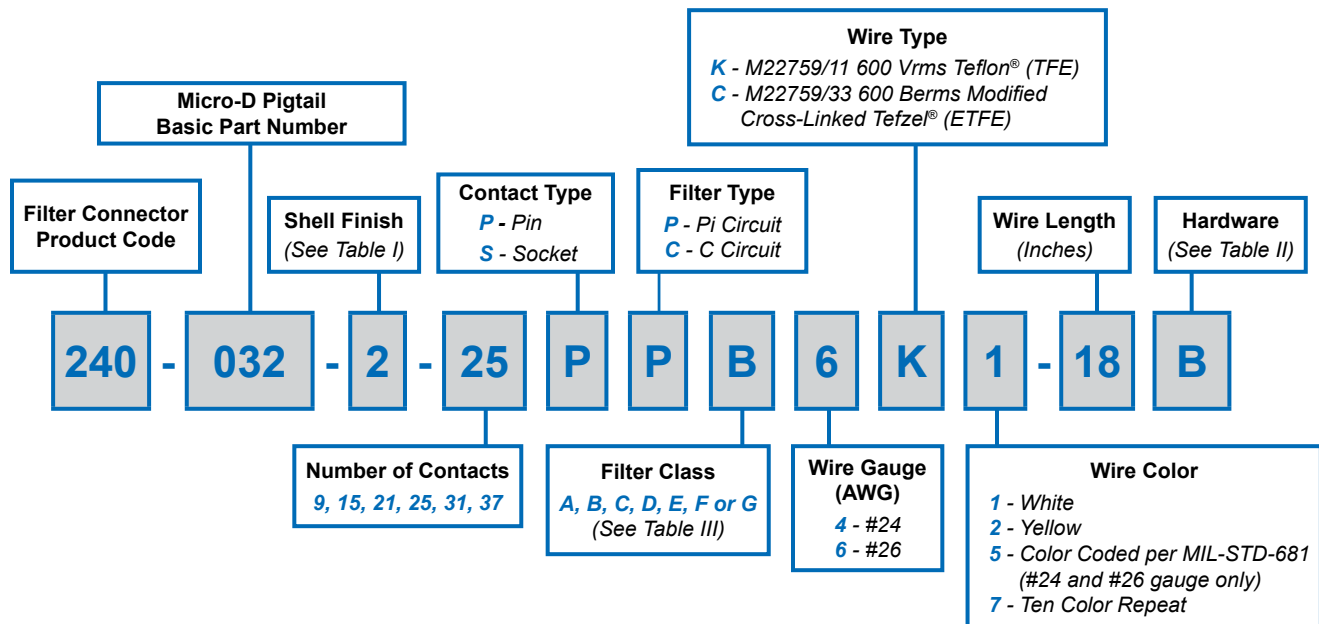


**37 Contacts**

# 240-032

## Micro-D Filter Connectors

### Pre-Wired Pigtails with Insulated Wire



**Glenair's Filtered Pigtail Micro-D's** provide EMI solutions in a miniaturized M83513 Micro-D connector. These connectors feature ceramic capacitor planar arrays and ferrite inductors. Insulated wire is factory precision-crimped to TwistPin contacts for superior reliability in the most demanding environments.

**Choose 9 to 67 Contacts**, with standard cadmium or nickel plating on the connector housing or choose optional finishes such as gold or chem film.

**240-032**  
**Micro-D Filter Connectors**  
**Pre-Wired Pigtails with Insulated Wire**



Micro-D  
Connectors

**TABLE I: SHELL FINISH**

| SYM | MATERIAL | FINISH DESCRIPTION      |
|-----|----------|-------------------------|
| 1   | Aluminum | Cadmium                 |
| 2   | Aluminum | Nickel                  |
| 5   | Aluminum | Gold                    |
| 6   | Aluminum | Chem Film               |
| 33  | Aluminum | Ni-PTFE 1000 Hour Grey™ |

**TABLE III: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE**

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

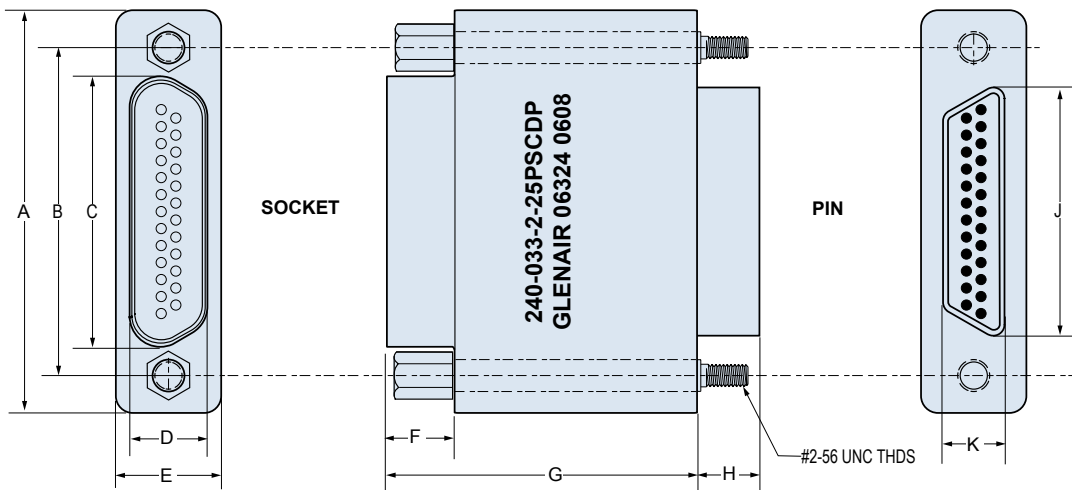
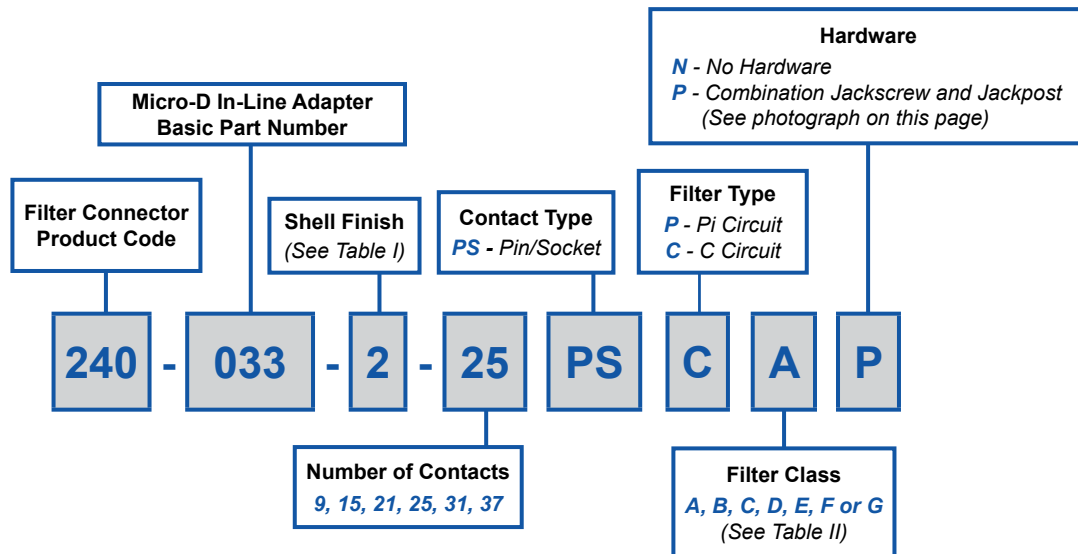
**TABLE II: MICRO-D MOUNTING HARDWARE**

| B                                             | P                                                    | M                                             | M1                                                     | S                                              | S1                                                      | L                                          | K                                                    | F                                              | R                                             |
|-----------------------------------------------|------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------|------------------------------------------------|---------------------------------------------------------|--------------------------------------------|------------------------------------------------------|------------------------------------------------|-----------------------------------------------|
|                                               |                                                      |                                               |                                                        |                                                |                                                         |                                            |                                                      |                                                |                                               |
| <b>Thru-Hole</b><br>Order Hardware Separately | <b>Jackpost</b><br>Removable Includes Nut and Washer | <b>Jackscrew</b><br>Hex Head Removable E-ring | <b>Jackscrew</b><br>Hex Head Removable E-ring Extended | <b>Jackscrew</b><br>Slot Head Removable E-ring | <b>Jackscrew</b><br>Slot Head Removable E-ring Extended | <b>Jackscrew</b><br>Hex Head Non-Removable | <b>Jackscrew</b><br>Slot Head Non-Removable Extended | <b>Float Mount</b><br>For Front Panel Mounting | <b>Float Mount</b><br>For Rear Panel Mounting |

**MICRO-D FILTER PIGTAIL DIMENSIONS**

| Layout | A Max. |       | B          |            | C Max. |       | D Max. |      | F          |            | H Max. |       |
|--------|--------|-------|------------|------------|--------|-------|--------|------|------------|------------|--------|-------|
|        | In.    | mm.   | In. ± .003 | mm. ± 0.08 | In.    | mm.   | In.    | mm.  | In. ± .004 | mm. ± 0.10 | In.    | mm.   |
| 9P     | .785   | 19.94 | .565       | 14.35      | .333   | 8.46  | .184   | 4.67 | .183       | 4.65       | .400   | 10.16 |
| 9S     | .785   | 19.94 | .565       | 14.35      | .400   | 10.16 | .250   | 6.35 | .195       | 4.95       | .400   | 10.16 |
| 15P    | .935   | 23.75 | .715       | 18.16      | .483   | 12.27 | .184   | 4.67 | .183       | 4.65       | .550   | 13.97 |
| 15S    | .935   | 23.75 | .715       | 18.16      | .551   | 14.00 | .250   | 6.35 | .195       | 4.95       | .550   | 13.97 |
| 21P    | 1.085  | 27.56 | .865       | 21.97      | .633   | 16.08 | .184   | 4.67 | .183       | 4.65       | .700   | 17.78 |
| 21S    | 1.085  | 27.56 | .865       | 21.97      | .701   | 17.81 | .250   | 6.35 | .195       | 4.95       | .700   | 17.78 |
| 25P    | 1.185  | 30.01 | .965       | 24.51      | .733   | 18.62 | .184   | 4.67 | .183       | 4.65       | .800   | 20.32 |
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| 31P    | 1.335  | 33.91 | 1.115      | 28.32      | .883   | 22.43 | .184   | 4.67 | .183       | 4.65       | .950   | 24.13 |
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| 37P    | 1.485  | 37.72 | 1.265      | 32.13      | 1.033  | 26.24 | .184   | 4.67 | .183       | 4.65       | 1.100  | 27.94 |
| 37S    | 1.485  | 37.72 | 1.265      | 32.13      | 1.101  | 27.96 | .250   | 6.35 | .195       | 4.95       | 1.100  | 27.94 |

# 240-033 Micro-D Filter Connectors Pin-Socket In-Line Filter Adapters



## Avoid Costly Redesign with Micro-D Filter Adapters.

Upgrade your existing cables and boxes to meet EMI requirements. These pin-socket adapters can be plugged into any standard M83513 connectors. Simply unplug your existing cable, install the filter adapter, and plug the cable into the adapter.

**Availability:** Filter elements in stock. Products ship in two weeks or less. Contact factory for price and delivery.

# 240-033 Micro-D Filter Connectors Pin-Socket In-Line Filter Adapters



Micro-D  
Connectors

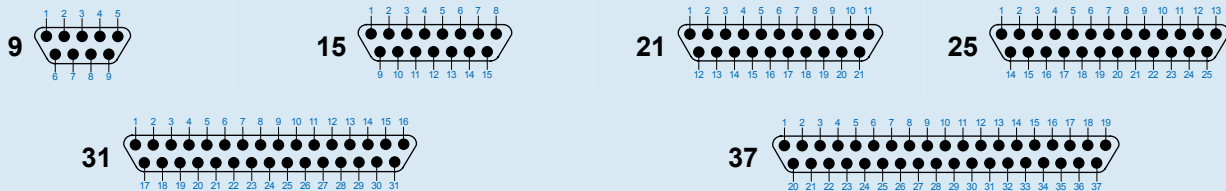
TABLE I: SHELL FINISH

| SYM | MATERIAL | FINISH DESCRIPTION      |
|-----|----------|-------------------------|
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| 2   | Aluminum | Nickel                  |
| 5   | Aluminum | Gold                    |
| 6   | Aluminum | Chem Film               |
| 33  | Aluminum | Ni-PTFE 1000 Hour Grey™ |

TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE\*

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

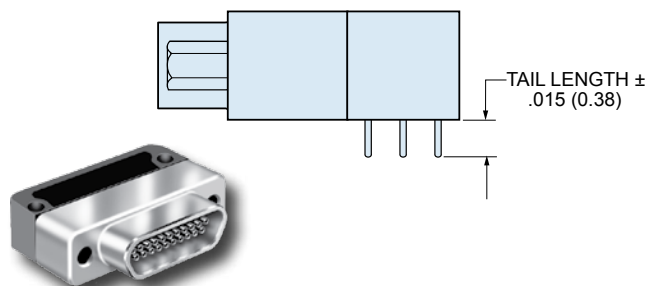
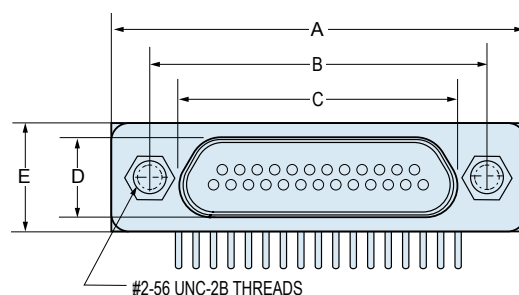
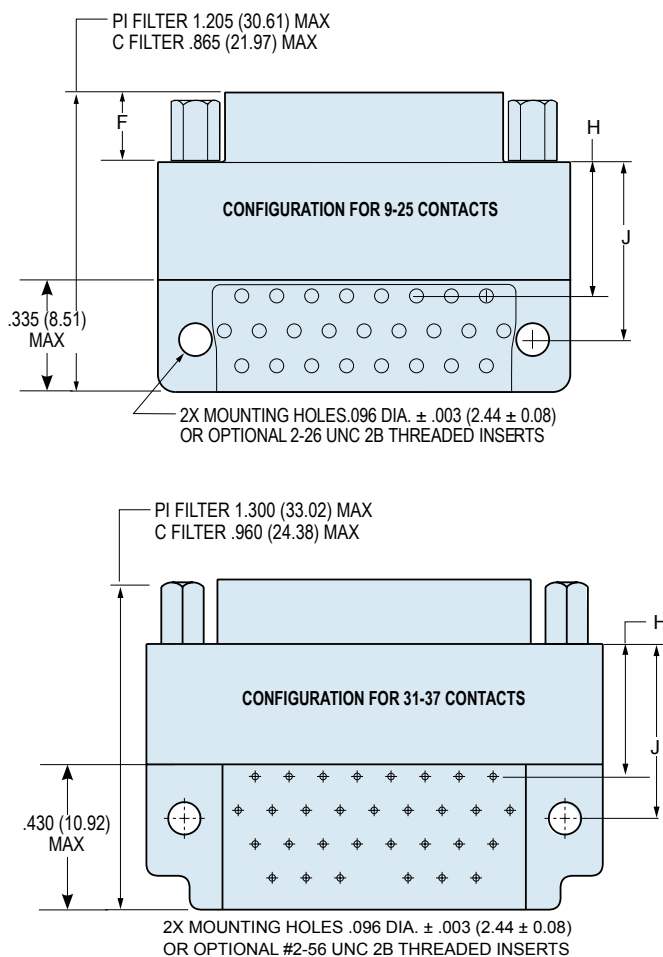
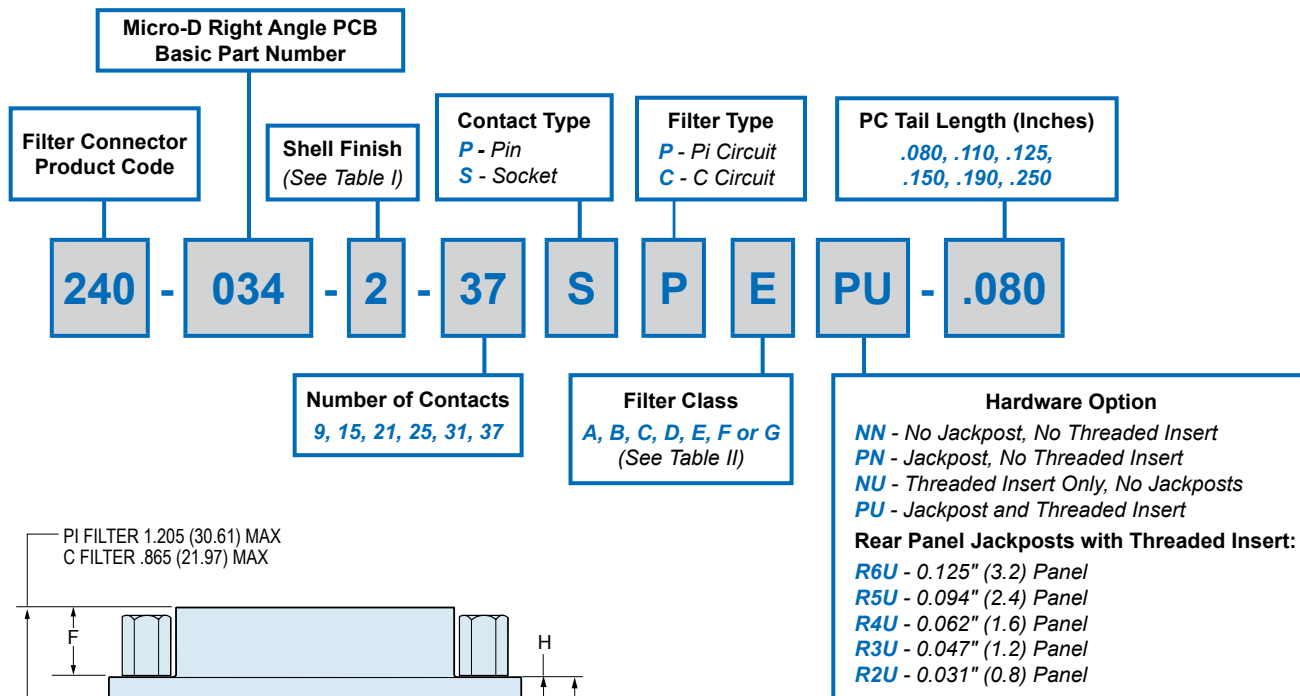
MICRO-D IN-LINE FILTER ADAPTER CONTACT ARRANGEMENTS



Mating Face View of Pin Connector. Socket connectors have reversed cavity numbers.

MICRO-D FILTER INLINE DIMENSIONS

| Layout | A Max. |       | B     |       | C Max. |       | D Max. |      | E Max. |      | F    |      | G Max. |       | H    |      | J Max. |       | K Max. |      |
|--------|--------|-------|-------|-------|--------|-------|--------|------|--------|------|------|------|--------|-------|------|------|--------|-------|--------|------|
|        | In.    | mm.   | In.   | mm.   | In.    | mm.   | In.    | mm.  | In.    | mm.  | In.  | mm.  | In.    | mm.   | In.  | mm.  | In.    | mm.   | In.    | mm.  |
| 9PS    | .785   | 19.94 | .565  | 14.35 | .400   | 10.16 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | 1.400  | 35.56 | .183 | 4.65 | .333   | 8.46  | .184   | 4.67 |
| 15PS   | .935   | 23.75 | .715  | 18.16 | .551   | 14.00 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | 1.400  | 35.56 | .183 | 4.65 | .483   | 12.27 | .184   | 4.67 |
| 21PS   | 1.085  | 27.56 | .865  | 21.97 | .701   | 17.81 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | 1.400  | 35.56 | .183 | 4.65 | .633   | 16.08 | .184   | 4.67 |
| 25PS   | 1.185  | 30.01 | .965  | 24.51 | .801   | 20.35 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | 1.400  | 35.56 | .183 | 4.65 | .733   | 18.62 | .184   | 4.67 |
| 31PS   | 1.335  | 33.91 | 1.115 | 28.32 | .951   | 24.16 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | 1.400  | 35.56 | .183 | 4.65 | .883   | 22.43 | .184   | 4.67 |
| 37PS   | 1.485  | 37.72 | 1.265 | 32.13 | 1.101  | 27.96 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | 1.400  | 35.56 | .183 | 4.65 | 1.033  | 26.24 | .184   | 4.67 |



**Right Angle Board Mount Filtered Micro-D's.** These connectors feature low-pass EMI filtering in a right angle header for PCB termination.

**.100" x .100" Board Spacing**—These connectors are similar to "CBR" style Micro-D's and share the same board footprint, allowing retrofit to existing boards.



**240-034**  
**Micro-D Filter Connectors**  
**Right Angle Printed Circuit Board**



**TABLE I: SHELL FINISH**

| SYM | MATERIAL | FINISH DESCRIPTION      |
|-----|----------|-------------------------|
| 1   | Aluminum | Cadmium                 |
| 2   | Aluminum | Nickel                  |
| 5   | Aluminum | Gold                    |
| 6   | Aluminum | Chem Film               |
| 33  | Aluminum | Ni-PTFE 1000 Hour Grey™ |

**TABLE II: CAPACITOR ARRAY CODE  
CAPACITANCE RANGE\***

| CLASS | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|-------|-------------------|------------------|
| A     | 38,000 - 56,000   | 19,000 - 28,000  |
| B     | 32,000 - 45,000   | 16,000 - 22,500  |
| C     | 18,000 - 33,000   | 9,000 - 16,500   |
| D     | 8,000 - 12,000    | 4,000 - 6,000    |
| E     | 3,300 - 5,000     | 1,650 - 2,500    |
| F     | 800 - 1,300       | 400 - 650        |
| G     | 400 - 600         | 200 - 300        |

**MICRO-D FILTER CLASSES AND PERFORMANCE**

| Filter Class →                     | A           |    | B           |    | C           |    | D          |    | E         |    | F        |    | G       |     |
|------------------------------------|-------------|----|-------------|----|-------------|----|------------|----|-----------|----|----------|----|---------|-----|
| Capacitance, Picofarads (pF)       |             |    |             |    |             |    |            |    |           |    |          |    |         |     |
| C Filter                           | 19000-28000 |    | 16000-22500 |    | 9000-16500  |    | 4000-6000  |    | 1650-2500 |    | 400-650  |    | 200-300 |     |
| Pi Filter                          | 38000-56000 |    | 32000-45000 |    | 18000-33000 |    | 8000-12000 |    | 3300-5000 |    | 800-1300 |    | 400-600 |     |
| Insertion Loss, dB Minimum, 25° C. |             |    |             |    |             |    |            |    |           |    |          |    |         |     |
| Filter Type →                      | C           | Pi | C           | Pi | C           | Pi | C          | Pi | C         | Pi | C        | Pi | C       | Pi  |
| 1 MHz                              | 6           | 10 | 5           | 8  | 3           | 5  | —          | 1  | —         | —  | —        | —  | —       | —   |
| 10 MHz                             | 24          | 40 | 23          | 35 | 16          | 25 | 8          | 14 | 4         | 8  | —        | 2  | —       | 0.8 |
| 100 MHz                            | 41          | 62 | 39          | 60 | 35          | 57 | 28         | 50 | 21        | 40 | 10       | 15 | 5       | 13  |
| 500-1000 MHz                       | 50          | 66 | 49          | 62 | 46          | 60 | 41         | 58 | 34        | 52 | 23       | 32 | 17      | 22  |

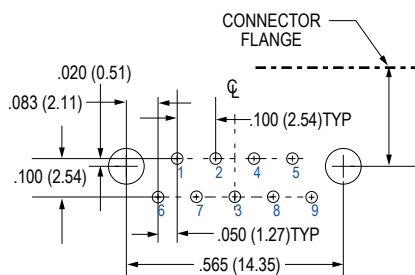
**MICRO-D FILTER RIGHT ANGLE PCB CONNECTORS**

| Layout     | A Max. |       | B     |       | C Max. |       | D Max. |      | E Max. |      | F    |      | G Max. |       | C Filter |       |      |       | Pi Filter |       |      |       |
|------------|--------|-------|-------|-------|--------|-------|--------|------|--------|------|------|------|--------|-------|----------|-------|------|-------|-----------|-------|------|-------|
|            |        |       |       |       |        |       |        |      |        |      |      |      |        |       | H        |       | J    |       | H         |       | J    |       |
|            | In.    | mm.   | In.   | mm.   | In.    | mm.   | In.    | mm.  | In.    | mm.  | In.  | mm.  | In.    | mm.   | In.      | mm.   | In.  | mm.   | In.       | mm.   | In.  | mm.   |
| <b>9P</b>  | .785   | 19.94 | .565  | 14.35 | .333   | 8.46  | .184   | 4.67 | .310   | 7.87 | .183 | 4.65 | .420   | 10.67 | .440     | 11.18 | .460 | 11.68 | .740      | 18.80 | .760 | 19.30 |
| <b>9S</b>  | .785   | 19.94 | .565  | 14.35 | .400   | 10.16 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | .420   | 10.67 | .440     | 11.18 | .460 | 11.68 | .740      | 18.80 | .760 | 19.30 |
| <b>15P</b> | .935   | 23.75 | .715  | 18.16 | .483   | 12.27 | .184   | 4.67 | .310   | 7.87 | .183 | 4.65 | .420   | 10.67 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |
| <b>15S</b> | .935   | 23.75 | .715  | 18.16 | .551   | 14.00 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | .420   | 10.67 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |
| <b>21P</b> | 1.085  | 27.56 | .865  | 21.97 | .633   | 16.08 | .184   | 4.67 | .310   | 7.87 | .183 | 4.65 | .420   | 10.67 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |
| <b>21S</b> | 1.085  | 27.56 | .865  | 21.97 | .701   | 17.81 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | .420   | 10.67 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |
| <b>25P</b> | 1.185  | 30.01 | .965  | 24.51 | .733   | 18.62 | .184   | 4.67 | .310   | 7.87 | .183 | 4.65 | .420   | 10.67 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |
| <b>25S</b> | 1.185  | 30.01 | .965  | 24.51 | .801   | 20.35 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | .420   | 10.67 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |
| <b>31P</b> | 1.335  | 33.91 | 1.115 | 28.32 | .883   | 22.43 | .184   | 4.67 | .310   | 7.87 | .183 | 4.65 | .520   | 13.21 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |
| <b>31S</b> | 1.335  | 33.91 | 1.115 | 28.32 | .951   | 24.16 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | .520   | 13.21 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |
| <b>37P</b> | 1.485  | 37.72 | 1.265 | 32.13 | 1.033  | 26.24 | .184   | 4.67 | .310   | 7.87 | .183 | 4.65 | .520   | 13.21 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |
| <b>37S</b> | 1.485  | 37.72 | 1.265 | 32.13 | 1.101  | 27.96 | .250   | 6.35 | .310   | 7.87 | .195 | 4.95 | .520   | 13.21 | .340     | 8.64  | .460 | 11.68 | .640      | 16.26 | .760 | 19.30 |

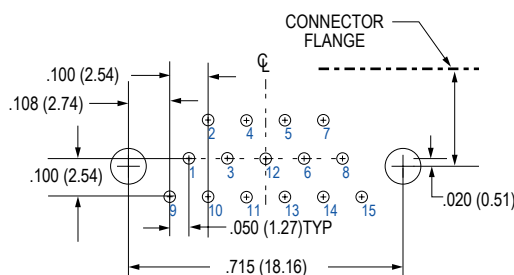
**PC Tail Diameter .018 ± .002 (0.46 ± 0.05)**

**Contact numbers shown are for pin connectors.**

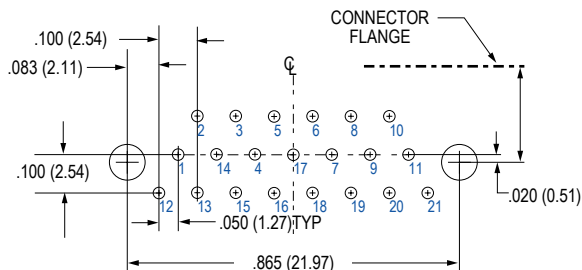
**Patterns shown are for connector mounting side of PC board.**



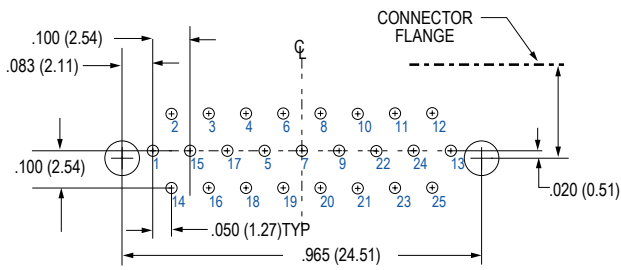
**9 Contacts**



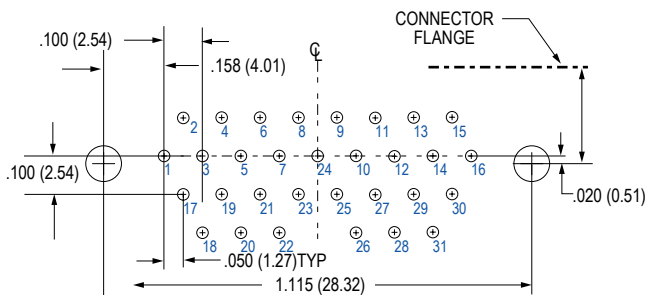
**15 Contacts**



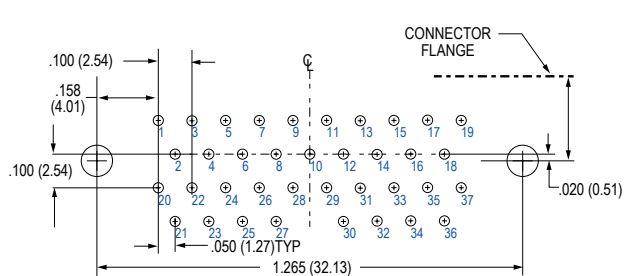
**21 Contacts**



**25 Contacts**



**31 Contacts**

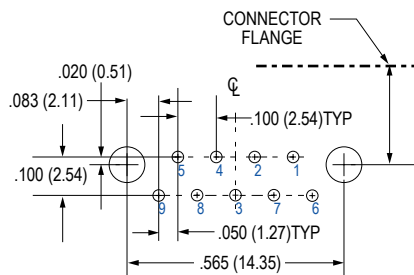


**37 Contacts**

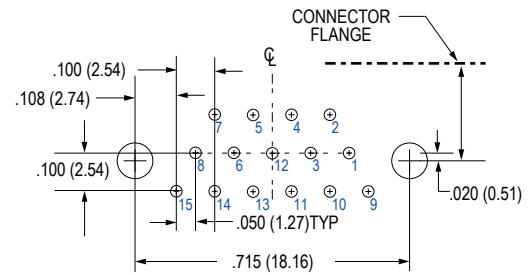
# 240-034 Micro-D Filter Connectors Right Angle Printed Circuit Board Layouts Socket Connector



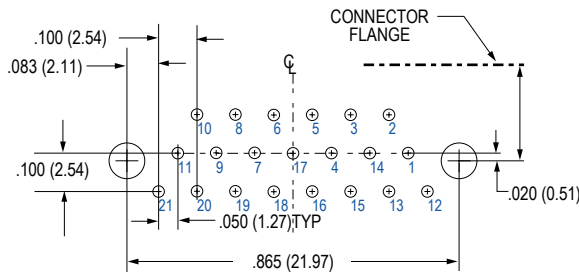
**PC Tail Diameter  $.018 \pm .002$  ( $0.46 \pm 0.05$ )**  
**Contact numbers shown are for socket connectors.**  
**Patterns shown are for connector mounting side of PC board.**



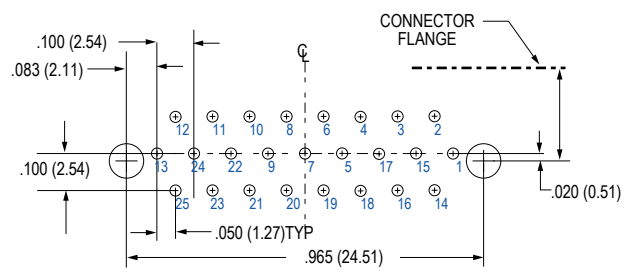
**9 Contacts**



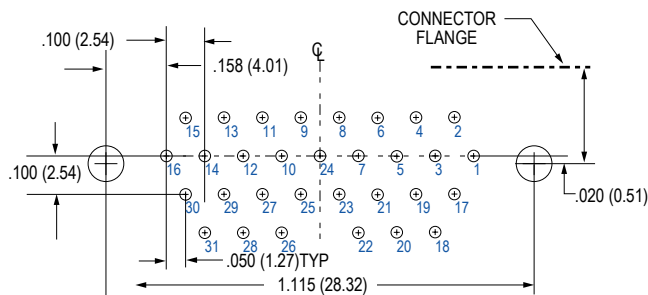
**15 Contacts**



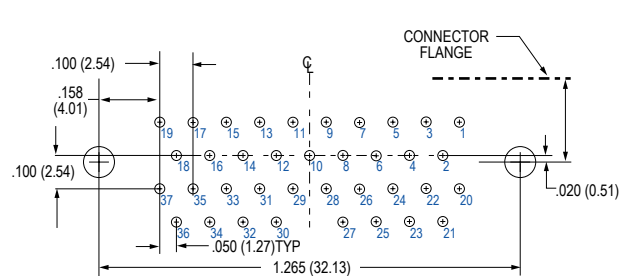
**21 Contacts**



**25 Contacts**



**31 Contacts**



**37 Contacts**

# Four Reasons to Add Glenair to Your Short List of Suppliers:

## **First and foremost you need availability.**

Are the products and components you need either in stock or able to be manufactured in a short period of time? Glenair has built its reputation on fast turnaround. We maintain the world's largest inventory of connector accessories and deliver faster turnaround on quotes and orders than anyone else in our business. Today, Glenair is changing the way the interconnect industry operates: from a long lead-time, custom order problem, to a fast response, in-stock solution.

## **Second, you need capacity.**

Can the supplier respond to your evolving requirements with the factory capacity and labor necessary to meet every demand—from one piece to one hundred thousand? Glenair has built the largest capacity, broadest capability factory in the interconnect accessory industry. We have the knowledge, experience and equipment necessary to handle any production requirement, no matter how large or complex, and the manpower to tackle even the most aggressive production schedules.

## **Third, you need convenience in ordering.**

Do your current suppliers insist on quantity or dollar minimums whenever you place an order? Are their products available only from distributors with limited product knowledge and equally limited shelf stock? Is it hard to get samples when and where you need them? If your answer to any of these questions is yes, we encourage you to consider Glenair, where complete convenience in ordering—your convenience, not ours—has been a guiding principle since 1956.

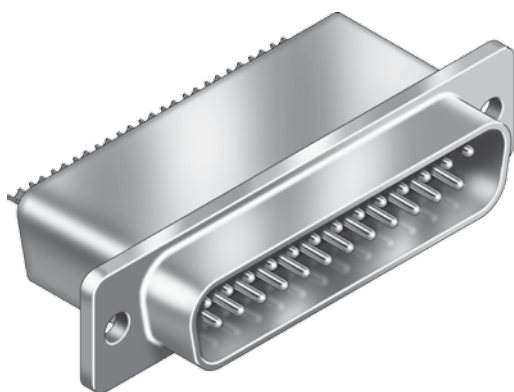
## **Finally, you need top quality products backed by outstanding technical support.**

At Glenair, we've made product quality and worldwide technical support a major part of our approach to earning your trust and loyalty—and we've been doing so since 1956. We've established an unsurpassed sales, support and engineering presence in every major market in the world, and we've designed quality into every product we ship.

***In every respect, our formula for serving our filter connector customers is identical to the "best-value" service model we've relied on to maintain our leadership position in our core, connector accessory business:***

- ***Same-Day Delivery on Our Most Popular Part Numbers***
- ***Lightning-Fast Turnaround on Quotes for Price and Delivery***
- ***No Price or Quantity Minimums***
- ***Outstanding Application Engineering and Worldwide Technical Support***

## D-Subminiature Connectors EMI Filtered (MIL-DTL-24308 Type)



### PRODUCT FEATURES

**Glenair's Filtered D-Subs** provide EMI solutions in a miniaturized MIL-DTL-24308 type connector. These connectors feature ceramic capacitor planar arrays and ferrite inductors. Solder cup contacts accept 22 gage wire.

**Choose Pi or C Filter Arrays** in seven filter classes and eleven layouts. Glenair filtered D-Sub connectors comply with applicable MIL-DTL-24308 requirements and are 100% intermateable with both standard density and high density connectors.

**Choose 9 to 104 Contacts**, with yellow cadmium, nickel or zinc-nickel plating on the connector housing. Ultra rugged stainless steel is available for most applications. For custom requirements we can propose a solution and back it up with rapid design and prototyping.

## MIL-DTL-24308 Type D-Sub Filtered Connectors

### *The Standard Solution to Electronic Black Box EMI/EMP Protection*

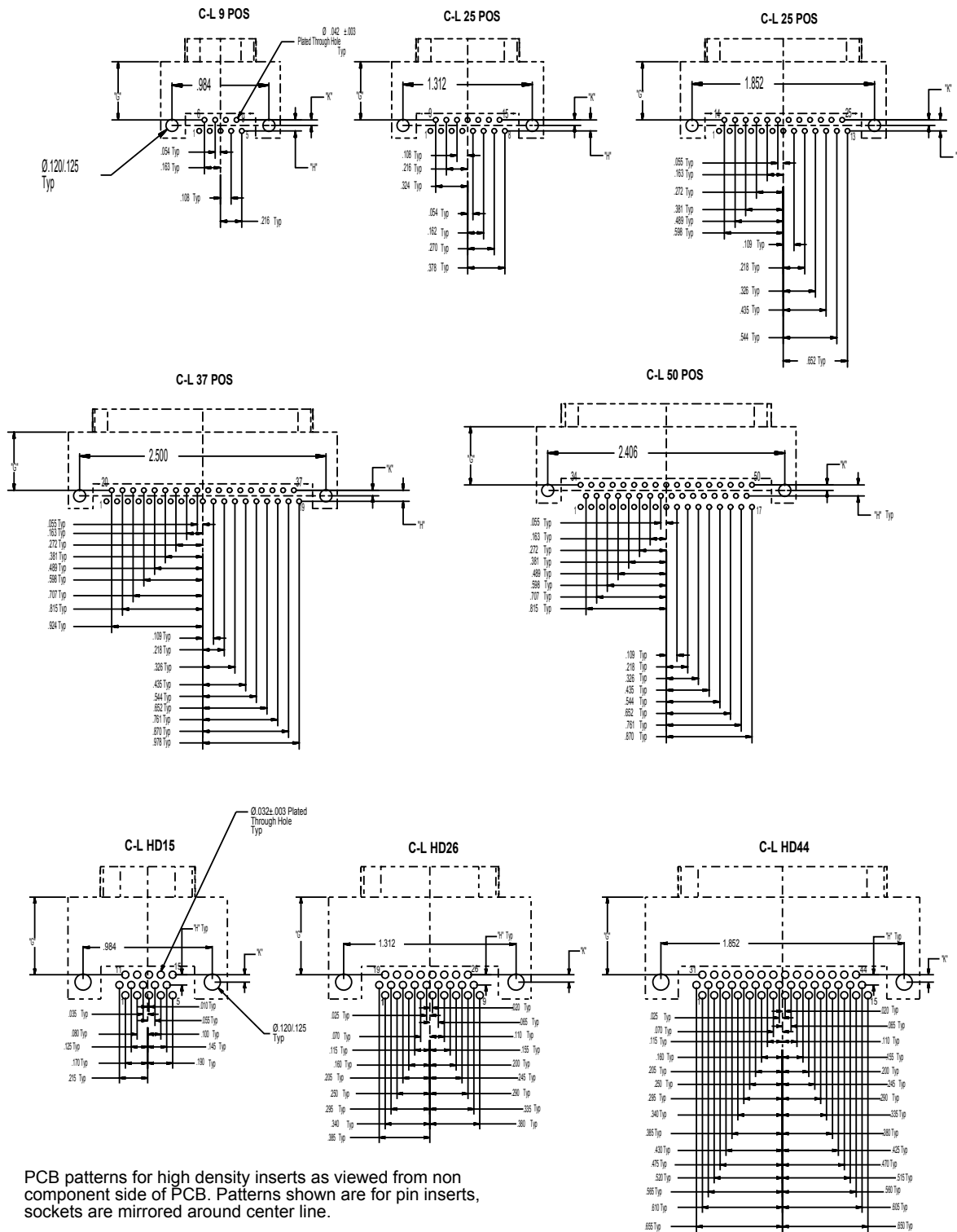
#### **Filtered D-Sub with Solder Cup or PC Tails**

These metal shell filtered MIL-DTL-24308 connectors are backfilled with thermally conductive epoxy to allow soldering without heat damage to sensitive filter elements. Standard density and high density versions are available for every insert arrangement.

#### **Filtered Right Angle Version with PC Tails**

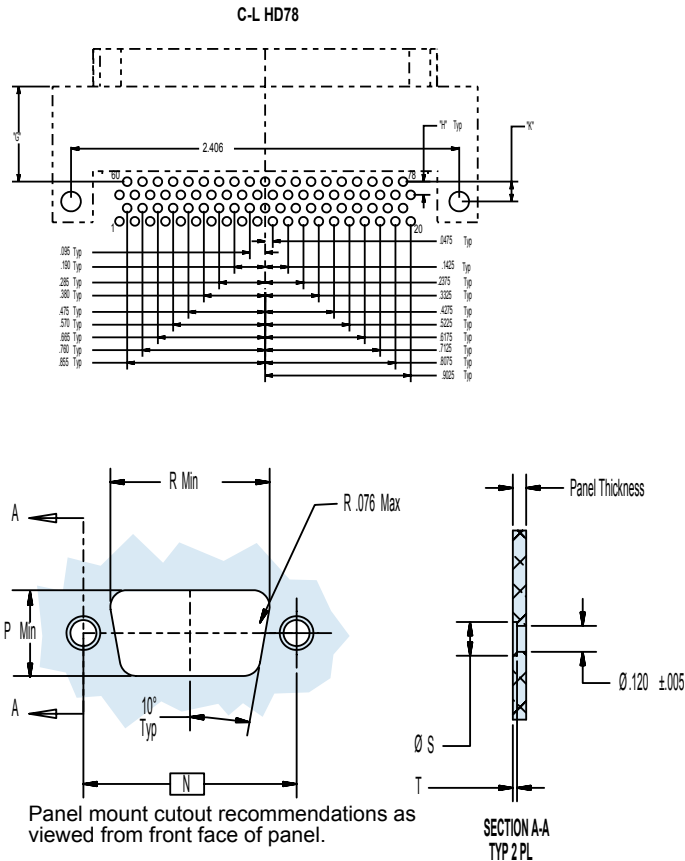
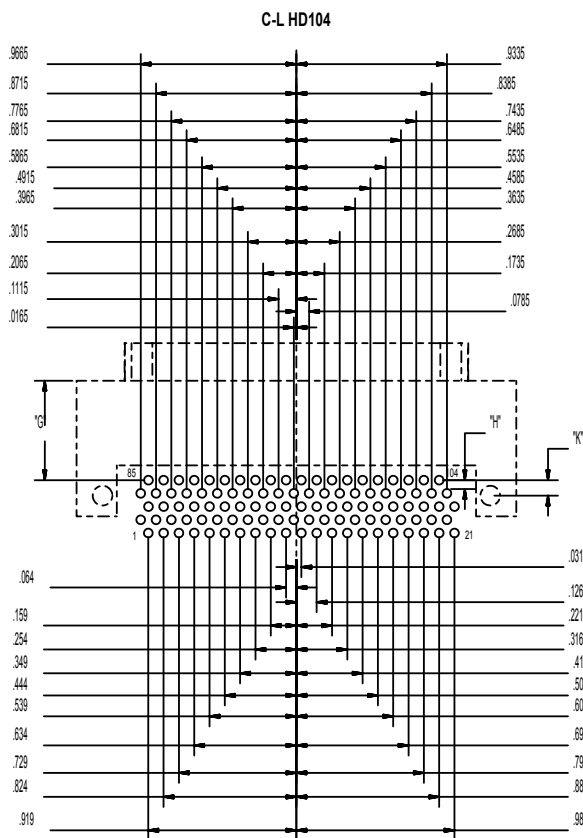
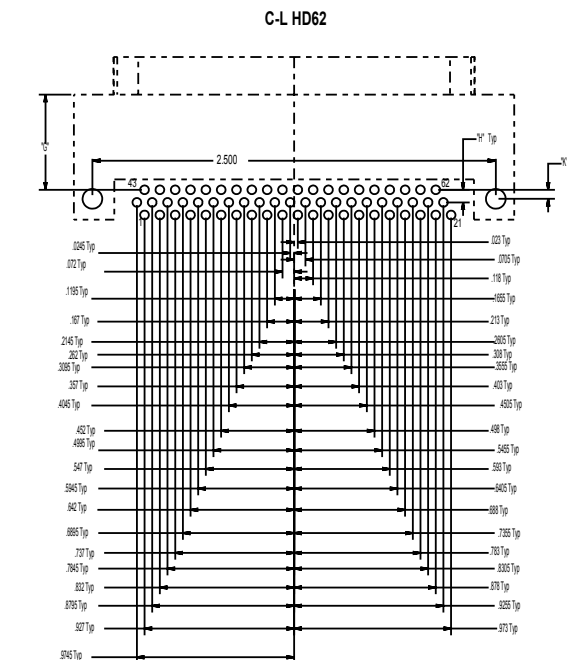
Designed to mate with the popular MIL-DTL-24308 connector family, these right angle PC tail filter connectors are available in Mil-Aero and European footprints. A single piece metal shell provides structural integrity for board mounting and eliminates "flaky" right angle mounting tabs.

# Panel Cut-Out and Footprints for 240-021 and 240-066 D-Subminiature Connectors EMI Filtered (MIL-DTL-24308 Type)





# Panel Cut-Out and Footprints for 240-021 and 240-066 D-Subminiature Connectors EMI Filtered (MIL-DTL-24308 Type)

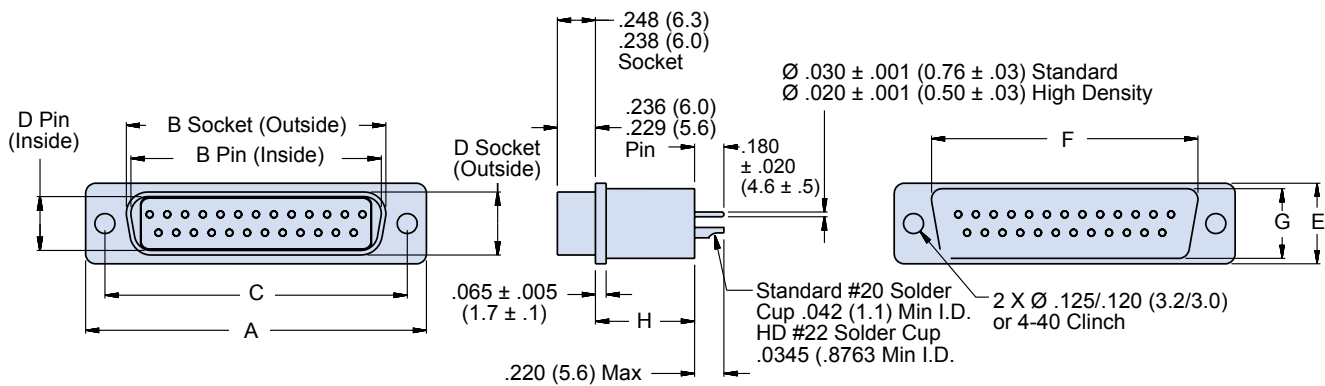
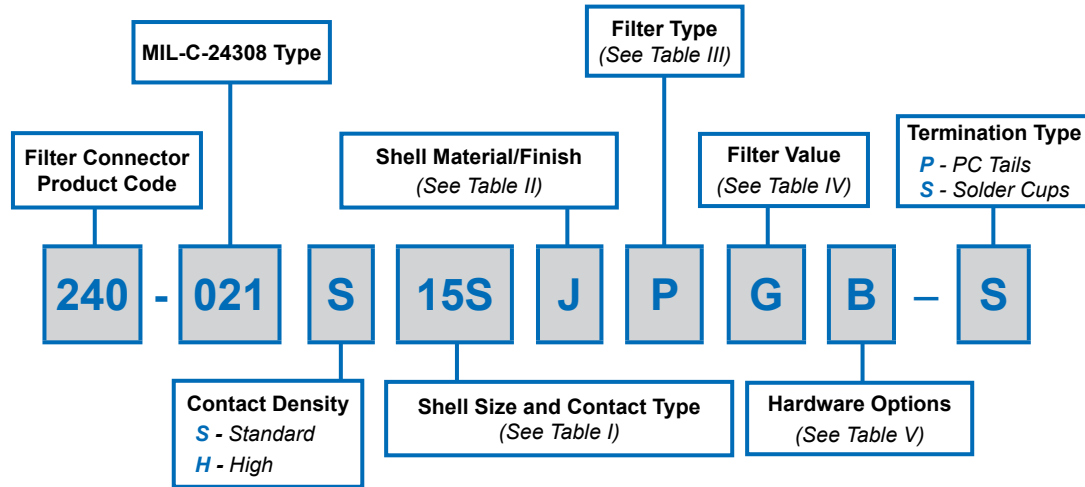


**TABLE VI: CUT-OUT DIMENSIONS**

| Shell Size | N BSC        | P Min       | R Min        |
|------------|--------------|-------------|--------------|
| 1          | .984 (25.0)  | .396 (10.1) | .735 (18.7)  |
| 2          | 1.312 (33.3) | .396 (10.1) | 1.060 (26.9) |
| 3          | 1.852 (47.0) | .396 (10.1) | 1.603 (40.7) |
| 4          | 2.500 (63.5) | .396 (10.1) | 2.251 (57.2) |
| 5          | 2.406 (61.1) | .510 (13.0) | 2.148 (55.0) |
| 6          | 2.500 (63.5) | .630 (16.0) | 2.276 (57.8) |

**TABLE VII: PANEL THICKNESS**

| Panel Code | Panel Thickness | S                   | T           |
|------------|-----------------|---------------------|-------------|
| R1         | .031 (0.79)     | N/A                 | N/A         |
| R2         | .047 (1.19)     | .157/.199 (4.0/5.1) | .005 (0.13) |
| R3         | .062 (1.57)     | .157/.199 (4.0/5.1) | .020 (0.50) |
| R4         | .093 (2.36)     | .157/.199 (4.0/5.1) | .051 (1.30) |
| R5         | .104 (2.64)     | .157/.199 (4.0/5.1) | .061 (1.55) |
| R6         | .125 (3.18)     | .157/.199 (4.0/5.1) | .082 (2.08) |
| R7         | .156 (3.96)     | .157/.199 (4.0/5.1) | .114 (2.90) |



### APPLICATION NOTES

- Materials/Finishes:  
Shells - See Table II  
Insulators - High grade rigid dielectric/N.A.  
Contacts - Copper Alloy/Gold Plated
- Assembly to be identified with date code, cage code, Glenair P/N, and serial number
- Electrical Performance:  
Dielectric withstanding voltage class A and B: 100 VDC  
All others: 500 VDC  
Insulation resistance: 5,000 megohms @ 100 VDC  
Current Rating Standard Density: 7.5 Amps maximum  
Current Rating High Density: 5 Amps maximum
- Dimensions B and D taken from inside of shell for Pin/Plug and outside for Socket/Receptacle
- Metric dimensions (mm) are indicated in parentheses

**240-021**  
**D-Subminiature Connector**  
**EMI Filtered (MIL-DTL-24308 Type)**



**TABLE I: DIMENSIONS**

| Shell Size | Number of Contacts |      | A<br>±.015 (0.38) | B<br>±.005 (0.13) | C<br>±.005 (0.13) | D<br>±.005 (0.13) | E<br>±.015 (0.38) | F<br>Max     | G<br>Max    |
|------------|--------------------|------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------|-------------|
|            | STD                | HD   |                   |                   |                   |                   |                   |              |             |
| 1          | 9P                 | 15P  | 1.213 (30.8)      | .666 (16.9)       | .984 (25.0)       | .329 (8.4)        | .494 (12.5)       | .769 (19.5)  | .432 (11.0) |
|            | 9S                 | 15S  | 1.213 (30.8)      | .643 (16.3)       | .984 (25.0)       | .311 (7.9)        | .494 (12.5)       | .769 (19.5)  | .432 (11.0) |
| 2          | 15P                | 26P  | 1.541 (39.1)      | .994 (25.2)       | 1.312 (33.3)      | .329 (8.4)        | .494 (12.5)       | 1.093 (27.8) | .432 (11.0) |
|            | 15S                | 26S  | 1.541 (39.1)      | .971 (24.7)       | 1.312 (33.3)      | .311 (7.9)        | .494 (12.5)       | 1.635 (41.5) | .432 (11.0) |
| 3          | 25P                | 44P  | 2.088 (53.0)      | 1.534 (39.0)      | 1.852 (47.0)      | .329 (8.4)        | .494 (12.5)       | 1.635 (41.5) | .432 (11.0) |
|            | 25S                | 44S  | 2.088 (53.0)      | 1.511 (38.4)      | 1.852 (47.0)      | .311 (7.9)        | .494 (12.5)       | 2.282 (58.0) | .432 (11.0) |
| 4          | 37P                | 62P  | 2.729 (69.3)      | 2.182 (55.4)      | 2.500 (63.5)      | .329 (8.4)        | .494 (12.5)       | 2.282 (58.0) | .432 (11.0) |
|            | 37S                | 62S  | 2.729 (69.3)      | 2.159 (54.8)      | 2.500 (63.5)      | .311 (7.9)        | .494 (12.5)       | 2.282 (58.0) | .432 (11.0) |
| 5          | 50P                | 78P  | 2.635 (66.9)      | 2.079 (52.8)      | 2.406 (61.1)      | .441 (11.2)       | .605 (15.4)       | 2.188 (55.6) | .544 (13.8) |
|            | 50S                | 78S  | 2.635 (66.9)      | 2.064 (52.4)      | 2.406 (61.1)      | .423 (10.7)       | .605 (15.4)       | 2.188 (55.6) | .544 (13.8) |
| 6          | X                  | 104P | 2.729 (69.3)      | 2.212 (56.2)      | 2.500 (63.5)      | .503 (12.8)       | .668 (17.0)       | 2.312 (58.7) | .606 (15.4) |
|            |                    | 104S | 2.729 (69.3)      | 2.189 (55.6)      | 2.500 (63.5)      | .486 (12.3)       | .668 (17.0)       | 2.312 (58.7) | .606 (15.4) |

**TABLE II: SHELL MATERIAL/FINISH**

| Symbol | Material | Finish Description                                     |
|--------|----------|--------------------------------------------------------|
| J      | Aluminum | Yellow Cadmium                                         |
| M      |          | Electroless Nickel                                     |
| MT     |          | NI-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| ZN     |          | Zinc Nickel                                            |

**TABLE III: FILTER TYPE**

| Symbol | Filter Type | H ±.010 (0.25) |
|--------|-------------|----------------|
| P      | PI-Circuit  | .610 ((15.5)   |
| C      | C-Circuit   | .380 (9.7)     |

**TABLE IV:  
CAPACITOR ARRAY CODE AND  
CAPACITANCE RANGE**

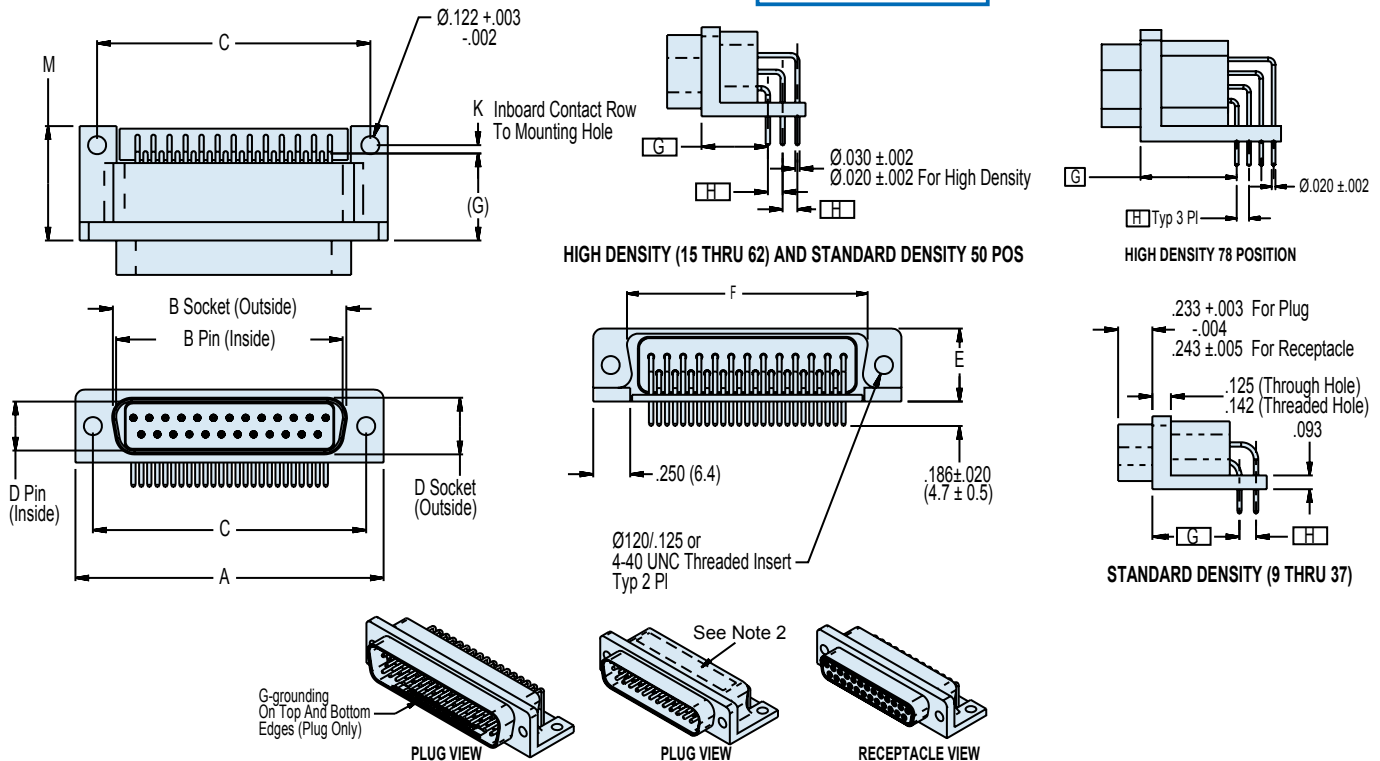
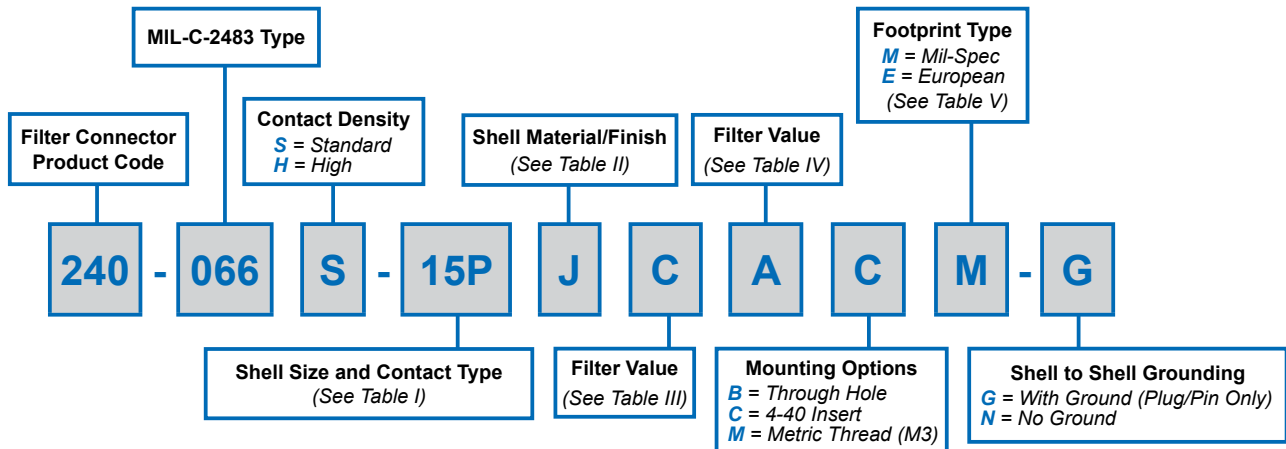
| Class | PI-Circuit (pF) | C-Circuit (pF)  |
|-------|-----------------|-----------------|
| A     | 38,000 - 56,000 | 19,000 - 28,000 |
| B     | 32,000 - 45,000 | 16,000 - 22,500 |
| C     | 18,000 - 33,000 | 9,000 - 16,500  |
| D     | 8,000 - 12,000  | 4,000 - 6,000   |
| E     | 3,300 - 5,000   | 1,650 - 2,500   |
| F     | 800 - 1,300     | 400 - 650       |
| G     | 400 - 600       | 200 - 300       |

**TABLE V: HARDWARE OPTIONS**

| Symbol | Hardware        |
|--------|-----------------|
| B      | No Hardware     |
| C      | 4-40 Clinch Nut |



# 240-066 D-Subminiature Connector, Right Angle Mount EMI Filtered (MIL-DTL-24308 Type)



## APPLICATION NOTES

- Materials/Finishes:**  
Shells - See Table II  
Insulators - High grade rigid dielectric/N.A.  
Contacts - Copper Alloy/Gold Plated
- Assembly to be identified with date code, cage code, Glenair P/N, and serial number.
- Dimensions B and D taken from inside of shell for Pin/Plug and outside for Socket/Receptacle.
- Electrical Performance:**  
Dielectric withstanding voltage class A and B: 100 VDC, all others: 500 VDC  
Insulation Resistance: 5,000 megohms @ 100 VDC  
Current Rating Standard Density: 7.5 Amps max.  
Current Rating High Density: 5 Amps maximum
- Metric dimensions (mm) are indicated in parentheses.

**240-066**  
**D-Subminiature Connector, Right Angle Mount**  
**EMI Filtered (MIL-DTL-24308 Type)**



**TABLE I: DIMENSIONS**

| Shell Size | Number of Contacts |      | A<br>±.015 (0.38) | B<br>±.005 (0.13) | C<br>±.005 (0.13) | D<br>±.005 (0.13) | E<br>±.015 (0.38) | F<br>Max     |
|------------|--------------------|------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------|
| 1          | 9P                 | 15P  | 1.213 (30.8)      | .666 (16.9)       | .984 (25.0)       | .329 (8.4)        | .494 (12.5)       | .769 (19.5)  |
|            | 9S                 | 15S  | 1.213 (30.8)      | .643 (16.3)       | .984 (25.0)       | .311 (7.9)        | .494 (12.5)       | .769 (19.5)  |
| 2          | 15P                | 26P  | 1.541 (39.1)      | .994 (25.2)       | 1.312 (33.3)      | .329 (8.4)        | .494 (12.5)       | 1.093 (27.8) |
|            | 15S                | 26S  | 1.541 (39.1)      | .971 (24.7)       | 1.312 (33.3)      | .311 (7.9)        | .494 (12.5)       | 1.635 (41.5) |
| 3          | 25P                | 44P  | 2.088 (53.0)      | 1.534 (39.0)      | 1.852 (47.0)      | .329 (8.4)        | .494 (12.5)       | 1.635 (41.5) |
|            | 25S                | 44S  | 2.088 (53.0)      | 1.511 (38.4)      | 1.852 (47.0)      | .311 (7.9)        | .494 (12.5)       | 1.635 (41.5) |
| 4          | 37P                | 62P  | 2.729 (69.3)      | 2.182 (55.4)      | 2.406 (61.1)      | .441 (11.2)       | .494 (12.5)       | 2.282 (58.0) |
|            | 37S                | 62S  | 2.729 (69.3)      | 2.159 (54.8)      | 2.406 (61.1)      | .423 (10.7)       | .494 (12.5)       | 2.282 (58.0) |
| 5          | 50P                | 78P  | 2.635 (66.9)      | 2.079 (52.8)      | 2.500 (63.5)      | .503 (12.8)       | .605 (15.4)       | 2.188 (55.6) |
|            | 50S                | 78S  | 2.635 (66.9)      | 2.064 (52.4)      | 2.500 (63.5)      | .486 (12.3)       | .605 (15.4)       | 2.188 (55.6) |
| 6          |                    | 104P | 2.729 (69.3)      | 2.212 (56.2)      | 2.500 (63.5)      | .503 (12.8)       | .668 (17.0)       | 2.312 (58.7) |
|            |                    | 104S | 2.729 (69.3)      | 2.189 (55.6)      | 2.500 (63.5)      | .486 (12.3)       | .668 (17.0)       | 2.312 (58.7) |

**TABLE II: SHELL MATERIAL/FINISH**

| Symbol | Material | Finish Description                                     |
|--------|----------|--------------------------------------------------------|
| J      | Aluminum | Yellow Cadmium                                         |
| M      |          | Electroless Nickel                                     |
| MT     |          | NI-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |
| ZN     |          | Zinc Nickel                                            |

**TABLE III: FILTER TYPE**

| Sym | Filter Type | "G" Basic   |
|-----|-------------|-------------|
| P   | Pi-Section  | .590 (15.0) |
| C   | C Only      | .450 (11.4) |

**TABLE IV: CAPACITOR ARRAY CODE and CAPACITANCE RANGE**

| Class | Pi-Section (pF) | C-Section (pF)  |
|-------|-----------------|-----------------|
| A     | 38,000 - 56,000 | 19,000 - 28,000 |
| B     | 32,000 - 45,000 | 16,000 - 22,500 |
| C     | 18,000 - 33,000 | 9,000 - 16,500  |
| D     | 8,000 - 12,000  | 4,000 - 6,000   |
| E     | 3,300 - 5,000   | 1,650 - 2,500   |
| F     | 800 - 1,300     | 400 - 650       |
| G     | 400 - 600       | 200 - 300       |

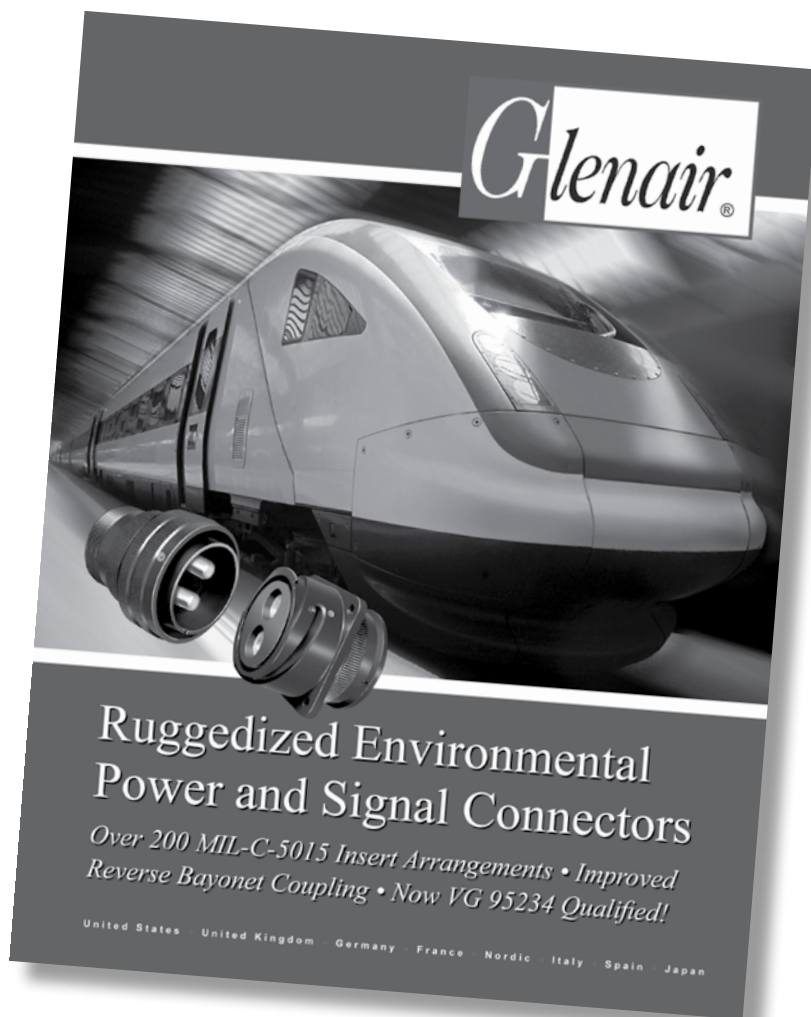
**TABLE V: DIMENSIONS**

| Mounting Style                                 | H Dim<br>Basic | K Dim<br>Basic | M Dim<br>Basic | M Dim<br>C Filter |
|------------------------------------------------|----------------|----------------|----------------|-------------------|
| Mil-Aero<br>Std Density (9-37)                 | .112 (2.8)     | .056 (1.4)     | .777 (19.7)    | .637 (16.2)       |
| Mil-Aero<br>Std Density (50)                   | .112 (2.8)     | .112 (2.8)     | .889 (22.6)    | .749 (19.0)       |
| Mil-Aero<br>Hi Density (15-62)                 | .078 (2.0)     | .078 (2.0)     | .821 (20.9)    | .681 (17.3)       |
| Mil-Aero<br>Hi Density (78)                    | .082 (2.1)     | .123 (3.1)     | .911 (23.1)    | .771 (19.6)       |
| Euro Style<br>Std (9-37)                       | .100 (2.5)     | .050 (1.3)     | .765 (19.4)    | .625 (15.9)       |
| Euro Style<br>Std 50 and Hi Density<br>(15-62) | .100 (2.5)     | .100 (2.5)     | .865 (22.0)    | .725 (18.4)       |
| Euro Style<br>Hi Density (78)                  | .100 (2.5)     | .150 (12.7)    | .965 (24.5)    | .825 (21.0)       |
| Mil-Aero<br>Hi Density (104)                   | .082 (2.1)     | .200 (5.1)     | 1.065 (27.1)   | .853 (14.8)       |
| Euro Style<br>Hi Density (104)                 | .100 (2.5)     | .164 (4.2)     | .993 (25.2)    | .925 (23.5)       |

# Now Arriving on Track 5015!

## Glenair Series ITS

### Reverse Bayonet Connectors



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**Factory Support:** Commital S.p.a. (Italy) Tel: +39-51-7821811 Email: [commital@commital.com](mailto:commital@commital.com)

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# Glenair ITS Series Reverse Bayonet Power and Signal Filter Connectors (5015 Type) Product Line Overview



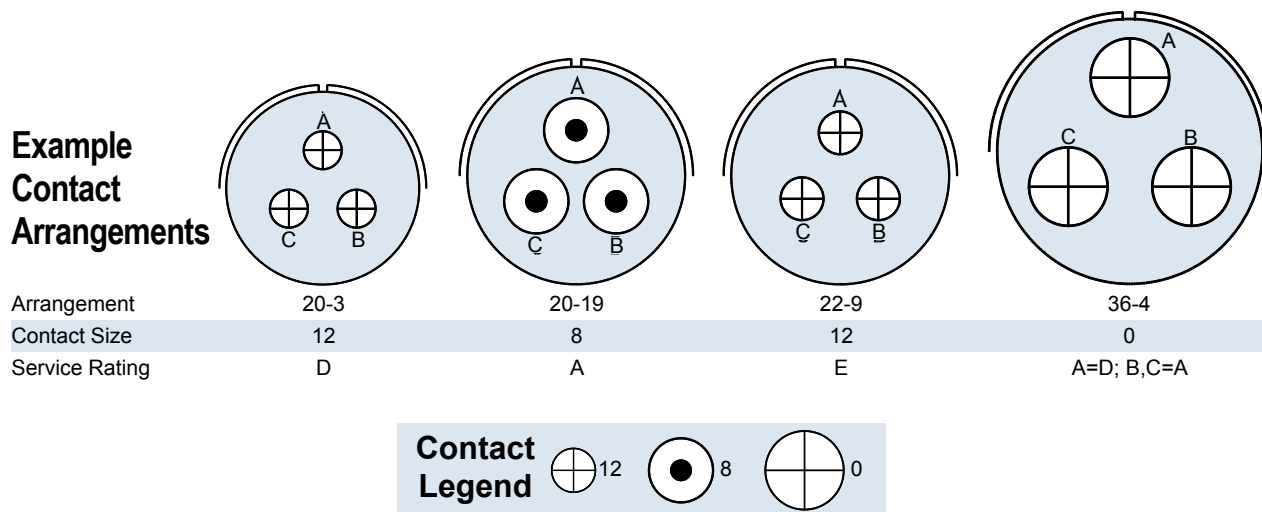
## PRODUCT FEATURES

- Fast, Easy Bayonet Coupling Connector: 1/4 Turn
- Ideal for Rail, Industrial and Military Applications
- C Filter Circuits from 200 pF to 120,000 pF
- Low-Pass Multilayer Ceramic Planar Array
- All Shell Styles: Plug, Square Flange, Jam-Nut, etc.
- High Shock and Vibration Resistance
- Contact Sizes from #0 to #8 and #12 in limited Insert Arrangements
- Solder-Cup Terminations
- Intermateable with Veam CIR, Amphenol GT and ITT Cannon CA\*\*B (5015 Type) and all VG 95234 Reverse Bayonet Connectors

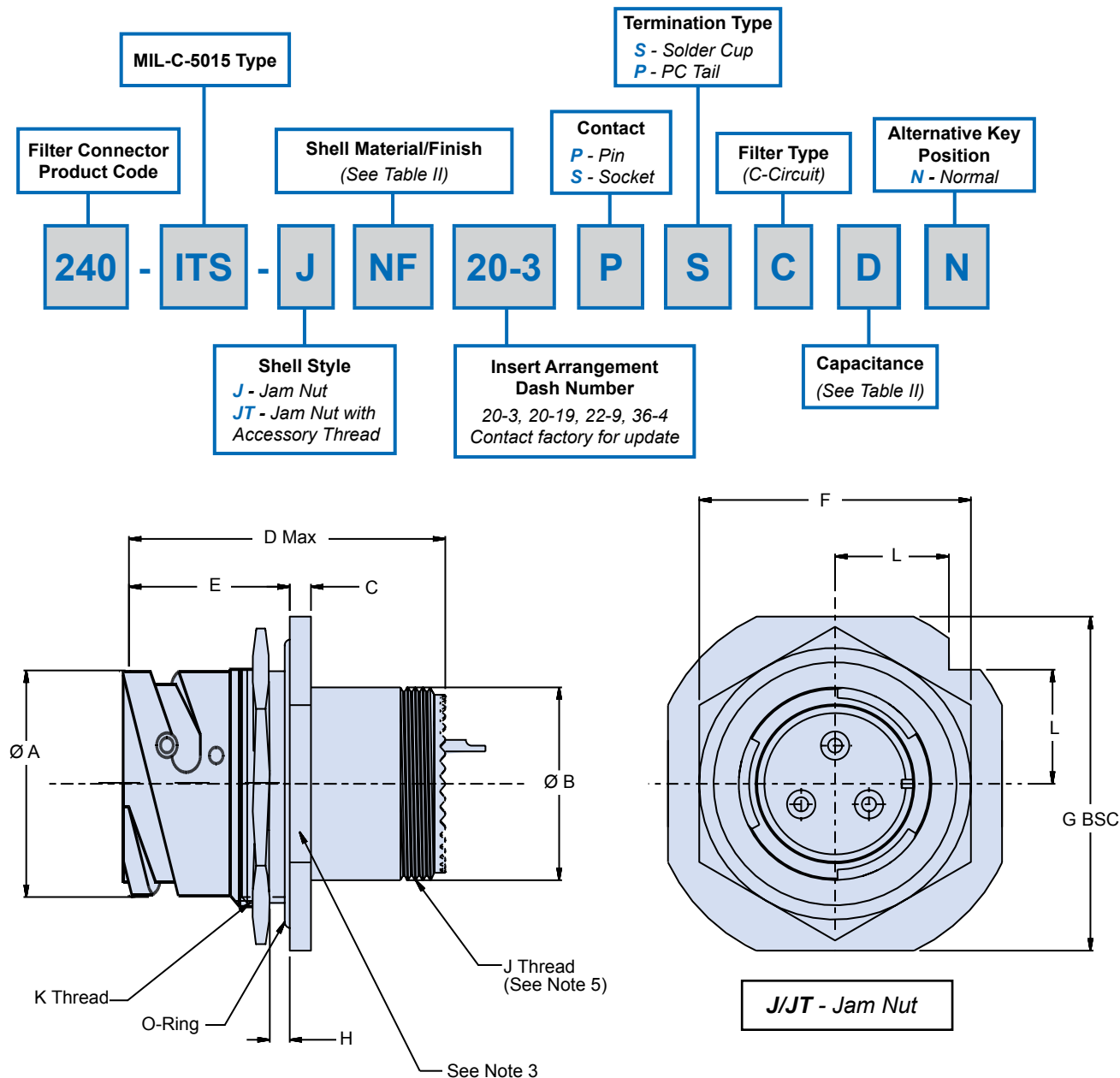
## Filtered Solutions for Popular MIL-DTL-5015 Type Industrial, Rail, and Military Bayonet Connectors

### Harsh Application Environments

The Glenair Series ITS Reverse Bayonet Power and Signal Connector is ideally suited for all rugged application connections. The reverse bayonet coupling provides faster coupling, especially when the connector is situated in an awkward or hard to reach location. The connector's high resistance to vibration and shock provides reliable mating in even the most rigorous application environments. Environmental protection to IP67 levels provides additional reliability. The following contact arrangements are presented as examples. Consult factory for additional layouts.



## 240-ITS-J Jam Nut Mount Filtered Receptacle Connector (5015 Type) with Reverse Bayonet Coupling



### APPLICATION NOTES

- Materials/Finishes:  
Shells - See Table I  
Insulators - High grade thermoplastic/N.A.  
Seals - Fluorosilicone/N.A.  
Contacts - Copper Alloy/Gold Plated
- EMI Circular Filter Connector designed to meet MIL-DTL-5015
- Assembly to be identified with date code, cage code, Glenair P/N, and serial number
- Electrical Performance:  
A - Capacitance - See Table II  
B - I.R. 5000 Megohms min at 200 VDC  
C - D.W.V. 500 VDC with 100 micro amps max leakage
- Shell style JT shown
- Metric dimensions (mm) are indicated in parentheses

# 240-ITS-J

## Jam Nut Mount Filtered Receptacle Connector (5015 Type) with Reverse Bayonet Coupling



5015 Power  
Connectors

TABLE I: DIMENSIONS

| Shell Size | A Ø<br>+.000 -.004<br>(+.000 -.102) | B Ø<br>Max   | C<br>±.008 (.203) | D<br>Max     | E<br>+.008 -.000<br>(+.203 -.000) | F<br>±.004 (.102) | G<br>±.008 (.203) |
|------------|-------------------------------------|--------------|-------------------|--------------|-----------------------------------|-------------------|-------------------|
| 10SL       | .719 (18.3)                         | .638 (16.2)  | .110 (2.8)        | 1.400 (35.6) | .728 (18.5)                       | .719 (18.3)       | 1.062 (27.0)      |
| 14S        | .965 (24.5)                         | .756 (19.2)  | .130 (3.3)        | 1.400 (35.6) | .728 (18.5)                       | .906 (23.0)       | 1.312 (33.3)      |
| 16S        | 1.071 (27.2)                        | .882 (22.4)  | .130 (3.3)        | 1.400 (35.6) | .728 (18.5)                       | .969 (24.6)       | 1.438 (36.5)      |
| 16         | 1.071 (27.2)                        | .882 (22.4)  | .130 (3.3)        | 1.800 (45.7) | .913 (23.2)                       | .969 (24.6)       | 1.438 (36.5)      |
| 18         | 1.209 (30.7)                        | 1.008 (25.6) | .157 (4.0)        | 1.800 (45.7) | .913 (23.2)                       | 1.063 (27.0)      | 1.562 (39.7)      |
| 20         | 1.339 (34.0)                        | 1.142 (29.0) | .157 (4.0)        | 1.800 (45.7) | .913 (23.2)                       | 1.157 (29.4)      | 1.688 (42.9)      |
| 22         | 1.469 (37.3)                        | 1.268 (32.2) | .157 (4.0)        | 1.800 (45.7) | .913 (23.2)                       | 1.250 (31.8)      | 1.812 (46.0)      |
| 24         | 1.610 (40.9)                        | 1.390 (35.3) | .157 (4.0)        | 1.800 (45.7) | .913 (23.2)                       | 1.374 (34.9)      | 2.000 (50.8)      |
| 28         | 1.839 (46.7)                        | 1.630 (41.4) | .157 (4.0)        | 1.800 (45.7) | .961 (24.4)                       | 1.563 (39.7)      | 2.250 (57.2)      |
| 32         | 2.102 (53.4)                        | 1.882 (47.8) | .157 (4.0)        | 1.800 (45.7) | .953 (24.2)                       | 1.750 (44.5)      | 2.500 (63.5)      |
| 36         | 2.346 (59.6)                        | 2.130 (54.1) | .157 (4.0)        | 1.800 (45.7) | .953 (24.2)                       | 1.937 (49.2)      | 2.750 (69.9)      |
| 40         | 2.579 (65.5)                        | 2.323 (59.0) | .157 (4.0)        | 1.800 (45.7) | .961 (24.4)                       | 2.187 (55.5)      | 3.000 (76.2)      |

TABLE III: CAPACITOR  
ARRAY CODE AND  
CAPACITANCE RANGE

| CLASS | C - SECTION (pF) |
|-------|------------------|
| X     | 80,000 - 120,000 |
| Y     | 40,000 - 60,000  |
| Z     | 30,000 - 45,000  |
| A     | 19,000 - 28,000  |
| B     | 16,000 - 22,500  |
| C     | 9,000 - 16,500   |

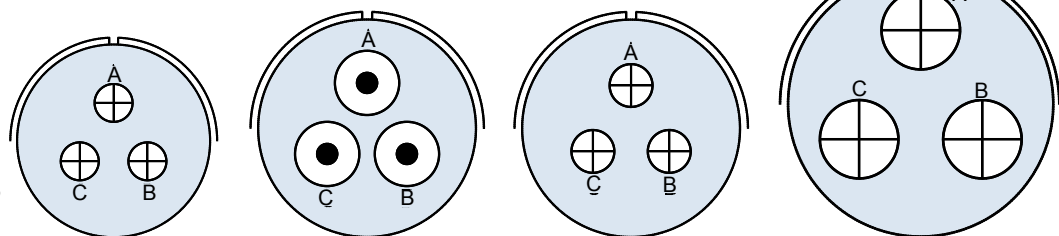
TABLE I: DIMENSIONS (CONTINUED)

| Shell Size | H          |            | J Ø<br>Thread    | K<br>Thread      | L            |
|------------|------------|------------|------------------|------------------|--------------|
|            | Min        | Max        |                  |                  |              |
| 10SL       | .094 (2.4) | .205 (5.2) | .6250 - 24 UNEF  | .8750 - 20 UNEF  | .441 (11.2)  |
| 14S        | .094 (2.4) | .295 (7.5) | .7500 - 20 UNEF  | 1.1250 - 18 UNEF | .575 (14.6)  |
| 16S        | .094 (2.4) | .295 (7.5) | .8750 - 20 UNEF  | 1.2500 - 18 UNEF | .618 (15.7)  |
| 16         | .094 (2.4) | .295 (7.5) | .8750 - 20 UNEF  | 1.2500 - 18 UNEF | .618 (15.7)  |
| 18         | .094 (2.4) | .354 (9.0) | 1.0000 - 20 UNEF | 1.3750 - 18 UNEF | .661 (16.8)  |
| 20         | .094 (2.4) | .354 (9.0) | 1.1250 - 18 UNEF | 1.5000 - 18 UNEF | .709 (18.0)  |
| 22         | .094 (2.4) | .358 (9.1) | 1.2500 - 18 UNEF | 1.6250 - 18 UNEF | .795 (20.2)  |
| 24         | .094 (2.4) | .358 (9.1) | 1.3750 - 18 UNEF | 1.7500 - 18 UNS  | .795 (20.2)  |
| 28         | .094 (2.4) | .335 (8.5) | 1.6250 - 18 UNEF | 2.0000 - 18 UNS  | .886 (22.5)  |
| 32         | .094 (2.4) | .256 (6.5) | 1.8750 - 16 UN   | 2.2500 - 16 UN   | .972 (24.7)  |
| 36         | .094 (2.4) | .327 (8.3) | 2.0625 - 16 UN   | 2.5000 - 16 UN   | 1.059 (26.9) |
| 40         | .094 (2.4) | .327 (8.3) | 2.3125 - 16 UN   | 2.7500 - 16 UN   | 1.165 (29.6) |

TABLE II: SHELL MATERIAL/FINISH

| Symbol | Material        | Finish Description                            |
|--------|-----------------|-----------------------------------------------|
| M      | Aluminum        | Electroless Nickel                            |
| NF     |                 | Cadmium Olive Drab<br>Over Electroless Nickel |
| P      | Stainless Steel | Electro-Deposited<br>Nickel                   |

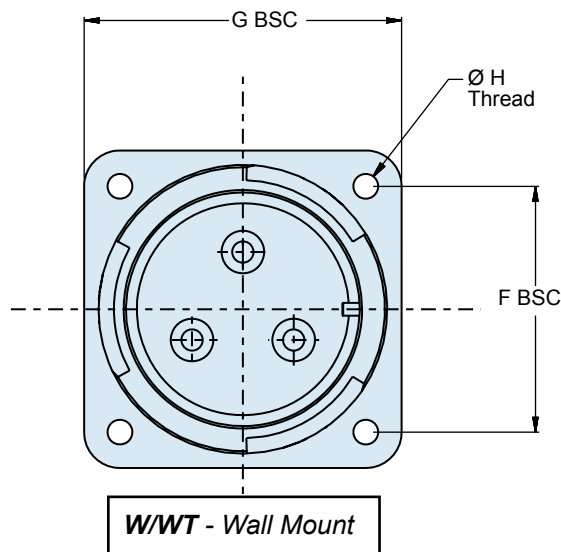
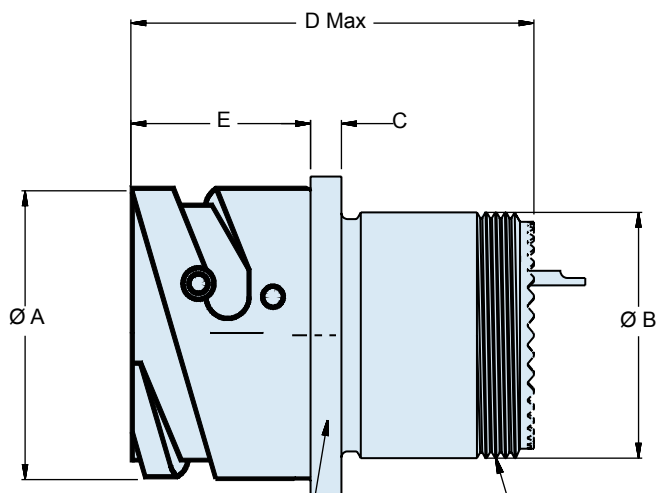
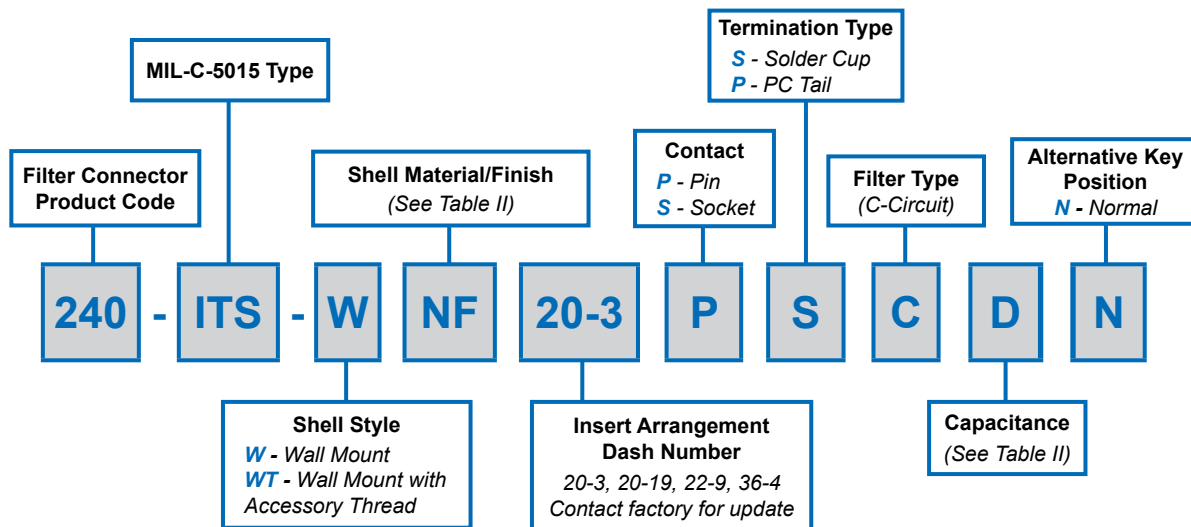
### Example Contact Arrangements



|                |      |       |      |            |
|----------------|------|-------|------|------------|
| Arrangement    | 20-3 | 20-19 | 22-9 | 36-4       |
| Contact Size   | 12   | 8     | 12   | 0          |
| Service Rating | D    | A     | E    | A=D; B,C=A |



# 240-ITS-W Wall Mount Filtered Receptacle Connector (5015 Type) with Reverse Bayonet Coupling



See Note 3

See Note 5

## APPLICATION NOTES

- Material/Finishes:  
Shells - See Table I  
Insulators - High grade thermoplastic/N.A.  
Seals - Fluorosilicone/N.A.  
Contacts - Copper Alloy/Gold Plated
- EMI Circular Filter Connector designed to meet MIL-DTL-5015
- Assembly to be identified with date code, cage code, Glenair P/N, and serial number
- Electrical Performance:  
A - Capacitance - See Table II  
B - I.R. 5000 Megohms min at 200 VDC  
C - D.W.V. 500 VDC with 100 micro amps max leakage
- Shell style WT shown
- Metric dimensions (mm) are indicated in parentheses

# 240-ITS-W

## Wall Mount Filtered Receptacle Connector (5015 Type) with Reverse Bayonet Coupling



TABLE I: DIMENSIONS

| Shell Size | A Ø<br>+.000 -.004<br>(+.000 -.102) | B Ø<br>Max   | C<br>±.008 (.203) | D<br>Max     | E<br>+.008 -.000<br>(+.203 -.000) | F BSC<br>±.004 (.102) | G BSC<br>±.008 (.203) | H Ø<br>Thread |
|------------|-------------------------------------|--------------|-------------------|--------------|-----------------------------------|-----------------------|-----------------------|---------------|
| 10SL       | .719 (18.3)                         | .638 (16.2)  | .110 (2.8)        | 1.400 (35.6) | .728 (18.5)                       | .719 (18.3)           | 1.000 (25.4)          | M4            |
| 14S        | .965 (24.5)                         | .756 (19.2)  | .130 (3.3)        | 1.400 (35.6) | .728 (18.5)                       | .906 (23.0)           | 1.197 (30.4)          | M4            |
| 16S        | 1.071 (27.2)                        | .882 (22.4)  | .130 (3.3)        | 1.400 (35.6) | .728 (18.5)                       | .969 (24.6)           | 1.280 (32.5)          | M4            |
| 16         | 1.071 (27.2)                        | .882 (22.4)  | .130 (3.3)        | 1.800 (45.7) | .913 (23.2)                       | .969 (24.6)           | 1.280 (32.5)          | M4            |
| 18         | 1.209 (30.7)                        | 1.008 (25.6) | .157 (4.0)        | 1.800 (45.7) | .913 (23.2)                       | 1.063 (27.0)          | 1.378 (35.0)          | M4            |
| 20         | 1.339 (34.0)                        | 1.142 (29.0) | .157 (4.0)        | 1.800 (45.7) | .913 (23.2)                       | 1.157 (29.4)          | 1.496 (38.0)          | M4            |
| 22         | 1.469 (37.3)                        | 1.268 (32.2) | .157 (4.0)        | 1.800 (45.7) | .913 (23.2)                       | 1.250 (31.8)          | 1.614 (41.0)          | M4            |
| 24         | 1.610 (40.9)                        | 1.390 (35.3) | .157 (4.0)        | 1.800 (45.7) | .913 (23.2)                       | 1.374 (34.9)          | 1.752 (44.5)          | M4            |
| 28         | 1.839 (46.7)                        | 1.630 (41.4) | .157 (4.0)        | 1.800 (45.7) | .961 (24.4)                       | 1.563 (39.7)          | 2.004 (50.9)          | M5            |
| 32         | 2.102 (53.4)                        | 1.882 (47.8) | .157 (4.0)        | 1.800 (45.7) | .953 (24.2)                       | 1.750 (44.5)          | 2.244 (57.0)          | M5            |
| 36         | 2.346 (59.6)                        | 2.130 (54.1) | .157 (4.0)        | 1.800 (45.7) | .953 (24.2)                       | 1.937 (49.2)          | 2.500 (63.5)          | M5            |
| 40         | 2.579 (65.5)                        | 2.323 (59.0) | .157 (4.0)        | 1.800 (45.7) | .961 (24.4)                       | 2.187 (55.5)          | 2.752 (70.0)          | M5            |

TABLE III: CAPACITOR  
ARRAY CODE AND  
CAPACITANCE RANGE

| CLASS | C - SECTION (pF) |
|-------|------------------|
| X     | 80,000 - 120,000 |
| Y     | 40,000 - 60,000  |
| Z     | 30,000 - 45,000  |
| A     | 19,000 - 28,000  |
| B     | 16,000 - 22,500  |
| C     | 9,000 - 16,500   |

TABLE II: SHELL MATERIAL/FINISH

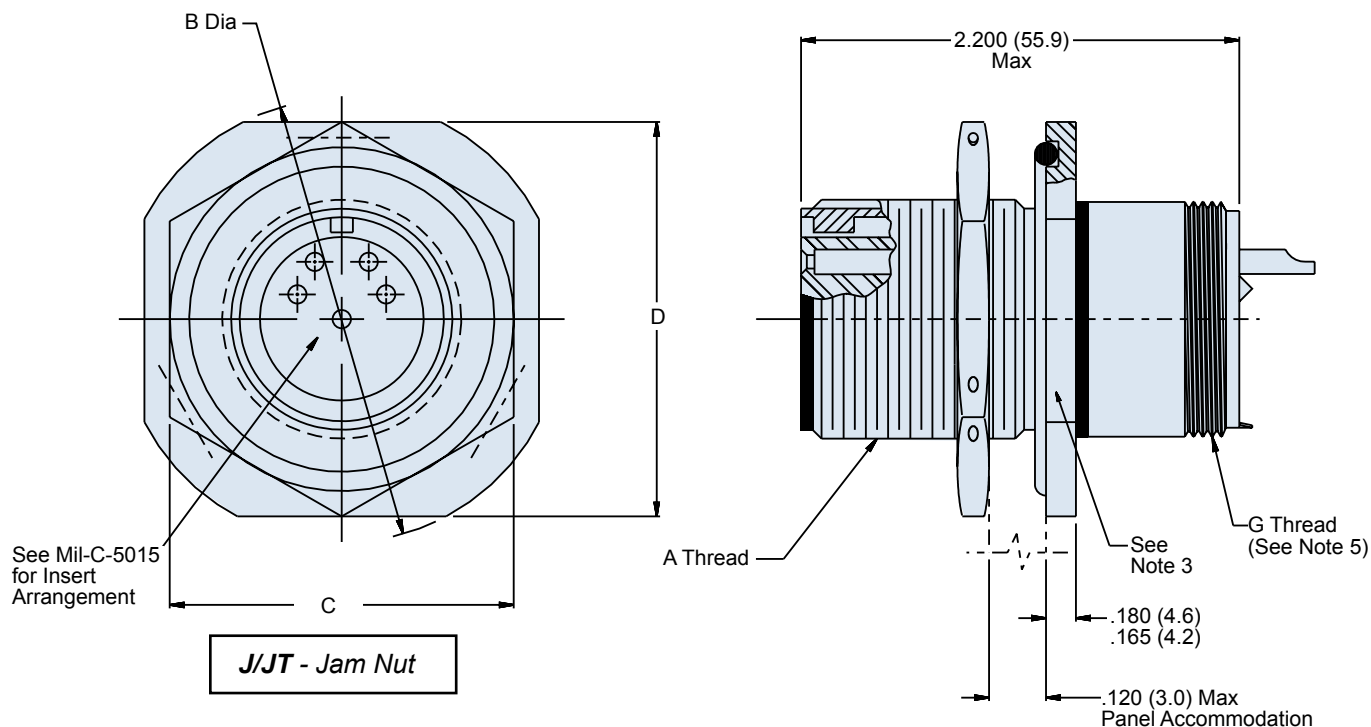
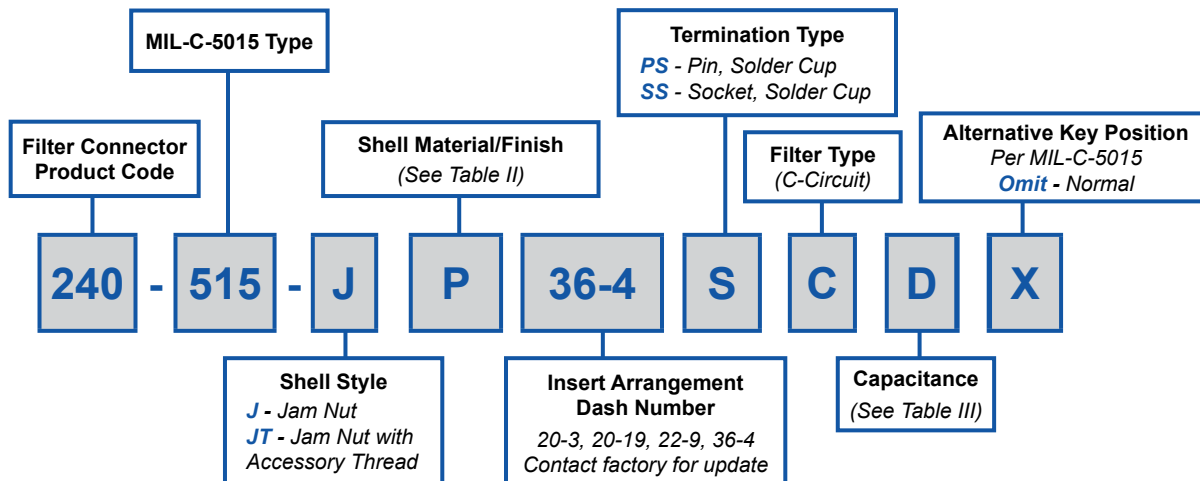
| Symbol | Material        | Finish Description                            |
|--------|-----------------|-----------------------------------------------|
| M      | Aluminum        | Electroless Nickel                            |
| NF     |                 | Cadmium Olive Drab<br>Over Electroless Nickel |
| P      | Stainless Steel | Electro-Deposited<br>Nickel                   |

### Example Contact Arrangements

|                |      |       |      |            |
|----------------|------|-------|------|------------|
| Arrangement    | 20-3 | 20-19 | 22-9 | 36-4       |
| Contact Size   | 12   | 8     | 12   | 0          |
| Service Rating | D    | A     | E    | A=D; B,C=A |

|                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact Legend</b>    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# 240-515-J Jam Nut Mount Filtered Receptacle Connector (5015 Type)



## APPLICATION NOTES

- Materials/Finishes:  
Shells - See Table II  
Insulators - High grade thermoplastic/N.A.  
Seals - Fluorosilicone/N.A.  
Contacts - Copper Alloy/Gold Plated
- EMI Circular Filter Connector designed to meet MIL-DTL-5015
- Assembly to be identified with date code, cage code, Glenair P/N, and serial number
- Electrical Performance:  
A - Capacitance - See Table III  
B - I.R. 5000 Megohms min at 200 VDC  
C - D.W.V. 500 VDC with 100 micro amps max leakage
- Shell style JT shown
- Metric dimensions (mm) are indicated in parentheses



# 240-515-J Jam Nut Mount Filtered Receptacle Connector (5015 Type)



TABLE I: DIMENSIONS

| Shell Size | A Thread Class 2A | B Dia ±.005 (0.13) | C ±.010 (0.25) | D ±.005 (0.13) | E Dia +.015 (0.38) - .000 (0) | F ±.005 (0.13) | G Thread Class 2A |
|------------|-------------------|--------------------|----------------|----------------|-------------------------------|----------------|-------------------|
| 14S        | .875 - 20 UNEF    | 1.647 (41.8)       | 1.125 (28.6)   | 1.562 (39.7)   | .880 (22.4)                   | .720 (18.3)    | 7/8-20 UNEF       |
| 16S        | 1.000 - 20 UNEF   | 1.772 (45.0)       | 1.250 (31.8)   | 1.687 (42.8)   | 1.005 (25.5)                  | .720 (18.3)    | 1-20 UNEF         |
| 18         | 1.125 - 18 UNEF   | 1.817 (46.2)       | 1.375 (34.9)   | 1.812 (46.0)   | 1.130 (28.7)                  | .970 (24.6)    | 1 1/16-18 UNEF    |
| 20         | 1.250 - 18 UNEF   | 2.022 (51.4)       | 1.500 (38.1)   | 1.937 (49.2)   | 1.255 (31.9)                  | .970 (24.6)    | 1 3/16-18 UNEF    |
| 22         | 1.375 - 18 UNEF   | 2.241 (56.9)       | 1.625 (41.3)   | 2.156 (54.8)   | 1.380 (35.1)                  | .970 (24.6)    | 1 5/16-18 UNEF    |
| 24         | 1.500 - 18 UNEF   | 2.356 (59.8)       | 1.750 (44.5)   | 2.281 (57.9)   | 1.505 (38.2)                  | .970 (24.6)    | 1 7/16-18 UNEF    |
| 32         | 2.000 - 18 UNS    | 2.856 (72.5)       | 2.375 (60.3)   | 2.781 (70.6)   | 2.005 (50.9)                  | .970 (24.6)    | 2-18 UNS          |
| 36         | 2.250 - 16 UN     | 2.118 (53.8)       | 2.875 (73.0)   | 3.031 (77.0)   | 2.255 (57.3)                  | .970 (24.6)    | 2 1/4-16 UN       |
| 40         | 2.500 - 16 UN     | 3.368 (85.5)       | 2.875 (73.0)   | 3.281 (83.3)   | 2.503 (63.6)                  | .970 (24.6)    | 1 1/2-16 UN       |

TABLE III: CAPACITOR  
ARRAY CODE AND  
CAPACITANCE RANGE

| CLASS | C - SECTION (pF) |
|-------|------------------|
| X     | 80,000 - 120,000 |
| Y     | 40,000 - 60,000  |
| Z     | 30,000 - 45,000  |
| A     | 19,000 - 28,000  |
| B     | 16,000 - 22,500  |
| C     | 9,000 - 16,500   |

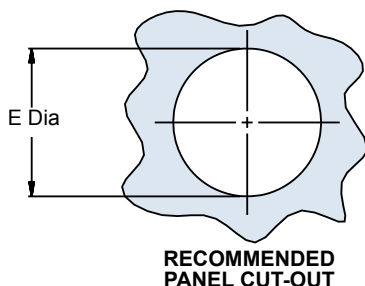


TABLE II: SHELL MATERIAL/FINISH

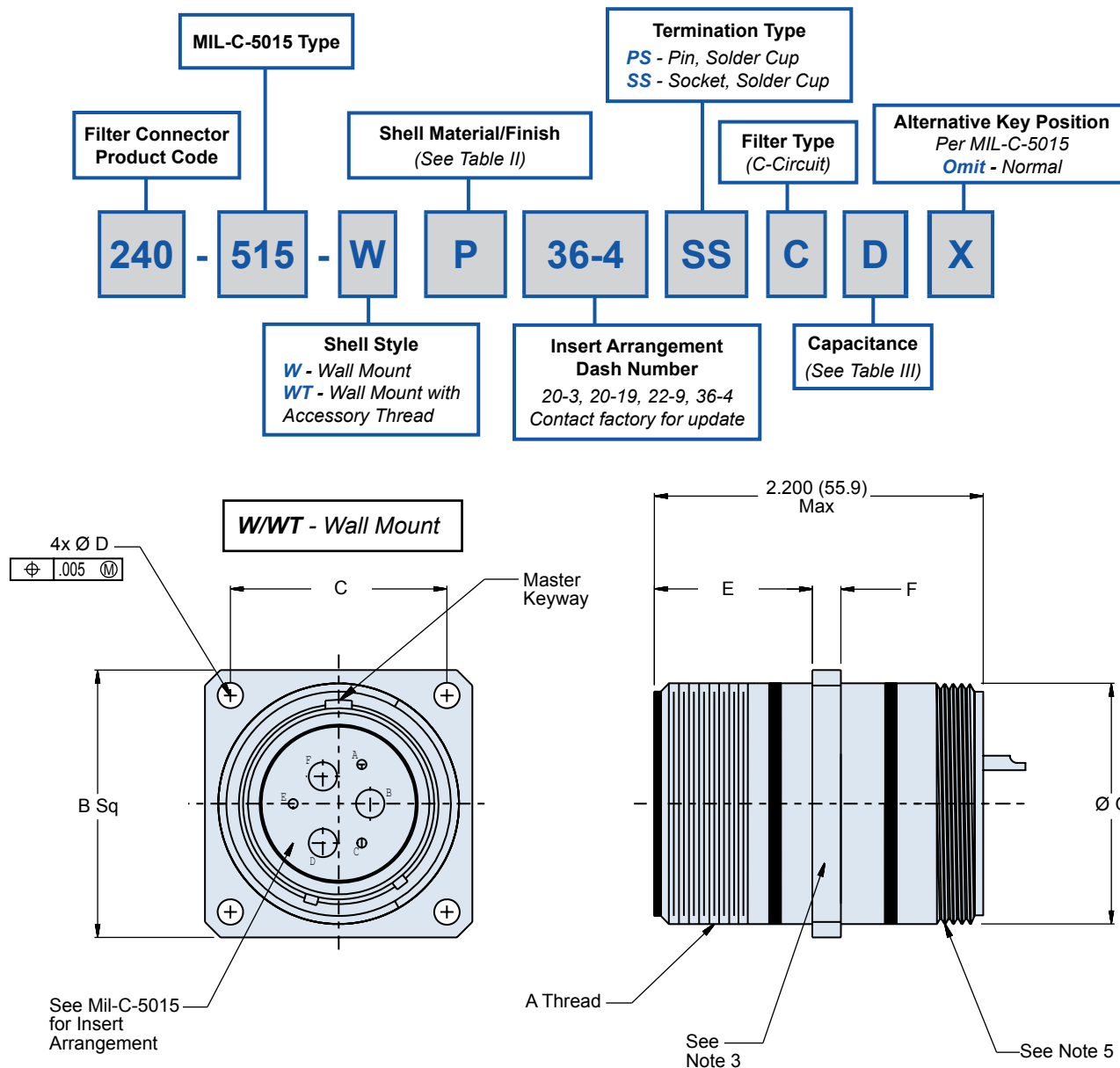
| Symbol | Material        | Finish Description                         |
|--------|-----------------|--------------------------------------------|
| M      | Aluminum        | Electroless Nickel                         |
| NF     |                 | Cadmium Olive Drab Over Electroless Nickel |
| P      | Stainless Steel | Electro-Deposited Nickel                   |

## Example Contact Arrangements

|                |      |       |      |            |
|----------------|------|-------|------|------------|
| Arrangement    | 20-3 | 20-19 | 22-9 | 36-4       |
| Contact Size   | 12   | 8     | 12   | 0          |
| Service Rating | D    | A     | E    | A=D; B,C=A |



# 240-515-W Wall Mount Filtered Receptacle Connector (5015, MS3452 Type)



## APPLICATION NOTES

- Materials/Finishes:  
Shells - See Table II  
Insulators - High grade thermoplastic/N.A.  
Seals - Fluorosilicone/N.A.  
Contacts - Copper Alloy/Gold Plated
- EMI Circular Filter Connector designed to meet MIL-DTL-5015
- Assembly to be identified with date code, cage code, Glenair P/N, and serial number
- Electrical Performance:  
A - Capacitance - See Table III  
B - I.R. 5000 Megohms min at 200 VDC  
C - D.W.V. 500 VDC with 100 micro amps max leakage
- Shell style WT shown
- Metric dimensions (mm) are indicated in parentheses

# 240-515-W Wall Mount Filtered Receptacle Connector (5015, MS3452 Type)



TABLE I: DIMENSIONS

| Shell Size | A Thread Class 2A | B<br>±.031 (0.78) | C SBC        | D<br>+.010 (0.25)<br>-.005 (0.13) | E Dia<br>+.015 (0.38)<br>-.000 (0) | F<br>±.015 (0.38) | Ø G<br>±.160 (4.06) |
|------------|-------------------|-------------------|--------------|-----------------------------------|------------------------------------|-------------------|---------------------|
| 14S        | .875 - 20 UNEF    | 1.188 (30.2)      | .906 (23.0)  | .120 (3.0)                        | .562 (14.3)                        | .083 (2.1)        | .875 (22.2)         |
| 16S        | 1.000 - 20 UNEF   | 1.281 (32.5)      | .969 (24.6)  | .120 (3.0)                        | .562 (14.3)                        | .083 (2.1)        | 1.000 (25.4)        |
| 18         | 1.125 - 18 UNEF   | 1.375 (34.9)      | 1.062 (27.0) | .120 (3.0)                        | .750 (19.1)                        | .125 (3.2)        | 1.062 (27.0)        |
| 20         | 1.250 - 18 UNEF   | 1.500 (38.1)      | 1.156 (29.4) | .120 (3.0)                        | .750 (19.1)                        | .125 (3.2)        | 1.187 (30.1)        |
| 22         | 1.375 - 18 UNEF   | 1.625 (41.3)      | 1.250 (31.8) | .120 (3.0)                        | .750 (19.1)                        | .125 (3.2)        | 1.312 (33.3)        |
| 24         | 1.500 - 18 UNEF   | 1.750 (44.5)      | 1.375 (34.9) | .147 (3.7)                        | .812 (20.6)                        | .125 (3.2)        | 1.437 (36.5)        |
| 32         | 2.000 - 18 UNS    | 2.250 (57.2)      | 1.750 (44.5) | .173 (4.4)                        | .875 (22.2)                        | .125 (3.2)        | 2.000 (50.8)        |
| 36         | 2.250 - 16 UN     | 2.500 (63.5)      | 1.938 (49.2) | .173 (4.4)                        | .875 (22.2)                        | .125 (3.2)        | 2.250 (57.2)        |
| 40         | 2.500 - 16 UN     | 2.750 (69.9)      | 2.188 (55.6) | .173 (4.4)                        | .875 (22.2)                        | .125 (3.2)        | 2.500 (63.5)        |

TABLE III: CAPACITOR  
ARRAY CODE AND  
CAPACITANCE RANGE

| CLASS | C - SECTION (pF) |
|-------|------------------|
| X     | 80,000 - 120,000 |
| Y     | 40,000 - 60,000  |
| Z     | 30,000 - 45,000  |
| A     | 19,000 - 28,000  |
| B     | 16,000 - 22,500  |
| C     | 9,000 - 16,500   |

TABLE II: SHELL MATERIAL/FINISH

| Symbol | Material        | Finish Description                         |
|--------|-----------------|--------------------------------------------|
| M      | Aluminum        | Electroless Nickel                         |
| NF     |                 | Cadmium Olive Drab Over Electroless Nickel |
| P      | Stainless Steel | Electro-Deposited Nickel                   |

## Example Contact Arrangements

|                |      |       |      |            |
|----------------|------|-------|------|------------|
| Arrangement    | 20-3 | 20-19 | 22-9 | 36-4       |
| Contact Size   | 12   | 8     | 12   | 0          |
| Service Rating | D    | A     | E    | A=D; B,C=A |

**Contact Legend**

# Need something unusual in a multi-contact connector?



Then consider Glenair's expertise in high reliability connector design and development.

**G**lenair's line of innovative, specialty connectors has grown, year after year, to become one of the most diverse in the industry. Our application engineers have worked directly with commercial, industrial and military customers worldwide to design and build such products as quick disconnects for missile launchers, high temperature

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#### PRODUCT FEATURES

- Special Shell and Flange Configurations
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- Crimp Removable Contacts
- Immersion-Proof Environmental Sealing
- Unique Glass Hermetic Versions
- PC Tail and PCB Terminations
- Rectangular and Circular Designs

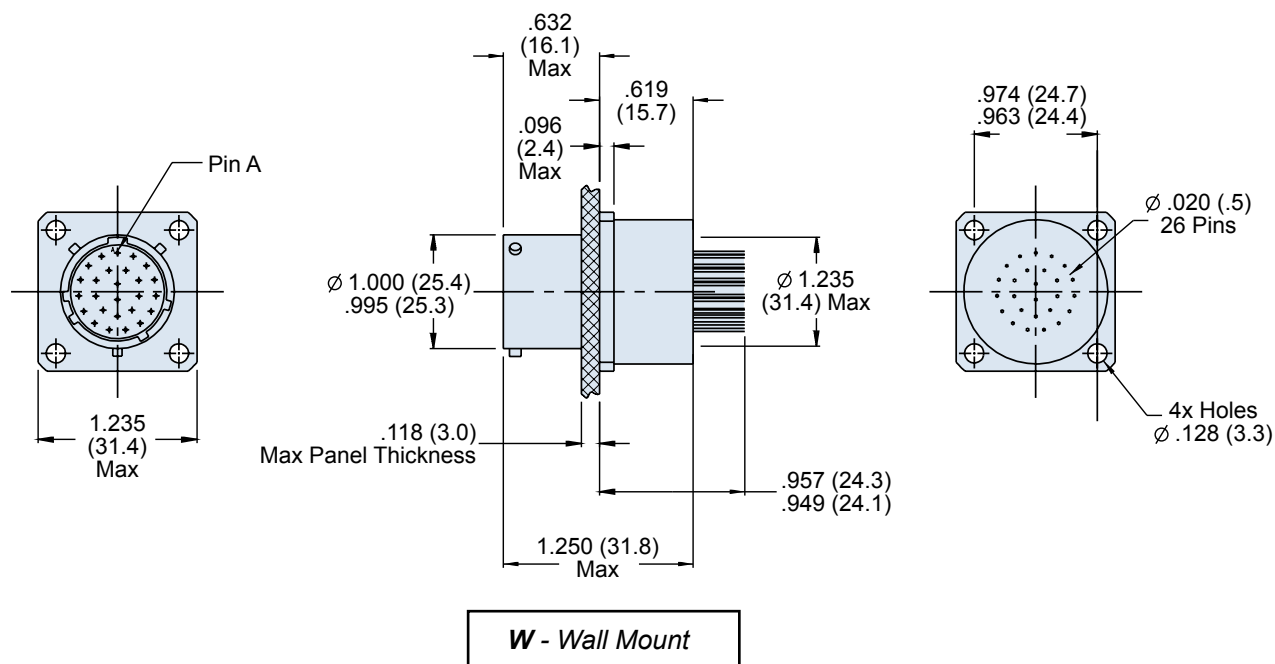
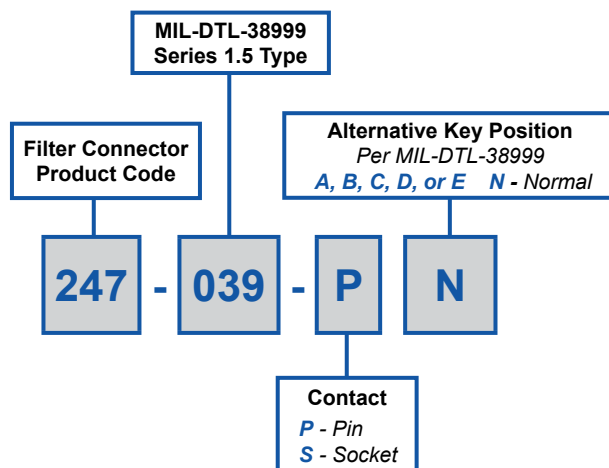
**From Custom Shells to Hybrid Fiber Optic and Electrical Insert Arrangements, Glenair Has the Capability to Produce Unique EMI/RFI Suppression Connectors to the Exact Design Requirements of Your Application.**

#### **Innovation Born From Over 50 Years of Experience in the Interconnect Industry**

This catalog presents a broad range of standardized interconnect solutions for EMI and EMP filter applications. The ability to offer standard catalog products designed to resolve the most commonly encountered EMI/RFI suppression requirements is a major Glenair strength. Many standard filter connector component elements are stock items, enabling Glenair to offer lightning fast turnaround on our catalog filter products.

But many situations call for special purpose or custom filter connector configurations—everything from unique capacitance values, to integrated TVS diodes or chip technologies. Glenair is equally adept at delivering truly custom filter connector solutions across our entire range of connector types and styles. This catalog section presents just a small sampling of some of the more interesting designs. Our capabilities in the manufacture of mission-critical filter connectors is virtually limitless. Please contact the factory for free application engineering assistance.

**247-039**  
**MIL-DTL-38999 Series 1.5**  
 (Eurofighter JN Spec)  
 Filtered Wall Mount Receptacle Connector





**247-039**  
**MIL-DTL-38999 Series 1.5**  
**(Eurofighter JN Spec)**  
**Filtered Wall Mount Receptacle Connector**



**TABLE I: FILTER PERFORMANCE**

| CONT.<br>NO. | CAP nF | FILTER<br>TYPE | ATT. dB |    |     |      |    |
|--------------|--------|----------------|---------|----|-----|------|----|
|              |        |                | 0.5M    | 1M | 10M | 100M | 1G |
| All          | 112    | PI             | 13      | 17 | 48  | 55   | 50 |

**APPLICATION NOTES**

1. This drawing describes the requirements for a filtered 26 way Size 20 pin contact, PCB Tail receptacle, complying with Eurofighter J62 .017 (JN1003) shell size 16 connector, polarization position 'N' insert arrangement 26.

2. Electrical Characteristics:

- I. Current rating - each contact at 25° C: 3A DC
- II. Working voltage - 100 VDC at sea level
- III. Dielectric withstand voltage (DWV) - 250 VDV @ 5 sec.
- IV. Typical capacitance - per table I +/- 20%
- V. Attenuation - per MIL-STD-220A (in 50 Ohm system no load) per table I

3. Transient Protection:

| Lines | W.V.          | B.V.            | C.V.                | ENERGY |
|-------|---------------|-----------------|---------------------|--------|
| 1-2   | 26V @ 50uA DC | 31-38V @ 1mA DC | 58V @ 30A @ 8/20 us | 0.1 J  |
| 3-13  | 30V @ 50uA DC | 37-46V @ 1mA DC | 65V @ 30A @ 8/20 us | 0.1 J  |

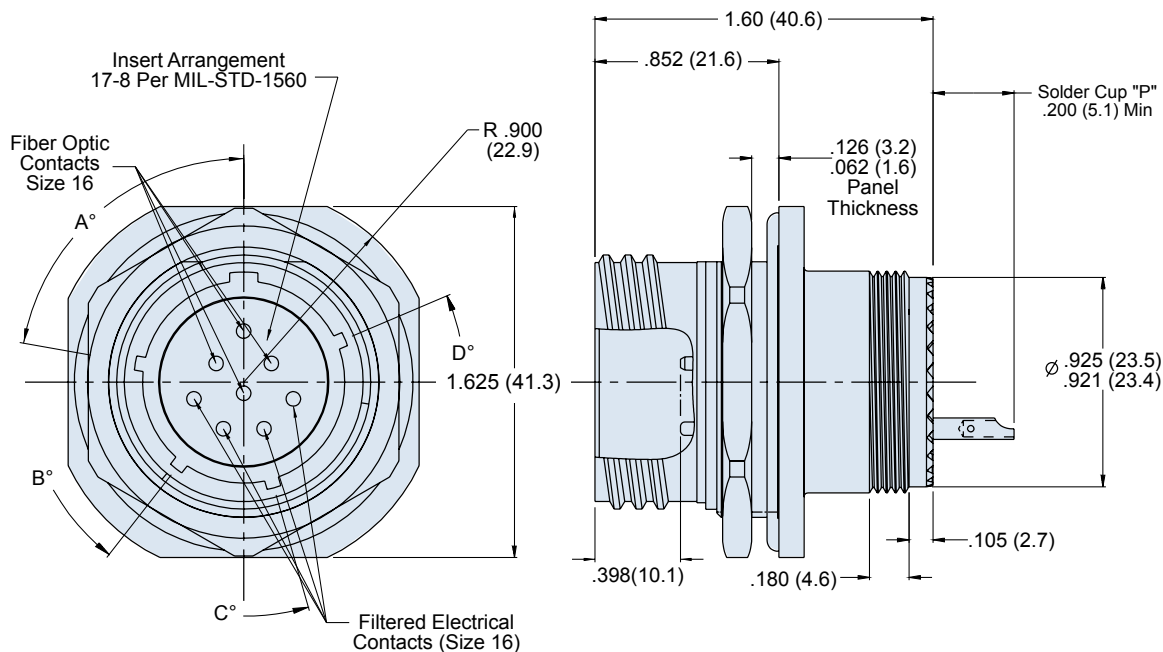
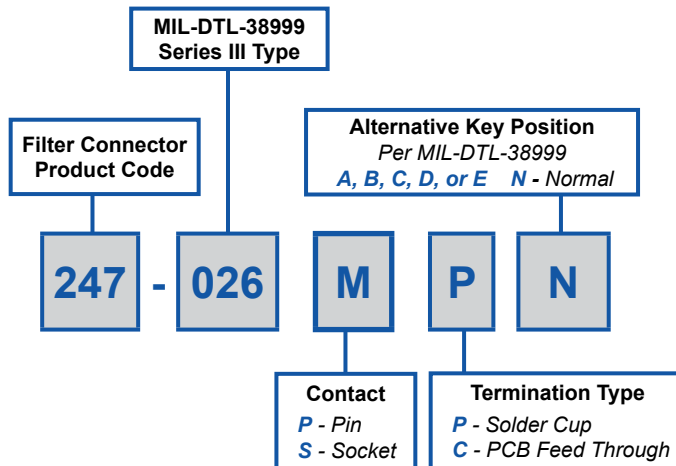
4. Environmental Requirements:

- I. Temperature range: -55°C to +125°C
- II. Shock: 40g x 6mS
- III. Vibration: 10g RMS @ 50 to 2000 Hz
- IV. Humidity: up to 95% R.H.

5. Materials and finishes in accordance with J62.017, Summarized as follows:

- I. Shell: aluminum alloy
- II. Finish: olive drab cad plate over nickel
- III. Contacts: copper alloy gold plate over nickel
- IV. Insulator: high grade plastic
- V. Potting: epoxy

**247-026**  
**MIL-DTL-38999 Series III**  
**Hybrid Fiber Optic/Electrical**  
**Filtered Jam Nut Mount Receptacle Connector**



**J - Jam Nut**

**247-026**  
**MIL-DTL-38999 Series III**  
**Hybrid Fiber Optic/Electrical**  
**Filtered Jam Nut Mount Receptacle Connector**



**TABLE I: FINISH AND MATERIALS**

| SYM | MATERIAL | FINISH DESCRIPTION                          |
|-----|----------|---------------------------------------------|
| M   | Aluminum | Electroless Nickel                          |
| NF  |          | Cadmium O.D. Over Electroless Nickel Finish |
| MT  |          | Ni-PTFE 1000 Hour Grey™                     |

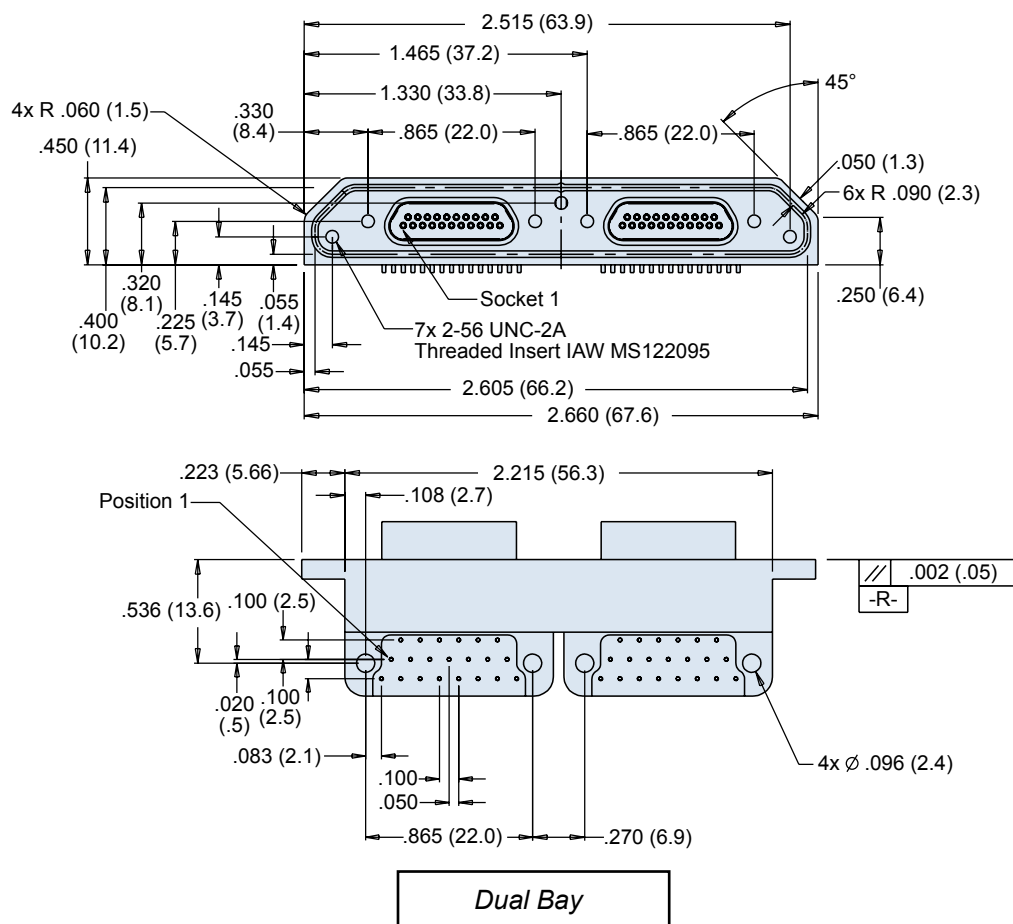
**KEY AND KEYWAY LOCATION**

| Position | A    | B    | C    | D    |
|----------|------|------|------|------|
| N        | 80°  | 142° | 196° | 293° |
| A        | 135° | 170° | 200° | 310° |
| B        | 49°  | 169° | 200° | 244° |
| C        | 66°  | 140° | 200° | 257° |
| D        | 62°  | 145° | 180° | 280° |
| E        | 79°  | 153° | 197° | 272° |

**APPLICATION NOTES**

- Materials / Finishes:  
 Shell - See Table I  
 Contacts - Copper Alloy / Gold Plate  
 Insulators - High Grade Thermoplastic / N.A.  
 Capacitor Array - Ceramic Metalisation  
 Potting - RTV and Epoxy  
 Seals - Fluorosilicone
- Assembly to be identified with Glenair's name, part number and date code  
 - space permitting.
- Electrical Performance: PI Filter  
 A. Capacitance - 20 nF  
 B. I.R. 5000 MegOhms at 100 VDC
- DWV - 200 VDC
- Attenuation per MIL-STD-220 at 25° C  

| Frequency | Value  |
|-----------|--------|
| 10 Mhz    | 20 dB  |
| 100 Mhz   | 65 dB  |
| 1 Ghz     | >70 dB |
- Optical Performance:  
 <1 dB loss at 850 nm 50/125 Multimode Fiber
- All contacts are Non-Removable
- Metric Dimensions (mm) are indicated in parentheses.



Please Consult Factory for Additional Insert Arrangements and Other Options to This Custom Connector Design

## APPLICATION NOTES

1. Interpret Drawing IAW ASME-Y-14.5
2. Interface Dimensions IAW MIL-DTL-83513/04-C
3. Materials and Finishes:
  - Shell - Aluminum Alloy / Tin over Nickel IAW ASTM-B-545
  - Insulators and Potting Trays - Liquid Crystal Polymer
  - Contacts - Copper Alloy / Gold over Nickel
  - Leads - 25 AWG Copper / Gold Plated
  - Interfacial Seals - Fluorosilicone
  - Hardware - Stainless Steel / Passivated
  - Potting - HYSOL EE4215, or 2850FT
4. Electrical Parameters:
  - Capacitance - Pins 9, 24, 27, 29, 34, 37 and 39 are internally grounded to shell.
  - All remaining pins are to be 16-22.5 nF

Insulation Resistance - 5000 MegOhms min. at 100 VDC  
Dielectric Withstand Voltage - 200 VDC

Insertion Loss -

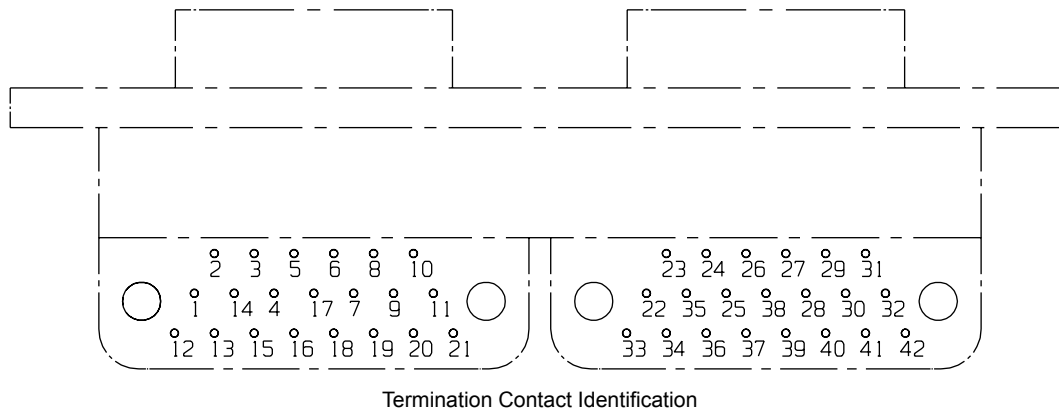
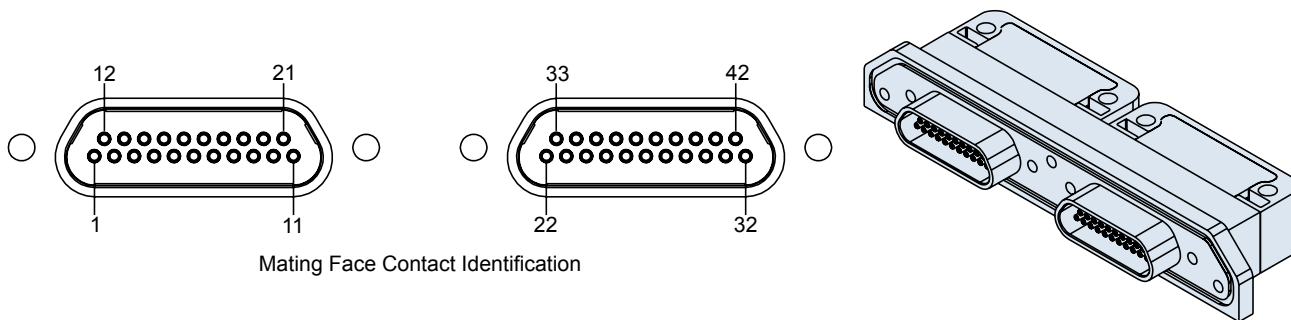
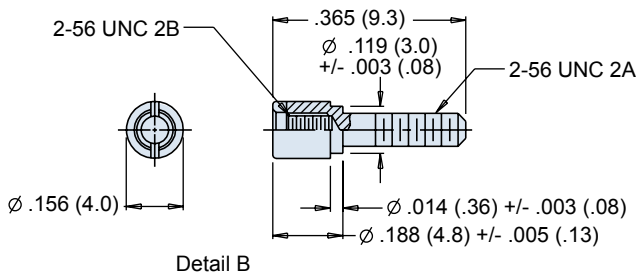
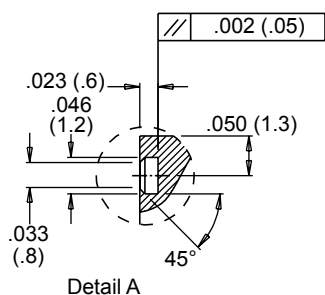
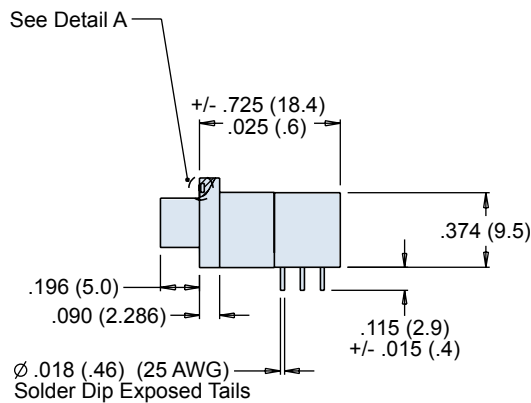
10 dB @ 10 MHz  
25 dB @ 100 MHz  
40 dB @ 1 GHz  
50 dB @ 10 GHz

5. Each assembly to be shipped with 4 rear panel mount jackposts for mounting to a .020 thick panel. (See Detail B)
6. Part supplied with EMI Spring installed.
7. Metric Dimensions (mm) are indicated in parentheses.

**247-045**  
**Dual Bay Micro-D Filter Connector**  
**Right Angle (90°) Printed Circuit Board Mount**



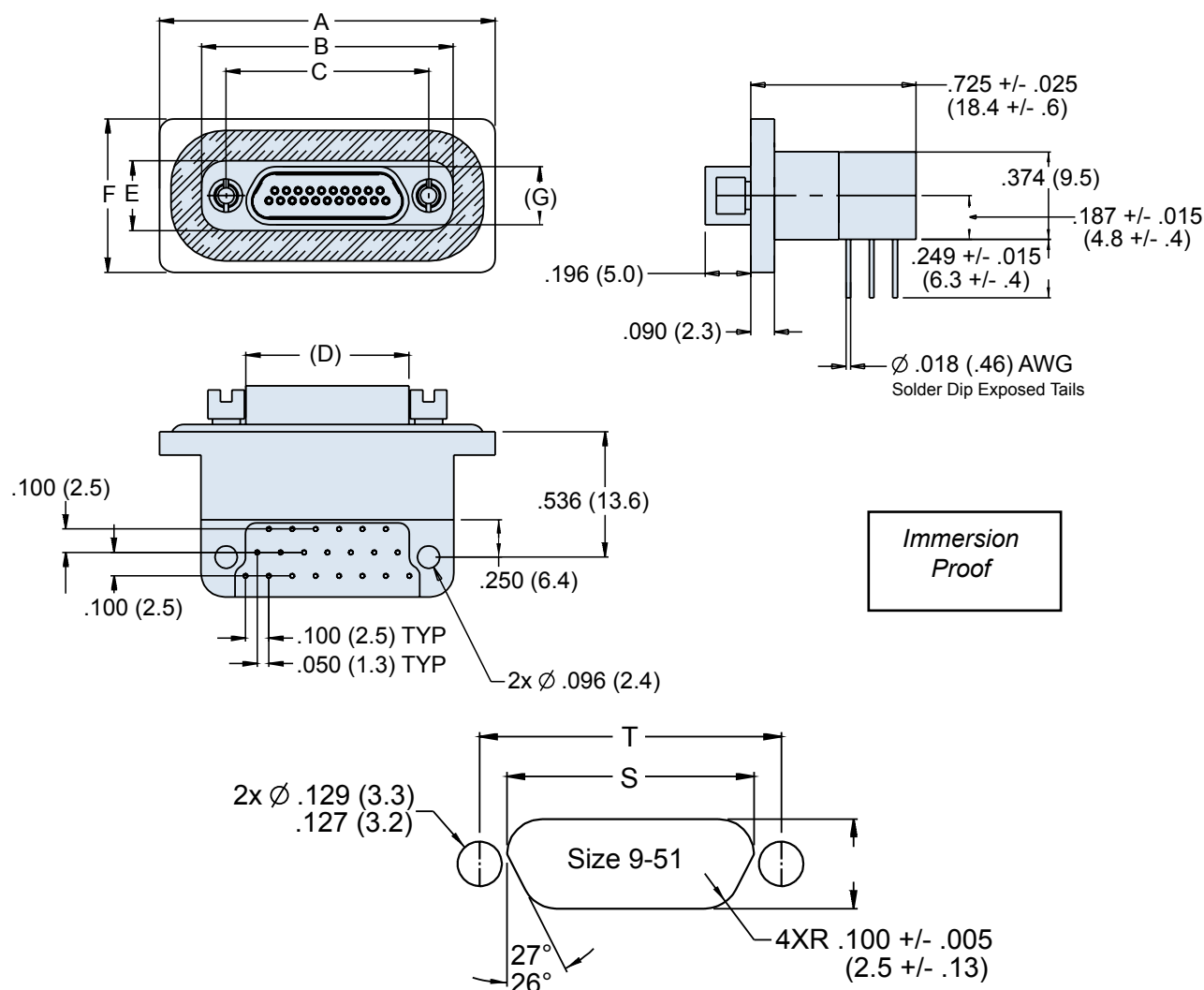
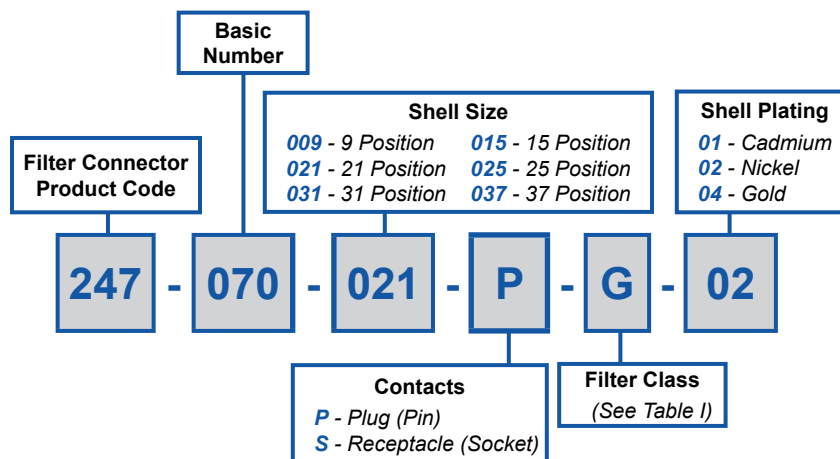
Special  
Connectors



# 247-070

## Immersion Proof Micro-D Filter Connector

### Right Angle (90°) Printed Circuit Board Mount





**247-070**  
**Immersion Proof Micro-D Filter Connector**  
**Right Angle (90°) Printed Circuit Board Mount**



| RECOMMENDED PANEL CUTOUTS |                           |                              |                           |
|---------------------------|---------------------------|------------------------------|---------------------------|
| LAYOUT                    | S +.004 (.1)<br>-.000 (0) | T +.003 (.08)<br>-.003 (.08) | W +.004 (.1)<br>-.000 (0) |
| 9                         | .408 (10.4)               | .565 (14.4)                  | .256 (6.5)                |
| 15                        | .558 (14.2)               | .715 (18.2)                  | .256 (6.5)                |
| 21                        | .708 (18.0)               | .865 (22.0)                  | .256 (6.5)                |
| 25                        | .808 (20.5)               | .965 (24.5)                  | .256 (6.5)                |
| 31                        | .958 (24.3)               | 1.115 (28.3)                 | .256 (6.5)                |
| 37                        | 1.108 (28.1)              | 1.265 (32.1)                 | .256 (6.5)                |

| TABLE I: CAPACITOR ARRAY CODE<br>CAPACITANCE RANGE |                  |
|----------------------------------------------------|------------------|
| CLASS                                              | C - CIRCUIT (pF) |
| A                                                  | 19,000 - 28,000  |
| B                                                  | 16,000 - 22,500  |
| C                                                  | 9,000 - 16,500   |
| D                                                  | 4,000 - 6,000    |
| E                                                  | 1,650 - 2,500    |
| F                                                  | 400 - 650        |
| G                                                  | 200 - 300        |

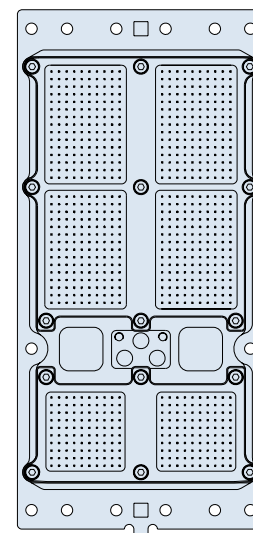
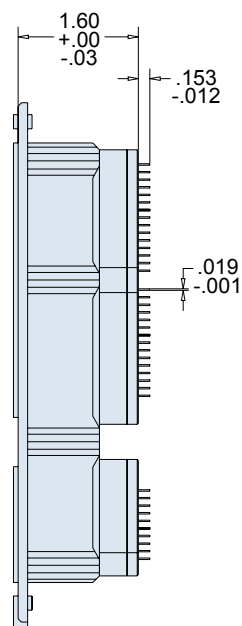
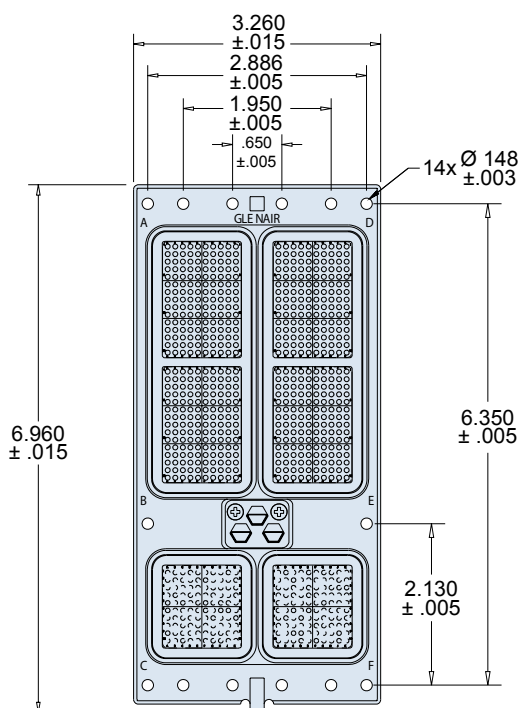
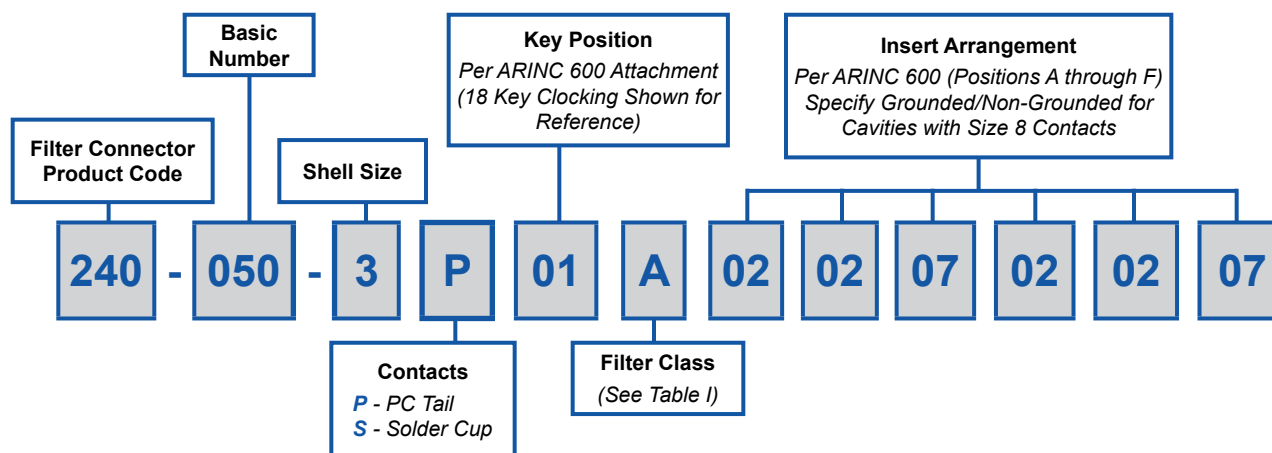
| DIMENSIONAL TABLE |                  |                  |                  |              |                  |                  |            |
|-------------------|------------------|------------------|------------------|--------------|------------------|------------------|------------|
| SHELL<br>SIZE     | A +/- .005 (.13) | B +/- .005 (.13) | C +/- .003 (.08) | (D)          | E +/- .005 (.13) | F +/- .005 (.13) | (G)        |
| 9P                | 1.135 (28.8)     | .775 (19.7)      | .565 (14.4)      | .304 (7.7)   | .298 (7.6)       | .655 (16.6)      | .185 (4.7) |
| 9S                | 1.135 (28.8)     | .775 (19.7)      | .565 (14.4)      | .358 (9.1)   | .298 (7.6)       | .655 (16.6)      | .235 (6.0) |
| 15P               | 1.285 (32.6)     | .925 (23.5)      | .715 (18.2)      | .484 (12.3)  | .298 (7.6)       | .655 (16.6)      | .185 (4.7) |
| 15S               | 1.285 (32.6)     | .925 (23.5)      | .715 (18.2)      | .534 (13.6)  | .298 (7.6)       | .655 (16.6)      | .235 (6.0) |
| 21P               | 1.435 (36.4)     | 1.075 (27.3)     | .865 (22.0)      | .634 (16.1)  | .298 (7.6)       | .655 (16.6)      | .185 (4.7) |
| 21S               | 1.435 (36.4)     | 1.075 (27.3)     | .865 (22.0)      | .684 (17.4)  | .298 (7.6)       | .655 (16.6)      | .235 (6.0) |
| 25P               | 1.535 (39.0)     | 1.175 (29.8)     | .965 (24.5)      | .734 (18.6)  | .298 (7.6)       | .655 (16.6)      | .185 (4.7) |
| 25S               | 1.535 (39.0)     | 1.175 (29.8)     | .965 (24.5)      | .784 (19.9)  | .298 (7.6)       | .655 (16.6)      | .235 (6.0) |
| 31P               | 1.685 (42.8)     | 1.325 (33.7)     | 1.115 (28.3)     | .884 (22.5)  | .298 (7.6)       | .655 (16.6)      | .185 (4.7) |
| 31S               | 1.685 (42.8)     | 1.325 (33.7)     | 1.115 (28.3)     | .934 (23.7)  | .298 (7.6)       | .655 (16.6)      | .235 (6.0) |
| 37P               | 1.835 (46.6)     | 1.475 (37.5)     | 1.265 (32.1)     | 1.034 (26.3) | .298 (7.6)       | .655 (16.6)      | .185 (4.7) |
| 37S               | 1.835 (46.6)     | 1.475 (37.5)     | 1.265 (32.1)     | 1.084 (27.5) | .298 (7.6)       | .655 (16.6)      | .235 (6.0) |

### APPLICATION NOTES

- Material/ Finish:  
Shells - Aluminum Alloy / See P/N Development for Plating  
Insulators - LCP / N.A.  
Contacts - Copper Alloy / Gold Plated  
O-Rings - Fluorosilicone
- Assembly to be identified with Glenair's name, part number, date code, and pin 1 identification.
- Performance Data per MIL-DTL-835613
- Interface Dimensions per MIL-DTL-83513
- Assembly Supplied with 2 Rear Panel Mount JackPosts for 1/16 Thick Panel
- Termination Footprint per Glenair CBR  
(see Glenair Micro-D catalog or [www.glenair.com](http://www.glenair.com))
- Plug Assemblies Supplied with EMI Ground Spring.
- Each Assembly to be Supplied with O-Ring Installed.
- All Contacts to have Identical Filter Value. Other Filter Arrangements Available - Contact Factory.
- DWV - 100 VDC Min.
- Insulation Resistance: 5000 MegOhms Min. at 200 VDC
- Metric dimensions (mm) are indicated in parentheses.

# 240-050

## ARINC 600 Class A Size 3 Filter Receptacle



**240-050**  
**ARINC 600 Class A Size 3 Filter Receptacle**



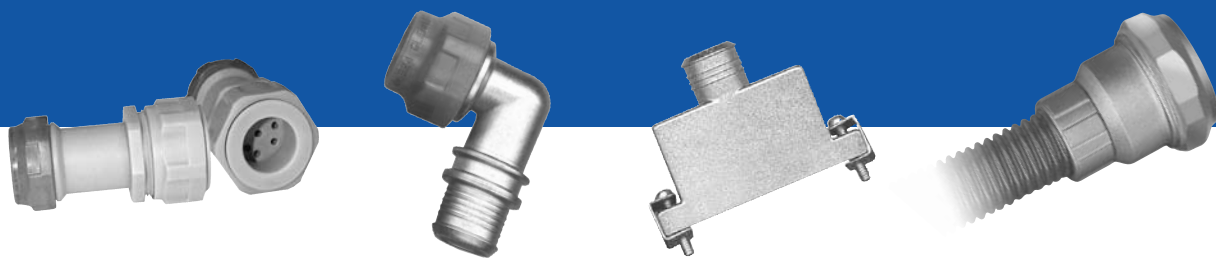
**TABLE I: CAPACITANCE CODE**

| CODE | PI - CIRCUIT (pF) | C - CIRCUIT (pF) |
|------|-------------------|------------------|
| X    | 160,000 - 240,000 | 80,000 - 120,000 |
| Y    | 80,000 - 120,000  | 40,000 - 60,000  |
| Z    | 60,000 - 91,000   | 30,000 - 45,000  |
| A    | 38,000 - 56,000   | 19,000 - 28,000  |
| B    | 32,000 - 45,000   | 16,000 - 22,500  |
| C    | 18,000 - 33,000   | 9,000 - 16,500   |
| D    | 8,000 - 12,000    | 4,000 - 6,000    |
| E    | 3,300 - 5,000     | 1,650 - 2,500    |
| F    | 800 - 1,300       | 400 - 650        |
| G    | 400 - 600         | 200 - 300        |

**APPLICATION NOTES**

1. Material/Finish:  
Shell: Aluminum/Cadmium Chromate per SAE-AMS-QQ-P-416, .000450 minimum thickness, type II  
Color: yellow to gold over electroless nickel plating per SAE-AMS-C-26074, .000100 - .000450 thickness over Copper flash deposition per SAE-AMS-2418  
Insulators: high grade rigid dielectric  
PC tail and solder cup contacts: Copper alloy/50 $\mu$ " Gold over 50 $\mu$ " Nickel
2. Assembly to be permanently identified with (space permitting)  
Glenair, part number, cavity and contact location, and date code.
3. Insert arrangement in accordance with ARINC 600 (arrangement shown for reference only)
4. EMI filter receptacle connector designed to meet requirements of MIL-STD-2120 and Arinc 600.
5. Electrical Parameters:  
Working voltage - 200 VDC, 115 VAC 400Hz  
Dielectric withstanding voltage (DWV) - 500 VDC min  
Insulation resistance (IR) - 5000 Megohms min at 200 VDC
6. Other filter styles (unbalanced or Pi) are available. Please consult factory with your specific requirements.
7. Additional features may be added (e.g. clinch nuts). Please consult factory with your specific requirements.

# Ten Reasons to Keep Glenair at the Top of Your List of Backshell Suppliers



**1. We offer the lowest total cost of ownership in the interconnect industry:** From our cost-saving "no minimum order" policy to our free product samples and application engineering, Glenair provides the best value in connector accessories available today.

**2. Our full spectrum product lines make for one-stop-shopping:** We have the most complete selection of circular and rectangular backshells and accessories in the world, including every Mil-Spec slash number and more composite designs than the rest of the industry combined.

**3. We have the largest capacity, broadest capability factory in the business** and the knowledge and expertise to handle any production requirement no matter how large or complex.

**4. We've provided complete convenience in ordering since 1956** (that's *your* convenience not ours): choose factory direct, your local Glenair office or your favorite distributor.

**5. We care as much about quality as you do:** Glenair is ISO 9001:200 and AS9100: 2004 Rev B Certified.

**6. We have over 65,000 accessory part numbers ready for immediate shipment** including every AS85049 accessory and thousands of Glenair's most popular rectangular and circular backshell part numbers.

**7. Our turnaround on quotes and custom orders is the fastest in the industry:** We offer 24 hour turnaround on RFQ's and just 2 to 3 weeks delivery on custom orders for everything from dustcaps to EMI shielding accessories.

**8. We have the largest and most experienced support staff in the business,** including sales and engineering in every major market. We offer free on-site application engineering and the support of dedicated product managers for every interconnect discipline.

**9. We understand interconnect systems from the ground up:** We're the only connector, backshell and accessory supplier to also operate our own full service cable harness and conduit assembly facility.

**10. We're committed:** We've served the backshell and connector accessory market since 1956 and we're committed to meeting the evolving needs of our customers.

Glenair: A World of Interconnect Solutions

**EMI Shielding Accessories:  
Backshells, Tubular Braid, Shorting Plugs  
and Other EMI Noise Suppression Technologies**



**PRODUCT FEATURES**

- Glenair is the world's largest supplier of EMI shielding backshells and connector accessories. Over 65,000 part numbers are in stock and ready for same-day shipment
- Section includes a small selection of the most practical EMI noise suppression and shielding devices
- Cable shield termination backshells for all filter connector series
- Military standard EMI shielding backshells, shorting plugs and tubular braiding available for complete electromagnetic compatibility

## Because the Art of EMI Management Usually Calls for More Technology Than Just a Filtered Connector

### Backshells: A Part of Every Well-Designed EMI Management Solution

Effective shielding of avionic devices must anticipate both “radiated susceptibility” (the degree to which outside interference affects the reliable functioning of equipment) and “radiated emissions” (the extent to which the device itself creates electromagnetic waves which can affect its function). In both cases, the techniques for managing the interference include reflecting the signals outright, reducing entry points in equipment and cable shields, absorbing the interference in permeable material and dissipating it as heat, or conducting the EMI along the skin of the device/cable and taking it to ground.

In practical terms, EMI management is accomplished by plating the skins of cases and cable shields, building up the density (thickness) of shield material, or eliminating line-of-sight entry points through which electromagnetic waves can penetrate or escape.

In interconnect applications, wires and cables are typically shielded by placing a conductive material between the cable conductor and its outer jacket, or by covering individual conductors within a cable with shielding material. Again, the purpose of such shielding is to either capture the EMI and take it to ground or to dissipate the interfering signal as heat. Shields must also be effectively terminated to the connector backshell lest radiation enter the system at the backshell/connector/shield interface and defeat the purpose of the shield.

Glenair understands that the management of EMI usually includes technology above and beyond a filtered connector. We offer thousands of EMI management products, and we've organized a small selection of some of the most practical devices here for use in conjunction with filtered connector products.


**Table I:**  
**Backshell Interface Dimensions**

| TABLE I: BACKSHELL INTERFACE DIMENSIONS |         |        |                       |              |              |              |              |
|-----------------------------------------|---------|--------|-----------------------|--------------|--------------|--------------|--------------|
| CONNECTOR DESIGNATOR                    |         |        | A THREAD<br>REFERENCE | B DIA<br>MAX | C DIA<br>MAX | D DIA<br>MAX | E DIA<br>MAX |
| A                                       | F       | H      |                       |              |              |              |              |
|                                         | 08 [9]  |        | 7/16 – 28 UNEF        | .590 (15.)   | .650 (16.5)  | .770 (19.6)  | .690 (17.5)  |
|                                         |         | 09 [A] | M12 x 1 – 6H          | .650 (16.5)  | .770 (19.6)  |              | .940 (24.8)  |
| 08                                      |         |        | 1/2 – 20 UNF          | .650 (16.5)  | .650 (16.5)  |              | .690 (17.5)  |
| 03                                      | 10 [11] |        | 9/16 – 24 UNEF        | .720 (18.3)  | .770 (19.6)  | .890 (22.6)  | .820 (20.8)  |
|                                         |         | 11 [B] | M15 x 1 – 6H          | .770 (19.6)  | .820 (20.8)  |              | 1.060 (26.9) |
| 10                                      |         |        | 5/8 – 24 UNEF         | .770 (19.6)  | .770 (19.6)  | .890 (22.6)  | .820 (20.8)  |
|                                         | 12 [13] |        | 11/16 – 24 UNEF       | .840 (21.3)  | .890 (22.6)  | 1.020 (25.9) | .940 (23.8)  |
|                                         |         | 13 [C] | M18 x 1 – 6H          | .890 (22.6)  | .940 (23.9)  |              | 1.170 (29.7) |
| 12 [7]                                  |         |        | 3/4 – 20 UNEF         | .970 (24.6)  | .940 (23.9)  | 1.020 (25.9) | .940 (23.8)  |
|                                         | 14 [15] |        | 13/16 – 20 UNEF       | .970 (24.6)  | 1.020 (29.2) | 1.150 (29.2) | 1.060 (26.9) |
|                                         |         | 15 [D] | M22 x 1 – 6H          | 1.030 (26.2) | 1.070 (26.2) |              | 1.290 (32.7) |
| 14 [12]                                 |         |        | 7/8 – 20 UNEF         | 1.090 (27.7) | 1.020 (25.9) | 1.150 (29.2) | 1.060 (26.9) |
|                                         | 16 [17] |        | 15/16 – 20 UNEF       | 1.090 (27.7) | 1.150 (29.2) | 1.260 (32.0) | 1.170 (29.7) |
|                                         |         | 17 [E] | M25 x 1 – 6H          | 1.150 (29.2) | 1.210 (30.7) |              | 1.420 (36.1) |
| 16 [19]                                 |         |        | 1 – 20 UNEF           | 1.220 (29.2) | 1.210 (30.7) | 1.230 (31.2) | 1.170 (29.7) |
| 18 [27]                                 | 18 [19] |        | 1 1/16 – 18 UNEF      | 1.220 (31.0) | 1.230 (31.2) | 1.400 (35.6) | 1.290 (32.7) |
|                                         |         | 19 [F] | M28 x 1 – 6H          | 1.280 (32.5) | 1.360 (34.5) |              | 1.540 (39.1) |
| 20 [37]                                 | 20 [21] |        | 1 3/16 – 18 UNEF      | 1.340 (34.0) | 1.360 (34.5) | 1.530 (38.9) | 1.420 (36.0) |
|                                         |         | 21 [G] | M31 x 1 – 6H          | 1.410 (35.8) | 1.480 (37.6) |              | 1.670 (42.4) |
| 22                                      | 22 [23] |        | 1 5/16 – 18 UNEF      | 1.470 (37.3) | 1.480 (37.6) | 1.600 (40.6) | 1.540 (39.1) |
|                                         |         | 23 [H] | M34 x 1 – 6H          | 1.530 (38.9) | 1.600 (40.6) |              | 2.010 (51.1) |
| 24                                      | 24 [25] |        | 1 7/16 – 18 UNEF      | 1.590 (40.4) | 1.730 (43.9) | 1.940 (49.3) | 1.660 (42.2) |
|                                         |         | 25 [J] | M37 x 1 – 6H          | 1.660 (42.2) | 1.700 (43.2) |              | 2.120 (53.8) |
| 61                                      |         |        | 1 1/2 – 18 UNEF       | 1.660 (42.2) | 1.670 (42.4) |              |              |
| 28                                      |         |        | 1 3/4 – 18 UNS        | 1.970 (50.0) | 1.970 (50.0) |              | 2.010 (51.1) |
| 32                                      |         |        | 2 – 18 UNS            | 2.280 (57.9) | 2.220 (56.4) |              | 2.260 (57.4) |
| 36                                      |         |        | 2 1/4 – 16 UN         | 2.530 (64.3) | 2.47 (62.7)  |              | 2.530 (64.3) |
| 40                                      |         |        | 2 1/2 – 16 UN         | 2.780 (70.6) | 2.720 (69.1) |              | 3.040 (77.2) |
| 44                                      |         |        | 2 3/4 – 16 UN         | 3.030 (77.0) | 2.970 (75.4) |              |              |
| 48                                      |         |        | 3 – 16 UN             | 3.220 (81.8) | 3.220 (81.8) |              |              |

\*Code C, MIL-C-22992, Left-Hand Thread. Connector designations depicted thus [ ] are for reference only and are not to be used in part number development.



600-058 and 600-061  
The **BAND-IT®** Clamping System  
Hand Banding Tools



## Fast, Cost-Effective Shielding Termination

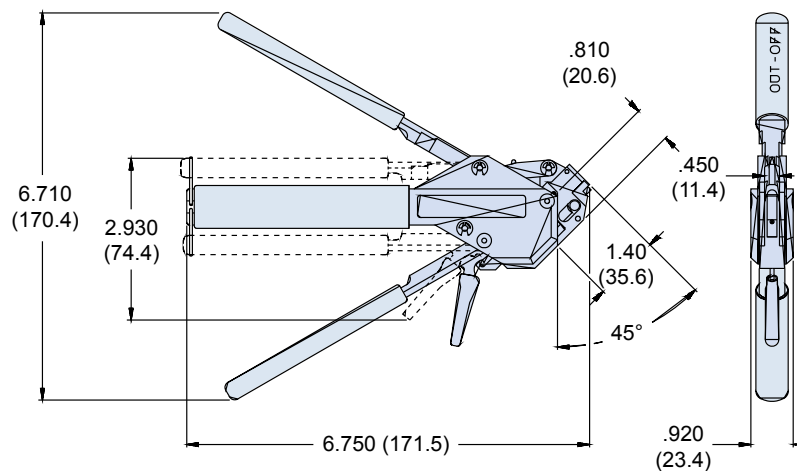
The **BAND-IT®** clamping system provides quick, easy, cost-effective and highly reliable termination of braided metallic shielding or fabric braid. Two sizes of banding tools and bands (bands are also available in standard and extended lengths) allow complete flexibility in terminating EMI shielding and protective mechanical braiding to fiber optic and electrical harnesses. Glenair's complete line of **BAND-IT®** products are in stock and ready for immediate shipment.



### Hand Banding Tool 600-058

**The 600-058 Hand Banding Tool** weighs 1.18 lbs., and is designed for standard clamping bands 600-052 and 600-090 (see page 36) in a tension range from 100 to 180 lbs. Calibrate at 150 lbs.  $\pm$  5 lbs. for most shield terminations. Tool and band should never be lubricated.

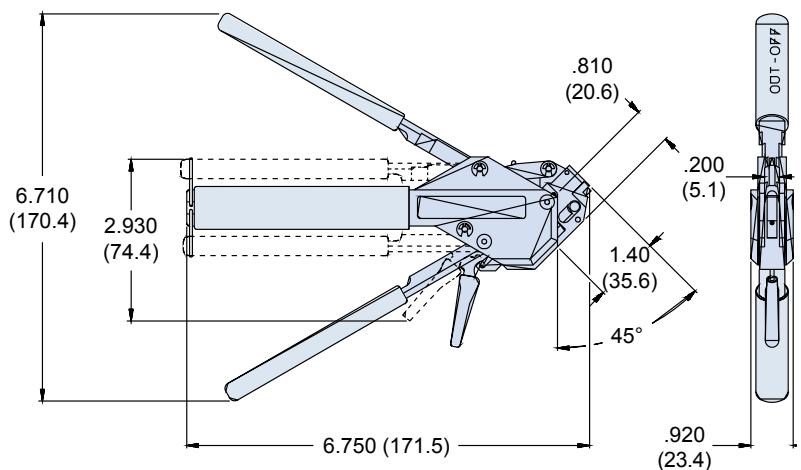
Reference: **BAND-IT®** part number A40199.



### Hand Micro Banding Tool 600-061

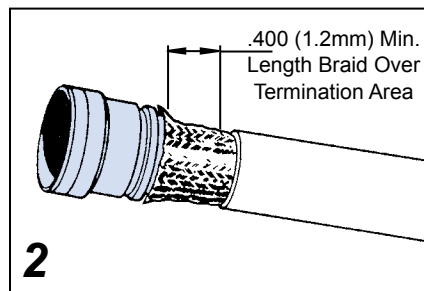
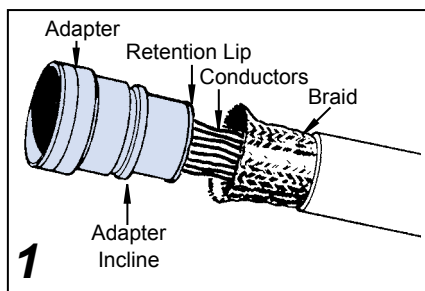
**The 600-061 Hand Micro Banding Tool** weighs 1.18 lbs., and is designed for micro clamping bands 600-057 and 600-083 (see page 36) in a tension range from 50 to 85 lbs. Calibrate at 75lbs  $\pm$  2 lbs. -7 lbs. for most shield terminations. Tool and band should never be lubricated.

Reference: **BAND-IT®** part number A30199.



## The **BAND-IT**® Clamping System EMI Shield Termination Instructions

1. Prepare cable braid for termination process (Figure 1).
2. Push braid forward over adapter retention lip to the adapter incline point (or .4" [10.2mm] minimum braid length). Milk braid as required to remove slack and ensure a snug fit around the shield termination area (Figure 2).

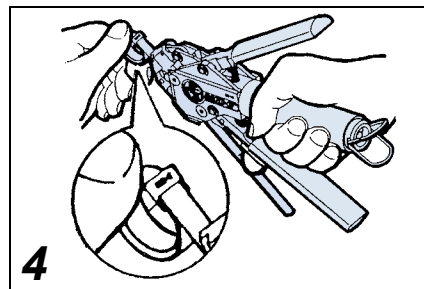
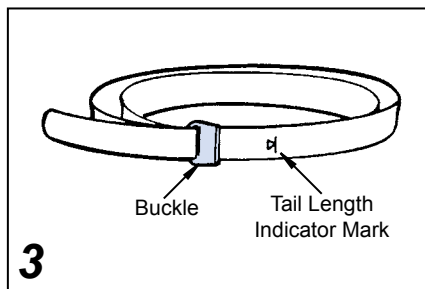


3. Prepare the band in the following manner:

**IMPORTANT:** Due to Connector/Adapter circumference, it may be necessary to prepare the band around the cable or retention area.

A. Roll band through the buckle slot twice (bands must be double-coiled).

B. Pull on band until mark ( >| ) is within approximately .250 inch (6.4mm) of buckle slot (Figure 3). The band may be tightened further if desired.

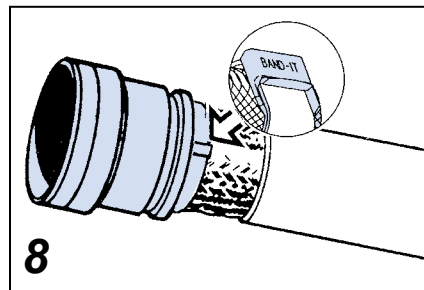
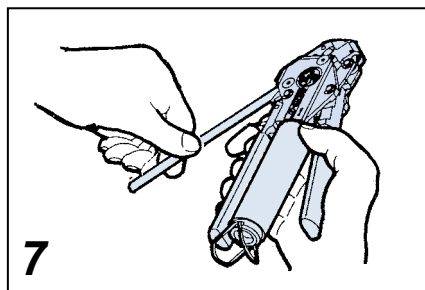
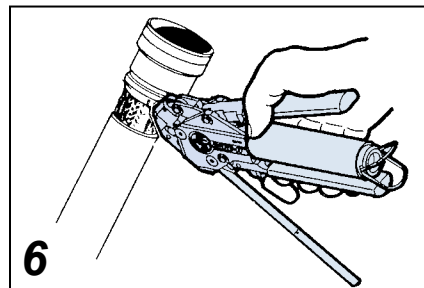
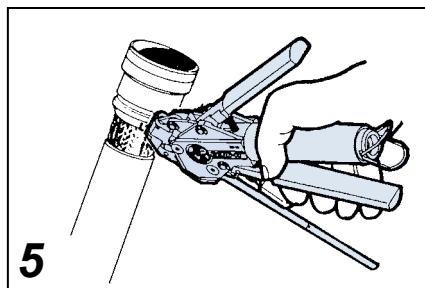


**NOTE:** Prepared band should have ( >| ) mark visible as shown in Figure 3.

### Shield Termination Clamping Process (Figures 4 thru 8)

**NOTE:** To free tool handles, move holding clips to center of tool.

4. Squeeze gripper release lever and insert band into the front end opening of the tool (NOTE: Circular portion of looped band must always face downward).
5. Aligning the band and tool with the shield termination area, squeeze black pull-up handle repeatedly using short strokes until it locks against tool body. (This indicates the band is compressed to the tool precalibrated tension).



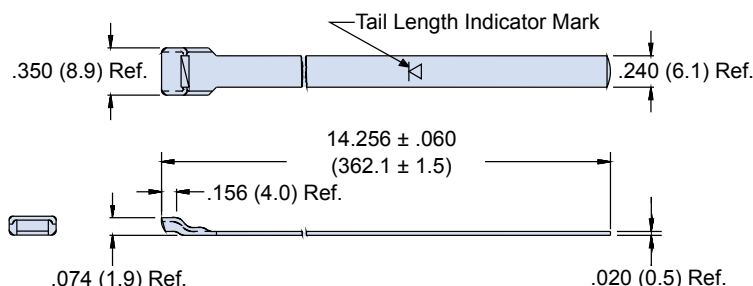
**NOTE:** If alignment of band and shield is unsatisfactory, tension on band can be relaxed by pushing on slotted release lever on top of tool. Make adjustments as necessary and again, squeeze black pull-up handle.

6. Complete the clamping process by squeezing the gray cut-off handle.
7. Remove excess band from tool and dispose.
8. Inspect shield termination.

# 600-052, 600-057, 600-090, and 600-083 The **BAND-IT®** Clamping System Clamping Bands



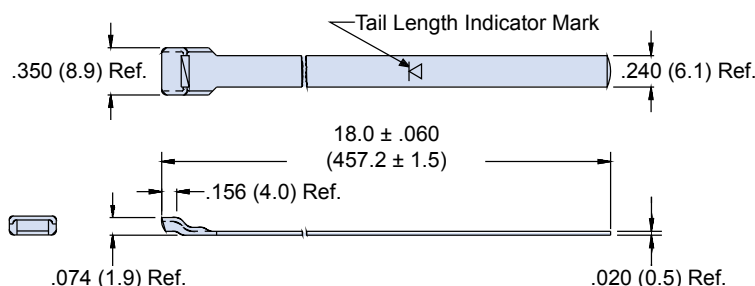
## Standard Band 600-052 and Precoiled Standard Band 600-052-1



**The 600-052 Standard Band** is precision constructed of 300 Series SST/Passivate and designed for use with the 600-058 Hand Banding Tool or the 600-067 Pneumatic Banding Tool. Double-wrapped bands will accommodate diameters up to approximately 1.8 inches (45.7). Bands may be ordered flat (600-052) or precoiled (600-052-1). Bands come bagged and tagged in quantities from 1 to 100.

Reference: **BAND-IT®** Part Number A10086

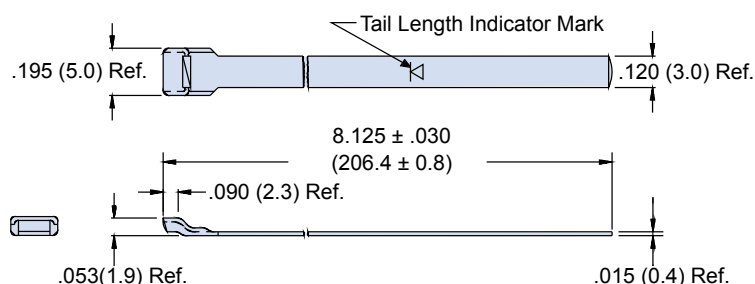
## Extended-Length Standard Band 600-090 and Precoiled Extended-Length Standard Band 600-090-1



**The 600-090 Extended Length Standard Band** is precision constructed of 300 Series SST/Passivate, and designed for use with the 600-058 Hand Banding Tool or the 600-067 Pneumatic Banding Tool. Double-wrapped bands will accommodate diameters up to approximately 2.5 inches (63.5). Bands may be ordered flat (600-090), or precoiled (600-090-1). Bands come bagged and tagged in quantities from 1 to 100.

Reference: **BAND-IT®** Part Number A11086

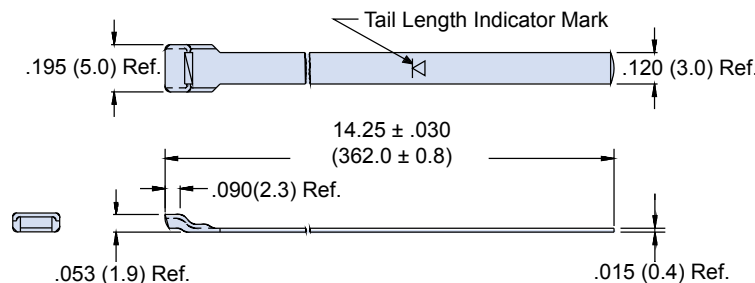
## Micro-Band 600-057 Precoiled Micro-Band 600-057-1



**The 600-057 Micro Band** is precision constructed of 300 Series SST/Passivate, and designed for use with the 600-061 Hand Banding Tool or the 600-068 Pneumatic Banding Tool. Double-wrapped bands will accommodate diameters up to approximately .88 inches (22.4). Bands may be ordered flat (600-057), or precoiled (600-057-1). Bands come bagged and tagged in quantities from 1 to 100.

Reference: **BAND-IT®** Part Number A31186

## Extended Length Micro-Band 600-083 Precoiled Micro-Band 600-083-1



**The 600-083 Extended Length Micro-Band** is precision constructed of 300 Series SST/Passivate, and designed for use with the 600-061 Hand Banding Tool or the 600-068 Pneumatic Banding Tool. Double-wrapped bands will accommodate diameters up to approximately 1.88 inches (47.8). Bands may be ordered flat (600-083), or precoiled (600-083-1). Bands come bagged and tagged in quantities from 1 to 100.

Reference: **BAND-IT®** Part Number A31089.

Metric dimensions (mm) are indicated in parentheses. Consult factory for diameters above 2.5 inches (63.5).

# 319-064

## Composite Swing-Arm Backshell with Shield Sock and Self-Locking Rotatable Coupling

### CONNECTOR DESIGNATOR:

|          |                                                             |
|----------|-------------------------------------------------------------|
| <b>A</b> | MIL-DTL-5015, -26482 Series II, and -83723 Series I and III |
| <b>F</b> | MIL-DTL-38999 Series I, II (see note 3)                     |
| <b>H</b> | MIL-DTL-38999 Series III and IV                             |

**SELF-LOCKING**

**ROTATABLE COUPLING**

### Finish Symbol

(See Table III)

### Product Series

**319** - EMI/RFI Shield  
Sock Assemblies

### Basic Part Number

**319**

**H**

**064**

**XO**

**15**

**B**

**R**

**14**

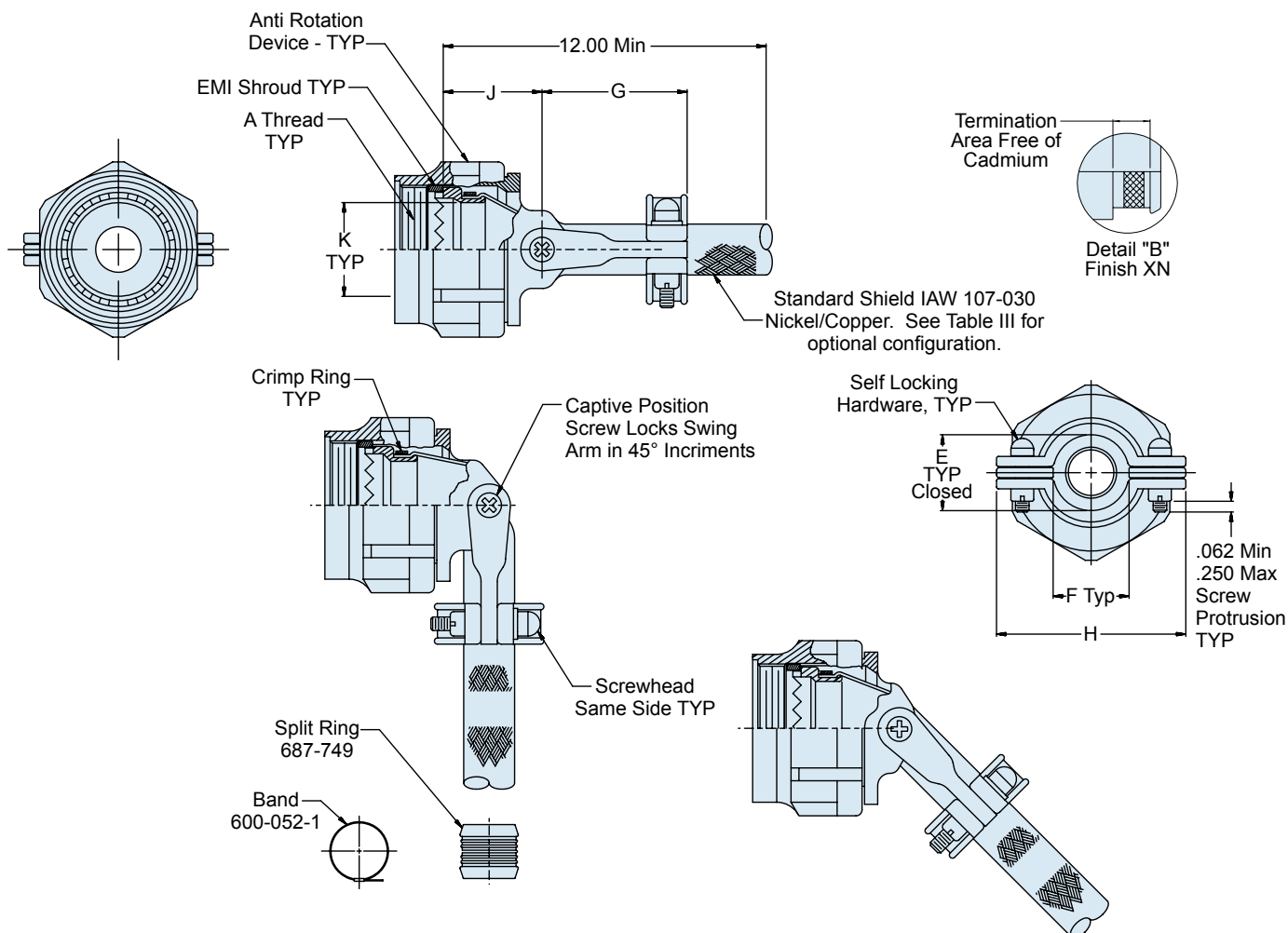
Connector Designator  
*A, F, and H*

Optional Braid  
Material  
Omit for Standard  
(See Table IV)

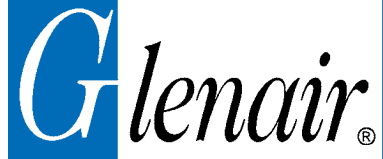
### Split Ring / Band Option

Split Ring (687-749) and Band  
(600-052-1) supplied with **R** option  
(Omit for none)

Custom Braid Length  
Specify In Inches  
(Omit for Std. 12" Length)



# 319-064 Composite Swing-Arm Backshell with Shield Sock and Self-Locking Rotatable Coupling



Composite  
Backshells

A

TABLE II: SHELL SIZE

| Shell Size |    | E<br>± .031 | F<br>Min.  | G<br>Max.   | H<br>Max.   | J<br>± .06  | K Min.<br>(H Code) | K Min.<br>(A Code) | K Min.<br>(F Code) |
|------------|----|-------------|------------|-------------|-------------|-------------|--------------------|--------------------|--------------------|
| A, F       | H  |             |            |             |             |             |                    |                    |                    |
| 08         | 09 | .265 (6.7)  | .22 (5.6)  | 1.06 (26.9) | .98 (24.9)  | .94 (23.9)  | .264 (6.7)         | .265 (6.7)         | .275 (7.0)         |
| 10         | 11 | .310 (7.9)  | .27 (6.9)  | 1.09 (27.7) | 1.05 (26.7) | .97 (24.6)  | .390 (9.9)         | .370 (9.4)         | .412 (10.5)        |
| 12         | 13 | .390 (9.9)  | .35 (8.9)  | 1.18 (30.0) | 1.20 (30.5) | 1.03 (26.2) | .504 (12.8)        | .506 (12.9)        | .526 (13.4)        |
| 14         | 15 | .506 (12.9) | .47 (11.9) | 1.24 (31.5) | 1.30 (33.0) | 1.09 (27.7) | .630 (16.0)        | .580 (14.7)        | .657 (16.7)        |
| 16         | 17 | .591 (15.0) | .55 (14.0) | 1.32 (33.5) | 1.44 (36.6) | 1.12 (28.4) | .756 (19.2)        | .705 (17.9)        | .776 (19.7)        |
| 18         | 19 | .661 (16.8) | .62 (15.7) | 1.39 (35.3) | 1.56 (39.6) | 1.15 (29.2) | .843 (21.4)        | .784 (19.9)        | .872 (22.1)        |
| 20         | 21 | .744 (18.9) | .70 (17.8) | 1.49 (37.8) | 1.69 (42.9) | 1.18 (30.0) | .969 (24.6)        | .909 (23.1)        | 1.007 (25.6)       |
| 22         | 23 | .826 (21.0) | .78 (19.8) | 1.55 (39.4) | 1.77 (45.0) | 1.25 (31.8) | 1.091 (27.7)       | 1.034 (26.3)       | 1.132 (28.8)       |
| 24         | 25 | .896 (22.8) | .85 (21.6) | 1.61 (40.9) | 1.89 (48.0) | 1.28 (32.5) | 1.217 (30.9)       | 1.149 (29.2)       | 1.257 (31.9)       |

TABLE III: FINISH

| Symbol     | Finish                                                                                                                                |
|------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>XB</b>  | Composite Material—No Plating, Color Black, Brass Interface Shroud and Adapter—Nickel Plated                                          |
| <b>XMT</b> | 2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer.<br><i>1000 Hour Grey™</i>                                         |
| <b>XN</b>  | Composite Material—No Plating, Color Black and Brown, Brass Interface Shroud and Adapter—Selectively Cadmium Plated<br>(See Detail B) |
| <b>XO</b>  | Composite Material—No Plating, Color Black and Brown, Brass Interface Shroud and Adapter—Nickel Plated                                |

TABLE IV: BRAID TYPE

| Symbol   | Braid Type                 |
|----------|----------------------------|
| A        | 100% AmberStrand®          |
| B        | 75%/25% AmberStrand® Blend |
| L        | 100% ArmorLite™            |
| Standard | Nickel/Copper 34awg        |
| T        | Tin/Copper 34awg           |

## NOTES

- See Table I in Intro for front-end dimensional details.
- See composite thermoplastic shield sock assembly procedure for detailed installation instructions.
- Add mod code -475 to end of part number for use with Series II connectors. Backshell to be supplied less shroud.
- Coupling nut supplied unplated.



# 319-065 Self-Locking Rotatable Coupling Composite Swing-Arm Strain Relief with Composite EMI/RFI Shield Sock & Optional Split Ring

## CONNECTOR DESIGNATOR:

**A** - MIL-DTL-5015 / -26482 / -83723  
**F** - MIL-DTL-38999 Series I, II  
**H** - MIL-DTL-38999 Series III and IV

**SELF-LOCKING**

**ROTATABLE  
COUPLING**

Connector Designator  
(A, F and H)

Product  
Series

**319**

Basic  
Number

**065**

Shell Size  
(See Table I)

**16**

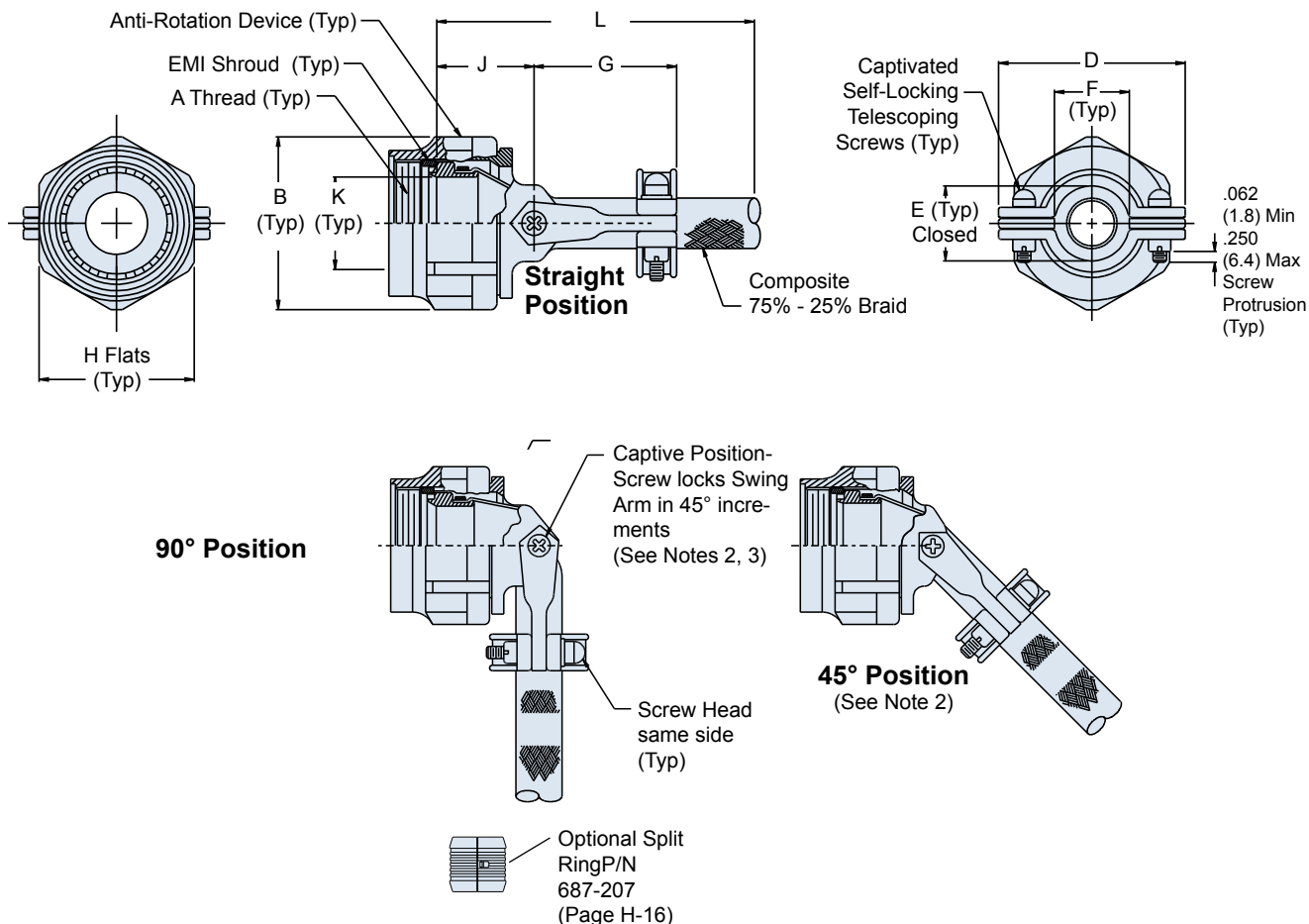
**R**

Finish Symbol  
(See Table III)

**XO**

Termination  
**R** - Split Ring (687-207)  
and Band (600-052)  
Supplied  
(Omit if Not Required)

U.S. PATENT NO. 6419519





**319-065**  
**Self-Locking Rotatable Coupling**  
**Composite Swing-Arm Strain Relief with**  
**Composite EMI/RFI Shield Sock & Optional Split Ring**



**See Page H-2 for Table I: Backshell Interface Dimensions**

**TABLE I: CONNECTOR SHELL SIZE ORDER NUMBER**

| Shell Size for Connector Designator* B Dia |    |    |              |              |             |             |              |              |              |              |              |                |     |     |
|--------------------------------------------|----|----|--------------|--------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|----------------|-----|-----|
| A                                          | F  | H  | Max          | D            | Max         | E           | ±.06 (1.5)   | F            | Min          | G            | Max          | H Flats        | Max | Min |
| 08                                         | 08 | 09 | .812 (20.6)  | .980 (24.9)  | .265 (6.7)  | .220 (5.9)  | 1.060 (26.9) | .750 (19.1)  | .736 (18.7)  | .940 (23.9)  | .265 (6.7)   | 7.000 (177.8)  |     |     |
| 10                                         | 10 | 11 | .938 (23.8)  | 1.050 (26.7) | .310 (7.9)  | .270 (6.9)  | 1.090 (27.7) | .875 (22.2)  | .860 (21.8)  | .970 (24.6)  | .370 (9.4)   | 7.000 (177.8)  |     |     |
| 12                                         | 12 | 13 | 1.125 (28.6) | 1.200 (30.5) | .390 (9.9)  | .350 (8.9)  | 1.180 (30.0) | 1.000 (25.4) | .980 (24.9)  | 1.030 (26.2) | .506 (12.9)  | 7.000 (177.8)  |     |     |
| 14                                         | 14 | 15 | 1.250 (31.8) | 1.300 (33.0) | .506 (12.9) | .470 (11.9) | 1.240 (31.5) | 1.125 (28.6) | 1.100 (27.9) | 1.090 (27.7) | .580 (14.7)  | 9.000 (228.6)  |     |     |
| 16                                         | 16 | 17 | 1.375 (34.9) | 1.440 (36.6) | .591 (15.0) | .550 (14.0) | 1.320 (33.5) | 1.250 (31.8) | 1.224 (31.1) | 1.120 (28.4) | .705 (17.9)  | 11.000 (279.4) |     |     |
| 18                                         | 18 | 19 | 1.500 (38.1) | 1.560 (39.6) | .661 (16.8) | .620 (15.7) | 1.390 (35.3) | 1.375 (34.9) | 1.469 (37.3) | 1.150 (29.2) | .784 (19.9)  | 11.000 (279.4) |     |     |
| 20                                         | 20 | 21 | 1.625 (41.3) | 1.690 (42.9) | .744 (18.9) | .700 (17.8) | 1.550 (39.4) | 1.500 (38.1) | 1.500 (38.1) | 1.180 (30.0) | .909 (23.1)  | 11.000 (279.4) |     |     |
| 22                                         | 22 | 23 | 1.750 (44.5) | 1.770 (45.0) | .826 (21.0) | .780 (19.8) | 1.550 (39.4) | 1.625 (41.3) | 1.581 (40.2) | 1.250 (31.8) | 1.034 (26.3) | 11.000 (279.4) |     |     |
| 24                                         | 24 | 25 | 1.875 (47.6) | 1.890 (48.0) | .896 (22.8) | .850 (21.6) | 1.610 (40.9) | 1.750 (44.5) | 1.960 (49.8) | 1.280 (32.5) | 1.149 (29.2) | 11.000 (279.4) |     |     |

\*\*Consult factory for additional entry sizes available.

**TABLE II: FINISHES**

| Symbol      | Finish                                                                                                                 |
|-------------|------------------------------------------------------------------------------------------------------------------------|
| <b>XB</b>   | Composite Material, No Plating, Color Black, Brass Interface Shroud and Adapter - Nickel Plated                        |
| <b>XMT*</b> | Ni-PTFE 1000 Hour Grey™ (Nickel-Fluorocarbon Polymer)                                                                  |
| <b>XN</b>   | Composite Material, No Plating, Color Black and Brown, Brass Interface Shroud and Adapter - Selectively Cadmium Plated |
| <b>XO</b>   | Composite Material, No Plating, Color Black and Brown, Brass Interface Shroud and Adapter - Nickel Plated              |
| <b>XW*</b>  | Cadmium Olive Drab over Electroless Nickel                                                                             |

\* Note: Coupling Nut, Saddle Bars and Arms supplied unplated.

**APPLICATION NOTES**

- Glenair series 600 Backshell assembly Tools are recommended for assembly and installation.
- Swing Arm locks in 45° increments—Sizes 08 thru 24, additional positioning increments are manufacturer's option.
- Captive Screw remains engaged to the body when positioning the Arm. When tightened, the Screw shall not protrude into the inside surfaces.
- Fits Connector Designators: MIL-DTL-38999 Series I, II (F), MIL-DTL-38999 Series III and IV (H), MIL-DTL-5015 (A), and MIL-DTL-26482 (A)

Metric dimensions (mm) are in parentheses and are for reference only.

# 319-138 "Wide Mouth" Composite Swing-Arm Strain Relief with Shield Sock and Self-Locking Rotatable Coupling

## CONNECTOR DESIGNATOR:

**A** MIL-DTL-5015, -26482 Series II, and  
-83723 Series I and III

**F** MIL-DTL-38999 Series I, II (see note 3)

**H** MIL-DTL-38999 Series III and IV

**SELF-LOCKING**

**ROTATABLE COUPLING**

**LOW PROFILE**

**Product Series**  
319 - EMI/RFI Shield  
Sock Assemblies

**Finish Symbol**  
(See Table III)

**Custom Braid Length**  
Specify In Inches  
(Omit for Std. 12" Length)

**Connector Designator**  
A, F, and H

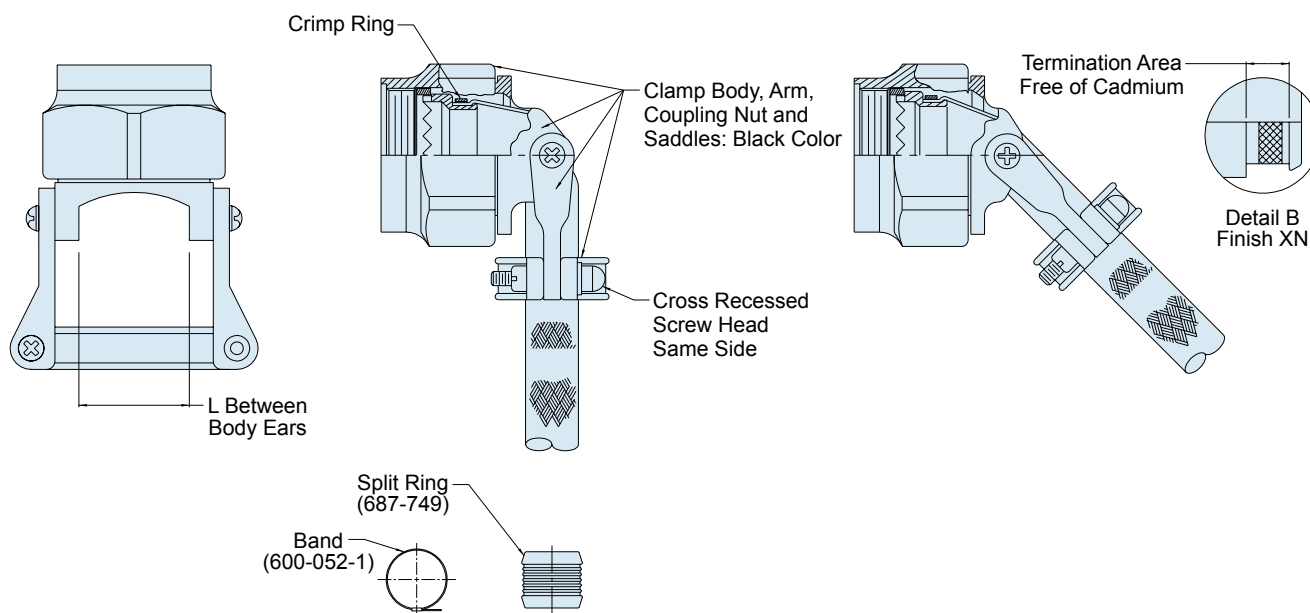
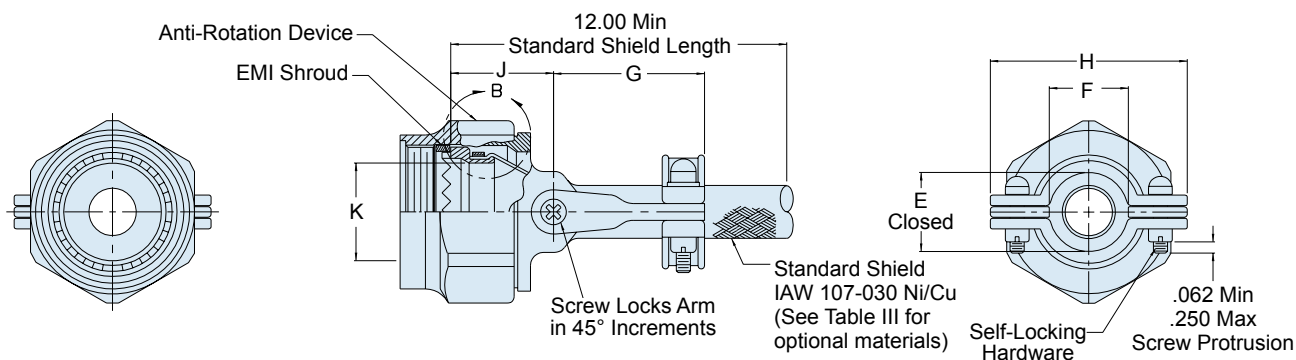
**Optional Braid Material**  
B - See Table IV for Options  
(Omit for Std. Nickel/Copper)

**319 H 138 XO 15 B R 8**

**Basic Part  
Number**

**Connector  
Shell Size**  
(See Table II)

**Split Ring / Band Option**  
Split Ring (687-749) and Band  
(600-052-1) supplied with **R** option  
(Omit for none)



**319-138**  
**"Wide Mouth" Composite Swing-Arm Strain Relief**  
**with Shield Sock and**  
**Self-Locking Rotatable Coupling**



Composite  
Backshells

**TABLE II: SHELL SIZE**

| Shell Size |    | E<br>± .031  | F<br>Min     | G<br>Max<br>± .06 | H<br>± .060  | J<br>Max    | L<br>Max     | K<br>Diameter |              |              |
|------------|----|--------------|--------------|-------------------|--------------|-------------|--------------|---------------|--------------|--------------|
| A, F       | H  |              |              |                   |              |             |              | A Code        | F Code       | H Code       |
| 08         | 09 | .350 (8.9)   | .350 (8.9)   | 1.045 (26.5)      | .936 (23.8)  | .94 (23.9)  | .393 (10.0)  | .265 (6.7)    | .275 (7.0)   | .264 (6.7)   |
| 10         | 11 | .436 (11.1)  | .455 (11.6)  | 1.045 (26.5)      | 1.172 (29.8) | .97 (24.6)  | .455 (11.6)  | .370 (9.4)    | .412 (10.5)  | .390 (9.9)   |
| 12         | 13 | .636 (16.2)  | .640 (16.3)  | 1.170 (29.7)      | 1.406 (35.7) | 1.03 (26.2) | .598 (15.2)  | .506 (12.9)   | .526 (13.4)  | .504 (12.8)  |
| 14         | 15 | .706 (17.9)  | .710 (18.0)  | 1.170 (29.7)      | 1.500 (38.1) | 1.09 (27.7) | .710 (18.0)  | .580 (14.7)   | .651 (16.5)  | .630 (16.0)  |
| 16         | 17 | .790 (20.1)  | .835 (21.2)  | 1.295 (32.9)      | 1.562 (39.7) | 1.12 (28.4) | .839 (21.3)  | .705 (17.9)   | .776 (19.7)  | .756 (19.2)  |
| 18         | 19 | .872 (22.1)  | .922 (23.4)  | 1.295 (32.9)      | 1.687 (42.8) | 1.15 (29.2) | .934 (23.7)  | .784 (19.9)   | .872 (22.1)  | .843 (21.4)  |
| 20         | 21 | .996 (25.3)  | 1.008 (25.6) | 1.467 (39.5)      | 1.969 (50.0) | 1.18 (30.0) | 1.068 (27.1) | .909 (23.1)   | 1.007 (25.6) | .969 (24.6)  |
| 22         | 23 | 1.060 (26.9) | 1.197 (30.4) | 1.467 (39.5)      | 2.094 (53.2) | 1.25 (31.8) | 1.197 (30.4) | 1.034 (1.034) | 1.132 (28.8) | 1.091 (27.7) |
| 24         | 25 | 1.123 (28.5) | 1.323 (33.6) | 1.461 (37.1)      | 2.281 (57.9) | 1.28 (32.5) | 1.323 (33.6) | 1.149 (29.2)  | 1.257 (31.9) | 1.217 (30.9) |

**A**

**TABLE III: FINISH**

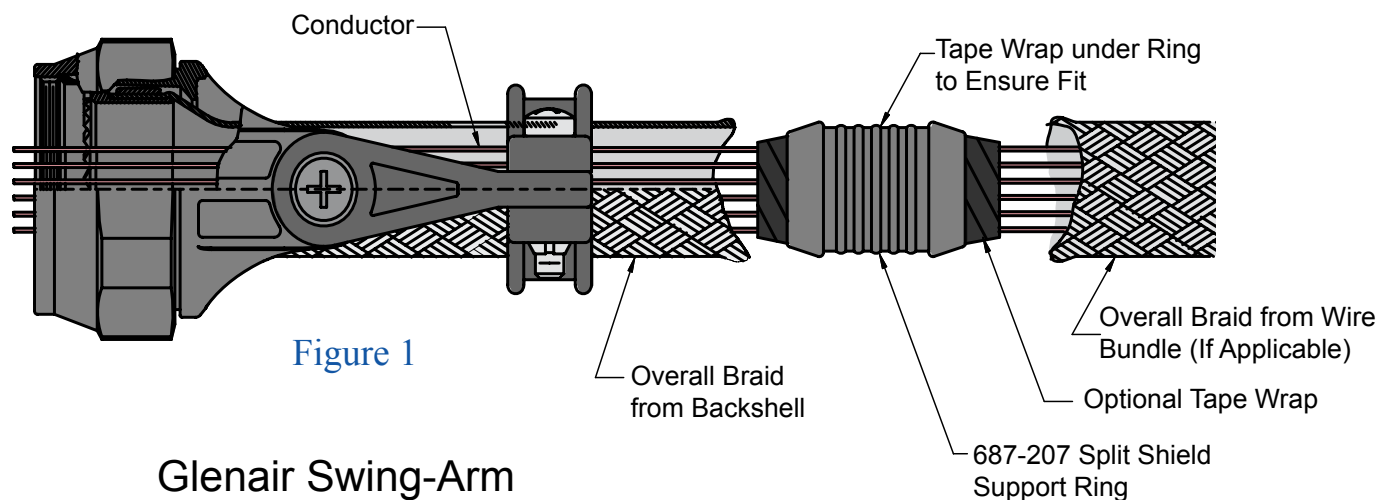
| Symbol     | Finish                                                                                                                             |
|------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>XB</b>  | Composite Material—No Plating, Color Black, Brass Interface Shroud and Adapter—Nickel Plated                                       |
| <b>XMT</b> | 2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. 1000 Hour Grey™                                                |
| <b>XN</b>  | Composite Material—No Plating, Color Black and Brown, Brass Interface Shroud and Adapter—Selectively Cadmium Plated (See Detail B) |

**TABLE IV: BRAID TYPE**

| Symbol          | Braid Type                 |
|-----------------|----------------------------|
| <b>A</b>        | 100% AmberStrand®          |
| <b>B</b>        | 75%/25% AmberStrand® Blend |
| <b>L</b>        | 100% ArmorLite™            |
| <b>Standard</b> | Nickel/Copper 34awg        |
| <b>T</b>        | Tin/Copper 34awg           |

**NOTES**

1. See Table I in Intro for front-end dimensional details.
2. See composite thermoplastic shield sock assembly procedure for detailed installation instructions.
3. Add mod code -475 to end of part number for use with Series II connectors. Backshell to be supplied less shroud.
4. Coupling nut supplied unplated.

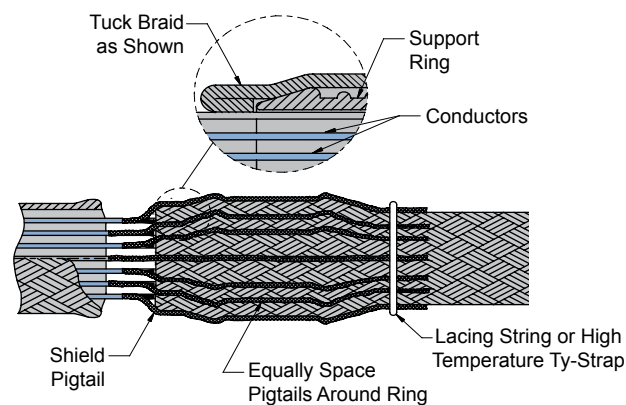
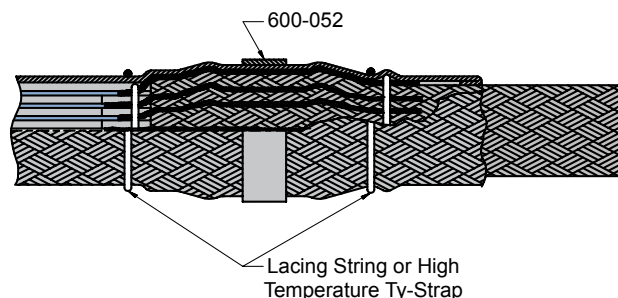


## Glenair Swing-Arm Offers Extremely Fast and Trouble-Free Termination of EMI Shielding:

Choose Straight, 45° or 90° angle, and tighten screws to lock arms in place. Leave the saddle clamp hardware loose.

Next, insert the wire bundle into the backshell to determine if the braid transition angle from the backshell to wire bundle is less than 45°. If it is less than 45°, build up the wire bundle with tape and re-insert wire bundle into backshell to support the transition of overall braid from the backshell to the wire bundle.

Loosely assembly the adapter to the connector and push back the backshell braid. Insert the wire bundle into the adapter and bottom it against the connector. Holding the cable, mark or tag the location where the shield support ring (Glenair Part Number 687-207) will be located. This distance may vary depending on your technique and the flexibility of the wire bundle immediately to the rear of the saddles (Figure 1).



# Composite Thermoplastic User Adjustable Swing-Arm Assembly Technical Information

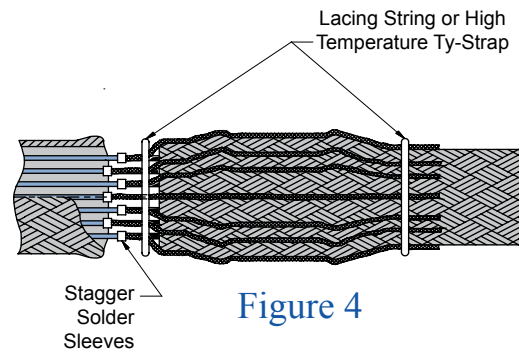
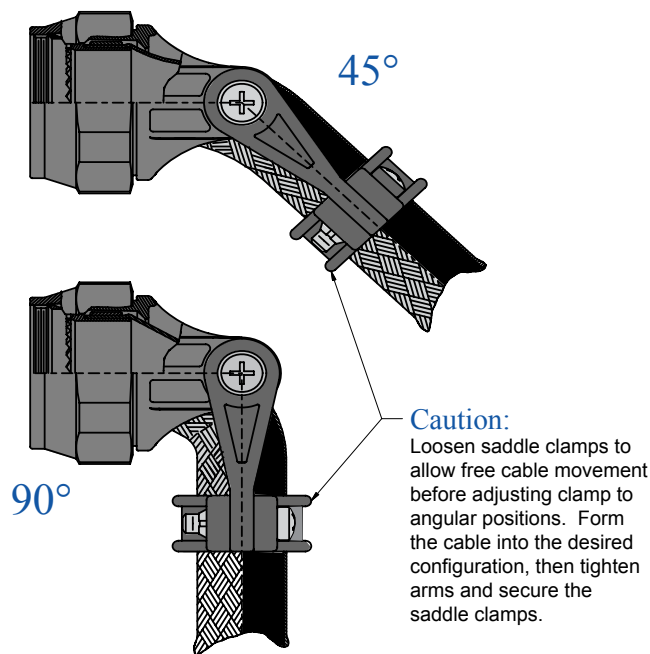


Figure 4

At the marked location, near the shield support ring, wrap tape around wire bundle for snug fit of shield support ring (Figure 1). Tape wrap is optional.

You can then slide the overall braid from the wire bundle side over the shield support ring, trimming braid ends and tucking extra braid underneath itself for a clean appearance.

For pin connectors, slide the backshell forward, and hand tighten backshell to connector. Then, evenly space shield pigtails (Figure 3) or solder sleeve pigtails (Figure 4) around the shield support ring. Cut the pigtails so that the end of the pigtails slightly beyond end of shield support ring.

Bring the shield sock from backshell and completely cover the pigtails and support ring. Trim and fold the braid as shown in Figure 2. Lace tie the shield adjacent to support ring ends.

Install Glenair's *Band-it*® band (600-052) between the lace ties onto the center of the support ring as shown in Figure 2. The hand banding tool (600-058) or pneumatic banding tool (600-067) is used for this banding process.

Next, you can wrap the shield support ring assembly with high temperature tape. Place lacing cord, high temperature tape, or high temperature plastic Ty-Straps on the braid transition to the rear of the backshell to secure the overbraid on wire bundle. If you wish, you can cover the overbraid with 102-080 braid sock.

Tighten the adapter to the connector using Glenair 600-091 composite hex coupling torque wrench and related tooling accessories to established torque values. Secure the strain relief saddle onto the wire bundle using TG69 soft jaw pliers. Torque the saddle screws to established values. You can use Teflon tape wrap or M85049/127 bushing strip as needed to cushion the braid sock under the saddle clamps.

With these few steps, your Swing-Arm strain relief installation is complete!

# 380-107

## EMI/RFI Non-Environmental Backshell with Strain Relief

### Type D - Self-Locking - Rotatable Coupling - Split Shell

## CONNECTOR DESIGNATOR:

**A** - MIL-DTL-5015 / -26482 / -83723  
**F** - MIL-DTL-38999 Series I, II  
**H** - MIL-DTL-38999 Series III and IV

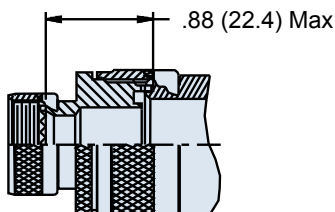
SELF-LOCKING

ROTATABLE  
COUPLING

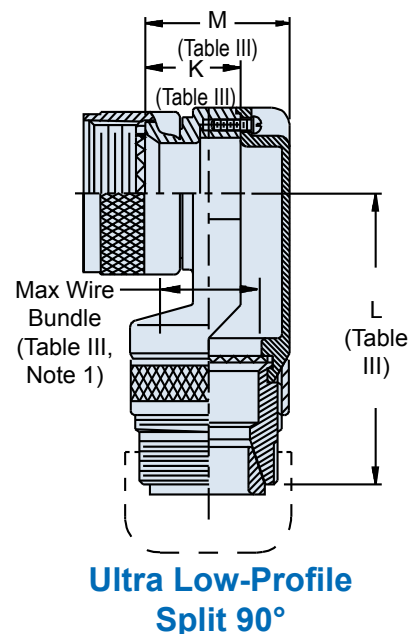
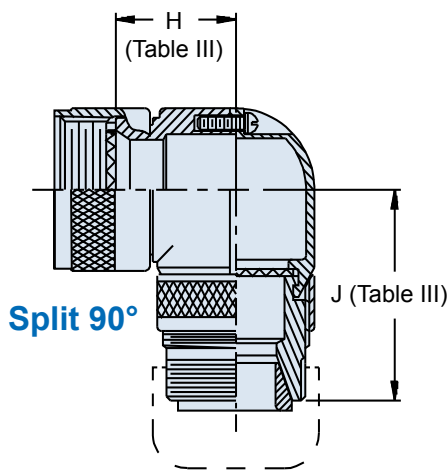
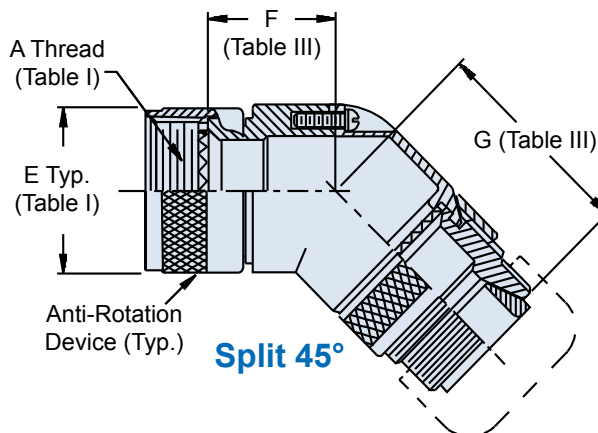
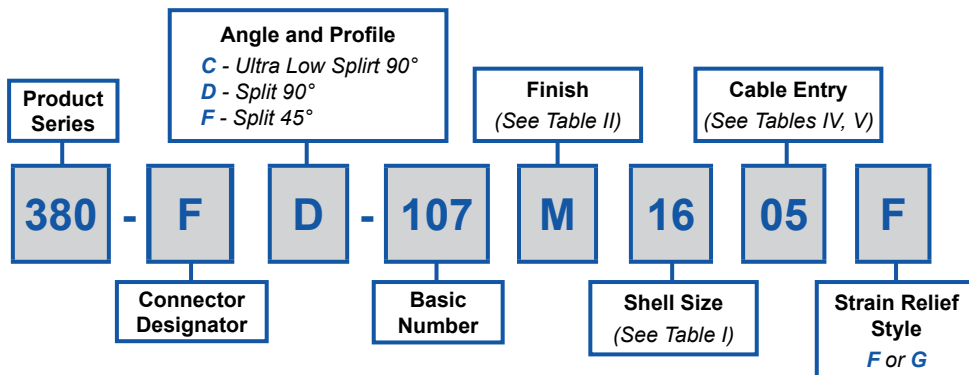
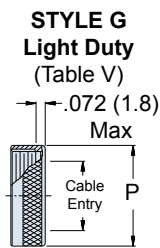
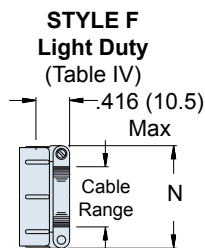
SPLIT SHELL

ULTRA-LOW PROFILE

TYPE D INDIVIDUAL  
OR OVERALL  
SHIELD TERMINATION



**STYLE 2**  
(See Note 1)





**380-107**  
**EMI/RFI Non-Environmental Backshell**  
**with Strain Relief**  
**Type D - Self-Locking - Rotatable Coupling - Split Shell**



See Page H-2 for Table I: Backshell Interface Dimensions

| TABLE II: FINISHES |                                                      |
|--------------------|------------------------------------------------------|
| Symbol             | Finish                                               |
| B                  | Cadmium Plate, Olive Drab                            |
| M                  | Electroless Nickel                                   |
| NF                 | Cadmium Plate, Olive Drab<br>over Electroless Nickel |
| MT                 | Nickel Fluorocarbon polymer (Ni-PTFE)                |

| TABLE III: DIMENSIONS |              |              |              |              |             |              |              |                            |
|-----------------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------|----------------------------|
| Shell Size            | F Max        | G Max        | H Max        | J Max        | K Max       | L Max        | M Max        | Function C Max Wire Bundle |
| 08/09                 | .596 (15.1)  | 1.730 (43.9) | .836 (21.2)  | 1.670 (42.4) | .496 (12.6) | 1.920 (48.8) | .837 (21.3)  | .250 (6.4)                 |
| 10/11                 | .656 (16.7)  | 1.785 (45.3) | .906 (23.0)  | 1.725 (43.8) | .426 (10.8) | 2.080 (52.8) | .887 (22.5)  | .375 (9.5)                 |
| 12/13                 | .716 (18.2)  | 1.855 (47.1) | .966 (24.5)  | 1.795 (45.6) | .426 (10.8) | 2.080 (52.8) | .887 (22.5)  | .375 (9.5)                 |
| 14/15                 | .776 (19.7)  | 1.887 (47.9) | 1.026 (26.1) | 1.827 (46.4) | .436 (11.1) | 2.150 (54.6) | .987 (25.1)  | .500 (12.7)                |
| 16/17                 | .836 (21.2)  | 1.987 (50.5) | 1.086 (27.6) | 1.927 (48.9) | .576 (14.6) | 2.200 (55.9) | 1.137 (28.9) | .625 (15.9)                |
| 18/19                 | .906 (23.0)  | 2.045 (51.9) | 1.156 (29.4) | 1.985 (50.4) | .796 (20.2) | 2.230 (56.6) | 1.337 (34.0) | .625 (15.9)                |
| 20/21                 | .976 (24.8)  | 2.106 (53.5) | 1.216 (30.9) | 2.046 (52.0) | .796 (20.2) | 2.230 (56.6) | 1.337 (34.0) | .625 (15.9)                |
| 22/23                 | 1.036 (26.3) | 2.167 (55.0) | 1.276 (32.4) | 2.107 (53.5) | .696 (17.7) | 2.380 (60.5) | 1.337 (34.0) | .750 (19.1)                |
| 24/25                 | 1.096 (27.8) | 2.225 (56.5) | 1.336 (33.9) | 2.165 (55.0) | .696 (17.7) | 2.380 (60.5) | 1.337 (34.0) | .750 (19.1)                |

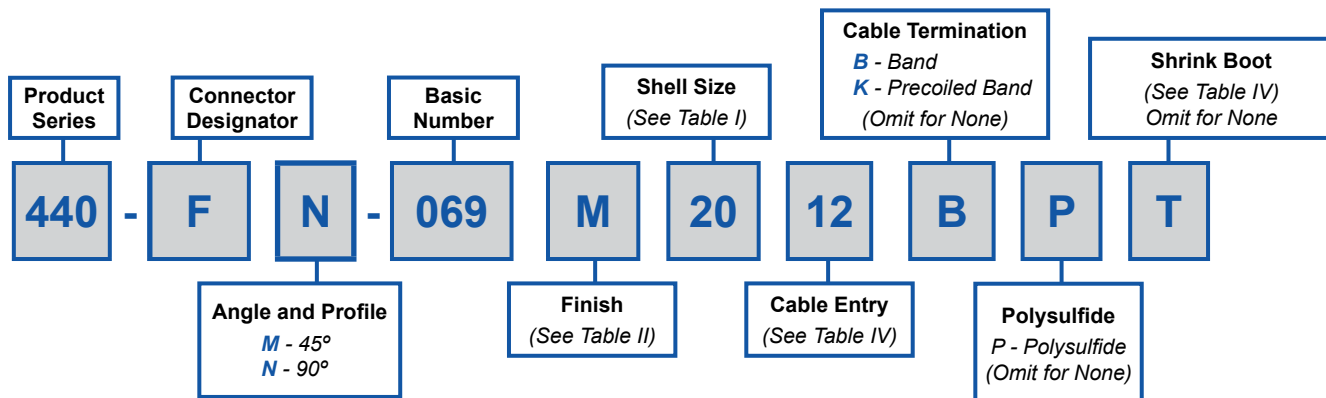
| TABLE IV: CABLE ENTRY |              |              |              |
|-----------------------|--------------|--------------|--------------|
| Dash No.              | N Max        | Cable Range  |              |
|                       |              | Min          | Max          |
| 02                    | .968 (24.6)  | .125 (3.2)   | .250 (6.4)   |
| 03                    | 1.046 (26.6) | .250 (6.4)   | .375 (9.5)   |
| 04                    | 1.156 (29.4) | .312 (7.9)   | .500 (12.7)  |
| 05                    | 1.218 (30.9) | .437 (11.1)  | .625 (15.9)  |
| 06                    | 1.343 (34.1) | .562 (14.3)  | .750 (19.1)  |
| 07                    | 1.468 (37.3) | .687 (17.4)  | .875 (22.2)  |
| 08                    | 1.593 (40.5) | .812 (20.6)  | 1.000 (25.4) |
| 10                    | 1.843 (46.8) | 1.062 (27.0) | 1.250 (31.8) |

| TABLE V: CABLE ENTRY |              |                 |
|----------------------|--------------|-----------------|
| Dash No.             | P Max        | Cable Entry Max |
|                      |              |                 |
| 01                   | .656 (16.7)  | .125 (3.2)      |
| 02                   | .781 (19.8)  | .250 (6.4)      |
| 03                   | .906 (23.0)  | .375 (9.5)      |
| 04                   | 1.031 (26.2) | .500 (12.7)     |
| 05                   | 1.156 (29.4) | .625 (15.9)     |
| 06                   | 1.281 (32.5) | .750 (19.1)     |
| 07                   | 1.406 (35.7) | .875 (22.2)     |
| 08                   | 1.531 (38.9) | 1.000 (25.4)    |
| 09                   | 1.656 (42.1) | 1.125 (28.6)    |
| 10                   | 1.781 (45.2) | 1.250 (31.8)    |

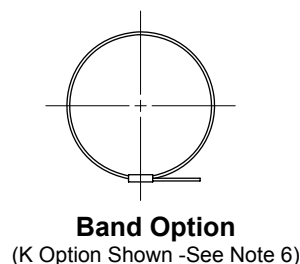
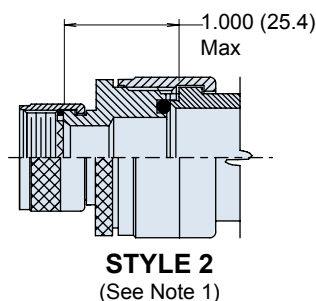
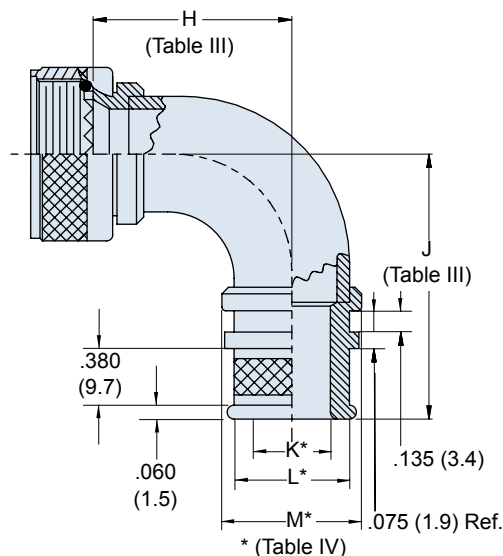
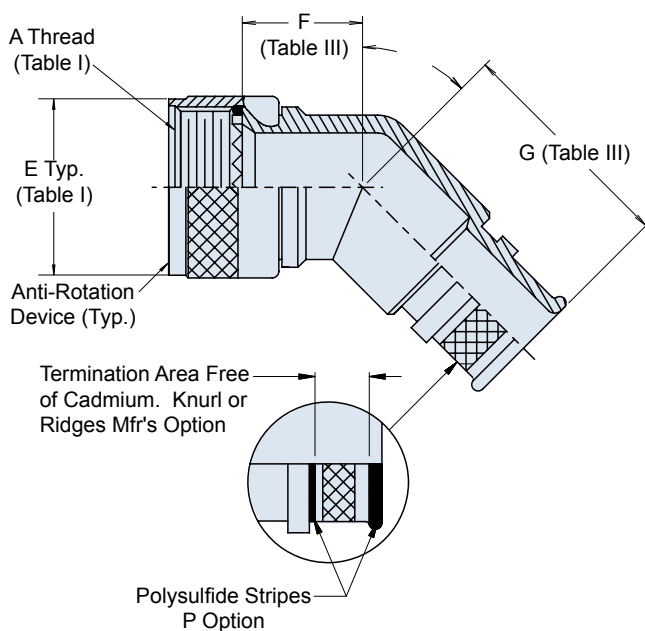
**APPLICATION NOTES**

- When maximum cable entry is exceeded (not available in Function C), Style 2 will be supplied. Dimensions F, G, H and J will not apply. Please consult factory.
- Metric dimensions (mm) are indicated in parentheses.
- Cable range is defined as the accommodations range for the wire bundle or cable. Dimensions shown are not intended for inspection criteria.
- Angular function "C", low-profile split elbow, not available with "S" connector designator.

## 440-069 EMI/RFI Banding and Shrink Boot Adapter Self-Locking Rotatable Coupling - Full Radius Profile



| CONNECTOR DESIGNATOR:      |                                 |
|----------------------------|---------------------------------|
| <b>A</b>                   | MIL-DTL-5015 / -26482 / -83723  |
| <b>F</b>                   | MIL-DTL-38999 Series I, II      |
| <b>H</b>                   | MIL-DTL-38999 Series III and IV |
| <b>SELF-LOCKING</b>        |                                 |
| <b>ROTATABLE COUPLING</b>  |                                 |
| <b>FULL RADIUS PROFILE</b> |                                 |



## See Page H-2 for Table I: Backshell Interface Dimensions

TABLE III: ELBOW DIMENSIONS

| Shell Size<br>Conn. Design. |    | F            | G            | H            | J            |
|-----------------------------|----|--------------|--------------|--------------|--------------|
| A-F-L                       | H  | Max          | Max          | Max          | Max          |
| 08                          | 09 | .968 (24.6)  | 1.017 (25.8) | 1.281 (32.5) | 1.335 (33.9) |
| 10                          | 11 | 1.031 (26.2) | 1.071 (27.2) | 1.406 (35.7) | 1.460 (37.1) |
| 12                          | 13 | 1.094 (27.8) | 1.121 (28.5) | 1.531 (38.9) | 1.585 (40.3) |
| 14                          | 15 | 1.156 (29.4) | 1.175 (29.8) | 1.656 (42.1) | 1.710 (43.4) |
| 16                          | 17 | 1.218 (30.9) | 1.224 (31.1) | 1.781 (45.2) | 1.835 (46.6) |
| 18                          | 19 | 1.250 (31.8) | 1.274 (32.4) | 1.906 (48.4) | 1.960 (49.8) |
| 20                          | 21 | 1.312 (33.3) | 1.328 (33.7) | 2.031 (51.6) | 2.085 (53.0) |
| 22                          | 23 | 1.344 (34.1) | 1.382 (35.1) | 2.156 (54.8) | 2.210 (56.1) |
| 24                          | 25 | 1.406 (35.7) | 1.431 (36.3) | 2.281 (57.9) | 2.335 (59.3) |

1. When maximum cable entry is exceeded, Style 2 will be supplied. Dimensions F, G, H and J will not apply. Please consult factory.
2. Metric dimensions (mm) are indicated in parentheses.
3. Interface O-Ring not supplied with Connector Designator A.
4. Consult factory for shorter lengths on straight backshells.
5. Backshells supplied with 600-052-\* band, see Glenair Series 600 Tool Catalog for installation.

TABLE IV: CABLE ENTRY

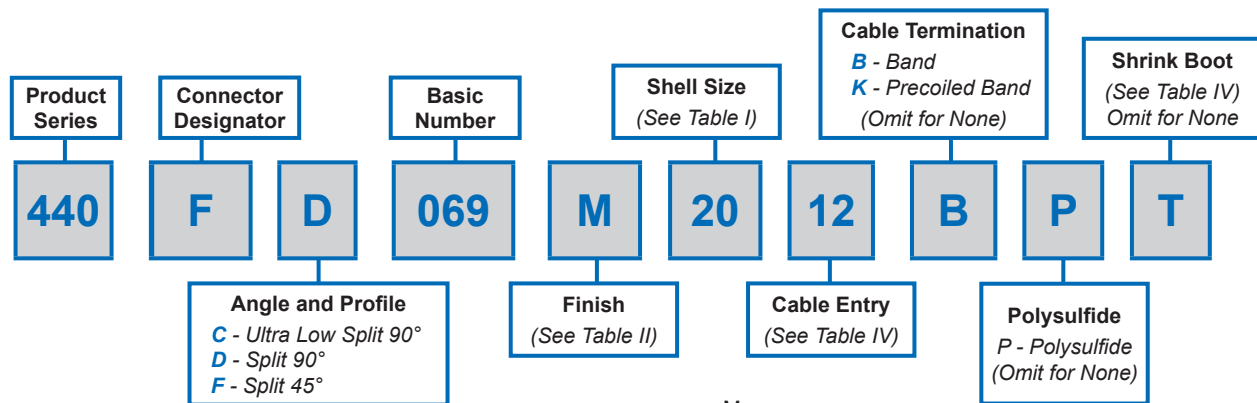
| Dash No. | K            | L            | M            | Shrink Boot* |
|----------|--------------|--------------|--------------|--------------|
| 01       | .125 (3.2)   | .250 (6.4)   | .312 (7.9)   | 770-003S111  |
| 31       | .188 (4.8)   | .312 (7.9)   | .374 (9.5)   | 770-003S111  |
| 02       | .250 (6.4)   | .375 (9.5)   | .437 (11.1)  | 770-003S112  |
| 32       | .312 (7.9)   | .438 (11.1)  | .500 (12.7)  | 770-003S112  |
| 03       | .375 (9.5)   | .500 (12.7)  | .562 (14.3)  | 770-003S112  |
| 33       | .438 (11.1)  | .562 (14.3)  | .624 (15.8)  | 770-001S104  |
| 04       | .500 (12.7)  | .625 (15.9)  | .687 (17.4)  | 770-001S104  |
| 34       | .562 (14.3)  | .688 (17.5)  | .750 (19.1)  | 770-001S104  |
| 05       | .625 (15.9)  | .750 (19.1)  | .812 (20.6)  | 770-001S104  |
| 35       | .688 (17.5)  | .812 (20.6)  | .874 (22.2)  | 770-001S104  |
| 06       | .750 (19.1)  | .875 (22.2)  | .937 (23.8)  | 770-001S105  |
| 36       | .812 (20.6)  | .938 (23.8)  | 1.000 (25.4) | 770-001S105  |
| 07       | .875 (22.2)  | 1.000 (25.4) | 1.062 (27.0) | 770-001S105  |
| 37       | .938 (23.8)  | 1.062 (27.0) | 1.124 (28.5) | 770-001S105  |
| 08       | 1.000 (25.4) | 1.125 (28.6) | 1.187 (30.1) | 770-001S106  |
| 38       | 1.062 (27.0) | 1.188 (30.2) | 1.250 (31.8) | 770-001S106  |
| 09       | 1.125 (28.6) | 1.250 (31.8) | 1.312 (33.3) | 770-001S107  |
| 10       | 1.250 (31.8) | 1.375 (34.9) | 1.437 (36.5) | 770-001S107  |
| 11       | 1.375 (34.9) | 1.500 (38.1) | 1.562 (39.7) | 770-001S107  |
| 12       | 1.500 (38.1) | 1.625 (41.3) | 1.687 (42.8) | 770-001S107  |
| 13       | 1.625 (41.3) | 1.750 (44.5) | 1.812 (46.0) | 770-001S108  |
| 14       | 1.750 (44.5) | 1.875 (47.6) | 1.937 (49.2) | 770-001S108  |
| 15       | 1.875 (47.6) | 2.000 (50.8) | 2.062 (52.4) | 770-001S109  |
| 16       | 2.000 (50.8) | 2.125 (54.0) | 2.187 (55.5) | 770-001S109  |

\* Shrink Boot Supplied with "T" Option  
(see Part Number Development)

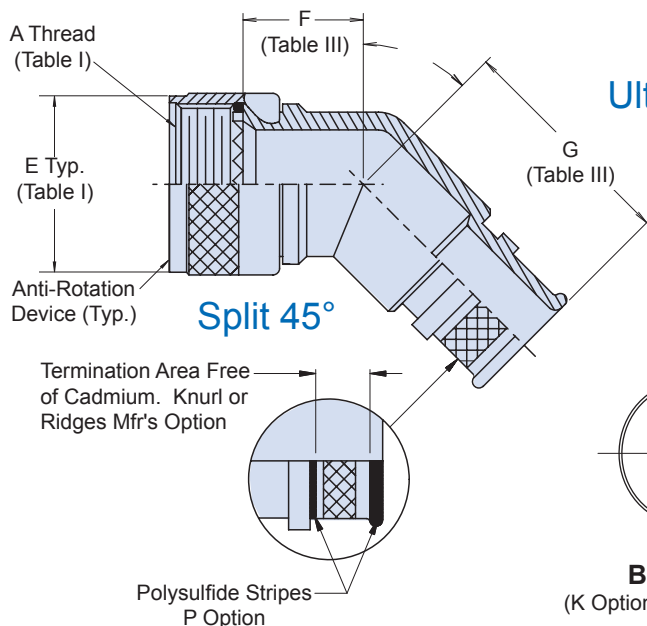
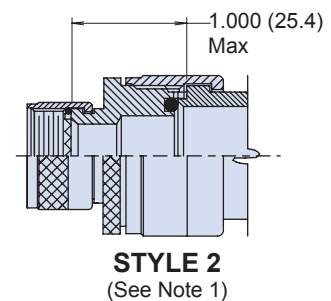
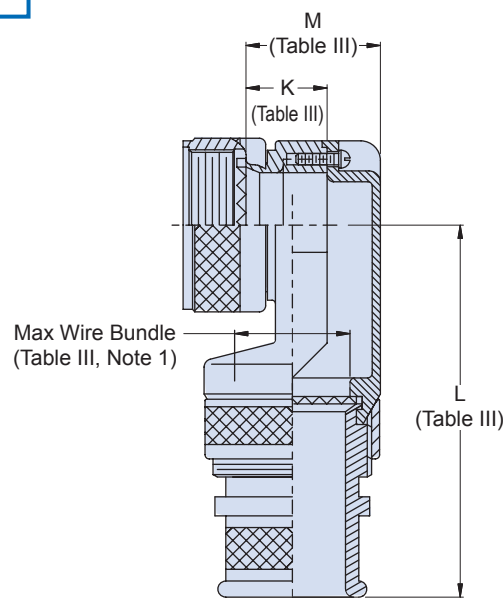
TABLE II: FINISHES

| Glenair Symbol | Finish                                                 |
|----------------|--------------------------------------------------------|
| B              | Cadmium Plate, Olive Drab                              |
| M              | Electroless Nickel                                     |
| NF             | Cadmium Plate, Olive Drab over Electroless Nickel      |
| MT             | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |

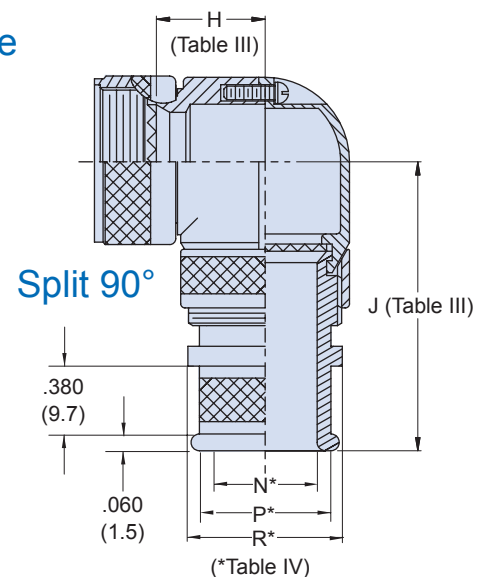
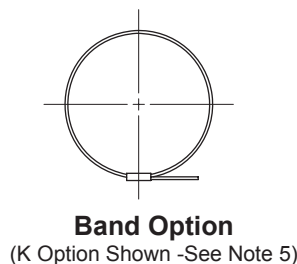
Consult Factory for Additional Finish Options



| CONNECTOR DESIGNATOR:                      |
|--------------------------------------------|
| <b>A</b> - MIL-DTL-5015 / -26482 / -83723  |
| <b>F</b> - MIL-DTL-38999 Series I, II      |
| <b>H</b> - MIL-DTL-38999 Series III and IV |
| <b>SELF-LOCKING</b>                        |
| <b>ROTATABLE COUPLING</b>                  |
| <b>SPLIT SHELL</b>                         |
| <b>ULTRA-LOW PROFILE</b>                   |



Ultra Low-Profile  
Split 90°



**440-069**  
**EMI/RFI Banding and Shrink Boot Adapter**  
**Self-Locking Rotatable Coupling - Split Shell**



See Page H-2 for Table I: Backshell Interface Dimensions

**TABLE III: ELBOW DIMENSIONS**

| Shell Size | F Max        | G Max        | H Max        | J Max        | K Max       | L Max        | M Max        | Function C Max Wire Bundle |
|------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------|----------------------------|
| 08/09      | .596 (15.1)  | 1.635 (41.5) | .836 (21.2)  | 1.575 (40.0) | .496 (12.6) | 1.915 (48.6) | .837 (21.3)  | .250 (6.4)                 |
| 10/11      | .656 (16.7)  | 1.695 (43.1) | .906 (23.0)  | 1.635 (41.5) | .426 (10.8) | 2.075 (52.7) | .887 (22.5)  | .375 (9.5)                 |
| 12/13      | .716 (18.2)  | 1.765 (44.8) | .966 (24.5)  | 1.705 (43.3) | .426 (10.8) | 2.075 (52.7) | .887 (22.5)  | .375 (9.5)                 |
| 14/15      | .776 (19.7)  | 1.795 (45.6) | 1.026 (26.1) | 1.735 (44.1) | .436 (11.1) | 2.145 (54.5) | .987 (25.1)  | .500 (12.7)                |
| 16/17      | .836 (21.2)  | 1.895 (48.1) | 1.086 (27.6) | 1.835 (46.6) | .576 (14.6) | 2.195 (55.8) | 1.137 (28.9) | .625 (15.9)                |
| 18/19      | .906 (23.0)  | 1.955 (49.7) | 1.156 (29.4) | 1.895 (48.1) | .796 (20.2) | 2.225 (56.5) | 1.337 (34.0) | .625 (15.9)                |
| 20/21      | .976 (24.8)  | 2.015 (51.2) | 1.216 (30.9) | 1.955 (49.7) | .796 (20.2) | 2.225 (56.5) | 1.337 (34.0) | .625 (15.9)                |
| 22/23      | 1.036 (26.3) | 2.075 (52.7) | 1.276 (32.4) | 2.015 (51.2) | .696 (17.7) | 2.375 (60.3) | 1.337 (34.0) | .750 (19.1)                |
| 24/25      | 1.096 (27.8) | 2.135 (54.2) | 1.336 (33.9) | 2.075 (52.7) | .696 (17.7) | 2.375 (60.3) | 1.337 (34.0) | .750 (19.1)                |

**TABLE IV: CABLE ENTRY**

| Dash No. | N            | P            | R            | Shrink Boot* |
|----------|--------------|--------------|--------------|--------------|
| 01       | .125 (3.2)   | .250 (6.4)   | .312 (7.9)   | 770-003S111  |
| 31       | .188 (4.8)   | .312 (7.9)   | .374 (9.5)   | 770-003S111  |
| 02       | .250 (6.4)   | .375 (9.5)   | .437 (11.1)  | 770-003S112  |
| 32       | .312 (7.9)   | .438 (11.1)  | .500 (12.7)  | 770-003S112  |
| 03       | .375 (9.5)   | .500 (12.7)  | .562 (14.3)  | 770-003S112  |
| 33       | .438 (11.1)  | .562 (14.3)  | .624 (15.8)  | 770-001S104  |
| 04       | .500 (12.7)  | .625 (15.9)  | .687 (17.4)  | 770-001S104  |
| 34       | .562 (14.3)  | .688 (17.5)  | .750 (19.1)  | 770-001S104  |
| 05       | .625 (15.9)  | .750 (19.1)  | .812 (20.6)  | 770-001S104  |
| 35       | .688 (17.5)  | .812 (20.6)  | .874 (22.2)  | 770-001S104  |
| 06       | .750 (19.1)  | .875 (22.2)  | .937 (23.8)  | 770-001S105  |
| 36       | .812 (20.6)  | .938 (23.8)  | 1.000 (25.4) | 770-001S105  |
| 07       | .875 (22.2)  | 1.000 (25.4) | 1.062 (27.0) | 770-001S105  |
| 37       | .938 (23.8)  | 1.062 (27.0) | 1.124 (28.5) | 770-001S105  |
| 08       | 1.000 (25.4) | 1.125 (28.6) | 1.187 (30.1) | 770-001S106  |
| 38       | 1.062 (27.0) | 1.188 (30.2) | 1.250 (31.8) | 770-001S106  |
| 09       | 1.125 (28.6) | 1.250 (31.8) | 1.312 (33.3) | 770-001S107  |
| 10       | 1.250 (31.8) | 1.375 (34.9) | 1.437 (36.5) | 770-001S107  |
| 11       | 1.375 (34.9) | 1.500 (38.1) | 1.562 (39.7) | 770-001S107  |
| 12       | 1.500 (38.1) | 1.625 (41.3) | 1.687 (42.8) | 770-001S107  |
| 13       | 1.625 (41.3) | 1.750 (44.5) | 1.812 (46.0) | 770-001S108  |
| 14       | 1.750 (44.5) | 1.875 (47.6) | 1.937 (49.2) | 770-001S108  |
| 15       | 1.875 (47.6) | 2.000 (50.8) | 2.062 (52.4) | 770-001S109  |
| 16       | 2.000 (50.8) | 2.125 (54.0) | 2.187 (55.5) | 770-001S109  |

\* Shrink Boot Supplied with "T" Option  
 (see Part Number Development)

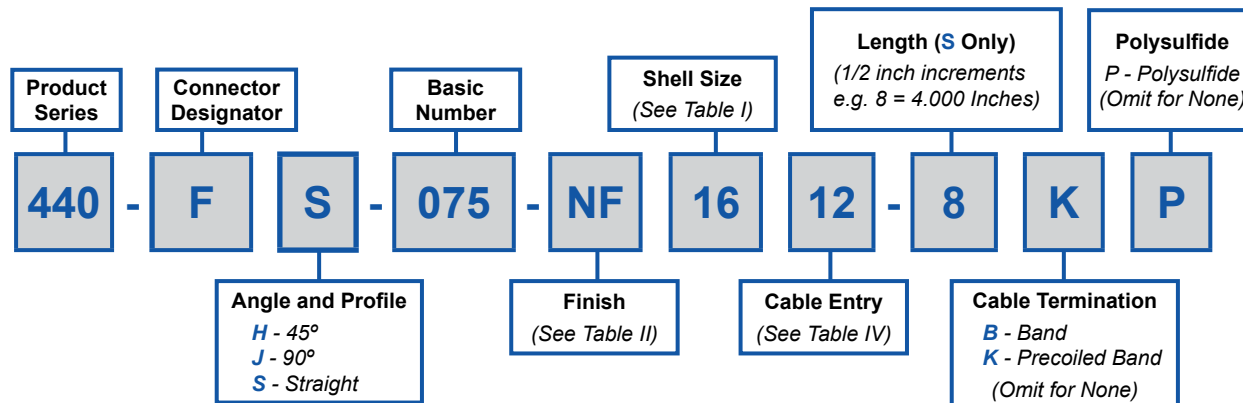
1. When maximum cable entry is exceeded, Style 2 will be supplied (not available in Function C). Dimensions F, G, H and J will not apply. Please consult factory.
2. Metric dimensions (mm) are indicated in parentheses.
3. Consult factory for shorter lengths on straight backshells.
4. Backshells supplied with 600-052-\* band, see Glenair Series 600 Tool Catalog for installation.
5. Angular function "C", low-profile split elbow, not available with "S" connector designator.

**TABLE II: FINISHES**

| Glenair Symbol | Finish                                              |
|----------------|-----------------------------------------------------|
| B              | Cadmium Plate, Olive Drab                           |
| M              | Electroless Nickel                                  |
| NF             | Cadmium Plate, Olive Drab over Electroless Nickel   |
| MT             | Ni-PTFE 1000 Hour Grey™ Nickel Fluorocarbon Polymer |

Consult Factory for Additional Finish Options

## 440-075 EMI/RFI Banding Adapter Self-Locking Rotatable Coupling - Standard Profile



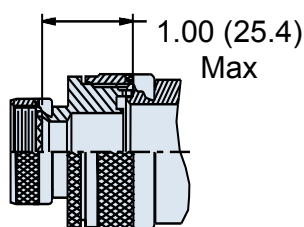
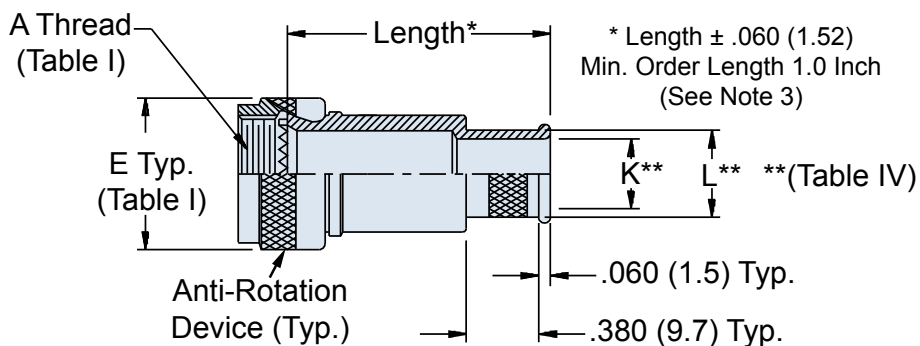
### CONNECTOR DESIGNATOR:

**A** - MIL-DTL-5015 / -26482 / -83723  
**F** - MIL-DTL-38999 Series I, II  
**H** - MIL-DTL-38999 Series III and IV

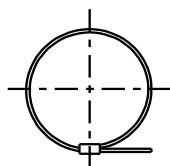
### SELF-LOCKING

### ROTATABLE COUPLING

### STANDARD PROFILE



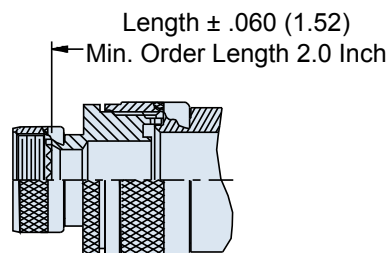
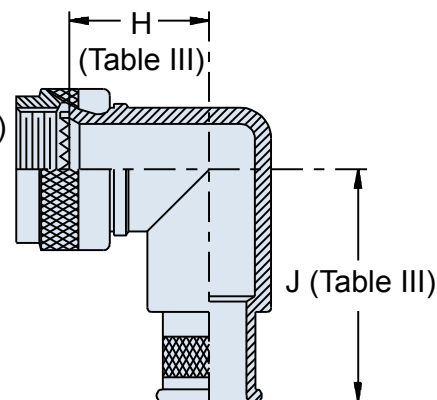
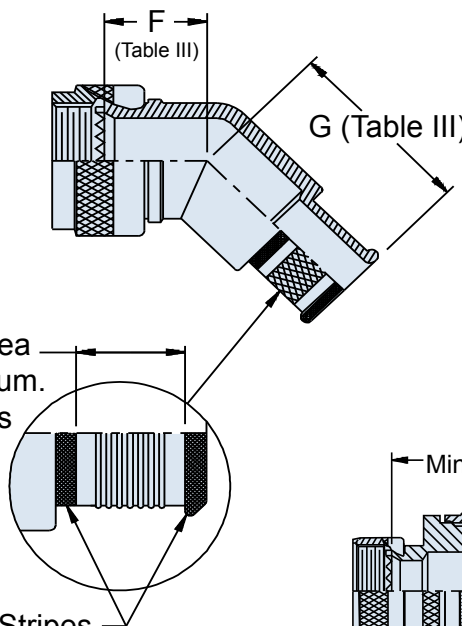
### STYLE 2 (45° & 90° See Note 1)



Band Option  
(K Option Shown  
- See Note 4)

Termination Area  
Free of Cadmium.  
Knurl or Ridges  
Mfr's Option

Polysulfide Stripes  
P Option



### STYLE 2 (STRAIGHT See Note 1)



**440-075**  
**EMI/RFI Banding Adapter**  
**Self-Locking Rotatable Coupling - Standard Profile**



See Page H-2 for Table I: Backshell Interface Dimensions

| TABLE III: ELBOW DIMENSIONS           |    |             |              |              |              |
|---------------------------------------|----|-------------|--------------|--------------|--------------|
| Shell Size<br>Conn. Desig.<br>A-F-L-S |    | F<br>Max    | G<br>Max     | H<br>Max     | J<br>Max     |
| 08                                    | 09 | .795 (20.2) | .890 (22.6)  | .906 (23.0)  | 1.000 (25.4) |
| 10                                    | 11 | .820 (20.8) | .920 (23.4)  | .966 (24.5)  | 1.060 (26.9) |
| 12                                    | 13 | .844 (21.4) | .940 (23.9)  | 1.026 (26.1) | 1.120 (28.4) |
| 14                                    | 15 | .861 (21.9) | .970 (24.6)  | 1.076 (27.3) | 1.190 (30.2) |
| 16                                    | 17 | .888 (22.6) | .990 (25.1)  | 1.136 (28.9) | 1.250 (31.8) |
| 18                                    | 19 | .904 (23.0) | 1.000 (25.4) | 1.176 (29.9) | 1.270 (32.3) |
| 20                                    | 21 | .929 (23.6) | 1.020 (25.9) | 1.236 (31.4) | 1.330 (33.8) |
| 22                                    | 23 | .956 (24.3) | 1.060 (26.9) | 1.296 (32.9) | 1.410 (35.8) |
| 24                                    | 25 | .979 (24.9) | 1.090 (27.7) | 1.356 (34.4) | 1.480 (37.6) |

| TABLE IV: CABLE ENTRY |              |              |  |
|-----------------------|--------------|--------------|--|
| Dash<br>No.           | K<br>Dia     | L<br>Dia     |  |
| 02                    | .125 (3.2)   | .250 (6.4)   |  |
| 03                    | .188 (4.8)   | .312 (7.9)   |  |
| 04                    | .250 (6.4)   | .375 (9.5)   |  |
| 05                    | .312 (7.9)   | .438 (11.1)  |  |
| 06                    | .375 (9.5)   | .500 (12.7)  |  |
| 07                    | .438 (11.1)  | .562 (14.3)  |  |
| 08                    | .500 (12.7)  | .625 (15.9)  |  |
| 09                    | .562 (14.3)  | .688 (17.5)  |  |
| 10                    | .625 (15.9)  | .750 (19.1)  |  |
| 11                    | .688 (17.5)  | .812 (20.6)  |  |
| 12                    | .750 (19.1)  | .875 (22.2)  |  |
| 13                    | .812 (20.6)  | .938 (23.8)  |  |
| 14                    | .875 (22.2)  | 1.000 (25.4) |  |
| 15                    | .938 (23.8)  | 1.062 (27.0) |  |
| 16                    | 1.000 (25.4) | 1.125 (28.6) |  |
| 17                    | 1.062 (27.0) | 1.188 (30.2) |  |
| 18                    | 1.125 (28.6) | 1.250 (31.8) |  |
| 20                    | 1.250 (31.8) | 1.375 (34.9) |  |
| 22                    | 1.375 (34.9) | 1.500 (38.1) |  |
| 24                    | 1.500 (38.1) | 1.625 (41.3) |  |
| 26                    | 1.625 (41.3) | 1.750 (44.5) |  |
| 28                    | 1.750 (44.5) | 1.875 (47.6) |  |
| 30                    | 1.875 (47.6) | 2.000 (50.8) |  |
| 32                    | 2.000 (50.8) | 2.125 (54.0) |  |

| TABLE II: FINISHES |                                                        |
|--------------------|--------------------------------------------------------|
| Glenair<br>Symbol  | Finish                                                 |
| B                  | Cadmium Plate, Olive Drab                              |
| M                  | Electroless Nickel                                     |
| NF                 | Cadmium Plate, Olive Drab<br>over Electroless Nickel   |
| MT                 | Ni-PTFE 1000 Hour Grey™<br>Nickel Fluorocarbon Polymer |

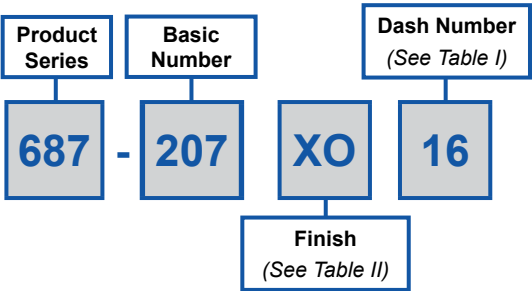
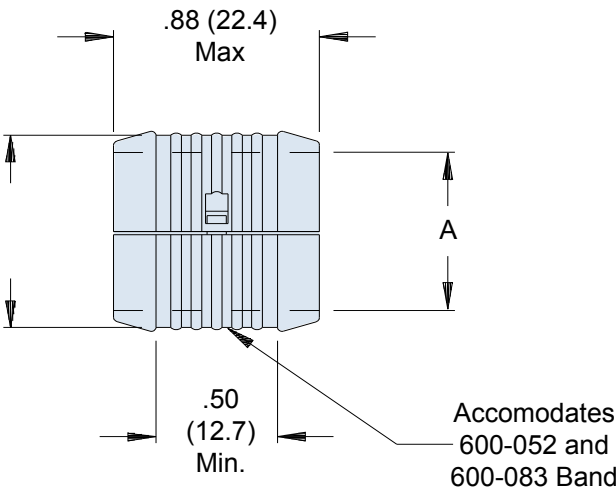
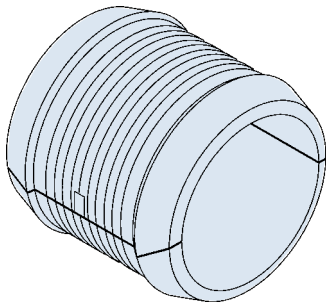
Consult Factory for Additional Finish Options

1. When maximum cable entry is exceeded, Style 2 will be supplied. Dimensions F, G, H and J will not apply. Please consult factory.
2. Metric dimensions (mm) are indicated in parentheses.
3. Consult factory for shorter lengths on straight backshells.
4. Backshells supplied with 600-052-\* band, see Glenair Series 600 Tool Catalog for installation.



687-207  
Composite MIL-C-85049/93  
Banding Split-Ring

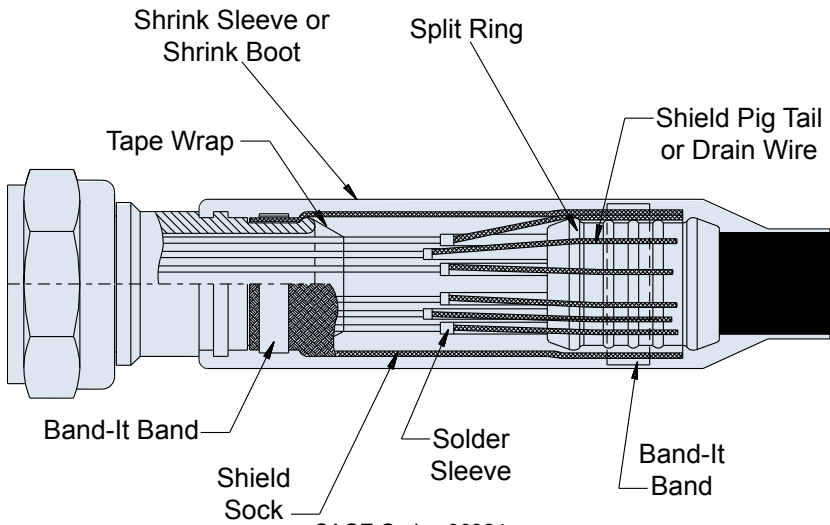
For Use  
with Glenair  
Banding  
Backshells and  
Braid Socks



| TABLE I: DASH NUMBER |                        |                        |  |  |
|----------------------|------------------------|------------------------|--|--|
| Dash No.             | A Diameter ± .03 (0.8) | B Diameter ± .03 (0.8) |  |  |
| 04                   | .25 (6.4)              | .36 (9.1)              |  |  |
| 06                   | .38 (9.7)              | .49 (12.4)             |  |  |
| 08                   | .50 (12.7)             | .61 (15.5)             |  |  |
| 10                   | .63 (16.0)             | .74 (18.8)             |  |  |
| 12                   | .75 (19.1)             | .86 (21.8)             |  |  |
| 14                   | .88 (22.4)             | .99 (25.1)             |  |  |
| 16                   | 1.00 (25.4)            | 1.10 (27.9)            |  |  |
| 18                   | 1.13 (28.7)            | 1.24 (31.5)            |  |  |
| 20                   | 1.25 (31.8)            | 1.36 (34.5)            |  |  |
| 22                   | 1.38 (35.1)            | 1.49 (37.8)            |  |  |
| 24                   | 1.50 (38.1)            | 1.61 (40.9)            |  |  |
| 26                   | 1.63 (41.4)            | 1.74 (44.2)            |  |  |
| 28                   | 1.75 (44.5)            | 1.86 (47.2)            |  |  |

Metric dimensions (mm) are in parentheses and are for reference only.

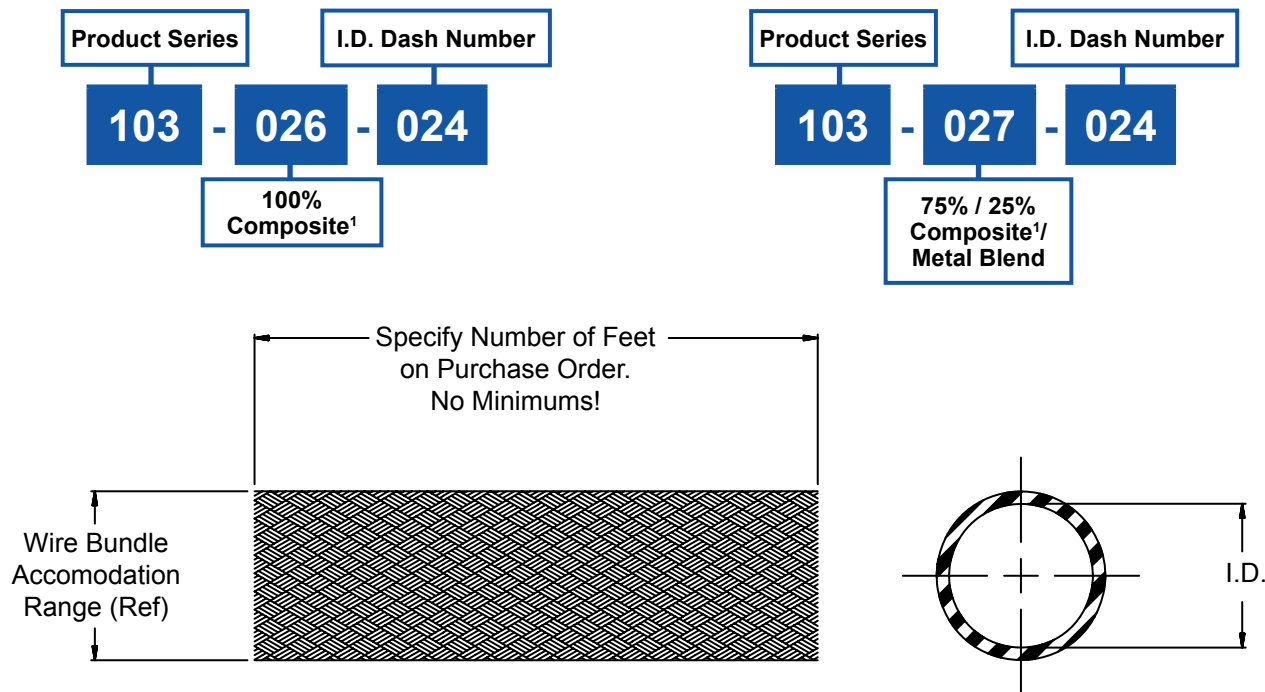
EXAMPLE APPLICATION



# 103-026 and -027

## EMI/RFI Composite Braided Shielding

### 100% Composite and 75% / 25% Blended Versions



1. Braid is made from Nickel-plated AmberStrand® composite thermoplastic fibers. AmberStrand® is a registered trademark of Syscom Advanced Materials Inc.

| 103-026 (100% AmberStrand® Fiber) |              |                               |                            |
|-----------------------------------|--------------|-------------------------------|----------------------------|
| Dash Number                       | Nominal I.D. | Wire Bundle Range             | Approximate Grams Per Foot |
| 004                               | .125 (3.2)   | .093 (2.4)<br>.140 (3.5)      | 1.0                        |
| 008                               | .250 (6.4)   | .125 (3.2)<br>.312 (7.9)      | 1.8                        |
| 012                               | .375 (9.5)   | .250 (6.4)<br>.437 (11.1)     | 2.3                        |
| 016                               | .500 (12.7)  | .250 (6.4)<br>.590 (15.0)     | 3.7                        |
| 020                               | .625 (15.9)  | .375 (9.5)<br>.700 (17.8)     | 4.4                        |
| 024                               | .750 (19.1)  | .500 (12.7)<br>.830 (21.1)    | 5.2                        |
| 032                               | 1.000 (25.4) | .780 (19.8)<br>1.100 (27.94)  | 8.0                        |
| 040                               | 1.250 (31.8) | .938 (23.8)<br>1.312 (33.3)   | 10.0                       |
| 048                               | 1.500 (38.1) | 1.187 (30.1)<br>1.590 (40.37) | 15.2                       |
| 064                               | 2.000 (50.8) | 1.312 (33.3)<br>2.090 (50.8)  | 22.0                       |

| 103-027 (75% AmberStrand® Fiber/25% Nickel Copper) |              |                               |                            |                                         |
|----------------------------------------------------|--------------|-------------------------------|----------------------------|-----------------------------------------|
| Dash Number                                        | Nominal I.D. | Wire Bundle Range             | Approximate Grams Per Foot | Carrier Breakdown                       |
| 004                                                | .125 (3.2)   | .093 (2.4)<br>.140 (3.5)      | 1.5                        | 16 - Amberstrand®<br>4 - Nickel Copper  |
| 008                                                | .250 (6.4)   | .125 (3.2)<br>.312 (7.9)      | 2.4                        | 24 - Amberstrand®<br>8 - Nickel Copper  |
| 012                                                | .375 (9.5)   | .250 (6.4)<br>.437 (11.1)     | 3.9                        | 36 - Amberstrand®<br>12 - Nickel Copper |
| 016                                                | .500 (12.7)  | .250 (6.4)<br>.590 (15.0)     | 6.0                        | 54 - Amberstrand®<br>18 - Nickel Copper |
| 020                                                | .625 (15.9)  | .375 (9.5)<br>.700 (17.8)     | 6.4                        | 54 - Amberstrand®<br>18 - Nickel Copper |
| 024                                                | .750 (19.1)  | .500 (12.7)<br>.830 (21.1)    | 7.2                        | 72 - Amberstrand®<br>24 - Nickel Copper |
| 032                                                | 1.000 (25.4) | .780 (19.8)<br>1.100 (27.94)  | 11.0                       | 48 - Amberstrand®<br>16 - Nickel Copper |
| 040                                                | 1.250 (31.8) | .938 (23.8)<br>1.312 (33.3)   | 15.0                       | 72 - Amberstrand®<br>24 - Nickel Copper |
| 048                                                | 1.500 (38.1) | 1.187 (30.1)<br>1.590 (40.37) | 25.2                       | 72 - Amberstrand®<br>24 - Nickel Copper |
| 064                                                | 2.000 (50.8) | 1.312 (33.3)<br>2.090 (50.8)  | 32.0                       | 72 - Amberstrand®<br>24 - Nickel Copper |

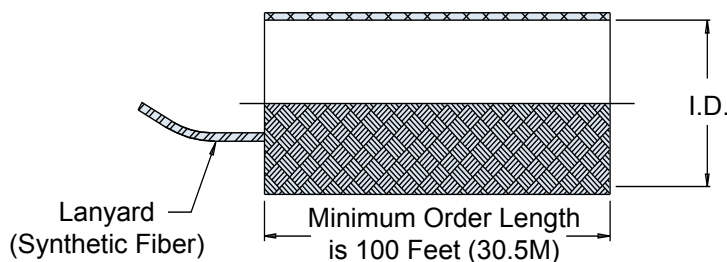
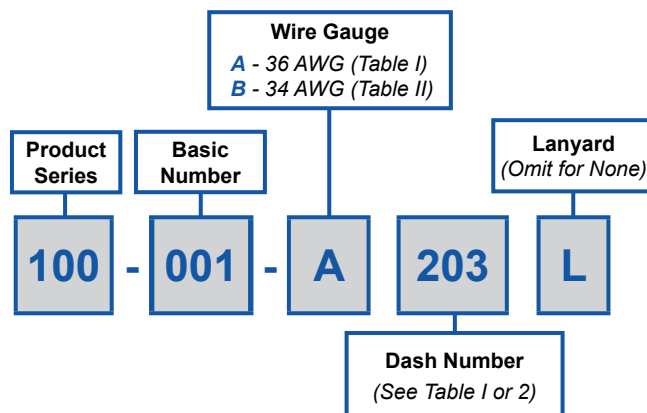
Metric dimensions (mm) are indicated in parentheses.

# 100-001

## Tubular Metal Braid QQ-B-575B ASTM B33

### Tin Coated Copper

### for EMI Shielding Applications



#### APPLICATION NOTES

1. Consult factory for sizes not shown
2. Metric dimensions (mm) are indicated in parentheses.
3. Direct current ratings are given for information only. Values shown are for uninsulated braid in free air at 86°F (30°C). Actual values will depend on permissible temperature rise, voltage drop and other conditions of service. Values should be de-rated if the braid is insulated or in close contact with other components.

**100-001**  
**Tubular Metal Braid QQ-B-575B ASTM B33**  
**Tin Coated Copper**  
**for EMI Shielding Applications**



**TABLE I (36 AWG)**

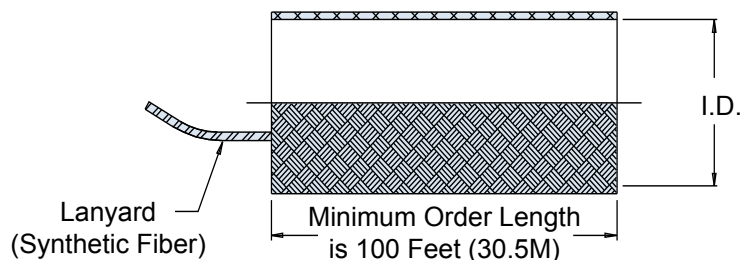
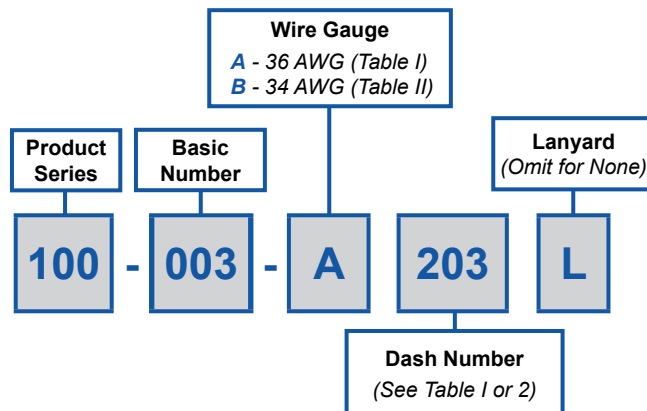
| Dash No. | Fractional Equivalent | Nominal I.D. | No. of Carriers | No. of Ends | Current Rating Amps | Lbs./100 Ft. (Kg/30.5M) | Federal Specification No. |
|----------|-----------------------|--------------|-----------------|-------------|---------------------|-------------------------|---------------------------|
| 031      | 1/32                  | .031 (.8)    | 24              | 24          | 7.0                 | .20 (.09)               | QQB575R36T031             |
| 062      | 1/16                  | .062 (1.6)   | 24              | 48          | 11.0                | .40 (.18)               | QQB575R36T062             |
| 078      | 5/64                  | .078 (2.0)   | 24              | 72          | 16.0                | .60 (.27)               | QQB575R36T078             |
| 109      | 7/64                  | .109 (2.8)   | 24              | 96          | 19.0                | .83 (.38)               | QQB575R36T109             |
| 125      | 1/8                   | .125 (3.2)   | 24              | 120         | 25.0                | 1.03 (.47)              | QQB575R36T125             |
| 156      | 5/32                  | .156 (4.0)   | 24              | 240         | 40.0                | 2.09 (.95)              | QQB575R36T156             |
| 171      | 11/64                 | .171 (4.3)   | 24              | 168         | 32.0                | 1.43 (.65)              | QQB575R36T171             |
| 188      | 3/16                  | .188 (4.8)   | 24              | 192         | 33.0                | 1.63 (.74)              | --                        |
| 203      | 13/64                 | .203 (5.2)   | 24              | 312         | 46.0                | 2.80 (1.27)             | QQB575R36T203             |
| 250      | 1/4                   | .250 (6.4)   | 24              | 384         | 53.0                | 3.45 (1.56)             | QQB575R36T250             |
| 375      | 3/8                   | .375 (9.5)   | 48              | 384         | 53.0                | 3.95 (1.79)             | QQB575R36T375             |
| 500      | 1/2                   | .500 (12.7)  | 48              | 528         | 62.0                | 4.77 (2.16)             | QQB575R36T500             |
| 562      | 9/16                  | .562 (14.3)  | 48              | 624         | 73.0                | 5.00 (2.27)             | --                        |
| 625      | 5/8                   | .625 (15.9)  | 48              | 720         | 85.0                | 5.94 (2.69)             | --                        |
| 781      | 25/32                 | .781 (19.8)  | 48              | 864         | 88.0                | 7.35 (3.33)             | QQB575R36T781             |
| 937      | 15/16                 | .937 (23.8)  | 64              | 640         | 65.0                | 5.83 (2.64)             | --                        |
| 1000     | 1                     | 1.000 (25.4) | 64              | 768         | 90.0                | 7.50 (3.40)             | --                        |
| 1250     | 1 1/4                 | 1.250 (31.8) | 72              | 792         |                     |                         |                           |
| 1375     | 1 3/8                 | 1.375 (34.9) | 72              | 864         |                     |                         |                           |
| 1500     | 1 1/2                 | 1.500 (38.1) | 72              | 936         |                     |                         |                           |
| 2000     | 2                     | 2.000 (50.8) | 96              | 1152        |                     |                         |                           |
| 2500     | 2 1/2                 | 2.500 (63.5) | 96              | 1248        |                     |                         |                           |

**TABLE II (34 AWG)**

| Dash No. | Fractional Equivalent | Nominal I.D. | No. of Carriers | No. of Ends | Current Rating Amps | Lbs./100 Ft. (Kg/30.5M) | Federal Specification No. |
|----------|-----------------------|--------------|-----------------|-------------|---------------------|-------------------------|---------------------------|
| 062      | 1/16                  | .062 (1.6)   | 16              | 32          | 11.0                | .43 (.20)               | QQB575R34T062             |
| 109      | 7/64                  | .109 (2.8)   | 16              | 64          | 19.0                | .82 (.37)               | QQB575R34T109             |
| 125      | 1/8                   | .125 (3.2)   | 24              | 72          | 19.0                | .92 (.42)               | QQB575R34T125             |
| 171      | 11/64                 | .171 (4.3)   | 24              | 120         | 36.0                | 1.56 (.71)              | QQB575R34T171             |
| 203      | 13/64                 | .203 (5.2)   | 24              | 192         | 46.0                | 2.79 (1.27)             | QQB575R34T203             |
| 375      | 3/8                   | .375 (9.5)   | 48              | 240         | 53.0                | 3.27 (1.48)             | QQB575R34T375             |
| 437      | 7/16                  | .437 (11.1)  | 48              | 288         | 44.2                | 3.93 (1.78)             | --                        |
| 500      | 1/2                   | .500 (12.7)  | 48              | 336         | 62.0                | 4.77 (2.16)             | QQB575R34T500             |
| 781      | 25/32                 | .781 (19.8)  | 48              | 528         | 88.0                | 7.14 (3.24)             | QQB575R34T781             |

# 100-003

## Tubular Metal Braid ASTM B355 Class 4 OFHC Nickel Plated Copper for EMI Shielding Applications



### APPLICATION NOTES

1. Consult factory for sizes not shown
2. Metric dimensions (mm) are indicated in parentheses.
3. Direct current ratings are given for information only. Values shown are for uninsulated braid in free air at 86°F (30°C). Actual values will depend on permissible temperature rise, voltage drop and other conditions of service. Values should be de-rated if the braid is insulated or in close contact with other components.



**100-003**  
**Tubular Metal Braid ASTM B355 Class 4 OFHC**  
**Nickel Plated Copper**  
**for EMI Shielding Applications**

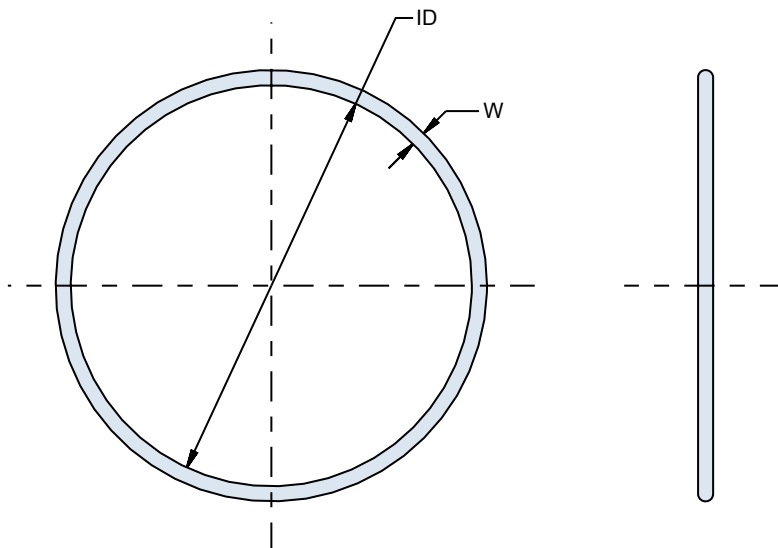
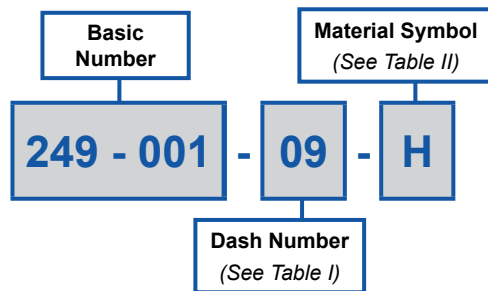


**TABLE I (36 AWG)**

| Dash No. | Fractional Equivalent | Nominal I.D. | No. of Carriers | No. of Ends | Current Rating Amps | Lbs./100 Ft. (Kg/30.5M) |
|----------|-----------------------|--------------|-----------------|-------------|---------------------|-------------------------|
| 031      | 1/32                  | .031 (.8)    | 24              | 24          | 7.0                 | .20 (.09)               |
| 062      | 1/16                  | .062 (1.6)   | 24              | 48          | 11.0                | .40 (.18)               |
| 078      | 5/64                  | .078 (2.0)   | 24              | 72          | 16.0                | .60 (.27)               |
| 109      | 7/64                  | .109 (2.8)   | 24              | 96          | 19.0                | .83 (.38)               |
| 125      | 1/8                   | .125 (3.2)   | 24              | 120         | 25.0                | 1.03 (.47)              |
| 156      | 5/32                  | .156 (4.0)   | 24              | 240         | 40.0                | 2.09 (.95)              |
| 171      | 11/64                 | .171 (4.3)   | 24              | 168         | 32.0                | 1.43 (.65)              |
| 188      | 3/16                  | .188 (4.8)   | 24              | 192         | 33.0                | 1.63 (.74)              |
| 203      | 13/64                 | .203 (5.2)   | 24              | 312         | 46.0                | 2.80 (1.27)             |
| 250      | 1/4                   | .250 (6.4)   | 24              | 384         | 53.0                | 3.45 (1.56)             |
| 375      | 3/8                   | .375 (9.5)   | 48              | 384         | 53.0                | 3.95 (1.79)             |
| 500      | 1/2                   | .500 (12.7)  | 48              | 528         | 62.0                | 4.77 (2.16)             |
| 562      | 9/16                  | .562 (14.3)  | 48              | 624         | 73.0                | 5.00 (2.27)             |
| 625      | 5/8                   | .625 (15.9)  | 48              | 720         | 85.0                | 5.94 (2.69)             |
| 781      | 25/32                 | .781 (19.8)  | 48              | 864         | 88.0                | 7.35 (3.33)             |
| 937      | 15/16                 | .937 (23.8)  | 64              | 640         | 65.0                | 5.83 (2.64)             |
| 1000     | 1                     | 1.000 (25.4) | 64              | 768         | 90.0                | 7.50 (3.40)             |
| 1250     | 1 1/4                 | 1.250 (31.8) | 72              | 792         |                     |                         |
| 1375     | 1 3/8                 | 1.375 (34.9) | 72              | 864         |                     |                         |
| 1500     | 1 1/2                 | 1.500 (38.1) | 72              | 936         |                     |                         |
| 2000     | 2                     | 2.000 (50.8) | 96              | 1152        |                     |                         |
| 2500     | 2 1/2                 | 2.500 (63.5) | 96              | 1248        |                     |                         |

**TABLE II (34 AWG)**

| Dash No. | Fractional Equivalent | Nominal I.D. | No. of Carriers | No. of Ends | Current Rating Amps | Lbs./100 Ft. (Kg/30.5M) |
|----------|-----------------------|--------------|-----------------|-------------|---------------------|-------------------------|
| 062      | 1/16                  | .062 (1.6)   | 16              | 32          | 11.0                | .43 (.20)               |
| 109      | 7/64                  | .109 (2.8)   | 16              | 64          | 19.0                | .82 (.37)               |
| 125      | 1/8                   | .125 (3.2)   | 24              | 72          | 19.0                | .92 (.42)               |
| 171      | 11/64                 | .171 (4.3)   | 24              | 120         | 36.0                | 1.56 (.71)              |
| 203      | 13/64                 | .203 (5.2)   | 24              | 192         | 46.0                | 2.79 (1.27)             |
| 375      | 3/8                   | .375 (9.5)   | 48              | 240         | 53.0                | 3.27 (1.48)             |
| 437      | 7/16                  | .437 (11.1)  | 48              | 288         | 44.2                | 3.93 (1.78)             |
| 500      | 1/2                   | .500 (12.7)  | 48              | 336         | 62.0                | 4.77 (2.16)             |
| 781      | 25/32                 | .781 (19.8)  | 48              | 528         | 88.0                | 7.14 (3.24)             |
| 1000     | 1                     | 1.000 (25.4) | 64              | 576         | 150.0               | 7.33 (3.33)             |
| 1250     | 1 1/4                 | 1.250 (31.8) | 72              | 648         |                     |                         |



**249-001**  
**Conductive O-Ring for**  
**Jam Nut Receptacle Connectors**



**TABLE I**

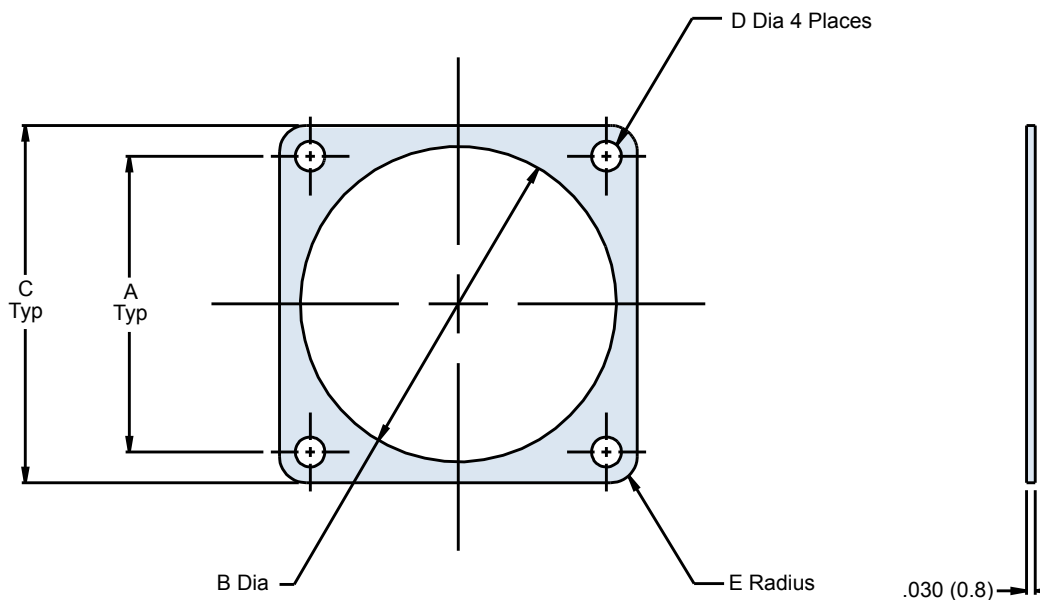
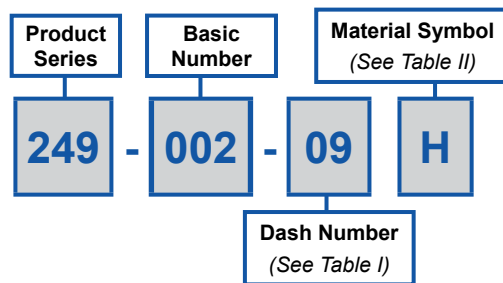
| Dash Number | O-Ring ID x W |
|-------------|---------------|
| -09         | .801 x .070   |
| -11         | .989 x .070   |
| -13         | 1.114 x .070  |
| -15         | 1.239 x .070  |
| -17         | 1.364 x .070  |
| -19         | 1.487 x .103  |
| -21         | 1.612 x .103  |
| -23         | 1.737 x .103  |
| -25         | 1.862 x .103  |

**TABLE II**

| Designator | Material                                                                     |
|------------|------------------------------------------------------------------------------|
| B          | Silver Plated Aluminum in Silicone<br>(CHO-Seal 1285)                        |
| C          | Silver Plated Aluminum in Fluorosilicone<br>(CHO-Seal in 1298 or Equivalent) |
| H          | Silver Plated Copper in Silicone<br>(CHO-Seal 1215 or Equivalent)            |



## 249-002 Conductive Gasket for Flange Mount Receptacle Connector



### NOTES:

1. Identified by bag and tag in suitable quantities.
2. Metric dimensions (mm) are indicated in parentheses.

H

**249-002**  
**Conductive Gasket for**  
**Flange Mount Receptacle Connector**



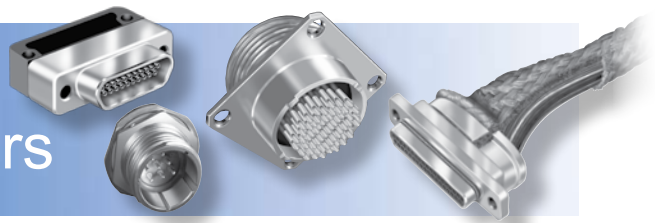
**TABLE I**

| <b>Dash Number</b> | <b>A<br/>± .005</b> | <b>Ø B<br/>± .007</b> | <b>C<br/>± .008</b> | <b>Ø D<br/>± .005</b> | <b>E Radius<br/>± .015</b> |
|--------------------|---------------------|-----------------------|---------------------|-----------------------|----------------------------|
| -09                | .719                | .687                  | .937                | .125                  | .105                       |
| -11                | .812                | .772                  | 1.031               | .125                  | .105                       |
| -13                | .906                | .937                  | 1.125               | .125                  | .105                       |
| -15                | .969                | 1.063                 | 1.250               | .125                  | .135                       |
| -17                | 1.062               | 1.187                 | 1.343               | .125                  | .135                       |
| -19                | 1.156               | 1.312                 | 1.467               | .125                  | .135                       |
| -21                | 1.250               | 1.437                 | 1.652               | .125                  | .135                       |
| -23                | 1.375               | 1.562                 | 1.703               | .152                  | .135                       |
| -25                | 1.500               | 1.600                 | 1.812               | .152                  | .135                       |

**TABLE II**

| <b>Designator</b> | <b>Material</b>                                                                                         |
|-------------------|---------------------------------------------------------------------------------------------------------|
| C                 | Flourosilicone Binder with Passivated Silver Plated Aluminum Particles (CHO-Seal in 1298 or Equivalent) |
| H                 | Silicone Binder with Silver Plated Copper Particles (CHO-Seal 1215 or Equivalent)                       |

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