



**RUGGEDIZED RJ45 AND USB**

# **SUPERSEAL™**

**MIL-DTL-38999 TYPE • SERIES 80 MIGHTY MOUSE • MIL-DTL-5015 TYPE**

APRIL 2013

RUGGEDIZED  
RJ45 AND USB  
CONNECTORS

# SUPERSEAL™



*Glenair introduces the world's most comprehensive line of ruggedized RJ45 Ethernet and USB connectors in D38999 type, 5015 type and Series 80 Mighty Mouse packaging*



## Features

- Superior sealing—IP68 when mated—for complete system protection against water, sand and dust
- Shielded/grounded coupler designs in both receptacle and plug connectors
- Crimp, solder-cup, PC tail, and Quadrax contact/wire termination options
- RJ45 plug and/or jack interface options available in Cat 5e or Cat 6a in D38999 type and 5015 type packaging
- USB 2.0 and 3.0 in Series 80 Mighty Mouse and D38999 type currently in development
- Intermateable, one-to-one equivalent solutions for other industry-standard commercial data interface field-duty connectors



**G**lenair®

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www.glenair.com

# Ruggedized RJ45 and USB SuperSeal™ Connectors Table of Contents



SuperSeal™  
Connectors



**SuperSeal™ MIL-DTL-38999 Type RJ45 Connectors**

**A**



**SuperSeal™ MIL-DTL-5015 Type Reverse-Bayonet RJ45 Connectors**

**B**



**SuperSeal™ MIL-DTL-38999 Type USB Connectors**

**C**



**SuperSeal™ Series 80 Mighty Mouse USB Connectors**

**D**

MIL-DTL-38999 TYPE  
FIELD-READY  
RJ45 ETHERNET

**MIL-DTL-38999 TYPE**

# SUPERSEAL™



*Rugged environmental MIL-DTL-38999 type connectors with IP68 sealing, robust insert-to-shell grounding, and a complete range of wire, cable, and circuit board terminations*



## Features

- Superior sealing—IP68 when mated—for complete system protection against water, sand and dust
- Highly durable RJ45 design, including enhanced operating temperature, increased life-cycle, and rugged vibration and shock performance
- Shielded/grounded coupler designs in both receptacle and plug connectors
- Crimp, solder-cup, PC tail, and Quadrx contact/wire termination options
- RJ45 plug and/or jack interface options available in Cat 5e or Cat 6a
- Industry standard scoop proof, self-locking, triple-start threaded coupling design of MIL-DTL-38999 Series III type connectors
- Intermateable with other MIL-DTL-38999 type RJ45 field-duty connectors



**G**lenair®

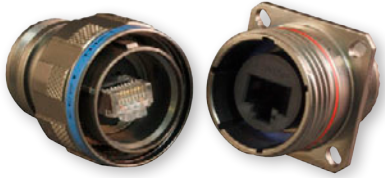
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# SuperSeal™ MIL-DTL-38999 Series III Type Connectors RJ45 Ethernet



D38999 Type  
RJ45 Connectors

## Product Selection Guide



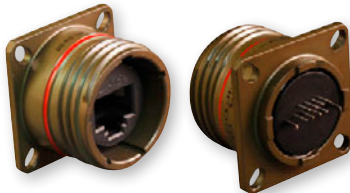
233-300

SuperSeal™ MIL-DTL-38999 Series III Type Connector/  
Adapter with RJ45 Jack/Plug or Plug/Jack Couplers



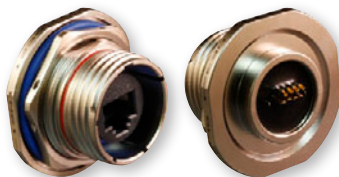
233-301

SuperSeal™ MIL-DTL-38999 Series III Type Connectors  
with RJ45 Jack or Plug to Rear Crimp Contact  
Termination



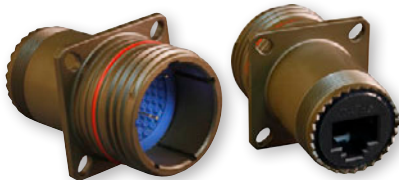
233-302

SuperSeal™ MIL-DTL-38999 Series III Type Connectors  
with RJ45 Jack to PC Tail Termination



233-303

SuperSeal™ MIL-DTL-38999 Series III Type Connectors  
with RJ45 Jack to Rear Solder Cup Termination



233-304

SuperSeal™ MIL-DTL-38999 Series III Type Connectors  
with Pin or Socket Contacts to RJ45 Jack or Plug  
Interface



233-305

SuperSeal™ MIL-DTL-38999 Series III Type Connectors  
with Pin or Socket Quadrx to RJ45 Jack or Plug



233-330

SuperSeal™ MIL-DTL-38999 Series III Type  
Feedthrough Receptacle with RJ45 Jack to Jack Coupler

A



## SuperSeal™ MIL-DTL-38999 Series III Type Connectors Materials and Performance Specifications

A



**Material and Finishes:**

Shell/coupling – High strength aluminum alloy  
 Plating – Cadmium olive drab over electroless nickel; Nickel PTFE; Electroless nickel  
 Contacts – PC tails, solder cup, and crimp contacts: Copper alloy, gold plated  
 RJ45 coupler housing – PPS  
 Seals – Silicon-based elastomer  
*Composite, stainless steel and other materials and finishes available. Please consult factory.*

**Shell Type and Sizes:**

Shell Type – D38999 Series III Type  
 Sizes – Shell sizes 17 and 19

**Electrical Specifications:**

Voltage Rating – 1000 Volts, Cat 5e and Cat 6a  
 Data Rate – 10BASE-T, 100BASE-TX, 1000BASE-T/1000BASE-TX and 10GBASE-T (Cat 6a only)  
 Current Rating – 1.5 Amps, Cat5e and Cat 6a  
 D.W.V. – 1000 VAC  
 Wiring – Straight through, Cat 5e and Cat 6a  
 Shield Continuity – Continuous through coupler and grounded to shell (Grounding through coupler only available for Cat5e, consult factory)

**Environmental / Mechanical Performance**

Sealing – IP68 mated condition  
 Outgassing – UL94 V0 low smoke, zero halogen  
 Operating Temperature Range – -40°C to +125°C  
 Backshell Interface – MIL-DTL-38999 connector designator H  
 Mating Cycles – 500

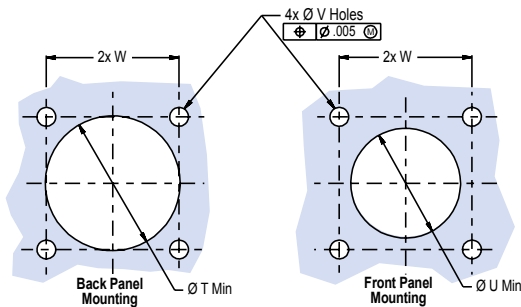
**Options:**

Metal gland backshell, round mounting holes, self-locking clinch nuts, plug-and-play cordsets, self-closing spring-loaded cover or anti-decoupling covers (receptacle only), integral shrink boot adapter and low-temp shrink boot (plug only).



Panel Cut-Out Dimensions						
Shell Size	T Dia Min	U Dia Min	V Holes	W	X Dia	Y Flat
17	1.219 (30.96)	1.016 (25.81)	.133 (3.38)	1.062 (26.97)	1.270 (32.26)	1.210 (30.73)
			.123 (3.12)		1.260 (32.00)	1.208 (30.68)
19	1.297 (32.94)	1.141 (28.98)		1.156 (29.36)	1.395 (35.43)	1.335 (33.91)
						1.385 (35.18)

Electrical Specifications for RJ45 Cat 5e and Cat 6a MIL-DTL-38999 Series III type		
Rating	Cat 5e	Cat 6a
Voltage Rating	1000 Volts	1000 Volts
Data Rate	10BASE-T, 100BASE-TX, 1000BASE-T/1000BASE-TX AND 10GBASE-T* (10GBASE-T Cat 6a Only)	
Current Rating	1.5 Amps	1.5 Amps
Wiring	Straight Through	Straight Through
Shield continuity	Continuous Through Coupler and Grounded to the Shell*	Continuous Through Coupler and Grounded to the Shell
Cabling length	100 Meters	100 Meters
*Grounding through coupler only available for Cat5e. Consult factory		



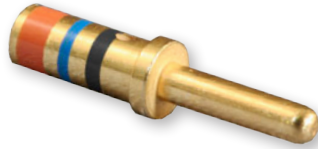
**Square Flange Mount**  
 Recommended Mounting Holes  
 Panel Thickness .288 (7.32) Max

**Jam Nut Mount**  
 Recommended Panel Cut-Out  
 Panel Thickness .126 - .062 (3.2 - 1.6)

**M39029/58-360 and M39029/56-348**  
**850-002-22-360 and 850-001-22-348**  
**Standard Duty Electrical Pin and Socket Contacts**

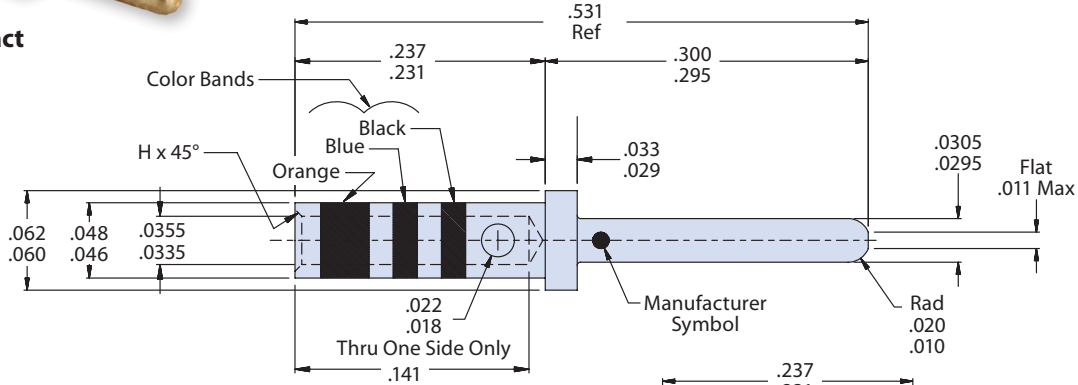


**SIZE #22 PIN AND SOCKET CONTACTS FOR USE WITH SUPERSEAL™ 233-304 AND 233-301 CONNECTORS**

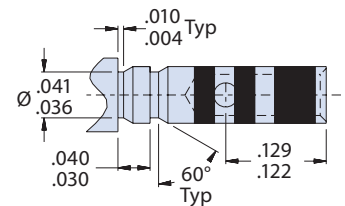
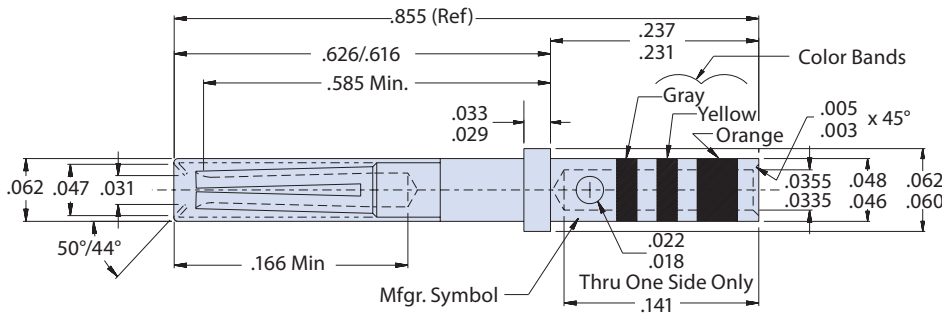
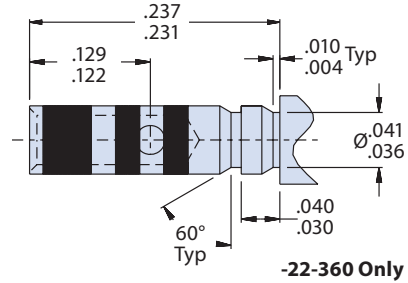


**Pin Contact**

	Mating End Size	Wire Accomodation	Military Part Number	Glenair Part Number
Pin	22	22-28 AWG	<b>M39029/58-360</b>	<b>850-002-22-360</b>
Socket	22	22-28 AWG	<b>M39029/56-348</b>	<b>850-001-22-348</b>



**Socket Contact**



**-22-348 Only**

Termination Tools							
Size 22	Part Number	Military Number	AWG Handling	Crimp Tool	Positioner	Insertion Tool	Extraction Tool
Pin	850-002-22-360	M39029/58-360	22, 24, 26, 28	M22520/2-01 M22520/7-01	M22520/2-09 M22520//7-07	M81969/14-01 M81969/8-01	M81969/14-01 M81969/8-02
Socket	850-001-22-348	M39029/56-348	22, 24, 26, 28	M22520/2-01 M22520/7-01	M22520/2-07 M22520//7-05	M81969/14-01 M81969/8-01	M81969/14-01 M81969/8-02

## HOW TO TERMINATE, INSTALL AND REMOVE SIZE #22 CONTACTS

**1 Set Up Crimp Tool.** Install proper positioner into crimp tool. The label on the positioner shows the proper tool setting for each wire size. Turn the adjustment wheel to the correct setting.

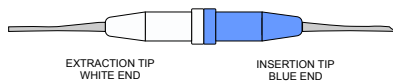
**2 Strip Wire.** Remove wire insulation, taking care to avoid nicking or cutting wire strands. Strip wire to length shown.

**3 Insert wire** into contact. The wire should be visible in the inspection hole.

**4** Insert contact into crimp tool as shown. Make sure that the contact is fully inserted into the tool. Squeeze handle completely. The ratchet mechanism will not allow a partial crimp. Release handle and remove contact.

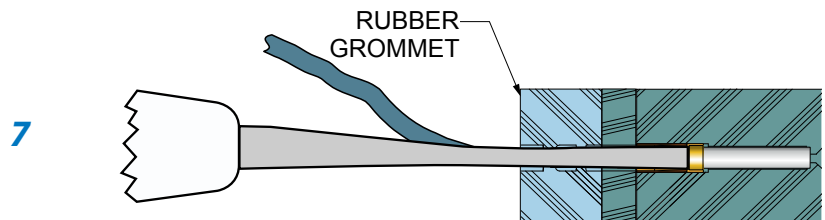
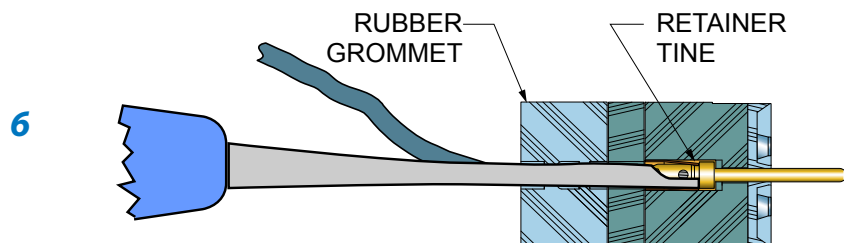
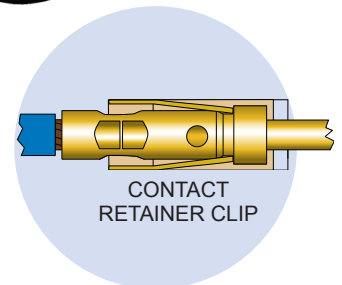
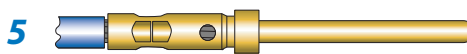
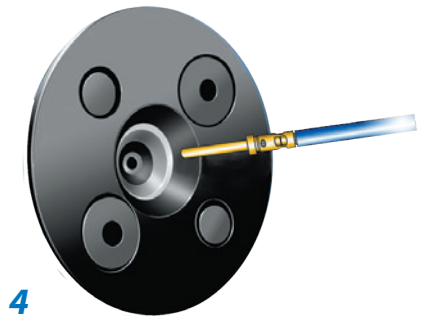
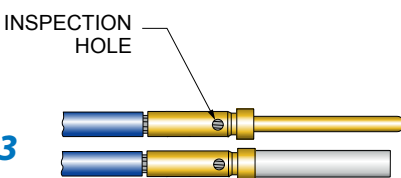
**5 Inspect crimped contact.** Wire should be fully inserted and the crimp should be uniform in appearance.

### Insertion/Extraction Tool M81969/14-01



**6 Install contact into connector.** Push the contact through the rear grommet until the contact locks into place. This can usually be done by hand without the need for a tool. If the wire gage is #26 or smaller, a tool is helpful. There are two techniques for installing contacts with a tool. One method is to push the contact in by hand, then use the tool to finish the insertion. The other method is to position the insertion tip against the contact shoulder, then insert the contact. Use insertion/extraction tool 809-088 to install contacts. Slide the wire into the groove on the blue end of the tool. Slide the tool tip up the contact until it touches the contact shoulder. **USE CARE TO AVOID DAMAGING THE CONNECTOR.**

**7 Contact Extraction.** Use tool M81969/14-01. The white end is used for contact extraction. First, push the wire into the groove of the metal tip. Slide the tip of the tool into the connector. Push the tool into the connector cavity until the tip bottoms in the connector. Avoid wiggling or rocking the tip. This may damage the cavity. A straight push is best. Pinch the wire between your finger and the white plastic grip and slide the tool and contact out of the connector. **Wire insulation diameter greater than 0.045 inches (1.14mm) is too large to work properly with the extraction tool. connector damage is possible.**

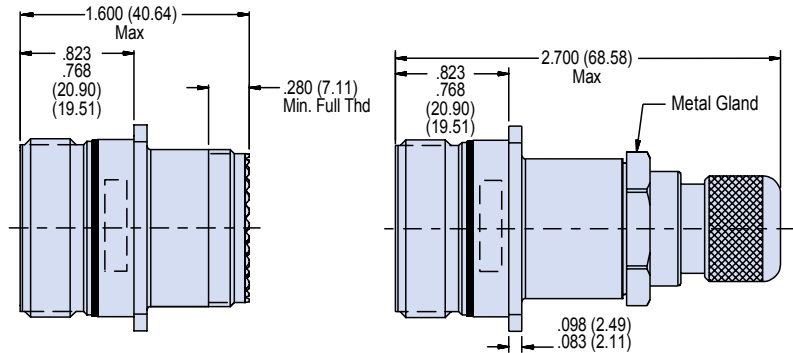
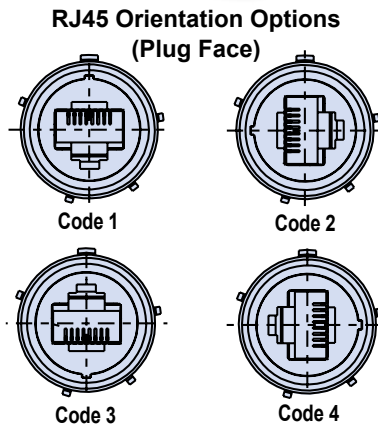
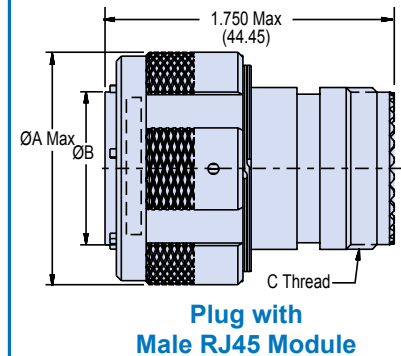
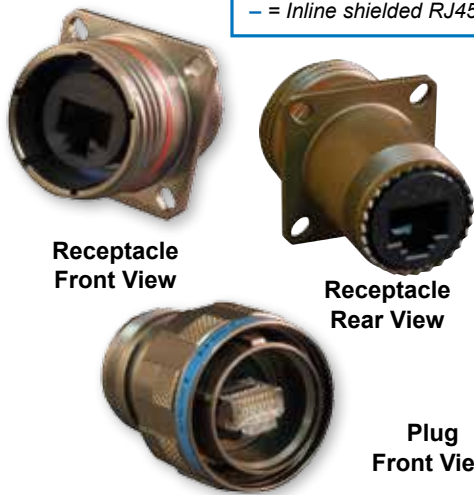
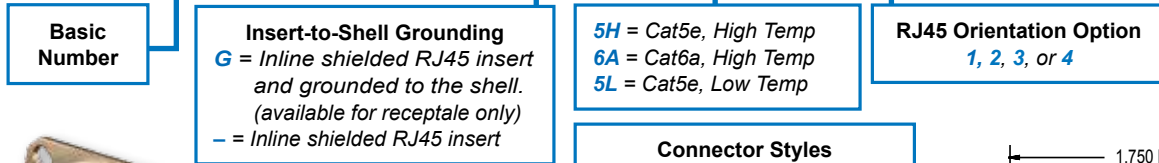
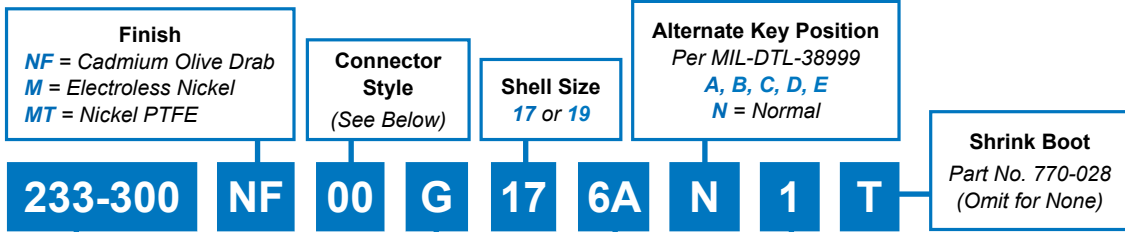




# 233-300 SuperSeal™ MIL-DTL-38999 Series III Type Connectors with RJ45 Jack/Jack or Plug/Plug Couplers

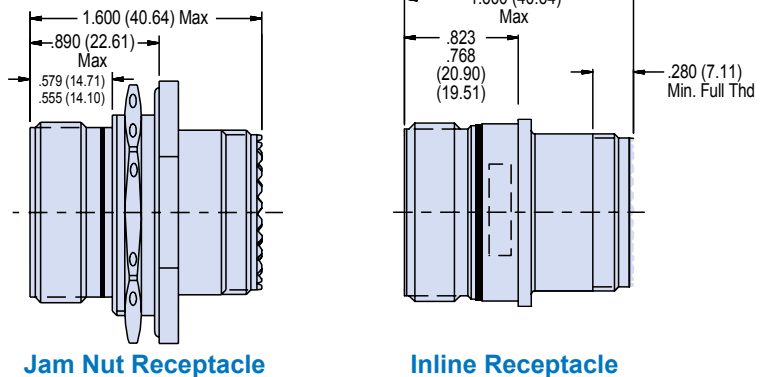


D38999 Type  
RJ45 Connectors



All External Dimensions, Features, etc. compliant with D38999/20, /24 & /26. Consult Factory for Additional Information

Plug Dimensions			
Shell Size	A Dia Max	B Dia	C Thread
17	1.406 (35.71)	.928/.922 23.57/23.42	M25 X 1.0-6g 0.100R
19	1.156 (29.36)	1.033/1.027 26.24/26.09	M25 X 1.0-6g 0.100R

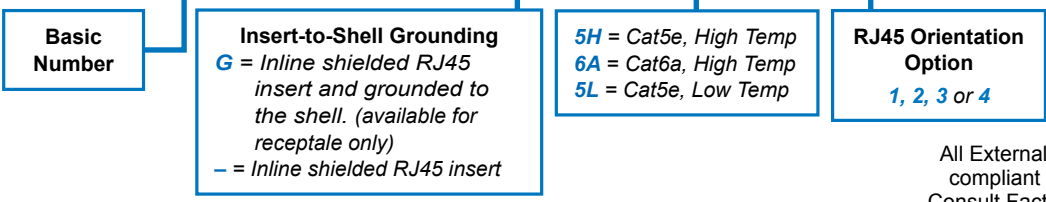
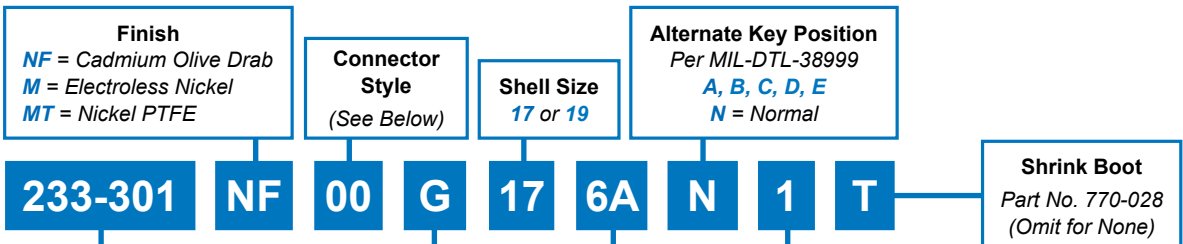


A



# 233-301 SuperSeal™ MIL-DTL-38999 Series III Type Connectors with RJ45 Jack or Plug to Rear Crimp Contact Termination

A



All External Dimensions, Features, etc. compliant with D38999/20, /24 & /26. Consult Factory for Additional Information

- Connector Styles**
- 00 = Square Flange Receptacle with Slotted Holes
  - 07 = Jam Nut Receptacle
  - 05 = In-Line Receptacle
  - G6 = Plug

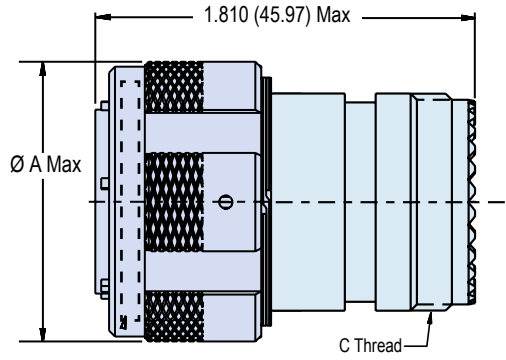
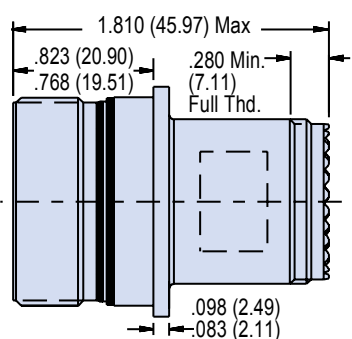
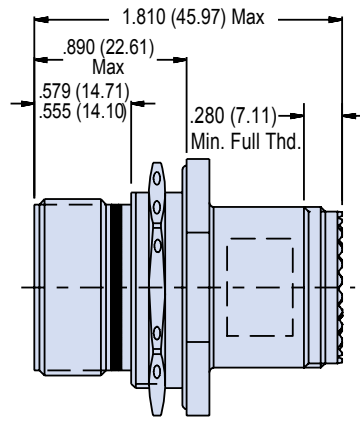
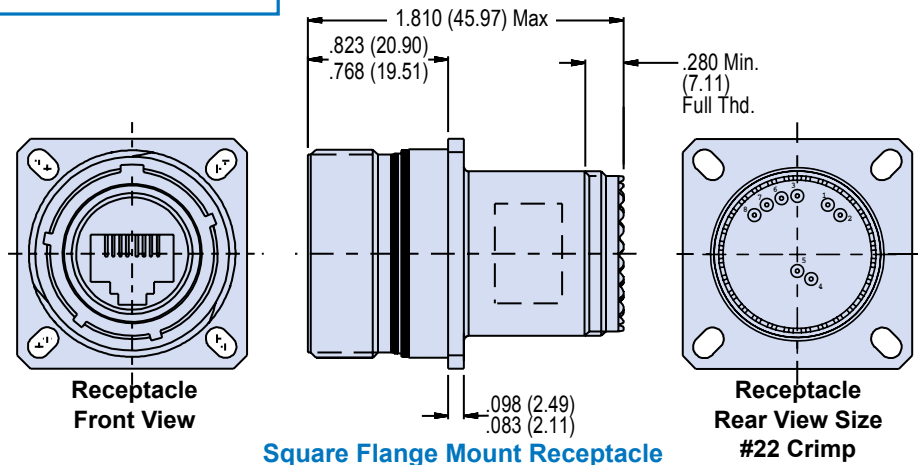
Plug Dimensions			
Shell Size	A Dia Max	B Dia	C Thread
17	1.406 (35.71)	.928/.922 23.57/23.42	M25 X 1.0-6g 0.100R
19	1.156 (29.36)	1.033/1.027 26.24/26.09	M25 X 1.0-6g 0.100R



**Receptacle Front View**



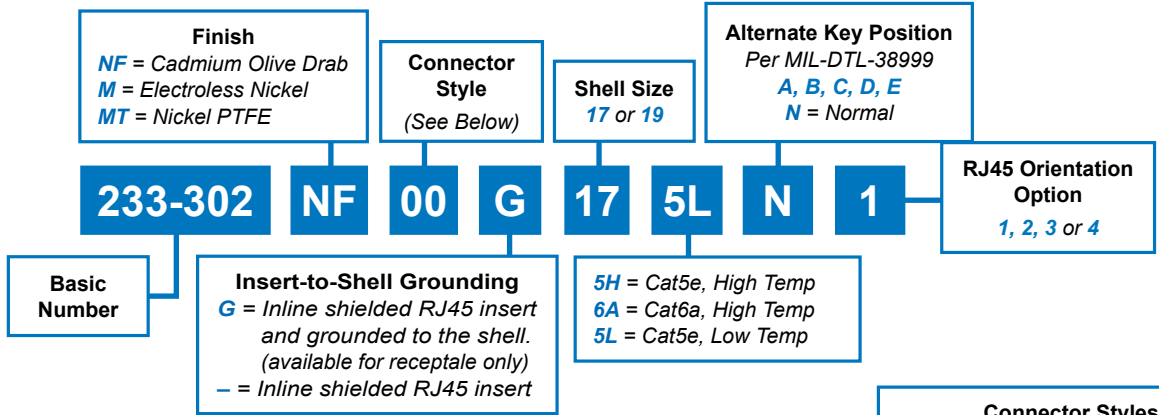
**Receptacle Rear View**



**233-302**  
**SuperSeal™ MIL-DTL-38999 Series III Type Connectors**  
 with RJ45 Jack to PC Tail Termination



D38999 Type  
 RJ45 Connectors

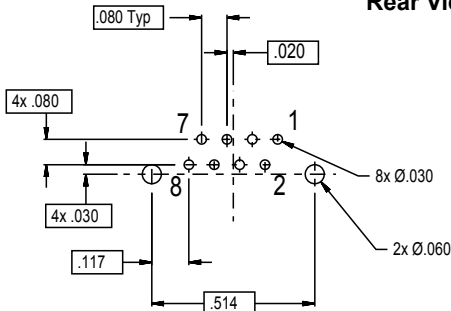


**A**

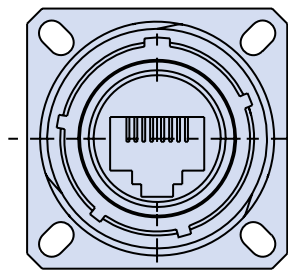


**Receptacle Front View**

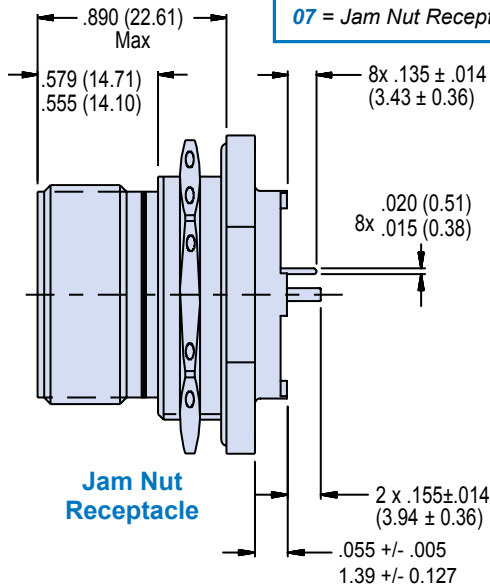
**Receptacle Rear View**



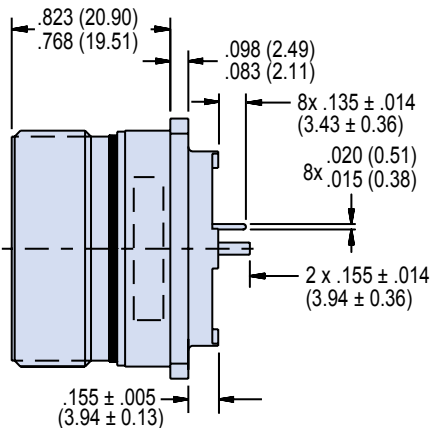
**Recommended PCB Layout (Solder Side Of Board)**



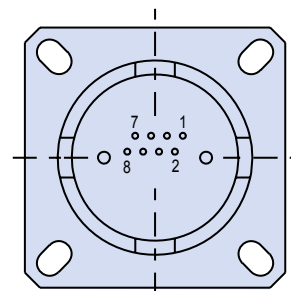
**Receptacle Front View**



**Jam Nut Receptacle**



**Square Flange Receptacle**

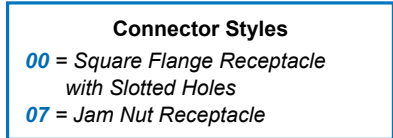
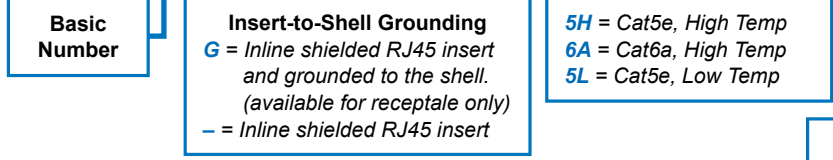
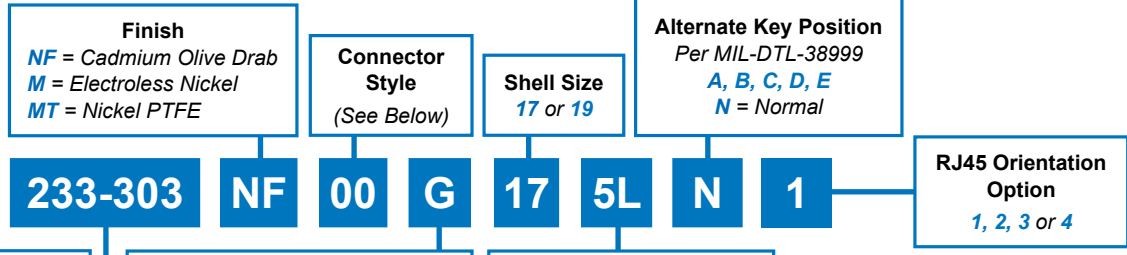


**Receptacle Rear View**



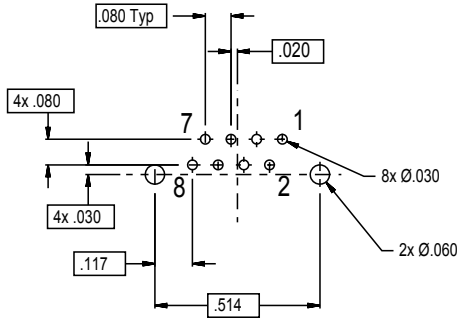
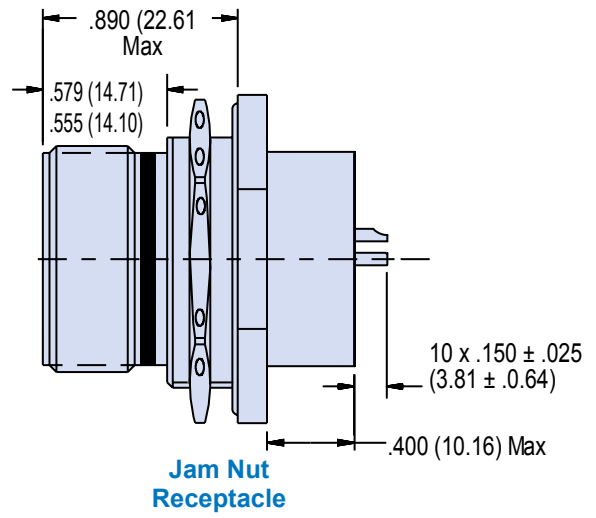
# 233-303 SuperSeal™ MIL-DTL-38999 Series III Type Connectors with RJ45 Jack to Solder Cup Wire Termination

A

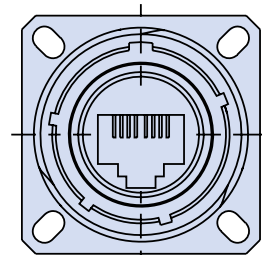


**Receptacle Front View**

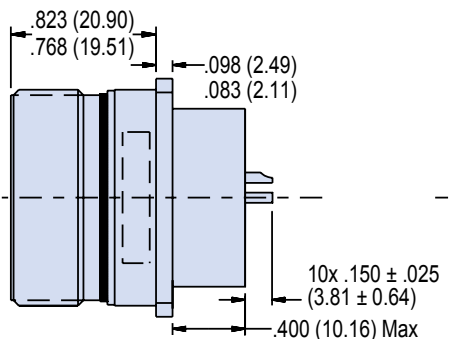
**Receptacle Rear View**



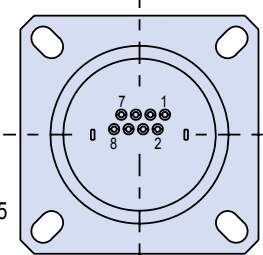
**Recommended PCB Layout  
(Solder Side Of Board)**



**Receptacle Front View**



Square Flange Receptacle



**Receptacle Rear View**

# 233-304 SuperSeal™ MIL-DTL-38999 Series III Type Connectors with Pin or Socket Contacts to RJ45 Jack or Plug



D38999 Type  
RJ45 Connectors

**Finish**  
NF = Cadmium Olive Drab  
M = Electroless Nickel  
MT = Nickel PTFE

**Connector Style**  
(See Below)

**Insert Arrangement**  
17 - 35  
Per MIL-STD-1560

**Alternate Key Position**  
Per MIL-DTL-38999  
A, B, C, D, E  
N = Normal

**Shrink Boot**  
Part No. 770-028  
(Omit for None)

**233-304** **NF** **00** **17** **G** - **35** **P** **5L** **N** **1** **T**

**Basic Number**

**Shell Size**  
17 or 19

**P = Pin**  
**S = Socket**

**RJ45 Orientation Option**  
1, 2, 3 or 4

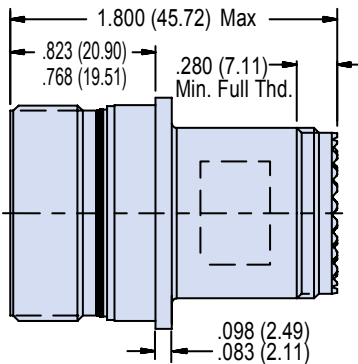
**Connector Styles**  
00 = Square Flange Receptacle with Slotted Holes  
07 = Jam Nut Receptacle  
05 = In-Line Receptacle  
G6 = Plug



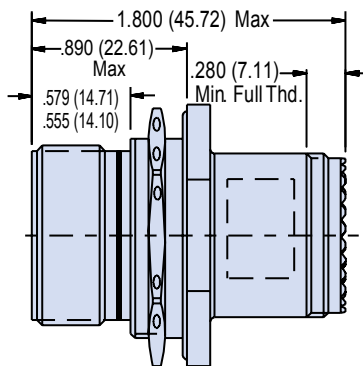
Receptacle Front View

Receptacle Rear View

**Insert-to-Shell Grounding**  
G = Inline shielded RJ45 insert and grounded to the shell. (available for receptacle only)  
- = Inline shielded RJ45 insert

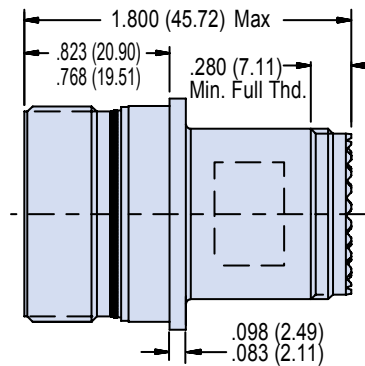


Square Flange Receptacle



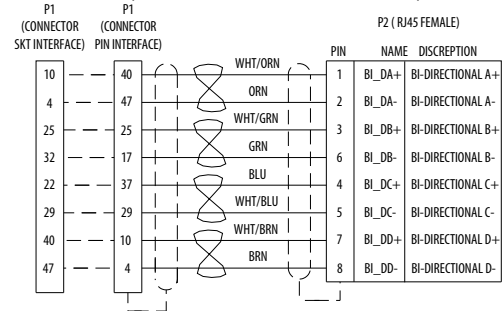
Jam Nut

Plug Dimensions			
Shell Size	A Dia Max	B Dia	C Thread
17	1.406 (35.71)	.928/.922 (23.57/23.42)	M25 X 1.0-6g 0.100R
19	1.156 (29.36)	1.033/1.027 (26.24/26.09)	M25 X 1.0-6g 0.100R

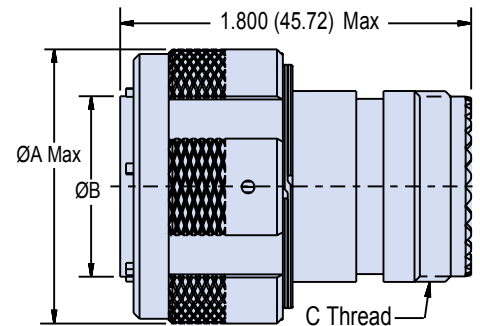
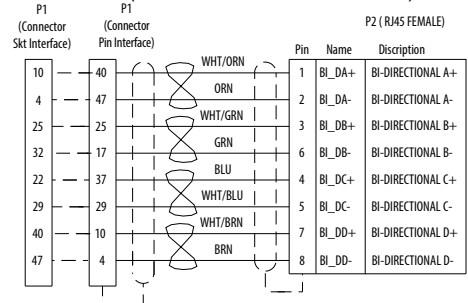


Inline

Wiring Diagram for Ethernet 1000base-T (Gigabit Ethernet) (COLOR CODES PER EIA/TIA 568B)



Wiring Diagram for Ethernet 1000base-T (Gigabit ethernet) (COLOR CODES PER EIA/TIA 568B)



Plug



# 233-305 SuperSeal™ MIL-DTL-38999 Series III Type Connectors with Pin or Socket Quadrax to RJ45 Jack or Plug

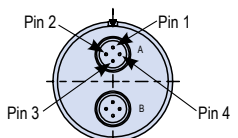
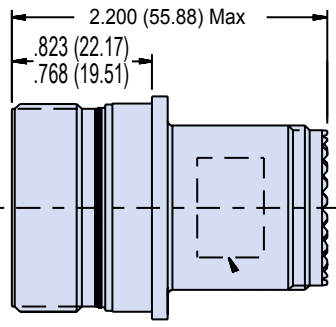
A

<b>Finish</b> NF = Cadmium Olive Drab M = Electroless Nickel MT = Nickel PTFE	<b>Connector Style</b> (See Below)	<b>Shell Size</b> 17 or 19	<b>P = Pin</b> <b>S = Socket</b>	<b>Alternate Key Position</b> Per MIL-DTL-38999 A, B, C, D, E N = Normal						
<b>233-305</b>	<b>NF</b>	<b>00</b>	<b>G</b>	<b>17</b>	<b>5L</b>	<b>P</b>	<b>N</b>	<b>1</b>	<b>T</b>	<b>Shrink Boot</b> Part No. 770-028 (Omit for None)
<b>Basic Number</b>	<b>Insert-to-Shell Grounding</b> G = Inline shielded RJ45 insert and grounded to the shell. (available for receptacle only) - = Inline shielded RJ45 insert	<b>5H = Cat5e, High Temp</b> <b>6A = Cat6a, High Temp</b> <b>5L = Cat5e, Low Temp</b>		<b>RJ45 Orientation Option</b> 1, 2, 3 or 4						



**Receptacle Rear View**

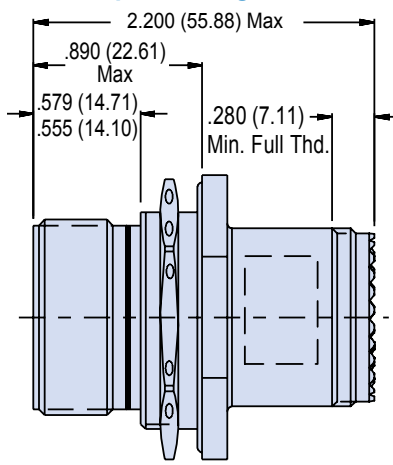
**Receptacle Front View**



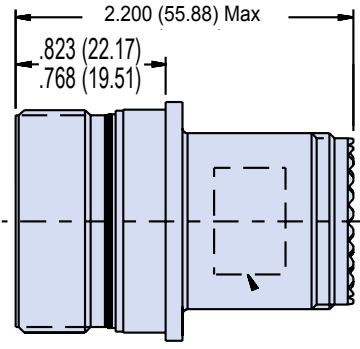
**Quadrax Pin Locations**

Plug Dimensions			
Shell Size	A Dia Max	B Dia	C Thread
17	1.406 (35.71)	.928/.922 (23.57/23.42)	M25 X 1.0-6g 0.100R
19	1.156 (29.36)	1.033/1.027 (26.24/26.09)	M25 X 1.0-6g 0.100R

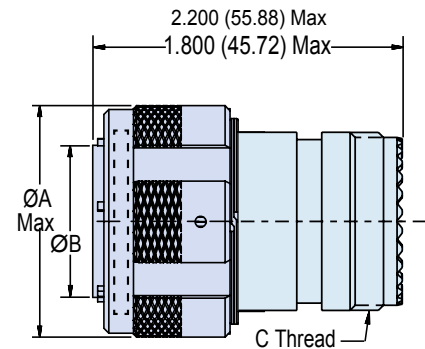
**Square Flange**



**Jam Nut**



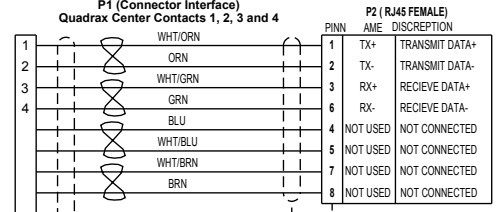
**Inline**



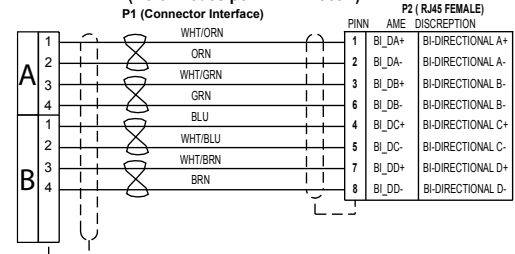
**Plug**

- Connector Styles**
- 00 = Square Flange Receptacle with Slotted Holes
  - 07 = Jam Nut Receptacle
  - 05 = Inline Receptacle
  - G6 = Plug Connector

**WIRING DIAGRAM**  
For Ethernet 10Base-T & 100 Base-TX  
(Color Codes per EIA/TIA 568B)



**WIRING DIAGRAM**  
For Ethernet 1000Base-T (Gigabit Ethernet)  
(Color Codes per EIA/TIA 568B)

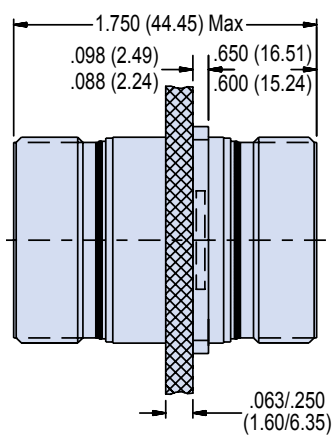
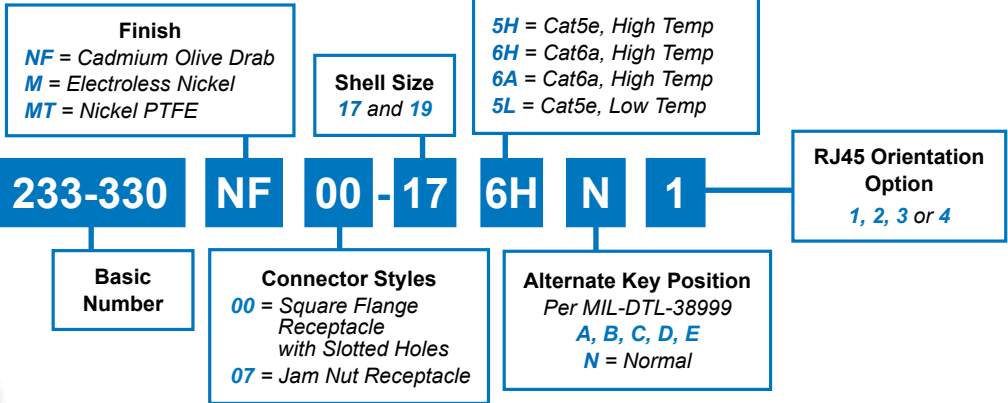


**233-330**  
**SuperSeal™ MIL-DTL-38999 Series III Type**  
**Bulkhead Feedthru**  
**with Back-to-Back RJ45 Jacks**

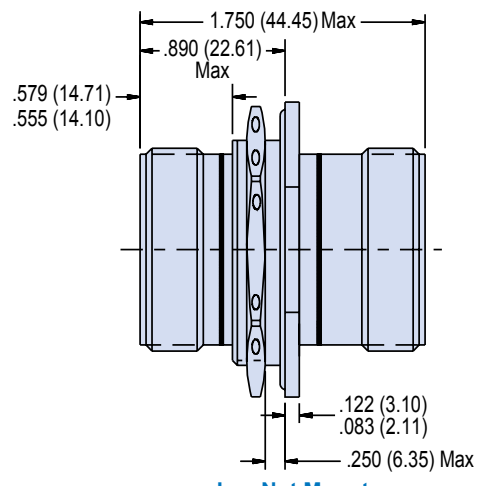


D38999 Type  
RJ45 Connectors

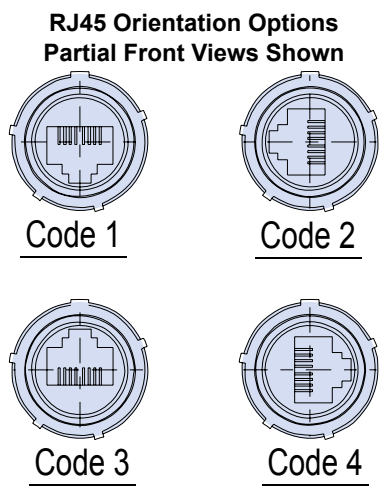
**A**



**Square Flange Mount Receptacle Feed Through Connector**



**Jam Nut Mount Receptacle Feed Through Connector**



All External Dimensions, Features, etc. compliant with D38999/20, /24 & /26.  
 Consult Factory for Additional Information

RUGGEDIZED  
SERIES ITS  
REVERSE-BAYONET  
RJ45

**MIL-DTL-5015 TYPE REVERSE-BAYONET**

# SUPERSEAL™

*Harsh-environment RJ45 data transmission connectors. High-reliability performance for military vehicle and rail applications*



#### Features

- Ruggedized MIL-DTL-5015 type connectors for heavy-duty industrial and transportation applications
- Reverse-bayonet coupling for fast, reliable mating in hard-to-reach locations
- Superior sealing—IP68 when mated—for complete harsh-environment protection
- Crimp contact termination or pigtail cables
- Available backshells for strain-relief and environmental protection
- Integrated RJ45 plugs and jacks for Cat 5e high-speed data transmission



**G**lenair®

Glenair, Inc.  
1211 Air Way  
Glendale, CA  
91201-2497  
818-247-6000  
sales@glenair.com  
www.glenair.com



**SuperSeal™ MIL-DTL-5015 Type  
Reverse-Bayonet Connectors  
RJ45 Ethernet**



**Product Selection Guide**



**SuperSeal™ 5015 Reverse Bayonet Plug  
with Cat 5e RJ45 Plug and  
Rear Crimp Contact Termination**



**SuperSeal™ 5015 Reverse Bayonet Plug  
with Cat 5e RJ45 Plug and  
Pre-Terminated Pigtail**



**SuperSeal™ 5015 Reverse Bayonet Receptacle  
with Cat 5e RJ45 Jack and Pre-Terminated Pigtail**



**SuperSeal™ 5015 Reverse Bayonet Receptacle  
with Cat 5e RJ45 Jack and PCB Termination**



**SuperSeal™ 5015 Reverse Bayonet Receptacles  
with Cat 5e RJ45 Jack/Jack Couplers**



**SuperSeal™ Reverse Bayonet RJ45 Connectors  
MIL-DTL-5015 Type • Size 18 • Cat5e  
Available Pigtail Configurations and Backshell Options**



## SuperSeal™ Reverse Bayonet RJ45 Connectors

### MIL-DTL-5015 Type • Size 18 • Cat5e

#### Introduction



#### Material and Finishes:

Shell/coupling – High strength aluminum alloy  
Plating – Electroless Nickel, Cad Olive Drab, Black Zinc Cobalt or Standard black electrodeposited paint

*Bronze, stainless steel and other materials and finishes available. Please consult factory.*

#### Shell Type and Sizes:

Shell Type – MIL-DTL-5015 Reverse-Bayonet Type  
Sizes – Shell size 18

#### Connector Styles:

Receptacle – MIL-DTL-5015 type in shell size 18 with integrated RJ45 jack/jack or jack/PCB coupler available in Cat 5e  
Plug – MIL-DTL-5015 type plug in shell size 18 with integrated RJ45 plug/jack coupler available in Cat 5e

*Receptacles and connectors available in square flange front or rear wall mount with slotted or round holes, jam nut front or rear wall mount, in-line, and feedthrough configurations.*

#### Technical Characteristics:

Category – Cat 5e  
Connection – 10BASE-T, 100BASE-TX, 1000BASE-T  
Max Current Rating – 1.5 Amps at 20° C  
Dielectric Withstanding Voltage – 1000 volts  
Working Temperature – -40° to +85° C  
Environmental Rating – IP67 unmatd

#### Termination Options:

Innovative crimp contact termination, printed circuit board termination, pre-terminated pigtails and jack/jack and jack/plug RJ45 configurations

Test Description	SuperSeal™ MIL-DTL-5015 RJ45 Performance Requirements / Specifications	Procedure Per MIL-DTL-5015 and or other standard
<b>Fluid Resistance</b>	Per EIA-364-10 unmatd connector shall not experience any damage detrimental to performance after immersion in fluid.	4.5.30 IAW EIA-364-10
<b>Contact Resistance</b>	Connecting hardware shall conform to A.2; a thru c of TIA/EIA-568-B.2 per IEC 60512-2, Test Method 2A, millivolt level method (shall not exceed 0.025 ohms and 0.050 ohms during subsequent tests)	TIA/EIA-568-B.2, Section A.2 IAW IEC 60512-2, Test method 2A
<b>Insulation Resistance</b>	Per IEC 60512-2, Test 3a, Method C, test voltage 500 VDC (Insulation Resistance minimum of 100 Ohm)	IAW IEC 60512-2, Test Method 2A
<b>Mating Durability</b>	500 to 1000 cycles (finish dependent) with no mechanical damage. Contact Resistance requirement as described above shall be met at 0.050 ohms after 100, 200 and 250 cycles (and 500 per finish). This shall be performed before Thermal Shock and Humidity/ Temperature cycling test and the additional 250 cycles shall be testing after completion in the same manner.	4.5.8 IAW TIA/EIA-568-B.2
<b>Contact Retention</b>	Individual contacts capable of withstanding at least 10 pounds axial load applied uniformly 1 lb/sec	IAW EIA-364-29
<b>Thermal Shock</b>	Per IEC 60068-2-14 Test Number Nb. • Temperature range -40 - +85°C ± 2°C • Exposure Time: 30 min. • Number of Cycles: 100 • Test Group B contacts shall be inspected and contact resistance measured after 50 cycles and at completion of est. These specimens shall be used for humidity/thermal cycling testing.	TIA/EIA-568-B.2, A.7 IAW IEC 60068-2-14, Test Number Nb
<b>Humidity/ Temperature Cycling</b>	EIA-364-31 with exceptions b, d & e; EIA 364-32 Test Condition A, except steps 2 & 4 shall be 2 minutes max duration; Humidity/ Temperature: TIA/EIA-568-B.2, A.8 per IEC 60068-2-38; Temperature for step 1 shall be -45 +0/-5°C. • Temperature for step 3 shall be 85 +5/-0°C Exposure Time: 30 min. • Number of Cycles: 100 No blistering, peeling or separation of the plating or other damage detrimental to operation of connector	4.5.11.1 or 4.5.11.2 4.5.13 IAW EIA-364-31, Method IV with temperature exceptions; IAW EIA-364-32, Test cond. A; IAW IEC 60068-2-14, Test Method Z/AD
<b>Salt Spray</b>	5% solution, 34°-36°C. 48-1000 hours, depending on finish. Unmatd connectors show no lifting of plated coating or exposure of basis material under 3X magnification which adversely affects performance.	4.5.13 IAW EIA-364-26
<b>Water Immersion</b>	1 Meter for 1 hour, Unmatd	MIL-STD-810 method 512

# SuperSeal™ 5015 Reverse Bayonet Plug with Cat 5e RJ45 Plug and Rear Crimp Contact Termination



MIL-DTL-5015 Type  
RJ45 Connectors



Front View



Rear View

**06** = Straight Cylindrical Plug  
with Accessory Threads

Basic  
Number

Shell Size  
**18**

Integrated High  
Speed Connector  
**RJ45**

**ITS**

**06**

**18**

**SSRJ45**

**3**

**N0**

**G3**

**Termination Options**  
**3** = Male RJ45 Plug with Crimp  
Contact Wire Termination

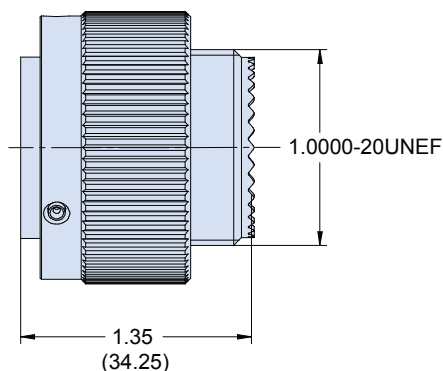
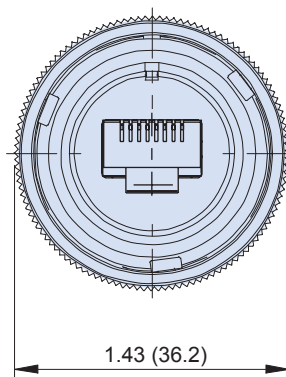
**Connector Accessory**

- PG** = Cable Gland Adaptor
- PHM** = Environmental Sealing Backshell
- N5** = Environmental Adapter and Cable Clamp
- N1** = Non Environmental Cable Clamp
- N0** = No Accessory Supplied with Connector

**Plating**

- G3** = Cadmium Olive Drab
- F11** = Electroless Nickel
- F6** = Black Electrodeposited Paint (Std.)
- F7** = Black Zinc Cobalt Plating

**06 = Straight Cylindrical Plug  
Connector with Accessory Threads**



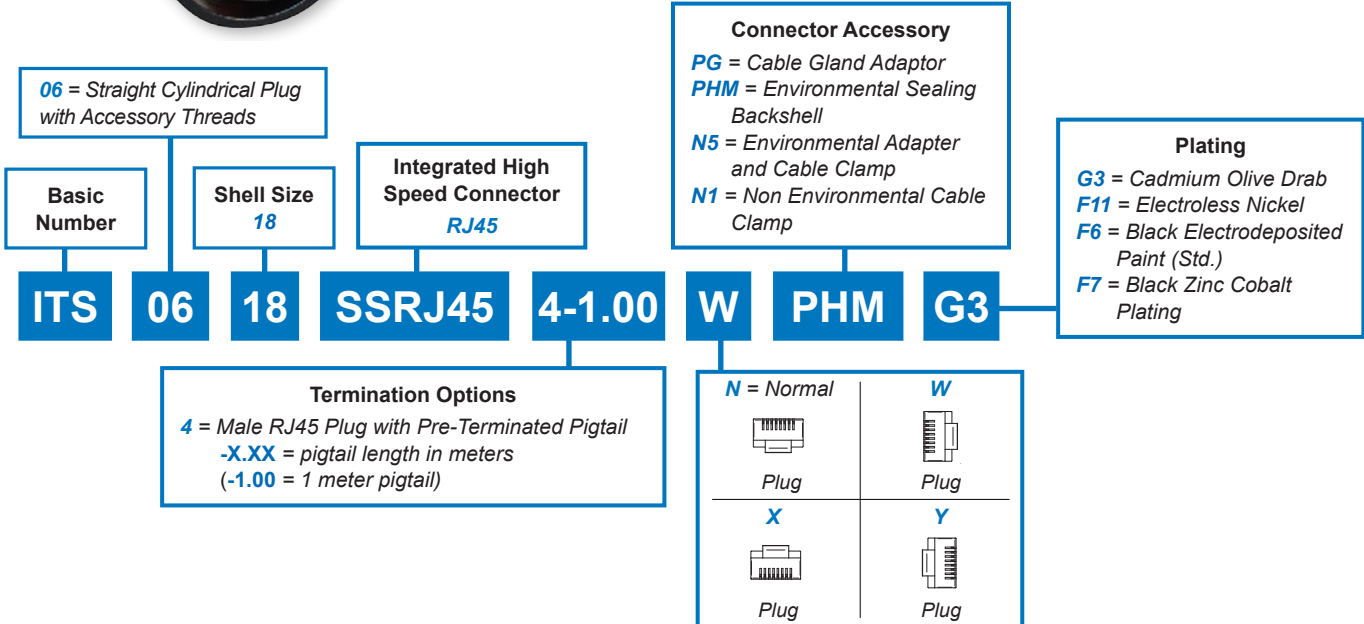
**B**



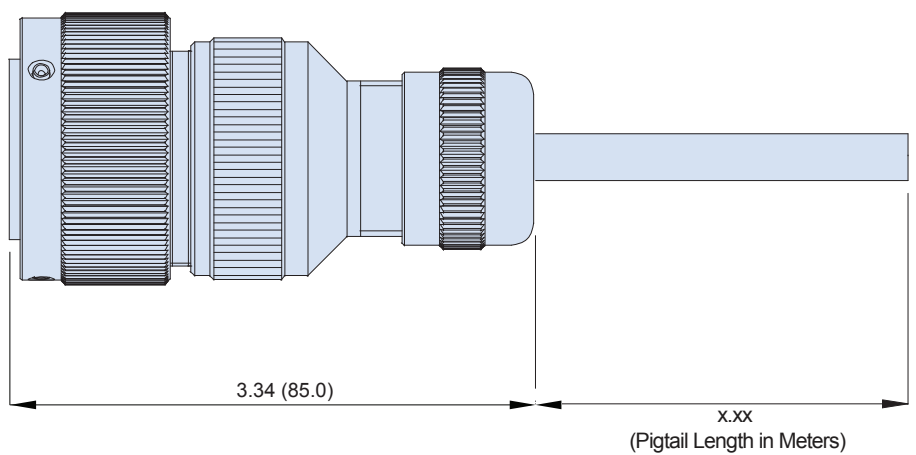
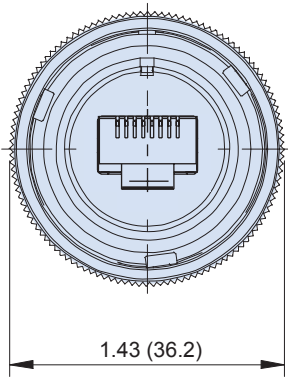
# SuperSeal™ 5015 Reverse Bayonet Plug with Cat 5e RJ45 Plug and Pre-Terminated Pigtail



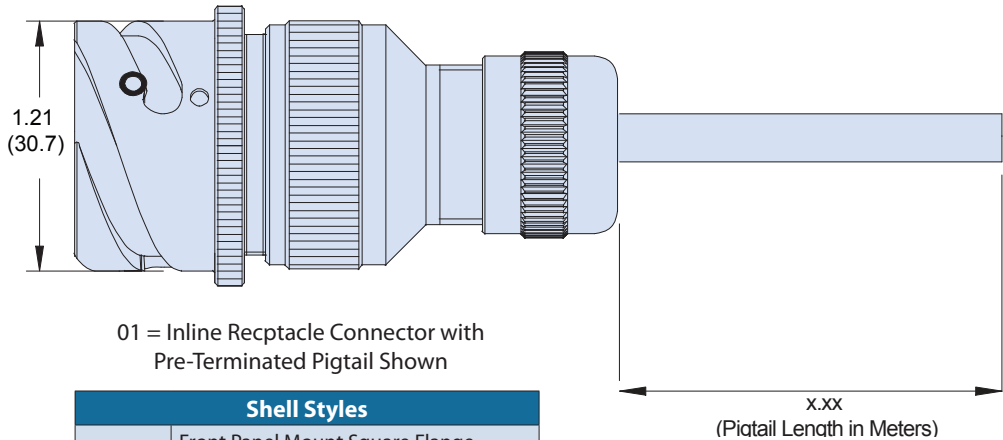
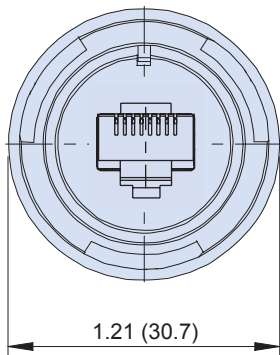
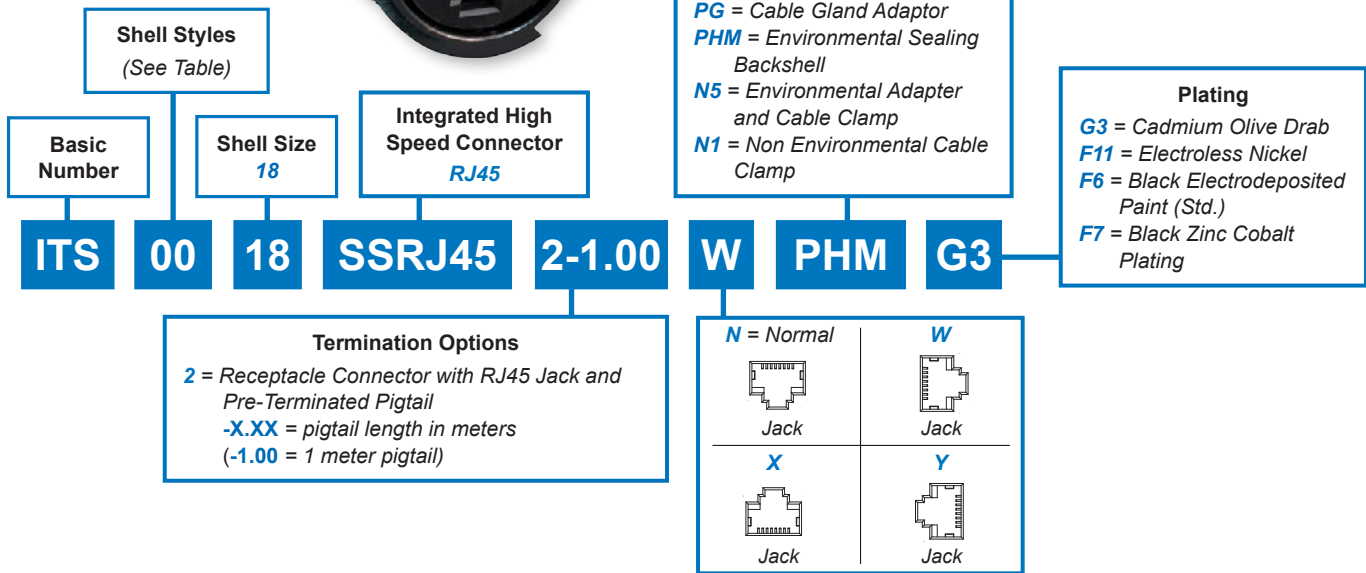
B



**06 = Straight Cylindrical Plug Connector with Pre-Terminated Pigtail**



# SuperSeal™ 5015 Reverse Bayonet Receptacle with Cat 5e RJ45 Jack and Pre-Terminated Pigtail



01 = Inline Receptacle Connector with Pre-Terminated Pigtail Shown

Shell Styles	
00	Front Panel Mount Square Flange Receptacle with Accessory Threads
01	In Line Cylindrical Receptacle with Accessory Threads
030	Rear Panel Mount Square Flange Receptacle with Accessory Threads
070	Rear Panel Mount Jam Nut Receptacle with Accessory Threads



# SuperSeal™ 5015 Reverse Bayonet Receptacle with Cat 5e RJ45 Jack and PCB Termination



Front View



Rear View

**03** = Rear Panel Mount Square Flange Receptacle without Accessory Threads

Basic Number

Shell Size  
**18**

Integrated High Speed Connector  
**RJ45**

**Plating**

**G3** = Cadmium Olive Drab  
**F11** = Electroless Nickel  
**F6** = Black Electrodeposited Paint (Std.)  
**F7** = Black Zinc Cobalt Plating

**ITS**

**03**

**18**

**SSRJ45**

**5**

**W**

**G3**

**Termination Options**

**5** = Rear-Mount Square Flange Receptacle with PCB Termination

**N** = Normal

**W**



Jack



Jack

**X**

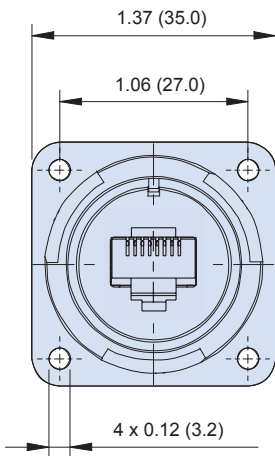
**Y**



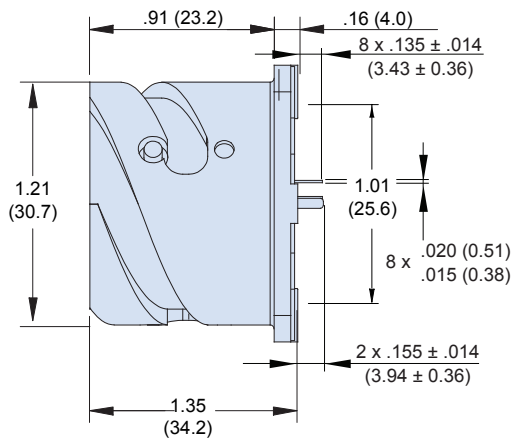
Jack



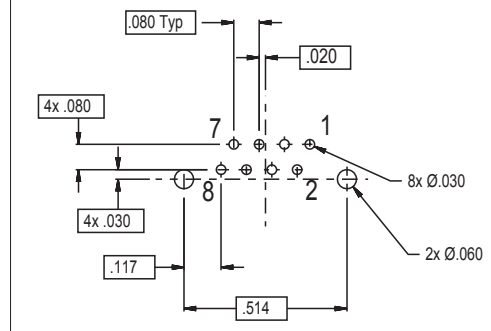
Jack



Front View



**Recommended PCB Layout for 03 (-5) Configurations Only**



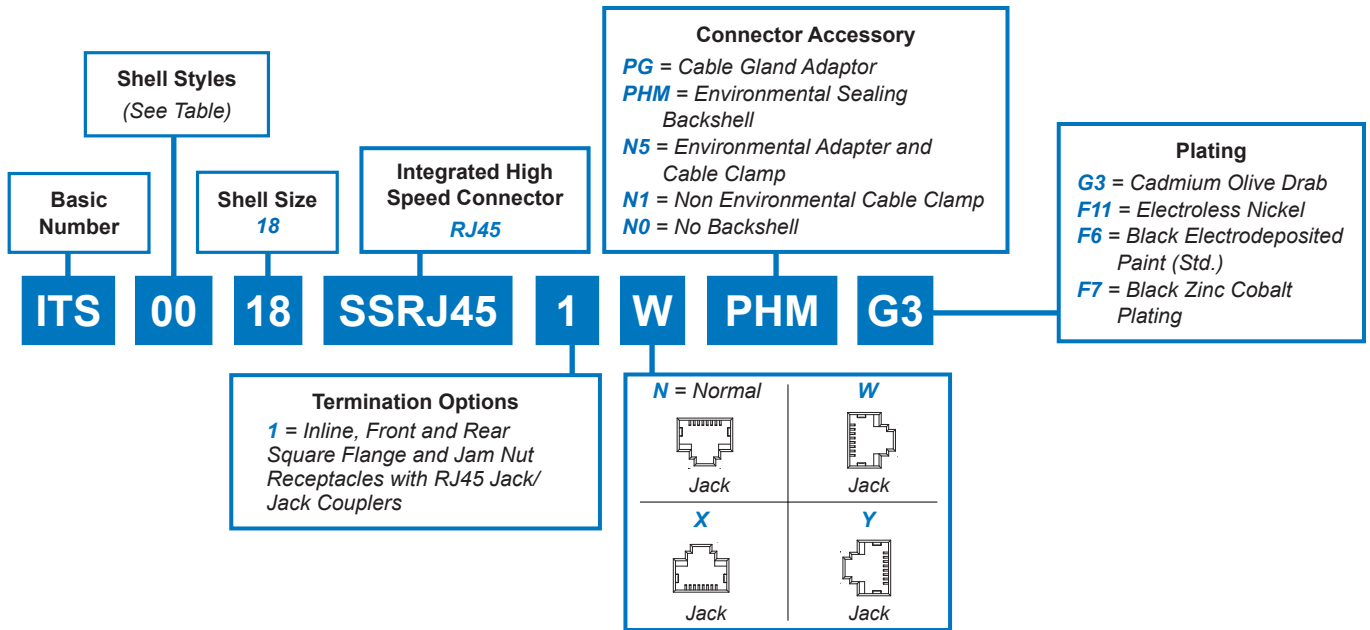
# SuperSeal™ 5015 Reverse Bayonet Receptacles with Cat 5e RJ45 Jack/ Jack Couplers



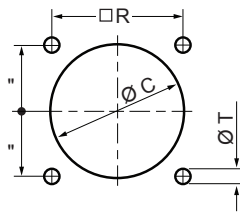
Front View

Rear View

Shell Styles	
00	Front Panel Mount Square Flange Receptacle with Accessory Threads
01	In Line Cylindrical Receptacle with Accessory Threads
030	Rear Panel Mount Square Flange Receptacle with Accessory Threads
070	Rear Panel Mount Jam Nut Receptacle with Accessory Threads

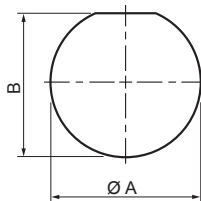


## Panel Cut-Out Dimensions



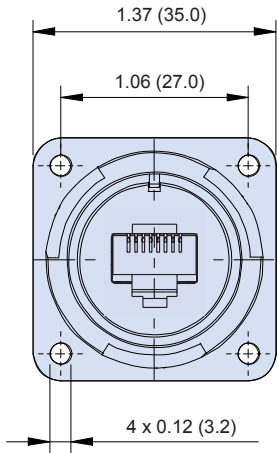
Panel Cutout for 00 and 02 Front Panel Mounting Connectors	
Shell Size	18
Ø C (mm)	26.5
R ± 0.1 (mm)	27
Ø T (mm)	3.4

Panel Cutout for 03 and 030 Rear Panel Mounting Connectors	
Shell Size	18
Ø C (mm)	31.7
R ± 0.1 (mm)	27
Ø T (mm)	4.5

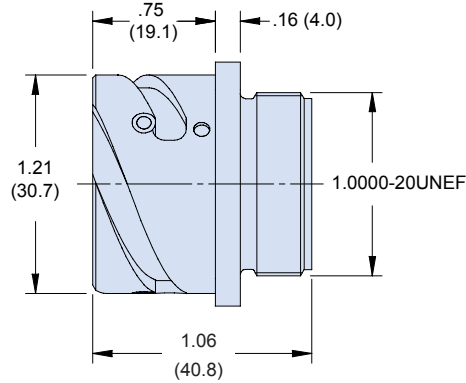


Jam Nut Receptacle Connectors	
Shell Size	18
Ø A + 0.25 (mm)	35.1
B - 0.35 (mm)	33.75

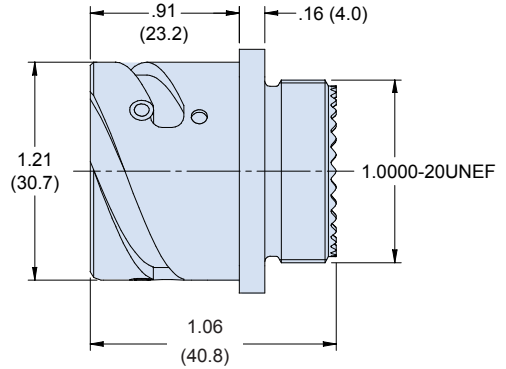
# SuperSeal™ 5015 Reverse Bayonet Receptacles with Cat 5e RJ45 Jack/Jack Couplers



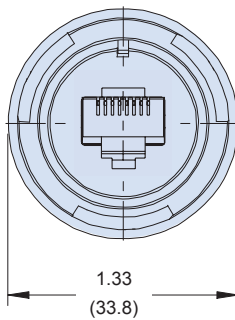
Front View



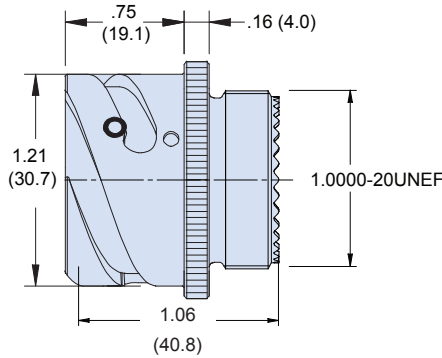
**00 = Front Panel Mount Square Flange  
Receptacle with Accessory Threads**



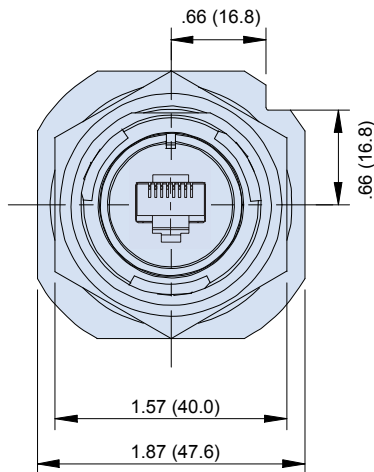
**030 = Rear Panel Mount Square Flange  
Receptacle with Accessory Threads**



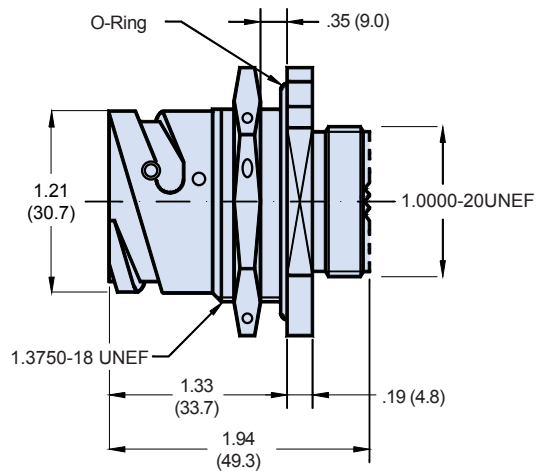
Front View



**01 = In Line Cylindrical Receptacle with  
Accessory Threads**



Front View

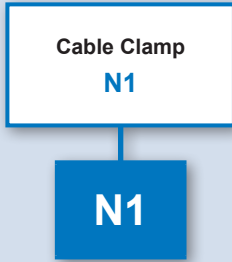


**070 = Rear Panel Mount Jam Nut Receptacle  
with Accessory Threads**

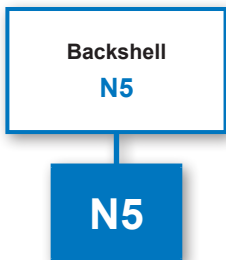
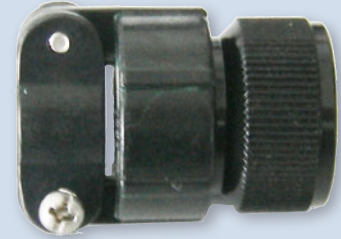
B



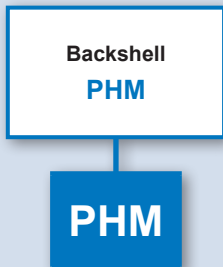
**SuperSeal™ Reverse Bayonet RJ45 Connectors**  
**MIL-DTL-5015 Type • Size 18 • Cat5e**  
Available Pigtail Configurations and Backshell Options



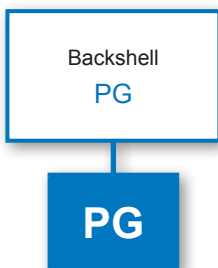
**The Glenair N1 cable clamp** provides a simple and effective strain relief option for all high speed data transmission connectors. Low profile saddle clamps purchase the cable just aft of the accessory threads for an unobtrusive and compact strain-relief solution. May be used in conjunction with a wide range of standard backshell accessories.



**The Glenair N5 backshell** offers users the benefits of an environmental sealing backshell combined with a style "C" cable clamp.



**The Glenair PHM backshell** utilizes a non-environmental compression bushing that provides ample strain relief for general duty applications.



**The Glenair PG cable gland** backshell provides basic environmental protection and strain relief for use with straight plugs.



B

MIL-DTL-38999 TYPE  
FIELD-READY  
USB 2.0/3.0

**MIL-DTL-38999 TYPE**

# SUPERSEAL™

*Rugged environmental MIL-DTL-38999 type connectors with IP68 sealing, robust insert-to-shell grounding, and a complete range of wire, cable, and circuit board terminations*



## Features

- Superior sealing—IP68 when mated—for complete system protection against water, sand and dust
- Highly durable USB design, including enhanced operating temperature, increased life-cycle, and rugged vibration and shock performance
- Shielded/grounded coupler designs in both receptacle and plug connectors
- Crimp, solder-cup, PC tail, and Quadrax contact/wire termination options
- USB 2.0 and 3.0 plug and receptacle versions
- Industry standard scoop proof, self-locking, triple-start threaded coupling design of MIL-DTL-38999 Series III type connectors
- Intermateable with other MIL-DTL-38999 type RJ45 field-duty connectors



**Glenair**®

Glenair, Inc.  
1211 Air Way  
Glendale, CA  
91201-2497  
818-247-6000  
sales@glenair.com  
www.glenair.com

USB SuperSeal™  
USB 2.0 Connectors  
D38999, Series III Type



Product Selection Guide



233-340

USB SuperSeal™ MIL-DTL-38999 Series III Type USB 2.0 Type A Plug-to-Receptacle or Receptacle-to-Receptacle Coupler



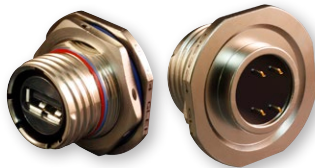
233-341

USB SuperSeal™ MIL-DTL-38999 Series III Type Connectors  
USB 2.0 Type A Receptacle to Size 22D Crimp Contacts



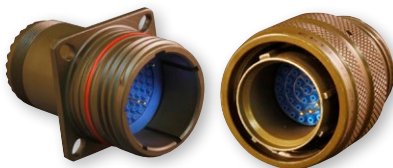
233-342

USB SuperSeal™ MIL-DTL-38999 Series III Type Receptacles  
USB 2.0 Type A Receptacle to PC Tail Termination



233-343

USB SuperSeal™ MIL-DTL-38999 Series III Type Receptacles  
USB 2.0 Type A Receptacle to Solder Cup Termination



233-344

USB SuperSeal™ MIL-DTL-38999 Series III Type Connectors  
Size 22 Pin or Socket Contacts to USB 2.0 Type A Receptacle



233-370

USB SuperSeal™ MIL-DTL-38999 Series III Type Receptacles  
Size 17 USB 2.0 Plug-to-Receptacle  
or Receptacle-to-Receptacle



## USB SuperSeal™ USB 2.0 Connectors D38999, Series III Type Materials, Performance Specifications and PCB Layout



### Material and Finishes:

Shell/coupling – High strength aluminum alloy  
 Plating – Cadmium olive drab over electroless nickel; Nickel PTFE; Electroless nickel  
 Contacts – PC tails, solder cup, and crimp contacts: Copper alloy, gold plated  
 Contacts – USB 2.0 Type A  
 Seals – Silicon-based elastomer  
 USB Insulator – LCP

*Composite, stainless steel and other materials and finishes available. Please consult factory.*

### Shell Type and Sizes:

Shell Type – D38999 Series III Type  
 Sizes – Shell sizes 15 and 17

### Electrical Specifications:

Data Rate – 480 Mbps USB 2.0 Type A  
 Signal Method – Pulling 2.0 USB Type A, Synchronous  
 Power Usage – 500 mAmps USB 2.0 Type A  
 Current Rating – 1.5 Amps, USB 2.0 Type A  
 D.W.V. – 500 VAC USB 2.0 Type A  
 Frequency – 1000 MegOhms USB 2.0 Type A  
 Wiring – Straight through  
 Cabling Length – 5.0 Meters USB 2.0 Type A  
 Shield Continuity – Continuous through coupler and grounded to shell, full shielding.

### Environmental / Mechanical Performance:

Sealing – IP68 mated condition  
 Outgassing – UL94 V0 low smoke, zero halogen  
 Operating Temperature Range – -40°C to +125°C  
 Vibration – 20g's, 3 Axis, 10 - 500 Hz  
 Mechanical Shock – 300 g's  
 Backshell Interface – MIL-DTL-38999 connector designator H  
 Mating Cycles – 500

### Options:

Round mounting holes, self-locking clinch nuts, plug-and-play cordsets, self-closing spring-loaded cover or anti-decoupling covers (receptacle only), integral shrink boot adapter and low-temp shrink boot (plug only).



**All External Dimensions, Features, etc.  
 Compliant with D38999/20, /24 & /26  
 Consult Factory for Additional Information**

# USB SuperSeal™ USB 2.0 Connectors D38999, Series III Type

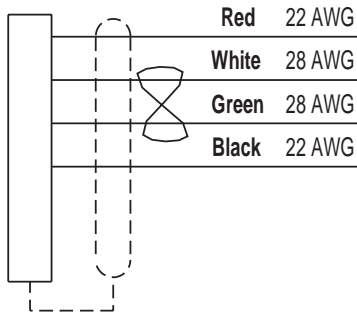
## USB Wiring, Customer Wiring Layout Guide and Recommended Mounting Holes



### Customer Wiring Layout Guide To Be Completed By the Customer

P1 ( Connector Interface )

Pin Locations To Be Determined  
By The Customer, Only 4 Pins Needed)



P2 ( USB 2.0 Female)

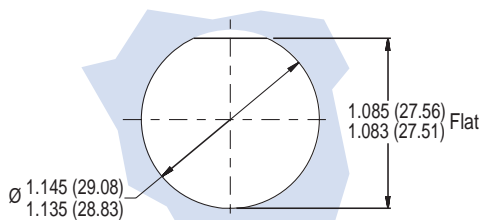
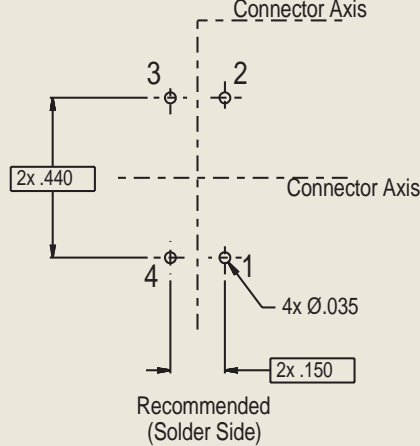
Pin	Name	Description
1	V-BUS	+5 V
2	D-	Data-
3	D+	Data+
4	GND	Ground

### USB 2.0 Wiring

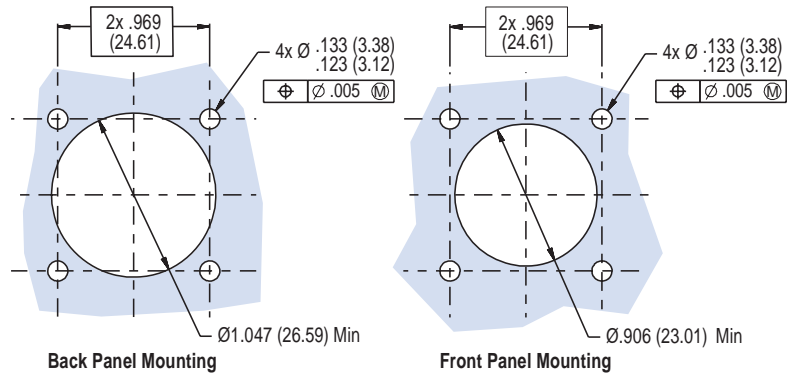
Pin	Name	Cable Color (USB)	Description	Recommended Wire Sizes (AWG)
1	(V BUS)	Red	+5 V	22
2	(D-)	White	Data -	28
3	(D+)	Green	Data +	28
4	(GND)	Black	Ground	22

### RECOMMENDED PCB LAYOUT

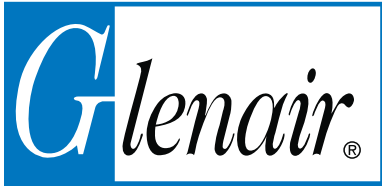
USB 2.0 / Type A  
(Horizontal Orientation)



Recommended Panel Cut Out

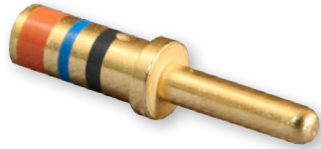


Recommended Mounting Holes For  
Wall Mount Receptacles



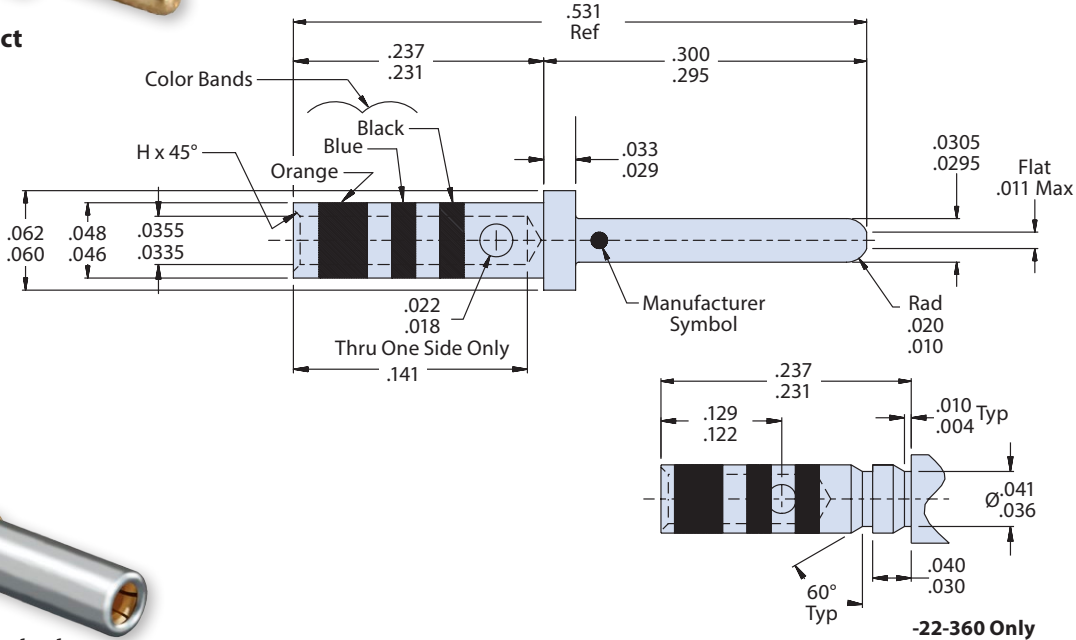
**M39029/58-360 and M39029/56-348**  
**850-002-22-360 and 850-001-22-348**  
**Standard Duty Electrical Pin and Socket Contacts**

**SIZE #22 PIN AND SOCKET CONTACTS FOR USE WITH USB SUPERSEAL™ 233-344 CONNECTORS**

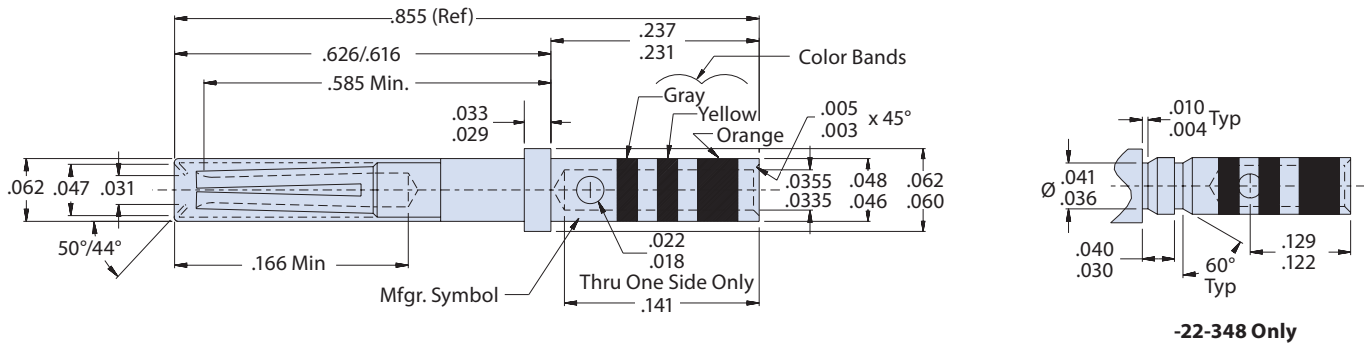


	Mating End Size	Wire Accomodation	Military Part Number	Glenair Part Number
Pin	22	22-28 AWG	<b>M39029/58-360</b>	<b>850-002-22-360</b>
Socket	22	22-28 AWG	<b>M39029/56-348</b>	<b>850-001-22-348</b>

**Pin Contact**



**Socket Contact**



**Termination Tools**

Size	Part Number	Military Number	AWG Handling	Crimp Tool	Positioner	Insertion Tool	Extraction Tool
22	Pin	850-002-22-360	M39029/58-360	22, 24, 26,	M22520/2-01	M22520/2-09	M81969/14-01
				28	M22520/7-01	M22520/7-07	M81969/8-01
22	Socket	850-001-22-348	M39029/56-348	22, 24, 26,	M22520/2-01	M22520/2-07	M81969/14-01
				28	M22520/7-01	M22520/7-05	M81969/8-01

# USB SuperSeal™ MIL-DTL-38999 Series III Type Connectors Contacts and Tools Size #22 Crimp Contact Instructions



## HOW TO TERMINATE, INSTALL AND REMOVE SIZE #22 CONTACTS

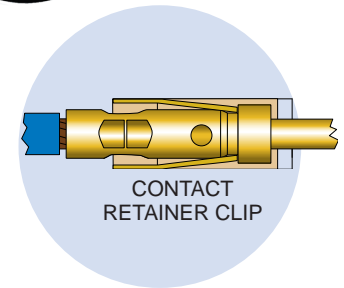
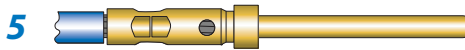
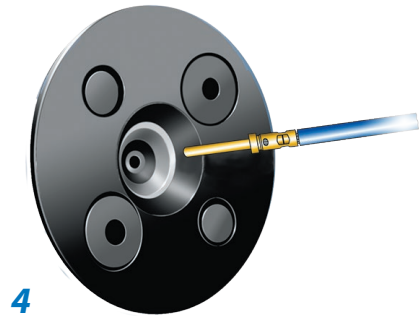
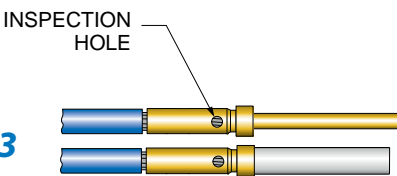
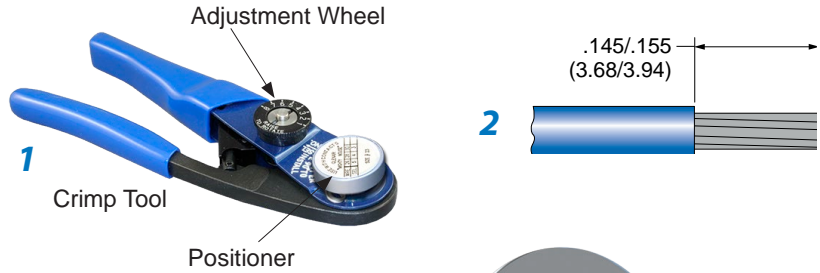
**1 Set Up Crimp Tool.** Install proper positioner into crimp tool. The label on the positioner shows the proper tool setting for each wire size. Turn the adjustment wheel to the correct setting.

**2 Strip Wire.** Remove wire insulation, taking care to avoid nicking or cutting wire strands. Strip wire to length shown.

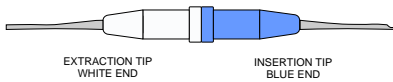
**3 Insert wire** into contact. The wire should be visible in the inspection hole.

**4** Insert contact into crimp tool as shown. Make sure that the contact is fully inserted into the tool. Squeeze handle completely. The ratchet mechanism will not allow a partial crimp. Release handle and remove contact.

**5 Inspect crimped contact.** Wire should be fully inserted and the crimp should be uniform in appearance.

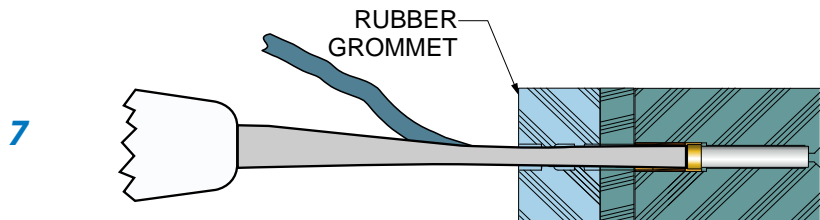
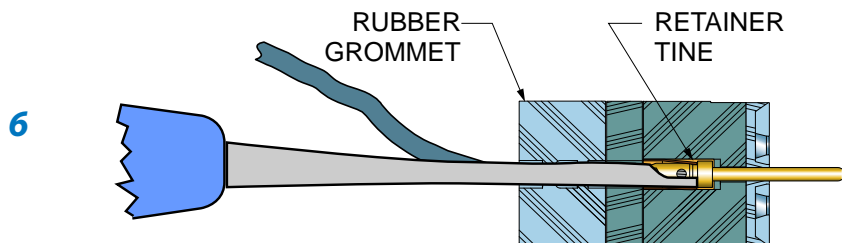


### Insertion/Extraction Tool M81969/14-01



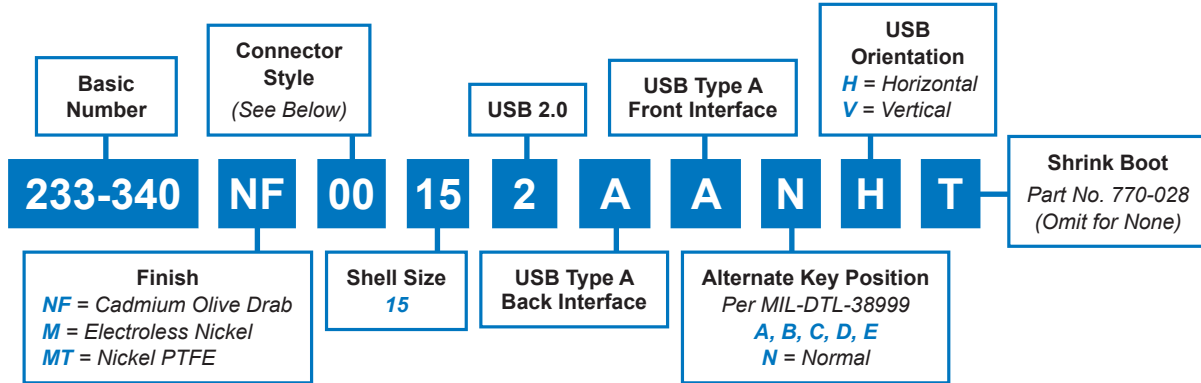
**6 Install contact into connector.** Push the contact through the rear grommet until the contact locks into place. This can usually be done by hand without the need for a tool. If the wire gage is #26 or smaller, a tool is helpful. There are two techniques for installing contacts with a tool. One method is to push the contact in by hand, then use the tool to finish the insertion. The other method is to position the insertion tip against the contact shoulder, then insert the contact. Use insertion/extraction tool 809-088 to install contacts. Slide the wire into the groove on the blue end of the tool. Slide the tool tip up the contact until it touches the contact shoulder. **USE CARE TO AVOID DAMAGING THE CONNECTOR.**

**7 Contact Extraction.** Use tool M81969/14-01. The white end is used for contact extraction. First, push the wire into the groove of the metal tip. Slide the tip of the tool into the connector. Push the tool into the connector cavity until the tip bottoms in the connector. Avoid wiggling or rocking the tip. This may damage the cavity. A straight push is best. Pinch the wire between your finger and the white plastic grip and slide the tool and contact out of the connector. **Wire insulation diameter greater than 0.045 inches (1.14mm) is too large to work properly with the extraction tool. connector damage is possible.**





**233-340**  
**USB SuperSeal™ D38999 Series III Type Connectors**  
**USB 2.0 Plug-to-Receptacle or**  
**Receptacle-to-Receptacle Coupler • Size 15**



**Square Flange Receptacle**  
Front View

**Plug**  
Front View

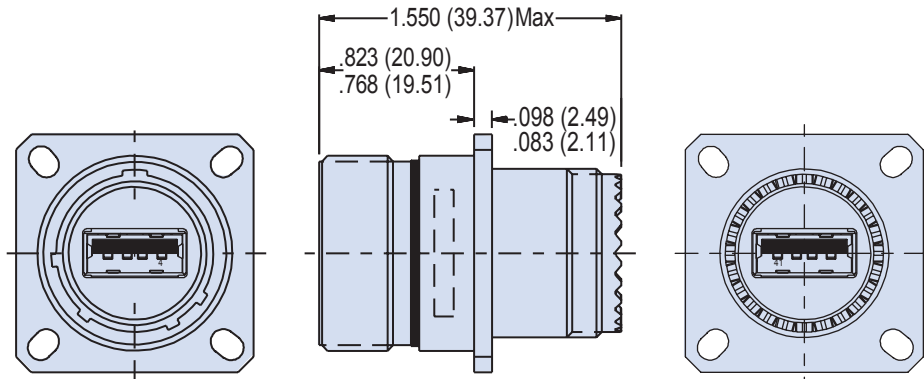
**Connector Styles**

**00** = Receptacle, Wall Mount with Slotted Holes  
**07** = Receptacle, Jam Nut Mount  
**G6** = Plug

All external dimensions, Features, etc. Compliant with D38999/20, /24 & /26.  
 Consult factory for additional information  
 Size 17 shells also available.  
 Consult factory, refer to P/N 233-360.

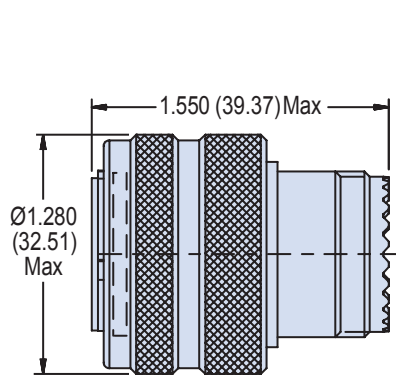
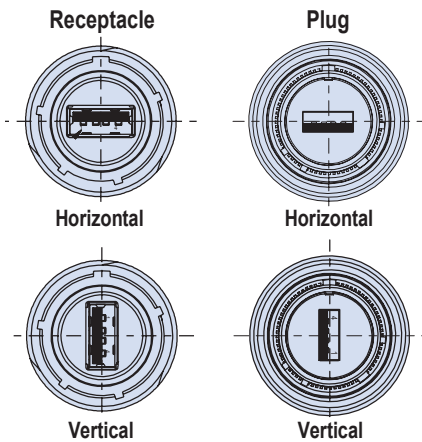


**Jam Nut Receptacle**  
Front View

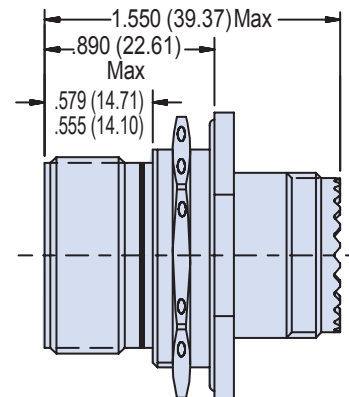


**Square Flange Receptacle**

**USB Orientation Options**  
*(Partial Views Shown)*



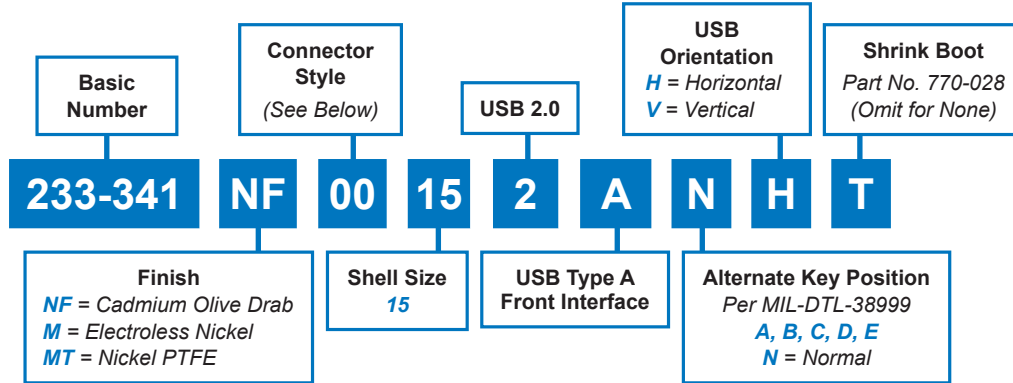
**Plug**



**Jam Nut**



233-341  
**USB SuperSeal™ D38999 Series III Type Connectors**  
**USB 2.0 Type A Receptacle**  
 to Size 22D Crimp Removable Contacts • Size 15



**Jam Nut Receptacle**  
Front View



**Square Flange Receptacle**  
Rear View



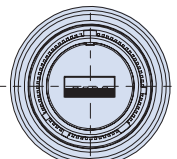
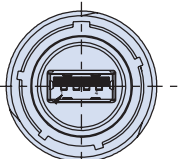
**Plug**  
Front View

**Connector Styles**  
 00 = Receptacle, Wall Mount with Slotted Holes  
 07 = Receptacle, Jam Nut Mount  
 G6 = Plug

**USB Orientation Options**  
(Partial Views Shown)

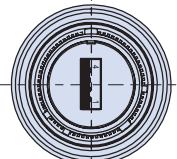
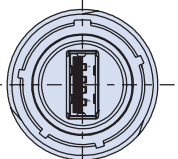
**Receptacle**

**Plug**



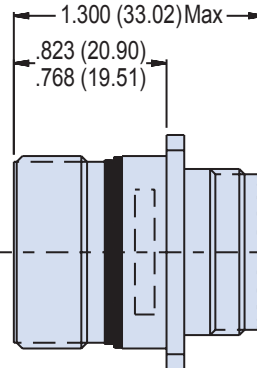
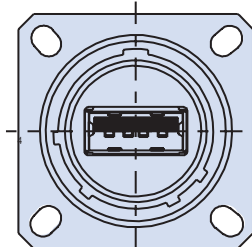
Horizontal

Horizontal

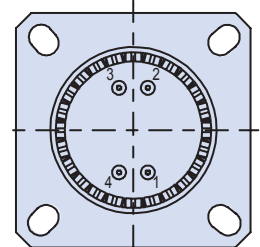


Vertical

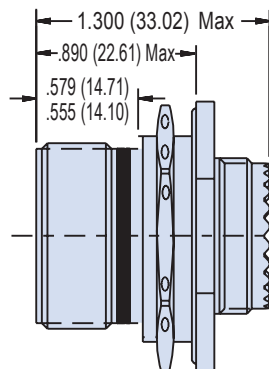
Vertical



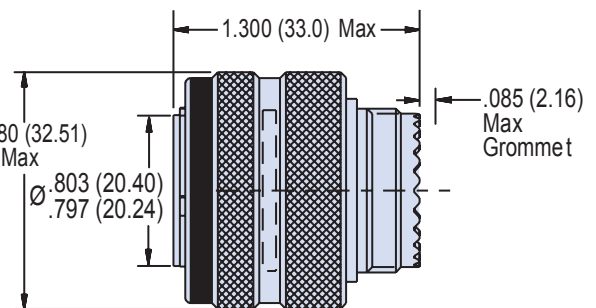
**USB 2.0 Special Arrangement**  
4 x Size 23 Cavities (Type A)



**Square Flange Receptacle**



**Jam Nut**



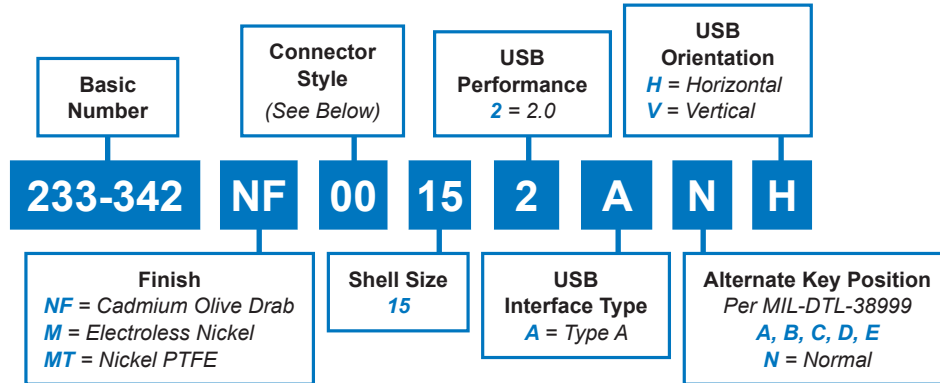
**Plug**

All External Dimensions, Features, etc. compliant with D38999/20, /24 & /26.

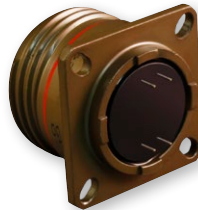
Consult Factory for Additional Information



**233-342**  
**USB SuperSeal™ D38999 Series III Type Receptacles**  
**USB 2.0 Type A Receptacle**  
**to PC Tail Termination • Size 15**



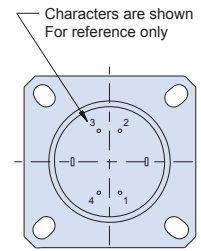
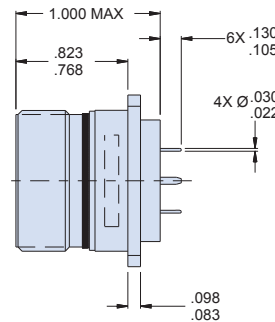
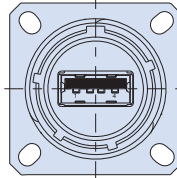
**Jam Nut Receptacle**  
Front View



**Square Flange Receptacle**  
Rear View

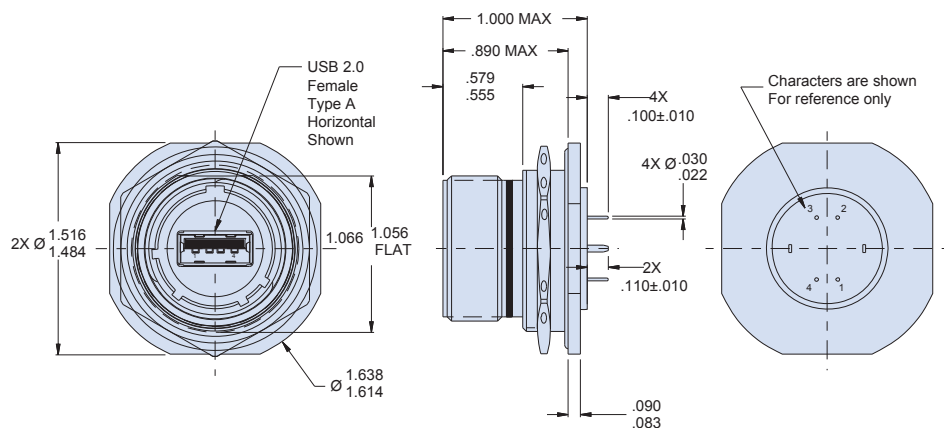
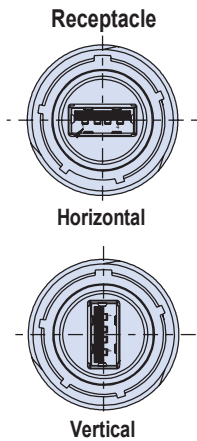
**Connector Styles**

**00** = Receptacle, Wall Mount with Slotted Holes  
**07** = Receptacle, Jam Nut Mount



**Square Flange Receptacle**

**USB Orientation Options**  
(Partial Views Shown)



**Jam Nut Receptacle**

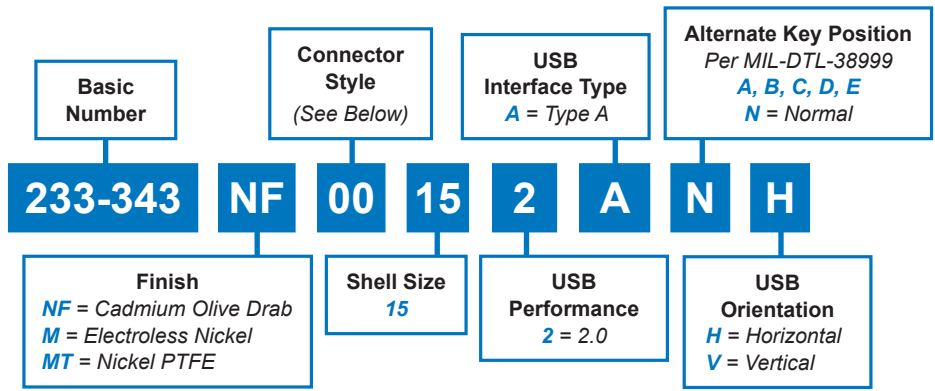
All External Dimensions, Features, etc. compliant with D38999/20, /24 & /26.

Consult Factory for Additional Information

233-343  
**USB SuperSeal™ D38999 Series III Type Receptacles**  
 USB 2.0 Type A Receptacle  
 to Solder Cup Termination • Size 15



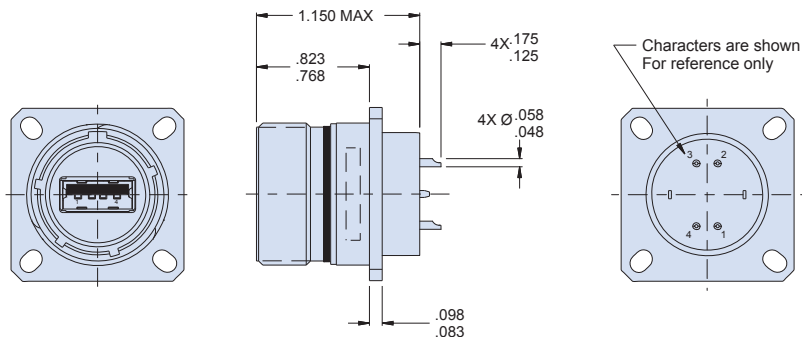
D38999 Type  
 USB Connectors



Jam Nut Receptacle  
 Front View

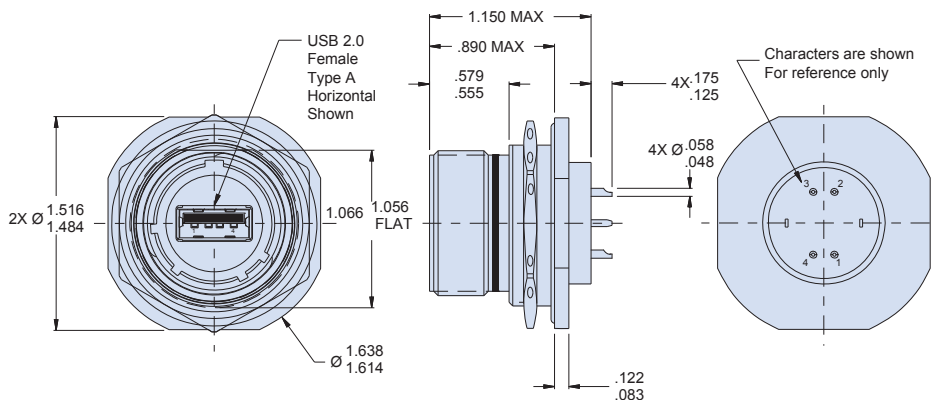
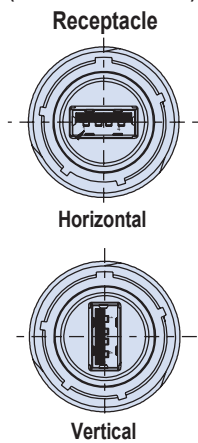
Jam Nut Receptacle  
 Rear View

**Connector Styles**  
 00 = Receptacle, Wall Mount  
 with Slotted Holes  
 07 = Receptacle, Jam Nut Mount



Square Flange Receptacle

**USB Orientation Options**  
 (Partial Views Shown)



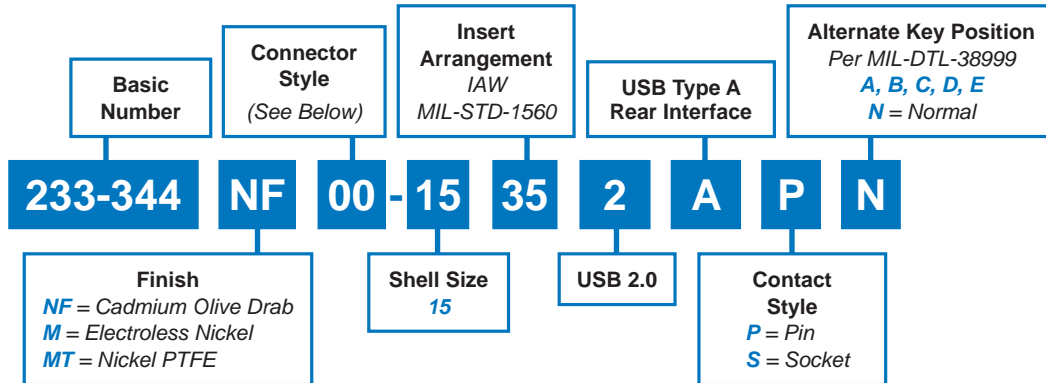
Jam Nut Receptacle

All External Dimensions,  
 Features, etc. compliant with  
 D38999/20, /24 & /26.

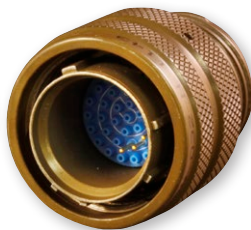
Consult Factory for Additional Information



**233-344**  
**USB SuperSeal™ D38999 Series III Type Connectors**  
 Size 22 Pin or Socket Contacts to  
 USB 2.0 Type A Receptacle • Size 15



**Receptacle Front View**

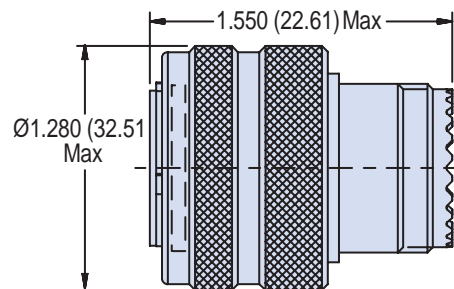
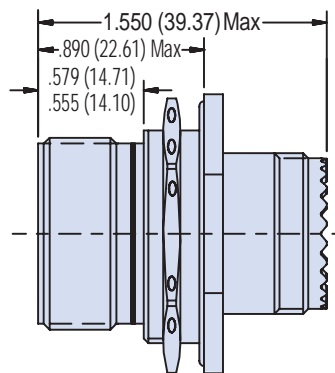
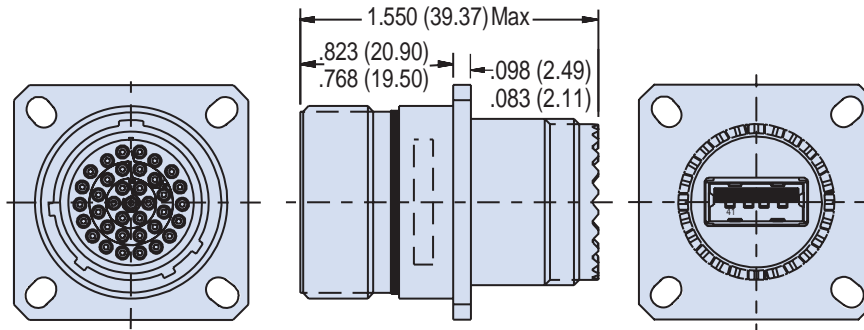


**Plug Front View**

**Connector Styles**

- 00** = Receptacle, Wall Mount with Slotted Holes
- 07** = Receptacle, Jam Nut Mount
- G6** = Plug

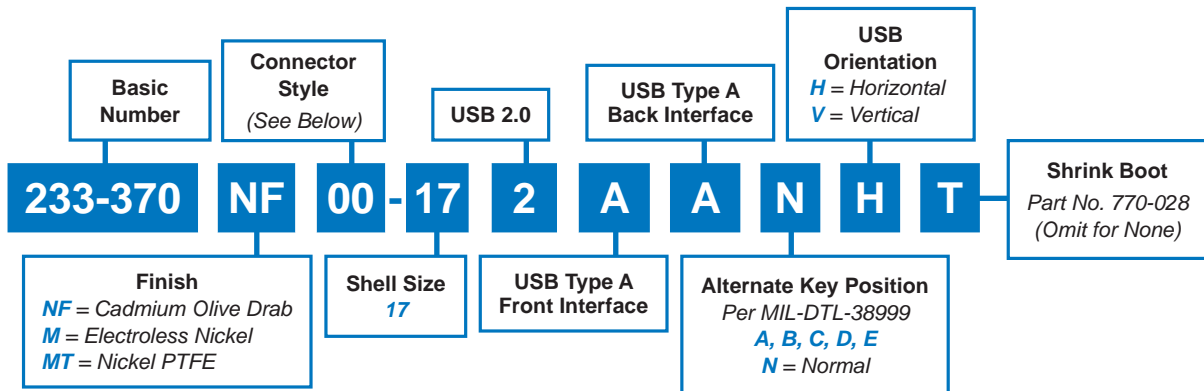
All External Dimensions, Features, etc. compliant with D38999/20, /24 & /26. Consult Factory for Additional Information.  
 Size 17 shells also available. Consult factory, refer to P/N 233-361.



233-370  
**USB SuperSeal™ D38999 Series III Type Receptacles**  
 USB 2.0 Plug-to-Receptacle or  
 Receptacle-to-Receptacle Coupler • Size 17



D38999 Type  
USB Connectors

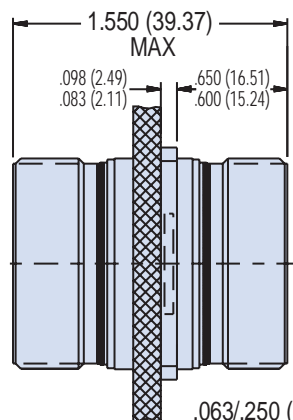
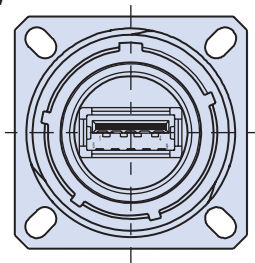


**Square Flange Receptacle Jam Nut Receptacle Front View**

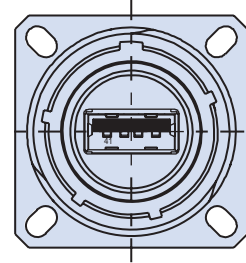


**Front View**

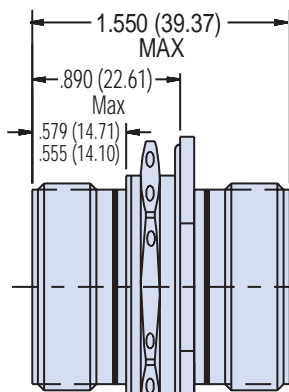
**Connector Styles**  
 00 = Receptacle, Wall Mount with Slotted Holes  
 07 = Receptacle, Jam Nut Mount



.063/.250 (1.60/6.35)  
Panel Accommodation  
This Side Only



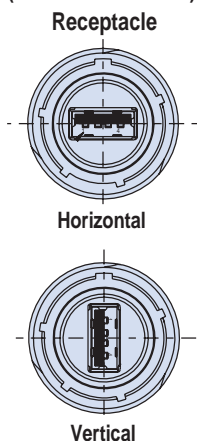
**Square Flange Receptacle**



**Jam Nut**

All External Dimensions, Features, etc. compliant with D38999/20, /24 & /26. Consult Factory for Additional Information

**USB Orientation Options (Partial Views Shown)**



SERIES 80 MIGHTY  
MOUSE FIELD-  
READY MICRO USB

# SERIES 80 MIGHTY MOUSE MICRO USB SUPERSEAL™

*Series 801 Mighty Mouse connectors with superior sealing, shielding and crimp contact termination*



## Features

- Superior sealing—IP68 when mated—for complete system protection against water, sand and dust
- Shielded/grounded coupler designs in both receptacle and plug connectors
- Crimp contact termination
- Integrated banding porch or connector accessory interface
- Micro USB “B” plugs and universal “AB” receptacles
- Double-start stub ACME threaded coupling standard. Consult factory for available QDC push-pull and triple-start threaded versions
- Less than half the size and weight compared to MIL-DTL-38999 type solutions



# SuperSeal™ Mighty Mouse Series 801 Micro USB Connectors



## Product Selection Guide



### Preliminary Performance Specifications

Connector test and performance specifications per MIL-DTL-38999, Universal Serial Bus and other applicable standards.



### Size #23 Contacts and Tools

Size #23 Pin Contacts for use with the Micro-B USB connectors in this catalog, plus appropriate tools and termination instructions.



### 801-082 and 801-083

SuperSeal™ Mighty Mouse Series 801 Plugs with Micro "B" USB Plug and Rear Crimp Contact Wire Termination



### 801-084 and 801-085

SuperSeal™ Mighty Mouse Series 801 Receptacles with Micro "AB" USB Receptacle with Rear Crimp Contact Wire Termination



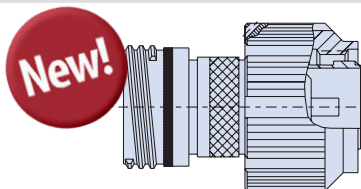
### 801-087 and 801-088

SuperSeal™ Mighty Mouse Series 801 Plugs with Front and Rear Micro "B" USB Plugs



### 801-089 and 801-090

SuperSeal™ Mighty Mouse Series 801 Receptacles with Front and Rear Micro "AB" USB Receptacles



### 801-091

SuperSeal™ Mighty Mouse Series 801 Sav-Con® Connector Saver with Micro "B" USB Plug and Micro "AB" USB Receptacle

## SuperSeal™ Mighty Mouse Series 801 Micro USB Connectors Materials and Performance Specifications

### Material and Finishes:

Shell/coupling – High strength aluminum alloy  
 Plating – Cadmium olive drab over electroless nickel; Nickel PTFE; Electroless nickel  
 Contacts – Copper alloy, gold plated  
 USB insulator – LCP  
 Seals – Silicon-based elastomer  
*Stainless steel and other materials and finishes available.  
 Please consult factory.*

### Shell Type and Sizes:

Mating – Double-start stub ACME threaded, QDC push-pull, and triple-start threaded  
 Size – Shell size 8

### Micro USB Electrical Specifications:

Voltage Rating – 30 VAC (rms)  
 Current Rating – Signal pins 1.0A, Power pins 1.8A  
 D.W.V. – 600 VAC  
 Shield Continuity – Continuous through coupler or continuous coupler to shell

### Environmental / Mechanical Performance

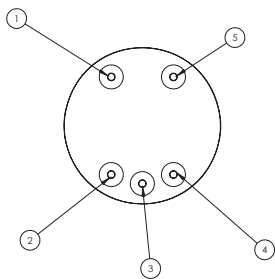
Sealing – IP68 mated condition  
 Operating Temperature Range – -40°C to +125°C  
 Vibration – 37 g's  
 Mechanical Shock – 300 g's  
 Mating Cycles – 10,000

### Options:

Complete range of protective covers, both metal and rubber are available



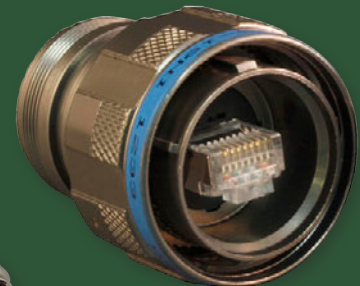
Crimp Contact Pin Layout



Pin Number	USB Designation	Typical Wiring Assignment
1	VBUS	RED
2	D-	WHITE
3	D+	GREEN
4	ID	RA_PLUG_ID
5	GND	BLACK
SHELL	SHIELD	DRAIN WIRE

**UP TO 71% WEIGHT SAVINGS!**  
**UP TO 52% SIZE SAVINGS!**

Series 801  
Mighty Mouse  
Micro USB



MIL-DTL-38999 Type  
RJ45

*The series 801 connector offers up to 71% weight savings and 52% size reduction when compared to a D38999 Series III connector.*



**SuperSeal™ Mighty Mouse Series 801  
Micro USB Connectors  
Performance Specifications - Preliminary Data**



**PERFORMANCE SPECIFICATIONS: PRELIMINARY DATA**

Test Description	Performance Requirements/Specifications	Procedure Per MIL-DTL-38999 Or Other Standard
Dielectric withstanding voltage	Maximum leakage current = 2 milliamperes No evidence of electric breakdown or flashover	4.5.11.1 or 4.5.11.2 IAW EIA-364-20, Method A
Insulation resistance	At ambient temperature: >5000 megohms between any pair of contacts and between any contact and the shell. after altitude immersion = 1000 megohms min. after humidity = 100 megohms min. At elevated temperature: >1000 megohms	4.5.10.1 and 4.5.10.2 IAW EIA-364-21
Contact resistance	Terminal-to-terminal resistance of mated connector contacts shall not exceed 0.050 ohms.	4.5.14
Mating durability	500-1000 cycles depending on plating, with no mechanical damage. Dielectric, contact resistance and air pressure requirements as described above shall be met after 500-1000 mating cycles.	4.5.8
Contact retention	Individual contacts capable of withstanding at least 10 pounds axial load applied uniformly at one pound per second.	IAW EIA-364-29
Vibration and Shock	37 g's random vibration, 300 g's shock. No electrical discontinuity, no disengagement of mated connectors, backing off of the coupling mechanism, or evidence of cracking, breaking, or loosening.	4.5.23
Temperature cycling	-65°C to 175°C or 200°, depending on finish. No blistering, peeling or separation of plating or other damage detrimental to the operation of the connector.	4.5.4 EIA364-32, Test condition A
Salt spray	5% solution, 34°-36°C. 48-1000 hours, depending on finish. Unmated connectors show no lifting of plated coating or exposure of basis material under 3X magnification which adversely affects performance.	4.5.13 EIA-364-26
Humidity	Cycle wired, mated connectors between 25 °C at 80 % and 65 °C at 50 %. Ramp time = 0.5 hour, dwell = 1.0 hour. 24 cycles.	4.5.26 EIA364-31, Method IV
Water immersion	1 Meter for 1 Hour, mated.	MIL-STD-810 Method 512
EMI Shielding	Series 801: Good Series 804: Very Good Series 805: Excellent	4.5.28 EIA-364-66

**Electrical Specs - Plug:**

IEC Compatibility (EN61000-4)
61000-4-2 (ESD): Air Gap And HBM - 15kV, Contact - 8kV
Bi-Directional Configuration
Ultra Low Leakage Current

**Electrical Specs - Receptacle:**

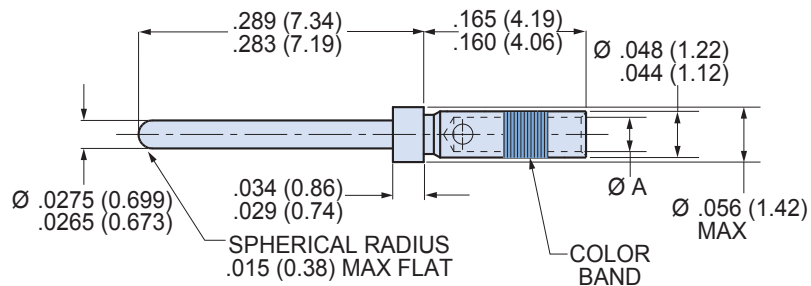
IEC Compatibility (EN61000-4)
61000-4-2 (ESD): Air Gap And HBM - 15kV, Contact - 8kV
Bi-Directional Configuration
Ultra Low Leakage Current

### SIZE #23 CRIMP CONTACTS



Standard size #23 contacts accept #22 to #28 AWG wire. Choose "small bore" versions for #26 to #30 AWG wire. For thermocouple applications, specify alumel or chromel contacts. Contacts are bulk packaged. Terminate with standard M22520 crimper with special positioner.

Contact Type	Wire Size	Material	Part Number	Ø A		Color Band	Tool Code
				In.	mm.		
Pin	#22 - #28	BeCu	<b>809-001</b>	.0335-.0355	0.851-0.902	None	A, C
Pin	#26 - #30	BeCu	<b>809-042</b>	.0229-.0245	0.582-0.622	Blue	A, D



#### Crimp Tensile Strength

Values are in pounds and are minimums.

Wire Gage	Silver or Tin Coated Copper Wire	Nickel Coated Copper Wire
#22	12	8
#24	8	6
#26	5	3
#28	3	2
#30	1.5	1.5

#### Material and Finish

Beryllium copper alloy per ASTM B196 or B197, 50 microinches gold plated per ASTM B488 Type II Code C Class 1.25 over nickel plate per QQ-N-290 Class 2, 50-100 microinches.

Thermocouple contacts: alumel or chromel alloy, unplated, per ANSI 96.1

#### Specifications

Current Rating: 5 Amps maximum

Voltage Drop (at 5 Amps and 25° C): 70 millivolts maximum

Temperature Range: -65° to + 200° C

### MINIATURE ADJUSTABLE CRIMP TOOL AND POSITIONER



Standard M22520/2-01 crimper for use with standard size #23 Mighty Mouse contacts. Performs precision eight-indent crimps for gas-tight wire terminations and excellent tensile strength. Adjustment wheel has 8 settings. Ratchet mechanism prevents improper crimps. Length is 6.75 inches, weight is approx. 10 oz. Bayonet-type positioner 809-005 hold contacts at correct height for crimping. Check calibration with M22520/3 gages.

Tool	Part Number	Military Part Number	Daniels Part Number	Tool Code
Crimp Tool	<b>809-015</b>	M22520/2-01	AFM8	A
Positioner	<b>809-005</b>	(none)	K1461	C

# Series 80 Mighty Mouse Contacts and Tools Size #23 Crimp Contact Instructions



## HOW TO TERMINATE, INSTALL AND REMOVE SIZE #23 CONTACTS

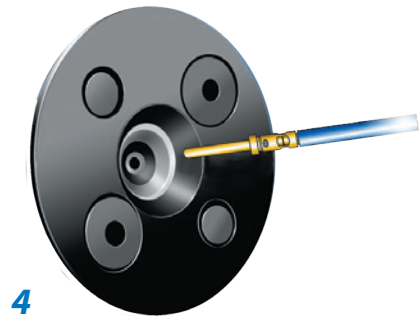
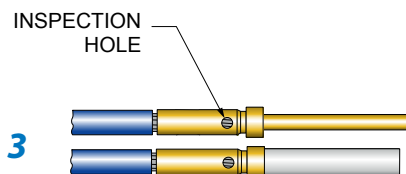
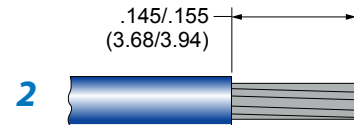
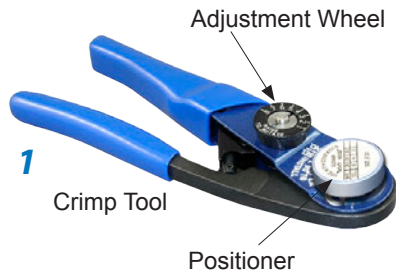
**1 Set Up Crimp Tool.** Install proper positioner into crimp tool. The label on the positioner shows the proper tool setting for each wire size. Turn the adjustment wheel to the correct setting.

**2 Strip Wire.** Remove wire insulation, taking care to avoid nicking or cutting wire strands. Strip wire to length shown.

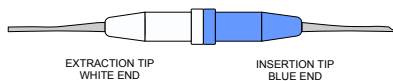
**3 Insert wire** into contact. The wire should be visible in the inspection hole.

**4** Insert contact into crimp tool as shown. Make sure that the contact is fully inserted into the tool. Squeeze handle completely. The ratchet mechanism will not allow a partial crimp. Release handle and remove contact.

**5 Inspect crimped contact.** Wire should be fully inserted and the crimp should be uniform in appearance.

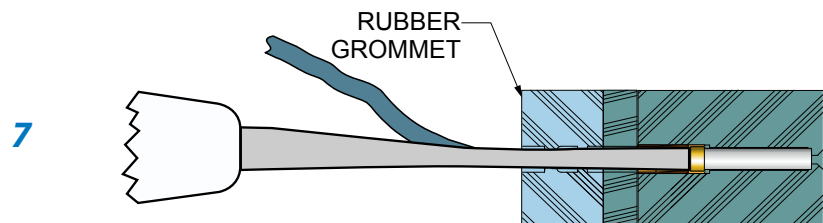
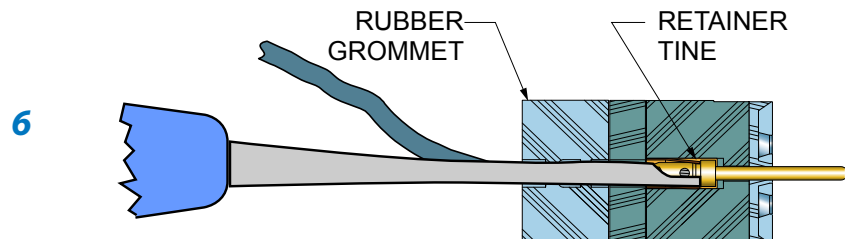
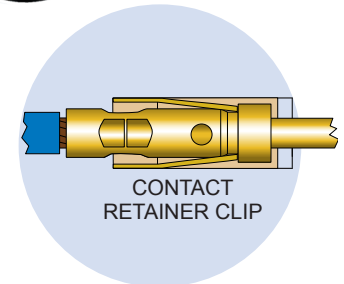
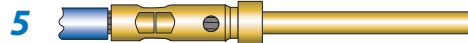


Insertion/Extraction Tool 809-088



**6 Install contact into connector.** Push the contact through the rear grommet until the contact locks into place. This can usually be done by hand without the need for a tool. If the wire gage is #26 or smaller, a tool is helpful. There are two techniques for installing contacts with a tool. One method is to push the contact in by hand, then use the tool to finish the insertion. The other method is to position the insertion tip against the contact shoulder, then insert the contact. Use insertion/extraction tool 809-088 to install contacts. Slide the wire into the groove on the blue end of the tool. Slide the tool tip up the contact until it touches the contact shoulder. **USE CARE TO AVOID DAMAGING THE CONNECTOR.**

**7 Contact Extraction.** Use tool 809-088. The white end is used for contact extraction. First, push the wire into the groove of the metal tip. Slide the tip of the tool into the connector. Push the tool into the connector cavity until the tip bottoms in the connector. Avoid wiggling or rocking the tip. This may damage the cavity. A straight push is best. Pinch the wire between your finger and the white plastic grip and slide the tool and contact out of the connector. **Wire insulation diameter greater than 0.045 inches (1.14mm) is too large to work properly with the extraction tool. connector damage is possible.**





# 801-082 and 801-083 SuperSeal™ Mighty Mouse Series 801 Plugs with Micro "B" USB Plug and Rear Crimp Contact Wire Termination



Plug, Micro B  
USB Front and  
Crimp Rear View



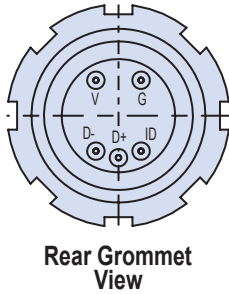
**Basic Number**  
801-082 = Shield Termination Porch  
801-083 = Accessory Threads

**Finish**  
NF = Cadmium Olive Drab  
M = Electroless Nickel  
MT = Nickel PTFE  
ZNU = Black Zinc Nickel

**801-082 - 16 MUSB - M A**

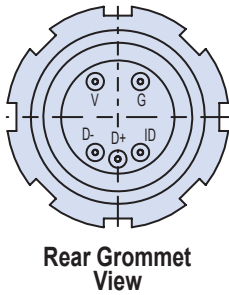
**Shell Style**  
16 = Plug with Anti-Decoupling Spring  
26 = Self-Locking Plug with Ratchet Mechanism

**Alternate Key Position**  
A, B, C, D, E, F



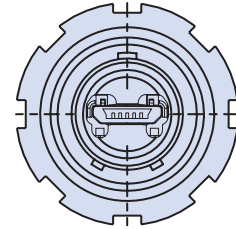
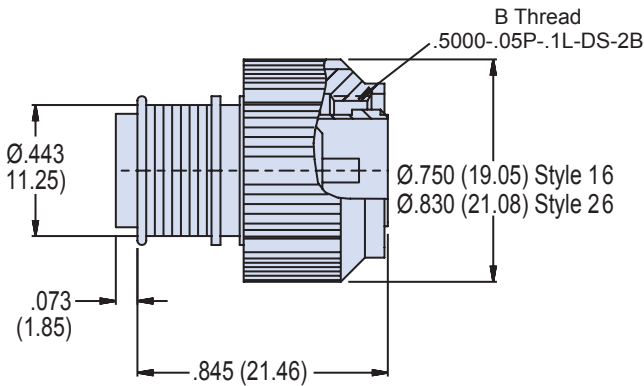
Rear Grommet  
View

801-082 Micro USB Plug B  
with Shield Termination Porch

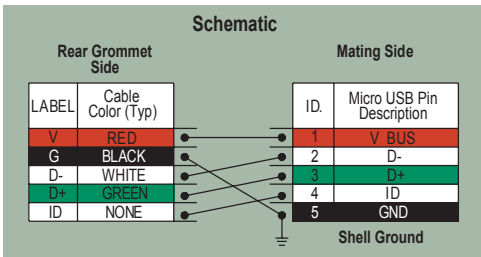
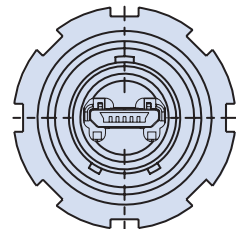
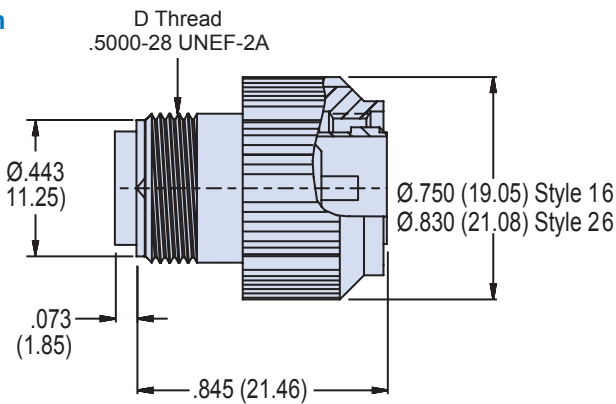


Rear Grommet  
View

801-083 Micro USB Plug B  
with Accessory Threads



These Plug Connectors  
Mate with Glenair  
Receptacles 801-084,  
801-085, and 801-090



Plug and Receptacle Key Positions		
	A°	B°
A	150°	210°
B	75°	210°
C	95°	230°
D	140°	275°
E	75°	275°
F	95°	210°

**801-084 and 801-085**  
**SuperSeal™ Mighty Mouse Series 801 Receptacles**  
 with Micro "AB" USB Receptacle with  
 Rear Crimp Contact Wire Termination



**Square Flange Mount, Micro AB USB Receptacle**

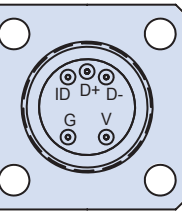
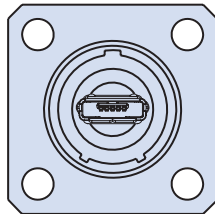
**Rear Panel Jam Nut Mount, Micro AB USB Receptacle**



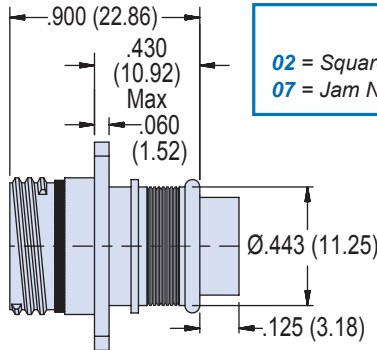
Micro-AB USB accepts both Micro-A and Micro-B plugs.



**Crimp Termination Rear View**



**Rear Grommet View**



**801-084-02 Square Flange Mount Receptacle with Shield Termination Porch**

**801-084 - 02 MUSB - M A**

**Basic Number**

801-084 = Shield Termination Porch  
 801-085 = Accessory Threads

**Finish**

NF = Cadmium Olive Drab  
 M = Electroless Nickel  
 MT = Nickel PTFE  
 ZNU = Black Zinc Nickel

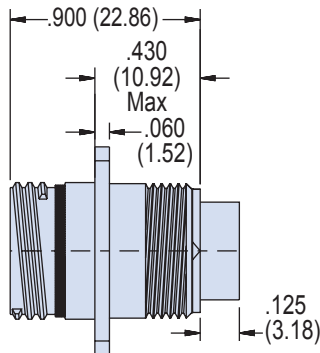
**Shell Style**

02 = Square Flange Mount Receptacle  
 07 = Jam Nut Mount Receptacle

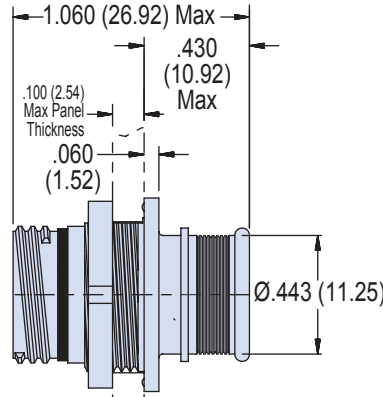
**Alternate Key Position**

A, B, C, D, E, F

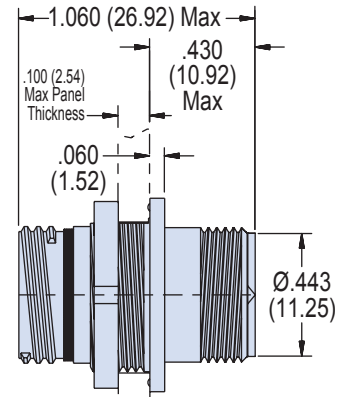
**These Micro AB Receptacles Mate with Glenair Plugs 801-082, 801-083, 801-087 and 801-088**



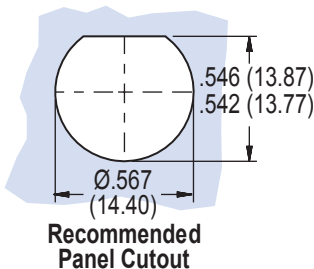
**801-085-02 Square Flange Mount Receptacle with Accessory Threads**



**801-084-07 Jam Nut Mount Receptacle with Shield Termination Porch**



**801-085-07 Jam Nut Mount Receptacle with Accessory Threads**

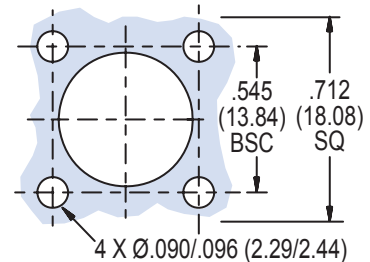


**Recommended Panel Cutout**

**Schematic**

Rear Grommet Side		Mating Side	
LABEL	Cable Color (Typ)	ID	Micro USB Pin Description
V	RED	1	V BUS
G	BLACK	2	D-
D-	WHITE	3	D+
D+	GREEN	4	ID
ID	NONE	5	GND

Shell Ground





# 801-087 and 801-088 SuperSeal™ Mighty Mouse Series 801 Plugs with Front and Rear Micro "B" USB Plugs



Plug, Micro B USB  
Front and Rear View

These Plugs Mate with  
Glenair Receptacles  
801-084 and 801-085

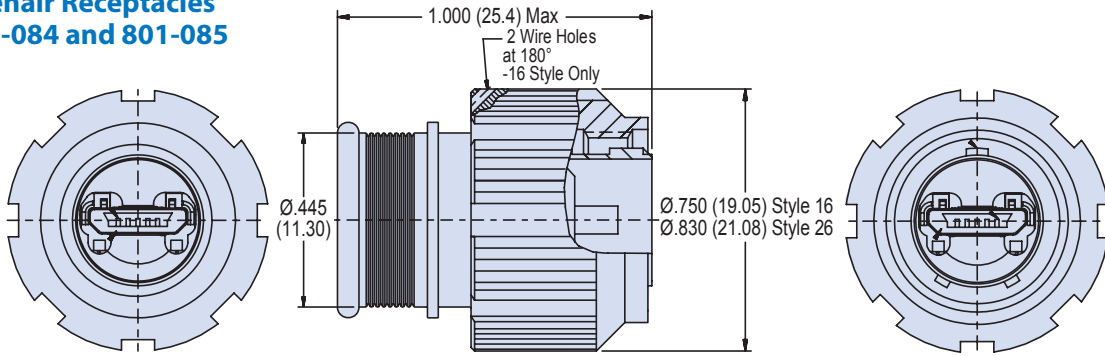
**Basic Number**  
801-087 = Shield Termination Porch  
801-088 = Accessory Threads

**Finish**  
NF = Cadmium Olive Drab  
M = Electroless Nickel  
MT = Nickel PTFE  
ZNU = Black Zinc Nickel

**801-087 - 16 MUSB - M A**

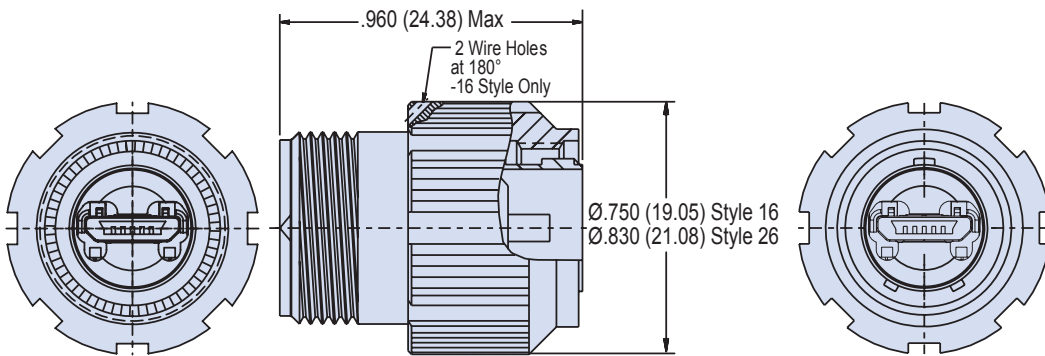
**Shell Style**  
16 = Plug with Anti-Decoupling Spring  
26 = Self-Locking Plug with Ratchet Mechanism

**Alternate Key Position**  
A, B, C, D, E, F



801-087 Micro USB Plug B  
with Termination Porch

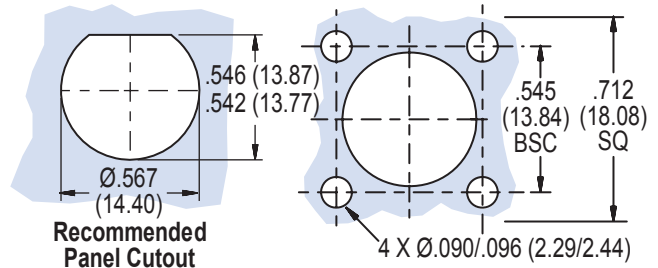
Face view of Plug Adapter as  
viewed from engaging end



801-088 Micro USB Plug B  
with Accessory Threads

Face view of Plug Adapter as  
viewed from engaging end

**Receptacle Panel Cutouts**



**Plug and Receptacle Key Positions**

	A°	B°	
A	150°	210°	
B	75°	210°	
C	95°	230°	
D	140°	275°	
E	75°	275°	
F	95°	210°	

D

# 801-089 and 801-090 SuperSeal™ Mighty Mouse Series 801 Receptacles with Front and Rear Micro "AB" USB Receptacles



Mighty Mouse  
Micro USB

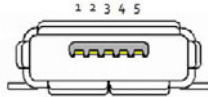


**Inline Receptacle**

**Jam Nut Receptacle**



**Square Flange Receptacle**



**Equipped with Micro AB USB Receptacles, Front and Rear**

**Basic Number**  
801-089 = Shield Termination Porch  
801-090 = Accessory Threads

**Finish**  
NF = Cadmium Olive Drab  
M = Electroless Nickel  
MT = Nickel PTFE  
ZNU = Black Zinc Nickel

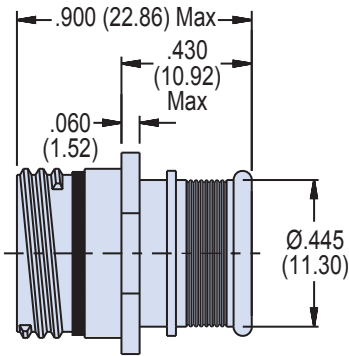
**801-089 - 02 MUSB - M A**

**Shell Style**  
01 = In Line Receptacle  
02 = Square Flange Front or Rear Mount Receptacle  
07 = Jam Nut Rear Mount Receptacle

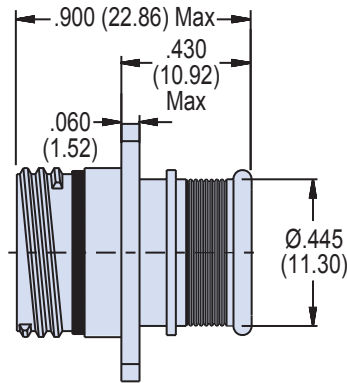
**Alternate Key Position**  
A, B, C, D, E, F

**These Receptacle Connectors Mate with Glenair Plugs 801-082 and 801-083**

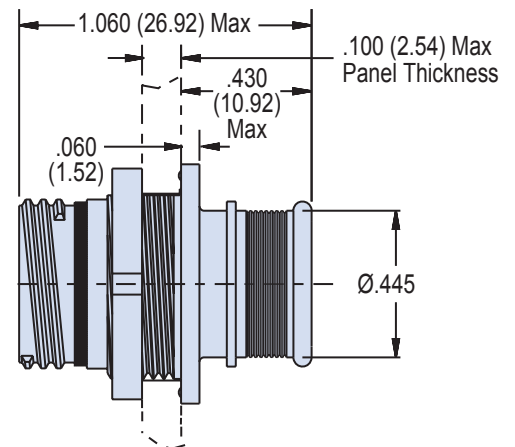
**Integral Banding Porch Versions**



**801-089-01 Inline**

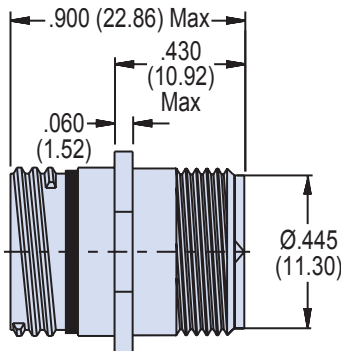


**801-089-02 Square Flange Front or Rear Mount**

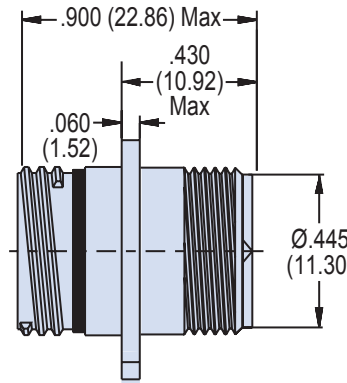


**801-089-07 Jam Nut Rear Mount**

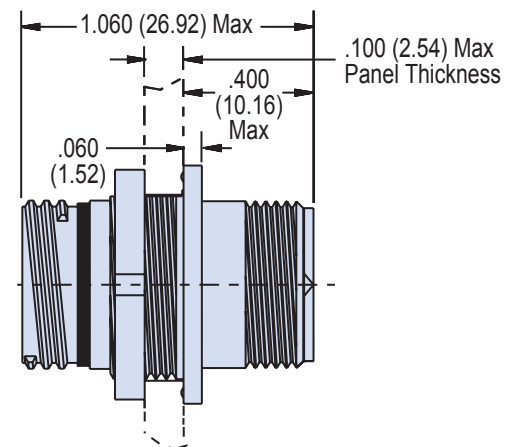
**Accessory Thread Versions**



**801-089-01 Inline**



**801-089-02 Square Flange Front or Rear Mount**

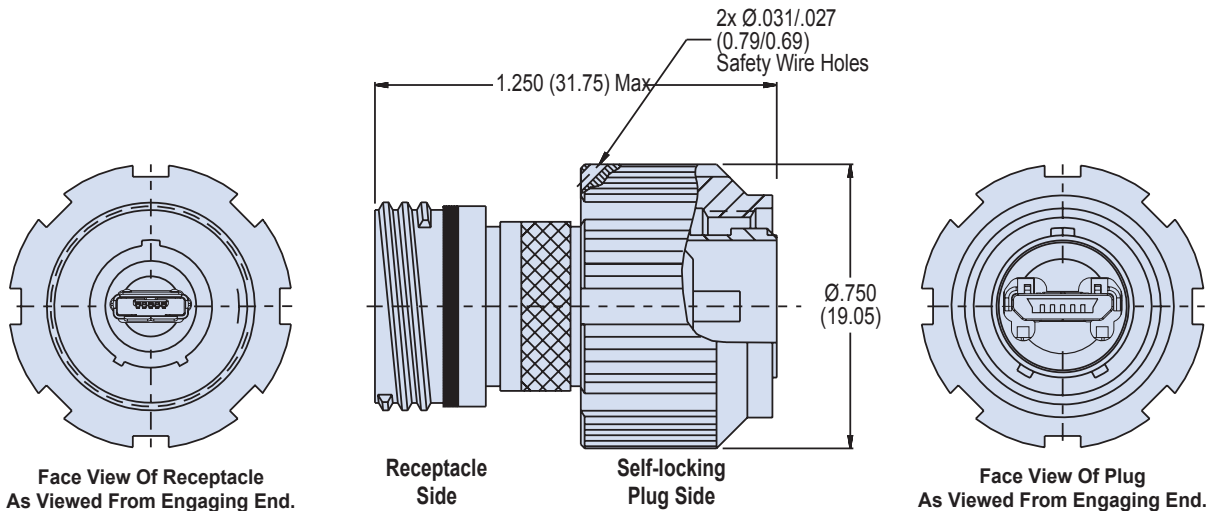
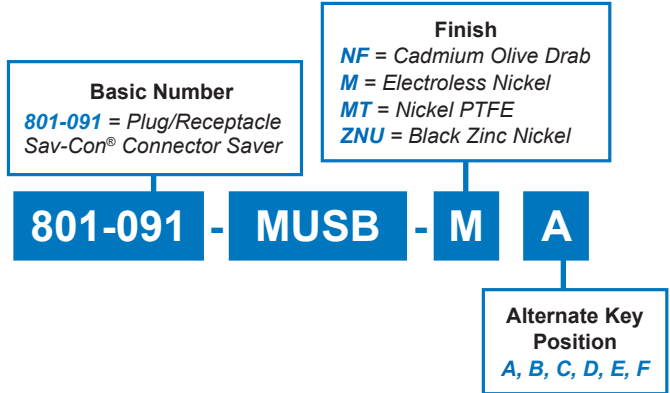


**801-089-07 Jam Nut Rear Mount**

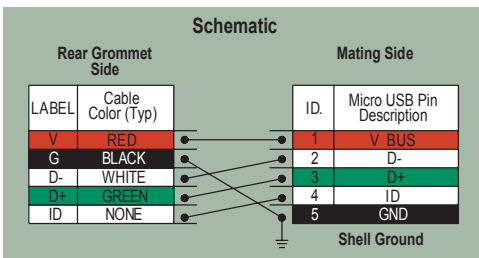




**801-091**  
**SuperSeal™ Mighty Mouse Series 801**  
**Sav-Con® Connector Saver with**  
**Micro "B" USB Plug and Micro "AB" USB Receptacle**



**801-091**  
**Mighty Mouse Sav-Con Connector Saver**  
**Micro-B USB Receptacle/Plug**  
**with Self-Locking Coupling Nut**



**Alternate Key Positions**

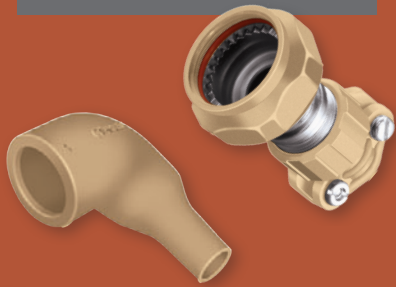
	A°	B°
A	150°	210°
B	75°	210°
C	95°	230°
D	140°	275°
E	75°	275°
F	95°	210°



FED-STD-33446  
DESERT TAN

# SEMPER TAN™

*The permanent FED-STD-33446  
Desert Tan solution*



## *Maintenance-Free Desert Tan Cables, Conduits, Junction Boxes and More*

Recently, a Glenair customer requested a FED-STD-33446 desert tan version of our popular high-temperature annular tubing (hylar or trade name Kynar). Glenair was able to produce the product shown above in just a few short weeks and it is now being used in a military vehicle application. The tubing is now part of our new Semper Tan series of interconnect components. Semper Tan is a permanent FED-STD-33446 Desert Tan solution that eliminates the costly labor of manually painting and maintaining standard cables, conduit assemblies, and junction boxes used in military applications. Please consult the factory for innovative Semper Tan solutions.

**Semper Tan**  
CONNECTORS, CABLES AND ACCESSORIES

**Glenair**®

Glenair, Inc.  
1211 Air Way  
Glendale, CA  
91201-2497  
818-247-6000  
sales@glenair.com  
www.glenair.com

# Why Choose **GLENAIR?**



Plenty of Raw Materials!



Outstanding  
Customer Service!



Abundant Machining Capacity!



In-House Assembly!



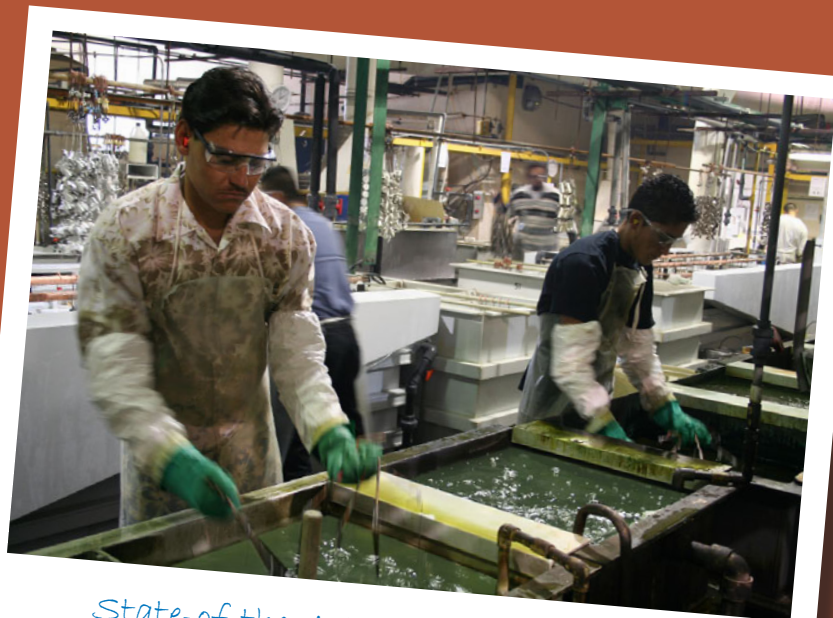
Huge "Same-Day" Inventory!



One of North America's  
and Machining



High-Production Injection Molding Equipment



State-of-the-Art Plating Capabilities



The Industry's Most Experienced EMI/RFI Braided Shielding Specialists



Largest CNC Milling Installations



Clean Rooms for Filter Array and Printed Circuit Board Assembly



*Out of This World*  
**INTERCONNECT  
SOLUTIONS**

**Glenair, Inc.**

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Telephone: 818-247-6000 • Fax: 818-500-9912 • sales@glenair.com  
[www.glenair.com](http://www.glenair.com)

**Glenair Power  
Products Group**

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Wallingford, CT  
06492

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Facsimile:  
203-741-0053  
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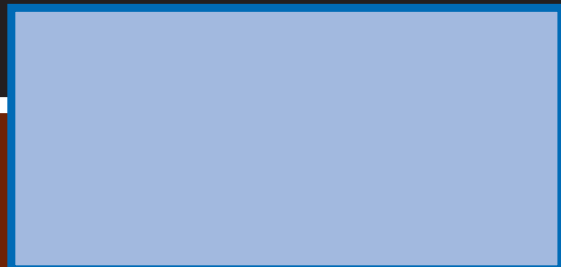
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Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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