

# Amphenol®

Canada



ENGINEERED SOLUTIONS. DESIGNED TO FIT

# MICRO CONNECTOR PRODUCTS

.050" (1.27 mm) PITCH

# Amphenol®

## Rectangular and Filtered Products

For more than 50 years, Amphenol Canada Corp. a subsidiary of Amphenol Corporation has been an international leader in the manufacture of rectangular and filtered connectors.

We design, manufacture and test EMI / EMP filter and non-filter connectors, which are used worldwide in military, aerospace, and commercial applications. As part of Amphenol Corporation, we have the advantage of access to technologies and processes of Amphenol's worldwide facilities. Our expertise in understanding and supporting our customers' interconnect needs has earned us a reputation of excellence among the world's leading users of electronic components.

## CUSTOMER SERVICE

At Amphenol Canada, customer service is a solid commitment from all our employees. Our product managers, application engineers, product specialists, and sales representatives are able to answer your questions and assist you in choosing the right connectors for your applications.

Using Amphenol's on-line computer system, we are able to promptly update you on your order status, provide you with price and delivery quotations, and address any problems or questions you might have.

Whether you need standard or custom designed connectors, our marketing department is your liaison with Amphenol Canada's engineering, quality and manufacturing experts.

## QUALITY & RELIABILITY

### Certified to ISO 9001:2000 + AS9100B

Amphenol Canada's broad base of customers and the high levels of technology in which they are involved make it essential that Amphenol's own products are of the highest quality and reliability.

Please contact us for RoHS requirements.

## ENGINEERING

Amphenol Canada provides innovative designs to help our customers solve a variety of EMI / EMP and/or allowable space problems.

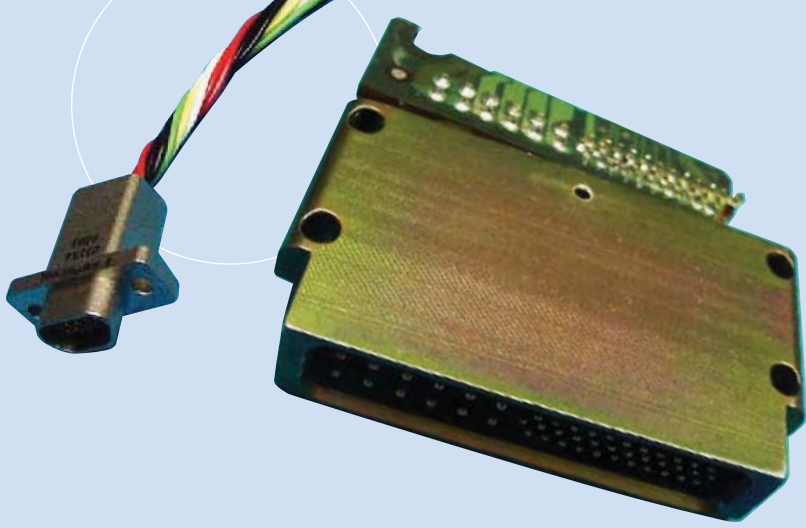
The engineering department is fully equipped with 3-D CAD modeling, state-of-the-art electrical test equipment and environmental test chambers; enabling ongoing research and development that contributes to our design solutions of tomorrow.

## MANUFACTURING CAPABILITIES

- CNC machining of connector shells and hardware
- Screw machining of contacts
- Stamping (including progressive dies) of shells, contacts and ground plates
- Plating with electroless nickel, cadmium, OD cadmium and other special plating
- Injection moulding of thermoset, thermoplastic and rubber
- Tool room equipped to manufacture and maintain tools, dies and moulds
- Final assembly shop equipped with special purpose assembly machinery, equipment and tools, and electrical test equipment
- Model shop for design concept evaluation and prototyping
- Quick reaction facility for speedy manufacturing of pre-production quantities



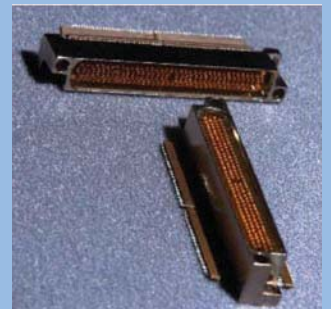
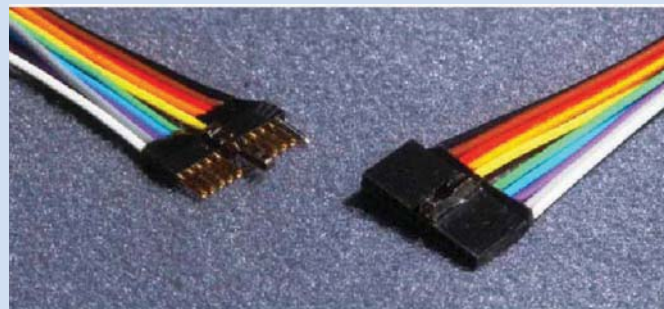




## ENGINEERED SOLUTIONS. DESIGNED TO FIT.

Amphenol micro connectors provide small inter-connect solutions, which will exceed the requirements of the US military standard M83513. What differentiates Amphenol from the competition is our overall connector design. Custom solutions can easily be engineered to ensure exact performance in any application.

Amphenol is not limited to the traditional M83513 rectangular connectors but has also developed and produced circular connectors, strip line connectors, PC board connectors, and hybrid connectors utilizing power, signal, coaxial and fiber optics contacts.



### MICROMINIATURE CONNECTORS: GENERAL INFORMATION

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Connector / Component Terminology .....	<b>p6</b>
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### MICRO-D HARNESSSED CONNECTORS: SERIES 100, 102, 104



Solder Cup Termination  
(QPL to M83513/01 &/02)  
Metal / Plastic Inter-matable  
Sizes 9 thru 100  
**p11-13**

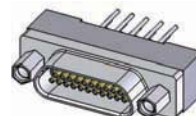


Stranded Wire Termination  
(QPL to M83513/03 &/04)  
Metal / Plastic Inter-matable  
Sizes 9 thru 100  
**p11-13**

### MICRO-D PRINTED CIRCUIT BOARD (PCB) CONNECTORS: SERIES 100, 102, 104, 110



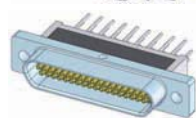
"BS" Straight Termination  
(QPL to M83513/22 thru /27)  
Metal / Plastic Inter-matable  
Sizes 9 thru 100  
**p14-16**



"C6" Straight Termination  
(QPL to M83513/28 thru /33)  
Metal / Plastic Inter-matable  
Sizes 9 thru 100  
**p14,21,23**



"BR" Right Angle Termination  
(QPL to M83513/16 thru /21)  
Metal / Plastic Inter-matable  
Sizes 9 thru 100  
**p14,17-18**



"C16" Straight Termination  
(C6 with standard/custom hardware)  
Metal / Plastic Inter-matable  
Sizes 9 thru 100  
**p14,22-23**

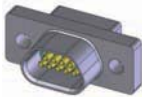


"CBR" Right Angle Termination  
(QPL to M83513/10 thru /15)  
Metal / Plastic Inter-matable  
Sizes 9 thru 100  
**p14,19-20**

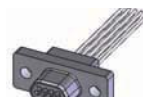


"110" Reversed Polarization, CBR Type  
Alternate Board Layout  
Metal / Plastic Inter-matable  
Sizes 9 thru 100  
**p24-26**

### MICRO-D PLASTIC CONNECTORS (NARROW WIDTH PROFILE): SERIES 101



Solder Cup Termination  
(QPL to M83513/06 &/07)  
Mates Only with Series 101  
Sizes 9 thru 100  
**p27-29**



Stranded Wire Termination  
(QPL to M83513/08 &/09)  
Mates Only with Series 101  
Sizes 9 thru 100  
**p27-29**



"BS" Straight Termination  
Mates Only with Series 101  
Sizes 9 thru 100  
**p30-31,16**



"BR" R/A Termination  
Mates Only with Series 101  
Sizes 9 thru 100  
**p30,32,18**



"CBR" R/A Termination  
Mates Only with Series 101  
Sizes 9 thru 100  
**p30,33,20**

### MICRO-D HARDWARE AND ACCESSORIES



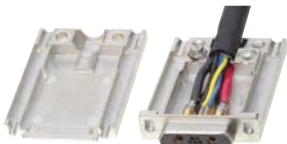
"MDCE" Dust Caps  
Suitable for M83513 connectors  
Statically Dissipative  
Sizes 9 thru 100  
**p34**



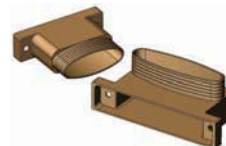
"HM05" Standard Hardware  
(QPL to M83513/05)  
#2-56 / #4-40 UNC Thread  
Low and High Profile  
**p35**



Custom Hardware  
(Pre-installed by Factory)  
#2-56 / #4-40 UNC Thread  
Low and High Profile  
Captive / Float  
**p36**

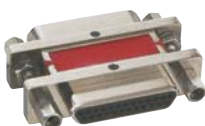


Connector with Integrated EMI Backshell  
Designed by Amphenol  
Intermates with M83513 connectors  
Reduce EMI and provides strain relief  
Grounding screw (optional)  
Sizes 9 thru 100  
**p37**



"MBS" EMI Backshell  
Straight / Right Angle Exit  
Suitable for M83513 connectors  
Sizes 9 thru 100  
**p38-40**

### MICRO-D CONNECTOR SAVER / ADAPTER: SERIES 100, 101, 102



"P/S" 2-in-1 Connector  
Intermates with M83513 connectors  
Opposite mating genders (consult factory for same genders)  
Sizes 9 thru 100  
**p41-42**



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## STRIP CONNECTORS (.050" CONTACT SPACING): SERIES 105



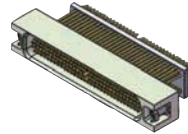
Plastic connector, solder cup or wire termination  
Single row (consult factory for double row)  
Guide pin (optional)  
Sizes 1 thru 30  
**p43-44**



## HI-DENSITY CARD CONNECTORS: SERIES 106



Metal connector, stranded wire termination  
Compact in size, M83513 performance  
Sizes 50 thru 152  
**p45-46**

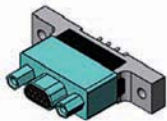


Metal connector, vertical PCB mount  
Compact in size, M83513 performance  
Sizes 50 thru 152  
**p45-46**

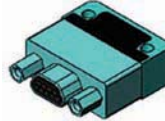


Consult factory for hi-density surface mount or straddle mount (edge card) connectors.

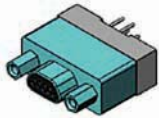
## FILTER MICRO-D CONNECTORS: SERIES M13



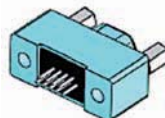
"BS" Straight Termination  
Pi or C Filter  
Mates with M83513 connectors  
Sizes 9 thru 37  
**p47-49,16**



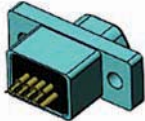
"CBR" Right Angle Termination  
Pi or C Filter  
Mates with M83513 connectors  
Sizes 9 thru 37  
**p47-48,52,20**



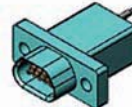
"C6" Straight Termination  
Pi or C Filter  
Mates with M83513 connectors  
Sizes 9 thru 37  
**p47-48,50,23**



Solid Wire Termination  
Pi or C Filter  
Mates with M83513 connectors  
Sizes 9 thru 37  
**p47-48,53**



Solder Cup Termination  
Pi or C Filter  
Mates with M83513 connectors  
Sizes 9 thru 37  
**p47-48,51**



Stranded Wire Termination  
Pi or C Filter  
Mates with M83513 connectors  
Sizes 9 thru 37  
**p47-48,54**

## SPECIALTY CONNECTORS



Combo / Hybrid Micro-D  
Signal with Power / Coaxial Contacts  
Sizes 9 thru 100  
**p54**



Surface Mount or Straddle Mount (Edge Card)  
Mates Only with Series 101  
Sizes 9 thru 100  
**p54**

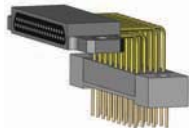


Panel Mount with O-ring Seal  
Minimum IP-67  
Sizes 9 thru 100  
**p54**



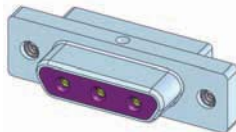
High Temperature (200C)  
Sizes 9 thru 100  
**p54**

## CUSTOM HARNESSSED ASSEMBLIES: APPLICATION SPECIFIC



Multiple Cable Terminations  
Micro-D to PCB Termination  
Micro-D to Other Product Termination  
**p55**

## CUSTOM CONNECTORS: APPLICATION SPECIFIC



Double Bay (Vertical / Horizontal)  
Power / Coaxial Contacts Only  
Strip Connector with Hardware  
Shell / Backshell Modifications  
**p56**

## REFERENCES

Wire Gauge and MIL-STD-681 (Sys 1) Colour Code ..... **p57**  
Part Number Cross Reference: MIL-SPEC / Amphenol ..... **p58-67**

### Why use Amphenol precision stamped & formed contacts



- **AMPHENOL DESIGN** not like other stamped and formed designs
- **FULLY QUALIFIED** per MIL-DTL-83513 requirements
- **ONE PIECE CONTACT** with **EQUALLY SPACED** compliant tines
- **GOLD OVER NICKEL** versus gold over copper flash barrier
- **TIGHTER CONTROL** over plating process
- **UNIFORM PLATING** thickness
- **AUTOMATED STAMPING** versus twist process variations
- Integrated closed engaging end **ENSURES UNIFORM INSERTION FORCES**
- **LOW MATING/UNMATING FORCE**
- **PREFERRED CONTACT** for **SPACE** and **SATELLITE** applications
- **CONTINUOUS CONNECTION** along the length of the contact beam (line contact) versus multi-point connection (point contact)

#### AMPHENOL



3-Tyne compression

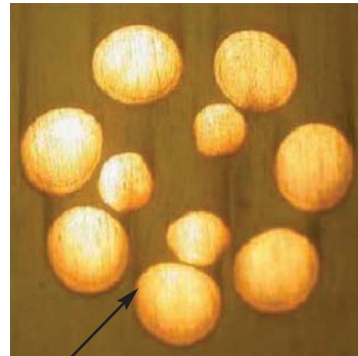
#### COMPETITOR



2 bundles of wires twisted, tip welded, squashed, crimped then plated



Au/Ni Barrier  
(Uniform plating thickness)



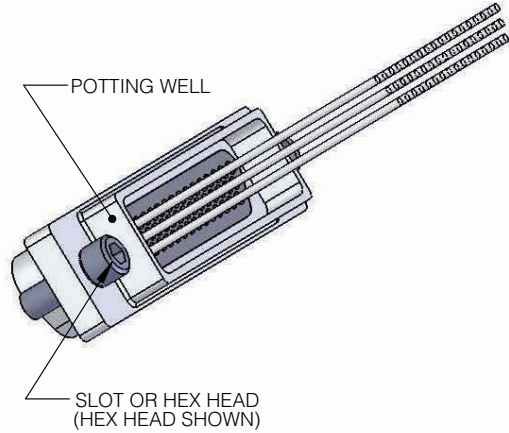
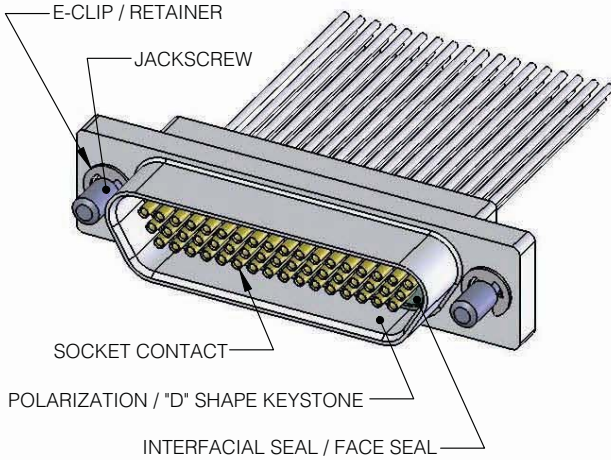
Au/Cu Flash Barrier  
(Inconsistent plating thickness)

Micro-miniature contact system employs a precision stamped and formed pin contact recessed within the plug insulator.

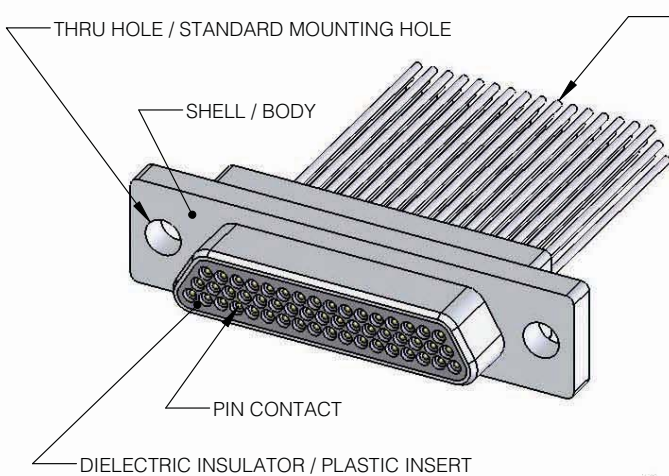
The contact system has proven reliability, exceeding the performance specifications of MIL-DTL-83513.

# How to describe what you really need?

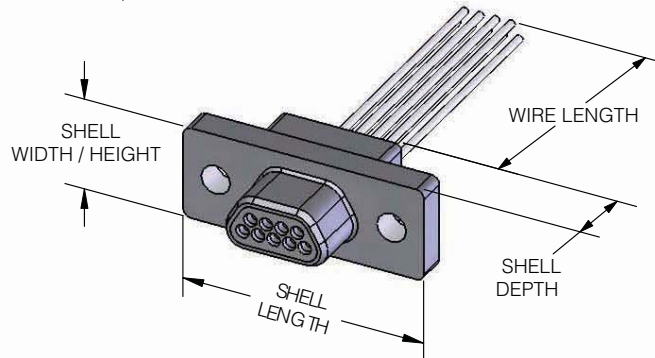
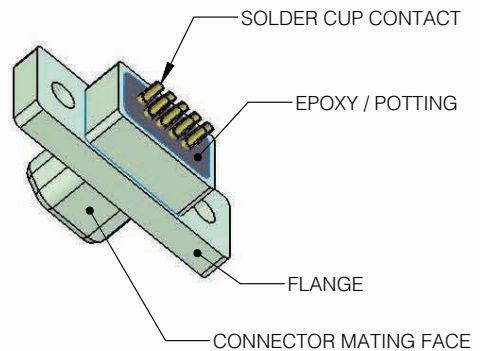
## RECEPTACLE / FEMALE / SOCKET CONNECTOR



## PLUG / MALE / PIN CONNECTOR



INSULATED WIRE (STRANDED) / PIGTAILS / FLYING LEADS  
OR  
UNINSULATED SOLID WIRE / STRAIGHT PCB TERMINATION



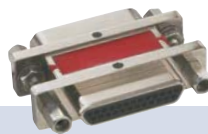
## SPECIFICATIONS

The Amphenol microminiature connector series offers proven military spec performance and reliability in rectangular and strip line micro connectors. Microminiature connectors are available in rectangular D, strip and custom card edge configurations, with contacts on .050 (1.27) centres. Inserts in micro-d miniature connectors with signal and coax/power contacts are also available.

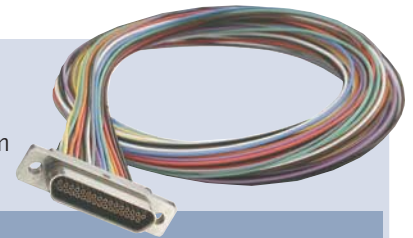
The Amphenol microminiature contact system employs a precision stamped and formed pin contact recessed within the plug insulator. The socket contact is a precision fabricated tube. Pin and socket contacts are epoxy retained in high grade thermoplastic insulators.

The contact system has proven reliability, exceeding the performance specifications of MIL-DTL-83513.

Terminations are available in a broad range including solder cup, terminated to wire harness, vertical and right angle PCB. Plastic and metal shell versions are available, in a broad range of shell finishes. A broad range of mounting hardware is available (jackscrews, posts, guide pins) as well as straight and angled back-shells.



**Amphenol**  
Canada



### MICROMINATURE CONNECTOR

The following data applies to a standard Amphenol Canada micro-d connector with wires or pcb termination. Variations from standard products may cause performance to vary from that mentioned below. Consult factory for special applications and requirements.

#### Specifications

<b>Shell Material</b>	Std. Metal (100, 106, 110 & M13 Series): 104 Series: Std. Plastic (101, 102 & 105 Series): High Temp Plastic:	Aluminum alloy 6061-T6 per QQ-A-200/8 Stainless steel Polyphenylene sulfide (Ryton) High performance thermoplastic (PEEK or equivalent)
<b>Shell Finish</b> (Metal Shell Only)	Anodize ** Cadmium Gold Irridite/Alodine ** Electroless Nickel Tin	
<b>Insulator / PCB Backshell</b>	Polyphenylene sulfide (Ryton) per MIL-M-24519, type GST-40F; colour: black	
<b>Contacts</b>	Copper alloy, 50 micro-inches gold plate over nickel	
<b>Hardware</b>	Stainless steel, passivated	
<b>Potting Material</b>	Std. Epoxy: High Temp Epoxy:	EP1730-1 or equivalent; colour: black EP173859 or equivalent
<b>Wire</b>	Insulated Wire:  Solid Uninsulated Wire:	MIL-W-16878/4 or /6 (available 7 or 19 strands) MIL-W-22759/11 or /33 Copper per A-A-59551 (QQ-W-343)
<b>Coupling</b>	Friction or Jackscrews into jackposts/threaded Inserts	
<b>Contact Spacing</b>	.050 (1.27) centers	
<b>Shell Styles (Gender)</b>	Plug (pin contacts) and receptacle (socket contacts)	
<b>Number of Contacts</b>	Standard Micro-d: Combo (Hybrid) Micro-d:  High Density Connector (106 Series): Strip Connector (105 Series):	9, 15, 21, 25, 31, 37, 51, 69, 100 7W2 or 7C2 (5 signal, 2 power/coax) 24W4 or 24C4 (20 signal, 4 power/coax) 50, 54, 58, 62, 66, 70, 74, 104, 112, 120, 128, 136, 144, 152 1 thru 30 (no guide pins) 1 thru 29 (guide pin on one end) 1 thru 28 (guide pin on both ends)
<b>Coaxial Cable</b>	RG-178/U	
<b>Wire Size</b>	#24 thru #32 AWG (largest to smallest diameter)	
<b>Contact Termination</b>	Multiple indent crimp	

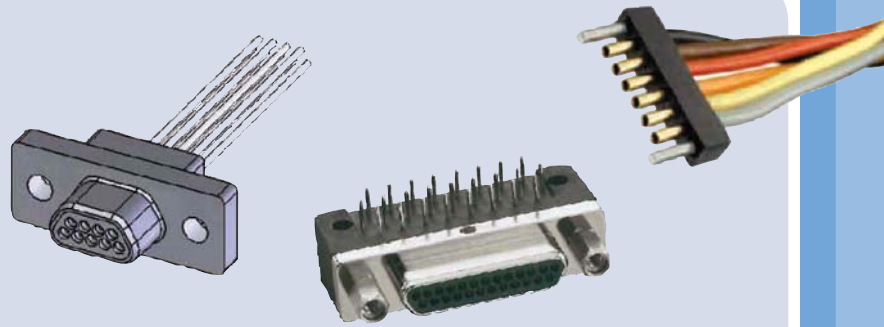


**MICROMINATURE CONNECTOR  
PERFORMANCE DATA**

The following data applies to a standard Amphenol Canada micro-d connector that is in accordance with M83513 spec.

Variations from standard products may cause performance to vary from that mentioned below.

Consult factory for special applications and requirements.



Test Description	Specification/ Method *	Limits
Contact Rating	---	3 amps max.
Magnetic Permeability	ASTM-A342/A342M	2.0 μ max.
D.W.V. (Test voltage rms 60 Hz ac volts)	EIA-364-20	at sea level: 600 vac for solder pot and standard wire at 70,000 ft altitude (reduced barometric pressure): 150 vac for solder pot and standard wire
Insulation Resistance	EIA-364-21	5000 megohms min.
Contact Resistance	EIA-364-23	8 milliohms at 3 amps
Contact Engagement Force	MIL-DTL-83513	6.0 oz. max.
Contact Separation Force	MIL-DTL-83513	0.5 oz. min.
Connector Mating Force	MIL-DTL-83513	(10 oz. times no. of contacts) max.
Connector Unmating Force	MIL-DTL-83513	(0.5 oz. times no. of contacts) min.
Thermal Shock (Temperature Cycling)	EIA-364-32, condition I, 5 cycles	No physical damage -55°C to +125°C (-67°F to +257°F)
Mechanical Shock (Specified Pulse)	EIA-364-27, condition E	No physical damage and no loosening of parts No loss of continuity > 1 microsec.
Vibration	EIA-364-28, condition IV	No physical damage and no loosening of parts No loss of continuity > 1 microsec.
Durability	MIL-DTL-83513	500 mating cycles at a rate of 200 ±100 CPH
Salt Spray (Corrosion)	EIA-364-26, condition B	Meets mateability and contact resistance requirements
Fluid Immersion	MIL-DTL-83513	Meets mateability requirements
Humidity	EIA-364-31	Meets D.W.V. and insulation resistance requirements 1 megohm min. after step 6, 1000 megohms min. after 24 hrs of conditioning
Insert Retention (class M)	MIL-DTL-83513	50 lbs psi (axial load)
Solderability	MIL-STD-202, method 208	Withstand test condition
Contact Retention E	IA-364-29	5 lbs min. (axial load)
Thermal Vacuum Outgassing (Space Classes)	SP-R-0022 or ASTM E595	Exceeds MIL-DTL-83513 requirements; standard is 1.0% max TML and 0.1% max VCM of original mass

\* Standards References

MIL = Department of Defense

ASTM = ASTM International

EIA = Electronic Industries Association

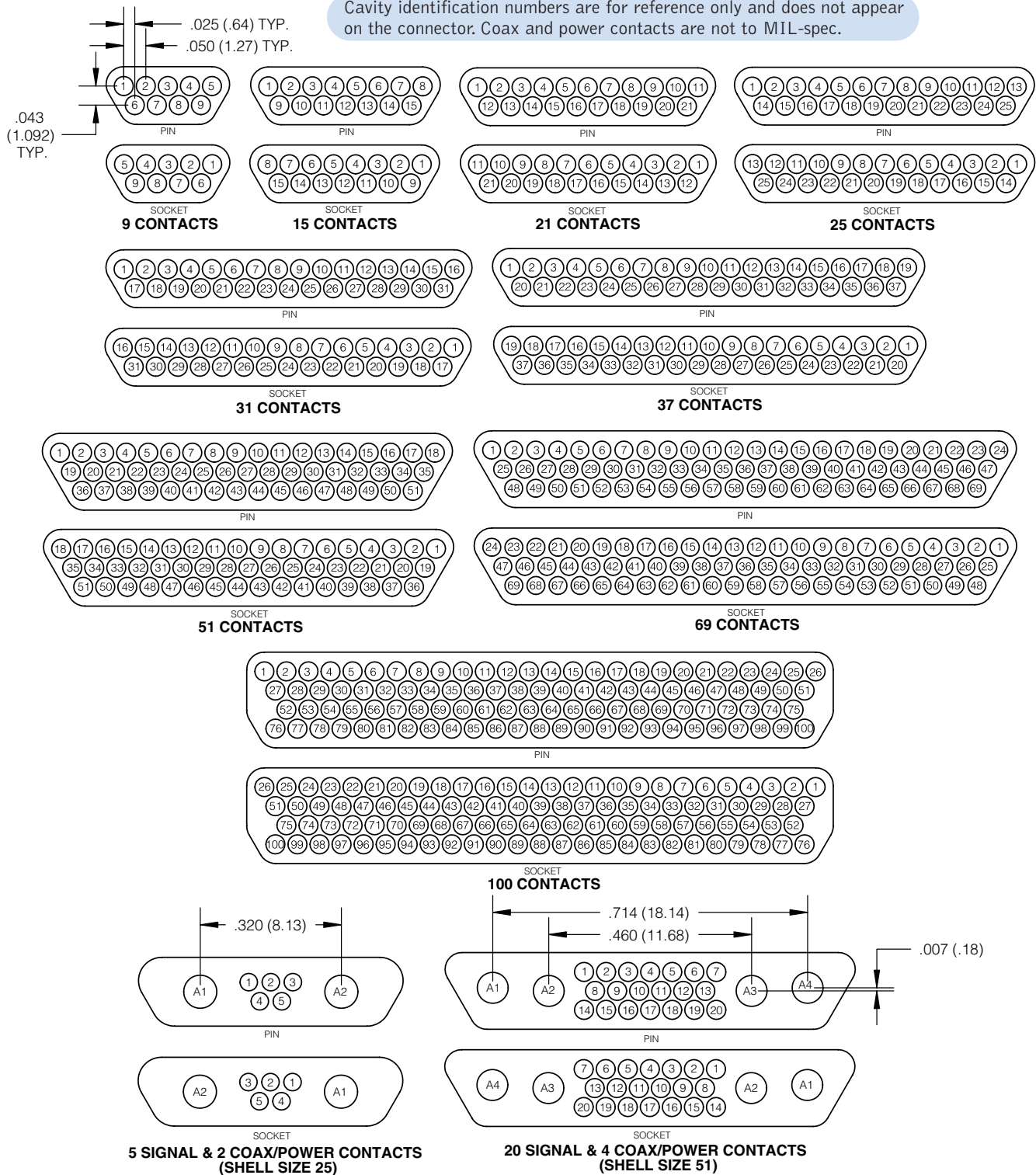
SP = NASA

\*\* Does not apply for die-cast parts (consult factory before ordering)

CONTACT ARRANGEMENTS

Series 100 to 104 & Combo Micro-D

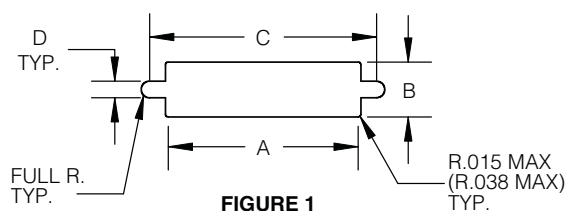
Cavity identification numbers are for reference only and does not appear on the connector. Coax and power contacts are not to MIL-spec.



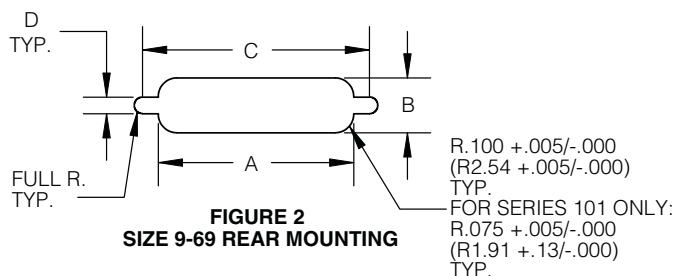
INCHES (MM)

# PANEL CUTOUTS

## Series 100 to 104 & Combo Micro-D

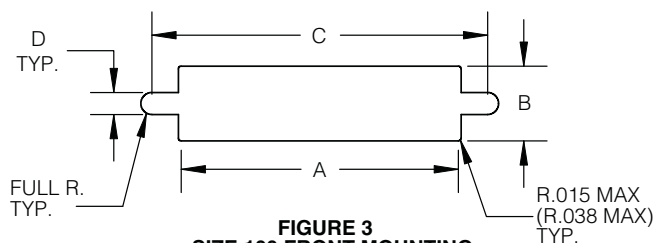


**FIGURE 1**  
SIZE 9-69 FRONT MOUNTING

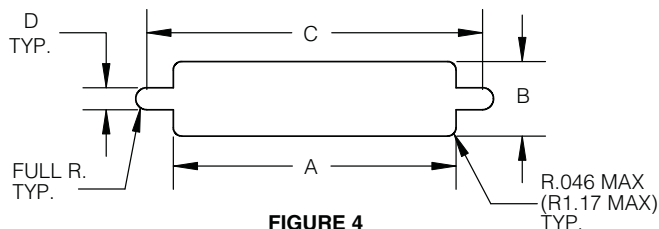


**FIGURE 2**  
SIZE 9-69 REAR MOUNTING

R.100 +.005/- .000  
(R2.54 +.005/- .000)  
TYP.  
FOR SERIES 101 ONLY:  
R.075 +.005/- .000  
(R1.91 +.13/- .000)  
TYP.



**FIGURE 3**  
SIZE 100 FRONT MOUNTING



**FIGURE 4**  
SIZE 100 REAR MOUNTING

R.046 MAX  
(R1.17 MAX)  
TYP.

### Series 100, 102, 104 & Combo Micro-D

SIZE	FIGURE	A		B		C		D	
		+0.004 (0.10) -0.000 (0.00)	+0.004 (0.10) -0.000 (0.00)	+0.005 (0.13) -0.000 (0.00)	+0.005 (0.13) -0.000 (0.00)	+0.005 (0.13) -0.000 (0.00)	+0.005 (0.13) -0.000 (0.00)		
9	1	.408 (10.36)	.271 (6.88)	.570 (14.48)	.089 (2.26)				
	2	.401 (10.19)	.252 (6.40)	.570 (14.48)	.089 (2.26)				
15	1	.558 (14.17)	.271 (6.88)	.720 (18.29)	.089 (2.26)				
	2	.551 (14.00)	.252 (6.40)	.720 (18.29)	.089 (2.26)				
21	1	.708 (17.98)	.271 (6.88)	.870 (22.10)	.089 (2.26)				
	2	.701 (17.81)	.252 (6.40)	.870 (22.10)	.089 (2.26)				
25	1	.808 (20.52)	.271 (6.88)	.970 (26.64)	.089 (2.26)				
	2	.801 (20.34)	.252 (6.40)	.970 (26.64)	.089 (2.26)				
31	1	.958 (24.33)	.271 (6.88)	1.120 (28.45)	.089 (2.26)				
	2	.951 (24.13)	.252 (6.40)	1.120 (28.45)	.089 (2.26)				
37	1	1.108 (28.14)	.271 (6.88)	1.270 (32.26)	.089 (2.26)				
	2	1.101 (27.97)	.252 (6.40)	1.270 (32.26)	.089 (2.26)				
51	1	1.058 (26.87)	.315 (8.00)	1.220 (30.99)	.089 (2.26)				
	2	1.051 (26.70)	.295 (7.49)	1.220 (30.99)	.089 (2.26)				
69	1	1.358 (34.49)	.315 (8.00)	1.525 (38.74)	.089 (2.26)				
	2	1.351 (34.32)	.295 (7.49)	1.525 (38.74)	.089 (2.26)				
100	3	1.456 (36.98)	.361 (9.17)	1.805 (45.85)	.118 (3.00)				
	4	1.520 (38.61)	.401 (10.18)	1.805 (45.85)	.118 (3.00)				

#### Notes:

- Shell sizes 9-69 front mounting (Figure 1) and rear mounting (Figure 2) cutouts accommodate #2-56 screws.
- Shell size 100 front mounting (Figure 3) and rear mounting (Figure 4) cutouts accommodate #4-40 screws.

### Series 101 only

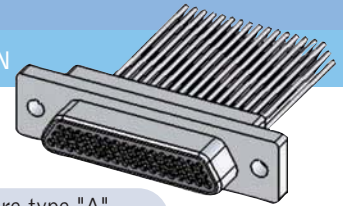
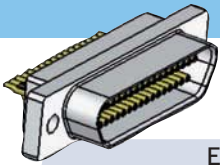
SIZE	FIGURE	A		B		C		D	
		+0.004 (0.10) -0.000 (0.00)	+0.004 (0.10) -0.000 (0.00)	+0.005 (0.13) -0.000 (0.00)	+0.005 (0.13) -0.000 (0.00)	+0.005 (0.13) -0.000 (0.00)	+0.005 (0.13) -0.000 (0.00)		
9	1	.408 (10.36)	.172 (4.37)	.570 (14.48)	.089 (2.26)				
	2	.378 (9.60)	.217 (5.51)	.570 (14.48)	.089 (2.26)				
15	1	.588 (14.94)	.172 (4.37)	.720 (18.29)	.089 (2.26)				
	2	.528 (13.41)	.217 (5.51)	.720 (18.29)	.089 (2.26)				
21	1	.708 (17.98)	.172 (4.37)	.870 (22.10)	.089 (2.26)				
	2	.678 (17.22)	.217 (5.51)	.870 (22.10)	.089 (2.26)				
25	1	.808 (20.52)	.172 (4.37)	.970 (26.64)	.089 (2.26)				
	2	.778 (19.76)	.217 (5.51)	.970 (26.64)	.089 (2.26)				
31	1	.958 (24.33)	.172 (4.37)	1.120 (28.45)	.089 (2.26)				
	2	.928 (23.57)	.217 (5.51)	1.120 (28.45)	.089 (2.26)				
37	1	1.108 (28.14)	.172 (4.37)	1.270 (32.26)	.089 (2.26)				
	2	1.078 (27.38)	.217 (5.51)	1.270 (32.26)	.089 (2.26)				
51	1	1.058 (26.87)	.215 (5.46)	1.220 (30.99)	.089 (2.26)				
	2	1.028 (26.11)	.261 (6.63)	1.220 (30.99)	.089 (2.26)				

#### Notes:

- Sizes 69 & 100 are not applicable for 101 series plastic connectors.



## SOLDER CUP AND CRIMP TERMINATION



### Series 100, 102 & 104

**Example:**  
100RN09S- 4A5FM2-20

**Description:** metal shell size 9 rcpt, nickel finish, 26 AWG wire type "A", non-std wire length 20 inches with M2 low profile jackscrews.

**100 R X XXX X - X X X X XX - XXX**

#### Connector Series

- 100** = metal shell per M83513
- 102** = all plastic (dimensionally identical to metal shell per M83513)
- 104** = stainless steel (dimensionally identical to metal shell per M83513)

#### Insulator Material

**R** = Polyphenylene Sulfide (Ryton)

#### Shell Finish Omit for series 102 & 104

- A** = anodize
- C** = cadmium
- G** = gold
- I** = irridite/alodine
- N** = electroless nickel
- T** = tin

#### Connector Size (number of contacts)

09, 15, 21, 25, 31, 37, 51, 69, 100  
All sizes I.A.W. M83513 except size 69 (non-military)

#### Connector Type

- P** = Plug (pin)
- S** = Receptacle (socket)

#### Wire Size (AWG.)

- 1** = 32
  - 2** = 30
  - 3** = 28
  - 4** = 26 (M83513 standard) \*off shelf
  - 5** = 25 (solid wire only)
  - 6** = 24
- Omit for solder cup contacts

#### Wire Type

##### General Applications:

- A** = 7 strd, per NEMA-HP3 (MIL-W-16878/4)
- B** = 7 strd, per NEMA-HP3 (formerly MIL-W-16878/6)
- C** = 19 strd, per NEMA-HP3 (formerly MIL-W-16878/4)
- D** = 19 strd, per NEMA-HP3 (formerly MIL-W-16878/6)

##### Military/Aerospace Applications:

- E** = per MIL-W-22759/11 (M83513 standard)
  - F** = per MIL-W-22759/33 (space grade)
  - L** = solid wire uninsulated
- Omit for solder cup contacts

#### Non Std. Length (Inches)

Stranded Wire (no decimal values)  
e.g. **1** = 1 inches, **100** = 100 inches  
Solid Wire (0.109 < length < 1.00)  
e.g. **110** = .110 inches, **999** = .999 inches

#### Hardware (pre-installed by factory)

- B** = standard mounting holes
- P** = jackpost
- M2** = low profile jackscrew, allen head
- M3** = high profile jackscrew, allen head
- M5** = low profile jackscrew, slot head
- M6** = high profile jackscrew, slot head
- L** = captive low profile jackscrew
- K** = captive high profile jackscrew
- F** = forward float mount
- R** = reverse float mount

#### Wire Length ((inches +1.00/-0.00)

- A** = 18.00
  - B** = 36.00
  - C** = 72.00
  - D** = 0.500 (solid wire only +0.20/-0.00)
  - E** = 1.00 (solid wire only +0.20/-0.00)
  - F** = Non std. length
- Omit for solder cup contacts

#### Wire Color / Finish

- 1** = all white (M83513 standard) \*off shelf
  - 2** = all yellow
  - 3** = solid wire uninsulated, tin plated
  - 4** = solid wire uninsulated, gold plated
  - 5** = color coded per mil-std-681, system 1
  - 6** = 1st 10 colors blk. thru wht. repeated (M83513 standard) \*off shelf
- Omit for solder cup contacts

**Amphenol**  
Canada

## FEATURES

- Plastic and metal shells are intermateable and intermountable.
- Available in sizes 9 thru 100, solder cup or crimp termination.
- Wide selection of wire sizes, types, and colour finish.
- Wide selection of hardware options.

INCHES (MM)

M83513 ORDERING INFORMATION - SOLDER CUP AND CRIMP TERMINATION

Solder Cup Termination:

M83513/XX - X X

Specification Sheet

- 01 = plug (pin)
- 02 = receptacle (socket)

Insert Arrangement

- A = 9
- B = 15
- C = 21
- D = 25
- E = 31
- F = 37
- G = 51
- H = 100

Shell Finish

- C = cadmium
- N = electroless nickel
- P = passivated stainless steel

Crimp Termination:

M83513/XX - X XX X

Specification Sheet

- 03 = plug (pin)
- 04 = receptacle (socket)

Insert Arrangement

- A = 9
- B = 15
- C = 21
- D = 25
- E = 31
- F = 37
- G = 51
- H = 100

Shell Finish

- C = cadmium
- N = electroless nickel
- P = passivated stainless steel

Wire Type (inches +1.00/-0.00)

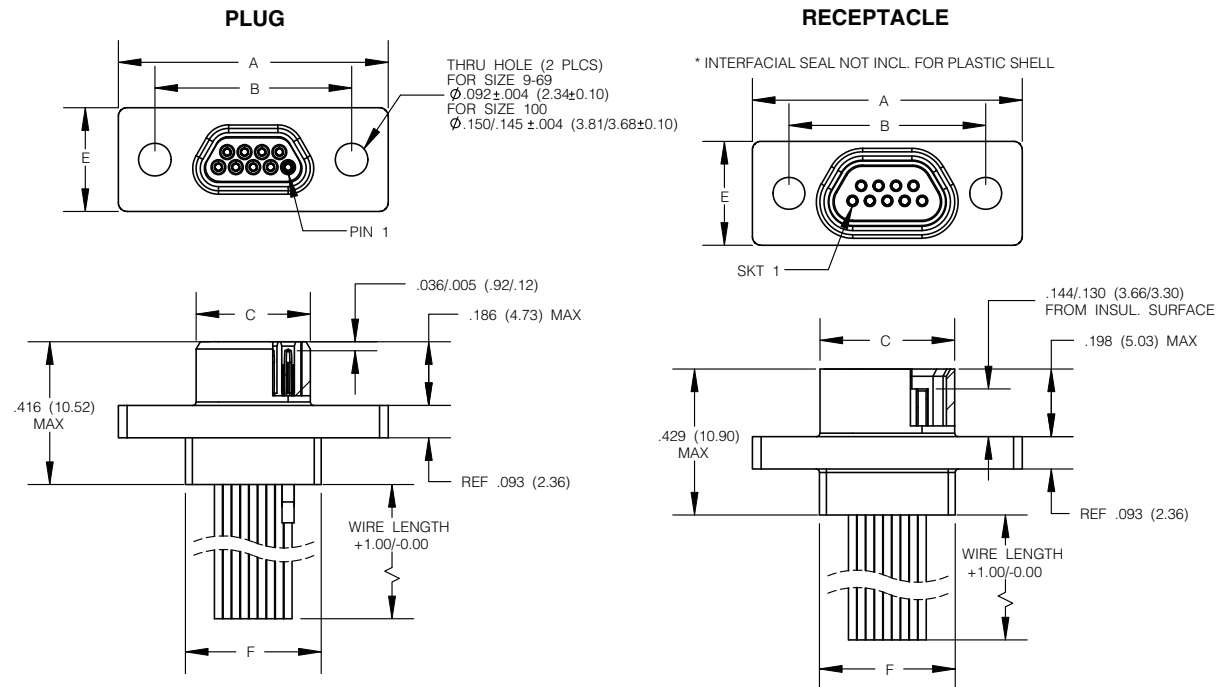
- 01 = M22759/11-26-9, 18"
- 02 = M22759/11-26-9, 36"
- 03 = M22759/11-26-(\*), 18"
- 04 = M22759/11-26-(\*), 36"
- 05 = A-A-59551, type S, 25 AWG, except shall be gold plated 10 micro-inches; 0.5"
- 06 = A-A-59551, type S, 25 AWG, except shall be gold plated 10 micro-inches; 1.0"
- 07 = A-A-59551, type S, 25 AWG, tin plated 100 micro-inches; 0.5"
- 08 = A-A-59551, type S, 25 AWG, tin plated 100 micro-inches; 1.0"
- 09 = M22759/33-26-9, 18"
- 10 = M22759/33-26-9, 36"
- 11 = M22759/33-26-(\*), 18"
- 12 = M22759/33-26-(\*), 36"
- 13 = M22759/11-26-9, 72"
- 14 = M22759/11-26-(\*), 72"
- 15 = M22759/33-26-9, 72"
- 16 = M22759/33-26-(\*), 72"
- 17 = 04035-26A-9, 18"
- 18 = 04035-26A-9, 36"
- 19 = 04035-26A-9, 72"
- 20 = 04035-26A-(\*), 18"
- 21 = 04035-26A-(\*), 36"
- 22 = 04035-26A-(\*), 72"



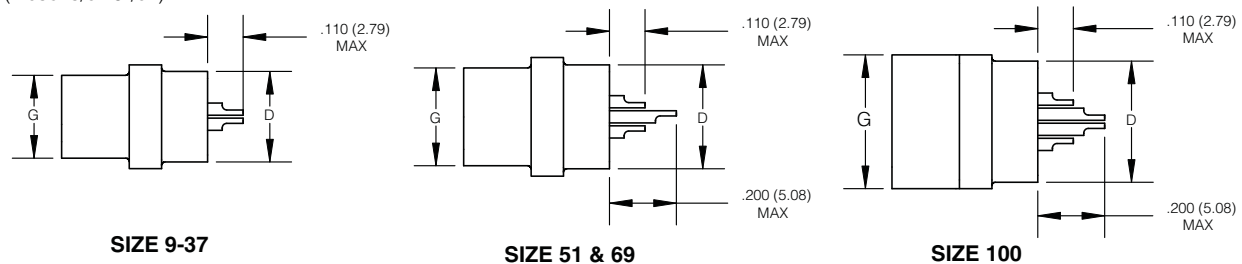
INCHES (MM)

# SERIES 100, 102 & 104

## WIRE TERMINATION (M83513/03 & /04)



## SOLDER CUP TERMINATION PLUG / RECEPTACLE (M83513/01 & /02)

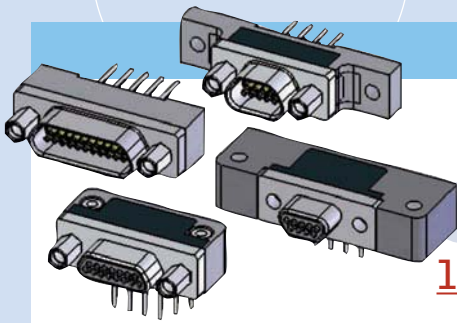


SIZE	A MAX	B $\pm .005$ (0.13)	C MAX		D MAX	E MAX	F MAX	G MAX	
			PLUG	RCPT				PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.270 (6.86)	.308 (7.82)	.400 (10.16)	.185 (4.70)	.253 (6.43)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.270 (6.86)	.308 (7.82)	.550 (13.97)	.185 (4.70)	.253 (6.43)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.270 (6.86)	.308 (7.82)	.700 (17.78)	.185 (4.70)	.253 (6.43)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.270 (6.86)	.308 (7.82)	.800 (20.32)	.185 (4.70)	.253 (6.43)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.270 (6.86)	.308 (7.82)	.950 (24.13)	.185 (4.70)	.253 (6.43)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	.270 (6.86)	.308 (7.82)	1.100 (27.94)	.185 (4.70)	.253 (6.43)
51	1.435 (36.45)	1.215 (30.86)	.984 (24.99)	1.052 (26.72)	.310 (7.87)	.351 (8.92)	1.050 (26.67)	.229 (5.82)	.296 (7.52)
69	1.735 (44.07)	1.515 (38.48)	1.289 (32.74)	1.357 (34.47)	.310 (7.87)	.351 (8.92)	1.350 (34.29)	.229 (5.82)	.296 (7.52)
100	2.170 (55.12)	1.800 (45.72)	1.384 (35.13)	1.508 (38.10)	.360 (9.14)	.394 (10.01)	1.442 (36.63)	.271 (6.88)	.394 (10.01)

INCHES (MM)

**Amphenol**  
Canada





## Series 100,102 & 104

Example: 100RN21P-CBRP1 Description: metal shell size 21 plug, nickel finish, CBR termination, pcb tail lead length .109 inches with jackposts included

**100 R X XXX X - BR X X X - XXX**

### Connector Series

- 100** = metal shell per M83513
- 102** = all plastic (dimensionally identical to metal shell per M83513)
- 104** = stainless steel (dimensionally identical to metal shell per M83513)

### Insulator Material

**R** = Polyphenylene Sulfide (Ryton)

### Shell Finish Omit for series 102 & 104

- A** = anodize
- C** = cadmium
- G** = gold
- I** = irridite/alodine
- N** = electroless nickel
- T** = tin

### Connector Size (number of contacts)

09, 15, 21, 25, 31, 37, 51, 69, 100  
All sizes I.A.W. M83513 except size 69 (non-military)

### Connector Type

- P** = Plug (pin)
- S** = Receptacle (socket)

### Non Std. Wire Length (Inches)

(0.109 < length < 1.00)  
e.g. **125** = .125 inches

### Lead Length (inches)

- 1** = .109 ± .015
- 2** = .140 ± .015
- 3** = .172 ± .015
- 4** = .250 ± .015
- F** = non std. length

### Threaded Insert (pre-installed)

**T** = threaded insert (PCB mounting option)  
Omit for no threaded insert

### Hardware for BS, BR, CBR & C6: (pre-installed)

- P** = jackpost  
Omit for no jackpost
- Hardware for C16: (pre-installed)**
- B** = standard mounting holes
- M2** = low profile jackscrew, allen head
- M3** = high profile jackscrew, allen head
- M5** = low profile jackscrew, slot head
- M6** = high profile jackscrew, slot head
- L** = captive low profile jackscrew
- K** = captive high profile jackscrew
- F** = forward float mount
- R** = reverse float mount

### Termination Type

- BS** = straight PCB per M83513/22 thru /27
- BR** = 90° PCB per M83513/16 thru /21
- CBR** = narrow 90° PCB per M83513/10 thru /15
- C6** = straight PCB per M83513/28 thru /33
- C16** = straight PCB with flange (C6 PC configuration)

### M83513 ORDERING INFORMATION

#### PRINTED CIRCUIT BOARD TERMINATION:

**M83513/XX - X XX X X**

### Specification Sheet

- 10** = plug (pin), CBR type, sizes 9-37
- 11** = plug (pin), CBR type, size 51
- 12** = plug (pin), CBR type, size 100
- 13** = receptacle (socket), CBR type, sizes 9-37
- 14** = receptacle (socket), CBR type, size 51
- 15** = receptacle (socket), CBR type, size 100
- 16** = plug (pin), BR type, sizes 9-37
- 17** = plug (pin), BR type, size 51
- 18** = plug (pin), BR type, size 100
- 19** = receptacle (socket), BR type, sizes 9-37
- 20** = receptacle (socket), BR type, size 51
- 21** = receptacle (socket), BR type, size 100
- 22** = plug (pin), BS type, sizes 9-37
- 23** = plug (pin), BS type, size 51
- 24** = plug (pin), BS type, size 100
- 25** = receptacle (socket), BS type, sizes 9-37
- 26** = receptacle (socket), BS type, size 51
- 27** = receptacle (socket), BS type, size 100
- 28** = plug (pin), C6 type, sizes 9-37
- 29** = plug (pin), C6 type, size 51
- 30** = plug (pin), C6 type, size 100
- 31** = receptacle (socket), C6 type, sizes 9-37
- 32** = receptacle (socket), C6 type, size 51
- 33** = receptacle (socket), C6 type, size 100

### Hardware

- N** = no jackpost or threaded insert
- P** = jackpost
- T** = threaded insert
- W** = jackpost and threaded insert

### Shell Finish

- C** = cadmium
- N** = electroless nickel
- P** = passivated stainless steel

### Lead Length (inches)

- 01** = .109 ± .015
- 02** = .140 ± .015
- 03** = .172 ± .015

### Insert Arrangement

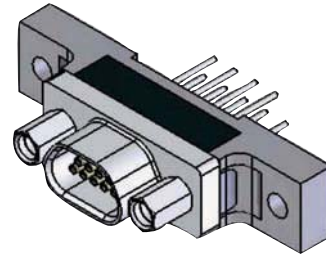
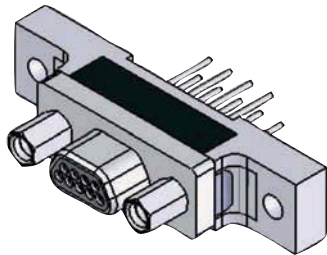
- A** = 9
- B** = 15
- C** = 21
- D** = 25
- E** = 31
- F** = 37
- G** = 51 (applicable for spec sheet 11, 14, 17, 20, 23, 26, 29 & 32)
- H** = 100 (applicable for spec sheet 12, 15, 18, 21, 24, 27, 30 & 33)

## FEATURES

Available in sizes 9 thru 100, straight and right angle PCB termination. Solid copper 24 AWG PCB leads, tin plated, and solder dipped. Wide selection of hardware options. Consult factory for other wire size termination.

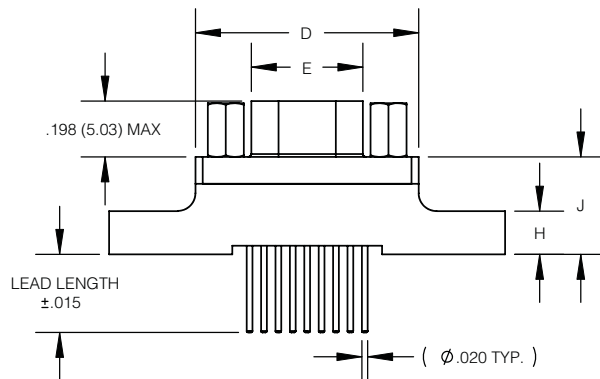
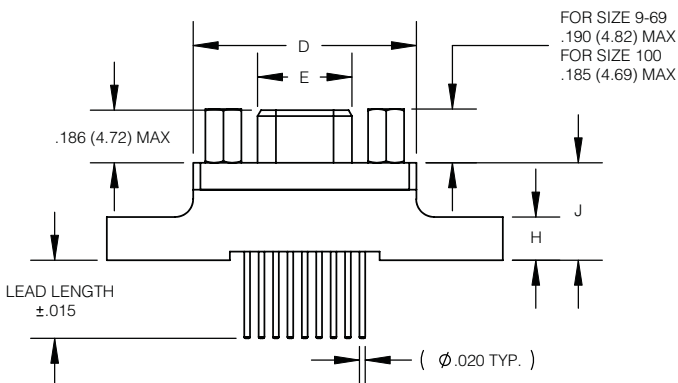
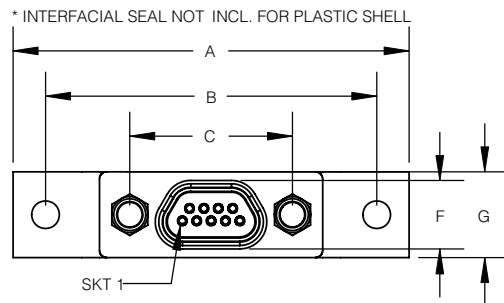
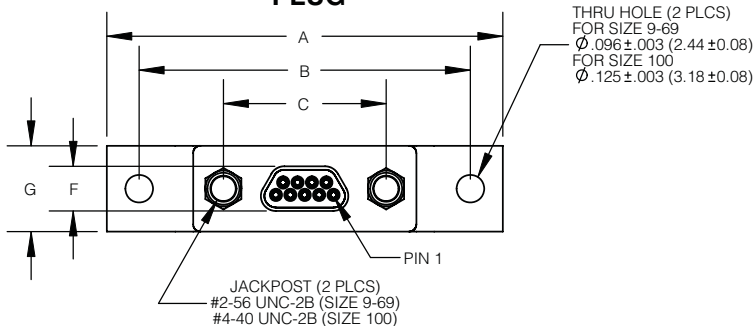
INCHES (MM)

### Series 100, 102 & 104



**PLUG**

**RECEPTACLE**



SIZE	A MAX	B $\pm .005$ (0.13)	C $\pm .005$ (0.13)	D MAX	E MAX		F MAX		G MAX	H MAX	J MAX
					PLUG	RCPT	PLUG	RCPT			
09	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.785 (19.84)	.334 (8.48)	.402 (10.21)	.185 (4.70)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)
15	1.390 (35.31)	1.150 (29.21)	.715 (18.16)	.935 (23.75)	.484 (12.29)	.552 (13.97)	.185 (4.70)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)
21	1.690 (43.93)	1.450 (36.83)	.865 (21.97)	1.085 (27.56)	.634 (16.10)	.702 (17.83)	.185 (4.70)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)
25	1.740 (44.20)	1.500 (38.10)	.965 (24.51)	1.185 (30.10)	.734 (18.64)	.802 (20.37)	.185 (4.70)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)
31	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	1.335 (33.91)	.884 (22.45)	.952 (24.18)	.185 (4.70)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)
37	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.485 (37.72)	1.034 (26.26)	1.102 (27.99)	.185 (4.70)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)
51	2.270 (67.66)	2.000 (50.80)	1.215 (30.86)	1.435 (36.45)	.984 (24.99)	1.052 (26.72)	.228 (5.79)	.296 (7.52)	.351 (8.92)	.165 (4.19)	.355 (9.02)
69	2.870 (72.90)	2.600 (66.04)	1.515 (38.48)	1.735 (44.07)	1.289 (32.74)	1.357 (34.47)	.228 (5.79)	.296 (7.52)	.351 (8.92)	.165 (4.19)	.355 (9.02)
100	3.070 (77.98)	2.800 (71.12)	1.800 (45.72)	2.170 (55.12)	1.384 (35.13)	1.508 (38.10)	.271 (6.88)	.394 (10.01)	.460 (11.68)	.303 (7.70)	.550 (12.70)

INCHES (MM)

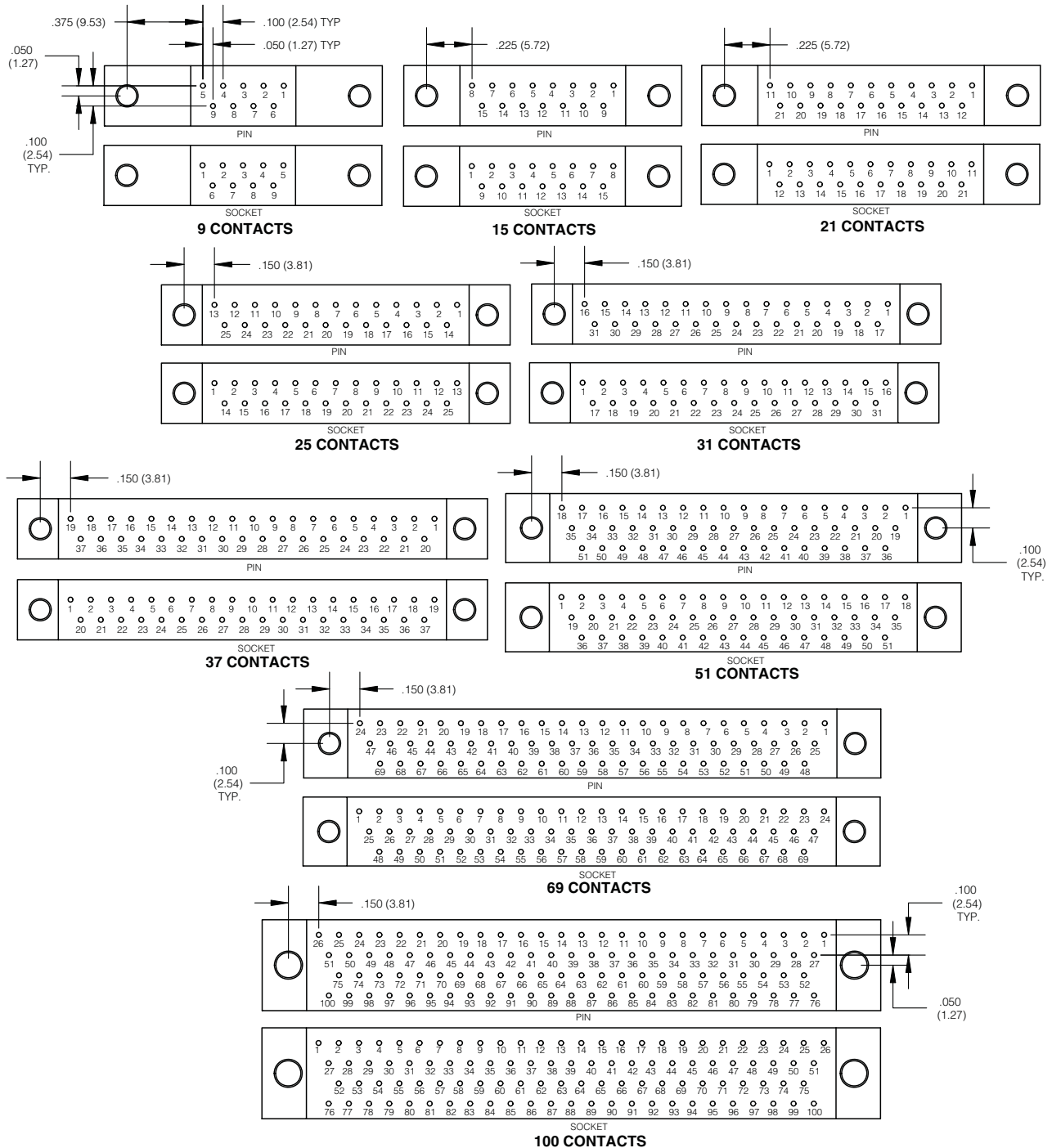


# SERIES 100, 101, 102 & 104

STRAIGHT PC CONFIGURATIONS (REAR VIEW)

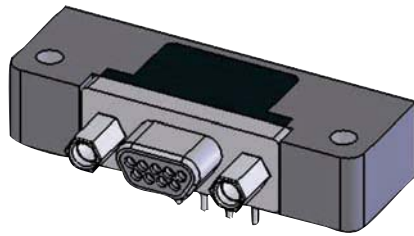
.100 (2.54) x .100 (2.54) grid pattern, offset .050 (1.27)

Cavity identification numbers are for reference only and does not appear on the connector.

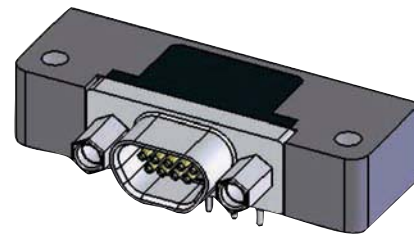




### Series 100, 102 & 104

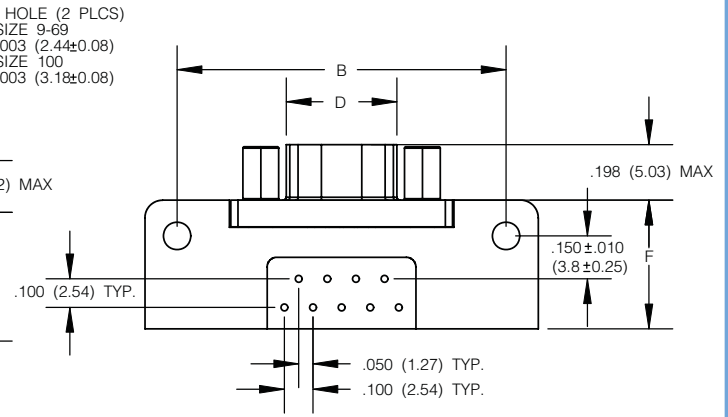
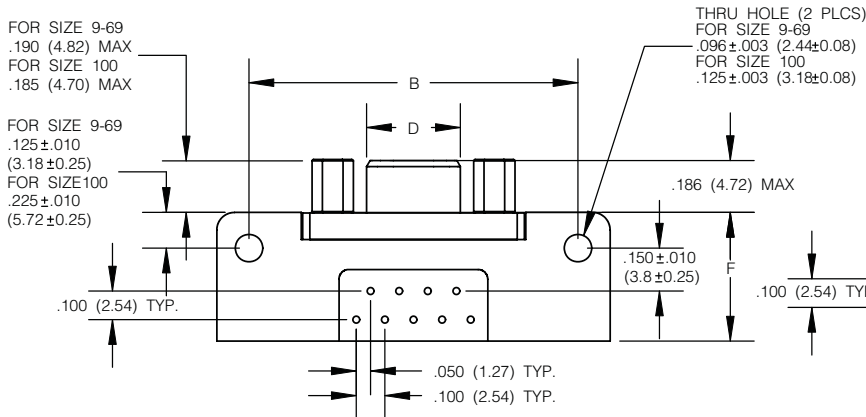
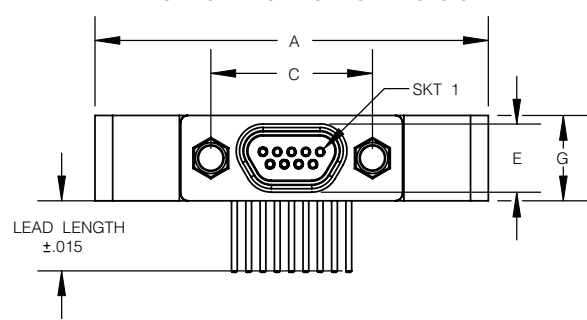
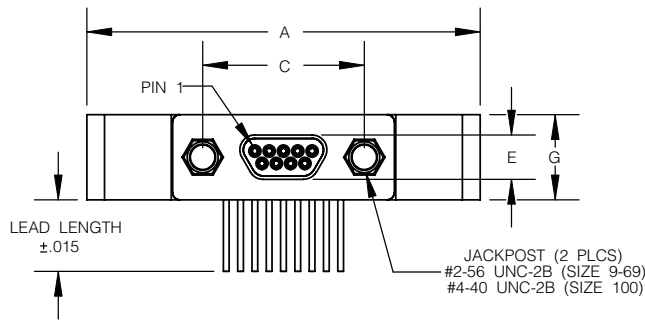


**PLUG**



**RECEPTACLE**

\* INTERFACIAL SEAL NOT INCL. FOR PLASTIC SHELL



SIZE	A MAX	B ±.007 (0.18)	C ±.005 (0.13)	D MAX		E MAX		F MAX	G MAX
				PLUG	RCPT	PLUG	RCPT		
09	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.185 (4.70)	.253 (6.43)	.455 (11.56)	.308 (7.82)
15	1.540 (39.12)	1.300 (33.02)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.185 (4.70)	.253 (6.43)	.455 (11.56)	.308 (7.82)
21	1.690 (42.93)	1.450 (36.83)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.185 (4.70)	.253 (6.43)	.455 (11.56)	.308 (7.82)
25	1.790 (45.47)	1.550 (39.37)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.185 (4.70)	.253 (6.43)	.455 (11.56)	.308 (7.82)
31	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.185 (4.70)	.253 (6.43)	.455 (11.56)	.308 (7.82)
37	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	.185 (4.70)	.253 (6.43)	.455 (11.56)	.308 (7.82)
51	1.875 (47.63)	1.600 (40.64)	1.215 (30.86)	.984 (24.99)	1.052 (26.72)	.228 (5.79)	.296 (7.52)	.565 (14.35)	.351 (8.92)
69	2.500 (63.50)	2.200 (55.88)	1.515 (38.48)	1.289 (32.74)	1.357 (34.47)	.228 (5.79)	.296 (7.52)	.565 (14.35)	.351 (8.92)
100	2.780 (70.61)	2.500 (63.50)	1.800 (45.72)	1.386 (35.15)	1.508 (38.10)	.271 (6.88)	.394 (10.01)	.765 (19.43)	.394 (10.01)

INCHES (MM)

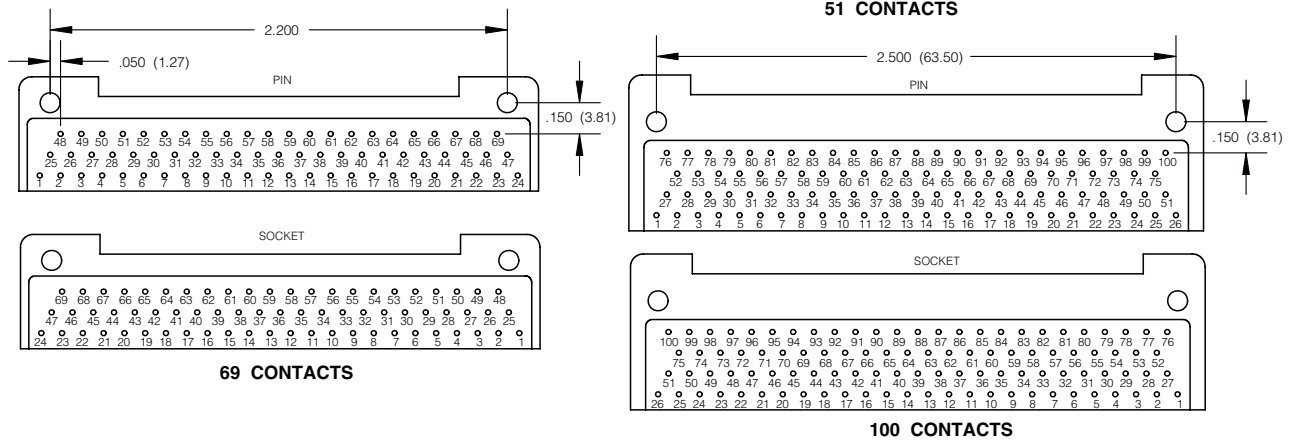
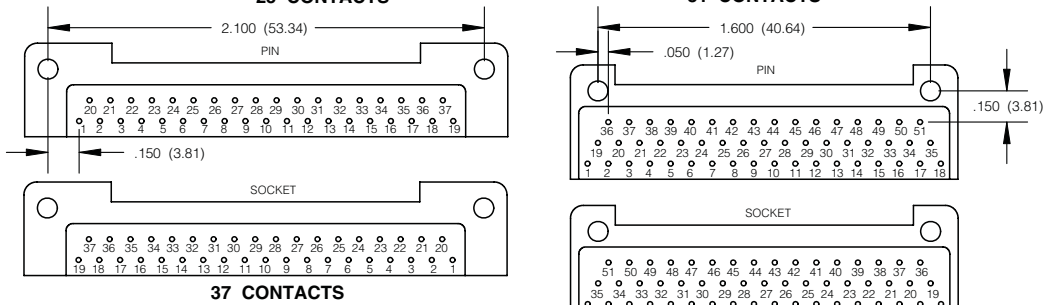
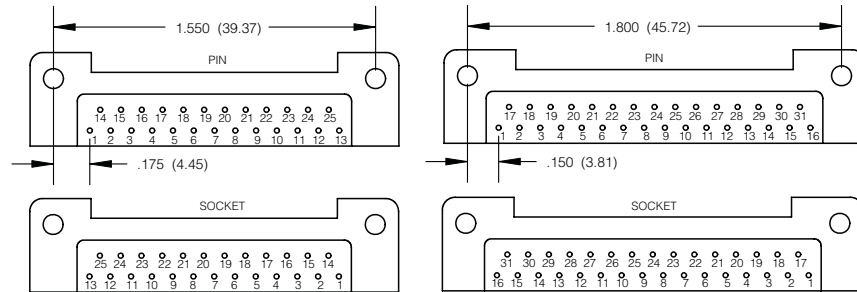
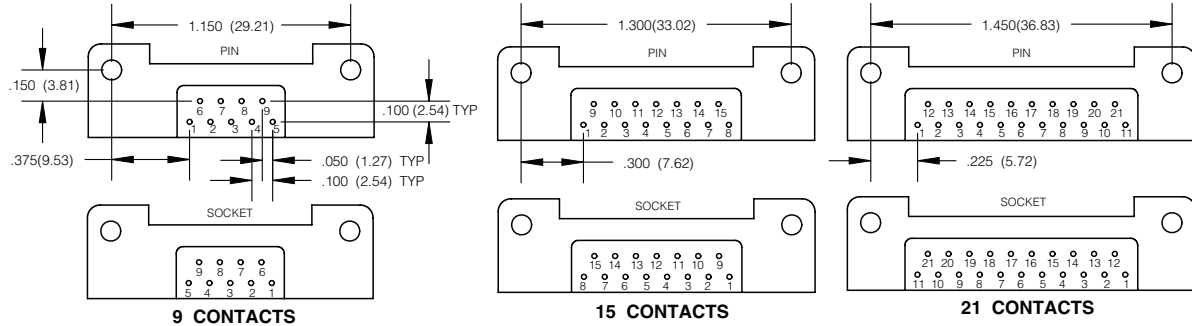


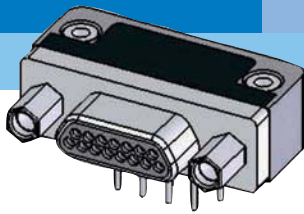
# SERIES 100, 101, 102 & 104

## RIGHT ANGLE (90 DEG) PC CONFIGURATIONS

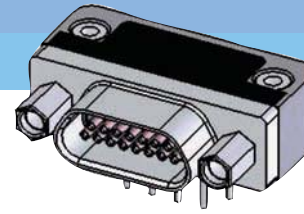
.100 (2.54) x .100 (2.54) grid pattern, offset .050 (1.27)

Cavity identification numbers are for reference only and does not appear on the connector.





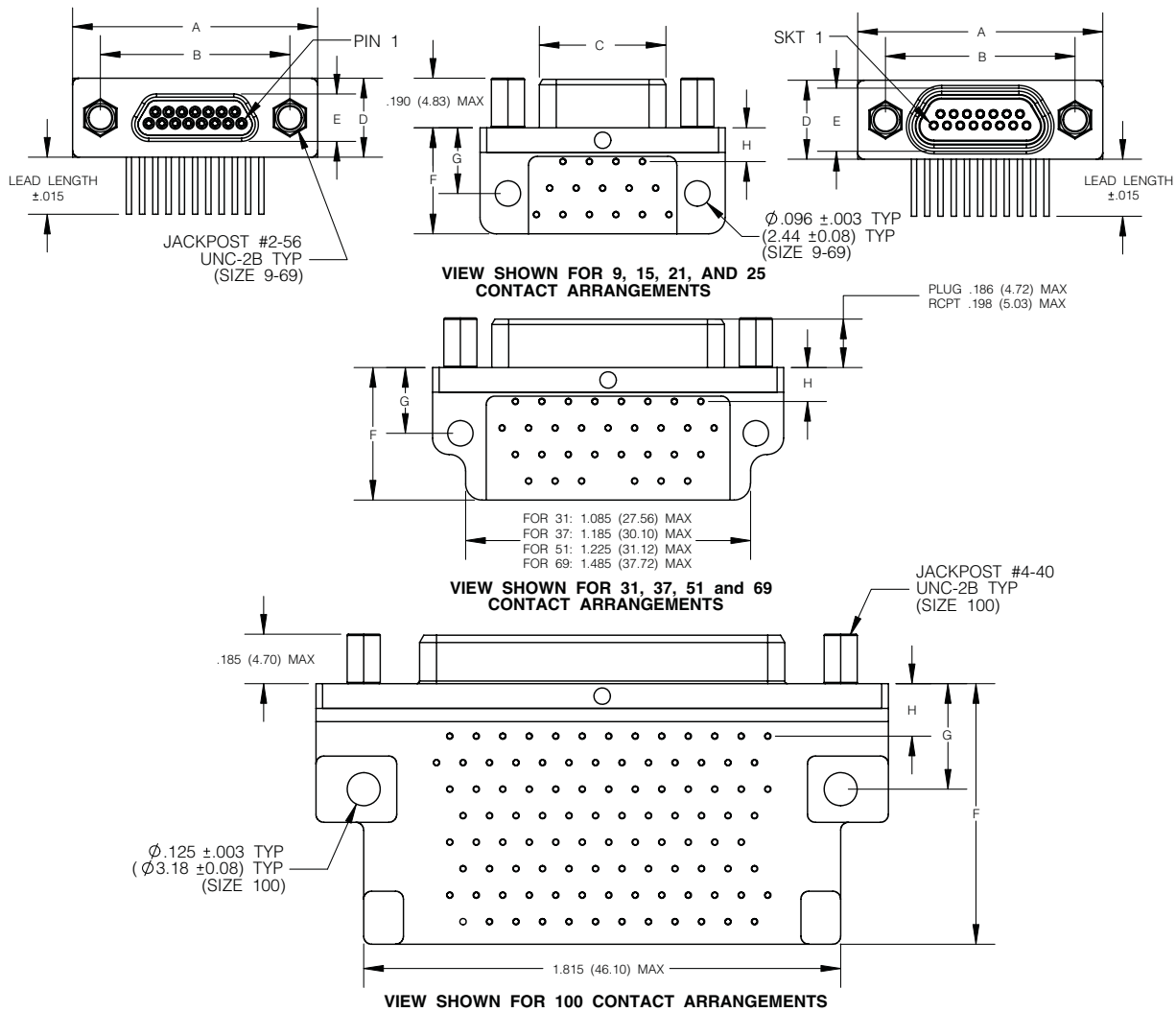
PLUG



RECEPTACLE

\*INTERFACIAL SEAL NOT INCL. FOR PLASTIC SHELL

Series 100, 102 & 104



SIZE	A MAX	B ±.005 (0.13)	C MAX		D MAX	E MAX		F MAX	G ±.010 (0.25)	H ±.010 (0.25)
			PLUG	RCPT		PLUG	RCPT			
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.230 (5.81)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.520 (13.21)	.250 (6.35)	.130 (3.30)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.520 (13.21)	.250 (6.35)	.130 (3.30)
51	1.435 (36.45)	1.215 (30.86)	.984 (24.99)	1.052 (26.72)	.351 (8.92)	.228 (5.79)	.296 (7.52)	.650 (16.15)	.300 (7.62)	.150 (3.81)
69	1.735 (44.07)	1.515 (38.48)	1.289 (32.74)	1.357 (34.47)	.351 (8.92)	.228 (5.79)	.296 (7.52)	.755 (19.18)	.300 (7.62)	.150 (3.81)
100	2.170 (55.12)	1.800 (45.72)	1.386 (35.15)	1.508 (38.10)	.394 (10.01)	.271 (6.88)	.394 (10.01)	1.000 (25.40)	.400 (10.16)	.200 (5.08)

INCHES (MM)

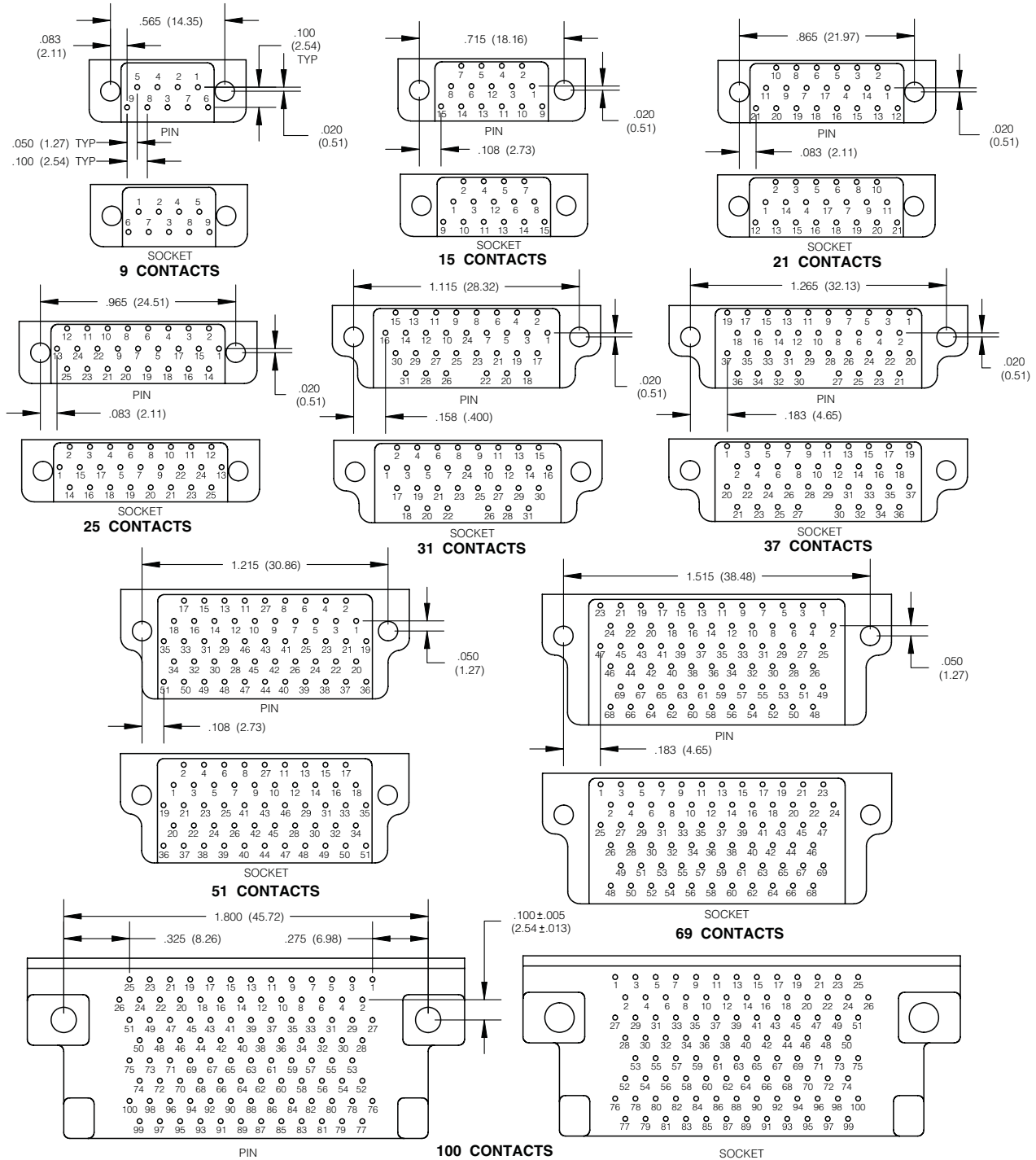


# SERIES 100, 101, 102 & 104

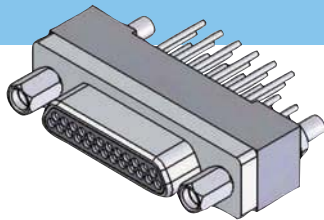
## RIGHT ANGLE (90 DEG) NARROW PROFILE PC CONFIGURATIONS

.100 (2.54) x .100 (2.54) grid pattern, offset .050 (1.27)

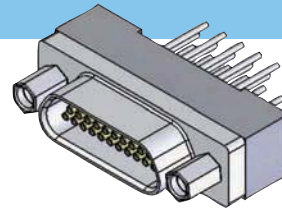
Cavity identification numbers are for reference only and does not appear on the connector.



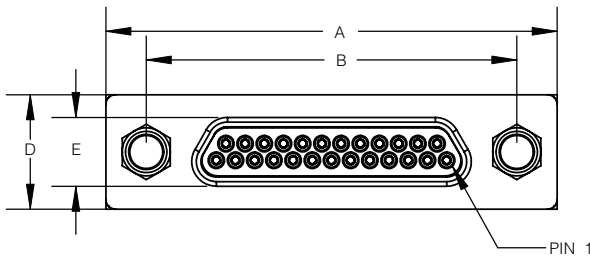




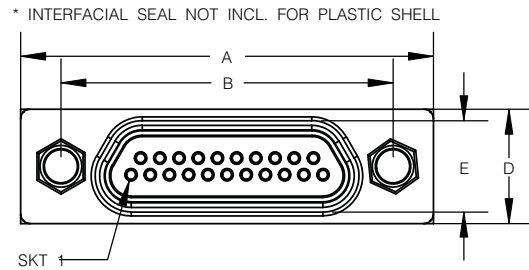
Series 100, 102 & 104



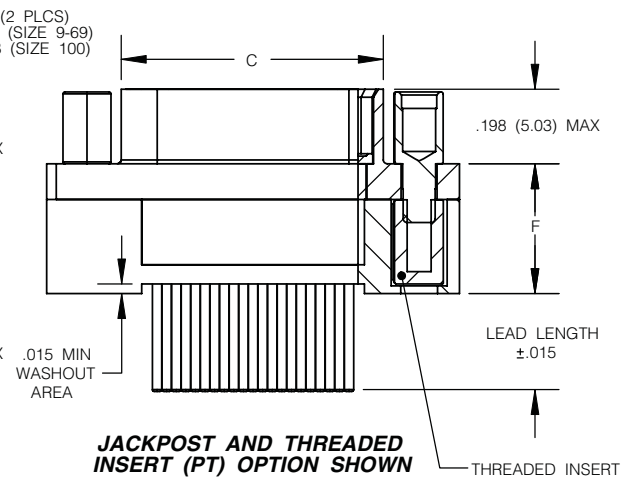
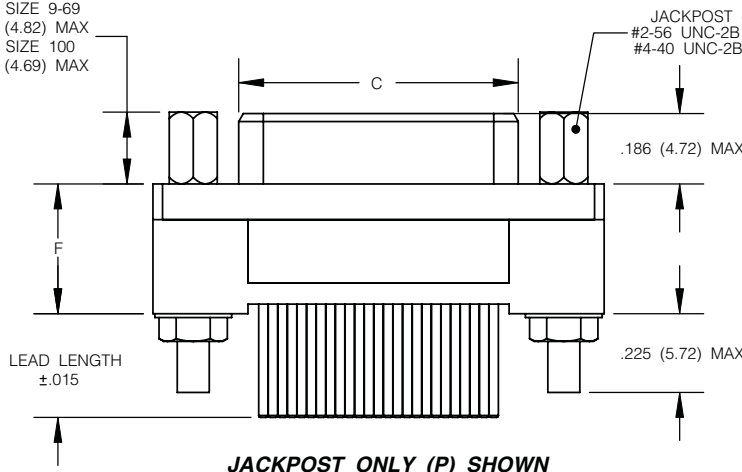
PLUG



RECEPTACLE



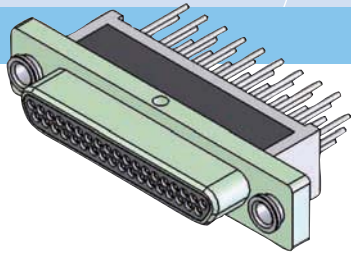
FOR SIZE 9-69  
.190 (4.82) MAX  
FOR SIZE 100  
.185 (4.69) MAX



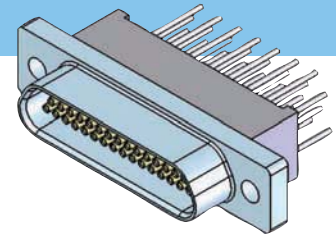
SIZE	A MAX	B ±.005 (0.13)	C MAX		D MAX	E MAX		F MAX
			PLUG	RCPT		PLUG	RCPT	
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)
51	1.435 (36.45)	1.215 (30.86)	.984 (24.99)	1.052 (26.72)	.400 (10.16)	.228 (5.79)	.296 (7.52)	.335 (8.51)
69	1.735 (44.07)	1.515 (38.48)	1.289 (32.74)	1.357 (34.47)	.400 (10.16)	.228 (5.79)	.296 (7.52)	.335 (8.51)
100	2.160 (54.86)	1.800 (45.72)	1.384 (35.13)	1.508 (38.10)	.510 (12.95)	.271 (6.88)	.394 (10.01)	.430 (10.92)

INCHES (MM)

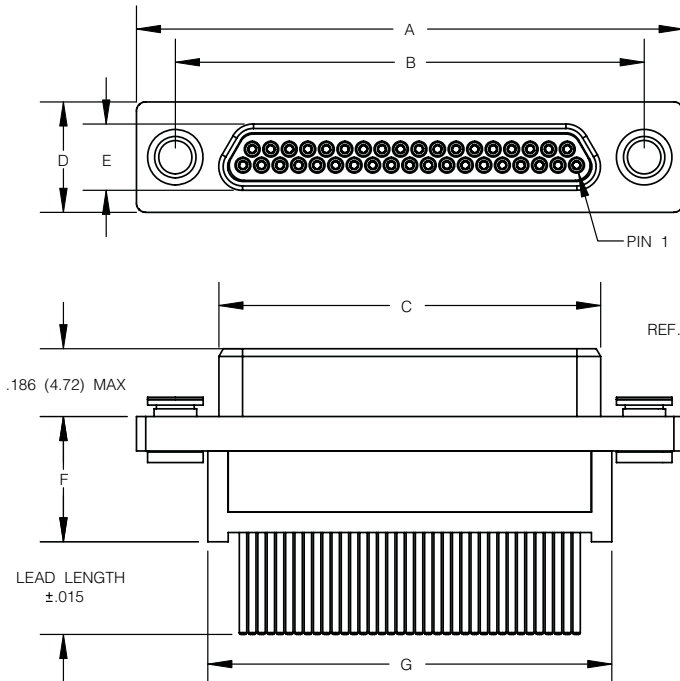




SERIES 100, 102 & 104

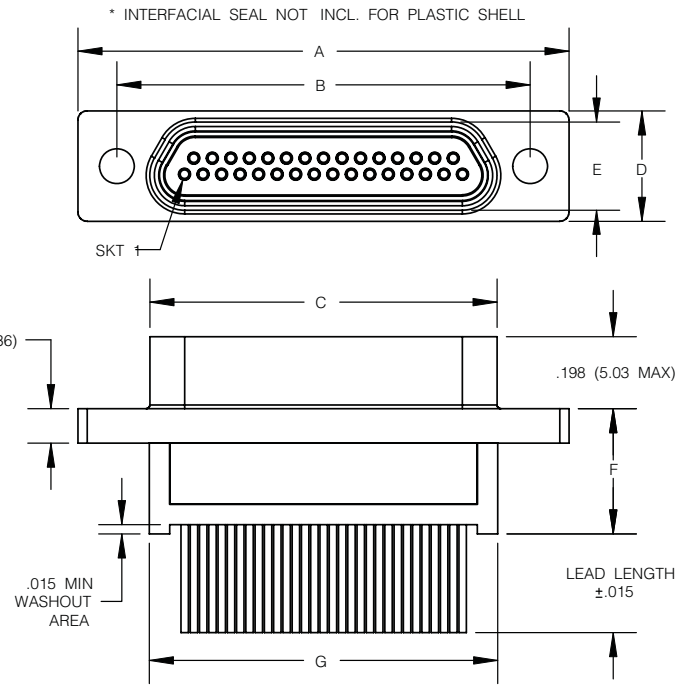


PLUG



FORWARD FLOAT MOUNT (F) SHOWN

RECEPTACLE

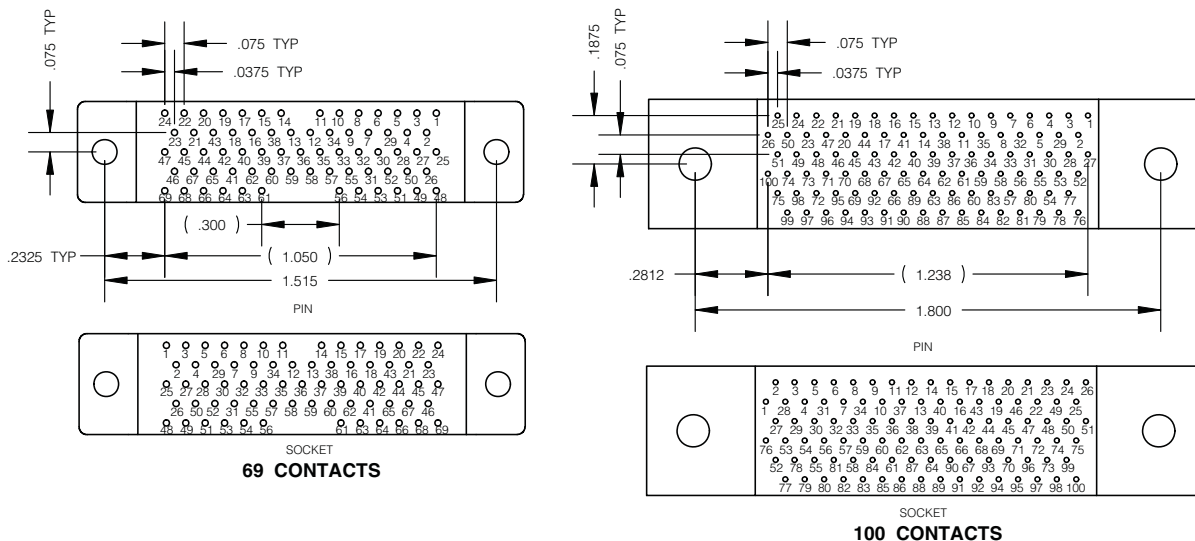
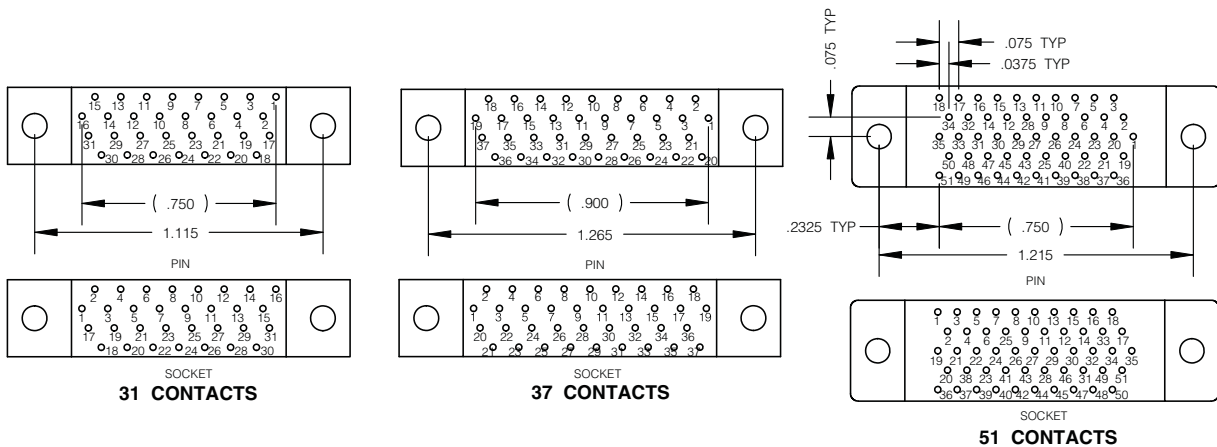
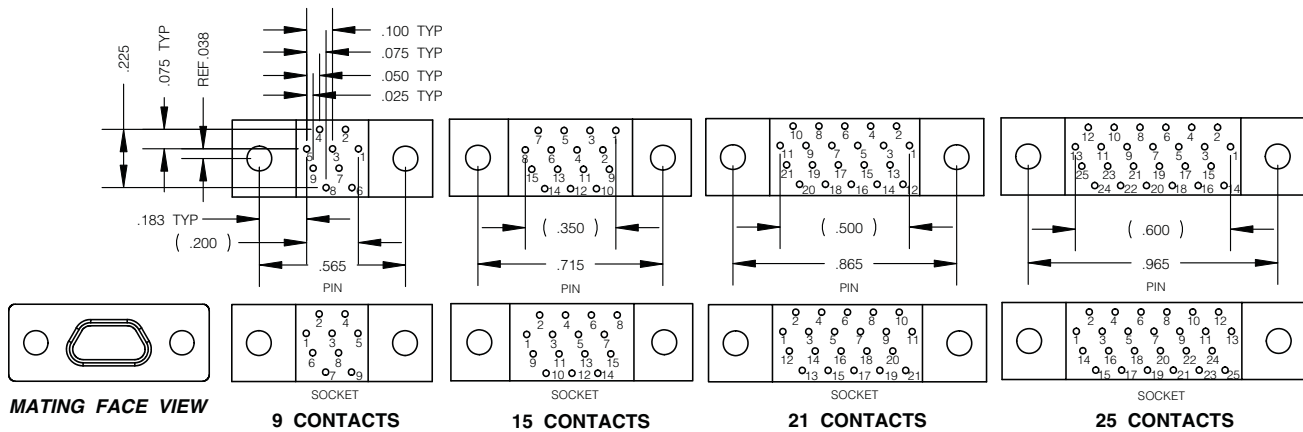


STANDARD MOUNTING HOLE (B) SHOWN

SIZE	A MAX	B ±.005 (0.13)	C MAX		D MAX	E MAX		F MAX	G MAX
			PLUG	RCPT		PLUG	RCPT		
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)	.395 (10.03)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)	.545 (13.84)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)	.695 (17.65)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)	.795 (20.19)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)	.945 (24.00)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	.310 (7.87)	.185 (4.70)	.253 (6.43)	.335 (8.51)	1.095 (27.81)
51	1.435 (36.45)	1.215 (30.86)	.984 (24.99)	1.052 (26.72)	.400 (10.16)	.228 (5.79)	.296 (7.52)	.335 (8.51)	1.050 (26.67)
69	1.735 (44.07)	1.515 (38.48)	1.289 (32.74)	1.357 (34.47)	.400 (10.16)	.228 (5.79)	.296 (7.52)	.335 (8.51)	1.350 (34.29)
100	2.160 (54.86)	1.800 (45.72)	1.384 (35.13)	1.508 (38.10)	.510 (12.95)	.271 (6.88)	.394 (10.01)	.430 (10.92)	1.450 (36.83)

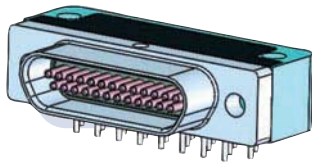
## Series 100, 102 & 104 VERTICAL MOUNT (TERMINATION VIEW)

Cavity identification numbers are for reference only and does not appear on the connector.



INCHES (MM)

**Amphenol**  
Canada



## Series 110

Example:  
110RN21P-CBRP1

Description: metal shell size 21 plug, reversed polarization, nickel finish, CBR termination, pcb tail lead length .109 inches with jackposts included.

**110 R X XXX X - CBR X X X - XXX**

**Connector Series**  
110 = reversed CBR type  
metal shell per M83513

**Insulator Material**  
R = Polyphenylene Sulfide (Ryton)

**Shell Finish**  
A = anodize  
C = cadmium  
G = gold  
I = irridite/alodine  
N = electroless nickel  
T = tin

**Connector Size** (number of contacts)  
09, 15, 21, 25, 31, 37, 51, 69, 100  
*All sizes I.A.W. M83513 except size 69 (non-military)*

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

**Non Std. Wire Length**  
(0.109 < length < 1.00)  
e.g. 125 = .125 inches

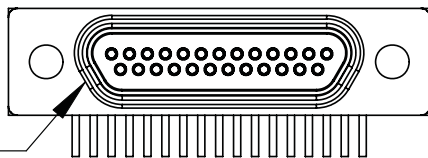
**Lead Length (inches)**  
1 = .109 ± .015  
2 = .140 ± .015  
3 = .172 ± .015  
4 = .250 ± .015  
F = non std. length (add to end of part no.)

**Threaded Insert** (pre-installed)  
T = threaded insert (PCB mounting option)  
*Omit for no threaded insert*

**Hardware** (pre-installed)  
P = jackpost  
*Omit for no jackpost*

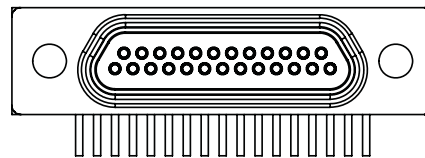
**Termination Type**  
CBR = narrow 90° PCB (dimensionally same as M83513/10 thru /15)

### REVERSED POLARIZATION CBR CONNECTOR



POLARIZATION /  
"D" SHAPE KEYSTONE

### STANDARD CBR CONNECTOR



## FEATURES

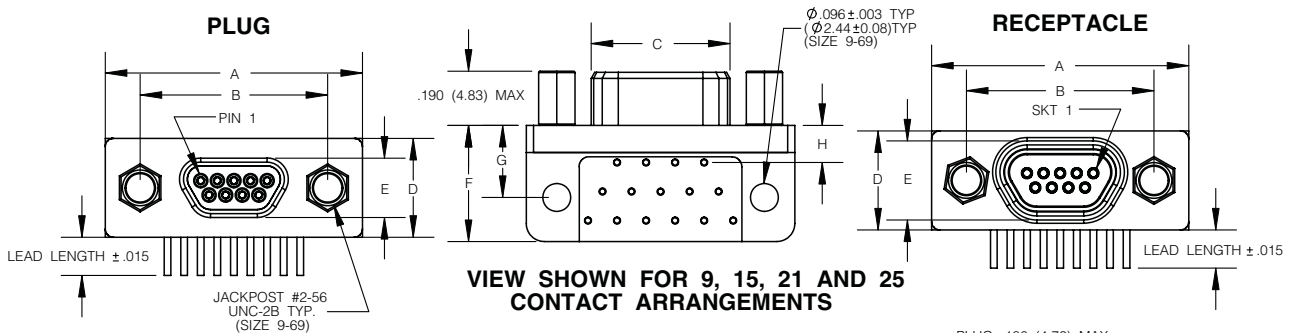
- Polarization is reversed from a standard series 100 CBR type connector.
- Available in sizes 9 thru 100, right angle PCB termination.
- Solid copper 24 AWG PCB leads, tin plated, and solder dipped.
- Wide selection of hardware options.

**Amphenol**  
Canada

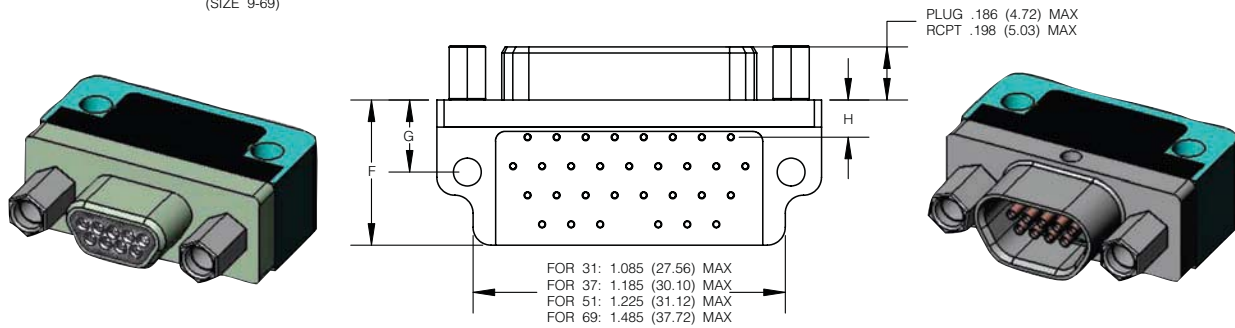
INCHES (MM)



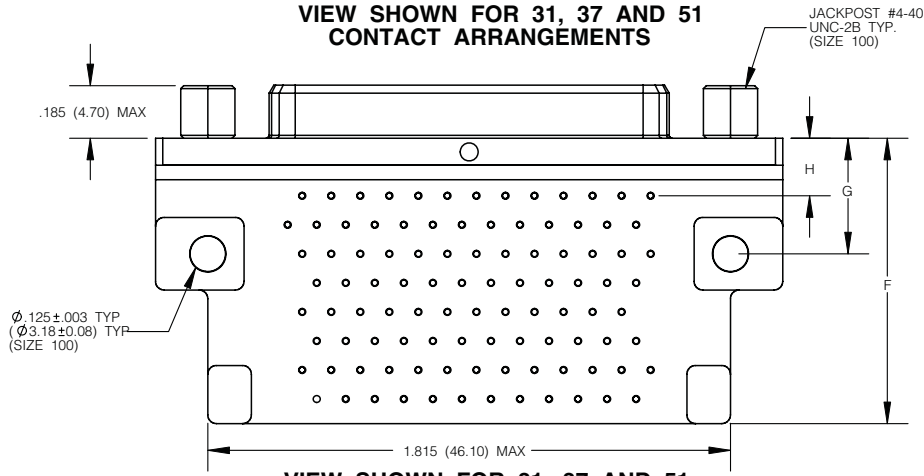
### Series 110



VIEW SHOWN FOR 9, 15, 21 AND 25 CONTACT ARRANGEMENTS



VIEW SHOWN FOR 31, 37 AND 51 CONTACT ARRANGEMENTS



VIEW SHOWN FOR 31, 37 AND 51 CONTACT ARRANGEMENTS

SIZE	A MAX	B ±.005 (0.13)	C MAX		D MAX	E MAX		F MAX	G ±.010 (0.25)	H ±.010 (0.25)
			PLUG	RCPT		PLUG	RCPT			
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.230 (5.81)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.520 (13.21)	.250 (6.35)	.130 (3.30)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	.308 (7.82)	.185 (4.70)	.253 (6.43)	.520 (13.21)	.250 (6.35)	.130 (3.30)
51	1.435 (36.45)	1.215 (30.86)	.984 (24.99)	1.052 (26.72)	.351 (8.92)	.228 (5.79)	.296 (7.52)	.650 (16.15)	.300 (7.62)	.150 (3.81)
69	1.735 (44.07)	1.515 (38.48)	1.289 (32.74)	1.357 (34.47)	.351 (8.92)	.228 (5.79)	.296 (7.52)	.755 (19.18)	.300 (7.62)	.150 (3.81)
100	2.170 (55.12)	1.800 (45.72)	1.386 (35.15)	1.508 (38.10)	.394 (10.01)	.271 (6.88)	.394 (10.01)	1.000 (25.40)	.400 (10.16)	.200 (5.08)

INCHES (MM)

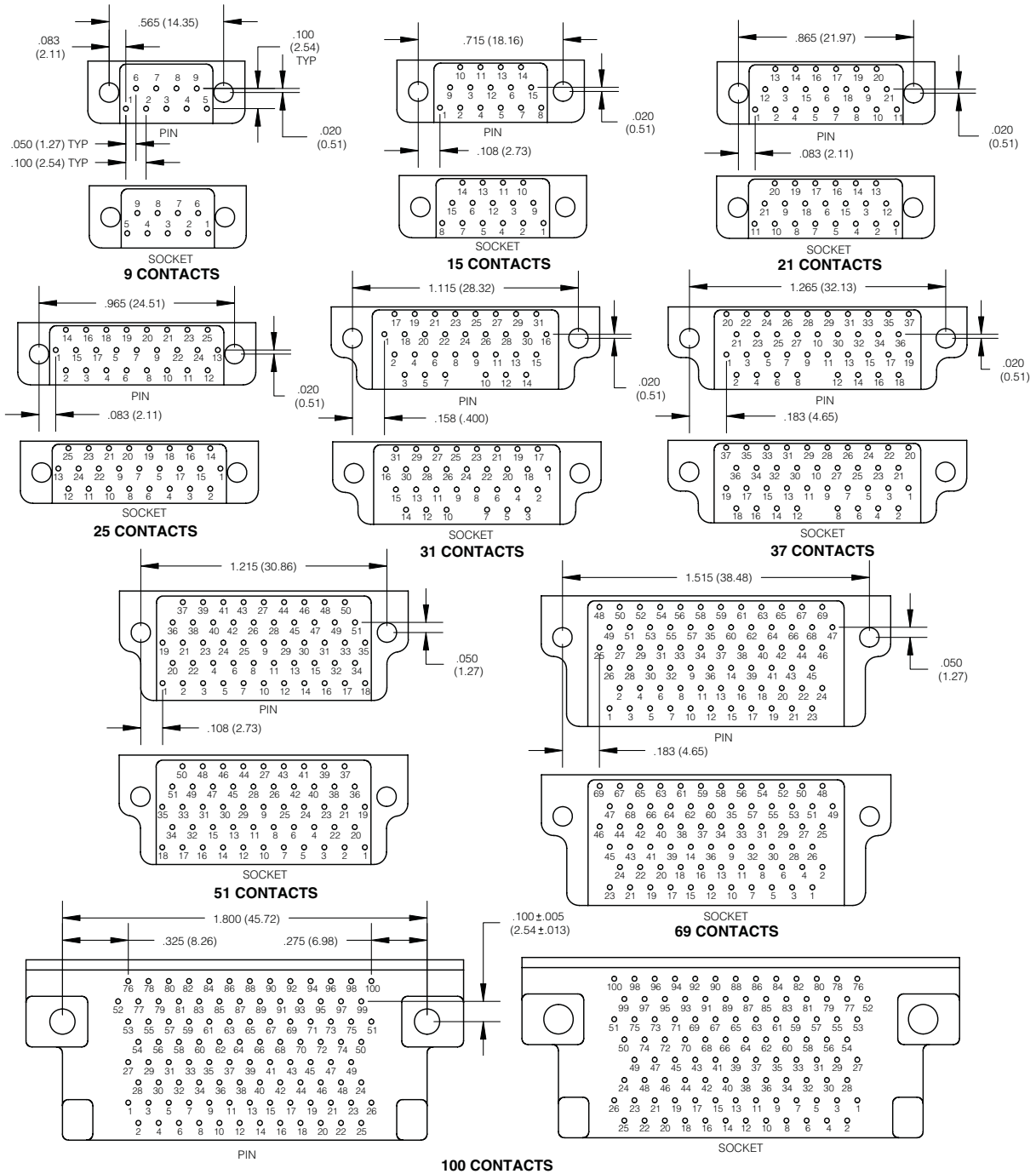
**Amphenol**  
Canada

# Series 110

## RIGHT ANGLE (90 DEG) NARROW PROFILE PC CONFIGURATIONS

.100 (2.54) x .100 (2.54) grid pattern, offset .050 (1.27)

Cavity identification numbers are for reference only and does not appear on the connector.



## SOLDER CUP AND CRIMP TERMINATION

## Series 101

Example:  
101R09P-4A5FM2-20

Description: plastic shell size 9 plug, 26 AWG wire type "A",  
non-std wire length 20 inches with M2 low profile jackscrews.

101 R XXX X - X X X X XX - XXX

**Connector Series**

101 = all plastic shell

**Insulator Material**

R = Polyphenylene Sulfide (Ryton)

**Connector Size** (number of contacts)

09, 15, 21, 25, 31, 37, 51

**Connector Type**

P = plug (pin)

S = receptacle (socket)

**Wire Size (AWG.)**

1 = 32

2 = 30

3 = 28

4 = 26 (M83513 standard) \*off shelf

5 = 25 (solid wire only)

6 = 24

Omit for solder cup contacts

**Wire Type****General Applications:**

A = 7 strd, per NEMA-HP3 (MIL-W-16878/4)

B = 7 strd, per NEMA-HP3 (MIL-W-16878/6)

C = 19 strd, per NEMA-HP3 (MIL-W-16878/4)

D = 19 strd, per NEMA-HP3 (MIL-W-16878/6)

**Military/Aerospace Applications:**

E = per MIL-W-22759/11 (M83513 standard)

F = per MIL-W-22759/33 (space grade)

L = solid wire uninsulated

Omit for solder cup contacts

**Non Std. Length** (Inches)

Stranded Wire (no decimal values)

e.g. 1 = 1 inches, 100 = 100 inches

Solid Wire (0.109 < length < 1.00)

e.g. 110 = .110 inches, 999 = .999 inches

**Hardware** (pre-installed by factory)

B = standard mounting holes

P = jackpost

M2 = low profile jackscrew, allen head

M3 = high profile jackscrew, allen head

M5 = low profile jackscrew, slot head

M6 = high profile jackscrew, slot head

L = captive low profile jackscrew

K = captive high profile jackscrew

F = forward float mount

R = reverse float mount

**Wire Length** ((inches +1.00/-0.00))

A = 18.00

B = 36.00

C = 72.00

D = 0.500 (solid wire only +0.20/-0.00)

E = 1.00 (solid wire only +0.20/-0.00)

F = Non std. length (add to end of part no.)

Omit for solder cup contacts

**Wire Color / Finish**

1 = all white (M83513 standard) \*off shelf

2 = all yellow

3 = solid wire uninsulated, tin plated

4 = solid wire uninsulated, gold plated

5 = color coded per mil-std-681, system 1

6 = 1st 10 colors blk. thru wht. repeated

(M83513 standard) \*off shelf

Omit for solder cup contacts

INCHES (MM)

**Amphenol**  
Canada

M83513 ORDERING INFORMATION - SOLDER CUP AND CRIMP TERMINATION

### Solder Cup Termination:

M83513/XX - X

**Specification Sheet** ●  
 06 = plug (pin)  
 07 = receptacle (socket)

**Insert Arrangement** ●  
 A = 9  
 B = 15  
 C = 21  
 D = 25  
 E = 31  
 F = 37  
 G = 51

Sizes 69 & 100 not available per M83513

**Note:** Mounting and mating hardware to be ordered separately per M83513.

### Crimp Termination:

M83513/XX - X XX

**Specification Sheet** ●  
 08 = plug (pin)  
 09 = receptacle (socket)

**Insert Arrangement** ●  
 A = 9  
 B = 15  
 C = 21  
 D = 25  
 E = 31  
 F = 37  
 G = 51

Sizes 69 & 100 not available per M83513

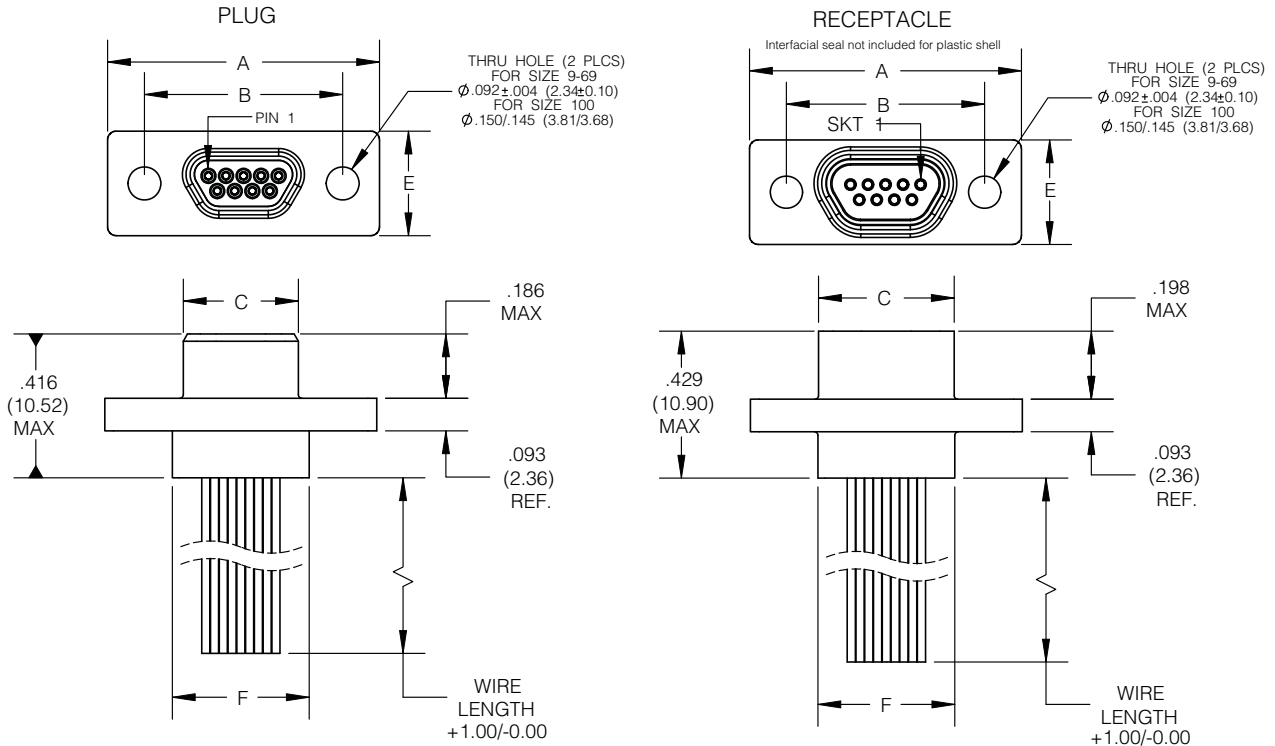
**Wire Type** (inches +1.00/-0.00)  
 01 = M22759/11-26-9, 18"  
 02 = M22759/11-26-9, 36"  
 03 = M22759/11-26-(\*), 18"  
 04 = M22759/11-26-(\*), 36"  
 05 = A-A-59551, type S, 25 AWG,  
 except shall be gold plated 10 micro-inches; 0.5"  
 06 = A-A-59551, type S, 25 AWG,  
 except shall be gold plated 10 micro-inches; 1.0"  
 07 = A-A-59551, type S, 25 AWG, tin plated 100 micro-inches; 0.5"  
 08 = A-A-59551, type S, 25 AWG, tin plated 100 micro-inches; 1.0"  
 09 = M22759/33-26-9, 18"  
 10 = M22759/33-26-9, 36"  
 11 = M22759/33-26-(\*), 18"  
 12 = M22759/33-26-(\*), 36"  
 13 = M22759/11-26-9, 72"  
 14 = M22759/11-26-(\*), 72"  
 15 = M22759/33-26-9, 72"  
 16 = M22759/33-26-(\*), 72"  
 17 = 04035-26A-9, 18"  
 18 = 04035-26A-9, 36"  
 19 = 04035-26A-9, 72"  
 20 = 04035-26A-(\*), 18"  
 21 = 04035-26A-(\*), 36"  
 22 = 04035-26A-(\*), 72"



# Series 101

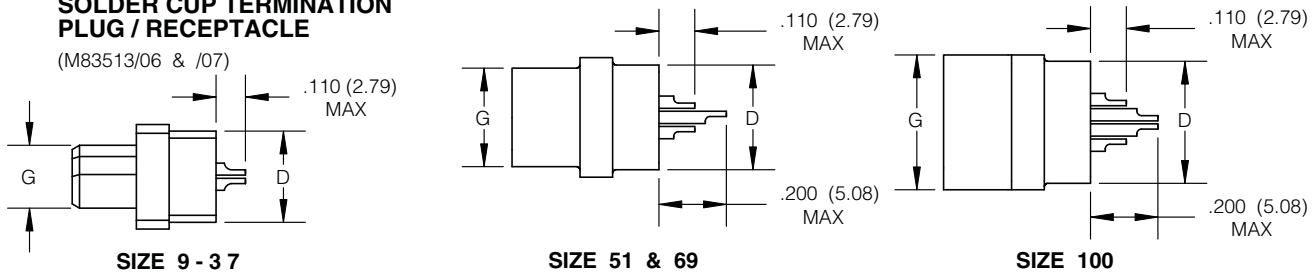
## WIRE TERMINATION

(M83513/08 & /09)



## SOLDER CUP TERMINATION PLUG / RECEPTACLE

(M83513/06 & /07)



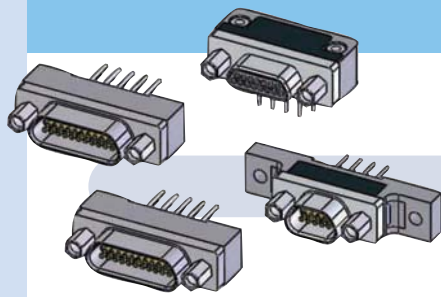
SIZE	A MAX	B $\pm .005$ (0.13)	C MAX		D MAX	E MAX	F MAX	G MAX	
			PLUG	RCPT				PLUG	RCPT
09	.788 (20.02)	.565 (14.35)	.292 (7.42)	.380 (9.65)	.173 (4.39)	.218 (5.54)	.408 (10.36)	.134 (3.40)	.218 (5.54)
15	.938 (23.82)	.715 (18.16)	.442 (11.23)	.530 (13.46)	.173 (4.39)	.218 (5.54)	.588 (14.17)	.134 (3.40)	.218 (5.54)
21	1.088 (27.64)	.865 (21.97)	.592 (15.04)	.680 (17.27)	.173 (4.39)	.218 (5.54)	.708 (17.98)	.134 (3.40)	.218 (5.54)
25	1.188 (30.18)	.965 (24.51)	.692 (17.58)	.780 (19.81)	.173 (4.39)	.218 (5.54)	.808 (20.56)	.134 (3.40)	.218 (5.54)
31	1.338 (33.98)	1.115 (28.32)	.842 (21.39)	.930 (23.62)	.173 (4.39)	.218 (5.54)	.958 (24.33)	.134 (3.40)	.218 (5.54)
37	1.488 (37.80)	1.265 (32.13)	.992 (25.20)	1.080 (27.43)	.173 (4.39)	.218 (5.54)	1.108 (28.14)	.134 (3.40)	.218 (5.54)
51	1.438 (36.52)	1.215 (30.86)	.942 (23.93)	1.030 (26.16)	.220 (5.59)	.260 (6.60)	1.058 (26.87)	.177 (4.49)	.260 (6.60)

INCHES (MM)

**Amphenol**  
Canada

# PLASTIC PCB CONNECTORS

## Series 101



Example:  
101R21P-CBRP1

Description: plastic shell size 21 plug, CBR termination, pcb tail lead length .109 inches with jackposts included.

**100 R XX X - BR X X X - XXX**

**Connector Series**  
101 = all plastic shell

**Insulator Material**  
R = Polyphenylene Sulfide (Ryton)

**Connector Size** (number of contacts)  
09, 15, 21, 25, 31, 37, 51

**Connector Type**  
P = plug (pin)  
S = receptacle (socket)

**Non Std. Wire Length (Inches)**  
(0.109 < length < 1.00)  
e.g. 125 = .125 inches

**Lead Length (inches)**  
1 = .109 ± .015  
2 = .140 ± .015  
3 = .172 ± .015  
4 = .250 ± .015  
F = non std. length (add to end of part no.)

**Threaded Insert** (pre-installed)  
T = threaded insert (PCB mounting option)  
Omit for no threaded insert

**Hardware for BS, BR, CBR:** (pre-installed)  
P = jackpost  
Omit for no jackpost

**Termination Type**  
BS = straight PCB per M83513/22 thru /27  
BR = 90° PCB per M83513/16 thru /21  
CBR = narrow 90° PCB per M83513/10 thru /15

## FEATURES

Available in sizes 9 thru 51, straight and right angle PCB termination.

Solid copper 24 AWG PCB leads, tin plated, and solder dipped.

Wide selection of hardware options.

Consult factory for other wire size termination.

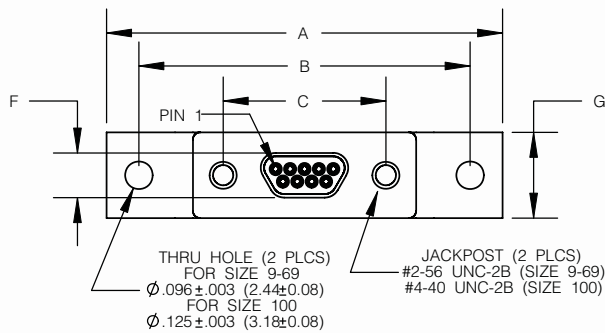
**Amphenol**  
Canada

INCHES (MM)

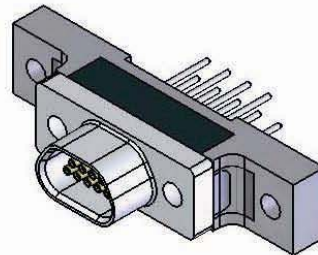
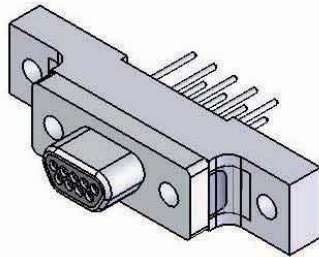
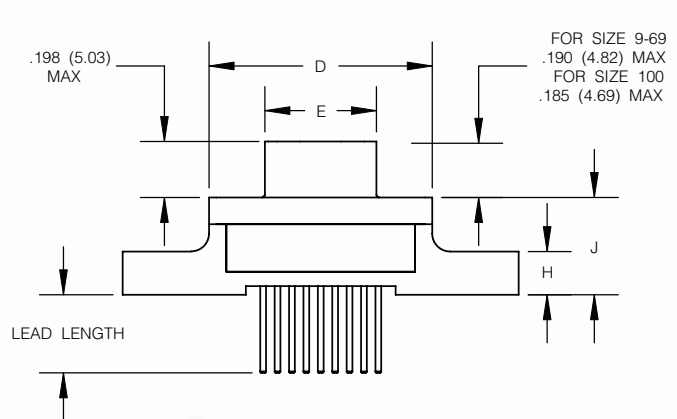
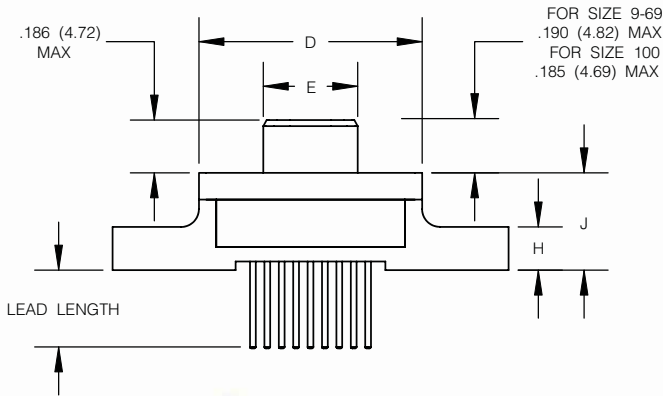
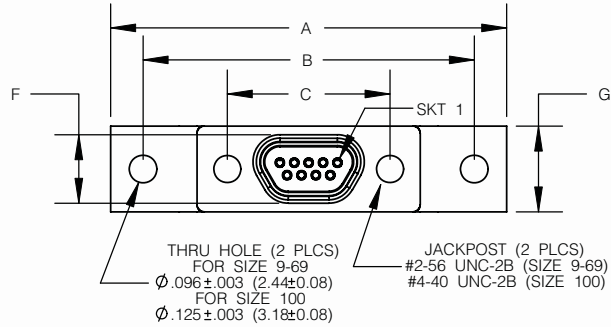
# Series 101

Refer to page 16 for straight PC configurations.

## PLUG



## RECEPTACLE



SIZE	A MAX	B ±.007 (0.18)	C ±.005 (0.13)	D MAX	E MAX		F MAX	
					PLUG	RCPT	PLUG	RCPT
09	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.788 (20.02)	.292 (7.42)	.380 (9.65)	.134 (3.40)	.218 (5.54)
15	1.390 (35.31)	1.150 (29.21)	.715 (18.16)	.938 (23.82)	.442 (11.23)	.530 (13.46)	.134 (3.40)	.218 (5.54)
21	1.690 (43.93)	1.450 (36.83)	.865 (21.97)	1.088 (27.64)	.592 (15.04)	.680 (17.27)	.134 (3.40)	.218 (5.54)
25	1.740 (44.20)	1.500 (38.10)	.965 (24.51)	1.188 (30.18)	.692 (17.58)	.780 (19.81)	.134 (3.40)	.218 (5.54)
31	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	1.338 (33.98)	.842 (21.39)	.930 (23.62)	.134 (3.40)	.218 (5.54)
37	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.488 (37.80)	.992 (25.20)	1.080 (27.43)	.134 (3.40)	.218 (5.54)
51	2.270 (67.66)	2.000 (50.80)	1.215 (30.86)	1.438 (36.53)	.942 (23.93)	1.030 (26.16)	.177 (4.49)	.260 (6.60)

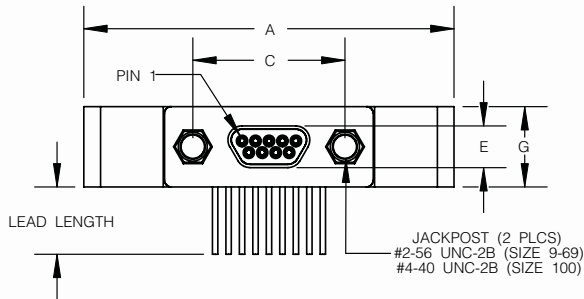
INCHES (MM)

**Amphenol**  
Canada

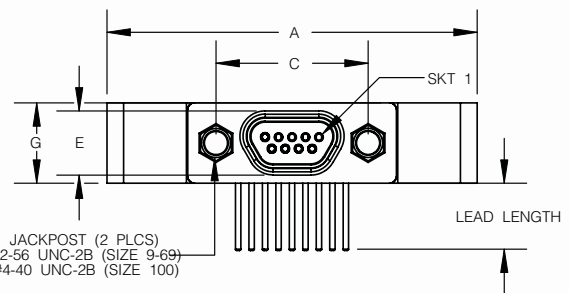
# Series 101

Refer to page 18 for right angle (90 DEG) PC configurations.

## PLUG



## RECEPTACLE



FOR SIZE 9-69  
.190 (4.82) MAX  
FOR SIZE 100  
.185 (4.70) MAX

FOR SIZE 9-69  
.125 ± .010  
(3.18 ± 0.25)  
FOR SIZE 100  
.225 ± .010  
(5.72 ± 0.25)

.100 (2.54) TYP.

.050 (1.27) TYP.  
.100 (2.54) TYP.

THRU HOLE (2 PLCS)  
FOR SIZE 9-69  
.096 ± .003 (2.44 ± 0.08)  
FOR SIZE 100  
.125 ± .003 (3.18 ± 0.08)

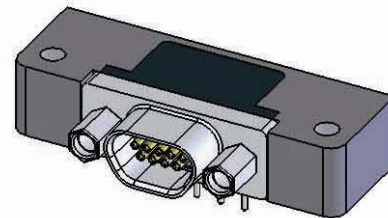
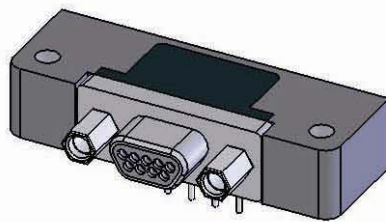
FOR SIZE 9-69  
.190 (4.82) MAX  
FOR SIZE 100  
.185 (4.70) MAX

FOR SIZE 9-69  
.125 ± .010  
(3.18 ± 0.25)  
FOR SIZE 100  
.225 ± .010  
(5.72 ± 0.25)

.100 (2.54) TYP.

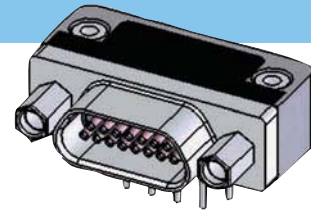
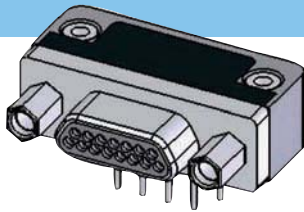
.050 (1.27) TYP.  
.100 (2.54) TYP.

THRU HOLE (2 PLCS)  
FOR SIZE 9-69  
.096 ± .003 (2.44 ± 0.08)  
FOR SIZE 100  
.125 ± .003 (3.18 ± 0.08)



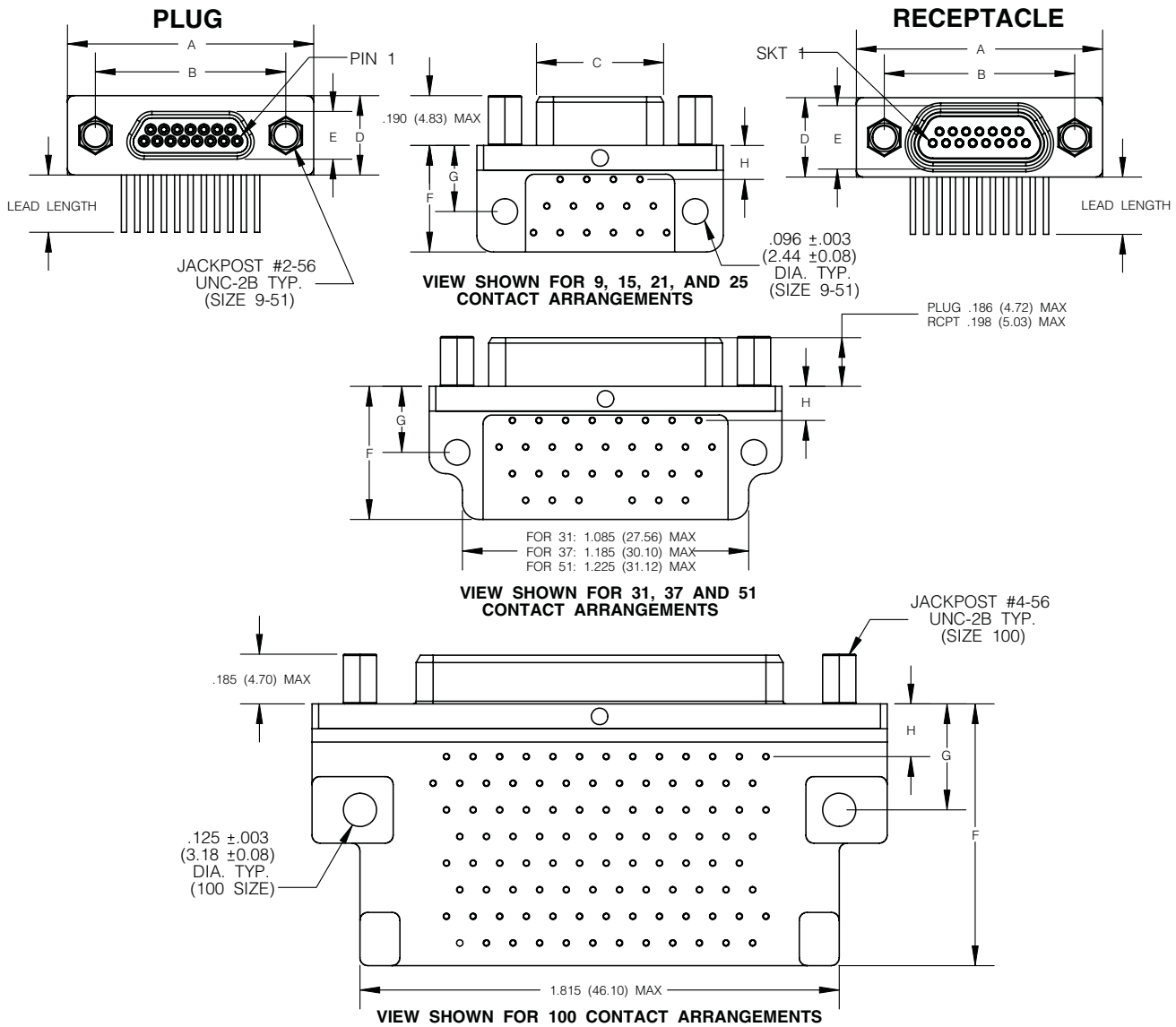
SIZE	A MAX	B ±.007 (0.18)	C ±.005 (0.13)	D MAX		E MAX		F MAX	G MAX
				PLUG	RCPT	PLUG	RCPT		
09	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.292 (7.42)	.380 (9.65)	.134 (3.40)	.218 (5.54)	.455 (11.56)	.218 (5.54)
15	1.540 (39.12)	1.300 (33.02)	.715 (18.16)	.442 (11.23)	.530 (13.46)	.134 (3.40)	.218 (5.54)	.455 (11.56)	.218 (5.54)
21	1.690 (42.93)	1.450 (36.83)	.865 (21.97)	.592 (15.04)	.680 (17.27)	.134 (3.40)	.218 (5.54)	.455 (11.56)	.218 (5.54)
25	1.790 (45.47)	1.550 (39.37)	.965 (24.51)	.692 (17.58)	.780 (19.81)	.134 (3.40)	.218 (5.54)	.455 (11.56)	.218 (5.54)
31	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	.842 (21.39)	.930 (23.62)	.134 (3.40)	.218 (5.54)	.455 (11.56)	.218 (5.54)
37	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	.992 (25.20)	1.080 (27.43)	.134 (3.40)	.218 (5.54)	.455 (11.56)	.218 (5.54)
51	1.875 (47.63)	1.600 (40.64)	1.215 (30.86)	.942 (23.93)	1.030 (26.16)	.177 (4.49)	.260 (6.60)	.565 (14.35)	.260 (6.60)





### Series 101

Refer to page 20 for right angle (90 DEG) narrow profile PC configurations.



SIZE	A MAX	B ±.005 (0.13)	C MAX		D MAX	E MAX		F MAX	G ±.010 (0.25)	H ±.010 (0.25)
			PLUG	RCPT		PLUG	RCPT			
09	.788 (20.02)	.565 (14.35)	.292 (7.42)	.380 (9.65)	.218 (5.54)	.134 (3.40)	.218 (5.54)	.420 (10.67)	.250 (6.35)	.230 (5.81)
15	.938 (23.82)	.715 (18.16)	.442 (11.23)	.530 (13.46)	.218 (5.54)	.134 (3.40)	.218 (5.54)	.420 (10.67)	.250 (6.35)	.130 (3.30)
21	1.088 (27.64)	.865 (21.97)	.592 (15.04)	.680 (17.27)	.218 (5.54)	.134 (3.40)	.218 (5.54)	.420 (10.67)	.250 (6.35)	.130 (3.30)
25	1.188 (30.18)	.965 (24.51)	.692 (17.58)	.780 (19.81)	.218 (5.54)	.134 (3.40)	.218 (5.54)	.420 (10.67)	.250 (6.35)	.130 (3.30)
31	1.338 (33.98)	1.115 (28.32)	.842 (21.39)	.930 (23.62)	.218 (5.54)	.134 (3.40)	.218 (5.54)	.520 (13.21)	.250 (6.35)	.130 (3.30)
37	1.488 (37.80)	1.265 (32.13)	.992 (25.20)	1.080 (27.43)	.218 (5.54)	.134 (3.40)	.218 (5.54)	.520 (13.21)	.250 (6.35)	.130 (3.30)
51	1.438 (36.52)	1.215 (30.86)	.942 (23.93)	1.030 (26.16)	.260 (6.60)	.177 (4.49)	.260 (6.60)	.650 (16.51)	.300 (7.62)	.150 (3.81)

INCHES (MM)



## Series MDCE

MDCE-XXX - X

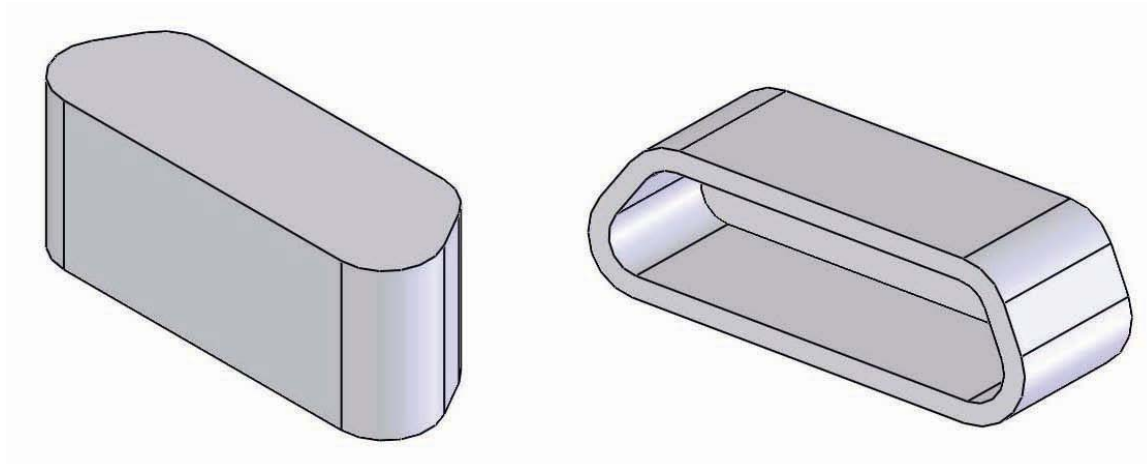
Connector Size ●  
(number of contacts)

- 09
- 15
- 21
- 25
- 31
- 37
- 51
- 69
- 100

Connector Type ●

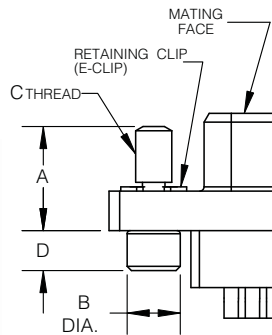
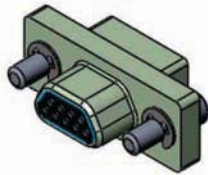
- P = plug (pin)
- S = receptacle (socket)

P/N
MDCE-09P
MDCE-15P
MDCE-21P
MDCE-25P
MDCE-31P
MDCE-37P
MDCE-51P
MDCE-69P
MDCE-100P
MDCE-09S
MDCE-15S
MDCE-21S
MDCE-25S
MDCE-31S
MDCE-37S
MDCE-51S
MDCE-69S
MDCE-100S



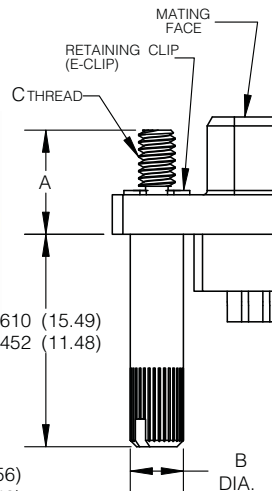
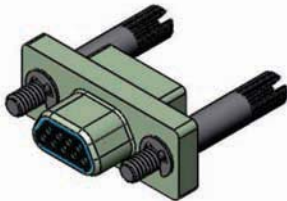
MATERIAL: Statically dissipative  
Colour: pink / black

**LOW PROFILE JACKSCREW ASSEMBLY**



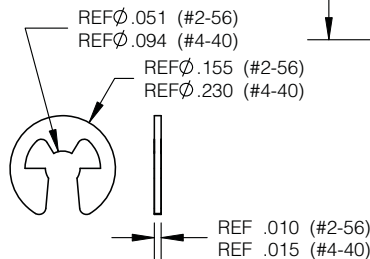
SHELL SIZE	9-69		100	
AMPHENOL P/N	HM05-05	HM05-02	HM05-15	HM05-12
P/N CODE	M5	M2	M5	M2
MIL-SPEC P/N	M83513/05-05 (SLOT)	M83513/05-02 (ALLEN)	M83513/05-15 (SLOT)	M83513/05-12 (ALLEN)
Dim. A	.258/.235 (6.55/5.97)		.287±.005 (7.29±0.13)	
Dim. B	.125 (3.18)		.187 (4.75)	
Dim. C (THREAD)	#2-56 UNC-2A		#4-40 UNC-2A	
Dim. D	.103/.070 (2.62/1.78)		.098 (2.49)	
Dim. E (HEX)	N/A			

**HIGH PROFILE JACKSCREW ASSEMBLY**

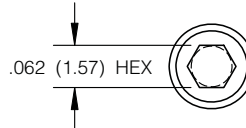


SHELL SIZE	9-69		100	
AMPHENOL P/N	HM05-06	HM05-03	HM05-16	HM05-13
P/N CODE	M6	M3	M6	M3
MIL-SPEC P/N	M83513/05-06 (SLOT)	M83513/05-03 (ALLEN)	M83513/05-16 (SLOT)	M83513/05-13 (ALLEN)
Dim. A	.258/.235 (6.55/5.97)		.287±.005 (7.29±0.13)	
Dim. B	.125 (3.18)		.187 (4.75)	
Dim. C (THREAD)	#2-56 UNC-2A		#4-40 UNC-2A	
Dim. D	N/A			
Dim. E (HEX)	N/A			

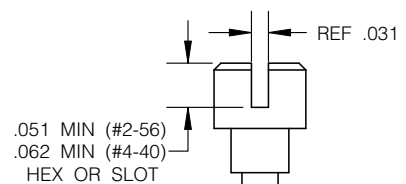
**RETAINING CLIP DETAIL**



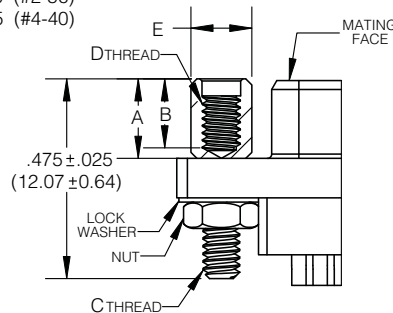
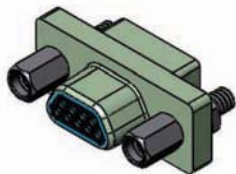
**ALLEN HEAD DETAIL**



**SLOT HEAD DETAIL**

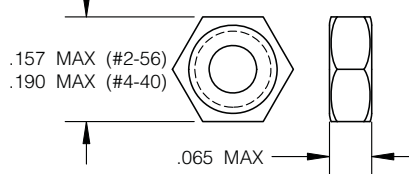


**JACKPOST ASSEMBLY**

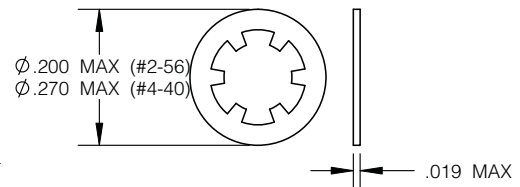


SHELL SIZE	9-69	100
AMPHENOL P/N	HM05-07	HM05-17
P/N CODE	P	
MIL-SPEC P/N	M83513/05-07	M83513/05-17
Dim. A	.190/.185 (4.83/4.70)	.185/.180 (4.70/4.58)
Dim. B	.155 (3.94)	.170 (4.32)
Dim. C (THREAD)	#2-56 UNC-2A	#4-40 UNC-2A
Dim. D	#2-56 UNC-2B	#4-40 UNC-2B
Dim. E (HEX)	.125 (3.18)	.187 (4.75)

**NUT DETAIL**



**LOCKWASHER DETAIL**

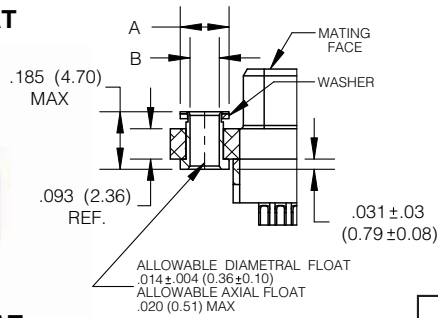
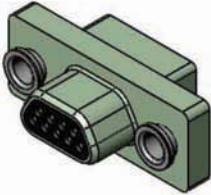


INCHES (MM)

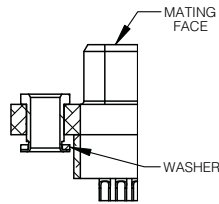
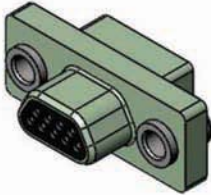


- \* Custom hardware pre-installed by the factory
- \* Captive hardware provides secure mounting
- \* For special design hardware, consult Amphenol sales for more options

## FORWARD FLOAT

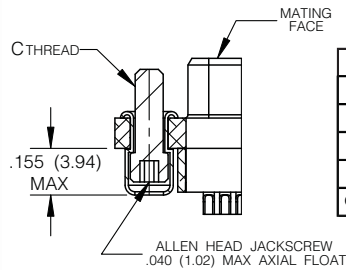
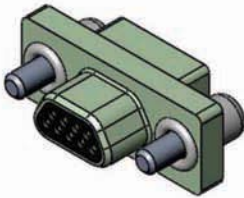


## REVERSE FLOAT (SAME DIMENSIONS AS FORWARD FLOAT)



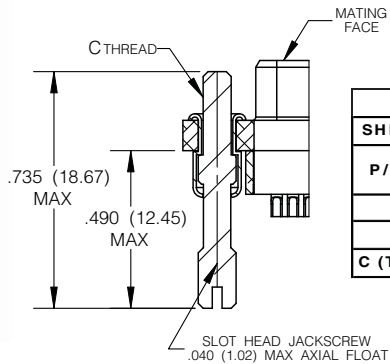
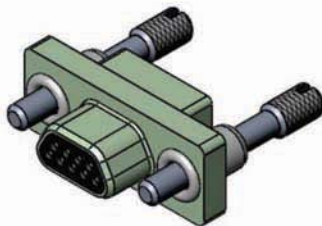
FLOAT MOUNT		
SHELL SIZE	9-69	100
P/N CODE	F = FORWARD FLOAT R = REVERSE FLOAT	
A	$.150 \pm .003 (3.81 \pm 0.076)$	$.174 \pm .005 (4.40 \pm 0.13)$
B	$.090 \pm .0015 (2.99 \pm 0.038)$	$.116 \pm .002 (2.95 \pm 0.051)$
C (THREAD)	N/A	

## LOW PROFILE CAPTIVE JACKSCREW

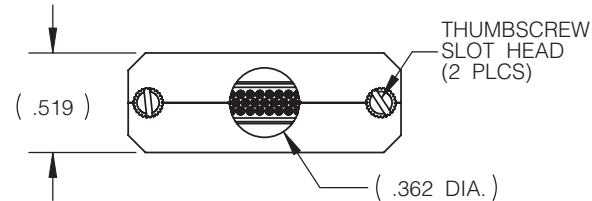
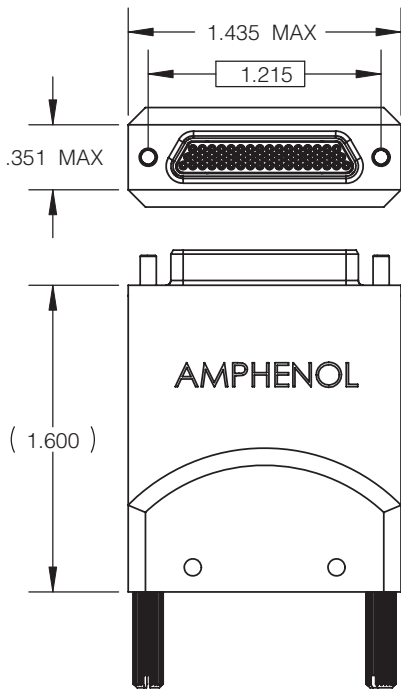


LOW PROFILE CAPTIVE		
SHELL SIZE	9-69	100
P/N CODE	L	
A	N/A	
B	N/A	
C (THREAD)	#2-56 UNC-2A	#4-40 UNC-2A

## HIGH PROFILE CAPTIVE JACKSCREW

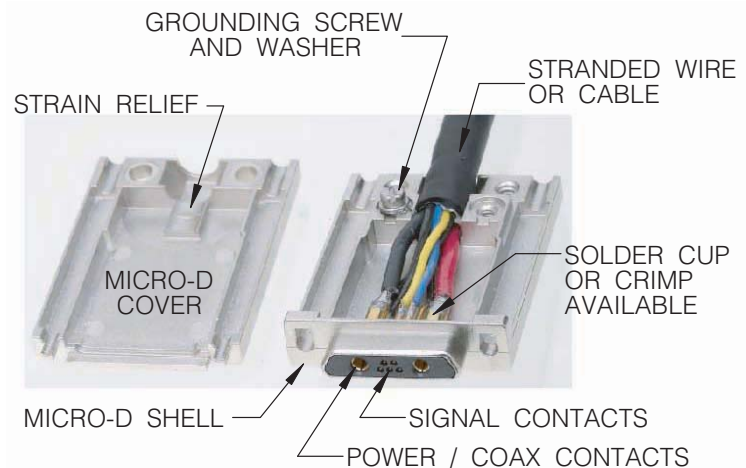
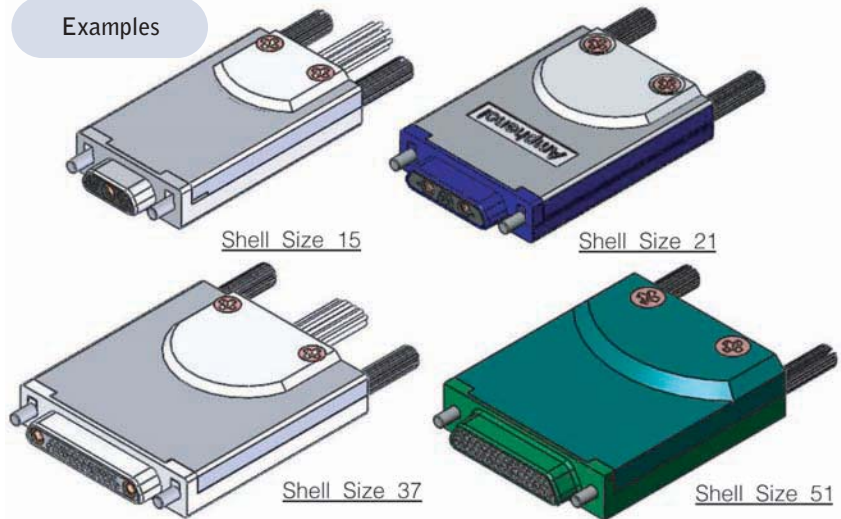


HIGH PROFILE CAPTIVE		
SHELL SIZE	9-69	100
P/N CODE	K	
A	N/A	
B	N/A	
C (THREAD)	#2-56 UNC-2A	#4-40 UNC-2A



SHELL SIZE 51 SHOWN  
(CONSULT FACTORY FOR OTHER SIZES  
OR INSERT PATTERNS)

### Examples



## FEATURES

- Easy assembly
- All-in-one Micro-D connector and EMI backshell
- Eliminate the use of retaining clip (E-clip) hardware
- Built in strain relief
- Grounding screw and washer included
- Solder cup and wire termination available
- Sizes 9 thru 100 available
- Standard MIL-DTL-83513 insert pattern or custom insert pattern available
- Signal / Power / Coaxial contacts available
- Consult factory for angled cable exit or specific cable diameter requirement

## MATERIAL & FINISH

Material: Aluminum alloy (consult factory for zinc alloy)

Finish: Electroless nickel

Hardware: Stainless steel

## PERFORMANCE INFORMATION

- D.W.V. 600 VAC (at sea level)
- Insulation resistance: 5000 megaohms min.
- Temperature rating: -55 deg C to +125 deg C (+85 deg C for zinc alloy)
- Designed to meet MIL-DTL-83513 performance standards

INCHES (MM)

**Amphenol**  
Canada



## Series MBS

**Example:**  
MBS-09N-EA00-M5

**Description:** metal backshell size 9, nickel finish,  
cable exit "A" straight with "M5" hardware

**MBS** - **XXX** **X** - **E** **X** **XX** **XX**

**MBS** = EMI Backshell  
(aluminum alloy material)

**Connector Size** (number of contacts)  
09, 15, 21, 25, 31, 37, 51, 100

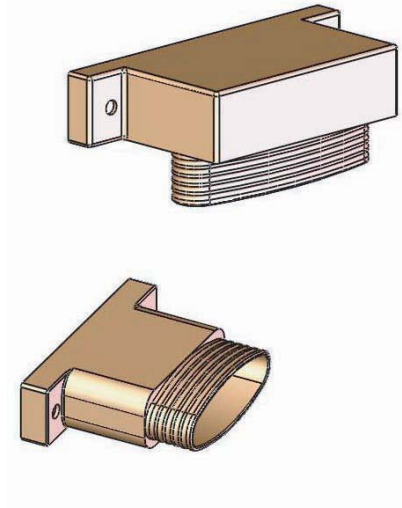
**Shell Finish**  
**C** = cadmium  
**N** = electroless nickel  
**G** = gold  
**Z** = customer specified plating  
(e.g. olive drab camium)

**Exit Shape**  
**E** = elliptical

**Cable Exit Size**  
**A, B, C, D, E, F, G, H**  
See page 39 for straight exit  
See page 40 for right angle exit

**Exit Angle**  
**00** = straight  
**90** = right angle

**Hardware**  
**M5** = low profile jackscrew (slot head)  
**M6** = high profile jackscrew (slot head)  
**P** = jackpost  
Omit for no hardware



## FEATURES

The Amphenol Micro-D EMI backshell series MBS is designed for use with M83513 connectors.

It is a reliable means of providing EMI and strain relief for harnessed connectors.

Available for sizes 9 thru 100.

Available in straight or 90 deg exit angle (consult factory for 45 deg or alternate exit angle).

Backshells are machined from Aluminum alloy and are offered with various plating options.

## PERFORMANCE INFORMATION

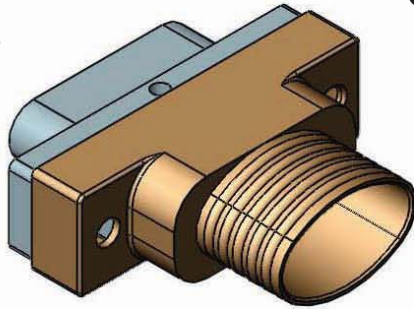
Magnetic permeability (MIL-I-17214): less than 2 mu

Shielding efficiency: to 1 GHz, 60 db to > 100 db

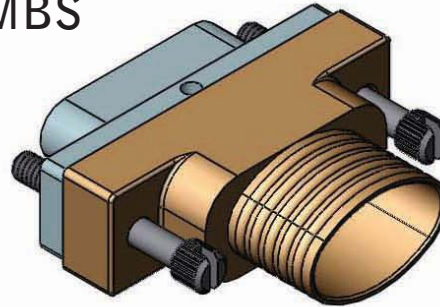
Vibration (per MIL-STD-1344 Method 2004, condition C): no damage or discontinuity between shell and shield

Series MBS

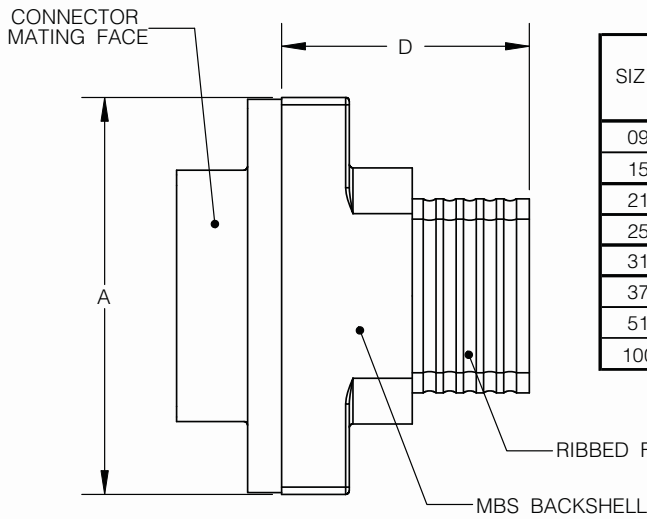
Connector shown for reference (order separately)



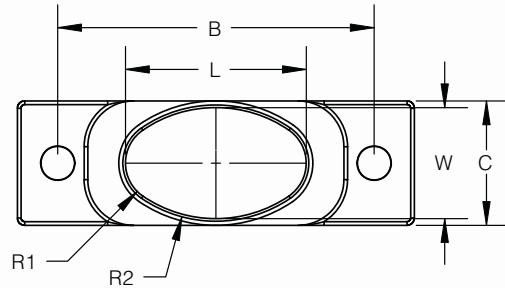
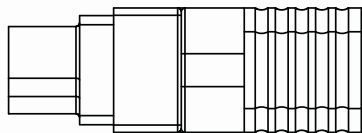
NO HARDWARE SHOWN



WITH HARDWARE SHOWN



SIZE	A MAX	B ±.005 (0.13)	C ±.005 (0.13)	D ±.020 (0.51)
09	.785 (19.94)	.565 (14.35)	.340 (8.64)	.762 (19.35)
15	.935 (23.75)	.715 (18.16)	.340 (8.64)	.812 (20.62)
21	1.085 (27.56)	.865 (21.97)	.340 (8.64)	.862 (21.89)
25	1.185 (30.10)	.965 (24.51)	.340 (8.64)	.912 (23.16)
31	1.335 (33.91)	1.115 (28.32)	.340 (8.64)	.952 (24.18)
37	1.485 (37.72)	1.265 (32.13)	.340 (8.64)	.992 (25.20)
51	1.435 (36.45)	1.215 (30.86)	.400 (10.16)	1.072 (27.32)
100	2.175 (55.25)	1.800 (45.72)	.450 (11.43)	1.137 (28.88)

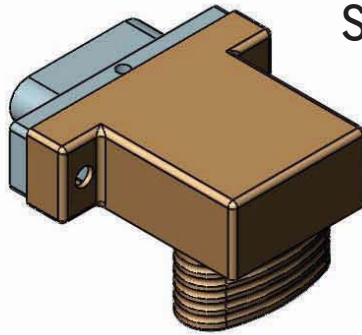


SIZE	W ±.010 (0.25)	L ±.010 (0.25)	R1 ±.010 (0.25)	R2 ±.020 (0.51)	AVAILABLE ON SIZE
A	.290 (7.37)	.344 (8.74)	.109 (2.77)	.182 (4.62)	09 THRU 100
B	.290 (7.37)	.494 (12.55)	.109 (2.77)	.353 (8.97)	15 THRU 100
C	.290 (7.37)	.644 (16.36)	.109 (2.77)	.757 (19.23)	21 THRU 100
D	.304 (7.72)	.744 (18.90)	.109 (2.77)	.940 (23.88)	25 THRU 100
E	.304 (7.72)	.894 (22.71)	.109 (2.77)	1.488 (37.80)	31 THRU 100
F	.304 (7.72)	.994 (25.25)	.109 (2.77)	1.893 (48.08)	37 THRU 100
G	.304 (7.72)	1.044 (26.52)	.109 (2.77)	2.128 (54.05)	37 AND 100
H	.384 (9.75)	1.524 (38.71)	.125 (3.18)	3.187 (80.95)	100 ONLY

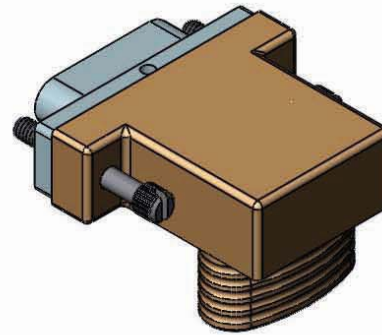
INCHES (MM)

## Series MBS

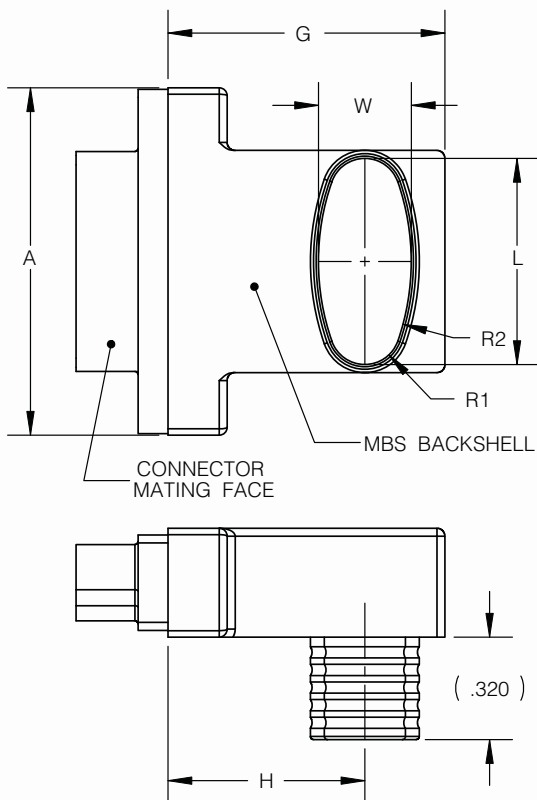
Connector shown for reference (order separately)



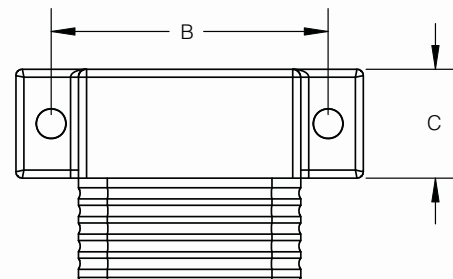
NO HARDWARE SHOWN



WITH HARDWARE SHOWN



SIZE	A MAX	B ±.005 (0.13)	C ±.005 (0.13)	G MAX	H ±.010 (0.25)
09	.785 (19.94)	.565 (14.35)	.340 (8.64)	.865 (21.97)	.615 (15.62)
15	.935 (23.75)	.715 (18.16)	.340 (8.64)	.865 (21.97)	.615 (15.62)
21	1.085 (27.56)	.865 (21.97)	.340 (8.64)	.865 (21.97)	.615 (15.62)
25	1.185 (30.10)	.965 (24.51)	.340 (8.64)	.885 (22.48)	.625 (15.88)
31	1.335 (33.91)	1.115 (28.32)	.340 (8.64)	.885 (22.48)	.625 (15.88)
37	1.485 (37.72)	1.265 (32.13)	.340 (8.64)	.885 (22.48)	.625 (15.88)
51	1.435 (36.45)	1.215 (30.86)	.400 (10.16)	.925 (23.50)	.645 (16.38)
100	2.175 (55.25)	1.800 (45.72)	.450 (11.43)	.980 (24.89)	.657 (16.69)



SIZE	W ±.010 (0.25)	L ±.010 (0.25)	R1 ±.010 (0.25)	R2 ±.020 (0.51)	AVAILABLE ON SIZE
A	.290 (7.37)	.344 (8.74)	.109 (2.77)	.182 (4.62)	09 THRU 100
B	.290 (7.37)	.494 (12.55)	.109 (2.77)	.353 (8.97)	15 THRU 100
C	.290 (7.37)	.644 (16.36)	.109 (2.77)	.757 (19.23)	21 THRU 100
D	.304 (7.72)	.744 (18.90)	.109 (2.77)	.940 (23.88)	25 THRU 100
E	.304 (7.72)	.894 (22.71)	.109 (2.77)	1.488 (37.80)	31 THRU 100
F	.304 (7.72)	.994 (25.25)	.109 (2.77)	1.893 (48.08)	37 THRU 100
G	.304 (7.72)	1.044 (26.52)	.109 (2.77)	2.128 (54.05)	37 AND 100
H	.384 (9.75)	1.524 (38.71)	.125 (3.18)	3.187 (80.95)	100 ONLY

## Series 100, 101, 102 &amp; 104

Example:  
100RN09P/S-B

Description: metal shell size 9 plug and receptacle, nickel finish,  
with standard mounting holes.

**100** **R** **X** **XXX** - **P/S** - **X**

**Connector Series**

- 100 = metal shell per M83513
- 101 = all plastic per M83513/06 thru /09
- 102 = all plastic (dimensionally identical to metal shell per M83513)
- 104 = stainless steel per M83513

**Insulator Material**

R = Polyphenylene Sulfide (Ryton)

**Shell Finish** (omit for series 101, 102 & 104)

- A = anodize
- C = cadmium
- G = gold
- I = irridite/alodine
- N = electroless nickel
- T = tin

**Connector Size** (number of contacts)

09, 15, 21, 25, 31, 37, 51, 69, 100

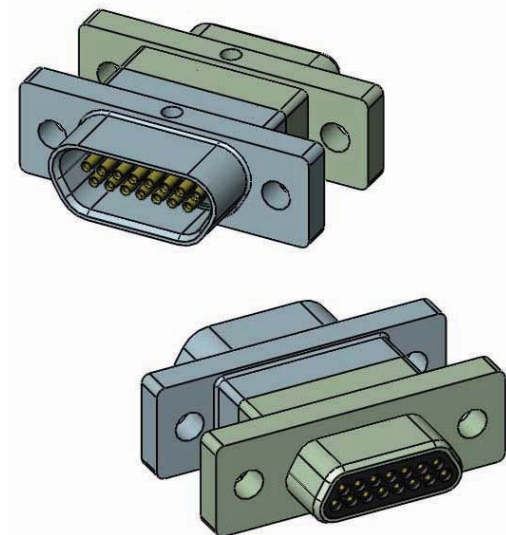
All sizes I.A.W. M83513 except size 69 (non-military)

**Connector Type**

P/S = connector saver (plug and receptacle)

**Hardware** (pre-installed by factory)

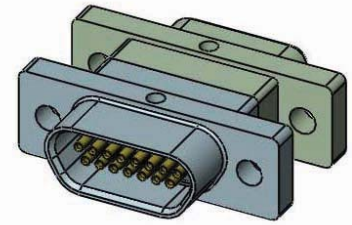
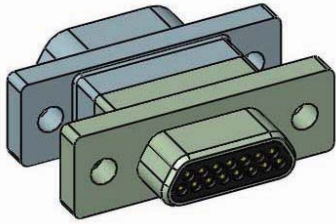
- B = standard mounting holes
- F = standard float mount
- R = reverse float mount
- P = jackpost



## FEATURES

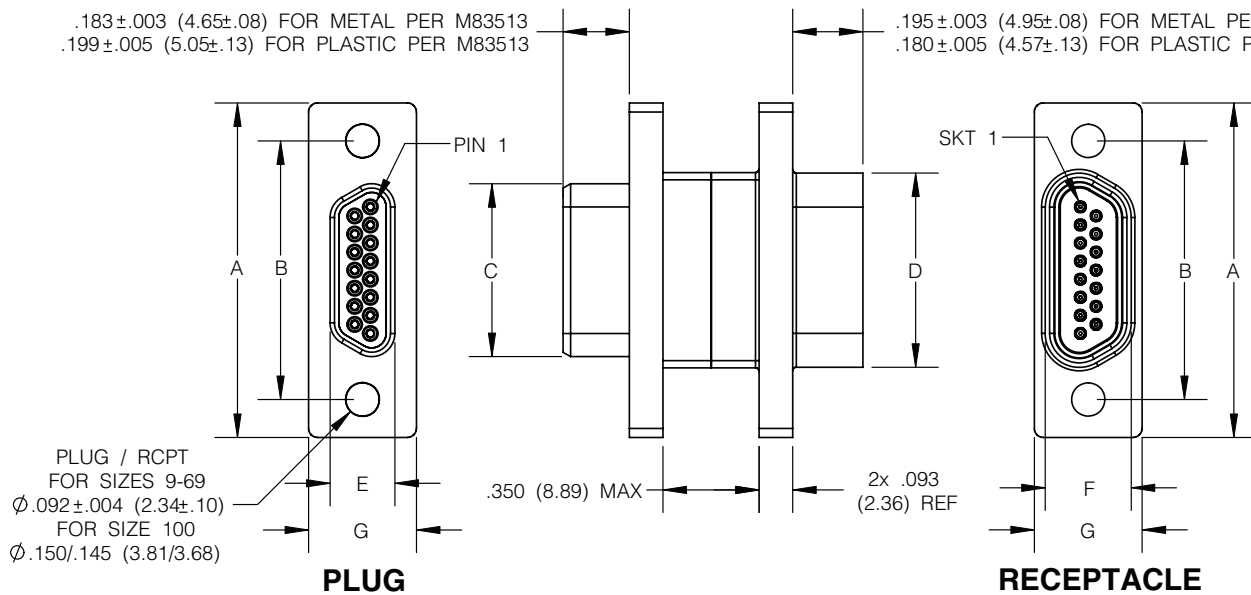
- Space reduction (2-in-1 connector)
- Opposite mating genders
- No termination required; ready for use

## Series 100, 101, 102 & 104



.183±.003 (4.65±.08) FOR METAL PER M83513  
 .199±.005 (5.05±.13) FOR PLASTIC PER M83513

.195±.003 (4.95±.08) FOR METAL PER M83513  
 .180±.005 (4.57±.13) FOR PLASTIC PER M83513



PLUG / RCPT  
 FOR SIZES 9-69  
 $\varnothing .092 \pm .004$  (2.34±.10)  
 FOR SIZE 100  
 $\varnothing .150 / .145$  (3.81/3.68)

**RECEPTACLE**  
 (Face seal included for 100 series only)

### 100, 102 & 104 SERIES

SIZE	A MAX	B ±.005 (0.13)	C MAX	D MAX	E MAX	F MAX	G MAX
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.185 (4.70)	.253 (6.43)	.308 (7.82)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.185 (4.70)	.253 (6.43)	.308 (7.82)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.185 (4.70)	.253 (6.43)	.308 (7.82)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.185 (4.70)	.253 (6.43)	.308 (7.82)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.185 (4.70)	.253 (6.43)	.308 (7.82)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	.185 (4.70)	.253 (6.43)	.308 (7.82)
51	1.435 (36.45)	1.215 (30.86)	.984 (24.99)	1.052 (26.72)	.228 (5.79)	.296 (7.52)	.351 (8.92)
69	1.735 (44.07)	1.515 (38.48)	1.289 (32.74)	1.357 (34.47)	.228 (5.79)	.296 (7.52)	.351 (8.92)
100	2.160 (54.86)	1.800 (45.72)	1.384 (35.13)	1.508 (38.10)	.271 (6.88)	.394 (10.01)	.394 (10.01)

### 101 SERIES ONLY (Sizes 69 & 100 are not applicable)

SIZE	A MAX	B ±.005 (0.13)	C MAX	D MAX	E MAX	F MAX	G MAX
09	.788 (20.02)	.565 (14.35)	.292 (7.42)	.380 (9.65)	.134 (3.40)	.218 (5.54)	.218 (5.54)
15	.938 (23.82)	.715 (18.16)	.442 (11.23)	.530 (13.46)	.134 (3.40)	.218 (5.54)	.218 (5.54)
21	1.088 (27.64)	.865 (21.97)	.592 (15.04)	.680 (17.27)	.134 (3.40)	.218 (5.54)	.218 (5.54)
25	1.188 (30.18)	.965 (24.51)	.692 (17.58)	.780 (19.81)	.134 (3.40)	.218 (5.54)	.218 (5.54)
31	1.338 (33.98)	1.115 (28.32)	.842 (21.39)	.930 (23.62)	.134 (3.40)	.218 (5.54)	.218 (5.54)
37	1.488 (37.80)	1.265 (32.13)	.992 (25.20)	1.080 (27.43)	.134 (3.40)	.218 (5.54)	.218 (5.54)
51	1.438 (36.52)	1.215 (30.86)	.942 (23.93)	1.030 (26.16)	.177 (4.49)	.260 (6.60)	.260 (6.60)



## Series 105

**Example:** 105R21P-4A5A1 **Description:** Ryton material strip connector, size 21 plug, wire termination, 26 AWG, 7-strd per NEMA-HP3, colour coded per MIL-STD-681 (sys 1), 18" long with one guide pin on one end of the connector.

**105 R XXX X - X X X - X X XXX**

**Connector Series**  
105 = Strip Connector

**Insulator Material**  
R = Polyphenylene Sulfide (Ryton)

**Number of Contacts**  
1 to 30 (no guide pins)  
1 to 29 (guide pin on one end)  
1 to 28 (guide pin on both ends)

**Connector Type**  
P = plug (pin)  
S = Receptacle (socket)

**Wire Size (Awg.)**  
1 = 32  
2 = 30  
3 = 28  
4 = 26 (stranded)  
5 = 25 (solid uninsulated)  
6 = 24  
*Omit for solder cup contacts*

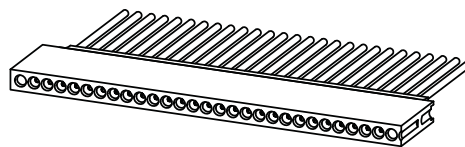
**Wire Type**  
**Naval Applications:**  
A = 7 strd, per NEMA-HP3 (MIL-W-16878/4)  
B = 7 strd, per NEMA-HP3 (MIL-W-16878/6)  
C = 19 strd, per NEMA-HP3 (MIL-W-16878/4)  
D = 19 strd, per NEMA-HP3 (MIL-W-16878/6)  
**Military/Aerospace Applications:**  
E = per MIL-W-22759/11 (M83513 standard)  
F = per MIL-W-22759/33 (space grade)  
L = solid wire uninsulated  
*Omit for solder cup contacts*

**Non Std. Length (Inches)**  
Stranded Wire (no decimal values)  
e.g. 1 = 1 inches, 100 = 100 inches  
Solid Wire (0.109 < length < 1.00)  
e.g. 110 = .110 inches, 999 = .999 inches

**Guidepin**  
Guidepin for receptacle; guidepin hole for plug  
1 = one end  
2 = both end  
*Omit for no guidepins*

**Wire Length (inches +1.00/-0.00)**  
A = 18.00  
B = 36.00  
C = 72.00  
D = 0.500 (solid wire only +0.20/-0.00)  
E = 1.00 (solid wire only +0.20/-0.00)  
F = non std. length (add to end of part no.)  
*Omit for solder cup contacts*

**Wire Colour / Finish**  
1 = all white (M83513 standard) \*off shelf  
2 = all yellow  
3 = solid wire uninsulated, tin plated  
4 = solid wire uninsulated, gold plated  
5 = colour coded per mil-std-681, system 1  
6 = 1st 10 colours blk. thru wht. repeated (M83513 standard) \*off shelf  
*Omit for solder cup contacts*

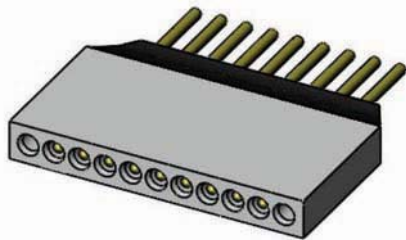


## FEATURES

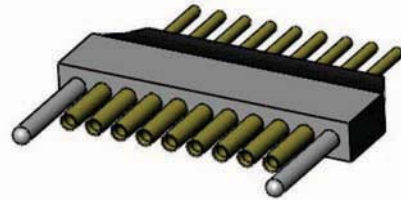
- One piece insulator: Polyphenylene sulfide (Ryton)
- Contacts (1-30 positions): Copper alloy, gold plate
- Guidepin (optional, one or both ends): 300 series stainless steel
- Wide selection of wire sizes, types, and colour finish.
- Coupling feature: Friction
- Contact spacing: .050" (1.27) centres

INCHES (MM)

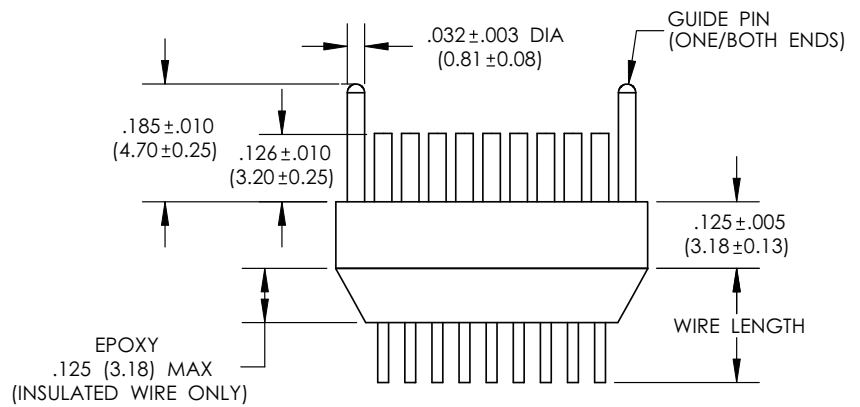
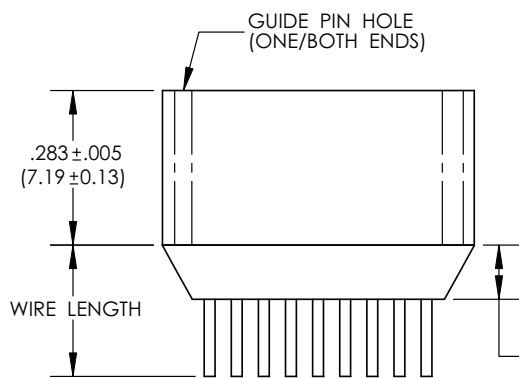
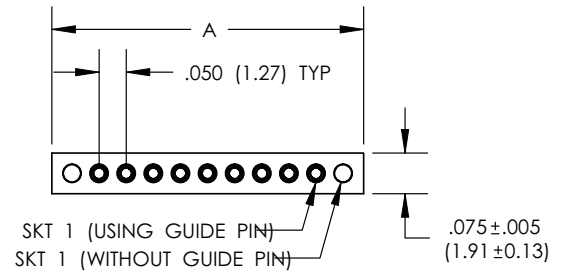
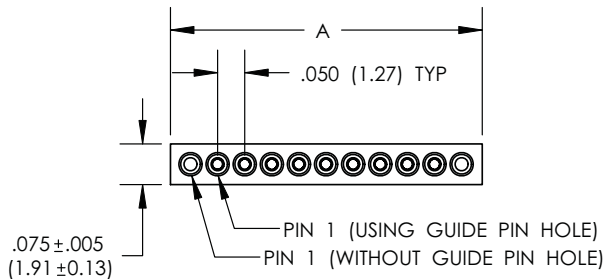
## Series 105



**PLUG**



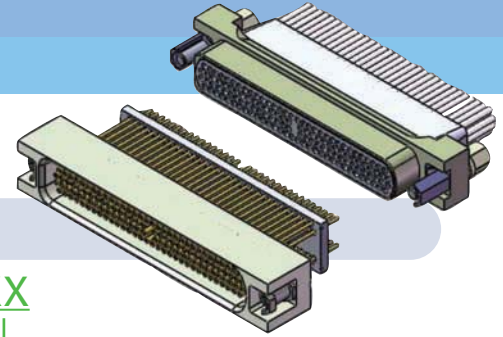
**RECEPTACLE**



SIZE	A ±.005 (0.13)
01	.075 (1.91)
02	.125 (3.18)
03	.175 (4.45)
04	.225 (5.72)
05	.275 (6.99)
06	.325 (8.25)
07	.375 (9.52)
08	.425 (10.80)
09	.475 (12.07)
10	.525 (13.34)
11	.575 (14.61)
12	.625 (15.88)
13	.675 (17.15)
14	.725 (18.42)
15	.775 (19.69)

SIZE	A ±.005 (0.13)
16	.825 (20.96)
17	.875 (22.23)
18	.925 (23.50)
19	.975 (24.77)
20	1.025 (26.04)
21	1.075 (27.31)
22	1.125 (28.58)
23	1.175 (29.85)
24	1.225 (31.12)
25	1.275 (32.39)
26	1.325 (33.66)
27	1.375 (34.93)
28	1.425 (36.20)
29	1.475 (37.47)
30	1.525 (38.74)

Series 106



Example:  
106RN120P-BS

Description: metal shell size 120 plug, nickel finish, vertical PCB mount, with polarizing hardware.

106 R X XXX X - X X X - XX

**Connector Series**  
106 = Hi-density card connector

**Insulator Material**  
R = Polyphenylene Sulfide (Ryton)

**Shell Finish**  
A = anodize  
C = cadmium  
G = gold  
I = irridite/alodine  
N = electroless nickel  
T = tin

**Connector Size**  
50, 54, 58, 62, 66, 70, 74, 104, 112, 120, 128, 136, 144, 152

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

**Wire Length** (inches +1.00/-0.00)  
e.g. 1 = 1 inches, 100 = 100 inches  
Omit for PCB termination

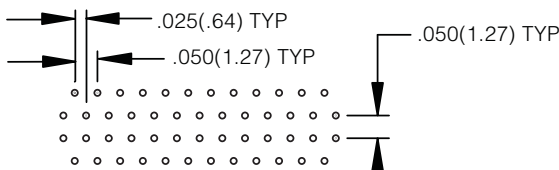
**Wire Colour / Finish**  
1 = all white (M83513 standard) \*off shelf  
2 = all yellow  
6 = 1st 10 colours blk. thru wht. repeated (M83513 standard) \*off shelf  
Omit for PCB termination

**Wire Type**  
**General Applications:**  
A = 7 strd, per NEMA-HP3 (formerly MIL-W-16878/4)  
B = 7 strd, per NEMA-HP3 (formerly MIL-W-16878/6)  
C = 19 strd, per NEMA-HP3 (formerly MIL-W-16878/4)  
D = 19 strd, per NEMA-HP3 (formerly MIL-W-16878/6)

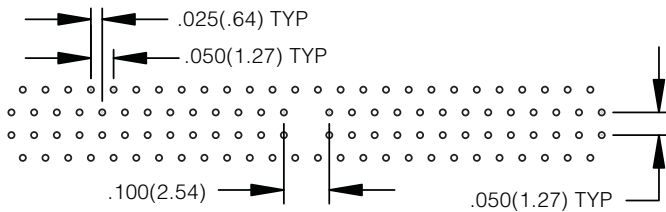
**Termination Type**  
**Wire Harness (Wire Size AWG):**  
2 = 30  
3 = 28  
4 = 26 (M83513 standard) \*off shelf  
6 = 24

**Vertical PCB Mount:**  
BS = Straight PCB Termination

CONTACT ARRANGEMENTS



SIZES 50-74



SIZES 104-152

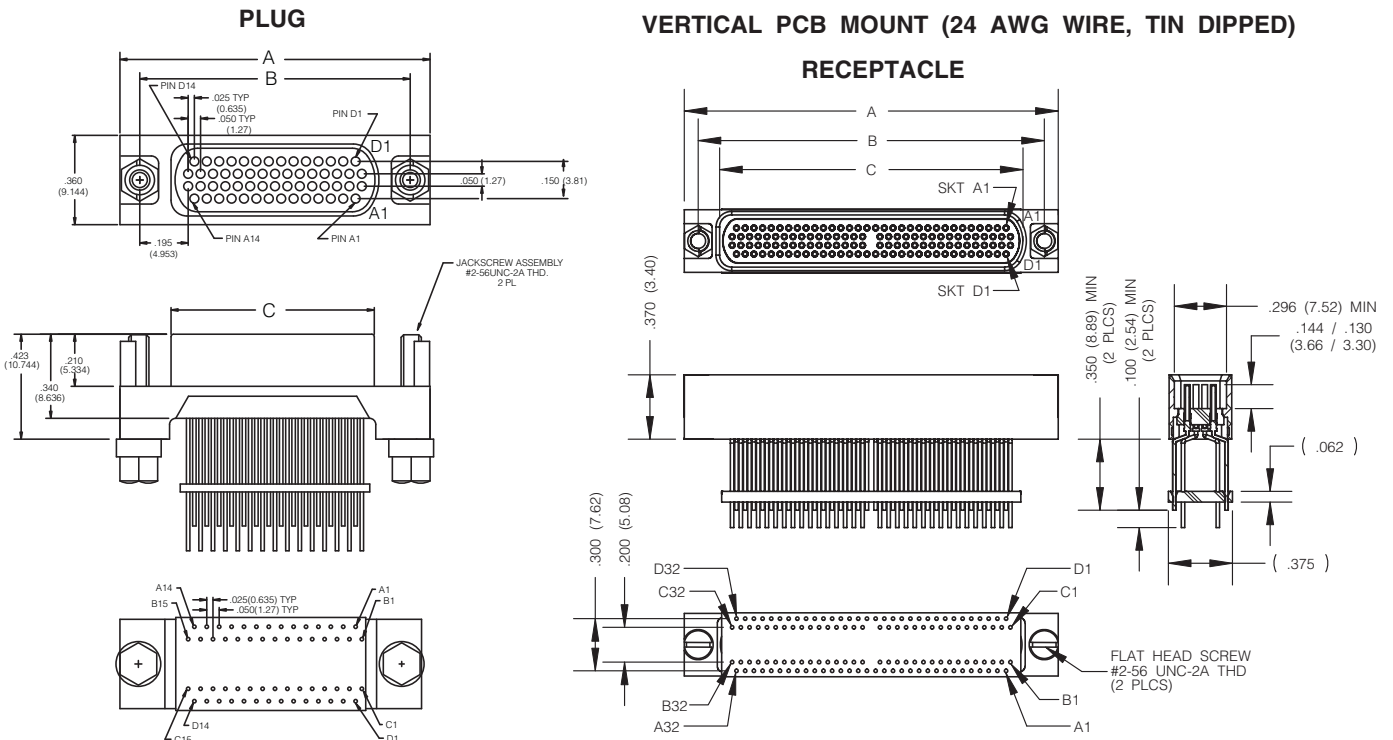
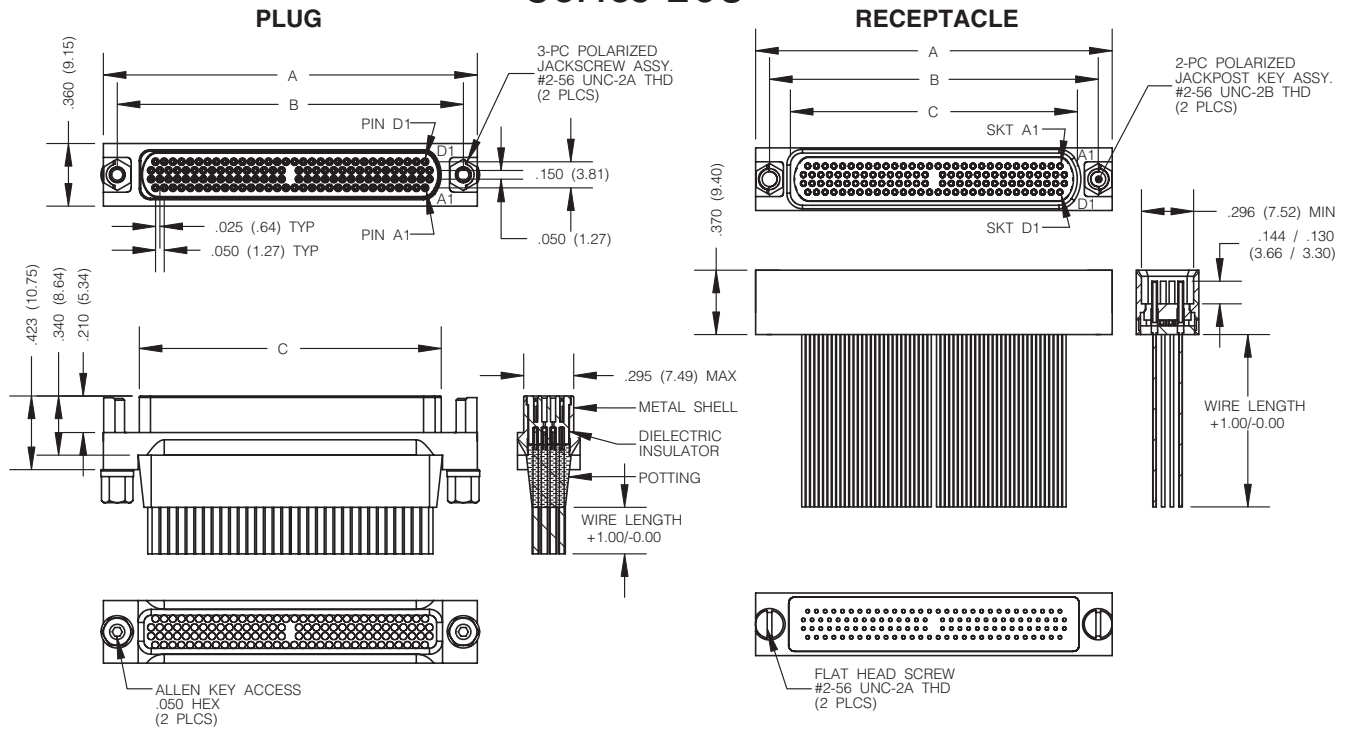
SIZE	A ±.005 (0.13)	B ±.005 (0.13)	C MAX	
			PLUG	RCPT
50	1.150 (29.21)	.990 (24.15)	.741 (18.82)	.747 (18.97)
54	1.200 (30.48)	1.040 (26.62)	.791 (20.09)	.797 (20.24)
58	1.250 (31.75)	1.090 (27.69)	.841 (21.36)	.847 (21.51)
62	1.300 (33.02)	1.140 (28.96)	.891 (22.63)	.897 (22.78)
66	1.350 (34.29)	1.190 (30.23)	.941 (23.90)	.947 (24.05)
70	1.400 (35.56)	1.240 (31.50)	.991 (25.17)	.997 (25.32)
74	1.450 (36.83)	1.290 (32.77)	1.041 (26.44)	1.047 (26.59)
104	1.850 (46.99)	1.690 (42.93)	1.441 (36.60)	1.447 (36.75)
112	1.950 (49.53)	1.790 (45.47)	1.541 (39.14)	1.547 (39.29)
120	2.050 (52.07)	1.890 (48.01)	1.641 (41.68)	1.647 (41.83)
128	2.150 (54.61)	1.990 (50.55)	1.741 (44.22)	1.747 (44.37)
136	2.250 (57.15)	2.090 (53.09)	1.841 (46.76)	1.847 (46.91)
144	2.350 (59.69)	2.190 (55.63)	1.941 (49.30)	1.947 (49.45)
152	2.450 (62.23)	2.290 (58.17)	2.041 (51.84)	2.047 (51.99)

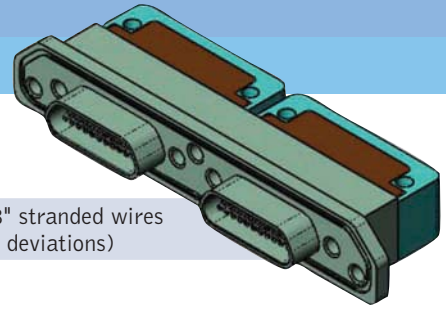
FEATURES

Designed for a space conscious industry. Provides an extremely dense and reliable interconnection for card-to-card and card-to-cable applications. Connector performance per M83513 specifications. Available in vertical mount for thru-hole applications and wire harness termination styles for both plug and receptacle. Wide selection of wire sizes (24 thru 30). Shell employs a polarizing "D" shape for correct mating.



## Series 106





## Series M13

**Example:**  
M13-21S6APC11-000

**Description:** metal shell size 21 receptacle, nickel finish, 18" stranded wires per M22759/11, jackposts only, C-filter value 1000 pF (no deviations)

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

**Connector Series**  
M13 = Filtered micro-d

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

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

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

**Wire / Lead Length (inches)**  
1 = .109 +/- .015  
2 = .140 +/- .015  
3 = .172 +/- .015  
4 = .250 +/- .015

**For Termination Type 6 (inches +1.00/-0.00):**  
A = 18.00 per M22759/11-26 (mil-std-681, system 1)  
B = 36.00 per M22759/11-26 (mil-std-681, system 1)  
C = 72.00 per M22759/11-26 (mil-std-681, system 1)

**Deviation**  
XXX (000 is standard part)

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

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

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

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

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

### MATERIALS AND FINISHES

**Connector Shell:** Aluminum Alloy  
**Insulator:** Polyphenyl Sulfide (PPS)  
**Seals:** Silicone Rubber or Equivalent  
**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  
**Encapsulant:** Thermally conductive epoxy

### QUALITY CONFORMANCE INSPECTION

Series M13 connectors have been extensively qualified per the requirements of MIL-DTL-83513. All products shipped have the following inspection tests:

- 100% visual and mechanical inspections
- 100% capacitance, DWV, insulation resistance and dissipation factor testing
- Sample insertion loss testing (AQL 1.0%)

For high reliability applications, the following inspection tests or certifications are also available:

- Thermal shock
- Elevated temperature voltage conditioning
- Elevated temperature insulation resistance and capacitance
- Outgassing per JSC-SPR-0022 for space-borne applications
- Baseline and single lot date code manufacturing
- Other tests as required (consult the factory)

INCHES (MM)

## FEATURES

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

**Amphenol**  
Canada



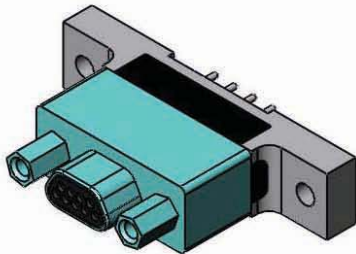
## Series M13

### C-FILTER SPECIFICATIONS

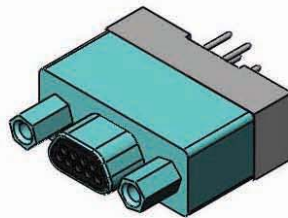
Filter Circuits		C, CLR, LRC					
Capacitance (pF) (@ 25 C, 1 kHz and 1.0 VRMS)		150 TO 300	300 TO 500	600 TO 1200	1200 TO 3200	4000 TO 8000	8000 TO 16000
Insertion Loss (dB min.)	.1 MHz	-	-	-	-	-	-
(per MIL-STD-220	1 MHz	-	-	-	-	-	-
@ 25 C and no load)	10 MHz	-	-	2	5	13	18
	100 MHz	6	12	17	24	33	40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

### PI-FILTER SPECIFICATIONS

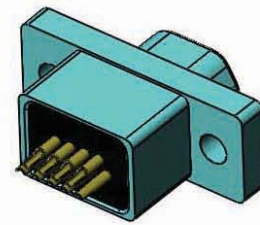
Filter Circuits		Pi					
Capacitance (pF) (@ 25 C, 1 kHz and 1.0 VRMS)		150 TO 300	300 TO 500	600 TO 1200	1200 TO 3200	4000 TO 8000	8000 TO 16000
Insertion Loss (dB min.)	.1 MHz	-	-	-	-	-	-
(per MIL-STD-220	1 MHz	-	-	-	-	-	3
@ 25 C and no load)	10 MHz	-	-	2	5	13	18
	100 MHz	7	12	18	26	45	57
	1000 MHz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



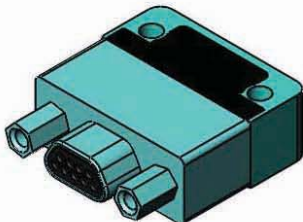
TERMINATION TYPE 1  
VERTICAL PCB "BS"



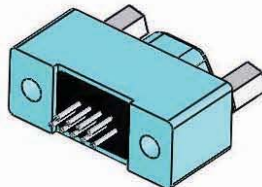
TERMINATION TYPE 2  
VERTICAL PCB "C6"



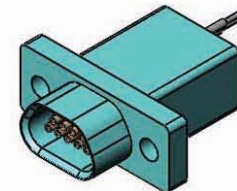
TERMINATION TYPE 3  
SOLDER CUP



TERMINATION TYPE 4  
RIGHT ANGLE PCB "CBR"

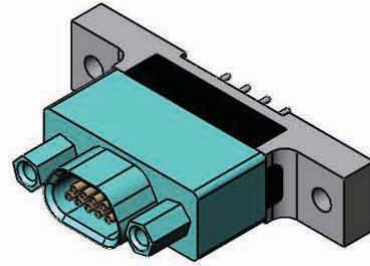
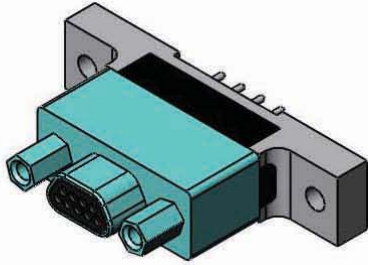


TERMINATION TYPE 5  
SOLID WIRE STRAIGHT



TERMINATION TYPE 6  
STRANDED WIRE

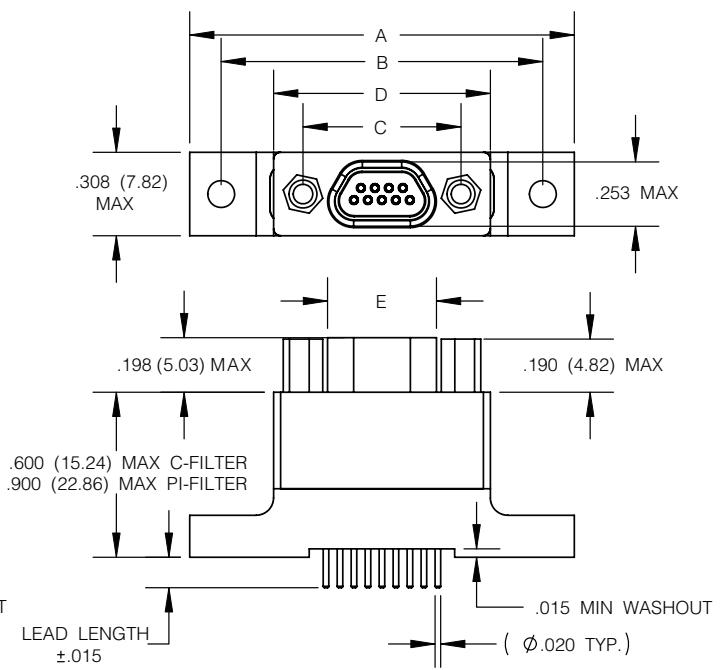
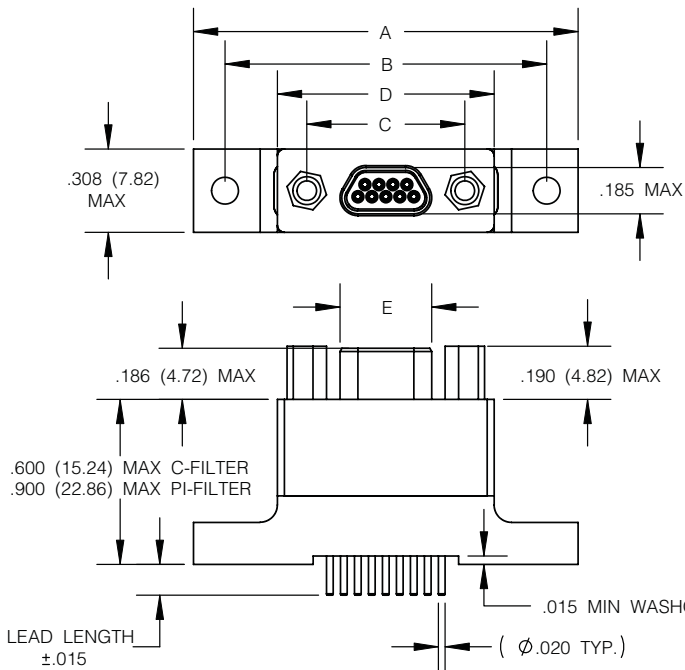
Series M13



PLUG

RECEPTACLE

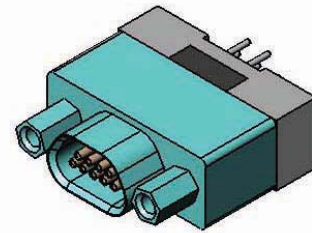
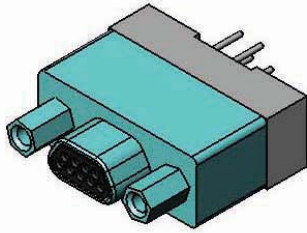
\* INTERFACIAL SEAL INCLUDED



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

REFER TO PAGE 16 FOR STRAIGHT PC CONFIGURATIONS (REAR VIEW)

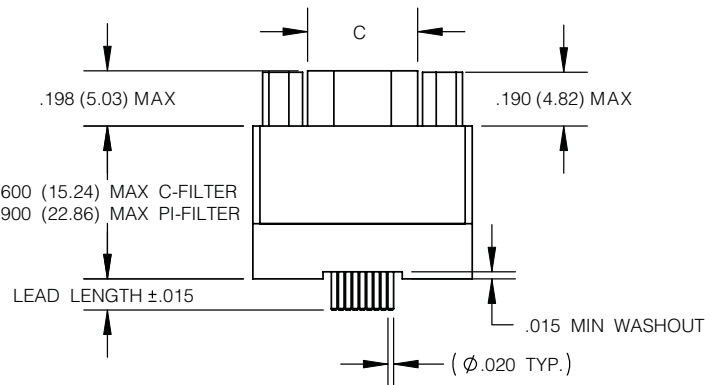
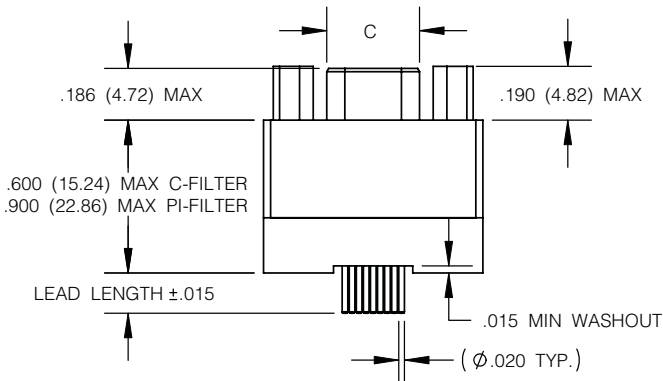
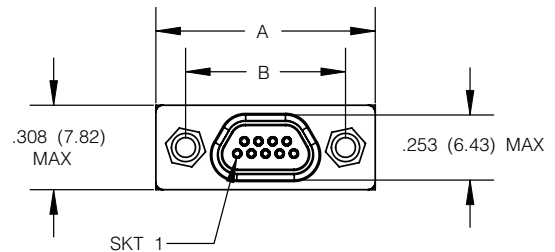
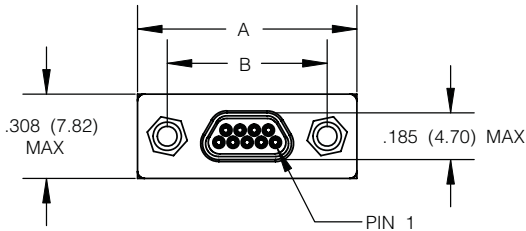
# Series M13



**PLUG**

**RECEPTACLE**

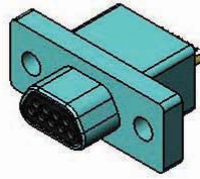
\* INTERFACIAL SEAL INCLUDED



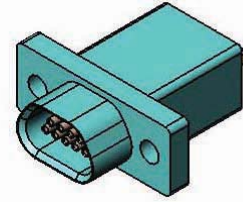
SIZE	A MAX	B ±.005 (0.13)	C MAX	
			PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)
31	1.335 (33.91)	1.115 (28.32)	.884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

REFER TO PAGE 23 FOR VERTICAL MOUNT PC CONFIGURATIONS (REAR VIEW)

# Series M13

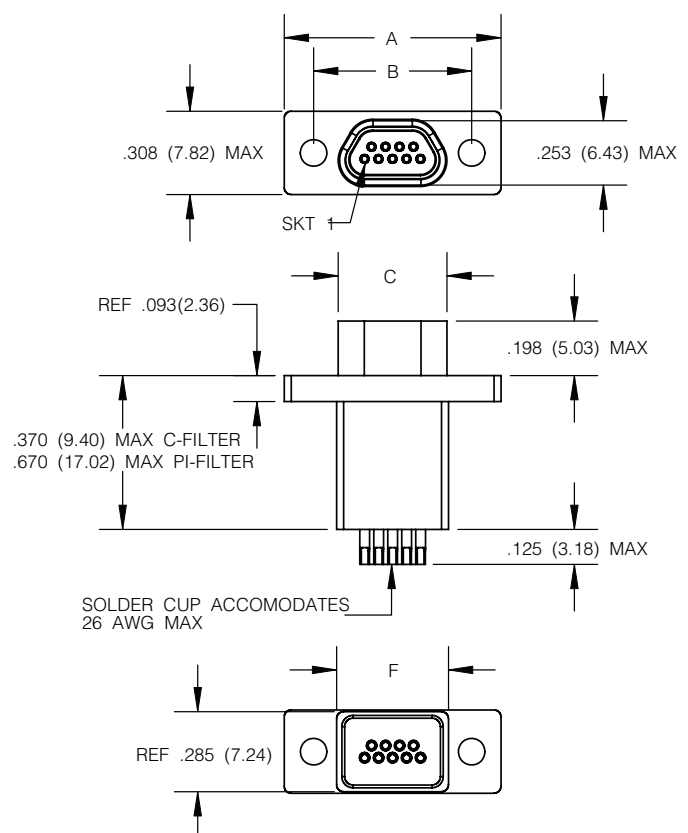
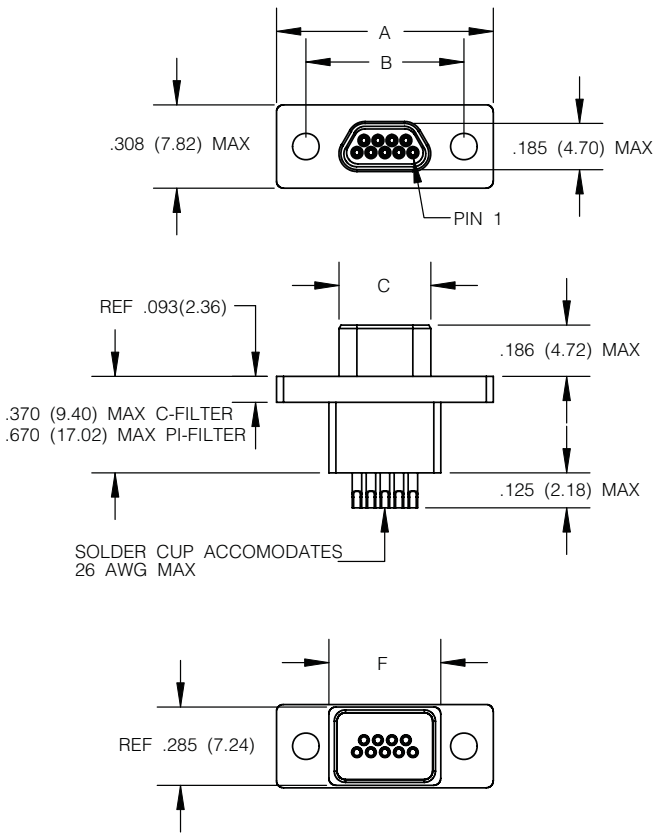


**PLUG**



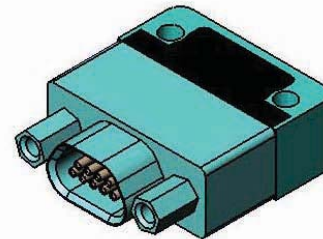
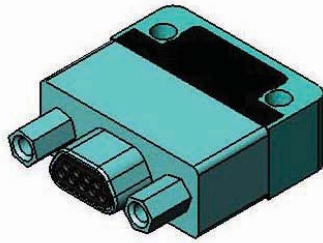
**RECEPTACLE**

\* INTERFACIAL SEAL INCLUDED



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

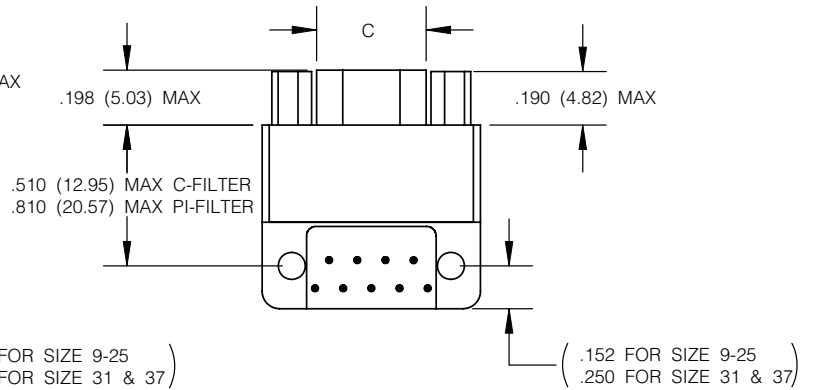
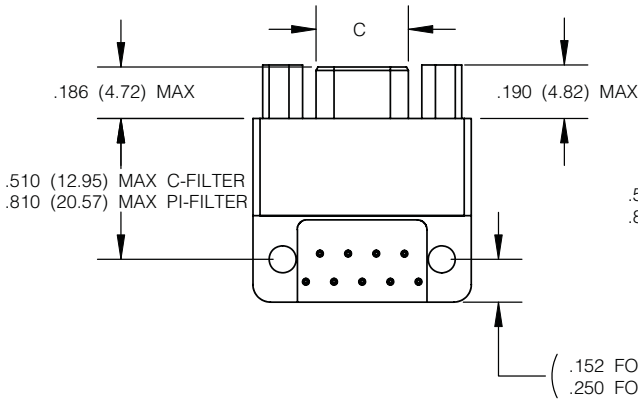
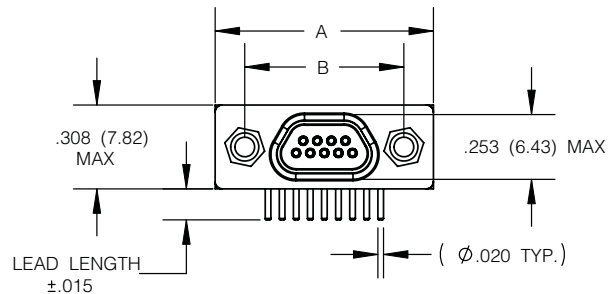
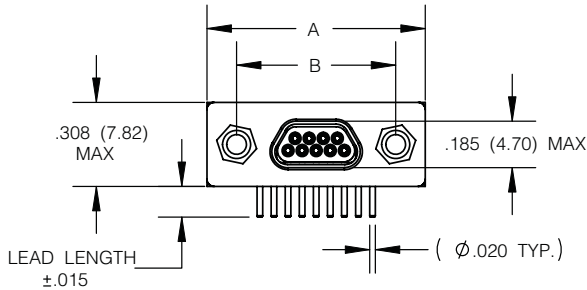
## Series M13



**PLUG**

**RECEPTACLE**

\* INTERFACIAL SEAL INCLUDED

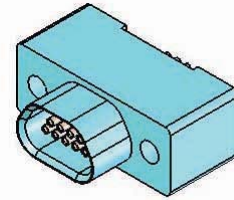
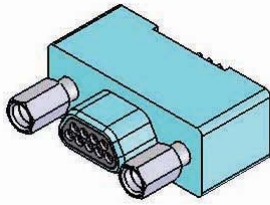


SIZE	A MAX	B ±.005 (0.13)	C MAX	
			PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)
31	1.335 (33.91)	1.115 (28.32)	.884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

REFER TO PAGE 20 FOR RIGHT ANGLE (90 DEG) NARROW PROFILE PC CONFIGURATIONS



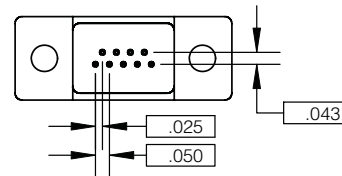
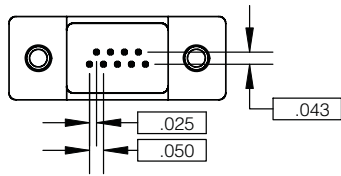
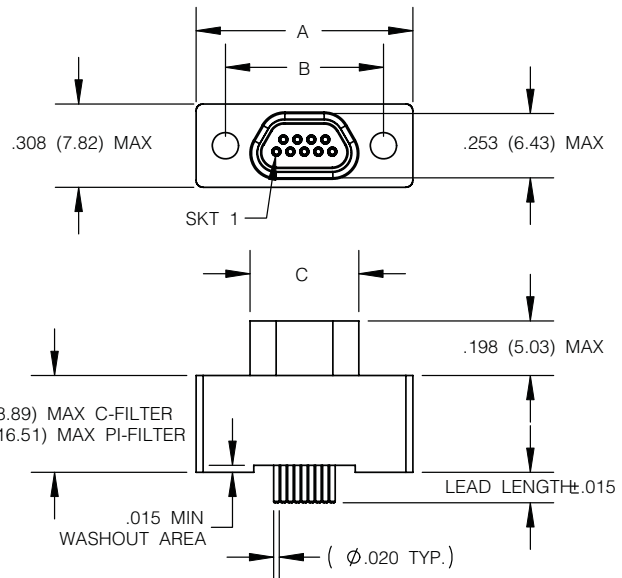
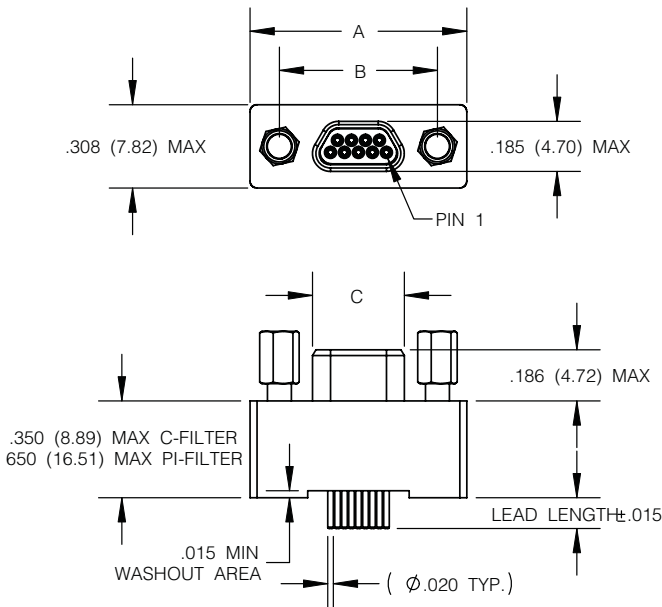
# Series M13



PLUG

RECEPTACLE

\* INTERFACIAL SEAL INCLUDED



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

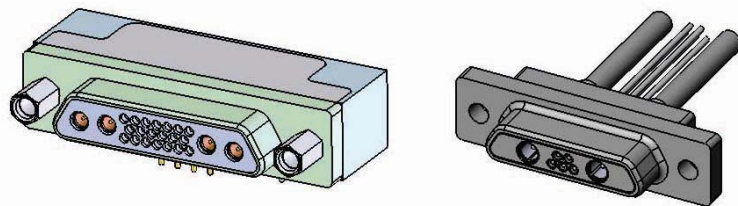
## NEED A SPECIAL CONNECTOR?

Amphenol has designed a range of specialty connectors to meet your specific requirements. Our connectors are designed to be compact, robust, and multi-functional.

Please contact us for more information.

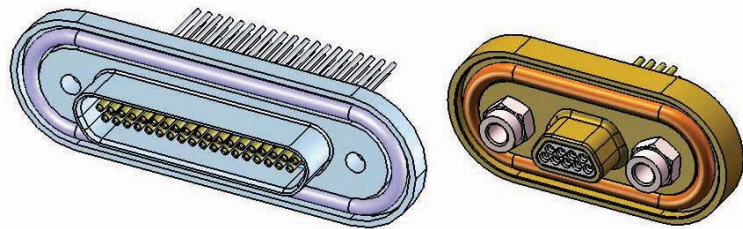
### COMBO / HYBRID MICRO-D

- Suitable for compact designs
- Coax / Power / Signal contacts
- Metal or plastic shell
- Available sizes 9 thru 100
- Available in various shell finishes
- Wire or PCB termination
- Standard to custom hardware available



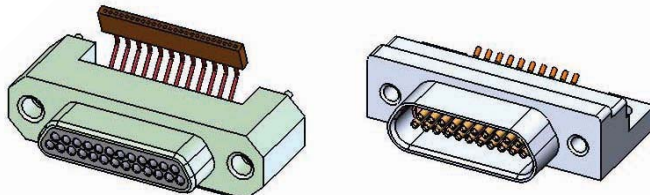
### PANEL MOUNT W/O-RING SEAL

- Suitable for external panel applications
- Meets IP-67 sealing requirement
- Metal or plastic shell
- Available sizes 9 thru 100
- Available in various shell finishes
- Wire or PCB termination
- Standard to custom hardware available
- Blind mounting holes



### SURFACE MOUNT / STRADDLE MOUNT

- Suitable for limited board space
- Vertical or horizontal mount
- .050" pad spacing
- Metal or plastic shell
- Available sizes 9 thru 37
- Standard to custom hardware available



### HIGH TEMPERATURE MICRO-D (200C)

- Suitable for oil and gas applications
- Metal or plastic shell
- Special high temp dielectric insulator
- High temp solder
- Available sizes 9 thru 100
- Available in various shell finishes
- Wire gauge range 32 AWG to 24 AWG
- Multiple wire lengths (+1.00 / -0.00)
- Standard to custom hardware available

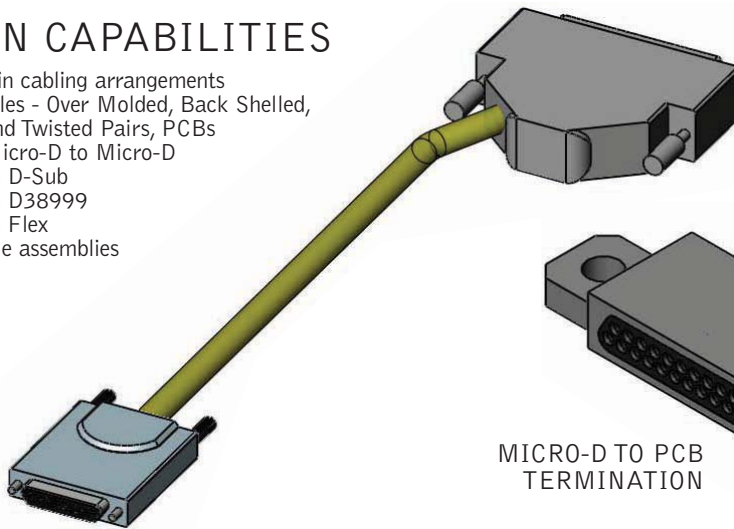


# Amphenol designs and manufactures the Right Solution for your needs!

Premium service, fast response time...  
imagine the possibilities!

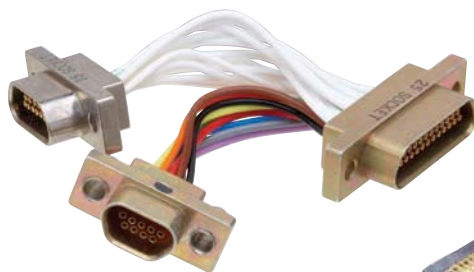
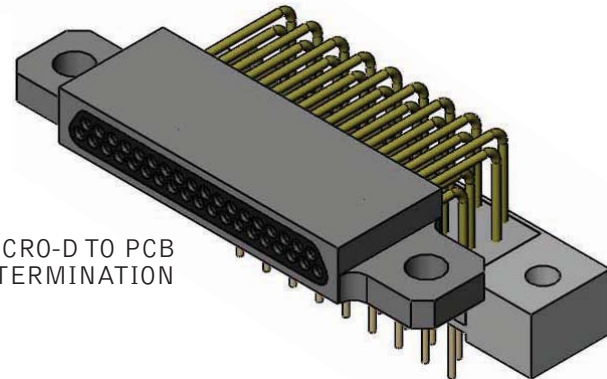
## DESIGN CAPABILITIES

- Specialize in cabling arrangements
- Cabling styles - Over Molded, Back Shelled, Shielded and Twisted Pairs, PCBs
- Multiple Micro-D to Micro-D
- Micro-D to D-Sub
- Micro-D to D38999
- Micro-D to Flex
- Space grade assemblies

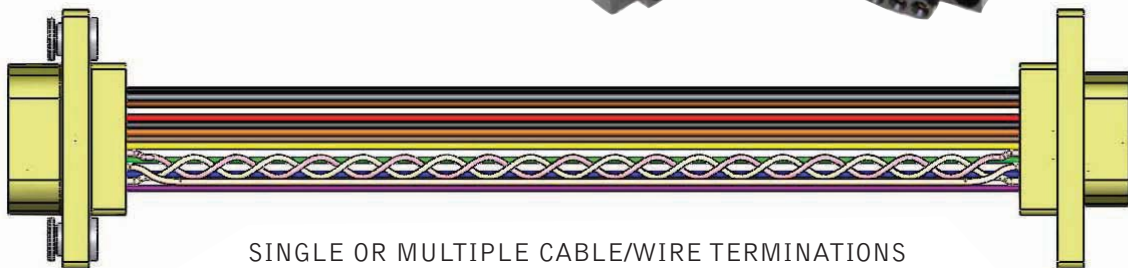


SINGLE OR MULTIPLE  
CABLE/WIRE TERMINATIONS  
(MICRO-D TO D-SUB,  
SHIELDED TEFLON CABLE)

MICRO-D TO PCB  
TERMINATION



MICRO-D TO HEADER  
OR OTHER PRODUCT  
TERMINATION



SINGLE OR MULTIPLE CABLE/WIRE TERMINATIONS  
(MICRO-D TO MICRO-D, TWISTED PAIRS AVAILABLE)

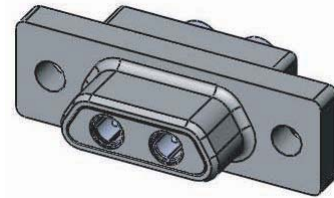
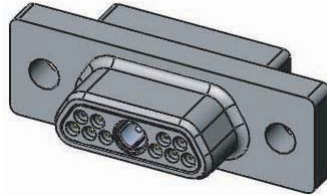
**Amphenol**  
Canada

## DESIGN CAPABILITIES

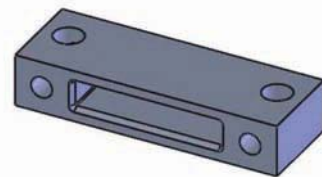
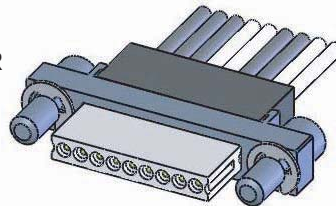
- Contact arrangements up to 372 positions
- Contact styles - Fiber Optic, Power, Signal, RF
- Mounting styles - SMT, Through Hole, Press Fit, Solder Cup, Blind Mate
- Custom contact lengths for multiple PCB thickness
- Custom connector shell designs available
- Standard to custom hardware available



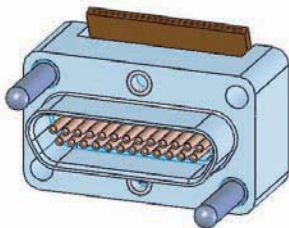
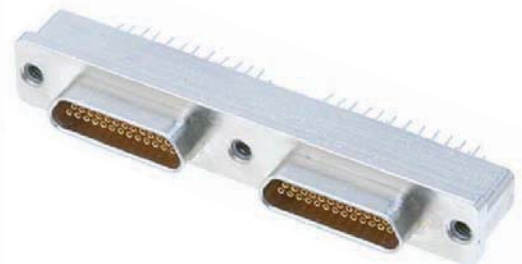
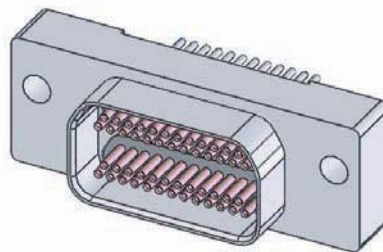
CUSTOM INSERT PATTERN  
(SIGNAL & POWER OR  
COAX CONTACTS)



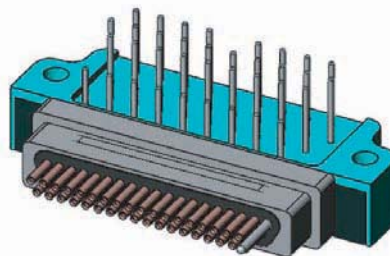
CUSTOM STRIP LINE CONNECTOR  
WITH MOUNTING FEATURES



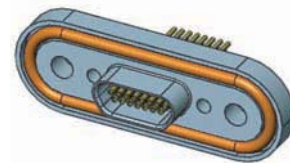
DOUBLE OR MULTIPLE BAY  
(VERTICAL / HORIZONTAL  
ORIENTATION)



CUSTOM SURFACE MOUNT  
WITH GUIDE PINS AND  
THREADED MOUNTING  
FEATURES



CUSTOM SHELL, PCB CONNECTOR  
(CBR TERMINATION SHOWN)



IP-67 O-RING PANEL MOUNT

**Amphenol**  
Canada



AWG	DIAMETER	
	(INCH)	(MM)
0000 (4/0)	0.46	11.684
000 (3/0)	0.4096	10.404
00 (2/0)	0.3648	9.266
0 (1/0)	0.3249	8.252
1	0.2893	7.348
2	0.2576	6.544
3	0.2294	5.827
4	0.2043	5.189
5	0.1819	4.621
6	0.162	4.115
7	0.1443	3.665
8	0.1285	3.264
9	0.1144	2.906
10	0.1019	2.588
11	0.0907	2.305
12	0.0808	2.053
13	0.072	1.828
14	0.0641	1.628
15	0.0571	1.45
16	0.0508	1.291
17	0.0453	1.15
18	0.0403	1.024
19	0.0359	0.912
20	0.032	0.812
21	0.0285	0.723
22	0.0253	0.644
23	0.0226	0.573
24	0.0201	0.511
25	0.0179	0.455
26	0.0159	0.405
27	0.0142	0.361
28	0.0126	0.321
29	0.0113	0.286
30	0.01	0.255
31	0.00893	0.227
32	0.00795	0.202
33	0.00708	0.18
34	0.0063	0.16
35	0.00561	0.143
36	0.005	0.127
37	0.00445	0.113
38	0.00397	0.101
39	0.00353	0.0897
40	0.00314	0.0799

PIN	BASE COLOUR	1st STRIPE	2nd STRIPE	3rd STRIPE
1	BLACK	-	-	-
2	BROWN	-	-	-
3	RED	-	-	-
4	ORANGE	-	-	-
5	YELLOW	-	-	-
6	GREEN	-	-	-
7	BLUE	-	-	-
8	VIOLET	-	-	-
9	GREY	-	-	-
10	WHITE	-	-	-
11	WHITE	BLACK	-	-
12	WHITE	BROWN	-	-
13	WHITE	RED	-	-
14	WHITE	ORANGE	-	-
15	WHITE	YELLOW	-	-
16	WHITE	GREEN	-	-
17	WHITE	BLUE	-	-
18	WHITE	VIOLET	-	-
19	WHITE	GREY	-	-
20	WHITE	BLACK	BROWN	-
21	WHITE	BLACK	RED	-
22	WHITE	BLACK	ORANGE	-
23	WHITE	BLACK	YELLOW	-
24	WHITE	BLACK	GREEN	-
25	WHITE	BLACK	BLUE	-
26	WHITE	BLACK	VIOLET	-
27	WHITE	BLACK	GREY	-
28	WHITE	BROWN	RED	-
29	WHITE	BROWN	ORANGE	-
30	WHITE	BROWN	YELLOW	-
31	WHITE	BROWN	GREEN	-
32	WHITE	BROWN	BLUE	-
33	WHITE	BROWN	VIOLET	-
34	WHITE	BROWN	GREY	-
35	WHITE	RED	ORANGE	-
36	WHITE	RED	YELLOW	-
37	WHITE	RED	GREEN	-
38	WHITE	RED	BLUE	-
39	WHITE	RED	VIOLET	-
40	WHITE	RED	GREY	-
41	WHITE	ORANGE	YELLOW	-
42	WHITE	ORANGE	GREEN	-
43	WHITE	ORANGE	BLUE	-
44	WHITE	ORANGE	VIOLET	-
45	WHITE	ORANGE	GREY	-
46	WHITE	YELLOW	GREEN	-
47	WHITE	YELLOW	BLUE	-
48	WHITE	YELLOW	VIOLET	-
49	WHITE	YELLOW	GREY	-
50	WHITE	GREEN	BLUE	-

PIN	BASE COLOUR	1st STRIPE	2nd STRIPE	3rd STRIPE
51	WHITE	GREEN	VIOLET	-
52	WHITE	GREEN	GREY	-
53	WHITE	BLUE	VIOLET	-
54	WHITE	BLUE	GREY	-
55	WHITE	VIOLET	GREY	-
56	WHITE	BLACK	BROWN	RED
57	WHITE	BLACK	BROWN	ORANGE
58	WHITE	BLACK	BROWN	YELLOW
59	WHITE	BLACK	BROWN	GREEN
60	WHITE	BLACK	BROWN	BLUE
61	WHITE	BLACK	BROWN	VIOLET
62	WHITE	BLACK	BROWN	GREY
63	WHITE	BLACK	RED	ORANGE
64	WHITE	BLACK	RED	YELLOW
65	WHITE	BLACK	RED	GREEN
66	WHITE	BLACK	RED	BLUE
67	WHITE	BLACK	RED	VIOLET
68	WHITE	BLACK	RED	GREY
69	WHITE	BLACK	ORANGE	YELLOW
70	WHITE	BLACK	ORANGE	GREEN
71	WHITE	BLACK	ORANGE	BLUE
72	WHITE	BLACK	ORANGE	VIOLET
73	WHITE	BLACK	ORANGE	GREY
74	WHITE	BLACK	YELLOW	GREEN
75	WHITE	BLACK	YELLOW	BLUE
76	WHITE	BLACK	YELLOW	VIOLET
77	WHITE	BLACK	YELLOW	GREY
78	WHITE	BLACK	GREEN	BLUE
79	WHITE	BLACK	GREEN	VIOLET
80	WHITE	BLACK	GREEN	GREY
81	WHITE	BLACK	BLUE	VIOLET
82	WHITE	BLACK	BLUE	GREY
83	WHITE	BLACK	VIOLET	GREY
84	WHITE	BROWN	RED	ORANGE
85	WHITE	BROWN	RED	YELLOW
86	WHITE	BROWN	RED	GREEN
87	WHITE	BROWN	RED	BLUE
88	WHITE	BROWN	RED	VIOLET
89	WHITE	BROWN	RED	GREY
90	WHITE	BROWN	ORANGE	YELLOW
91	WHITE	BROWN	ORANGE	GREEN
92	WHITE	BROWN	ORANGE	BLUE
93	WHITE	BROWN	ORANGE	VIOLET
94	WHITE	BROWN	ORANGE	GREY
95	WHITE	BROWN	YELLOW	GREEN
96	WHITE	BROWN	YELLOW	BLUE
97	WHITE	BROWN	YELLOW	VIOLET
98	WHITE	BROWN	YELLOW	GREY
99	WHITE	BROWN	GREEN	BLUE
100	WHITE	BROWN	GREEN	VIOLET

# PART NUMBER CROSS REFERENCE

Mil-Spec / Amphenol

Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/01-AC	100RC09P-B	M83513/03-A15C	100RN09P-4F1CB	M83513/03-C12N	100RC21P-4F6BB
M83513/01-AN	100RN09P-B	M83513/03-A15N	100RN09P-4F1CB	M83513/03-C13C	100RC21P-4E1CB
M83513/01-BC	100RC15P-B	M83513/03-A16C	100RC09P-4F6CB	M83513/03-C13N	100RN21P-4E1CB
M83513/01-BN	100RN15P-B	M83513/03-A16N	100RN09P-4F6CB	M83513/03-C14C	100RC21P-4E6CB
M83513/01-CC	100RC21P-B	M83513/03-B01C	100RC15P-4E1AB	M83513/03-C14N	100RN21P-4E6CB
M83513/01-CN	100RN21P-B	M83513/03-B01N	100RN15P-4E1AB	M83513/03-C15C	100RC21P-4F1CB
M83513/01-DC	100RC25P-B	M83513/03-B02C	100RC15P-4E1BB	M83513/03-C15N	100RN21P-4F1CB
M83513/01-DN	100RN25P-B	M83513/03-B02N	100RN15P-4E1BB	M83513/03-C16C	100RC21P-4F6CB
M83513/01-EC	100RC31P-B	M83513/03-B03C	100RC15P-4E6AB	M83513/03-C16N	100RN21P-4F6CB
M83513/01-EN	100RN31P-B	M83513/03-B03N	100RN15P-4E6AB	M83513/03-D01C	100RC25P-4E1AB
M83513/01-FC	100RC37P-B	M83513/03-B04C	100RC15P-4E6BB	M83513/03-D01N	100RN25P-4E1AB
M83513/01-FN	100RN37P-B	M83513/03-B04N	100RN15P-4E6BB	M83513/03-D02C	100RC25P-4E1BB
M83513/01-GC	100RC51P-B	M83513/03-B05C	100RC15P-5L4DB	M83513/03-D02N	100RN25P-4E1BB
M83513/01-GN	100RN51P-B	M83513/03-B05N	100RN15P-5L4DB	M83513/03-D03C	100RC25P-4E6AB
M83513/01-HC	100RC100P-B	M83513/03-B06C	100RC15P-5L4EB	M83513/03-D03N	100RN25P-4E6AB
M83513/01-HN	100RN100P-B	M83513/03-B06N	100RN15P-5L4EB	M83513/03-D04C	100RC25P-4E6BB
M83513/02-AC	100RC09S-B	M83513/03-B07C	100RC15P-5L3DB	M83513/03-D04N	100RN25P-4E6BB
M83513/02-AN	100RN09S-B	M83513/03-B07N	100RN15P-5L3DB	M83513/03-D05C	100RC25P-5L4DB
M83513/02-BC	100RC15S-B	M83513/03-B08C	100RC15P-5L3EB	M83513/03-D05N	100RN25P-5L4DB
M83513/02-BN	100RN15S-B	M83513/03-B08N	100RN15P-5L3EB	M83513/03-D06C	100RC25P-5L4EB
M83513/02-CC	100RC21S-B	M83513/03-B09C	100RC15P-4F1AB	M83513/03-D06N	100RN25P-5L4EB
M83513/02-CN	100RN21S-B	M83513/03-B09N	100RN15P-4F1AB	M83513/03-D07C	100RC25P-5L3DB
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M83513/02-DN	100RN25S-B	M83513/03-B10N	100RN15P-4F1BB	M83513/03-D08C	100RC25P-5L3EB
M83513/02-EC	100RC31S-B	M83513/03-B11C	100RC15P-4F6AB	M83513/03-D08N	100RN25P-5L3EB
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M83513/02-HN	100RN100S-B	M83513/03-B14N	100RN15P-4E6CB	M83513/03-D12C	100RC25P-4F6BB
M83513/03-A01C	100RC09P-4E1AB	M83513/03-B15C	100RC15P-4F1CB	M83513/03-D12N	100RN25P-4F6BB
M83513/03-A01N	100RN09P-4E1AB	M83513/03-B15N	100RN15P-4F1CB	M83513/03-D13C	100RC25P-4E1CB
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M83513/03-A02N	100RN09P-4E1BB	M83513/03-B16N	100RN15P-4F6CB	M83513/03-D14C	100RC25P-4E6CB
M83513/03-A03C	100RC09P-4E6AB	M83513/03-C01C	100RC21P-4E1AB	M83513/03-D14N	100RN25P-4E6CB
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M83513/03-A05C	100RC09P-5L4DB	M83513/03-C03C	100RC21P-4E6AB	M83513/03-D16N	100RN25P-4F6CB
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M83513/03-A08C	100RC09P-5L3EB	M83513/03-C06C	100RC21P-5L4EB	M83513/03-E03N	100RN31P-4E6AB
M83513/03-A08N	100RN09P-5L3EB	M83513/03-C06N	100RN21P-5L4EB	M83513/03-E04C	100RC31P-4E6BB
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M83513/03-A09N	100RN09P-4F1AB	M83513/03-C07N	100RN21P-5L3DB	M83513/03-E05C	100RC31P-5L4DB
M83513/03-A10C	100RC09P-4F1BB	M83513/03-C08C	100RC21P-5L3EB	M83513/03-E05N	100RN31P-5L4DB
M83513/03-A10N	100RN09P-4F1BB	M83513/03-C08N	100RN21P-5L3EB	M83513/03-E06C	100RC31P-5L4EB
M83513/03-A11C	100RC09P-4F6AB	M83513/03-C09C	100RC21P-4F1AB	M83513/03-E06N	100RN31P-5L4EB
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M83513/03-A12C	100RC09P-4F6BB	M83513/03-C10C	100RC21P-4F1BB	M83513/03-E07N	100RN31P-5L3DB
M83513/03-A12N	100RN09P-4F6BB	M83513/03-C10N	100RN21P-4F1BB	M83513/03-E08C	100RC31P-5L3EB
M83513/03-A13C	100RC09P-4E1CB	M83513/03-C11C	100RC21P-4F6AB	M83513/03-E08N	100RN31P-5L3EB
M83513/03-A13N	100RN09P-4E1CB	M83513/03-C11N	100RN21P-4F6AB	M83513/03-E09C	100RC31P-4F1AB
M83513/03-A14C	100RC09P-4E6CB	M83513/03-C12C	100RC21P-4F6BB	M83513/03-E09N	100RN31P-4F1AB



Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/03-E10C	100RC31P-4F1BB	M83513/03-G07N	100RN51P-5L3DB	M83513/04-A05C	100RC09S-5L4DB
M83513/03-E10N	100RN31P-4F1BB	M83513/03-G08C	100RC51P-5L3EB	M83513/04-A05N	100RN09S-5L4DB
M83513/03-E11C	100RC31P-4F6AB	M83513/03-G08N	100RN51P-5L3EB	M83513/04-A06C	100RC09S-5L4EB
M83513/03-E11N	100RN31P-4F6AB	M83513/03-G09C	100RC51P-4F1AB	M83513/04-A06N	100RN09S-5L4EB
M83513/03-E12C	100RC31P-4F6BB	M83513/03-G09N	100RN51P-4F1AB	M83513/04-A07C	100RC09S-5L3DB
M83513/03-E12N	100RC31P-4F6BB	M83513/03-G10C	100RC51P-4F1BB	M83513/04-A07N	100RN09S-5L3DB
M83513/03-E13C	100RC31P-4E1CB	M83513/03-G10N	100RN51P-4F1BB	M83513/04-A08C	100RC09S-5L3EB
M83513/03-E13N	100RN31P-4E1CB	M83513/03-G11C	100RC51P-4F6AB	M83513/04-A08N	100RN09S-5L3EB
M83513/03-E14C	100RC31P-4E6CB	M83513/03-G11N	100RN51P-4F6AB	M83513/04-A09C	100RC09S-4F1AB
M83513/03-E14N	100RN31P-4E6CB	M83513/03-G12C	100RC51P-4F6BB	M83513/04-A09N	100RN09S-4F1AB
M83513/03-E15C	100RC31P-4F1CB	M83513/03-G12N	100RC51P-4F6BB	M83513/04-A10C	100RC09S-4F1BB
M83513/03-E15N	100RN31P-4F1CB	M83513/03-G13C	100RC51P-4E1CB	M83513/04-A10N	100RN09S-4F1BB
M83513/03-E16C	100RC31P-4F6CB	M83513/03-G13N	100RN51P-4E1CB	M83513/04-A11C	100RC09S-4F6AB
M83513/03-E16N	100RN31P-4F6CB	M83513/03-G14C	100RC51P-4E6CB	M83513/04-A11N	100RN09S-4F6AB
M83513/03-F01C	100RC37P-4E1AB	M83513/03-G14N	100RN51P-4E6CB	M83513/04-A12C	100RC09S-4F6BB
M83513/03-F01N	100RN37P-4E1AB	M83513/03-G15C	100RC51P-4F1CB	M83513/04-A12N	100RC09S-4F6BB
M83513/03-F02C	100RC37P-4E1BB	M83513/03-G15N	100RN51P-4F1CB	M83513/04-A13C	100RC09S-4E1CB
M83513/03-F02N	100RN37P-4E1BB	M83513/03-G16C	100RC51P-4F6CB	M83513/04-A13N	100RN09S-4E1CB
M83513/03-F03C	100RC37P-4E6AB	M83513/03-G16N	100RN51P-4F6CB	M83513/04-A14C	100RC09S-4E6CB
M83513/03-F03N	100RN37P-4E6AB	M83513/03-H01C	100RC100P-4E1AB	M83513/04-A14N	100RN09S-4E6CB
M83513/03-F04C	100RC37P-4E6BB	M83513/03-H01N	100RN100P-4E1AB	M83513/04-A15C	100RC09S-4F1CB
M83513/03-F04N	100RN37P-4E6BB	M83513/03-H02C	100RC100P-4E1BB	M83513/04-A15N	100RN09S-4F1CB
M83513/03-F05C	100RC37P-5L4DB	M83513/03-H02N	100RN100P-4E1BB	M83513/04-A16C	100RC09S-4F6CB
M83513/03-F05N	100RN37P-5L4DB	M83513/03-H03C	100RC100P-4E6AB	M83513/04-A16N	100RN09S-4F6CB
M83513/03-F06C	100RC37P-5L4EB	M83513/03-H03N	100RN100P-4E6AB	M83513/04-B01C	100RC15S-4E1AB
M83513/03-F06N	100RN37P-5L4EB	M83513/03-H04C	100RC100P-4E6BB	M83513/04-B01N	100RN15S-4E1AB
M83513/03-F07C	100RC37P-5L3DB	M83513/03-H04N	100RN100P-4E6BB	M83513/04-B02C	100RC15S-4E1BB
M83513/03-F07N	100RN37P-5L3DB	M83513/03-H05C	100RC100P-5L4DB	M83513/04-B02N	100RN15S-4E1BB
M83513/03-F08C	100RC37P-5L3EB	M83513/03-H05N	100RN100P-5L4DB	M83513/04-B03C	100RC15S-4E6AB
M83513/03-F08N	100RN37P-5L3EB	M83513/03-H06C	100RC100P-5L4EB	M83513/04-B03N	100RN15S-4E6AB
M83513/03-F09C	100RC37P-4F1AB	M83513/03-H06N	100RN100P-5L4EB	M83513/04-B04C	100RC15S-4E6BB
M83513/03-F09N	100RN37P-4F1AB	M83513/03-H07C	100RC100P-5L3DB	M83513/04-B04N	100RN15S-4E6BB
M83513/03-F10C	100RC37P-4F1BB	M83513/03-H07N	100RN100P-5L3DB	M83513/04-B05C	100RC15S-5L4DB
M83513/03-F10N	100RN37P-4F1BB	M83513/03-H08C	100RC100P-5L3EB	M83513/04-B05N	100RN15S-5L4DB
M83513/03-F11C	100RC37P-4F6AB	M83513/03-H08N	100RN100P-5L3EB	M83513/04-B06C	100RC15S-5L4EB
M83513/03-F11N	100RN37P-4F6AB	M83513/03-H09C	100RC100P-4F1AB	M83513/04-B06N	100RN15S-5L4EB
M83513/03-F12C	100RC37P-4F6BB	M83513/03-H09N	100RN100P-4F1AB	M83513/04-B07C	100RC15S-5L3DB
M83513/03-F12N	100RC37P-4F6BB	M83513/03-H10C	100RC100P-4F1BB	M83513/04-B07N	100RN15S-5L3DB
M83513/03-F13C	100RC37P-4E1CB	M83513/03-H10N	100RN100P-4F1BB	M83513/04-B08C	100RC15S-5L3EB
M83513/03-F13N	100RN37P-4E1CB	M83513/03-H11C	100RC100P-4F6AB	M83513/04-B08N	100RN15S-5L3EB
M83513/03-F14C	100RC37P-4E6CB	M83513/03-H11N	100RN100P-4F6AB	M83513/04-B09C	100RC15S-4F1AB
M83513/03-F14N	100RN37P-4E6CB	M83513/03-H12C	100RC100P-4F6BB	M83513/04-B09N	100RN15S-4F1AB
M83513/03-F15C	100RC37P-4F1CB	M83513/03-H12N	100RC100P-4F6BB	M83513/04-B10C	100RC15S-4F1BB
M83513/03-F15N	100RN37P-4F1CB	M83513/03-H13C	100RC100P-4E1CB	M83513/04-B10N	100RN15S-4F1BB
M83513/03-F16C	100RC37P-4F6CB	M83513/03-H13N	100RN100P-4E1CB	M83513/04-B11C	100RC15S-4F6AB
M83513/03-F16N	100RN37P-4F6CB	M83513/03-H14C	100RC100P-4E6CB	M83513/04-B11N	100RN15S-4F6AB
M83513/03-G01C	100RC51P-4E1AB	M83513/03-H14N	100RN100P-4E6CB	M83513/04-B12C	100RC15S-4F6BB
M83513/03-G01N	100RN51P-4E1AB	M83513/03-H15C	100RC100P-4F1CB	M83513/04-B12N	100RC15S-4F6BB
M83513/03-G02C	100RC51P-4E1BB	M83513/03-H15N	100RN100P-4F1CB	M83513/04-B13C	100RC15S-4E1CB
M83513/03-G02N	100RN51P-4E1BB	M83513/03-H16C	100RC100P-4F6CB	M83513/04-B13N	100RN15S-4E1CB
M83513/03-G03C	100RC51P-4E6AB	M83513/03-H16N	100RN100P-4F6CB	M83513/04-B14C	100RC15S-4E6CB
M83513/03-G03N	100RN51P-4E6AB	M83513/04-A01C	100RC09S-4E1AB	M83513/04-B14N	100RN15S-4E6CB
M83513/03-G04C	100RC51P-4E6BB	M83513/04-A01N	100RN09S-4E1AB	M83513/04-B15C	100RC15S-4F1CB
M83513/03-G04N	100RN51P-4E6BB	M83513/04-A02C	100RC09S-4E1BB	M83513/04-B15N	100RN15S-4F1CB
M83513/03-G05C	100RC51P-5L4DB	M83513/04-A02N	100RN09S-4E1BB	M83513/04-B16C	100RC15S-4F6CB
M83513/03-G05N	100RN51P-5L4DB	M83513/04-A03C	100RC09S-4E6AB	M83513/04-B16N	100RN15S-4F6CB
M83513/03-G06C	100RC51P-5L4EB	M83513/04-A03N	100RN09S-4E6AB	M83513/04-C01C	100RC21S-4E1AB
M83513/03-G06N	100RN51P-5L4EB	M83513/04-A04C	100RC09S-4E6BB	M83513/04-C01N	100RN21S-4E1AB
M83513/03-G07C	100RC51P-5L3DB	M83513/04-A04N	100RN09S-4E6BB	M83513/04-C02C	100RC21S-4E1BB

# PART NUMBER CROSS REFERENCE

Mil-Spec / Amphenol  
(Continued)

Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/04-C02N	100RN21S-4E1BB	M83513/04-D16C	100RC25S-4F6CB	M83513/04-F13N	100RN37S-4E1CB
M83513/04-C03C	100RC21S-4E6AB	M83513/04-D16N	100RN25S-4F6CB	M83513/04-F14C	100RC37S-4E6CB
M83513/04-C03N	100RN21S-4E6AB	M83513/04-E01C	100RC31S-4E1AB	M83513/04-F14N	100RN37S-4E6CB
M83513/04-C04C	100RC21S-4E6BB	M83513/04-E01N	100RN31S-4E1AB	M83513/04-F15C	100RC37S-4F1CB
M83513/04-C04N	100RN21S-4E6BB	M83513/04-E02C	100RC31S-4E1BB	M83513/04-F15N	100RN37S-4F1CB
M83513/04-C05C	100RC21S-5L4DB	M83513/04-E02N	100RN31S-4E1BB	M83513/04-F16C	100RC37S-4F6CB
M83513/04-C05N	100RN21S-5L4DB	M83513/04-E03C	100RC31S-4E6AB	M83513/04-F16N	100RN37S-4F6CB
M83513/04-C06C	100RC21S-5L4EB	M83513/04-E03N	100RN31S-4E6AB	M83513/04-G01C	100RC51S-4E1AB
M83513/04-C06N	100RN21S-5L4EB	M83513/04-E04C	100RC31S-4E6BB	M83513/04-G01N	100RN51S-4E1AB
M83513/04-C07C	100RC21S-5L3DB	M83513/04-E04N	100RN31S-4E6BB	M83513/04-G02C	100RC51S-4E1BB
M83513/04-C07N	100RN21S-5L3DB	M83513/04-E05C	100RC31S-5L4DB	M83513/04-G02N	100RN51S-4E1BB
M83513/04-C08C	100RC21S-5L3EB	M83513/04-E05N	100RN31S-5L4DB	M83513/04-G03C	100RC51S-4E6AB
M83513/04-C08N	100RN21S-5L3EB	M83513/04-E06C	100RC31S-5L4EB	M83513/04-G03N	100RN51S-4E6AB
M83513/04-C09C	100RC21S-4F1AB	M83513/04-E06N	100RN31S-5L4EB	M83513/04-G04C	100RC51S-4E6BB
M83513/04-C09N	100RN21S-4F1AB	M83513/04-E07C	100RC31S-5L3DB	M83513/04-G04N	100RN51S-4E6BB
M83513/04-C10C	100RC21S-4F1BB	M83513/04-E07N	100RN31S-5L3DB	M83513/04-G05C	100RC51S-5L4DB
M83513/04-C10N	100RN21S-4F1BB	M83513/04-E08C	100RC31S-5L3EB	M83513/04-G05N	100RN51S-5L4DB
M83513/04-C11C	100RC21S-4F6AB	M83513/04-E08N	100RN31S-5L3EB	M83513/04-G06C	100RC51S-5L4EB
M83513/04-C11N	100RN21S-4F6AB	M83513/04-E09C	100RC31S-4F1AB	M83513/04-G06N	100RN51S-5L4EB
M83513/04-C12C	100RC21S-4F6BB	M83513/04-E09N	100RN31S-4F1AB	M83513/04-G07C	100RC51S-5L3DB
M83513/04-C12N	100RC21S-4F6BB	M83513/04-E10C	100RC31S-4F1BB	M83513/04-G07N	100RN51S-5L3DB
M83513/04-C13C	100RC21S-4E1CB	M83513/04-E10N	100RN31S-4F1BB	M83513/04-G08C	100RC51S-5L3EB
M83513/04-C13N	100RN21S-4E1CB	M83513/04-E11C	100RC31S-4F6AB	M83513/04-G08N	100RN51S-5L3EB
M83513/04-C14C	100RC21S-4E6CB	M83513/04-E11N	100RN31S-4F6AB	M83513/04-G09C	100RC51S-4F1AB
M83513/04-C14N	100RN21S-4E6CB	M83513/04-E12C	100RC31S-4F6BB	M83513/04-G09N	100RN51S-4F1AB
M83513/04-C15C	100RC21S-4F1CB	M83513/04-E12N	100RC31S-4F6BB	M83513/04-G10C	100RC51S-4F1BB
M83513/04-C15N	100RN21S-4F1CB	M83513/04-E13C	100RC31S-4E1CB	M83513/04-G10N	100RN51S-4F1BB
M83513/04-C16C	100RC21S-4F6CB	M83513/04-E13N	100RN31S-4E1CB	M83513/04-G11C	100RC51S-4F6AB
M83513/04-C16N	100RN21S-4F6CB	M83513/04-E14C	100RC31S-4E6CB	M83513/04-G11N	100RN51S-4F6AB
M83513/04-D01C	100RC25S-4E1AB	M83513/04-E14N	100RN31S-4E6CB	M83513/04-G12C	100RC51S-4F6BB
M83513/04-D01N	100RN25S-4E1AB	M83513/04-E15C	100RC31S-4F1CB	M83513/04-G12N	100RC51S-4F6BB
M83513/04-D02C	100RC25S-4E1BB	M83513/04-E15N	100RN31S-4F1CB	M83513/04-G13C	100RC51S-4E1CB
M83513/04-D02N	100RN25S-4E1BB	M83513/04-E16C	100RC31S-4F6CB	M83513/04-G13N	100RN51S-4E1CB
M83513/04-D03C	100RC25S-4E6AB	M83513/04-E16N	100RN31S-4F6CB	M83513/04-G14C	100RC51S-4E6CB
M83513/04-D03N	100RN25S-4E6AB	M83513/04-F01C	100RC37S-4E1AB	M83513/04-G14N	100RN51S-4E6CB
M83513/04-D04C	100RC25S-4E6BB	M83513/04-F01N	100RN37S-4E1AB	M83513/04-G15C	100RC51S-4F1CB
M83513/04-D04N	100RN25S-4E6BB	M83513/04-F02C	100RC37S-4E1BB	M83513/04-G15N	100RN51S-4F1CB
M83513/04-D05C	100RC25S-5L4DB	M83513/04-F02N	100RN37S-4E1BB	M83513/04-G16C	100RC51S-4F6CB
M83513/04-D05N	100RN25S-5L4DB	M83513/04-F03C	100RC37S-4E6AB	M83513/04-G16N	100RN51S-4F6CB
M83513/04-D06C	100RC25S-5L4EB	M83513/04-F03N	100RN37S-4E6AB	M83513/04-H01C	100RC100S-4E1AB
M83513/04-D06N	100RN25S-5L4EB	M83513/04-F04C	100RC37S-4E6BB	M83513/04-H01N	100RN100S-4E1AB
M83513/04-D07C	100RC25S-5L3DB	M83513/04-F04N	100RN37S-4E6BB	M83513/04-H02C	100RC100S-4E1BB
M83513/04-D07N	100RN25S-5L3DB	M83513/04-F05C	100RC37S-5L4DB	M83513/04-H02N	100RN100S-4E1BB
M83513/04-D08C	100RC25S-5L3EB	M83513/04-F05N	100RN37S-5L4DB	M83513/04-H03C	100RC100S-4E6AB
M83513/04-D08N	100RN25S-5L3EB	M83513/04-F06C	100RC37S-5L4EB	M83513/04-H03N	100RN100S-4E6AB
M83513/04-D09C	100RC25S-4F1AB	M83513/04-F06N	100RN37S-5L4EB	M83513/04-H04C	100RC100S-4E6BB
M83513/04-D09N	100RN25S-4F1AB	M83513/04-F07C	100RC37S-5L3DB	M83513/04-H04N	100RN100S-4E6BB
M83513/04-D10C	100RC25S-4F1BB	M83513/04-F07N	100RN37S-5L3DB	M83513/04-H05C	100RC100S-5L4DB
M83513/04-D10N	100RN25S-4F1BB	M83513/04-F08C	100RC37S-5L3EB	M83513/04-H05N	100RN100S-5L4DB
M83513/04-D11C	100RC25S-4F6AB	M83513/04-F08N	100RN37S-5L3EB	M83513/04-H06C	100RC100S-5L4EB
M83513/04-D11N	100RN25S-4F6AB	M83513/04-F09C	100RC37S-4F1AB	M83513/04-H06N	100RN100S-5L4EB
M83513/04-D12C	100RC25S-4F6BB	M83513/04-F09N	100RN37S-4F1AB	M83513/04-H07C	100RC100S-5L3DB
M83513/04-D12N	100RC25S-4F6BB	M83513/04-F10C	100RC37S-4F1BB	M83513/04-H07N	100RN100S-5L3DB
M83513/04-D13C	100RC25S-4E1CB	M83513/04-F10N	100RN37S-4F1BB	M83513/04-H08C	100RC100S-5L3EB
M83513/04-D13N	100RN25S-4E1CB	M83513/04-F11C	100RC37S-4F6AB	M83513/04-H08N	100RN100S-5L3EB
M83513/04-D14C	100RC25S-4E6CB	M83513/04-F11N	100RN37S-4F6AB	M83513/04-H09C	100RC100S-4F1AB
M83513/04-D14N	100RN25S-4E6CB	M83513/04-F12C	100RC37S-4F6BB	M83513/04-H09N	100RN100S-4F1AB
M83513/04-D15C	100RC25S-4F1CB	M83513/04-F12N	100RC37S-4F6BB	M83513/04-H10C	100RC100S-4F1BB
M83513/04-D15N	100RN25S-4F1CB	M83513/04-F13C	100RC37S-4E1CB	M83513/04-H10N	100RN100S-4F1BB

Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/04-H11C	100RC100S-4F6AB	M83513/08-B08	101R15P-5L3EB	M83513/08-F03	101R37P-4E6AB
M83513/04-H11N	100RN100S-4F6AB	M83513/08-B09	101R15P-4F1AB	M83513/08-F04	101R37P-4E6BB
M83513/04-H12C	100RC100S-4F6BB	M83513/08-B10	101R15P-4F1BB	M83513/08-F05	101R37P-5L4DB
M83513/04-H12N	100RC100S-4F6BB	M83513/08-B11	101R15P-4F6AB	M83513/08-F06	101R37P-5L4EB
M83513/04-H13C	100RC100S-4E1CB	M83513/08-B12	101R15P-4F6BB	M83513/08-F07	101R37P-5L3DB
M83513/04-H13N	100RN100S-4E1CB	M83513/08-B13	101R15P-4E1CB	M83513/08-F08	101R37P-5L3EB
M83513/04-H14C	100RC100S-4E6CB	M83513/08-B14	101R15P-4E6CB	M83513/08-F09	101R37P-4F1AB
M83513/04-H14N	100RN100S-4E6CB	M83513/08-B15	101R15P-4F1CB	M83513/08-F10	101R37P-4F1BB
M83513/04-H15C	100RC100S-4F1CB	M83513/08-B16	101R15P-4F6CB	M83513/08-F11	101R37P-4F6AB
M83513/04-H15N	100RN100S-4F1CB	M83513/08-C01	101R21P-4E1AB	M83513/08-F12	101R37P-4F6BB
M83513/04-H16C	100RC100S-4F6CB	M83513/08-C02	101R21P-4E1BB	M83513/08-F13	101R37P-4E1CB
M83513/04-H16N	100RN100S-4F6CB	M83513/08-C03	101R21P-4E6AB	M83513/08-F14	101R37P-4E6CB
M83513/05-02	HM05-02	M83513/08-C04	101R21P-4E6BB	M83513/08-F15	101R37P-4F1CB
M83513/05-03	HM05-03	M83513/08-C05	101R21P-5L4DB	M83513/08-F16	101R37P-4F6CB
M83513/05-05	HM05-05	M83513/08-C06	101R21P-5L4EB	M83513/08-G01	101R51P-4E1AB
M83513/05-06	HM05-06	M83513/08-C07	101R21P-5L3DB	M83513/08-G02	101R51P-4E1BB
M83513/05-07	HM05-07	M83513/08-C08	101R21P-5L3EB	M83513/08-G03	101R51P-4E6AB
M83513/05-12	HM05-12	M83513/08-C09	101R21P-4F1AB	M83513/08-G04	101R51P-4E6BB
M83513/05-13	HM05-13	M83513/08-C10	101R21P-4F1BB	M83513/08-G05	101R51P-5L4DB
M83513/05-15	HM05-15	M83513/08-C11	101R21P-4F6AB	M83513/08-G06	101R51P-5L4EB
M83513/05-16	HM05-16	M83513/08-C12	101R21P-4F6BB	M83513/08-G07	101R51P-5L3DB
M83513/05-17	HM05-17	M83513/08-C13	101R21P-4E1CB	M83513/08-G08	101R51P-5L3EB
M83513/06-A	101R09P-B	M83513/08-C14	101R21P-4E6CB	M83513/08-G09	101R51P-4F1AB
M83513/06-B	101R15P-B	M83513/08-C15	101R21P-4F1CB	M83513/08-G10	101R51P-4F1BB
M83513/06-C	101R21P-B	M83513/08-C16	101R21P-4F6CB	M83513/08-G11	101R51P-4F6AB
M83513/06-D	101R25P-B	M83513/08-D01	101R25P-4E1AB	M83513/08-G12	101R51P-4F6BB
M83513/06-E	101R31P-B	M83513/08-D02	101R25P-4E1BB	M83513/08-G13	101R51P-4E1CB
M83513/06-F	101R37P-B	M83513/08-D03	101R25P-4E6AB	M83513/08-G14	101R51P-4E6CB
M83513/06-G	101R51P-B	M83513/08-D04	101R25P-4E6BB	M83513/08-G15	101R51P-4F1CB
M83513/07-A	101R09S-B	M83513/08-D05	101R25P-5L4DB	M83513/08-G16	101R51P-4F6CB
M83513/07-B	101R15S-B	M83513/08-D06	101R25P-5L4EB	M83513/09-A01	101R09S-4E1AB
M83513/07-C	101R21S-B	M83513/08-D07	101R25P-5L3DB	M83513/09-A02	101R09S-4E1BB
M83513/07-D	101R25S-B	M83513/08-D08	101R25P-5L3EB	M83513/09-A03	101R09S-4E6AB
M83513/07-E	101R31S-B	M83513/08-D09	101R25P-4F1AB	M83513/09-A04	101R09S-4E6BB
M83513/07-F	101R37S-B	M83513/08-D10	101R25P-4F1BB	M83513/09-A05	101R09S-5L4DB
M83513/07-G	101R51S-B	M83513/08-D11	101R25P-4F6AB	M83513/09-A06	101R09S-5L4EB
M83513/08-A01	101R09P-4E1AB	M83513/08-D12	101R25P-4F6BB	M83513/09-A07	101R09S-5L3DB
M83513/08-A02	101R09P-4E1BB	M83513/08-D13	101R25P-4E1CB	M83513/09-A08	101R09S-5L3EB
M83513/08-A03	101R09P-4E6AB	M83513/08-D14	101R25P-4E6CB	M83513/09-A09	101R09S-4F1AB
M83513/08-A04	101R09P-4E6BB	M83513/08-D15	101R25P-4F1CB	M83513/09-A10	101R09S-4F1BB
M83513/08-A05	101R09P-5L4DB	M83513/08-D16	101R25P-4F6CB	M83513/09-A11	101R09S-4E6AB
M83513/08-A06	101R09P-5L4EB	M83513/08-E01	101R31P-4E1AB	M83513/09-A12	101R09S-4F6BB
M83513/08-A07	101R09P-5L3DB	M83513/08-E02	101R31P-4E1BB	M83513/09-A13	101R09S-4E1CB
M83513/08-A08	101R09P-5L3EB	M83513/08-E03	101R31P-4E6AB	M83513/09-A14	101R09S-4E6CB
M83513/08-A09	101R09P-4F1AB	M83513/08-E04	101R31P-4E6BB	M83513/09-A15	101R09S-4F1CB
M83513/08-A10	101R09P-4F1BB	M83513/08-E05	101R31P-5L4DB	M83513/09-B01	101R15S-4E1AB
M83513/08-A11	101R09P-4F6AB	M83513/08-E06	101R31P-5L4EB	M83513/09-B02	101R15S-4E1BB
M83513/08-A12	101R09P-4F6BB	M83513/08-E07	101R31P-5L3DB	M83513/09-B03	101R15S-4E6AB
M83513/08-A13	101R09P-4E1CB	M83513/08-E08	101R31P-5L3EB	M83513/09-B04	101R15S-4E6BB
M83513/08-A14	101R09P-4E6CB	M83513/08-E09	101R31P-4F1AB	M83513/09-B05	101R15S-5L4DB
M83513/08-A15	101R09P-4F1CB	M83513/08-E10	101R31P-4F1BB	M83513/09-B06	101R15S-5L4EB
M83513/08-A16	101R09P-4F6CB	M83513/08-E11	101R31P-4F6AB	M83513/09-B07	101R15S-5L3DB
M83513/08-B01	101R15P-4E1AB	M83513/08-E12	101R31P-4F6BB	M83513/09-B08	101R15S-5L3EB
M83513/08-B02	101R15P-4E1BB	M83513/08-E13	101R31P-4E1CB	M83513/09-B09	101R15S-4F1AB
M83513/08-B03	101R15P-4E6AB	M83513/08-E14	101R31P-4E6CB	M83513/09-B10	101R15S-4F1BB
M83513/08-B04	101R15P-4E6BB	M83513/08-E15	101R31P-4F1CB	M83513/09-B11	101R15S-4E6AB
M83513/08-B05	101R15P-5L4DB	M83513/08-E16	101R31P-4F6CB	M83513/09-B12	101R15S-4F6BB
M83513/08-B06	101R15P-5L4EB	M83513/08-F01	101R37P-4E1AB	M83513/09-B13	101R15S-4E1CB
M83513/08-B07	101R15P-5L3DB	M83513/08-F02	101R37P-4E1BB	M83513/09-B14	101R15S-4E6CB

# PART NUMBER CROSS REFERENCE

Mil-Spec / Amphenol  
(Continued)

Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/09-B15	101R15S-4F1CB	M83513/09-F14	101R37S-4E6CB	M83513/10-D02CP	100RC25P-CBRP2
M83513/09-C01	101R21S-4E1AB	M83513/09-F15	101R37S-4F1CB	M83513/10-D02NN	100RN25P-CBR2
M83513/09-C02	101R21S-4E1BB	M83513/09-G01	101R51S-4E1AB	M83513/10-D02NP	100RN25P-CBRP2
M83513/09-C03	101R21S-4E6AB	M83513/09-G02	101R51S-4E1BB	M83513/10-D03CN	100RC25P-CBR3
M83513/09-C04	101R21S-4E6BB	M83513/09-G03	101R51S-4E6AB	M83513/10-D03CP	100RC25P-CBRP3
M83513/09-C05	101R21S-5L4DB	M83513/09-G04	101R51S-4E6BB	M83513/10-D03NN	100RN25P-CBR3
M83513/09-C06	101R21S-5L4EB	M83513/09-G05	101R51S-5L4DB	M83513/10-D03NP	100RN25P-CBRP3
M83513/09-C07	101R21S-5L3DB	M83513/09-G06	101R51S-5L4EB	M83513/10-E01CN	100RC31P-CBR1
M83513/09-C08	101R21S-5L3EB	M83513/09-G07	101R51S-5L3DB	M83513/10-E01CP	100RC31P-CBRP1
M83513/09-C09	101R21S-4F1AB	M83513/09-G08	101R51S-5L3EB	M83513/10-E01NN	100RN31P-CBR1
M83513/09-C10	101R21S-4F1BB	M83513/09-G09	101R51S-4F1AB	M83513/10-E01NP	100RN31P-CBRP1
M83513/09-C11	101R21S-4E6AB	M83513/09-G10	101R51S-4F1BB	M83513/10-E02CN	100RC31P-CBR2
M83513/09-C12	101R21S-4F6BB	M83513/09-G11	101R51S-4E6AB	M83513/10-E02CP	100RC31P-CBRP2
M83513/09-C13	101R21S-4E1CB	M83513/09-G12	101R51S-4F6BB	M83513/10-E02NN	100RN31P-CBR2
M83513/09-C14	101R21S-4E6CB	M83513/09-G13	101R51S-4E1CB	M83513/10-E02NP	100RN31P-CBRP2
M83513/09-C15	101R21S-4F1CB	M83513/09-G14	101R51S-4E6CB	M83513/10-E03CN	100RC31P-CBR3
M83513/09-D01	101R25S-4E1AB	M83513/09-G15	101R51S-4F1CB	M83513/10-E03CP	100RC31P-CBRP3
M83513/09-D02	101R25S-4E1BB	M83513/10-A01CN	100RC09P-CBR1	M83513/10-E03NN	100RN31P-CBR3
M83513/09-D03	101R25S-4E6AB	M83513/10-A01CP	100RC09P-CBRP1	M83513/10-E03NP	100RN31P-CBRP3
M83513/09-D04	101R25S-4E6BB	M83513/10-A01NN	100RN09P-CBR1	M83513/10-F01CN	100RC37P-CBR1
M83513/09-D05	101R25S-5L4DB	M83513/10-A01NP	100RN09P-CBRP1	M83513/10-F01CP	100RC37P-CBRP1
M83513/09-D06	101R25S-5L4EB	M83513/10-A02CN	100RC09P-CBR2	M83513/10-F01NN	100RN37P-CBR1
M83513/09-D07	101R25S-5L3DB	M83513/10-A02CP	100RC09P-CBRP2	M83513/10-F01NP	100RN37P-CBRP1
M83513/09-D08	101R25S-5L3EB	M83513/10-A02NN	100RN09P-CBR2	M83513/10-F02CN	100RC37P-CBR2
M83513/09-D09	101R25S-4F1AB	M83513/10-A02NP	100RN09P-CBRP2	M83513/10-F02CP	100RC37P-CBRP2
M83513/09-D10	101R25S-4F1BB	M83513/10-A03CN	100RC09P-CBR3	M83513/10-F02NN	100RN37P-CBR2
M83513/09-D11	101R25S-4E6AB	M83513/10-A03CP	100RC09P-CBRP3	M83513/10-F02NP	100RN37P-CBRP2
M83513/09-D12	101R25S-4F6BB	M83513/10-A03NN	100RN09P-CBR3	M83513/10-F03CN	100RC37P-CBR3
M83513/09-D13	101R25S-4E1CB	M83513/10-A03NP	100RN09P-CBRP3	M83513/10-F03CP	100RC37P-CBRP3
M83513/09-D14	101R25S-4E6CB	M83513/10-B01CN	100RC15P-CBR1	M83513/10-F03NN	100RN37P-CBR3
M83513/09-D15	101R25S-4F1CB	M83513/10-B01CP	100RC15P-CBRP1	M83513/10-F03NP	100RN37P-CBRP3
M83513/09-E01	101R31S-4E1AB	M83513/10-B01NN	100RN15P-CBR1	M83513/11-G01CN	100RC51P-CBR1
M83513/09-E02	101R31S-4E1BB	M83513/10-B01NP	100RN15P-CBRP1	M83513/11-G01CP	100RC51P-CBRP1
M83513/09-E03	101R31S-4E6AB	M83513/10-B02CN	100RC15P-CBR2	M83513/11-G01NN	100RN51P-CBR1
M83513/09-E04	101R31S-4E6BB	M83513/10-B02CT	100RC15P-CBRT2	M83513/11-G01NP	100RN51P-CBRP1
M83513/09-E05	101R31S-5L4DB	M83513/10-B02CP	100RC15P-CBRP2	M83513/11-G02CN	100RC51P-CBR2
M83513/09-E06	101R31S-5L4EB	M83513/10-B02NN	100RN15P-CBR2	M83513/11-G02CP	100RC51P-CBRP2
M83513/09-E07	101R31S-5L3DB	M83513/10-B02NP	100RN15P-CBRP2	M83513/11-G02NN	100RN51P-CBR2
M83513/09-E08	101R31S-5L3EB	M83513/10-B03CN	100RC15P-CBR3	M83513/11-G02NP	100RN51P-CBRP2
M83513/09-E09	101R31S-4F1AB	M83513/10-B03CP	100RC15P-CBRP3	M83513/11-G03CN	100RC51P-CBR3
M83513/09-E10	101R31S-4F1BB	M83513/10-B03NN	100RN15P-CBR3	M83513/11-G03CP	100RC51P-CBRP3
M83513/09-E11	101R31S-4E6AB	M83513/10-B03NP	100RN15P-CBRP3	M83513/11-G03NN	100RN51P-CBR3
M83513/09-E12	101R31S-4F6BB	M83513/10-C01CN	100RC21P-CBR1	M83513/11-G03NP	100RN51P-CBRP3
M83513/09-E13	101R31S-4E1CB	M83513/10-C01CP	100RC21P-CBRP1	M83513/12-H01CN	100RC100P-CBR1
M83513/09-E14	101R31S-4E6CB	M83513/10-C01NN	100RN21P-CBR1	M83513/12-H01CP	100RC100P-CBRP1
M83513/09-E15	101R31S-4F1CB	M83513/10-C01NP	100RN21P-CBRP1	M83513/12-H01NN	100RN100P-CBR1
M83513/09-F01	101R37S-4E1AB	M83513/10-C02CN	100RC21P-CBR2	M83513/12-H01NP	100RN100P-CBRP1
M83513/09-F02	101R37S-4E1BB	M83513/10-C02CP	100RC21P-CBRP2	M83513/12-H02CN	100RC100P-CBR2
M83513/09-F03	101R37S-4E6AB	M83513/10-C02NN	100RN21P-CBR2	M83513/12-H02CP	100RC100P-CBRP2
M83513/09-F04	101R37S-4E6BB	M83513/10-C02NP	100RN21P-CBRP2	M83513/12-H02NN	100RN100P-CBR2
M83513/09-F05	101R37S-5L4DB	M83513/10-C03CN	100RC21P-CBR3	M83513/12-H02NP	100RN100P-CBRP2
M83513/09-F06	101R37S-5L4EB	M83513/10-C03CP	100RC21P-CBRP3	M83513/12-H03CN	100RC100P-CBR3
M83513/09-F07	101R37S-5L3DB	M83513/10-C03NN	100RN21P-CBR3	M83513/12-H03CP	100RC100P-CBRP3
M83513/09-F08	101R37S-5L3EB	M83513/10-C03NP	100RN21P-CBRP3	M83513/12-H03NN	100RN100P-CBR3
M83513/09-F09	101R37S-4F1AB	M83513/10-D01CN	100RC25P-CBR1	M83513/12-H03NP	100RN100P-CBRP3
M83513/09-F10	101R37S-4F1BB	M83513/10-D01CP	100RC25P-CBRP1	M83513/13-A01CN	100RC09S-CBR1
M83513/09-F11	101R37S-4E6AB	M83513/10-D01NN	100RN25P-CBR1	M83513/13-A01CP	100RC09S-CBRP1
M83513/09-F12	101R37S-4F6BB	M83513/10-D01NP	100RN25P-CBRP1	M83513/13-A01NN	100RN09S-CBR1
M83513/09-F13	101R37S-4E1CB	M83513/10-D02CN	100RC25P-CBR2	M83513/13-A01NP	100RN09S-CBRP1



Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/13-A02CN	100RC09S-CBR2	M83513/13-F01NN	100RN37SCBR1	M83513/16-C01CP	100RC21PBRP1
M83513/13-A02CP	100RC09S-CBRP2	M83513/13-F01NP	100RN37SCBRP1	M83513/16-C01NN	100RN21PCBR1
M83513/13-A02NN	100RN09S-CBR2	M83513/13-F02CN	100RC37SCBR2	M83513/16-C01NP	100RN21PBRP1
M83513/13-A02NP	100RN09S-CBRP2	M83513/13-F02CP	100RC37SCBRP2	M83513/16-C02CN	100RC21PBR2
M83513/13-A03CN	100RC09S-CBR3	M83513/13-F02NN	100RN37SCBR2	M83513/16-C02CP	100RC21PBRP2
M83513/13-A03CP	100RC09S-CBRP3	M83513/13-F02NP	100RN37SCBRP2	M83513/16-C02NN	100RN21PBR2
M83513/13-A03NN	100RN09S-CBR3	M83513/13-F03CN	100RC37SCBR3	M83513/16-C02NP	100RN21PBRP2
M83513/13-A03NP	100RN09S-CBRP3	M83513/13-F03CP	100RC37SCBRP3	M83513/16-C03CN	100RC21PBR3
M83513/13-B01CN	100RC15S-CBR1	M83513/13-F03NN	100RN37SCBR3	M83513/16-C03CP	100RC21PBRP3
M83513/13-B01CP	100RC15S-CBRP1	M83513/13-F03NP	100RN37SCBRP3	M83513/16-C03NN	100RN21PBR3
M83513/13-B01NN	100RN15S-CBR1	M83513/14-G01CN	100RC51SCBR1	M83513/16-C03NP	100RN21PBRP3
M83513/13-B01NP	100RN15S-CBRP1	M83513/14-G01CP	100RC51SCBRP1	M83513/16-D01CN	100RC25PBR1
M83513/13-B02CN	100RC15S-CBR2	M83513/14-G01NN	100RN51SCBR1	M83513/16-D01CP	100RC25PBRP1
M83513/13-B02CP	100RC15S-CBRP2	M83513/14-G01NP	100RN51SCBRP1	M83513/16-D01NN	100RN25PBR1
M83513/13-B02CT	100RC15S-CBR2	M83513/14-G02CN	100RC51SCBR2	M83513/16-D01NP	100RN25PBRP1
M83513/13-B02NN	100RN15S-CBR2	M83513/14-G02CP	100RC51SCBRP2	M83513/16-D02CN	100RC25PBR2
M83513/13-B02NP	100RN15S-CBRP2	M83513/14-G02NN	100RN51SCBR2	M83513/16-D02CP	100RC25PBRP2
M83513/13-B03CN	100RC15S-CBR3	M83513/14-G02NP	100RN51SCBRP2	M83513/16-D02NN	100RN25PBR2
M83513/13-B03CP	100RC15S-CBRP3	M83513/14-G03CN	100RC51SCBR3	M83513/16-D02NP	100RN25PBRP2
M83513/13-B03NN	100RN15S-CBR3	M83513/14-G03CP	100RC51SCBRP3	M83513/16-D03CN	100RC25PBR3
M83513/13-B03NP	100RN15S-CBRP3	M83513/14-G03NN	100RN51SCBR3	M83513/16-D03CP	100RC25PBRP3
M83513/13-C01CN	100RC21S-CBR1	M83513/14-G03NP	100RN51SCBRP3	M83513/16-D03NN	100RN25PBR3
M83513/13-C01CP	100RC21S-CBRP1	M83513/14-H01CN	100RC100SCBR1	M83513/16-D03NP	100RN25PBRP3
M83513/13-C01NN	100RN21S-CBR1	M83513/15-H01CP	100RC100SCBRP1	M83513/16-E01CN	100RC31PBR1
M83513/13-C01NP	100RN21S-CBRP1	M83513/15-H01NN	100RN100SCBR1	M83513/16-E01CP	100RC31PBRP1
M83513/13-C02CN	100RC21S-CBR2	M83513/15-H01NP	100RN100SCBRP1	M83513/16-E01NN	100RN31PBR1
M83513/13-C02CP	100RC21S-CBRP2	M83513/15-H02CN	100RC100SCBR2	M83513/16-E01NP	100RN31PBRP1
M83513/13-C02NN	100RN21S-CBR2	M83513/15-H02CP	100RC100SCBRP2	M83513/16-E02CN	100RC31PBR2
M83513/13-C02NP	100RN21S-CBRP2	M83513/15-H02NN	100RN100SCBR2	M83513/16-E02CP	100RC31PBRP2
M83513/13-C03CN	100RC21S-CBR3	M83513/15-H02NP	100RN100SCBRP2	M83513/16-E02NN	100RN31PBR2
M83513/13-C03CP	100RC21S-CBRP3	M83513/15-H03CN	100RC100SCBR3	M83513/16-E02NP	100RN31PBRP2
M83513/13-C03NN	100RN21S-CBR3	M83513/15-H03CP	100RC100SCBRP3	M83513/16-E03CN	100RC31PBR3
M83513/13-C03NP	100RN21S-CBRP3	M83513/15-H03NN	100RN100SCBR3	M83513/16-E03CP	100RC31PBRP3
M83513/13-D01CN	100RC25SCBR1	M83513/15-H03NP	100RN100SCBRP3	M83513/16-E03NN	100RN31PBR3
M83513/13-D01CP	100RC25SCBRP1	M83513/16-A01CN	100RC09SBR1	M83513/16-E03NP	100RN31PBRP3
M83513/13-D01NN	100RN25SCBR1	M83513/16-A01CP	100RC09PBRP1	M83513/16-F01CN	100RC37PBR1
M83513/13-D01NP	100RN25SCBRP1	M83513/16-A01NN	100RN09PBR1	M83513/16-F01CP	100RC37PBRP1
M83513/13-D02CN	100RC25SCBR2	M83513/16-A01NP	100RN09PBRP1	M83513/16-F01NN	100RN37PBR1
M83513/13-D02CP	100RC25SCBRP2	M83513/16-A02CN	100RC09PBR2	M83513/16-F01NP	100RN37PBRP1
M83513/13-D02NN	100RN25SCBR2	M83513/16-A02CP	100RC09PBRP2	M83513/16-F02CN	100RC37PBR2
M83513/13-D02NP	100RN25SCBRP2	M83513/16-A02NN	100RN09PBR2	M83513/16-F02CP	100RC37PBRP2
M83513/13-D03CN	100RC25SCBR3	M83513/16-A02NP	100RN09PBRP2	M83513/16-F02NN	100RN37PBR2
M83513/13-D03CP	100RC25SCBRP3	M83513/16-A03CN	100RC09PBR3	M83513/16-F02NP	100RN37PBRP2
M83513/13-D03NN	100RN25SCBR3	M83513/16-A03CP	100RC09PBRP3	M83513/16-F03CN	100RC37PBR3
M83513/13-D03NP	100RN25SCBRP3	M83513/16-A03NN	100RN09PBR3	M83513/16-F03CP	100RC37PBRP3
M83513/13-E01CN	100RC31SCBR1	M83513/16-A03NP	100RN09PBRP3	M83513/16-F03NN	100RN37PBR3
M83513/13-E01CP	100RC31SCBRP1	M83513/16-B01CN	100RC15PBR1	M83513/16-F03NP	100RN37PBRP3
M83513/13-E01NN	100RN31SCBR1	M83513/16-B01CP	100RC15PBRP1	M83513/17-G01CN	100RC51PBR1
M83513/13-E01NP	100RN31SCBRP1	M83513/16-B01NN	100RN15PBR1	M83513/17-G01CP	100RC51PBRP1
M83513/13-E02CN	100RC31SCBR2	M83513/16-B01NP	100RN15PBRP1	M83513/17-G01NN	100RN51PBR1
M83513/13-E02CP	100RC31SCBRP2	M83513/16-B02CN	100RC15PBR2	M83513/17-G01NP	100RN51PBRP1
M83513/13-E02NN	100RN31SCBR2	M83513/16-B02CP	100RC15PBRP2	M83513/17-G02CN	100RC51PBR2
M83513/13-E02NP	100RN31SCBRP2	M83513/16-B02NN	100RN15PBR2	M83513/17-G02CP	100RC51PBRP2
M83513/13-E03CN	100RC31SCBR3	M83513/16-B02NP	100RN15PBRP2	M83513/17-G02NN	100RN51PBR2
M83513/13-E03CP	100RC31SCBRP3	M83513/16-B03CN	100RC15PBR3	M83513/17-G02NP	100RN51PBRP2
M83513/13-E03NN	100RN31SCBR3	M83513/16-B03CP	100RC15PBRP3	M83513/17-G03CN	100RC51PBR3
M83513/13-E03NP	100RN31SCBRP3	M83513/16-B03NN	100RN15PBR3	M83513/17-G03CP	100RC51PBRP3
M83513/13-F01CN	100RC37SCBR1	M83513/16-B03NP	100RN15PBRP3	M83513/17-G03NN	100RN51PBR3
M83513/13-F01CP	100RC37SCBRP1	M83513/16-C01CN	100RC21PBR1	M83513/17-G03NP	100RN51PBRP3

# PART NUMBER CROSS REFERENCE

Mil-Spec / Amphenol  
(Continued)

Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/18-H01CN	100RC100PBR1	M83513/19-D03NP	100RN25SBRP3	M83513/22-A03NN	100RN09PBS3
M83513/18-H01CP	100RC100PBRP1	M83513/19-E01CN	100RC31SBR1	M83513/22-A03NP	100RN09PBSP3
M83513/18-H01NN	100RN100PBR1	M83513/19-E01CP	100RC31SBRP1	M83513/22-B01CN	100RC15PBS1
M83513/18-H01NP	100RN100PBRP1	M83513/19-E01NN	100RN31SBR1	M83513/22-B01CP	100RC15PBSP1
M83513/18-H02CN	100RC100PBR2	M83513/19-E01NP	100RN31SBRP1	M83513/22-B01NN	100RN15PBS1
M83513/18-H02CP	100RC100PBRP2	M83513/19-E02CN	100RC31SBR2	M83513/22-B01NP	100RN15PBSP1
M83513/18-H02NN	100RN100PBR2	M83513/19-E02CP	100RC31SBRP2	M83513/22-B02CN	100RC15PBS2
M83513/18-H02NP	100RN100PBRP2	M83513/19-E02NN	100RN31SBR2	M83513/22-B02CP	100RC15PBSP2
M83513/18-H03CN	100RC100PBR3	M83513/19-E02NP	100RN31SBRP2	M83513/22-B02NN	100RN15PBS2
M83513/18-H03CP	100RC100PBRP3	M83513/19-E03CN	100RC31SBR3	M83513/22-B02NP	100RN15PBSP2
M83513/18-H03NN	100RN100PBR3	M83513/19-E03CP	100RC31SBRP3	M83513/22-B01CT	100RC15P-BST1
M83513/18-H03NP	100RN100PBRP3	M83513/19-E03NN	100RN31SBR3	M83513/22-B03CN	100RC15PBS3
M83513/19-A01CN	100RN09SBRP1	M83513/19-E03NP	100RN31SBRP3	M83513/22-B03CP	100RC15PBSP3
M83513/19-A01CP	100RC09SBRP1	M83513/19-F01CN	100RC37SBR1	M83513/22-B03NN	100RN15PBS3
M83513/19-A01NN	100RN09SBR1	M83513/19-F01CP	100RC37SBRP1	M83513/22-B03NP	100RN15PBSP3
M83513/19-A01NP	100RN09SBRP1	M83513/19-F01NN	100RN37SBR1	M83513/22-C01CN	100RC21PBS1
M83513/19-A02CN	100RC09SBR2	M83513/19-F01NP	100RN37SBRP1	M83513/22-C01CP	100RC21PBSP
M83513/19-A02CP	100RC09SBRP2	M83513/19-F02CN	100RC37SBR2	M83513/22-C01NN	100RN21PBS1
M83513/19-A02NN	100RN09SBR2	M83513/19-F02CP	100RC37SBRP2	M83513/22-C01NP	100RN21PBSP1
M83513/19-A02NP	100RN09SBRP2	M83513/19-F02NN	100RN37SBR2	M83513/22-C02CN	100RC21PBS2
M83513/19-A03CN	100RC09SBR3	M83513/19-F02NP	100RN37SBRP2	M83513/22-C02CP	100RC21PBSP2
M83513/19-A03CP	100RC09SBRP3	M83513/19-F03CN	100RC37SBR3	M83513/22-C02NN	100RN21PBS2
M83513/19-A03NN	100RN09SBR3	M83513/19-F03CP	100RC37SBRP3	M83513/22-C02NP	100RN21PBSP2
M83513/19-A03NP	100RN09SBRP3	M83513/19-F03NN	100RN37SBR3	M83513/22-C03CN	100RC21PBS3
M83513/19-B01CN	100RC15SBR1	M83513/19-F03NP	100RN37SBRP3	M83513/22-C03CP	100RC21PBSP3
M83513/19-B01CP	100RC15SBRP1	M83513/20-G01CN	100RC51SBR1	M83513/22-C03NN	100RN21PBS3
M83513/19-B01NN	100RN15SBR1	M83513/20-G01CP	100RC51SBRP1	M83513/22-C03NP	100RN21PBSP3
M83513/19-B01NP	100RN15SBRP1	M83513/20-G01NN	100RN51SBR1	M83513/22-D01CN	100RC25PBS1
M83513/19-B02CN	100RC15SBR2	M83513/20-G01NP	100RN51SBRP1	M83513/22-D01CP	100RC25PBSP1
M83513/19-B02CP	100RC15SBRP2	M83513/20-G02CN	100RC51SBR2	M83513/22-D01NN	100RN25PBS1
M83513/19-B02NN	100RN15SBR2	M83513/20-G02CP	100RC51SBRP2	M83513/22-D01NP	100RN25PBSP1
M83513/19-B02NP	100RN15SBRP2	M83513/20-G02NN	100RN51SBR2	M83513/22-D02CN	100RC25PBS2
M83513/19-B03CN	100RC15SBR3	M83513/20-G02NP	100RN51SBRP2	M83513/22-D02CP	100RC25PBSP2
M83513/19-B03CP	100RC15SBRP3	M83513/20-G03CN	100RC51SBR3	M83513/22-D02NN	100RN25PBS2
M83513/19-B03NN	100RN15SBR3	M83513/20-G03CP	100RC51SBRP3	M83513/22-D02NP	100RN25PBSP2
M83513/19-B03NP	100RN15SBRP3	M83513/20-G03NN	100RN51SBR3	M83513/22-D03CN	100RC25PBS3
M83513/19-C01CN	100RC21SBR1	M83513/20-G03NP	100RN51SBRP3	M83513/22-D03CP	100RC25PBSP3
M83513/19-C01CP	100RC21SBRP1	M83513/21-H01CN	100RC100SBR1	M83513/22-D03NN	100RN25PBS3
M83513/19-C01NN	100RN21SBR1	M83513/21-H01CP	100RC100SBRP1	M83513/22-D03NP	100RN25PBSP3
M83513/19-C01NP	100RN21SBRP1	M83513/21-H01NN	100RN100SBR1	M83513/22-E01CN	100RC31PBS1
M83513/19-C02CN	100RC21SBR2	M83513/21-H01NP	100RN100SBRP1	M83513/22-E01CP	100RC31PBSP1
M83513/19-C02CP	100RC21SBRP2	M83513/21-H02CN	100RC100SBR2	M83513/22-E01NN	100RN31PBS1
M83513/19-C02NN	100RN21SBR2	M83513/21-H02CP	100RC100SBRP2	M83513/22-E01NP	100RN31PBSP1
M83513/19-C02NP	100RN21SBRP2	M83513/21-H02NN	100RN100SBR2	M83513/22-E02CN	100RC31PBS2
M83513/19-C03CN	100RC21SBR3	M83513/21-H02NP	100RN100SBRP2	M83513/22-E02CP	100RC31PBSP2
M83513/19-C03CP	100RC21SBRP3	M83513/21-H03CN	100RC100SBR3	M83513/22-E02NN	100RN31PBS2
M83513/19-C03NN	100RN21SBR3	M83513/21-H03CP	100RC100SBRP3	M83513/22-E02NP	100RN31PBSP2
M83513/19-C03NP	100RN21SBRP3	M83513/21-H03NN	100RN100SBR3	M83513/22-E03CN	100RC31PBS3
M83513/19-D01CN	100RC25SBR1	M83513/21-H03NP	100RN100SBRP3	M83513/22-E03CP	100RC31PBSP3
M83513/19-D01CP	100RC25SBRP1	M83513/22-A01CN	100RC09PBS1	M83513/22-E03NN	100RN31PBS3
M83513/19-D01NN	100RN25SBR1	M83513/22-A01CP	100RC09PBSP1	M83513/22-E03NP	100RN31PBSP3
M83513/19-D01NP	100RN25SBRP1	M83513/22-A01NN	100RN09PBS1	M83513/22-F01CN	100RC37PBS1
M83513/19-D02CN	100RC25SBR2	M83513/22-A01NP	100RN09PBSP1	M83513/22-F01CP	100RC37PBSP1
M83513/19-D02CP	100RC25SBRP2	M83513/22-A02CN	100RC09PBS2	M83513/22-F01NN	100RN37PBS1
M83513/19-D02NN	100RN25SBR2	M83513/22-A02CP	100RC09PBSP2	M83513/22-F01NP	100RN37PBSP1
M83513/19-D02NP	100RN25SBRP2	M83513/22-A02NN	100RN09PBS2	M83513/22-F02CN	100RC37PBS2
M83513/19-D03CN	100RC25SBR3	M83513/22-A02NP	100RN09PBSP2	M83513/22-F02CP	100RC37PBSP2
M83513/19-D03CP	100RC25SBRP3	M83513/22-A03CN	100RC09PBS3	M83513/22-F02NN	100RN37PBS2
M83513/19-D03NN	100RN25SBR3	M83513/22-A03CP	100RC09PBSP3	M83513/22-F02NP	100RN37PBSP2



Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/22-F03CN	100RC37PBS3	M83513/25-C02NN	100RN21SBS2	M83513/27-H02CP	100RC100SBSP2
M83513/22-F03CP	100RC37PBSP3	M83513/25-C02NP	100RN21SBSP2	M83513/27-H02NN	100RN100SBS2
M83513/22-F03NN	100RN37PBS3	M83513/25-C03CN	100RC21SBS3	M83513/27-H02NP	100RN100SBSP2
M83513/22-F03NP	100RN37PBSP3	M83513/25-C03CP	100RC21SBSP3	M83513/27-H03CN	100RC100SBS3
M83513/23-G01CN	100RC51PBS1	M83513/25-C03NN	100RN21SBS3	M83513/27-H03CP	100RC100SBSP3
M83513/23-G01CP	100RC51PBSP1	M83513/25-C03NP	100RN21SBSP3	M83513/27-H03NN	100RN100SBS3
M83513/23-G01NN	100RN51PBS1	M83513/25-D01CN	100RC25SBS1	M83513/27-H03NP	100RN100SBSP3
M83513/23-G01NP	100RN51PBSP1	M83513/25-D01CP	100RC25SBSP1	M83513/28-A01CN	100RC09P-C61
M83513/23-G02CN	100RC51PBS2	M83513/25-D01NN	100RN25SBS1	M83513/28-A01CP	100RC09P-C6P1
M83513/23-G02CP	100RC51PBSP2	M83513/25-D01NP	100RN25SBSP1	M83513/28-A01CT	100RC09P-C6T1
M83513/23-G02NN	100RN51PBS2	M83513/25-D02CN	100RC25SBS2	M83513/28-A01CW	100RC09P-C6PT1
M83513/23-G02NP	100RN51PBSP2	M83513/25-D02CP	100RC25SBSP2	M83513/28-A01NN	100RN09P-C61
M83513/23-G03CN	100RC51PBS3	M83513/25-D02NN	100RN25SBS2	M83513/28-A01NP	100RN09P-C6P1
M83513/23-G03CP	100RC51PBSP3	M83513/25-D02NP	100RN25SBSP2	M83513/28-A01NT	100RN09P-C6T1
M83513/23-G03NN	100RN51PBS3	M83513/25-D03CN	100RC25SBS3	M83513/28-A01NW	100RN09P-C6PT1
M83513/23-G03NP	100RN51PBSP3	M83513/25-D03CP	100RC25SBSP3	M83513/28-A02CN	100RC09P-C62
M83513/24-H01CN	100RC100PBS1	M83513/25-D03NN	100RN25SBS3	M83513/28-A02CP	100RC09P-C6P2
M83513/24-H01CP	100RC100PBSP1	M83513/25-D03NP	100RN25SBSP3	M83513/28-A02CT	100RC09P-C6T2
M83513/24-H01NN	100RN100PBS1	M83513/25-E01CN	100RC31PBS1	M83513/28-A02CW	100RC09P-C6PT2
M83513/24-H01NP	100RN100PBSP1	M83513/25-E01CP	100RC31SBSP1	M83513/28-A02NN	100RN09P-C62
M83513/24-H02CN	100RC100PBS2	M83513/25-E01NN	100RN31PBS1	M83513/28-A02NP	100RN09P-C6P2
M83513/24-H02CP	100RC100PBSP2	M83513/25-E01NP	100RN31SBSP1	M83513/28-A02NT	100RN09P-C6T2
M83513/24-H02NN	100RN100PBS2	M83513/25-E02CN	100RC31PBS2	M83513/28-A02NW	100RN09P-C6PT2
M83513/24-H02NP	100RN100PBSP2	M83513/25-E02CP	100RC31SBSP2	M83513/28-A03CN	100RC09P-C63
M83513/24-H03CN	100RC100PBS3	M83513/25-E02NN	100RN31PBS2	M83513/28-A03CP	100RC09P-C6P3
M83513/24-H03CP	100RC100PBSP3	M83513/25-E02NP	100RN31PBSP2	M83513/28-A03CT	100RC09P-C6T3
M83513/24-H03NN	100RN100PBS3	M83513/25-E03CN	100RC31PBS3	M83513/28-A03CW	100RC09P-C6PT3
M83513/24-H03NP	100RN100PBSP3	M83513/25-E03CP	100RC31PBSP3	M83513/28-A03NN	100RN09P-C63
M83513/25-A01CN	100RC09SBS1	M83513/25-E03NN	100RN31PBS3	M83513/28-A03NP	100RN09P-C6P3
M83513/25-A01CP	100RC09SBSP1	M83513/25-E03NP	100RN31PBSP3	M83513/28-A03NT	100RN09P-C6T3
M83513/25-A01NN	100RN09SBS1	M83513/25-F01CN	100RC37PBS1	M83513/28-A03NW	100RN09P-C6PT3
M83513/25-A01NP	100RN09SBSP1	M83513/25-F01CP	100RC37SBSP1	M83513/28-B01CN	100RC15P-C61
M83513/25-A02CN	100RC09SBS2	M83513/25-F01NN	100RN37PBS1	M83513/28-B01CP	100RC15P-C6P1
M83513/25-A02CP	100RC09SBSP2	M83513/25-F01NP	100RN37PBSP1	M83513/28-B01CT	100RC15P-C6T1
M83513/25-A02NN	100RN09SBS2	M83513/25-F02CN	100RC37PBS2	M83513/28-B01CW	100RC15P-C6PT1
M83513/25-A02NP	100RN09SBSP2	M83513/25-F02CP	100RC37SBSP2	M83513/28-B01NN	100RN15P-C61
M83513/25-A03CN	100RC09SBS3	M83513/25-F02NN	100RN37PBS2	M83513/28-B01NP	100RN15P-C6P1
M83513/25-A03CP	100RC09SBSP3	M83513/25-F02NP	100RN37PBSP2	M83513/28-B01NT	100RN15P-C6T1
M83513/25-A03NN	100RN09SBS3	M83513/25-F03CN	100RC37PBS3	M83513/28-B01NW	100RN15P-C6PT1
M83513/25-A03NP	100RN09SBSP3	M83513/25-F03CP	100RC37PBSP3	M83513/28-B02CN	100RC15P-C62
M83513/25-B01CN	100RC15SBS1	M83513/25-F03NN	100RN37PBS3	M83513/28-B02CP	100RC15P-C6P2
M83513/25-B01CP	100RC15SBSP1	M83513/25-F03NP	100RN37PBSP3	M83513/28-B02CT	100RC15P-C6T2
M83513/25-B01NN	100RN15SBS1	M83513/26-G01CN	100RC51SBS1	M83513/28-B02CW	100RC15P-C6PT2
M83513/25-B01NP	100RN15SBSP1	M83513/26-G01CP	100RC51SBSP1	M83513/28-B02NN	100RN15P-C62
M83513/25-B01CT	100RC15S-BST1	M83513/26-G01NN	100RN51SBS1	M83513/28-B02NP	100RN15P-C6P2
M83513/25-B02CN	100RC15SBS2	M83513/26-G01NP	100RN51SBSP1	M83513/28-B02NT	100RN15P-C6T2
M83513/25-B02CP	100RC15SBSP2	M83513/26-G02CN	100RC51SBS2	M83513/28-B02NW	100RN15P-C6PT2
M83513/25-B02NN	100RN15SBS2	M83513/26-G02CP	100RC51SBSP2	M83513/28-B03CN	100RC15P-C63
M83513/25-B02NP	100RN15SBSP2	M83513/26-G02NN	100RN51SBS2	M83513/28-B03CP	100RC15P-C6P3
M83513/25-B03CN	100RC15SBS3	M83513/26-G02NP	100RN51SBSP2	M83513/28-B03CT	100RC15P-C6T3
M83513/25-B03CP	100RC15SBSP3	M83513/26-G03CN	100RC51SBS3	M83513/28-B03CW	100RC15P-C6PT3
M83513/25-B03NN	100RN15SBS3	M83513/26-G03CP	100RC51SBSP3	M83513/28-B03NN	100RN15P-C63
M83513/25-B03NP	100RN15SBSP3	M83513/26-G03NN	100RN51SBS3	M83513/28-B03NP	100RN15P-C6P3
M83513/25-C01CN	100RC21SBS1	M83513/26-G03NP	100RN51SBSP3	M83513/28-B03NT	100RN15P-C6T3
M83513/25-C01CP	100RC21SBSP1	M83513/27-H01CN	100RC100SBS1	M83513/28-B03NW	100RN15P-C6PT3
M83513/25-C01NN	100RN21SBS1	M83513/27-H01CP	100RC100SBSP1	M83513/28-C01CN	100RC21P-C61
M83513/25-C01NP	100RN21SBSP1	M83513/27-H01NN	100RN100SBS1	M83513/28-C01CP	100RC21P-C6P1
M83513/25-C02CN	100RC21SBS2	M83513/27-H01NP	100RN100SBSP1	M83513/28-C01CT	100RC21P-C6T1
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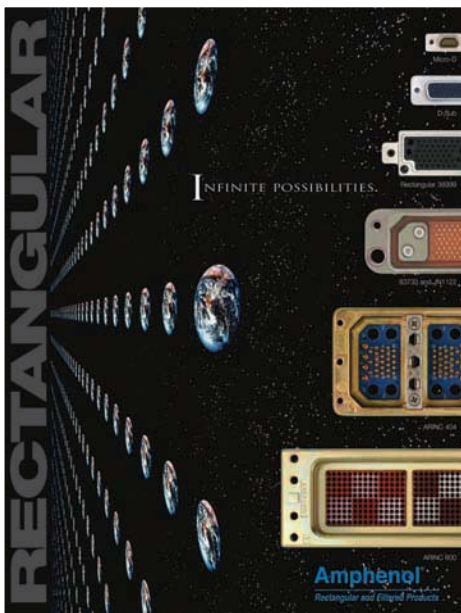
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Mil-Spec / Amphenol  
(Continued)

Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/28-C01NN	100RN21P-C61	M83513/28-E02NW	100RN31P-C6PT2	M83513/30-G01CT	100RC100P-C6T1
M83513/28-C01NP	100RN21P-C6P1	M83513/28-E03CN	100RC31P-C63	M83513/30-G01CW	100RC100P-C6PT1
M83513/28-C01NT	100RN21P-C6T1	M83513/28-E03CP	100RC31P-C6P3	M83513/30-G01NN	100RN100P-C61
M83513/28-C01NW	100RN21P-C6PT1	M83513/28-E03CT	100RC31P-C6T3	M83513/30-G01NP	100RN100P-C6P1
M83513/28-C02CN	100RC21P-C62	M83513/28-E03CW	100RC31P-C6PT3	M83513/30-G01NT	100RN100P-C6T1
M83513/28-C02CP	100RC21P-C6P2	M83513/28-E03NN	100RN31P-C63	M83513/30-G01NW	100RN100P-C6PT1
M83513/28-C02CT	100RC21P-C6T2	M83513/28-E03NP	100RN31P-C6P3	M83513/29-G02CN	100RC100P-C62
M83513/28-C02CW	100RC21P-C6PT2	M83513/28-E03NT	100RN31P-C6T3	M83513/30-G02CP	100RC100P-C6P2
M83513/28-C02NN	100RN21P-C62	M83513/28-E03NW	100RN31P-C6PT3	M83513/30-G02CT	100RC100P-C6T2
M83513/28-C02NP	100RN21P-C6P2	M83513/28-F01CN	100RC37P-C61	M83513/30-G02CW	100RC100P-C6PT2
M83513/28-C02NT	100RN21P-C6T2	M83513/28-F01CP	100RC37P-C6P1	M83513/30-G02NN	100RN100P-C62
M83513/28-C02NW	100RN21P-C6PT2	M83513/28-F01CT	100RC37P-C6T1	M83513/30-G02NP	100RN100P-C6P2
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M83513/28-C03NP	100RN21P-C6P3	M83513/28-F02CN	100RC37P-C62	M83513/30-G03CW	100RC100P-C6PT3
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M83513/28-C03NW	100RN21P-C6PT3	M83513/28-F02CT	100RC37P-C6T2	M83513/30-G03NP	100RN100P-C6P3
M83513/28-D01CN	100RC25P-C61	M83513/28-F02CW	100RC37P-C6PT2	M83513/30-G03NT	100RN100P-C6T3
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M83513/28-D01CW	100RC25P-C6PT1	M83513/28-F02NT	100RN37P-C6T2	M83513/31-A01CP	100RC09S-C6P1
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M83513/28-D01NW	100RN25P-C6PT1	M83513/28-F03CT	100RC37P-C6T3	M83513/31-A01NP	100RN09S-C6P1
M83513/28-D02CN	100RC25P-C62	M83513/28-F03CW	100RC37P-C6PT3	M83513/31-A01NT	100RN09S-C6T1
M83513/28-D02CP	100RC25P-C6P2	M83513/28-F03NN	100RN37P-C63	M83513/31-A01NW	100RN09S-C6PT1
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M83513/28-D02CW	100RC25P-C6PT2	M83513/28-F03NT	100RN37P-C6T3	M83513/31-A02CP	100RC09S-C6P2
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M83513/28-D02NW	100RN25P-C6PT2	M83513/29-G01CT	100RC51P-C6T1	M83513/31-A02NP	100RN09S-C6P2
M83513/28-D03CN	100RC25P-C63	M83513/29-G01CW	100RC51P-C6PT1	M83513/31-A02NT	100RN09S-C6T2
M83513/28-D03CP	100RC25P-C6P3	M83513/29-G01NN	100RN51P-C61	M83513/31-A02NW	100RN09S-C6PT2
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M83513/28-D03CW	100RC25P-C6PT3	M83513/29-G01NT	100RN51P-C6T1	M83513/31-A03CP	100RC09S-C6P3
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M83513/28-D03NW	100RN25P-C6PT3	M83513/29-G02CT	100RC51P-C6T2	M83513/31-A03NP	100RN09S-C6P3
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M83513/28-E02CW	100RC31P-C6PT2	M83513/29-G03NT	100RN51P-C6T3	M83513/31-B02CP	100RC15S-C6P2
M83513/28-E02NN	100RN31P-C62	M83513/29-G03NW	100RN51P-C6PT3	M83513/31-B02CT	100RC15S-C6T2
M83513/28-E02NP	100RN31P-C6P2	M83513/30-G01CN	100RC100P-C61	M83513/31-B02CW	100RC15S-C6PT2
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Mil-Spec	Amphenol	Mil-Spec	Amphenol	Mil-Spec	Amphenol
M83513/31-B02NP	100RN15S-C6P2	M83513/31-E01CN	100RC31S-C61	M83513/32-G02CW	100RC51S-C6PT2
M83513/31-B02NT	100RN15R-C6T2	M83513/31-E01CP	100RC31S-C6P1	M83513/32-G02NP	100RN51S-C62
M83513/31-B02NW	100RN15S-C6PT2	M83513/31-E01CT	100RC31S-C6T1	M83513/32-G02NN	100RN51S-C6P2
M83513/31-B03CN	100RC15S-C63	M83513/31-E01CW	100RC31S-C6PT1	M83513/32-G02NT	100RN51S-C6T2
M83513/31-B03CP	100RC15S-C6P3	M83513/31-E01NN	100RN31S-C61	M83513/32-G02NW	100RN51S-C6PT2
M83513/31-B03CT	100RC15S-C6T3	M83513/31-E01NP	100RN31S-C6P1	M83513/32-G03CN	100RC51S-C63
M83513/31-B03CW	100RC15S-C6PT3	M83513/31-E01NT	100RN31S-C6T1	M83513/32-G03CP	100RC51S-C6P3
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M83513/31-C02CW	100RC21S-C6PT2	M83513/31-E03NT	100RN31S-C6T3	M83513/33-H02CP	100RC100S-C6P2
M83513/31-C02NN	100RN21S-C62	M83513/31-E03NW	100RN31S-C6PT3	M83513/33-H02CT	100RC100S-C6T2
M83513/31-C02NP	100RN21S-C6P2	M83513/31-F01CN	100RC37S-C61	M83513/33-H02CW	100RC100S-C6PT2
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M83513/31-C03NW	100RN21S-C6PT3	M83513/31-F02CT	100RC37S-C6T2	M83513/33-H03NP	100RN100S-C6P3
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M83513/31-D01NP	100RN25S-C6P1	M83513/31-F03CN	100RC37S-C63		
M83513/31-D01NT	100RN25S-C6T1	M83513/31-F03CP	100RC37S-C6P3		
M83513/31-D01NW	100RN25S-C6PT1	M83513/31-F03CT	100RC37S-C6T3		
M83513/31-D02CN	100RC25S-C62	M83513/31-F03CW	100RC37S-C6PT3		
M83513/31-D02CP	100RC25S-C6P2	M83513/31-F03NN	100RN37S-C63		
M83513/31-D02CT	100RC25S-C6T2	M83513/31-F03NP	100RN37S-C6P3		
M83513/31-D02CW	100RC25S-C6PT2	M83513/31-F03NT	100RN37S-C6T3		
M83513/31-D02NN	100RN25S-C62	M83513/31-F03NW	100RN37S-C6PT3		
M83513/31-D02NP	100RN25S-C6P2	M83513/32-G01CN	100RC51S-C61		
M83513/31-D02NT	100RN25S-C6T2	M83513/32-G01CP	100RC51S-C6P1		
M83513/31-D02NW	100RN25S-C6PT2	M83513/32-G01CT	100RC51S-C6T1		
M83513/31-D03CN	100RC25S-C63	M83513/32-G01CW	100RC51S-C6PT1		
M83513/31-D03CP	100RC25S-C6P3	M83513/32-G01NN	100RN51S-C61		
M83513/31-D03CT	100RC25S-C6T3	M83513/32-G01NP	100RN51S-C6P1		
M83513/31-D03CW	100RC25S-C6PT3	M83513/32-G01NT	100RN51S-C6T1		
M83513/31-D03NN	100RN25S-C63	M83513/32-G01NW	100RN51S-C6PT1		
M83513/31-D03NP	100RN25S-C6P3	M83513/32-G02CN	100RC51S-C62		
M83513/31-D03NT	100RN25S-C6T3	M83513/32-G02CP	100RC51S-C6P2		
M83513/31-D03NW	100RN25S-C6PT3	M83513/32-G02CT	100RC51S-C6T2		





## Rectangular and Filtered Product Overview



## Filtered Connectors

**164F**  
SERIES

### Amphenol

#### MIL-C-55116 Filtered Audio Connectors



Amphenol's 164F series is a line of filtered MIL-C-55116 & MIL-C-55117 audio connectors for use in audio, electronic, and radio transmitter applications. Designed specifically for non-GND, variable impedance impedances or alternate impedance applications, the 164F series offers communication security and ECCM capabilities. Two connector lengths are offered by mounting flexibility in line as well as product applications. The standard version is permanently attached to carrier module boards for fixed audio connectors. The inline version offers 500K ohm loading, allowing easier design into greater audio sets or variety of non-fixed equipment.

Low loss impedance technology in combination with Amphenol's stress isolation design results in a shorter, lighter connector with superior thermal and practical shock capabilities. Both S & A pin versions are available with either solder cup or P.C.B. terminations.

For further information, please contact your nearest Amphenol sales representative or the factory directly.

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**Specifications**

<p><b>Mechanical:</b></p> <p>Meets or exceeds all requirements of MIL-C-55116 Rev. B</p> <ul style="list-style-type: none"> <li>- Mating Durability: 3000 cycles</li> <li>- Contact Interference: 20A, 10 lb</li> <li>- Physical Shock: passes 14ms, 10 g drop test to concrete floor.</li> </ul>	<p><b>Materials:</b></p> <p>Contacts: copper alloy, 99% minimum gold plating minimum layer weight: 300t minimum shell type: 325, plated</p>	<p><b>Environmental:</b></p> <p>Meets or exceeds all requirements of MIL-C-55116 Rev. B</p> <ul style="list-style-type: none"> <li>- Thermal Shock: per MIL-STD-202, method 1004, test condition B (20 to 80°C)</li> <li>- Operating Temp: Range: 55 to 125°C Thermal Aging: per MIL-STD-202</li> </ul>
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**Electrical Characteristics\***

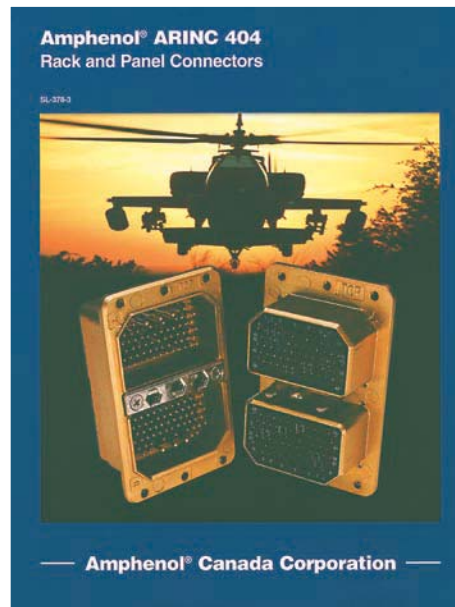
Filter Program	Shield Connector	151	152	---	381
Filter Circuit Type	Shield Connector	500	500	500	500
Capacitance @ 100 Hz (10 MHz and 1 MHz)		2000 pF	800 pF	2000 pF	2000 pF
Working Voltage @ 50°C (50 MHz max. operating frequency)		500V DC	500V DC	500V DC	500V DC
Dielectric Withstanding Voltage @ 50°C (50 MHz max. operating frequency)		1000V AC	1000V AC	1000V AC	1000V AC
Insulation Resistance (minimum @ 50°C)		10 Gohms	10 Gohms	10 Gohms	10 Gohms
Filter W/ Current Rating (minimum @ 50°C)		2 ampere	2 ampere	2 ampere	2 ampere
Operating Temp. Range (°C)		-55°	-55°	-55°	-55°

\*Note: Refer to 164F connector series for Connector Configuration, Construction Details, or custom requirements consult factory.

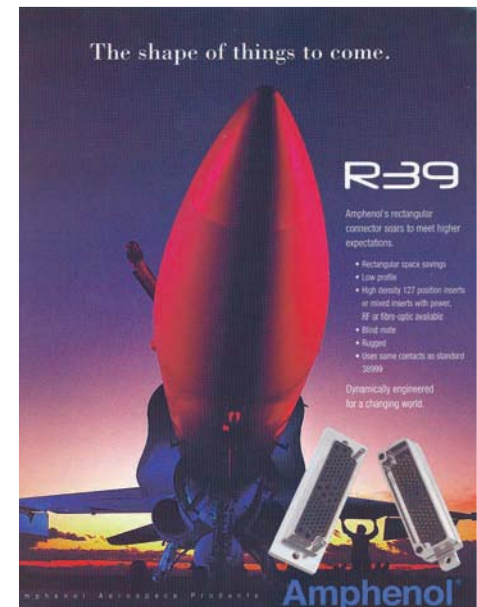
## Filtered Audio Connectors



## ARINC 600 Rack & Panel Connectors



## ARINC 404 Rack & Panel Connectors



## R39 Rectangular 38999 Connectors

Amphenol Canada Corporation offers a comprehensive range of filtered and rectangular products for Military, Aerospace, Commercial and Industrial applications. Please contact us for further information.

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Amphenol Canada Corporation  
 an ISO 9001:2000 + AS9100B company  
 605 Milner Avenue  
 Toronto, ON, Canada  
 M1B 5X6

Factory Direct: +1(416) 291-4401  
 N.A. Toll-Free: 1-866-816-6540  
 Fax: +1(416) 292-0647  
 E-mail: sales@amphenolcanada.com  
 Web: www.amphenolcanada.com

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- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А