Glenair®

## HIGH-PRESSURE CONNECTORS AND PBOF ASSEMBLIES

# MARINE/SUBSEA

## DEEP WATER • DOWNHOLE • TOPSIDE

APRIL 2017

# MARINE/SUBSEA INTERCONNECT SOLUTIONS FROM GLENAIR

- High-pressure, 10K psi open-face subsea
- Ruggedized serial and high-speed electrical connectors
- Glass-sealed high-pressure bulkhead feed-thrus
- Fiber optic and opto-electronic solutions
- Hazardous zone ATEx explosion-proof
- Commercial Oil & Gas and defense industry solutions

Cover photo: Deep Sea Systems Max Rover ROV returning from the deep Canada Basin, NOAA

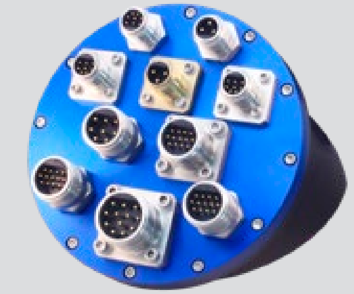
DEEP WATER · DOWN HOLE · TOP SIDE · SHALLOW WATER

High-performance, high-pressure interconnect technologies with proven sealing performance in shipboard, downhole and subsea applications

Crew aboard the M/V Independence prepare to launch a Remotely Operated Vehicle (ROV).

## DEEP WATER SUBSEA, HIGH-PRESSURE 10K PSI / 700 BAR / 7000M CONNECTORS

SeaKing™ 10K PSI open-face high-density subsea connectors and cables

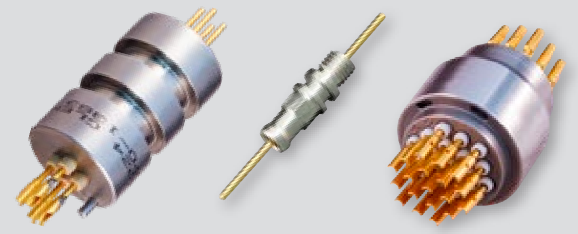


SuperG55™ dry-mate 10K PSI subsea electrical connectors

Economical Marine Molded cable-to-cable and cable-to-panel interconnects

## DOWNHOLE HIGH-TEMPERATURE / HIGH PRESSURE CONNECTORS

Well-Master® high temperature Micro-D connectors

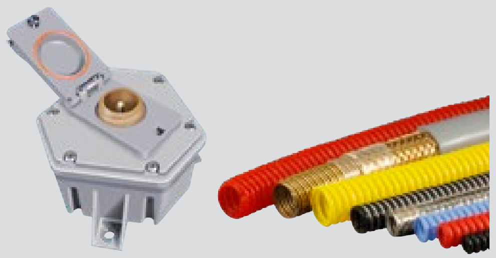


Single- and multi-pin High Temperature/High Pressure (HTHP) Glass sealed penetrators and feedthroughs

## TOPSIDE OR SHIPBOARD CONNECTORS

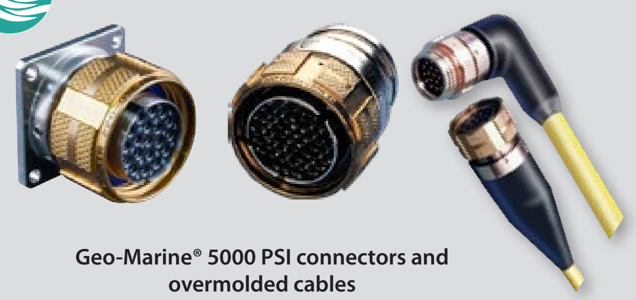
ITS-Ex ATEx-qualified and approved explosive zone connectors

SeaCrow™ rugged Marine Bronze environmental connectors



Corrosion-resistant composite junction boxes, cable bays, and wire protection conduit

## SHALLOW WATER SUBSEA CONNECTORS



Geo-Marine® 5000 PSI connectors and overmolded cables

AquaMouse™ 3500 PSI miniature Connectors and overmolded cables

**DEEP WATER**

Photo: NOAA

*HIGH-PRESSURE*

# 10K PSI Open-Face Deep Water Connectors, Cables, and PBOF Assembiles

**Next-generation high-speed, signal, and power connectors for mission-critical applications—from submarines and ROVs to seafloor oil and gas production platforms**

**DEEP WATER SUBSEA, HIGH-PRESSURE 10K PSI / 700 BAR / 7000M CONNECTORS**

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SuperG55™ - Page 20


Marine Molded - Page 36





# SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies

## Product selection guide

SEAKING SEVEN HUNDRED

# SERIES 70 SeaKing™

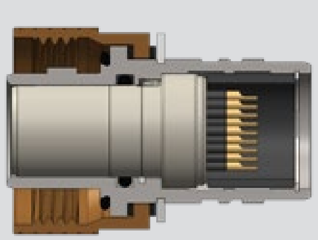
## 10K PSI / 700 Bar / 7000m open-face or mated, dual O-ring equipped, high-density, high-voltage, fiber optic and hybrid electrical/optical subsea connectors

SeaKing is an innovative new connector series that eliminates a broad range of mechanical design weaknesses found in many of today's high-pressure subsea connector families. From its double O-ring seals and retractable engaging nut, to its multi-keyed mating interface, the SeaKing represents a bold new approach to subsea power and signal connectivity.

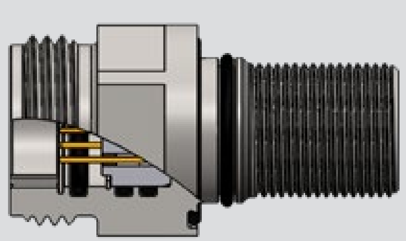
Ideally suited for offshore oil & gas, military/defense, oceanographic research, and other harsh-environment subsea applications, the dry-mate connector series is built for optimal durability and reliability. Tested to 15,000 PSI (open face and mated), and equipped with integrated dual O-ring seals, marine bronze coupling nuts, corrosion-resistant stainless steel shells and high-pressure contact inserts with gold-plated signal contacts, special RF and fiber optic solutions, the Series 70 SeaKing is today's most advanced high-density signal and standard-density power subsea connector available.

- **High density, small form-factor connector**
- **For every leak path dual O-ring seals ensure high-pressure performance**
- **Signal, power, RF and optical contact arrangements**
- **Stainless steel construction with anti-galling marine bronze engaging nut**
- **Full-mate inspection ports**
- **Easy O-ring replacement**
- **Key and keyway polarization**

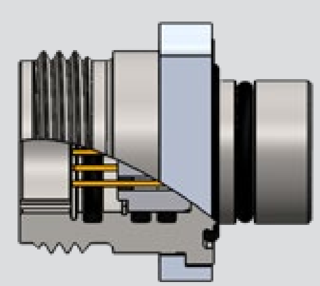
### STANDARD CONFIGURATIONS



Cable Connector Plug (CCP)



Bulkhead Connector Receptacle (BCR)



Flange Connector Receptacle (FCR)









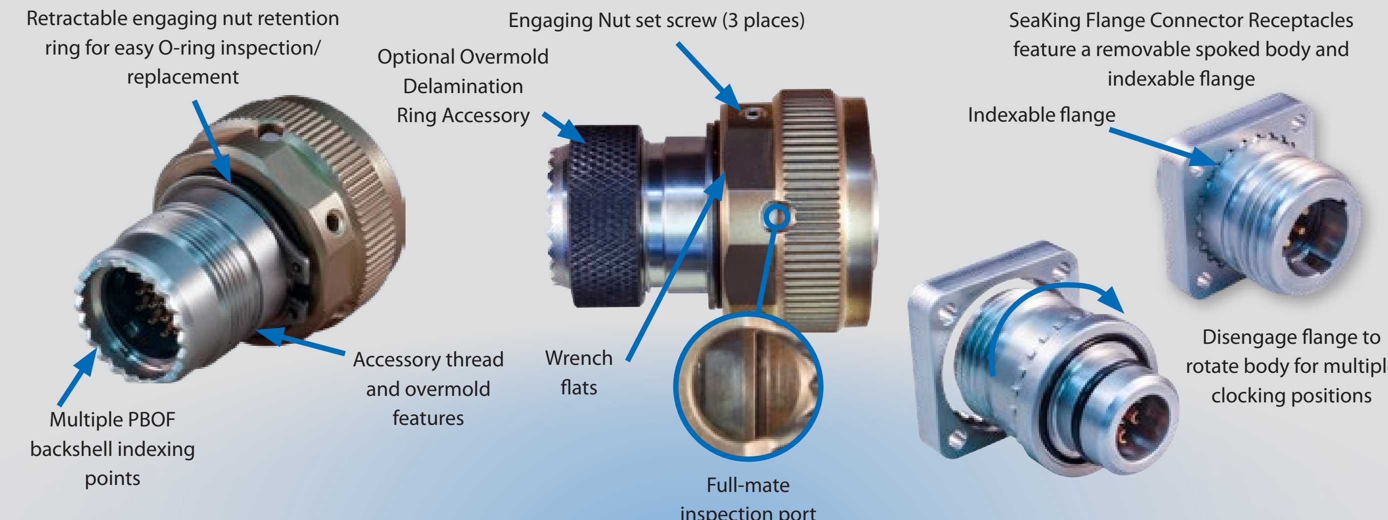
# SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies

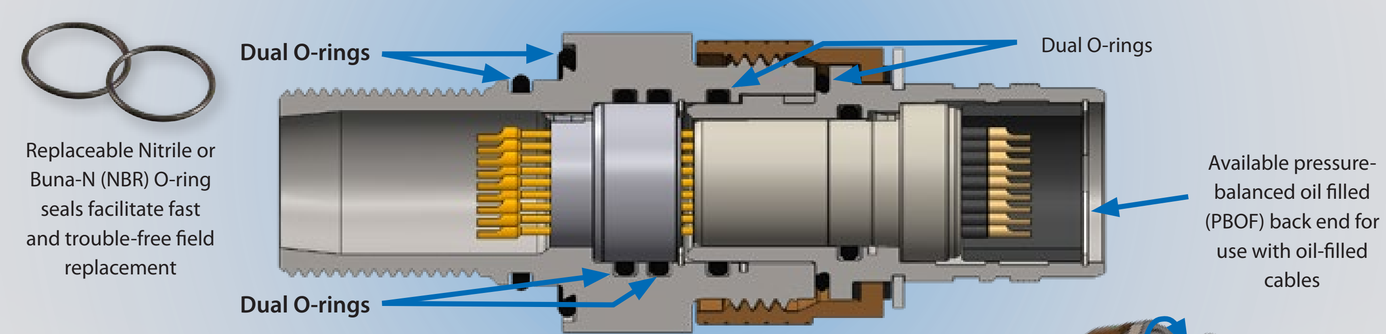
## Key mechanical and environmental features

**Sealing:** The Series 70 SeaKing™ is the best sealed subsea connector on the market. All critical interfaces, including bulkhead seals, glass-to-metal insert seals, mating interface bore seals, and face seals are fully redundant ensuring 10K PSI protection, even in the event of a single-seal failure.

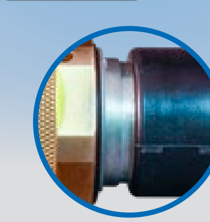
**Mating:** SeaKing™ utilizes a modified UNC (coarse) mating interface with added clearance to reduce bio-fouling and facilitate rapid-advance mating. The marine bronze engaging nut on the plug is equipped with wrench flats as well as knurling and is less susceptible to galling than standard steel engaging nuts. Polarized keys and keyways prevent both thread damage and mismating.

**Ease-of-Use:** Multiple PBOF backshell indexing points, indexable flange FCRs, full-mate inspection ports, retractable engaging nuts, and other features make SeaKing™ the most user-friendly subsea connector on the market.

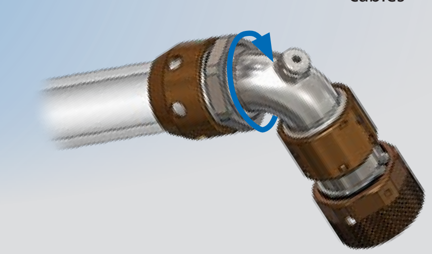



BCR showing keyway-assisted mating and polarization feature and wrench flats for reliable, secure attachment to pressure bulkheads

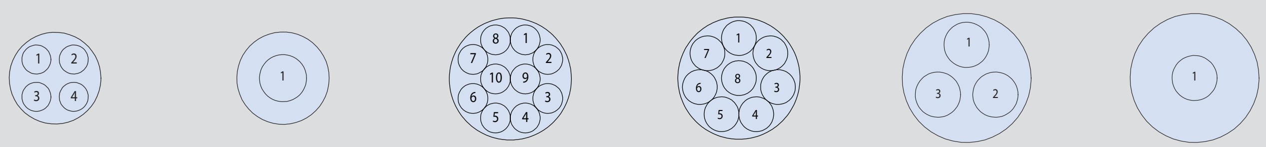


Series 70 SeaKing™ cable assemblies are available from the factory with special 10,000 PSI overmolded cable-to-plug connector environmental sealing.

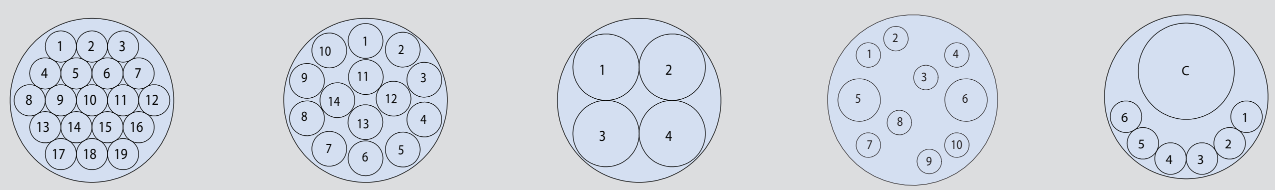


Revolutionary PBOF swivel assembly features kink-proof hose swivel, straight, 45° and 90° routing, and superfast assembly

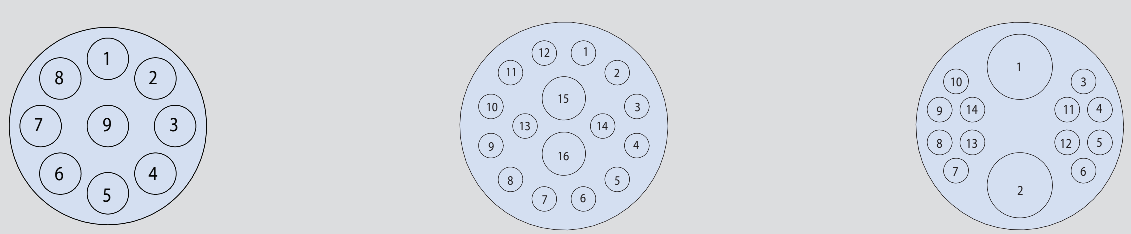
## SEAKING™ CONTACT ARRANGEMENTS Mating face view of pin insert (socket insert IDs are reversed)



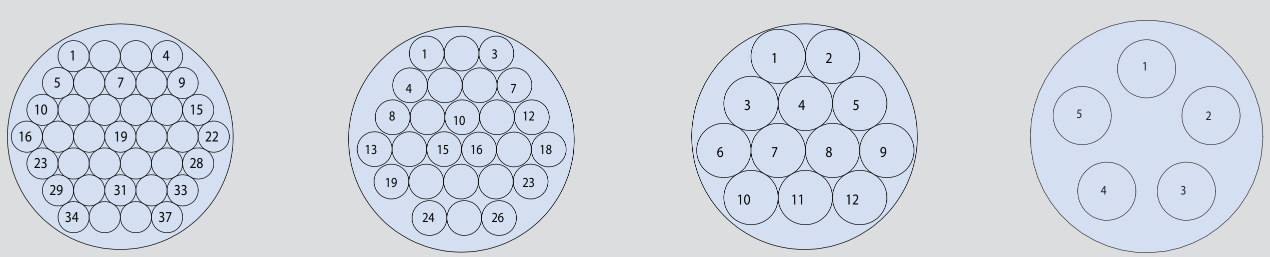
| Size E | | Size G | | | |
|---|---|---|---|---|---|
| **E4** | **E1** | **G10** | **G8** | **G3** | **GC** |
| 4 Size #22 Contacts | 1 Size #16 Contact | 10 Size #22 Contacts | 8 Size #20 Contacts | 3 #16 Contacts | 1 Coax Contact |



| Size K | | | | |
|---|---|---|---|---|
| **K19** | **K14** | **K4** | **KX10** | **KC6** |
| 19 Size #22 Contacts | 14 Size #20 Contacts | 4 Size #16 Contacts | 2 #16 Contacts, 8 #22 Contacts | Single 75 Ohm Coax, 6 #22 Contacts |



| Size L | | |
|---|---|---|
| **L9** | **LX16** | **LX14** |
| 9 Size #16 Contacts | 14 #22 Contacts 2 #16 Contacts | 2 #12 Contacts 12 #22 Contacts |



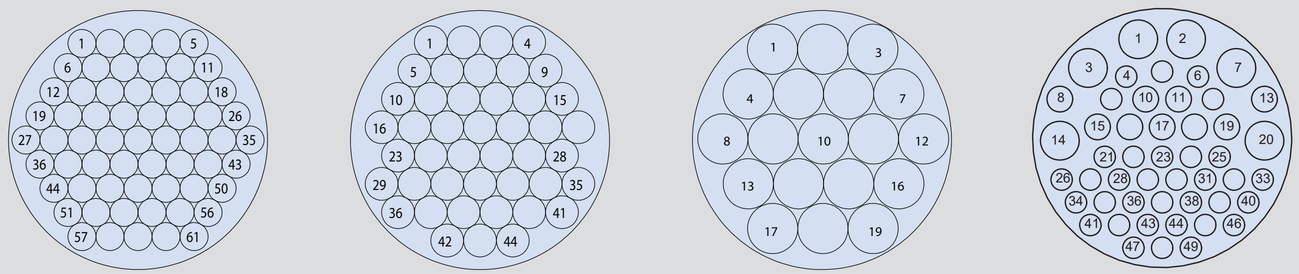
| Size M | | | |
|---|---|---|---|
| **M37** | **M26** | **M12** | **M5** |
| 37 Size #22 Contacts | 26 Size #20 Contacts | 12 Size #16 Contacts | 5 #12 Contacts 850VDC / 600VAC |

SUBSEA/DEEPWATER: SEAKING™

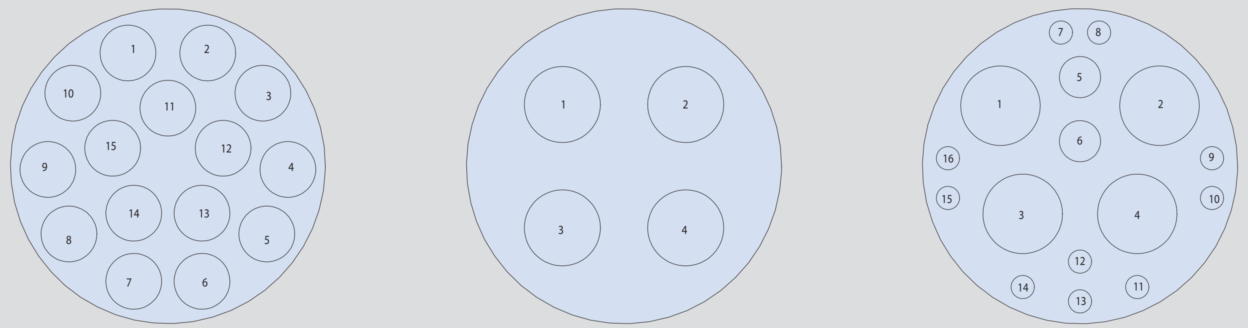



SERIES 70 10K PSI / 700 BAR / 7000 M
SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies
Contact arrangements and specifications

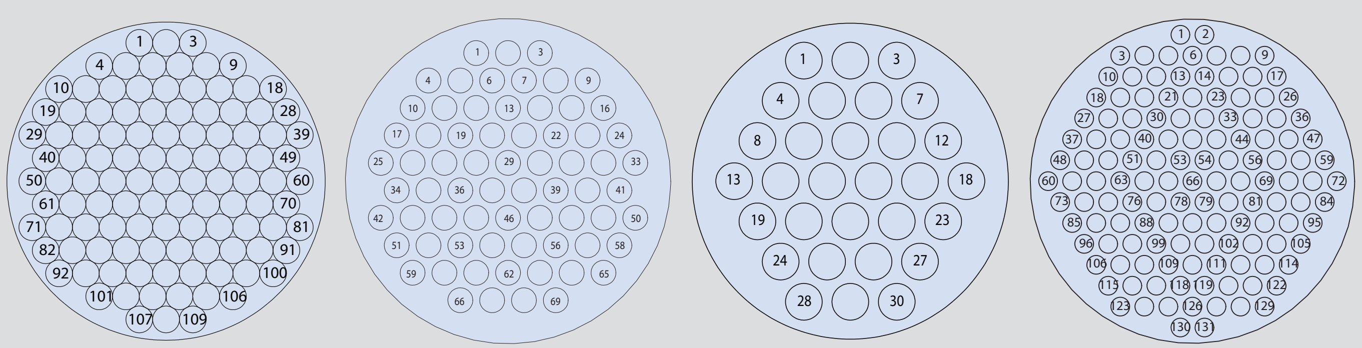
Consult factory for custom insert arrangements including a wide range of shielded RF microwave and high frequency contact configurations



| Size O | | | |
|---|---|---|---|
| **O61** | **O44** | **O19** | **OX49** |
| 61 Size #22 Contacts | 44 Size #20 Contacts | 19 Size #16 Contacts | 49 Contacts 6 #16 • 9 #20 • 34 #22 |



| Size P | | |
|---|---|---|
| **P15** | **P4** | **PX16** |
| 15 Size #12 Contacts | 4 Size #8 Contacts 1kV | 16 Contacts 4 #8 • 2 #16 • 10 #22 |

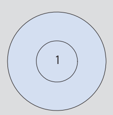


| Size Q | | | Size R |
|---|---|---|---|
| **Q109** | **Q69** | **Q30** | **R131** |
| 109 Size #22 Contacts | 69 Size #20 Contacts | 30 Size #16 Contacts | 131 Size #22 Contacts |

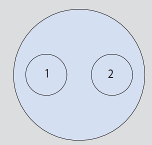
SUBSEA/DEEPWATER: SEAKING™

## SEAKING™ FIBER OPTIC AND HYBRID FIBER-ELECTRICAL ARRANGEMENTS

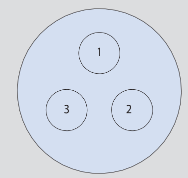
Mating face view of pin insert (socket insert IDs are reversed)



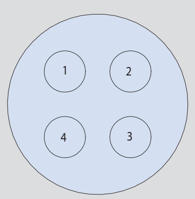

**Size E** — **EF1** — 1 Fiber Terminus



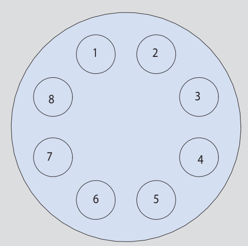

**Size K** — **KF2** — 2 Fiber Termini



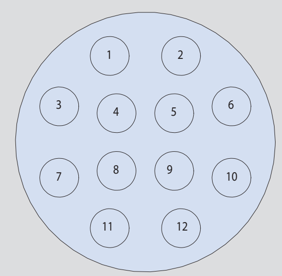

**Size L** — **LF3** — 3 Fiber Termini



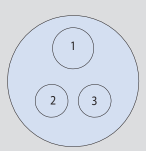

**Size M** — **MF4** — 4 Fiber Termini



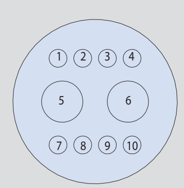

**Size O** — **OF8** — 8 Fiber Termini



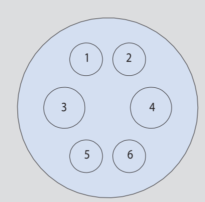

**Size P** — **PF12** — 12 Fiber Termini



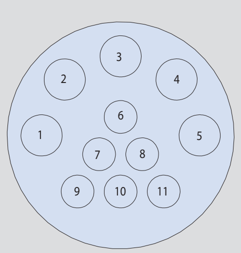

**Size K** — **KH12** — 1 Fiber Terminus, 2 #16 Contacts



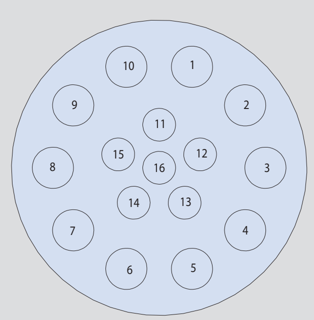

**Size L** — **LH28** — 2 Fiber Termini, 8 #22 Contacts



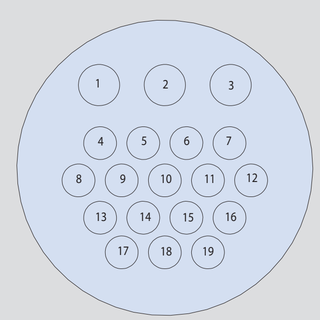

**Size M** — **MH24** — 2 Fiber Termini, 4 #16 Contacts




**Size O** — **OH56** — 5 Fiber Termini, 6 #16 Contacts




**Size Q** — **QH106** — 10 Fiber Termini, 6 #16 Contacts




**Size Q** — **QH316** — 3 Fiber Termini, 16 #16 Contacts




SERIES 70 10K PSI / 700 BAR / 7000 M
SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies
Contact arrangements and specifications

Consult factory for custom insert arrangements including a wide range of shielded RF microwave and high frequency contact configurations

**All high-density signal and standard-density power contact arrangements are available across the complete range of connector styles (CCP, FCR, and BCR). High-speed Ethernet inserts as well as Pressure Balanced Oil Filled (PBOF) configurations and a purpose-designed family of pressure caps, accessories and backshells are also available, please consult the factory.**

**SeaKing™ bulkhead connector receptacles (BCR) and flange connector receptacles (FCR) are equipped with high-pressure glass-to-metal sealed inserts with solder contact wire termination and 10K psi open-face rating. Cable connector plugs (CCP) utilize environmental O-ring sealed inserts and are rated to 10K psi in the mated condition.**

**Contact Arrangement Table**

| Shell Size | Contact Size | | | | | | |
|---|---|---|---|---|---|---|---|
| | #22 | #20 | #16 | #12 | #8 | Fiber Optic | Hybrid |
| E | 4 | | 1 | | | 1 | |
| G | 10 | 8 | 3 | | | | 1 Coax (only) |
| K | 19 | 14 | 4 | | | 2 | 1 Coax • 6 #22<br>8 #22 • 2 #16<br>1 F/O • 2 #16 |
| L | | | 9 | | | 3 | 12 #22 • 2 #12<br>8 #22 • 2 #16<br>2 F/O • 8 #22 |
| M | 37 | 26 | 12 | 5 | | 4 | 2 F/O • 4 #16 |
| O | 61 | 44 | 19 | | | 8 | 6 #16 • 9 #20 • 34 #22<br>5 F/O • 6 #16 |
| P | | | | 15 | 4 (1kV) | 12 | 4 #8 • 2 #16 • 10 #22 |
| Q | 109 | 69 | 30 | | | | 10 F/O • 6 #16<br>3 F/O • 16 #16 |
| R | 131 | | | | | | |

**Current Rating (Amps)**

| Contact Size | GRE Molded Inserts | Glass-to-Metal Sealed Inserts |
|---|---|---|
| #22 | 5 Amps | 3 Amps |
| #20 | 7.5 Amps | 5 Amps |
| #16 | 13 Amps | 10 Amps |
| #12 | 23 Amps | 17 Amps |
| #8 | 50 Amps | 35 Amps |

All contact arrangements are rated for 600 VDC / 400 VAC unless otherwise specified.
Solder cups are sized to accept maximum wire gauge according to the contact size

**SeaKing™ Performance Specifications**

| | | |
|---|---|---|
| Pressure Rating | Plug: 10,000 psi, mated condition<br>Receptacles: 10,000 psi mated and open face | per ISO 13628-6 |
| Electrical | 600 V typical<br>5 GOhm insulation resistance at 500 VDC | per MIL-STD-202, Method 301<br>per MIL-STD-202, Method 302 |
| Materials | Salt Spray (corrosion)<br>Humidity (steady state)<br>Thermal Cycle | MIL-STD-202, Method 101<br>MIL-STD-202, Method 103<br>ISO 13628-6 |

SUBSEA/DEEPWATER: SEAKING™

## 2 APPLICABLE DOCUMENTS

### 2.1 Government Documents.

The following government documents form a part of this specification to the extent specified herein. Unless otherwise indicated in the listing the issue in effect on the day release of this specification shall apply.

| | |
|---|---|
| MIL-DTL-38999 | Connectors Electrical, Circular, Miniature, High Density, Quick Disconnect Bayonet, Threaded and Breech Coupling, Environment Resistant, Removable Crimp and Hermetic Solder Contacts, General Specification for |
| MIL-DTL-38999/23 | Connectors, Electrical, Circular, Threaded, Receptacle, Jam-Nut Mounting, Hermetic, Solder Contacts, Series III, Metric |
| MIL-DTL-38999/28 | Connectors, Electrical, Circular Nut, Hexagon, Connector Mounting Series III and IV Metric |
| MIL-STD-202 | Test Method Standard Electronic and Electrical Component Parts |
| MIL-STD-810 | Environmental Engineering Considerations and Laboratory Tests |

### 2.2 Non-Government Documents

ISO-13628-6 Hydrostatic Pressure Test Procedure for Electrical Connector

EIA-364 Electrical Connectors and Sockets Test Procedures Including Environmental Classification

EIA-364-20 Withstanding Voltage Test Procedure for Electrical Connectors, Sockets Coaxial Contacts

EIA-364-21 Insulation Resistance Test Procedure for Electrical Connectors Sockets and Coaxial Contacts

EIA-364-26 Salt Spray Test Procedure for Electrical Connectors and Sockets

EIA-364-32 Thermal Shock (Temperature Cycling) Test Procedure for Electrical Connectors and Sockets

## 7 VERIFICATION

7.6 Dielectric Withstanding Voltage. (All Parts) ***PASSED***
Connectors shall be tested in accordance with test procedure EIA-364-20 Method C and Condition I, at 1200 VAC ± 10% 60 second and there shall be no evidence of electric breakdown or flashover.

7.7 Insulation Resistance. (All Parts) ***PASSED***
Connectors shall be tested in accordance with test procedure EIA-364-21
Connector contacts shall be tested 5 GΩ at 500 VDC ±10% voltage source at room temperature

7.8 Durability. ***PASSED***
Connectors shall be tested in accordance with EIA-364-9, IEC-60512-5 Test 9a.
The wired, assembled plugs and receptacles shall be mated and unmated 300 cycles.
The mating and unmating shall be accomplished so that the plug and receptacle are completely separated during each cycle. After the durability test is completed a pass 5 GΩ at 500 VDC insulation resistance test from each contact to every other contact and the shell.




SERIES 70 10K PSI / 700 BAR / 7000 M
SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies
Qualification test plan - selected data

7.9 Thermal Shock. (All Parts) ***PASSED***
Test in accordance with test procedure EIA-364-32 Method A
Unmated connectors shall be subjected to 5 cycles at temperature of -20ºC to 105ºC ± 5ºC
There shall be no evidence of cracking, breaking or loosening.
After the thermal shock test is completed a pass 5 GΩ at 500 VDC insulation resistance test from each contact to every other contact and the shell.

7.10 Salt Spray. (Group 2 only) ***PASSED***
Connectors shall be tested in accordance with test procedure EIA-364-26 Condition C
The connectors shall be fully populated and immersion time 500 hours.
At the end of the immersion duration while still immersed, insulation resistance 5 GΩ at 500 VDC test shall be completed from each contact to every other contact and the shell.

7.11 Hydrostatic Pressure. ***PASSED***
Connectors shall be test in accordance with procedure per ISO-13628-6 except the minimum Period of measurement shall be three minutes. Replace Interface O-rings before pressure testing
- Hydrostatic Pressure Testing – Open Face – BCR Individual
- Hydrostatic Pressure Testing – Mated Condition – Mated Pair
- Hydrostatic Pressure Testing – Glass sealed Inserts

8 cycles – 3X 5min-dwell @ 11,000 + 4X 5min-dwell @ 15,000 + 1 X 1hr-dwell @ 15,000psi
Ramp 3,000psi/min – Reference





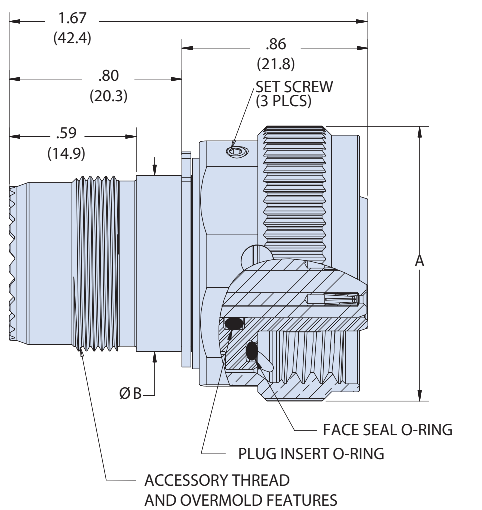
SUBSEA/DEEPWATER: SEAKING™

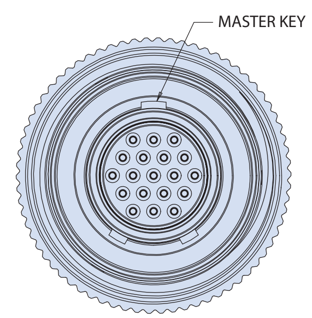
# 700-001 cable connector plug (CCP)

| SeaKing Plug - How To Order | | | | | | |
|---|---|---|---|---|---|---|
| **Sample Part Number** | 700 | -001- | K19 | -Z1 | S | N |
| **Product Series** | 700 = SeaKing™ | | | | | |
| **Connector Style** | 001 = Cable connector plug | | | | | |
| **Shell Size-Contact Arrangement** | See SeaKing contact arrangements table (pgs. 4-5) | | | | | |
| **Barrel Material** | Z1 = 316 Stainless steel TC = Titanium | | | | | |
| **Contact Style** | S = Socket | | | | | |
| **Alternate Key Position** | A, B, C, N = Normal (see alternate key positions table) | | | | | |

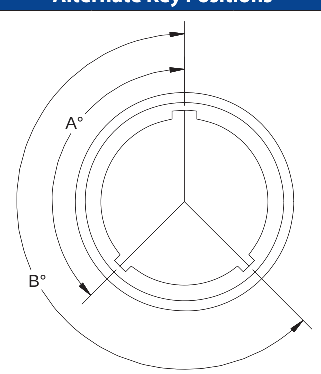
## NOTES

1. Double O-ring sealing in mated condition
2. Mates with 700-006 / -007 series SeaKing receptacles of the same size and polarization
3. Retractable coupling nut facilitates O-ring servicing
4. Material/Finish
   - Barrel: 316 stainless steel or titanium
   - Coupling nut: marine bronze
   - Contacts: Copper alloy, gold plated
   - Insulator: Composite thermoplastic
   - Set screw: 316 stainless steel
   - O-ring: Nitrile (NBR)




### Alternate Key Positions




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

### Dimensions

| Shell Size | Ø A | Ø B | Face seal O-ring | Plug insert O-ring | Accessory Thread | Set Screw | Mating Torque |
|---|---|---|---|---|---|---|---|
| G | 1.15 (29.21) | 0.69 (17.53) | 015 | 012 | 11⁄16-28 UN-2A | 4-40 x 3/32 | 10 ft/lbs |
| K | 1.27 (32.26) | 0.81 (20.57) | 017 | 014 | 13⁄16-28 UN-2A | | 12 ft/lbs |
| L | 1.38 (35.05) | 0.94 (23.88) | 019 | 016 | 15⁄16-28 UN-2A | | 12 ft/lbs |
| M | 1.51 (38.35) | 1.06 (26.92) | 020 | 017 | 1 1⁄16-28 UN-2A | | 12 ft/lbs |
| O | 1.74 (44.20) | 1.31 (33.27) | 024 | 020 | 1 5⁄16-28 UN-2A | | 15 ft/lbs |
| Q | 2.01 (51.05) | 1.56 (39.62) | 028 | 024 | 1 9⁄16-20 UN-2A | | 15 ft/lbs |
| R | 2.14 (54.36) | 1.69 (42.93) | 029 | 026 | 1 11⁄16-20 UN-2A | | 15 ft/lbs |






SERIES 70 10K PSI / 700 BAR / 7000 M
SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies

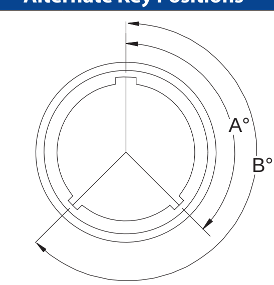
# 700-006 flange connector receptacle (FCR)

| SeaKing FCR - How To Order | | | | | | |
|---|---|---|---|---|---|---|
| **Sample Part Number** | 700 | -006- | 019 | -Z1 | P | N |
| **Product Series** | 700 = SeaKing™ | | | | | |
| **Connector Style** | 006 = Flange connector receptacle | | | | | |
| **Shell Size-Contact Arrangement** | See SeaKing contact arrangements table (pgs. 4-5) | | | | | |
| **Shell Material** | Z1 = 316 Stainless steel TC = Titanium | | | | | |
| **Contact Style** | P = Pin | | | | | |
| **Alternate Key Position** | A, B, C, N = Normal (see alternate key positions table) | | | | | |

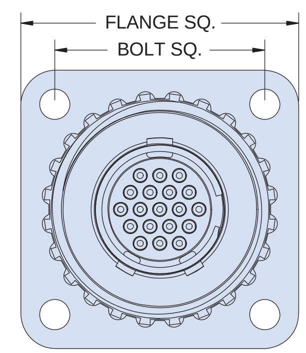
## NOTES

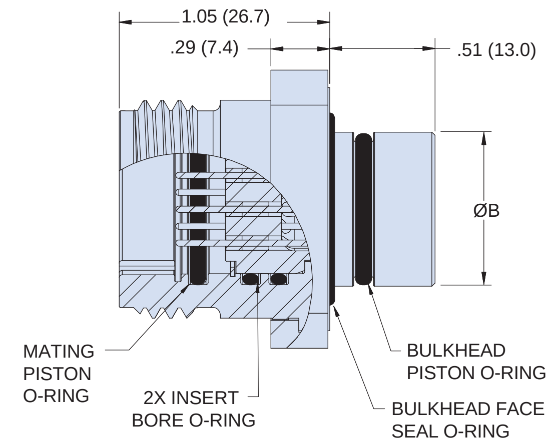
1. Double O-ring sealing:
   - Flange and piston O-rings to bulkhead
   - Dual piston O-rings at insert
   - Flange and piston O-rings in mated condition
2. Mates with 700-001 series SeaKing
3. Material/Finish
   - Shell: 316 stainless steel or titanium
   - Contacts: Inconel X750, gold plated
   - Insert: Inconel X750
   - Insulator: Fused vitreous glass
   - O-ring: Nitrile (NBR)

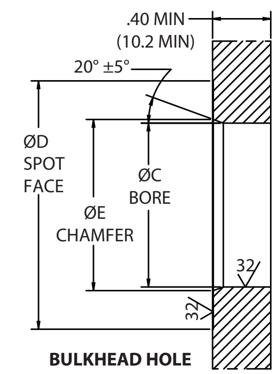
### Alternate Key Positions



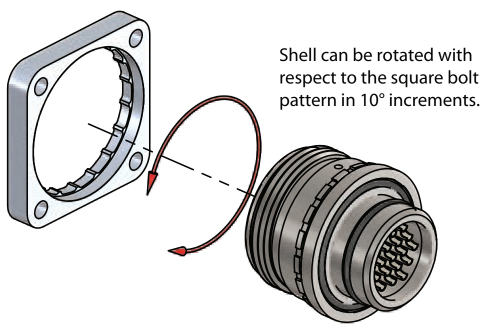

| Position | A° | B° |
|---|---|---|
| N | 150° | 210° |
| A | 75° | 210° |
| B | 95° | 230° |
| C | 140° | 275° |




BULKHEAD HOLE



Shell can be rotated with respect to the square bolt pattern in 10° increments.

### Dimensions

| Shell Size | Flange Sq. | Bolt Sq. | Bulkhead face seal O-ring | Bulkhead piston O-ring | Mating Piston & Insert O-ring | Retaining Ring | Ø B | Ø C +.002(+.05) -.000 (-.00) | Ø D Min. Spotface ≤.005 | Ø D Min Spotface > .005 | Ø E | Flange Screws |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G | 1.20 (30.48) | .906 (23.01) | 2-018 | 2-015 | 2-014 | VH-50-S02 | .685 (17.40) | .687 (17.45) | 1.080 (27.43) | 1.600 (40.64) | .737 (18.72) | #4-40 |
| K | 1.35 (34.29) | 1.020 (25.91) | 2-019 | 2-016 | 2-016 | VH-62-S02 | .748 (19.00) | .750 (19.05) | 1.205 (30.61) | 1.795 (45.59) | .800 (20.3) | #6-32 |
| L | 1.47 (37.34) | 1.124 (28.55) | 2-021 | 2-018 | 2-018 | VH-75-S02 | .873 (22.17) | .875 (22.23) | 1.330 (33.78) | 1.960 (49.78) | .925 (23.50) | #6-32 |
| M | 1.60 (40.64) | 1.186 (30.12) | 2-022 | 2-020 | 2-019 | VH-81-S02 | .998 (25.35) | 1.000 (25.40) | 1.465 (37.21) | 2.115 (53.72) | 1.050 (26.67) | #8-32 |
| O | 1.87 (47.50) | 1.446 (36.73) | 2-026 | 2-022 | 2-023 | VH-106-S02 | 1.123 (28.52) | 1.125 (28.58) | 1.705 (43.31) | 2.660 (67.56) | 1.175 (29.85) | #8-32 |
| Q | 2.18 (55.37) | 1.662 (42.21) | 2-029 | 2-026 | 2-028 | VH-137-S02 | 1.373 (34.87) | 1.375 (34.92) | 1.955 (49.66) | 2.890 (73.41) | 1.425 (36.20) | #10-24 |
| R | 2.30 (58.42) | 1.768 (44.91) | 2-030 | 2-028 | 2-029 | VH-150-S02 | 1.498 (38.05) | 1.500 (38.10) | 2.080 (52.83) | 3.050 (77.47) | 1.550 (39.37) | #10-24 |

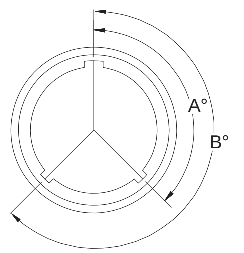
SUBSEA/DEEPWATER: SEAKING™

## 700-007 bulkhead connector receptacle (BCR)

### NOTES

1. Double O-ring sealing:
   - Flange and piston O-rings to bulkhead
   - Dual piston O-rings at insert
   - Flange and piston O-rings in mated condition
2. Mates with 700-001 series SeaKing plugs of the same size and polarization
3. Material/Finish
   - Shell: 316 stainless steel shell
   - Contacts: Inconel X750, gold plated
   - Insert: Inconel X750
   - Insulator: Fused vitreous glass
   - O-ring: Nitrile

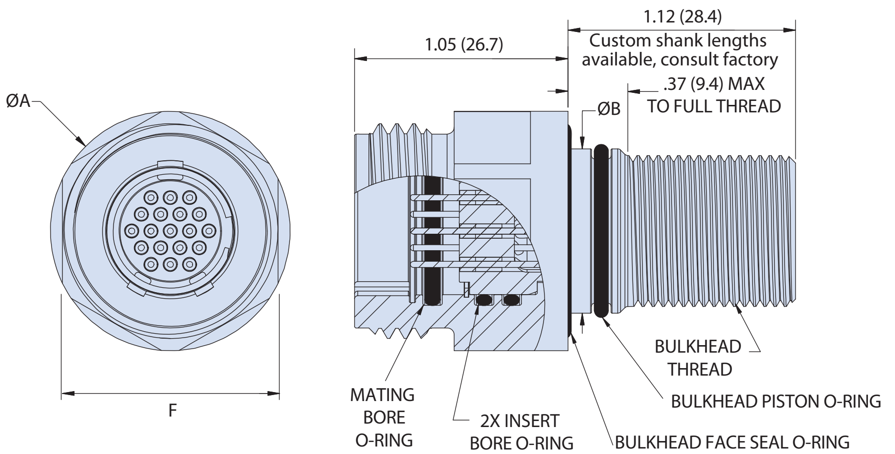
**Alternate Key Positions**

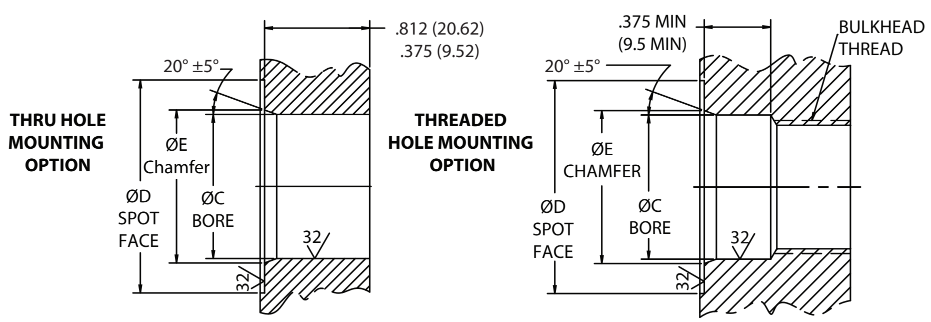



| Position | A° | B° |
|---|---|---|
| N | 150° | 210° |
| A | 75° | 210° |
| B | 95° | 230° |
| C | 140° | 275° |

**SeaKing BCR - How To Order**

| Sample Part Number | 700 | -007- | K19 | -Z1 | P | N |
|---|---|---|---|---|---|---|
| Product Series | 700 = SeaKing™ | | | | | |
| Connector Style | 007 = Bulkhead connector | | | | | |
| Shell Size-Contact Arrangement | See SeaKing contact arrangements table (pgs. 4-5) | | | | | |
| Shell Material | Z1 = 316 Stainless steel TC = Titanium | | | | | |
| Contact Style | P = Pin | | | | | |
| Alternate Key Position | A, B, C, N = Normal (see alternate key positions table) | | | | | |




**Dimensions**

| Shell Size | Ø A | Ø B | Hex Flats F | Bulkhead Face Seal O-Ring | Bulkhead Piston O-Ring | Mating Piston and Insert O-Ring | Retaining Ring | Ø C +.002 (+.05) -.000 (-.00) | Ø D Min | Ø E ±.010 (±.25) | Bulkhead Thread Male: Class 2A Female: Class 2B | Bulkhead Mounting Torque (Dry Threads) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G | 1.06 (26.9) | .685 (17.40) | .938 (23.83) | 2-019 | 2-015 | 2-014 | VH-50-S02 | .687 (17.45) | 1.08 (27.4) | .737 (18.72) | ⅝-24 UNEF | 30 ft/lbs |
| K | 1.18 (30.0) | .810 (20.57) | 1.063 (27.00) | 2-020 | 2-017 | 2-016 | VH-62-S02 | .812 (20.62) | 1.20 (30.5) | .862 (21.89) | ¾-20 UNEF | 35 ft/lbs |
| L | 1.31 (33.3) | .935 (23.75) | 1.188 (30.18) | 2-022 | 2-019 | 2-018 | VH-75-S02 | .937 (23.80) | 1.33 (33.8) | .987 (25.07) | ⅞-20 UNEF | 35 ft/lbs |
| M | 1.43 (36.3) | 1.060 (26.92) | 1.313 (33.35) | 2-024 | 2-021 | 2-019 | VH-81-S02 | 1.062 (26.97) | 1.45 (36.8) | 1.112 (28.24) | 1-20 UNEF | 35 ft/lbs |
| O | 1.68 (42.7) | 1.185 (30.10) | 1.563 (39.70) | 2-027 | 2-023 | 2-023 | VH-106-S02 | 1.187 (30.15) | 1.70 (43.2) | 1.237 (31.42) | 1 ⅛-16 UN | 50 ft/lbs |
| Q | 1.93 (49.0) | 1.435 (36.45) | 1.813 (46.05) | 2-030 | 2-027 | 2-028 | VH-137-S02 | 1.437 (36.50) | 1.95 (49.5) | 1.487 (37.77) | 1 ⅜-16 UN | 50 ft/lbs |
| R | 2.06 (52.3) | 1.623 (41.22) | 1.938 (49.23) | 2-031 | 2-029 | 2-029 | VH-150-S02 | 1.625 (41.28) | 2.08 (52.8) | 1.675 (42.55) | 1 ½-16 UN | 60 ft/lbs |






## PBOF assembly fittings and accessories

### REVOLUTIONARY PBOF SWIVEL HOSE ATTACHMENT ACCESSORIES

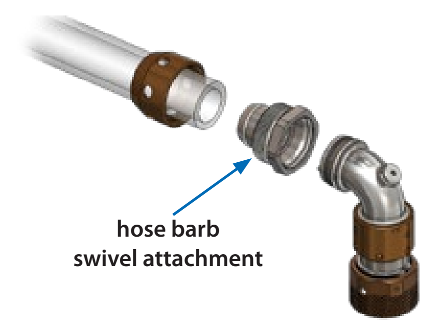
Hose barb fittings for PBOF assemblies are the perennial weak link in subsea oil & gas applications. Kinked and twisted hoses, leaky fittings, corroded hose clamps, and general poor performance characterize most existing solutions. The Glenair PBOF swivel hose attachment for SeaKing™ connectors solves these problems and more. Designed from the sea floor up to perform flawlessly and reliably, this revolutionary attachment puts an end to the long list of field maintenance problems associated with oil-filled cable applications.

- **Straight, 45°, and 90° "full radius" angle and profile hose routing**
- **Hose angle adjustment feature eliminates risk of oil leakage**
- **Corrosion-resistant materials used throughout**
- **Threaded couplers with safety set-screws for fail-safe leak and decoupling protection—no special tools required for assembly**
- **Compact PBOF compression fitting with 340° hose swivel action**
- **Support for the broad range of hose diameters and wall thicknesses**

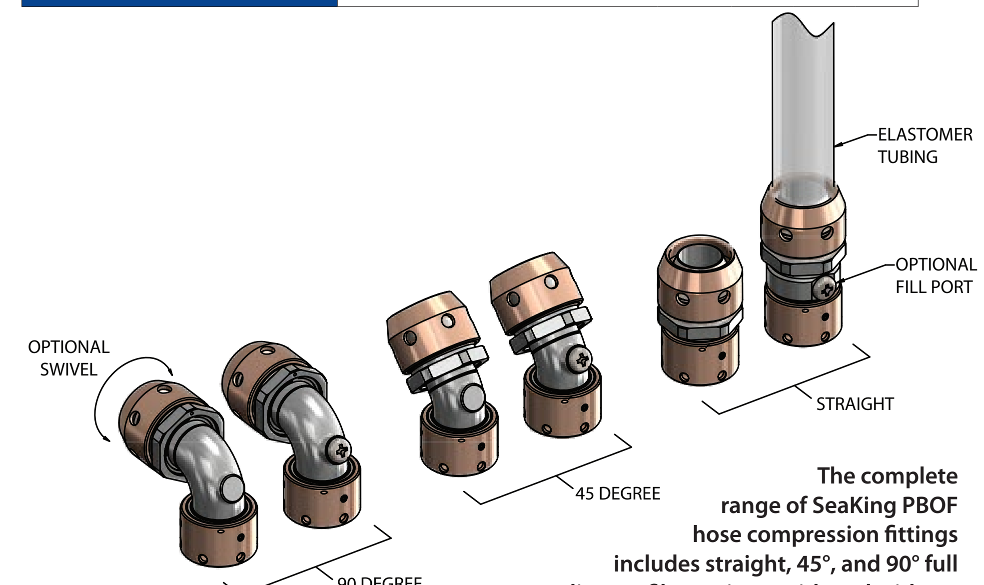

Interlocking teeth on SeaKing™ plug connectors interface with corresponding teeth on the PBOF swivel hose attachment to facilitate easy indexing and routing of hose assemblies

**SeaKing PBOF Attachment Accessory Kits - How To Order**

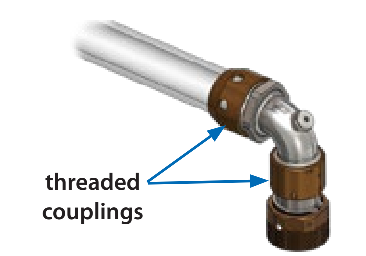
| Sample Part Number | 709-003 | K | -L | 1 | S |
|---|---|---|---|---|---|
| Product Series | 709-003 = SeaKing™ PBOF accessory | | | | |
| Shell Size | G, K, M, O, Q | | | | |
| Angular Function | L = Straight M = 45° N = 90° | | | | |
| Fill Port Option | 0 = No fill port 1 = With fill port | | | | |
| Swivell/Fixed Option | S = Swivel F = Fixed | | | | |




Revolutionary swivel hose barb compression attachment eliminates twisting and damage in PBOF assemblies




The complete range of SeaKing PBOF hose compression fittings includes straight, 45°, and 90° full radius profile versions; with and without integrated oil fill ports

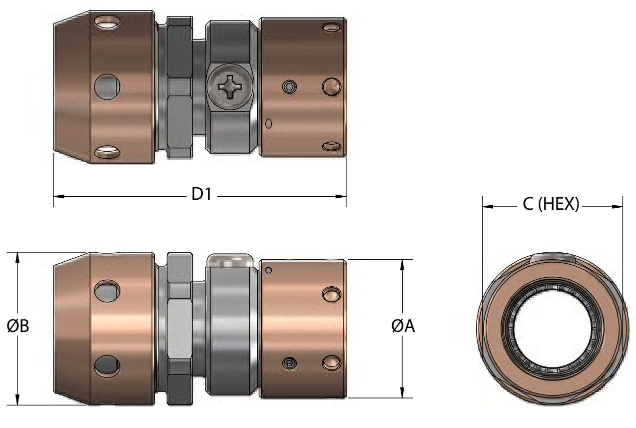



Threaded PBOF compression nut and connector coupling nut (with additional safety set screw) provide for fast and easy assembly and prevent leaks and assembly decoupling

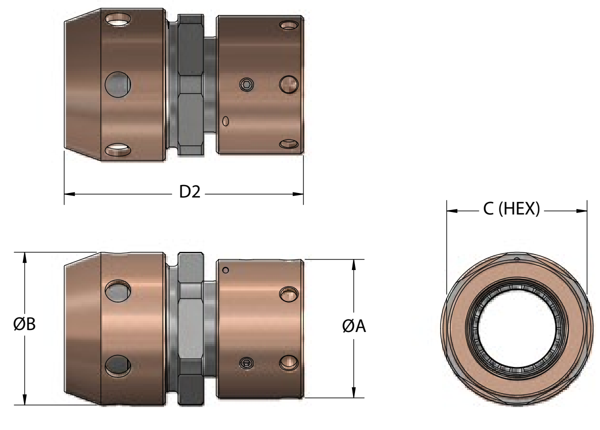
SERIES 70 10K PSI / 700 BAR / 7000 M

# SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies

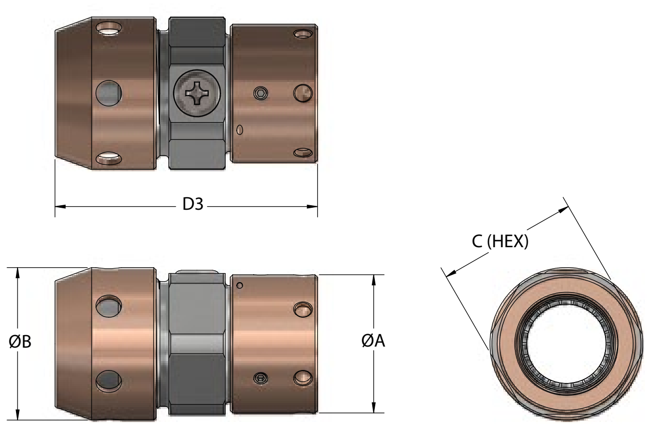
## PBOF fitting: straight with fill port and swivel



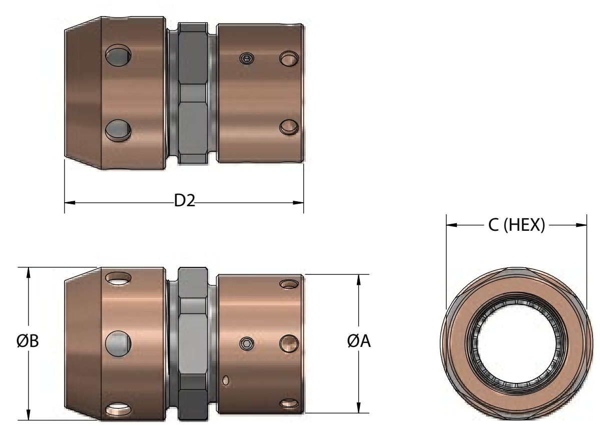

709-003 -L1S
STRAIGHT, WITH FILL PORT, SWIVEL




709-003 -L0S
STRAIGHT, WITHOUT FILL PORT, SWIVEL




709-003 -L1F
STRAIGHT, WITH FILL PORT, FIXED




709-003 -L0F
STRAIGHT, WITHOUT FILL PORT, FIXED

SUBSEA/DEEPWATER: SEAKING™

| Dimensions | | | | | |
|---|---|---|---|---|---|
| Dim Callout | Shell Size | | | | |
| | G | K | M | O | Q |
| A | 0.97 (24.64) | 1.10 (27.94) | 1.35 (34.29) | 1.60 (40.64) | 1.85 (46.99) |
| B | 1.08 (27.43) | 1.21 (30.73) | 1.40 (35.56) | 1.58 (40.13) | 1.83 (46.48) |
| C | 0.99 (25.15) | 1.11 (28.19) | 1.30 (33.02) | 1.49 (37.85) | 1.80 (45.72) |
| D1 | 2.32 (58.93) | 2.32 (58.93) | 2.40 (60.96) | 2.32 (58.93) | 2.41 (61.21) |
| D2 | 1.89 (48.01) | 1.89 (48.01) | 1.97 (50.04) | 1.89 (48.01) | 1.98 (50.29) |
| D3 | 2.08 (52.83) | 2.08 (52.83) | 2.16 (54.86) | 2.08 (52.83) | 2.08 (52.83) |

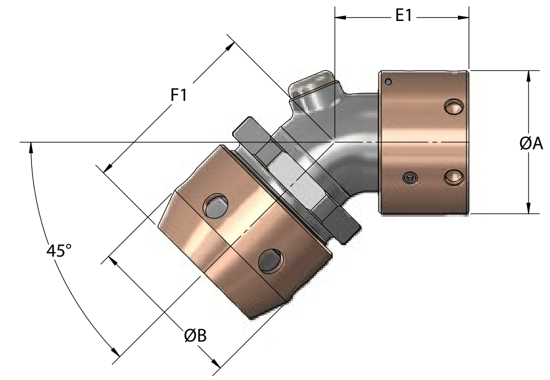




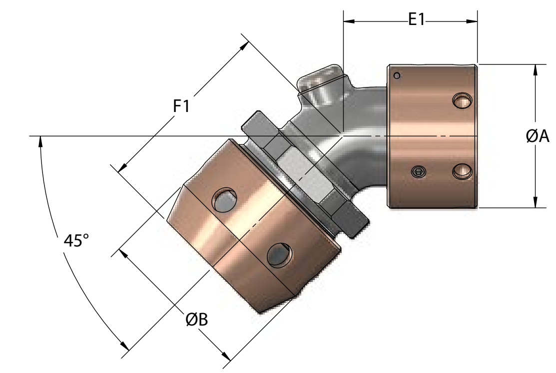
SERIES 70 10K PSI / 700 BAR / 7000 M

SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies

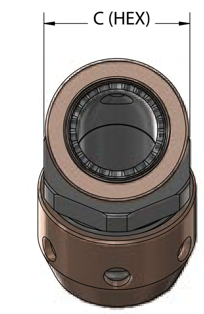
## PBOF fitting: 45° with fill port and swivel

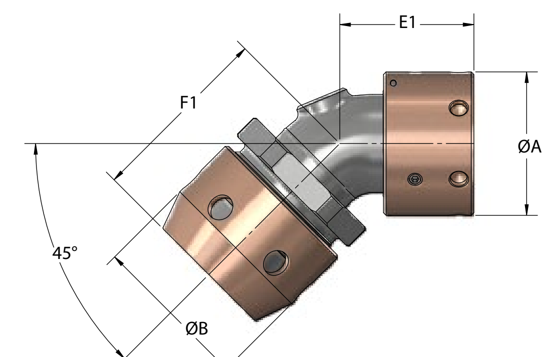



709-003 -M1S
45°, WITH FILL PORT, SWIVEL

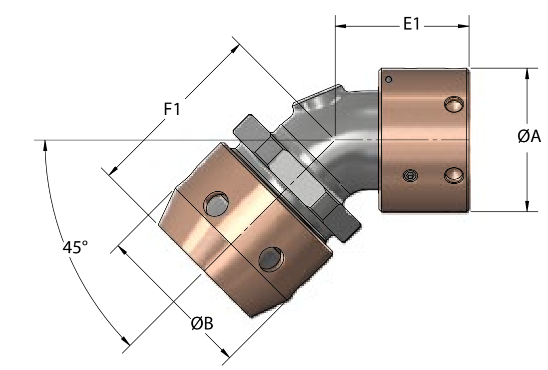



709-003 -M1F
45°, WITH FILL PORT, FIXED




709-003 -M0S
45°, WITHOUT FILL PORT, SWIVEL

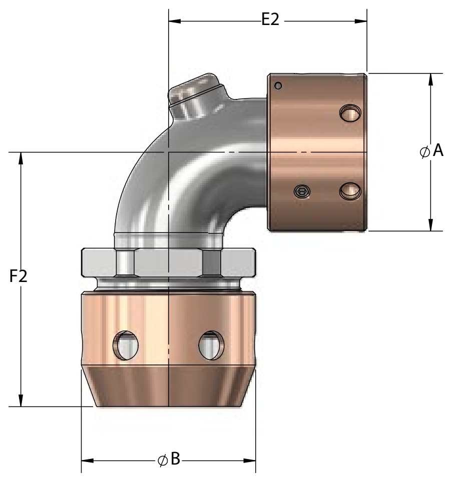



709-003 -M0F
45°, WITHOUT FILL PORT, FIXED

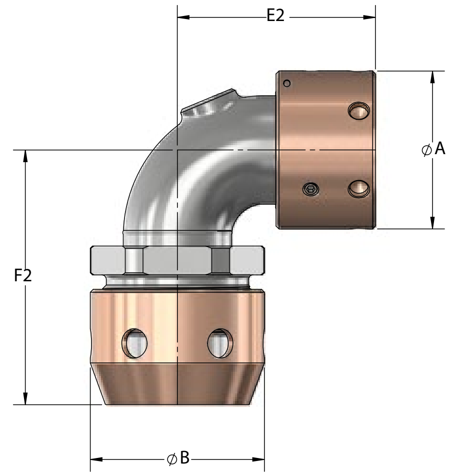
SUBSEA/DEEPWATER: SEAKING™

| Dimensions | | | | | |
|---|---|---|---|---|---|
| Dim Callout | Shell Size | | | | |
| | G | K | M | O | Q |
| A | 0.97 (24.64) | 1.10 (27.94) | 1.35 (34.29) | 1.60 (40.64) | 1.85 (46.99) |
| B | 1.08 (27.43) | 1.21 (30.73) | 1.40 (35.56) | 1.58 (40.13) | 1.83 (46.48) |
| C | 0.99 (25.15) | 1.11 (28.19) | 1.30 (33.02) | 1.49 (37.85) | 1.80 (45.72) |
| E1 | 1.01 (25.65) | 1.07 (27.18) | 1.14 (28.96) | 1.22 (30.99) | 1.33 (33.78) |
| F1 | 1.42 (36.07) | 1.48 (37.59) | 1.63 (41.40) | 1.63 (41.40) | 1.83 (46.48) |

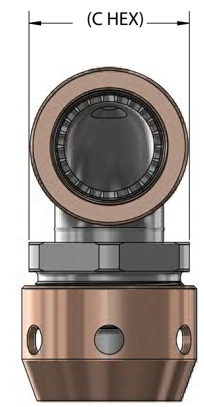
## PBOF fitting: 90° with fill port and swivel

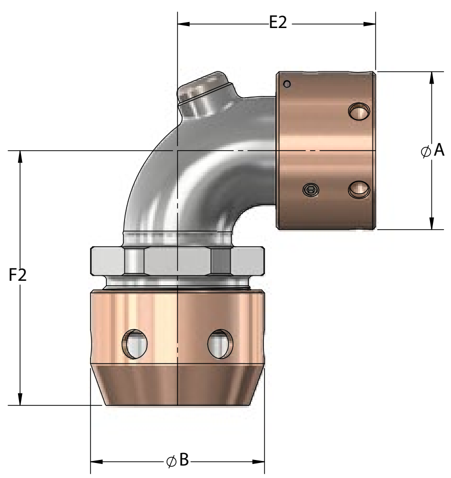



709-003 -N1S
90°, WITH FILL PORT, SWIVEL

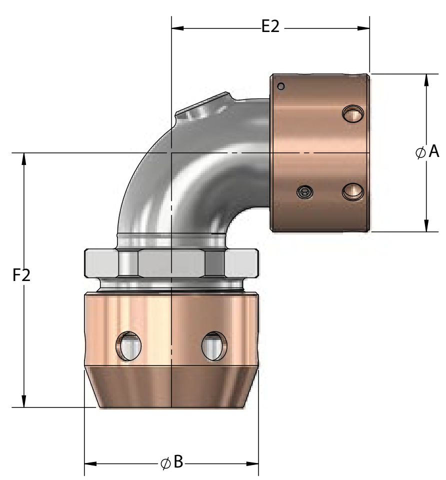



709-003 -N0S
90°, WITHOUT FILL PORT, SWIVEL




709-003 -N1F
90°, WITH FILL PORT, FIXED




709-003 -N0F
90°, WITHOUT FILL PORT, FIXED

**Dimensions**

| Dim Callout | Shell Size G | Shell Size K | Shell Size M | Shell Size O | Shell Size Q |
|---|---|---|---|---|---|
| A | 0.97 (24.64) | 1.10 (27.94) | 1.35 (34.29) | 1.60 (40.64) | 1.85 (46.99) |
| B | 1.08 (27.43) | 1.21 (30.73) | 1.40 (35.56) | 1.58 (40.13) | 1.83 (46.48) |
| C | 0.99 (25.15) | 1.11 (28.19) | 1.30 (33.02) | 1.49 (37.85) | 1.80 (45.72) |
| E2 | 1.24 (31.50) | 1.36 (34.54) | 1.54 (39.12) | 1.72 (43.69) | 1.96 (49.78) |
| F2 | 1.65 (41.91) | 1.77 (44.96) | 2.03 (51.56) | 2.13 (54.10) | 2.46 (62.48) |

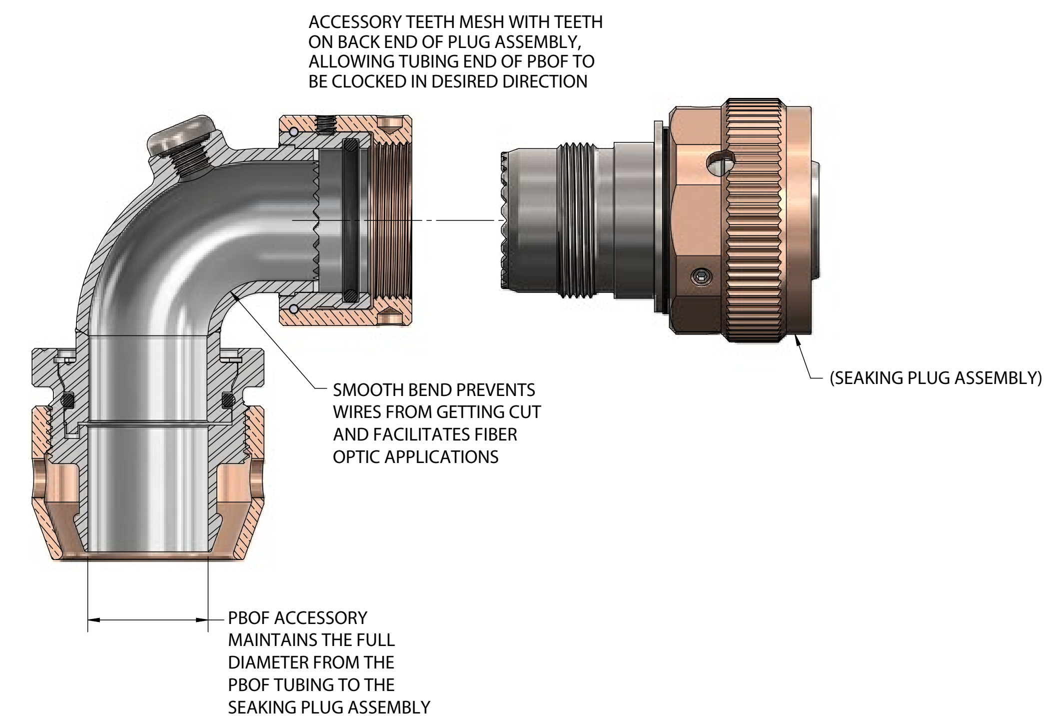


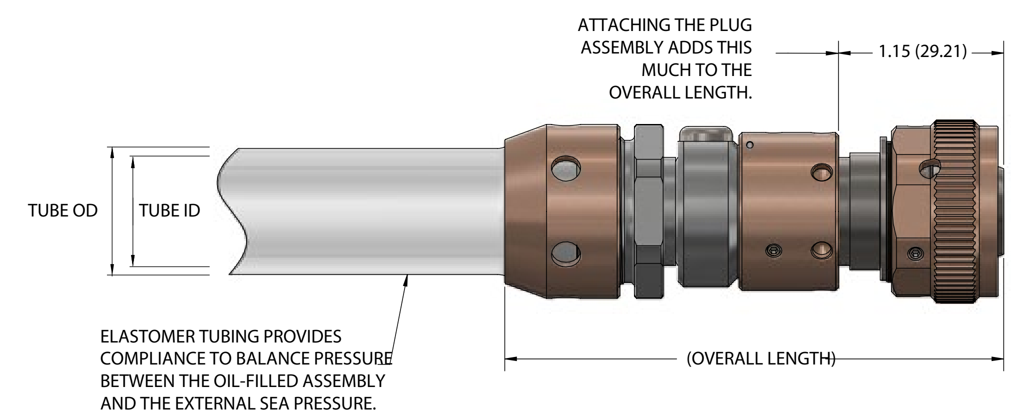




SERIES 70 10K PSI / 700 BAR / 7000 M
SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies

## PBOF tubing: flexible elastomer




**Dimensions and Performance Data**

| SeaKing Shell Size | Tube I.D. | Tube O.D. | Wall Thickness | Min Bend Radius | Max Working Pressure @ 73F° | Max Working Pressure @ 180F° | Vacuum Rating Inches of Mercury @ 73F° | Vacuum Rating Inches of Mercury @ 180° F |
|---|---|---|---|---|---|---|---|---|
| E | 3/8 | 5/8 | 1/8 | 1 1/2 | 205 | 115 | 29.9 | 29.9 |
| G | 1/2 | 3/4 | 1/8 | 2 | 195 | 110 | 29.9 | 29.9 |
| K | 5/8 | 7/8 | 1/8 | 3 | 175 | 105 | 29.9 | 25.0 |
| M | 3/4 | 1 1/16 | 5/32 | 3 1/2 | 150 | 100 | 29.9 | 25.0 |
| O | 1 | 1 3/8 | 3/16 | 4 3/4 | 120 | 80 | 29.9 | 15.0 |
| Q | 1 1/4 | 1 3/4 | 1/4 | 6 | 95 | 65 | 29.9 | 20.0 |

SUBSEA/DEEPWATER: SEAKING™

# Cable assembly capabilities and accessories

## TURNKEY OVERMOLDED AND REPAIRABLE CABLE ASSEMBLIES AND SPECIAL CONFIGURATIONS

**Amber overmold test sample demonstrates Glenair's harsh-environment, high-pressure cable overmolding and cable termination expertise (no voids, 360° material adhesion and cosmetic perfection)**

10K psi overmolded CCP assembly

10K psi overmolded 75 Ohm Coax hybrid assembly

Cabled bulkhead connector receptacle (BCR) assembly

Special FCR assembly with additional mounting points and indexed flange

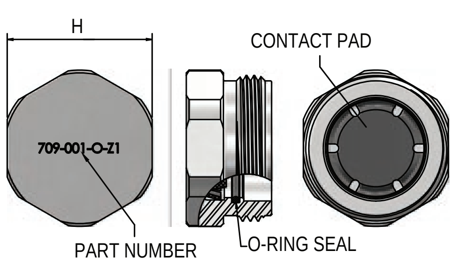
Special Oil & Gas industry NE 606 overmolded cable

## PLUG PRESSURE CAP (MATES WITH 700-006/007)

| Shell Size | Face Seal O-ring | Set Screw | Mating Torque |
|---|---|---|---|
| G | 015 | 4-40 x 3/32 | 10 ft/lbs |
| K | 017 | | 12 ft/lbs |
| L | 019 | | ft/lbs |
| M | 020 | | 12 ft/lbs |
| O | 024 | | 15 ft/lbs |
| Q | 028 | | 15 ft/lbs |
| R | 029 | | ft/lbs |

| Basic Part Number | Plug Size | Body Material |
|---|---|---|
| 709-002 | -K | -Z1 |
| | G, K, L, M,M O, P, Q, R See table | Z1 Stainless Steel<br>TC Titanium Barrel and Coupling Nut |

## RECEPTACLE PRESSURE CAP (MATES WITH 700-001)




| Plug Size | Hex H | Thread T (UN-2A) | O-Ring Size |
|---|---|---|---|
| G | .938 (23.83) | 15/16-12 | 2-014 |
| K | 1.063 (27.00) | 1 1/16-12 | 2-016 |
| L | 1.188 (30.18) | 1 3/16-12 | 2-018 |
| M | 1.313 (33.35) | 1 5/16-12 | 2-019 |
| O | 1.563 (39.70) | 1 9/16-12 | 2-023 |
| Q | 1.813 (46.05) | 1 13/16-12 | 2-028 |
| R | 1.938 (49.23) | 1 15/16-12 | 2-029 |

| Basic Part Number | Plug Size | Body Material |
|---|---|---|
| 709-001 | -O | -Z1 |
| | G, K, L, M,M O, P, Q, R See table | Z1 Stainless Steel*<br>TC Titanium |

*For sizes G through O: Type 316 for sizes Q and up: 2507 Super Duplex

SUBSEA/DEEPWATER: SEAKING™

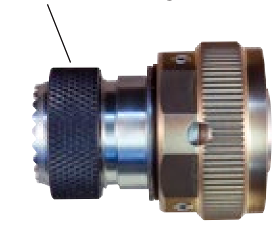




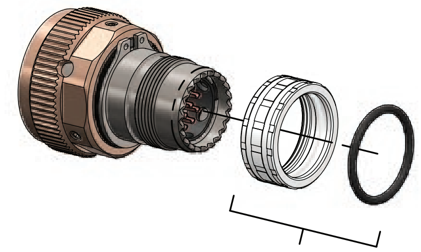

# Tools and accessories

## ANTI-CATHODIC DELAMINATION RING

ACD Nut made of 40% glass-filled PPS

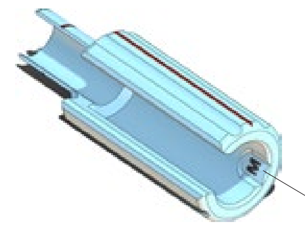


| Part # |
|---|
| 709-009-G |
| 709-009-K |
| 709-009-L |
| 709-009-M |
| 709-009-O |
| 709-009-Q |
| 709-009-R |



ACD ring includes one nitrile o-ring.

## INSERT INSTALLATION TOOL




For Plug and Receptacle

| Part # | Description |
|---|---|
| 709-004-G | Insert Installation Tool for shell size G |
| 709-004-K | Insert Installation Tool for shell size K |
| 709-004-L | Insert Installation Tool for shell size L |
| 709-004-M | Insert Installation Tool for shell size M |
| 709-004-O | Insert Installation Tool for shell size O |
| 709-004-Q | Insert Installation Tool for shell size Q |
| 709-004-R | Insert Installation Tool for shell size R |

## O-RING KITS AND O-RING LUBRICATION GREASE

O-Rings

Parker O-Lube O-ring lubricating grease

| Part # | O-Ring for Bulkhead Connector Receptacle |
|---|---|
| 709-005-07-G | O-Ring Kit for Size G |
| 709-005-07-K | O-Ring Kit for Size K |
| 709-005-07-M | O-Ring Kit for Size M |
| 709-005-07-O | O-Ring Kit for Size O |
| 709-005-07-Q | O-Ring Kit for Size Q |

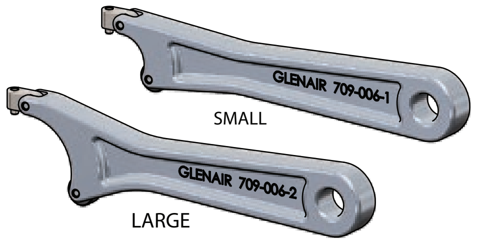
| Part # | O-Ring for Flange Connector Receptacle |
|---|---|
| 709-005-06-G | O-Ring Kit for Size G |
| 709-005-06-K | O-Ring Kit for Size K |
| 709-005-06-M | O-Ring Kit for Size M |
| 709-005-06-O | O-Ring Kit for Size O |
| 709-005-06-Q | O-Ring Kit for Size Q |

| Part # | O-Ring for Cable Connector Plug |
|---|---|
| 709-005-01-G | O-Ring Kit for Size G |
| 709-005-01-K | O-Ring Kit for Size K |
| 709-005-01-M | O-Ring Kit for Size M |
| 709-005-01-O | O-Ring Kit for Size O |
| 709-005-01-Q | O-Ring Kit for Size Q |

| Part # | Description |
|---|---|
| 884-4 | Parker O-Lube O-Ring Grease, large 4 Oz. tube |
| 884-2 | Parker O-Lube O-Ring Grease, small 2 g packet |

SUBSEA/DEEPWATER: SEAKING™

## SPANNER WRENCH




| Part # | Description |
|---|---|
| 709-006-1 | Fits SeaKing™ accessory sizes G thru M. |

| Part # | Description |
|---|---|
| 709-006 -2 | Fits SeaKing™ accessory sizes O and up. |

## TORQUE WRENCH ADAPTORS

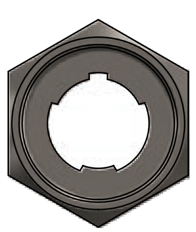

Small adaptor, order number 709-011-1 fits SeaKing accessory sizes G thru M.

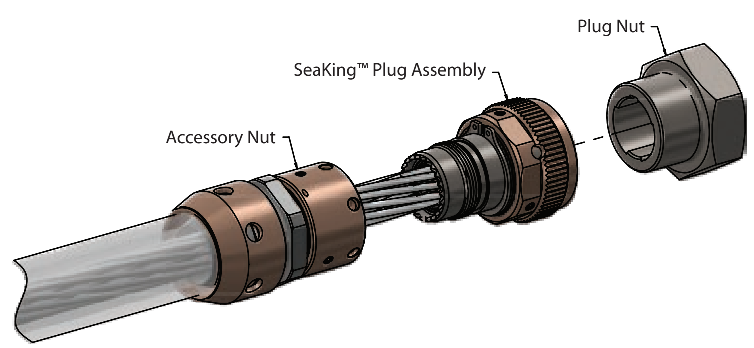
Large adaptor, order number 709-011-2 fits SeaKing accessory sizes O and up.

### NOTES

1. Each adaptor has a 3/8 square drive hole for adapting to a torque wrench.
2. Adaptors are made of 316 stainless steel.
3. Each adaptor has a delrin rotary pad to prevent from marring the accessory nut.

## PLUG NUT






### NOTES

1. The SeaKing™ plug nut is used when tightening the accessory nut onto the SeaKing™ plug assembly. The plug nut engages the plug barrel and a spanner wrench is used to tighten the accessory nut onto the back of the plug assembly
2. Plug is made of 303 stainless steel

| Part # | Description |
|---|---|
| 709-010-G | Plug Nut for shell size G |
| 709-010-K | Plug Nut for shell size K |
| 709-010-L | Plug Nut for shell size L |
| 709-010-M | Plug Nut for shell size M |
| 709-010-O | Plug Nut for shell size O |
| 709-010-Q | Plug Nut for shell size Q |
| 709-010-R | Plug Nut for shell size R |

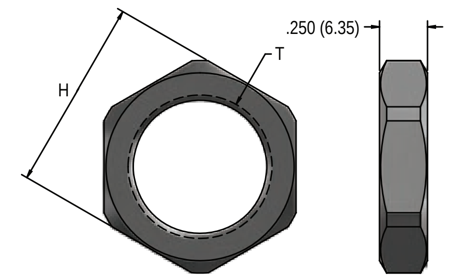






SERIES 70 10K PSI / 700 BAR / 7000 M
SeaKing™ High-Pressure Subsea Connectors, Cables, and PBOF Assemblies
Tools and accessories

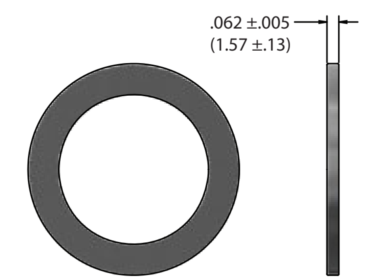
## REPLACEMENT HEX NUT FOR BULKHEAD CONNECTOR RECEPTACLE




| Shell Size | H ±.010 (0.25) | T |
|---|---|---|
| G | .875 (22.23) | 5/8-24-UNEF-2B |
| K | 1.000 (25.40) | 3/4-20 UNEF -2B |
| L | 1.125 (28.58) | 7/8-20 UNEF-2B |
| M | 1.250 (31.75) | 1-20 UNEF -2B |
| O | 1.500 (38.10) | 1 1/8-16 UN-2B |
| P | 1.625 (41.28) | 1 1/4-16 UN-2B |
| Q | 1.750 (44.45) | 1 3/8-16 UN-2B |
| R | 1.875 (47.63) | 1 1/2-16 UN-2B |

| Basic Part Number | Plug Size | Body Material |
|---|---|---|
| 709-012 | -O | -Z1 |
| | G, K, L, M, M, O, P, Q, R | Z1 = Stainless Steel<br>TC = Titanium<br>BZ = Nickel Aluminum Bronze |

## REPLACEMENT WASHER




| Basic Part Number | Plug Size | Body Material |
|---|---|---|
| 709-013 | -O | -Z1 |
| | G, K, L, M, M O, P, Q, R | Z1 = Stainless Steel<br>TC = Titanium<br>BZ = Nickel Aluminum Bronze |

## SNAP RING PLIERS

| Part # | Description |
|---|---|
| 709-008 | Snap Ring Pliers - consult factory for sizing |

## BAND-MASTER ATS® MICRO BANDING TOOL AND BANDS


| Part # | Description |
|---|---|
| 601-101 | Band-Master ATS® Micro Tool with Counter |
| 601-024 | Short Micro band, flat |
| 601-025 | Short Micro band, pre-coiled |
| 601-060 | Medium Micro band, flat |
| 601-061 | Medium Micro band, pre-coiled |
| 601-064 | Long Micro band, flat |
| 601-065 | Long Micro band, pre-coiled |

Weighs 1.3 lbs., and is designed for micro .120" width clamping bands in a tension range from 50 to 85 lbs. Calibrate at 80 lbs ±3 lbs for most shield terminations. Tool and band should never be lubricated.

SUBSEA/DEEPWATER: SEAKING™

SERIES SG55 10K PSI / 700 BAR / 7000M

# SuperG55™ High-Pressure, Dry-Mate Subsea Connectors

## Product selection guide





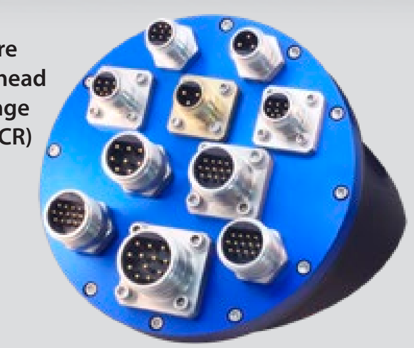


Photo: NOAA



# *DEEP-SEA 10K PSI DRY MATE ELECTRICAL*

# SuperG55™



High-pressure open face bulkhead (BCR) and flange receptacles (FCR)

The SuperG55™ family of dry-mate deep-sea–high pressure connectors are a revolutionary new design of the popular industry-standard used in countless ROV, underwater camera, diver communications, lights, pan and tilts, and other subsea applications.

Available in multiple shell sizes , the SuperG55™ is manufactured from 316L Stainless Steel with insert molded contact assemblies designed for pressure-sealed applications up to 10K psi mated and unmated. Intermateable and intermountable with other "55" series connectors, the Glenair solution introduces a long list of product innovations designed to improve performance and durability. Our PBOF versions, for example, utilize easy-to-assemble threaded fittings which deliver both superior sealing performance while reducing installation time. Other innovations include full-mate inspection ports, improved solder cup contact design and more. Cable plugs and receptacles available in attachable (user-terminatable) versions as well as factory overmolded single-ended whips.

Bulkhead Connector Receptacle (BCR)

Factory-terminated overmolded Cable Connector Plug (CCP)

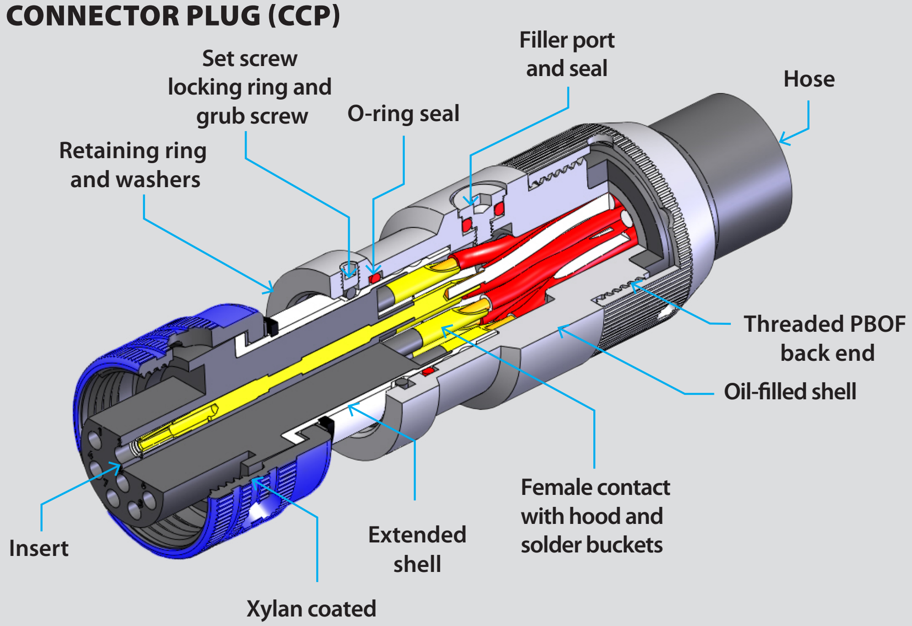
Flange Connector Receptacle (FCR)

- **10,000 psi mated/ unmated (approx. 22,500ft/7,000m)**
- **Recessed socket contacts in plugs for electrical safety**
- **Intermateable and intermountable with other "55" series connectors**
- **3 shell sizes — 15, 20 and 24 and 3 to 21 contacts**
- **PBOF versions available**
- **600 VDC, 5 to 18 Amps (dependent on conductor and cable size and make-up)**

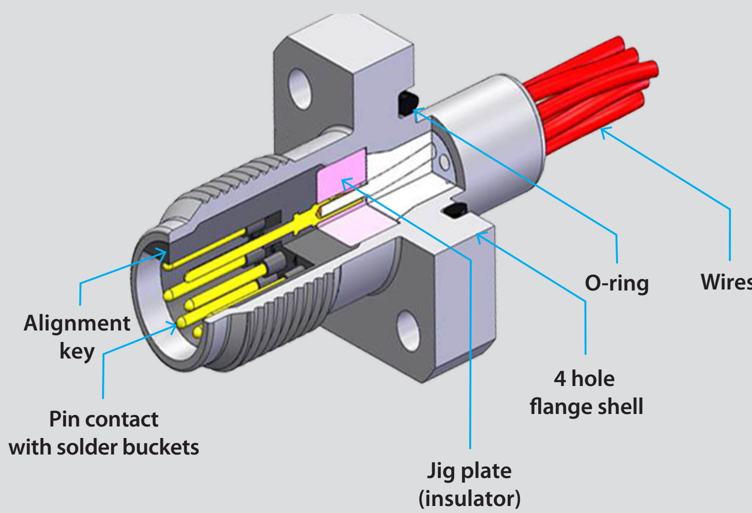
# Key mechanical and environmental features



## SUPERG55™ PRESSURE-BALANCED OIL-FILLED CABLE CONNECTOR PLUG (CCP)




## SUPERG55™ FLANGE CONNECTOR RECEPTACLE (FCR)




| SuperG55™ Performance Specifications | |
|---|---|
| Mating Cycles | 500 |
| Pressure | 689 Bar (10,000 PSI) Mated and Un-mated |
| Operating Temperature | -20°C to +90°C |
| Voltage Rating | 600 VDC / 440 VAC |
| Current (max.) | 5 to 18 Amps (dependant on contact and cable conductor sizes) |

| SuperG55™ Material/Finish | |
|---|---|
| Shells | 316L Stainless Steel/ Passivated |
| Insulator | PEEK/NA |
| Insert | Neoprene/NA |
| Contacts | Copper Alloy/Gold Plated |
| O-rings | Nitrile/NA |
| Overmold and Cable | Polyurethane or Neoprene/NA |
| Coupling Nut | 316L Stainless Steel/ Protective Coating Blue |
| Bulkhead Receptacle Tails | PTFE Insulated 16 AWG Wire/NA |
| Cable | Polyurethane or Neoprene Jacketed/NA |

| | |
|---|---|
| Bulkhead Mounting Torque | Size 15 - 14.12NM (125LB. INS.)<br>Size 20 - 18.64NM (165LB.INS.)<br>Size 24 - 25.42NM (225LB.INS.) |

**NON-STANDARD MATERIALS:** Other material options are available as part of our non-catalog offerings including Anodized aluminium, Titanium, and Aluminium Bronze. Glenair is also able to supply SuperG55™ interconnects in composite thermoplastic (PEEK) to meet application requirements for reduced cathodic corrosion as well as weight reduction without affecting connector performance.

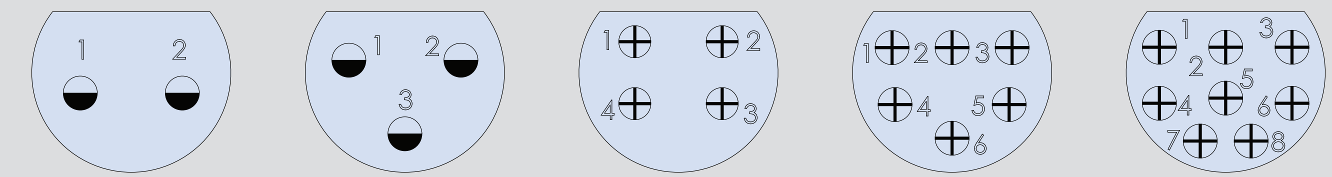
**HIGH-SPEED ETHERNET:** The SuperG55™ Ethernet option is available in the 1508, 2013 and 2021 contact configurations and provides both high speed (Up to 1GB) and power (600Volts) in a full subsea environment (10,000PSI). Gigabit speed data transfer up to a distance of 75mtrs.



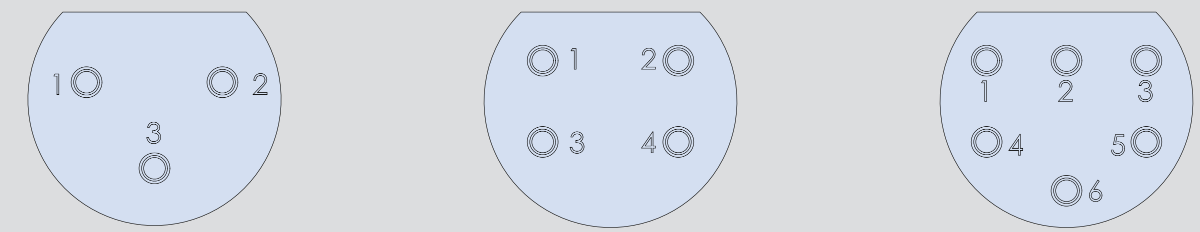

10K PSI / 700 BAR / 7000M
SuperG55™ High-Pressure, Dry-Mate Subsea Connectors

# Contact Arrangements

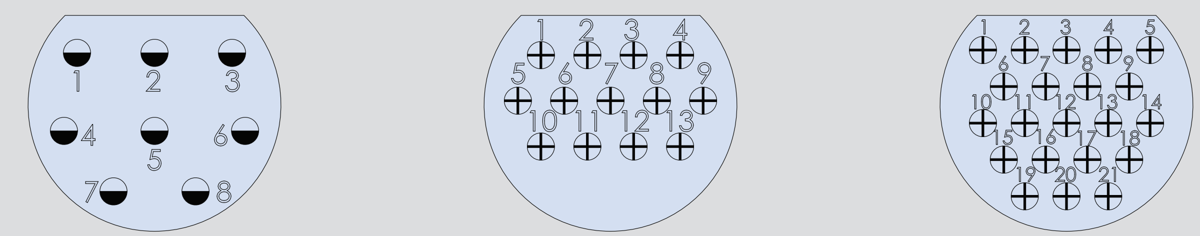
## SUPERG55™ CONTACT ARRANGEMENTS Mating face view of socket insert (pin insert IDs are reversed)



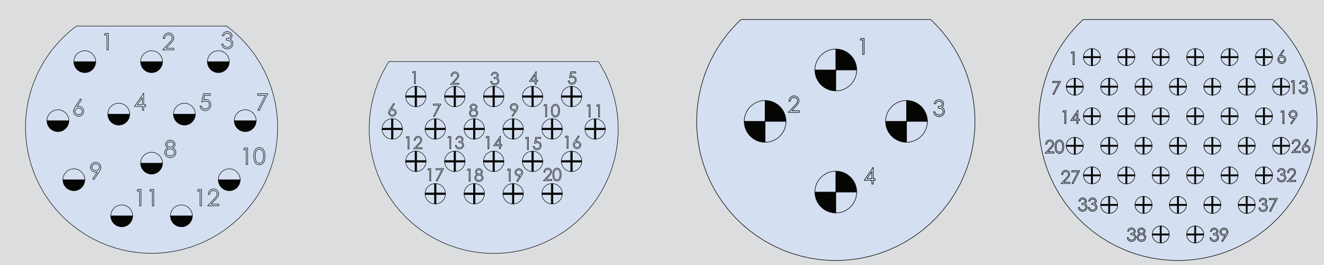
| Shell Size 15 | | | | |
|---|---|---|---|---|
| 1502 | 1503 | 1504 | 1506 | 1508 |
| 2 Size #12 Contacts | 3 Size #12 Contacts | 4 Size #16 Contacts | 6 Size #16 Contacts | 8 Size #16 Contacts |



| Shell Size 20 | | |
|---|---|---|
| 2003 | 2004 | 2006 |
| 3 Size #10 Contacts | 4 Size #10 Contacts | 6 Size #10 Contacts |



| Shell Size 20 | | |
|---|---|---|
| 2008 | 2013 | 2021 |
| 8 Size #12 Contacts | 13 Size #16 Contacts | 21 Size #16 Contacts |



| Shell Size 24 | | Shell Size 32 | |
|---|---|---|---|
| 2412 | 2420 | 3204 | 3239 |
| 12 Size #12 Contacts | 20 Size #16 Contacts | 4 Size #6 Contacts | 39 Size #16 Contacts |

SUBSEA/DEEPWATER: SUPERG55™

## Test Sequence.

The samples were divided into 5 groups as described in GTS 4131 4.1, testing was then carried out in the following sequence as in GTS 4131

| Test Description | QTP-G55 | Test Group | | |
|---|---|---|---|---|
| | Requirement | 1 & 3 | 2 & 4 | 5 |
| Product Examination. | 7.1 | x | x | x |
| Insulation Resistance | 7.2 | x | x | |
| Line Resistance | 7.3 | x | x | |
| Dielectric Withstand Voltage | 7.4 | x | x | |
| Initial Hydrostatic Pressure Test | 7.8 B | x | x | |
| Thermal Shock Test | 7.5 | x | x | |
| Durability | 7.6 | x | | |
| Salt Spray | 7.7 | x | | |
| Final Hydrostatic Pressure Test | 7.8 A | x | x | |
| Final Insulation Resistance | 7.2 | x | x | |
| Final Line Resistance | 7.3 | x | x | |
| Final Dielectric Withstand Voltage | 7.4 | x | x | |
| Final Examination. | 7.1 | x | x | x |

x - applicable

## Test Method

**Examination of Product (7.1).**
All test items shall be visually examined for damage, burrs, quality of finish or other imperfections that may impair function.

**Insulation Resistance (7.2)**
IR shall be measured in accordance with EIA-364-21

**Line Resistance, Low Level Signal Current (7.3)**
Line resistance shall be measured in accordance with EIA-364-23.

**Dielectric Withstand Voltage (7.4)**
1800V (DC) shall be applied in accordance with EIA-364-20, the maximum leakage current will be recorded.

**Initial Hydrostatic Pressure Test (7.8B)**
Sample shall be tested at 6,000PSI. The test duration will be 2 hours.
IR measurements will be taken between odds & even numbered contacts and shell.

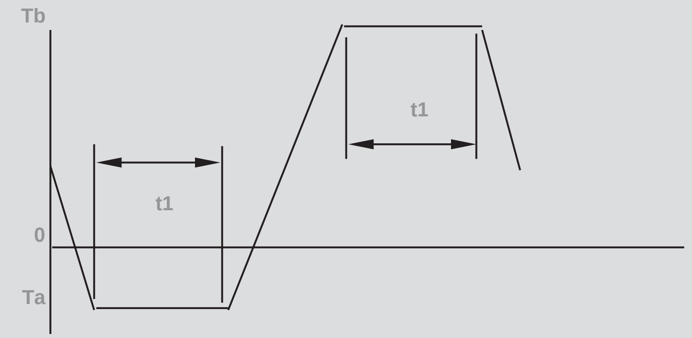





10K PSI / 700 BAR / 7000M
SuperG55™ High-Pressure, Dry-Mate Subsea Connectors
Qualification testing

## Test Method (continued)

**Thermal Cycle(7.5)**




**Comments:** Number of cycles:10 ,
Ta: -20c
Tb:+ 105c
Testing was performed in accordance with EIA-364-32 Method A

**Durability (7.6)**
Samples are to be manually mated and unmated for 500 cycles, the samples will then be mated manually. The testing shall be performed in accordance with EIA-364-26

**Salt Spray (7.7)**
Tested in accordance with EIA-364-26, 5% salt spray, 35°C, 500 hours duration.

**Final Hydrostatic Pressure Test (7.8A)**
Sample will be tested at 15,000PSI. The pressure will be increased at a steady rate, hold for 1 min at 1000PSI increments, the test duration will be 2 hours.

SUBSEA/DEEPWATER: SUPERG55™

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Dimensions in Inches (millimeters) are subject to change without notice.

# SuperG55™ High-Pressure, Dry-Mate Subsea Connectors

## Qualification testing

### Test Results

| PROPERTY | UNIT | REQUIREMENTS | TEST METHOD | PASSED |
|---|---|---|---|---|
| **Electrical** | | | | |
| Insulation Resistance (IR) | Ω | >1G Ω | EIA-364-21 | ☑ |
| Dielectric Withstand Voltage (DWV) 1800v, 30 secs | mA | <2mA Leakage Current | EIA-364-20 | ☑ |
| **Environmental** | | | | |
| Thermal Shock 10 Cycles, -20°C - +105°C | | The samples maintained functionality (including pressure performance) | EIA-364-32 Method A | ☑ |
| Salt Spray 500 hours, 5% salt solution | | The samples showed no signs of corrosion or delamination. | EIA-364-26 condition C | ☑ |
| **Durability** | | | | |
| 500 Mating Cycles | | The samples maintained functionality (including pressure performance) | EIA-364-9 | ☑ |
| **Subsea Performance** | | | | |
| Hydrostatic Pressure Test 10,000psi 2 hour duration Open face and mated | | All samples showed no signs of water ingress, mated connectors maintained IR >100MΩ throughout the test. Samples showed no signs of delamination or permanent deformation. | | ☑ |

SuperG55 connector assemblies undergoing rigorous qualification testing in the salt spray chamber





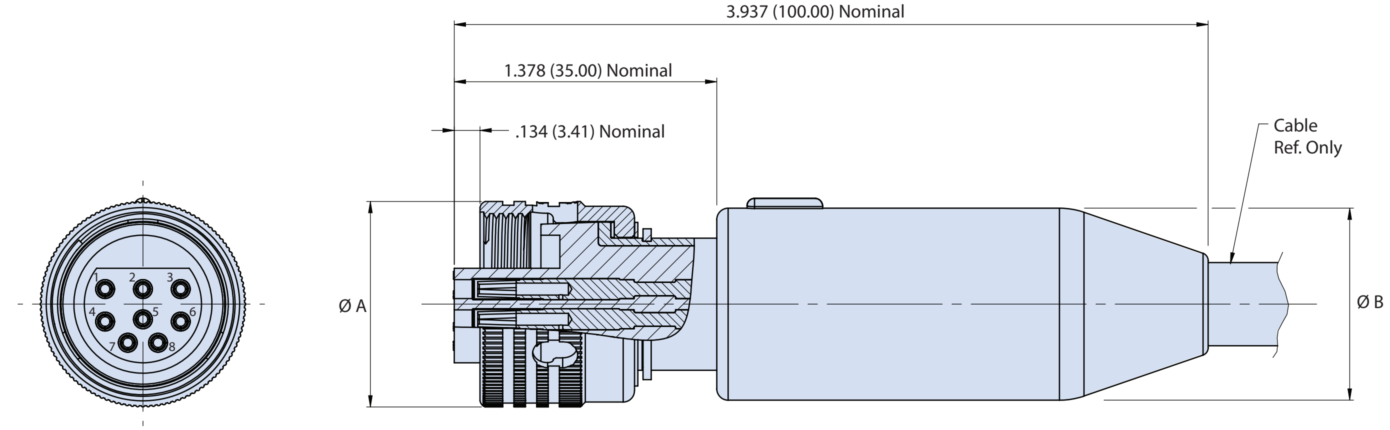


10K PSI / 700 BAR / 7000M

SuperG55™ High-Pressure, Dry-Mate Subsea Connectors

## G55 01 straight overmolded cable plug (CCP)

| SuperG55™ CCP - How To Order | | | | | | |
|---|---|---|---|---|---|---|
| Sample Part Number | | G55 | 01 | 15 | 03 | -0001 |
| Series | SuperG55™ = Underwater dry-mate | | | | | |
| Connector Style | 01 = Cable connector plug | | | | | |
| Shell Size | 15, 20, 24 | | | | | |
| Number of Contacts | See contact arrangements (page 23) | | | | | |
| Cable Length | In feet (0001 = 1 foot, 0002 = 2 feet, etc.) | | | | | |



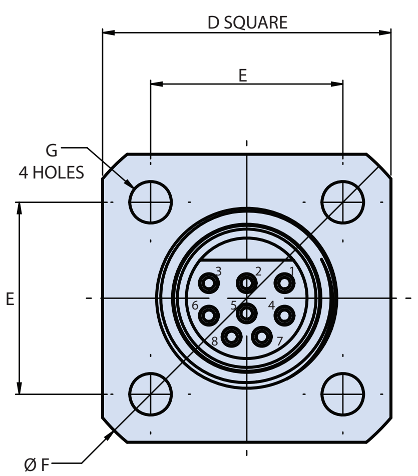

| Dimensions | | |
|---|---|---|
| Shell Size | Dim A ±.006 (.15) | Dim B ±.010 (.25) |
| 15 | 1.070 (27.18) | 1.000 (25.40) |
| 20 | 1.450 (36.83) | 1.380 (35.05) |
| 24 | 1.700 (43.18) | 1.640 (41.66) |

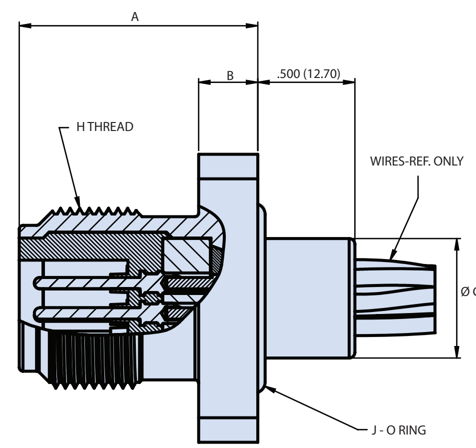
**NOTES**

- 1508 Pin configuration shown. Other pin configurations available
- All contacts / pin configurations suit 16 AWG wire

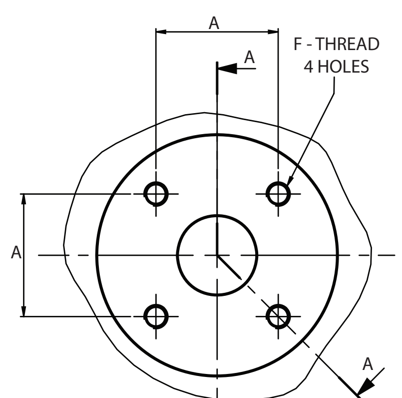
# G55 06 flange connector receptacle (FCR)

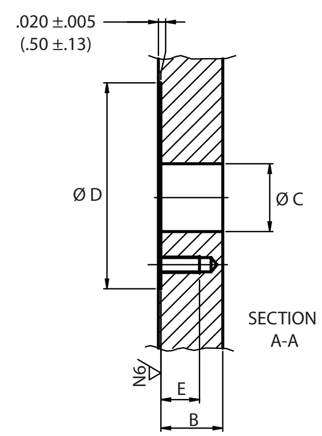
| SuperG55™ FCR - How To Order | | |
|---|---|---|
| **Sample Part Number** | | G55 / 06 / 15 / 08 / -0001 |
| **Series** | **SuperG55™** = Underwater dry-mate | G55 |
| **Connector Style** | **06** = Flange connector receptacle | 06 |
| **Shell Size** | **15, 20, 24** | 15 |
| **Number of Contacts** | See contact arrangements (page 23) | 08 |
| **Cable Length** | In feet (0001 = 1 foot, 0002 = 2 feet, etc.) | -0001 |




## PANEL CUTOUT DIMENSIONS




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | Dim A ±.010 (.26) | Dim B ±.015 (.39) | Dim C ±.002 (.05) | Dim D ±.005 (.13) | Dim E ±.002 (.05) |
| 15 | 1.250 (31.75) | .314 (7.98) | .622 (15.80) | 1.500 (38.10) | 1.000 (25.4) |
| 20 | 1.500 (38.10) | .374 (9.50) | .737 (18.73) | 1.750 (44.45) | 1.250 (31.75) |
| 24 | 1.500 (38.10) | .374 (9.50) | .987 (25.08) | 2.000 (50.80) | 1.500 (38.10) |

| Dimensions (continued) | | | | |
|---|---|---|---|---|
| Shell Size | Dim F ±.005 (.13) | Dim G +.004/-0 (+.10/-0) | H Thread | J - O Ring |
| 15 | 1.949 (49.50) | .217 (5.50) | 15/16”-20UNEF-2A | BS1806-116 |
| 20 | 2.299 (58.40) | .276 (7.00) | 1 1/4”-9 STUB ACME | BS1806-118 |
| 24 | 2.626 (66.70) | .276 (7.00) | 1 1/2”-9 STUB ACME | BS1806-122 |

| Panel Mount Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | Dim A ±.004 (.10) | Dim B Min | Dim C ±.005 (.13) | Dim D ±.005 (.13) | E Thread Depth Typical | F - Thread |
| 15 | 1.000 (25.40) | .525 (13.3) | .650 (16.50) | 1.980 (50.30) | .315 (8.00) | M5 x 0.8-6H |
| 20 | 1.250 (31.75) | .625 (15.88) | .770 (19.56) | 2.33 (59.18) | .375 (9.52) | M6 x 1.0-6H |
| 24 | 1.500 (38.10) | .625 (15.88) | 1.020 (25.91) | 2.655 (67.44) | .375 (9.52) | M6 x 1.0-6H |

## NOTES

- 1508 Pin configuration shown. Other pin configurations available
- All contacts / pin configurations suit 16 AWG wire

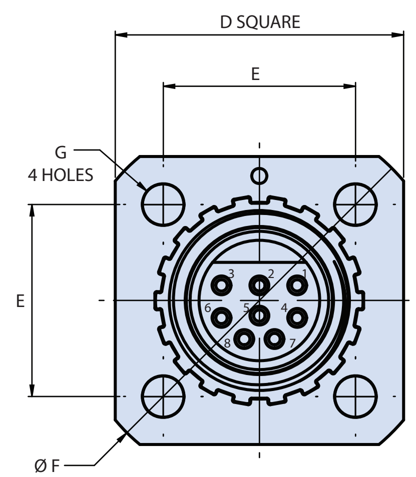


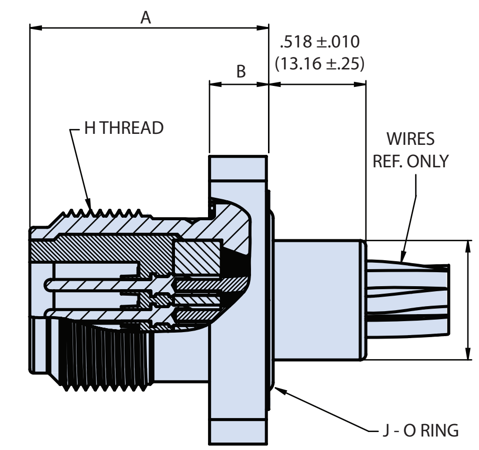




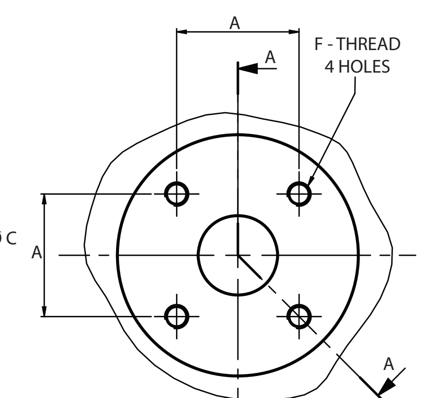

# G55 06IF indexable flange connector receptacle (IFCR)

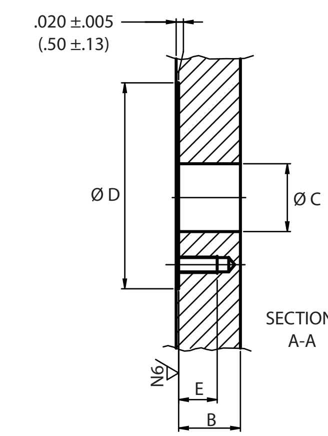
| SuperG55™ IFCR - How To Order | | |
|---|---|---|
| **Sample Part Number** | | G55 / 06IF / 15 / 03 / -0001 |
| **Series** | **SuperG55™** = Underwater dry-mate | G55 |
| **Connector Style** | **06IF** = Indexable flange receptacle connector | 06IF |
| **Shell Size** | **15, 20, 24** | 15 |
| **Number of Contacts** | See contact arrangements (page 23) | 03 |
| **Cable Length** | In feet (0001 = 1 foot, 0002 = 2 feet, etc.) | -0001 |




## PANEL CUTOUT DIMENSIONS




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | Dim A ±.007 (.18) | Dim B ±.002 (.05) | Dim C ±.002 (.05) | Dim D ±.005 (.13) | Dim E ±.002 (.05) |
| 15 | 1.231 (31.27) | .296 (7.52) | .622 (15.80) | 1.500 (38.10) | 1.000 (25.40) |
| 20 | 1.481 (37.62) | .355 (9.02) | .737 (18.73) | 1.750 (44.45) | 1.250 (31.75) |
| 24 | 1.481 (37.62) | .355 (9.02) | .987 (25.08) | 2.000 (50.80) | 1.500 (38.10) |

| Dimensions (continued) | | | | |
|---|---|---|---|---|
| Shell Size | Dim F ±.005 (.13) | Dim G +.004/-0 (+.10/-0) | H Thread | J O-Ring |
| 15 | 1.949 (49.50) | .217 (5.50) | 15/16”-20UNEF-2A | BS1806-116 |
| 20 | 2.299 (58.39) | .276 (7.00) | 1 1/4”-9 STUB ACME | BS1806-118 |
| 24 | 2.626 (66.70) | .276 (7.00) | 1 1/2”-9 STUB ACME | BS1806-122 |

| Panel Mount Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | Dim A ±.004 (.10) | Dim B Min | Dim C ±.005 (.13) | Dim D ±.005 (.13) | E Thread Depth Typical | F - Thread |
| 15 | 1.000 (25.40) | .525 (13.34) | .650 (16.51) | 1.980 (50.29) | .315 (8.00) | M5 x 0.8-6h |
| 20 | 1.250 (31.75) | .625 (15.88) | .770 (19.56) | 2.33 (59.18) | .375 (9.52) | M6 x 1.0-6H |
| 24 | 1.500 (38.10) | .625 (15.88) | 1.020 (25.91) | 2.655 (67.44) | .375 (9.52) | M6 x 1.0-6H |

## NOTES

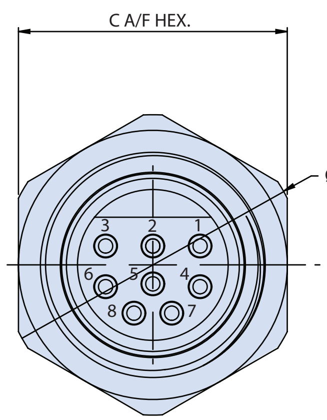
- 1508 Pin configuration shown. Other pin configurations available
- All contacts / pin configurations suit 16 AWG wire

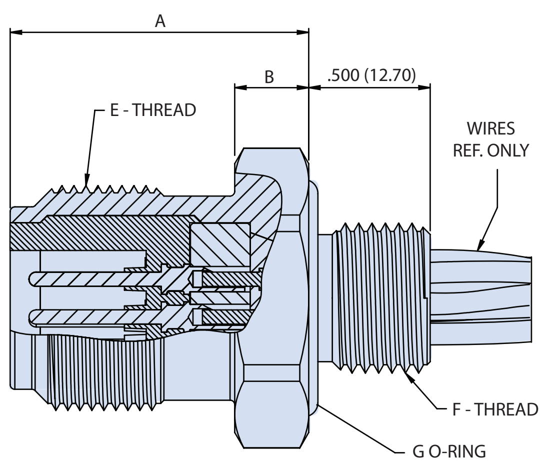
10K PSI / 700 BAR / 7000M

# SuperG55™ High-Pressure, Dry-Mate Subsea Connectors

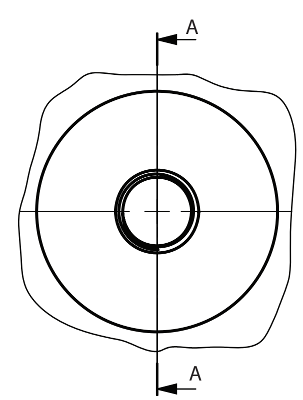
## G55 07 bulkhead connector receptacle (BCR)

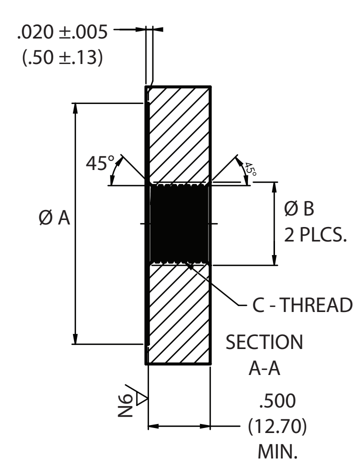
| SuperG55™ BCR - How To Order | | | | | | |
|---|---|---|---|---|---|---|
| Sample Part Number | | G55 | 07 | 15 | 03 | -0001 |
| Series | SuperG55™ = Underwater Dry-Mate | | | | | |
| Connector Style | 07 = Bulkhead connector receptacle | | | | | |
| Shell Size | 15, 20, 24 | | | | | |
| Number of Contacts | See contact arrangements (page 23) | | | | | |
| Cable Length | in feet (0001 = 1 foot, 0002 = 2 feet, etc.) | | | | | |




### PANEL CUTOUT DIMENSIONS




| Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size | Dim A ±.010 (.26) | Dim B ±.015 (.39) | Dim C ±.005 (.13) | Dim D .005 (.13) | E - THREAD | F Thread | G - O RING |
| 15 | 1.250 (31.75) | .314 (7.98) | 1.120 (28.45) | 1.250 (31.75) | 15/16 - 20UNEF-02A | 5/8"-UNF-2A | BS1806-116 |
| 20 | 1.500 (38.10) | .374 (9.50) | 1.250 (31.75) | 1.398 (35.51) | 1 1/4"-9 STUB ACME | 3/4"-16UNF-2A | BS1806-118 |
| 24 | 1.500 (38.10) | .374 (9.50) | 1.500 (38.10) | 1.700 (43.18) | 1 1/2"-9 STUB ACME | 1.000"-14UNS-2A | BS1806-122 |

| Panel Mount Dimensions | | | |
|---|---|---|---|
| Shell Size | Dim A ±.005 (.15) | Dim B ±.005 (.13 ) | Dim C Thread |
| 15 | 1.300 (33.02) | .680 (17.27) | 5/8"-18UNF-28 |
| 20 | 1.440 (36.58) | .790 (20.07) | 3/4"-16UNF-28 |
| 24 | 1.730 (43.94) | 1.050 (26.67) | 1.000"-14UNS-2B |

### NOTES

- 2008 Pin configuration shown. Other pin configurations available
- All contacts / pin configurations suit 16 AWG wire

SUBSEA/ DEEPWATER: SUPERG55™

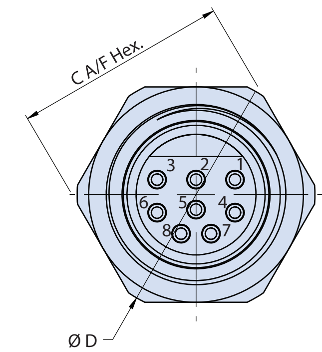


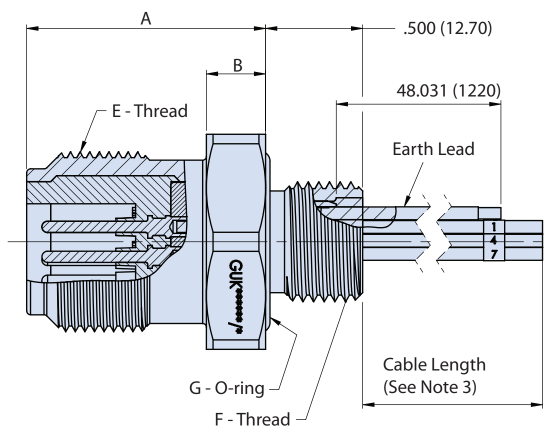

10K PSI / 700 BAR / 7000M

# SuperG55™ High-Pressure Subsea

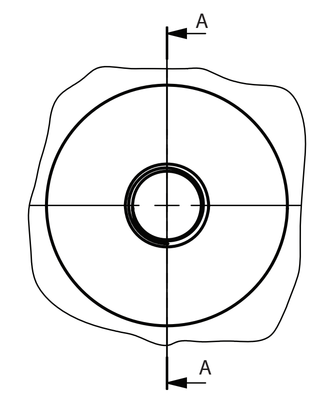
## G55 07 bulkhead connector receptacle with earth lead/ground pin (BCR-EL)

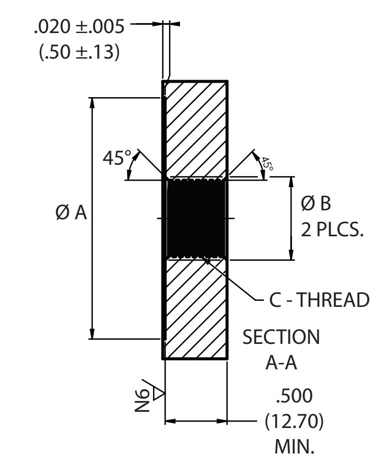
| SuperG55™ BCR with Earth Lead - How To Order | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sample Part Number | | G55 | 07 | 15 | 08 | -0001 | EL |
| Series | SuperG55™ = Underwater dry-mate | | | | | | |
| Connector Style | 07 = Bulkhead connector receptacle | | | | | | |
| Shell Size | 15, 20, 24 | | | | | | |
| Number of Contacts | See contact arrangements (page 23) | | | | | | |
| Cable Length | In feet (0001 = 1 foot, 0002 = 2 feet, etc.) | | | | | | |
| Earth Lead | EL = Earth lead (ground pin) | | | | | | |




### PANEL CUTOUT DIMENSIONS




| Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size | Dim A 0.26 (0.010") | Dim B 0.39 (0.015") | Dim C .13 (0.005") | Dim D 0.13 (0.005") | E - Thread | F - Thread | G - O Ring |
| 15 | 1.250 (31.75) | .314 (7.98) | 1.120 (28.45) | 1.250 (31.75) | 15/16"-20 UNEF-2A | 5/8"-18 UNF-2A | BS1806-116 |
| 20 | 1.500 (38.10) | .374 (9.50) | 1.250 (31.75) | 1.398 (35.51) | 1 1/4"-9 STUB ACME | 3/4"-16 UNF-2A | BS1806-118 |
| 24 | 1.500 (38.10) | .374 (9.50) | 1.500 (38.10) | 1.700 (43.18) | 1 1/2"-9 STUB ACME | 1.000"-14 UNS-2A | BS1806-122 |

### NOTES

1. 1508 Pin configuration shown. Other pin configurations available
2. All contacts / pin configurations suit 16 AWG wire
3. Cable length tolerance:
   - Length = ≤ 0.30M (1ft) tolerance = +25mm / -0mm (+1" / -0)
   - Length = 0.3M - 1.5M (1ft - 5ft) tolerance = +50mm / -0mm (+2" / -0)
   - Length = 1.5M - 3M (5ft - 10ft) tolerance = +100mm / -0mm (+4" / -0)
   - Length = 3M - 7.5M (10ft - 25ft)tolerance = +150mm / -0mm (+6" / -0)
   - Length = ≥ 7.5M (25ft ) tolerance = +5% / -0mm

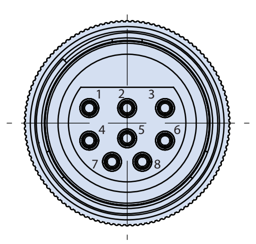
SUBSEA/DEEPWATER: SUPERG55™

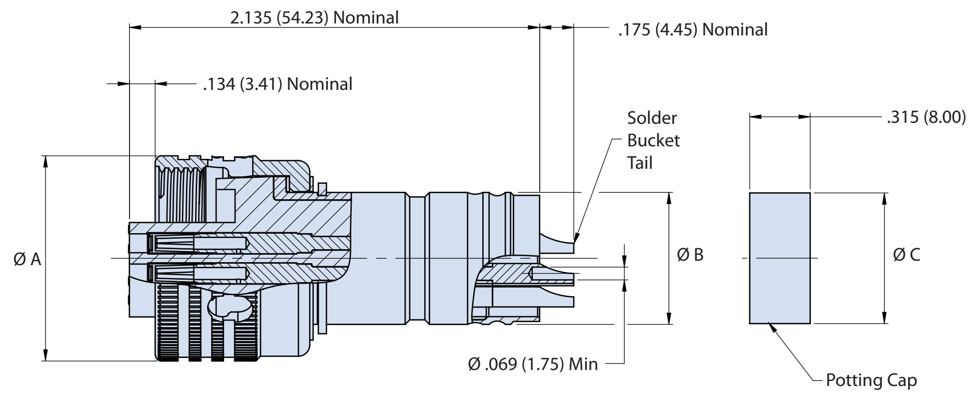
# SuperG55™ High-Pressure Subsea

## Attachable, G55 A1 cable connector plug (CCP-AT) and G55 OFA1 cable connector plug, oil filled (CCP-OF)



| SuperG55™ CCP and CCP-OF - How To Order | | | | | |
|---|---|---|---|---|---|
| Sample Part Number | G55 | A1 | 15 | 03 | -0001 |
| Series | **SuperG55™** = Underwater dry-mate | | | | |
| Connector Style | **A1** = Cable connector plug, attachable<br>**OFA1** = Oil filled cable connector plug, attachable | | | | |
| Shell Size | **15, 20, 24** | | | | |
| Number of Contacts | See contact arrangements (page 23) | | | | |
| Cable Length | In feet (0001 = 1 foot, 0002 = 2 feet, etc.) | | | | |






| Dimensions | | | |
|---|---|---|---|
| Shell Size | Dim A ±.006 (.15) | Dim B ±.002 (.05) | Dim C ±.002 (.05) |
| 15 | 1.070 (27.18) | .688 (17.48) | .681 (17.30) |
| 20 | 1.450 (36.85) | 1.093 (27.76) | 1.073 (27.26) |
| 24 | 1.700 (43.20) | 1.312 (33.32) | 1.288 (32.72) |

### NOTES

- 1508 Pin configuration shown. Other pin configurations available
- All contacts / pin configurations suit 16 AWG wire





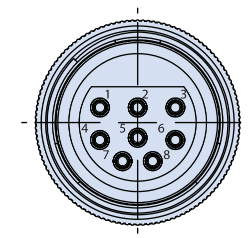


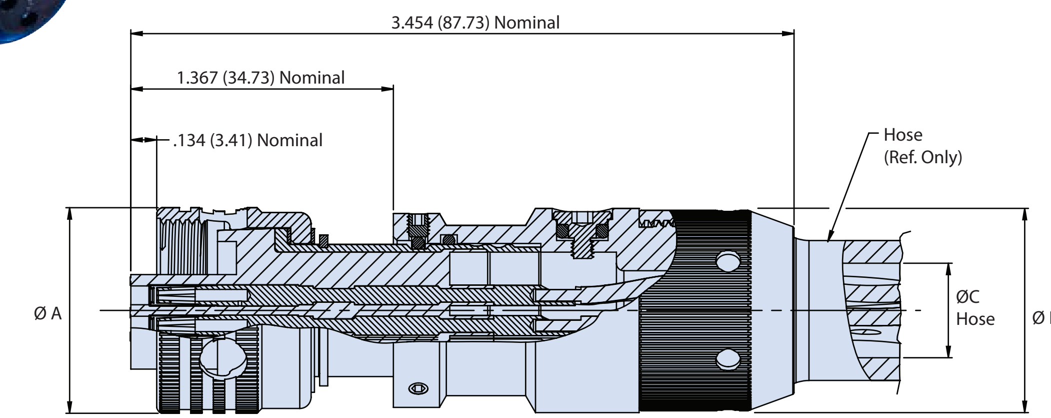
# SuperG55™ High-Pressure Subsea

## G55 OF1 oil filled straight cable connector plug with clamped hose (CCP-OF)



| SuperG55™ CCP-OF - How To Order | | | | | |
|---|---|---|---|---|---|
| Sample Part Number | G55 | OF1 | 15 | 03 | -0001 |
| Series | **SuperG55™** = Underwater dry-mate | | | | |
| Connector Style | **OF1** = Oil filled cable connector plug | | | | |
| Shell Size | **15, 20, 24** | | | | |
| Number of Contacts | See contact arrangements (page 23) | | | | |
| Cable Length | in feet (0001 = 1 foot, 0002 = 2 feet, etc.) | | | | |






| Dimensions | | | |
|---|---|---|---|
| Shell Size | Dim A Nominal | Dim B ±.15 (.006) | Dim C ±.25 (.10) |
| 15 | 1.070 (27.18) | 1.063 (27.00) | .500 (12.70) |
| 20 | 1.450 (36.85) | 1.441 (36.60) | .750 (19.05) |
| 24 | 1.700 (43.20) | 1.687 (42.84) | .750 (19.05) |

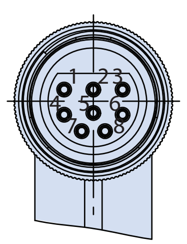
### NOTES

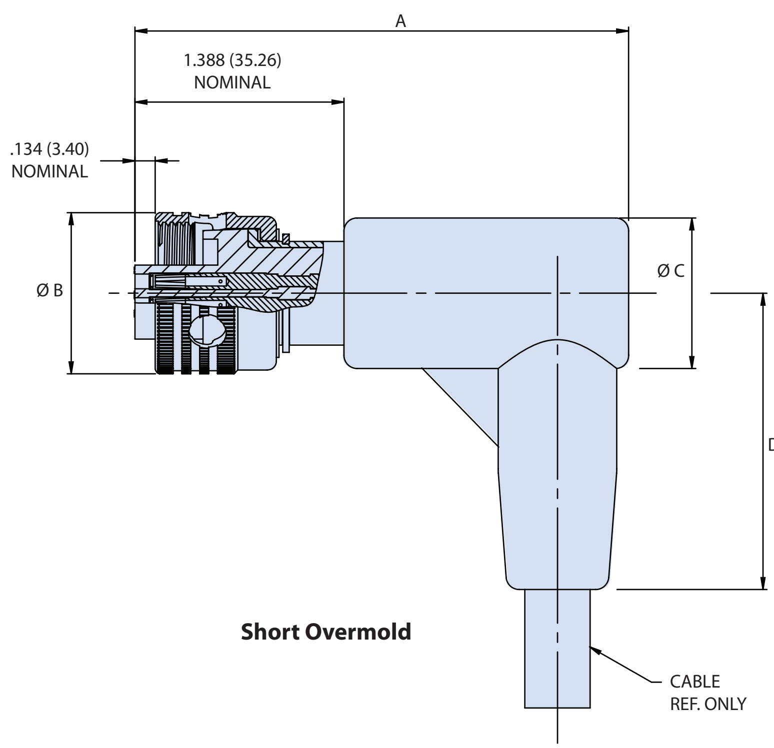
- 1508 Pin configuration shown. Other pin configurations available
- All contacts / pin configurations suit 16 AWG wire

# SuperG55™ High-Pressure, Dry-Mate Subsea Connectors

## G55 R1 right angle cable connector plug

| SuperG55™ CCP-RA- - How To Order | | | | | |
|---|---|---|---|---|---|
| **Sample Part Number** | G55 | R1 | 15 | 03 | -0001 |
| **Series** | **SuperG55™** = Underwater dry-mate | | | | |
| **Connector Style** | **R1** = Overmolded, right angle cable connector plug | | | | |
| **Shell Size** | **15, 20, 24** | | | | |
| **Number of Contacts** | See contact arrangements (page 23) | | | | |
| **Cable Length** | in feet (0001 = 1 foot, 0002 = 2 feet, etc.) | | | | |






**Short Overmold**

| Dimensions | | | | |
|---|---|---|---|---|
| Shell Size | Dim A Nominal | Dim B ±.15 (.006) | Dim C ±.25 (.10) | Dim D Nominal |
| 15 | 3.278 (83.26) | 1.070 (27.18) | 1.00 (25.40) | 1.968 (49.99) |
| 20 | 3.518 (89.36) | 1.450 (36.85) | 1.380 (35.05) | 2.759 (70.08) |
| 24 | 3.778 (95.96) | 1.700 (43.20) | 1.640 (41.66) | 3.179 (80.75) |

### NOTES

- 1508 Pin configuration shown. Other pin configurations available
- All contacts / pin configurations suit 16 AWG wire





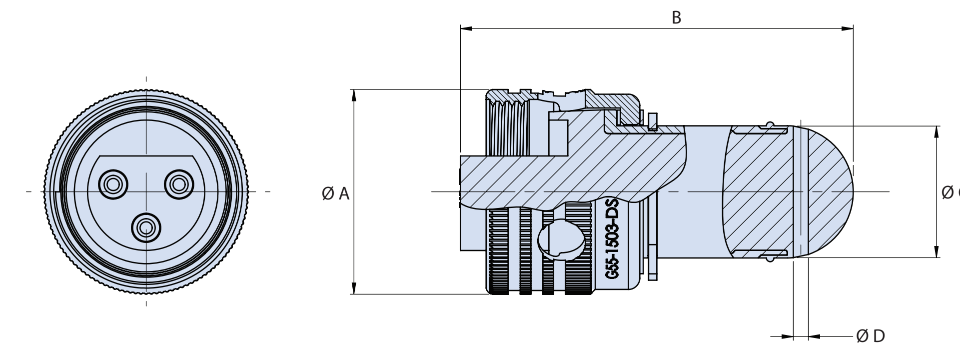


10K PSI / 700 BAR / 7000M

SuperG55™ High-Pressure, Dry-Mate Subsea Connectors

## G55 receptacle cover

| SuperG55™ Receptacle Cover - How To Order | | | | | |
|---|---|---|---|---|---|
| **Sample Part Number** | G55 | D1 | 15 | 03 | -0001 |
| **Series** | **SuperG55™** = Underwater dry-mate | | | | |
| **Connector Style** | **D1** = Receptacle cover | | | | |
| **Shell Size** | **15, 20, 24** | | | | |
| **Number of Contacts** | See contact arrangements (page 23) | | | | |
| **Cable Length** | In feet (0001 = 1 foot, 0002 = 2 feet, etc.) | | | | |




| Dimensions | | | | |
|---|---|---|---|---|
| Contact Arrangement | Dim A ±.006 (.15) | Dim B Nominal | Dim C ±.010 (.25) | Dim D ±.005 (.13) |
| 1503 | 1.070 (27.18) | 2.047 (52.00) | 0.688 (17.48) | .079 (2.00) |
| 1508 | 1.070 (27.18) | 2.047 (52.00) | 0.688 (17.48) | .079 (2.00) |
| 2008 | 1.450 (36.85) | 2.244 (57.00) | 1.093 (27.76) | .118 (3.00) |
| 2013 | 1.450 (36.85) | 2.244 (57.00) | 1.093 (27.76) | .118 (3.00) |
| 2021 | 1.450 (36.85) | 2.244 (57.00) | 1.093 (27.76) | .118 (3.00) |
| 2412 | 1.700 (43.20) | 2.362 (60.00) | 1.312 (33.32) | .118 (3.00) |

DOWN HOLE

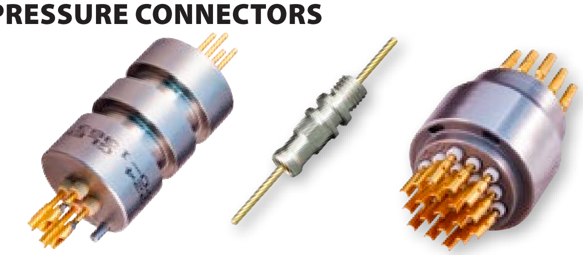
*MINIATURE HIGH-DENSITY*

## High Pressure / High Temperature Interconnects for Downhole LWD and MWD Applications

**Small form-factor solutions tailored for harsh-environment geophysical downhole tooling applications—with high temperature tolerance and high pressure glass sealing**

**DOWNHOLE HIGH-TEMPERATURE / HIGH PRESSURE CONNECTORS**

Well-Master® - Page 1



Penetrators/Feedthroughs - Page 18



260® Well-Master

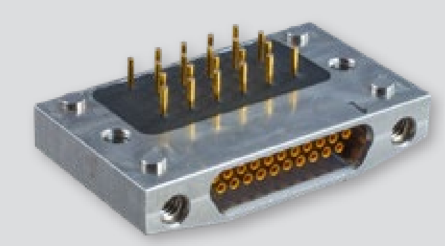
*SERIES GHTM WELL-MASTER 260°*

# Downhole Micro-D Connector

## Product selection guide

Glenair





HIGH-TEMPERATURE

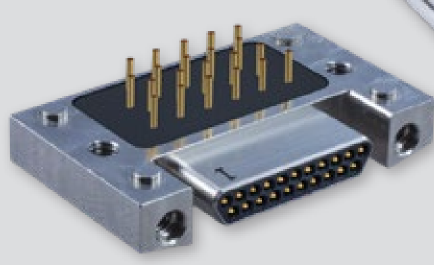
# Well-Master® 260 °

## The Micro-D connector for serious, high-temperature applications

Standard Micro-D connectors are rated for +125°C. Glenair's MWDM Micro-D can withstand +150°C continuous operating temperature and can be upgraded to +200°C if assembled with special high temperature epoxies. But oil, gas and geothermal wells can subject electronic instruments to temperatures as high as +260°C. The GHTM Series Micro-D meets the need for a high density, high performance connector capable of handling this temperature. The GHTM features contacts made from a special alloy that resists softening when exposed to temperatures up to +260°C (500° F). Rugged passivated stainless steel shells and hardware, high temperature liquid crystal polymer (LCP) insulators allow these connectors to survive the most demanding environments. Unique angled mounting ears allow the Well-Master™ 260° to fit in confined spaces.

- **+260°C Operating Temperature**
- **Angled Mounting Ears to Fit in Small Diameter Instruments**
- **High Reliability TwistPin Contact System with Special High Temperature Alloy**
- **.050" Pitch Contact Spacing for Reduced Size**
- **Solder Cup, Pre-Wired or PCB**

Well-Master 260®



**+260°C PCB Header**

**+260°C Cable Connector**

DOWNHOLE: WELL-MASTER® 260°

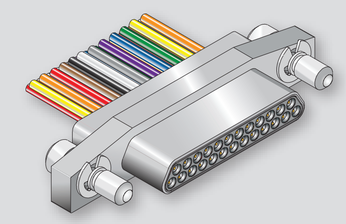


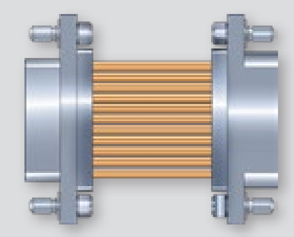




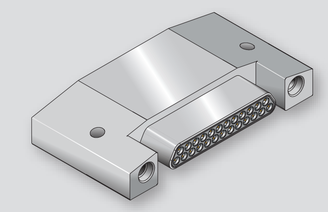
In addition to extreme high temperature tolerance, and demating resistance to vibration and shock, the Glenair Well-Master™ 260° Micro-D connector features unique shell packaging designed to conform with the cylindrical shape of instrument housings. Special angled mounting ears facilitate incorporation of the connector into available space, and the Micro-D's overall reduced size compared to other rectangular connector solutions allows for more efficient utilization.

**High Temperature Micro-D with insulated Wire Pigtails**



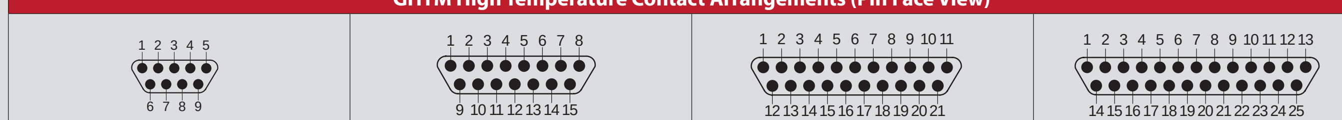


**High Temperature Back-to-Back Micro-D**

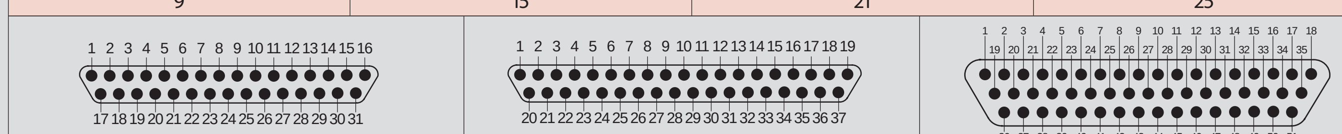


**High Temperature PCB Header**

**GHTM High Temperature Contact Arrangements (Pin Face View)**



| 9 | 15 | 21 | 25 |
|---|---|---|---|



| 31 | 37 | 51 |
|---|---|---|

**Mating face of pin connector. Socket connector contact numbers are reversed.**

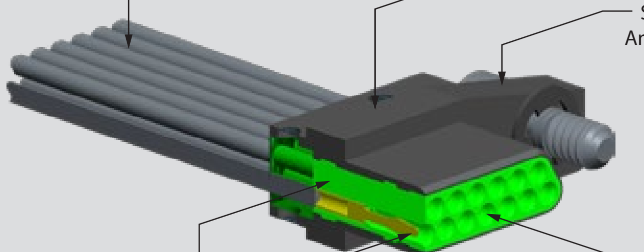
DOWNHOLE: WELL-MASTER® 260°

# Materials and specifications

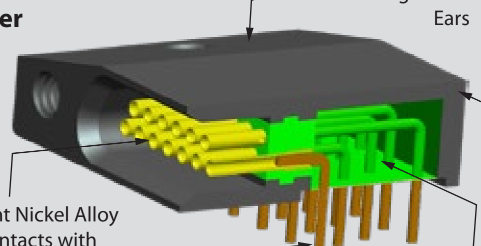


## WELL-MASTER® 260° FEATURES

### Cable Connector




### PCB Header

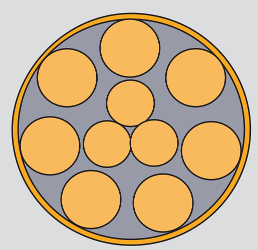




**What sets our pins apart**
This unretouched photograph shows important differences between the TwistPin and stamped pins.

**A Stronger Pin**
Both types of contacts meet the requirements of MIL-DTL-83513. But only the TwistPin offers a stronger pin with its seven points of contact, high normal force and better resistance to vibration.

**Seven Points of Electrical Contact**
The TwistPin size #24 contact has seven strands of BeCu wire surrounding three filler strands . Each strand makes contact with the socket, assuring low resistance, plenty of contact wipe, and excellent shock and vibration performance.



## A Better Crimp Joint

Micro-D connectors are factory-terminated to wire. Board mount and insulated wire pigtails have crimp joints where the wire attaches to the contact. Micro-D GHTM crimp joints are encased with a LCP insulator. This design is unique among high reliability mil spec connectors because the mil spec allows stamped crimp barrels and does not specify that the crimping process must use mil spec crimp tools. The thin sheet metal in the stamped pin cannot produce a satisfactory gas-tight crimp joint, so spot welding is required to reduce the chance of failure.

| Materials and Finishes | |
|---|---|
| Contacts | Proprietary nickel alloy, gold plated |
| Insulators | Liquid crystal polymer (LCP) |
| Shell | Stainless steel, passivated |
| Mounting Hardware | Stainless Steel |
| Insulated Wire | Nickel-coated copper, PTFE insulation per M22759/87 (260°C) |

| Specifications | |
|---|---|
| Current Rating | 3 Amps |
| Contact Resistance | 8 milliohms maximum |
| Dielectric Withstanding Voltage | 600 Vac sea level |
| Insulation Resistance | 5000 megohms minimum |
| Operating Temperature | -55° C. to +260° C. |
| Shock | 50 g. |
| Vibration | 20 g. |



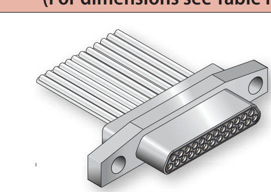
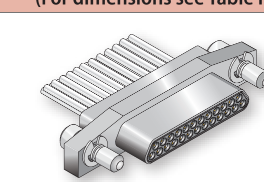
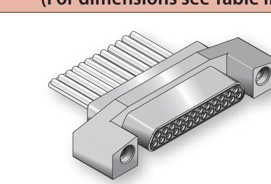
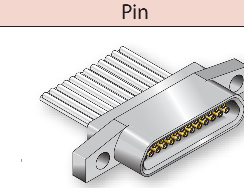
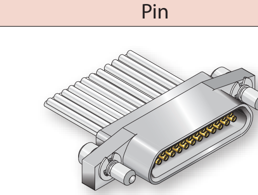
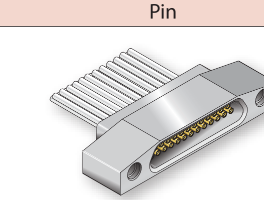

260° Well-Master
*SERIES GHTM WELL-MASTER 260°*
Downhole Micro-D Connector
Glenair.

# Insulated wire connector with pin or socket contacts

## GHTM PRE-WIRED CONNECTORS WITH +260°C MIL SPEC PTFE/POLYIMIDE WIRE

GHTM Well-Master™ 260° pre-wired Micro-D connectors withstand +260°C continuous operating temperature. These .050" pitch Micro-D connectors are terminated to #24 AWG insulated wire. Nickel-coated copper wire conforms to M22759/87, PTFE/polyimide insulation. Pin contacts are gold-plated high performance twistpin type and are recessed into insulator to prevent damage. Special nickel alloy contact material resists softening in high heat. Machined passivated stainless steel shell. Glass-filled high temperature LCP thermoplastic insulators. 100% hi-pot tested. Meets performance requirements of MIL-DTL-83513. Available with 9 to 51 contacts. 3 A., 600 Vac, -55°C to +260°C.

| How To Order | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Part Number | | GHTM | -31 | S | -4 | T | 1 | -18 | B |
| Series | GHTM Glenair High Temperature Micro | | | | | | | | |
| Shell Size | 9, 15, 21, 25, 31, 37, 51<br>See Table II for Thru-Hole and Jackscrew Connector Dimensions and Table III for Integral Jackpost Connector Dimensions | | | | | | | | |
| Contact Type | P - Pin/Plug S - Socket/Receptacle | | | | | | | | |
| Wire Gage (AWG) | 4 – #24 | | | | | | | | |
| Wire Type | T – PTFE/Polyimide Insulated Nickel Coated Copper | | | | | | | | |
| Wire Color | 1 – White | | | | | | | | |
| Wire Length (Inches) | 18 – Wire Length In Inches. "18" Specifies 18 Inches. | | | | | | | | |
| Mounting Hardware | B - Std. Thru-Hole (Ø.089/.095) M - Hex Head Jackscrew S - Slot Head Jackscrew P - Integral Jackpost<br>See Mounting Hardware Table | | | | | | | | |

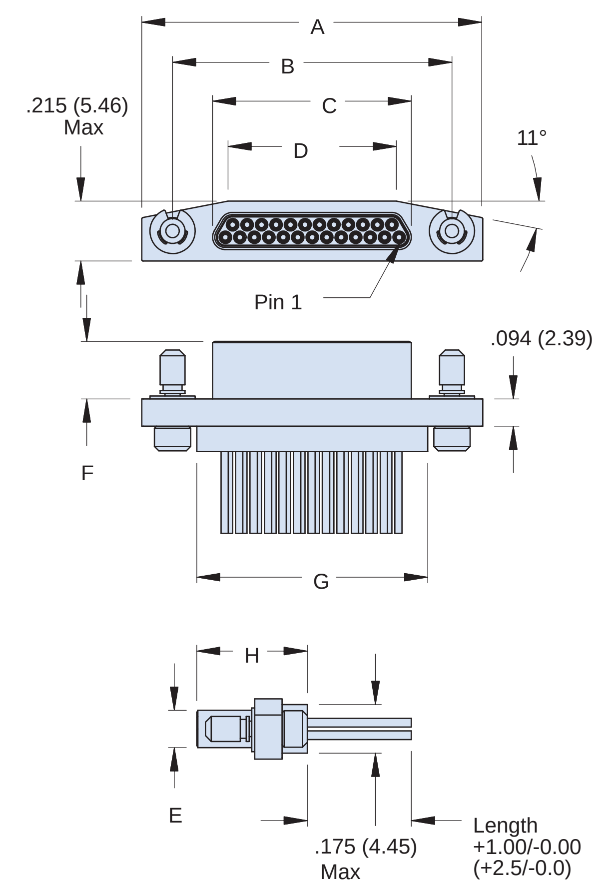
| GHTM Mounting Hardware | | |
|---|---|---|
| B<br>Std. Thru-Hole Mounting<br>.096/.088 (2.43/2.23) Dia.<br>(For dimensions see Table II) | M and S<br>#2-56 Jackscrews<br>Slot head (S), Hex Head (M)<br>(For dimensions see Table II) | P<br>Integral Jackpost<br>#2-56<br>(For dimensions see Table III) |
|  |  |  |
| Pin | Pin | Pin |
|  |  |  |
| Socket | Socket | Socket |

DOWNHOLE: WELL-MASTER® 260°

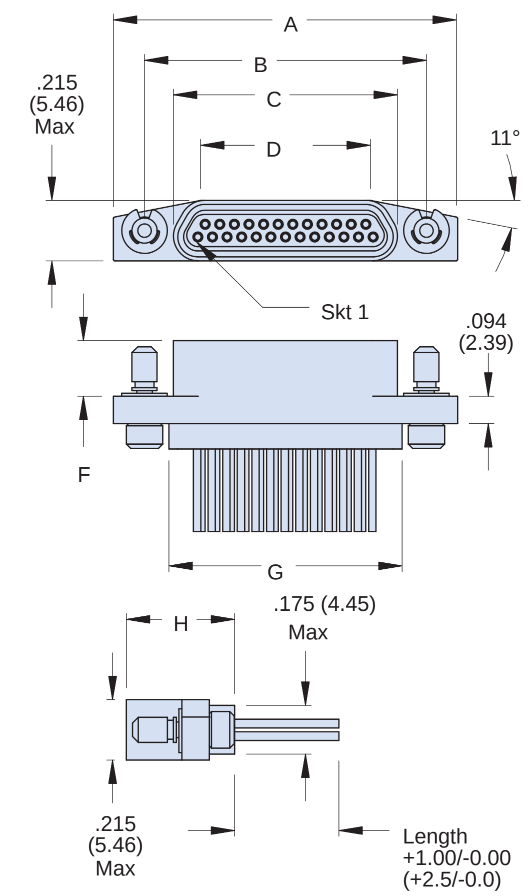
# Downhole Micro-D Connector

## Insulated wire plug (pin) or receptacle (socket) connector, thru-hole or jackscrew - dimensions

### Pin (Plug) Connector




### Socket (Receptacle) Connector




| GHTM Insulated Pre-Wired Dimensions for Thru-Hole or Jackscrew Version | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Layout | A Max. | B ± .003 (.08) | C Max. | D | E Max. | F ± .003 (.08) | G Max. | H Max. |
| 9P | .785 (19.94) | .565 (14.35) | .290 (7.37) | .181 (4.60) | .131 (3.33) | .199 (5.05) | .405 (10.29) | .390 (9.91) |
| 9S | .785 (19.94) | .565 (14.35) | .371 (9.42) | .181 (4.60) | .215 (5.46) | .191 (4.85) | .405 (10.29) | .377 (9.58) |
| 15P | .935 (23.75) | .715 (18.16) | .440 (11.18) | .331 (8.41) | .131 (3.33) | .199 (5.05) | .555 (14.10) | .390 (9.91) |
| 15S | .935 (23.75) | .715 (18.16) | .521 (13.23) | .331 (8.41) | .215 (5.46) | .191 (4.85) | .555 (14.10) | .377 (9.58) |
| 21P | 1.085 (27.56) | .865 (21.97) | .590 (14.99) | .481 (12.22) | .131 (3.33) | .199 (5.05) | .705 (17.91) | .390 (9.91) |
| 21S | 1.085 (27.56) | .865 (21.97) | .671 (17.04) | .481 (12.22) | .215 (5.46) | .191 (4.85) | .705 (17.91) | .377 (9.58) |
| 25P | 1.185 (30.10) | .965 (24.51) | .690 (17.53) | .581 (14.76) | .131 (3.33) | .199 (5.05) | .805 (20.45) | .390 (9.91) |
| 25S | 1.185 (30.10) | .965 (24.51) | .771 (19.58) | .581 (14.76) | .215 (5.46) | .191 (4.85) | .805 (20.45) | .377 (9.58) |
| 31P | 1.335 (33.91) | 1.115 (28.32) | .840 (21.34) | .731 (18.57) | .131 (3.33) | .199 (5.05) | .955 (24.26) | .390 (9.91) |
| 31S | 1.335 (33.91) | 1.115 | .921 (23.39) | .731 (18.57) | .215 (5.46) | .191 (4.85) | .955 (24.26) | .377 (9.58) |
| 37P | 1.485 (37.72) | 1.265 (32.13) | .990 (25.15) | .881 (22.38) | .131 (3.33) | .199 (5.05) | 1.105 (28.07) | .390 (9.91) |
| 37S | 1.485 (37.72) | 1.265 (32.13) | 1.071 (27.20) | .881 (22.38) | .215 (5.46) | .191 (4.85) | 1.105 (28.07) | .377 (9.58) |
| 51P | 1.435 (36.45) | 1.215 (30.86) | .940 (23.88) | .831 (21.11) | .178 (4.52) | .195 (4.95) | 1.055 (26.80) | .350 (8.89) |
| 51S | 1.435 (36.45) | 1.215 (30.86) | .951 (24.16) | .831 (21.11) | 186 (4724.40) | .274 (6.96) | 1.055 (26.80) | .377 (9.58) |





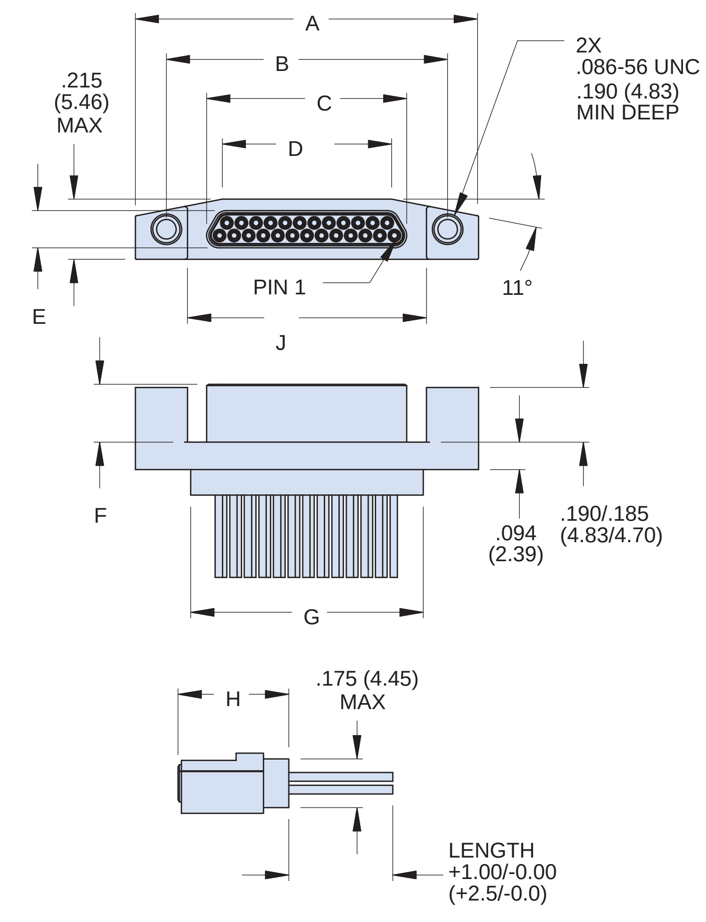




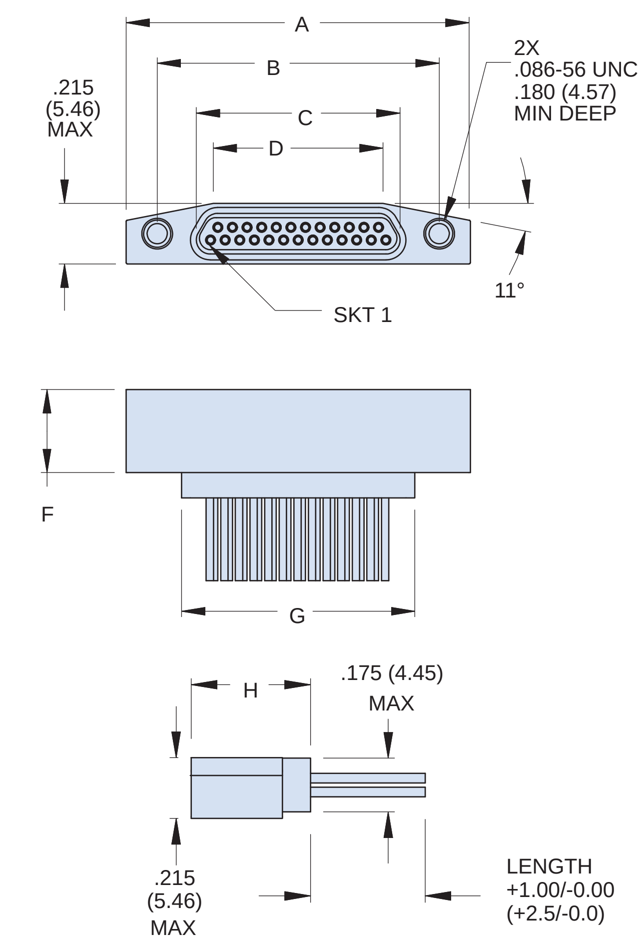
# Downhole Micro-D Connector

## Insulated wire plug (pin) or receptacle (socket) connector, integral jackpost - dimensions

### Pin (Plug) Connector

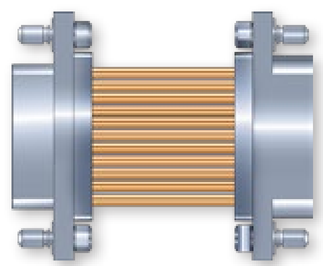



### Socket (Receptacle) Connector




| GHTM Insulated Pre-Wired Dimensions for Integral Jackpost Version | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Layout | A Max. | B ± .003 (.08) | C Max. | D | E Max. | F ± .003 (.08) | G Max. | H Max. | J |
| 9P | .785 (19.94) | .565 (14.35) | .290 (7.37) | .181 (4.60) | .131 (3.33) | .199 (5.05) | .405 (10.29) | .390 (9.91) | .420 (10.67) |
| 9S | .785 (19.94) | .565 (14.35) | .301 (7.65) | .181 (4.60) | .215 (5.46) | .274 (6.96) | .405 (10.29) | .377 (9.58) | N/A |
| 15P | .935 (23.75) | .715 (18.16) | .440 (11.18) | .331 (8.41) | .131 (3.33) | .199 (5.05) | .555 (14.10) | .390 (9.91) | .570 (14.48) |
| 15S | .935 (23.75) | .715 (18.16) | .451 (11.46) | .331 (8.41) | .215 (5.46) | .274 (6.96) | .555 (14.10) | .377 (9.58) | N/A |
| 21P | 1.085 (27.56) | .865 (21.97) | .590 (14.99) | .481 (12.22) | .131 (3.33) | .199 (5.05) | .705 (17.91) | .390 (9.91) | .720 (18.29) |
| 21S | 1.085 (27.56) | .865 (21.97) | .601 (15.27) | .481 (12.22) | .215 (5.46) | .274 (6.96) | .705 (17.91) | .377 (9.58) | N/A |
| 25P | 1.185 (30.10) | .965 (24.51) | .690 (17.53) | .581 (14.76) | .131 (3.33) | .199 (5.05) | .805 (20.45) | .390 (9.91) | .820 (20.83) |
| 25S | 1.185 (30.10) | .965 (24.51) | .701 (17.81) | .581 (14.76) | .215 (5.46) | .274 (6.96) | .805 (20.45) | .377 (9.58) | N/A |
| 31P | 1.335 (33.91) | 1.115 (28.32) | .840 (21.34) | .731 (18.57) | .131 (3.33) | .199 (5.05) | .955 (24.26) | .390 (9.91) | .970 (24.64) |
| 31S | 1.335 (33.91) | 1.115 (28.32) | .851 (21.62) | .731 (18.57) | .215 (5.46) | .274 (6.96) | .955 (24.26) | .377 (9.58) | N/A |
| 37P | 1.485 (37.72) | 1.265 (32.13) | .990 (25.15) | .881 (22.38) | .131 (3.33) | .199 (5.05) | 1.11 (28.19) | .390 (9.91) | 1.120 (28.45) |
| 37S | 1.485 (37.72) | 1.265 (32.13) | 1.001 (25.43) | .881 (22.38) | .215 (5.46) | .274 (6.96) | 1.11 (28.19) | .377 (9.58) | N/A |
| 51P | 1.435 (36.45) | 1.215 (30.86) | .940 (23.88) | .831 (21.11) | .178 (4.52) | .195 (4.95) | 1.06 (26.92) | .350 (8.89) | 1.07 (27.18) |
| 51S | 1.435 (36.45) | 1.215 (30.86) | .951 (24.16) | .831 (21.11) | .186 (4.72) | .274 (6.96) | 1.06 (26.92) | .377 (9.58) | N/A |

## GHTM BACK-TO-BACK CONNECTORS WITH +260°C MIL SPEC PTFE/POLYIMIDE WIRE

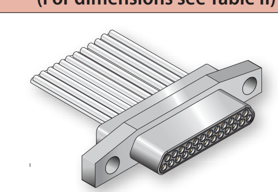
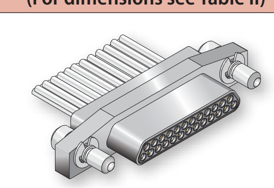
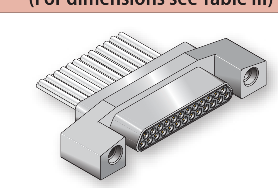
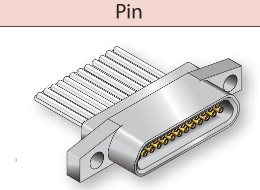
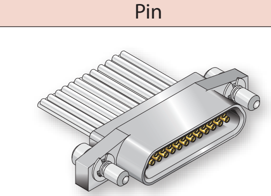
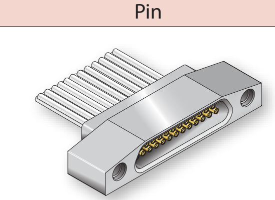


GHTM Well-Master® 260° back-to-back Micro-D cable assemblies withstand +260°C continuous operating temperature. These .050" pitch Micro-D connectors are terminated to #24 AWG insulated wire. Nickel-coated copper wire conforms to M22759/87, PTFE/polyimide insulation. Pin contacts are gold-plated high performance twistpin type and are recessed into insulator to prevent damage. Special nickel alloy contact material resists softening in high heat. Machined passivated stainless steel shell. Glass-filled high temperature LCP thermoplastic insulators. Meets performance requirements of MIL-DTL-83513. Available with 9 to 51 contacts. 3 A., 600 Vac, -55°C to +260°C.

**How To Order**

| Sample Part Number | GHTM | -31 | GS | -6 | T | 1 | -18 | B |
|---|---|---|---|---|---|---|---|---|
| **Series** | **GHTM** Glenair High Temperature Micro-D | | | | | | | |
| **Shell Size** | **9**, **15**, **21**, **25**, **31**, **37**, **51**<br>See Thru-Hole and Jackscrew Dimensions Table or Integral Jackpost Dimensions Table | | | | | | | |
| **Contact Type** | **GP** - Pin Connector Both Ends<br>**GS** - Socket Connector Both Ends<br>**CS** - Pin Connector to Socket Connector | | | | | | | |
| **Wire Gage (AWG)** | **4** - #24 | | | | | | | |
| **Wire Type** | **T** - PTFE/Polyimide Insulated Nickel Coated Copper | | | | | | | |
| **Wire Color** | **1** - White | | | | | | | |
| **Wire Length (Inches)** | **18** - Wire length in Inche (2" minimum for 2 rows, 3" minimum for 3 rows) | | | | | | | |
| **Mounting Hardware** | **B** - Std. Thru-Hole **M** - Hex Head Jackscrew **S** - Slot Head Jackscrew **P** - Integral Jackpost<br>(See Mounting Hardware Table | | | | | | | |

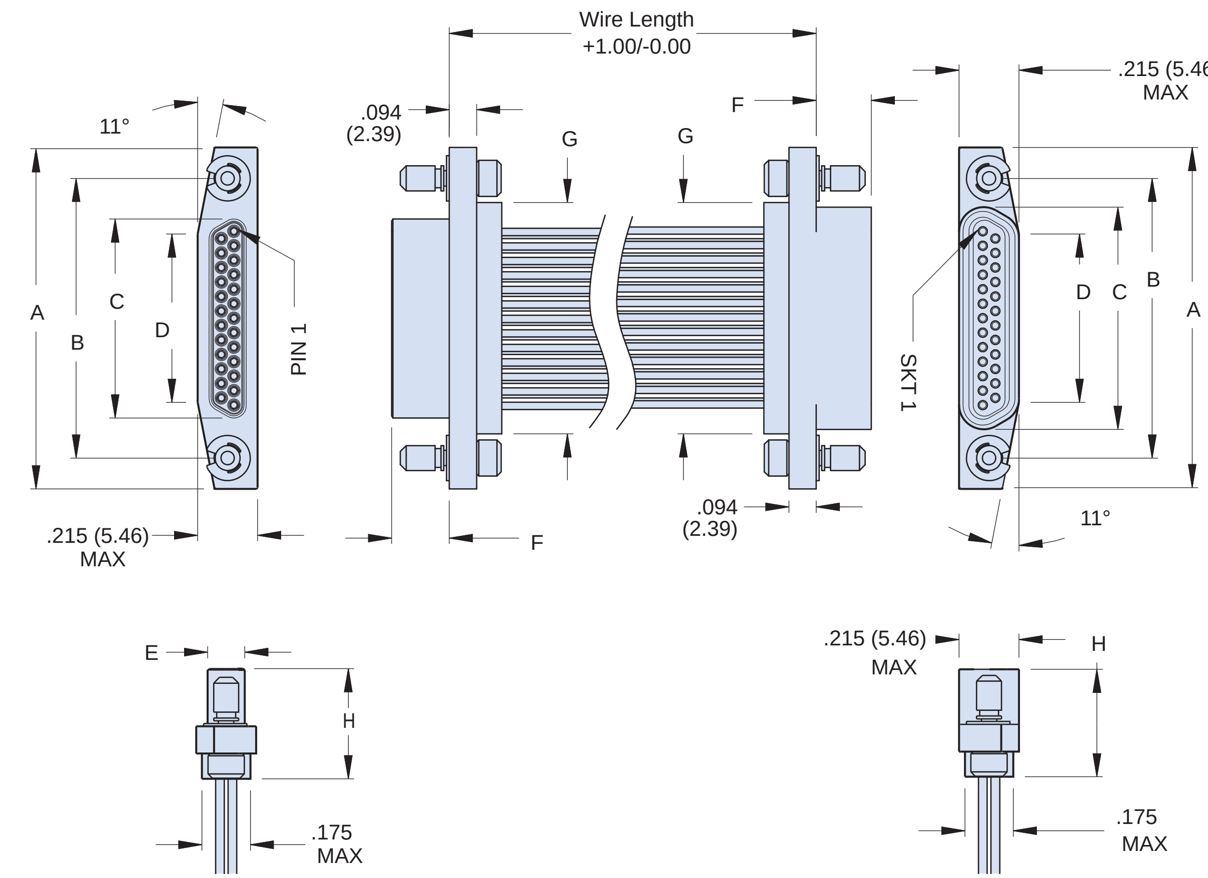
**GHTM Mounting Hardware**

| **B**<br>Std. Thru-Hole Mounting<br>.096/.088 (2.43/2.23) Dia.<br>(For dimensions see Table II) | **M and S**<br>#2-56 Jackscrews<br>Slot head (S), Hex Head (M)<br>(For dimensions see Table II) | **P**<br>Integral Jackpost<br>#2-56<br>(For dimensions see Table III) |
|---|---|---|
|  |  |  |
| Pin | Pin | Pin |
|  |  |  |
| Socket | Socket | Socket |








**GHTM Back-To-Back Dimensions for Thru-Hole and Jackscrew Versions**

| Shell Size | A Max. | B ± .003 (±.08) | C Max. | D | E Max. | F ± .003 (±.08) | G Max. | H Max. |
|---|---|---|---|---|---|---|---|---|
| 9P | .785 (19.94) | .565 (14.35) | .290 (7.37) | .181 (4.60) | .131 (3.33) | .199 (5.05) | .405 (10.29) | .390 (9.91) |
| 9S | .785 (19.94) | .565 (14.35) | .371 (9.42) | .181 (4.60) | .215 (5.46) | .191 (4.85) | .405 (10.29) | .377 (9.58) |
| 15P | .935 (23.75) | .715 (18.16) | .440 (11.18) | .331 (8.41) | .131 (3.33) | .199 (5.05) | .555 (14.10) | .390 (9.91) |
| 15S | .935 (23.75) | .715 (18.16) | .521 (13.23) | .331 (8.41) | .215 (5.46) | .191 (4.85) | .555 (14.10) | .377 (9.58) |
| 21P | 1.085 (27.56) | .865 (21.97) | .590 (14.99) | .481 (12.22) | .131 (3.33) | .199 (5.05) | .705 (17.91) | .390 (9.91) |
| 21S | 1.085 (27.56) | .865 (21.97) | .671 (17.04) | .481 (12.22) | .215 (5.46) | .191 (4.85) | .705 (17.91) | .377 (9.58) |
| 25P | 1.185 (30.10) | .965 (24.51) | .690 (17.53) | .581 (14.76) | .131 (3.33) | .199 (5.05) | .805 (20.45) | .390 (9.91) |
| 25S | 1.185 (30.10) | .965 (24.51) | .771 (19.58) | .581 (14.76) | .215 (5.46) | .191 (4.85) | .805 (20.45) | .377 (9.58) |
| 31P | 1.335 (33.91) | 1.115 (28.32) | .840 (21.34) | .731 (18.57) | .131 (3.33) | .199 (5.05) | .955 (24.26) | .390 (9.91) |
| 31S | 1.335 (33.91) | 1.115 (28.32) | .921 (23.39) | .731 (18.57) | .215 (5.46) | .191 (4.85) | .955 (24.26) | .377 (9.58) |
| 37P | 1.485 (37.72) | 1.265 (32.13) | .990 (25.15) | .881 (22.38) | .131 (3.33) | .199 (5.05) | 1.105 (28.07) | .390 (9.91) |
| 37S | 1.485 (37.72) | 1.265 (32.13) | 1.071 (27.20) | .881 (22.38) | .215 (5.46) | .191 (4.85) | 1.105 (28.07) | .377 (9.58) |
| 51P | 1.435 (36.45) | 1.215 (30.86) | .940 (23.88) | .831 (21.11) | .178 (4.52) | .195 (4.95) | 1.055 (26.80) | .350 (8.89) |
| 51S | 1.435 (36.45) | 1.215 (30.86) | .951 (24.16) | .831 (21.11) | .186 (4.72) | .274 (6.96) | 1.055 (26.80) | .377 (9.58) |



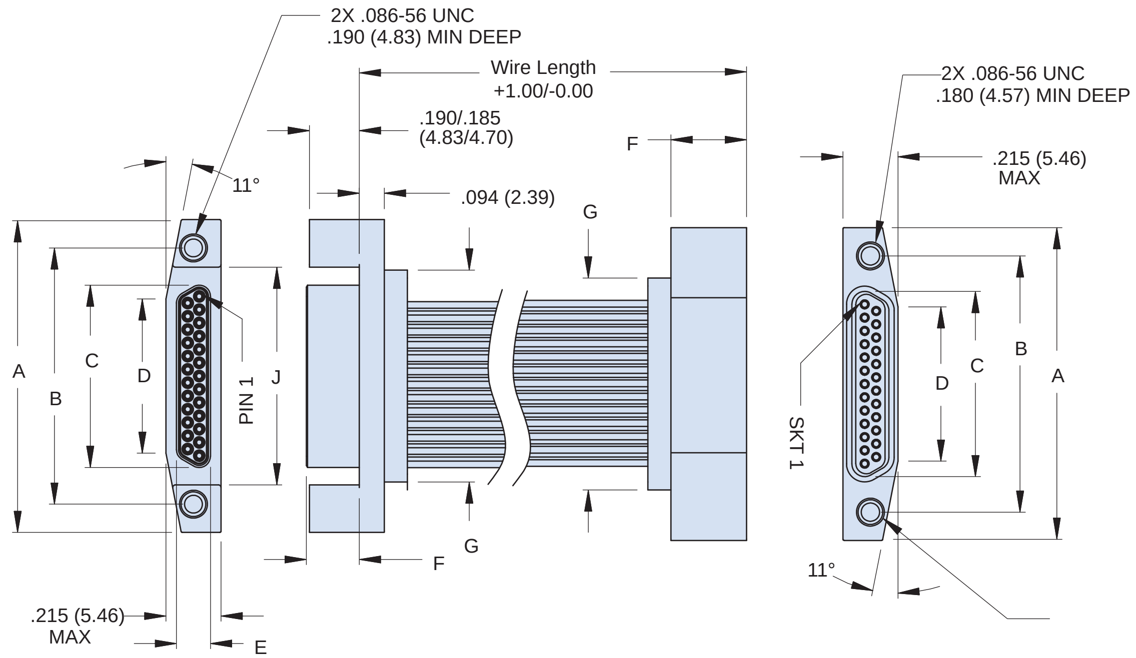

DOWNHOLE: WELL-MASTER® 260°

260° Well-Master®

*SERIES GHTM WELL-MASTER 260°*

# Downhole Micro-D Connector

## Back-to-back cable assemblies, integral jackpost dimensions





**GHTM Back-To-Back Dimensions for Integral Jackpost Versions**

| Layout | A Max. | B ± .003 (±.08) | C Max. | D | E Max. | F ± .003 (±.08) | G Max. | H Max. | J |
|---|---|---|---|---|---|---|---|---|---|
| 9P | .785 (19.94) | .565 (14.35) | .290 (7.37) | .181 (4.60) | .131 (3.33) | .199 (5.05) | .405 (10.29) | .390 (9.91) | .420 (10.67) |
| 9S | .785 (19.94) | .565 (14.35) | .301 (7.65) | .181 (4.60) | .215 (5.46) | .274 (6.96) | .405 (10.29) | .377 (9.58) | N/A |
| 15P | .935 (23.75) | .715 (18.16) | .440 (11.18) | .331 (8.41) | .131 (3.33) | .199 (5.05) | .555 (14.10) | .390 (9.91) | .570 (14.48) |
| 15S | .935 (23.75) | .715 (18.16) | .451 (11.46) | .331 (8.41) | .215 (5.46) | .274 (6.96) | .555 (14.10) | .377 (9.58) | N/A |
| 21P | 1.085 (27.56) | .865 (21.97) | .590 (14.99) | .481 (12.22) | .131 (3.33) | .199 (5.05) | .705 (17.91) | .390 (9.91) | .720 (18.29) |
| 21S | 1.085 (27.56) | .865 (21.97) | .601 (15.27) | .481 (12.22) | .215 (5.46) | .274 (6.96) | .705 (17.91) | .377 (9.58) | N/A |
| 25P | 1.185 (30.10) | .965 (24.51) | .690 (17.53) | .581 (14.76) | .131 (3.33) | .199 (5.05) | .805 (20.45) | .390 (9.91) | .820 (20.83) |
| 25S | 1.185 (30.10) | .965 (24.51) | .701 (17.81) | .581 (14.76) | .215 (5.46) | .274 (6.96) | .805 (20.45) | .377 (9.58) | N/A |
| 31P | 1.335 (33.91) | 1.115 (28.32) | .840 (21.34) | .731 (18.57) | .131 (3.33) | .199 (5.05) | .955 (24.26) | .390 (9.91) | .970 (24.64) |
| 31S | 1.335 (33.91) | 1.115 (28.32) | .851 (21.62) | .731 (18.57) | .215 (5.46) | .274 (6.96) | .955 (24.26) | .377 (9.58) | N/A |
| 37P | 1.485 (37.72) | 1.265 (32.13) | .990 (25.15) | .881 (22.38) | .131 (3.33) | .199 (5.05) | 1.105 (28.07) | .390 (9.91) | 1.120 (28.45) |
| 37S | 1.485 (37.72) | 1.265 (32.13) | 1.001 (25.43) | .881 (22.38) | .215 (5.46) | .274 (6.96) | 1.105 (28.07) | .377 (9.58) | N/A |
| 51P | 1.435 (36.45) | 1.215 (30.86) | .940 (23.88) | .831 (21.11) | .178 (4.52) | .195 (4.95) | 1.055 (26.80) | .350 (8.89) | 1.07 (27.18) |
| 51S | 1.435 (36.45) | 1.215 (30.86) | .951 (24.16) | .831 (21.11) | .186 (4.72) | .274 (6.96) | 1.055 (26.80) | .377 (9.58) | N/A |

DOWNHOLE: WELL-MASTER® 260°



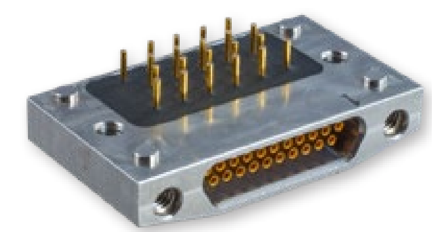
260° Well-Master®

*SERIES GHTM WELL-MASTER 260°*

# Downhole Micro-D Connector

## GHTM right angle printed circuit board headers

### GHTM RIGHT ANGLE PRINTED CIRCUIT BOARD HEADERS



GHTM Well-Master® 260° right angle PCB Micro-D connectors withstand +260°C continuous operating temperature. These .050" pitch Micro-D connectors have .020 inch diameter (0.51mm)gold-plated PC terminals. Terminal spacing is .100 inch by .075 inch (2.54 by 1.91mm). Pin contacts are gold-plated high performance twistpin type and are recessed into insulator to prevent damage. Special nickel alloy contact material resists softening in high heat. Machined passivated stainless steel shell with integral jackpost. Glass-filled high temperature LCP thermoplastic insulators to withstand soldering heat. Meets performance requirements of MIL-DTL-83513. Available with 9 to 51 contacts. 3 A., 600 Vac, -55°C to +260°C.

**How To Order**

| Sample Part Number | GHTM | -25 | P | RA | P | -110 |
|---|---|---|---|---|---|---|
| Series | GHTM Glenair High Temperature Micro-D | | | | | |
| Shell Size | 9, 15, 21, 25, 31, 37, 51<br>See the Thru-Hole and Jackscrew Dimensions Table or Integral Jackpost Dimensions Table | | | | | |
| Gender | P = Pin/Plug S = Socket/Receptacle | | | | | |
| Termination Type | RA = Right Angle Board Mount | | | | | |
| Mounting Hardware | P - Integral Jackpost; See Mounting Hardware Table | | | | | |
| Terminal Length | All lengths ±.015 (.38)<br>.080, .110, .125, .140, .150, .175, .190, .205 | | | | | |

**Dimensions for Plug (Pin) Connector**

| Layout | A Max. | B ± .003 | C Max. | D | E Max. | F Max. | G | H Max. |
|---|---|---|---|---|---|---|---|---|
| 9P | .785 (19.94) | .565 (14.35) | .290 (7.37) | .181 (4.60) | .134 (3.40) | .648 (16.46) | .420 (10.67) | .215 (5.46) |
| 15P | .935 (23.75) | .715 (18.16) | .440 (11.18) | .331 (8.41) | .134 (3.40) | .648 (16.46) | .570 (14.48) | .215 (5.46) |
| 21P | 1.085 (27.56) | .865 (21.97) | .590 (14.99) | .481 (12.22) | .134 (3.40) | .648 (16.46) | .720 (18.29) | .215 (5.46) |
| 25P | 1.185 (30.10) | .965 (24.51) | .690 (17.53) | .581 (14.76) | .134 (3.40) | .648 (16.46) | .820 (20.83) | .215 (5.46) |
| 31P | 1.335 (33.91) | 1.115 (28.32) | .840 (21.34) | .731 (18.57) | .134 (3.40) | .648 (16.46) | .970 (24.64) | .215 (5.46) |
| 37P | 1.485 (37.72) | 1.265 (32.13) | .990 (25.15) | .881 (22.38) | .134 (3.40) | .648 (16.46) | 1.120 (28.45) | .215 (5.46) |
| 51P | 1.435 (36.45) | 1.215 (30.86) | .940 (23.88) | .831 (21.11) | .178 (4.52) | .798 (20.27) | 1.07 (27.18) | .258 (6.55) |

**Dimensions for Receptacle (Socket) Connector**

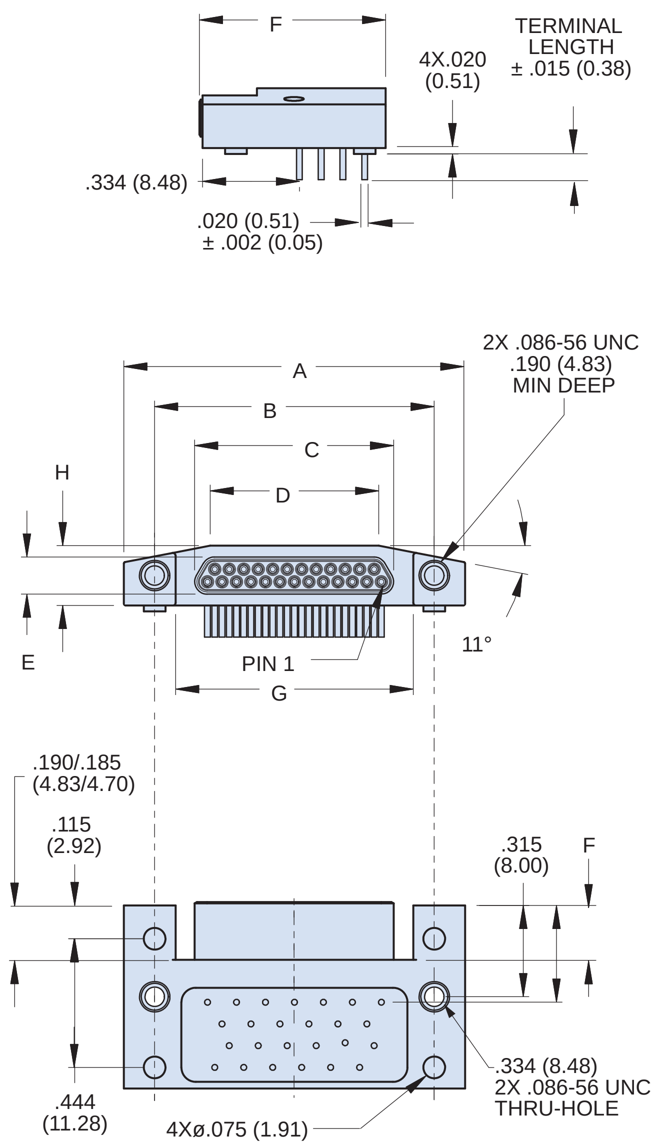
| Layout | A Max. | B ± .003 | C Max. | D | E Max. | F Max. | G |
|---|---|---|---|---|---|---|---|
| 9S | .785 (19.94) | .565 (14.35) | .301 (7.65) | .181 (4.60) | .142 (3.61) | .629 (15.98) | .215 (5.46) |
| 15S | .935 (23.75) | .715 (18.16) | .451 (11.46) | .331 (8.41) | .142 (3.61) | .629 (15.98) | .215 (5.46) |
| 21S | 1.085 (27.56) | .865 (21.97) | .601 (15.27) | .481 (12.22) | .142 (3.61) | .629 (15.98) | .215 (5.46) |
| 25S | 1.185 (30.10) | .965 (24.51) | .701 (17.81) | .581 (14.76) | .142 (3.61) | .629 (15.98) | .215 (5.46) |
| 31S | 1.335 (33.91) | 1.115 (28.32) | .851 (21.62) | .731 (18.57) | .142 (3.61) | .629 (15.98) | .215 (5.46) |
| 37S | 1.485 (37.72) | 1.265 (32.13) | 1.001 (25.43) | .881 (22.38) | .142 (3.61) | .629 (15.98) | .215 (5.46) |
| 51S | 1.435 (36.45) | 1.215 (30.86) | .951 (24.16) | .831 (21.11) | .186 (4.72) | .779 (19.79) | .258 (6.55) |

DOWNHOLE: WELL-MASTER® 260°

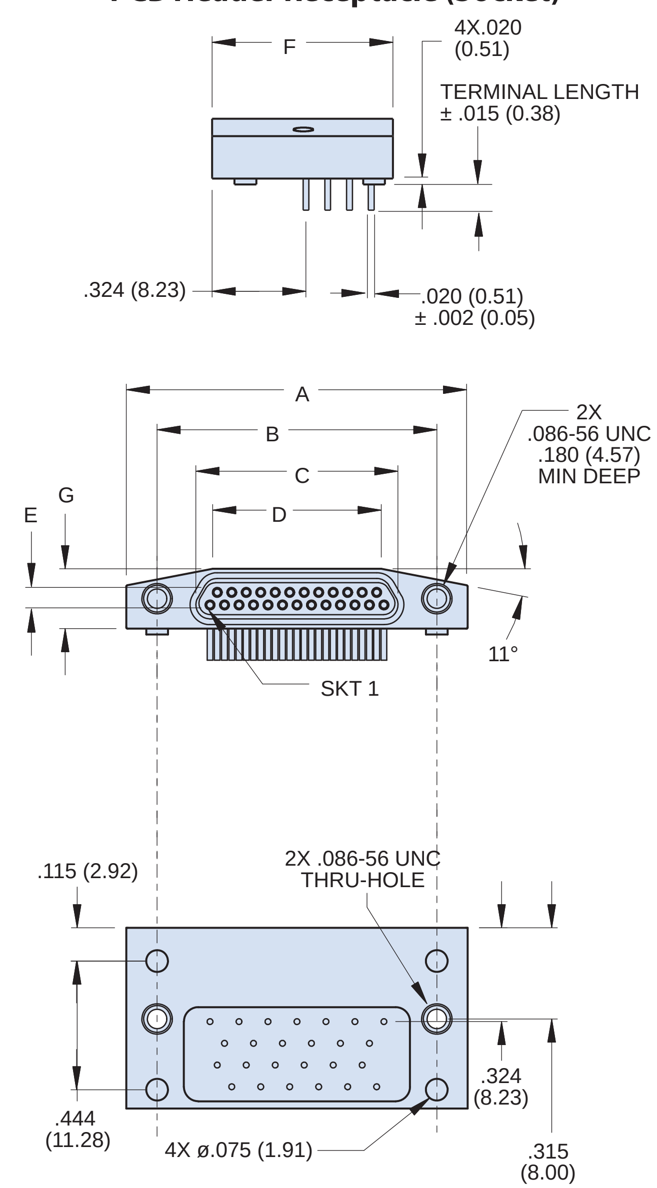
# Downhole Micro-D Connector

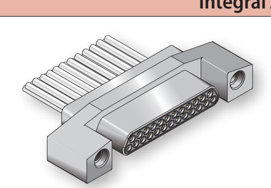
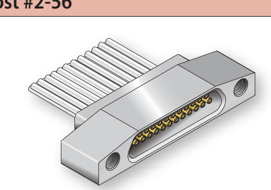
## GHTM right angle printed circuit board header, plug and rececptacle - dimensions

### PCB Header Plug (Pin)




### PCB Header Receptacle (Socket)




| GHTM Mounting Hardware | |
|---|---|
| P<br>Integral Jackpost #2-56 | |
|  |  |
| Pin | Socket |



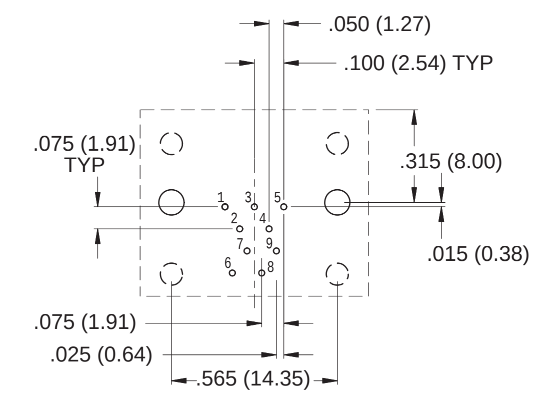




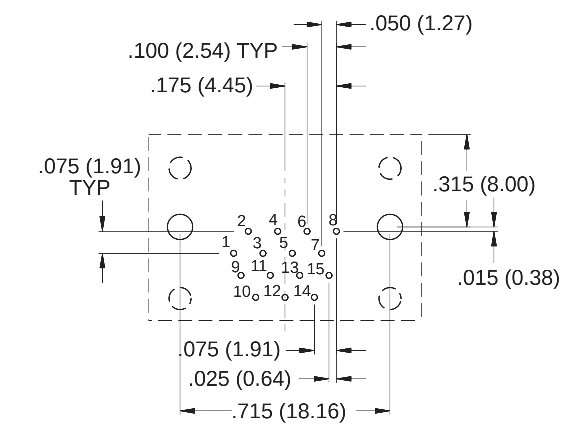

# Downhole Micro-D Connector

## GHTM right angle printed circuit board header, plug (pin) - PCB layout

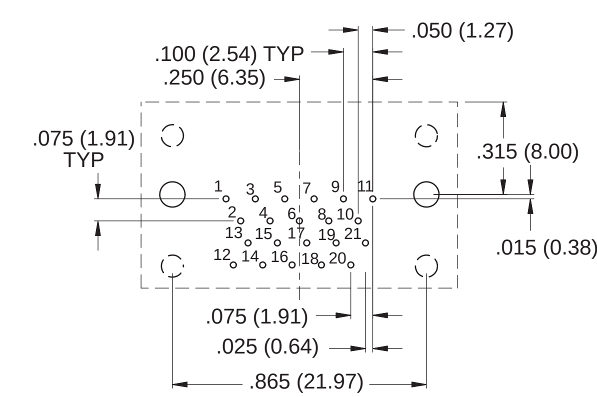
Patterns shown are for component mounting side of PCB. Terminals are .022 (0.56) max. diameter, mounting holes are .093 (2.36) diameter. Segmented lines represent connector body envelope and integral standoff locations.



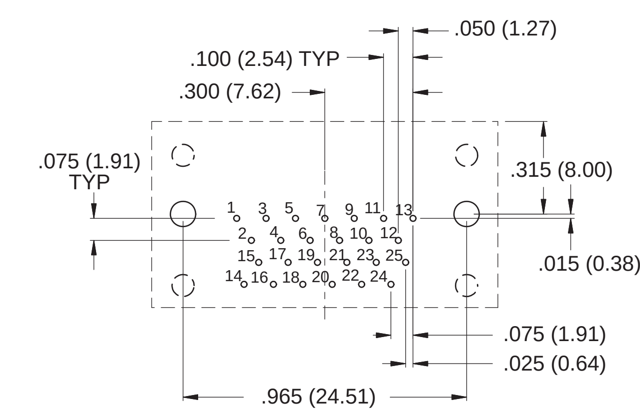

9 PIN




15 PIN




21 PIN



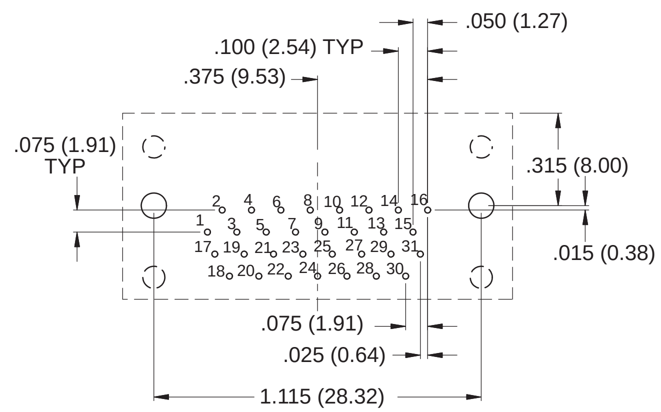

25 PIN



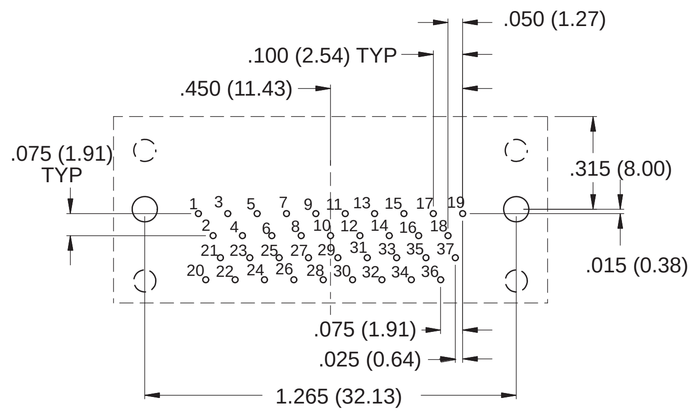

DOWNHOLE: WELL-MASTER® 260°

## GHTM right angle printed circuit board header, plug (pin) - PCB layout

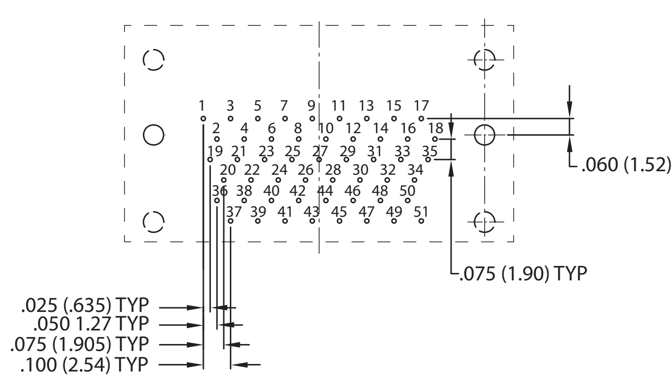
Patterns shown are for component mounting side of PCB. Terminals are .022 (0.56) max. diameter, mounting holes are .093 (2.36) diameter. Segmented lines represent connector body envelope and integral standoff locations.




**31 PIN**




**37 PIN**




**51 PIN**

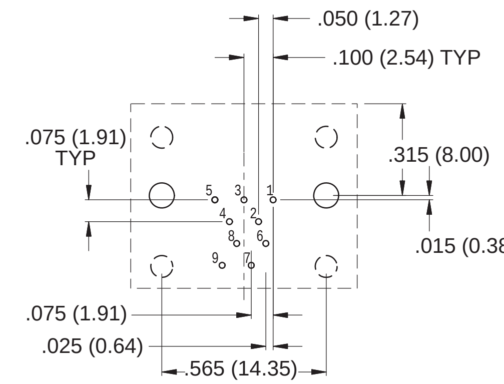




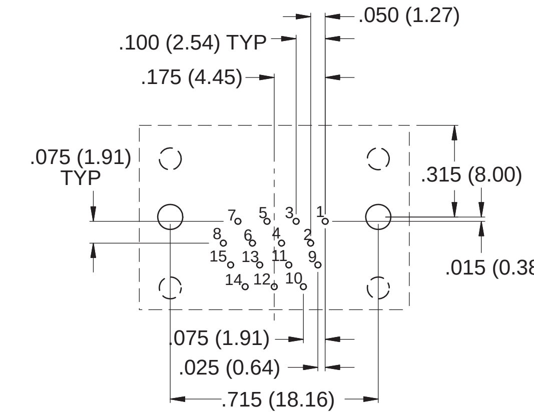
SERIES GHTM WELL-MASTER 260°
Downhole Micro-D Connector

## GHTM right angle printed circuit board header, receptacle (socket) - PCB layout

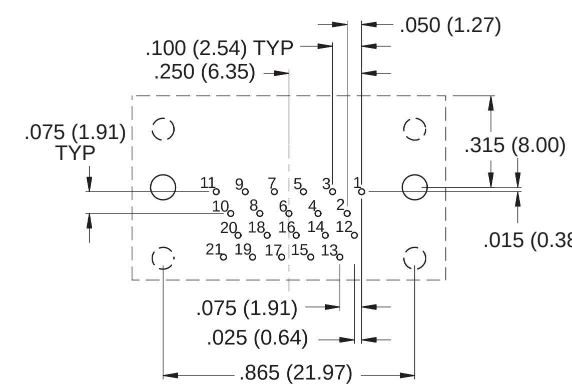
Patterns shown are for component mounting side of PCB. Terminals are .022 (0.56) max. diameter, mounting holes are .093 (2.36) diameter. Segmented lines represent connector body envelope and integral standoff locations.



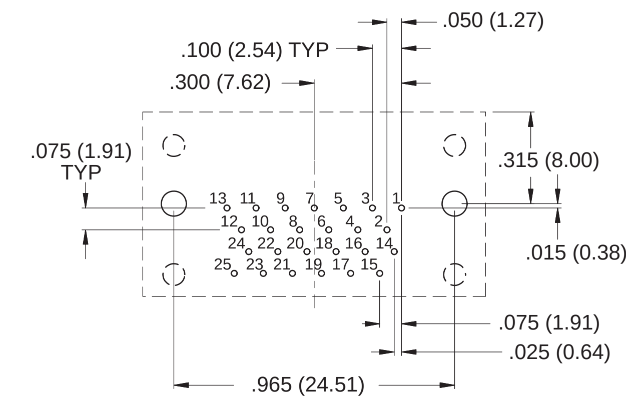

**9 SOCKET**




**15 SOCKET**




**21 SOCKET**

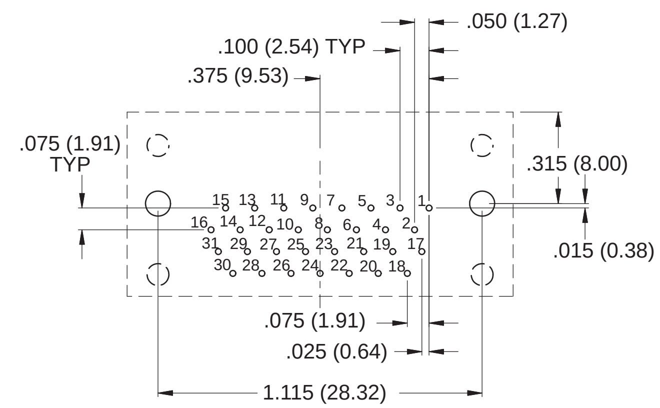



**25 SOCKET**

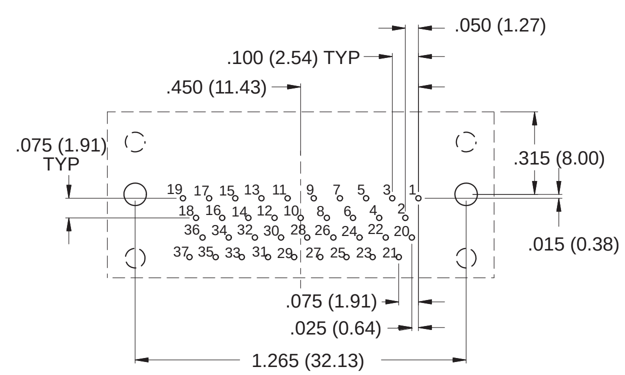
DOWNHOLE: WELL-MASTER® 260°

# GHTM right angle printed circuit board header, receptacle (socket) - PCB layout

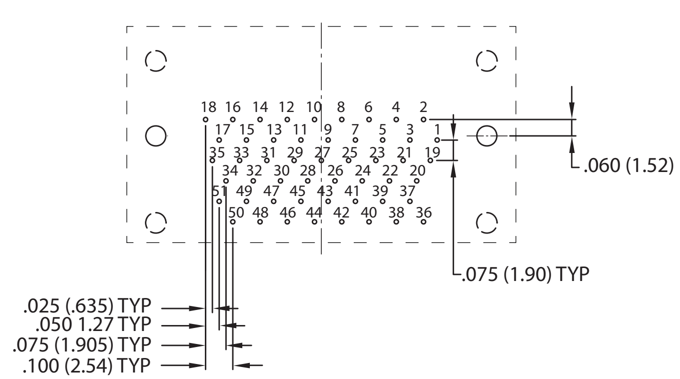
Patterns shown are for component mounting side of PCB. Terminals are .022 (0.56) max. diameter, mounting holes are .093 (2.36) diameter. Segmented lines represent connector body envelope and integral standoff locations.




31 SOCKET




37 SOCKET




51 SOCKET





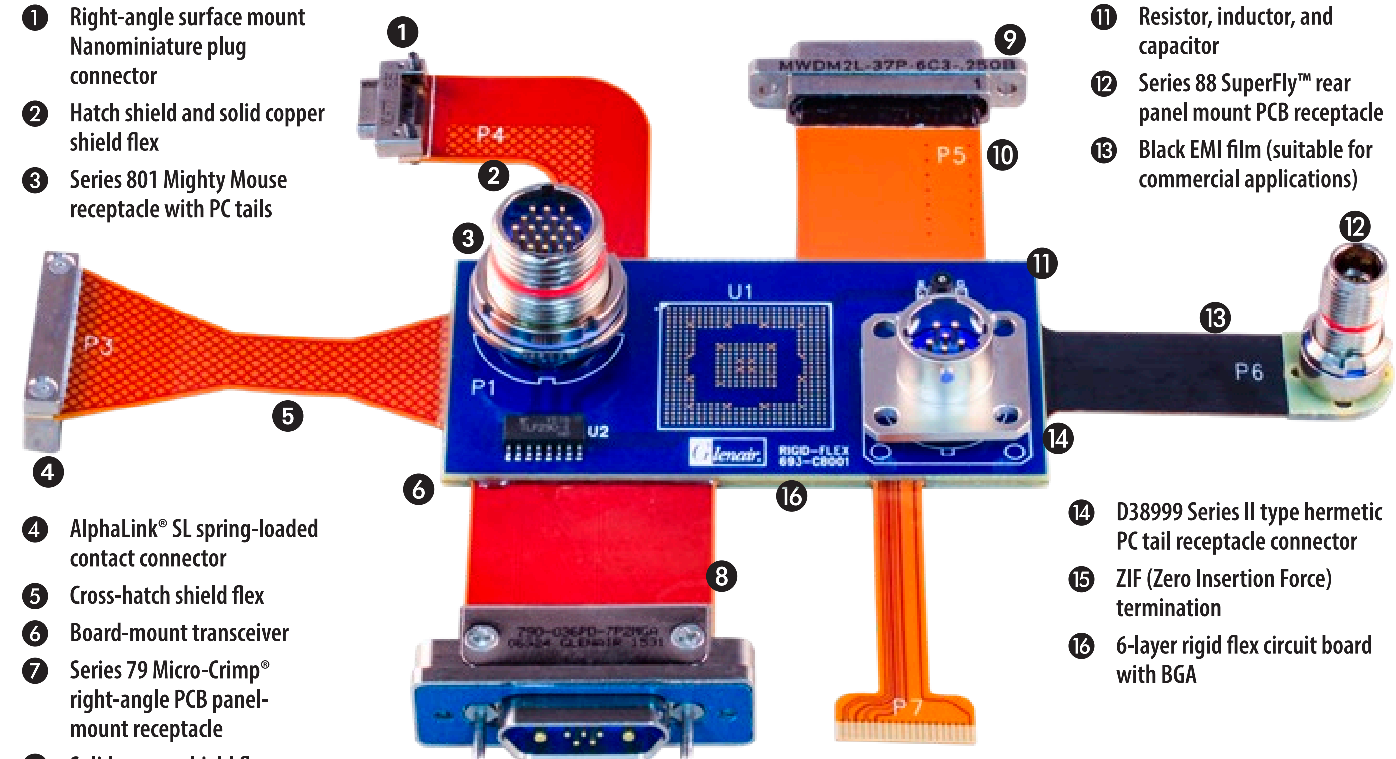




# Available connectorized flex and rigid flex design, fabrication, assembly, and test services

## STANDARD DESIGN OPTIONS FOR INTEGRATED (CONNECTORIZED) FLEX/RIGID FLEX ASSEMBLIES

1. Right-angle surface mount Nanominiature plug connector
2. Hatch shield and solid copper shield flex
3. Series 801 Mighty Mouse receptacle with PC tails
4. AlphaLink® SL spring-loaded contact connector
5. Cross-hatch shield flex
6. Board-mount transceiver
7. Series 79 Micro-Crimp® right-angle PCB panel-mount receptacle
8. Solid copper shield flex
9. Micro-D 37-pin connector
10. Silver paste shield flex
11. Resistor, inductor, and capacitor
12. Series 88 SuperFly™ rear panel mount PCB receptacle
13. Black EMI film (suitable for commercial applications)
14. D38999 Series II type hermetic PC tail receptacle connector
15. ZIF (Zero Insertion Force) termination
16. 6-layer rigid flex circuit board with BGA




## CONNECTORIZED FLEX ASSEMBLIES

- Point-to-point or multibranch connectorized jumpers
- Flexible, repeatable routing for complex 3-dimensional installations
- Save size, weight, and improve density compared to wire bundles
- Broadest range of high-performance I/O and board connectors
- Optimized reliability: high-speed, high temp, high shock and vibe

## RIGID FLEX ASSEMBLIES

- "Best of both worlds" combines durable rigid-board architecture with flex circuitry for double-sided component mounting and easy/flexible circuit routing
- 3-D vibration-resistant flex routing advantage plus hard mount points and stiffeners as required
- Integration of active componentry with flex circuitry

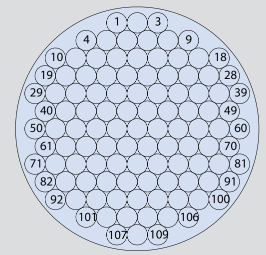
# High Pressure/High Temperature Connectors

## Feedthrus and Penetrators
## Product Selection Guide



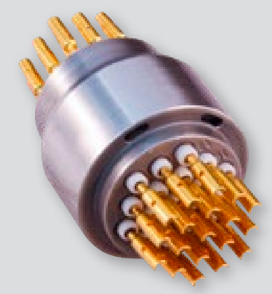
**REFERENCE INFORMATION**
Materials, contact arrangements, and performance specifications

**pg. 19**



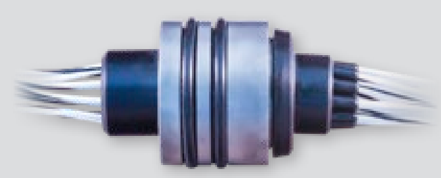
**707-00015**
High Temperature/High Pressure Glass Sealed Penetrator

**pg. 22**



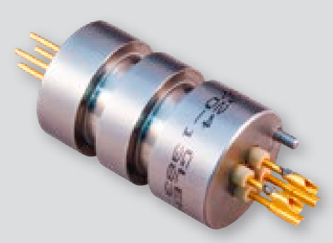
**707-00030**
High Temperature/High Pressure Glass Sealed Receptacle

**pg. 23**



**2570-1383**
4 Pin High Temperature/High Pressure Glass Sealed Feedthrough

**pg. 24**



**2570-1364**
Single-Pin Glass Sealed Feedthrough

**pg. 25**








*HIGH TEMPERATURE*
*HIGH PRESSURE*

# Glass Sealed Penetrators and Feedthroughs

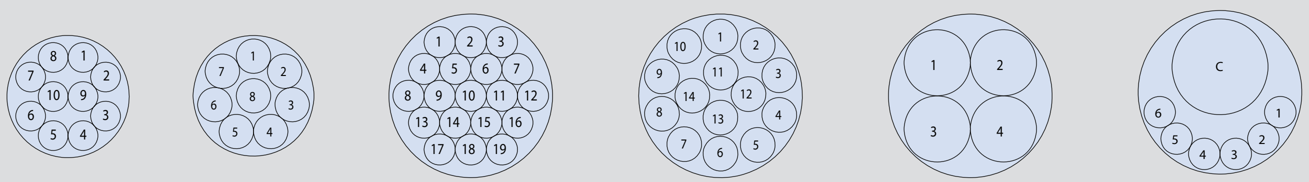
Glass sealed penetrators and feedthroughs provide sealed interconnect solutions for downhole applications such as logging while drilling (LWD) and measurement while drilling (MWD) applying methods such as near-balanced, underbalanced and overbalanced drilling. In these environments, conditions can reach temperatures approaching 300°C while experiencing elevated shock and vibration, downhole fluids and a confined environment. Glenair SeaKing™ penetrators are typically used where a waterproof seal is needed but separation from equipment is not.

- **Available in 7 shell sizes and 17 insert arrangements**
- **Standard penetrators with hermeticity of <1 X $10^{-7}$ sccHe/sec @ 1 atmosphere differential and rated to 10,000 PSI**
- **High pressure penetrators rated to 25,000 PSI and hermeticity of <1 X $10^{-8}$ sccHe/sec @ 1 atmosphere differential**

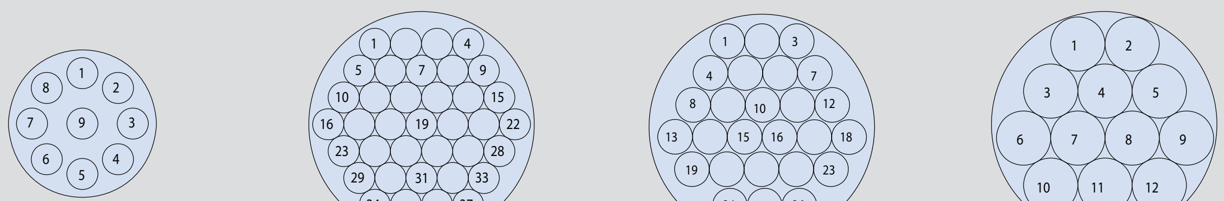
## Feedthrus and penetrators
## Glass sealed insert - contact arrangements



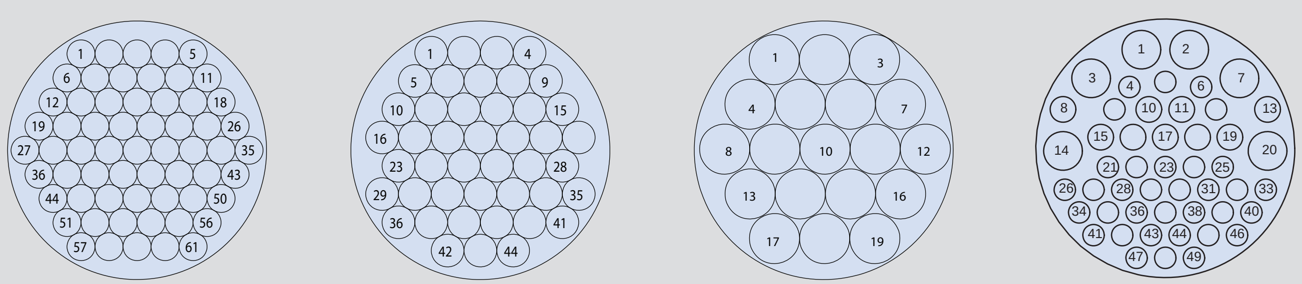
**HTHP CONTACT ARRANGEMENTS** Mating face view of pin insert (socket insert IDs are reversed)



| Size G | | Size K | | | |
|---|---|---|---|---|---|
| **G10** | **G8** | **K19** | **K14** | **K4** | **KC6** |
| 10 Size #22 Contacts | 8 Size #20 Contacts | 19 Size #22 Contacts | 14 Size #20 Contacts | 4 Size #16 Contacts | Single 75 Ohm Coax, 6 #22 Contacts |



| Size L | Size M | | |
|---|---|---|---|
| **L9** | **M37** | **M26** | **M12** |
| 9 Size #16 Contacts | 37 Size #22 Contacts | 26 Size #20 Contacts | 12 Size #16 Contacts |

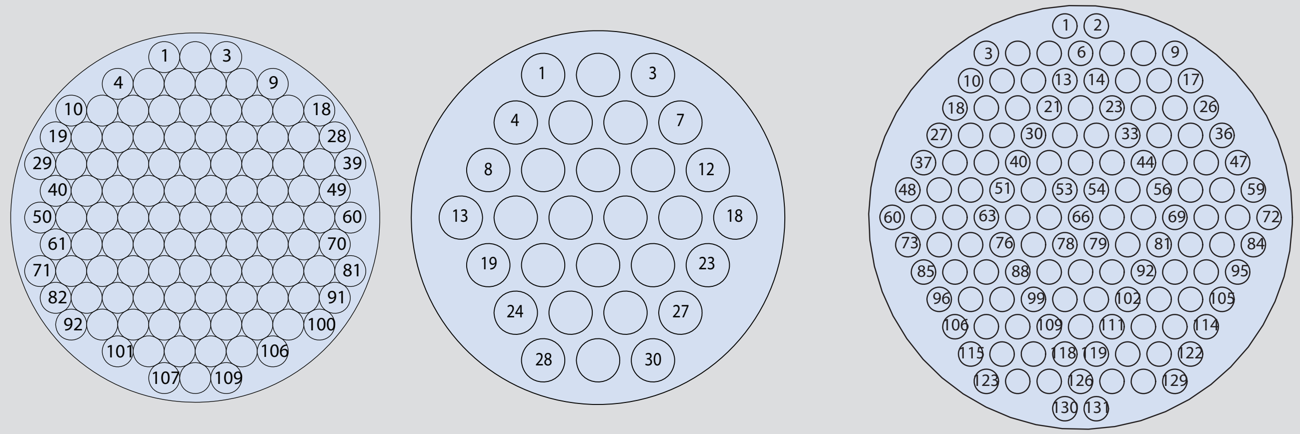


| Size O | | | |
|---|---|---|---|
| **O61** | **O44** | **O19** | **OX49** |
| 61 Size #22 Contacts | 44 Size #20 Contacts | 19 Size #16 Contacts | 49 Contacts 6 #16 • 9 #20 • 34 #22 |

Consult factory for custom insert arrangements including a wide range of shielded RF microwave and high frequency contact configurations




DOWNHOLE HTHP
High Pressure/High Temperature Connectors
Feedthrus and penetrators
Glass sealed insert - contact arrangements



| Size Q | | Size R |
|---|---|---|
| **Q109** | **Q30** | **Q131** |
| 109 Size #22 Contacts | 30 Size #16 Contacts | 129 Size #22 Contacts |

Consult factory for custom insert arrangements including a wide range of shielded RF microwave and high frequency contact configurations

**All high-density signal and standard-density power contact arrangements are available across the complete range of connector styles (CCP, FCR, and BCR). High-speed Ethernet inserts as well as Pressure Balanced Oil Filled (PBOF) configurations and a purpose-designed family of pressure caps, accessories and backshells are also available, please consult the factory.**

**HTHP bulkhead connector receptacles (BCR) and flange connector receptacles (FCR) are equipped with high-pressure glass-to-metal sealed inserts with solder contact wire termination and 10K psi open-face rating. Cable connector plugs (CCP) utilize environmental O-ring sealed inserts and are rated to 10K psi in the mated condition.**

**Contact Arrangement Table**

| Shell Size | Contact Size #22 | #20 | #16 | Hybrid |
|---|---|---|---|---|
| G | 10 | 8 | | |
| K | 19 | | 4 | One 75 Ohm Coax • Six #22 |
| L | | | 9 | |
| M | 37 | 26 | 12 | |
| O | 61 | 44 | 19 | 6 #16, 9 #20, 29 #22 |
| Q | 109 | | 30 | |
| R | 129 | | | |
| Current Rating (Amps) | 3 | 5 | 10 | |

**HTHP Performance Specifications**

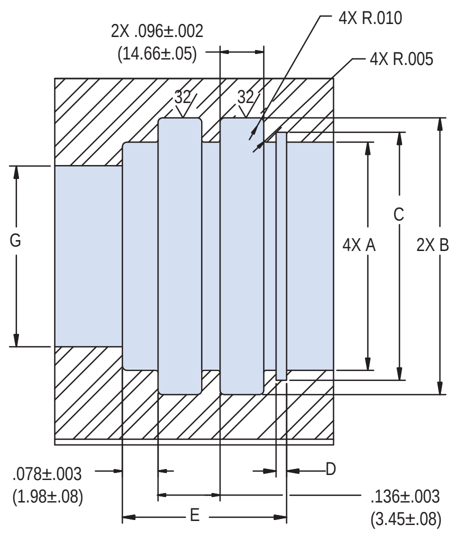
| Pressure Rating | Plug: 10,000 psi, mated condition<br>Receptacles: 10,000 psi mated and open face | per ISO 13628-6 |
|---|---|---|
| Electrical | 600 V typical<br>5 GOhm insulation resistance at 500 VDC | per MIL-STD-202, Method 301<br>per MIL-STD-202, Method 302 |
| Materials | Salt Spray (corrosion)<br>Humidity (steady state)<br>Thermal Cycle | MIL-STD-202, Method 101<br>MIL-STD-202, Method 103<br>ISO 13628-6 |

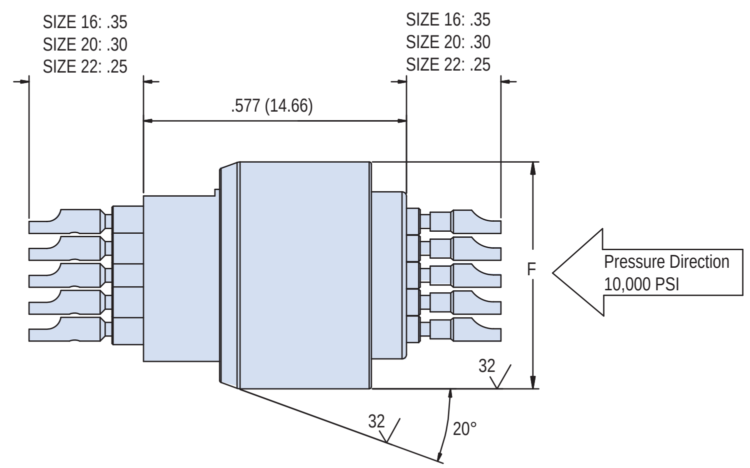
DOWNHOLE: HIGH PRESSURE/HIGH TEMPERATURE

© 2017 Glenair, Inc • 1211 Air Way, Glendale, CA 91201 • 818-247-6000 • www.glenair.com • U.S. CAGE code 06324 • Marine/Subsea Catalog
Dimensions in Inches (millimeters) are subject to change without notice.

## 707-0015 glass sealed penetrator with solder cup to solder cup contacts

| How To Order | | |
|---|---|---|
| Sample Part Number | 707-0015 | -M37 |
| Series | 707-0015 | |
| Sheel Size/ Insert Arrangement | See page 20 and 21 | |




| Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | Ø A Bore Dia. | Ø B Bore 0-Ring Groove Dia. | Ø C Retainging Ring Groove Dia | Ø D Retaining Ring Groove Width | Ø E Retaining Ring Groove Location | Bore O-ring | Retaining Ring | Insertion Tool | Ø F Feedthru Dia. | G (Clearance Diameter) |
| G | .5005 ±.0008 (12.71 ±.02 ) | .607 ±.001 (15.42 ±.03) | .528 ±.002 (13.41 ±.05) | .023 +.002/-.001 (.58 +.05/-.03) | .3600 ±.0025 (9.14 ±.06) | 2-014 | VH-50-S16 | 709-004-G | .497 (12.62) | Ø.3865 ±.025 (Ø.9.82 ± 0.64) |
| K | .6255 ±.0008 (15.88 ±.02) | .732 ±.001 (18.59 ±.03) | .635 ±.002 (16.13 ±.05) | .023 +.002/-.001 (.58 +.05/-.03) | .3600 ±.0025 (9.14 ±.06) | 2-016 | VH-62-S16 | 709-004-K | .622 (15.80) | Ø.5115 ±.0025 (Ø12.99 ± 0.06) |
| M | .8125 ±.0008 (20.64 ±.02) | .919 ±.001 (23.34 ±.03) | .854 ±.002 (21.69 ± 0.05) | .027 +.002/-.001 (.69 +.05/-.03) | .3640 ±.0025 (9.25 ±.06) | 2-019 | VH-81-S16 | 709-004-M | .809 (20.55) | Ø.6985 ±.0025 (Ø17.74 ± 0.06) |
| O | 1.0625 ±.0008 (26.99 ±.02) | 1.169 ±.001 (29.69 ±.03) | 1.106 ±.002 (28.09 ± 0.05) | .032 +.002/-.001 (.81 +.05/-.03) | .3690 ±.0025 (9.37 ±.06) | 2-023 | VH-106-S16 | 709-004-O | 1.059 (26.90) | Ø.8865 ±.0025 (22.52 ± 0.06) |
| Q | 1.3755 ±.0008 (34.94 ±.02) | 1.482 ±.001 (37.64 ±.03) | 1.419 ±.002 (36.04 ± 0.05) | .032 +.002/-.001 (.81 +.05/-.03) | .3690 ±.0025 (9.37 ±.06) | 2-028 | VH-137-S16 | 709-004-Q | 1.372 (34.85) | Ø1.11365 ±.0025 (2.89 ± 0.06) |

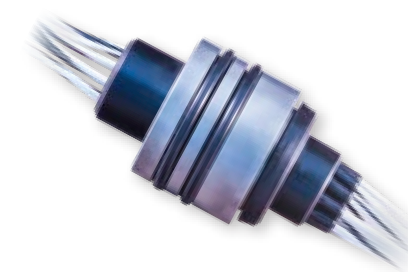
### NOTES

1. Environmental ratings:
   - Pressure - open face - 10,000 psi (uni-directional as shown)
   - Pressure tested to 15,000 PSI per ISO 13628-6
   - Dielectric withstand voltage: 1200VAC per EIA-364-20
   - Insulation resistance: 5,000 megohms (test) @ 500Vdc per EIA-364-21
   - Operating temperature: -55°C to +125°C
   - Hermeticity - <1 x 10^ -7 sccHe/sec @ 1 atmosphere differential
2. Material
   - Glass seal insert: Inconel® X-750 per AMS 5667
   - O-ring: nitrile - 90 duro

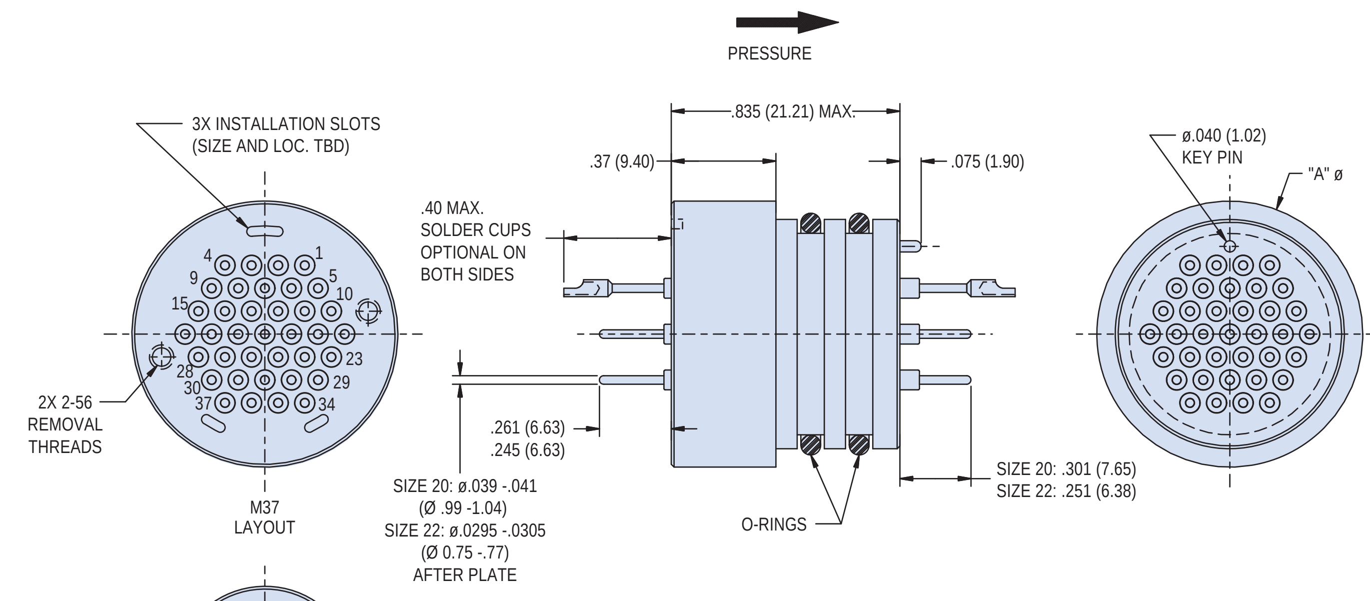


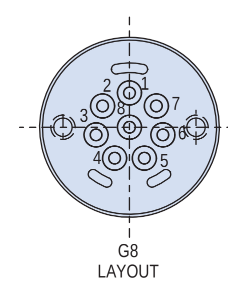



## 707-0030 glass sealed receptacle



| How To Order | | | | |
|---|---|---|---|---|
| Sample Part Number | 707-0030 | -M | 37 | P |
| Series | 707-0030 | | | |
| Sheel Size | G = Shell Size G M = Shell Size M See dimensions table | | | |
| Insert Arrangement | See page 20 and 21 | | | |
| Pin Termination | P = Pin S = Solder Cup | | | |




| Dimensions | | | |
|---|---|---|---|
| Part No. | Contacts | "A" Ø | O-Ring |
| 707-0030-G8* | 8#20 | .635 (16.13) | 2-012 |
| 707-0030-M37* | 37#22 | .940 (23.88) | 2-017 |

### NOTES

- Dielectric withstand voltage: 1200VAC at sea level
- Insulation resistance: 5,000 megohms min @ 500 Vdc
- Operating temperature: -60°C to +260°C
- Hermeticity - <1 x 10^ -7 sccHe/sec @ 1 atmosphere differential
- Pressure: 0 to 12,000 PSI



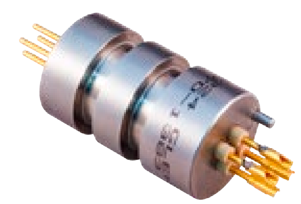


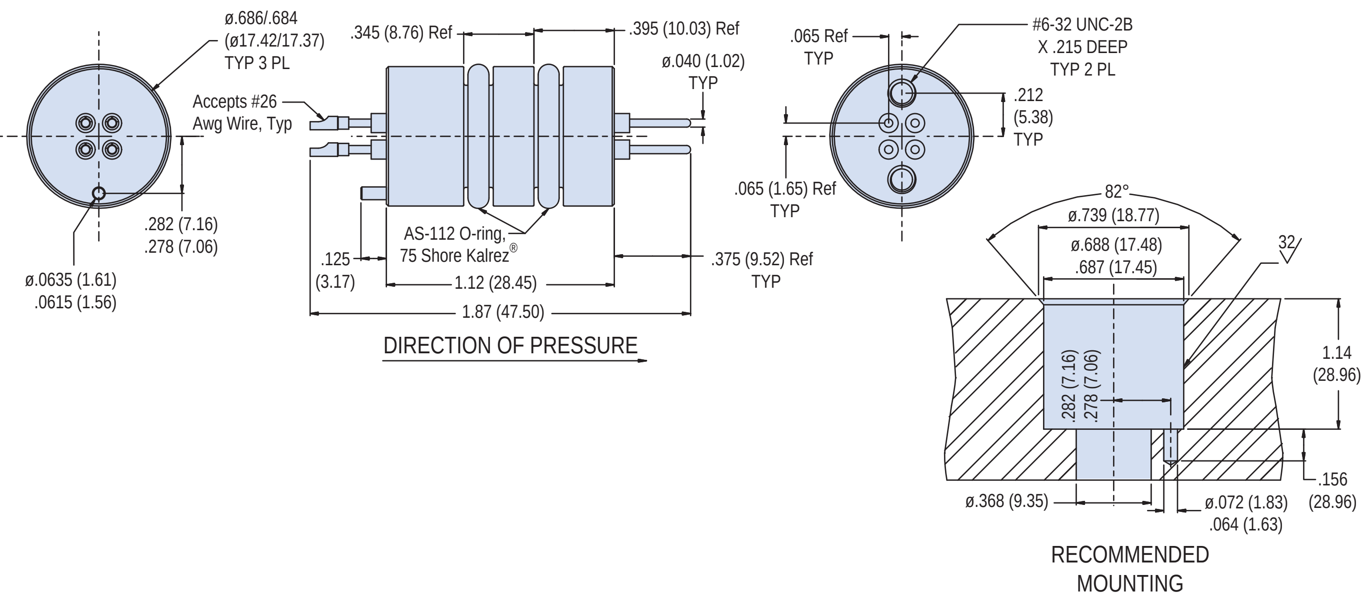
DOWNHOLE: HIGH PRESSURE/HIGH TEMPERATURE

## 4 Pin, high pressure glass sealed feedthrough



### 4 PIN, 25,000 PSI MAX HIGH PRESSURE, GLASS SEALED FEEDTHROUGH






### NOTES

1. Performance specifications:
   - Hermeticity: <1 x 10^-8 sccHe/sec @ 1 atm diff
   - Maximum voltage: 500 Vdc
   - Operating voltage: 250 Vdc
   - Temperature: -76°F (-60°C) to 500°F (260°C)
   - Current capacity:
     3.3 Amps @ ambient
     2.5 Amps @ 500°F (260°C)
   - Pressure: 25,000 psi max in direction indicated
   - Temperature: 500°F (260°C) max
2. Material / finish:
   - Body: Inconel® X-750 / none
   - Pins: Inconel® X-750 / gold plate .00005 Min thick
   - Insulators:
     vitreous glass / N.A.
     peek / N.A.
   - O-rings: Kalrez® (ffkm) / N.A.

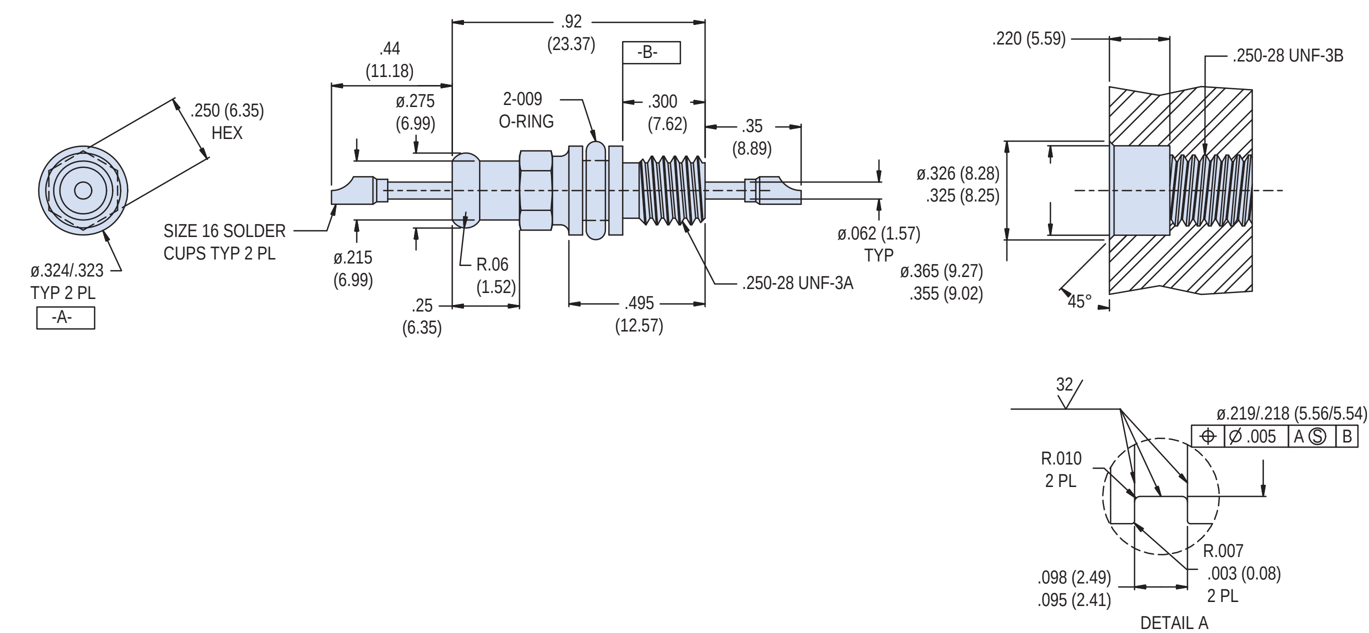





## Single-pin pin tool joint glass-sealed feedthrough



### SINGLE PIN, TOOL JOINT GLASS SEALED FEEDTHROUGH




### NOTES

1. Performance:
   - Hermeticity: <1 x 10^-10 sccHe/sec @ 1 atm diff
   - D.W.V.: 1000 Vdc pin to shell without breakdown
   - I.R.: 5000 Megohms min @ 500 Vdc (ambient)
   - Current: 7 amps
   - Temperature: -5°C to 50°C (23° to 122°F)
2. Material / finish:
   - Body: Inconel® X-750 / none
   - Pin: Inconel® X-750 / gold plate .00005 min thick
   - Solder cups: 52 alloy / gold plate .00005 min thick
   - Insulator: vitreous glass / N.A.
   - O-ring: fluorocarbon (viton ) (FKM®) / N.A.

**TOP SIDE**

*HARSH-ENVIRONMENT*

# Special-Purpose Shipboard and Topside Interconnects and Cable Routing Technologies

**Composite thermoplastic, marine bronze, and stainless steel interconnect wire system components for ruggedized salt spray and explosive zone applications**

**TOPSIDE OR SHIPBOARD CONNECTORS**







# Topside / Shipboard Environmental Connectors

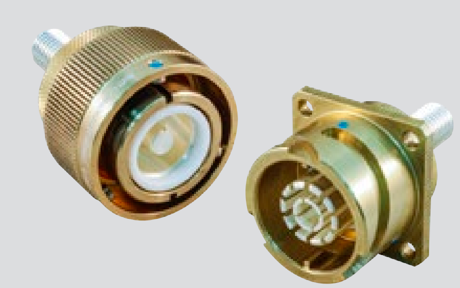
## Product selection guide











*MARINE BRONZE*

# Seacrow Connectors

## For geophysical/offshore and other harsh-environment applications

Glenair manufactures connectors qualified to VG96929, VG95234 and VG95328 standards. These connectors are mostly used in harsh-environment military applications for ground vehicles and ground systems. Our new Marine Bronze version increases the level of robustness of these connectors to be succesfully used in all severe environment navy installations, as well as off-shore platforms, sea ports, geological and oceanographic applications.

- **Marine bronze alloy for superior corrosion resistance in seawater and other harsh environments**
- **Ideal for shipboard and offshore drilling applications**
- **Available in Series ITS (5015 reverse-bayonet), Series IPT (26482), Series IGE (Single-pole high-power VG96929) and Series IT (5015 threaded)**
- **IP67 environmental sealing in mated condition; IP68 available**
- **Hundreds of available contact arrangements for both power and signal as well as hybrid applications**







*SEACROW MARINE BRONZE*

# Topside / Shipboard Environmental Connectors

## Series overview

### ITS-MB MIL-C-5015 TYPE REVERSE-BAYONET CONNECTORS

**VG95234 Equivalent Marine Bronze Series**

ITS-MB connectors are compliant with VG95234, using all the same insert arrangements available in the standard ITS Reverse Bayonet Connectors catalog. Typically they are used for power and signal transmission, with wires from 26 AWG to 4/0. A wide variety of backshells allow the ITS-MB to accept jacketed cables, single or multi-poles, with or without RFI/EMI shielding, conduits with PG or metric thread. IP67 protection is the standard performance. IP68 on request.

### IT-MB MIL-C-5015G TYPE THREADED CONNECTORS

**MIL-C-5015 Compliant Marine Bronze Series**

IT-MB is a threaded connector compliant with the MIL-DTL-5015 standard. All the electrical characteristics are available in the IT standard catalog. IT-MB family is a threaded version mostly used for power and signal, with IP67 standard performance sealing.

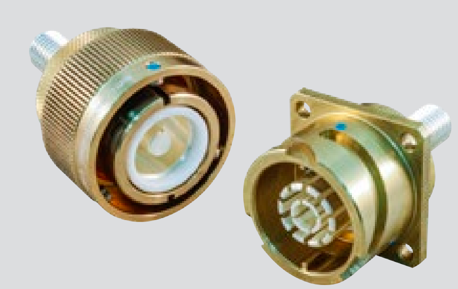
### IPT-MB MIL-DTL-26482 TYPE HIGH DENSITY BAYONET CONNECTORS

**VG95328 Equivalent Marine Bronze Series**

IPT-MB connectors are the choice for reliability when 20-16 AWG signal cables are used. The insert arrangements as well as the electrical characteristics are detailed in the IPT IPT-SE catalog. Backshells suitable for EMI shield terminations and heat shrink boots are also available.

The receptacle is also available with PCB contacts. IP67 protection is the standard performance. IP68 on request.

### IGE-MB MIL-C-5015 TYPE REVERSE-BAYONET SINGLE-POLE POWER CONNECTORS



**VG96929 Equivalent Marine Bronze Series**

IGE-MB High Power Single Pole Connectors are used with cables from 16 to 240 mmq.

These connectors achieve high-performance working current and peak current, and are ideal for engines, power supplies, and power distribution boxes. Several backshells are available, either straight or 90° elbows for the most reliable cable accomodation. See the VG96929 catalog for detailed electrical characteristics. IP67 protection is the standard performance. IP68 on request.

## ITS-MB with solder cup or crimp contacts

### ITS-MB REVERSE-BAYONET MIL-C-5015 TYPE / VG95234 EQUIVALENT MARINE BRONZE SERIES

ITS-MB connectors are compliant with VG95234, using all the same insert arrangements available in the standard ITS Reverse Bayonet Receptacles and ITB Reverse Bayonet Plugs. Typically they are used for power and signal transmission, with wires from 32 AWG to 4/0. A wide variety of backshells allow the ITS-MB to accept jacketed cables, single or multi-poles, with or without RFI/EMI shielding, conduits with PG or metric thread. IP67 protection is the standard performance. IP68 on request.

**ITS-MB How To Order**

| Sample Part Number | ITB | G | 31 | 06 | A | 20-27 | P | Y | MB |
|---|---|---|---|---|---|---|---|---|---|
| **Series** | **ITS** = Reverse bayonet coupling receptacle<br>**ITB** = Reverse bayonet coupling plug | | | | | | | | |
| **Plug Grounding Fingers** | | **G** = Grounding fingers; omit for none (plug only) | | | | | | | |
| **Contact Type** | | | **31** = Solder cup **41** = Crimp | | | | | | |
| **Shell Style** | | | | See shell style table | | | | | |
| **Environmental Class** | | | | | See environmental class table; backshell determined by class (see note 1 and 2) | | | | |
| **Shell Size/Insert Arrangement** | | | | | | See insert arrangement tables | | | |
| **Contact Gender** | | | | | | | **P** = Pin **S** = Socket | | |
| **Alternate Insert Rotation** | | | | | | | | See insert rotation positions table (pg 8-9) | |
| **Material Option** | | | | | | | | | **MB** = Marine bronze |

**ITS or ITB Connector Shell Styles**

| Code | Description |
|---|---|
| **ITS Receptacle** | |
| **00** | Front panel mount square flange receptacle with accessory threads |
| **01** | In-line cylindrical receptacle with accessory threads |
| **02** | Front panel mount square flange receptacle—no accessory threads |
| **03** | Rear panel mount square flange receptacle—no accessory threads |
| **030** | Rear panel mount square flange receptacle with accessory threads |
| **038** | Rear panel mount square flange receptacle with 90° backshell |
| **07** | Rear panel mount jam nut receptacle—no accessory threads |
| **070** | Rear panel mount jam nut receptacle with accessory threads |
| **078** | Rear panel mount jam nut receptacle with 90° backshell |
| **ITB Plug** | |
| **06** | Straight cylindrical plug connector with accessory threads |
| **08** | Cylindrical plug connector with 90° backshell |
| **26** | Square flange panel mount plug |

**Environmental Class**

| Code | Description |
|---|---|
| **A** | Non-environmental |
| **G, GR, SP** | Environmental (with wire sealing grommet) |
| **GS** | Environmental (wire sealing grommet and shrink boot) |
| **F, R, RS** | Environmental (wire sealing grommet and compression ring) |

### SHELL STYLE / ENVIRONMENTAL CLASS MATRIX

| Shell Style | Environmental Class | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | F | G | GR | GS | SP | R | RS | SP |
| **ITS 00** | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ |
| **ITS 01** | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ |
| **ITS 02** | ✓ | | | | | | ✓ | | |
| **ITS 03** | ✓ | | | | | | ✓ | | |
| **ITS 030** | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ |
| **ITS 038** | ✓ | | | | | | ✓ | | |
| **ITS 07** | ✓ | | | | | | ✓ | | |
| **ITS 070** | ✓ | | | | | | ✓ | | |
| **ITS 078** | ✓ | | | | | | ✓ | | |
| **ITB 26** | ✓ | | | | | | ✓ | | |
| **ITB 06** | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| **ITB 08** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |

### NOTES

1. See pages 16 and 17 for connector/backshell configurations.
2. See page 18 for overall length of specific connector/backshell configurations.








## ITS-MB marine bronze insert arrangements

| Arrangement | Rating | Contact Number | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 10SL-3 | A | 3 | | | | | | 3 | | |
| 10SL-4 | A | 2 | | | | | | 2 | | |
| 14S-1 | A | 3 | | | | | | 3 | | |
| 14S-2 | I | 4 | | | | | | 4 | | |
| 14S-5 | I | 5 | | | | | | 5 | | |
| 14S-6 | I | 6 | | | | | | 6 | | |
| 14S-7 | A | 3 | | | | | | 3 | | |
| 14S-9 | A | 2 | | | | | | 2 | | |
| 14S-07 | I | 7 | | | | | | 7 | | |
| 16S-1 | A | 7 | | | | | | 7 | | |
| 16S-4 | D | 2 | | | | | | 2 | | |
| 16S-5 | A | 3 | | | | | | 3 | | |
| 16S-8 | A | 5 | | | | | | 5 | | |
| 16-2 | E | 1 | | | | | 1 | | | |
| 16-7 | A | 3 | | | | 1 | | 2 | | |
| 16-9 | A | 4 | | | | | 2 | 2 | | |
| 16-10 | A | 3 | | | | | 3 | | | |
| 16-11 | A | 2 | | | | | 2 | | | |
| 16-12 | A | 1 | | | 1 | | | | | |
| 16-A10* | I | 10 | | | | | | | 10 | |
| 18-1 | I | 10 | | | | | | 10 | | |
| 18-3 | D | 2 | | | | | 2 | | | |
| 18-4 | D | 4 | | | | | | 4 | | |
| 18-5 | D | 3 | | | | | 2 | 1 | | |
| 18-6 | D | 1 | | | 1 | | | | | |
| 18-06 | A | 6 | | | | | 4 | 2 | | |
| 18-7 | B | 1 | | | | 1 | | | | |
| 18-8 | A | 8 | | | | | 1 | 7 | | |
| 18-9 | I | 7 | | | | | 2 | 5 | | |
| 18-10 | A | 4 | | | | | 4 | | | |
| 18-10S MT | A | 4 | | | | | 4 | | | |
| 18-11 | A | 5 | | | | | 5 | | | |
| 18-12 | A | 6 | | | | | | 6 | | |
| 18-13 | A | 4 | | | | 1 | 3 | | | |
| 18-16 | C | 1 | | | | | 1 | | | |
| 18-19 | A | 10 | | | | | | 10 | | |
| 18-20 | A | 5 | | | | | | 5 | | |
| 18-22 | D | 3 | | | | | | 3 | | |
| 18-30 (18-20x110°) | A | 5 | | | | | | 5 | | |
| 20-2 | D | 1 | | 1 | | | | | | |
| 20-3 | D | 3 | | | | | 3 | | | |
| 20-4 | D | 4 | | | | | 4 | | | |
| 20-6 | D | 3 | | | | | | 3 | | |
| 20-7 | A | 8 | | | | | | 8 | | |
| 20-8 | I | 6 | | | | 2 | | 4 | | |

| Arrangement | Rating | Contact Number | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 20-9 | A | 8 | | | | | 1 | 7 | | |
| 20-11 | I | 13 | | | | | | 13 | | |
| 20-14 | A | 5 | | | | 2 | 3 | | | |
| 20-15 | A | 7 | | | | | 7 | | | |
| 20-16 | A | 9 | | | | | 2 | 7 | | |
| 20-17 | A | 6 | | | | | 5 | 1 | | |
| 20-18 | A | 9 | | | | | 3 | 6 | | |
| 20-19 | A | 3 | | | | 3 | | | | |
| 20-21 | A | 9 | | | | | 1 | 8 | | |
| 20-22 | A | 6 | | | | 3 | | 3 | | |
| 20-23 | A | 2 | | | | 2 | | | | |
| 20-24 | A | 4 | | | | 2 | | 2 | | |
| 20-A24 | A | 4 | | | | 2 | | 2 | | |
| 20-25 (20-11x100°) | I | 13 | | | | | | 13 | | |
| 20-27 | A | 14 | | | | | | 14 | | |
| 20-29 | A | 17 | | | | | | 17 | | |
| 20-30 (20-11x250°) | I | 13 | | | | | | 13 | | |
| 20-33 | A | 11 | | | | | | 11 | | |
| 20-A8 | I | 8 | | | | 2 | | 6 | | |
| 20-A9 | A | 9 | | | | | 9 | | | |
| 20-A48 | I | 19 | | | | | | 19 | | |
| 20-B8 | A | 8 | | | | | 4 | 4 | | |
| 22-1 | D | 2 | | | | 2 | | | | |
| 22-2 | D | 3 | | | | 3 | | | | |
| 22-4 | A | 4 | | | | 2 | 2 | | | |
| 22-5 | D | 6 | | | | | 2 | 4 | | |
| 22-7 | E | 1 | | 1 | | | | | | |
| 22-9 | E | 3 | | | | | 3 | | | |
| 22-10 | E | 4 | | | | | | 4 | | |
| 22-11 | B | 2 | | | | | | 2 | | |
| 22-12 | D | 5 | | | | 2 | | 3 | | |
| 22-14 | A | 19 | | | | | | 19 | | |
| 22-15 | A | 6 | | | | | 5 | 1 | | |
| 22-17 | A | 9 | | | | | 1 | 8 | | |
| 22-18 | A | 8 | | | | | | 8 | | |
| 22-19 | A | 14 | | | | | | 14 | | |
| 22-20 | A | 9 | | | | | | 9 | | |
| 22-21 | A | 3 | | 1 | | | | 2 | | |
| 22-22 | A | 4 | | | | 4 | | | | |
| 22-23 | A | 8 | | | | | 8 | | | |
| 22-27 | A | 9 | | | | 1 | | 8 | | |
| 22-28 | A | 7 | | | | | 7 | | | |
| 22-34 | D | 5 | | | | | 3 | 2 | | |
| 22-82 | A | 10 | | | | 2 | | 8 | | |

* Only Crimp Contact Version

## ITS-MB marine bronze insert arrangements



| Arrangement | Rating | Contact Number | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 22-A10 | A | 10 | | | | | | 10 | | |
| 22-A37* | A | 37 | | | | | | | 37 | |
| 22-22S MT | A | 4 | | | | 4 | | | | |
| 24-2 | D | 7 | | | | | 7 | | | |
| 24-3 | A | 7 | | | | | 2 | 5 | | |
| 24-4 | D | 4 | | 1 | | | | 3 | | |
| 24-5 | A | 16 | | | | | | 16 | | |
| 24-06 | D | 6 | | | | 4 | | 2 | | |
| 24-6 | A | 8 | | | | | 8 | | | |
| 24-07 | D | 7 | | | | | 7 | | | |
| 24-7 | A | 16 | | | | | 2 | 14 | | |
| 24-9 | A | 2 | | | 2 | | | | | |
| 24-10 | A | 7 | | | | 7 | | | | |
| 24-11 | A | 9 | | | | 3 | 6 | | | |
| 24-12 | A | 5 | | | 2 | | 3 | | | |
| 24-013 | A | 13 | | | | | 6 | 7 | | |
| 24-19 | A | 12 | | | | | | 12 | | |
| 24-20 | D | 11 | | | | | 2 | 9 | | |
| 24-22 | D | 4 | | | | 4 | | | | |
| 24-27 | E | 7 | | | | | | 7 | | |
| 24-28 | I | 24 | | | | | | 24 | | |
| 24-67 | A | 19 | | | | | 19 | | | |
| 24-A1 | B | 1 | | 1 | | | | | | |
| 24-A8 | A | 8 | | | | 5 | 3 | | | |
| 24-A11 | A | 11 | | | | 2 | | 9 | | |
| 24-A12 | A | 12 | | | 2 | | | 10 | | |
| 24-A25 | A | 25 | | | | | | 25 | | |
| 24-A28 | I | 28 | | | | | | 28 | | |
| 24-A55* | I | 55 | | | | | | | | 55 |
| 24-G5 | A | 5 | | | | 5 | | | | |
| 28-1 | A | 9 | | | | 3 | 6 | | | |
| 28-2 | D | 14 | | | | | 2 | 12 | | |
| 28-3 | E | 3 | | | | 3 | | | | |
| 28-6 | D | 3 | | | 3 | | | | | |
| 28-09 | A | 9 | | | 4 | | | 5 | | |
| 28-9 | D | 12 | | | | | 6 | 6 | | |
| 28-10 | A | 7 | | | 2 | 2 | 3 | | | |
| 28-11 | A | 22 | | | | | 4 | 18 | | |
| 28-12 | A | 26 | | | | | | 26 | | |
| 28-13 (28-12x100°) | A | 26 | | | | | | 26 | | |
| 28-15 | A | 35 | | | | | | 35 | | |
| 28-16 | A | 20 | | | | | | 20 | | |
| 28-17 | A | 15 | | | | | | 15 | | |
| 28-18 | I | 12 | | | | | | 12 | | |
| 28-19 | A | 10 | | | | | 4 | 6 | | |

| Arrangement | Rating | Contact Number | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 28-20 | A | 14 | | | | | 10 | 4 | | |
| 28-21 | A | 37 | | | | | | 37 | | |
| 28-22 | D | 6 | | | 3 | | | 3 | | |
| 28-51 | D | 12 | | | | | 12 | | | |
| 28-59 | A | 17 | | | | | 7 | 10 | | |
| 28-70 | A | 7 | | | | 7 | | | | |
| 28-72* | I | 72 | | | | | | | | 72 |
| 28-84 | A | 9 | | | | 9 | | | | |
| 28-124 | A | 16 | | | | 4 | | 12 | | |
| 28-A29 | A | 29 | | | | 2 | | 27 | | |
| 28-A31* | A | 31 | | | | 6 | | | | 25 |
| 28-A35 | A | 35 | | | | | | 35 | | |
| 28-A63 | I | 28 | | | | | 9 | 19 | | |
| 28-B1 | B | 1 | | 1 | | | | | | |
| 28-B2 | E | 2 | | | | 2 | | | | |
| 32-1 | D | 5 | | 2 | | | 3 | | | |
| 32-2 | E | 5 | | | 3 | | | 2 | | |
| 32-3 | D | 9 | | 1 | 2 | | 2 | 4 | | |
| 32-5 | D | 2 | | 2 | | | | | | |
| 32-6 | A | 23 | | | 2 | 3 | 2 | 16 | | |
| 32-7 | I | 35 | | | | | 7 | 28 | | |
| 32-8 | A | 30 | | | | | 6 | 24 | | |
| 32-9 | D | 14 | | | 2 | | | 12 | | |
| 32-013 | D | 13 | | | | | 13 | | | |
| 32-13 | D | 23 | | | | | 5 | 18 | | |
| 32-15 | D | 8 | | 2 | | | 6 | | | |
| 32-17 | D | 4 | | | 4 | | | | | |
| 32-22 | A | 54 | | | | | | 54 | | |
| 32-31 | A | 31 | | | | | | 31 | | |
| 32-59 | A | 42 | | | | 2 | | 40 | | |
| 32-68 | A | 16 | | | 4 | | | 12 | | |
| 32-689 | A | 9 | | | 3 | | | 6 | | |
| 32-A5 GM | A | 5 | | | 5 | | | | | |
| 32-76 | A | 19 | | | | | 19 | | | |
| 32-79 | D | 5 | | | 4 | 1 | | | | |
| 32-88 | A | 54 | | | | | | 54 | | |
| 32-A1 | A | 1 | 1 | | | | | | | |
| 32-A3 | E | 3 | | | 3 | | | | | |
| 32-A8 | A | 8 | | | | 8 | | | | |
| 32-A25 | A | 25 | | | | | 25 | | | |
| 32-A27 | A | 27 | | | | | 10 | 17 | | |
| 32-A30 | A | 30 | | | | | 10 | 20 | | |
| 32-A40 | A | 40 | | | | | | 40 | | |
| 32-A48 | I | 48 | | | | | | 48 | | |
| 32-A55 | A | 55 | | | | | | 55 | | |
| 32-B22 | A | 22 | | | 2 | | | 20 | | |

* Only Crimp Contact Version





Seacrow™
SEACROW MARINE BRONZE
Topside / Shipboard
Environmental Connectors
Glenair.
ITS-MB marine bronze insert arrangements



| Arrangement | Rating | Contact Number | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 36-01 | C | 1 | 1 | | | | | | | |
| 36-3 | D | 6 | | 3 | | | 3 | | | |
| 36-4 | A | 3 | | 3 | | | | | | |
| 36-5 | A | 4 | | 4 | | | | | | |
| 36-6 | A | 6 | | 2 | 4 | | | | | |
| 36-7 | A | 47 | | | | | 7 | 40 | | |
| 36-8 | A | 47 | | | | | 1 | 46 | | |
| 36-9 | A | 31 | | | 1 | 2 | 14 | 14 | | |
| 36-10 | A | 48 | | | | | | 48 | | |
| 36-14 | D | 16 | | | | 5 | 5 | 6 | | |
| 36-15 | A | 35 | | | | | | 35 | | |
| 36-18 (36-9x100°) | A | 31 | | | 1 | 2 | 14 | 14 | | |
| 36-22 | D | 22 | | | | | 22 | | | |
| 36-35 | A | 36 | | | | 4 | | 32 | | |
| 36-54= 36-B39 | A | 39 | | | | 8 | | 31 | | |
| 36-66 | A | 56 | | | | | 4 | 52 | | |
| 36-74 | A | 44 | | | | 1 | | 43 | | |
| 36-77 | D | 7 | | | 7 | | | | | |
| 36-A7 | A | 7 | | 3 | 2 | | 2 | | | |
| 36-A10 | A | 10 | | | 2 | 8 | | | | |
| 36-A35 | A | 8 | | 4 | | | | 4 | | |
| 36-A51 | D | 6 | | 3 | 2 | | | 1 | | |
| 36-A72* | I | 72 | | | | | 4 | 16 | 52 | |
| 36-A99* | A | 65 | | | | | | 15 | | 50 |
| 36-B78 | D | 14 | | | | 12 | | 2 | | |
| 36-B90 | D | 1 | n.1** Special Contact | | | | | | | |
| 36-D78 | D | 14 | | | | 10 | | 4 | | |
| 40-1 | D | 30 | | | | | 6 | 24 | | |
| 40-9 | A | 47 | | | | 1 | 22 | 24 | | |
| 40-10 | A | 29 | | | 4 | 9 | | 16 | | |
| 40-26 | A | 26 | | | | 7 | 19 | | | |
| 40-31 | D | 31 | | | | | 31 | | | |
| 40-35 | D | 35 | | | | | 35 | | | |
| 40-47 | A | 47 | | | | 1 | 22 | 24 | | |
| 40-53 | A | 60 | | | | | | 60 | | |
| 40-56 | A | 85 | | | | | | 85 | | |
| 40-62 | A | 60 | | | | | | 60 | | |
| 40-63 | A | 61 | | | | | | 61 | | |
| 40-67 | A | 11 | | | 10 | | | 1 | | |
| 40-100* | A | 100 | | | | | | | 100 | |
| 40-150* | I | 150 | | | | | | | 150 | |
| 40-951 | A | 51 | | | | | 25 | 26 | | |
| 40-A3 | A | 5 | | 3 | | | 2 | | | |
| 40-A4 | A | 6 | | 4 | | | 2 | | | |
| 40-A5 | A | 5 | | 3 | 1 | | 1 | | | |

| Arrangement | Rating | Contact Number | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 40-A5GM | A | 5 | | 5 | | | | | | |
| 40-A6 | B | 6 | | | | | 6 | | | |
| 40-A8 | E | 8 | | 4 | | | | 4 | | |
| 40-A9 | A | 9 | | 3 | | 6 | | | | |
| 40-A10 | D | 8 | | | 4 | | | 4 | | |
| 40-A14 | A | 14 | | | 8 | | 6 | | | |
| 40-A20 | D | 20 | | | | 2 | 18 | | | |
| 40-A24 | D | 24 | | | | 8 | 16 | | | |
| 40-A38 | A | 38 | | | | | 38 | | | |
| 40-A51 | A | 31 | | | | 15 | | 16 | | |
| 40-A55 | A | 5 | | 5 | | | | | | |
| 40-A56 | A | 85 | | | | | | 85 | | |
| 40-A62 | A | 62 | | | | 2 | | 60 | | |
| 40-A65 | A | 65 | | | | | | 65 | | |
| 40-A70 | A | 70 | | | | | | 70 | | |
| 40-B4 | E | 4 | | 4 | | | | | | |
| 40-B19 | A | 19 | | | | 19 | | | | |
| 40-B25 | A | 29 | | 4 | | | | 25 | | |
| 40-B37 | A | 37 | | | | | 37 | | | |
| 40-D4 | C | 4 | | | | 4 | | | | |
| 40-G4 | E | 4 | | | | 4 | | | | |

* Only Crimp Contact Version
Special Contact

# ITS-MB marine bronze insert rotation

Seacrow™
SEACROW MARINE BRONZE
Topside / Shipboard Environmental Connectors
Glenair.
ITS-MB marine bronze insert rotation

TOPSIDE: SEACROW™

| Arrangement | a ± 2° | | | |
|---|---|---|---|---|
| | W | X | Y | Z |
| 10SL-3 | | | | |
| 10SL-4 | | | | |
| 14S-1 | 90 | 180 | 270 | |
| 14S-2 | | 120 | 240 | |
| 14S-5 | | 110 | | |
| 14S-6 | 90 | | | |
| 14S-7 | 90 | 180 | 270 | |
| 14S-9 | 70 | 145 | 215 | 290 |
| 14S-07 | | | | |
| 16S-1 | 80 | | | 280 |
| 16S-4 | 35 | 110 | 250 | 325 |
| 16S-5 | 70 | 145 | 215 | 290 |
| 16S-8 | | 170 | 265 | |
| 16-2 | | | | |
| 16-7 | 80 | 110 | 250 | 280 |
| 16-9 | 35 | 110 | 250 | 325 |
| 16-10 | 90 | 180 | 270 | |
| 16-11 | 35 | 110 | 250 | 325 |
| 16-12 | | | | |
| 16A-10 | 35 | 112 | 235 | 315 |
| 18-1 | 70 | 145 | 215 | 290 |
| 18-3 | 35 | 110 | 250 | 325 |
| 18-4 | 35 | 110 | 250 | 325 |
| 18-5 | 80 | 110 | 250 | 280 |
| 18-6 | | | | |
| 18-06 | 180 | | | |
| 18-7 | | | | |
| 18-8 | 70 | | | 290 |
| 18-9 | 80 | 110 | 250 | 280 |
| 18-10 | | 120 | 240 | |
| 18-10S MT | | | | |
| 18-11 | | 170 | 265 | |
| 18-12 | 80 | | | 280 |
| 18-13 | 80 | 110 | 250 | 280 |
| 18-16 | | | | |
| 18-19 | | 120 | 240 | |
| 18-20 | 90 | 180 | 270 | |
| 18-22 | 70 | 145 | 215 | 290 |
| 18-29 | 90 | 180 | 270 | |
| 18-30 | | | | |
| 20-2 | | | | |
| 20-3 | 70 | 145 | 215 | 290 |
| 20-4 | 45 | 110 | 250 | |
| 20-6 | 70 | 145 | 215 | 290 |
| 20-7 | 80 | 110 | 250 | 280 |
| 20-8 | 80 | 110 | 250 | 280 |
| 20-9 | 80 | 110 | 250 | 280 |

| Arrangement | a ± 2° | | | |
|---|---|---|---|---|
| | W | X | Y | Z |
| 20-11 | | | | |
| 20-14 | 80 | 110 | 250 | 280 |
| 20-15 | 80 | | | 280 |
| 20-16 | 80 | 110 | 250 | 280 |
| 20-17 | 90 | 180 | 270 | |
| 20-18 | 35 | 110 | 250 | 325 |
| 20-19 | 90 | 180 | 270 | |
| 20-21 | 35 | 110 | 250 | 325 |
| 20-22 | 80 | 110 | 250 | 280 |
| 20-23 | 35 | 110 | 250 | 325 |
| 20-24 | 35 | 110 | 250 | 325 |
| 20-A24 | 55 | 125 | 200 | 340 |
| 20-25 | | | | |
| 20-27 | 35 | 110 | 250 | 325 |
| 20-29 | 80 | | | 280 |
| 20-30 | | | | |
| 20-33 | | | | 280 |
| 20-A8 | | | | |
| 20-A9 | | 110 | 250 | |
| 20-A48 | | 80 | 280 | |
| 20-B8 | 80 | 110 | 250 | 280 |
| 22-1 | 35 | 110 | 250 | 325 |
| 22-2 | 70 | 145 | 215 | 290 |
| 22-4 | 35 | 110 | 250 | 325 |
| 22-5 | 35 | 110 | 250 | 325 |
| 22-7 | | | | |
| 22-9 | 70 | 145 | 215 | 290 |
| 22-10 | 35 | 110 | 250 | 325 |
| 22-11 | 35 | 110 | 250 | 325 |
| 22-12 | 80 | 110 | 250 | 280 |
| 22-14 | 80 | 110 | 250 | 280 |
| 22-15 | 80 | 110 | 250 | 280 |
| 22-17 | 80 | 110 | 250 | 280 |
| 22-18 | 80 | 110 | 250 | 280 |
| 22-19 | 80 | 110 | 250 | 280 |
| 22-20 | 35 | 110 | 250 | 325 |
| 22-21 | 80 | 110 | 250 | 280 |
| 22-22 | | 110 | 250 | |
| 22-23 | 35 | | 250 | |
| 22-27 | 80 | | 250 | 280 |
| 22-28 | 80 | | | 280 |
| 22-34 | 80 | 110 | 250 | 280 |
| 22-82 | 80 | 110 | 250 | 280 |
| 22A-10 | | 120 | 240 | |
| 22-A37 | 80 | 112 | 250 | 280 |
| 22-22S MT | | | | |
| 24-2 | 80 | | | 280 |

| Arrangement | a ± 2° | | | |
|---|---|---|---|---|
| | W | X | Y | Z |
| 24-3 | 80 | 110 | 250 | 280 |
| 24-4 | 80 | 110 | 250 | 280 |
| 24-5 | 80 | 110 | 250 | 280 |
| 24-06 | 40 | | | 320 |
| 24-6 | 80 | 110 | 250 | 280 |
| 24-07 | 80 | | | 280 |
| 24-7 | 80 | 110 | 250 | 280 |
| 24-9 | 35 | 110 | 250 | 325 |
| 24-10 | 80 | | | 280 |
| 24-11 | 35 | 110 | 250 | 325 |
| 24-12 | 80 | 110 | 250 | 280 |
| 24-013 | | | | |
| 24-19 | | | | |
| 24-20 | 80 | 110 | 250 | 280 |
| 24-22 | 45 | 110 | 250 | |
| 24-27 | 80 | | | 280 |
| 24-28 | 80 | 110 | 250 | 280 |
| 24-67 | 80 | | | 335 |
| 24-A1 | | | | |
| 24-A8 | | | | |
| 24-A11 | 35 | 110 | 250 | 325 |
| 24-A12 | | | | |
| 24-A25 | 80 | 110 | 250 | 280 |
| 24-A28 | 65 | 146 | 235 | |
| 24-A55 | 80 | 110 | 250 | 280 |
| 24-G5 | 70 | 110 | 240 | 270 |
| 28-1 | 80 | 110 | 250 | 280 |
| 28-2 | 35 | 110 | 250 | 325 |
| 28-3 | 70 | 145 | 215 | 290 |
| 28-6 | 70 | 145 | 215 | 290 |
| 28-09 | 110 | 250 | 260 | 280 |
| 28-9 | 80 | 110 | 250 | 280 |
| 28-10 | 80 | 110 | 250 | 280 |
| 28-11 | 80 | 110 | 250 | 280 |
| 28-12 | 90 | 180 | 270 | |
| 28-13 | | | | |
| 28-15 | 80 | 110 | 250 | 280 |
| 28-16 | 80 | 110 | 250 | 280 |
| 28-17 | 80 | 110 | 250 | 280 |
| 28-18 | 70 | 145 | 215 | 290 |
| 28-19 | 80 | 110 | 250 | 280 |
| 28-20 | 80 | 110 | 250 | 280 |
| 28-21 | 80 | 110 | 250 | 280 |
| 28-22 | 70 | 145 | 215 | 290 |
| 28-51 | 80 | 135 | 190 | |
| 28-59 | 35 | 110 | 250 | 325 |
| 28-70 | 80 | | | 280 |



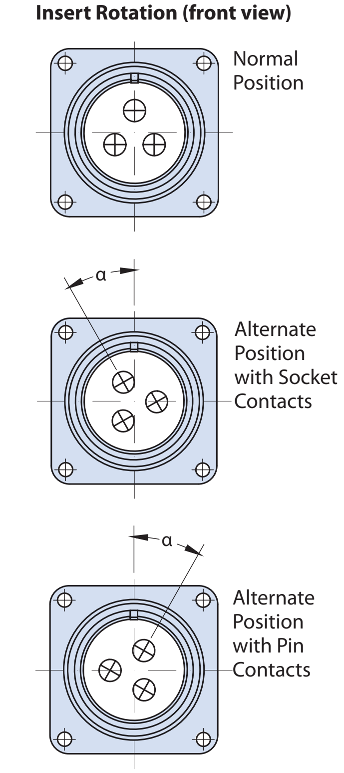
| Arrangement | a ± 2° | | | |
|---|---|---|---|---|
| | W | X | Y | Z |
| 28-72** | 72 | 144 | 216 | 288 |
| 28-84 | 45 | 157 | 90 | 135 |
| 28-124 | 80 | 110 | 250 | 280 |
| 28A-29 | 80 | 110 | 250 | 280 |
| 28A-31 | 35 | | 260 | 310 |
| 28A-35 | 80 | 110 | 250 | 280 |
| 28A-63 | | 100 | 260 | |
| 28-B1 | | | | |
| 28-B2 | | | | |
| 32-1 | 80 | 110 | 250 | 280 |
| 32-2 | 70 | 145 | 215 | 290 |
| 32-3 | 80 | 110 | 250 | 280 |
| 32-5 | 35 | 110 | 250 | 325 |
| 32-6 | 80 | 110 | 250 | 280 |
| 32-7 | 80 | 125 | 235 | 280 |
| 32-8 | 80 | 125 | 235 | 280 |
| 32-9 | 80 | 110 | 250 | 280 |
| 32-013 | 65 | 130 | 230 | 295 |
| 32-13 | 80 | 110 | 250 | 280 |
| 32-15 | 35 | 110 | 250 | 280 |
| 32-17 | 45 | 110 | 250 | |
| 32-22 | 80 | 110 | 250 | 280 |
| 32-31 | 80 | 125 | 215 | 280 |
| 32-59 | 36 | 108 | 252 | 324 |
| 32-68 | 65 | 135 | 225 | 275 |
| 32-689 | | | | |
| 32-A5 GM | | | | |
| 32-76 | 80 | 110 | 250 | 280 |
| 32-79 | | | | |
| 32-88 | 80 | 110 | 250 | 280 |
| 32-A1 | | | | |
| 32-A3 | 22 | 44 | 76 | 98 |
| 32A-8 | 35 | 122 | | 315 |
| 32A-25 | 60 | 120 | | |
| 32-A27 | 30 | 115 | 285 | 335 |
| 32-A30 | | | | |
| 32A-40 | 35 | 130 | | |
| 32A-48 | 80 | 125 | 235 | |
| 32-A55 | 80 | 110 | 250 | 280 |
| 32-B22 | 35 | 110 | 250 | 325 |
| 36-01 | | | | |
| 36-3 | 70 | 145 | 215 | 290 |
| 36-4 | 70 | 145 | 215 | 290 |
| 36-5 | | 120 | 240 | |
| 36-6 | 35 | 110 | 250 | 325 |
| 36-7 | 80 | 110 | 250 | 280 |
| 36-8 | 80 | 110 | 250 | 280 |

| Arrangement | a ± 2° | | | |
|---|---|---|---|---|
| | W | X | Y | Z |
| 36-9 | 80 | 125 | 235 | 280 |
| 36-10 | 80 | 125 | 235 | 280 |
| 36-14 | 90 | 180 | 270 | |
| 36-15 | 60 | 125 | 245 | 305 |
| 36-18 | | | | |
| 36-22 | 80 | 110 | 250 | 280 |
| 36-35 | | | | |
| 36-54 = 36-B39 | 67 | | | |
| 36-66 | 110 | 250 | 260 | 280 |
| 36-74 | | | | |
| 36-77 | 45 | 90 | | |
| 36-A7 | | | | |
| 36-A10 | 45 | 110 | 250 | 315 |
| 36-A35 | | | | |
| 36-A51 | 45 | 135 | 225 | 315 |
| 36A-72 | | 110 | | |
| 36-A99 | 30 | 135 | | |
| 36B-78 | 35 | 106 | 254 | 325 |
| 36B-90 | | | | |
| 36D-78 | 35 | 106 | 254 | 325 |
| 40-1 | 65 | 130 | 235 | 300 |
| 40-9 | 65 | 125 | 225 | 310 |
| 40-10 | 65 | 125 | 225 | 310 |
| 40-26 | 80 | 110 | 250 | 280 |
| 40-31 | 80 | 110 | 250 | 280 |
| 40-35 | 70 | 130 | 230 | 290 |
| 40-47 | 65 | 125 | 225 | 310 |
| 40-53 | 80 | 110 | 250 | 280 |
| 40-56 | 72 | 144 | 216 | 288 |
| 40-62 | 30 | 130 | 220 | 290 |
| 40-63 | 80 | | | 280 |
| 40-67 | 70 | 110 | 230 | 280 |
| 40-100 | 30 | 105 | 230 | 315 |
| 40-150 | | | | |
| 40-951 | 90 | 105 | | |
| 40-A3 | 70 | 145 | 215 | 290 |
| 40-A4 | 50 | 120 | 240 | 325 |
| 40-A5 | 33 | | | 270 |
| 40-A6 | 35 | 110 | 250 | 280 |
| 40-A5GM | 33 | | | 270 |
| 40-A8 | 35 | 110 | 250 | 325 |
| 40-A9 | | | | |
| 40-A10 | 65 | | | |
| 40-A14 | | | | |
| 40-A20 | 80 | 110 | 250 | 280 |
| 40-A24 | | | | |
| 40-A38 | 37 | | | |

| Arrangement | a ± 2° | | | |
|---|---|---|---|---|
| | W | X | Y | Z |
| 40-A51 | | | | |
| 40-A55 | | | | |
| 40-A56 | 72 | 144 | 216 | 288 |
| 40-A62 | 80 | 130 | 230 | 280 |
| 40-A65 | 70 | 145 | 215 | 285 |
| 40-A70 | 80 | 110 | 250 | 280 |
| 40-B4 | 45 | 110 | 215 | 300 |
| 40-B19 | 35 | 105 | 255 | 325 |
| 40-B25 | | | | |
| 40-B37 | | | | |
| 40-D4 | | | | |
| 40-G4 | | | | |

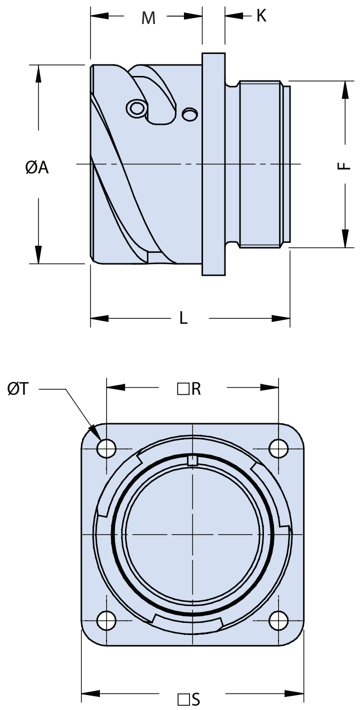
** Class A Only - Only Crimp Contacs

**Insert Rotation (front view)**



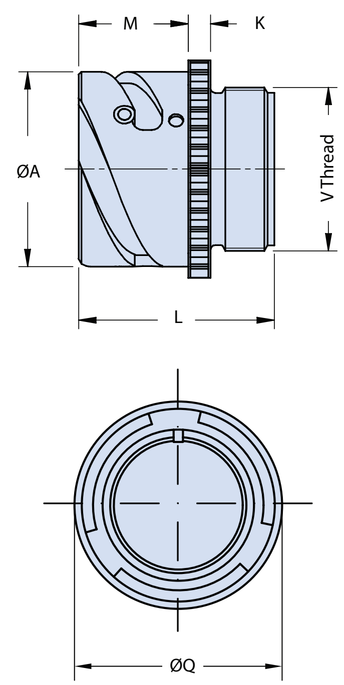

TOPSIDE: SEACROW™

## ITS 00 FRONT WALL MOUNT RECEPTACLE WITH THROUGH HOLES AND ACCESSORY THREADS




| Dimensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Shell Size | ØA +0.2[.01]- 0.1[.00] | K ±0.2 [.01] | L Max. | M +0.4[.02] -0[0.00] | R ±0.2[.01] | S ±0.2[.01] | ØT +0.1[0.00] -0[0.00] | F Thread |
| 10 SL | 18.2 [0.72] | 2.8 [0.11] | 24.7 [0.97] | 14.2 [0.56] | 18.25 [0.72] | 25.4 [1.00] | 3.2 [0.13] | 0.6250 - 24UNEF |
| 14 S | 24.5 [0.96] | 3.2 [0.13] | 24.9 [0.98] | 14.2 [0.56] | 23.00 [0.91] | 30.4 [1.20] | 3.2 [0.13] | 0.7500 - 20UNEF |
| 16 S | 27.2 [1.07] | 3.2 [0.13] | 24.9 [0.98] | 14.2 [0.56] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] | 0.8750 - 20UNEF |
| 16 | 27.2 [1.07] | 3.2 [0.13] | 33.9 [1.33] | 19.0 [0.75] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] | 0.8750 - 20UNEF |
| 18 | 30.7 [1.21] | 4.0 [0.16] | 34.3 [1.35] | 19.0 [0.75] | 27.00 [1.06] | 35.0 [1.38] | 3.2 [0.13] | 1.0000 - 20UNEF |
| 20 | 34.0 [1.34] | 4.0 [0.16] | 34.3 [1.35] | 19.0 [0.75] | 29.40 [1.16] | 38.0 [1.50] | 3.2 [0.13] | 1.1250 - 18UNEF |
| 22 | 37.3 [1.47] | 4.0 [0.16] | 34.3 [1.35] | 19.0 [0.75] | 31.75 [1.25] | 41.0 [1.61] | 3.2 [0.13] | 1.2500 - 18UNEF |
| 24 | 40.9 [1.61] | 4.0 [0.16] | 35.8 [1.41] | 20.6 [0.81] | 34.90 [1.37] | 44.5 [1.75] | 3.7 [0.15] | 1.3750 - 18UNEF |
| 28 | 46.7 [1.84] | 4.0 [0.16] | 35.8 [1.41] | 20.6 [0.81] | 39.70 [1.56] | 50.9 [2.00] | 3.7 [0.15] | 1.6250 - 18UNEF |
| 32 | 53.4 [2.10] | 4.0 [0.16] | 37.4 [1.47] | 22.2 [0.87] | 44.50 [1.75] | 57.0 [2.24] | 4.3 [0.17] | 1.8750 - 16UN |
| 36 | 59.6 [2.35] | 4.0 [0.16] | 37.4 [1.47] | 22.2 [0.87] | 49.20 [1.94] | 63.5 [2.50] | 4.3 [0.17] | 2.0625 - 16UNS |
| 40 | 65.5 [2.58] | 4.0 [0.16] | 37.4 [1.47] | 22.2 [0.87] | 55.55 [2.19] | 69.9 [2.75] | 4.3 [0.17] | 2.3125 - 16UNS |

## ITS 01 IN-LINE RECEPTACLE WITH ACCESSORY THREADS




| Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | ØA +0.2 [.01] -0.1 [00] | K ±0.2 [.01] | L Max. | M +0.4 [.02] -0 [0] | ØQ ±0.1[.00] | V Thread |
| 10 SL | 18.2 [0.72] | 2.8 [0.11] | 24.7 [0.97] | 14.2 [0.56] | 21.8 [0.86] | 0.6250 - 24UNEF |
| 14 S | 24.5 [0.96] | 3.2 [0.13] | 24.9 [0.98] | 14.2 [0.56] | 28.8 [1.13] | 0.7500 - 20UNEF |
| 16 S | 27.2 [1.07] | 3.2 [0.13] | 24.9 [0.98] | 14.2 [0.56] | 30.5 [1.20] | 0.8750 - 20UNEF |
| 16 | 27.2 [1.07] | 3.2 [0.13] | 33.9 [1.33] | 19.0 [0.75] | 30.5 [1.20] | 0.8750 - 20UNEF |
| 18 | 30.7 [1.21] | 4.0 [0.16] | 34.3 [1.35] | 19.0 [0.75] | 33.8 [1.33] | 1.0000 - 20UNEF |
| 20 | 34.0 [1.34] | 4.0 [0.16] | 34.2 [1.35] | 19.0 [0.75] | 36.9 [1.45] | 1.1250 - 18UNEF |
| 22 | 37.3 [1.47] | 4.0 [0.16] | 34.3 [1.35] | 19.0 [0.75] | 39.5 [1.56] | 1.2500 - 18UNEF |
| 24 | 40.9 [1.61] | 4.0 [0.16] | 35.8 [1.41] | 20.6 [0.81] | 43.9 [1.73] | 1.3750 - 18UNEF |
| 28 | 46.7 [1.84] | 4.0 [0.16] | 35.8 [1.41] | 20.6 [0.81] | 48.4 [1.91] | 1.6250 - 18UNEF |
| 32 | 53.4 [2.10] | 4.0 [0.16] | 37.4 [1.47] | 22.2 [0.87] | 56.0 [2.20] | 1.8750 - 16UN |
| 36 | 59.6 [2.35] | 4.0 [0.16] | 37.4 [1.47] | 22.2 [0.87] | 62.4 [2.46] | 2.0625 - 16UNS |
| 40 | 65.5 [2.58] | 4.0 [0.16] | 37.4 [1.47] | 22.2 [0.87] | 68.6 [2.70] | 2.3125 - 16UNS |





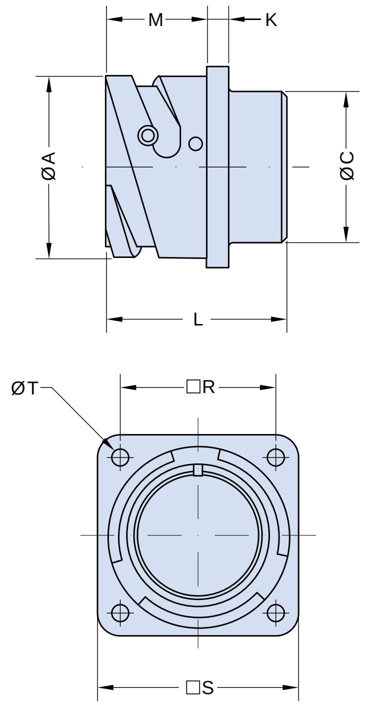
Seacrow™

*SEACROW MARINE BRONZE*
Topside / Shipboard
Environmental Connectors



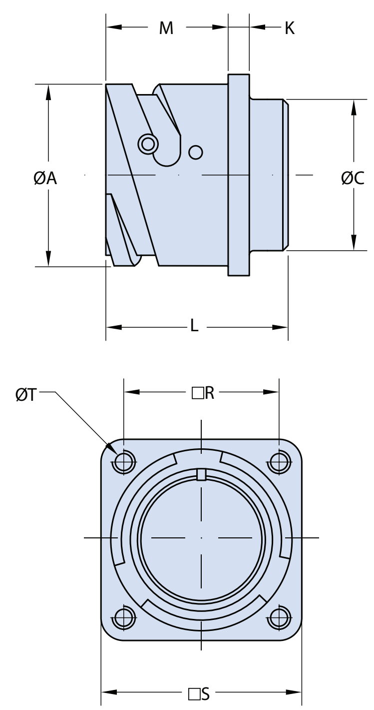
TOPSIDE: SEACROW™

## ITS 02 FRONT WALL MOUNT RECEPTACLE, NO ACCESSORY THREADS




| Dimensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Shell Size | Ø A +0.2 [.01] -0.1 [.00] | ØC Max. | K ±0.2 [.01] | L Max | M +0.41[.02] -0 [0.00] | R ±0.2 [.01] | S ±0.2 [.01] | ØT +0.1[.00] -0[0.00] |
| 10 SL | 18.2 [0.72] | 16.2 [0.64] | 2.8 [0.11] | 24.7 [0.97] | 14.2 [0.56] | 18.25 [0.72] | 25.4 [1.00] | 3.2 [0.13] |
| 14 S | 24.5 [0.96] | 19.2 [0.76] | 3.2 [0.13] | 24.9 [0.98] | 14.2 [0.56] | 23.00 [0.91] | 30.4 [1.20] | 3.2 [0.13] |
| 16 S | 27.2 [1.07] | 22.4 [0.88] | 3.2 [0.13] | 24.9 [0.98] | 14.2 [0.56] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] |
| 16 | 27.2 [1.07] | 22.4 [0.88] | 3.2 [0.13] | 33.9 [1.33] | 19.0 [0.75] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] |
| 18 | 30.7 [1.21] | 25.6 [1.01] | 4.0 [0.16] | 34.3 [1.35] | 19.0 [0.75] | 27.00 [1.06] | 35.0 [1.38] | 3.2 [0.13] |
| 20 | 34.0 [1.34] | 29.0 [1.14] | 4.0 [0.16] | 34.3 [1.35] | 19.0 [0.75] | 29.40 [1.16] | 38.0 [1.50] | 3.2 [0.13] |
| 22 | 37.3 [1.47] | 32.2 [1.27] | 4.0 [0.16] | 34.3 [1.35] | 19.0 [0.75] | 31.75 [1.25] | 41.0 [1.61] | 3.2 [0.13] |
| 24 | 40.9 [1.61] | 35.3 [1.39] | 4.0 [0.16] | 35.8 [1.41] | 20.6 [0.81] | 34.90 [1.37] | 44.5 [1.75] | 3.7 [0.15] |
| 28 | 46.7 [1.84] | 41.4 [1.63] | 4.0 [0.16] | 35.8 [1.41] | 20.6 [0.81] | 39.70 [1.56] | 50.9 [2.00] | 3.7 [0.15] |
| 32 | 53.4 [2.10] | 47.8 [1.88] | 4.0 [0.16] | 37.4 [1.47] | 22.2 [0.87] | 44.50 [1.75] | 57.0 [2.24] | 4.3 [0.17] |
| 36 | 59.6 [2.35] | 54.1 [2.13] | 4.0 [0.16] | 37.4 [1.47] | 22.2 [0.87] | 49.20 [1.94] | 63.5 [2.50] | 4.3 [0.17] |
| 40 | 65.5 [2.58] | 59.0 [2.32] | 4.0 [0.16] | 37.4 [1.47] | 22.2 [0.87] | 55.55 [2.19] | 69.9 [2.75] | 4.3 [0.17] |

## ITS 03 REAR PANEL MOUNT SQUARE FLANGE RECEPACLE, NO ACCESSORY THREADS




| Dimensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Shell Size | ØA +0.2 [.01] -0.1 [0.00] | ØC max. | K ±0.2 [0.01] | L Max. | M +0.2 [0.01] -0 [0.00] | R ±0.2 [0.01] | S ±0.2 [0.01] | T Thd |
| 10 SL | 18.2 [0.72] | 16.2 [0.64] | 2.8 [0.11] | 25.0 [0.98] | 18.4 [0.72] | 18.25 [0.72] | 25.4 [1.00] | M4 |
| 14 S | 24.5 [0.96] | 19.2 [0.76] | 3.2 [0.13] | 25.0 [0.98] | 18.4 [0.72] | 23.00 [0.91] | 30.4 [1.20] | M4 |
| 16 S | 27.2 [1.07] | 22.4 [0.88] | 3.2 [0.13] | 25.0 [0.98] | 18.4 [0.72] | 24.60 [0.97] | 32.5 [1.28] | M4 |
| 16 | 27.2 [1.07] | 22.4 [0.88] | 3.2 [0.13] | 34.5 [1.36] | 23.2 [0.91] | 24.60 [0.97] | 32.5 [1.28] | M4 |
| 18 | 30.7 [1.21] | 25.6 [1.01] | 4.0 [0.16] | 34.5 [1.36] | 23.2 [0.91] | 27.00 [1.06] | 35.0 [1.38] | M4 |
| 20 | 34.0 [1.34] | 29.0 [1.14] | 4.0 [0.16] | 34.5 [1.36] | 23.2 [0.91] | 29.40 [1.16] | 38.0 [1.50] | M4 |
| 22 | 37.3 [1.47] | 32.2 [1.27] | 4.0 [0.16] | 34.5 [1.36] | 23.2 [0.91] | 31.75 [1.25] | 41.0 [1.61] | M4 |
| 24 | 40.9 [1.61] | 35.3 [1.39] | 4.0 [0.16] | 34.5 [1.36] | 23.2 [0.91] | 34.90 [1.37] | 44.5 [1.75] | M4 |
| 28 | 46.7 [1.84] | 41.4 [1.63] | 4.0 [0.16] | 34.5 [1.36] | 24.2 [0.95] | 39.70 [1.56] | 50.9 [2.00] | M5 |
| 32 | 53.4 [2.10] | 47.8 [1.88] | 4.0 [0.16] | 34.5 [1.36] | 24.2 [0.95] | 44.50 [1.75] | 57.0 [2.24] | M5 |
| 36 | 59.6 [2.35] | 54.1 [2.13] | 4.0 [0.16] | 34.5 [1.36] | 24.2 [0.95] | 49.20 [1.94] | 63.5 [2.50] | M5 |
| 40 | 65.5 [2.58] | 59.0 [2.32] | 4.0 [0.16] | 34.5 [1.36] | 24.2 [0.95] | 55.55 [2.19] | 69.9 [2.75] | M5 |

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Dimensions in millimeters [inches] are subject to change without notice.

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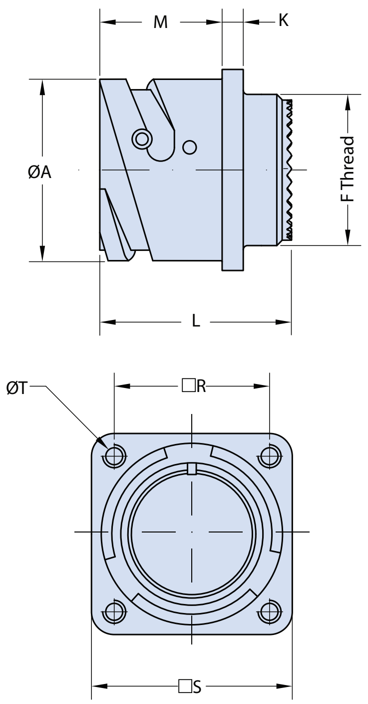
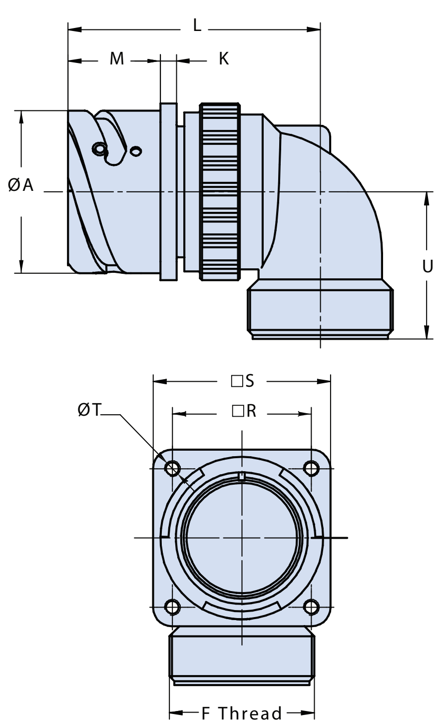
## ITS 030 REAR WALL MOUNT SQUARE FLANGE RECEPTACLE WITH ACCESSORY THREADS




| Dimensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Shell Size | ØA +0.2[.01] -0.1[0.00] | K ±0.2[.01] | L ±0.2[.01] | M +0.2[.01] 0[.00] | R ±0.2[.01] | S ±0.2[.01] | T Thd | F Thread |
| 10 SL | 18.2 [0.72] | 2.8 [0.11] | 30.0 [1.18] | 18.4 [0.72] | 18.25 [0.72] | 25.4 [1.00] | M4 | 0.6250 - 24UNEF |
| 14 S | 24.5 [0.96] | 3.2 [0.13] | 30.0 [1.18] | 18.4 [0.72] | 23.00 [0.91] | 30.4 [1.20] | M4 | 0.7500 - 20UNEF |
| 16 S | 27.2 [1.07] | 3.2 [0.13] | 30.0 [1.18] | 18.4 [0.72] | 24.60 [0.97] | 32.5 [1.28] | M4 | 0.8750 - 20UNEF |
| 16 | 27.2 [1.07] | 3.2 [0.13] | 37.0 [1.46] | 23.2 [0.91] | 24.60 [0.97] | 32.5 [1.28] | M4 | 0.8750 - 20UNEF |
| 18 | 30.7 [1.21] | 4.0 [0.16] | 36.0 [1.42] | 23.2 [0.91] | 27.00 [1.06] | 35.0 [1.38] | M4 | 1.0000 - 20UNEF |
| 20 | 34.0 [1.34] | 4.0 [0.16] | 38.3 [1.51] | 23.2 [0.91] | 29.40 [1.16] | 38.0 [1.50] | M4 | 1.1250 - 18UNEF |
| 22 | 37.3 [1.47] | 4.0 [0.16] | 37.0 [1.46] | 23.2 [0.91] | 31.75 [1.25] | 41.0 [1.61] | M4 | 1.2500 - 18UNEF |
| 24 | 40.9 [1.61] | 4.0 [0.16] | 37.0 [1.46] | 23.2 [0.91] | 34.90 [1.37] | 44.5 [1.75] | M4 | 1.3750 - 18UNEF |
| 28 | 46.7 [1.84] | 4.0 [0.16] | 39.5 [1.56] | 24.2 [0.95] | 39.70 [1.56] | 50.9 [2.00] | M5 | 1.6250 - 18UNEF |
| 32 | 53.4 [2.10] | 4.0 [0.16] | 39.5 [1.56] | 24.2 [0.95] | 44.50 [1.75] | 57.0 [2.24] | M5 | 1.8750 - 16UN |
| 36 | 59.6 [2.35] | 4.0 [0.16] | 39.5 [1.56] | 24.2 [0.95] | 49.20 [1.94] | 63.5 [2.50] | M5 | 2.0625 - 16UNS |
| 40 | 65.5 [2.58] | 4.0 [0.16] | 39.5 [1.56] | 24.2 [0.95] | 55.55 [2.19] | 69.9 [2.75] | M5 | 2.3125 - 16UNS |

## ITS 038 RPM SQUARE FLANGE RECEPTALCE AND 90° BACKSHELL ASSEMBLY WITH ACCSY THREADS



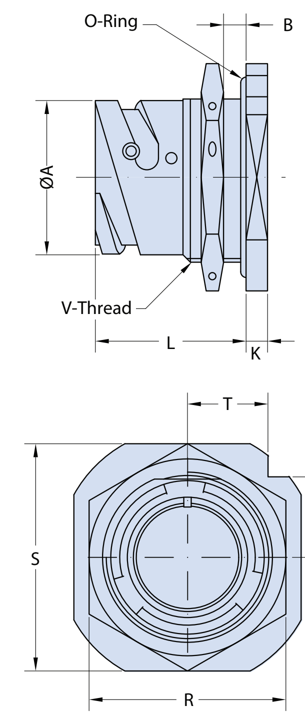

| Dimensions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Shell Size | ØA +0.2[.01] -0.1[0.00] | F Thread | K ±0.2[.01] | L Max. | U ±0.2[.01] | M +0.2[.01] -0[0.00] | R ±0.2[.01] | S ±0.2[.01] | T Thd |
| 10 SL | 18.2 [0.72] | 0.6250 - 24UNEF | 2.8 [0.11] | 48 [1.89] | 25.0 [0.98] | 18.4 [0.72] | 18.25 [0.72] | 25.4 [1.00] | M4 |
| 14 S | 24.5 [0.96] | 0.7500 - 20UNEF | 3.2 [0.13] | 50 [1.97] | 26.5 [1.04] | 18.4 [0.72] | 23.00 [0.91] | 30.4 [1.20] | M4 |
| 16 S | 27.2 [1.07] | 0.8750 - 20UNEF | 3.2 [0.13] | 53 [2.09] | 27.0 [1.06] | 18.4 [0.72] | 24.60 [0.97] | 32.5 [1.28] | M4 |
| 16 | 27.2 [1.07] | 0.8750 - 20UNEF | 3.2 [0.13] | 60 [2.36] | 27.0 [1.06] | 23.2 [0.91] | 24.60 [0.97] | 32.5 [1.28] | M4 |
| 18 | 30.7 [1.21] | 1.0000 - 20UNEF | 4.0 [0.16] | 61 [2.40] | 30.0 [1.18] | 23.2 [0.91] | 27.00 [1.06] | 35.0 [1.38] | M4 |
| 20 | 34.0 [1.34] | 1.1875 - 18UNEF | 4.0 [0.16] | 69 [2.72] | 32.0 [1.26] | 23.2 [0.91] | 29.40 [1.16] | 38.0 [1.50] | M4 |
| 22 | 37.3 [1.47] | 1.1875 - 18UNEF | 4.0 [0.16] | 69 [2.72] | 32.0 [1.26] | 23.2 [0.91] | 31.75 [1.25] | 41.0 [1.61] | M4 |
| 24 | 40.9 [1.61] | 1.4375 - 18UNEF | 4.0 [0.16] | 71 [2.80] | 37.0 [1.46] | 23.2 [0.91] | 34.90 [1.37] | 44.5 [1.75] | M4 |
| 28 | 46.7 [1.84] | 1.4375 - 18UNEF | 4.0 [0.16] | 73 [2.87] | 38.0 [1.50] | 24.2 [0.95] | 39.70 [1.56] | 50.9 [2.00] | M5 |
| 32 | 53.4 [2.10] | 1.7500 - 18UNS | 4.0 [0.16] | 77 [3.03] | 45.5 [1.79] | 24.2 [0.95] | 44.50 [1.75] | 57.0 [2.24] | M5 |
| 36 | 59.6 [2.35] | 2.0000 - 18UNS | 4.0 [0.16] | 80 [3.15] | 47.2 [1.86] | 24.2 [0.95] | 49.20 [1.94] | 63.5 [2.50] | M5 |
| 40 | 65.5 [2.58] | 2.2500 - 16UN | 4.0 [0.16] | 83 [3.27] | 52.0 [2.05] | 24.2 [0.95] | 55.55 [2.19] | 69.9 [2.75] | M5 |





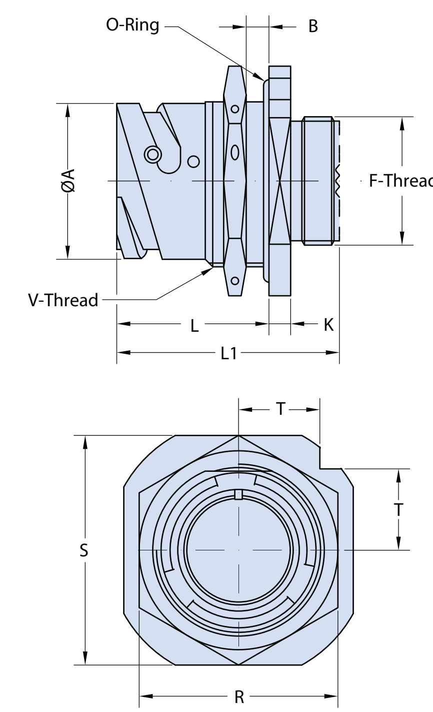


## ITS 07 JAM NUT RECEPTACLE, NO ACCESSORY THREADS




| Dimensions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Shell Size | ØA +0.2[.01] -0.1[0.00] | B | | K ± 0.2[.01] | L ±0.1[0.00] | R Key | S ±0.2[.01] | T | V Thread |
| | | Min. | Max. | | | | | | |
| 10 SL | 18.2 [0.72] | 2.4 [0.09] | 5.2 [0.20] | 4.0 [0.16] | 24.5 [0.96] | 27 [1.06] | 31.8 [1.25] | 11.2 [0.44] | 0.8750 - 20UNEF |
| 14 S | 24.5 [0.96] | 2.4 [0.09] | 7.5 [0.30] | 4.8 [0.19] | 26.8 [1.06] | 33 [1.30] | 41.3 [1.63] | 14.6 [0.57] | 1.1250 - 18UNEF |
| 16 S | 27.2 [1.07] | 2.4 [0.09] | 7.5 [0.30] | 4.8 [0.19] | 26.8 [1.06] | 38 [1.50] | 44.4 [1.75] | 15.7 [0.62] | 1.2500 - 18UNEF |
| 16 | 27.2 [1.07] | 2.4 [0.09] | 7.5 [0.30] | 4.8 [0.19] | 32.2 [1.27] | 38 [1.50] | 44.4 [1.75] | 15.7 [0.62] | 1.2500 - 18UNEF |
| 18 | 30.7 [1.21] | 2.4 [0.09] | 9.0 [0.35] | 4.8 [0.19] | 33.7 [1.33] | 40 [1.57] | 47.6 [1.87] | 16.8 [0.66] | 1.3750 - 18UNEF |
| 20 | 34.0 [1.34] | 2.4 [0.09] | 9.0 [0.35] | 4.8 [0.19] | 33.7 [1.33] | 44 [1.73] | 50.8 [2.00] | 18.0 [0.71] | 1.5000 - 18UNEF |
| 22 | 37.3 [1.47] | 2.4 [0.09] | 9.1 [0.36] | 4.8 [0.19] | 33.7 [1.33] | 46 [1.81] | 54.2 [2.13] | 20.2 [0.80] | 1.6250 - 18UNEF |
| 24 | 40.9 [1.61] | 2.4 [0.09] | 9.1 [0.36] | 4.8 [0.19] | 33.7 [1.33] | 51 [2.01] | 57.2 [2.25] | 20.2 [0.80] | 1.7500 - 18UNS |
| 28 | 46.7 [1.84] | 2.4 [0.09] | 8.5 [0.33] | 5.6 [0.22] | 35.2 [1.39] | 55 [2.17] | 63.5 [2.50] | 22.5 [0.89] | 2.0000 - 18UNS |
| 32 | 53.4 [2.10] | 2.4 [0.09] | 6.5 [0.26] | 5.6 [0.22] | 35.2 [1.39] | 62 [2.44] | 69.8 [2.75] | 24.7 [0.97] | 2.2500 - 16UN |
| 36 | 59.6 [2.35] | 2.4 [0.09] | 8.3 [0.33] | 5.6 [0.22] | 35.2 [1.39] | 71 [2.80] | 76.2 [3.00] | 26.9 [1.06] | 2.5000 - 16UN |
| 40 | 65.5 [2.58] | 2.4 [0.09] | 8.3 [0.33] | 5.6 [0.22] | 35.2 [1.39] | 75 [2.95] | 83.5 [3.29] | 29.6 [1.17] | 2.7500 - 16UN |

## ITS 070 JAM NUT RECEPTACLE WITH ACCESSORY THREADS




| Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | ØA+0.2 -0.1 | B*Max | F Thread | K ±0.2 | L ±0.1 | L1 ±0.25 | R (Key) | S ±0.2 | T | V Thread |
| 10 SL | 18.2 [0.72] | 5.2 [0.20] | 0.6250 - 24UNEF | 4.0 [0.16] | 24.5 [0.96] | 36.2 [1.43] | 27 [1.06] | 31.8 [1.25] | 11.2 [0.44] | 0.8750 - 20UNEF |
| 14 S | 24.5 [0.96] | 7.5 [0.30] | 0.7500 - 20UNEF | 4.8 [0.19] | 26.8 [1.06] | 38.9 [1.53] | 33 [1.30] | 41.3 [1.63] | 14.6 [0.57] | 1.1250 - 18UNEF |
| 16 S | 27.2 [1.07] | 7.5 [0.30] | 0.8750 - 20UNEF | 4.8 [0.19] | 26.8 [1.06] | 38.9 [1.53] | 38 [1.50] | 44.4 [1.75] | 15.7 [0.62] | 1.2500 - 18UNEF |
| 16 | 27.2 [1.07] | 7.5 [0.30] | 0.8750 - 20UNEF | 4.8 [0.19] | 32.2 [1.27] | 48.5 [1.91] | 38 [1.50] | 44.4 [1.75] | 15.7 [0.62] | 1.2500 - 18UNEF |
| 18 | 30.7 [1.21] | 9.0 [0.35] | 1.0000 - 20UNEF | 4.8 [0.19] | 33.7 [1.33] | 49.3 [1.94] | 40 [1.57] | 47.6 [1.87] | 16.8 [0.66] | 1.3750 - 18UNEF |
| 20 | 34.0 [1.34] | 9.0 [0.35] | 1.1250 - 18UNEF | 4.8 [0.19] | 33.7 [1.33] | 49.3 [1.94] | 44 [1.73] | 50.8 [2.00] | 18.0 [0.71] | 1.5000 - 18UNEF |
| 22 | 37.3 [1.47] | 9.1 [0.36] | 1.2500 - 18UNEF | 4.8 [0.19] | 33.7 [1.33] | 49.3 [1.94] | 46 [1.81] | 54.2 [2.13] | 20.2 [0.80] | 1.6250 - 18UNEF |
| 24 | 40.9 [1.61] | 9.1 [0.36] | 1.3750 - 18UNEF | 4.8 [0.19] | 33.7 [1.33] | 49.3 [1.94] | 51 [2.01] | 57.2 [2.25] | 20.2 [0.80] | 1.7500 - 18UNS |
| 28 | 46.7 [1.84] | 8.5 [0.33] | 1.6250 - 18UNEF | 5.6 [0.22] | 35.2 [1.39] | 51.9 [2.04] | 55 [2.17] | 63.5 [2.50] | 22.5 [0.89] | 2.0000 - 18UNS |
| 32 | 53.4 [2.10] | 6.5 [0.26] | 1.8750 - 16UN | 5.6 [0.22] | 35.2 [1.39] | 51.9 [2.04] | 62 [2.44] | 69.8 [2.75] | 24.7 [0.97] | 2.2500 - 16UN |
| 36 | 59.6 [2.35] | 8.3 [0.33] | 2.0625 - 16UNS | 5.6 [0.22] | 35.2 [1.39] | 51.9 [2.04] | 71 [2.80] | 76.2 [3.00] | 26.9 [1.06] | 2.5000 - 16UN |
| 40 | 65.5 [2.58] | 8.3 [0.33] | 2.3125 - 16UNS | 5.6 [0.22] | 35.2 [1.39] | 51.9 [2.04] | 75 [2.95] | 83.5 [3.29] | 29.6 [1.17] | 2.7500 - 16UN |

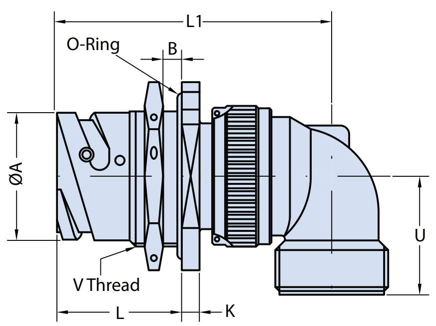
*B minimum dimension is 2.4 [0.09]

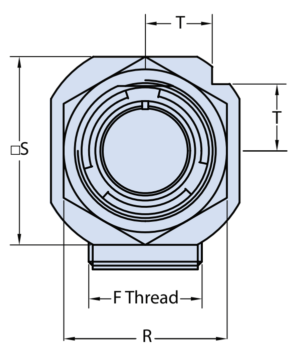




TOPSIDE: SEACROW™

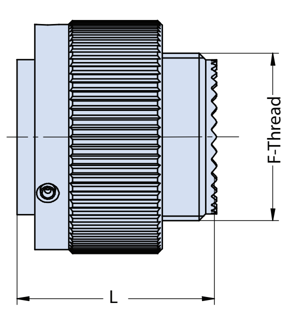
## ITS 078 JAM-NUT RECEPTACLE AND 90° BACKSHELL ASSEMBLY

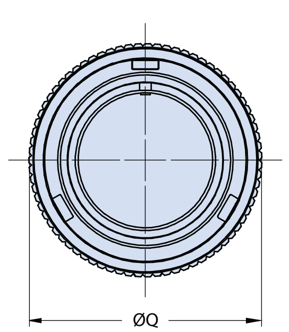



| Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | ØA +0.2 [.01] -0.1 [.00] | B | | F Thread | K ±0.2 [.01] | L ±0.1 [.00] | L1 Max | R Key | S ±0.2 [.01] | T | U ±0.2 [.01] | V Thread |
| | | Min | Max | | | | | | | | | |
| 10 SL | 18.2 [0.72] | 2.4 [0.09] | 5.2 [0.20] | 0.6250 - 24UNEF | 4.0 [0.16] | 24.5 [0.96] | 55 [2.17] | 27 [1.06] | 31.8 [1.25] | 11.2 [0.44] | 25.0 [0.98] | 0.8750 - 20UNEF |
| 14 S | 24.5 [0.96] | 2.4 [0.09] | 7.5 [0.30] | 0.7500 - 20UNEF | 4.8 [0.19] | 26.8 [1.06] | 60 [2.36] | 33 [1.30] | 41.3 [1.63] | 14.6 [0.57] | 26.5 [1.04] | 1.1250 - 18UNEF |
| 16 S | 27.2 [1.07] | 2.4 [0.09] | 7.5 [0.30] | 0.8750 - 20UNEF | 4.8 [0.19] | 26.8 [1.06] | 60 [2.36] | 38 [1.50] | 44.4 [1.75] | 15.7 [0.62] | 27.0 [1.06] | 1.2500 - 18UNEF |
| 16 | 27.2 [1.07] | 2.4 [0.09] | 7.5 [0.30] | 0.8750 - 20UNEF | 4.8 [0.19] | 32.2 [1.27] | 73 [2.87] | 38 [1.50] | 44.4 [1.75] | 15.7 [0.62] | 27.0 [1.06] | 1.2500 - 18UNEF |
| 18 | 30.7 [1.21] | 2.4 [0.09] | 9.0 [0.35] | 1.0000 - 20UNEF | 4.8 [0.19] | 33.7 [1.33] | 74 [2.91] | 40 [1.57] | 47.6 [1.87] | 16.8 [0.66] | 30.0 [1.18] | 1.3750 - 18UNEF |
| 20 | 34.0 [1.34] | 2.4 [0.09] | 9.0 [0.35] | 1.1875 - 18UNEF | 4.8 [0.19] | 33.7 [1.33] | 80 [3.15] | 44 [1.73] | 50.8 [2.00] | 18.0 [0.71] | 32.0 [1.26] | 1.5000 - 18UNEF |
| 22 | 37.3 [1.47] | 2.4 [0.09] | 9.1 [0.36] | 1.1875 - 18UNEF | 4.8 [0.19] | 33.7 [1.33] | 80 [3.15] | 46 [1.81] | 54.2 [2.13] | 20.2 [0.80] | 32.0 [1.26] | 1.6250 - 18UNEF |
| 24 | 40.9 [1.61] | 2.4 [0.09] | 9.1 [0.36] | 1.4375 - 18UNEF | 4.8 [0.19] | 33.7 [1.33] | 84 [3.31] | 51 [2.01] | 57.2 [2.25] | 20.2 [0.80] | 37.0 [1.46] | 1.7500 - 18UNS |
| 28 | 46.7 [1.84] | 2.4 [0.09] | 8.5 [0.33] | 1.4375 - 18UNEF | 5.6 [0.22] | 35.2 [1.39] | 85 [3.35] | 55 [2.17] | 63.5 [2.50] | 22.5 [0.89] | 38.0 [1.50] | 2.0000 - 18UNS |
| 32 | 53.4 [2.10] | 2.4 [0.09] | 6.5 [0.26] | 1.7500 - 18UNS | 5.6 [0.22] | 35.2 [1.39] | 89 [3.50] | 62 [2.44] | 69.8 [2.75] | 24.7 [0.97] | 45.5 [1.79] | 2.2500 - 16UN |
| 36 | 59.6 [2.35] | 2.4 [0.09] | 8.3 [0.33] | 2.0000 - 18UNS | 5.6 [0.22] | 35.2 [1.39] | 93 [3.66] | 71 [2.80] | 76.2 [3.00] | 26.9 [1.06] | 47.2 [1.86] | 2.5000 - 16UN |
| 40 | 65.5 [2.58] | 2.4 [0.09] | 8.3 [0.33] | 2.2500 - 16UN | 5.6 [0.22] | 35.2 [1.39] | 95 [3.74] | 75 [2.95] | 83.5 [3.29] | 29.6 [1.17] | 52.0 [2.05] | 2.7500 - 16UN |

## ITB 06 PLUG WITH ACCESSORY THREADS



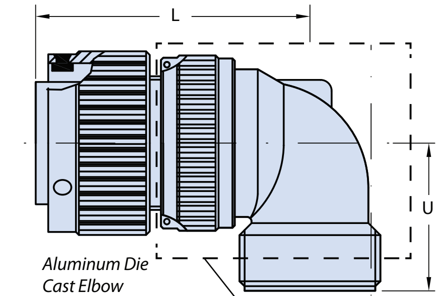

| Dimensions | | | |
|---|---|---|---|
| Shell Size | L ±0.1[0.00] | Ø ±0.2[.01] | F Thread |
| 10 SL | 24.6 [0.97] | 22.6 [0.89] | 0.6250 - 24UNEF |
| 14 S | 24.6 [0.97] | 29.0 [1.14] | 0.7500 - 20UNEF |
| 16 S | 24.6 [0.97] | 31.6 [1.24] | 0.8750 - 20UNEF |
| 16 | 34.1 [1.34] | 31.6 [1.24] | 0.8750 - 20UNEF |
| 18 | 34.1 [1.34] | 36.2 [1.43] | 1.0000 - 20UNEF |
| 20 | 34.9 [1.37] | 39.8 [1.57] | 1.1250 - 18UNEF |
| 22 | 34.9 [1.37] | 43.0 [1.69] | 1.2500 - 18UNEF |
| 24 | 35.7 [1.41] | 46.4 [1.83] | 1.3750 - 18UNEF |
| 28 | 35.7 [1.41] | 53.0 [2.09] | 1.6250 - 18UNEF |
| 32 | 37.3 [1.47] | 60.0 [2.36] | 1.8750 - 16UN |
| 36 | 37.3 [1.47] | 66.2 [2.61] | 2.0625 - 16UNS |
| 40 | 37.3 [1.47] | 72.3 [2.85] | 2.3125 - 16UNS |

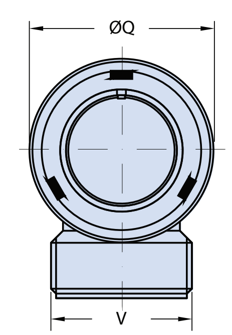


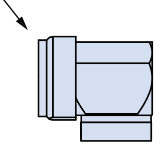



SEACROW MARINE BRONZE
Topside / Shipboard Environmental Connectors
ITS-MB with solder cup or crimp contacts

## ITB 08 90° PLUG ASSEMBLY WITH ACCESSORY THREADS



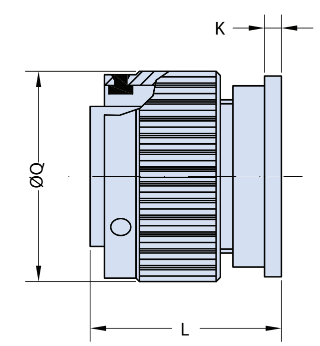



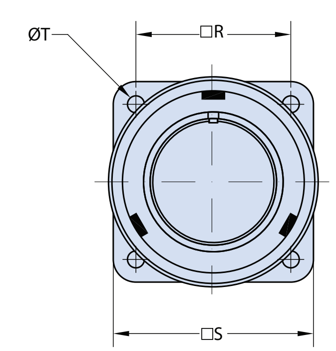



*Stainless Steel/ Marine Bronze Machined Elbow. For dimensions please contact the factory.*

| Dimensions | | | | |
|---|---|---|---|---|
| Shell Size | V Thread | L Max. | ØQ ±0.2[.01] | U ±0.2[.01] |
| 10 SL | 0.6250 - 24UNEF | 40 [1.57] | 22.6 [0.89] | 25.0 [0.98] |
| 14 S | 0.7500 - 20UNEF | 42 [1.65] | 29.0 [1.14] | 26.5 [1.04] |
| 16 S | 0.8750 - 20UNEF | 46 [1.81] | 31.6 [1.24] | 27.0 [1.06] |
| 16 | 0.8750 - 20UNEF | 55 [2.17] | 31.6 [1.24] | 27.0 [1.06] |
| 18 | 1.0000 - 20UNEF | 57 [2.24] | 36.2 [1.43] | 30.0 [1.18] |
| 20 | 1.1875 - 18UNEF | 62 [2.44] | 39.8 [1.57] | 32.0 [1.26] |
| 22 | 1.1875 - 18UNEF | 62 [2.44] | 43.0 [1.69] | 32.0 [1.26] |
| 24 | 1.4375 - 18UNEF | 67 [2.64] | 46.4 [1.83] | 37.0 [1.46] |
| 28 | 1.4375 - 18UNEF | 67 [2.64] | 53.0 [2.09] | 38.0 [1.50] |
| 32 | 1.7500 - 18UNS | 72 [2.83] | 60.0 [2.36] | 45.5 [1.79] |
| 36 | 2.0000 - 18UNS | 75 [2.95] | 66.2 [2.61] | 47.2 [1.86] |
| 40 | 2.2500 - 16UN | 78 [3.07] | 72.3 [2.85] | 52.0 [2.05] |

## ITB 06 SQUARE FLANGE PANEL MOUNT PLUG



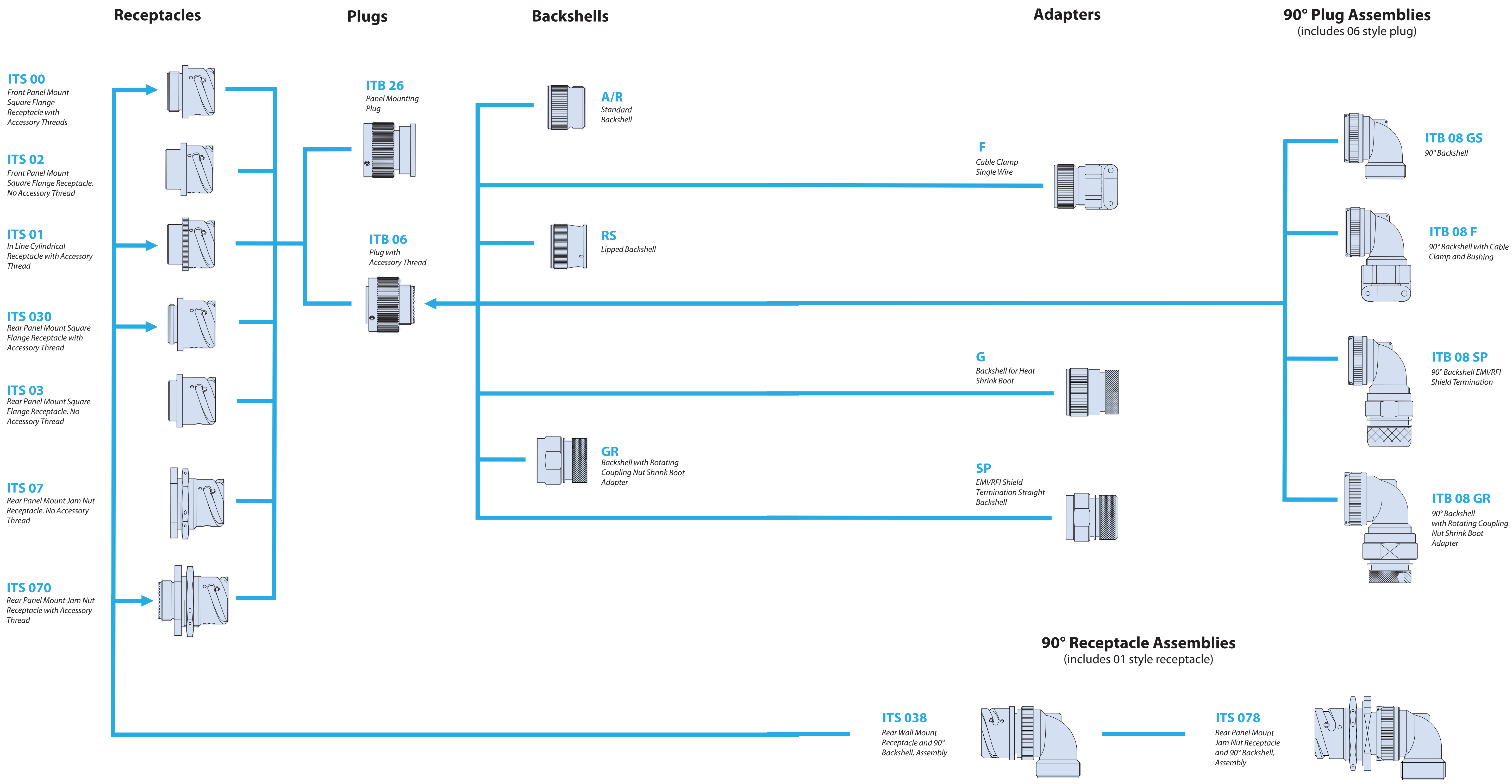




| Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | K ±0.2[.01] | L Max. | ØQ ±0.2[.01] | R ±0.2[.01] | S ±0.2[.01] | ØT +0.1[0.00] -0[0.00] |
| 10 SL | 2.8 [0.11] | 29.9 [1.18] | 22.6 [0.89] | 18.25 [0.72] | 25.4 [1.00] | 3.2 [0.13] |
| 14 S | 3.2 [0.13] | 29.9 [1.18] | 29.0 [1.14] | 23.00 [0.91] | 30.4 [1.20] | 3.2 [0.13] |
| 16 S | 3.2 [0.13] | 35.1 [1.38] | 31.6 [1.24] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] |
| 16 | 3.2 [0.13] | 35.1 [1.38] | 31.6 [1.24] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] |
| 18 | 4.0 [0.16] | 40.2 [1.58] | 36.2 [1.43] | 27.00 [1.06] | 35.0 [1.38] | 3.2 [0.13] |
| 20 | 4.0 [0.16] | 43.8 [1.72] | 39.8 [1.57] | 29.40 [1.16] | 38.0 [1.50] | 3.2 [0.13] |
| 22 | 4.0 [0.16] | 43.8 [1.72] | 43.0 [1.69] | 31.75 [1.25] | 41.0 [1.61] | 3.2 [0.13] |
| 24 | 4.0 [0.16] | 43.8 [1.72] | 46.4 [1.83] | 34.90 [1.37] | 44.5 [1.75] | 3.7 [0.15] |
| 28 | 4.0 [0.16] | 44.0 [1.73] | 53.0 [2.09] | 39.70 [1.56] | 50.9 [2.00] | 3.7 [0.15] |
| 32 | 4.0 [0.16] | 45.1 [1.78] | 60.0 [2.36] | 44.50 [1.75] | 57.0 [2.24] | 4.3 [0.17] |
| 36 | 4.0 [0.16] | 45.1 [1.78] | 66.2 [2.61] | 49.20 [1.94] | 63.5 [2.50] | 4.3 [0.17] |
| 40 | 4.0 [0.16] | 45.1 [1.78] | 72.3 [2.85] | 55.55 [2.19] | 69.9 [2.75] | 4.3 [0.17] |

TOPSIDE: SEACROW™

# Topside / Shipboard Environmental Connectors

## Summary of Connector Styles and Backshells




TOPSIDE: SEACROW™



© 2017 Glenair, Inc • 1211 Air Way, Glendale, CA 91201 • 818-247-6000 • www.glenair.com • U.S. CAGE code 06324 • Marine/Subsea Catalog
Dimensions in millimeters [inches] are subject to change without notice.

## IT Connector + Backshell Maximum Overall Lengths

| Maximum Overall Lengths of Front Panel Mount Square Flange Receptacles (00) with Backshell Options | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | Backshell Class | | | | | |
| | A & R | F | G | GR | RS | SP |
| 10 SL | 44.0 [1.73] | 56.0 [2.20] | 53.0 [2.09] | 55.0 [2.17] | 44.0 [1.73] | 57.0 [2.24] |
| 14 S | 46.5 [1.83] | 60.0 [2.36] | 5.3.5 | 55.0 [2.17] | 48.5 [1.91] | 57.0 [2.24] |
| 16 S | 46.5 [1.83] | 61.5 [2.42] | 53.5 [2.11] | 55.0 [2.17] | 48.5 [1.91] | 58.5 [2.30] |
| 16 | 57.0 [2.24] | 72.0 [2.83] | 65.5 [2.58] | 61.0 [2.40] | 56.5 [2.22] | 67.5 [2.66] |
| 18 | 58.0 [2.28] | 73.0 [2.87] | 66.0 [2.60] | 64.5 [2.54] | 57.0 [2.24] | 69.0 [2.72] |
| 20 | 58.0 [2.28] | 73.0 [2.87] | 66.5 [2.62] | 64.5 [2.54] | 57.0 [2.24] | 69.0 [2.72] |
| 22 | 58.5 [2.30] | 73.5 [2.89] | 66.5 [2.62] | 64.5 [2.54] | 58.0 [2.28] | 69.0 [2.72] |
| 24 | 60.5 [2.38] | 77.0 [3.03] | 66.5 [2.62] | 68.5 [2.70] | 58.5 [2.30] | 70.5 [2.78] |
| 28 | 66.5 [2.62] | 83.0 [3.27] | 66.5 [2.62] | 68.5 [2.70] | 58.5 [2.30] | 70.5 [2.78] |
| 32 | 71.5 [2.81] | 88.0 [3.46] | 84.0 [3.31] | 70.0 [2.76] | 60.5 [2.38] | 72.0 [2.83] |
| 36 | 77.0 [3.03] | 94.5 [3.72] | 84.0 [3.31] | 70.0 [2.76] | 60.5 [2.38] | 72.0 [2.83] |
| 40 | 77.0 [3.03] | 108.5 [4.27] | 84.0 [3.31] | 70.0 [2.76] | 60.5 [2.38] | 72.0 [2.83] |

| Maximum Overall Lengths of Front Panel Mount Square Flange Receptacle (01) with Backshell Options | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | Backshell Class | | | | | |
| | A & R | F | G | GR | RS | SP |
| 10 SL | 44.0 [1.73] | 56.0 [2.20] | 53.0 [2.09] | 55.0 [2.17] | 44.0 [1.73] | 57.0 [2.24] |
| 14 S | 46.5 [1.83] | 60.0 [2.36] | 53.5 [2.11] | 55.0 [2.17] | 48.5 [1.91] | 57.0 [2.24] |
| 16 S | 46.5 [1.83] | 61.5 [2.42] | 53.5 [2.11] | 55.0 [2.17] | 48.5 [1.91] | 58.5 [2.30] |
| 16 | 57.0 [2.24] | 72.0 [2.83] | 65.5 [2.58] | 61.0 [2.40] | 56.5 [2.22] | 67.5 [2.66] |
| 18 | 58.0 [2.28] | 73.0 [2.87] | 66.0 [2.60] | 64.5 [2.54] | 57.0 [2.24] | 69.0 [2.72] |
| 20 | 58.0 [2.28] | 73.0 [2.87] | 66.5 [2.62] | 64.5 [2.54] | 57.0 [2.24] | 69.0 [2.72] |
| 22 | 58.5 [2.30] | 73.5 [2.89] | 66.5 [2.62] | 64.5 [2.54] | 58.0 [2.28] | 69.0 [2.72] |
| 24 | 60.5 [2.38] | 77.0 [3.03] | 66.5 [2.62] | 68.5 [2.70] | 58.5 [2.30] | 70.5 [2.78] |
| 28 | 66.5 [2.62] | 83.0 [3.27] | 66.5 [2.62] | 68.5 [2.70] | 58.5 [2.30] | 70.5 [2.78] |
| 32 | 71.5 [2.81] | 88.0 [3.46] | 84.0 [3.31] | 70.0 [2.76] | 60.5 [2.38] | 72.0 [2.83] |
| 36 | 77.0 [3.03] | 94.5 [3.72] | 84.0 [3.31] | 70.0 [2.76] | 60.5 [2.38] | 72.0 [2.83] |
| 40 | 77.0 [3.03] | 108.5 [4.27] | 84.0 [3.31] | 70.0 [2.76] | 60.5 [2.38] | 72.0 [2.83] |

| 4.0Maximum Overall Lengths of Front Panel Mount Square Flange Receptacle (030) with Backshell Options | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | Backshell Class | | | | | |
| | A & R | F | G | GR | RS | SP |
| 10 SL | 49.5 [1.95] | 61.5 [2.42] | 58.0 [2.28] | 59.0 [2.32] | 49.5 [1.95] | 61.0 [2.40] |
| 14 S | 52.0 [2.05] | 65.5 [2.58] | 58.5 [2.30] | 59.0 [2.32] | 53.5 [2.11] | 61.0 [2.40] |
| 16 S | 52.0 [2.05] | 67.0 [2.64] | 58.5 [2.30] | 59.0 [2.32] | 53.5 [2.11] | 62.0 [2.44] |
| 16 | 60.5 [2.38] | 75.5 [2.97] | 68.5 [2.70] | 64.0 [2.52] | 60.0 [2.36] | 70.0 [2.76] |
| 18 | 60.5 [2.38] | 75.5 [2.97] | 68.5 [2.70] | 66.5 [2.62] | 60.0 [2.36] | 71.0 [2.80] |
| 20 | 62.5 [2.46] | 77.5 [3.05] | 70.5 [2.78] | 67.0 [2.64] | 62.0 [2.44] | 72.5 [2.85] |
| 22 | 62.5 [2.46] | 77.5 [3.05] | 70.5 [2.78] | 67.0 [2.64] | 62.0 [2.44] | 72.5 [2.85] |
| 24 | 62.5 [2.46] | 79.0 [3.11] | 70.5 [2.78] | 70.0 [2.76] | 62.0 [2.44] | 72.5 [2.85] |
| 28 | 70.0 [2.76] | 86.5 [3.41] | 70.5 [2.78] | 70.0 [2.76] | 62.0 [2.44] | 73.5 [2.89] |
| 32 | 71.5 [2.81] | 88.0 [3.46] | 86.0 [3.39] | 72.0 [2.83] | 62.5 [2.46] | 74.0 [2.91] |
| 36 | 79.0 [3.11] | 96.5 [3.80] | 86.0 [3.39] | 72.0 [2.83] | 62.5 [2.46] | 74.0 [2.91] |
| 40 | 79.0 [3.11] | 110.5 [4.35] | 86.0 [3.39] | 72.0 [2.83] | 62.5 [2.46] | 74.0 [2.91] |

| Maximum Overall Lengths of Front Panel Mount Square Flange Receptacle (070) with Backshell Options | |
|---|---|
| Shell Size | Backshell Class |
| | A & R |
| 10 SL | 24.5 [0.96] |
| 14 S | 26.8 [1.06] |
| 16 S | 26.8 [1.06] |
| 16 | 32.2 [1.27] |
| 18 | 33.7 [1.33] |
| 20 | 33.7 [1.33] |
| 22 | 33.7 [1.33] |
| 24 | 33.7 [1.33] |
| 28 | 35.2 [1.39] |
| 32 | 35.2 [1.39] |
| 36 | 35.2 [1.39] |
| 40 | 35.2 [1.39] |

| Maximum Overall Lengths of Front Panel Mount Square Flange Receptacle (06) with Backshell Options | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | Backshell Class | | | | | |
| | A & R | F | G | GR | RS | SP |
| 10 SL | 44.0 [1.73] | 56.0 [2.20] | 53.0 [2.09] | 54.0 [2.13] | 44.0 [1.73] | 56.0 [2.20] |
| 14 S | 46.5 [1.83] | 60.0 [2.36] | 53.0 [2.09] | 54.0 [2.13] | 48.5 [1.91] | 56.0 [2.20] |
| 16 S | 46.5 [1.83] | 61.5 [2.42] | 53.0 [2.09] | 54.0 [2.13] | 48.5 [1.91] | 58.0 [2.28] |
| 16 | 57.5 [2.26] | 72.5 [2.85] | 66.0 [2.60] | 61.0 [2.40] | 46.5 [1.83] | 67.5 [2.66] |
| 18 | 58.0 [2.28] | 73.0 [2.87] | 66.0 [2.60] | 63.5 [2.50] | 57.0 [2.24] | 68.5 [2.70] |
| 20 | 58.5 [2.30] | 73.5 [2.89] | 66.0 [2.60] | 63.5 [2.50] | 57.0 [2.24] | 68.5 [2.70] |
| 22 | 58.5 [2.30] | 73.5 [2.89] | 66.0 [2.60] | 63.5 [2.50] | 58.0 [2.28] | 68.5 [2.70] |
| 24 | 60.5 [2.38] | 77.5 [3.05] | 66.0 [2.60] | 67.5 [2.66] | 58.5 [2.30] | 70.0 [2.76] |
| 28 | 66.0 [2.60] | 83.0 [3.27] | 66.0 [2.60] | 67.5 [2.66] | 58.5 [2.30] | 70.0 [2.76] |
| 32 | 71.5 [2.81] | 88.0 [3.46] | 84.0 [3.31] | 69.5 [2.74] | 60.5 [2.38] | 71.5 [2.81] |
| 36 | 77.0 [3.03] | 94.5 [3.72] | 84.0 [3.31] | 69.5 [2.74] | 60.5 [2.38] | 72.0 [2.83] |
| 40 | 77.0 [3.03] | 108.5 [4.27] | 84.0 [3.31] | 69.5 [2.74] | 60.5 [2.38] | 72.0 [2.83] |








## IT-MB marine bronze connectors

### IT-MB THREADED MIL-C-5015 TYPE MARINE BRONZE SERIES

IT-MB is a threaded connector compliant with the MIL-DTL-5015 standard. All the electrical characteristics are available in the IT standard catalogue. IT-MB family is a threaded version mostly used for power and signal, frequently utilized with high-performance IP68 sealing. IP67 is considered standard performance.

| IT-MB How To Order | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sample Part Number | IT | 31 | 00 | A | 20-27 | P | Y | MB |
| Series | IT = M5015G Threaded Coupling | | | | | | | |
| Contact Type | 31 = Solder Cup 41 = Crimp | | | | | | | |
| Shell Style | See Shell Style Table | | | | | | | |
| Environmental Class | See Backshell/Adapter Class Table; backshell determined by class | | | | | | | |
| Contact Arrangement | See Shell Size and Insert Arrangements Table | | | | | | | |
| Contact Gender | P = Pin S = Socket | | | | | | | |
| Alternate Insert Rotation | See Insert Rotation Alternate Positions Table | | | | | | | |
| Material/Finish | MB = Marine Bronze | | | | | | | |

| Connector Shell Styles | |
|---|---|
| Code | Description |
| 00 | Front Panel Mount Square Flange Receptacle with Accessory Threads |
| 01 | In-Line Cylindrical Receptacle with Accessory Threads |
| 02 | Front Panel Mount Square Flange Receptacle—No Accessory Threads |
| 06 | Straight Cylindrical Plug Connector with Accessory Threads |
| 08 | Cylindrical Plug Connector with 90° Backshell |

| Environmental Class/Backshell | |
|---|---|
| Code | Description |
| A, F | Non-Environmental |
| G, GR, SP, Y | Environmental (includes Wire Sealing Grommet) |
| R | Environmental (includes Wire Sealing Grommet and Compression Ring) |

### SHELL STYLE AND ENVIRONMENTAL CLASS/BACKSHELLMATRIX

| | Backshell/Adapter Classes | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Style | A | F | G | GR | SP | Y | R |
| 00 | ✓ | ✓ | | | | | ✓ |
| 01 | ✓ | ✓ | | | | | ✓ |
| 02 | ✓ | | | | | ✓ | ✓ |
| 06 | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| 08 | ✓ | ✓ | | | | | ✓ |

### NOTES

1. See pages 29 for connector/backshell configurations.

SEACROW MARINE BRONZE (MB)

# Topside / Shipboard Environmental Connectors

## IT-MB connector contact arrangements

SEACROW MARINE BRONZE (MB)
Topside / Shipboard Environmental Connectors
IT-MB connector contact arrangements

TOPSIDE: SEACROW™

| Arrangement | Rating | Contact | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Number | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 10SL-3 | A | 3 | | | | | | 3 | | |
| 10SL-4 | A | 2 | | | | | | 2 | | |
| 14S-1 | A | 3 | | | | | | 3 | | |
| 14S-2 | I | 4 | | | | | | 4 | | |
| 14S-5 | I | 5 | | | | | | 5 | | |
| 14S-6 | I | 6 | | | | | | 6 | | |
| 14S-7 | A | 3 | | | | | | 3 | | |
| 14S-9 | A | 2 | | | | | | 2 | | |
| 14S-07 | I | 7 | | | | | | 7 | | |
| 16S-1 | A | 7 | | | | | | 7 | | |
| 16S-4 | D | 2 | | | | | | 2 | | |
| 16S-5 | A | 3 | | | | | | 3 | | |
| 16S-8 | A | 5 | | | | | | 5 | | |
| 16-2 | E | 1 | | | | | 1 | | | |
| 16-7 | A | 3 | | | | 1 | | 2 | | |
| 16-9 | A | 4 | | | | | 2 | 2 | | |
| 16-10 | A | 3 | | | | | 3 | | | |
| 16-11 | A | 2 | | | | | 2 | | | |
| 16-12 | A | 1 | | | 1 | | | | | |
| 16-A10* | I | 10 | | | | | | | 10 | |
| 18-1 | I | 10 | | | | | | 10 | | |
| 18-3 | D | 2 | | | | | 2 | | | |
| 18-4 | D | 4 | | | | | | 4 | | |
| 18-5 | D | 3 | | | | | 2 | 1 | | |
| 18-6 | D | 1 | | | 1 | | | | | |
| 18-06 | A | 6 | | | | | 4 | 2 | | |
| 18-7 | B | 1 | | | | 1 | | | | |
| 18-8 | A | 8 | | | | | 1 | 7 | | |
| 18-9 | I | 7 | | | | | 2 | 5 | | |
| 18-10 | A | 4 | | | | | 4 | | | |
| 18-10S MT | A | 4 | | | | | 4 | | | |
| 18-11 | A | 5 | | | | | 5 | | | |
| 18-12 | A | 6 | | | | | | 6 | | |
| 18-13 | A | 4 | | | | 1 | 3 | | | |
| 18-16 | C | 1 | | | | | 1 | | | |
| 18-19 | A | 10 | | | | | | 10 | | |
| 18-20 | A | 5 | | | | | | 5 | | |
| 18-22 | D | 3 | | | | | | 3 | | |
| 18-30 (18-20x110°) | A | 5 | | | | | | 5 | | |
| 20-2 | D | 1 | | 1 | | | | | | |
| 20-3 | D | 3 | | | | | 3 | | | |
| 20-4 | D | 4 | | | | | 4 | | | |
| 20-6 | D | 3 | | | | | | 3 | | |
| 20-7 | A | 8 | | | | | | 8 | | |
| 20-8 | I | 6 | | | | 2 | | 4 | | |
| 20-9 | A | 8 | | | | | 1 | 7 | | |
| 20-11 | I | 13 | | | | | | 13 | | |

| Arrangement | Rating | Contact | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Number | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 20-14 | A | 5 | | | | 2 | 3 | | | |
| 20-15 | A | 7 | | | | | 7 | | | |
| 20-16 | A | 9 | | | | | 2 | 7 | | |
| 20-17 | A | 6 | | | | | 5 | 1 | | |
| 20-18 | A | 9 | | | | | 3 | 6 | | |
| 20-19 | A | 3 | | | | 3 | | | | |
| 20-21 | A | 9 | | | | | 1 | 8 | | |
| 20-22 | A | 6 | | | | 3 | | 3 | | |
| 20-23 | A | 2 | | | | 2 | | | | |
| 20-24 | A | 4 | | | | 2 | | 2 | | |
| 20-A24 | A | 4 | | | | 2 | | 2 | | |
| 20-25 (20-11x100°) | I | 13 | | | | | | 13 | | |
| 20-27 | A | 14 | | | | | | 14 | | |
| 20-29 | A | 17 | | | | | | 17 | | |
| 20-30 (20-11x250°) | I | 13 | | | | | | 13 | | |
| 20-33 | A | 11 | | | | | | 11 | | |
| 20-A8 | I | 8 | | | | 2 | | 6 | | |
| 20-A9 | A | 9 | | | | | 9 | | | |
| 20-A48 | I | 19 | | | | | | 19 | | |
| 20-B8 | A | 8 | | | | | 4 | 4 | | |
| 22-1 | D | 2 | | | | 2 | | | | |
| 22-2 | D | 3 | | | | 3 | | | | |
| 22-4 | A | 4 | | | | 2 | 2 | | | |
| 22-5 | D | 6 | | | | | 2 | 4 | | |
| 22-7 | E | 1 | | 1 | | | | | | |
| 22-9 | E | 3 | | | | | 3 | | | |
| 22-10 | E | 4 | | | | | | 4 | | |
| 22-11 | B | 2 | | | | | | 2 | | |
| 22-12 | D | 5 | | | | 2 | | 3 | | |
| 22-14 | A | 19 | | | | | | 19 | | |
| 22-15* | A | 6 | | | | | 5 | 1 | | |
| 22-17 | A | 9 | | | | | 1 | 8 | | |
| 22-18 | A | 8 | | | | | | 8 | | |
| 22-19 | A | 14 | | | | | | 14 | | |
| 22-20 | A | 9 | | | | | | 9 | | |
| 22-21 | A | 3 | | 1 | | | | 2 | | |
| 22-22 | A | 4 | | | | 4 | | | | |
| 22-23 | A | 8 | | | | | 8 | | | |
| 22-27 | A | 9 | | | | 1 | | 8 | | |
| 22-28 | A | 7 | | | | | 7 | | | |
| 22-34 | D | 5 | | | | | 3 | 2 | | |
| 22-82 | A | 10 | | | | 2 | | 8 | | |
| 22-A10 | A | 10 | | | | | | 10 | | |
| 22-A37* | A | 37 | | | | | | | 37 | |
| 22-22S MT | A | | | | | 4 | | | | |

* Only Crimp Contact Version





| Arrangement | Rating | Contact | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Number | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 24-2 | D | 7 | | | | | 7 | | | |
| 24-3 | A | 7 | | | | | 2 | 5 | | |
| 24-4 | D | 4 | | 1 | | | | 3 | | |
| 24-5 | A | 16 | | | | | | 16 | | |
| 24-06 | D | 6 | | | | 4 | | 2 | | |
| 24-6 | A | 8 | | | | | 8 | | | |
| 24-07 | D | 7 | | | | | 7 | | | |
| 24-7 | A | 16 | | | | | 2 | 14 | | |
| 24-9 | A | 2 | | | 2 | | | | | |
| 24-10 | A | 7 | | | | 7 | | | | |
| 24-11 | A | 9 | | | | 3 | 6 | | | |
| 24-12 | A | 5 | | | 2 | | 3 | | | |
| 24-013 | A | 13 | | | | | 6 | 7 | | |
| 24-19 | A | 12 | | | | | | 12 | | |
| 24-20 | D | 11 | | | | | 2 | 9 | | |
| 24-22 | D | 4 | | | | 4 | | | | |
| 24-27 | E | 7 | | | | | | 7 | | |
| 24-28 | I | 24 | | | | | | 24 | | |
| 24-67* | A | 19 | | | | | 19 | | | |
| 24-A1 | B | 1 | | 1 | | | | | | |
| 24-A8 | A | 8 | | | | 5 | 3 | | | |
| 24-A11 | A | 11 | | | | 2 | | 9 | | |
| 24-A12 | A | 12 | | | 2 | | | 10 | | |
| 24-A25 | A | 25 | | | | | | 25 | | |
| 24-A28 | I | 28 | | | | | | 28 | | |
| 24-A55* | I | 55 | | | | | | | | 55 |
| 24-G5 | A | 5 | | | | 5 | | | | |
| 28-1 | A | 9 | | | | 3 | 6 | | | |
| 28-2 | D | 14 | | | | | 2 | 12 | | |
| 28-3 | E | 3 | | | | 3 | | | | |
| 28-6 | D | 3 | | | 3 | | | | | |
| 28-09 | A | 9 | | | 4 | | | 5 | | |
| 28-9 | D | 12 | | | | | 6 | 6 | | |
| 28-10 | A | 7 | | | 2 | 2 | 3 | | | |
| 28-11 | A | 22 | | | | | 4 | 18 | | |
| 28-12 | A | 26 | | | | | | 26 | | |
| 28-13 (28-12x100°) | A | 26 | | | | | | 26 | | |
| 28-15 | A | 35 | | | | | | 35 | | |
| 28-16 | A | 20 | | | | | | 20 | | |
| 28-17 | A | 15 | | | | | | 15 | | |
| 28-18 | I | 12 | | | | | | 12 | | |
| 28-19 | A | 10 | | | | | 4 | 6 | | |
| 28-20 | A | 14 | | | | | 10 | 4 | | |
| 28-21 | A | 37 | | | | | | 37 | | |
| 28-22 | D | 6 | | | 3 | | | 3 | | |
| 28-51 | D | 12 | | | | | 12 | | | |
| 28-59 | A | 17 | | | | | 7 | 10 | | |

| Arrangement | Rating | Contact | Contact Size | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Number | 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
| 28-70 | A | 7 | | | | 7 | | | | |
| 28-72** | I | 72 | | | | | | | | 72 |
| 28-84 | A | 9 | | | | 9 | | | | |
| 28-124 | A | 16 | | | | 4 | | 12 | | |
| 28-A29 | A | 29 | | | | 2 | | 27 | | |
| 28-A31 | A | 31 | | | | 6 | | | | 25 |
| 28-A35 | A | 35 | | | | | | 35 | | |
| 28-A63 | I | 28 | | | | | 9 | 19 | | |
| 28-B1 | B | 1 | | 1 | | | | | | |
| 28-B2 | E | 2 | | | | 2 | | | | |
| 32-1 | D | 5 | | 2 | | | 3 | | | |
| 32-2 | E | 5 | | | 3 | | | 2 | | |
| 32-3 | D | 9 | | 1 | 2 | | 2 | 4 | | |
| 32-5 | D | 2 | | 2 | | | | | | |
| 32-6 | A | 23 | | | 2 | 3 | 2 | 16 | | |
| 32-7 | I | 35 | | | | | 7 | 28 | | |
| 32-8 | A | 30 | | | | | 6 | 24 | | |
| 32-9 | D | 14 | | | 2 | | | 12 | | |
| 32-013 | D | 13 | | | | | 13 | | | |
| 32-13 | D | 23 | | | | | 5 | 18 | | |
| 32-15 | D | 8 | | 2 | | | 6 | | | |
| 32-17 | D | 4 | | | 4 | | | | | |
| 32-22 | A | 54 | | | | | | 54 | | |
| 32-31 | A | 31 | | | | | | 31 | | |
| 32-59 | A | 42 | | | | 2 | | 40 | | |
| 32-68 | A | 16 | | | 4 | | | 12 | | |
| 32-689 | A | 9 | | | 3 | | | 6 | | |
| 32-A5 GM | A | 5 | | | 5 | | | | | |
| 32-76 | A | 19 | | | | | 19 | | | |
| 32-79 | D | 5 | | | 4 | 1 | | | | |
| 32-88 | A | 54 | | | | | | 54 | | |
| 32-A1 | A | 1 | 1 | | | | | | | |
| 32-A3 | E | 3 | | | 3 | | | | | |
| 32-A8 | A | 8 | | | | 8 | | | | |
| 32-A25 | A | 25 | | | | | 25 | | | |
| 32-A27 | A | 27 | | | | | 10 | 17 | | |
| 32-A30 | A | 30 | | | | | 10 | 20 | | |
| 32-A40 | A | 40 | | | | | | 40 | | |
| 32-A48 | I | 48 | | | | | | 48 | | |
| 32-A55 | A | 55 | | | | | | 55 | | |
| 32-B22 | A | 22 | | | 2 | | | 20 | | |
| 36-01 | C | 1 | 1 | | | | | | | |
| 36-3 | D | 6 | | 3 | | | 3 | | | |
| 36-4 | A | 3 | | 3 | | | | | | |
| 36-5 | A | 4 | | 4 | | | | | | |
| 36-6 | A | 6 | | 2 | 4 | | | | | |

* Only Crimp Contact Version

TOPSIDE: SEACROW™

## IT-MB connector contact arrangements

| Arrangement | Rating | Contact Number | Contact Size 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| 36-7 | A | 47 | | | | | 7 | 40 | | |
| 36-8 | A | 47 | | | | | 1 | 46 | | |
| 36-9 | A | 31 | | | 1 | 2 | 14 | 14 | | |
| 36-10 | A | 48 | | | | | | 48 | | |
| 36-14 | D | 16 | | | | 5 | 5 | 6 | | |
| 36-15 | A | 35 | | | | | | 35 | | |
| 36-18 (36-9x100°) | A | 31 | | | 1 | 2 | 14 | 14 | | |
| 36-22 | D | 22 | | | | | 22 | | | |
| 36-35 | A | 36 | | | | 4 | | 32 | | |
| 36-54=36-B39 | A | 39 | | | | 8 | | 31 | | |
| 36-66 | A | 56 | | | | | 4 | 52 | | |
| 36-74 | A | 44 | | | | 1 | | 43 | | |
| 36-77 | D | 7 | | | 7 | | | | | |
| 36-A7 | A | 7 | | 3 | 2 | | 2 | | | |
| 36-A10 | A | 10 | | | 2 | 8 | | | | |
| 36-A35 | A | 8 | | 4 | | | | 4 | | |
| 36-A51 | D | 6 | | 3 | 2 | | | 1 | | |
| 36-A72** | I | 72 | | | | | 4 | 16 | 52 | |
| 36-A99* | A | 65 | | | | | | 15 | | 50 |
| 36-B78 | D | 14 | | | | 12 | | 2 | | |
| 36-B90 | D | 1 | n.1 Special Contact | | | | | | | |
| 36-D78 | D | 14 | | | | 10 | | 4 | | |
| 40-1 | D | 30 | | | | | 6 | 24 | | |
| 40-9 | A | 47 | | | | 1 | 22 | 24 | | |
| 40-10 | A | 29 | | | 4 | 9 | | 16 | | |
| 40-26 | A | 26 | | | | 7 | 19 | | | |
| 40-31 | D | 31 | | | | | 31 | | | |
| 40-35 | D | 35 | | | | | 35 | | | |
| 40-47 | A | 47 | | | | 1 | 22 | 24 | | |
| 40-53 | A | 60 | | | | | | 60 | | |
| 40-56 | A | 85 | | | | | | 85 | | |
| 40-62 | A | 60 | | | | | | 60 | | |
| 40-63 | A | 61 | | | | | | 61 | | |
| 40-67 | A | 11 | | | 10 | | | 1 | | |
| 40-100** | A | 100 | | | | | | | 100 | |
| 40-150** | I | 150 | | | | | | | 150 | |
| 40-951 | A | 51 | | | | | 25 | 26 | | |
| 40-A3 | A | 5 | | 3 | | | 2 | | | |
| 40-A4 | A | 6 | | 4 | | | 2 | | | |
| 40-A5 | A | 5 | | 3 | 1 | | 1 | | | |
| 40-A5GM | A | 5 | | 5 | | | | | | |
| 40-A6 | B | 6 | | | | | 6 | | | |
| 40-A8 | E | 8 | | 4 | | | | 4 | | |
| 40-A9 | A | 9 | | 3 | | 6 | | | | |
| 40-A10 | D | 8 | | | 4 | | | 4 | | |
| 40-A14 | A | 14 | | | 8 | | 6 | | | |

| Arrangement | Rating | Contact Number | Contact Size 4/0 | 0 | 4 | 8 | 12 | 16 | 18 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| 40-A20 | D | 20 | | | | 2 | 18 | | | |
| 40-A24 | D | 24 | | | | 8 | 16 | | | |
| 40-A38 | A | 38 | | | | | 38 | | | |
| 40-A51 | A | 31 | | | | 15 | | 16 | | |
| 40-A55 | A | 5 | | 5 | | | | | | |
| 40-A56 | A | 85 | | | | | | 85 | | |
| 40-A62 | A | 62 | | | | 2 | | 60 | | |
| 40-A65 | A | 65 | | | | | | 65 | | |
| 40-A70 | A | 70 | | | | | | 70 | | |
| 40-B4 | E | 4 | | 4 | | | | | | |
| 40-B19 | A | 19 | | | | 19 | | | | |
| 40-B25 | A | 29 | | 4 | | | | 25 | | |
| 40-B37 | A | 37 | | | | | 37 | | | |
| 40-D4 | C | 4 | | | | 4 | | | | |

* Only Crimp Contact Version
** Class A Only - Only Crimp Contacts

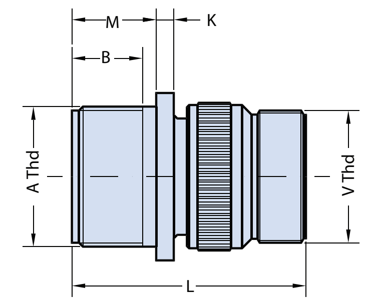




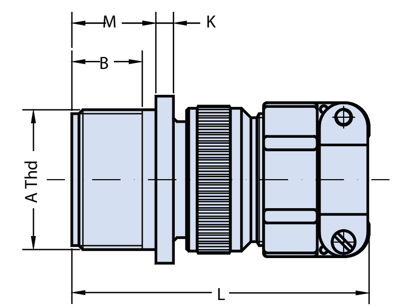



## IT-MB wall-mount receptacle (00) - Dimensions

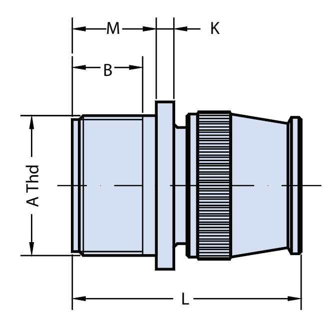
### IT 00 WALL MOUNT RECEPTACLE, ENVIRONMENTAL CLASS A, F, AND R



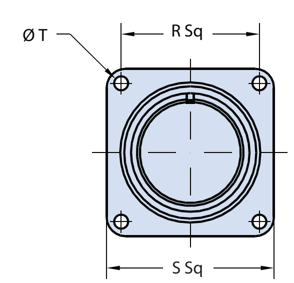
Class A backshell



Class F Backshell with Cable Clamp



Class R with Insulating Grommet and Backshell



Class 00 Connector Face

| Shell Size | A Thread | B Min | K ±0.25 [.01] | M ±0.2[.01] -0[0.00] | R Sq. ±0.1[0.00] | S Sq. ±0.2[.01] | ØT +0.1[0.00] | V Thread |
|---|---|---|---|---|---|---|---|---|
| 10 SL | 0.6250 - 24UNEF | 11 [0.43] | 2.8 [0.11] | 14.3 [0.56] | 18.25 [0.72] | 25.4 [1.00] | 3.2 [0.13] | 0.6250 - 24UNEF |
| 12 S | 0.7500 - 20UNEF | 11 [0.43] | 2.8 [0.11] | 14.3 [0.56] | 20.60 [0.81] | 27.8 [1.09] | 3.2 [0.13] | 0.6250 - 24UNEF |
| 12 | 0.7500 - 20UNEF | 16 [0.63] | 2.8 [0.11] | 19.1 [0.75] | 20.60 [0.81] | 27.8 [1.09] | 3.2 [0.13] | 0.6250 - 24UNEF |
| 14 S | 0.8750 - 20UNEF | 11 [0.43] | 3.3 [0.13] | 14.5 [0.57] | 23.00 [0.91] | 30.0 [1.18] | 3.2 [0.13] | 0.7500 - 20UNEF |
| 14 | 0.8750 - 20UNEF | 16 [0.63] | 3.3 [0.13] | 19.1 [0.75] | 23.00 [0.91] | 30.0 [1.18] | 3.2 [0.13] | 0.7500 - 20UNEF |
| 16 S | 1.0000 - 20UNEF | 11 [0.43] | 3.3 [0.13] | 14.5 [0.57] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] | 0.8750 - 20UNEF |
| 16 | 1.0000 - 20UNEF | 16 [0.63] | 3.3 [0.13] | 19.1 [0.75] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] | 0.8750 - 20UNEF |
| 18 | 1.1250 - 18UNEF | 16 [0.63] | 4.0 [0.16] | 19.1 [0.75] | 27.00 [1.06] | 35.0 [1.38] | 3.2 [0.13] | 1.0000 - 20UNEF |
| 20 | 1.2500 - 18UNEF | 16 [0.63] | 4.0 [0.16] | 19.1 [0.75] | 29.40 [1.16] | 38.0 [1.50] | 3.2 [0.13] | 1.1875 - 18UNEF |
| 22 | 1.3750 - 18UNEF | 16 [0.63] | 4.0 [0.16] | 19.6 [0.77] | 31.75 [1.25] | 41.0 [1.61] | 3.2 [0.13] | 1.1875 - 18UNEF |
| 24 | 1.5000 - 18UNEF | 17 [0.67] | 4.0 [0.16] | 20.6 [0.81] | 34.90 [1.37] | 44.5 [1.75] | 3.7 [0.15] | 1.4375 - 18UNEF |
| 28 | 1.7500 - 18UNS | 17 [0.67] | 4.0 [0.16] | 20.0 [0.79] | 39.70 [1.56] | 50.9 [2.00] | 3.7 [0.15] | 1.4375 - 18UNEF |
| 32 | 2.0000 - 18UNS | 17 [0.67] | 4.0 [0.16] | 22.3 [0.88] | 44.45 [1.75] | 57.0 [2.24] | 4.3 [0.17] | 1.7500 - 18UNS |
| 36 | 2.2500 - 16UN | 17 [0.67] | 4.0 [0.16] | 22.3 [0.88] | 49.20 [1.94] | 63.5 [2.50] | 4.3 [0.17] | 2.0000 - 18UNS |
| 40 | 2.5000 - 16UN | 17 [0.67] | 4.0 [0.16] | 22.3 [0.88] | 55.55 [2.19] | 69.9 [2.75] | 4.3 [0.17] | 2.2500 - 16UN |

**Overall Lengths for Wall Mount Connector (00) and Environmental Class/Backshell**

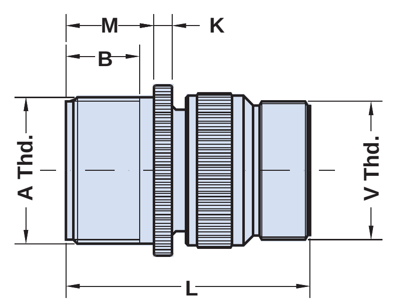
| Envir. Class | Shell Size 10SL | 12 S | 12 | 14 S | 14 | 16 S | 16 | 18 | 20 | 22 | 24 | 28 | 32 | 36 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 44.0 [1.73] | 44.0 [1.73] | 51.5 [2.03] | 46.4 [1.83] | 53.0 [2.09] | 46.4 [1.83] | 57.8 [2.28] | 57.8 [2.28] | 58.1 [2.29] | 58.1 [2.29] | 59.7 [2.35] | 66.2 [2.61] | 71.3 [2.81] | 76.8 [3.02] | 76.8 [3.02] |
| F | 55.0 [2.17] | 55.0 [2.17] | 62.5 [2.46] | 58.4 [2.30] | 65.0 [2.56] | 60.4 [2.38] | 71.8 [2.83] | 77.8 [3.06] | 74.0 [2.91] | 74.0 [2.91] | 76.7 [3.02] | 83.2 [3.28] | 90.3 [3.56] | 96.8 [3.81] | 115.8 [4.56] |
| R | 38.0 [1.50] | 38.0 [1.50] | 45.5 [1.79] | 47.5 [1.87] | 52.5 [2.07] | 45.5 [1.79] | 55.5 [2.19] | 55.5 [2.19] | 55.5 [2.19] | 55.5 [2.19] | 58.5 [2.30] | 58.5 [2.30] | 58.5 [2.30] | 58.5 [2.30] | 58.5 [2.30] |

SEACROW MARINE BRONZE (MB)

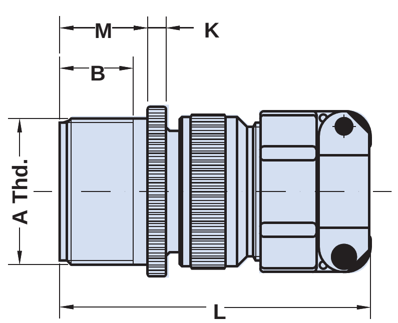
# Topside / Shipboard Environmental Connectors

## IT-MB in-line receptacle (01) - Dimensions

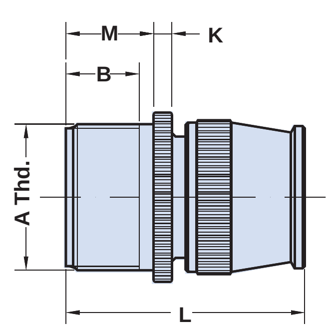
### IT 01 IN-LINE RECEPTACLE, ENVIRONMENTAL CLASS A, F OR R



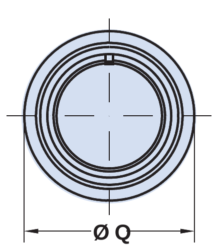

Class A backshell




Class F Backshell with Cable Clamp




Class R with Insulating Grommet and Back




IT 01 connector, face view

| Dimesions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | A Thread | B Min. | K ±0.2[.01] | M +0.2[.01] -0[0.00] | Ø Q ±0.2[.01] | V Thread |
| 10 SL | 0.6250 - 24UNEF | 11 [0.43] | 2.8 [0.11] | 14.3 [0.56] | 21.6 [0.85] | 0.6250 - 24UNEF |
| 12 S | 0.7500 - 20UNEF | 11 [0.43] | 2.8 [0.11] | 14.3 [0.56] | 24.9 [0.98] | 0.6250 - 24UNEF |
| 12 | 0.7500 - 20UNEF | 16 [0.63] | 2.8 [0.11] | 19.1 [0.75] | 24.9 [0.98] | 0.6250 - 24UNEF |
| 14 S | 0.8750 - 20UNEF | 11 [0.43] | 3.3 [0.13] | 14.5 [0.57] | 28.8 [1.13] | 0.7500 - 20UNEF |
| 14 | 0.8750 - 20UNEF | 16 [0.63] | 3.3 [0.13] | 19.1 [0.75] | 28.8 [1.13] | 0.7500 - 20UNEF |
| 16 S | 1.0000 - 20UNEF | 11 [0.43] | 3.3 [0.13] | 14.5 [0.57] | 30.6 [1.20] | 0.8750 - 20UNEF |
| 16 | 1.0000 - 20UNEF | 16 [0.63] | 3.3 [0.13] | 19.1 [0.75] | 30.6 [1.20] | 0.8750 - 20UNEF |
| 18 | 1.1250 - 18UNEF | 16 [0.63] | 4.0 [0.16] | 19.1 [0.75] | 33.7 [1.33] | 1.0000 - 20UNEF |
| 20 | 1.2500 - 18UNEF | 16 [0.63] | 4.0 [0.16] | 19.1 [0.75] | 36.9 [1.45] | 1.1875 - 18UNEF |
| 22 | 1.3750 - 18UNEF | 16 [0.63] | 4.0 [0.16] | 19.6 [0.77] | 39.5 [1.56] | 1.1875 - 18UNEF |
| 24 | 1.5000 - 18UNEF | 17 [0.67] | 4.0 [0.16] | 20.6 [0.81] | 43.9 [1.73] | 1.4375 - 18UNEF |
| 28 | 1.7500 - 18UNS | 17 [0.67] | 4.0 [0.16] | 20.0 [0.79] | 49.2 [1.94] | 1.4375 - 18UNEF |
| 32 | 2.0000 - 18UNS | 17 [0.67] | 4.0 [0.16] | 22.3 [0.88] | 55.8 [2.20] | 1.7500 - 18UNS |
| 36 | 2.2500 - 16UN | 17 [0.67] | 4.0 [0.16] | 22.3 [0.88] | 62.3 [2.45] | 2.0000 - 18UNS |
| 40 | 2.5000 - 16UN | 17 [0.67] | 4.0 [0.16] | 22.3 [0.88] | 68.5 [2.70] | 2.2500 - 16UN |

| Overall Lengths for In-Line Receptacle (01) and Backshell Styles | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Envir. Class | Shell Size | | | | | | | | | | | | | | |
| | 10SL | 12 S | 12 | 14 S | 14 | 16 S | 16 | 18 | 20 | 22 | 24 | 28 | 32 | 36 | 40 |
| A | 44.0 [1.73] | 44.0 [1.73] | 51.5 [2.03] | 46.4 [1.83] | 53.0 [2.09] | 46.4 [1.83] | 57.8 [2.28] | 57.8 [2.28] | 58.1 [2.29] | 58.1 [2.29] | 59.7 [2.35] | 66.2 [2.61] | 71.3 [2.81] | 76.8 [3.02] | 76.8 [3.02] |
| F | 55.0 [2.17] | 55.0 [2.17] | 62.5 [2.46] | 58.4 [2.30] | 65.0 [2.56] | 60.4 [2.38] | 71.8 [2.83] | 77.8 [3.06] | 74.0 [2.91] | 74.0 [2.91] | 76.7 [3.02] | 83.2 [3.28] | 90.3 [3.56] | 96.8 [3.81] | 115.8 [4.56] |
| R | 38.0 [1.50] | 38.0 [1.50] | 45.5 [1.79] | 47.5 [1.87] | 52.5 [2.07] | 45.5 [1.79] | 55.5 [2.19] | 55.5 [2.19] | 55.5 [2.19] | 55.5 [2.19] | 58.5 [2.30] | 58.5 [2.30] | 58.5 [2.30] | 58.5 [2.30] | 58.5 [2.30] |

TOPSIDE: SEACROW™



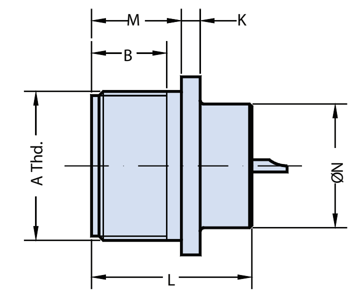


SEACROW MARINE BRONZE (MB)

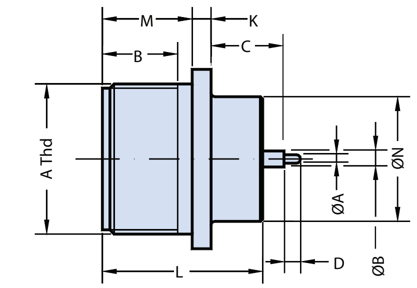
Topside / Shipboard Environmental Connectors

## IT-MB box mount receptacle (02) - Dimensions

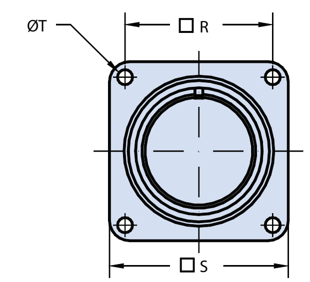
### IT 02 BOX MOUNT RECEPTACLE, ENVIRONMENTAL CLASS A OR R




Box Mount Receptacle with Solder Cups




Box Mount Receptacle with PC Tails




Box Mount Receptacle, Face View

| Dimensions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Shell Size | A Thread | B Min | K ±0.2 [.01] | L ±0.2 [.01] | M +0.2 [.01] 0 [0.00] | N +0.2 [.01] -0 [0.00] | R ±0.1 [0.00] | S ±0.2 [.01] | T +0.1 [0.00] |
| 10 SL | 0.6250 - 24UNEF | 11 [0.43] | 2.8 [0.11] | 24.6 [0.97] | 14.3 [0.56] | 15.9 [0.63] | 18.25 [0.72] | 25.4 [1.00] | 3.2 [0.13] |
| 12 S | 0.7500 - 20UNEF | 11 [0.43] | 2.8 [0.11] | 24.6 [0.97] | 14.3 [0.56] | 15.9 [0.63] | 20.60 [0.81] | 27.8 [1.09] | 3.2 [0.13] |
| 12 | 0.7500 - 20UNEF | 16 [0.63] | 2.8 [0.11] | 34.5 [1.36] | 19.1 [0.75] | 15.9 [0.63] | 20.60 [0.81] | 27.8 [1.09] | 3.2 [0.13] |
| 14 S | 0.8750 - 20UNEF | 11 [0.43] | 3.3 [0.13] | 24.8 [0.98] | 14.5 [0.57] | 19.0 [0.75] | 23.00 [0.91] | 30.0 [1.18] | 3.2 [0.13] |
| 14 | 0.8750 - 20UNEF | 16 [0.63] | 3.3 [0.13] | 34.5 [1.36] | 19.1 [0.75] | 19.0 [0.75] | 23.00 [0.91] | 30.0 [1.18] | 3.2 [0.13] |
| 16 S | 1.0000 - 20UNEF | 11 [0.43] | 3.3 [0.13] | 24.8 [0.98] | 14.5 [0.57] | 22.2 [0.87] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] |
| 16 | 1.0000 - 20UNEF | 16 [0.63] | 3.3 [0.13] | 34.5 [1.36] | 19.1 [0.75] | 22.2 [0.87] | 24.60 [0.97] | 32.5 [1.28] | 3.2 [0.13] |
| 18 | 1.1250 - 18UNEF | 16 [0.63] | 4.0 [0.16] | 34.2 [1.35] | 19.1 [0.75] | 25.5 [1.00] | 27.00 [1.06] | 35.0 [1.38] | 3.2 [0.13] |
| 20 | 1.2500 - 18UNEF | 16 [0.63] | 4.0 [0.16] | 34.2 [1.35] | 19.1 [0.75] | 28.5 [1.12] | 29.40 [1.16] | 38.0 [1.50] | 3.2 [0.13] |
| 22 | 1.3750 - 18UNEF | 16 [0.63] | 4.0 [0.16] | 34.2 [1.35] | 19.6 [0.77] | 31.7 [1.25] | 31.75 [1.25] | 41.0 [1.61] | 3.2 [0.13] |
| 24 | 1.5000 - 18UNEF | 17 [0.67] | 4.0 [0.16] | 35.7 [1.41] | 20.6 [0.81] | 34.9 [1.37] | 34.90 [1.37] | 44.5 [1.75] | 3.7 [0.15] |
| 28 | 1.7500 - 18UNS | 17 [0.67] | 4.0 [0.16] | 35.7 [1.41] | 20.0 [0.79] | 41.4 [1.63] | 39.70 [1.56] | 50.9 [2.00] | 3.7 [0.15] |
| 32 | 2.0000 - 18UNS | 17 [0.67] | 4.0 [0.16] | 37.3 [1.47] | 22.3 [0.88] | 47.6 [1.87] | 44.45 [1.75] | 57.0 [2.24] | 4.3 [0.17] |
| 36 | 2.2500 - 16UN | 17 [0.67] | 4.0 [0.16] | 37.3 [1.47] | 22.3 [0.88] | 52.4 [2.06] | 49.20 [1.94] | 63.5 [2.50] | 4.3 [0.17] |
| 40 | 2.5000 - 16UN | 17 [0.67] | 4.0 [0.16] | 37.3 [1.47] | 22.3 [0.88] | 58.7 [2.31] | 55.55 [2.19] | 69.9 [2.75] | 4.3 [0.17] |

| PC Tail Dimensions (Fig. 1) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | DS 1 | | | | Y # 16 | | | | Y #12 | | | | YL5 | | | |
| | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D |
| 10 SL | 0.8 [0.03] | 1.8 [0.07] | 13.80 [0.54] | 3.6 [0.14] | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 S | 0.8 [0.03] | 1.8 [0.07] | 12.90 [0.51] | 3.6 [0.14] | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 0.8 [0.03] | 1.8 [0.07] | - | 3.6 [0.14] | - | - | - | - | 1.8 [0.07] | 3.4 [0.13] | 18.30 [0.72] | 3.5 [0.14] | - | - | - | - |
| 14 S | 0.8 [0.03] | 1.8 [0.07] | 12.40 [0.49] | 3.6 [0.14] | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 0.8 [0.03] | 1.8 [0.07] | 14.60 [0.57] | 3.6 [0.14] | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 S | 0.8 [0.03] | 1.8 [0.07] | 12.40 [0.49] | 3.6 [0.14] | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | 0.8 [0.03] | 1.8 [0.07] | 14.60 [0.57] | 3.6 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 17.85 [0.70] | 3.5 [0.14] | 1.8 [0.07] | 3.4 [0.13] | 17.85 [0.70] | 3.5 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 17.85 [0.70] | 5 [0.20] |
| 18 | 0.8 [0.03] | 1.8 [0.07] | 13.80 [0.54] | 3.6 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 17.05 [0.67] | 3.5 [0.14] | 1.8 [0.07] | 3.4 [0.13] | 17.05 [0.67] | 3.5 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 17.05 [0.67] | 5 [0.20] |
| 20 | 0.8 [0.03] | 1.8 [0.07] | 13.80 [0.54] | 3.6 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 17.05 [0.67] | 3.5 [0.14] | 1.8 [0.07] | 3.4 [0.13] | 17.05 [0.67] | 3.5 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 17.05 [0.67] | 5 [0.20] |
| 22 | 0.8 [0.03] | 1.8 [0.07] | 13.30 [0.52] | 3.6 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 16.55 [0.65] | 3.5 [0.14] | 1.8 [0.07] | 3.4 [0.13] | 16.55 [0.65] | 3.5 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 16.55 [0.65] | 5 [0.20] |
| 24 | 0.8 [0.03] | 1.8 [0.07] | 12.20 [0.48] | 3.6 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 15.45 [0.61] | 3.5 [0.14] | 1.8 [0.07] | 3.4 [0.13] | 15.45 [0.61] | 3.5 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 15.45 [0.61] | 5 [0.20] |
| 28 | 0.8 [0.03] | 1.8 [0.07] | 13.00 [0.51] | 3.6 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 16.25 [0.64] | 3.5 [0.14] | 1.8 [0.07] | 3.4 [0.13] | 16.25 [0.64] | 3.5 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 16.25 [0.64] | 5 [0.20] |
| 32 | - | - | - | - | 0.8 [0.03] | 1.8 [0.07] | 13.85 [0.55] | 3.5 [0.14] | 1.8 [0.07] | 3.4 [0.13] | 13.85 [0.55] | 3.5 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 16.70 [0.66] | 5 [0.20] |
| 36 | - | - | - | - | 0.8 [0.03] | 1.8 [0.07] | 13.85 [0.55] | 3.5 [0.14] | 1.8 [0.07] | 3.4 [0.13] | 13.85 [0.55] | 3.5 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 16.70 [0.66] | 5 [0.20] |
| 40 | - | - | - | - | 0.8 [0.03] | 1.8 [0.07] | 13.85 [0.55] | 3.5 [0.14] | 1.8 [0.07] | 3.4 [0.13] | 13.85 [0.55] | 3.5 [0.14] | 0.8 [0.03] | 1.8 [0.07] | 16.70 [0.66] | 5 [0.20] |

TOPSIDE: SEACROW™

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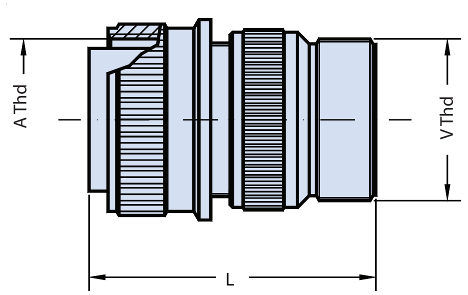
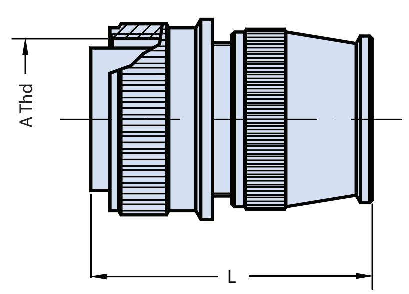
Dimensions in millimeters [inches] are subject to change without notice.

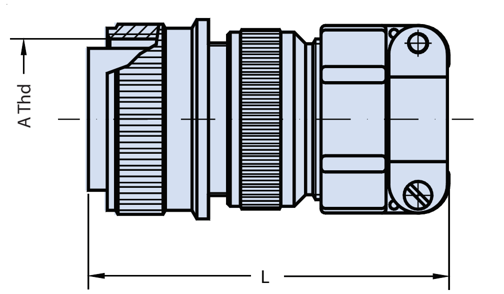
## IT 06 PLUG, ENVIRONMENTAL CLASS A, F, G, GR, R OR SP



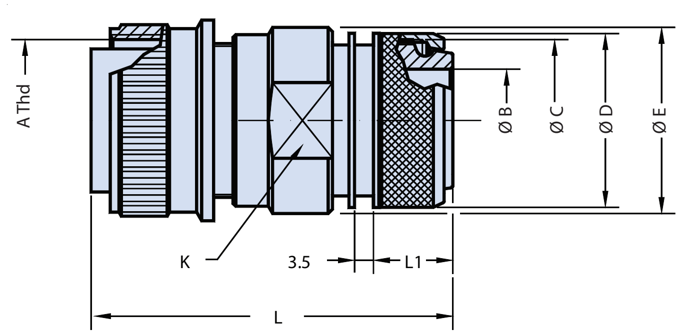
Class A - Backshell



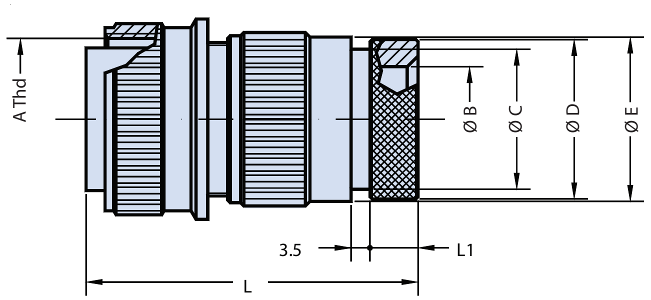
Class R - Wire Sealing Grommet and Backshell



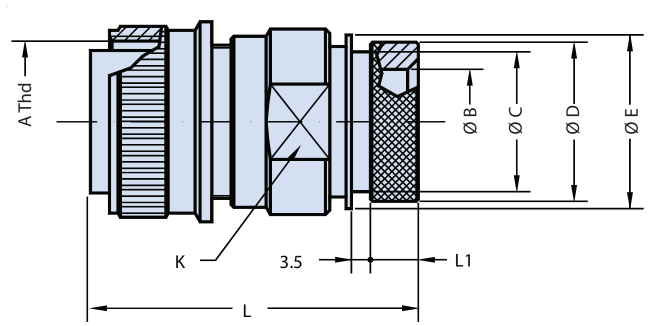
Class F - Backshell with Insulating Grommet, Backshell and Cable Clamp



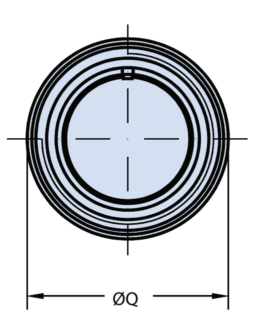
Class SP - Insulating Grommet and Backshell



Class G - Backshell with Wire Sealing Grommet and Backshell



Class GR - Backshell with Rotating Clamp Nut



Plug Face - Dimensions Apply to All Classes

TOPSIDE: SEACROW™




SEACROW MARINE BRONZE (MB)
Topside / Shipboard Environmental Connectors
IT-MB in-line plug (06) - Dimensions

**Dimensions for Class A, F and R Only**

| Shell Size | A Thread | Q ±0.2 [.01] | V Thread | L Max Dimension by Environmental Class | | | |
|---|---|---|---|---|---|---|---|
| | | | | A | F | R | G, GR, SP |
| 10 SL | 0.6250 - 24UNEF | 24.1 [0.95] | 0.6250 - 24UNEF | 44.0 [1.73] | 55.0 [2.17] | 38.0 [1.50] | 52.7 [2.07] |
| 12 S | 0.7500 - 20UNEF | 25.0 [0.98] | 0.6250 - 24UNEF | 44.0 [1.73] | 55.0 [2.17] | 38.0 [1.50] | 52.7 [2.07] |
| 12 | 0.7500 - 20UNEF | 25.0 [0.98] | 0.6250 - 24UNEF | 51.5 [2.03] | 62.5 [2.46] | 45.5 [1.79] | 57.5 [2.26] |
| 14 S | 0.8750 - 20UNEF | 28.0 [1.10] | 0.7500 - 20UNEF | 46.4 [1.83] | 58.4 [2.30] | 47.5 [1.87] | 53.4 [2.10] |
| 14 | 0.8750 - 20UNEF | 28.0 [1.10] | 0.7500 - 20UNEF | 53.0 [2.09] | 65.0 [2.56] | 52.5 [2.07] | 55.0 [2.17] |
| 16 S | 1.0000 - 20UNEF | 31.5 [1.24] | 0.8750 - 20UNEF | 46.4 [1.83] | 60.4 [2.38] | 45.5 [1.79] | 53.4 [2.10] |
| 16 | 1.0000 - 20UNEF | 31.5 [1.24] | 0.8750 - 20UNEF | 57.8 [2.28] | 71.8 [2.83] | 55.5 [2.19] | 65.8 [2.59] |
| 18 | 1.1250 - 18UNEF | 34.0 [1.34] | 1.0000 - 20UNEF | 57.8 [2.28] | 77.8 [3.06] | 55.5 [2.19] | 65.8 [2.59] |
| 20 | 1.2500 - 18UNEF | 37.2 [1.46] | 1.1875 - 18UNEF | 58.1 [2.29] | 74.0 [2.91] | 55.5 [2.19] | 66.1 [2.60] |
| 22 | 1.3750 - 18UNEF | 40.4 [1.59] | 1.1875 - 18UNEF | 58.1 [2.29] | 74.0 [2.91] | 55.5 [2.19] | 66.1 [2.60] |
| 24 | 1.5000 - 18UNEF | 43.5 [1.71] | 1.4375 - 18UNEF | 59.7 [2.35] | 76.7 [3.02] | 58.5 [2.30] | 65.7 [2.59] |
| 28 | 1.7500 - 18UNS | 49.9 [1.96] | 1.4375 - 18UNEF | 66.2 [2.61] | 83.2 [3.28] | 58.5 [2.30] | 66.2 [2.61] |
| 32 | 2.0000 - 18UNS | 56.0 [2.20] | 1.7500 - 18UNS | 71.3 [2.81] | 56.0 [2.20] | 58.5 [2.30] | 73.8 [2.91] |
| 36 | 2.2500 - 16UN | 62.5 [2.46] | 2.0000 - 18UNS | 76.8 [3.02] | 62.5 [2.46] | 58.5 [2.30] | 83.8 [3.30] |
| 40 | 2.5000 - 16UN | 69.0 [2.72] | 2.2500 - 16UN | 76.8 [3.02] | 69.0 [2.72] | 58.5 [2.30] | 83.8 [3.30] |

**Dimensions for Class G, GR and SP Only**

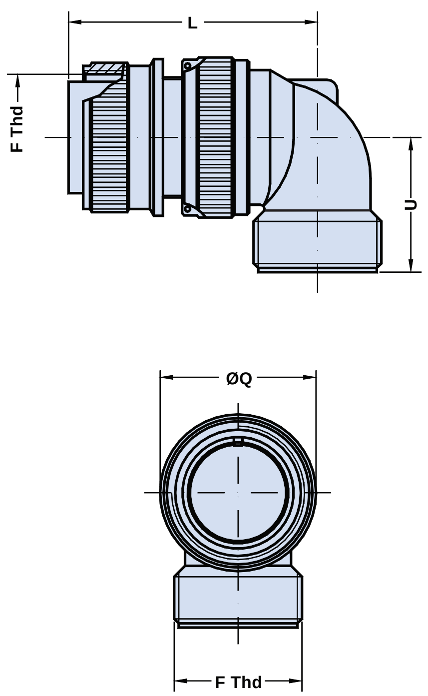
| Shell Size | A Thread | B Min | C ±0.1[0.00] | D ±0.2[.01] | E ±0.2[.01] | Ch. K K Key * | L Max | Li ±0.1[0.00] | Q ±0.2[0.1] |
|---|---|---|---|---|---|---|---|---|---|
| 10 SL | 0.6250 - 24UNEF | 8.5 [0.33] | 13.0 [0.51] | 15.5 [0.61] | 17.0 [0.67] | 20 [0.79] | 52.7 [2.07] | 8.2 [0.32] | 24.1 [0.95] |
| 12 S | 0.7500 - 20UNEF | 8.5 [0.33] | 13.0 [0.51] | 15.5 [0.61] | 17.0 [0.67] | 20 [0.79] | 52.7 [2.07] | 8.2 [0.32] | 25.0 [0.98] |
| 12 | 0.7500 - 20UNEF | 8.5 [0.33] | 13.0 [0.51] | 15.5 [0.61] | 17.0 [0.67] | 20 [0.79] | 57.5 [2.26] | 8.2 [0.32] | 25.0 [0.98] |
| 14 S | 0.8750 - 20UNEF | 12.0 [0.47] | 16.5 [0.65] | 19.1 [0.75] | 20.1 [0.79] | 23 [0.91] | 53.4 [2.10] | 8.2 [0.32] | 28.0 [1.10] |
| 14 | 0.8750 - 20UNEF | 12.0 [0.47] | 16.5 [0.65] | 19.1 [0.75] | 20.1 [0.79] | 23 [0.91] | 55.0 [2.17] | 8.2 [0.32] | 28.0 [1.10] |
| 16 S | 1.0000 - 20UNEF | 14.5 [0.57] | 21.5 [0.85] | 23.9 [0.94] | 23.5 [0.93] | 26 [1.02] | 53.4 [2.10] | 8.2 [0.32] | 31.5 [1.24] |
| 16 | 1.0000 - 20UNEF | 14.5 [0.57] | 21.5 [0.85] | 23.9 [0.94] | 23.5 [0.93] | 26 [1.02] | 65.8 [2.59] | 8.0 [0.31] | 31.5 [1.24] |
| 18 | 1.1250 - 18UNEF | 17.5 [0.69] | 21.7 [0.85] | 23.9 [0.94] | 26.5 [1.04] | 28 [1.10] | 65.8 [2.59] | 8.0 [0.31] | 34.0 [1.34] |
| 20 | 1.2500 - 18UNEF | 19.5 [0.77] | 26.0 [1.02] | 29.6 [1.17] | 30.5 [1.20] | 32 [1.26] | 66.1 [2.60] | 8.9 [0.35] | 37.2 [1.46] |
| 22 | 1.3750 - 18UNEF | 22.0 [0.87] | 26.0 [1.02] | 29.6 [1.17] | 33.6 [1.32] | 36 [1.42] | 66.1 [2.60] | 8.9 [0.35] | 40.4 [1.59] |
| 24 | 1.5000 - 18UNEF | 25.0 [0.98] | 34.5 [1.36] | 37.8 [1.49] | 36.1 [1.42] | 39 [1.54] | 65.7 [2.59] | 9.2 [0.36] | 43.5 [1.71] |
| 28 | 1.7500 - 18UNS | 29.0 [1.14] | 34.3 [1.35] | 37.8 [1.49] | 41.4 [1.63] | 46 [1.81] | 66.2 [2.61] | 9.2 [0.36] | 49.9 [1.96] |
| 32 | 2.0000 - 18UNS | 34.0 [1.34] | 43.6 [1.72] | 47.8 [1.88] | 48.6 [1.91] | 52 [2.05] | 73.8 [2.91] | 11.7 [0.46] | 56.0 [2.20] |
| 36 | 2.2500 - 16UN | 38.5 [1.52] | 43.6 [1.72] | 47.8 [1.88] | 54.8 [2.16] | 58 [2.28] | 83.8 [3.30] | 11.7 [0.46] | 62.5 [2.46] |
| 40 | 2.5000 - 16UN | 48.0 [1.89] | 52.6 [2.07] | 57.8 [2.28] | 60.9 [2.40] | 65 [2.56] | 83.8 [3.30] | 11.7 [0.46] | 69.0 [2.72] |

* Applies to styles GR and SP only

TOPSIDE: SEACROW™

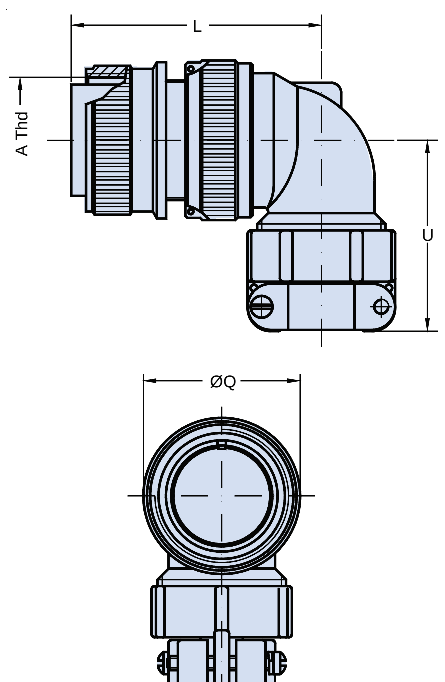
# IT-MB 90° plug assembly (08) - Dimensions

## IT 08 PLUG AND 90° BACKSHELL ASSEMBLY, ENVIRONMENTAL CLASS A AND R




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | A Thread | F Thread | L Max | Q ±0.2 | U ±0.2 |
| 10 SL | 0.6250 - 24UNEF | 0.6250 - 24UNEF | 40 [1.57] | 24.1 [0.95] | 25.0 [0.98] |
| 12 S | 0.7500 - 20UNEF | 0.6250 - 24UNEF | 40 [1.57] | 25.0 [0.98] | 25.0 [0.98] |
| 12 | 0.7500 - 20UNEF | 0.6250 - 24UNEF | 50 [1.97] | 25.0 [0.98] | 25.0 [0.98] |
| 14 S | 0.8750 - 20UNEF | 0.7500 - 20UNEF | 42 [1.65] | 28.0 [1.10] | 26.5 [1.04] |
| 14 | 0.8750 - 20UNEF | 0.7500 - 20UNEF | 52 [2.05] | 28.0 [1.10] | 26.5 [1.04] |
| 16 S | 1.0000 - 20UNEF | 0.8750 - 20UNEF | 46 [1.81] | 31.5 [1.24] | 27.0 [1.06] |
| 16 | 1.0000 - 20UNEF | 0.8750 - 20UNEF | 55 [2.17] | 31.5 [1.24] | 27.0 [1.06] |
| 18 | 1.1250 - 18UNEF | 1.0000 - 20UNEF | 57 [2.24] | 34.0 [1.34] | 30.0 [1.18] |
| 20 | 1.2500 - 18UNEF | 1.1875 - 18UNEF | 62 [2.44] | 37.2 [1.46] | 32.0 [1.26] |
| 22 | 1.3750 - 18UNEF | 1.1875 - 18UNEF | 62 [2.44] | 40.4 [1.59] | 32.0 [1.26] |
| 24 | 1.5000 - 18UNEF | 1.4375 - 18UNEF | 67 [2.64] | 43.5 [1.71] | 37.0 [1.46] |
| 28 | 1.7500 - 18UNS | 1.4375 - 18UNEF | 67 [2.64] | 49.9 [1.96] | 38.0 [1.50] |
| 32 | 2.0000 - 18UNS | 1.7500 - 18UNS | 72 [2.83] | 56.0 [2.20] | 45.5 [1.79] |
| 36 | 2.2500 - 16UN | 2.0000 - 18UNS | 75 [2.95] | 62.5 [2.46] | 47.2 [1.86] |
| 40 | 2.5000 - 16UN | 2.2500 - 16UN | 78 [3.07] | 69.0 [2.72] | 52.0 [2.05] |

## IT 08 PLUG AND 90° BACKSHELL ASSEMBLY WITH CABLE CLAMP, ENVIRONMENTAL CLASS F



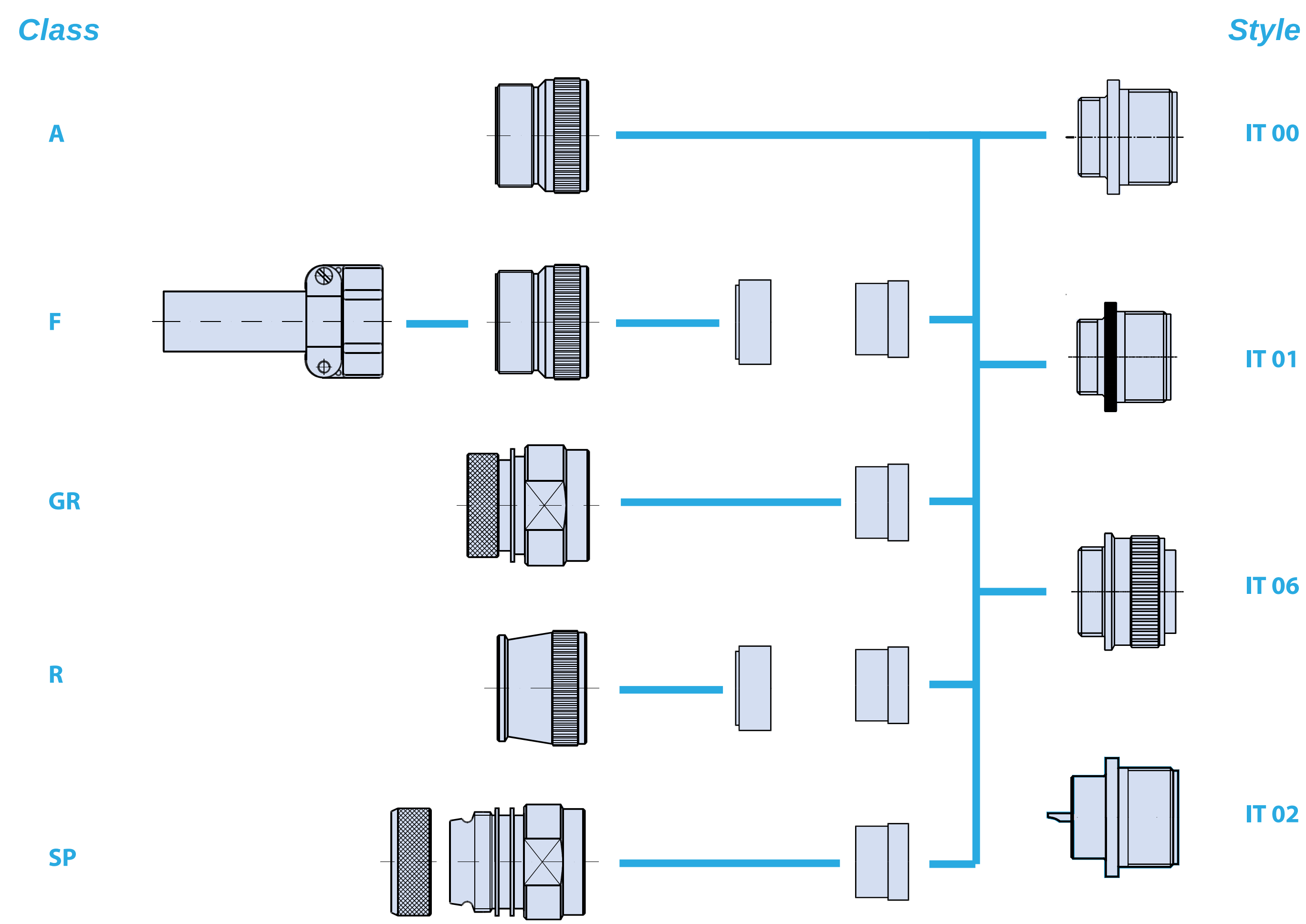

| Dimensions | | | | |
|---|---|---|---|---|
| Shell Size | A Thread | L Max | Q ±0.2 | U Max. |
| 10 SL | 0.6250 - 24UNEF | 40 [1.57] | 24.1 [0.95] | 36.0 [1.42] |
| 12 S | 0.7500 - 20UNEF | 40 [1.57] | 25.0 [0.98] | 36.0 [1.42] |
| 12 | 0.7500 - 20UNEF | 50 [1.97] | 25.0 [0.98] | 36.0 [1.42] |
| 14 S | 0.8750 - 20UNEF | 42 [1.65] | 28.0 [1.10] | 38.5 [1.52] |
| 14 | 0.8750 - 20UNEF | 52 [2.05] | 28.0 [1.10] | 38.5 [1.52] |
| 16 S | 1.0000 - 20UNEF | 46 [1.81] | 31.5 [1.24] | 41.0 [1.61] |
| 16 | 1.0000 - 20UNEF | 55 [2.17] | 31.5 [1.24] | 41.0 [1.61] |
| 18 | 1.1250 - 18UNEF | 57 [2.24] | 34.0 [1.34] | 50.0 [1.97] |
| 20 | 1.2500 - 18UNEF | 62 [2.44] | 37.2 [1.46] | 48.0 [1.89] |
| 22 | 1.3750 - 18UNEF | 62 [2.44] | 40.4 [1.59] | 48.0 [1.89] |
| 24 | 1.5000 - 18UNEF | 67 [2.64] | 43.5 [1.71] | 54.0 [2.13] |
| 28 | 1.7500 - 18UNS | 67 [2.64] | 49.9 [1.96] | 55.0 [2.17] |
| 32 | 2.0000 - 18UNS | 72 [2.83] | 56.0 [2.20] | 64.5 [2.54] |
| 36 | 2.2500 - 16UN | 75 [2.95] | 62.5 [2.46] | 67.2 [2.65] |
| 40 | 2.5000 - 16UN | 78 [3.07] | 69.0 [2.72] | 91.0 [3.58] |



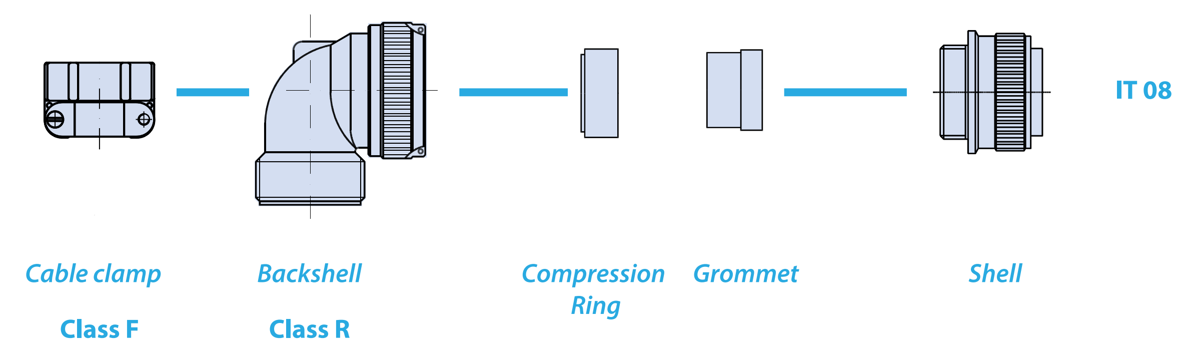





# Style and Class Configurations

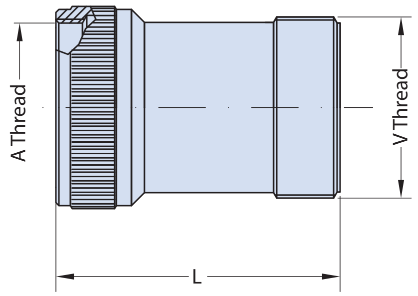


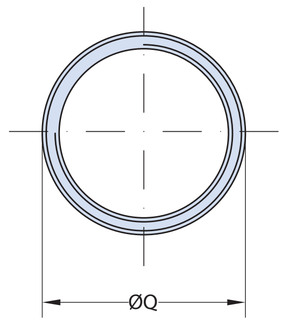

## 90° Plug Assemblies



## IT-MB Accessories

### IT 101393 EXTENDER BACKSHELL FOR PLUG CONNECTORS



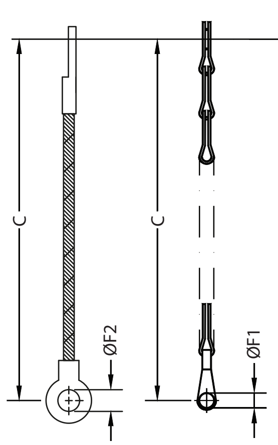




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Part Number | Shell Size | A Thread | L Max | Q ±0.2 | V Thread |
| IT 101393-123 | 10 SL | 0.6250 - 24UNEF | 36.0 [1.42] | 20.0 [0.79] | 0.6250 - 24UNEF |
| IT 101393-143 | 14 S | 0.7500 - 20UNEF | 50.0 [1.97] | 23.0 [0.91] | 0.7500 - 20UNEF |
| IT 101393-163 | 16 S | 0.8750 - 20UNEF | 50.0 [1.97] | 25.0 [0.98] | 0.8750 - 20UNEF |
| IT 101393-173 | 16 | 0.8750 - 20UNEF | 54.0 [2.13] | 25.0 [0.98] | 0.8750 - 20UNEF |
| IT 101393-183 | 18 | 1.0000 - 20UNEF | 56.0 [2.20] | 29.5 [1.16] | 1.0000 - 20UNEF |
| IT 101393-203 | 20 | 1.1250 - 18UNEF | 56.0 [2.20] | 32.0 [1.26] | 1.1875 - 18UNEF |
| IT 101393-223 | 22 | 1.2500 - 18UNEF | 56.0 [2.20] | 35.0 [1.38] | 1.1875 - 18UNEF |
| IT 101393-243 | 24 | 1.3750 - 18UNEF | 56.0 [2.20] | 38.5 [1.52] | 1.4375 - 18UNEF |
| IT 101393-283 | 28 | 1.6250 - 18UNEF | 61.0 [2.40] | 45.0 [1.77] | 1.4375 - 18UNEF |
| IT 101393-323 | 32 | 1.8750 - 16UN | 61.0 [2.40] | 53.2 [2.09] | 1.7500 - 18UNS |
| IT 101393-363 | 36 | 2.0625 - 16UN | 61.0 [2.40] | 57.4 [2.26] | 2.0000 - 18UNS |
| IT 101393-403 | 40 | 2.3125 - 16UN | 61.0 [2.40] | 63.2 [2.49] | 2.2500 - 16UN |

**How-To-Order**

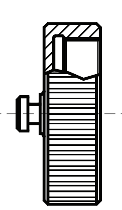
| IT | 101393-323 | MB |
|---|---|---|
| Series | Basic Part Number and Shell Size Designator See Dimensions Table | Marine Bronze Finish |

### IT 25042 PLUG COVER OR IT 25043 RECEPTACLECOVER

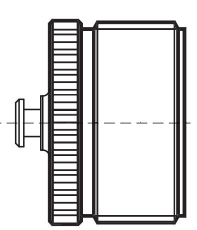



**Lanyard Options**

| TF | Omit |
|---|---|
| Wire Rope | Chain (Standard) |



**25043 Receptacle Cover**



**25042 Plug Cover**

IT Plug Cover How-to-Order

| IT | 25042-18D | MB |
|---|---|---|
| Series | 25042 = Chain<br>25043TF = SST Wire Rope | Marine Bronze Finish |

IT Receptacle Cover, How-to-Order

| IT | 25043-18D | MB |
|---|---|---|
| Series | 25043 = Chain<br>25043TF = SST Wire Rope | Marine Bronze Finish |

| Dimensions | | | | | |
|---|---|---|---|---|---|
| Part Number | Shell Size | C1 Min (Chain) | C2 Min (Wire Rope) | ØF1 * +0.25 -0.13 | ØF2** +0.25 -0.13 |
| IT 25043-10D | 10S - 10SL | 102 [4.02] | 193 [7.60] | 3.55 [0.14] | 4.30 |
| IT 25043-12D | 12 - 12S | 115 [4.53] | 193 [7.60] | 3.55 [0.14] | 4.30 |
| IT 25043-14D | 14 - 14S | 115 [4.53] | 193 [7.60] | 3.55 [0.14] | 4.30 |
| IT 25043-16D | 16 - 16S | 115 [4.53] | 193 [7.60] | 3.55 [0.14] | 4.30 |
| IT 25043-18D | 18 | 115 [4.53] | 193 [7.60] | 3.55 [0.14] | 4.30 |
| IT 25043-20D | 20 | 127 [5.00] | 193 [7.60] | 3.55 [0.14] | 4.30 |
| IT 25043-22D | 22 | 127 [5.00] | 193 [7.60] | 3.55 [0.14] | 4.30 |
| IT 25043-24D | 24 | 140 [5.51] | 193 [7.60] | 4.30 [0.17] | 4.30 |
| IT 25043-28D | 28 | 197 [7.76] | 193 [7.60] | 4.30 [0.17] | 5.30 |
| IT 25043-32D | 32 | 197 [7.76] | 193 [7.60] | 4.80 [0.19] | 5.30 |
| IT 25043-36D | 36 | 197 [7.76] | 193 [7.60] | 4.80 [0.19] | 5.30 |
| IT 25043 - 40D | 40 | 197 [7.76] | 193 [7.60] | 4.80 [0.19] | 5.30 |

* Chain Eyelet ** Wire Rope Eyelet







Seacrow™
SEACROW MARINE BRONZE
Topside / Shipboard Environmental Connectors
Glenair.

## IPT-MB marine bronze connectors

### IPT-MB MIL-C-26482 BAYONET TYPE / VG95328 COMPLIANT MARINE BRONZE SERIES

IPT-MB connectors are the choice for reliability when 20-16 AWG signal cables are used. The insert arrangements as well as the electrical characteristics are detailed in the IPT IPT-SE Catalogue. Backshells suitable for EMI shield terminations and heat shrink boots are also available. The receptacle is also available with PCB contacts. IP67 protection is standard, IP68 upon request.

| IPT-MB How To Order | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Part Number | IPT | G | 06 | A | 18-11 | P | X | C | MB |
| Series | IPT = MIL-C-26482 Ser. I, bayonet-lock with polychloroprene insert | | | | | | | | |
| Plug Grounding Fingers | G = Grounding fingers; omit for none (Plug Only) | | | | | | | | |
| Shell Style | See shell style table | | | | | | | | |
| Environmental Class | See environmental class table | | | | | | | | |
| Shell Size / Arrangement | See insert arrangement table | | | | | | | | |
| Contact Gender | P = Pin S = Socket | | | | | | | | |
| Alternate Rotation | See alterernate positions table | | | | | | | | |
| Contact Type | C = Crimp; omit for solder cup | | | | | | | | |
| Material/Finish | MB = Marine Bronze | | | | | | | | |

| Shell Styles | | | |
|---|---|---|---|
| Code | Receptacle Descriptions | Code | Plug Descriptions |
| 00 | Front panel mount square flange receptacle with accessory threads | 06 | Straight cylindrical plug connector with accessory threads |
| 01 | In-line cylindrical receptacle with accessory threads | 08 | Cylindrical plug connector with 90° backshell |
| 02 | Front panel mount square flange receptacle—no accessory threads | | |
| 07 | Rear panel mount jam nut receptacle—no accessory threads | | |

| Environmental Class | |
|---|---|
| A | Connector/backshell assembly does not include a wire sealing grommet |
| E, G, M | Connector/backshell assembly includes a wire sealing grommet |
| W, J | Connector backshell assembly includes an overall cable sealing gland |

### SHELL STYLE AND ENVIRONMENTAL CLASS MATRIX

| | Environmental Classes | | | | | |
|---|---|---|---|---|---|---|
| Shell Style | A | E | G | M | W | J |
| 00 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 01 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 02 | Not Applicable | | | | | |
| 07 | Not Applicable | | | | | |
| 06 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 08 | | | | ✓ | | |

*SEACROW MARINE BRONZE (MB)*

# Topside / Shipboard Environmental Connectors

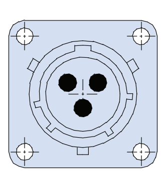
## Insert arrangements and alternate insert positions

| Insert Arrangement Table | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size/ Arrangement | Cl. Isol. Rating | Contact Size | | | | | |
| | | 20S | 20 | 16S | 16 | 12S | 12 |
| 8-2 | I | 2 | | | | | |
| 8-3 | I | 3 | | | | | |
| 8-3A | I | 3 | | | | | |
| 8-4 | I | 4 | | | | | |
| 8-33 | I | 3 | | | | | |
| 10-2 | II | | | 2 | | | |
| 10-6 | I | 6 | | | | | |
| 10-7 | I | 7 | | | | | |
| 10-8 | I | 8 | | | | | |
| 10-98 | I | 6 | | | | | |
| 12-3 | II | | | 3 | | | |
| 12-4 | I | | | 4 | | | |
| 12-8 | I | 8 | | | | | |
| 12-10 | I | 10 | | | | | |
| 12-14 | I | 14 | | | | | |
| 12-A6 | I | | | 6 | | | |
| 14-4 | I | | | | | 4 | |
| 14-5 | II | | | 5 | | | |
| 14-12 | I | 8 | | 4 | | | |
| 14-12/3 | II | | | 12 | | | |
| 14-14* | I | 14 | | | | | |
| 14-15 | I | 14 | | 1 | | | |
| 14-18 | I | 18 | | | | | |
| 14-19 | I | 19 | | | | | |
| 16-2** | I | | | | 2 x 16-2.5 | | |
| 16-8 | II | | | 8 | | | |
| 16-23 | I | 22 | | 1 | | | |
| 16-26 | I | 26 | | | | | |
| 16-99 | I | 21 | | 2 | | | |
| 18-11 | II | | | 11 | | | |
| 18-32 | I | 32 | | | | | |
| 20-16 | II | | | | 16 | | |
| 20-39* | I | | 37 | | 2 | | |
| 20-41 | I | | 41 | | | | |
| 22-21* | II | | | | 21 | | |
| 22-36 | I | | 36 | | | | |
| 22-41 | I | | 27 | | 14 | | |
| 22-55 | I | | 55 | | | | |
| 22-95 | I | | 26 | | | | 6 |
| 24-61 | I | | 61 | | | | |

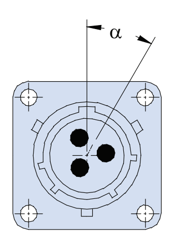
| Alternate Positions | | | | |
|---|---|---|---|---|
| Shell Size/ Arrangement | Degrees | | | |
| | W | X | Y | Z |
| 8-2 | 58 | 122 | | |
| 8-3 | 60 | 210 | | |
| 8-3A | | 60 | | |
| 8-4 | 45 | | | |
| 8-33 | 90 | | | |
| 10-2 | | | | |
| 10-6 | 90 | | | |
| 10-7 | 90 | | | |
| 10-8 | | | | |
| 10-98 | 90 | 180 | 240 | 270 |
| 12-3 | | | 180 | |
| 12-4 | 38 | | | |
| 12-8 | 90 | 112 | 203 | 292 |
| 12-10 | 60 | 155 | 270 | 295 |
| 12-14 | 60 | 155 | 270 | 295 |
| 12-A6 | | | | |
| 14-4 | 45 | | | |
| 14-5 | 40 | 92 | 184 | 273 |
| 14-12 | 43 | 90 | | |
| 14-12/3 | | | | |
| 14-14 | 17 | 110 | 155 | 234 |
| 14-15 | 17 | 110 | 155 | 234 |
| 14-18 | 15 | 90 | 180 | 270 |
| 14-19 | 30 | 165 | 315 | |
| 16-2** | | | | |
| 16-8 | 54 | 152 | 180 | 331 |
| 16-23 | 158 | 270 | | |
| 16-26 | 60 | | 275 | 338 |
| 16-99 | 66 | 156 | 223 | 340 |
| 18-11 | 62 | 119 | 241 | 340 |
| 18-32 | 85 | 138 | 222 | 265 |
| 20-16 | 238 | 318 | 333 | 347 |
| 20-39 | 63 | 144 | 252 | 333 |
| 20-41 | 45 | 126 | 225 | |
| 22-21 | 16 | 135 | 175 | 349 |
| 22-36 | 72 | 144 | 216 | 288 |
| 22-41 | 39 | 135 | 264 | |
| 22-55 | 30 | 142 | 226 | 314 |
| 22-95 | 26 | 180 | 266 | |
| 24-61 | 90 | 180 | 270 | 324 |

* Consult Factory
** Supplied only for classes without grommet

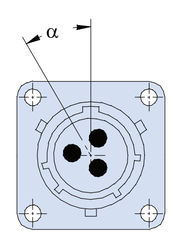
The 3 mating pins are 120° spaced.
All pictures show a receptacle connector.
The key orientation on plug connectors is clockwise.
IAW BS9522 F0017.



Normal Position




Alternate Insert Position with Pin Contacts




Alternate Insert Position with Socket Contacts

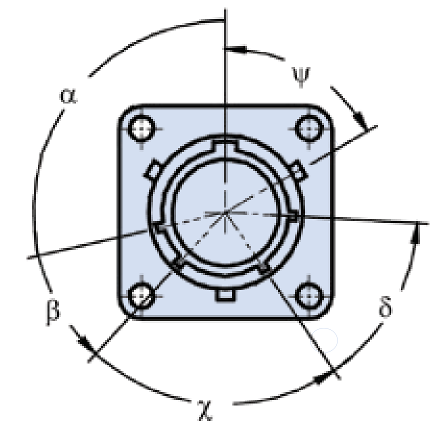
**TOPSIDE:** SEACROW™







## IPT Series Alternate Keyway Positions




| Shell size | N Polarization | | | | |
|---|---|---|---|---|---|
| | α | β | χ | δ | ψ |
| 8 | 105 | 35 | 75 | 50 | 60 |
| 10 | 105 | 35 | 75 | 50 | 60 |
| 12 | 105 | 35 | 75 | 50 | 60 |
| 14 | 105 | 35 | 75 | 50 | 60 |
| 16 | 105 | 35 | 75 | 50 | 60 |
| 18 | 105 | 35 | 75 | 50 | 60 |
| 20 | 105 | 35 | 75 | 50 | 60 |
| 22 | 105 | 35 | 75 | 50 | 60 |
| 24 | 105 | 35 | 75 | 50 | 60 |

| Shell size | B Polarization | | | | |
|---|---|---|---|---|---|
| | α | β | χ | δ | ψ |
| 8 | - | - | - | - | - |
| 10 | 85 | 35 | 75 | 50 | 40 |
| 12 | 89 | 35 | 75 | 50 | 44 |
| 14 | 91 | 35 | 75 | 50 | 46 |
| 16 | 93 | 35 | 75 | 50 | 48 |
| 18 | 95 | 35 | 75 | 50 | 50 |
| 20 | 95 | 35 | 75 | 50 | 50 |
| 22 | 97 | 35 | 75 | 50 | 52 |
| 24 | 97 | 35 | 75 | 50 | 52 |

| Shell size | C Polarization | | | | |
|---|---|---|---|---|---|
| | α | β | χ | δ | ψ |
| 8 | - | - | - | - | - |
| 10 | 125 | 35 | 75 | 50 | 80 |
| 12 | 121 | 35 | 75 | 50 | 76 |
| 14 | 119 | 35 | 75 | 50 | 74 |
| 16 | 117 | 35 | 75 | 50 | 72 |
| 18 | 115 | 35 | 75 | 50 | 70 |
| 20 | 115 | 35 | 75 | 50 | 70 |
| 22 | 113 | 35 | 100 | 50 | 68 |
| 24 | 113 | 35 | 75 | 50 | 68 |

| Shell size | E Polarization | | | | |
|---|---|---|---|---|---|
| | α | β | χ | δ | ψ |
| 8 | 118 | 30 | 100 | 30 | 73 |
| 10 | 115 | 30 | 100 | 30 | 70 |
| 12 | 115 | 30 | 100 | 30 | 70 |
| 14 | 75 | 30 | 100 | 30 | 30 |
| 16 | 75 | 30 | 100 | 30 | 30 |
| 18 | 75 | 30 | 100 | 30 | 30 |
| 20 | 75 | 30 | 100 | 30 | 30 |
| 22 | 75 | 30 | 75 | 30 | 30 |
| 24 | 75 | 30 | 100 | 30 | 30 |

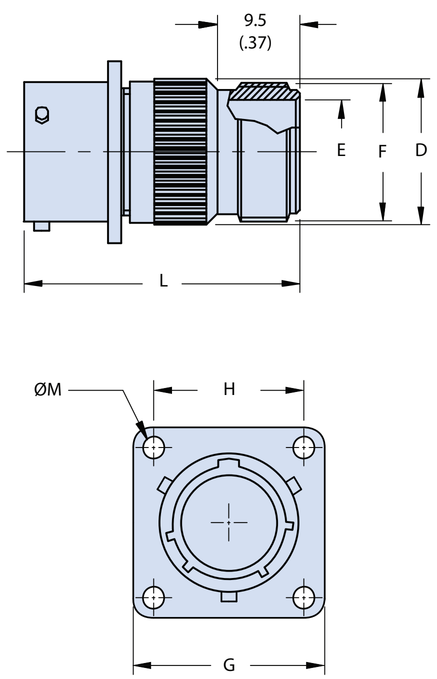
| Shell size | F Polarization | | | | |
|---|---|---|---|---|---|
| | α | β | χ | δ | ψ |
| 8 | 82 | 50 | 75 | 45 | 47 |
| 10 | 85 | 50 | 75 | 45 | 50 |
| 12 | 85 | 50 | 75 | 45 | 50 |
| 14 | 120 | 50 | 75 | 35 | 75 |
| 16 | 120 | 50 | 75 | 35 | 75 |
| 18 | 120 | 50 | 75 | 35 | 75 |
| 20 | 120 | 50 | 75 | 35 | 75 |
| 22 | 120 | 50 | 75 | 35 | 75 |
| 24 | 120 | 50 | 75 | 35 | 75 |

Mating Pins are spaced 120°.
Picture Shows a receptacle connector.
Key orientation on plug connectors is clockwise.
IAW BS9522 F0017

**TOPSIDE:** SEACROW™

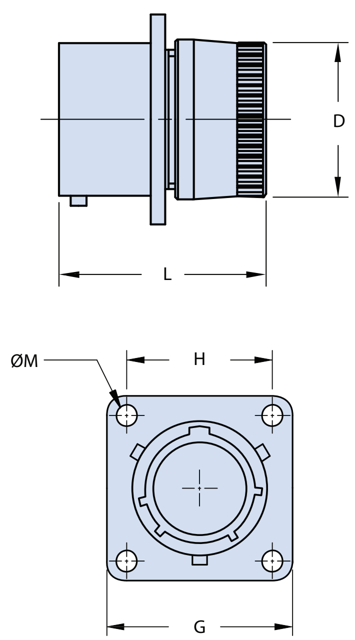
## IPT 00 wall mount receptacle - Dimensions

### IPT 00 WITH CLASS A BACKSHELL




| Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size | D Max. | E Min. | F Thread | G ±0.4[.02] | H ±0.1[0.00] | Ø M +0.1[0.00] 0[0.00] | L Max |
| 8 | 15.00 [0.59] | 7.55 [0.30] | .5000 - 28 UNEF | 20.6 [0.81] | 15.10 [0.59] | 3.04 [0.12] | 45.9 [1.81] |
| 10 | 18.20 [0.72] | 10.70 [0.42] | .6250 - 24 UNEF | 23.8 [0.94] | 18.25 [0.72] | 3.04 [0.12] | 45.9 [1.81] |
| 12 | 21.20 [0.83] | 13.85 [0.55] | .7500 - 20 UNEF | 26.2 [1.03] | 20.60 [0.81] | 3.04 [0.12] | 45.9 [1.81] |
| 14 | 24.60 [0.97] | 16.85 [0.66] | .8750 - 20 UNEF | 28.6 [1.13] | 23.00 [0.91] | 3.04 [0.12] | 45.9 [1.81] |
| 16 | 27.60 [1.09] | 20.00 [0.79] | 1.0000 - 20 UNEF | 31.0 [1.22] | 24.60 [0.97] | 3.04 [0.12] | 45.9 [1.81] |
| 18 | 30.90 [1.22] | 22.30 [0.88] | 1.1875 - 18 UNEF | 33.3 [1.31] | 27.00 [1.06] | 3.04 [0.12] | 45.9 [1.81] |
| 20 | 33.80 [1.33] | 25.75 [1.01] | 1.1875 - 18 UNEF | 36.5 [1.44] | 29.40 [1.16] | 3.04 [0.12] | 50.0 [1.97] |
| 22 | 37.10 [1.46] | 28.80 [1.13] | 1.4375 - 18 UNEF | 39.7 [1.56] | 31.75 [1.25] | 3.04 [0.12] | 50.0 [1.97] |
| 24 | 40.25 [1.58] | 32.00 [1.26] | 1.4375 - 18 UNEF | 42.8 [1.69] | 34.92 [1.37] | 3.73 [0.15] | 50.0 [1.97] |

### IPT 00 WITH CLASS E BACKSHELL




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | D Max | G ±0.4[.02] | H ±0.1 | ØM +0.1[0.00] 0[0.00] | L Max |
| 8 | 14.20 [0.56] | 20.6 [0.81] | 15.10 [0.59] | 3.04 [0.12] | 32.15 [1.27] |
| 10 | 17.40 [0.69] | 23.8 [0.94] | 18.25 [0.72] | 3.04 [0.12] | 32.15 [1.27] |
| 12 | 20.65 [0.81] | 26.2 [1.03] | 20.60 [0.81] | 3.04 [0.12] | 32.15 [1.27] |
| 14 | 23.60 [0.93] | 28.6 [1.13] | 23.00 [0.91] | 3.04 [0.12] | 32.15 [1.27] |
| 16 | 26.85 [1.06] | 31.0 [1.22] | 24.60 [0.97] | 3.04 [0.12] | 32.15 [1.27] |
| 18 | 29.85 [1.18] | 33.3 [1.31] | 27.00 [1.06] | 3.04 [0.12] | 32.15 [1.27] |
| 20 | 33.00 [1.30] | 36.5 [1.44] | 29.40 [1.16] | 3.04 [0.12] | 38.50 [1.52] |
| 22 | 36.30 [1.43] | 39.7 [1.56] | 31.75 [1.25] | 3.04 [0.12] | 38.50 [1.52] |
| 24 | 39.50 [1.56] | 42.8 [1.69] | 34.92 [1.37] | 3.73 [0.15] | 40.10 [1.58] |

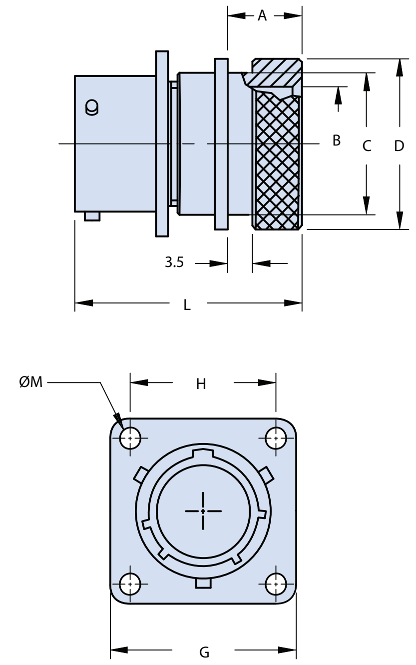
TOPSIDE: SEACROW™



Dimensions in millimeters [inches] are subject to change without notice.

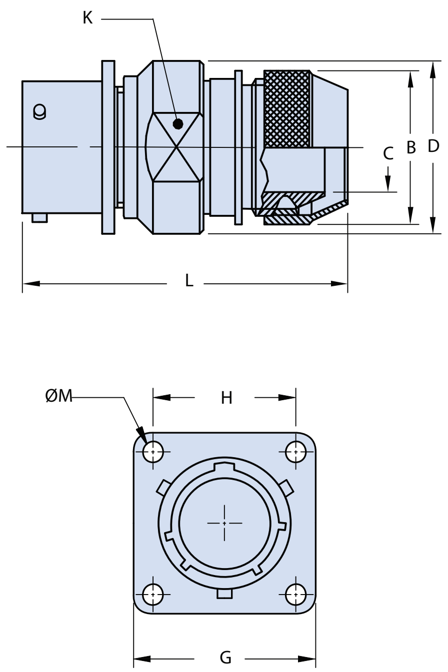
SEACROW MARINE BRONZE (MB)
Topside / Shipboard Environmental Connectors
IPT 00 wall mount receptacle - Dimensions

### IPT 00 WITH CLASS G BACKSHELL




| Dimensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Shell Size | A ±0.1 | B +0.1 -0 | C +0 -0.1 | D +0 -0.3 | G ±0.4 | H ±0.1 | ØM +0.1 0 | L Max |
| 8 | 12.2 (0.48) | 8.20 (0.32) | 13.0 (0.51) | 15.5 (0.61) | 20.6 (0.81) | 15.10 (0.59) | 3.04 (0.12) | 43.5 (1.71) |
| 10 | 12.2 (0.48) | 11.40 (0.45) | 15.8 (0.62) | 18.3 (0.72) | 23.8 (0.94) | 18.25 (0.72) | 3.04 (0.12) | 42.0 (1.65) |
| 12 | 12.2 (0.48) | 14.55 (0.57) | 21.0 (0.83) | 23.6 (0.93) | 26.2 (1.03) | 20.60 (0.81) | 3.04 (0.12) | 42.0 (1.65) |
| 14 | 12.2 (0.48) | 17.50 (0.69) | 21.8 (0.86) | 24.4 (0.96) | 28.6 (1.13) | 23.00 (0.91) | 3.04 (0.12) | 42.0 (1.65) |
| 16 | 14.5 (0.57) | 20.60 (0.81) | 25.9 (1.02) | 29.7 (1.17) | 31.0 (1.22) | 24.60 (0.97) | 3.04 (0.12) | 44.0 (1.73) |
| 18 | 14.5 (0.57) | 23.15 (0.91) | 28.2 (1.11) | 31.9 (1.26) | 33.3 (1.31) | 27.00 (1.06) | 3.04 (0.12) | 44.5 (1.75) |
| 20 | 15.8 (0.62) | 26.50 (1.04) | 32.2 (1.27) | 36.0 (1.42) | 36.5 (1.44) | 29.40 (1.16) | 3.04 (0.12) | 48.5 (1.91) |
| 22 | 15.8 (0.62) | 29.60 (1.17) | 34.5 (1.36) | 38.4 (1.51) | 39.7 (1.56) | 31.75 (1.25) | 3.04 (0.12) | 48.5 (1.91) |
| 24 | 14.9 (0.59) | 32.80 (1.29) | 37.6 (1.48) | 41.5 (1.63) | 42.8 (1.69) | 34.92 (1.37) | 3.73 (0.15) | 48.5 (1.91) |

### IPT 00 WITH CLASS M BACKSHELL




| Dimensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Shell Size | D +0[0.00] -1[.01] | B +0.58[.02] 0[0.00] | C Min | G ±0.4[.02] | H ±0.1[0.00] | ØM +0.1[0.00] 0[0.00] | L Max | K Key |
| 8 | 14.0 (0.55) | 16 (0.63) | 6.6 (0.26) | 20.6 (0.81) | 15.10 (0.59) | 3.04 (0.12) | 52.0 (2.05) | 18 (0.71) |
| 10 | 16.0 (0.63) | 18 (0.71) | 9.2 (0.36) | 23.8 (0.94) | 18.25 (0.72) | 3.04 (0.12) | 52.0 (2.05) | 21 (0.83) |
| 12 | 20.0 (0.79) | 22 (0.87) | 12.2 (0.48) | 26.2 (1.03) | 20.60 (0.81) | 3.04 (0.12) | 52.0 (2.05) | 24 (0.94) |
| 14 | 23.0 (0.91) | 25 (0.98) | 15.2 (0.60) | 28.6 (1.13) | 23.00 (0.91) | 3.04 (0.12) | 53.0 (2.09) | 28 (1.10) |
| 16 | 26.0 (1.02) | 28 (1.10) | 18.3 (0.72) | 31.0 (1.22) | 24.60 (0.97) | 3.04 (0.12) | 53.0 (2.09) | 31 (1.22) |
| 18 | 28.5 (1.12) | 32 (1.26) | 20.0 (0.79) | 33.3 (1.31) | 27.00 (1.06) | 3.04 (0.12) | 53.0 (2.09) | 34 (1.34) |
| 20 | 30.5 (1.20) | 34 (1.34) | 23.0 (0.91) | 36.5 (1.44) | 29.40 (1.16) | 3.04 (0.12) | 57.0 (2.24) | 37 (1.46) |
| 22 | 34.5 (1.36) | 38 (1.50) | 26.0 (1.02) | 39.7 (1.56) | 31.75 (1.25) | 3.04 (0.12) | 57.0 (2.24) | 41 (1.61) |
| 24 | 37.5 (1.48) | 41 (1.61) | 28.8 (1.13) | 42.8 (1.69) | 34.92 (1.37) | 3.73 (0.15) | 58.5 (2.30) | 44 (1.73) |

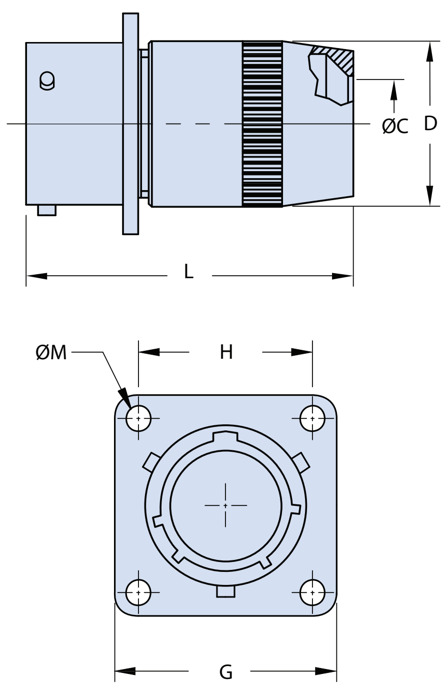
TOPSIDE: SEACROW™


Dimensions in millimeters [inches] are subject to change without notice.

# IPT 00 wall mount receptacle - Dimensions



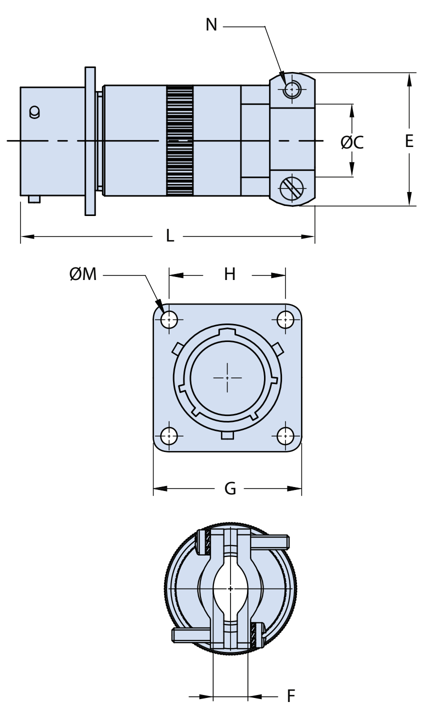
## IPT 00 WITH CLASS W BACKSHELL




| Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size | Ø C open | Ø C closed | D Max | G±0.4 | H ±0.1 | Ø M +0.1[0.00] 0[0.00] | L Max |
| 8 | 5.85 [0.23] | 4.5 [0.18] | 13.90 [0.55] | 20.6 [0.81] | 15.10 [0.59] | 3.04 [0.12] | 47.5 [1.87] |
| 10 | 7.9 [0.31] | 5.6 [0.22] | 17.15 [0.68] | 23.8 [0.94] | 18.25 [0.72] | 3.04 [0.12] | 47.5 [1.87] |
| 12 | 11.25 [0.44] | 8.6 [0.34] | 20.60 [0.81] | 26.2 [1.03] | 20.60 [0.81] | 3.04 [0.12] | 47.5 [1.87] |
| 14 | 13.7 [0.54] | 10.2 [0.40] | 23.90 [0.94] | 28.6 [1.13] | 23.00 [0.91] | 3.04 [0.12] | 55.5 [2.19] |
| 16 | 15 [0.59] | 12.5 [0.49] | 27.50 [1.08] | 31.0 [1.22] | 24.60 [0.97] | 3.04 [0.12] | 61.0 [2.40] |
| 18 | 16.5 [0.65] | 13.5 [0.53] | 30.90 [1.22] | 33.3 [1.31] | 27.00 [1.06] | 3.04 [0.12] | 68.0 [2.68] |
| 20 | 18.5 [0.73] | 15 [0.59] | 34.10 [1.34] | 36.5 [1.44] | 29.40 [1.16] | 3.04 [0.12] | 78.5 [3.09] |
| 22 | 21.5 [0.85] | 18 [0.71] | 37.50 [1.48] | 39.7 [1.56] | 31.75 [1.25] | 3.04 [0.12] | 83.0 [3.27] |
| 24 | 22.7 [0.89]* | 18.8 [0.74]* | 40.30 [1.59] | 42.8 [1.69] | 34.92 [1.37] | 3.73 [0.15] | 90.0 [3.54] |

* Consult the factory.

## IPT 00 WITH CLASS J BACKSHELL




| Dimensions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Shell Size | ØC Open | ØC Closed | F** ±0.75[.03] | E ±0.2[.01] | G ±0.2[.01] | H ±0.1[.01] | ØM +0.1[0.00] 0[0.00] | L Max. | N Thd |
| 8 | 5.85 [0.23] | 4.5 [0.18] | 4 [0.16] | 19.10 [0.75] | 20.6 [0.81] | 15.10 [0.59] | 3.04 [0.12] | 56 [2.20] | 6-32 |
| 10 | 7.9 [0.31] | 5.6 [0.22] | 4 [0.16] | 20.70 [0.81] | 23.8 [0.94] | 18.25 [0.72] | 3.04 [0.12] | 56 [2.20] | 6-32 |
| 12 | 11.25 [0.44] | 8.6 [0.34] | 6.4 [0.25] | 23.90 [0.94] | 26.2 [1.03] | 20.60 [0.81] | 3.04 [0.12] | 59 [2.32] | 6-32 |
| 14 | 13.7 [0.54] | 10.2 [0.40] | 7.5 [0.30] | 27.00 [1.06] | 28.6 [1.13] | 23.00 [0.91] | 3.04 [0.12] | 66 [2.60] | 6-32 |
| 16 | 15 [0.59] | 12.5 [0.49] | 8.3 [0.33] | 28.60 [1.13] | 31.0 [1.22] | 24.60 [0.97] | 3.04 [0.12] | 72 [2.83] | 6-32 |
| 18 | 16.5 [0.65] | 13.5 [0.53] | 11.3 [0.44] | 35.00 [1.38] | 33.3 [1.31] | 27.00 [1.06] | 3.04 [0.12] | 79 [3.11] | 8-32 |
| 20 | 18.5 [0.73] | 15 [0.59] | 12.7 [0.50] | 35.00 [1.38] | 36.5 [1.44] | 29.40 [1.16] | 3.04 [0.12] | 90 [3.54] | 8-32 |
| 22 | 21.5 [0.85] | 18 [0.71] | 16.3 [0.64] | 39.75 [1.56] | 39.7 [1.56] | 31.75 [1.25] | 3.04 [0.12] | 95 [3.74] | 8-32 |
| 24 | 22.7 [0.89]* | 18.8 [0.74]* | 16.3 [0.64] | 42.10 [1.66] | 42.8 [1.69] | 34.92 [1.37] | 3.73 [0.15] | 102 [4.02] | 8-32 |

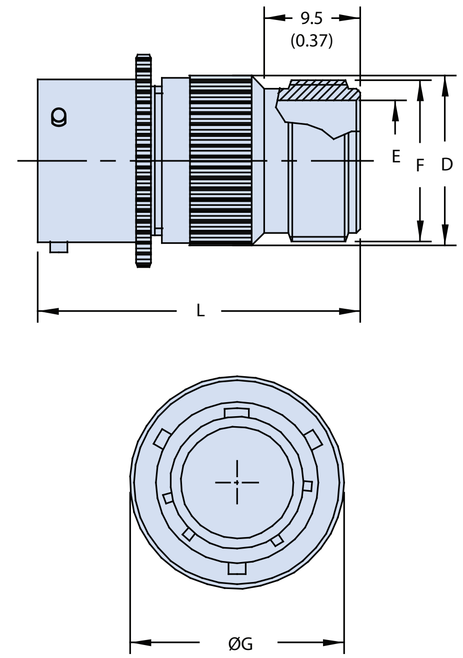
* Consult the factory.
** Cable clamp cleats fully cosed.




SEACROW MARINE BRONZE (MB)
Topside / Shipboard Environmental Connectors

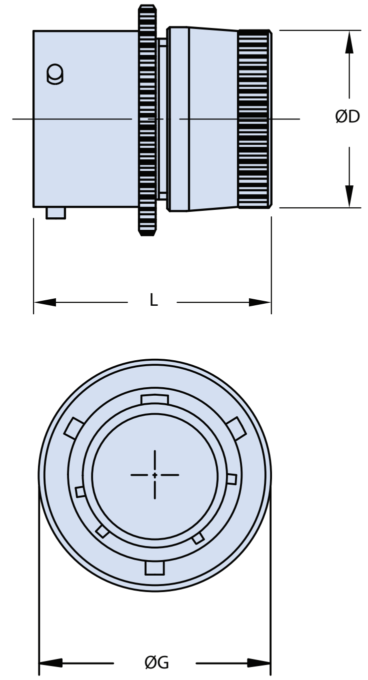
# IPT 01 in-line receptacle - Dimensions

## IPT 01 WITH CLASS A BACKSHELL



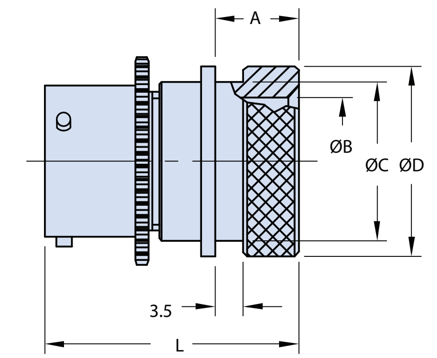

| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | D Max | E Min | F Thread (inhes) | Ø G ± 0.2 [.01] | L Max |
| 8 | 15.00 (0.59) | 7.55 (0.30) | .5000 - 28 UNEF | 17.3 (0.68) | 45.9 (1.81) |
| 10 | 18.20 (0.72) | 10.70 (0.42) | .6250 - 24 UNEF | 21.8 (0.86) | 45.9 (1.81) |
| 12 | 21.20 (0.83) | 13.85 (0.55) | .7500 - 20 UNEF | 25.1 (0.99) | 45.9 (1.81) |
| 14 | 24.60 (0.97) | 16.85 (0.66) | .8750 - 20 UNEF | 28.6 (1.13) | 45.9 (1.81) |
| 16 | 27.60 (1.09) | 20.00 (0.79) | 1.0000 - 20 UNEF | 30.6 (1.20) | 45.9 (1.81) |
| 18 | 30.90 (1.22) | 22.30 (0.88) | 1.1875 - 18 UNEF | 33.2 (1.31) | 45.9 (1.81) |
| 20 | 33.80 (1.33) | 25.75 (1.01) | 1.1875 - 18 UNEF | 36.5 (1.44) | 50.0 (1.97) |
| 22 | 37.10 (1.46) | 28.80 (1.13) | 1.4375 - 18 UNEF | 39.6 (1.56) | 50.0 (1.97) |
| 24 | 40.25 (1.58) | 32.00 (1.26) | 1.4375 - 18 UNEF | 43.1 (1.70) | 50.0 (1.97) |

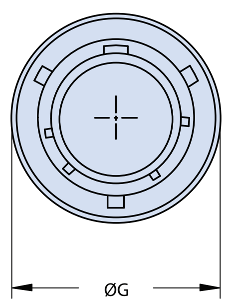
## IPT 01 WITH CLASS E BACKSHELL




| Dimensions | | | |
|---|---|---|---|
| Shell Size | Ø D Max. | Ø G ±0.2[.01] | L Max. |
| 8 | 15.44 [0.61] | 17.3 [0.68] | 32.15 [1.27] |
| 10 | 18.64 [0.73] | 21.8 [0.86] | 32.15 [1.27] |
| 12 | 21.79 [0.86] | 25.1 [0.99] | 32.15 [1.27] |
| 14 | 25.00 [0.98] | 28.6 [1.13] | 32.15 [1.27] |
| 16 | 28.19 [1.11] | 30.6 [1.20] | 32.15 [1.27] |
| 18 | 31.34 [1.23] | 33.2 [1.31] | 32.15 [1.27] |
| 20 | 34.54 [1.36] | 36.5 [1.44] | 38.50 [1.52] |
| 22 | 37.69 [1.48] | 39.6 [1.56] | 38.50 [1.52] |
| 24 | 40.89 [1.61] | 43.1 [1.70] | 40.10 [1.58] |

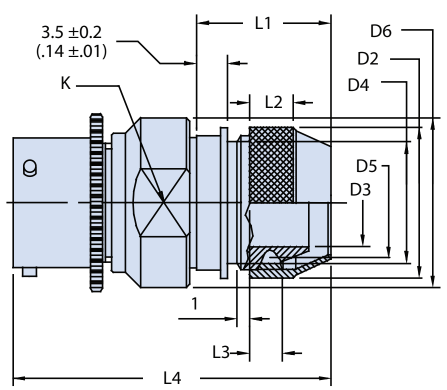
## IPT 01 WITH CLASS G BACKSHELL

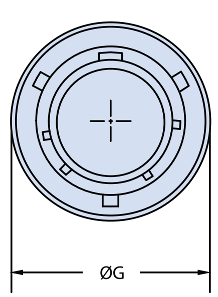



| Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | A ±0.7[.03] | Ø B +0.1[0.00] -0[0.00] | ØC +0[0.00] -0.1[0.00] | ØD +0[0.00] -0.3[.01] | L Max | ØG ±0.2[.01] |
| 8 | 12.2 [0.48] | 8.20 [0.32] | 13.0 [0.51] | 15.5 [0.61] | 43.5 [1.71] | 17.3 [0.68] |
| 10 | 12.2 [0.48] | 11.40 [0.45] | 15.8 [0.62] | 18.3 [0.72] | 42.0 [1.65] | 21.8 [0.86] |
| 12 | 12.2 [0.48] | 14.55 [0.57] | 21.0 [0.83] | 23.6 [0.93] | 42.0 [1.65] | 25.1 [0.99] |
| 14 | 12.2 [0.48] | 17.50 [0.69] | 21.8 [0.86] | 24.4 [0.96] | 42.0 [1.65] | 28.6 [1.13] |
| 16 | 14.5 [0.57] | 20.60 [0.81] | 25.9 [1.02] | 29.7 [1.17] | 44.0 [1.73] | 30.6 [1.20] |
| 18 | 14.5 [0.57] | 23.15 [0.91] | 28.2 [1.11] | 31.9 [1.26] | 44.5 [1.75] | 33.2 [1.31] |
| 20 | 15.8 [0.62] | 26.50 [1.04] | 32.2 [1.27] | 36.0 [1.42] | 48.5 [1.91] | 36.5 [1.44] |
| 22 | 15.8 [0.62] | 29.60 [1.17] | 34.5 [1.36] | 38.4 [1.51] | 48.5 [1.91] | 39.6 [1.56] |
| 24 | 14.9 [0.59] | 32.80 [1.29] | 37.6 [1.48] | 41.5 [1.63] | 48.5 [1.91] | 43.1 [1.70] |

## IPT 01 WITH CLASS M BACKSHELL




| Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | K Key | ØG ±0.2 [.01] | D2 +0.5[.02] -0[0.00] | D3 Min | D4 | D5 | D6 Max | L1 +0[0.00] -2.5[.10] | L2 +1.5[.06] -0[0.00] | L3 Min | L4 Max |
| 8 | 18 [0.71] | 17.3 [0.68] | 16 [0.63] | 6.6 [0.26] | 13.5 [0.53] | M14x1 | 20 [0.79] | 17 [0.67] | 5 [0.20] | 4 [0.16] | 55 [2.17] |
| 10 | 21 [0.83] | 21.8 [0.86] | 18 [0.71] | 9.2 [0.36] | 16.0 [0.63] | M16x1 | 23 [0.91] | 17 [0.67] | 5 [0.20] | 4 [0.16] | 55 [2.17] |
| 12 | 24 [0.94] | 25.1 [0.99] | 22 [0.87] | 12.2 [0.48] | 20.0 [0.79] | M20x1 | 27 [1.06] | 17 [0.67] | 7 [0.28] | 5 [0.20] | 55 [2.17] |
| 14 | 28 [1.10] | 28.6 [1.13] | 25 [0.98] | 15.2 [0.60] | 22.0 [0.87] | M23x1 | 30 [1.18] | 18 [0.71] | 8 [0.31] | 6 [0.24] | 56 [2.20] |
| 16 | 31 [1.22] | 30.6 [1.20] | 28 [1.10] | 18.3 [0.72] | 26.0 [1.02] | M26x1 | 33 [1.30] | 18 [0.71] | 8 [0.31] | 6 [0.24] | 56 [2.20] |
| 18 | 34 [1.34] | 33.2 [1.31] | 32 [1.26] | 20.0 [0.79] | 28.2 [1.11] | M30x1 | 36 [1.42] | 18 [0.71] | 10 [0.39] | 6 [0.24] | 56 [2.20] |
| 20 | 37 [1.46] | 36.5 [1.44] | 34 [1.34] | 23.0 [0.91] | 30.5 [1.20] | M32x1 | 40 [1.57] | 18 [0.71] | 10 [0.39] | 6 [0.24] | 62 [2.44] |
| 22 | 41 [1.61] | 39.6 [1.56] | 38 [1.50] | 26.0 [1.02] | 34.5 [1.36] | M36x1 | 43 [1.69] | 18 [0.71] | 10 [0.39] | 6 [0.24] | 62 [2.44] |
| 24 | 44 [1.73] | 43.1 [1.70] | 41 [1.61] | 28.8 [1.13] | 37.2 [1.46] | M39x1 | 46 [1.81] | 18 [0.71] | 10 [0.39] | 6 [0.24] | 64 [2.52] |

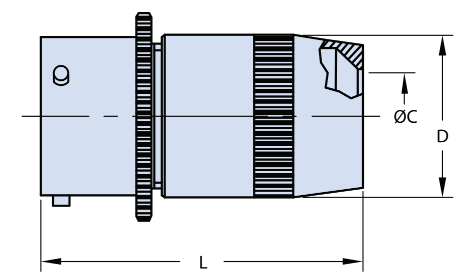


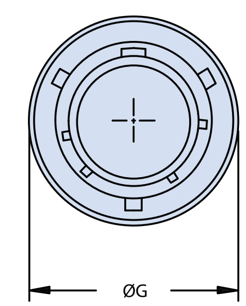




SEACROW MARINE BRONZE (MB)
Topside / Shipboard Environmental Connectors
IPT 01 in-line receptacle - Dimensions

## IPT 01 WITH CLASS W BACKSHELL

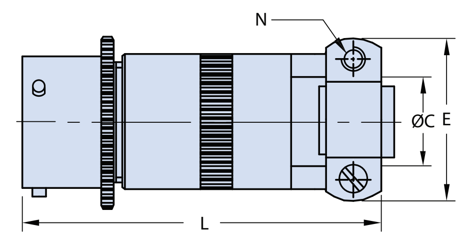


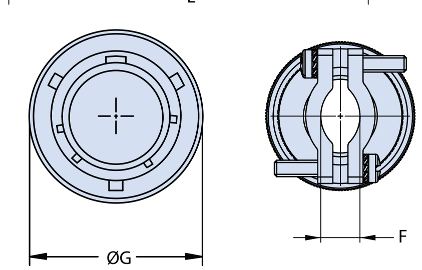




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | ØC open | ØC closed | D Max | ØG ±0.2 | L Max |
| 8 | 5.85 [0.23] | 4.5 [0.18] | 13.90 [0.55] | 17.3 [0.68] | 47.5 [1.87] |
| 10 | 7.9 [0.31] | 5.6 [0.22] | 17.15 [0.68] | 21.8 [0.86] | 47.5 [1.87] |
| 12 | 11.25 [0.44] | 8.6 [0.34] | 20.60 [0.81] | 25.1 [0.99] | 47.5 [1.87] |
| 14 | 13.7 [0.54] | 10.2 [0.40] | 23.90 [0.94] | 28.6 [1.13] | 55.5 [2.19] |
| 16 | 15 [0.59] | 12.5 [0.49] | 27.50 [1.08] | 30.6 [1.20] | 61.0 [2.40] |
| 18 | 16.5 [0.65] | 13.5 [0.53] | 30.90 [1.22] | 33.2 [1.31] | 68.0 [2.68] |
| 20 | 18.5 [0.73] | 15 [0.59] | 34.10 [1.34] | 36.5 [1.44] | 78.5 [3.09] |
| 22 | 21.5 [0.85] | 18 [0.71] | 37.50 [1.48] | 39.6 [1.56] | 83.0 [3.27] |
| 24 | 22.7* [0.89] | 18.8* [0.74] | 40.30 [1.59] | 43.1 [1.70] | 90.0 [3.54] |

* Consult the factory.

## IPT 01 WITH CLASS J BACKSHELL




| Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size | ØC Open | ØC Closed | F** ±0.75 | E ±0.2 | Ø ±0.2 | L Max | N Thread |
| 8 | 5.85 [0.23] | 4.5 [0.18] | 4 [0.16] | 19.10 [0.75] | 17.3 [0.68] | 56 [2.20] | 6-32 |
| 10 | 7.9 [0.31] | 5.6 [0.22] | 4 [0.16] | 20.70 [0.81] | 21.8 [0.86] | 56 [2.20] | 6-32 |
| 12 | 11.25 [0.44] | 8.6 [0.34] | 6.4 [0.25] | 23.90 [0.94] | 25.1 [0.99] | 59 [2.32] | 6-32 |
| 14 | 13.7 [0.54] | 10.2 [0.40] | 7.5 [0.30] | 27.00 [1.06] | 28.6 [1.13] | 66 [2.60] | 6-32 |
| 16 | 15 [0.59] | 12.5 [0.49] | 8.3 [0.33] | 28.60 [1.13] | 30.6 [1.20] | 72 [2.83] | 6-32 |
| 18 | 16.5 [0.65] | 13.5 [0.53] | 11.3 [0.44] | 35.00 [1.38] | 33.2 [1.31] | 79 [3.11] | 8-32 |
| 20 | 18.5 [0.73] | 15 [0.59] | 12.7 [0.50] | 35.00 [1.38] | 36.5 [1.44] | 90 [3.54] | 8-32 |
| 22 | 21.5 [0.85] | 18 [0.71] | 16.3 [0.64] | 39.75 [1.56] | 39.6 [1.56] | 95 [3.74] | 8-32 |
| 24 | 22.7[*] | 18.8[*] | 16.3 [0.64] | 42.10 [1.66] | 43.1 [1.70] | 102 [4.02] | 8-32 |

* Consult the factory.
** Cable clamp cleats fully closed.

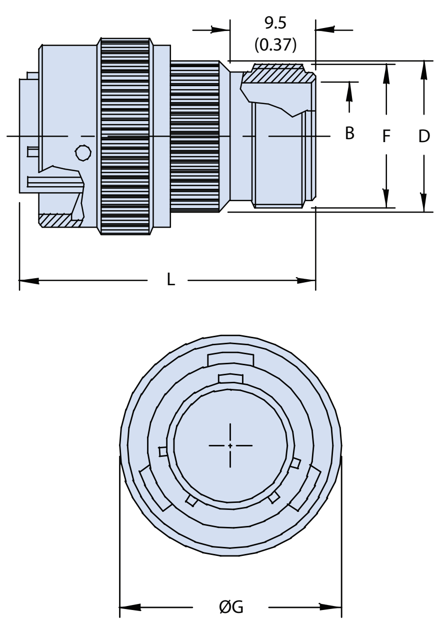




TOPSIDE: SEACROW™

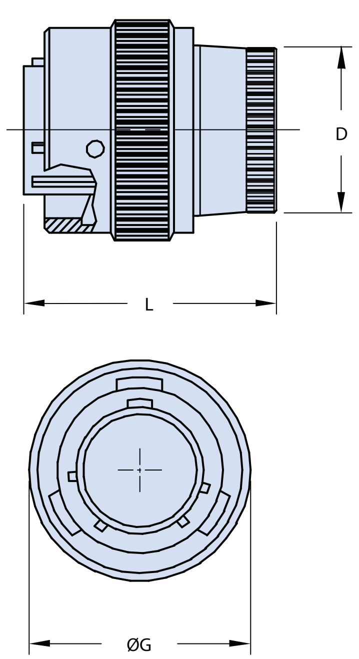
# IPT 06 plug - Dimensions

## IPT 06 WITH CLASS A BACKSHELL




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | B Min | D Max | F Thread in Inches | Ø G | L Max |
| 8 | 6.6 [0.26] | 15.00 [0.59] | .5000 - 28 UNEF | 18.10 [0.71] | 45.90 [1.81] |
| 10 | 9.2 [0.36] | 18.20 [0.72] | .6250 - 24 UNEF | 21.05 [0.83] | 45.90 [1.81] |
| 12 | 12.2 [0.48] | 21.20 [0.83] | .7500 - 20 UNEF | 25.15 [0.99] | 45.90 [1.81] |
| 14 | 15.2 [0.60] | 24.60 [0.97] | .8750 - 20 UNEF | 28.40 [1.12] | 45.90 [1.81] |
| 16 | 18.3 [0.72] | 27.60 [1.09] | 1.0000 - 20 UNEF | 31.60 [1.24] | 45.90 [1.81] |
| 18 | 20.0 [0.79] | 30.90 [1.22] | 1.1875 - 18 UNEF | 35.00 [1.38] | 45.90 [1.81] |
| 20 | 23.0 [0.91] | 33.80 [1.33] | 1.1875 - 18 UNEF | 37.70 [1.48] | 50.00 [1.97] |
| 22 | 26.0 [1.02] | 37.10 [1.46] | 1.4375 - 18 UNEF | 40.20 [1.58] | 50.00 [1.97] |
| 24 | 28.8 [1.13] | 40.25 [1.58] | 1.4375 - 18 UNEF | 44.00 [1.73] | 50.00 [1.97] |

## IPT 06 WITH CLASS E BACKSHELL




| Dimensions | | | |
|---|---|---|---|
| Shell Size | D Max. | ØG ±0.2[.01] | L Max. |
| 8 | 14.20 [0.56] | 18.10 [0.71] | 32.15 [1.27] |
| 10 | 17.40 [0.69] | 21.05 [0.83] | 32.15 [1.27] |
| 12 | 20.65 [0.81] | 25.15 [0.99] | 32.15 [1.27] |
| 14 | 23.60 [0.93] | 28.40 [1.12] | 32.15 [1.27] |
| 16 | 26.85 [1.06] | 31.60 [1.24] | 32.15 [1.27] |
| 18 | 29.85 [1.18] | 35.00 [1.38] | 32.15 [1.27] |
| 20 | 33.00 [1.30] | 37.70 [1.48] | 36.50 [1.44] |
| 22 | 36.30 [1.43] | 40.20 [1.58] | 36.50 [1.44] |
| 24 | 39.50 [1.56] | 44.00 [1.73] | 38.10 [1.50] |

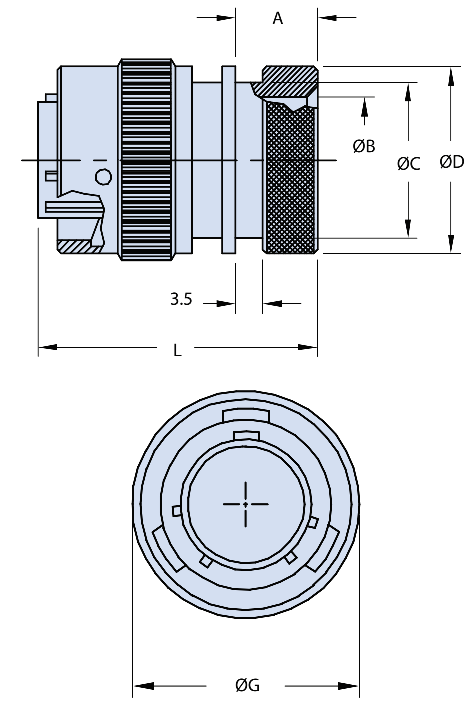
TOPSIDE: SEACROW™





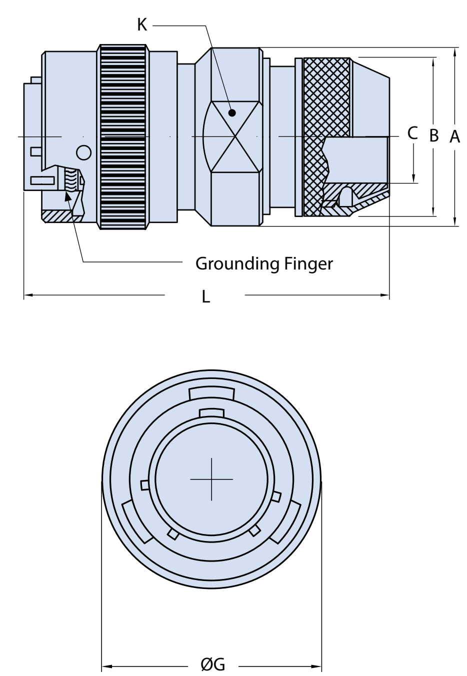
Seacrow™
SEACROW MARINE BRONZE (MB)
Topside / Shipboard Environmental Connectors
Glenair.
IPT 06 plug - Dimensions

## IPT 06 WITH CLASS G BACKSHELL




| Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | A ±0.1[0.00] | Ø +0.1[0.00] -0[0.00] | ØC +0[0.00] -0.1[0.00] | ØD +0[0.00] -0.3[.01] | L Max | ØG ±0.2[.01] |
| 8 | 12.2 [0.48] | 8.20 [0.32] | 13.0 [0.51] | 15.5 [0.61] | 43.5 [1.71] | 18.10 [0.71] |
| 10 | 12.2 [0.48] | 11.40 [0.45] | 15.8 [0.62] | 18.3 [0.72] | 42.0 [1.65] | 21.05 [0.83] |
| 12 | 12.2 [0.48] | 14.55 [0.57] | 21.0 [0.83] | 23.6 [0.93] | 42.0 [1.65] | 25.15 [0.99] |
| 14 | 12.2 [0.48] | 17.50 [0.69] | 21.8 [0.86] | 24.4 [0.96] | 42.0 [1.65] | 28.40 [1.12] |
| 16 | 14.5 [0.57] | 20.60 [0.81] | 25.9 [1.02] | 29.7 [1.17] | 44.0 [1.73] | 31.60 [1.24] |
| 18 | 14.5 [0.57] | 23.15 [0.91] | 28.2 [1.11] | 31.9 [1.26] | 44.5 [1.75] | 35.00 [1.38] |
| 20 | 15.8 [0.62] | 26.50 [1.04] | 32.2 [1.27] | 36.0 [1.42] | 47.0 [1.85] | 37.70 [1.48] |
| 22 | 15.8 [0.62] | 29.60 [1.17] | 34.5 [1.36] | 38.4 [1.51] | 47.0 [1.85] | 40.20 [1.58] |
| 24 | 14.9 [0.59] | 32.80 [1.29] | 37.6 [1.48] | 41.5 [1.63] | 47.0 [1.85] | 44.00 [1.73] |

## IPT 06 WITH CLASS M BACKSHELL




| Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | A Max | B +0.5 [.02] -0 [-0] | C Min. | K Key | L Max | ØG ±0.2 [.01] |
| 8 | 20 [0.79] | 16 [0.63] | 6.6 [0.26] | 18 [0.71] | 55 [2.17] | 18.10 [0.71] |
| 10 | 23 [0.91] | 18 [0.71] | 9.2 [0.36] | 21 [0.83] | 55 [2.17] | 21.05 [0.83] |
| 12 | 27 [1.06] | 22 [0.87] | 12.2 [0.48] | 24 [0.94] | 55 [2.17] | 25.15 [0.99] |
| 14 | 30 [1.18] | 25 [0.98] | 15.2 [0.60] | 28 [1.10] | 56 [2.20] | 28.40 [1.12] |
| 16 | 33 [1.30] | 28 [1.10] | 18.3 [0.72] | 31 [1.22] | 56 [2.20] | 31.60 [1.24] |
| 18 | 36 [1.42] | 32 [1.26] | 20.0 [0.79] | 34 [1.34] | 56 [2.20] | 35.00 [1.38] |
| 20 | 40 [1.57] | 34 [1.34] | 23.0 [0.91] | 37 [1.46] | 60 [2.36] | 37.70 [1.48] |
| 22 | 43 [1.69] | 38 [1.50] | 26.0 [1.02] | 41 [1.61] | 60 [2.36] | 40.20 [1.58] |
| 24 | 46 [1.81] | 41 [1.61] | 28.8 [1.13] | 44 [1.73] | 62 [2.44] | 44.00 [1.73] |

TOPSIDE: SEACROW™

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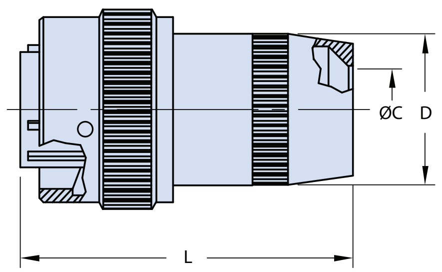
Dimensions in millimeters [inches] are subject to change without notice.

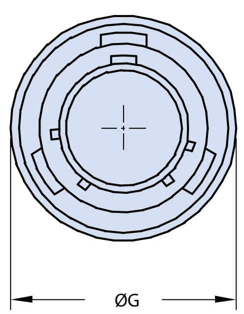
## IPT 06 plug - Dimensions

### IPT 06 WITH CLASS W BACKSHELL

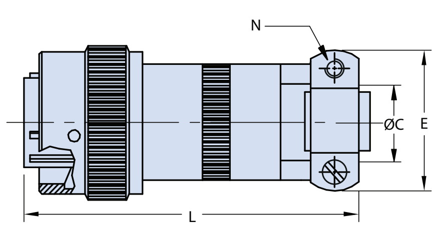


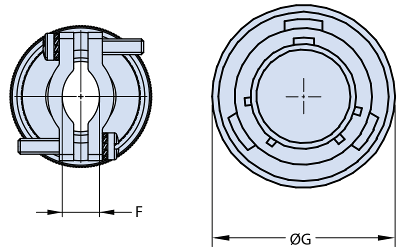

| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | ØC | | D Max | ØG ±0.2 [.01] | L Max |
| | Open | Closed | | | |
| 8 | 5.85 [0.23] | 4.5 [0.18] | 13.90 [0.55] | 18.10 [0.71] | 47.5 [1.87] |
| 10 | 7.9 [0.31] | 5.6 [0.22] | 17.15 [0.68] | 21.05 [0.83] | 47.5 [1.87] |
| 12 | 11.25 [0.44] | 8.6 [0.34] | 20.60 [0.81] | 25.15 [0.99] | 47.5 [1.87] |
| 14 | 13.7 [0.54] | 10.2 [0.40] | 23.90 [0.94] | 28.40 [1.12] | 55.5 [2.19] |
| 16 | 15 [0.59] | 12.5 [0.49] | 27.50 [1.08] | 31.60 [1.24] | 61.0 [2.40] |
| 18 | 16.5 [0.65] | 13.5 [0.53] | 30.90 [1.22] | 35.00 [1.38] | 68.0 [2.68] |
| 20 | 18.5 [0.73] | 15 [0.59] | 34.10 [1.34] | 37.70 [1.48] | 78.5 [3.09] |
| 22 | 21.5 [0.85] | 18 [0.71] | 37.50 [1.48] | 40.20 [1.58] | 83.0 [3.27] |
| 24 | 22.7 [0.89]* | 18.8 [0.74]* | 40.30 [1.59] | 44.00 [1.73] | 90.0 [3.54] |

* Consult the factory.




### IPT 06 WITH CLASS J BACKSHELL




| Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size | ØC | | F** ±0.75 [.03] | E ±0.2 [.01] | ØG ±0.2 [.01] | L Max | N Thd |
| | Open | Closed | | | | | |
| 8 | 5.85 [0.23] | 4.5 [0.18] | 4 [0.16] | 19.10 [0.75] | 18.10 [0.71] | 56.0 [2.20] | 6-32 |
| 10 | 7.9 [0.31] | 5.6 [0.22] | 4 [0.16] | 20.70 [0.81] | 21.05 [0.83] | 56.0 [2.20] | 6-32 |
| 12 | 11.25 [0.44] | 8.6 [0.34] | 6.4 [0.25] | 23.90 [0.94] | 25.15 [0.99] | 59.0 [2.32] | 6-32 |
| 14 | 13.7 [0.54] | 10.2 [0.40] | 7.5 [0.30] | 27.00 [1.06] | 28.40 [1.12] | 66.0 [2.60] | 6-32 |
| 16 | 15 [0.59] | 12.5 [0.49] | 8.3 [0.33] | 28.60 [1.13] | 31.60 [1.24] | 72.0 [2.83] | 6-32 |
| 18 | 16.5 [0.65] | 13.5 [0.53] | 11.3 [0.44] | 35.00 [1.38] | 35.00 [1.38] | 79.0 [3.11] | 8-32 |
| 20 | 18.5 [0.73] | 15 [0.59] | 12.7 [0.50] | 35.00 [1.38] | 37.70 [1.48] | 88.5 [3.48] | 8-32 |
| 22 | 21.5 [0.85] | 18 [0.71] | 16.3 [0.64] | 39.75 [1.56] | 40.20 [1.58] | 95.5 [3.76] | 8-32 |
| 24 | 22.7 [0.89] | 18.8 [0.74]* | 16.3 [0.64] | 42.10 [1.66] | 44.00 [1.73] | 100.0 [3.94] | 8-32 |

* Consult the factory.
** Cable clamp cleats fully closed.

TOPSIDE: SEACROW™





Seacrow™

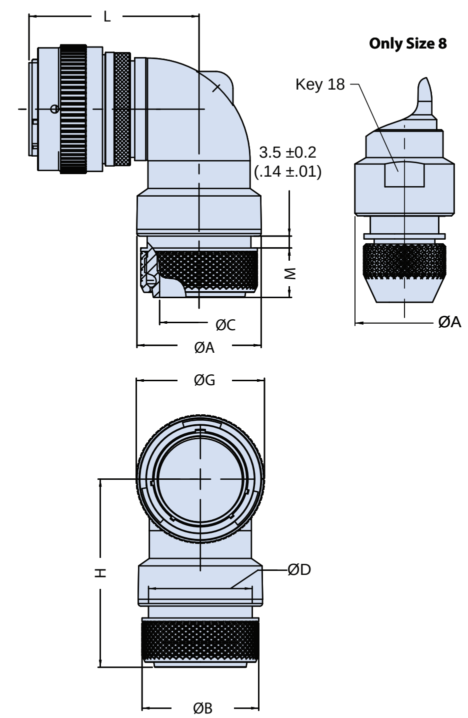
SEACROW MARINE BRONZE (MB)

Topside / Shipboard Environmental Connectors

Glenair.

## IPT 08 plug assembly - Dimensions

### IPT 08 WITH CLASS M BACKSHELL




| Dimensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Shell Size | ØA ± 0.2 [0.1] | ØB ±0.2 [0.1] | ØC +0.1/0 [+.00/0] | ØD 0 [0] -0.2 [0.1] | M ±0.5 [.02] | ØG ±0.2 [.02] | L Max | H Max |
| 8 | 19.6 [0.77] | 16.20 [0.64] | 6.80 [0.27] | 13.50 [0.53] | 13.50 [0.53] | 18.10 [0.71] | 34.50 [1.36] | 45.50 [1.79] |
| 10 | 19.05 [0.75] | 18.30 [0.72] | 9.30 [0.37] | 15.80 [0.62] | 12.50 [0.49] | 21.05 [0.83] | 37.50 [1.48] | 45.10 [1.78] |
| 12 | 22.00 [0.87] | 22.30 [0.88] | 12.25 [0.48] | 19.80 [0.78] | 13.50 [0.53] | 25.15 [0.99] | 37.50 [1.48] | 48.00 [1.89] |
| 14 | 25.50 [1.00] | 25.30 [1.00] | 15.40 [0.61] | 22.60 [0.89] | 14.50 [0.57] | 28.40 [1.12] | 39.20 [1.54] | 49.50 [1.95] |
| 16 | 30.175 [1.19] | 28.30 [1.11] | 18.50 [0.73] | 26.00 [1.02] | 14.50 [0.57] | 31.60 [1.24] | 44.40 [1.75] | 52.70 [2.07] |
| 18 | 30.175 [1.19] | 32.30 [1.27] | 20.20 [0.80] | 28.20 [1.11] | 14.50 [0.57] | 35.00 [1.38] | 46.60 [1.83] | 56.60 [2.23] |
| 20 | 36.60 [1.44] | 34.30 [1.35] | 23.30 [0.92] | 30.50 [1.20] | 14.50 [0.57] | 37.70 [1.48] | 50.50 [1.99] | 55.80 [2.20] |
| 22 | 36.60 [1.44] | 38.20 [1.50] | 26.00 [1.02] | 34.00 [1.34] | 14.50 [0.57] | 40.20 [1.58] | 54.40 [2.14] | 59.60 [2.35] |
| 24 | 44.80 [1.76] | 41.30 [1.63] | 29.00 [1.14] | 37.20 [1.46] | 14.50 [0.57] | 44.00 [1.73] | 55.70 [2.19] | 58.60 [2.31] |

TOPSIDE: SEACROW™

## IGE-MB MIL-C-5015 REVERSE-BAYONET TYPE / VG96929 COMPLIANT SINGLE POLE MARINE BRONZE POWER CONNECTOR SERIES

IGE-MB High Power Single Pole Connectors are used with cables from 16 to 240 mmq. These connectors achieve high-performance working current and peak current, and are ideal for engines, power supplies, and power distribution boxes. Several backshells are available, either straight or 90° elbows for the most reliable cable accomodation. See the VG96929 Catalogue for detailed electrical characteristics. IP67 protection is the standard performance. IP68 on request.

**IGE-MB How To Order**

| Sample Part Number | IGE | 6E | 22H9 | Z | N | B | -14 | MB |
|---|---|---|---|---|---|---|---|---|
| Series | IGE = VG96929 reverse bayonet single pole coneectors | | | | | | | |
| Shell Style | See shell style table | | | | | | | |
| Shell Size/Contact Size | 16H2, 18H5, 22H9, 28H15, 32H24; see wire accomodation table | | | | | | | |
| Contact Gender | Z = Male F = Female; omit when ordering shell style 9E | | | | | | | |
| Insert Rotation | N = Standard W = Alternate; see alternate positions; omit | | | | | | | |
| Coupling | B = Reverse bayonet | | | | | | | |
| Modification Code | See modification code table; check shell style/modification code table for available combinations | | | | | | | |
| Material/Finish | MB = Marine bronze | | | | | | | |

**Shell Style**

| Code | Description |
|---|---|
| 0E | RPM* Square flange reptacle with accessory threads |
| 1E | In-line receptacle with accessory threads |
| 2E | RPM* Square flange receptacle with threaded holes† |
| 2EFF | RPM* Square flange receptacle with threaded holes and threaded contact |
| 2EFP | FPM* Square flange receptacle with through holes |
| 6E | Straight plug connector with grounding fingers and accessory threads |
| 7E | Jam nut receptacle with threaded coupling |
| 8E | 90° Plug assemlby with accessory threads |
| 9E | RPM* sq. flange through bulkhead receptacle with threaded holes |
| 9EFP | FPM** Sq. flange through-bulkhead receptacle with through holes |

*RPM - Rear Panel Mount
**FPM - Front Panel Mount

† For IGE 2E with -16 modification only, mounting holes are through hole type and shell style is front panel mount

**Modification Codes**

| Code | Description |
|---|---|
| 03 | Shrink boot adapter |
| 04 | Crimp contact termination |
| 14 | EMI/RFI braid and shrink boot adapter |
| 16 | Threaded contact; see page 53 for dimensions |
| ZL | EMI/RFI braid and shrink boot adapter, no band |
| ZLF | Shrink boot braid adapter with band‡ |

‡Band-Master™ Band provided

**Contact Wire Accomodation and Specifications**

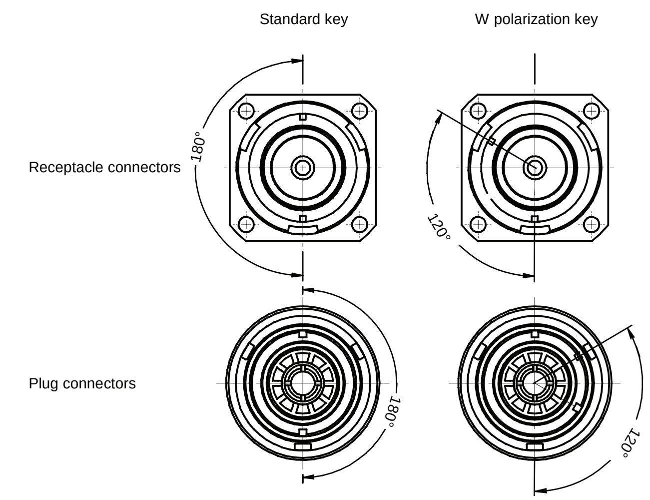
| Contact Size | Shell Size | Wire Size | Current Rating at 85°C | | Max. Contact Resistance |
|---|---|---|---|---|---|
| H2 | 16 | 25 mm² | 225 A | 750 A | 0.60 mΩ |
| H5 | 18 | 50 mm² | 350 A | 1.000 A | 0.30 mΩ |
| H9 | 22 | 95 mm² | 570 A | 2.000 A | 0.15 mΩ |
| H15 | 28 | 150 mm² | 750 A | 3.000 A | 0.10 mΩ |
| H24 | 32 | 240 mm² | 950 A | 5.000 A | 0.07 mΩ |

TOPSIDE: SEACROW™





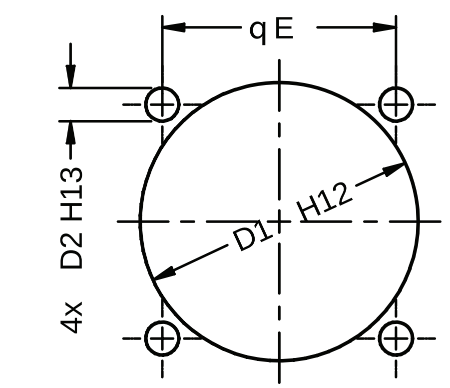

## ALTERNATE POSTIONS




**Alternate key and keyway positions**

To avoid mismating of similar connectors , IGE connectors are available with key and keyway in two different positions:
**W: 120° N: 180°**

## MOUNTING DIMENSIONS FOR SQUARE FLANGE RECEPTACLES



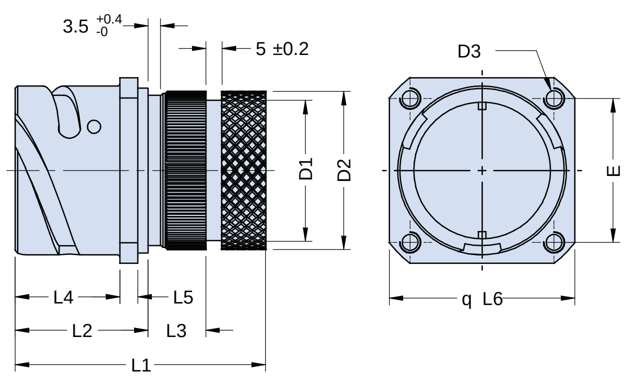

| Size | D1 Front | D1 Rear | D2 2E-16 | D2 9EFP | D2 0E-03 9E | E |
|---|---|---|---|---|---|---|
| 16 | - | 27.7 [1.09] | M4 | M4 | 4.5 [0.18] | 24.6 [0.97] |
| 18 | 27.4 [1.08] | 31.1 [1.22] | M4 | M4 | 4.5 [0.18] | 27.0 [1.06] |
| 22 | 33.7 [1.33] | 37.8 [1.49] | M4 | M4 | 4.5 [0.18] | 31.8 [1.25] |
| 28 | 43.3 [1.70] | 47.1 [1.85] | M4 | M5 | 5.5 [0.22] | 39.7 [1.56] |
| 32 | 49.7 [1.96] | 53.8 [2.12] | M4 | M5 | 5.5 [0.22] | 44.5 [1.75] |

## CONNECTOR SHELL STYLE AND MODIFICATION CODE MATRIX

| | Modification Codes | | | | | |
|---|---|---|---|---|---|---|
| Shell Style | 03 | 04 | 14 | 16 | ZL | ZLF |
| 0E | ✓ | | | | ✓ | ✓ |
| 1E | ✓ | | ✓ | | | |
| 2E | | ✓ | | ✓ | | |
| 2EFP | | ✓ | | | | |
| 2EFF | | | | ✓ | | |
| 6E | ✓ | | ✓ | ✓ | | |
| 7E | | | | ✓ | | |
| 8E | | | ✓ | | | |
| 9E | Not Applicable | | | | | |
| 9EFP | Not Applicable | | | | | |

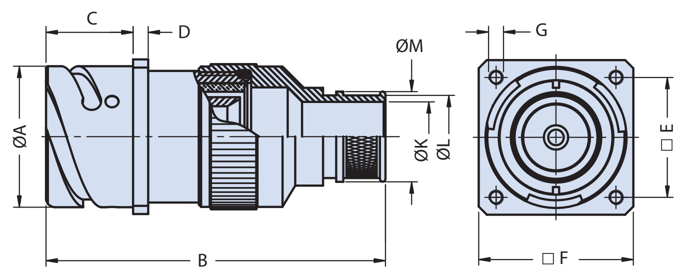
TOPSIDE: SEACROW™

## SQUARE FLANGE REAR PANEL MOUNT RECEPTACLE WITH THREADED METRIC HOLES AND SHRINK BOOT ADAPTER



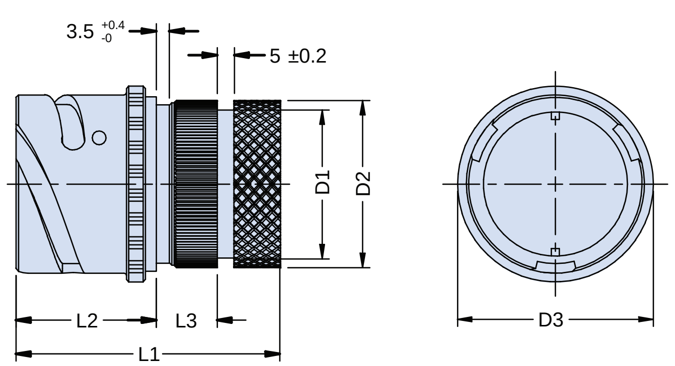

| IGE | 0E | 22H9 | Z | N | B | -03 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts **F** = Socket **Z** = Pin | Keyway **N** - Stand. **W** - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |

## SQUARE FLANGE RPM RECEPTACLE WITH THREADED METRIC HOLES AND BACKSHELL WITH BOOT PLATFORM AND BANDING PORCH



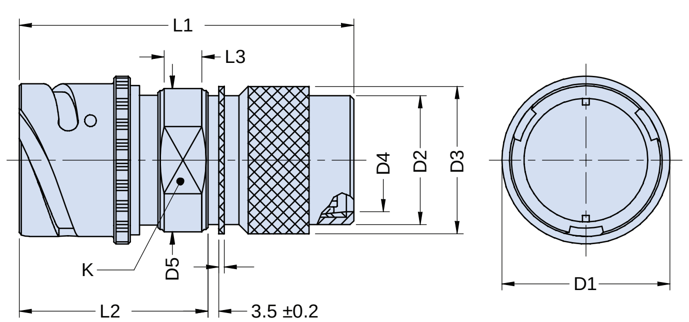

| IGE | 0E | 22H9 | Z | N | B | -ZL | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts **F** - Socket **Z** - Pin | Keyway **N** - Stand. **W** - Alt. | Bayonet Coupling | Mod. Code **ZL** -No Band **ZLF** - Band | Marine Bronze Finish |

## IN-LINE RECEPTACLE WITH SHRINK BOOT ADAPTER




| IGE | 1E | 22H9 | Z | N | B | -03 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts **F** - Socket **Z** - Pin | Keyway **N** - Stand. **W** - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |

## IN-LINE RECEPTACLE WITH EMI/RFI BRAIDED SHIELD AND SHRINK BOOT ADAPTER




| IGE | 1E | 22H9 | Z | N | B | -14 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts **F** - Socket **Z** - Pin | Keyway **N** - Stand. **W** - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |




SEACROW MARINE BRONZE (MB)
Topside / Shipboard Environmental Connectors
IGE-MB connectors - dimensions

**IGE 0E -03 Square Flange, Rear Panel Mount Connector with Boot Adapter - Dimensions**

| Cable mm² | Shell Size | D1 Max | D2 Max | D3 | E ±0.1[0.00] | L1 ±0.4[.02] | L2 ±0.2[.01] | L3 Opt. | L4 ±0.4[.02] | L5 ±0.3[.01] | L6 ±0.3[.01] | L7 ±0.3[.01] | Weight for Alloy Ver. (gr. max) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 16 | 20.3 [0.80] | 22.7 [0.89] | M4 | 24.6 [0.97] | 41.0 [1.61] | 29 [1.14] | - | 20.00 [0.79] | 3.2 [0.13] | 32.5 [1.28] | 50 [1.97] | 120 |
| 50 | 18 | 25.8 [1.02] | 28.4 [1.12] | M4 | 27.0 [1.06] | 50.0 [1.97] | 32 [1.26] | - | 23.05 [0.91] | 4.0 [0.16] | 35.0 [1.38] | 86 [3.39] | 150 |
| 95 | 22 | 33.0 [1.30] | 35.3 [1.39] | M4 | 31.8 [1.25] | 54.0 [2.13] | 34 [1.34] | - | 23.05 [0.91] | 4.0 [0.16] | 41.0 [1.61] | 127 [5.00] | 240 |
| 150 | 28 | 41.3 [1.63] | 44.8 [1.76] | M5 | 39.7 [1.56] | 65.3 [2.57] | 38 [1.50] | 18 [0.71] | 24.05 [0.95] | 4.0 [0.16] | 50.8 [2.00] | 250 [9.84] | 420 |
| 240 | 32 | 46.1 [1.81] | 49.6 [1.95] | M5 | 44.5 [1.75] | 66.8 [2.63] | 39 [1.54] | 18 [0.71] | 28.90 [1.14] | 4.0 [0.16] | 57.0 [2.24] | 305 [12.01] | 520 |

**IGE 2E -ZL Square Flange, Front Panel Mount Connector with Threaded Contact - Dimensions**

| Cable mm² | Shell Size | ØA 0/-0.1 [0.00/-0.00] | B Max | C ±0.2[.01] | D ±0.2[.01] | ☐E ±0.1[0.00] | F ±0.2[.01] | G Thread | ØK ±0.1[0.00] | ØL ±0.1[0.00] | ØM ±0.1[0.00] | Weight for Alloy Version (gr. max) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 95 | 22 | 37.4 [1.47] | 90 [3.54] | 23.05 [0.91] | 4.0 [0.16] | 31.8 [1.25] | 41.0 [1.61] | M4 | 19.0 [0.75] | 21.7 [0.85] | 23.3 [0.92] | 170 |

**IGE 1E -03 In-Line Receptacle with Boot Adapter - Dimensions**

| Cable mm² | Shell Size | D1 Max | D2 Max | D3 ±0.3 | L1 ±0.4 | L2 ±2 | L3 opt. | Mass g max |
|---|---|---|---|---|---|---|---|---|
| 25 | 16 | 20.3 [0.80] | 22.7 [0.89] | 32.5 [1.28] | 41.0 [1.61] | 29 [1.14] | - | 50 |
| 50 | 18 | 25.8 [1.02] | 28.4 [1.12] | 35.0 [1.38] | 50.0 [1.97] | 32 [1.26] | - | 86 |
| 95 | 22 | 33.0 [1.30] | 35.3 [1.39] | 41.0 [1.61] | 54.0 [2.13] | 34 [1.34] | - | 127 |
| 150 | 28 | 41.3 [1.63] | 44.8 [1.76] | 50.8 [2.00] | 65.3 [2.57] | 38 [1.50] | 18 [0.71] | 250 |
| 240 | 32 | 46.1 [1.81] | 49.6 [1.95] | 57.0 [2.24] | 66.8 [2.63] | 39 [1.54] | 18 [0.71] | 305 |

**IGE 1E -14 In-line Receptacle with EMI/RFI Braided Shield and Shrink Boot Adapter - Dimensions**

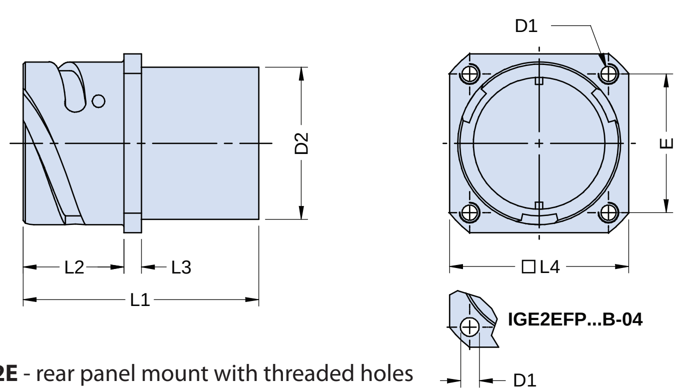
| Cable mm² | Shell Size | D1 ±0.3[.01] | D2 max | D3 max | D4 min | D5 max | K | L1 max | L2 Max | L3 min | L4 ±0.7[.03] | Mass g max |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 16 | 32.5 [1.28] | 24.1 [0.95] | 26.0 [1.02] | 15.5 [0.61] | 32.0 [1.26] | 26 [1.02] | 70 [2.76] | 45.6 [1.80] | 8 [0.31] | 1.0 [0.04] | 80 |
| 50 | 18 | 35.0 [1.38] | 28.8 [1.13] | 32.0 [1.26] | 20.0 [0.79] | 36.5 [1.44] | 32 [1.26] | 76 [2.99] | 51.1 [2.01] | 6 [0.24] | 1.0 [0.04] | 156 |
| 95 | 22 | 41.0 [1.61] | 34.1 [1.34] | 37.0 [1.46] | 25.5 [1.00] | 46.0 [1.81] | 38 [1.50] | 86 [3.39] | 61.0 [2.40] | 9 [0.35] | 1.0 [0.04] | 204 |
| 150 | 28 | 50.8 [2.00] | 40.7 [1.60] | 44.0 [1.73] | 32.0 [1.26] | 53.0 [2.09] | 50 [1.97] | 98 [3.86] | 71.7 [2.82] | 9 [0.35] | 1.0 [0.04] | 300 |
| 240 | 32 | 57.0 [2.24] | 47.3 [1.86] | 51.6 [2.03] | 38.0 [1.50] | 60.0 [2.36] | 52 [2.05] | 98 [3.86] | 70.7 [2.78] | 12 [0.47] | 2.0 [0.08] | 450 |




TOPSIDE: SEACROW™

# IGE-MB connectors - dimensions

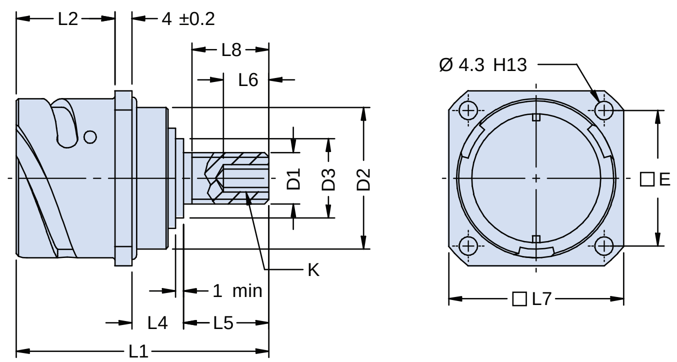
## SQUARE FLANGE REAR PANEL MOUNT RECEPTACLE WITH THREADED OR THROUGH MOUNTING HOLES AND CRIMP CONTACTS




**2E** - rear panel mount with threaded holes
**2EFP** - front panel mount with through holes

| IGE | 2E | 22H9 | Z | N | B | -04 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style **2E** or **2EFP** | Shell Size and Contact Size | Contacts **F** = Socket **Z** = Pin | Keyway **N** - Stand. **W** - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |

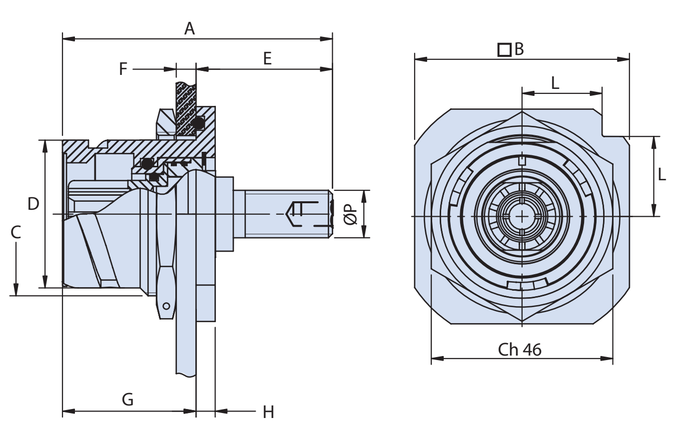
## SQUARE FLANGE FRONT PANEL MOUNT RECEPTACLE WITH THREADED OR THROUGH MOUNTING HOLES AND THREADED CONTACT




**2E** - front panel mount with through holes
**2EFF** - rear panel mount with threaded holes

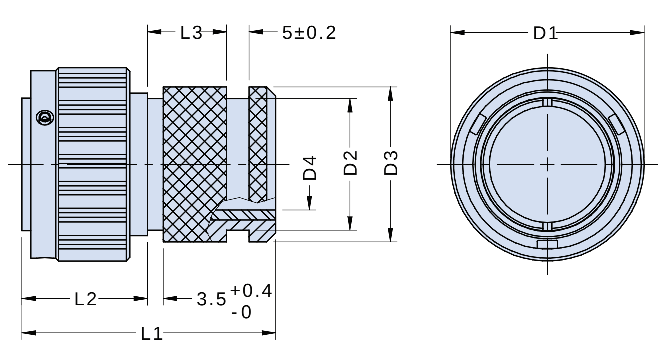
| IGE | 2EFF | 22H9 | Z | N | B | -16 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style **2E** or **2EFF** | Shell Size and Contact Size | Contacts **F** - Socket **Z** - Pin | Keyway **N** - Stand. **W** - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |

## JAM NUT RECEPTACLE WITH THREADED CONTACT




| IGE | 7E | 22H9 | Z | N | B | -16 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts **F** - Socket **Z** - Pin | Keyway **N** - Stand. **W** - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |

## STRAIGHT PLUG WITH GROUNDING FINGERS AND ADAPTER FOR ATTACHING SHIELDING BRAID AND BOOT




| IGE | 6E | 22H9 | Z | N | B | -03 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts **F** - Socket **Z** - Pin | Keyway **N** - Stand. **W** - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |






SEACROW MARINE BRONZE (MB)
Topside / Shipboard
Environmental Connectors
IGE-MB connectors - dimensions

**IGE 2E 04 and 2EFP -04, Rear Panel Mount Receptacle, Threaded or Through Hole Mount - Dimensions**

| Cable mm² | Shell Size | D1 | | D2 ±0.15[0.01] | E ±0.1[0.00] | L1 Max | L2 ±0.4[.00] | L3 ±0.3[.01] | L4 ±0.3[.01] | Mass g max |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Thd | (FP) H13 | | | | | | | |
| 25 | 16 | M4 | 4.3 [0.17] | 22.1 [0.87] | 24.6 [0.97] | 41.0 [1.61] | 20.00 [0.79] | 3.2 [0.13] | 32.5 [1.28] | - |
| 50 | 18 | M4 | 4.3 [0.17] | 27.0 [1.06] | 27.0 [1.06] | 50.0 [1.97] | 23.05 [0.91] | 4.0 [0.16] | 35.0 [1.38] | - |
| 95 | 22 | M4 | 4.3 [0.17] | 24.9 [0.98] | 31.8 [1.25] | 54.0 [2.13] | 23.05 [0.91] | 4.0 [0.16] | 41.0 [1.61] | - |
| 150 | 28 | M5 | 5.3 [0.21] | 42.7 [1.68] | 39.7 [1.56] | 66.8 [2.63] | 24.05 [0.95] | 4.0 [0.16] | 50.8 [2.00] | - |
| 240 | 32 | M5 | 5.3 [0.21] | 49.2 [1.94] | 44.5 [1.75] | 66.8 [2.63] | 28.90 [1.14] | 4.0 [0.16] | 57.0 [2.24] | - |

**IGE 2E or 2EFF -16 Front Panel Mount Square Flange Receptacle, Threaded or Through Hole Mount**

| Cable mm² | Shell Size | D1 | D2 +0 [0.00] -0.15 [.01] | D3 +0 [0.00] -0.15 [.01] | D4 ±0.3 | | ☐E ±0.1 [0.00] | ⬡K ±0.2 [.01] | L1 max | L2 +0.4 [.02] -0 [0.00] | L4 [±1.5] | | L5 ±0.3 [.01] | L6 ±0.3 [.01] | L7 ±0.3 [.01] | L8 min | Weight for alloy version (gr. max) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Thrd | (FP) H13 | | | | | (F) | (Z) | | | | | |
| 50 | 18 | M8 | 26.9 [1.06] | 15.0 [0.59] | M4 | 4.3 [0.17] | 27.0 [1.06] | 3 [0.12] | 55 [2.17] | 23.05 [0.91] | 12.0 [0.47] | 12.0 [0.47] | 15 [0.59] | 10 [0.39] | 35.0 [1.38] | 12 [0.47] | 195 |
| 95 | 22 | M12 | 33.2 [1.31] | 18.7 [0.74] | M4 | 4.3 [0.17] | 31.8 [1.25] | 6 [0.24] | 66 [2.60] | 23.05 [0.91] | 13.5 [0.53] | 12.0 [0.47] | 25 [0.98] | 8 [0.31] | 41.0 [1.61] | 22 [0.87] | 250 |
| 150 | 28 | M12 | 42.8 [1.69] | 27.0 [1.06] | M4 | 5.3 [0.21] | 39.7 [1.56] | 6 [0.24] | 62 [2.44] | 24.05 [0.95] | 12.0 [0.47] | 12.0 [0.47] | 20 [0.79] | 8 [0.31] | 50.8 [2.00] | 16 [0.63] | 430 |
| 240 | 32 | M16 | 49.2 [1.94] | 31.7 [1.25] | M4 | 5.3 [0.21] | 44.5 [1.75] | 8 [0.31] | 78 [3.07] | 28.90 [1.14] | 14.0 [0.55] | 14.0 [0.55] | 30 [1.18] | 8 [0.31] | 57.0 [2.24] | 27 [1.06] | 530 |

**IGE 7E -16 Jam Nut Receptacle with Threaded Contact - Dimensions**

| Cable mm² | Shell Size | ØA ±0.1 | B Sq ±0.2 | P Metric Thread | C (inches) | ØD 0/-0.1 [0.00/-0.00] | E ±0.1[0.00] | F ±0.2 [0.1] | G ±0.2 [.01] | H ±0.2 [.01] | L ±0.1 [0.00] | CH | Weight for alloy version (gr. max) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 95 | 22 | 68.0 | 54.0 | M12 | 1 5/8 - 18 | 37.4 [1.47] | 34.0 [1.34] | 2.4 - 9.1 | 33.7 [1.33] | 4.8 [0.19] | 20.0 [0.79] | 46 | 150 |

**IGe 6E -16 Straight Plug with Grounding Fingers and Adapter for Attaching Shielding Braid and Boot**

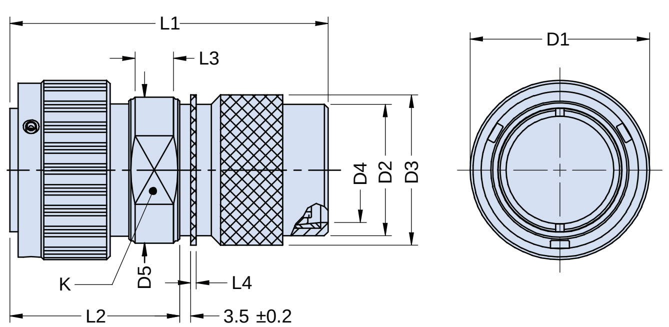
| Cable mm² | Shell Size | D1 max | D2 max | D3 max | D4 min | L1 max | L2 max | L3 opt. | Mass g max |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 16 | 32.0 [1.26] | 20.3 [0.80] | 22.7 [0.89] | 14.0 [0.55] | 44 [1.73] | 25 [0.98] | - | 64 |
| 50 | 18 | 36.5 [1.44] | 25.8 [1.02] | 28.4 [1.12] | 19.0 [0.75] | 53 [2.09] | 33 [1.30] | - | 106 |
| 95 | 22 | 43.1 [1.70] | 31.5 [1.24] | 35.3 [1.39] | 23.9 [0.94] | 57 [2.24] | 37 [1.46] | 13.3 | 146 |
| 150 | 28 | 53.5 [2.11] | 41.3 [1.63] | 44.8 [1.76] | 27.3 [1.07] | 65 [2.56] | 37 [1.46] | 18.0 | 270 |
| 240 | 32 | 60.1 [2.37] | 46.1 [1.81] | 49.6 [1.95] | 32.8 [1.29] | 65 [2.56] | 39 [1.54] | 15.0 | 320 |

TOPSIDE: SEACROW™



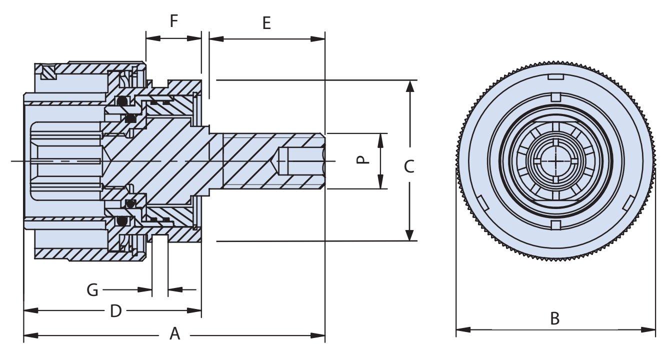
Dimensions in millimeters [inches] are subject to change without notice.

### STRAIGHT PLUG WITH GROUNDING FINGERS AND ADAPTER FOR ATTACHING SHIELDING BRAID AND BOOT



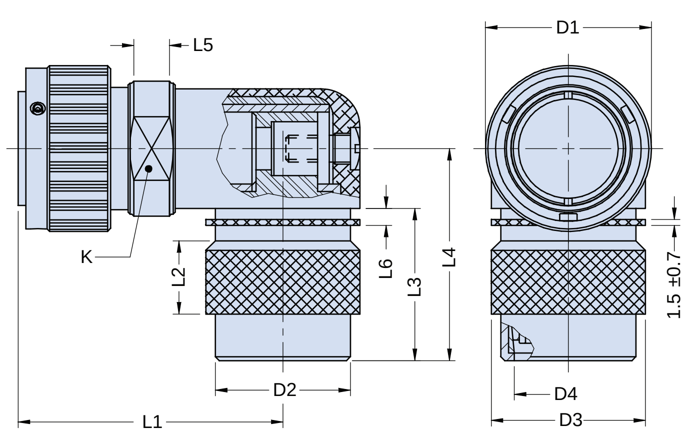

| IGE | 6E | 22H9 | Z | N | B | -14 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts F - Socket Z - Pin | Keyway N - Stand. W - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |

### STRAIGHT PLUG WITH GROUNDING FINGERS AND ADAPTER FOR ATTACHING SHIELDING BRAID AND BOOT



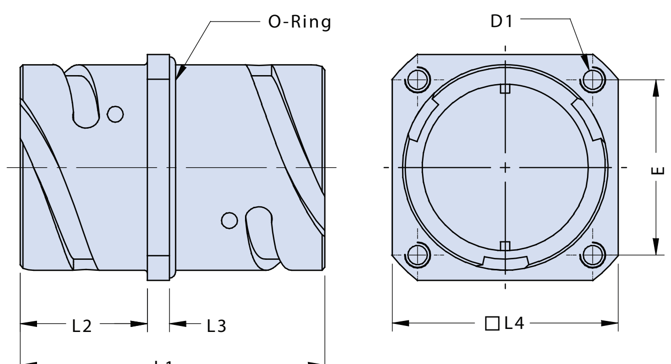

| IGE | 6E | 22H9 | Z | N | B | -16 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts F - Socket Z - Pin | Keyway N - Stand. W - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |

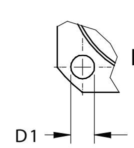
### RIGHT ANGLE PLUG WITH GROUNDING FINGERS AND ADAPTER FOR ATTACHING SHIELDING BRAID AND BOOT




| IGE | 8E | 22H9 | Z | N | B | -14 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts F - Socket Z - Pin | Keyway N - Stand. W - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |

### REAR PANEL MOUNT, THROUGH BULKHEAD RECEPTACLE WITH THREADED HOLES OR THROUGH BULKHEAD WITH THROUGH HOLES




IGE9EFP...X-B

**9E** - front panel mount with threaded holes
**9EFP** - rear panel mount with through holes

| IGE | 9E | 22H9 | Z | N | B | -14 | MB |
|---|---|---|---|---|---|---|---|
| Basic P/N | Shell Style | Shell Size and Contact Size | Contacts F - Socket Z - Pin | Keyway N - Stand. W - Alt. | Bayonet Coupling | Mod. Code | Marine Bronze Finish |





Seacrow™
*SEACROW MARINE BRONZE (MB)*
Topside / Shipboard Environmental Connectors
Glenair.
IGE-MB connectors - dimensions

TOPSIDE: SEACROW™

| IGe 6E 14 Straight Plug with Grounding Fingers and Adapter for Attaching Shielding Braid and Boot | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cable $mm^2$ | Shell Size | D1 max | D2 max | D3 max | D4 min | D5 max | K | L1 max | L2 max | L3 min | L4 ±0.7[.03] | Mass g max |
| 25 | 16 | 32.0 [1.26] | 24.1 [0.95] | 26.0 [1.02] | 15.5 [0.61] | 32.0 [1.26] | 26 [1.02] | 70 [2.76] | 45.6 [1.80] | 8 [0.31] | 1.0 [0.04] | 80 |
| 50 | 18 | 36.5 [1.44] | 28.8 [1.13] | 32.0 [1.26] | 20.0 [0.79] | 36.5 [1.44] | 32 [1.26] | 76 [2.99] | 51.1 [2.01] | 6 [0.24] | 1.0 [0.04] | 156 |
| 95 | 22 | 43.1 [1.70] | 34.1 [1.34] | 37.0 [1.46] | 25.5 [1.00] | 46.0 [1.81] | 38 [1.50] | 86 [3.39] | 61.0 [2.40] | 9 [0.35] | 1.0 [0.04] | 204 |
| 150 | 28 | 53.5 [2.11] | 40.7 [1.60] | 44.0 [1.73] | 32.0 [1.26] | 53.0 [2.09] | 50 [1.97] | 98 [3.86] | 71.7 [2.82] | 9 [0.35] | 1.0 [0.04] | 300 |
| 240 | 32 | 60.1 [2.37] | 47.3 [1.86] | 51.6 [2.03] | 38.0 [1.50] | 60.0 [2.36] | 52 [2.05] | 98 [3.86] | 70.7 [2.78] | 12 [0.47] | 2.0 [0.08] | 450 |

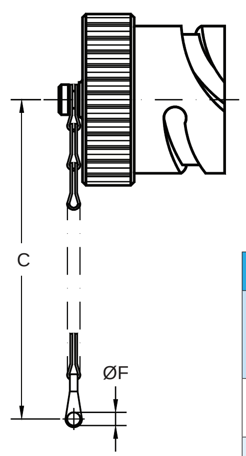
| IGE 6E -16 Straight Plug with Grounding fingers and Adapter for Attaching Shielding Braid and Boot - Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Cable $mm^2$ | Size | A ±0.5 | B Max | C Max | D ±0.1[0.00] | E ±0.1 | F ±0.1 | G ±0.1[0.00] | P Thread | Weight for alloy version (gr. max] |
| 95 | 22 | 65.5 [2.58] | 43.2 [1.70] | 36.0 [1.42] | 38.5 [1.52] | 25.0 [0.98] | 12.0 [0.47] | 3.5 [0.14] | M12 | 300 |
| 150 | 28 | 60.1 [2.37] | 53.5 [2.11] | 43.0 [1.69] | 38.1 [1.50] | 20.0 [0.79] | 10.0 [0.39] | 3.5 [0.14] | M12 | 450 |
| 240 | 32 | 75.0 [2.95] | 60.1 [2.37] | 49.5 [1.95] | 42.5 [1.67] | 30.0 [1.18] | 11.0 [0.43] | 3.5 [0.14] | M16 | 550 |

| IGE 8E -14 Right Angle Plug with Grounding Fingers and Adapter for Attaching Shielding Braid and Boot | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | L6 | | |
| Cable $mm^2$ | Shell Size | D1 max | D2 max | D3 max | D3 ±0.3 [.01] | K | L1 max | L2 opt. | L3 max | L4 max | L5 min | | tol. | Mass g max |
| 95 | 22 | 43.1 [1.70] | 39.0 [1.54] | 42.5 [1.67] | 28 [1.10] | 38 [1.50] | 81 [3.19] | 19.0 [0.75] | 41.5 [1.63] | 57 [2.24] | 6.0 [0.24] | 2.9 [0.11] | ±0.5 [0.02] | 440 |
| 150 | 28 | 53.5 [2.11] | 43.7 [1.72] | 48.0 [1.89] | 29 [1.14] | 50 [1.97] | 79 [3.11] | 20.6 [0.81] | 41.5 [1.63] | 58 [2.28] | 7.5 [0.30] | 3.2 [0.13] | ±0.2 [0.01] | 690 |
| 240 | 32 | 60.1 [2.37] | 48.6 [1.91] | 52.5 [2.07] | 42 [1.65] | 52 [2.05] | 84 [3.31] | 22.2 [0.87] | 41.5 [1.63] | 65 [2.56] | 6.0 [0.24] | 3.2 [0.13] | ±0.2 [0.01] | 850 |

| IGE 9E -14 Rear Panel Mount, Through Bulkhead Receptacle with Threaded Holes or Through Bulkhead with Through Holes Dimensions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | D1 | | | | L2 | | | | |
| Size | Thrd | Thru Hole H13 | E ±0.1[0.00] | L1 max | min | max | L3 ±0.2[.01] | L4 ±0.3[.01] | Mass G max |
| 22 | M4 | 4.3 [0.17] | 31.8 [1.25] | 52.1 [2.05] | 16 [0.63] | 24.0 [0.94] | 4.0 [0.16] | 41.0 [1.61] | 140 |
| 28 | M5 | 5.3 [0.21] | 39.7 [1.56] | 52.1 [2.05] | 18 [0.71] | 23.6 [0.93] | 4.0 [0.16] | 50.8 [2.00] | 235 |
| 32 | M5 | 5.3 [0.21] | 44.5 [1.75] | 60.5 [2.38] | 19 [0.75] | 25.2 [0.99] | 4.0 [0.16] | 57.0 [2.24] | 300 |

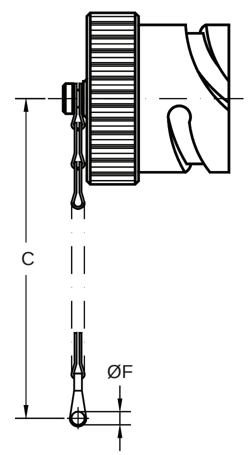
# IGE-MB connectors and accessories - dimensions

## ITB 06T PLUG COVER



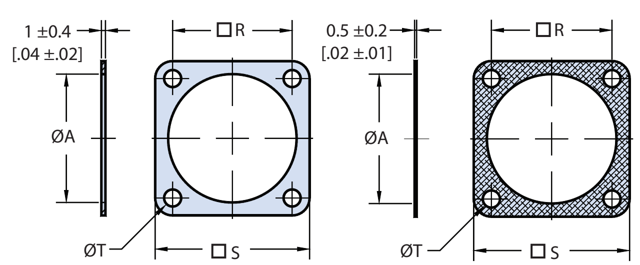

| Dimensions | | | |
|---|---|---|---|
| Part Number | Shell Size | C min | ØF +0.2[.01] -0[0.00] |
| ITB06T-16 | 16 | 123 [4.84] | 4.3 [0.17] |
| ITB06T-18 | 18 | 123 [4.84] | 4.3 [0.17] |
| ITB06T-22 | 22 | 138 [5.43] | 4.8 [0.19] |
| ITB06T-28 | 28 | 206 [8.11] | 4.8 [0.19] |
| ITB06T-32 | 32 | 206 [8.11] | 5.6 [0.22] |

## ITB 02T RECEPTACLE COVER



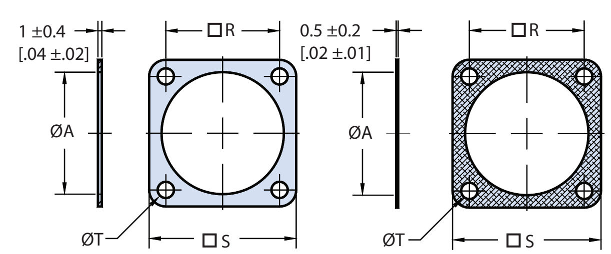

| Dimensions | | | |
|---|---|---|---|
| Part Number | Shell Size | C min | ØF +0.2[.01] -0[0.00] |
| ITB02T-16 | 16 | 108 [4.25] | 4.3 [0.17] |
| ITB02T-18 | 18 | 123 [4.84] | 4.3 [0.17] |
| ITB02T-22 | 22 | 123 [4.84] | 4.3 [0.17] |
| ITB02T-28 | 28 | 206 [8.11] | 5.6 [0.22] |
| ITB02T-32 | 32 | 206 [8.11] | 5.6 [0.22] |

## IT 40450 FRONT PANEL MOUNT GASKET




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Part Number | Shell Size | ØA +1 [.04] | R ±0.2 [.01] | S ±0.5 [.02] | ØT +0.5 [.02] |
| IT40450-16 | 16 | 25.3 [1.00] | 24.6 [0.97] | 32.5 [1.28] | 4.2 [0.17] |
| IT40450-18 | 18 | 28.4 [1.12] | 27.0 [1.06] | 35.0 [1.38] | 4.2 [0.17] |
| IT40450-22 | 22 | 34.8 [1.37] | 31.8 [1.25] | 41.0 [1.61] | 4.2 [0.17] |
| IT40450-28 | 28 | 44.3 [1.74] | 39.7 [1.56] | 50.8 [2.00] | 5.1 [0.20] |
| IT40450-32 | 32 | 50.7 [2.00] | 44.5 [1.75] | 57.0 [2.24] | 5.1 [0.20] |

## IT 40450 REAR PANEL MOUNT GASKET




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Part Number | Shell Size | ØA +1 [.04] | R ±0.2 [.01] | S ±0.5 [.02] | ØT +0.5 [.02] |
| IT40460-16 | 16 | 27.4 | 24.6 | 32.5 | 4.2 |
| IT40460-18 | 18 | 30.8 | 27.0 | 35.0 | 4.2 |
| IT40460-22 | 22 | 37.4 | 31.8 | 41.0 | 4.2 |
| IT40460-28 | 28 | 46.7 | 39.7 | 50.8 | 5.1 |
| IT40460-32 | 32 | 53.4 | 44.5 | 57.0 | 5.1 |

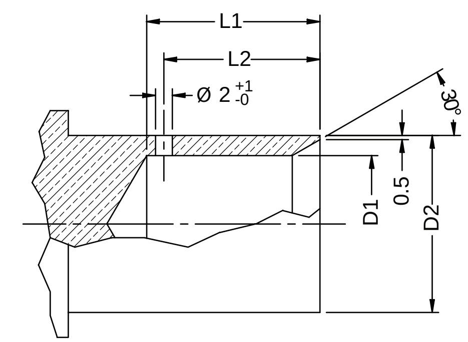







# IGE-MB marine bronze - reference information

## CONTACT DIMENSIONS




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Size | Cable mm² | D 1 +0.3[.01] 0[0.00] | D 2 ±0.2[.01] | L1 ±0.2[.01] | L2 |
| H 2 | 25 | 7.7 (0.30) | 10.9 (0.43) | 14.0 (0.55) | 11.0 (0.43) |
| H 5 | 50 | 11.2 (0.44) | 16.0 (0.63) | 15.0 (0.59) | 13.0 (0.51) |
| H 9 | 95 | 16.2 (0.64) | 21.0 (0.83) | 20.5 (0.81) | 18.5 (0.73) |
| H 15 | 150 | 20.9 (0.82) | 27.0 (1.06) | 28.0 (1.10) | 25.5 (1.00) |
| H 24 | 240 | 26.8 (1.06) | 31.6 (1.24) | 30.0 (1.18) | 27.0 (1.06) |

## COUPLING TORQUE

| Coupling Torque (VG95319-2) | | |
|---|---|---|
| Shell Size | Opening and Closing Max | Opening Min |
| 16 | 5.5 Nm | 0.5 Nm |
| 18 | 8.0 Nm | 0.6 Nm |
| 22 | 11.0 Nm | 0.8 Nm |
| 28 | 17.0 Nm | 0.9 Nm |
| 32 | 19.0 Nm | 1.0 Nm |

# Product selection guide









SERIES 927-072

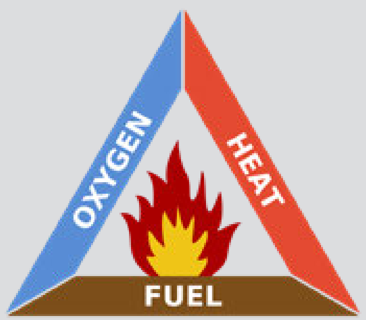
# ITS-Ex IECEx/ATEx Qualified Hazardous/Explosive Zone Connectors

Glenair is a qualified manufacturer of connectors for potential explosive zone use, built IAW IECEx/ATEx standards. The connectors may be used in application areas where flammable gases and vapors are present as a normal condition of operation (group IIC) and with temperature classes T6 and T5, zones 1 and 2; and for applications where potentially flammable dust is present as a normal condition of operation (group IIIC) and with temperature classes T80°C and T95°C in zone 21 and 22. The connector series design is optimized for fast and easy crimp-contact wire termination with ample wiring space in the cable housing and accessory hardware. Glenair Series ITS-Ex complies with the following standards:

- EN 60079-0 : 2012, "Explosive Atmospheres - Part 0: Equipment - General Requirements".
- EN 60079-1: 2014, "Explosive Atmospheres - Part 1: Equipment protection by flameproof enclosures 'd'".
- EN 60079-31: 2014, "Explosive Atmospheres - Part 31: Equipment Dust Ignition Protection by Enclosure 't'".
- IEC 60079-0: 2011, "Explosive Atmospheres - Part 0: Equipment - General Requirements".
- IEC 60079-1: 2014, "Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures 'd'".
- IEC 60079-31: 2013, "Explosive Atmospheres - Part 31: Equipment Dust Ignition Protection by Enclosure 't'".
- For panel mount only: EN/IEC 60079-7: "Explosive Atmospheres -Part 7: Equipment protection by increased safety 'e'"

- **Over 40 power and signal contact arrangements**
- **Full support for common armored and unarmored cable types**
- **MIL-DTL-5015 crimp-contact derivative solution**
- **Locking set screw-equipped coupling nut and protective safety covers**
- **Extended shell labyrinth cooling zone and potting chamber features**
- **Mechanical cable clamp, basket weave, and Ex d cable gland accessories**
- **IP68 water, vapor, moisture and dust protection in mated condition**

## ATEx EXPLOSIVE ZONES AND CATEGORIES




Explosion Triangle

### Purpose of explosion zone connectors and glands

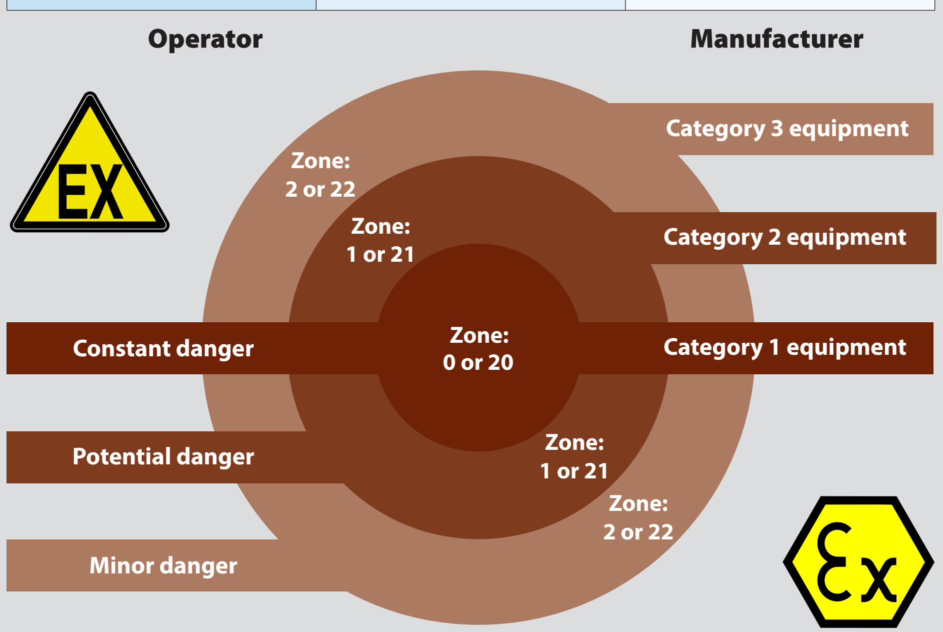
Glenair Series 927-072 ITS-Ex Hazardous Zone Connectors prevent explosions by eliminating the heat component in the explosion triangle. This is accomplished by preventing an ignition source, such as a flame or spark, from migrating through the cable or connector into a defined hazardous zone such as might be found in a petrochemical refinery or land/offshore drilling system. Hazardous zones are defined by frequency of presence of explosive gas or dust.

**Hazardous Zone Fuel Types**

- **Gas, vapor and mists : methane, butane, ethylene, hydrogen, acetylene**
- **Dust : aluminum, sulfur, zinc grain, coal, sugar, epoxy resin**

In the ATEx 1999/92/EC directive, hazardous areas are divided into three defined zones: 0, 1, and 2. These zones are designations used to describe the likelihood that explosive mixtures of fuel and oxygen exist during normal conditions of facility operation.

| Zone 0 (20) | Zone 1 (21) | Zone 2 (22) |
|---|---|---|
| Area in which an explosive gas (dust) atmosphere is present continuously or for long periods or frequently. | Area in which an explosive gas (dust) atmosphere is likely to occur in normal operation occasionally. | Area in which an explosive gas (dust) atmosphere is likely to occur in normal operation but, if it does occur, will persist for a short period only. |




Explosive area zone classifications are used by the operator to distinguish between explosive areas and their relative levels of risk. Operators use the triangular EX mark to indicate compliance with IECEx/ATEx requirements. Manufacturers however use different classifications to describe where their products may be used. The two systems generally conform in meaning but the words and symbols change.





SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Zone and category designations

Glenair Connectors 927-072 are qualified for Group IIA, IIB, IIC and for Group IIIA, IIIB, IIIC, Category 2 and Category 3.

| Category 2 | Category 3 |
|---|---|
| Place where explosive atmosphere is likely to occur. Provides the protection level in case of failure of the connector/equipment. | Place where explosive atmosphere are unlikely to occur, or if they do occur not frequently and only for a short period of time. Provides the requisite level of protection during normal operation. |

GROUP II is for explosive GASES

| Group II | Gases |
|---|---|
| IIA | Acetone, ethyl alcohol, ammonia, gasoline, butane, hexane, ethanol, natural gas, methanol, propane |
| IIB | Acetaldehyde, propane, ethylene |
| IIC | Hydrogen, gas mixture containing more than 25% hydrogen, acetylene, carbon disulphide |

GROUP III is for explosive DUST

| Group III | Dust |
|---|---|
| IIIA | Fibers |
| IIIB | Non-conductive dust |
| IIIC | Conductive dust |

## TEMPERATURE CLASSES

Glenair Series 927-072 ITS-Ex Hazardous Zone Connectors are qualified IAW class T6 to class T1.
The temperature class identifies the hottest temperature that the equipment can reach.

| Temperature Class | Permissible surface temperatures of the electrical equipment | Ignition temperature of the combustible gases |
|---|---|---|
| T1 | 450 °C | > 450 °C |
| T2 | 300 °C | 300 - 450 °C |
| T3 | 200 °C | 200 - 300 °C |
| T4 | 135 °C | 135 - 200 °C |
| T5 | 100 °C | 100 - 135 °C |
| T6 | 85 °C | 85 - 100 °C |



TOPSIDE: ITS-Ex™

## Zone and category designations

### IEC AND ATEx

ATEx 94/9/EC directive classifies the equipment into categories 1,2,3 (Group II), based on protection level. Standard EN/IEC 60079-0 introduces EPL (Equipment Protection Level).

| ATEx Group II | EPL according to IEC/EN 60079-0 | |
|---|---|---|
| | Gas | Dust |
| Category 1 | Ga | Da |
| Category 2 | Gb | Db |
| Category 3 | Gc | Dc |

The relation between the ATEx 1999/92/EC and the IEC is indicated below : in the Zone 0 you could mount an equipment Ga or 1G (according to 94/9/EC ATEx).

| Atmosphere | Zone | EPL | ATEx Category |
|---|---|---|---|
| Gas | 0 | Ga | 1G |
| | 1 | Gb or Ga | 2G or 1G |
| | 2 | Gc or Gb or Ga | 3G or 2G or 1G |
| Dust | 20 | Da | 1D |
| | 21 | Db or Da | 2D or 1D |
| | 22 | Dc or Db or Da | 3D or 2D or 1D |

### RANGE OF APPLICATIONS

- **Automotive refuelling or petrol stations**
- **Oil & gas extraction**
- **Oil refineries**
- **Gas pipelines and distribution**
- **Chemical processing plants**
- **Aircraft refuelling and hangars**
- **Transportation**
- **Pharmaceuticals**
- **Food processing**
- **Metal surface grinding**
- **Sugar refineries**
- **Grain handling and storage**
- **Coal mining**







SERIES 927-072
ITS-Ex Hazardous Zone Connectors

## ITS-Ex Series labeling and materials

### TECHNICAL OVERVIEW

**Certified Uses:**

- **With flammable gases and vapors with apparatus group IIC and with temperature classes T6 and T5 in zones 1 and 2**
- **With flammable dusts with apparatus group IIIC and with temperature classes T80°C and T95°C in zone 21 and 22**
- **The connectors are certified IP68 (tested at a depth of 10 meters for 30 minutes)**

The Glenair ITS-Ex Hazardous Zone series of connectors is comprised of metallic bodies and shells (aluminium alloy standard, optional materials avalaible) with resilient silicone rubber inserts IAW MIL-DTL-5015. Pin or socket crimp contacts are available, and male and female inserts are reversible. Cable plugs and receptacles are available to form in-line cable connections. A fixed flange mount receptacle is available for Ex d boxes and Ex e bulkhead use. Connectors are coupled with a trapezoidal double-start threaded nut retained by grub (set) screws, and form a cylindrical flamepath when mated. When disconnected, plugs and receptacles are mated to an attached protective safety cap (or blanking cap). Absence of cap voids the Ex certification. Mate plug and receptacle caps together when not in use to prevent thread damage. Both plug and receptacle cable configurations are equipped with back-end accessory threads for the attachment of mechanical cable clamps and wire mesh Kellums grip-style attachments (potting required). A third style of rear-end accessory, an industry-standard Ex-certified explosion-proof cable gland, is also available and supplied by Glenair. The Ex certified cable gland does not require potting by the customer to achieve Ex d certified performance.

### ATEx / IECEx LABELS

All Glenair ITS-Ex connectors are supplied with a non-removable label containg the following information per ATEx and IECEx directives:

**ATEx Marking**

CE 2460 Ex

II 2 G Ex db IIC T6, T5 Gb
II 2 D Ex tb IIIC T80°C, T95°C Db IP68
-40ºC ≤ Tamb ≤ +40°C (T6, T80°C) or +55°C (T5, T95°C)

**IECEx Marking**

Ex db IIC T6, T5 Gb
Ex tb IIIC T80°C, T95°C Db IP68
-40ºC ≤ Tamb ≤ +40°C (T6, T80°C) or +55°C (T5, T95°C)

FOR PANEL MOUNT CONNECTORS ONLY:

**ATEx Marking**

CE 2460 Ex

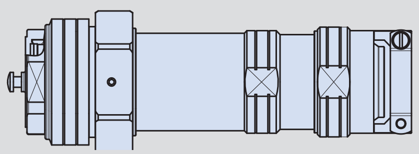
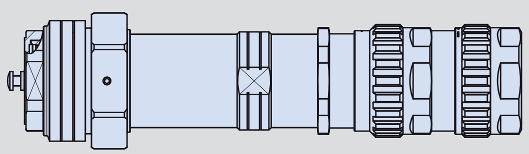
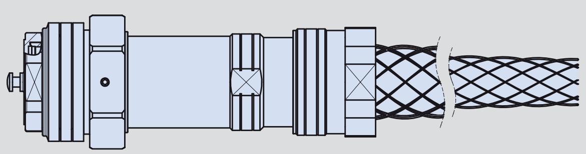
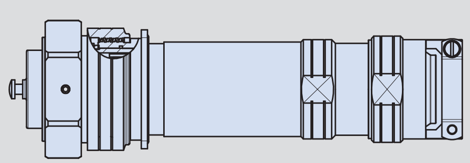
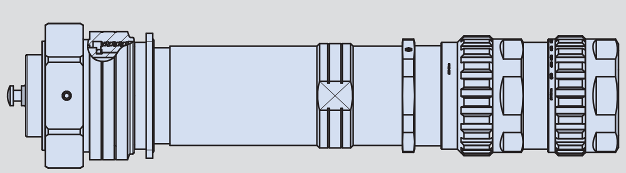
II 2 G Ex de IIC T6, T5 Gb
II 2 D Ex tb IIIC T80°C, T95°C Db IP68
-40oC ≤ Tamb ≤ +40°C (T6, T80°C) or +55°C (T5, T95°C)

**IECEx Marking**

Ex de IIC T6, T5 Gb
Ex tb IIIC T80°C, T95°C Db IP68
-40oC ≤ Tamb ≤ +40°C (T6, T80°C) or +55°C (T5, T95°C)

| Materials | |
|---|---|
| **Item** | **Material** |
| Hardware Body | Standard Base Material: aluminium alloy EN AW 6082-T6 UNI EN 573-3 (0.7÷1.3% Si, 0.6÷1.2% Mg, <0.2% Ti). All aluminium parts finished with a hard, scratch-resistant coating per MIL-A-8625, type III, class 2. |
| Insert | Silicone rubber |
| Cable Seal Glands | Silicone rubber |
| Grommet and Gasket | Silicone fire resistant rubber |
| O-Ring | Silicone MVQ / VMQ |
| Grub Screws (Set Screws) | UNI EN 10088-3, Alloy 316, stainless steel, passivated |
| Crimp Socket and Pin Contacts | Copper alloy ISO CuZn37Pb2/CuZn35Pb2 (OT61B/OT62A) for size AWG 20, 18, 16, 12 and 8 and copper alloy ISO CuTe for size 4,0 4/0. Both of them are silver plated as standard and gold plated as option. |
| Cement for potting | Bi-component epoxy resin (applied by the customer), flame retardant and thermally conductive, cure at room temperature for 24 hours. |

TOPSIDE: ITS-Ex™

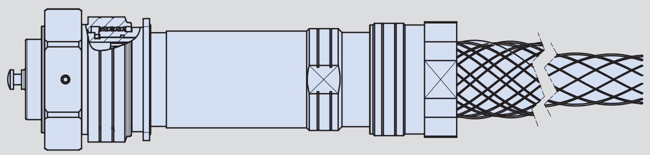
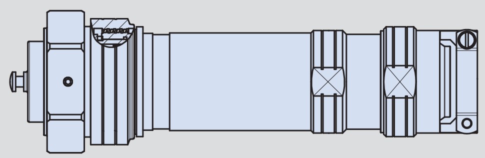
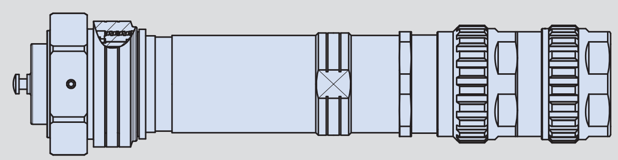
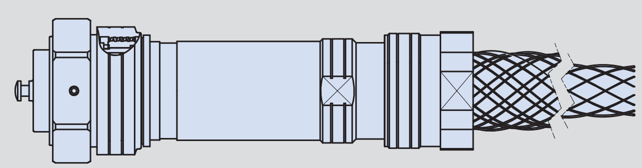
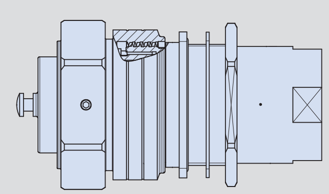
| Connectors Configurations | Base Part Number and Description |
|---|---|
| **Cable Plug with Mechanical Clamp and Potting Well** | **927-072-016-** |
|  | **Plug with mechanical cable clamp and potting well:** 927-072-016 incorporates a potting well /cable adapter which must be filled with supplied 2-part epoxy for certified Ex d performance. Various cable entry sizes for popular armored and unarmored cable are supported. Protective safety cover included. |
| **Cable Plug with Ex d Cable Gland** | **927-072-026-** |
|  | **Plug with "Ex d" certified cable gland** (potting is not required): 927-072-026 is supplied with an industry-standard Ex d certified cable gland, ready for immediate use. Various cable entry sizes for popular armored and unarmored cable are supported. Protective safety cover included. |
| **Cable Plug with Basket Weave Cable Grip** | **927-072-036-** |
|  | **Plug with basket-weave cable grip and potting well:** 927-072-036 incorporates a potting well /cable adapter which must be filled with supplied 2-part epoxy for certified Ex d performance. Various cable entry sizes for popular armored and unarmored cable are supported. Protective safety cover included. |
| **Fixed In-Line Receptacle with Mechanical Clamp** | **927-072-012-** |
|  | **Fixed in-line receptacle with mechanical cable clamp and potting well:** 927-072-012 incorporates a potting well /cable adapter which must be filled with supplied 2-part epoxy for certified Ex d performance. Various cable entry sizes for popular armored and unarmored cable are supported. Protective safety cover included. |
| **Fixed In-Line Receptacle with Ex d Cable Gland** | **927-072-022-** |
|  | **Fixed in-line receptacle with "Ex d" certified cable gland** (potting is not required): 927-072-022 is supplied with an industry-standard Ex d certified cable gland, ready for immediate use. Various cable entry sizes for popular armored and unarmored cable are supported. Protective safety cover included. |







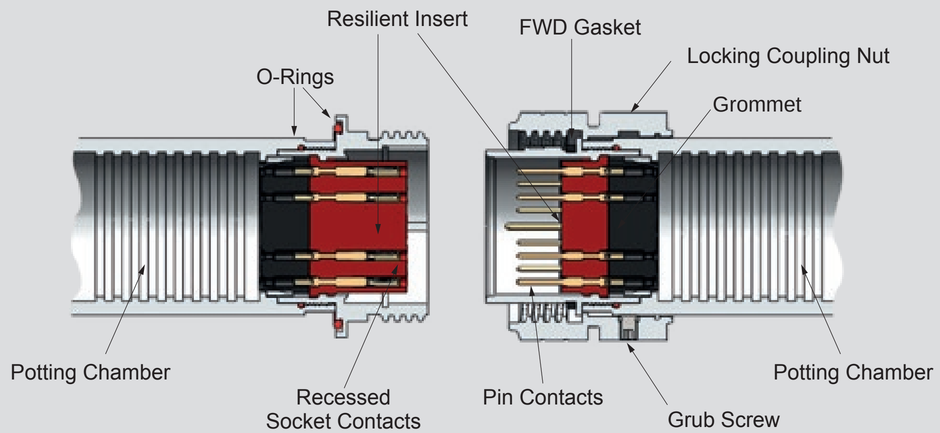
SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Connector configurations

| Connectors Configurations | Base Part Number and Description |
|---|---|
| **Fixed In-Line Receptacle with Cable Grip** | **927-072-032-** |
|  | **Fixed in-line receptacle with basket-weave cable grip and potting well:** 927-072-032 incorporates a potting well/cable adapter which must be filled with supplied 2-part epoxy for certified Ex d performance. Various cable entry sizes for popular armored and unarmored cable are supported. Protective safety cover included. |
| **In-Line Receptacle with Mechanical Cable Clamp** | **927-072-011-** |
|  | **In-Line receptacle with mechanical cable clamp and potting well:** 927-072-011 incorporates a potting well/cable adapter which must be filled with supplied 2-part epoxy for certified Ex d performance. Various cable entry sizes for popular armored and unarmored cable are supported. Protective safety cover included. |
| **In-Line Receptacle with Ex d Cable Gland** | **927-072-021-** |
|  | **In-Line receptacle with "Ex d" certified cable gland** (potting is not required): 927-072-021 is supplied with an industry-standard Ex d certified cable gland, ready for immediate use. Various cable entry sizes for popular armored and unarmored cable are supported. Protective safety cover included. |
| **In-Line Receptacle with Basket Weave Cable Grip** | **927-072-031-** |
|  | **Flange-mount receptacle with basket-weave cable grip and potting well:** 927-072-031 incorporates a potting well/cable adapter which must be filled with supplied 2-part epoxy for certified Ex d performance. Various cable entry sizes for popular armored and unarmored cable are supported. Protective safety cover included. |
| **Panel-Mount Fixed Receptacle*** | **927-072-003-** |
| <br>*Final IEC ATEx Ex d certification pending for this configuration only. Consult factory for status | **Panel mount fixed receptacle with potting well:** 927-072-003 is designed for use in certified Ex d flame-proof enclosures. An auxiliary lock nut is supplied for blowout protection in Ex e increased safety enclosures. The receptacle incorporates a potting well which must be filled with supplied 2-part epoxy for certified Ex d performance. Protective safety cover included. |

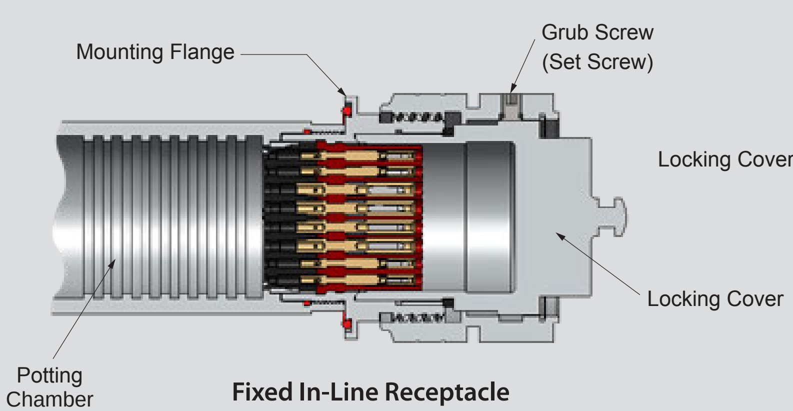
TOPSIDE: ITS-Ex™

## Cross-sectional and exploded views

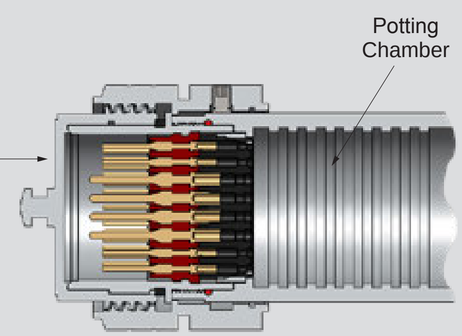
### CROSS-SECTIONAL VIEWS




**Receptale (left) and Plug (right) connector pair**

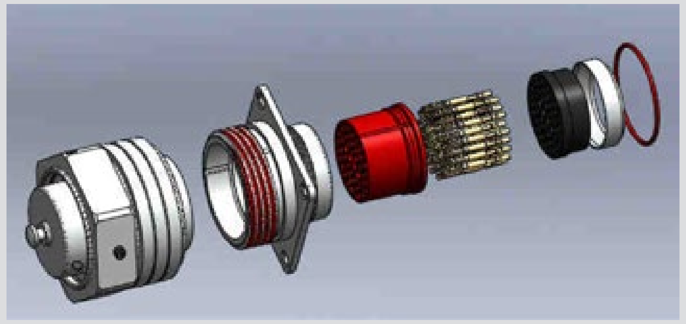



**Fixed In-Line Receptacle with protective safety cover**

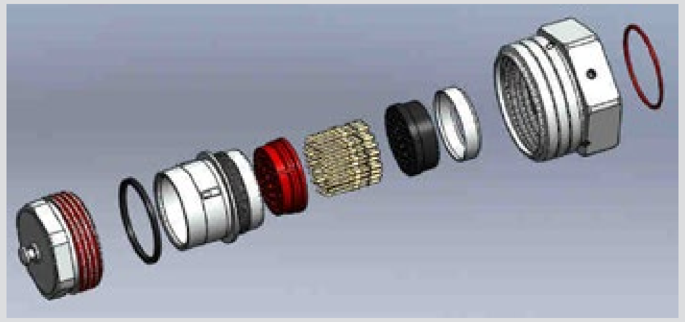



**Plug with protective safety cover**

### EXPLODED VIEWS



**Receptacle**



**Plug**








## ITS-Ex operation best practices

### SPECIAL CONDITIONS OF SAFE USE

The following conditions shall be met for safe use of Series ITS-Ex connectors.

1. Male and female connectors are considered completely mated when the plug coupling nut is fully advanced on the receptacle, and all grub screws are secured.
2. Use Loctite 242 or equivalent (medium strength threadlocker) at threaded joints between the following: plug shell and cable adapter (backshell); receptacle shell and cable adapter (backshell); cable adapter (backshell) and certified cable gland.
3. Never demate connector halves when energized or remove protective safety covers when an explosive gas or dust atmosphere is present.
4. When a connector half fitted with contact pins is not connected to an associated plug or receptacle, it shall not be energized, per IEC 60079-0, clause 20.2.
5. Use protective safety covers whenever connector halves are not mated, being careful to always advance and secure the grub screws. Flame-proof safety caps are a part of the certification, and their use is required to maintain independent flameproof worthiness of the connector halves.
6. When a connector half fitted with socket contacts is not mated to an associated plug or receptacle, it shall not be re-energized unless it is fitted with an flameproof protective safety cover.
7. Perform connector backpotting step according to Glenair instruction manual D500500000. Backpotting, or use of an Ex d certified cable gland is required for all Hazardous Zone rated equipment and shall be performed carefully and properly, using the 2-part epoxy compound supplied with each connector.
8. Always use suitable cable with a minimum rated operating temperature of 90°C when using rated current according to N.E.C. It is the responsibility of the operator to ensure selected cable is suitable for use in each specific application, including resistance to aggressive substances and caustic chemicals.
9. Always use suitable cable with a minimum rated operating temperature of 100°C when using rated current extrapolated from VG95234. It is the responsibility of the operator to ensure selected cable is suitable for use in each specific application, including resistance to aggressive substances and caustic chemicals.
10. It is not possible to connect to a battery without using a circuit breaker.
11. Series ITS-Ex connectors do not incorporate an external earth/ground. It is the responsibility of the user or installer to ensure adequate earth/ground continuity IAW Glenair instruction manual D500500000.
12. Do not remove Ex marking label and its lanyard from connector body or protective safety cover. For flange-mount receptacles mounted to a panel, attach label lanyard directly to a flange mounting hole. Label is required for identification of connector in a certified Ex d application.
13. For multi-pin connectors, calculate current load and temperature rise based on ambient temperature plus the aggregate total of the individual contacts in the insert. MIL-W-5088 specifications shall be used as reference on the subject in as much as pertinent cable de-rating data is included.

## CABLE CROSS-SECTION AND INTERNAL CONSTRUCTION

There are no IEC construction standards for the cables intended for use in flammable atmospheres, but minimum cable operating temperature shall be 90°C IAW NEC / 100°C VG95234. Gas-tight sealing of cabling for use in Ex d equipment enclosures depends heavily on cable shape and construction. Please see Glenair Instruction Manual D500500000 for complete information on cable selection, noting that any selected cable should:

1. Be substantially compact and circular (especially the part of the cable entering the enclosure),

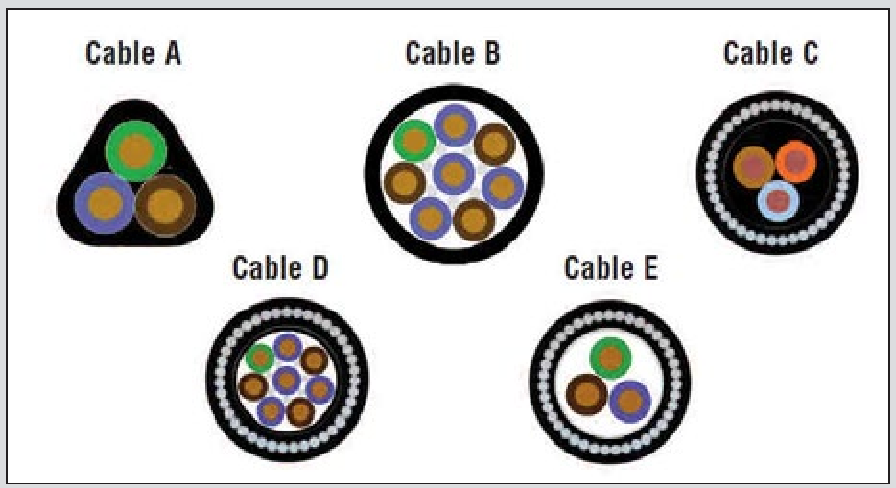
2. Have an extruded bedding (without any gaps),

3. Only utilize fillers which are Non-Hygroscopic.

In this illustration, **Cable A** is not suitable due to its irregular shape (impossible for cylindrical sealing gasket to seal).

**Cables B, D and E** are not suitable due to the presence of internal voids in the cable construction (potential flame migration path between conductors).

**Cable C** is the only one of the five sample cables illustrated which could be selected (uniformly round with no internal voids or gaps in cable lay or consturcion).




## GROUNDING

Glenair ITS-Ex connectors do not incorporate external grounding/earthing. It is the responsibility of the operator to effect earth continuity during the assembly process. Various methodologies, such as terminating a ground wire to a spare connector contact may be used for signal grounding and continuity. Electrical grounding of the cable armour system may be accomplished with the use of soldering, heat shrink, adhesive electrical tapes, or other methodologies to bond cable armoring to ground.

Glenair recommends that a small strip of outer jacket be cut away a reasonable distance from the entrance to the cable gland servicing the connector. A durable insulated conductor with a cross section not smaller than #14 AWG/4mm should then be bonded to the exposed armour. Protective tape, heat or cold shrink should be applied to protect and seal the bond point. The grounding conductor should be terminated at a fixed-panel receptacle. Periodic inspection of the ground attachment is recommended.




SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Cable application notes

## ARMORED AND UNARMORED CABLE SELECTION AND USE

It is the responsibility of the operator to select appropriate cables for use in hazardous Ex zones. Glenair recommends cables optimized for flexibility (IEC class 5 or higher / ICEA type H or higher) that incorporate flexible basket weave braided shielding when armoring is required (IEC 92-3 or IEEE455 or UL1309). Cables incorporating environmental jacketing, such as those in the following list should always be specified.

1. Halogen free ethylene-propylene elastomer or similar.

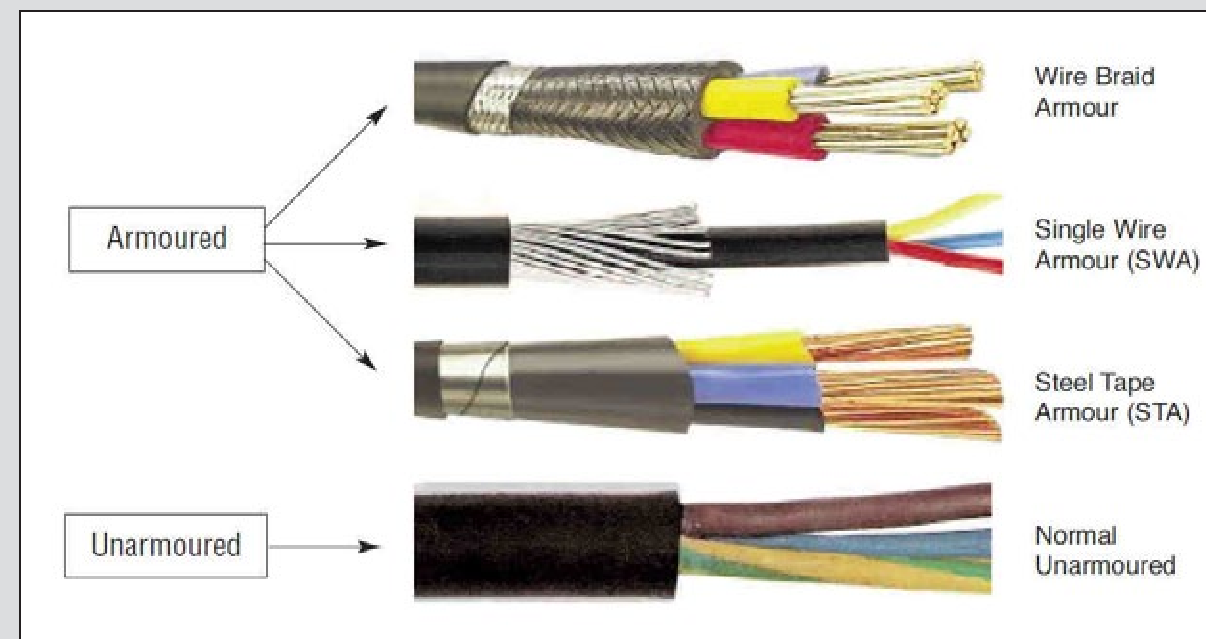
2. Halogen free cross-linked polyethylene or similar.

3. Halogen free thermoplastic polyolefin or similar.

4. Halogen free cross-linked polyolefin copolymer or similar.

5. Thermosetting neoprene or similar.

Glenair ITS-Ex cable glands, mechanical grips, and basket weave assemblies support cable diameter ranges from 52mm to 3mm, depending upon shell size. Some example of types of cable jacket and insulation cores materials are as follows (typical for marine, railway, onshore and offshore applications):




In this illustration, among the three armored types shown, Glenair recommends flexible Wire Braid Armor type cables. Single Wire Armor (SWA) and Steel Tape Armor (STA) cable types are not recommended. Standard unarmored cable is suitable for use in non-EMI/RFI applications and/or applications where risks of mechanical damage to cable conductors are minimal.

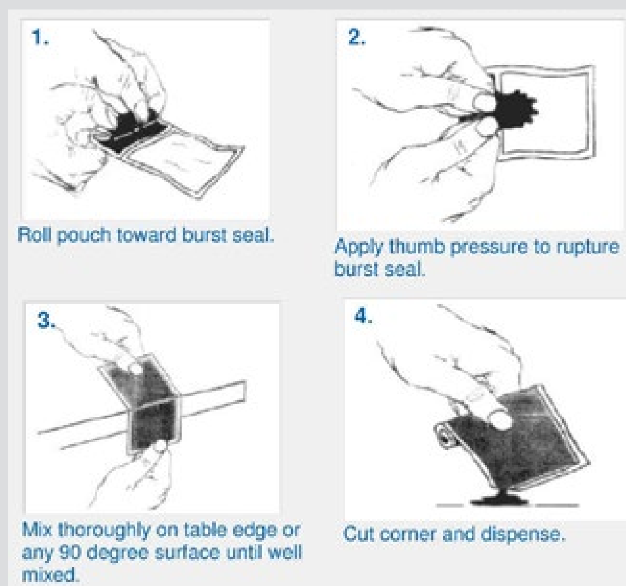
TOPSIDE: ITS-Ex™

## EPOXY RESIN POTTING MATERIAL

Glenair ITS-Ex series connectors equipped with an Ex barrier gland do not require potting. All other configurations, including mechanical cable clamp, basket weave backshell, and fixed flange receptacles must be potted for Ex certification. Connectors are supplied with a 2-part epoxy resin material for this purpose. This cement is both flame retardant and thermally conductive, fully cures at room temperature in 24 hours, and hardens after 4 hours. The material has a mix ratio by weight equal to 100 parts of resin to five parts of activation catalyst.The material is supplied in pre-measured burst packs. It is the operator's responsibility to evaluate whether any caustic chemicals or other aggressive substances present in the facility might damage the performance of the potting material.

## MIXING INSTRUCTIONS

1. Check expiration date of potting material before proceeding
2. Wear appropriate eye protection
3. Connector and cable should be fully terminated and prepped for potting prior to material mixing
4. Follow all burst pack mixing instructions, note mixing time is approximately 5 minutes



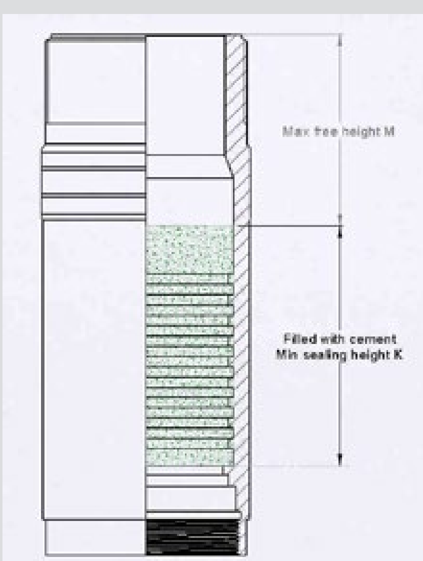
1. Roll pouch toward burst seal.

2. Apply thumb pressure to rupture burst seal.

3. Mix thoroughly on table edge or any 90 degree surface until well mixed.

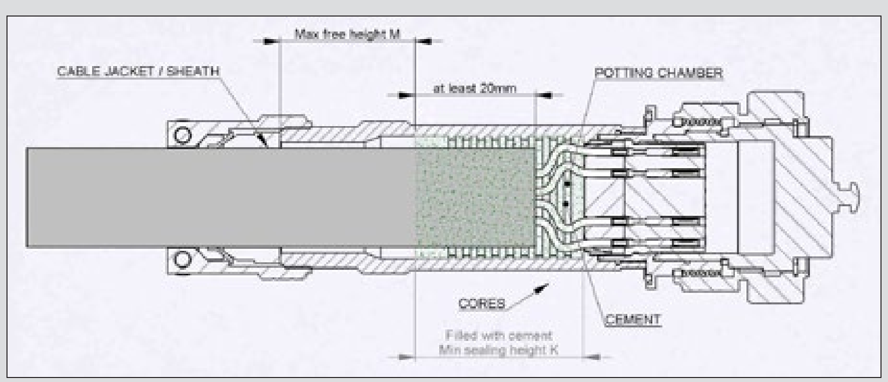
4. Cut corner and dispense.

**Fill Depth Illustration and Table**




| Shell Size | 36 | 18 | 10SL |
|---|---|---|---|
| Min sealing height K [mm] | 61 | 57 | 32 |
| Max free height M [mm] | 65 | 23 | 23 |

**Illustration of Fill Depth in relation to Jacketed and Stripped Cable zones**




| Shell Size | 36 | 18 | 10SL |
|---|---|---|---|
| Min sealing height K [mm] | 61 | 57 | 32 |
| Max free height M [mm] | 65 | 23 | 23 |

TOPSIDE: ITS-Ex™




SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Potting materials and instructions

## POTTING CHAMBER TO CONNECTOR ASSEMBLY

See ITS-Ex instruction manual D500500000 for best practice recommendations on connector termination, wiring, and assembly. Prior to completing potting step, properly assemble mechanical cable clamps, basket weave backshells, and cable glands to ITS-Ex series connectors follow these instructions.

1. Mount receptacle connector or plug body in an appropriate fixture such as a vice with smooth face or soft jaws (see illustration, right).
2. Apply thread locking compound (Loctite 242 blue or equivalent) to all backshell-to-connector threads.
3. Hand-tighten backshell accessory to connector.
4. Use a strap wrench or correctly sized flat wrench to tighten accessory fitting to connector according to torque values referenced in instruction manual D500500000 (see illustration, right).

## POTTING INSTRUCTIONS

1. Use only Glenair supplied 2-part epoxy resin for potting of ITS-Ex series connectors.
2. Fill potting chamber area behind wire terminations to the volume depths recommended in the illustrations and tables on opposite page. The goal is to fill as much of the potting area as required with material but to not inhibit the action and the performance of the cable sealing gland, follower, and clamp.
3. Glenair recommends when potting mated pairs of Series ITS-Ex connectors, always pot the connector with the female (socket) insert first. Once the socket side is set, backpot the male (pin) insert connector while mated with its corresponding pair. This will ensure correct axial alignment of the pin contacts in relation to socket contacts.
4. Throughout the potting process, the receptacle flange should be rigidly fixed in a vertical position as illustrated below. The fixture must be capable of holding the mated connector pair rigidly for a minimum of 4 hours at room temperature. The exiting conductor / cable should be fixed in line above the connector pair during the entire curing process.
5. Cut a corner of the cement burst pack and completely fill a needle-equipped syringe applicator
6. Fill the potting chamber to the recommended depth, being careful to fill progressively from the wire grommet end towards the mouth of the backshell. Cement volume usage is approximated in the table below.

| Shell size | Approx. cement usage in a cable adapter |
|---|---|
| 10SL | 14.5 grams, about 0.50 ounces |
| 18 | 62.5 grams, about 2.20 ounces |
| 36 | 173 grams, about 6.10 ounces |

TOPSIDE: ITS-Ex™

# Electrical performance

## ELECTRICAL PARAMETERS

| Voltage Service Rating IAW MIL-DTL-5015 (Specifications Non-Circuit Breaking) | | | |
|---|---|---|---|
| Service Voltage Rating | Operating Voltage VDC [V] | Operating Voltage VAC RMS [V] | Test Voltage VAC RMS [V] |
| I | 250 | 200 | 1000 |
| A | 700 | 500 | 2000 |
| D | 1250 | 900 | 2800 |
| E | 1750 | 1250 | 3500 |
| B | 2450 | 1750 | 4500 |
| C | 4200 | 3000 | 7000 |

| Contact Max Current Rating IAW NEC and VG95234 (Specifications Non-Circuit Breaking) | | | | |
|---|---|---|---|---|
| Contact Size AWG | Max Rated Current [A] | | Max Contact Resistance [mΩ] | Wire Size AWG |
| | IAW N.E.C. (1) (2) | Extrapolated from VG95234 (1) (3) | | |
| 16 – 16s | 16 | 20 | 6 | 16-18 AWG |
| 12 | 30 | 32 | 3 | 12 AWG |
| 8 | 50 | 60 | 1 | 8 AWG |
| 4 | 90 | 120 | 0,5 | 4 AWG |
| 0 | 155 | 220 | 0,3 | 0 AWG |

(1) Apply derating per contact arrangement IAW MIL-W-5088L.
(2) Non-circuit breaking contacts rated current as per N.E.C. (National Electrical Code) based on arcing control.
Use a cable of minimum rated temperature of 90°C.
(3) Values extrapolated from rated current chart of VG95234-1, at ambient temperature of 40°C.
Use a cable of minimum rated temperature of 100°C.

| Shell Size | Voltage Service Rating | Insert Arrangements | Contact Size AWG | Max Theoretical Rating Current per Shell Size (A) |
|---|---|---|---|---|
| 10SL | A | 2 | 16 | 48 |
| 18 | I, A, D, B, C | 17 | 16-12-8-4 | 210 |
| 36 | I, A, D, C | 24 | 20-18-16-12-8-4-0-4/0 | 1110 |

## WARNING

- Use suitable cable with minimum rated continuous operating temperature of 90°C with N.E.C. maximum rated current.
- Use suitable cable with minimum rated continuous operating temperature of 100°C with VG95234 maximum rated current.

As to derating per insert arrangement, when multiple conductors are used, the load factor and temperature rise based on ambient and total insert temperature must be taken into account.
MIL-W-5088 specifications shall be used as reference for derating per insert arrangement.








# Contact arrangements

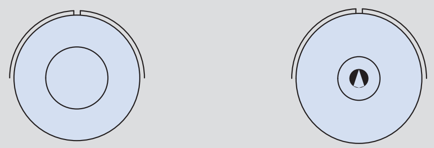
## CONTACT ARRANGEMENTS BY SHELL SIZE

| Shell Size | Contact Arrangement | Rating | Contact Number | Contact Size | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 0 | 4 | 8 | 12 | 16 |
| 10 | 10SL-3 | A | 3 | | | | | 3 |
| | 10SL-4 | A | 2 | | | | | 2 |
| 18 | 18-1 | I | 10 | | | | | 10 |
| | 18-3 | D | 2 | | | | 2 | |
| | 18-4 | D | 4 | | | | | 4 |
| | 18-5 | D | 3 | | | | 2 | 1 |
| | 18-6 | D | 1 | | 1 | | | |
| | 18-06 | A | 6 | | | | 4 | 2 |
| | 18-7 | B | 1 | | | 1 | | |
| | 18-8 | A | 8 | | | | 1 | 7 |
| | 18-9 | I | 7 | | | | 2 | 5 |
| | 18-10 | A | 4 | | | | 4 | |
| | 18-11 | A | 5 | | | | 5 | |
| | 18-12 | A | 6 | | | | | 6 |
| | 18-13 | A | 4 | | | 1 | 3 | |
| | 18-19 | A | 10 | | | | | 10 |
| | 18-20 | A | 5 | | | | | 5 |
| | 18-22 | D | 3 | | | | | 3 |
| | 18-30 (18-20x110°) | A | 5 | | | | | 5 |
| 36 | 36-3 | D | 6 | 3 | | | 3 | |
| | 36-4 | A | 3 | 3 | | | | |
| | 36-5 | A | 4 | 4 | | | | |
| | 36-6 | A | 6 | 2 | 4 | | | |
| | 36-7 | A | 47 | | | | 7 | 40 |
| | 36-8 | A | 47 | | | | 1 | 46 |
| | 36-9 | A | 31 | | 1 | 2 | 14 | 14 |
| | 36-10 | A | 48 | | | | | 48 |
| | 36-14 | D | 16 | | | 5 | 5 | 6 |
| | 36-15 | A | 35 | | | | | 35 |
| | 36-18 (36-9x100°) | A | 31 | | 1 | 2 | 14 | 14 |
| | 36-22 | D | 22 | | | | 22 | |
| | 36-35 | A | 36 | | | 4 | | 32 |
| | 36-54=36-B39 | A | 39 | | | 8 | | 31 |
| | 36-66 | A | 56 | | | | 4 | 52 |
| | 36-74 | A | 44 | | | 1 | | 43 |
| | 36-77 | D | 7 | | 7 | | | |
| | 36-A7 | A | 7 | 3 | 2 | | 2 | |
| | 36-A35 | A | 8 | 4 | | | | 4 |
| | 36-A51 | D | 6 | 3 | 2 | | | 1 |
| | 36-B78 | D | 14 | | | 12 | | 2 |
| | 36-D78 | D | 14 | | | 10 | | 4 |

* Only Crimp Contact Version

# Contact arrangements by number of contacts

## 1 CONTACT

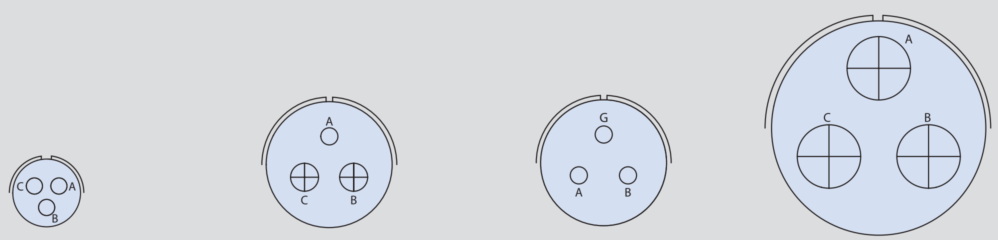


| | | |
|---|---|---|
| Arrangement | 18-6 | 18-7 |
| Quantity/Contact Size | 4 | 8 |
| Service Rating | D | B |

## 2 CONTACTS

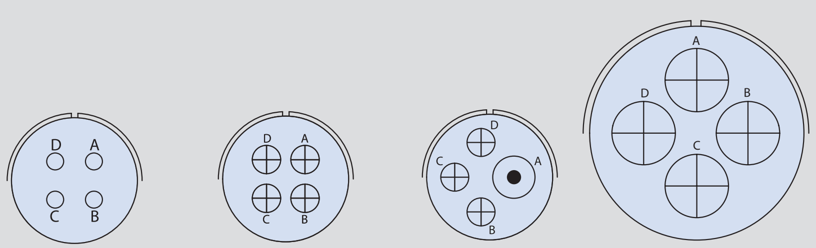
| | | |
|---|---|---|
| Arrangement | 10SL-4 | 18-3 |
| Quantity/Contact Size | 16 | 12 |
| Service Rating | A | D |

## 3 CONTACTS



| | | | | |
|---|---|---|---|---|
| Arrangement | 10SL-3 | 18-5 | 18-22 | 36-4 |
| Quantity/Contact Size | 16 | 2/12, 1/16 | 16 | 0 |
| Service Rating | A | D | D | A=D; B,C=A |

## 4 CONTACTS



| | | | | |
|---|---|---|---|---|
| Arrangement | 18-4 | 18-10 | 18-13 | 36-5 |
| Quantity/Contact Size | 16 | 12 | 1/8, 3/12 | 0 |
| Service Rating | D | A | A | A |

* Contact "D": First - Mate - Last - Break Grounding Contact

**CONTACT LEGEND** 20 · 18 · 16 · 12 · 8 · 4 · 0 · 4/0

TOPSIDE: ITS-Ex™

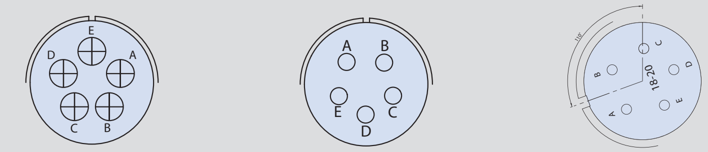






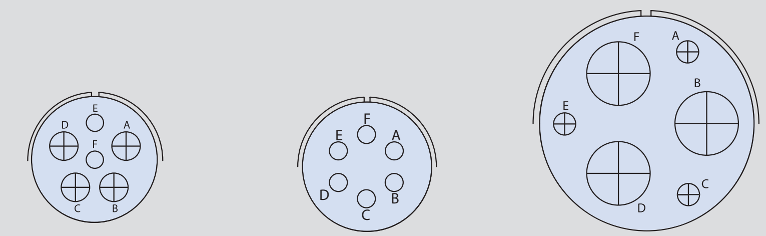
Contact arrangements by number of contacts

## 5 CONTACTS



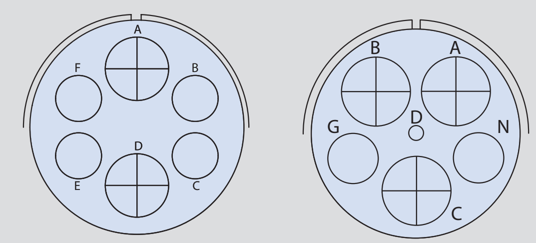
| | | | |
|---|---|---|---|
| Arrangement | 18-11 | 18-20 | 18-30 (18-20 x 110°) |
| Quantity/Contact Size | 12 | 16 | 16 |
| Service Rating | A | A | A |

## 6 CONTACTS



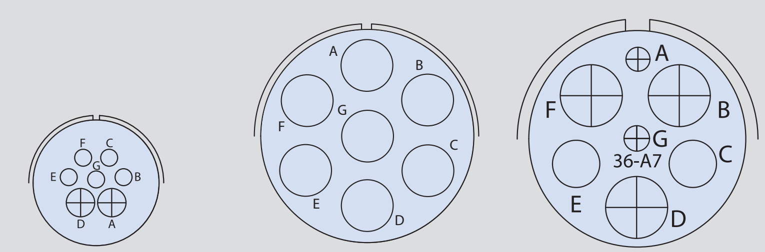
| | | | |
|---|---|---|---|
| Arrangement | 18-06 | 18-12 | 36-3 |
| Quantity/Contact Size | 4/12, 2/16 | 16 | 3/0, 3/12 |
| Service Rating | A | A | D |

## 6 CONTACTS



| | | |
|---|---|---|
| Arrangement | 36-6 | 36A-51 |
| Quantity/Contact Size | 2/0, 4/4 | 3/0, 2/4, 1/16 |
| Service Rating | A | D |

## 7 CONTACTS

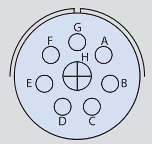
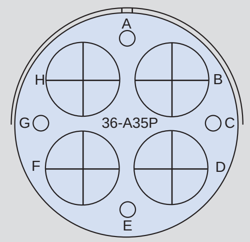


| | | | |
|---|---|---|---|
| Arrangement | 18-9 | 36-77 | 36-A7 |
| Quantity/Contact Size | 2/12, 5/16 | 4 | 3/0, 2/4, 2/12 |
| Service Rating | I | D | A |

**CONTACT LEGEND** 20 · 18 · 16 · 12 · 8 · 4 · 0 · 4/0

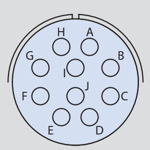
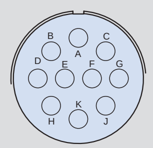
TOPSIDE: ITS-Ex™

## 8 CONTACTS

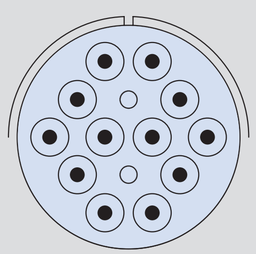
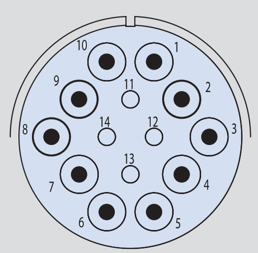
| Arrangement | 18-8 | 36-A35 |
|---|---|---|
| Quantity/Contact Size | 1/12, 7/16 | 4/16, 4/0 |
| Service Rating | A | A |

## 10 CONTACTS

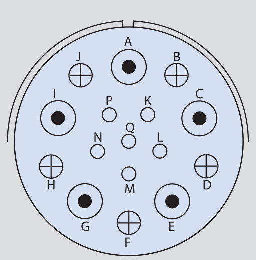
| Arrangement | 18-1 | 18-19 |
|---|---|---|
| Quantity/Contact Size | 16 | 16 |
| Service Rating | B,C,F,G = A; Bal=I | A |

## 14 CONTACTS

| Arrangement | 36-B78 | 36-D78 |
|---|---|---|
| Quantity/Contact Size | 12/8, 2/16 | 10/8, 4/16 |
| Service Rating | D | D |

## 16 CONTACTS



| Arrangement | 36-14 |
|---|---|
| Quantity/Contact Size | 5/8, 5/12, 6/16 |
| Service Rating | D |

**CONTACT LEGEND** 20 18 16 12 8 4 0 4/0

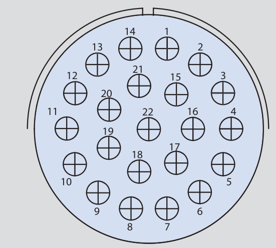




SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Contact arrangements by number of contacts

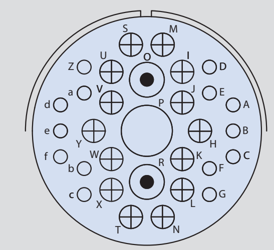
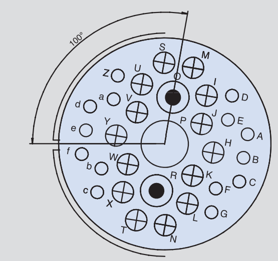
TOPSIDE: ITS-Ex™

## 22 CONTACTS



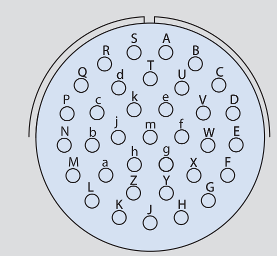
| Arrangement | 36-22 |
|---|---|
| Quantity/Contact Size | 12 |
| Service Rating | D |

## 31 CONTACTS

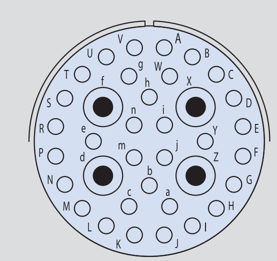
| Arrangement | 36-9 | 36-18 (36-9 x 100°) |
|---|---|---|
| Quantity/Contact Size | 1/4, 2/8, 14/12, 14/16 | 1/4, 2/8, 14/12, 14/16 |
| Service Rating | A | A |

## 35 CONTACTS



| Arrangement | 36-15 |
|---|---|
| Quantity/Contact Size | 35/16 |
| Service Rating | M=D; Bal=A |

## 36 CONTACTS



| Arrangement | 36-35 |
|---|---|
| Quantity/Contact Size | 4/8, 32/16 |
| Service Rating | A |

**CONTACT LEGEND** 20 18 16 12 8 4 0 4/0

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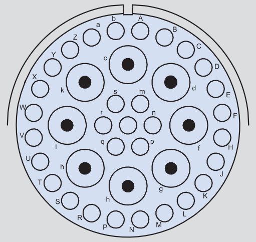
Dimensions in Inches (millimeters) are subject to change without notice.

# Contact arrangements by number of contacts

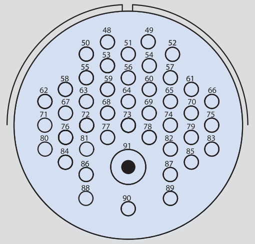


## 39 CONTACTS



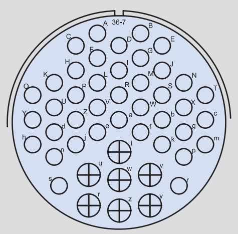
| | |
|---|---|
| Arrangement | 36-54 = 36-B39 |
| Quantity/Contact Size | 8/8, 31/16 |
| Service Rating | A |

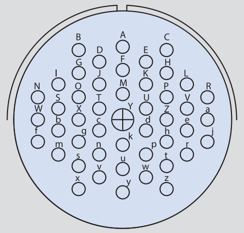
## 44 CONTACTS



| | |
|---|---|
| Arrangement | 36-74 |
| Quantity/Contact Size | 1/8, 43/16 |
| Service Rating | A |

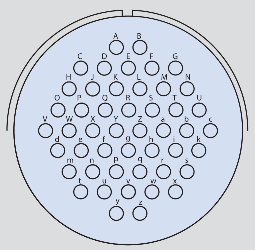
## 47 CONTACTS





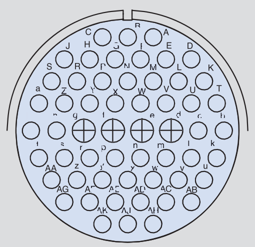
| | | |
|---|---|---|
| Arrangement | 36-7 | 36-8 |
| Quantity/Contact Size | 7/12, 40/16 | 1/12, 46/16 |
| Service Rating | A | A |

## 48 CONTACTS



| | |
|---|---|
| Arrangement | 36-10 |
| Quantity/Contact Size | 16 |
| Service Rating | A |

## 56 CONTACTS



| | |
|---|---|
| Arrangement | 36-66 |
| Quantity/Contact Size | 4/12, 52/16 |
| Service Rating | A |

**CONTACT LEGEND**

20 18 16 12 8 4 0 4/0





SERIES 927-072
ITS-Ex Hazardous Zone Connectors

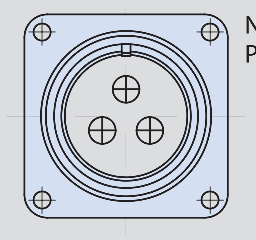
# Polarization

## INSERT ROTATION ALTERNATE POSITIONS

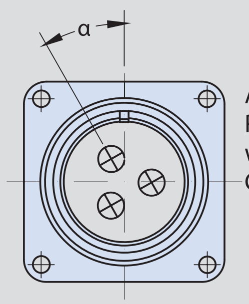
| Arrangement | α ± 2° | | | |
|---|---|---|---|---|
| | W | X | Y | Z |
| 10SL-3 | | | | |
| 10SL-4 | | | | |
| 18-1 | 70 | 145 | 215 | 290 |
| 18-3 | 35 | 110 | 250 | 325 |
| 18-4 | 35 | 110 | 250 | 325 |
| 18-5 | 80 | 110 | 250 | 280 |
| 18-6 | | | | |
| 18-06 | 180 | | | |
| 18-7 | | | | |
| 18-8 | 70 | | | 290 |
| 18-9 | 80 | 110 | 250 | 280 |
| 18-10 | | 120 | 240 | |
| 18-11 | | 170 | 265 | |
| 18-12 | 80 | | | 280 |
| 18-13 | 80 | 110 | 250 | 280 |
| 18-19 | | 120 | 240 | |
| 18-20 | 90 | 180 | 270 | |
| 18-22 | 70 | 145 | 215 | 290 |
| 18-30 | | | | |

| Arrangement | α ± 2° | | | |
|---|---|---|---|---|
| | W | X | Y | Z |
| 36-3 | 70 | 145 | 215 | 290 |
| 36-4 | 70 | 145 | 215 | 290 |
| 36-5 | | 120 | 240 | |
| 36-6 | 35 | 110 | 250 | 325 |
| 36-7 | 80 | 110 | 250 | 280 |
| 36-8 | 80 | 110 | 250 | 280 |
| 36-9 | 80 | 125 | 235 | 280 |
| 36-10 | 80 | 125 | 235 | 280 |
| 36-14 | 90 | 180 | 270 | |
| 36-15 | 60 | 125 | 245 | 305 |
| 36-18 | | | | |
| 36-22 | 80 | 110 | 250 | 280 |
| 36-35 | | | | |
| 36-54 = 36-B39 | 67 | | | |
| 36-66 | 110 | 250 | 260 | 280 |
| 36-74 | | | | |
| 36-77 | 45 | 90 | | |
| 36-A7 | | | | |
| 36-A35 | | | | |
| 36-A51 | 45 | 135 | 225 | 315 |
| 36B-78 | 35 | 106 | 254 | 325 |
| 36D-78 | 35 | 106 | 254 | 325 |

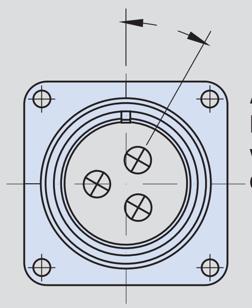
**Insert Rotation (front view)**



Normal Position




Alternate Position with Socket Contacts

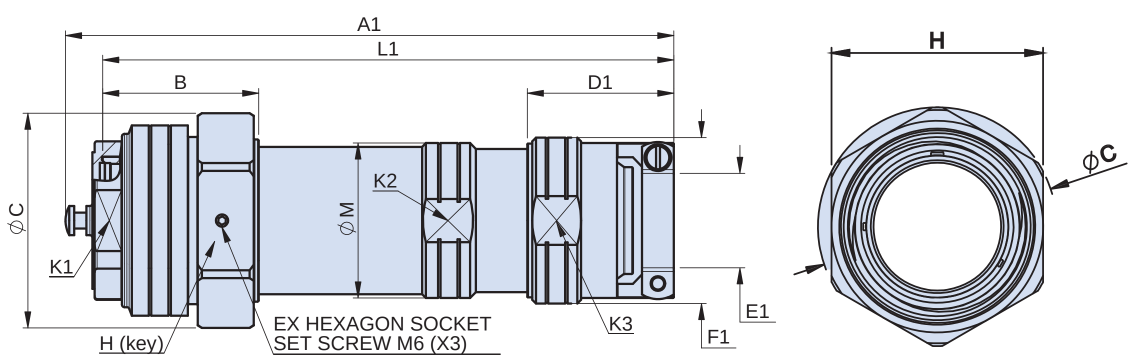


Alternate Position with Pin Contacts

TOPSIDE: ITS-Ex™

## 927-072-016 CABLE PLUG WITH ENVIRONMENTAL CABLE ADAPTER AND MECHANICAL CABLE CLAMP

| How To Order | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sample Part Number | 927-072 | 016 | 36-66 | P1 | F9 | N | A |
| Series | 927-072 | | | | | | |
| Style | 016 = Mechanical Cable Clamp | | | | | | |
| Shell Size - Insert Arrangement | See pages 69 – 74 | | | | | | |
| Contact Type and Plating | P = Pin Contact; S = Socket Contact; 1 = Silver Plated; 2 = Gold Plated | | | | | | |
| Shell Material and Finish | F9 = Aluminium Alloy, Anodize Hardcoat | | | | | | |
| Alternate Key Position | N = Normal, X, Y, Z, W (See Table on page 75) | | | | | | |
| Cable Range | A, B, C (See Table next page) | | | | | | |




| Shell Size | A1 | B | C | D1 | E1 Min. | E1 Max. | F1 | H | K1 | K2 | K3 | L1 | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10SL** | 146 | 2.20 (6.0) | 1.81 (46) | 1.60 (40.7) | 0.18 (4.50) | 0.44 (11.12) | 1.10 (28.0) | 1.61 (41) | 0.94 (24) | 0.87 (22) | 1.06 (27) | 5.20 (132) | 0.98 (25) |
| **18** | 185 | 2.52 (63.9) | 2.32 (59) | 1.78 (45.2) | 0.38 (9.60) | 0.94 (23.80) | 0.85 (21.5) | 2.05 (52) | 1.34 (34) | 1.42 (36) | 1.61 (41) | 6.69 (170) | 1.50 (38.2) |
| **36** | 250 | 2.52 (63.9) | 3.46 (88) | 2.36 (60) | 0.92 (23.40) | 1.62 (41.25) | 2.68 (68.0) | 3.07 (78) | 2.36 (60) | 2.40 (61) | 2.48 (63) | 9.25 (235) | 2.50 (63.5) |

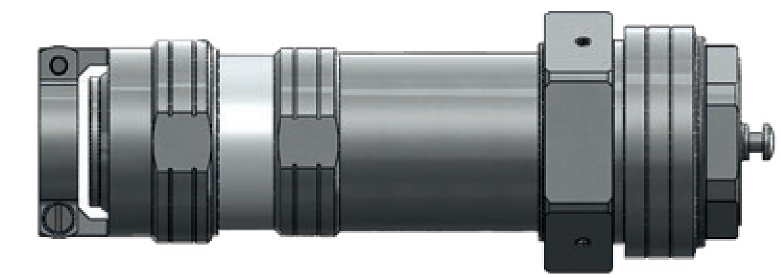
Dimensions

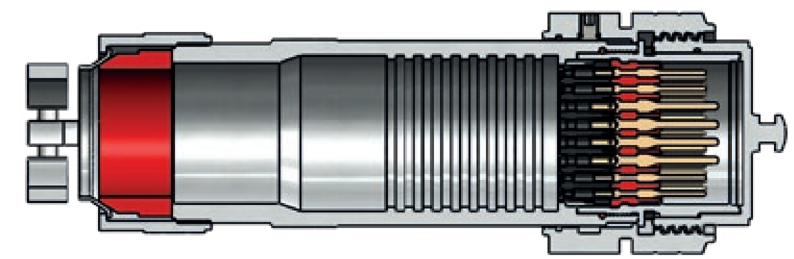


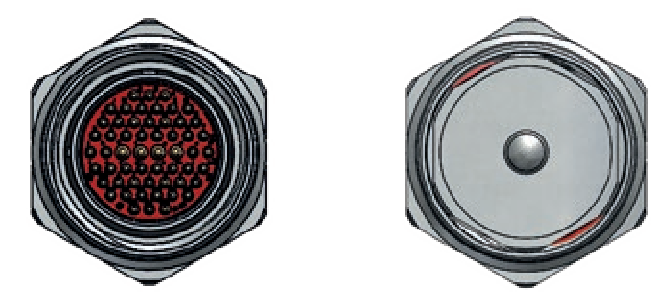




SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Cable plug with mechanical cable clamp







| Cable Range Dimensions for Mechanical Cable Clamp | | | |
|---|---|---|---|
| Shell Size | Cable Range Designator | Cable Type | Cable Jacket Range [mm] (1) |
| 36 | A | Unarmored cable | 29.90 to 41.25 |
| | B | Unarmored cable | 23.40 to 35.00 |
| 18 | A | Unarmored cable | 15.50 to 23.80 |
| | B | Unarmored cable | 11.30 to 19.00 |
| | C | Unarmored cable | 9.60 to 15.87 |
| 10SL | A | Unarmored cable | 5.84 to 11.12 |
| | B | Unarmored cable | 4.50 to 7.93 |

(1) It is advisable to use reduction sleeves for lower values of cable diameter within cable range.



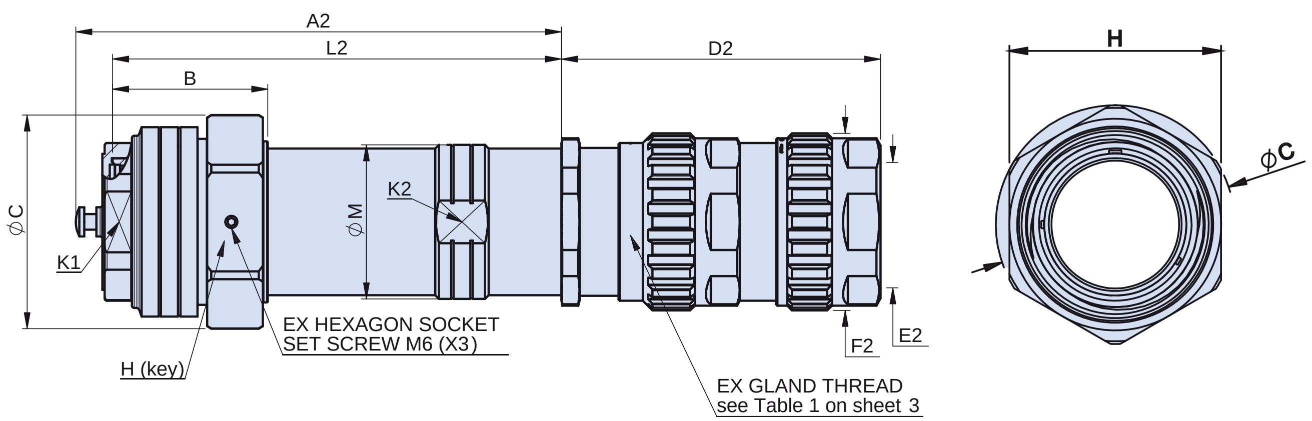


TOPSIDE: ITS-Ex™

SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Cable plug with Ex cable gland

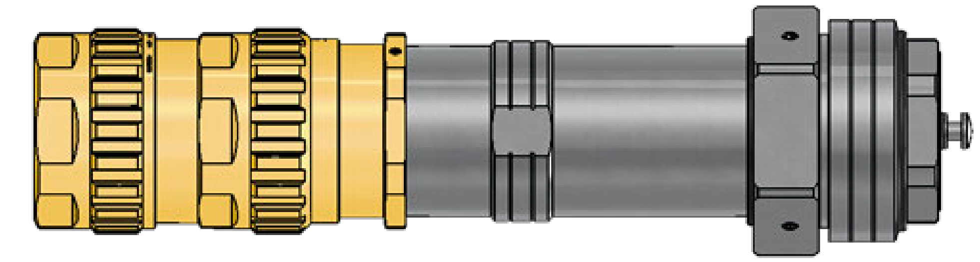
## 927-072-026 CABLE PLUG WITH ENVIRONMENTAL CABLE ADAPTER AND EX CABLE GLAND

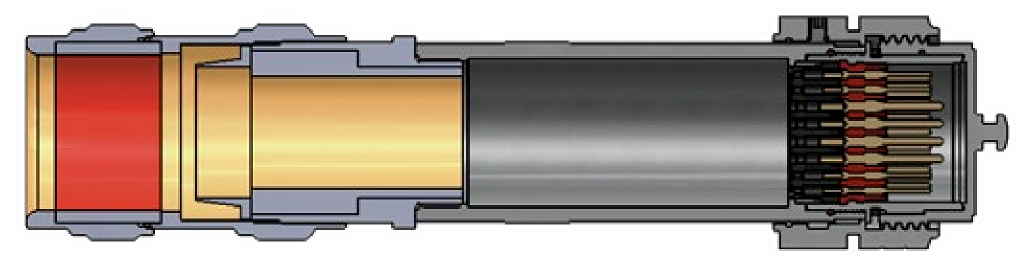
| How To Order | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sample Part Number | 927-072 | 026 | 36-66 | P1 | F9 | N | A |
| Series | 927-072 | | | | | | |
| Style | 026 = Ex Cable Gland | | | | | | |
| Shell Size - Insert Arrangement | See pages 69 – 74 | | | | | | |
| Contact Type and Plating | P = Pin Contact, S = Socket Contact<br>1 = Silver Plated, 2 = Gold Plated | | | | | | |
| Shell Material and Finish | F9 = Aluminium Alloy, Anodize Hardcoat | | | | | | |
| Alternate Key Position | N = Normal, X, Y, Z, W (See Table on page 75) | | | | | | |
| Cable Range | A, B, C (See Table next page) | | | | | | |

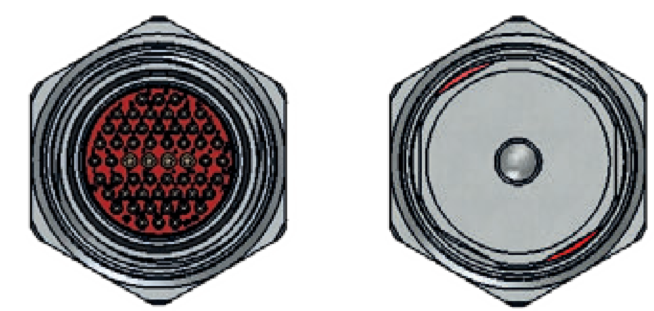



| Dimensions | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | A2 | B | C | D2 | E2 Min. | E2 Max. | Ex Gland Thread | F2 | H | K1 | K2 | L2 | M |
| **10SL** | 4.13 (105) | 2.20 (56.0) | 1.81 (46) | * | 3.0 (0.12) | 20.50 (0.81) | M20x1.5<br>M16x1.5 | * | 1.61 (41) | 0.94 (24) | 0.87 (22) | 3.58 (91) | 0.98 (25) |
| **18** | 5.94 (151) | 2.52 (63.9) | 2.32 (59) | * | 6.0 (0.24) | 26.0 (1.02) | M25x1.5<br>M20x1.5 | * | 2.05 (52) | 1.34 (34) | 1.42 (36) | 5.31 (135) | 1.50 (38.2) |
| **36** | 7.91 (201) | 2.52 (63.9) | 3.46 (88) | * | 22.0 (0.87) | 52.60 (2.07) | M50x1.5<br>M40x1.5 | * | 3.07 (78) | 2.36 (60) | 2.40 (61) | 7.28 (185) | 2.50 (63.5) |

(*) Dimension varies according to Ex Cable Gland.







| Cable Range Dimensions for Ex Cable Gland | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | Cable Range Designator | Cable Type | Ex Gland Thread | Cable outer sheath range [mm] | Cable inner sheath range [mm] | Armor Range with Clamping Ring |
| 36 | A | Unarmored cable | M50x1.5 | 28 to 41 | | |
| | B | Unarmored cable | M40x1.5 | 22 to 33 | | |
| | A1 | Armored Cable | M50x1.5 | 36 to 52.60 | 28.90 to 44.40 | 0 to 1.0 and 1.5 to 2.5 |
| | B1 | Armored Cable | M40x1.5 | 28 to 41 | 22 to 33 | 0 to 0.7 and 1.3 to 2.0 |
| 18 | A | Unarmored cable | M25x1.5 | 12.50 to 20.50 | | |
| | B | Unarmored cable | M20x1.5 | 9 to 16 | | |
| | C | Unarmored cable | M20x1.5 | 6 to 12 | | |
| | A1 | Armored Cable | M25x1.5 | 16.90 to 26 | 12.50 to 20.50 | 0 to 0.7 and 0.9 to 1.6 |
| | B1 | Armored Cable | M25x1.5 | 12.50 to 20.50 | 9 to 14 | 0 to 0.7 and 0.7 to 1.4 |
| | C1 | Armored Cable | M20x1.5 | 12.50 to 20.50 | 9 to 14 | 0 to 0.7 and 0.7 to 1.4 |
| | D1 | Armored Cable | M20x1.5 | 9 to 16 | 6 to 12 | 0 to 0.7 and 0.7 to 1.25 |
| | E1 | Armored Cable | M20x1.5 | 6 to 12 | 3 to 8.10 | 0 to 0.7 and 0.7 to 1.25 |
| 10SL | A | Unarmored cable | M20x1.5 | 9 to 16 | | |
| | B | Unarmored cable | M20x1.5 | 6 to 12 | | |
| | C | Unarmored cable | M16x1.5 | 6 to 12 | | |
| | A1 | Armored Cable | M20x1.5 | 12.50 to 20.50 | 9 to 14 | 0 to 0.7 and 0.7 to 1.4 |
| | B1 | Armored Cable | M20x1.5 | 9 to 16 | 6 to 12 | 0 to 0.7 and 0.7 to 1.25 |
| | C1 | Armored Cable | M20x1.5 | 6 to 12 | 3 to 8.1 | 0 to 0.7 and 0.7 to 1.25 |
| | D1 | Armored Cable | M16x1.5 | 6 to 12 | 3 to 8.1 | 0 to 0.7 and 0.7 to 1.25 |


TOPSIDE: ITS-Ex™



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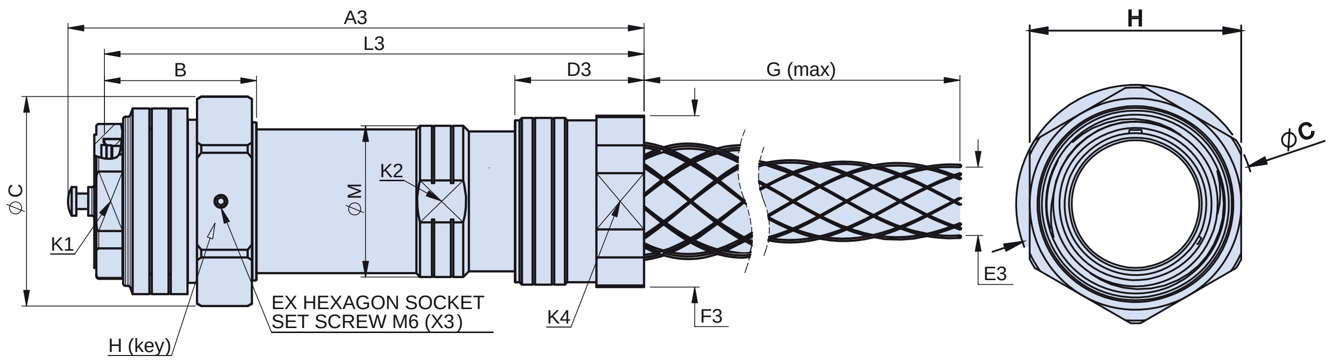
## 927-072-036 CABLE PLUG WITH ENVIRONMENTAL CABLE ADAPTER AND BASKET WEAVE CABLE GRIP

| How To Order | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sample Part Number** | 927-072 | 036 | 36-66 | P1 | F9 | N | A |

| | |
|---|---|
| **Series** | 927-072 |
| **Style** | 036 = Basket Weave Cable Grip |
| **Shell Size - Insert Arrangement** | See pages 69 – 74 |
| **Contact Type and Plating** | P = Pin Contact; S = Socket Contact<br>1 = Silver Plated; 2 = Gold Plated |
| **Shell Material and Finish** | F9 = Aluminium Alloy, Anodize Hardcoat |
| **Alternate Key Position** | N = Normal, X, Y, Z, W (See Table on page 75) |
| **Cable Range** | A, B, C (See Table next page) |

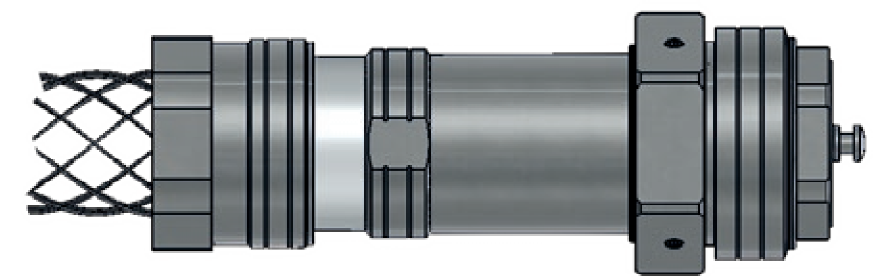


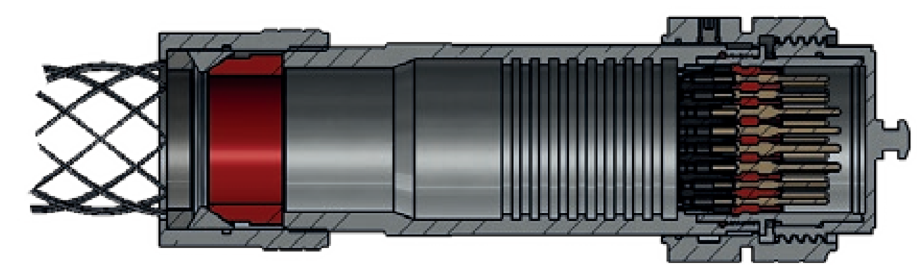

| Dimensions | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | A3 | B | C | D3 | E3 Min. | E3 Max. | F3 | G Max. | H | K1 | K2 | K4 | L3 | M |
| **10SL** | | 2.20 (56.0) | 1.81 (46) | | | | | | 1.61 (41) | 0.94 (24) | 0.87 (22) | | | 0.98 (25) |
| **18** | 7.17 (182) | 2.52 (63.9) | 2.32 (59) | 1.68 (42.7) | 0.50 (12.70) | 0.94 (23.80) | 1.81 (46.0) | 201** | 2.05 (52) | 1.34 (34) | 1.42 (36) | 1.65 (42) | 6.97 (177) | 1.50 (38.2) |
| **36** | 9.53 (242) | 2.52 (63.9) | 3.46 (88) | 2.06 (52.4) | 1.01 (25.60) | 1.62 (41.25) | 2.83 (72.0) | 315** | 3.07 (78) | 2.36 (60) | 2.40 (61) | 2.68 (68) | 8.94 (227) | 2.50 (63.5) |

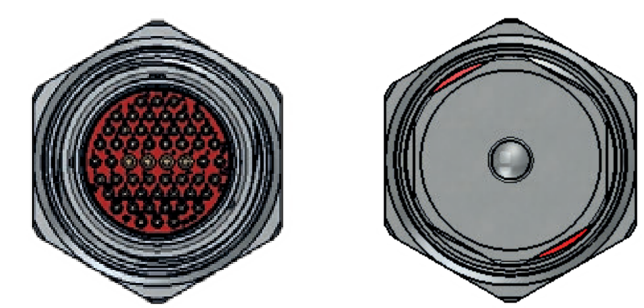
(**) Max overall dimension; dimension less than max one, depending on Basket Weave Cable Range.




SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Cable plug with basket weave cable grip







| Cable Range Dimensions for Basketweave Cable Grip | | | |
|---|---|---|---|
| Shell Size | Cable Range Designator | Cable Type | Cable Jacket Range [mm] (1) |
| 36 | A | Unarmored cable | 39,40 to 41,25 |
| | B | Unarmored cable | 38,90 to 40,50 |
| | C | Unarmored cable | 34,50 to 38,50 |
| | D | Unarmored cable | 31,00 to 34,90 |
| | E | Unarmored cable | 29,40 to 33,30 |
| | F | Unarmored cable | 25,60 to 29,50 (1) |
| 18 | A | Unarmored cable | 19,60 to 23,80 |
| | B | Unarmored cable | 18,00 to 22,20 (1) |
| | C | Unarmored cable | 15,50 to 19,10 |
| | D | Unarmored cable | 12,70 to 15,87 |
| | E | Unarmored cable | 10,40 to 12,70 (1) |
| 10SL | Not available | | |

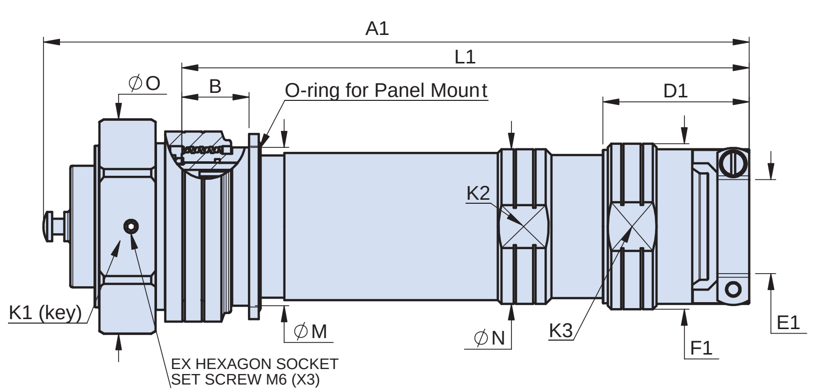
(1) It is advisable to use reduction sleeves for lower values of cable diameter within cable range.

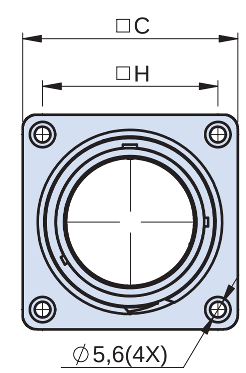
TOPSIDE: ITS-Ex™

Fixed in-line receptacle
with mechanical cable clamp

## 927-072-012 FIXED IN-LINE RECEPTACLE WITH ENVIRONMENTAL CABLE ADAPTER AND MECHANICAL CABLE CLAMP

| How To Order | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample Part Number** | | 927-072 | 012 | 36-66 | P1 | F9 | N | A |
| **Series** | 927-072 | | | | | | | |
| **Style** | 012 = Mechanical Cable Clamp | | | | | | | |
| **Shell Size - Insert Arrangement** | See pages 69 – 74 | | | | | | | |
| **Contact Type and Plating** | P = Pin Contact, S = Socket Contact<br>1 = Silver Plated, 2 = Gold Plated | | | | | | | |
| **Shell Material and Finish** | F9 = Aluminium Alloy, Anodize Hardcoat | | | | | | | |
| **Alternate Key Position** | N = Normal, X, Y, Z, W (See Table on page 75) | | | | | | | |
| **Cable Range** | A, B, C (See Table next page) | | | | | | | |



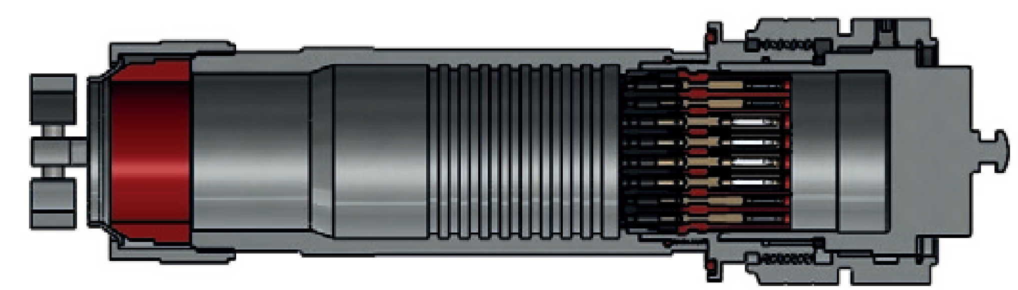

| Dimensions | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | A1 | B | C | D1 | E1 | | F1 | H | K1 | K2 | K3 | L1 | M | N | O |
| | | | | | Min. | Max. | | | | | | | | | |
| **10SL** | 7.05 (179) | 0.97 (24.7) | 1.77 (45) | 1.60 (40.7) | 0.18 (4.50) | 0.44 (11.12) | 1.10 (28.0) | 1.30 (33) | 1.61 (41) | 0.87 (22) | 1.06 (27) | 5.12 (130) | 1.02 (26) | 0.98 (25) | 1.81 (46) |
| **18** | 8.86 (225) | 1.09 (27.6) | 2.24 (57) | 1.78 (45.2) | 0.38 (9.60) | 0.94 (23.80) | 0.85 (21.5) | 1.65 (42) | 2.05 (52) | 1.42 (36) | 1.61 (41) | 6.69 (170) | 1.50 (38) | 1.50 (38.2) | 2.32 (59) |
| **36** | 11.42 (290) | 1.09 (27.6) | 2.99 (76) | 2.36 (60) | 0.92 (23.40) | 1.62 (41.25) | 2.68 (68.0) | 2.44 (62) | 3.07 (78) | 2.40 (61) | 2.48 (63) | 9.17 (233) | 2.56 (65) | 2.50 (63.5) | 3.46 (88) |

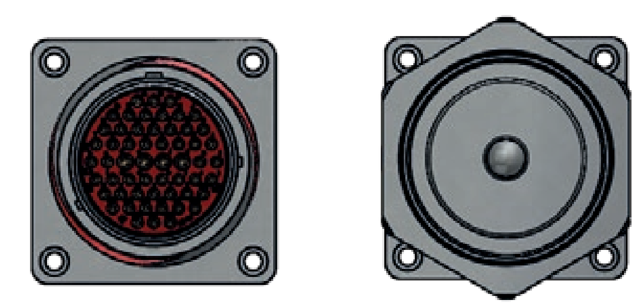





Dimensions in Inches (millimeters) are subject to change without notice.

SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Fixed in-line receptacle
with mechanical cable clamp





| Cable Range Dimensions for Mechanical Cable Clamp | | | |
|---|---|---|---|
| Shell Size | Cable Range Designator | Cable Type | Cable Jacket Range [mm] (1) |
| 36 | A | Unarmored cable | 29,90 to 41,25 |
| | B | Unarmored cable | 23,40 to 35,00 |
| 18 | A | Unarmored cable | 15,50 to 23,80 |
| | B | Unarmored cable | 11,30 to 19,00 |
| | C | Unarmored cable | 9,60 to 15,87 |
| 10SL | A | Unarmored cable | 5,84 to 11,12 |
| | B | Unarmored cable | 4,50 to 7,93 |

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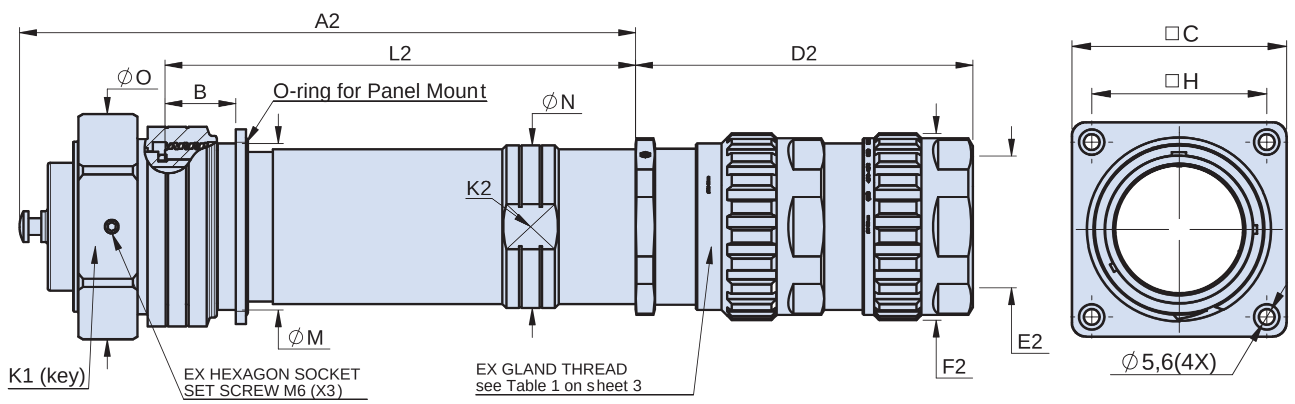
SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Glenair.
Fixed in-line receptacle with Ex cable gland

## 927-072-022 FIXED IN-LINE RECEPTACLE WITH ENVIRONMENTAL CABLE ADAPTER AND EX CABLE GLAND

**How To Order**

| Sample Part Number | 927-072 | 022 | 36-66 | P1 | F9 | N | A |
|---|---|---|---|---|---|---|---|
| **Series** | 927-072 | | | | | | |
| **Style** | 022 = Ex Cable Gland | | | | | | |
| **Shell Size - Insert Arrangement** | See pages 69 – 74 | | | | | | |
| **Contact Type and Plating** | P = Pin Contact S = Socket Contact<br>1 = Silver Plated 2 = Gold Plated | | | | | | |
| **Shell Material and Finish** | F9 = Aluminium Alloy, Anodize Hardcoat | | | | | | |
| **Alternate Key Position** | N = Normal, X, Y, Z, W (See Table on page 75) | | | | | | |
| **Cable Range** | A, B, C (See Table next page) | | | | | | |

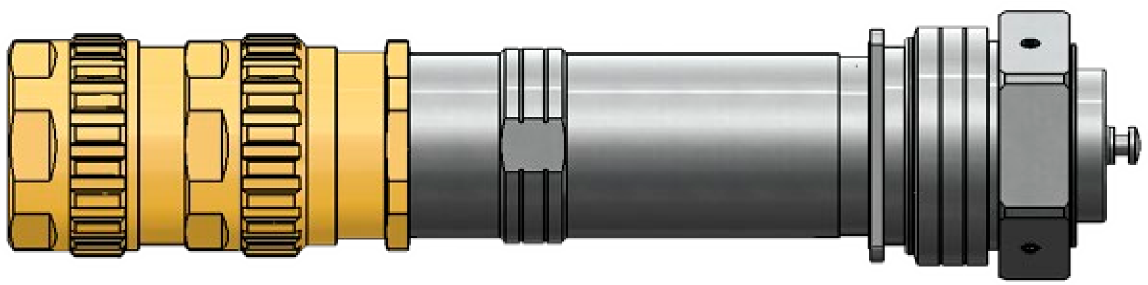


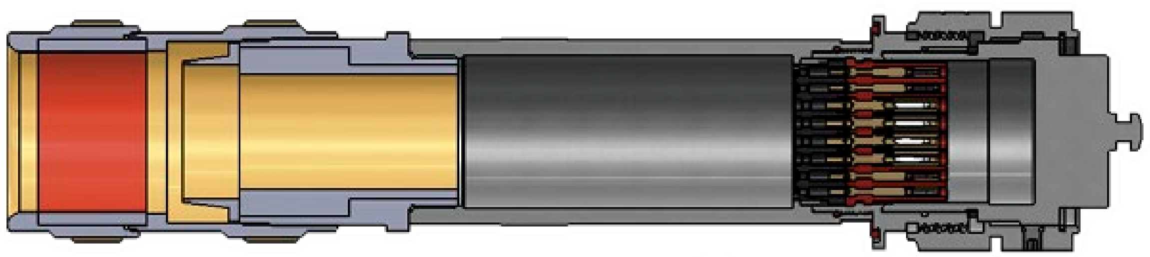

**Dimensions**

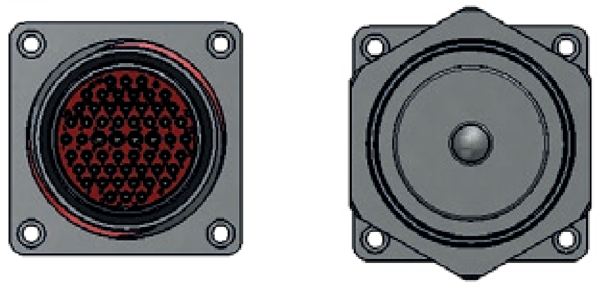
| Shell Size | A2 | B | C | D2 | E2 Min. | E2 Max. | Ex Gland Thread | F2 | H | K1 | K2 | L2 | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10SL** | 5.43 (138) | 0.97 (24.7) | 1.77 (45) | * | 0.12 (3.0) | 0.81 (20.50) | M20x1.5<br>M16x1.5 | * | 1.30 (33) | 1.61 (41) | 0.87 (22) | 3.50 (89) | 1.02 (26) | 0.98 (25) | 1.81 (46) |
| **18** | 7.52 (191) | 1.09 (27.6) | 2.24 (57) | * | 0.24 (6.0) | 1.02 (26.0) | M25x1.5<br>M20x1.5 | * | 1.65 (42) | 2.05 (52) | 1.42 (36) | 5.28 (134) | 1.50 (38) | 1.50 (38.2) | 2.32 (59) |
| **36** | 9.49 (241) | 1.09 (27.6) | 2.99 (76) | * | 0.87 (22.0) | 2.07 (52.60) | M50x1.5<br>M40x1.5 | * | 2.44 (62) | 3.07 (78) | 2.40 (61) | 7.24 (184) | 2.56 (65) | 2.50 (63.5) | 3.46 (88) |

(*) Dimension varies according to Ex Cable Gland.







**Cable Range Dimensions for Ex Cable Gland**

| Shell Size | Cable Range Designator | Cable Type | Ex Gland Thread | Cable outer sheath range [mm] | Cable inner sheath range [mm] | Armor Range with Clamping Ring |
|---|---|---|---|---|---|---|
| 36 | A | Unarmored cable | M50x1.5 | 28 to 41 | | |
| | B | Unarmored cable | M40x1.5 | 22 to 33 | | |
| | A1 | Armored Cable | M50x1.5 | 36 to 52.60 | 28.90 to 44.40 | 0 to 1.0 and 1.5 to 2.5 |
| | B1 | Armored Cable | M40x1.5 | 28 to 41 | 22 to 33 | 0 to 0.7 and 1.3 to 2.0 |
| 18 | A | Unarmored cable | M25x1.5 | 12.50 to 20.50 | | |
| | B | Unarmored cable | M20x1.5 | 9 to 16 | | |
| | C | Unarmored cable | M20x1.5 | 6 to 12 | | |
| | A1 | Armored Cable | M25x1.5 | 16.90 to 26 | 12.50 to 20.50 | 0 to 0.7 and 0.9 to 1.6 |
| | B1 | Armored Cable | M25x1.5 | 12.50 to 20.50 | 9 to 14 | 0 to 0.7 and 0.7 to 1.4 |
| | C1 | Armored Cable | M20x1.5 | 12.50 to 20.50 | 9 to 14 | 0 to 0.7 and 0.7 to 1.4 |
| | D1 | Armored Cable | M20x1.5 | 9 to 16 | 6 to 12 | 0 to 0.7 and 0.7 to 1.25 |
| | E1 | Armored Cable | M20x1.5 | 6 to 12 | 3 to 8.10 | 0 to 0.7 and 0.7 to 1.25 |
| 10SL | A | Unarmored cable | M20x1.5 | 9 to 16 | | |
| | B | Unarmored cable | M20x1.5 | 6 to 12 | | |
| | C | Unarmored cable | M16x1.5 | 6 to 12 | | |
| | A1 | Armored Cable | M20x1.5 | 12.50 to 20.50 | 9 to 14 | 0 to 0.7 and 0.7 to 1.4 |
| | B1 | Armored Cable | M20x1.5 | 9 to 16 | 6 to 12 | 0 to 0.7 and 0.7 to 1.25 |
| | C1 | Armored Cable | M20x1.5 | 6 to 12 | 3 to 8.1 | 0 to 0.7 and 0.7 to 1.25 |
| | D1 | Armored Cable | M16x1.5 | 6 to 12 | 3 to 8.1 | 0 to 0.7 and 0.7 to 1.25 |





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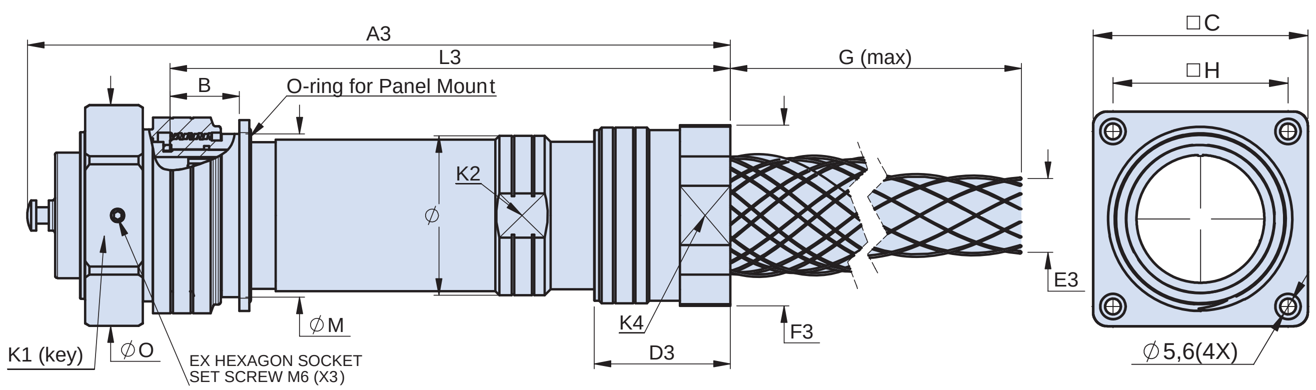
## 927-072-032 FIXED IN-LINE RECEPTACLE WITH ENVIRONMENTAL CABLE ADAPTER AND BASKET WEAVE CABLE GRIP

| How To Order | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sample Part Number** | 927-072 | 032 | 36-66 | P1 | F9 | N | A |

| | |
|---|---|
| **Series** | **927-072** |
| **Style** | **032** = Basket Weave Cable Grip |
| **Shell Size - Insert Arrangement** | See pages 69 – 74 |
| **Contact Type and Plating** | **P** = Pin Contact **S** = Socket Contact<br>**1** = Silver Plated **2** = Gold Plated |
| **Shell Material and Finish** | **F9** = Aluminium Alloy, Anodize Hardcoat |
| **Alternate Key Position** | **N** = Normal, **X**, **Y**, **Z**, **W** (See Table on page 75) |
| **Cable Range** | **A**, **B**, **C** (See Table next page) |




| Dimensions | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | A3 | B | C | D3 | E3 Min. | E3 Max. | F3 | G Max. | H | K1 | K2 | K4 | L3 | M | N | O |
| **10SL** | | 0.97 (24.7) | 1.77 (45) | | | | | | 1.30 (33) | 1.61 (41) | 0.87 (22) | | | 1.02 (26) | 0.98 (25.0) | 1.81 (46) |
| **18** | 8.78 (223) | 1.09 (27.6) | 2.24 (57) | 1.68 (42.7) | 0.50 (12.70) | 0.94 (23.80) | 1.81 (46.0) | 201** | 1.65 (42) | 2.05 (52) | 1.42 (36) | 1.65 (42) | 6.54 (166) | 1.50 (38) | 1.50 (38.2) | 2.32 (59) |
| **36** | 11.02 (280) | 1.09 (27.6) | 2.99 (76) | 2.06 (52.4) | 25.60 (1.01) | 1.62 (41.25) | 2.83 (72.0) | 315** | 2.44 (62) | 78 (3.07) | 2.40 (61) | 2.68 (68) | 8.82 (224) | 2.56 (65) | 2.50 (63.5) | 3.46 (88) |

(**) Max overall dimension; dimension less than max one, depending on Basket Weave Cable Range.




*SERIES 927-072*
ITS-Ex Hazardous Zone Connectors
Fixed in-line receptacle
with basket weave cable grip

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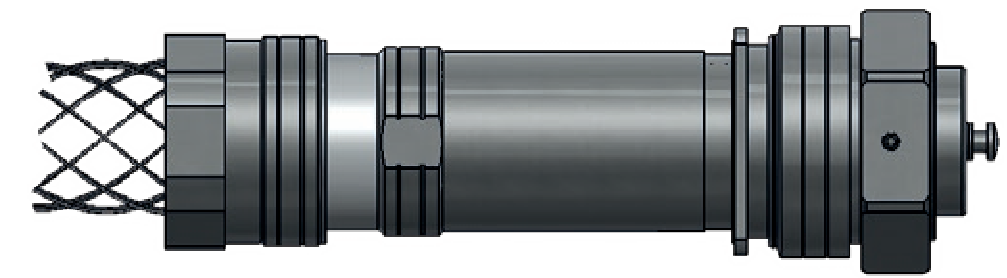
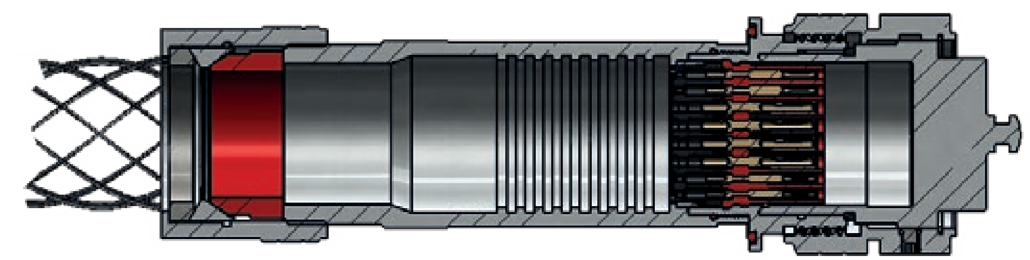
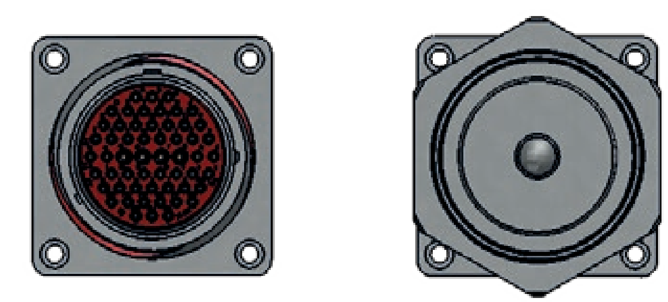






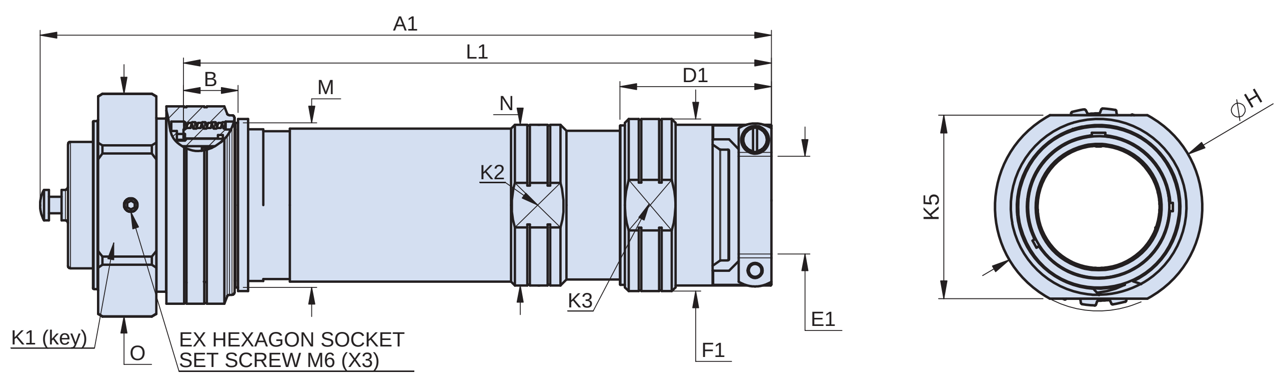
| Cable Range Dimensions for Basketweave Cable Grip | | | |
|---|---|---|---|
| **Shell Size** | **Cable Range Designator** | **Cable Type** | **Cable Jacket Range [mm] (1)** |
| 36 | A | Unarmored cable | 39.40 to 41.25 |
| | B | Unarmored cable | 38.90 to 40.50 |
| | C | Unarmored cable | 34.50 to 38.50 |
| | D | Unarmored cable | 31.00 to 34.90 |
| | E | Unarmored cable | 29.40 to 33.30 |
| | F | Unarmored cable | 25.60 to 29.50 (1) |
| 18 | A | Unarmored cable | 19.60 to 23.80 |
| | B | Unarmored cable | 18.00 to 22.20 (1) |
| | C | Unarmored cable | 15.50 to 19.10 |
| | D | Unarmored cable | 12.70 to 15.87 |
| | E | Unarmored cable | 10.40 to 12.70 (1) |
| 10SL | Not available | | |

(1) It is advisable to use reduction sleeves for lower values of cable diameter within cable range.

SERIES 927-072
ITS-Ex Hazardous Zone Connectors
In-line receptacle with mechanical cable clamp

## 927-072-011 IN-LINE RECEPTACLE WITH ENVIRONMENTAL CABLE ADAPTER AND MECHANICAL CABLE CLAMP

| How To Order | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sample Part Number** | 927-072 | 011 | 36-66 | P1 | F9 | N | A |
| **Series** | 927-072 | | | | | | |
| **Style** | 011 = Mechanical Cable Clamp | | | | | | |
| **Shell Size - Insert Arrangement** | See pages 69 – 74 | | | | | | |
| **Contact Type and Plating** | P = Pin Contact  S = Socket Contact<br>1 = Silver Plated  2 = Gold Plated | | | | | | |
| **Shell Material and Finish** | F9 = Aluminium Alloy, Anodize Hardcoat | | | | | | |
| **Alternate Key Position** | N = Normal, X, Y, Z, W (See Table on page 75) | | | | | | |
| **Cable Range** | A, B, C (See Table next page) | | | | | | |



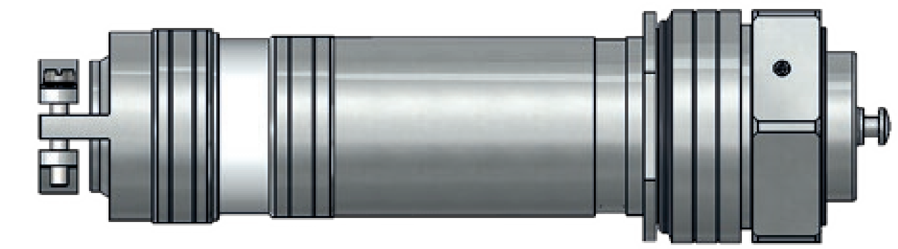

| SHELL SIZE | A1 | B | C | D1 | E1 Min. | E1 Max. | F1 | H | K1 | K2 | K3 | K5 | L1 | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10SL** | 7.05 (179) | 0.90 (22.8) | 1.77 (45) | 1.60 (40.7) | 0.18 (4.50) | 0.44 (11.12) | 1.10 (28.0) | 1.46 (37) | 1.61 (41) | 0.87 (22) | 27 (1.06) | 34 (1.34) | 5.10 (129.5) | 1.02 (26) | 0.98 (25) | 1.81 (46) |
| **18** | 8.86 (225) | 0.98 (24.9) | 2.24 (57) | 1.78 (45.2) | 0.38 (9.60) | 0.94 (23.80) | 0.85 (21.5) | 1.95 (49.5) | 2.05 (52) | 1.42 (36) | 41 (1.61) | 40 (1.57) | 6.61 (168) | 1.50 (38) | 1.50 (38.2) | 2.32 (59) |
| **36** | 11.42 (290) | 0.85 (21.6) | 2.99 (76) | 2.36 (60) | 0.92 (23.40) | 1.62 (41.25) | 2.68 (68.0) | 3.03 (77) | 3.07 (78) | 2.40 (61) | 2.48 (63) | 68 (2.68) | 9.17 (233) | 2.56 (65) | 2.50 (63.5) | 3.46 (88) |

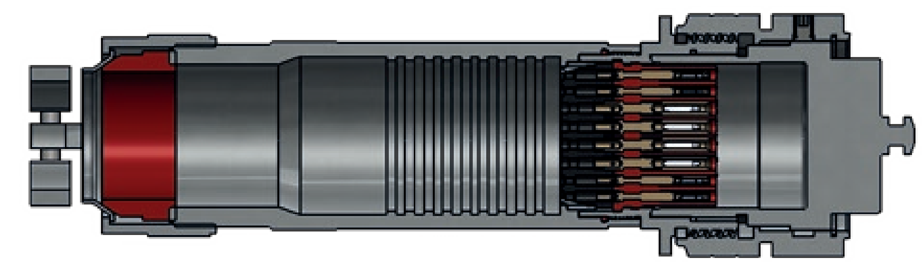
Dimensions

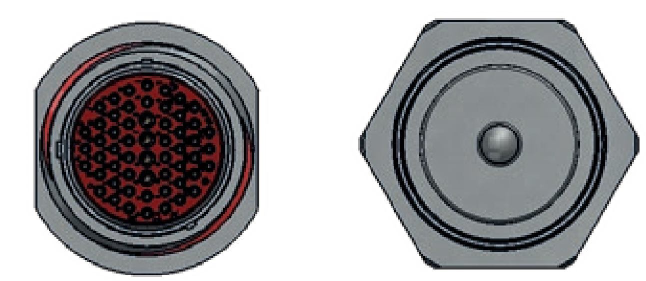












| Cable Range Dimensions for Mechanical Cable Clamp | | | |
|---|---|---|---|
| **Shell Size** | **Cable Range Designator** | **Cable Type** | **Cable Jacket Range [mm]** |
| 36 | A | Unarmored cable | 29.90 to 41.25 |
| | B | Unarmored cable | 23.40 to 35.00 |
| 18 | A | Unarmored cable | 15.50 to 23.80 |
| | B | Unarmored cable | 11.30 to 19.00 |
| | C | Unarmored cable | 9.60 to 15.87 |
| 10SL | A | Unarmored cable | 5.84 to 11.12 |
| | B | Unarmored cable | 4.50 to 7.93 |

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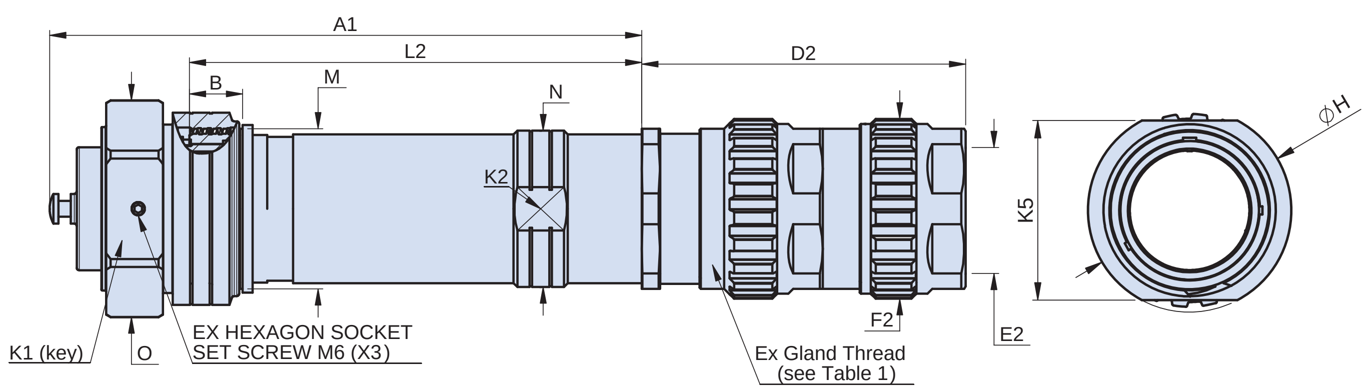
## 927-072-021 IN-LINE RECEPTACLE WITH ENVIRONMENTAL CABLE ADAPTER AND EX CABLE GLAND

**How To Order**

| Sample Part Number | 927-072 | 021 | 36-66 | P1 | F9 | N | A |
|---|---|---|---|---|---|---|---|
| | 927-072 | | | | | | |
| Style | 021 = Ex Cable Gland | | | | | | |
| Shell Size - Insert Arrangement | See pages 69 – 74 | | | | | | |
| Contact Type and Plating | P = Pin Contact, S = Socket Contact<br>1 = Silver Plated, 2 = Gold Plated | | | | | | |
| Shell Material and Finish | F9 = Aluminium Alloy, Anodize Hardcoat | | | | | | |
| Alternate Key Position | N = Normal, X, Y, Z, W (See Table on page 75) | | | | | | |
| Cable Range | A, B, C (See Table next page) | | | | | | |




**Dimensions**

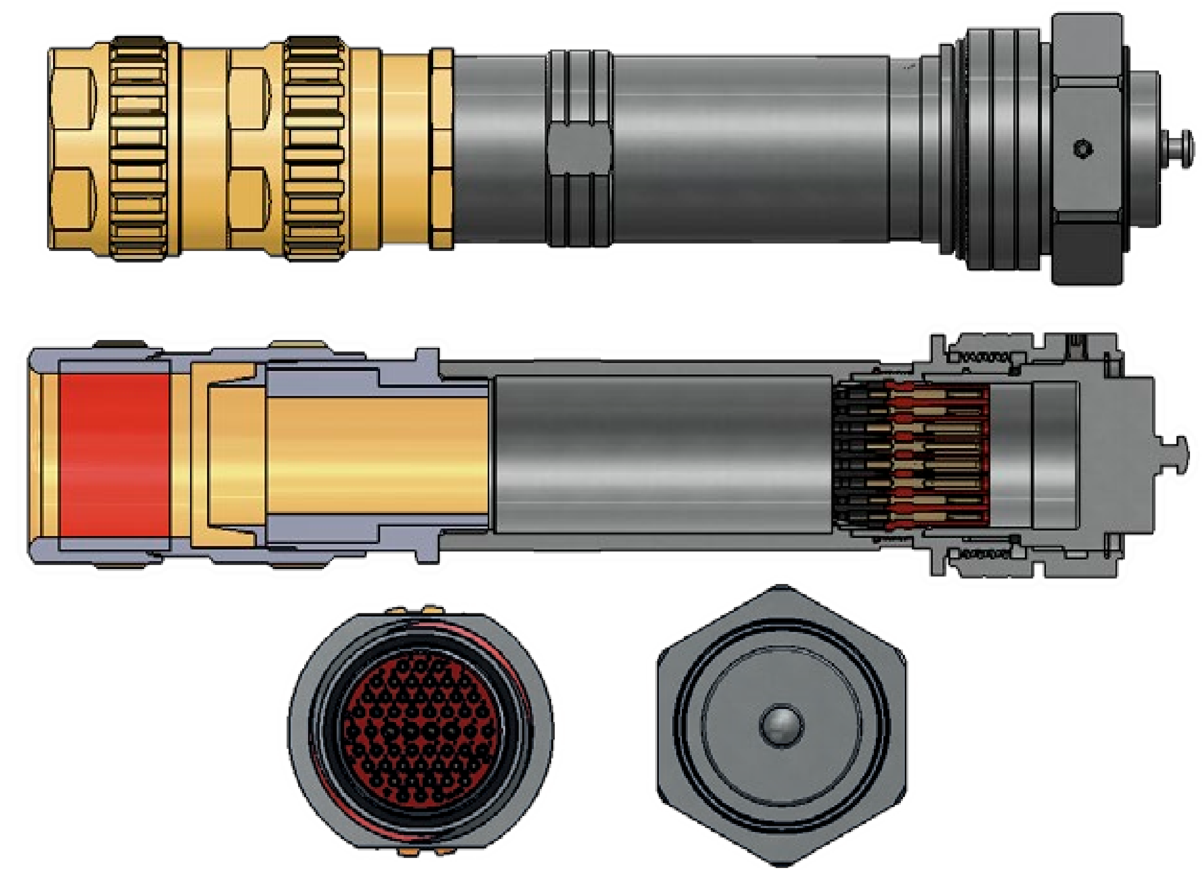
| Shell Size | A2 | B | C | D2 | E2 Min. | E2 Max. | Ex Gland Thread | F2 | H | K1 | K2 | K5 | L2 | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10SL** | 5.43 (138) | 0.90 (22.8) | 1.77 (45) | * | 0.12 (3.0) | 0.81 (20.50) | M20x1.5 M16x1.5 | * | 1.46 (37) | 1.61 (41) | 0.87 (22) | 1.34 (34) | 3.48 (88.3) | 1.02 (26) | 0.98 (25) | 1.81 (46) |
| **18** | 7.50 (190.5) | 0.98 (24.9) | 2.24 (57) | * | 0.24 (6.0) | 1.02 (26.0) | M25x1.5 M20x1.5 | * | 1.95 (49.5) | 2.05 (52) | 1.42 (36) | 1.57 (40) | 5.28 (134) | 1.50 (38) | 1.50 (38.2) | 2.32 (59) |
| **36** | 9.49 (241) | 0.85 (21.6) | 2.99 (76) | * | 0.87 (22.0) | 2.07 (52.60) | M50x1.5 M40x1.5 | * | 3.03 (77) | 3.07 (78) | 2.40 (61) | 2.68 (68) | 7.24 (184) | 2.56 (65) | 2.50 (63.5) | 3.46 (88) |

(*) Dimension varies according to Ex Cable Gland.






SERIES 927-072
ITS-Ex Hazardous Zone Connectors
In-line receptacle with Ex cable gland



**Cable Range Dimensions for Ex Cable Gland**

| Shell Size | Cable Range Designator | Cable Type | Ex Gland Thread | Cable outer sheath range [mm] | Cable inner sheath range [mm] | Armor Range with Clamping Ring |
|---|---|---|---|---|---|---|
| 36 | A | Unarmored cable | M50x1.5 | 28 to 41 | | |
| | B | Unarmored cable | M40x1.5 | 22 to 33 | | |
| | A1 | Armored Cable | M50x1.5 | 36 to 52.60 | 28.90 to 44.40 | 0 to 1.0 and 1.5 to 2.5 |
| | B1 | Armored Cable | M40x1.5 | 28 to 41 | 22 to 33 | 0 to 0.7 and 1.3 to 2.0 |
| 18 | A | Unarmored cable | M25x1.5 | 12.50 to 20.50 | | |
| | B | Unarmored cable | M20x1.5 | 9 to 16 | | |
| | C | Unarmored cable | M20x1.5 | 6 to 12 | | |
| | A1 | Armored Cable | M25x1.5 | 16.90 to 26 | 12.50 to 20.50 | 0 to 0.7 and 0.9 to 1.6 |
| | B1 | Armored Cable | M25x1.5 | 12.50 to 20.50 | 9 to 14 | 0 to 0.7 and 0.7 to 1.4 |
| | C1 | Armored Cable | M20x1.5 | 12.50 to 20.50 | 9 to 14 | 0 to 0.7 and 0.7 to 1.4 |
| | D1 | Armored Cable | M20x1.5 | 9 to 16 | 6 to 12 | 0 to 0.7 and 0.7 to 1.25 |
| | E1 | Armored Cable | M20x1.5 | 6 to 12 | 3 to 8.10 | 0 to 0.7 and 0.7 to 1.25 |
| 10SL | A | Unarmored cable | M20x1.5 | 9 to 16 | | |
| | B | Unarmored cable | M20x1.5 | 6 to 12 | | |
| | C | Unarmored cable | M16x1.5 | 6 to 12 | | |
| | A1 | Armored Cable | M20x1.5 | 12.50 to 20.50 | 9 to 14 | 0 to 0.7 and 0.7 to 1.4 |
| | B1 | Armored Cable | M20x1.5 | 9 to 16 | 6 to 12 | 0 to 0.7 and 0.7 to 1.25 |
| | C1 | Armored Cable | M20x1.5 | 6 to 12 | 3 to 8.1 | 0 to 0.7 and 0.7 to 1.25 |
| | D1 | Armored Cable | M16x1.5 | 6 to 12 | 3 to 8.1 | 0 to 0.7 and 0.7 to 1.25 |

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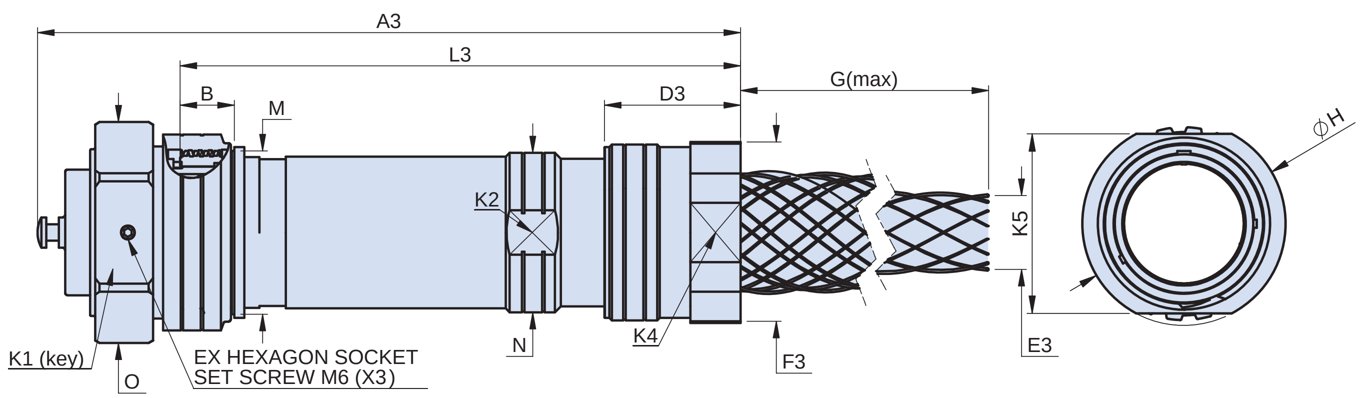
## 927-072-031 IN-LINE RECEPTACLE WITH ENVIRONMENTAL CABLE ADAPTER AND BASKET WEAVE CABLE GRIP

| How To Order | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample Part Number** | | 927-072 | 031 | 36-66 | P1 | F9 | N | A |
| **Series** | 927-072 | | | | | | | |
| **Style** | 031 = Basket Weave Cable Grip | | | | | | | |
| **Shell Size - Insert Arrangement** | See pages 69 – 74 | | | | | | | |
| **Contact Type and Plating** | P = Pin Contact S = Socket Contact<br>1 = Silver Plated 2 = Gold Plated | | | | | | | |
| **Shell Material and Finish** | F9 = Aluminium Alloy, Anodize Hardcoat | | | | | | | |
| **Alternate Key Position** | N = Normal, X, Y, Z, W (See Table on page 75) | | | | | | | |
| **Cable Range** | A, B, C (See Table next page) | | | | | | | |



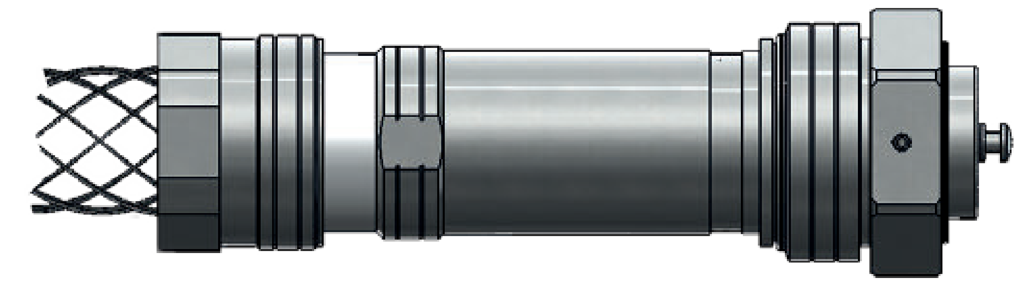

| Dimensions | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | A3 | B | C | D3 | E3 Min. | E3 Max. | F3 | G Max. | H | K1 | K2 | K4 | K5 | L3 | M | N | O |
| 10SL | | 0.90 (22.8) | 1.77 (45) | | | | | | 1.46 (37) | 1.61 (41) | 0.87 (22) | | 1.34 (34) | | 1.02 (26) | 0.98 (25.0) | 1.81 (46) |
| 18 | 8.78 (223) | 0.98 (24.9) | 2.24 (57) | 1.68 (42.7) | 0.50 (12.70) | 0.94 (23.80) | 1.81 (46.0) | 7.91** (201) | 1.95 (49.5) | 2.05 (52) | 1.42 (36) | 1.65 (42) | 1.57 (40) | 6.44 (163.5) | 1.50 (38) | 1.50 (38.2) | 2.32 (59) |
| 36 | 11.02 (280) | 0.85 (21.6) | 2.99 (76) | 2.06 (52.4) | 1.01 (25.60) | 1.62 (41.25) | 2.83 (72.0) | 12.40** (315) | 3.03 (77) | 3.07 (78) | 2.40 (61) | 2.68 (68) | 2.68 (68) | 8.79 (223.2) | 2.56 (65) | 2.50 (63.5) | 3.46 (88) |

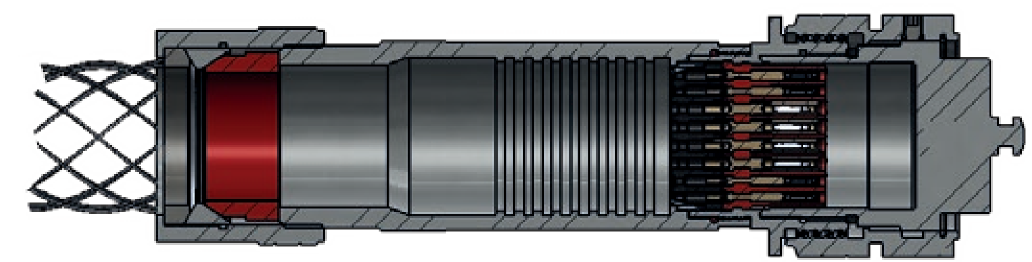
(**) Max overall dimension; dimension less than max one, depending on Basket Weave Cable Range.

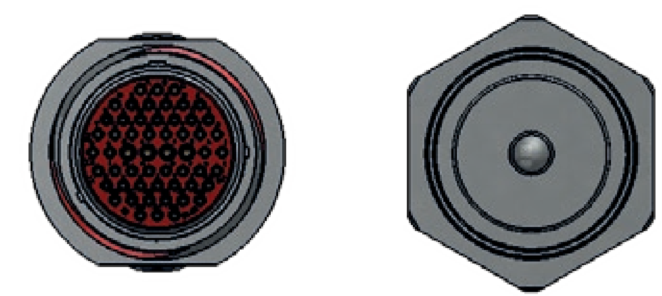
TOPSIDE: ITS-Ex™




SERIES 927-072
ITS-Ex Hazardous Zone Connectors
In-line receptacle with basket weave cable grip







| Cable Range Dimensions for Basketweave Cable Grip | | | |
|---|---|---|---|
| Shell Size | Cable Range Designator | Cable Type | Cable Jacket Range [mm] (1) |
| 36 | A | Unarmored cable | 39.40 to 41.25 |
| | B | Unarmored cable | 38.90 to 40.50 |
| | C | Unarmored cable | 34.50 to 38.50 |
| | D | Unarmored cable | 31.00 to 34.90 |
| | E | Unarmored cable | 29.40 to 33.30 |
| | F | Unarmored cable | 25.60 to 29.50 (1) |
| 18 | A | Unarmored cable | 19.60 to 23.80 |
| | B | Unarmored cable | 18.00 to 22.20 (1) |
| | C | Unarmored cable | 15.50 to 19.10 |
| | D | Unarmored cable | 12.70 to 15.87 |
| | E | Unarmored cable | 10.40 to 12.70 (1) |
| 10SL | Not available | | |

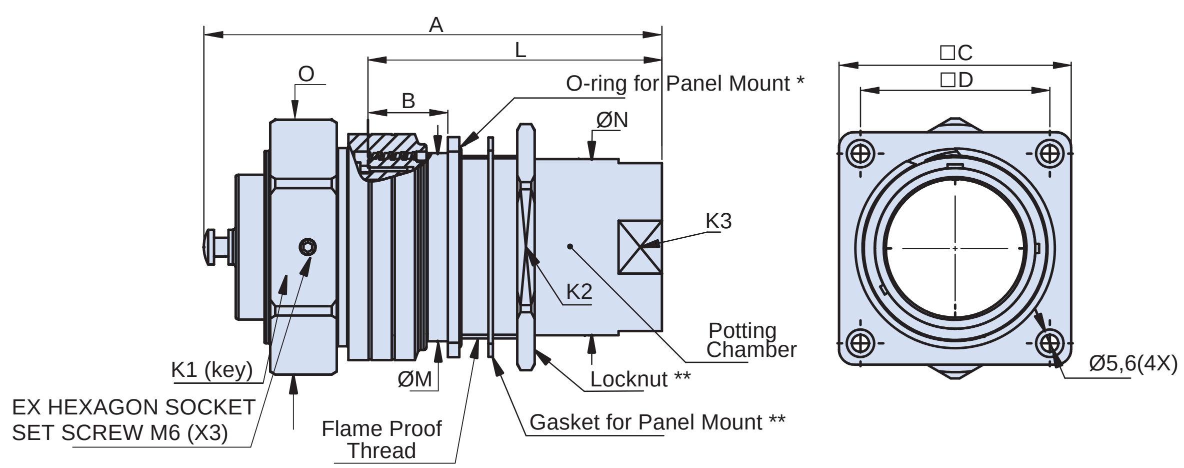
(1) It is advisable to use reduction sleeves for lower values of cable diameter within cable range.

TOPSIDE: ITS-Ex™

## 927-072-003 PANEL-MOUNT FIXED RECEPTACLE WITH POTTING WELL AND AUXILIARY LOCK NUT*

| How To Order | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sample Part Number** | | 927-072 | 003 | 36-66 | P1 | F9 | N |
| Series | 927-072 | | | | | | |
| Style | 003 = Panel Mount Fixed Receptacle | | | | | | |
| Shell Size - Insert Arrangement | See pages 69 – 74 | | | | | | |
| Contact Type and Plating | P = Pin Contact; S = Socket Contact; 1 = Silver Plated; 2 = Gold Plated | | | | | | |
| Shell Material and Finish | F9 = Aluminium Alloy, Anodize Hardcoat | | | | | | |
| Alternate Key Position | N = Normal, X, Y, Z, W (See Table on page 75) | | | | | | |

*Final IEC ATEx Ex d certification pending for this configuration only. Consult factory for status



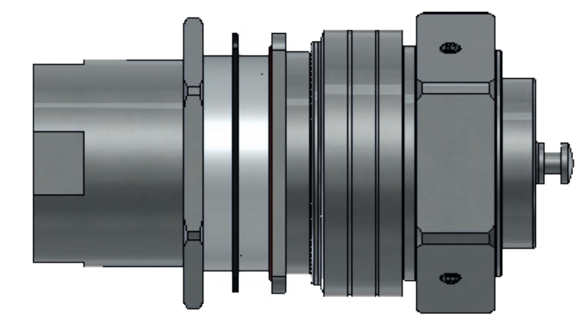

(*) For Mounting on Ex d enclosure: use only O-ring for Panel Mount.
(**)For Mounting on Ex e enclosure: use only Gesket for Panel Mount and Locknut.

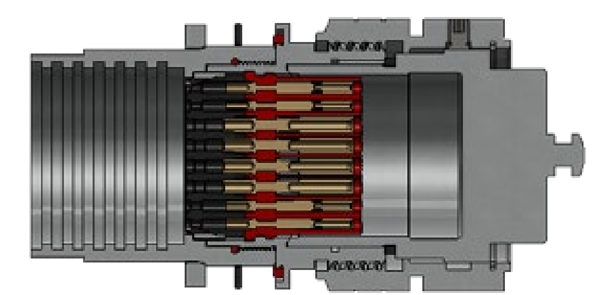
| Dimensions | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shell Size | A | B | C | D | K1 | K2 | K3 | L | M | N | O | Flame Proof Thread | Min Full Thread Length |
| 10SL | 5.02 (127.5) | 0.97 (24.7) | 1.77 (45) | 1.30 (33) | 1.61 (41) | 1.81 (46) | 0.83 (21) | 3.07 (78) | 1.02 (26) | 0.87 (22) | 1.81 (46) | M25 x 1.5 6 g | 19 |
| 18 | 6.24 (158.5) | 1.09 (27.6) | 2.24 (57) | 1.65 (42) | 2.05 (52) | 2.20 (56) | 1.26 (32) | 4.02 (102) | 1.50 (38) | 1.38 (35) | 2.32 (59) | M40 x 1.5 6 g | 19 |
| 36 | 6.24 (158.5) | 1.09 (27.6) | 2.99 (76) | 2.44 (62) | 3.07 (78) | 2.95 (75) | 2.28 (58) | 4.02 (102) | 2.56 (65) | 2.39 (60.8) | 3.46 (88) | M63 x 1.5 6 g | 19 |

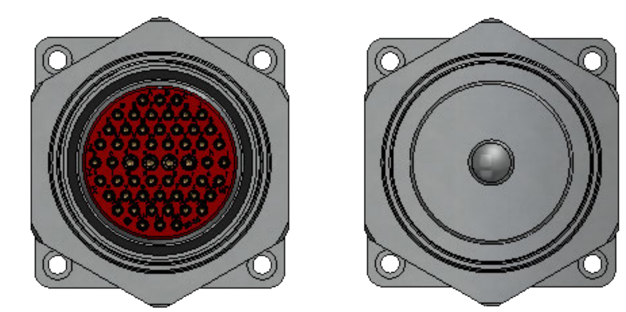
TOPSIDE: ITS-Ex™




SERIES 927-072
ITS-Ex Hazardous Zone Connectors
Panel-mount fixed receptacle with potting well and auxiliary lock nut







| Cable Range Dimensions for Panel Mount | | |
|---|---|---|
| Shell Size | Cable Type | Cable Jacket Range [mm] |
| 36 | Unarmoured cable | 23.4 to 41.25 |
| 18 | Unarmoured cable | 9.6 to 20.4 |
| 10SL | Unarmoured cable | 4.5 to 11.12 |

TOPSIDE: ITS-Ex™

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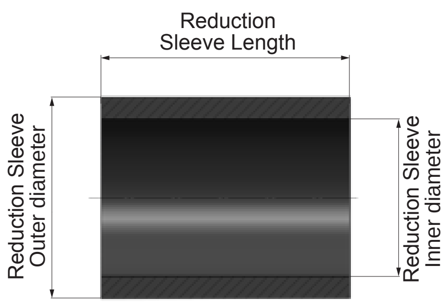
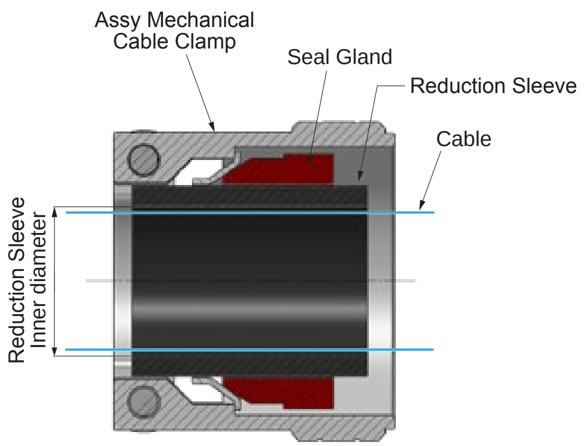
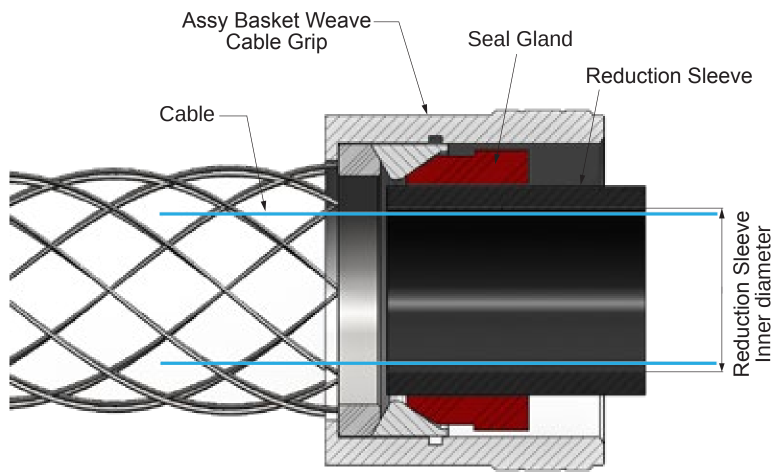
Dimensions in Inches (millimeters) are subject to change without notice.

## REDUCTION SLEEVES FOR CABLE

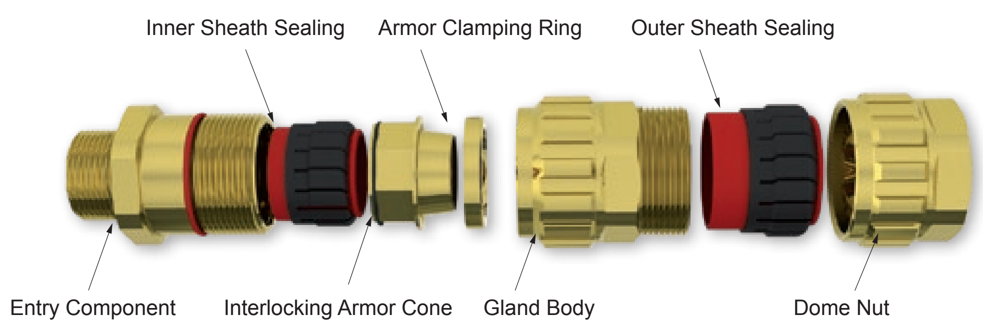


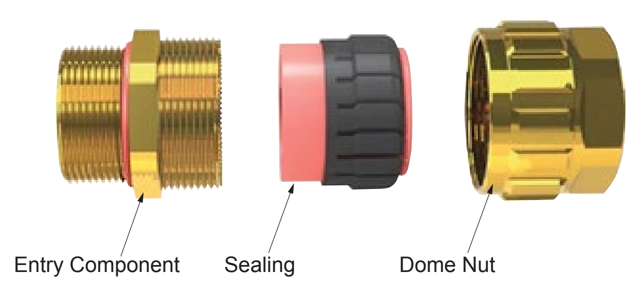

| Reduction Sleeve for use with Mechanical Cable Clamp or Basketweave Cable Grip | | | | | |
|---|---|---|---|---|---|
| Shell Size | Sleeve P/N | Sleeve inner diameter [mm] | Sleeve outer diameter [mm] | Sleeve length [mm] | Use for cable range [mm] |
| 36 | D-3420-28A | 31.80 | 40.60 | 50.20 | 29.90 to 32.00 |
| | D-3420-24A | 28.50 | 33.90 | 51.10 | 23.40 to 28.50 |
| 18 | D-3420-16A | 19.00 | 23.60 | 50.90 | 15.50 to 19.00 |
| | D-3420-12A | 13.74 | 18.50 | 50.90 | 11.30 to 13.74 |
| | D-3420-10A | 11.10 | 15.70 | 50.50 | 9.60 to 11.10 |
| 10SL | D-3420-6A | 7.93 | 10.50 | 50.50 | 5.84 to 7.93 |
| | D-3420-4A | 5.56 | 7.63 | 50.50 | 4.50 to 5.56 |




## Ex CABLE GLAND ASSEMBLY, EXPLODED VIEW












## PIN CRIMP CONTACTS

Series 927-072 contacts for size #16s through size #0 wire. Copper alloy with silver or gold plating, Terminate to wire with standard crimp tools. Contacts are front-release. Use in series 927-072 connectors.

Pin contact with silver plating. For properties please consult table Materials on page 66 row Item Crimp Socket and Pin Contacts. Highly conductive silver plating is ideal for high current applications.
Pin contact with gold plating is used to improve protection from corrosive environments. For Electric properties, please consult table on page 66.

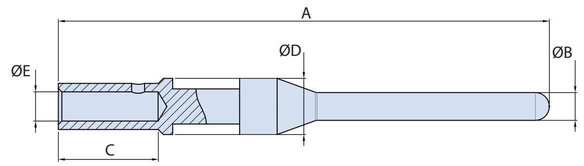
| Pin Crimp Contacts Table | | | |
|---|---|---|---|
| Size [AWG] | Wire Size [AWG] | Finish | Pin Contact Part Number |
| 16S* | 18-16 | Silver | D-20-40553 |
| | | Gold | D-21-40553 |
| 16 | 18-16 | Silver | D-20-40557 |
| | | Gold | D-21-40557 |
| 12 | 12 | Silver | D-20-40560 |
| | | Gold | D-21-40560 |
| 8 | 8 | Silver | D-20-40792 |
| 4 | 4 | Silver | D-20-113474-4P |
| 0 | 0 | Silver | D-20-113474-1P |

* S = short (see length contacts)

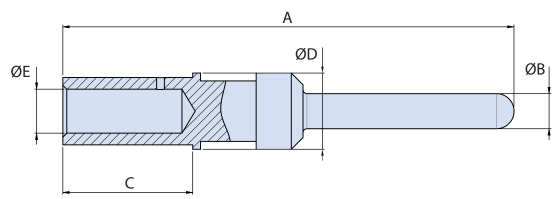
| Pin Contact Current Ratings and Resistance | | | |
|---|---|---|---|
| Contact Size AWG | Max Rated Current [A] | | Max Contact Resistance [mW] |
| | IAW N.E.C. (1) | IAW VG95234 (2) | |
| 16 – 16s | 16 | 20 | 6 |
| 12 | 30 | 32 | 3 |
| 8 | 50 | 60 | 1 |
| 4 | 90 | 120 | 0.5 |
| 0 | 155 | 220 | 0.3 |

(1) Non-circuit breaking contacts rated current as per N.E.C. (National Electrical Code) based on arcing control. Use a cable of minimum rated temperature of 90°C.
(2) Values extrapolated from rated current chart of VG95234-1, at ambient temperature of 40°C.

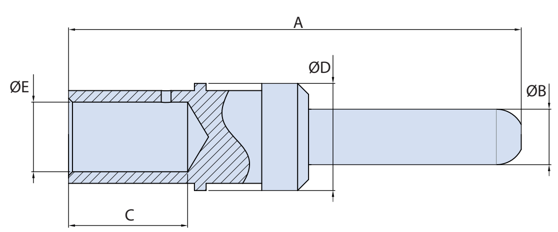
## PIN CRIMP CONTACTS



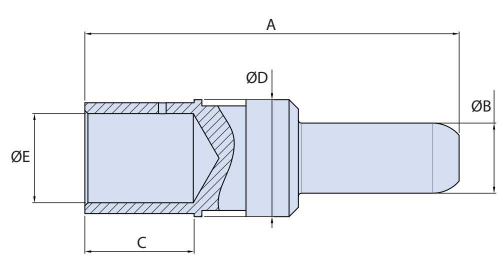

| Part Number | Contact Size | A | ØB | C | ØD | ØE |
|---|---|---|---|---|---|---|
| D-10-40553 | 16S | 1.23 (31.25) | 0.06 (1.57) | 0.29 (7.45) | 0.12 (3.1) | 0.07 (1.7) |
| D-10-40557 | 16 | 1.44 (36.65) | 0.06 (1.57) | 0.31 (7.75) | 0.12 (3.1) | 0.07 (1.7) |
| D-10-40560 | 12 | 1.65 (41.85) | 0.09 (2.38) | 0.33 (8.5) | 0.19 (4.8) | 0.10 (2.5) |




| Part Number | Contact Size | A | ØB | C | ØD | ØE |
|---|---|---|---|---|---|---|
| D-10-40792 | 8 | 1.82 (46.2) | 0.14 (3.59) | 0.52 (13.3) | 0.31 (7.8) | 0.18 (4.5) |




| Part Number | Contact Size | A | ØB | C | ØD | ØE |
|---|---|---|---|---|---|---|
| D-10-113474-4P | 4 | 1.83 (46.4) | 0.22 (5.7) | 0.51 (12.9) | 0.43 (11) | 0.28 (7.15) |



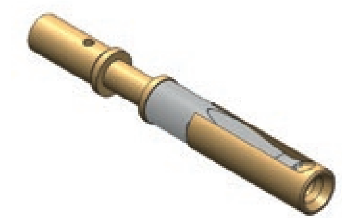

| Part Number | Contact Size | A | ØB | C | ØD | ØE |
|---|---|---|---|---|---|---|
| D-10-113474-1P | 0 | 1.90 (48.3) | 0.36 (9.05) | 0.56 (14.1) | 0.59 (15.1) | 0.45 (11.5) |








## SOCKET CRIMP CONTACTS



Series 927-072 contacts for size #16s through size #0 wire. Copper alloy with silver or gold plating, Terminate to wire with standard crimp tools. Contacts are front-release. Use in series 927-072 connectors.

Socket contact with silver plating. For properties please consult table Materials on page 66 row Item Crimp Socket and Pin Contacts. Highly conductive silver plating is ideal for high current applications.
Socket contact with gold plating is used to improve protection from corrosive environments. For Electric properties, please consult table on page 66.

**Socket Crimp Contacts Table**

| Size [AWG] | Wire Size [AWG] | Finish | Socket Contact Part Number | Contact type |
|---|---|---|---|---|
| 16S* | 18-16 | Silver | D-20-40552 | Spring clip |
| | | Gold | D-21-40552 | |
| 16 | 18-16 | Silver | D-20-40556 | Spring clip |
| | | Gold | D-21-40556 | |
| 12 | 12 | Silver | D-20-40560 | Spring clip |
| | | Gold | D-21-40560 | |
| 8 | 8 | Silver | D-21-40793 | Hood |
| 4 | 4 | Silver | D-21-113474-4S-1 | Hood |
| 0 | 0 | Silver | D-21-113474-1S | Hood |

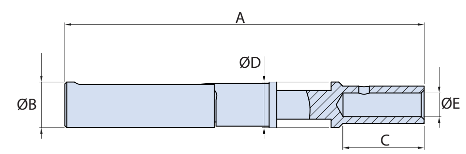
* S = short (see length contacts)
Other contact wire size on request.

**Socket Contact Current Ratings and Resistance**

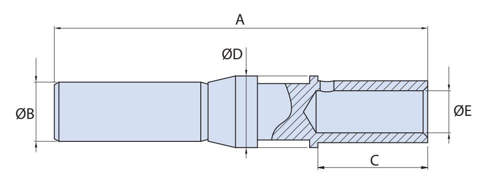
| Contact Size AWG | Max Rated Current [A] | | Max Contact Resistance [mW] |
|---|---|---|---|
| | IAW N.E.C. (1) | IAW VG95234 (2) | |
| 16 – 16s | 16 | 20 | 6 |
| 12 | 30 | 32 | 3 |
| 8 | 50 | 60 | 1 |
| 4 | 90 | 120 | 0,5 |
| 0 | 155 | 220 | 0,3 |

(1) Non-circuit breaking contacts rated current as per N.E.C. (National Electrical Code) based on arcing control. Use a cable of minimum rated temperature of 90°C.
(2) Values extrapolated from rated current chart of VG95234-1, at ambient temperature of 40°C.

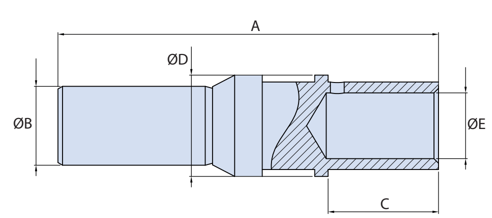
## SOCKET CRIMP CONTACTS



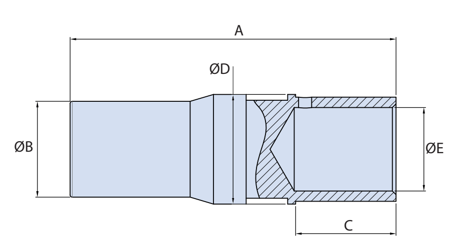

| Part Number | Contact Size | A | ØB | C | ØD | ØE |
|---|---|---|---|---|---|---|
| D-10-40552 | 16S | 1.05 (26.7) | 0.13 (3.2) | 0.30 (7.5) | 0.13 (3.2) | 0.07 (1.7) |
| D-10-40556 | 16 | 1.44 (36.5) | 0.13 (3.2) | 0.31 (7.8) | 0.13 (3.2) | 0.07 (1.7) |
| D-10-40560 | 12 | 1.48 (37.65) | 0.19 (4.8) | 0.33 (8.5) | 0.19 (4.8) | 0.10 (2.5) |




| Part Number | Contact Size | A | ØB | C | ØD | ØE |
|---|---|---|---|---|---|---|
| D-10-40793 | 8 | 1.61 (40.8) | 0.25 (6.45) | 0.47 (12) | 0.31 (7.8) | 0.18 (4.58) |




| Part Number | Contact Size | A | ØB | C | ØD | ØE |
|---|---|---|---|---|---|---|
| D-10-113474-4S-1 | 4 | 1.63 (41.35) | 0.34 (8.57) | 0.47 (12) | 0.43 (11) | 0.28 (7.15) |




| Part Number | Contact Size | A | ØB | C | ØD | ØE |
|---|---|---|---|---|---|---|
| D-10-113474-1S | 0 | 1.76 (44.8) | 0.52 (13.2) | 0.54 (13.8) | 0.59 (15.1) | 0.45 (11.5) |

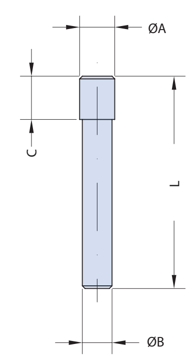




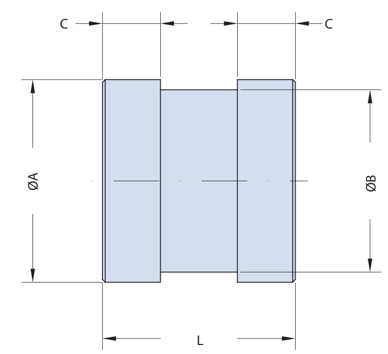


## WIRE HOLE PLUG FOR CONTACT INSERTS

| Part Number | Contact Size | ØA | ØB | C | L | Color |
|---|---|---|---|---|---|---|
| D-10-305045-16 | 16S - 16 | 0.10 (2.6) | 0.09 (2.2) | 0.13 (3.2) | 0.62 (15.7) | Blue |
| D-10-101033-13 | 12 | 0.18 (4.6) | 0.15 (3.7) | 0.13 (3.2) | 0.47 (11.9) | Yellow |
| D-10-305045-8 | 8 | 0.30 (7.6) | 0.25 (6.4) | 0.12 (3.1) | 0.46 (11.8) | White |
| D-10-305045-4 | 4 | 0.43 (10.9) | 0.38 (9.7) | 0.12 (3.1) | 0.46 (11.8) | Green |
| D-10-305045-0 | 0 | 0.59 (15.0) | 0.53 (13.5) | 0.17 (4.3) | 0.56 (14.3) | Black |




D-10-305045-16



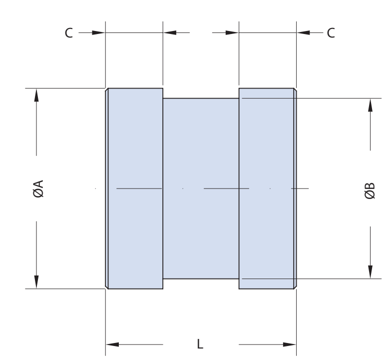

D-10-101033-13
D-10-305045-XX

### NOTES

Contact Hole Plug - Insert Version.
Used to fill an insert cavity in order to maintain the environmental seal when a cavity is without contact.

## WIRE HOLE PLUG FOR WIRE SEALING GROMMETS

| Part Number | Contact Size | ØA | ØB | C | L | Color |
|---|---|---|---|---|---|---|
| D-10-101033-12 | 16S - 16 | 0.15 (3.7) | 0.11 (2.8 | 0.13 (3.2) | 0.47 (11.9) | Blu / Blue |
| D-10-101033-13 | 12 | 0.18 (4.6) | 0.15 (3.7) | 0.13 (3.2) | 0.47 (11.9) | Giallo / Yellow |
| D-10-101033-14 | 8 | 0.23 (5.8) | 0.20 (5.0) | 0.13 (3.2) | 0.47 (11.9) | Bianco / White |
| D-10-101033-15 | 4 | 0.33 (8.5) | 0.30 (7.6) | 0.13 (3.2) | 0.47 (11.9) | Verde / Green |
| D-10-101033-16 | 0 | 0.53 (13.5) | 0.50 (12.8) | 0.13 (3.2) | 0.47 (11.9) | Nero / Black |




D-10-101033-XX

### NOTES

Contact Hole Plug - Grommet Version.
Used to fill a grommet cavity in order to maintain the environmental seal when a cavity is without contact.

TOPSIDE: ITS-Ex™

### MANUAL AND PNEUMATIC CRIMP TOOLS

Manual Crimp Tool

| Contact Size | Wire Size | Manual Crimp Tool | | | Pneumatic Crimp Tool | | |
|---|---|---|---|---|---|---|---|
| | | | | | Type A | | |
| | | Manual Tool | Turret | Universal Locator | Pneumatic Tool | Turret | Universal Locator |
| 16s | 16 | M.105007 | M.105009* | M.105012** | M.105002 | M.105009* | M.105012** |
| 16 | 16 | M.105007 | M.105009* | M.105012** | M.105002 | M.105009* | M.105012** |
| 12 | 12 | M.105007 | M.105009* | M.105012** | M.105002 | M.105009* | M.105012** |
| 8 | 8 | / | / | / | / | / | / |
| 4 | 4 | / | / | / | / | / | / |
| 0 | 0 | / | / | / | / | / | / |

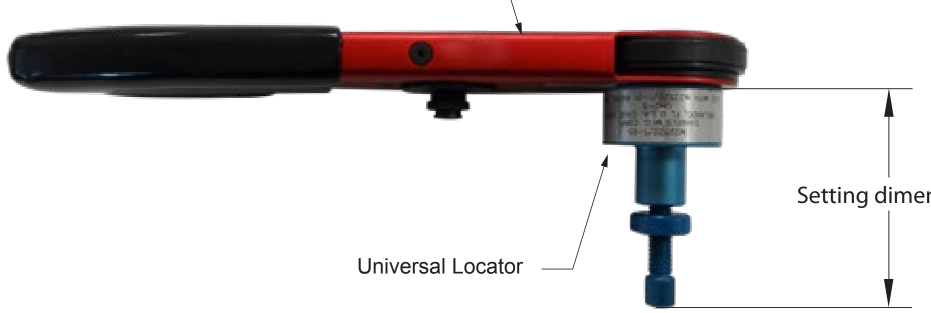
* Socket contact only
** Pin contact only

Turret

Universal Locator

Pneumatic Crimp Tool Type A

Turret for Pneumatic Crimp Tool Type A




| Contact Size | Wire Size | Manual Crimp Tool | | |
|---|---|---|---|---|
| | | Manual Tool | Universal Locator | Setting dimension [mm] |
| 16s | 16 | M.105007 | M.105012 | 67.7 |
| 16 | 16 | M.105007 | M.105012 | 73.0 |
| 12 | 12 | M.105007 | M.105012 | 85.4 |







*SERIES 927-072*

# Contacts, Tools, and Accessories

## Crimp tools for large contacts
## Contact insertion and removal tools

### HYDRAULIC AND PNEUMATIC CRIMP TOOLS

Hydraulic Crimp Tool

| Contact Size | Wire Size | Hydraulic Crimp Tool | | Pneumatic Crimp Tool | | | |
|---|---|---|---|---|---|---|---|
| | | | | Type B | | | |
| | | Hydraulic Tool | Die | Pneumatic Tool | Die | Locator Pin | Locator Socket |
| 16s | 16 | / | / | / | / | / | / |
| 16 | 16 | / | / | / | / | / | / |
| 12 | 12 | / | / | / | / | / | / |
| 8 | 8 | M.112004 | M.112005 | M.112000 | M.112001 | M.112308 | M.112309 |
| 4 | 4 | M.112004 | M.112006 | M.112000 | M.112002 | M.112307 | M.112311 |
| 0 | 0 | M.112004 | M.112010 | M.112000 | M.112003 | M.112306 | M.112313 |

* Socket contact only   ** Pin contact only

Die for Oleodinamic Crimp Tool

Pneumatic Crimp Tool Type B

Die For Pneumatic Crimp Tool Type B

Locator for Pneumatic Crimp Tool Type B

### INSERTION AND REMOVAL TOOLS

A

| Contact Size | Insertion Tool | Figure | Removal Tool | Figure |
|---|---|---|---|---|
| 16S | M.117083 | A | M.118250 | C |
| 16 | M.117083 | A | M.118250 | C |
| 12 | M.117082 | A | M.118250 | C |
| 8 | M.117344 | B | M.118260 | D |
| 4 | M.117347 | B | M.118270 | D |
| 0 | M.117348 | B | M.118280 | D |

B

C

D





TOPSIDE: ITS-Ex™

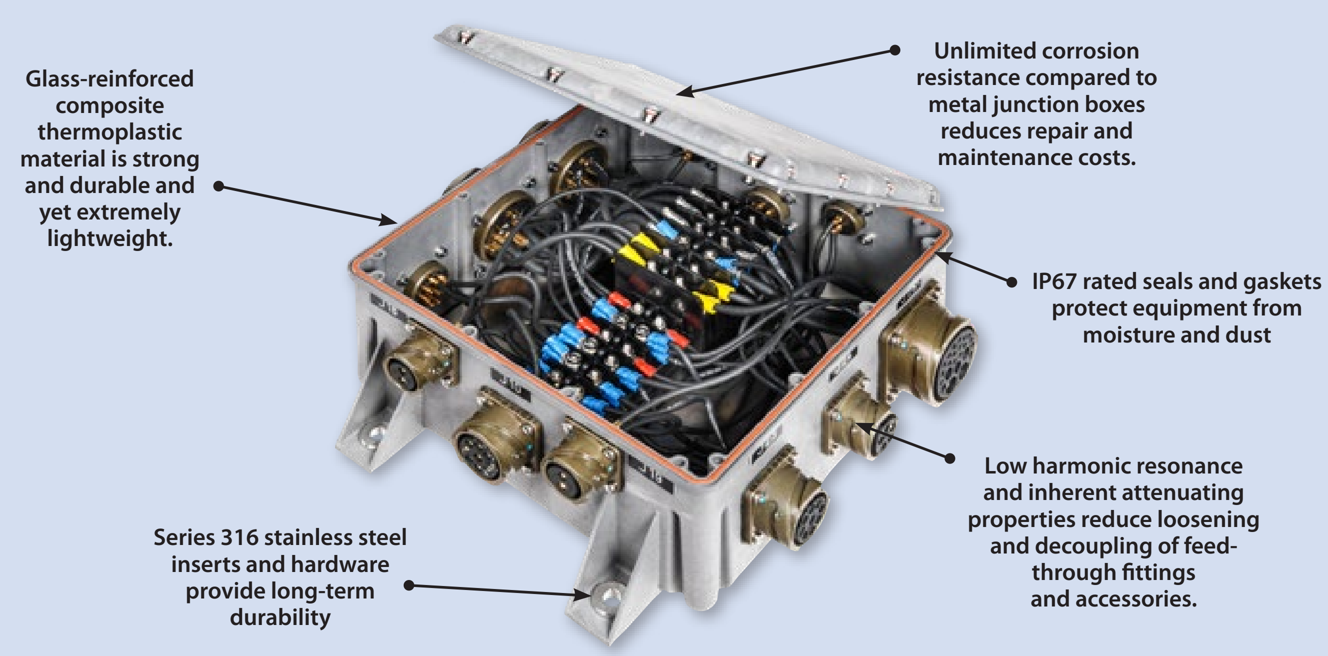
*HIGH PEFORMANCE*

# Corrosion Free Composite Junction Boxes and Cable Bays

## Product selection guide



### *Ultra-Lightweight and Corrosion-Free Composite Boxes and Cable Bays*

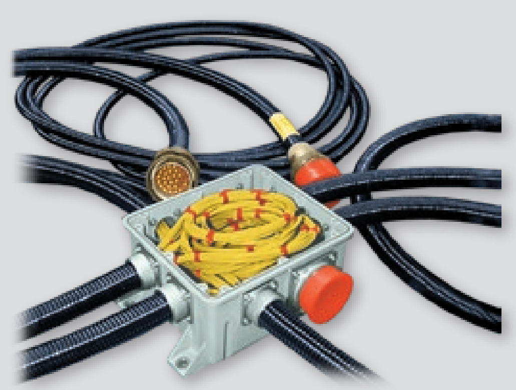



**TOPSIDE:** COMPOSITE BOXES



*SERIES 14*

# Composite Junction Boxes



- 15 Ft. Submersion Composite Boxes
- Over a dozen different tooled sizes and shapes.
- Made-to-order configurations available—just ask.
- Extremely durable, corrosion-free, high temperature engineering composite thermoplastic
- Tested and qualified to U.S. Navy, UK MOD and hundreds of commercial aircraft and marine applications

Glenair EMI/RFI CostSaver Composite Junction Box application—protecting and storing fiber optic media service loops

## Install it and forget it: Glenair corrosion-free EMI/RFI shielded cable junction boxes




**TOPSIDE:** COMPOSITE BOXES

# 140-060XMS-01 (NSN: 5975-01-556-7957)
## 10 terminal, grounded composite junction box

**Basic Part Number** | **Finish** *(See Table I)* | **Basic Box Number**

**140-060 XMS - 01 - T1**

**Dash Number** *See Table III*

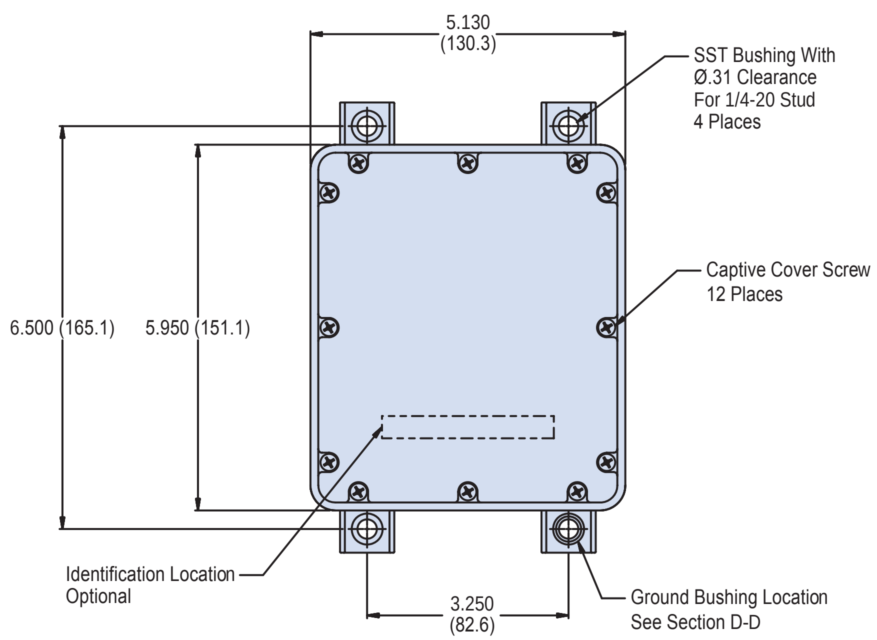
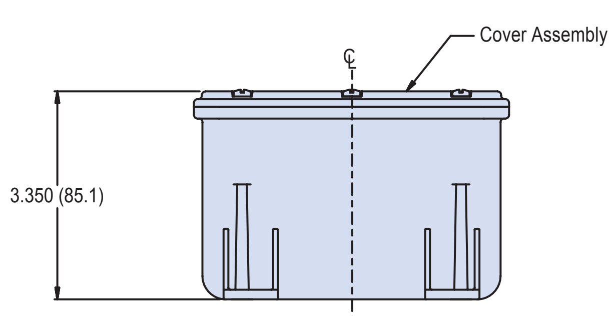



**FIGURE 1 TOP VIEW**

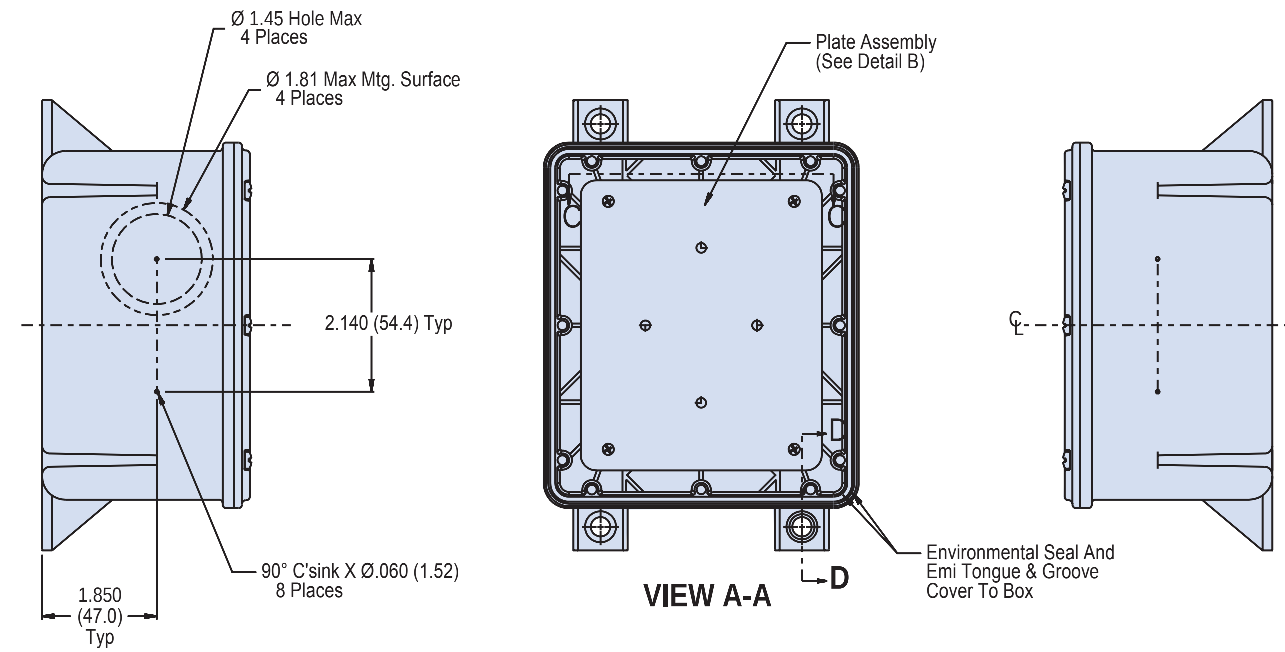









SERIES 147
15 Ft. Submersion Composite Boxes
140-060XMS-01 (NSN: 5975-01-556-7957)
10 terminal, grounded composite junction box




**VIEW A-A**

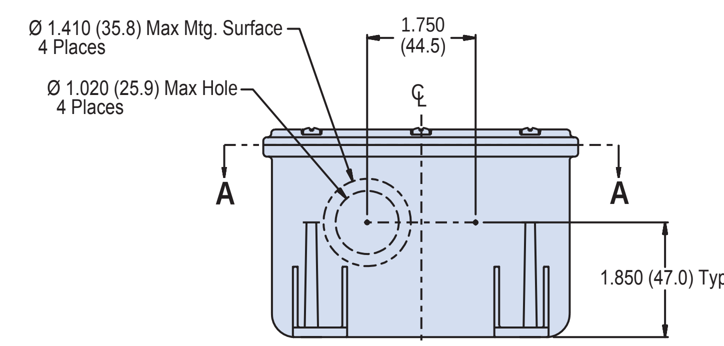
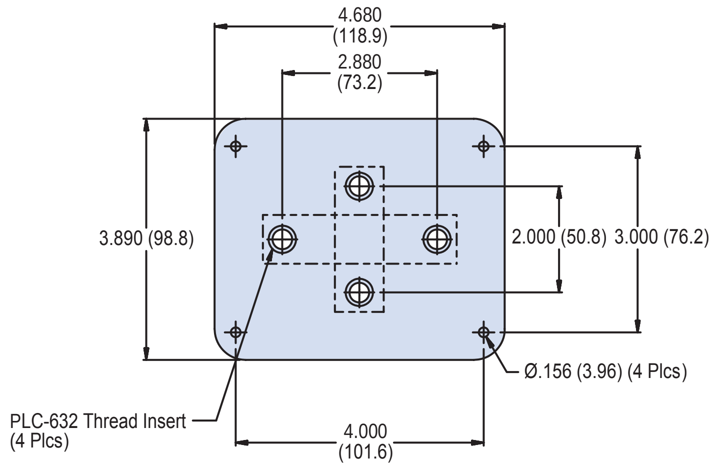


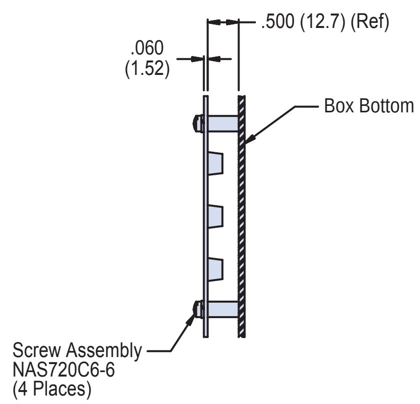

**FIGURE 2**

TOPSIDE: COMPOSITE BOXES

# 140-060XMS-01 (NSN: 5975-01-556-7957)
## 10 terminal, grounded composite junction box




DETAIL B




VIEW C-C

### APPLICATION NOTES

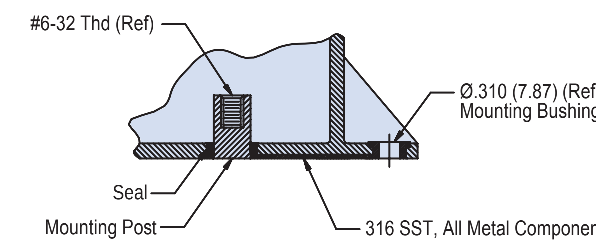
1. Assembly identified with manufacurer's code identification number (Glenair, part number and date code).
2. Color may be subject to fading, however UV exposure will not affect material physical properties.
3. Assembly is similar to symbol part numbers and require installation in accordance with NAVSEA drawing 803-6983506.
4. Material / Finish:
   - Box, cover: Thermoplastic grey color/see Table I.
   - Hardware: 316 SST/passivate.
   - Seals and gaskets: Silicone/N.A.
   - Mounting Plate - 300 series SST/passivate.
5. Metric dimensions (mm) are indicated in parentheses.







SERIES 147
15 Ft. Submersion Composite Boxes
140-060XMS-01 (NSN: 5975-01-556-7957)
10 terminal, grounded composite junction box




**SECTION D-D**
**Electrical Ground Through Internal Mounting Post To External Mounting Bushing**

**TABLE I: Finish**

| Symbol | Description |
|---|---|
| XMS | Internal Surfaces - Electroless Nickel<br>Exterior Surfaces - Unplated Light Grey Color |
| XO | No Plating |

**TABLE II: Replacement Parts**

| Item | Part Number | Description | Material |
|---|---|---|---|
| 1 | 140-065XMS-01 | Cover Assembly | Grey Thermoplastic |
| 2 | 687-499-2 | Cover Screw Assembly | 316 SST/Passivate |
| 3 | 687-305Z129 | Mounting Plate Assembly | 300 SST/Passivate |

**TABLE III: Mounting Plate Assembly**

| Dash No. | 2.000″ Mntg Holes | 2.880″ Mntg Holes | MIL-T-55164 A-A-59125 | Number of Terminals | Max No of Wires | Recm'd Max Wire Size | Recm'd Lug MS17143 | Qnty Blocks per Assembly | Symbol Number | Military Specification |
|---|---|---|---|---|---|---|---|---|---|---|
| 01T1 | 6TB06 | - | /12 | 6 | 24 | #14 AWG | -5 | 1 | - | - |
| 01T2 | 25TB05 | - | /23 | 5 | 10 | #14 AWG | -17 | 1 | - | - |
| 01T3 | - | 4TB085 | /10 | 8 | 32 | #12 AWG | -3 | 1 | 435.1 | MIL-T-24588/2 |
| 01T4 | - | 6TB10 | /12 | 10 | 30 | #14 AWG | -5 | 1 | 528 | MIL-T-24588/3 |
| 01T5 | - | 15TB10 | /19 | 10 | 40 | #14 AWG | -8 | 1 | - | - |
| 01T6 | - | 16TB04 | /20 | 4 | 08 | #12 AWG | -3 | 1 | 444 | MIL-T-24588/18 |

TOPSIDE: COMPOSITE BOXES

# 15 Ft. Submersion Composite Boxes

## 140-060XMS-02 (NSN: 5975-01-557-2672)
## 12 terminal, grounded composite junction box



| Basic Part Number | Finish (See Table I) | Basic Box Number | Dash Number See Table II |
|---|---|---|---|
| 140-060 | XMS | 02 | T1 |

**140-060 XMS - 02 - T1**

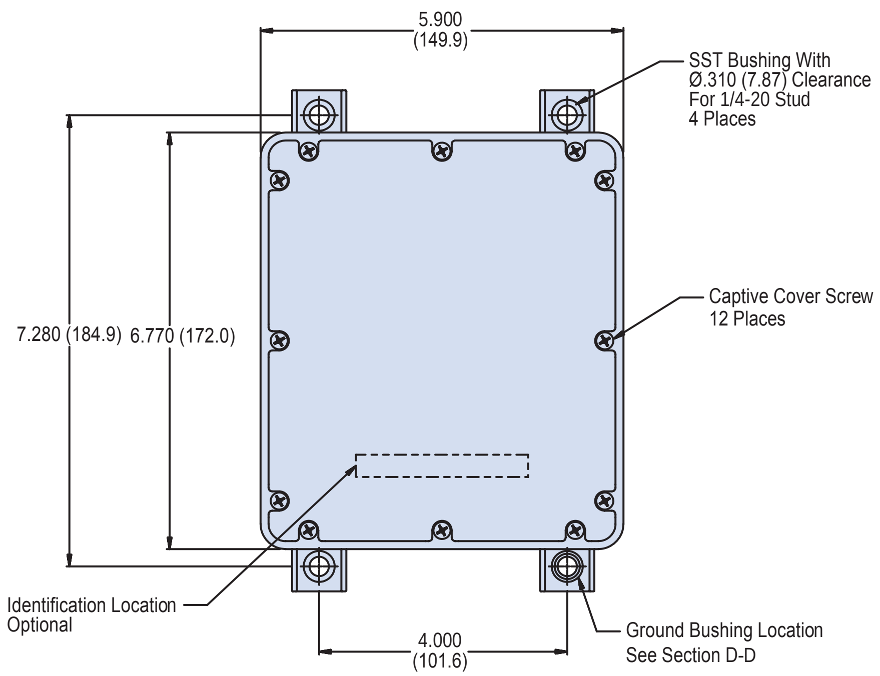
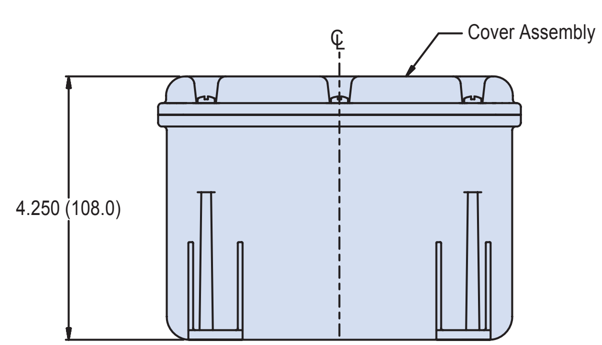


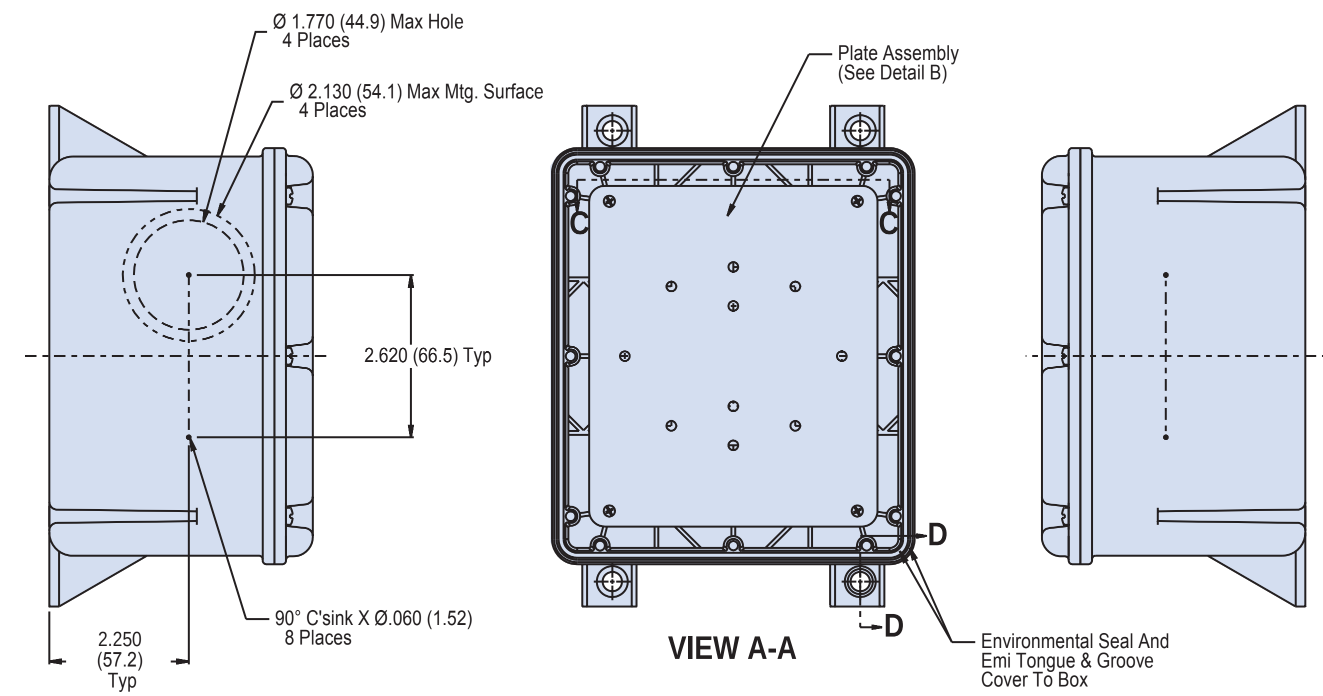

FIGURE 1 TOP VIEW




SERIES 147

15 Ft. Submersion Composite Boxes

140-060XMS-02 (NSN: 5975-01-557-2672)
12 terminal, grounded composite junction box




VIEW A-A

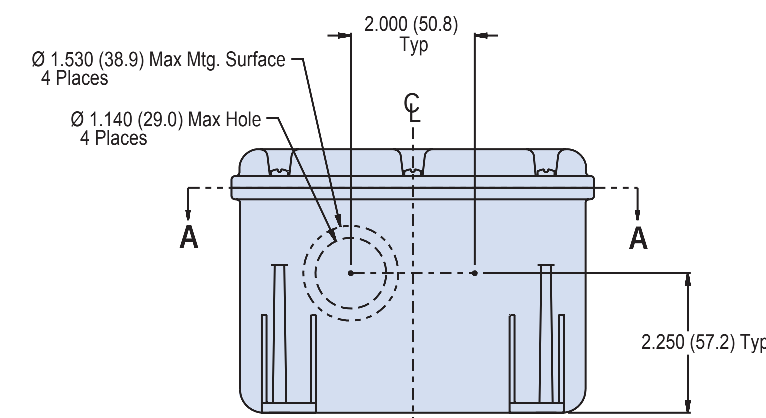



FIGURE 2

TOPSIDE: COMPOSITE BOXES





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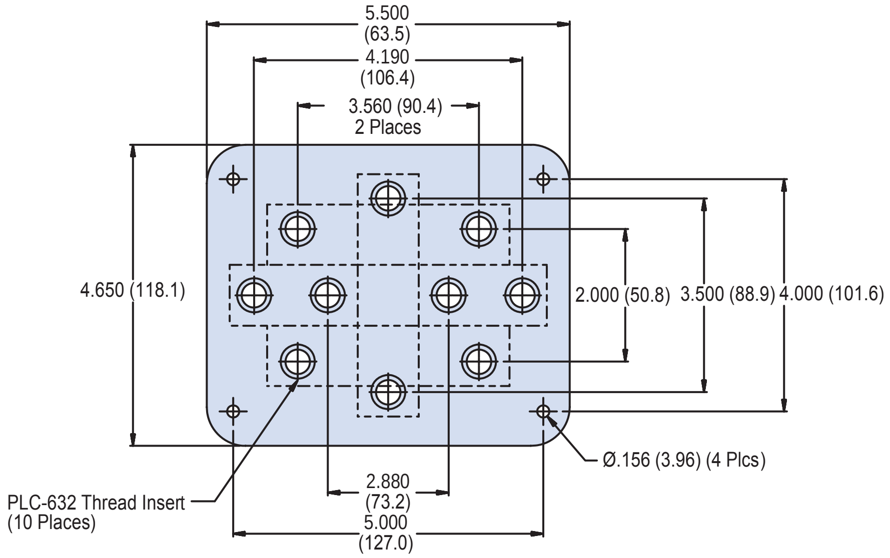
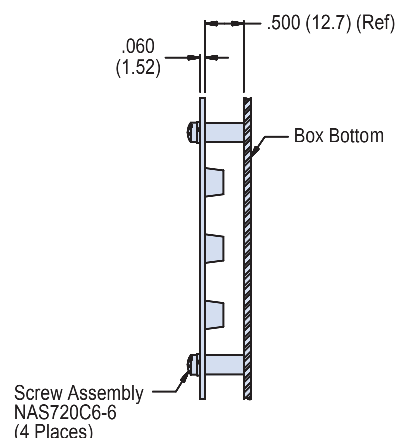
Dimensions in Inches (millimeters) are subject to change without notice.

# 15 Ft. Submersion Composite Boxes

## 140-060XMS-02 (NSN: 5975-01-557-2672)
## 12 terminal, grounded composite junction box




DETAIL B




VIEW C-C

### APPLICATION NOTES

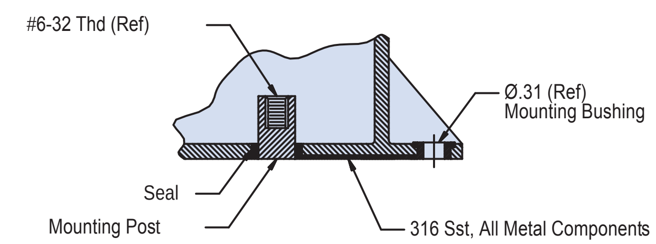
1. Assembly identified with manufacurer's code identification number (Glenair, part number and date code).
2. Color may be subject to fading, however UV exposure will not affect material physical properties.
3. Assembly is similar to symbol part numbers and require installation in accordance with NAVSEA drawing 803-6983506.
4. Material / Finish:
   - Box, cover - Thermoplastic grey color/see Table I.
   - Hardware - 316 SST/passivate.
   - Seals and gaskets - Silicone/N.A.
     Mounting Plate - 300 series SST/passivate.
5. Metric dimensions (mm) are indicated in parentheses.







SERIES 147
Composite
15 Ft. Submersion Composite Boxes
140-060XMS-02 (NSN: 5975-01-557-2672)
12 terminal, grounded composite junction box




SECTION D-D
Electrical Ground Through Internal
Mounting Post To External Mounting Bushing

**TABLE I: Finish**

| Symbol | Description |
|---|---|
| XMS | Internal Surfaces - Electroless Nickel<br>Exterior Surfaces - Unplated Light Grey Color |
| XO | No Plating |

**TABLE II: Replacement Parts**

| Item | Part Number | Description | Material |
|---|---|---|---|
| 1 | 140-065XMS-17 | Cover Assembly | Grey Thermoplastic |
| 2 | 687-499-2 | Cover Screw Assembly | 316 SST/Passivate |
| 3 | 687-305Z130 | Mounting Plate Assembly | 300 SST/Passivate |

**TABLE II: Mounting Plate Assembly**

| Dash No. | 2.000″ Mntg Holes | 2.880″ Mntg Holes | 3.500″ Mntg Holes | 3.560″ Mntg Holes | 4.190″ Mntg Holes | MIL-T-55164 A-A-59125 | Number of Terminals | Max No of Wires | Recm'd Max Wire Size | Recm'd Lug MS17143 | Qnty Blocks per Assembly |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 02T1 | 6TB60 | - | - | - | - | /12 | 6 | 40 | #14 AWG | -5 | 2 |
| 02T2 | 25TB05 | - | - | - | - | /23 | 5 | 20 | #14 AWG | -17 | 2 |
| 02T3 | - | 4TB08 | - | - | - | /10 | 8 | 32 | #12 AWG | -3 | 1 |
| 02T4 | - | 5TB0 | - | - | - | /12 | 10 | 30 | #14 AWG | -5 | 1 |
| 02T5 | - | 15TB0 | - | - | - | /19 | 10 | 40 | #14 AWG | -8 | 1 |
| 02T6 | - | 16TB04 | - | - | - | /20 | 8 W/ STUD 16 W/OW/O | 8 | #12 AWG | -3 | 1 |
| 02T7 | - | - | 8TB08 | - | - | /14 | 10 | 32 | #14 AWG | -11 | 1 |
| 02T8 | - | - | - | 25TB10 | - | /23 | 10 W/ STUD 20 W/OW/O | 40 | #14 AWG | -17 | 2 |
| 02T9 | - | - | - | 26TB10 | - | /24 | 12 | 80 | #16 AWG | -20 | 2 |
| 03210 | - | - | - | - | 25TB12 | /23 | 12W/ STUD 20 W/O | 24 | #14 AWG | -17 | 1 |
| 03T11 | - | - | - | - | 26TB12 | /24 | | 48 | #16 AWG | -20 | 1 |

TOPSIDE: COMPOSITE BOXES

# 140-060XMS-03 (NSN: 5975-01-557-2679)
## 48 terminal, grounded composite junction box

| Basic Part Number | Finish (See Table I) | | Basic Box Number | |
|---|---|---|---|---|
| 140-060 | XMS | - | 03 | T1 |

**Optional Configuration** *See Table III for Required MIL-T-55164 Terminal Block*

*Omit if Not Required*

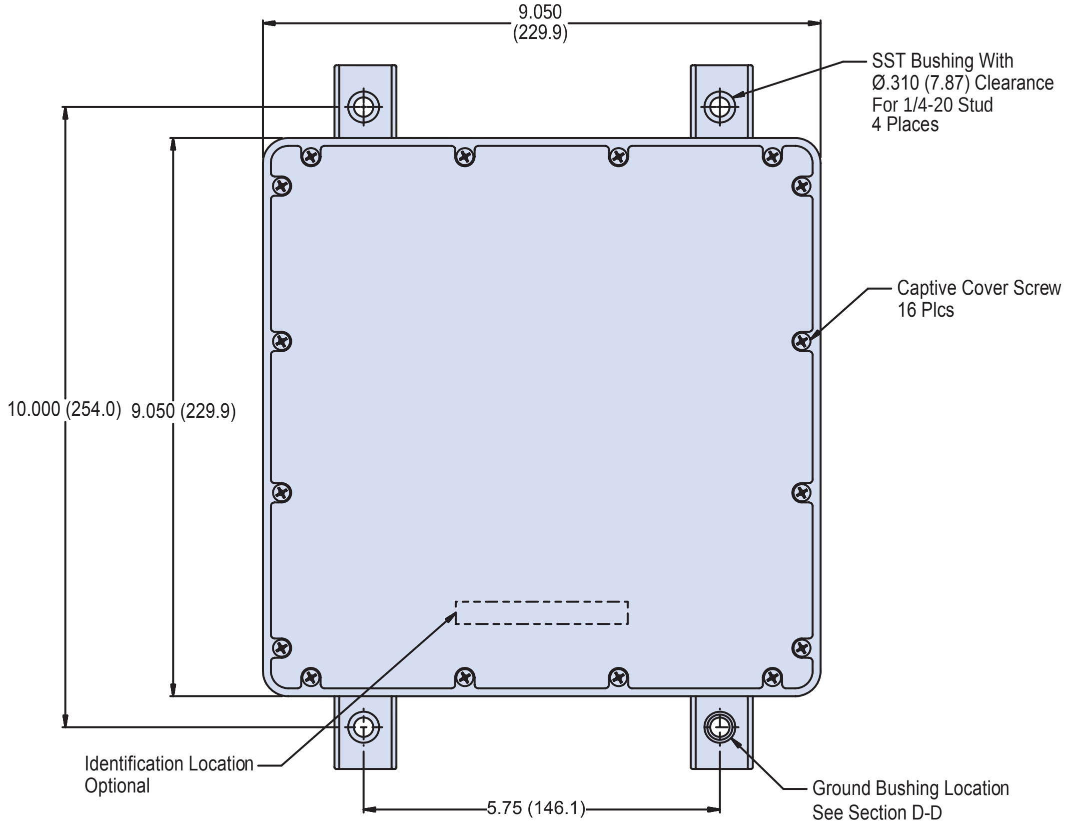



FIGURE 1 TOP VIEW







Composite
SERIES 147
15 Ft. Submersion Composite Boxes
Glenair.
140-060XMS-03 (NSN: 5975-01-557-2679)
48 terminal, grounded composite junction box

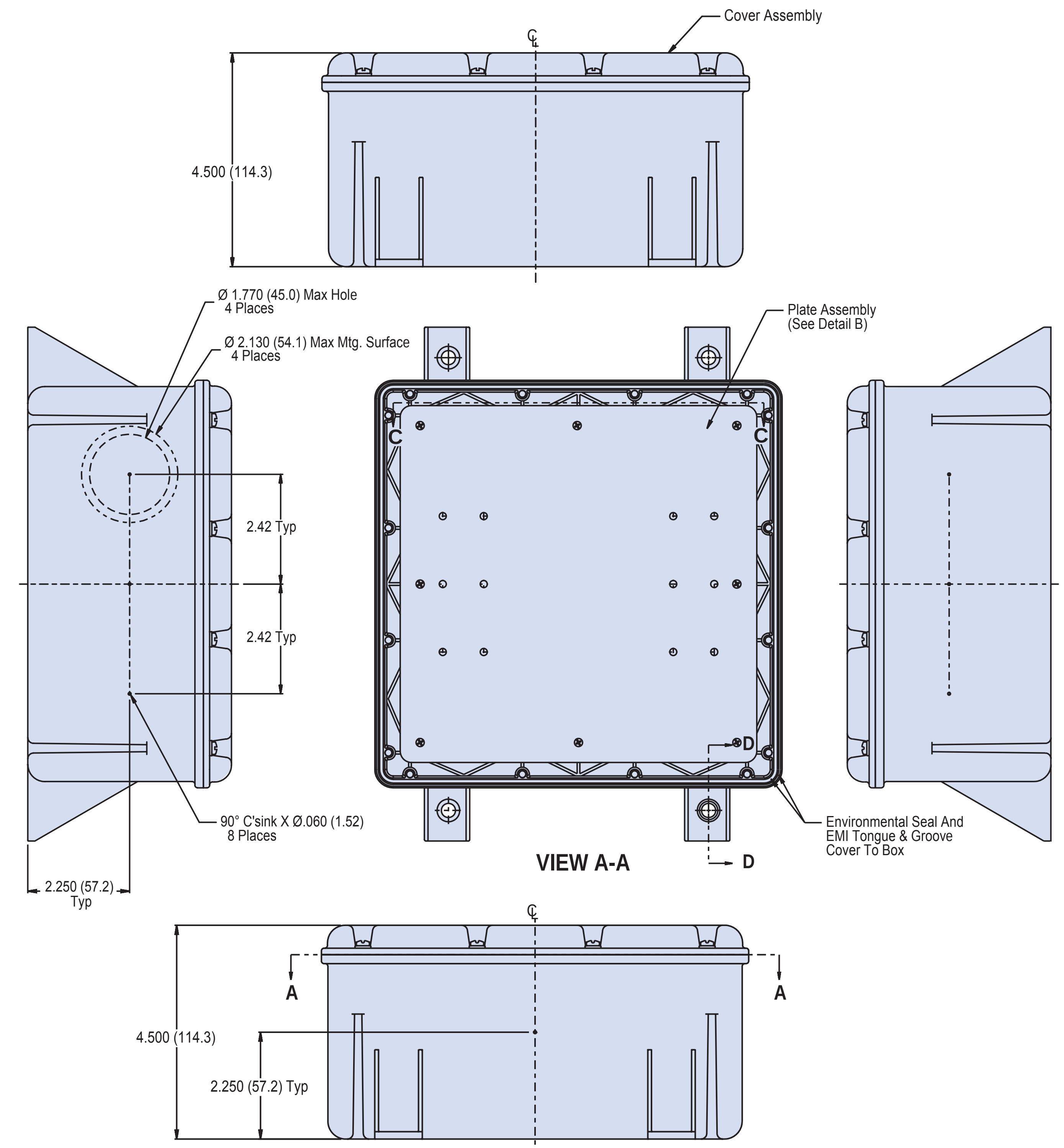
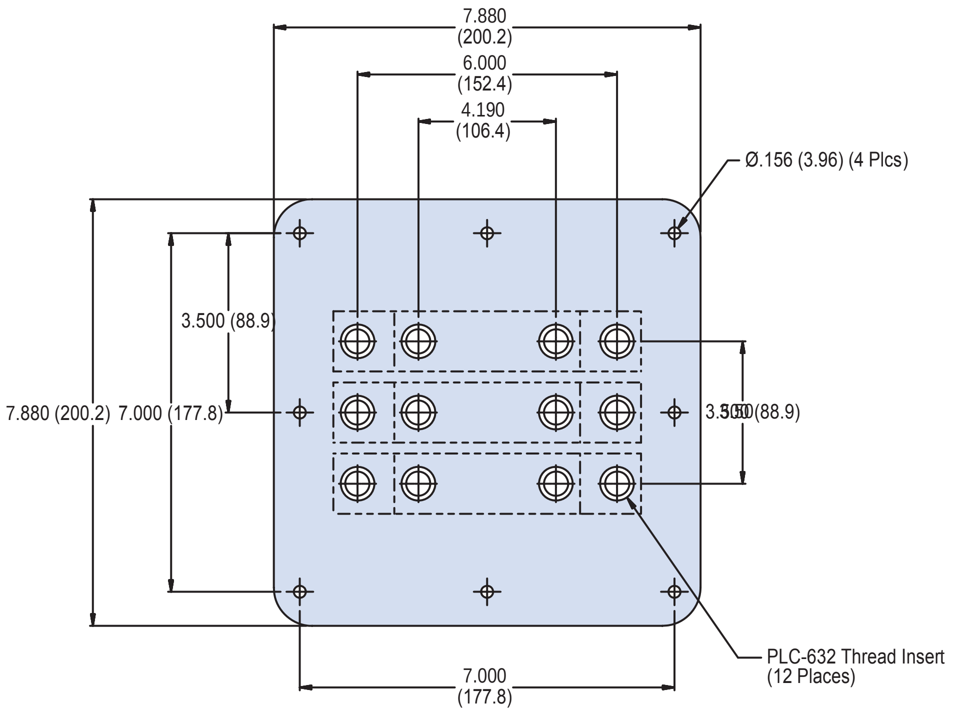


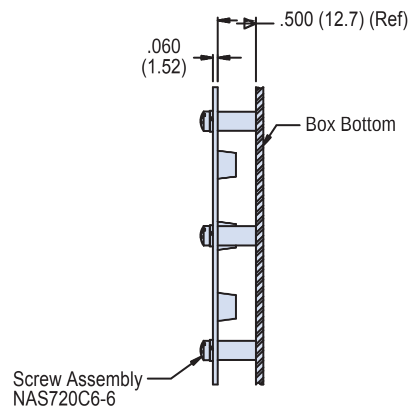

FIGURE 2

# 140-060XMS-03 (NSN: 5975-01-557-2679)
## 48 terminal, grounded composite junction box

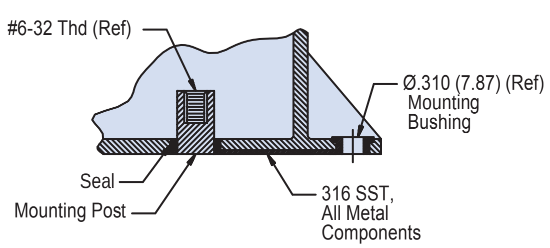





DETAIL B




VIEW C-C




**SECTION D-D**

**Electrical Ground Through Internal Mounting Post To External Mounting Bushing**

### APPLICATION NOTES

1. Assembly identified with manufacurer's code identification number (Glenair, part number and date code).
2. Color may be subject to fading, however UV exposure will not affect material physical properties.
3. Assembly is similar to symbol part numbers and require installation in accordance with NAVSEA drawing 803-6983506.
4. Material / Finish:
   - Box, cover - Thermoplastic grey color/see Table I.
   - Hardware - 316 SST/passivate.
   - Seals and gaskets - Silicone/N.A.
   - Mounting Plate - 300 series SST/passivate.
5. Metric dimensions (mm) are indicated in parentheses.





Composite
SERIES 147
15 Ft. Submersion Composite Boxes
Glenair
140-060XMS-03 (NSN: 5975-01-557-2679)
48 terminal, grounded composite junction box

**TABLE I: Finish**

| Symbol | Description |
|---|---|
| XMS | Internal Surfaces - Electroless Nickel<br>Exterior Surfaces - Unplated Light Grey Color |
| XO | No Plating |

**TABLE II: Replacement Parts**

| Item | Part Number | Description | Material |
|---|---|---|---|
| 1 | 140-065XMS-15 | Cover Assembly | Grey Thermoplastic |
| 2 | 687-499-2 | Cover Screw Assembly | 316 SST/Passivate |
| 3 | 687-305Z131 | Mounting Plate Assembly | 300 SST/Passivate |

**TABLE III: MIL-T-55164 Terminal Block**

| Part Number | National Stock Number |
|---|---|
| 140-060XMS-03 | 5935-01-557-2679 |
| 140-060XMS-03T1 | 5940-01-556-9489 |
| 140-060XMS-03T2 | 5940-01-557-2564 |
| 140-060XMS-03T5 | 5940-01-5576-2578 |
| 140-060XMS-03T9 | 5940-01-557-2582 |
| 140-060XMS-03T10 | 5940-01-556-9494 |
| 140-060XMS-03T11 | 5940-01-557-2563 |
| 140-060XMS-03T12 | 5940-01-556-9499 |

**TABLE IV: Mounting Plate Assembly**

| Dash No. | 6.000" Mntg Holes | 4.190" Mntg Holes | MIL-T-55164 A-A-59125 | Number of Terminals | Max No of Wires | Recm'd Max Wire Size | Recm'd Lug MS17143 | Qnty Blocks per Assembly | Symbol Number | Military Specification |
|---|---|---|---|---|---|---|---|---|---|---|
| 03T1 | 4TB20 | - | /10 | 20 | 80 | #12 AWG | -3 | 1 | 432.1 | MIL-T-24558/4 |
| 03T2 | 6TB06F/24 | - | /12 | 30 | 90 | #14 AWG | -5 | 2 | 434 | MIL-T-24558/5 |
| 03T3 | 10TB28 | - | /16 | 56 | 168 | #14 AWG | - | 2 | - | - |
| 03T4 | 15TB24 | - | /19 | 48 | 144 | #14 AWG | -8 | 2 | - | - |
| 03T5 | 16TB10 | - | /20 | 10 | 20 | #12 AWG | -3 | 1 | 529 | MIL-T-24588/20 |
| 03T6 | 17TB10 | - | /21 | 10W/STUD 20 W/O | 80 | #12 AWG | -3 | 2 | - | - |
| 03T7 | - | 25TB12 | /23 | 36 | 72 | #14 AWG | -17 | 3 | - | - |
| 03T8 | - | 26TB12 | /24 | 24W/STUD 48 W/O | 96 | #16 AWG | -20 | 2 | - | - |
| 03T9 | 4TB20 | - | /10 | 40 | 160 | #12 AWG | -3 | 2 | 433.1 | MIL-T-24588/6 |
| 03T10 | 6TB24 | - | /12 | 48 | 144 | #14 AWG | -5 | 2 | 522.1 | MIL-T-24588/7 |
| 03T11 | 4TB20T | - | /10 | 60 | 240 | #12 AWG | -3 | 3 | 446 | MIL-T-24588/8 |
| 03T12 | 6TB24 | - | /12 | 72 | 216 | #14 AWG | -5 | 3 | 525 | MIL-T-24588/9 |

TOPSIDE: COMPOSITE BOXES

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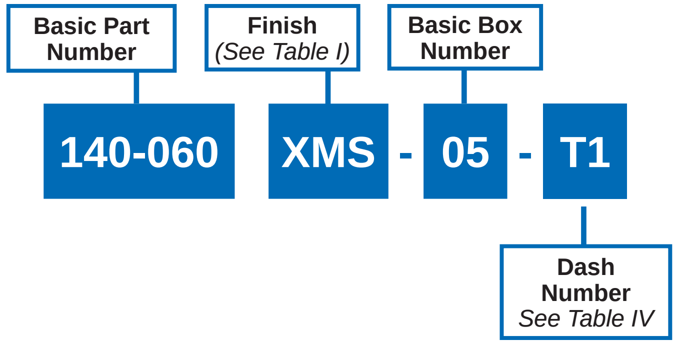
Dimensions in Inches (millimeters) are subject to change without notice.

# 140-060XMS-05 (NSN: 5975-01-556-7948)
## 4 terminal, grounded composite junction box

### HEXAGONAL 4.3 X 4.8 X 2.9 INCH COMPOSITE BOX



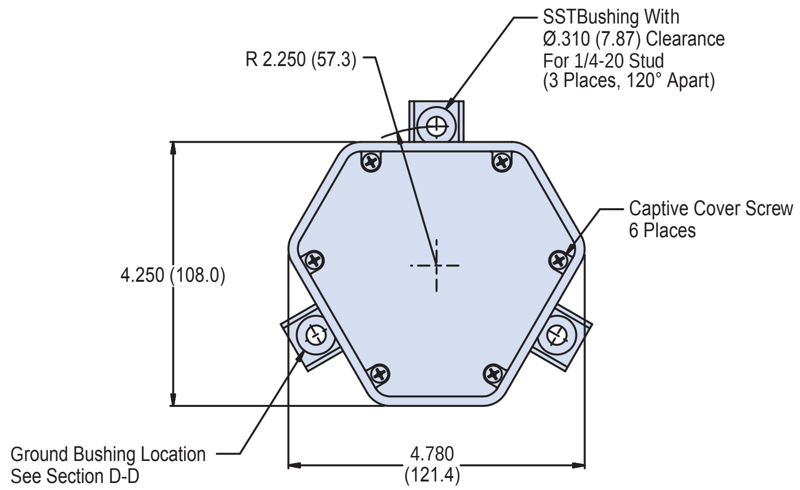
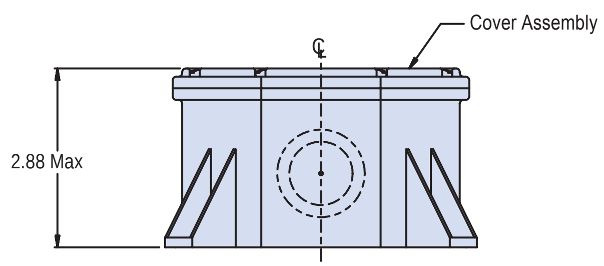




FIGURE 1 TOP VIEW



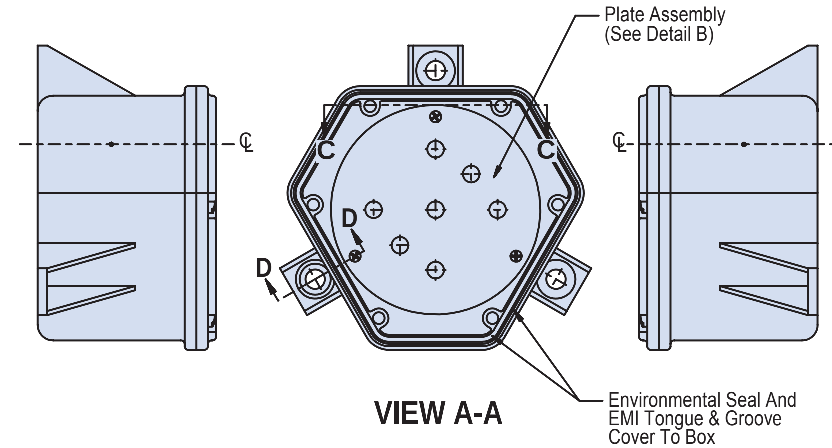







SERIES 147
15 Ft. Submersion Composite Boxes
140-060XMS-05 (NSN: 5975-01-556-7948)
4 terminal, grounded composite junction box

HEXAGONAL 4.3 X 4.8 X 2.9 INCH COMPOSITE BOX




VIEW A-A

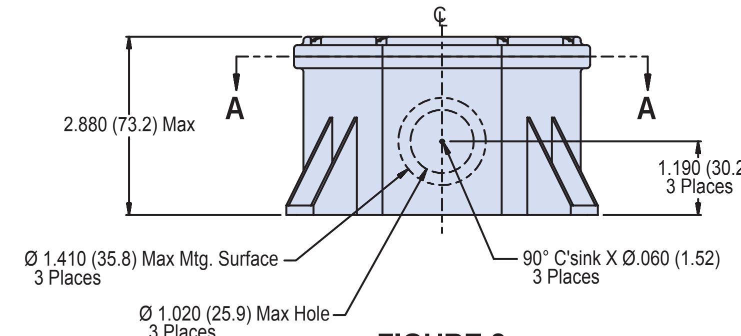



FIGURE 2



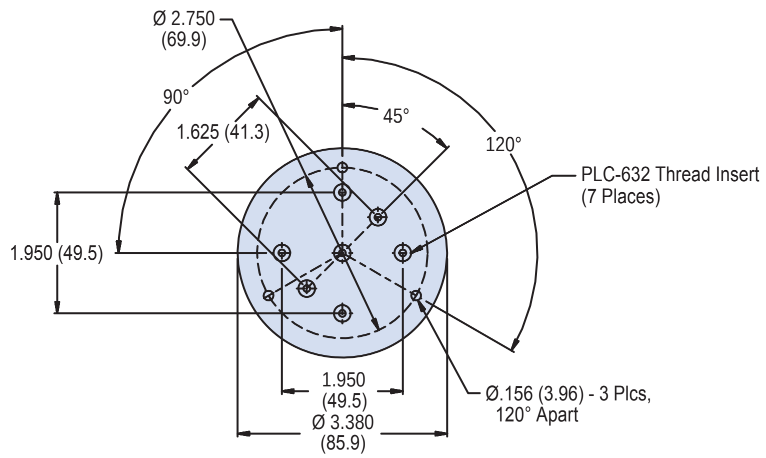


TOPSIDE: COMPOSITE BOXES

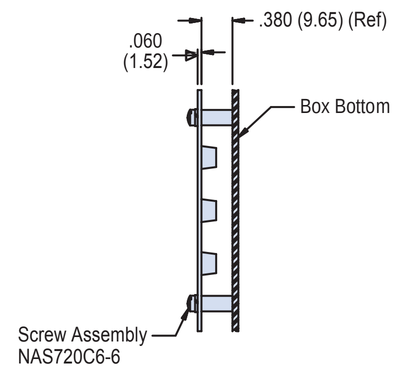
SERIES 147
15 Ft. Submersion Composite Boxes
140-060XMS-05 (NSN: 5975-01-556-7948)
4 terminal, grounded composite junction box



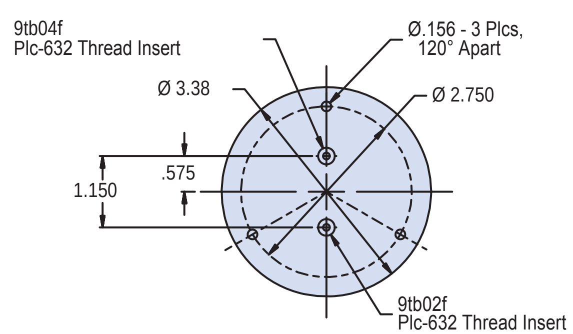
## HEXAGONAL 4.3 X 4.8 X 2.9 INCH COMPOSITE BOX




**DETAIL B**
Dash No.'s T1, T2 & T3




**VIEW C-C**




**DETAIL B**
Dash No. T4 Only

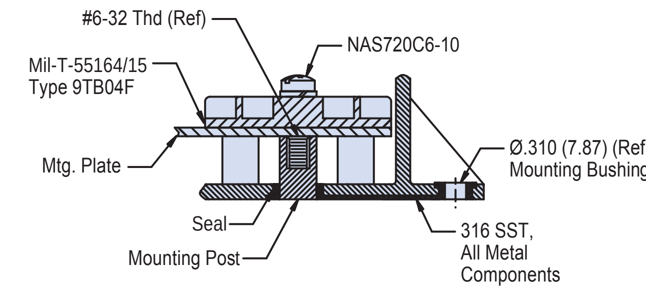
### APPLICATION NOTES

1. Assembly identified with manufacurer's code identification number (Glenair, part number and date code).
2. Color may be subject to fading, however UV exposure will not affect material physical properties.
3. Assembly is similar to symbol part numbers and require installation in accordance with NAVSEA drawing 803-6983506.
4. Material / Finish:
   - Box, cover - Thermoplastic grey color/see Table I.
   - Hardware - 316 SST/passivate.
   - Seals and gaskets - Silicone/N.A.
   - Mounting Plate - 300 series SST/passivate.
5. Metric dimensions (mm) are indicated in parentheses.





HEXAGONAL 4.3 X 4.8 X 2.9 INCH COMPOSITE BOX




**SECTION VIEW D-D**
Terminal Block Mounting Plate, Internal
Mounting Post And External Mounting Bushing
(Ground Option Shown)

| TABLE I: Finish | |
|---|---|
| Symbol | Description |
| XMS | Internal Surfaces - Electroless Nickel<br>Exterior Surfaces - Unplated Light Grey Color |
| XO | No Plating |

| TABLE II: MIL-T-55164 Terminal Block | |
|---|---|
| Part Number | National Stock Number |
| 140-060XMS-05 | 5975-01-556-7948 |
| 140-060XMS-05T1 | 5940-01-557-2579 |
| 140-060XMS-05T4 | 5940-01-557-2712 |

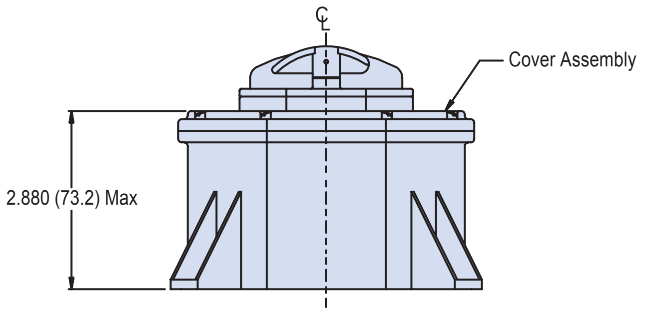
| TABLE III: Replacement Parts | | | |
|---|---|---|---|
| Item | Part Number | Description | Material |
| 1 | 140-065XMS-14 | Cover Assembly | Grey Thermoplastic |
| 2 | 687-499-2 | Cover Screw Assembly | 316 SST/Passivate |
| 3 | 687-305Z131 | Mounting Plate Assembly | 300 SST/Passivate |

| TABLE IV: Mounting Plate Assembly | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Dash No. | 1.950" Mntg Holes | 1.625" Mntg Holes | MIL-T-55164 A-A-59125 | Number of Terminals | Max No of Wires | Recm'd Max Wire Size | Recm'd Lug MS17143 | Qnty Blocks per Assembly | Symbol Number | Military Specification |
| 05T1 | 9TB04 | - | /15 | 4 | 8 | #12 AWG | - | 1 | - | - |
| 05T2 | 6TB06 | - | /12 | 6 | 18 | #14 AWG | -5 | 1 | 520.1 | MIL-T-24588/1 |
| 05T3 | 25TB05 | - | /23 | 5 | 10 | #14 AWG | -17 | 1 | - | - |
| 05T4 | T4 Detail | - | /15 | 6 | 12 | - | - | 2 | 400 | MIL-T-24588/18 |

TOPSIDE: COMPOSITE BOXES

# 147-023XMS-02 (NSN: 5940-01-557-2667)
# (Symbol 1099.1) grounded composite junction box

## SINGLE RECEPTACLE, 15 AMP, 115 VOLT BLADE TYPE COMPOSITE BOX • SIZE 4.3 X 4.8 X 2.9




| Basic Part Number | Finish (See Table I) | | Basic Box Number | |
|---|---|---|---|---|
| 147-023 | XMS | - | 02 | T |

**Optional Configuration**
*Add "T" for MIL-T-55164/15 Terminal Block*
*Omit if Not Required*

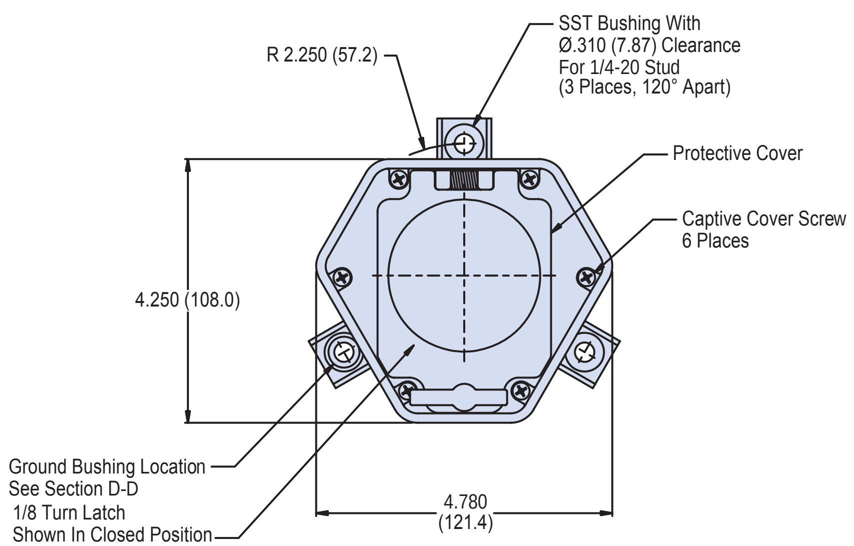
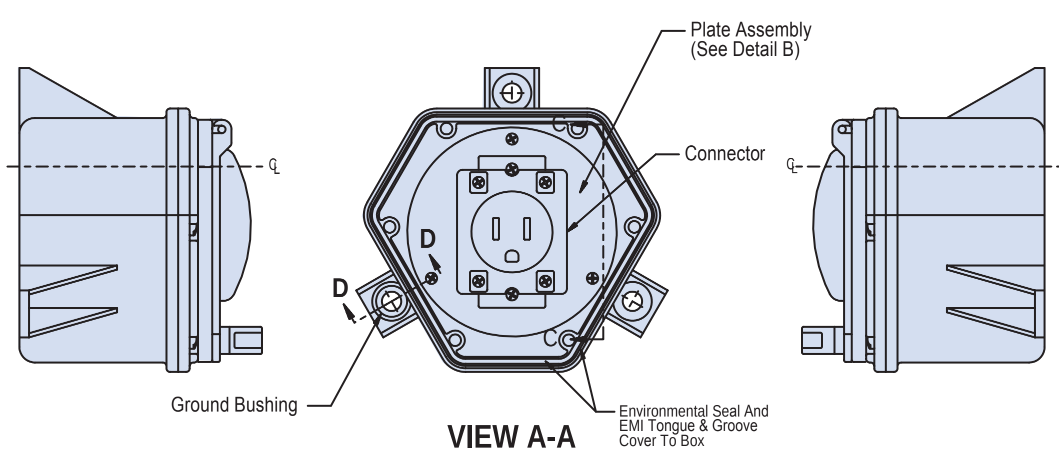



FIGURE 1 TOP VIEW




VIEW A-A

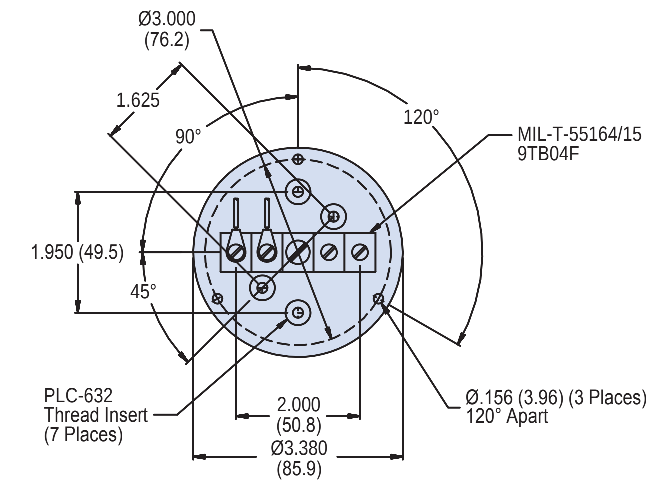




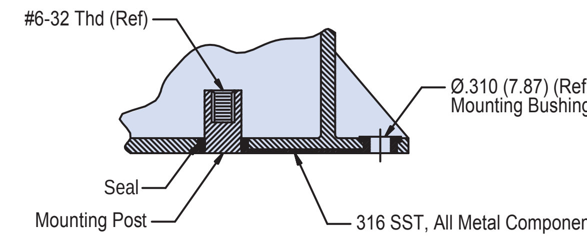


SERIES 147
15 Ft. Submersion Composite Boxes
147-023XMS-02 (NSN: 5940-01-557-2667)
(Symbol 1099.1) grounded composite junction box

SINGLE RECEPTACLE, 15 AMP, 115 VOLT BLADE TYPE COMPOSITE BOX • SIZE 4.3 X 4.8 X 2.9

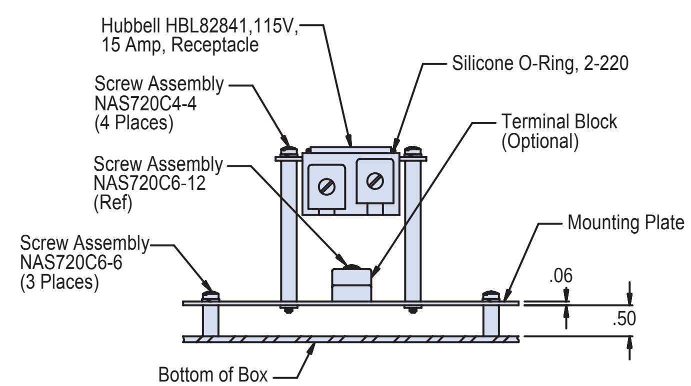



DETAIL B




**SECTION D-D**

Electrical Ground Through Internal Mounting Post To External Mounting Bushing




VIEW C-C

**TABLE I: Finish**

| Symbol | Description |
|---|---|
| XMS | Internal Surfaces - Electroless Nickel<br>Exterior Surfaces - Unplated Light Grey Color |
| XO | No Plating |

**TABLE II: Replacement Parts**

| Item | Part Number | Description | Material |
|---|---|---|---|
| 1 | 140-065XMS-18 | Cover Assembly | Grey Thermoplastic |
| 2 | 687-499-2 | Cover Screw Assembly | 316 SST/Passivate |
| 3 | 687-305Z132 | Mounting Plate Assembly | 300 Series SST |
| 4 | 630-038XO-04K | 1/8 Turn Flop Lid | Grey Thermoplastic |
| 5 | HBL8284I | Electrical Connector | N/A |

## APPLICATION NOTES

1. Assembly identified with manufacurer's code identification number (Glenair, part number and date code).
2. Color may be subject to fading, however UV exposure will not affect material physical properties.
3. Assembly is similar to symbol part numbers and require installation in accordance with NAVSEA drawing 803-6983506.
4. Material / Finish:
5. Box, cover - Thermoplastic grey color/see Table I.
   - Hardware - 316 SST/passivate.
   - Seals and gaskets - Silicone/N.A.
   - Mounting Plate - 300 series SST/passivate.
6. Metric dimensions (mm) are indicated in parentheses.





TOPSIDE: COMPOSITE BOXES


CONDUIT SYSTEMS

# *POLYMER AND METAL-CORE* Conduit Systems

## The flexible wire protection and cable routing alternative to standard jacketed cables

Conduit wire protection systems for high-reliability applications must be able to withstand extreme environments—from immersion in harsh chemicals, to temperature extremes and numerous flex cycles—without breakdown or failure. Glenair conduit systems are rigorously engineered to meet the exacting specifications of both commercial and military—geophysical and oceanographic environments.

Corrosion resistant, flexible polymer-core materials are available in a wide variety of materials to suit any application: Annular material choices include: Kynar, PVDF and G-FLEX Siltem, helical choices include ETFE, FEP, PFA, PTFE, and PEEK plus AS81914 /1 – 11 qualified materials and configurations.

Metal-core versions are specified for extreme crush resistance and optimal EMI shielding. The helically-wound metal conduit provides extremely high levels of EMI protection across all radiation fields and frequencies. Stainless steel versions are often specified for environments subject to temperature extremes such as geophysical applications.

- **Hermetically sealed, flexible metal-core conduit for interconnect applications**
- **Lightweight, flexible helical and annular polymer-core materials and easy to install fittings, transitions and adapters**
- **Turnkey, factory-terminated assemblies for industrial applications**





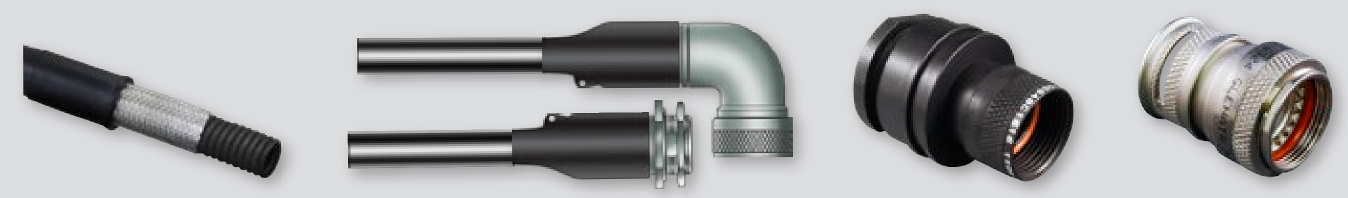
CONDUIT SYSTEMS

*SERIES 72, 73 AND 74*

# Convoluted Tubing and Conduit

## Wire protection conduit and cable routing fittings selection guide

### SERIES 72 CONVOLUTED TUBING PRODUCT SELECTION GUIDE



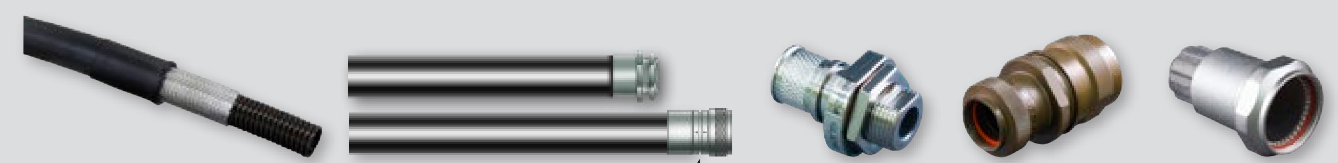
Convoluted Tubing

Factory Terminated Assemblies

Sentry system

Easy-to-Install Guardian system

### SERIES 74 CONVOLUTED TUBING PRODUCT SELECTION GUIDE



Helical Convoluted Tubing

Factory Terminated Assemblies

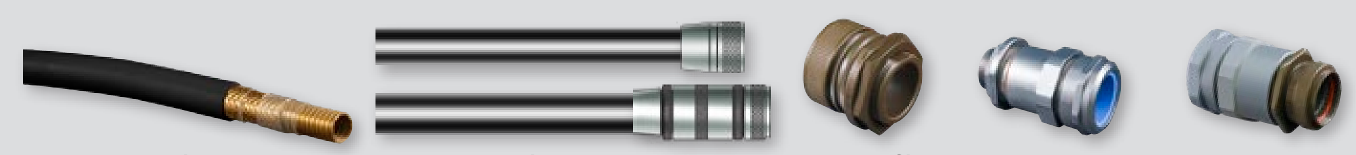
Swivel-joint circular connector backshell

Easy Assembly Hat Trick System

Super Durable Internal Braid System

Ultra Lightweight Composite Hummer Nut System

### SERIES 75 METAL-CORE HELICALLY-WOUND CONDUIT PRODUCT SELECTION GUIDE



Metal-Core Helical-Wound Conduit

Turnkey Factory Terminated Assemblies

Low-Profile RP Plus System

Heavy-Duty Environmental Metal System

Heavy-Duty Environmental Conduit System

## Reduce package size, weight, and labor with turnkey factory assemblies

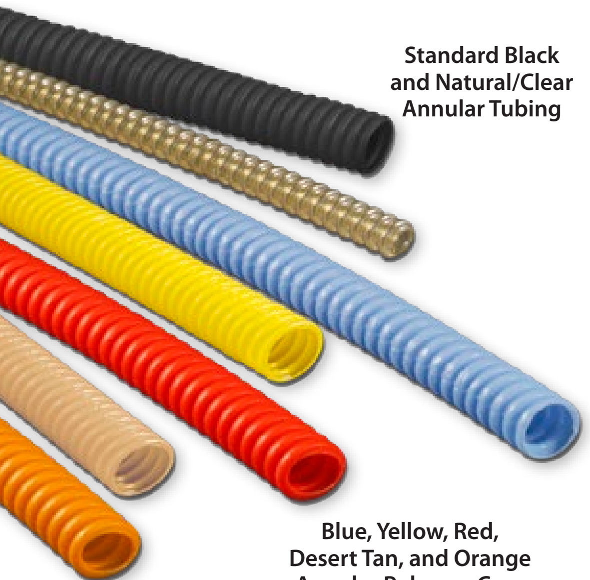
- **Glenair can design, build, terminate—and even pre-wire—turnkey conduit wire routing solutions.**
- **Certified factory assemblers and calibrated tooling create better-performing systems.**
- **Simple point-to-point or complex multi-branch.**

SERIES 72

# Annular Polymer-Core Conduit Systems

## Economical wire protection conduit





Standard Black and Natural/Clear Annular Tubing

Blue, Yellow, Red, Desert Tan, and Orange Annular Polymer-Core Tubing

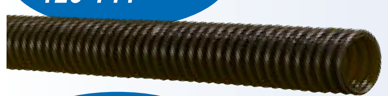
- **Lightweight, flexible polymer-core materials and easy to install fittings, transitions and adapters**
- **Choice of three tubing material choices: Kynar, PVDF and G-FLEX Siltem**
- **Choice of turnkey, factory-terminated assemblies or user-installable configurations**

Compact Environmental Sentry System

Easy-to-Install Guardian System

## High-performance annular convoluted tubing provides an economical, lightweight and durable enclosure for interconnect wiring

**Part Number 120-144**



***For non-environmental and non-EMI/RFI applications***

Strong, abrasion resistant annular conduit tubing, supplied in thermally stabilized Kynar®, PVDF, or medium duty Siltem. Available in 7 colors, standard or slit.

**Part Number 121-190**

***For non-environmental EMI/RFI applications***

Annular conduit tubing with braided shield for EMI/RFI protection and additional structural integrity, particularly pull (tensile) strength.

**Part Number 121-191**

***For environmental EMI/RFI applications***

Annular conduit tubing with braided shielding for EMI/RFI protection and a ruggedized jacket for environmental protection against dust, dirt, and moisture incursion.

**Part Number 121-192**

***For non-environmental EMI/RFI applications with high dB shielding requirements***

Annular conduit tubing with double braided shield for high frequency EMI/RFI protection and mechanical strength.

**Part Number 121-193**

***For environmental EMI/RFI applications with high dB shielding requirements***

Annular conduit tubing with double braided shield and jacket for optimum EMI/RFI protection, strength and environmental sealing.







SERIES 74

# Helical Polymer-Core Conduit Systems

## High-performance/high-temperature conduit



Easy Assembly Hat Trick System

Super Durable Internal Braid System

Ultra Lightweight Composite AeroLite System

- **Lightweight, flexible helical polymer-core materials and easy to install fittings, transitions and adapters**
- **Choice of five materials: ETFE, FEP, PFA, PTFE, and low-smoke, halogen-free PEEK**
- **Choice of turnkey, factory-terminated assemblies or user-installable configurations**
- **All popular part numbers in stock and ready for same-day shipment**

## Series 74 High-performance helical convoluted tubing, backshells, fittings and assemblies

**Part Number 120-100**

***Outstanding mechanical wire protection and lubricity for non-environmental and non-EMI/RFI applications***

Helical plastic convoluted tubing , available in a choice of 5 materials. Choose standard black or clear color.

**Part Number 121-101**

***Adds EMI/RFI braided shielding for use in non-environmental applications***

Helical plastic convoluted tubing, available in a choice of 5 materials, with a single braided shield for EMI/RFI protection.

**Part Number 121-102**

***Adds a second layer of high dB EMI/RFI shielding for use in non-environmental applications***

Helical plastic convoluted tubing, available in a choice of 5 materials, with double braided shield for high frequency shielding applications.

**Part Number 121-100**

***A jacketed configuration with one EMI/RFI shield for use in environmental applications***

Helical plastic convoluted tubing, available in a choice of 5 materials, with braided shielding for EMI/RFI protection and a ruggedized jacket for environmental protection.

**Part Number 121-103**

***Double-braided and jacketed configuration for environmental and high dB EMI/RFI shielding protection***

Helical plastic convoluted tubing, available in a choice of 5 materials with double shielding and jacket for optimum EMI/RFI protection and environmental sealing.

**Part Number 123-100**

***For environmental applications without EMI shielding requirements***

Helical convoluted tubing in choice of 5 materials with a ruggedized jacket for environmental protection.

**Part Number 121-195**

***Internal braid configuration for harsh chemical environment applications, with EMI/RFI shielding***

Chemical- and UV-resistant plastic conduit tubing with internal braid for weight savings and harsh-environment EMI/RFI protection.

# Helical Metal-Core Conduit Systems

## Crush-resistant and hermetically sealed

Copper-clad nickel iron conduit

- **Hermetically sealed, flexible metal-core conduit for interconnect applications**
- **Choice of three materials: Brass, Stainless Steel, and Nickel Iron Alloy**
- **Turnkey, factory-terminated assemblies**
- **All materials deliver superior EMC performance as well as crush resistance and environmental sealing**

## The ultimate in highly flexible, crush-proof EMI/RFI protection: Series 75 helically-wound metal-core conduit

**Part Number 750-190**

***Superior EMI protection and crush-proof strength for static applications***

Highly flexible crush-proof metal conduit, available in Nickel-Iron, Brass, or SST.

**Part Number 750-191**

***Adds braided shielding for additional tensile strength applications***

Flexible metal-core conduit tubing with numerous braided shielding options, for additional tensile strength and effective grounding of electromagnetic interference.

**Part Number 750-192**

***Adds a jacket for environmental protection***

Flexible metal-core conduit tubing with braided shielding plus a ruggedized jacket for environmental protection against contaminants and moisture.

**Part Number 750-193**

***Adds a second braided shield for high dB EMI/RFI shielding***

Flexible metal-core conduit tubing with double braided shield for high frequency EMI/RFI shielding requirements.

**Part Number 750-194**

***A jacketed, double-braided configuration for combined environmental and EMI/RFI applications with high dB shielding requirements***

Flexible metal-core conduit tubing with double braided shield and jacket for optimum EMI/RFI protection, strength and environmental sealing.

**Part Number 750-195**

***Triple-braided conduit for predictable and reliable grounding of surface-borne/high frequency electromagnetic interference***

Flexible metal-core conduit tubing with triple braided shield for optimal tensile strength and enhanced high frequency EMI/RFI protection.

**Part Number 750-196**

***Triple-braided and jacketed conduit for maximum EMI shielding in environmental applications***

Flexible metal-core conduit tubing with triple braided shield and jacket for enhanced high-frequency EMI/RFI protection, strength and environmental sealing.









# Duralectric™ Jacketing High-Performance Elastomeric Material

## Conduit and cable applications

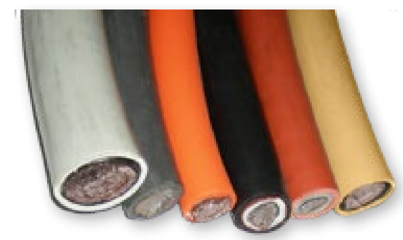
Duralectric™ is high-performance elastomeric material for use as wire insulation, conduit jacketing, cable/conduit overmolding, cable jacketing and molded boots.

Perfectly suited for immersion, chemical or caustic fluid exposure, temperature extremes, UV radiation and more.

### NOTABLE ATTRIBUTES

- **Service temperature range: -65°C to 225°C**
- **Duralectric™ K (Kelvin) range: -110° to 225°C**
- **Fire-resistant, Low Smoke-Zero Halogen (LSZH)**
- **Mil-aero and industrial fluid-resistant**
- **Accelerated UV/sunlight resistant, 53 year equivalent exposure**
- **Ozone resistant IAW ASTM D518**
- **Moldable and extrudable**

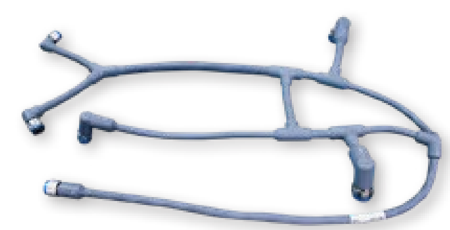
### DURALECTRIC™ HIGH-TEMPERATURE, HALOGEN-FREE, CHEMICALLY RESISTANT JACKETING



Bulk jacketed Duralectric™ cable for harsh-environment power applications

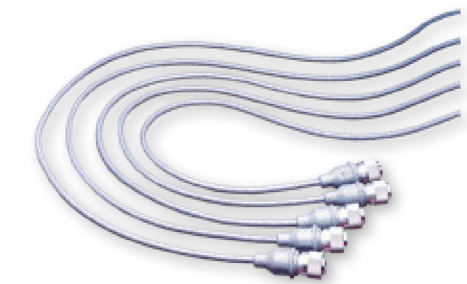
Duralectric™ Autoshrink™ employed in environmental boots and sleeves

Duralectric™ jacketing employed as conduit covering in topside naval applications



Aerospace overmolded cable assembly with rugged Duralectric™ jacketing

Shipboard application with Duralectric™ jacketing and overmolding



Duralectric™ jacketing employed in environmental commercial application

TurboFlex® with Duralectric® jacketing ideally suited for equipment grounding

Turboflex® power pylon cable assembly with Duralectric™ jacketing

# Duralectric™ Cable Jacketing High-Performance Elastomeric Material

## Performance specifications

Duralectric™ is a high-performance elastomeric material for use as wire insulation, cable jacketing, conduit jacketing, cable/conduit overmolding, and molded boots.

### NOTABLE ATTRIBUTES

- **Service Temperature Range: -65°C to 225°C**
- **Fire Resistant and Low Smoke-Zero Halogen (LSZH)**
- **Resistant to common aerospace, military and industrial fluids**

| Duralectric™ Physical Properties | | |
|---|---|---|
| **Property** | **Typical Result** | **Test Method** |
| Hardness, Shore A | 60 | ASTM D2240 |
| Tensile Strength, psi | 1100 | ASTM D412 |
| Elongation, % | 500 | ASTM D412 |
| Tear Strength, Die B, ppi | 150 | ASTM D624 |
| Low Temperature Impact at -65°C | Pass/No Cracks | ASTM D2137 |
| Accelerated UV/Sunlight Resistance, 53 Year Equivalent Exposure | Pass/Excellent | IEC 60068-2-5 |
| Ozone Resistance | Pass/No Cracks | ASTM D518 |
| Zero Halogen | Pass | IEC 754-1 |

| Duralectric™ Electrical Properties | | |
|---|---|---|
| **Property** | **Typical Result** | **Test Method** |
| Dielectric Strength, kV/mm | 19 | ASTM D419 |
| Comparative Tracking Index, VAC | > 600 | ASTM D3638 |

| Duralectric™ Fire Resistance Properties | |
|---|---|
| **Property** | **Typical Result** |
| **Flammability** | |
| Oxygen Index, % | 45 |
| FAR 25.853, 12 Second Vertical | Pass |
| BSS7230 Method F2 | Pass |
| IEC60614-1 | Pass |
| EN60695-2-12, 850°C Glow-Wire | Pass |
| UL1685 FT4/IEEE1202 | Pass |
| **Smoke Density** | |
| BSS7238 | Pass |
| NES 711 | Pass |
| EN 60695-2-11 | Pass |
| UL1685 FT4/IEEE1202 | Pass |
| **Combustion Toxicity** | |
| BSS7239 | Pass |
| NES 713 | Pass |
| SMP800 C | Pass |







TECHNICAL DATASHEET
Duralectric™ Cable Jacketing High-Performance Elastomeric Material
Performance specifications

| Duralectric™ Fluid Resistance MIL-STD-810G, Method 504, Procedure II | |
|---|---|
| A-A-52624A Type I and Type II | MIL-L-23699 Gas Turbine Engine Oil |
| Amerex AFFF Fire Extinguishing Foam | MIBK |
| AMS 1432 Potassium Acetate De-Icer | Polyalphaolefin (PAO) |
| AMS 1450A Insecticide | Propylene Glycol Antifreeze |
| Calla 855 Aircraft Cleaner | Pyrethrum-based Insecticides |
| CBRN/NBC Washdown* | R-134 Refrigerant |
| Coolanol 25R Silicate Ester Fluid | Royco 500 Gas Turbine Engine Oil |
| E36 Runway De-Icer | Royco 756 Hydraulic Fluid |
| Ethylene Glycol Antifreeze | Skydrol 5 |
| Isopropyl Alcohol | Skydrol 500 B-4 |
| JP-8 | Skydrol LD-4 |
| MIL-C-85570 Aircraft Cleaner | Supertropical Bleach (STB)* |
| MIL-C-87252 Coolant | TT-I-735 |
| MIL-H-5606 Hydraulic Fluid | Water |

*Tested in accordance with TOP-8-111
Duralectric™ is not recommended for continuous immersion in petroleum based fuels, solvents, crude oil, or Type V phosphate ester fluids.

### IMPORTANT NOTE

Data generated in accordance with prevailing national and international test standards and should be used only for material comparison. Actual property values are highly dependent on part geometry, mold configuration, and processing conditions. Please contact the factory to discuss the use of Duralectric™ in specific applications or environments.

TOPSIDE: CONDUIT SYSTEMS

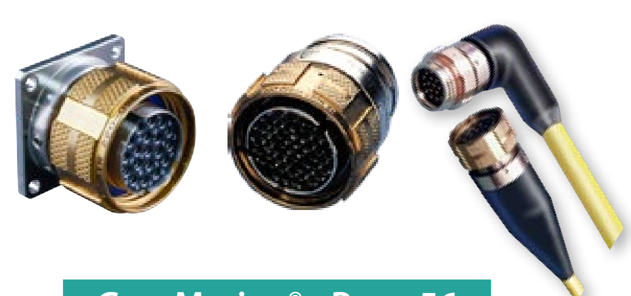
**SHALLOW WATER**

*PROVEN PERFORMANCE*

# AquaMouse™ and Geo-Marine® Submersible Connectors and Cables for Towed Array and other Littoral Zone Applications

**Piston O-ring and hermetically sealed interconnect technologies with marine-grade stainless steel and Marine Bronze materials for power, signal, and high-speed applications**

**SHALLOW WATER SUBSEA CONNECTORS**



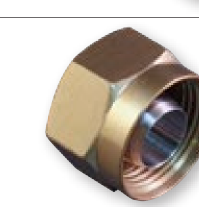
AquaMouse™ - Page 1

Geo-Marine® - Page 56









SUBSEA/SHALLOW WATER: AQUAMOUSE™

SERIES 802

# AquaMouse

## Ultraminiature High-pressure

Originally developed for petroleum pipeline inspection equipment, Series 802 connectors are available in ten sizes from 1 to 130 contacts and equipped with Viton® O-rings to withstand exposure to corrosive chemicals and high temperature environments. These connectors feature high density crimp Mighty Mouse inserts, 316 stainless steel or marine bronze shells and a piston O–ring for hydrostatic sealing. Series 802 insulated wire, panel mount receptacles can be ordered as square flange, in–line or jam–nut versions. Choose integral shield termination platform or accessory thread for use with a variety of strain relief options. Crimp style gold–plated crimp contacts accept #12–30 wire. Connectors are backfilled with epoxy potting compound. Hermetic glass–sealed connectors come with solder cup contacts (non-removable) or PC tails. 100% tested to meet 1 x 10-7 cc/sec helium leakage. Open face pressure rating 3500 PSI.

- **3500 psi pressure rated**
- **High-temperature and corrosive chemical-resistant Viton® or Nitrile O-rings**
- **Ultraminiature #23 contacts**
- **Size #20, #20HD, #16, #12, #8 signal, power, fiber optic and shielded contacts**
- **Discrete connectors and turnkey cable assemblies**

### AQUAMOUSE CONNECTOR CONFIGURATIONS AND CLASSES

Series 802 Plugs

Series 802 Jam Nut Mount

Series 802 Square Flange Receptacle

Series 802 Hermetic

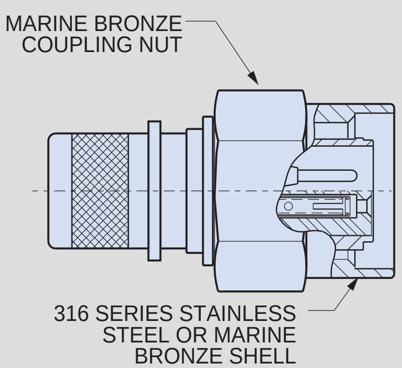
Series 802 Hermetic Bulkhead Feed-Thru



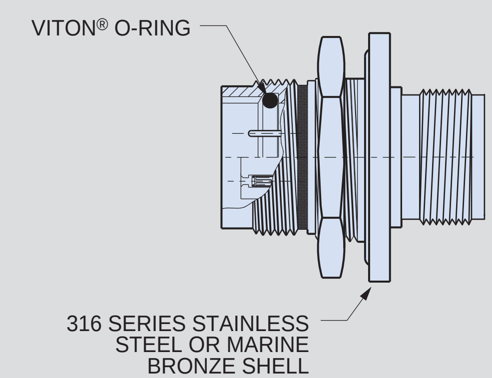




## Glenair Series 802 AquaMouse™ Delivers High-Pressure Sealing and Rugged Design in a Miniature Package




Series 802 Plug



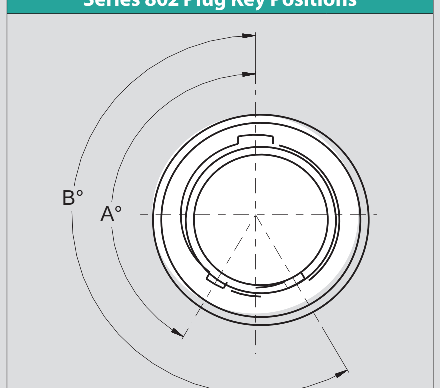

Series 802 Receptacle

**Stainless Steel or Marine Bronze**
Available in ten sizes from 1 to 130 contacts, Series 802 connectors feature 316 stainless steel or marine bronze shells. Viton® o-rings resist high temperature and corrosive chemicals.

**3500 psi**
These connectors withstand up to 3500 PSI hydrostatic pressure in a mated condition. Hermetic versions withstand 1000 PSI open face pressure.

### AQUAMOUSE SPECIFICATIONS AND PLUG KEY POSITIONS

Series 802 Plug Key Positions

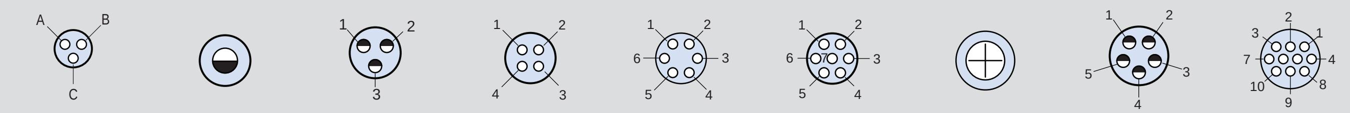



| Key Position | Key Rotation A° | Key Rotation B° |
|---|---|---|
| Normal (A) | 150° | 210° |
| B | 75° | 210° |
| C | 95° | 230° |
| D | 140° | 275° |
| E | 75° | 275° |
| F | 9° | 210° |

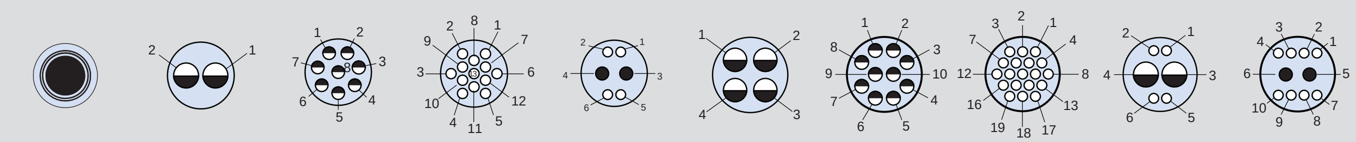
| Performance Specifications | |
|---|---|
| Current Rating | #23–5 A, #20–7.5 A, #16–13 A, #12–23 A |
| Dielectric Withstanding Voltage | #23–750 VAC, #20HD–1000VAC, #16 and #12–1800 VAC |
| Insulation Resistance | 5000 megohms minimum |
| Operating Temperature | -65° C. to +175° C. |
| Hydrostatic Pressure | 3500 PSI mated, 1000 PSI open face (hermetic) |
| Shock | 300 g. |
| Vibration | 37 g. |
| Durability | 2000 mating cycles |

| Material and Finish | |
|---|---|
| Shells, Jam Nuts | 316 stainless steel or marine bronze |
| Coupling Nuts | Marine bronze, unplated |
| Contacts | Copper alloy, 50 µInch gold plated. Socket hood: stainless steel, passivated. Hermetic pin contacts: Nickel-Iron alloy per ASTM-F-30, 50 µInch gold plated. |
| Insulators | Liquid crystal polymer (LCP) , 30% glass-filled |
| Contact Retention Clip | Beryllium copper alloy |
| Interfacial Seal, O-rings | Viton Rubber |
| Interfacial seal, rear grommet | Fluorosilicone rubber, blue |
| O-rings | Viton® |

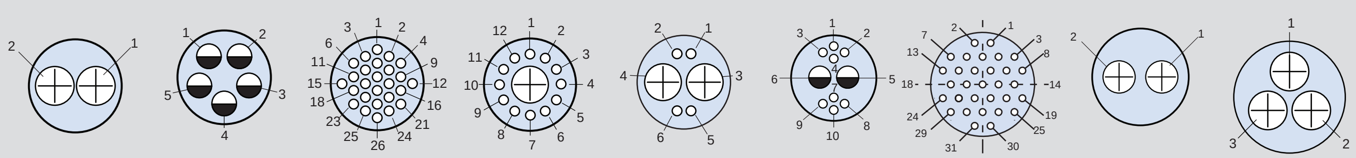
SUBSEA SHALLOW WATER: AQUAMOUSE™



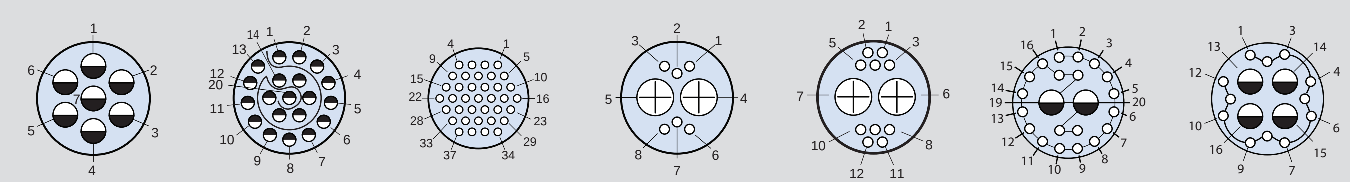
| Shell Size 5 | Shell Size 6 | | | | | Shell Size 7 | | |
|---|---|---|---|---|---|---|---|---|
| 5-3 | 6-1 | 6-23 | 6-4 | 6-6 | 6-7 | 7-1 | 7-25 | 7-10 |
| 3 Size #23 Contacts | 1 Size #16 Contacts | 3 Size #20HD Contacts | 4 Size #23 Contacts | 6 Size #23 Contacts | 7 Size #23 Contacts | 1 Size #12 Contact | 5 Size #20HD Contacts | 10 Size #23 Contacts |



| Shell Size 8 | | | | | Shell Size 9 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8-1 | 8-2 | 8-28 | 8-13 | 8-200 | 9-4 | 9-210 | 9-19 | 9-200 | 9-201 |
| 1 Size #8 Contact | 2 Size #16 Contacts | 8 Size #20HD Contacts | 13 Size #23 Contacts | 4 Size #23 2 Size #20 Contacts | 4 Size #16 Contacts | 10 Size #20hd Contacts | 19 Size #23 Contacts | 4 Size #23 2 Size #16 Contacts | 8 Size #23 2 Size #20 Contacts |



| Shell Size 10 | | | | | | Shell Size 11 | Shell Size 12 | |
|---|---|---|---|---|---|---|---|---|
| 10-2 | 10-5 | 10-26 | 10-200 | 10-201 | 10-202 | 11-31 | 12-2 | 12-3 |
| 2 Size #12 Contacts | 5 Size #16 Contacts | 26 Size #23 Contacts | 12 Size #23 1 Size #12 Contacts | 4 Size #23 2 Size #12 Contacts | 8 Size #23 2 Size #16 Contacts | 31 Size #23 Contacts | 2 Size #12 Contacts | 3 Size #12 Contacts |



| Shell Size 12 | | | | | | |
|---|---|---|---|---|---|---|
| 12-7 | 12-220 | 12-37 | 12-200 | 12-201 | 12-202 | 12-203 |
| 7 Size #16 Contacts | 20 Size #20HD Contacts | 37 Size #23 Contacts | 6 Size #23 2 Size #12 Contacts | 10 Size #23 2 Size #12 Contacts | 20 Size #23 2 Size #16 Contacts | 12 Size #23 4 Size #16 Contacts |

Standard PCB footprints begin on page 7
Hybrid PCB footprints begin on page 24

*All arrangements with #12 contacts available with keyed Twinax contacts. Use mode code -688

Contact Legend

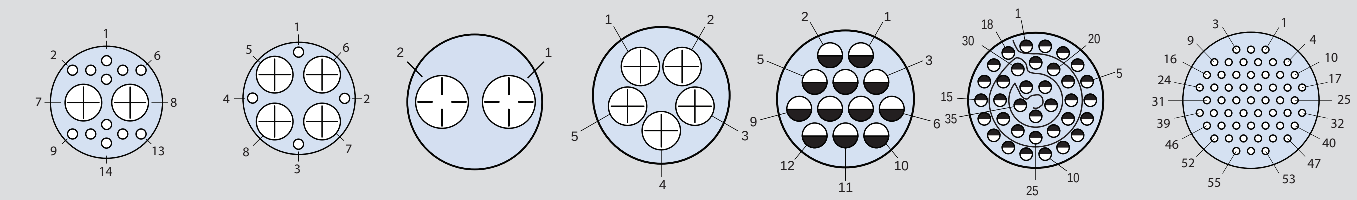
#23○ #20HD◒ #20● #16◒ #12⊕ #8 ⊕

SUBSEA/SHALLOW WATER: AQUAMOUSE™

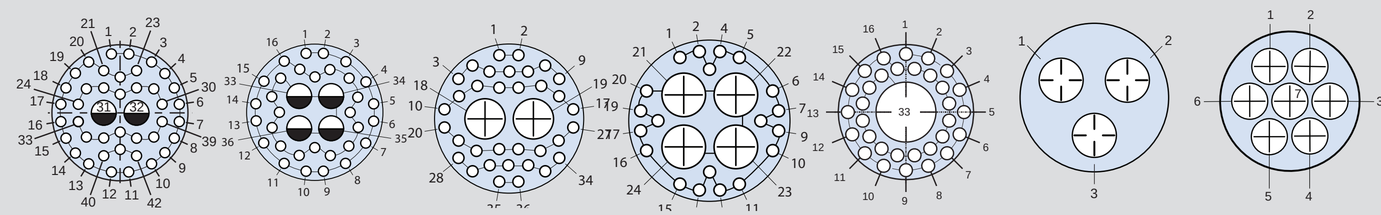




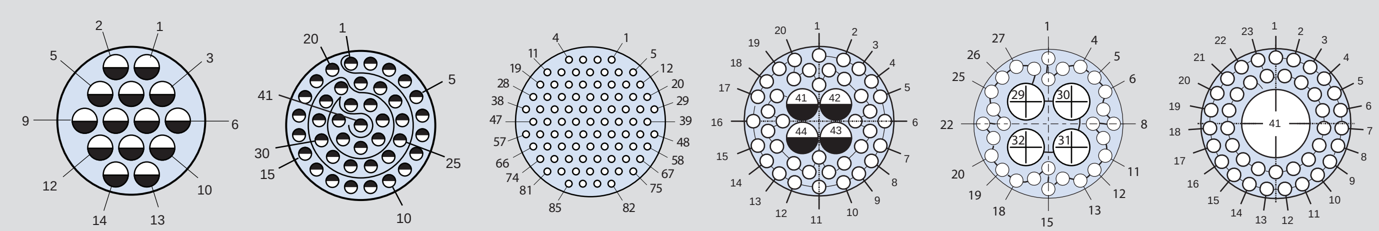
SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
Contact arrangements



| | | Shell Size 14 | | | | |
|---|---|---|---|---|---|---|
| 12-204 | 12-205 | 14-2 | 14-5 | 14-12 | 14-235 | 14-55 |
| 12 Size #23 2 Size #12 Contacts | 4 Size #23 4 Size #12 Contacts | 2 Size #8 Contacts | 5 Size #12 Contacts | 12 Size #16 Contacts | 35 Size #20 Contacts | 55 Size #23 Contacts |



| Shell Size 14 | | | | | Shell Size 15 | |
|---|---|---|---|---|---|---|
| 14-204 | 14-205 | 14-206 | 14-207 | 14-208 | 15-3 | 15-7 |
| 2 Size #16 40 Size #23 Contacts | 4 Size #16 32 Size #23 Contacts | 34 Size #23 2 Size #12 Contacts | 20 Size #23 4 Size #12 Contacts | 32 Size #23 1 Size #8 Contacts | 3 Size #8 Contacts | 7 Size #12 Contacts |



| 15-14 | 15-241 | 15-85 | 15-203 | 15-204 | 15-205 |
|---|---|---|---|---|---|
| 14 Size #16 Contacts | 41 Size #20HD Contacts | 85 Size #23 Contacts | 40 Size #23 4 Size #16 Contacts | 28 Size #23 4 Size #12 Contacts | 1 Size #8 40 Size #23 |

Standard PCB footprints begin on page 7
Hybrid PCB footprints begin on page 24

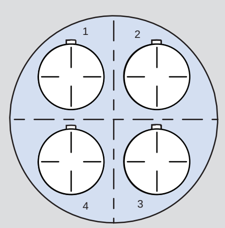
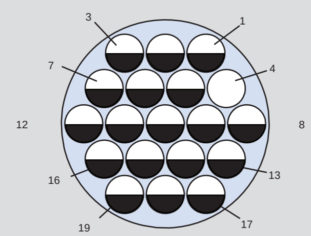
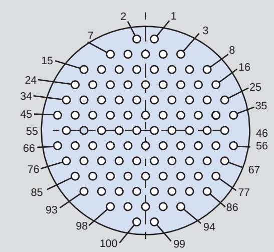
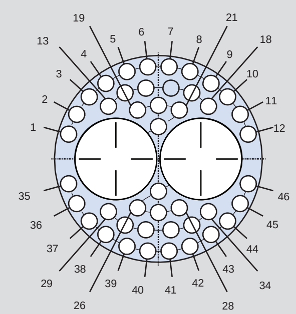
*All arrangements with #12 contacts available with keyed Twinax contacts. Use mode code -688

Contact Legend

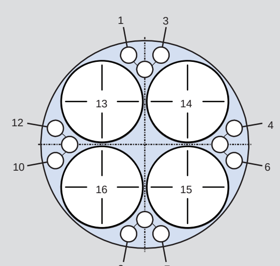
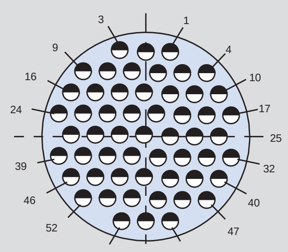
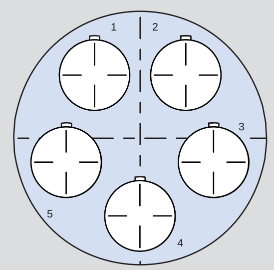
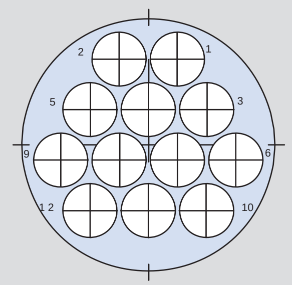
#23○ #20HD◒ #20● #16◒ #12⊕ #8 ⊕

SUBSEA SHALLOW WATER: AQUAMOUSE™

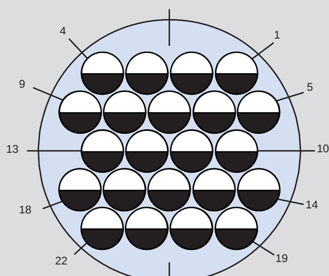
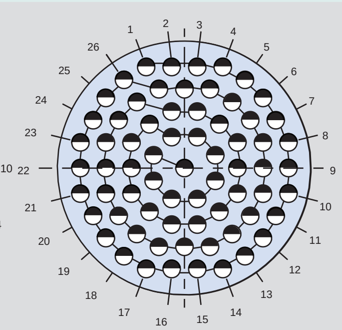
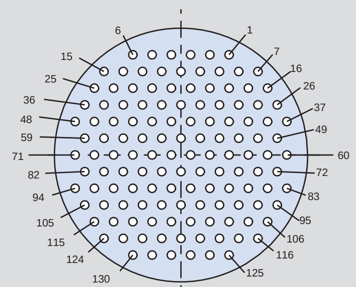
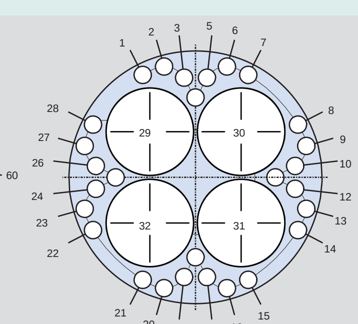
## Contact arrangements

| Shell Size 19 | | | |
|---|---|---|---|
| 19-4 | 19-19 | 19-100 | 19-201 |
| 4 Size #8 Contacts | 19 Size #16 Contacts | 100 Size #23 Contacts | 2 Size #8 44 Size #23 Contacts |

| | | Shell Size 21 | |
|---|---|---|---|
| 19-202 | 19-255 | 21-5 | 21-12 |
| 4 Size #8 12 Size #23 Contacts | 55 Size #20HD Contacts | 5 Size #8 Contacts | 12 Size #12 Contacts |

| Shell Size 21 | | | |
|---|---|---|---|
| 21-22 | 21-269 | 21-130 | 21-200 |
| 22 Size #16 Contacts | 69 Size #20HD Contacts | 130 Size #23 Contacts | 4 Size #8 28 Size #23 Conctacts |

Standard PCB footprints begin on page 7
Hybrid PCB footprint layouts begin on page 24

*All arrangements with #12 contacts available with keyed Twinax contacts. Use mode code -688

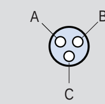
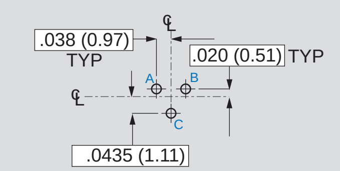
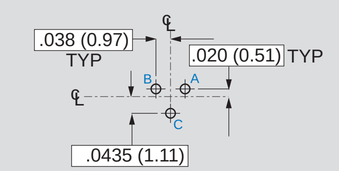
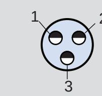
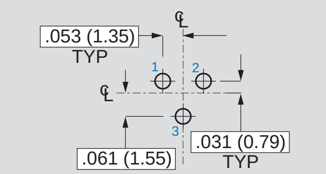
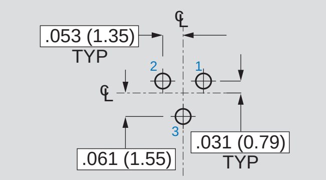
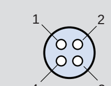
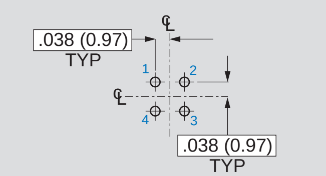
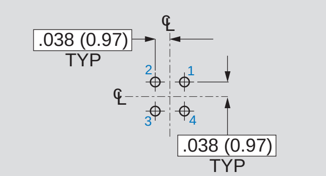
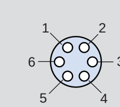
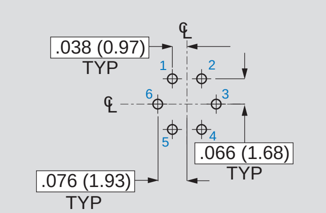
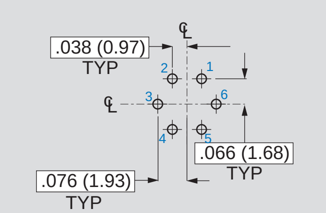
Contact Legend
#23 #20HD #20 #16 #12 #8






SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors

## Standard PCB footprint
## Viewed from component mounting side of PCB

| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|
|  **Contact Arrangement 5-3** 3 #23 Contacts .022 (0.56) Max. Dia. Tail |  |  |
|  **Contact Arrangement 6-23** 3 #20HD Contacts .028 (0.56) Max. Dia. Tail |  |  |
|  **Contact Arrangement 6-4** 4 #23 Contacts .022 (0.56) Max. Dia. Tail |  |  |
|  **Contact Arrangement 6-6** 6 #23 Contacts .022 (0.56) Max. Dia. Tail |  |  |

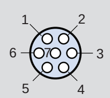



SUBSEA SHALLOW WATER: AQUAMOUSE™

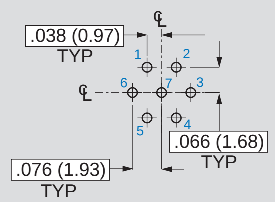
## Standard PCB footprint
## Viewed from component mounting side of PCB

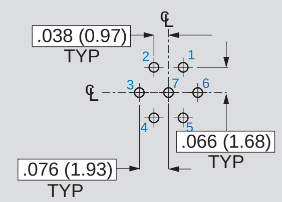


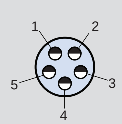
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



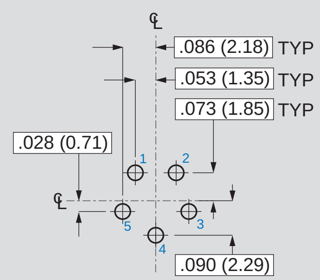
**Contact Arrangement 6-7**
7 #23 Contacts
.022 (0.56) Max. Dia. Tail

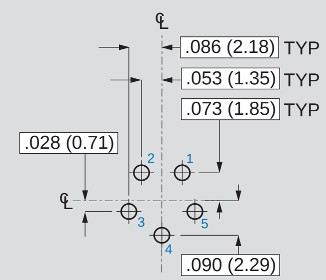


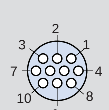



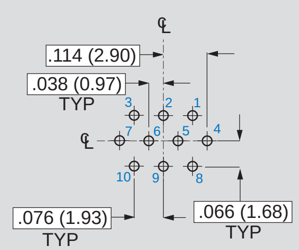
**Contact Arrangement 7-25**
5 #20HD Contacts
.028 (0.71) Max. Dia. Tail

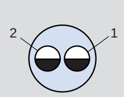


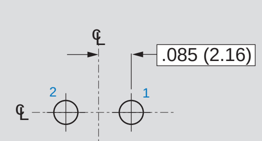



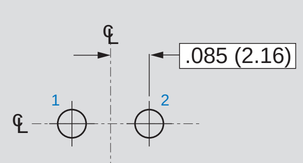
**Contact Arrangement 7-10**
10 #23 Contacts
.022 (0.56) Max. Dia. Tail



**Contact Arrangement 8-2**
2 #16 Contacts
.064 (1.63) Max. Dia. Tail



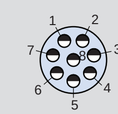





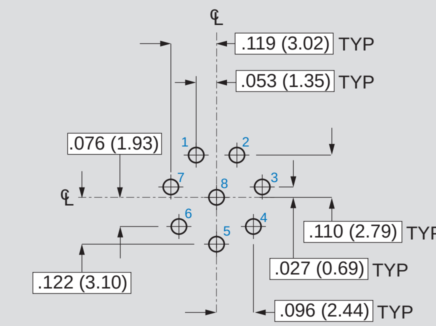


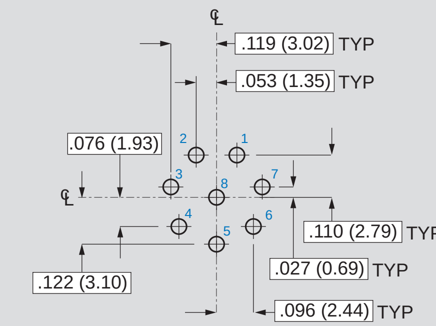

SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
Standard PCB footprint
Viewed from component mounting side of PCB

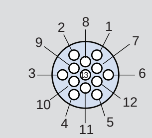
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



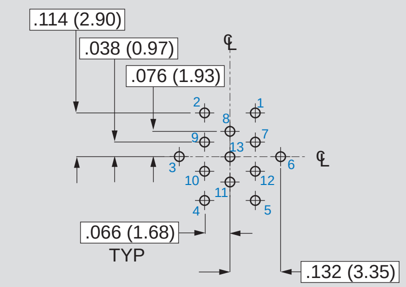
**Contact Arrangement 8-28**
8 #20HD Contacts
.028 (0.71) Max. Dia. Tail

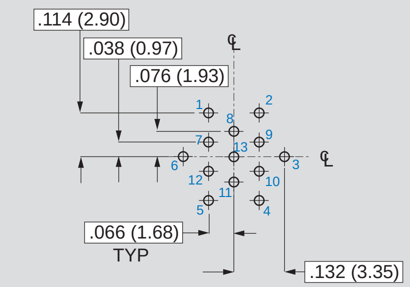


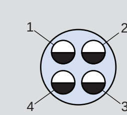



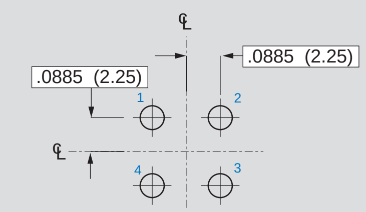
**Contact Arrangement 8-13**
13 #23 Contacts
.022 (0.56) Max. Dia. Tail

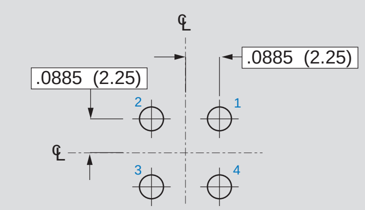


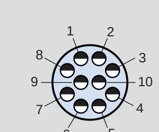



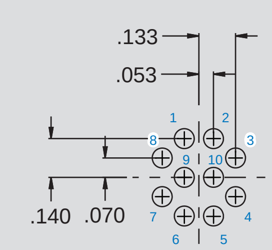
**Contact Arrangement 9-4**
4 #16 Contacts
.064 (1.63) Max. Dia. Tail

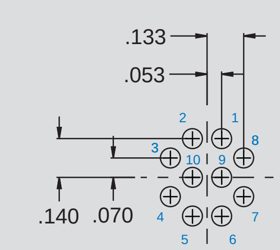


**Contact Arrangement 9-210**
10 #20HD Contacts
.028 (0.71) Max. Dia. Tail

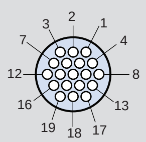


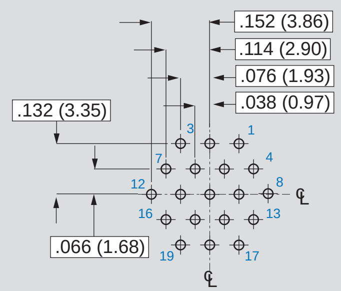
# Standard PCB footprint
# Viewed from component mounting side of PCB

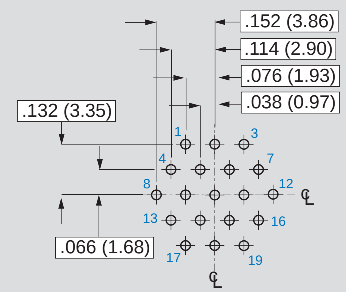


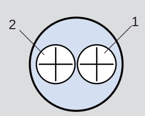
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



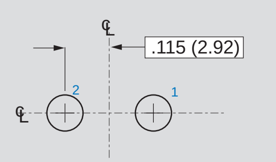
**Contact Arrangement**
**9-19**
19 #23 Contacts
.022 (0.56) Max. Dia. Tail

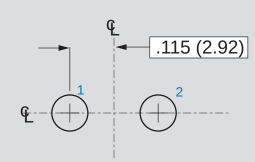


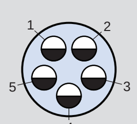



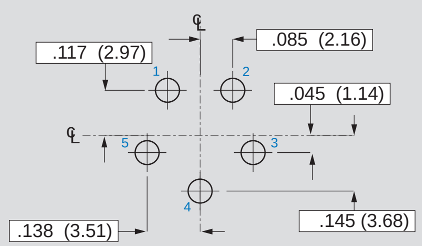
**Contact Arrangement**
**10-2**
2 #12 Contacts
.096 (2.44) Max Dia. Tail

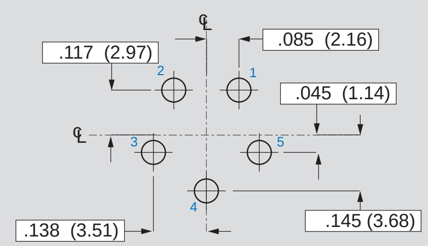


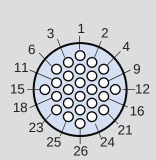



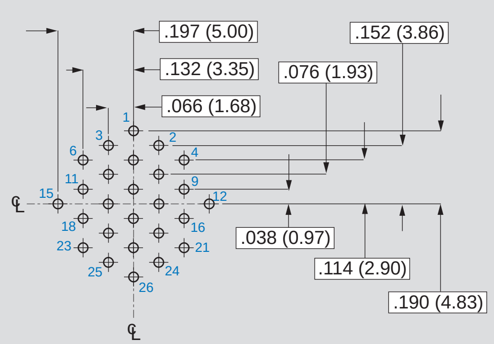
**Contact Arrangement**
**10-5**
5 #16 Contacts
.064 (1.63) Max. Dia. Tail

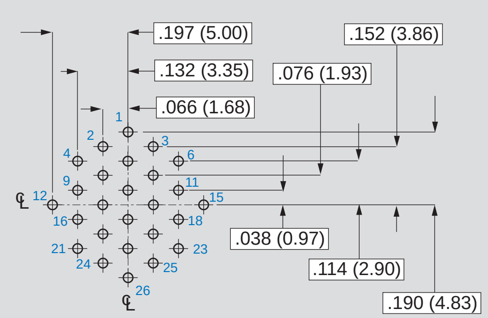


**Contact Arrangement**
**10-26**
26 #23 Contacts
.022 (0.56) Max. Dia. Tail



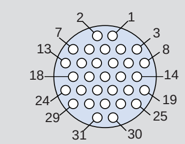




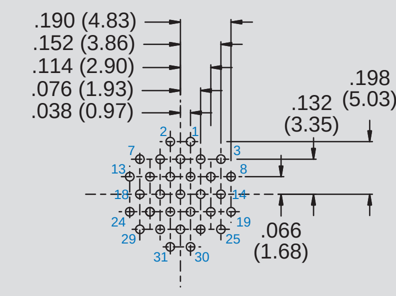

SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
Standard PCB footprint
Viewed from component mounting side of PCB

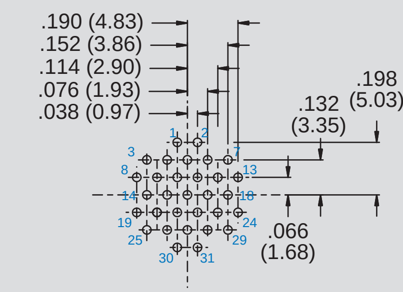


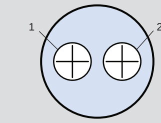
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



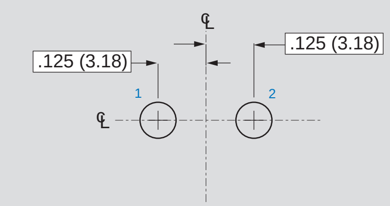
**Contact Arrangement**
**11-31**
31 #23 Contacts
.022 (0.56) Max. Dia. Tail

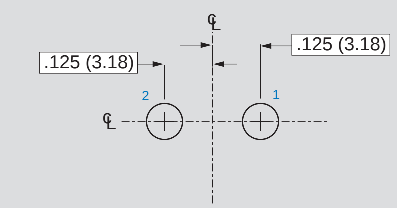


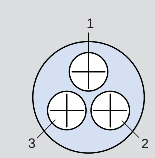



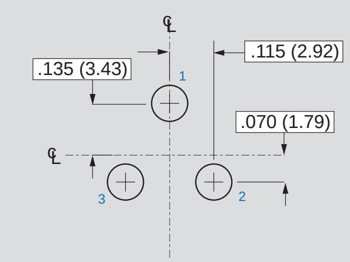
**Contact Arrangement**
**12-2**
2 #12 Contacts
.096 (2.44) Max Dia. Tail

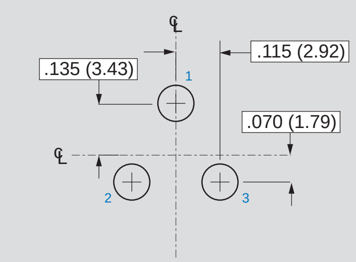


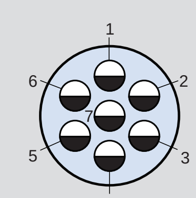



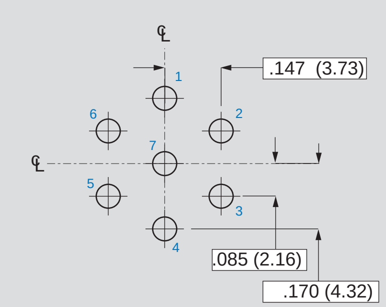
**Contact Arrangement**
**12-3**
3 #12 Contacts
.096 (2.44) Max Dia. Tail

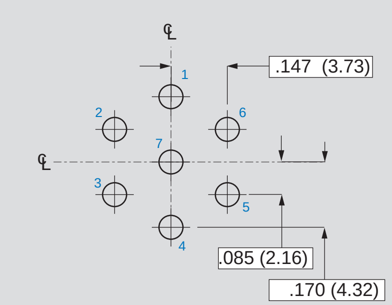


**Contact Arrangement**
**12-7**
7 #16 Contacts
.064 (1.63) Max. Dia. Tail

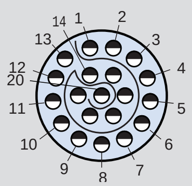


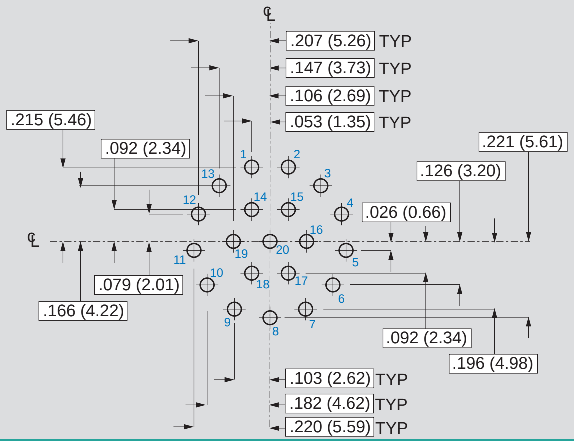
## Standard PCB footprint
## Viewed from component mounting side of PCB



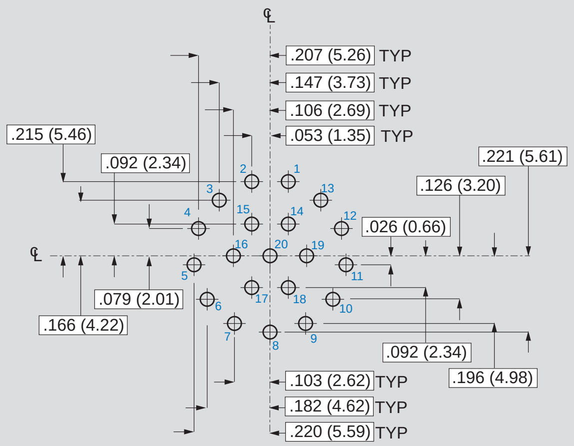
| Contact Arrangement | Pin Connector |
|---|---|



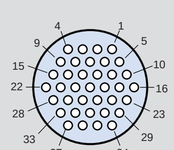
**Contact Arrangement**
**12-220**
20 #20HD Contacts
.028 (0.71) Max. Dia. Tail



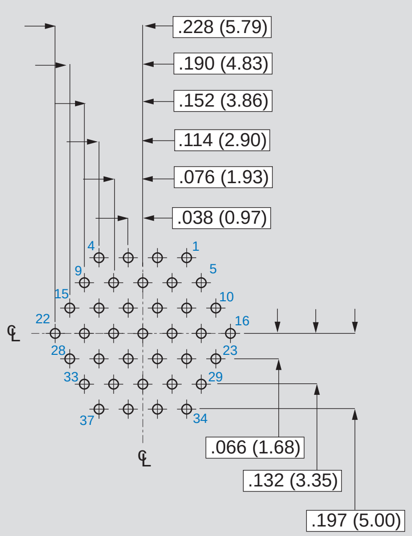

**Socket Connector**

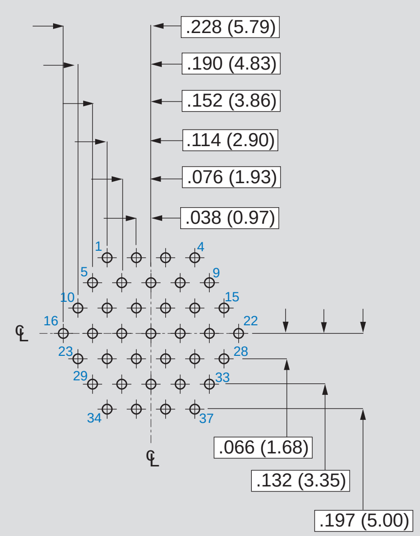



| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



**Contact Arrangement**
**12-37**
37 #23 Contacts
.022 (0.56) Max. Dia. Tail



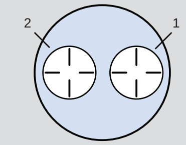




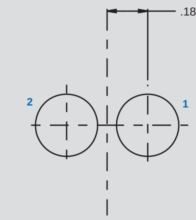

SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors

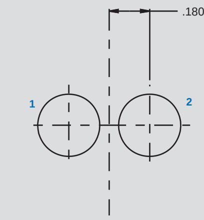
Standard PCB footprint
Viewed from component mounting side of PCB

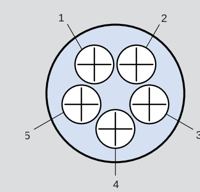
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



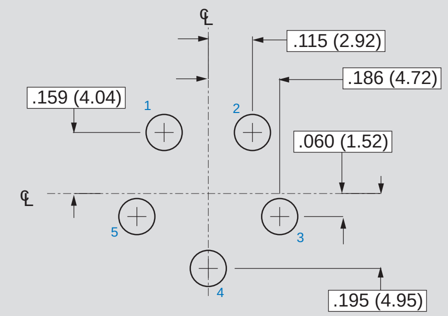
**Contact Arrangement**
**14-2**
2 #8 Contacts
.182 (4.62) Max Dia. Tail

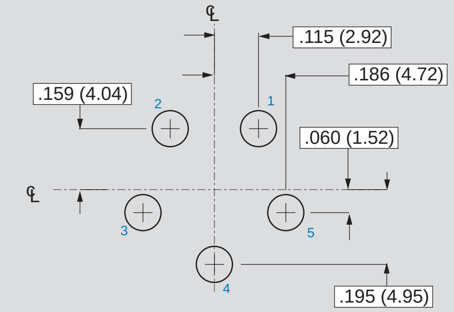


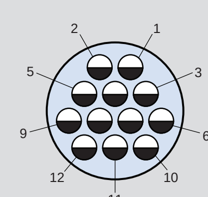



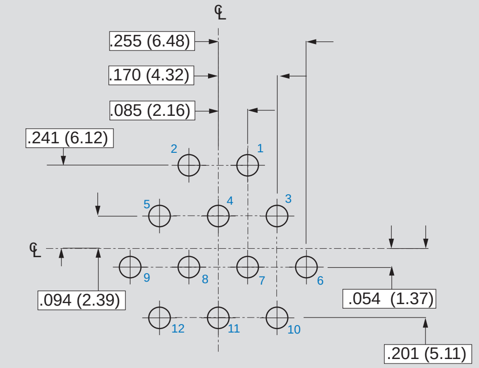
**Contact Arrangement**
**14-5**
5 #12 Contacts
.096 (2.44) Max Dia. Tail

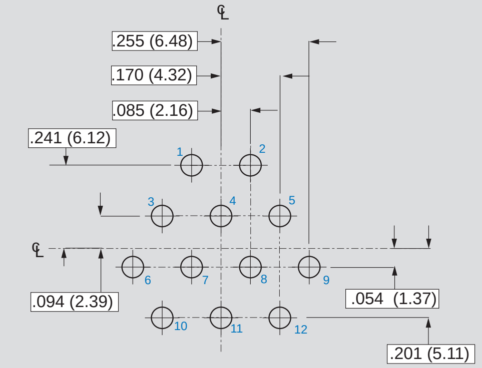


**Contact Arrangement**
**14-12**
12 #16 Contacts
.064 (1.63) Max Dia. Tail



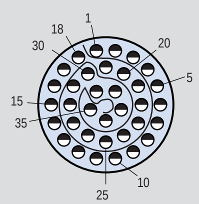





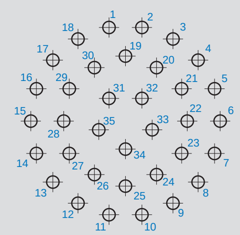


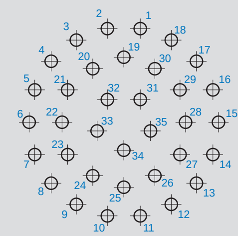

SUBSEA SHALLOW WATER: AQUAMOUSE™

| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|

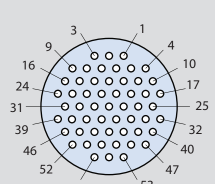


**Contact Arrangement**
**14-235**
35 #20HD Contacts
.028 (0.71) Max. Dia. Tail

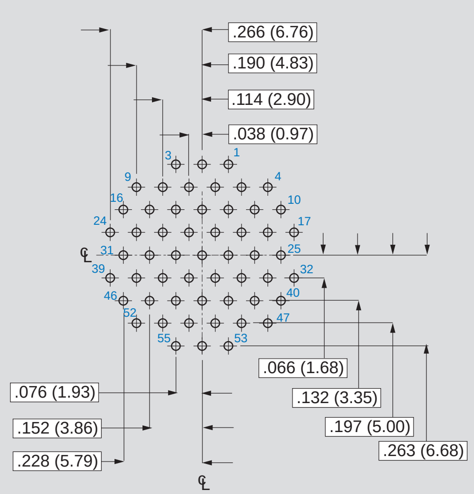


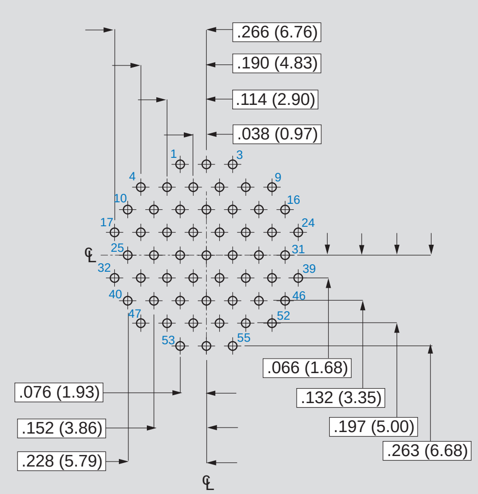


| Pin No. | X In. | X mm. | Y In. | Y mm. | Pin No. | X In. | X mm. | Y In. | Y mm. | Pin No. | X In. | X mm. | Y In. | Y mm. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | -.053 | -1.35 | .301 | 7.65 | **13** | -.234 | -5.94 | -.196 | -4.98 | **25** | .000 | 0.00 | -.209 | -5.31 |
| **2** | .053 | 1.35 | .301 | 7.65 | **14** | -.287 | -7.29 | -.104 | -2.64 | **26** | -.100 | -2.54 | -.172 | -4.37 |
| **3** | .153 | 3.89 | .264 | 6.71 | **15** | -.305 | -7.75 | .000 | 0.00 | **27** | -.181 | -4.60 | -.104 | -2.64 |
| **4** | .234 | 5.94 | .196 | 4.98 | **16** | -.287 | 7.29 | .104 | 2.64 | **28** | -.199 | -5.05 | .000 | 0.00 |
| **5** | .287 | 7.29 | .104 | 2.64 | **17** | -.234 | -5.94 | .196 | 4.98 | **29** | -.181 | -4.60 | .104 | 2.64 |
| **6** | .305 | 7.75 | .000 | 0.00 | **18** | -.153 | -3.89 | .264 | 6.71 | **30** | -.100 | -2.54 | .172 | 4.37 |
| **7** | .287 | 7.29 | -.104 | -2.64 | **19** | .000 | 0.00 | .209 | 5.31 | **31** | -.053 | -1.35 | .073 | 1.85 |
| **8** | .234 | 5.94 | -.196 | -4.98 | **20** | .100 | 2.54 | .172 | 4.37 | **32** | .053 | 1.35 | .073 | 1.85 |
| **9** | .153 | 3.89 | -.264 | -6.71 | **21** | .181 | 4.60 | .104 | 2.64 | **33** | .086 | 2.18 | -.028 | -0.71 |
| **10** | .053 | 1.35 | -.301 | -7.65 | **22** | .199 | 5.05 | .000 | 0.00 | **34** | .000 | 0.00 | -.090 | -2.29 |
| **11** | -.053 | -1.35 | -.301 | -7.65 | **23** | .181 | 4.60 | -.104 | -2.64 | **35** | -.086 | -2.18 | -.028 | -0.71 |
| **12** | -.153 | -3.89 | -.264 | -6.71 | **24** | .100 | 2.54 | -.172 | -4.37 | | | | | |



**Contact Arrangement**
**14-55**
55 #23 Contacts
.022 (0.56) Max. Dia. Tail



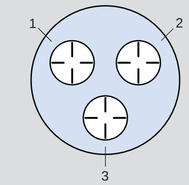




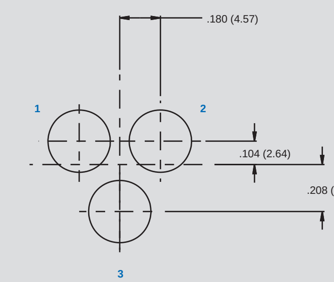

SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
Standard PCB footprint
Viewed from component mounting side of PCB

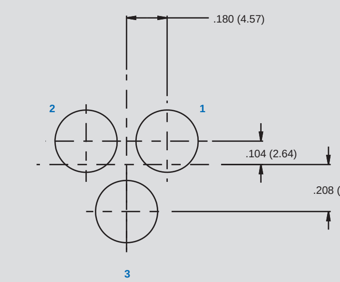
SUBSEA SHALLOW WATER: AQUAMOUSE™

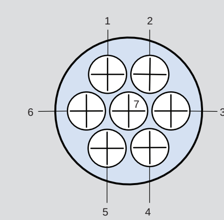
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



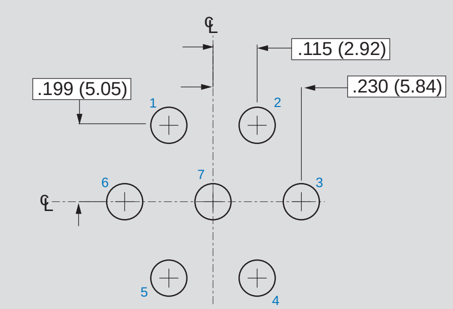
**Contact Arrangement**
**15-3**
3 #8 Contacts
.182 (4.62) Max Dia. Tail

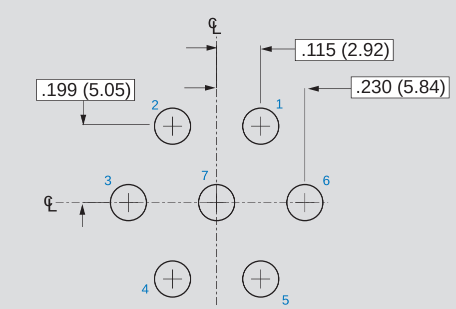


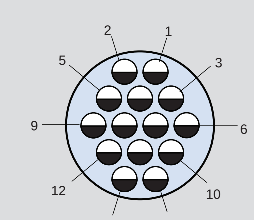



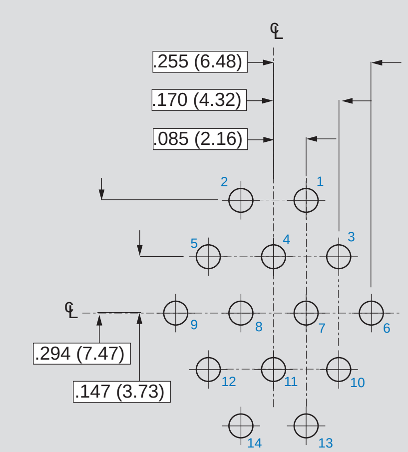
**Contact Arrangement**
**15-7**
7 #12 Contacts
.096 (2.44) Max Dia. Tail

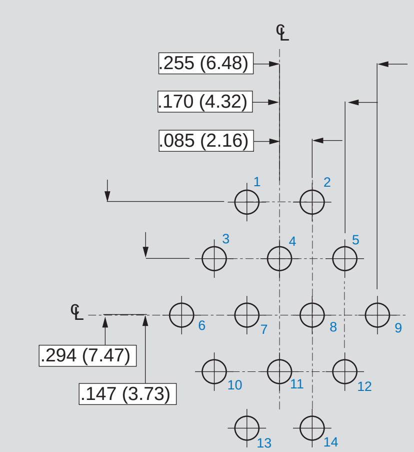


**Contact Arrangement**
**15-14**
14 #16 Contacts
.064 (1.63) Max Dia. Tail

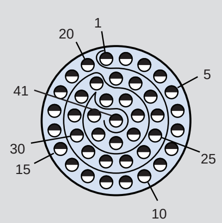


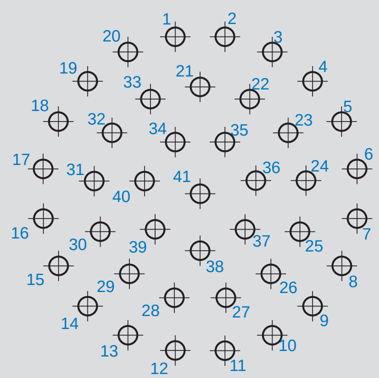
## Standard PCB footprint
## Viewed from component mounting side of PCB

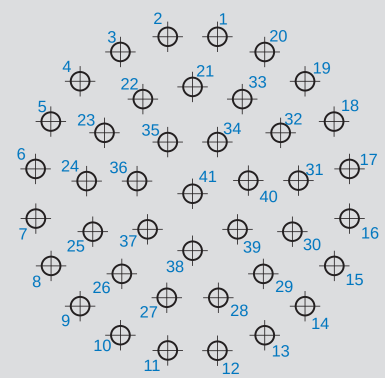


| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



**Contact Arrangement 15-241**
41 #20HD Contacts
.028 (0.71) Max. Dia. Tail





| Pin No. | X In. | X mm. | Y In. | Y mm. | Pin No. | X In. | X mm. | Y In. | Y mm. | Pin No. | X In. | X mm. | Y In. | Y mm. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | -.053 | -1.35 | .335 | 8.51 | **15** | -.302 | -7.67 | -.154 | -3.91 | **29** | -.151 | -3.84 | -.171 | -4.34 |
| **2** | .053 | 1.35 | .335 | 8.51 | **16** | -.335 | -8.51 | -.053 | -1.35 | **30** | -.213 | -5.41 | -.081 | -2.06 |
| **3** | .154 | 3.91 | .302 | 7.67 | **17** | -.335 | -8.51 | .053 | 1.35 | **31** | -.226 | -5.74 | .028 | 0.71 |
| **4** | .240 | 6.10 | .240 | 6.10 | **18** | -.302 | -7.67 | .154 | 3.91 | **32** | -.188 | -4.78 | .130 | 3.30 |
| **5** | .302 | 7.67 | .154 | 3.91 | **19** | -.240 | -6.10 | .240 | 6.10 | **33** | -.106 | -2.69 | .202 | 5.13 |
| **6** | .335 | 8.51 | .053 | 1.35 | **20** | -.154 | -3.91 | .302 | 7.67 | **34** | -.053 | -1.35 | .110 | 2.79 |
| **7** | .335 | 8.51 | -.053 | -1.35 | **21** | .000 | 0.00 | .228 | 5.79 | **35** | .053 | 1.35 | .110 | 2.79 |
| **8** | .302 | 7.67 | -.154 | -3.91 | **22** | .106 | 2.69 | .202 | 5.13 | **36** | .119 | 3.02 | .027 | 0.69 |
| **9** | .240 | 6.10 | -.240 | -6.10 | **23** | .188 | 4.78 | .130 | 3.30 | **37** | .096 | 2.44 | -.076 | -1.93 |
| **10** | .154 | 3.91 | -.302 | -7.67 | **24** | .226 | 5.74 | .028 | 0.71 | **38** | .000 | 0.00 | -.122 | -3.10 |
| **11** | .053 | 1.35 | -.335 | -8.51 | **25** | .213 | 5.41 | -.081 | -2.06 | **39** | -.096 | -2.44 | -.076 | -1.93 |
| **12** | -.053 | -1.35 | -.335 | -8.51 | **26** | .151 | 3.84 | -.171 | -4.34 | **40** | -.119 | -3.02 | .027 | 0.69 |
| **13** | -.154 | -3.91 | -.302 | -7.67 | **27** | .055 | 1.40 | -.222 | -5.64 | **41** | .000 | 0.00 | .000 | 0.00 |
| **14** | -.240 | -6.10 | -.240 | -6.10 | **28** | -.055 | -1.40 | -.222 | -5.64 | | | | | |



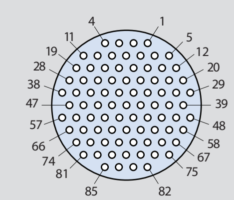


SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors

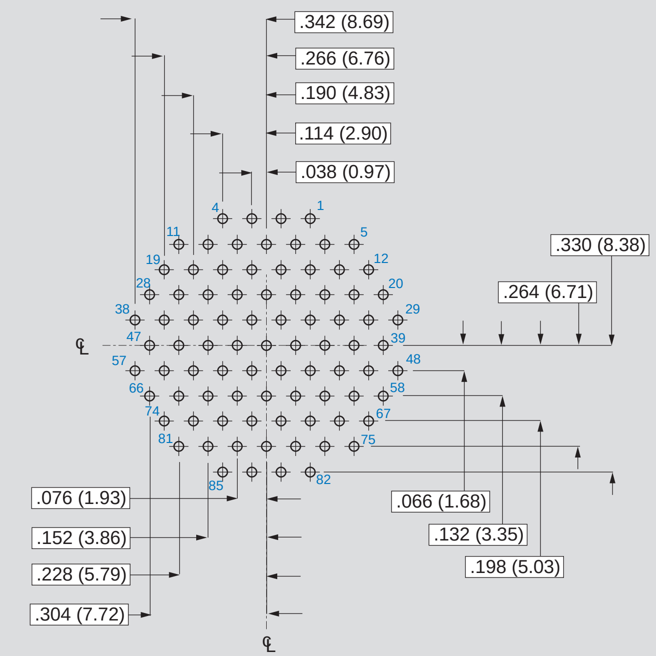
Standard PCB footprint
Viewed from component mounting side of PCB

SUBSEA SHALLOW WATER: AQUAMOUSE™

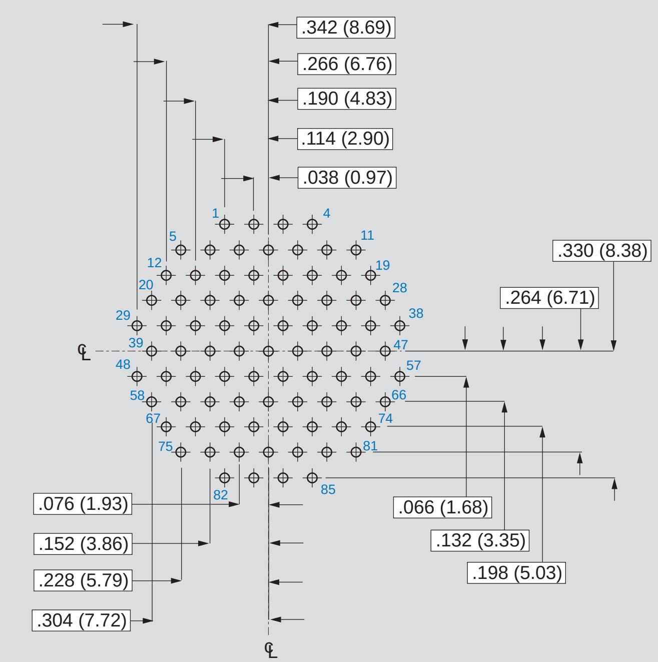
| Contact Arrangement | Pin Connector |
|---|---|



**Contact Arrangement 15-85**
85 #23 Contacts
.022 (0.56) Max. Dia. Tail



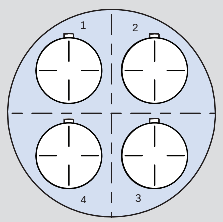

### Socket Connector



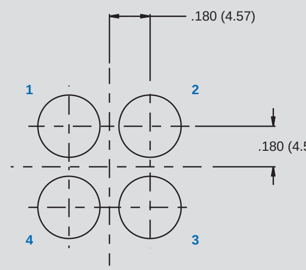
## Standard PCB footprint
## Viewed from component mounting side of PCB

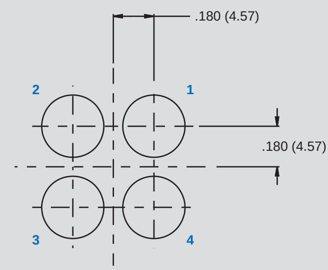


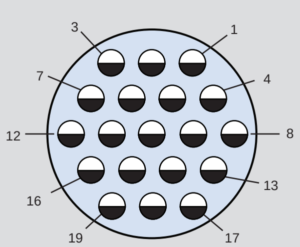
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



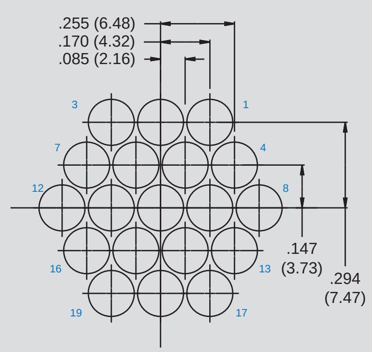

**Contact Arrangement**
**19-4**
4 #8 Contacts
.182 (4.62) Max Dia. Tail

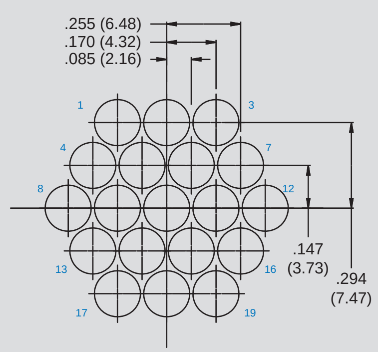



**Contact Arrangement**
**19-19**
19 #16 Contacts
.064 (1.63) Max Dia. Tail





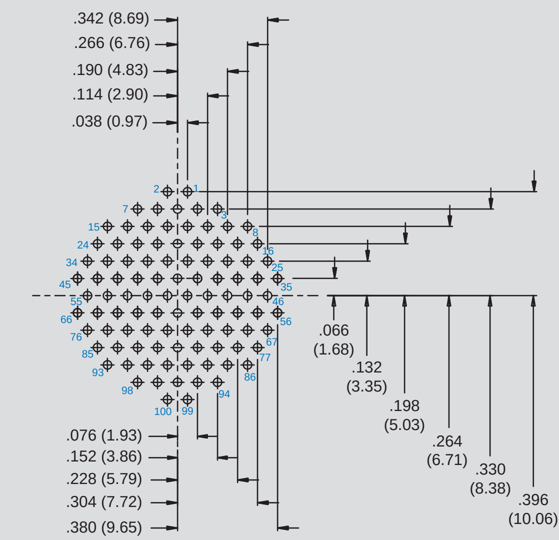


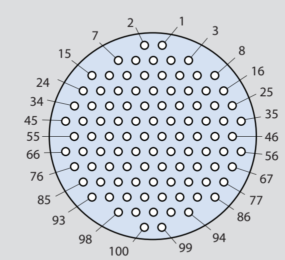



Standard PCB footprint
Viewed from component mounting side of PCB



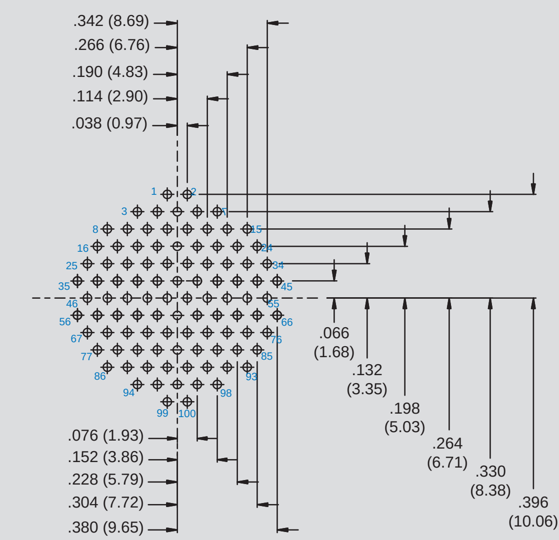
| Contact Arrangement | Pin Connector |
|---|---|



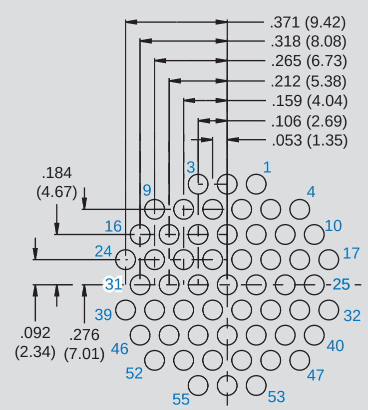

**Contact Arrangement**
**19-100**
100 #23 Contacts
.022 (.559) Max Dia

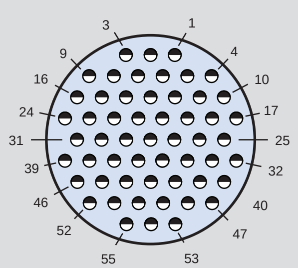
Socket Connector



## Standard PCB footprint
## Viewed from component mounting side of PCB

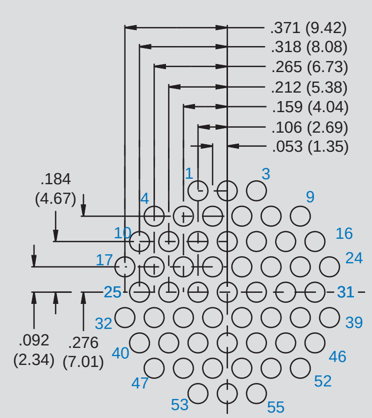
| Contact Arrangement | Pin Connector |
| --- | --- |



**Contact Arrangement**
**19-255**
55 #20HD Contacts
.028 (0.71) Max. Dia. Tail

**Socket Connector**

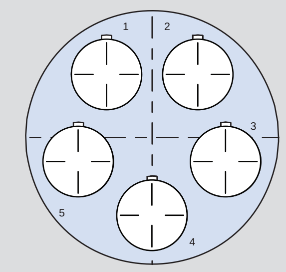


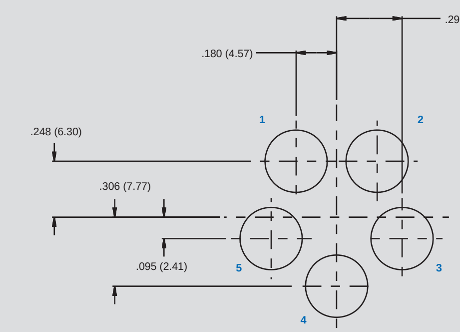

SUBSEA/SHALLOW WATER: AQUAMOUSE™

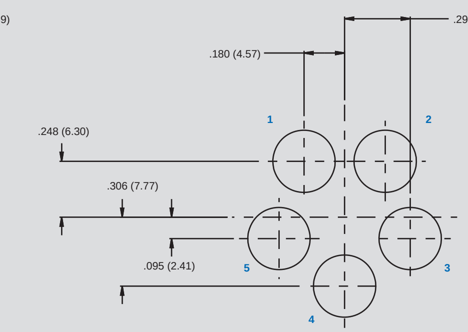



SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
Standard PCB footprint
Viewed from component mounting side of PCB

| Contact Arrangement | Pin Connector | Socket Connector |
| --- | --- | --- |

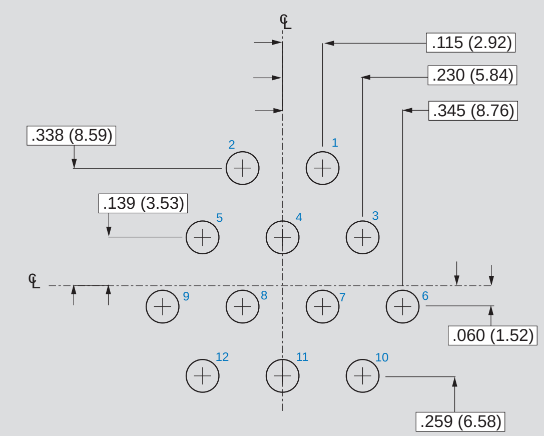


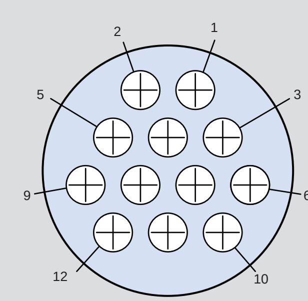


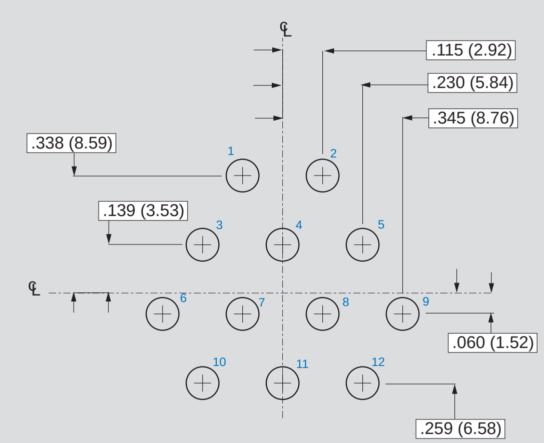

**Contact Arrangement**
**21-5**
5 #8 Contacts
.182 (4.62) Max Dia

| Contact Arrangement | Pin Connector |
| --- | --- |



**Socket Connector**



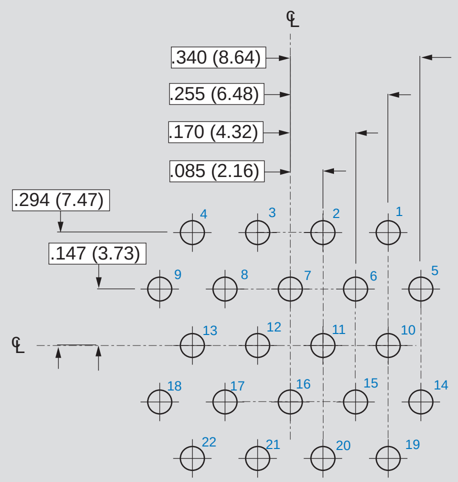

**Contact Arrangement**
**21-12**
#12 Contacts
.096 (2.44) Max Dia

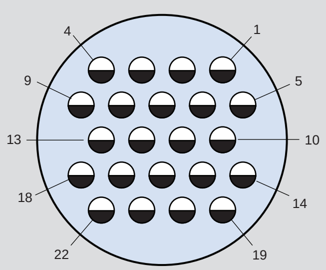
SUBSEA SHALLOW WATER: AQUAMOUSE™

## Standard PCB footprint
## Viewed from component mounting side of PCB

SUBSEA/SHALLOW WATER: AQUAMOUSE™

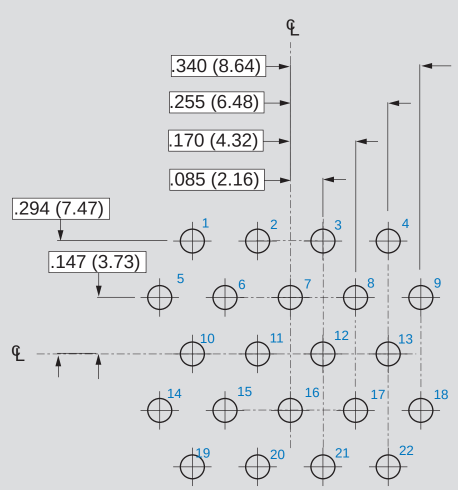
| Contact Arrangement | Pin Connector |
|---|---|




**Contact Arrangement**
**21-22**
22 #16 Contacts
.064 (1.63 Max. Dia. Tail)

### Socket Connector



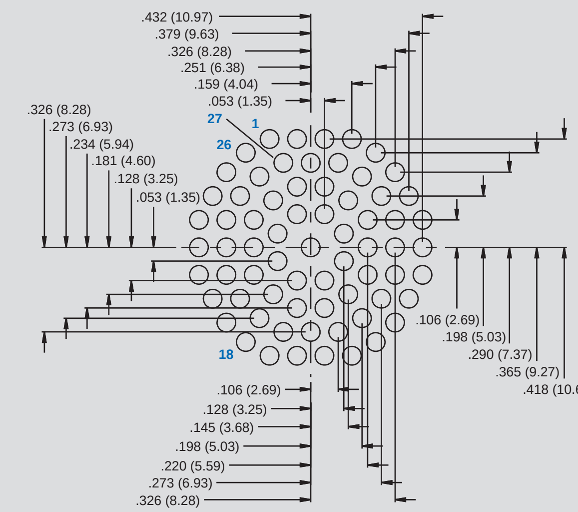


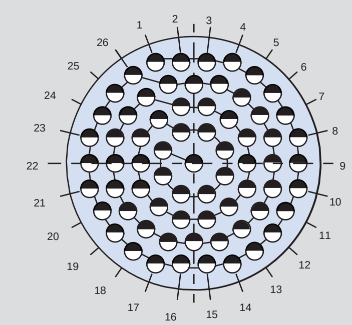


SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
Standard PCB footprint
Viewed from component mounting side of PCB

SUBSEA SHALLOW WATER: AQUAMOUSE™

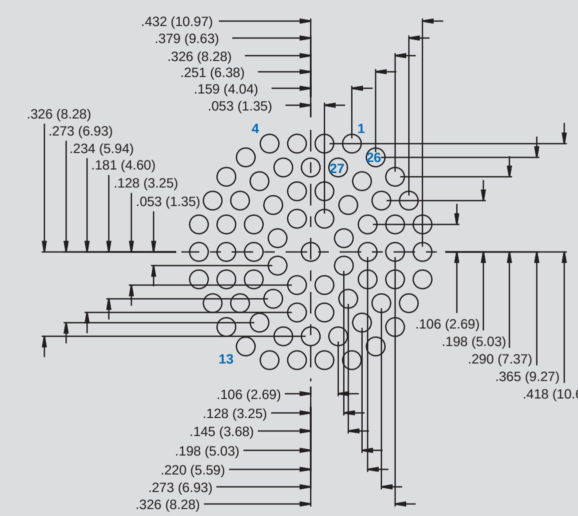
| Contact Arrangement | Pin Connector |
|---|---|




**Contact Arrangement**
**21-269**
69 #20HD Contacts
.028 (.71) Max Dia. Tail

### Socket Connector

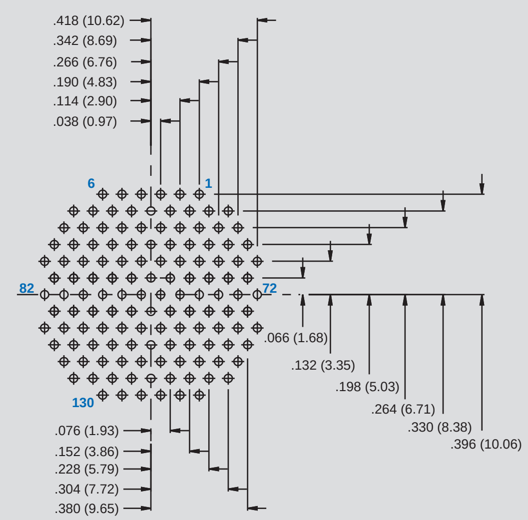


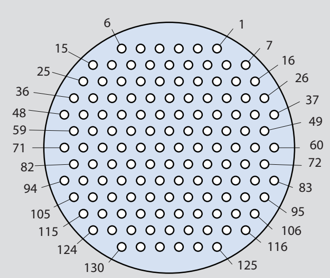
# Ultraminiature Subsea Connectors

## Hybrid PCB footprints
## Viewed from component mounting side of PCB



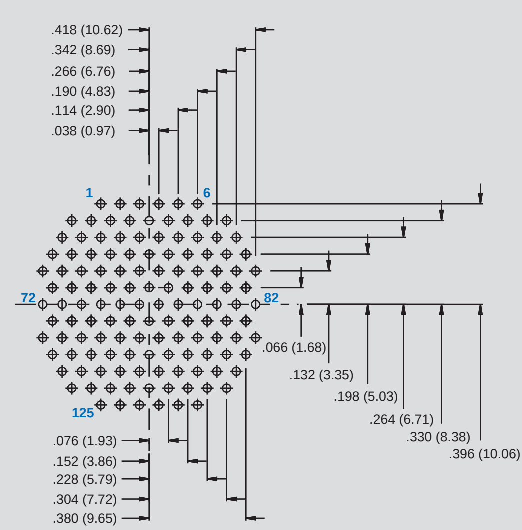
| Contact Arrangement | Pin Connector |
|---|---|



**Contact Arrangement 21-130**
130 #23 Contacts
.022 (0.56) Max Dia. Tail

### Socket Connector

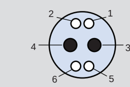




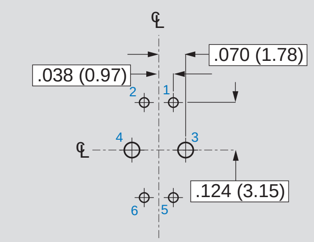


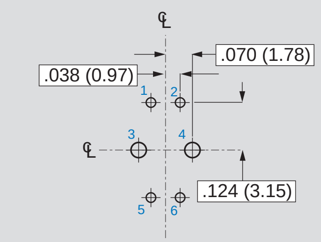

SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
Hybrid PCB footprints
Viewed from component mounting side of PCB

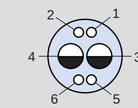
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



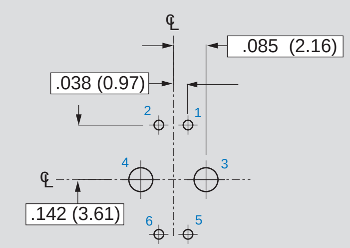
**Contact Arrangement 8-200**
2 #20 Contacts
.028 (0.71) Max. Dia. Tail
4 #23 Contacts
.022 (0.56) Max. Dia. Tail

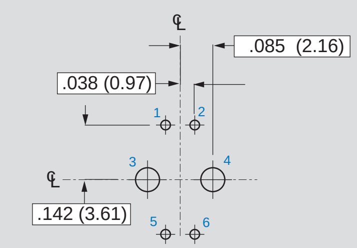


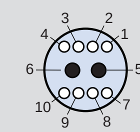



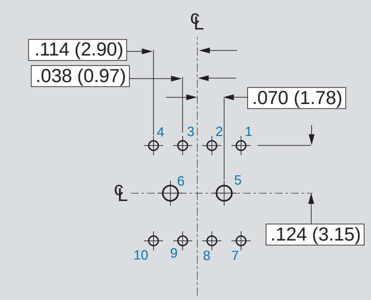
**Contact Arrangement 9-200**
4 #23 Contacts
.022 (0.56) Max. Dia. Tail
2 #16 Contacts
.064 (1.63) Max. Dia. Tail

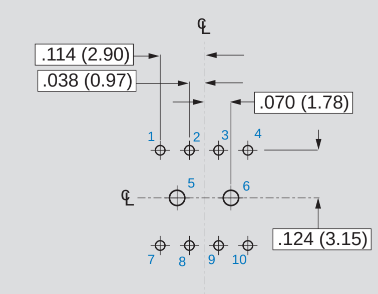


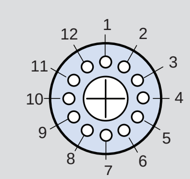



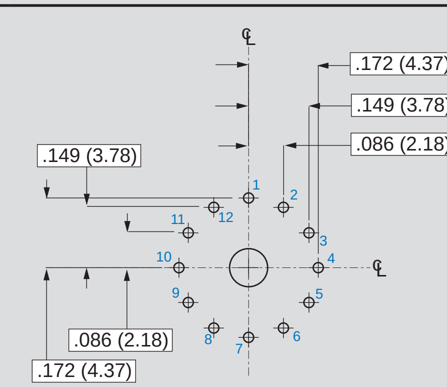
**Contact Arrangement 9-201**
2 #20 Contacts
.028 (0.71) Max Dia Tail
8 #23 Contacts
.022 (0.56) Max Dia Tail

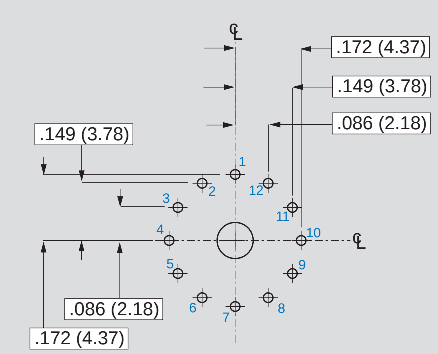


**Contact Arrangement 10-200**
1 #12 Contact
.096 (2.44) Max Dia Tail
12 #23 Contacts
.022 (0.56) Max. Dia. Tail

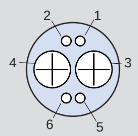


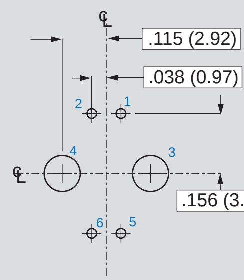
# Hybrid PCB footprints
## Viewed from component mounting side of PCB

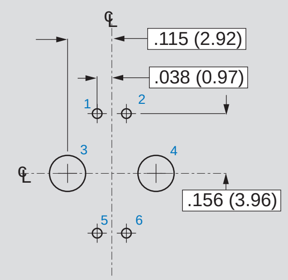


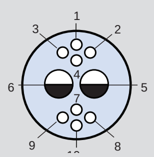
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



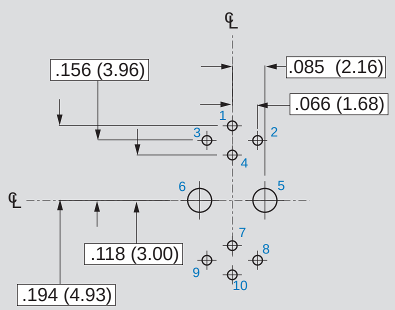
**Contact Arrangement**
**10-201**
2 #12 Contacts
.096 (2.44) Max. Dia. Tail
4 #23 Contacts
.022 (0.56) Max. Dia. Tail

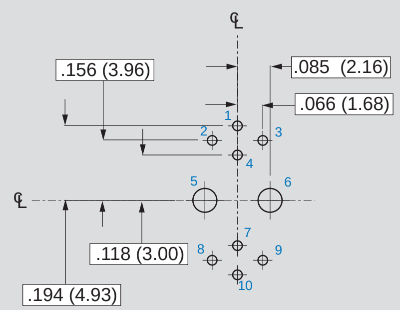


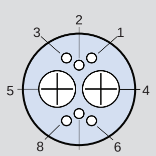



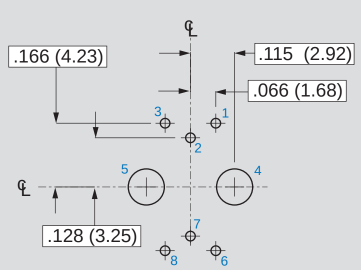
**Contact Arrangement**
**10-202**
2 #16 Contacts
.064 (1.63) Max. Dia. Tail)
8 #23 Contacts
.022 (0.5 Max. Dia. Tail)

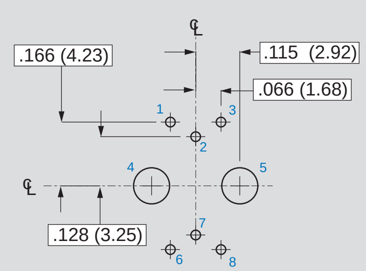


**Contact Arrangement**
**12-200**
2 #12 Contacts
.096 (2.44) Max. Dia. Tail
6 #23 Contacts
.022 (0.56) Max. Dia. Tail



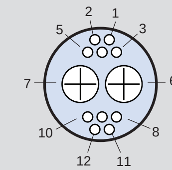




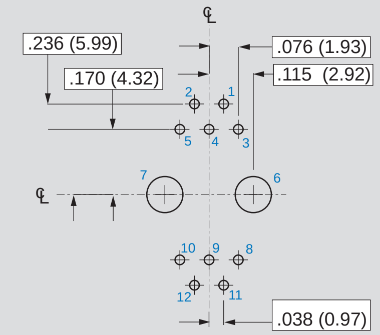

SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
Hybrid PCB footprints
Viewed from component mounting side of PCB

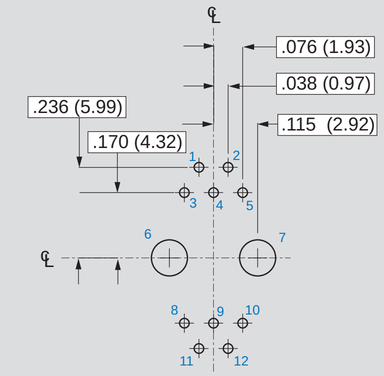


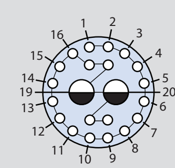
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



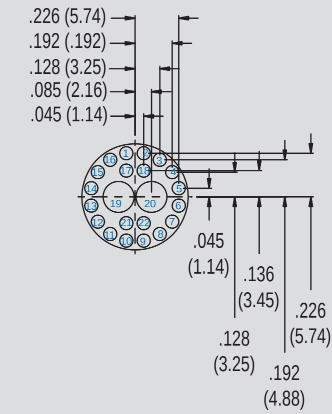
**Contact Arrangement**
**12-201**
2 #12 Contacts
.096 (2.44) Max. Dia. Tail
10 #23 Contacts
.022 (0.56) Max. Dia. Tail

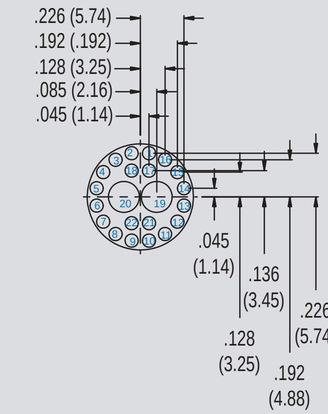


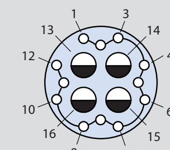



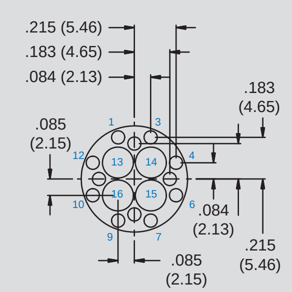
**Contact Arrangement**
**12-202**
2 #16 Contacts
.064 (1.63) Max. Dia. Tail
20 #23 Contacts
.028 (0.71) Max. Dia. Tail

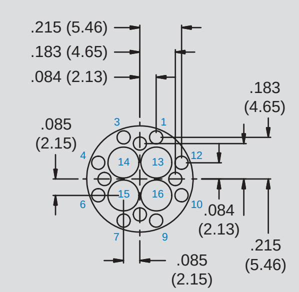


**Contact Arrangement**
**12-203**
4 #16 Contacts
.064 (1.63) Max. Dia. Tail
12 #23 Contacts
.022 (0.71) Max. Dia. Tail

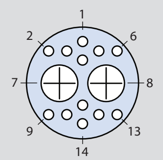


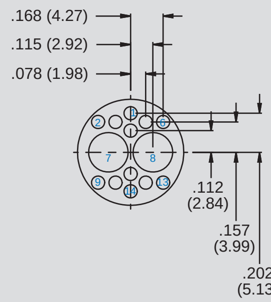
## Hybrid PCB footprints
## Viewed from component mounting side of PCB

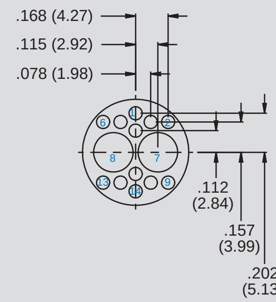


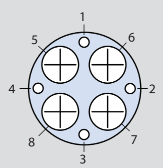
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



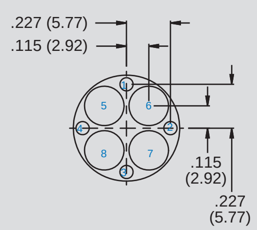
**Contact Arrangement 12-204**
2 #12 Contacts
.096 (2.44) Max. Dia. Tail
12 #23 Contacts
.022 (0.71) Max. Dia. Tail

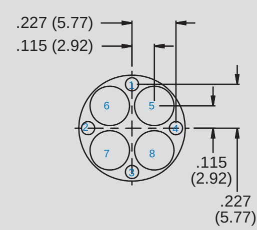


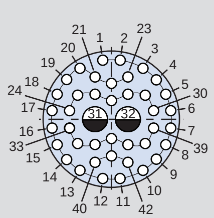



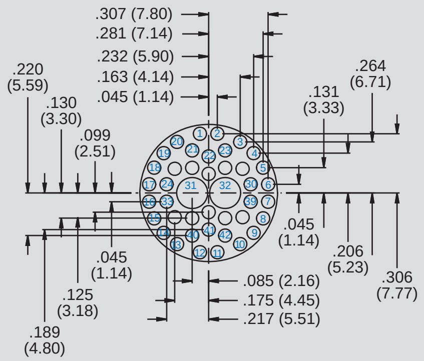
**Contact Arrangement 12-205**
4 #12 Contacts
.096 (2.44) Max. Dia. Tail
4 #23 Contacts
.022 (0.71) Max. Dia. Tail

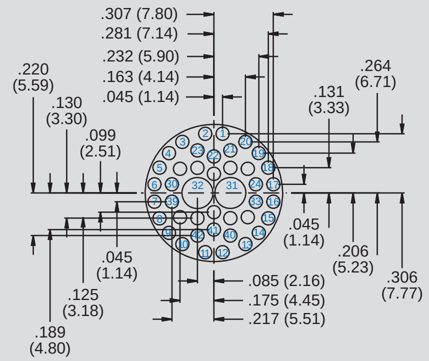


**Contact Arrangement 14-204**
2 #16 Contacts
.064 (1.63) Max. Dia. Tail
40 #23 Contacts
.022 (0.71) Max. Dia. Tail







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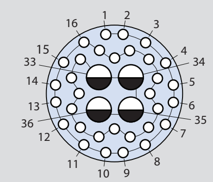
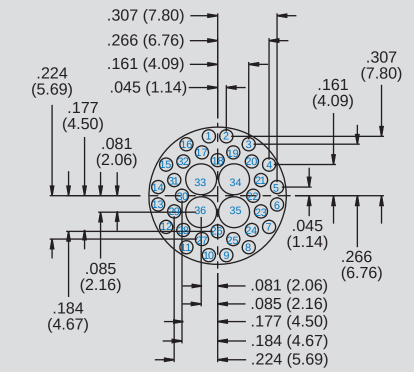
Hybrid PCB footprints
Viewed from component mounting side of PCB

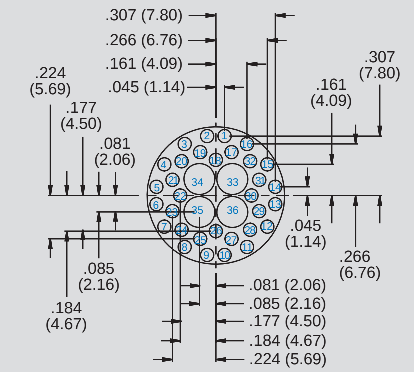


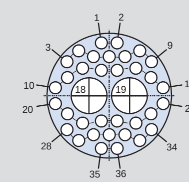
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



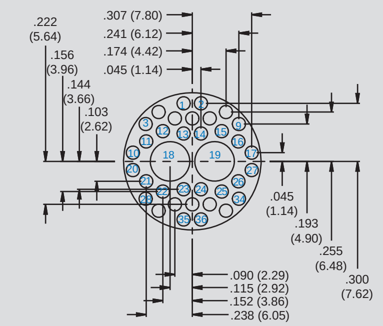
**Contact Arrangement 14-205**
4 #16 Contacts
.064 (1.63) Max. Dia. Tail
32 #23 Contacts
.022 (0.71) Max. Dia. Tail

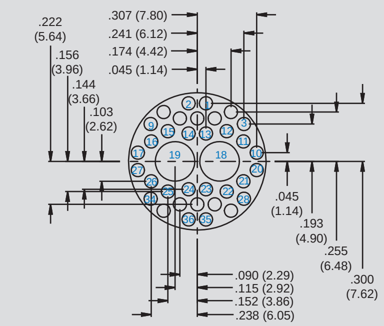


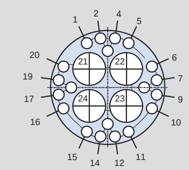



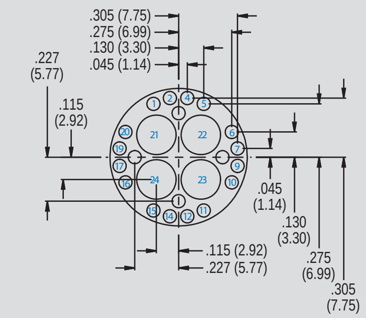
**Contact Arrangement 14-206**
2 #12 Contacts
.096 (2.44) Max. Dia. Tail
34 #23 Contacts
.022 (0.71) Max. Dia. Tail

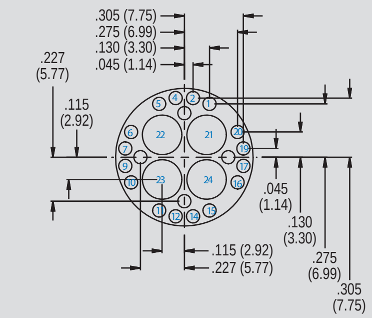


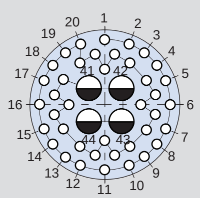
**Contact Arrangement 14-207**
4 #12 Contacts
.096 (2.44) Max. Dia. Tail
20 #23 Contacts
.022 (0.71) Max. Dia. Tail



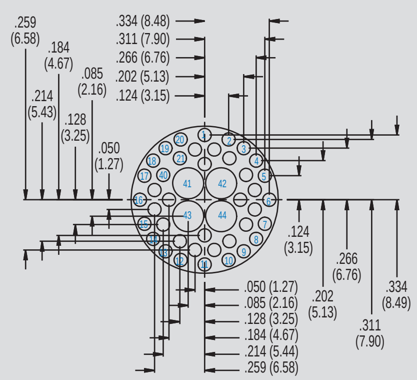



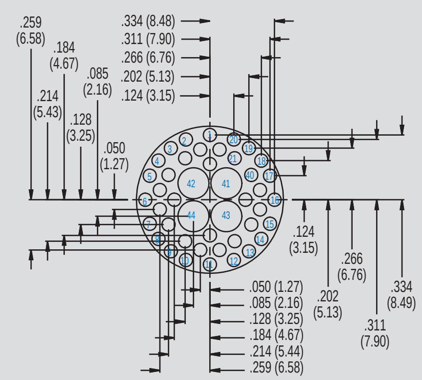
## Hybrid PCB footprints
## Viewed from component mounting side of PCB

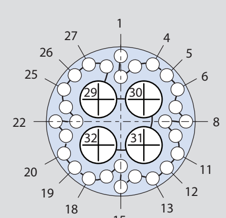
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



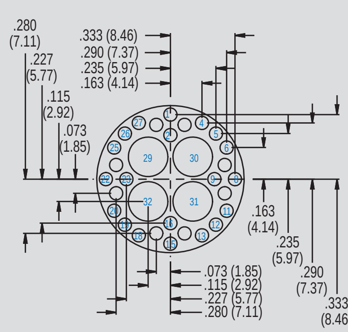
**Contact Arrangement**
**15-203**
4 #16 Contacts
.064 (1.63) Max. Dia. Tail
40 #23 Contacts
.022 (0.71) Max. Dia. Tail

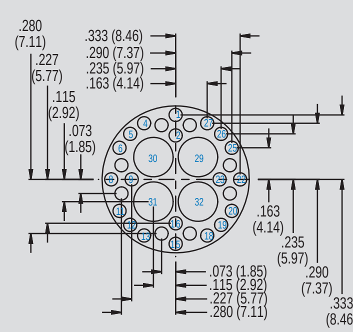






**Contact Arrangement**
**15-204**
4 #12 Contacts
.096 (2.44) Max. Dia. Tail
28 #23 Contacts
.022 (0.71) Max. Dia. Tail











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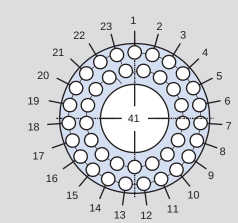
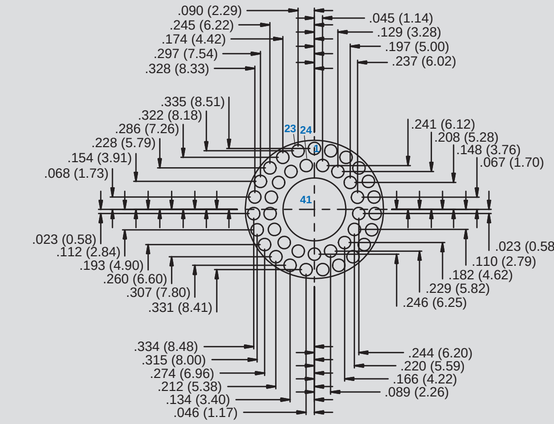
Hybrid PCB footprints
Viewed from component mounting side of PCB

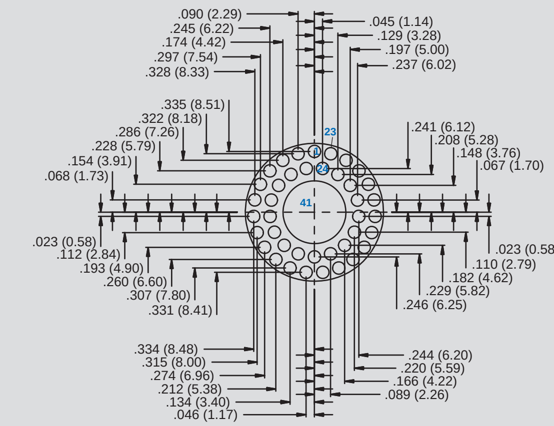
| Contact Arrangement | Pin Connector |
|---|---|





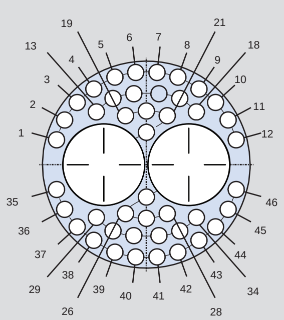
**Contact Arrangement**
**15-205**
1 #8 Contacts
.182 (4.62) Max. Dia. Tail
40 #23 Contacts
.022 (0.56) Max. Dia. Tail

**Socket Connector**

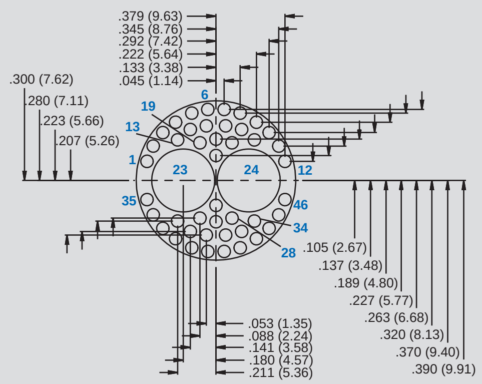


# Hybrid PCB footprints
## Viewed from component mounting side of PCB

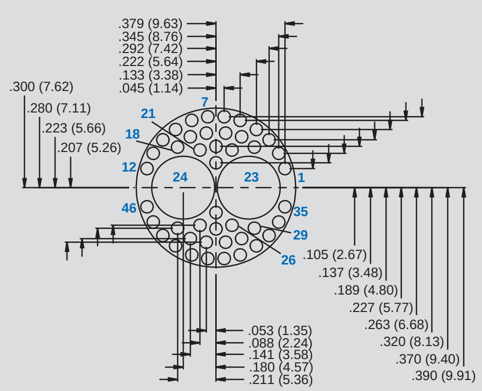
| Contact Arrangement | Pin Connector |
|---|---|



**Contact Arrangement**
**19-201**
2 #8 Contacts
.182 (4.62) Max. Dia. Tail
44 #23 Contacts
.022 (.56) Max. Dia. Tail




| Socket Connector |
|---|



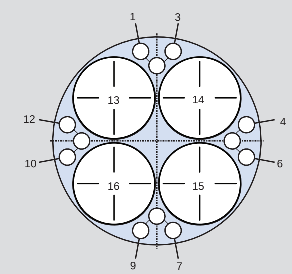




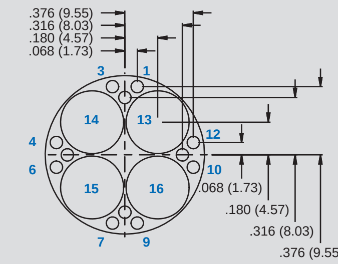


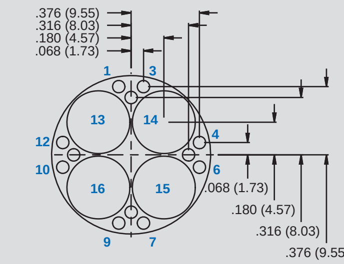
# Hybrid PCB footprints
## Viewed from component mounting side of PCB

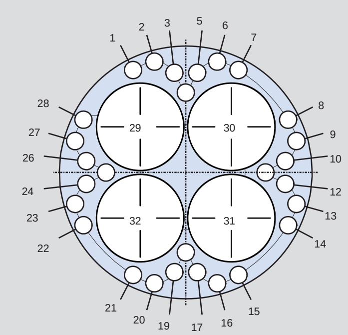
| Contact Arrangement | Pin Connector | Socket Connector |
|---|---|---|



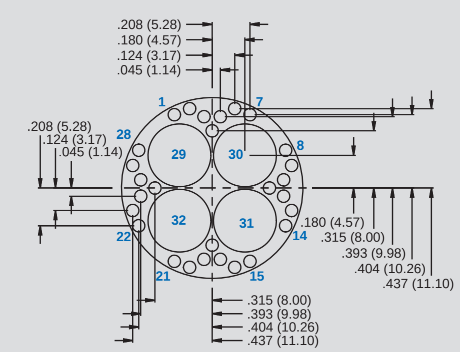
**Contact Arrangement**
**19-202**
4 #8 Contacts
.182 (4.62) Max. Dia. Tail
12 #23 Contacts
.022 (.56) Max. Dia. Tail

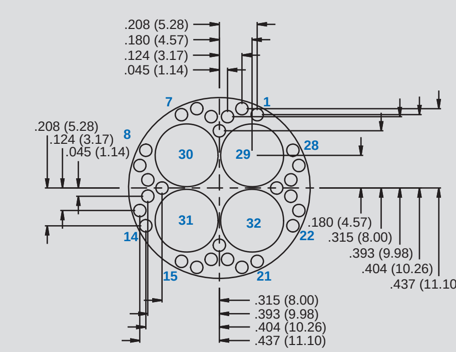


**Contact Arrangement**
**21-200**
4 #8 Contacts
.182 (4.62) Max. Dia. Tail
28 #23 Contacts
.022 (0.56) Max. Dia. Tail



# 802-008 and 802-009 (CCP)
## In-line cable plug



**Stainless Steel** or **Marine Bronze Shell** withstands corrosion in the most hostile environments. Rated for 3500 PSI when mated, these connectors are suitable for the most demanding geophysical and underwater applications.

**Gold-Plated Contacts** attach to wire with standard mil spec crimp tools. Contacts are packaged with connectors.

**Two Shell Styles:** Integral platform for direct shield attachment using Band-Master™ ATS termination system, or accessory thread for attaching accessories.

**How To Order**

| Sample Part Number | 802-009 | -06 | Z1 | 9-19 | S | A |
|---|---|---|---|---|---|---|
| Series (See Table I) | **802-008** = Plug with Banding/ Molding Platform<br>**802-009** = Plug with Accessory Thread | | | | | |
| Shell Style | **-06** = Plug | | | | | |
| Shell Material and Finish | **Z1** = Stainless Steel/Passivated RoHS Compliant<br>**ZM** = Stainless Steel/ Electroless Nickel Plated<br>**AB** = Marine Bronze | | | | | |
| Shell Size - Contact Arrangement | See Contact Arrangements page 4-6 | | | | | |
| Contact Type | **Connector supplied with contacts**: **P** = Pin, Crimp; **S** = Socket, Crimp<br>**Connector supplied without contacts**: **A** = Pin Connector, less contacts; **B** = Socket Connector, less contacts<br>Connectors with contacts are supplied with signal and/or power crimp contacts. These contacts are not installed. Coaxial contacts and non-standard signal contacts are ordered separately. | | | | | |
| Shell Key Positions (See Table II) | **A** = Normal **B** = Pos. B **C** = Pos. C **D** = Pos. D **E** = Pos. E **F** = Pos. F | | | | | |

**Table I: Series**

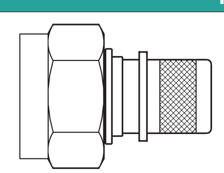
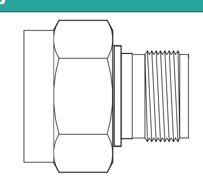
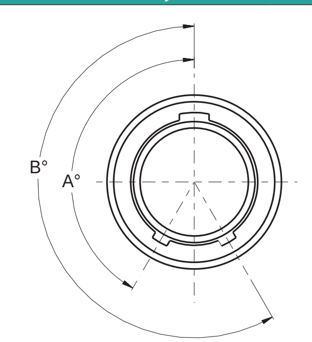
|  |  |
|---|---|
| **802-008** Hex Plug with Banding/Molding Platform | **802-009** Hex Plug with Accessory Thread |

**Table II: Key Positions**




| Key Position | Key Rotation A° | Key Rotation B° |
|---|---|---|
| Normal (A) | 150° | 210° |
| B | 75° | 210° |
| C | 95° | 230° |
| D | 140° | 275° |
| E | 75° | 275° |
| F | 95° | 210° |

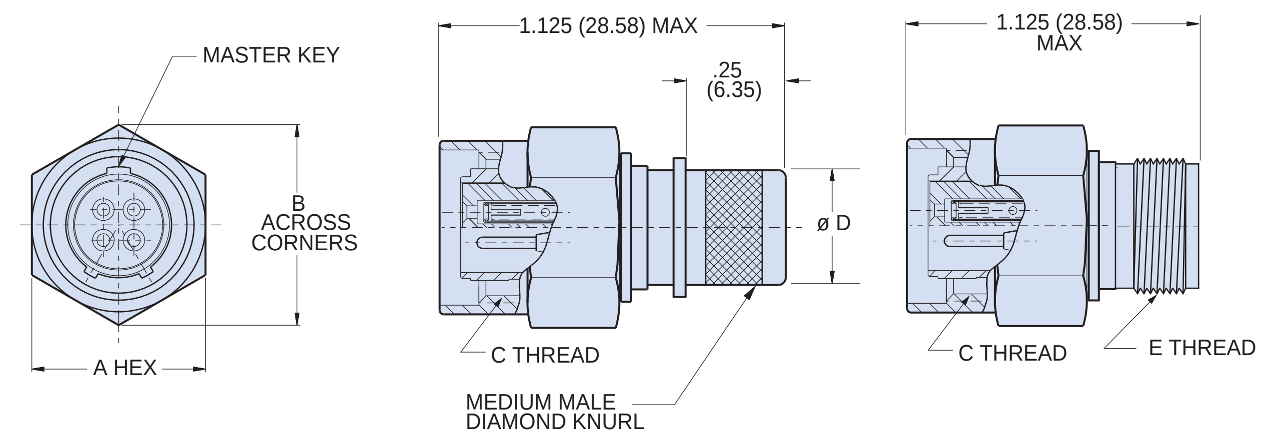





# 802-008-06 and 802-009-06 (CCP)
## Cable connector plug



**PLUG CONNECTOR**




PLUG WITH INTEGRAL BAND PLATFORM 802-008

PLUG WITH ACCESSORY THREAD 802-009

**Dimensions**

| Shell Size | A Hex | B. | C Thread | Ø D | E Threads Accessory |
|---|---|---|---|---|---|
| 5 | .500 (12.70) | .56 (14.22) | .438-28 UNEF | .232 (5.89) | .2500-32 UNEF |
| 6 | .625 (15.88) | .72 (18.29) | .562-20 UN | .312 (7.92) | .3125-32 UNEF |
| 7 | .688 (17.48) | .78 (19.81) | .625-20 UN | .375 (9.52) | .4375-28 UNEF |
| 8 | .750 (19.05) | .86 (21.84) | .687-20 UN | .438 (11.13) | .5000-28 UNEF |
| 9 | .812 (20.62) | .93 (23.62) | .750-20 UNEF | .500 (12.70) | .5625-24 UNEF |
| 10 | .875 (22.23) | 1.00 (25.40) | .812-20 UNEF | .562 (14.27) | .6250-24 UNEF |
| 12 | .938 (23.83) | 1.06 (26.92) | .875-20 UNEF | .656 (16.66) | .6875-24 UNEF |
| 14 | 1.125 (28.58) | 1.25 (31.75) | 1.062-20 UN | .812 (20.62) | .8750-20 UNEF |
| 15 | 1.188 (30.18) | 1.32 (33.53) | 1.125-20 UN | .885 (22.48) | .9375-20 UNEF |
| 21 | 1.562 (39.67) | 1.70 (43.18) | 1.438-20 un | 1.188 (30.18) | 1.250-18 UNEF |

# 802-010 and 802-011 Submersible receptacle



*Jam Nut, Rear Mount*

*FCR Flange Connector Receptacle (Square Flange)*

**Three Shell Mounting Options:** Jam nut with o-ring for rear panel mounting, flange connector receptacle for front panel mounting, or in-line receptacles for free-hanging cables.

**Two Shell Styles:** Choose the integral band platform for direct attachment of a cable shield. Install a boot, or overmold a boot over the band platform. An accessory thread is available for attaching strain reliefs and backshells.

**How To Order**

| Sample Part Number | 802-011 | -02 | Z1 | 10-26 | P | B |
|---|---|---|---|---|---|---|
| **Series (See Table I)** | **802-010** = Receptacle with Banding Platform<br>**802-011** = Receptacle with Accessory Thread | | | | | |
| **Shell Style (See Table II)** | | **-01** = In-Line<br>**-02** = Flange Connector Receptacle<br>**-07** = Jam Nut for Rear Panel Mounting | | | | |
| **Shell Material and Finish** | | | **Z1** = Stainless Steel/Passivated RoHS Compliant<br>**ZM** = Stainless Steel/Electroless Nickel Plated<br>**AB** = Marine Bronze/Unplated | | | |
| **Shell Size - Contact Arrangement** | | | | See Contact Arrangements page 4-6 | | |
| **Contact Type** | | | | | **Connector supplied with contacts**<br>**P** = Pin, Crimp<br>**S** = Socket, Crimp<br>**Connector supplied without contacts**<br>**A** = Pin Connector, less contacts<br>**B** = Socket Connector, less contacts<br>Connectors with contacts are supplied with signal and/or power crimp contacts. These contacts are not installed.<br>Coaxial contacts and non-standard signal contacts are ordered separately. | |
| **Shell Key Positions (See Table III)** | | | | | | **A** = Normal **B** = Pos. B **C** = Pos. C **D** = Pos. D **E** = Pos. E **F** = Pos. F See Keyway Positions Table |

**Table I: Series**

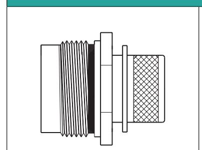
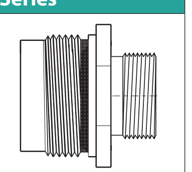
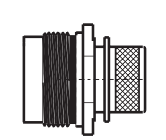
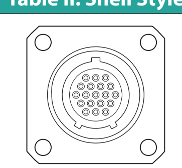
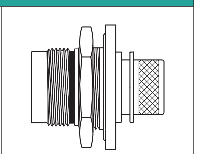
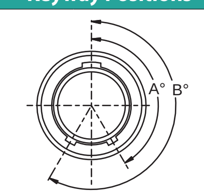
|  |  |
|---|---|
| **802-010**<br>Receptacle with Banding Platform | **802-011**<br>Receptacle with Accessory Thread |

**Table II: Shell Style**

|  |  |  |
|---|---|---|
| **-01**<br>In-Line | **-02**<br>Square Flange | **-07**<br>Jam Nut for Rear Panel Mounting |

**Keyway Positions**




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

*Rev. 10/23/17*

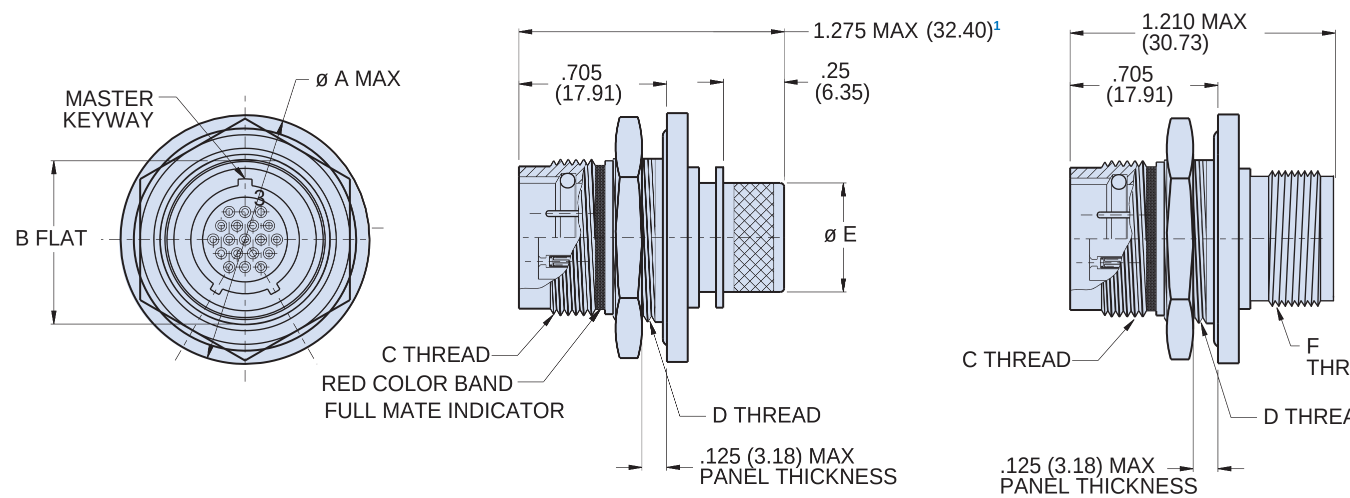




SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors

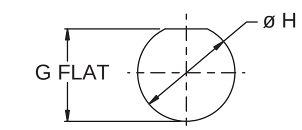
# 802-010 and 802-011 Rear panel mount, jam nut receptacle

## JAM NUT, REAR PANEL MOUNT RECEPTACLE - SHELL STYLE 07




Intergral Band Platform
**802-010**

Accessory Thread
**802-011**




**RECOMMENDED PANEL CUT OUT STYLE 07**

### NOTES

1. Grommet protrudes for power/ combo/#8 arrangements.

| Dimensions | | | | | | | Panel Cutout Dimensions | |
|---|---|---|---|---|---|---|---|---|
| Shell Size | A Max. | B Flat ± .003 | C Mating Threads | D Jam Nut Threads | Ø E | F Accessory Threads | G Flat ± .003 | Ø H |
| 5 | .885 (22.48) | .466 (11.84) | .4375-28 UNEF | .5000-32 UN-2A | .232 (5.89) | .2500-32 UNEF-2A | 0.479 (12.17)<br>0.474 (12.04) | .510 (12.95) |
| 6 | 1.010 (25.65) | .591 (15.01) | .5625-20 UN | .6250-28 UN-2A | .312 (7.92) | .3125-32 UNEF-2A | 0.604 (15.34)<br>0.599 (15.21) | .635 (16.13) |
| 7 | 1.072 (27.23) | .653 (16.59) | .6250-20 UN | .6875-28 UN-2A | .375 (9.52) | .4375-28 UNEF-2A | 0.666 (16.92)<br>0.661 (16.79) | .697 (17.70) |
| 8 | 1.135 (28.83) | .729/.725 (18.52/18.41) | .6875-20 UN | .7500-28 UN-2A | .438 (11.13) | .5000-28 UNEF-2A | 0.737 (18.72)<br>0.733 (18.62) | .760 (19.30) |
| 9 | 1.195 (30.35) | .778 (19.76) | .7500-20 UNEF | .8125-28 UN-2A | .500 (12.70) | .5625-24 UNEF-2A | 0.791 (20.09)<br>0.786 (19.96) | .822 (20.88) |
| 10 | 1.260 (32.00) | .827 (21.01) | .8125-20 UNEF | .8750-28 UN-2A | .562 (14.27) | .6250-24 UNEF-2A | 0.84 (21.34)<br>0.835 (21.21) | .885 (22.48) |
| 12 | 1.322 (33.58) | .890 (22.61) | .8750-20 UNEF | .9375-28 UN-2A | .656 (16.66) | .6875-24 UNEF-2A | 0.903 (22.94)<br>0.898 (22.81) | .948 (24.08) |
| 14 | 1.510 (38.35) | 1.077 (27.36) | 1.0625-20 UN | 1.1250-28 UN-2A | .812 (20.62) | .8750-20 UNEF-2A | 1.09 (27.69)<br>1.085 (27.56) | 1.135 (28.83) |
| 15 | 1.572 (39.93) | 1.140 (28.96) | 1.1250-20 UN | 1.1875-28 UN-2A | .885 (22.48) | .9375-20 UNEF-2A | 1.153 (29.29)<br>1.148 (29.16) | 1.198 (30.43) |
| 21 | 1.940 (49.28) | 1.467/1.463 (37.26/ 37.16) | 1.4375-20 UN | 1.5000-28 UN-2A | 1.188 (30.18) | 1.2500-20 UNEF-2A | 1.478 (37.54)<br>1.471 (37.36) | 1.510 (38.35) |

SUBSEA SHALLOW WATER: AQUAMOUSE™

## SERIES 802 2400M / 3500 PSI

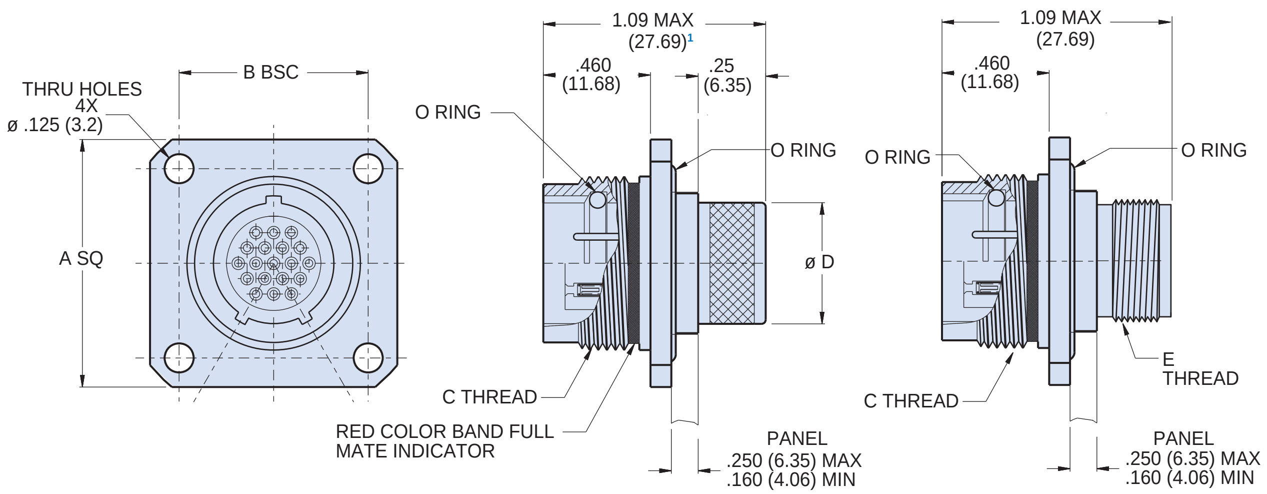
# Ultraminiature Subsea Connectors

## 802-010 and 802-011 (FCR)

## Flange connector receptacle

SUBSEA/SHALLOW WATER: AQUAMOUSE™

### FLANGE CONNECTOR RECEPTACLE, FRONT PANEL MOUNT - SHELL STYLE 02




Intergral Band Platform
**802-010**

Accessory Thread
**802-011**

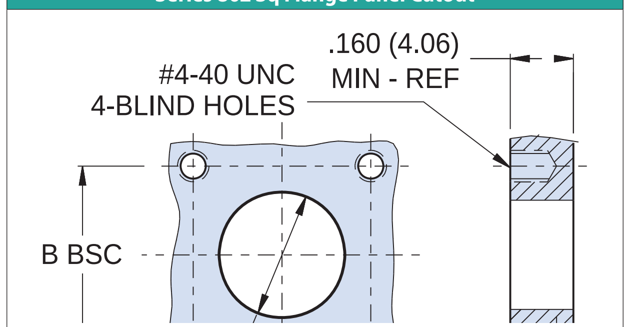
| Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | A Square | B Bsc. | C Mating Threads | Ø D | E Accessory Threads | Ø F |
| 5 | .885 (22.48) | .500 (12.70) | .4375-28 UNEF | .232 (5.89) | .250-32 UNEF-2A | .327 (8.31) |
| 6 | 1.010 (25.65) | .625 (15.88) | .5625-20 UN | .312 (7.92) | .312-32 UNEF-2A | .390 (9.91) |
| 7 | 1.072 (27.23) | .688 (17.48) | .6250-20 UN | .375 (9.52) | .438-28 UNEF-2A | .515 (13.08) |
| 8 | 1.135 (28.83) | .750 (19.05) | .6875-20 UN | .438 (11.13) | .500-28 UNEF-2A | .577 (14.66) |
| 9 | 1.195 (30.35) | .812 (20.62) | .7500-20 UNEF | .500 (12.70) | .562-24 UNEF-2A | .640 (16.26) |
| 10 | 1.260 (32.00) | .875 (22.23) | .8125-20 UNEF | .562 (14.27) | .625-24 UNEF-2A | .702 (17.83) |
| 12 | 1.323 (33.60) | .938 (23.83) | .8750-20 UNEF | .656 (16.66) | .688-24 UNEF-2A | .765 (19.43) |
| 14 | 1.510 (38.35) | 1.125 (28.58) | 1.0625-20 UN | .812 (20.62) | .875-20 UNEF-2A | .953 (24.21) |
| 15 | 1.573 (39.95) | 1.188 (30.18) | 1.1250-20 UN | .885 (22.48) | .938-20 UNEF-2A | 1.015 (25.78) |
| 21 | 1.750 (44.45) | 1.375 (34.92) | 1.4375-20 UN | 1.188 (30.18) | 1.250-20 UNEF-2A | 1.312 (33.32) |

| Piston O-ring replacement | |
|---|---|
| Shell size | Flange Style 02 O-ring P/N |
| 5 | 2-012 |
| 6 | 2-014 |
| 7 | 2-015 |
| 8 | 2-016 |
| 9 | 2-017 |
| 10 | 2-018 |
| 12 | 2-019 |
| 14 | 2-022 |
| 15 | 2-023 |
| 21 | 2-028 |

### NOTES

1. Grommet protrudes for power/ combo/#8 arrangements.

**Series 802 Sq Flange Panel Cutout**







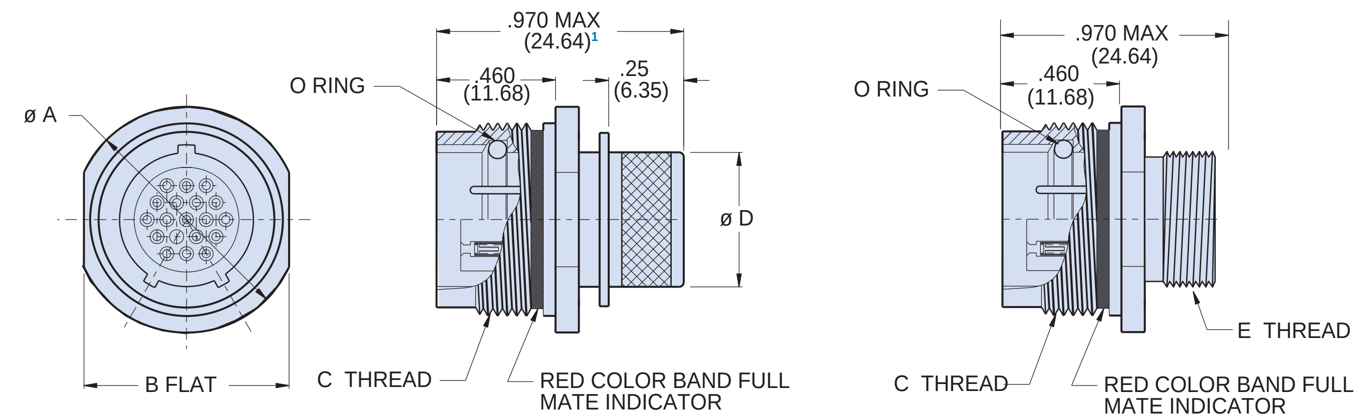

## SERIES 802 2400M / 3500 PSI

# Ultraminiature Subsea Connectors

## 802-010 and 802-011 (CCR)

## Cable connector receptacle

### CABLE CONNECTOR RECEPTACLE, INLINE - SHELL STYLE 01




Intergral Band Platform
**802-010**

Accessory Thread
**802-011**

| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | Ø A | B Flats | C Mating Threads | Ø D | E Accessory Threads |
| 5 | .560 (14.22) | .500 (12.70) | .4375-28 UNEF | .232 (5.89) | .250-32 UNEF-2A |
| 6 | .720 (18.29) | .625 (15.88) | .5625-20 UN | .312 (7.92) | .312-32 UNEF-2A |
| 7 | .780 (19.81) | .688 (17.48) | .6250-20 UN | .375 (9.52) | .438-28 UNEF-2A |
| 8 | .860 (21.84) | .750 (19.05) | .6875-20 UN | .438 (11.13) | .500-28 UNEF-2A |
| 9 | .930 (23.62) | .812 (20.62) | .7500-20 UNEF | .500 (12.70) | .562-24 UNEF-2A |
| 10 | 1.000 (25.40) | .875 (22.23) | .8125-20 UNEF | .562 (14.27) | .625-24 UNEF-2A |
| 12 | 1.060 (26.92) | .938 (23.83) | .8750-20 UNEF | .656 (16.66) | .688-24 UNEF-2A |
| 14 | 1.250 (31.75) | 1.125 (28.58) | 1.0625-20 UN | .812 (20.62) | .875-20 UNEF-2A |
| 15 | 1.320 (33.53) | 1.188 (30.18) | 1.1250-20 UN | .885 (22.48) | .938-20 UNEF-2A |
| 21 | 1.690 (42.93) | 1.562 (39.67) | 1.4375-20 UN | 1.188 (30.18) | 1.250-20 UNEF-2A |

| Piston O-ring replacement | |
|---|---|
| Shell size | Piston O-ring P/N |
| 5 | 2-009 |
| 6 | 5-052 |
| 7 | 5-012 |
| 8 | 5-212 |
| 9 | 2-014 |
| 10 | 2-015 |
| 12 | 2-016 |
| 14 | 2-019 |
| 15 | 2-020 |
| 21 | 2-023 |

### NOTES

1. Grommet protrudes for power/ combo/#8 arrangements.

SUBSEA SHALLOW WATER: AQUAMOUSE™

## 802-012 or 802-030
## Submersible solder cup or PC tail receptacle



**Printed Circuit Board/ Solder Cup Receptacles** feature low profile shells for minimum protrusion inside enclosures and integral standoffs for board washout. Contacts are non-removable.

**Water Immersion, Unmated**
Specify ***802-012*** connectors for applications where open face water immersion is not a requirement. For MIL-STD-810 Method 512G immersion requirements, specify ***802-030*** watertight connectors . These 802-030 connectors are specially sealed ("MOD-518") and are 100% tested to maintain a helium leak rate of 1 x 10$^{-4}$ cc/second at one atmosphere pressure differential from -40C to +70C.

**How To Order**

| Sample Part Number | 802-012 | -00 | Z1 | 9-200 | P | A |
|---|---|---|---|---|---|---|
| Series | **802-012** = Receptacle for Solder Cup or PCB Termination, with Standard Epoxy Potting<br>**802-030** = Receptacle for Solder Cup or PCB Termination, with Special "MOD-518" Sealing for Open Face (Unmated) Water Immersion Requirements. 100% Leak Tested. | | | | | |
| Shell Style (See Table I) | **-00** = Jam Nut for Front Panel Mounting<br>**-02** = Square Flange for Front Panel Mounting<br>**-07** = Jam Nut for Rear Panel Mounting | | | | | |
| Shell Material and Finish | **Z1** = Stainless Steel / Passivated RoHS Compliant<br>**ZM** = Stainless Steel/Electroless Nickel Plated<br>**AB** = Marine Bronze/Unplated | | | | | |
| Shell Size - Contact Arrangement | See Contact Arrangements page 4-6<br>See begining of this section for PCB footprints | | | | | |
| Contact Type | **P** = Pin, PC Tail **E** = Pin, Solder Cup<br>**S** = Socket, PC Tail **F** = Socket, Solder Cup | | | | | |
| Shell Key Position (See Table II) | **A** = Normal **B** = Pos. B **C** = Pos. C **D** = Pos. D **E** = Pos. E **F** = Pos. F | | | | | |

**Table I: Shell Style**

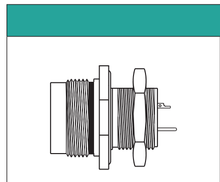
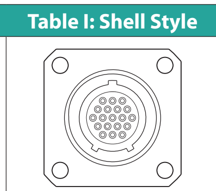
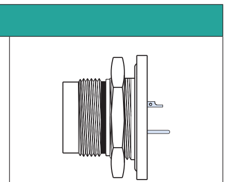
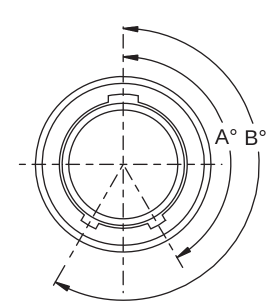
|  |  |  |
|---|---|---|
| **-00**<br>Jam Nut for Front Panel Mounting | **-02**<br>Square Flange | **-07**<br>Jam Nut for Rear Panel Mounting |

**Table II: Keyway Positions**

| Key Position | Key Rotation A° | Key Rotation B° |
|---|---|---|
| A Normal | 150° | 210° |
| B | 75° | 210° |
| C | 95° | 230° |
| D | 140° | 275° |
| E | 75° | 275° |
| F | 9° | 210° |





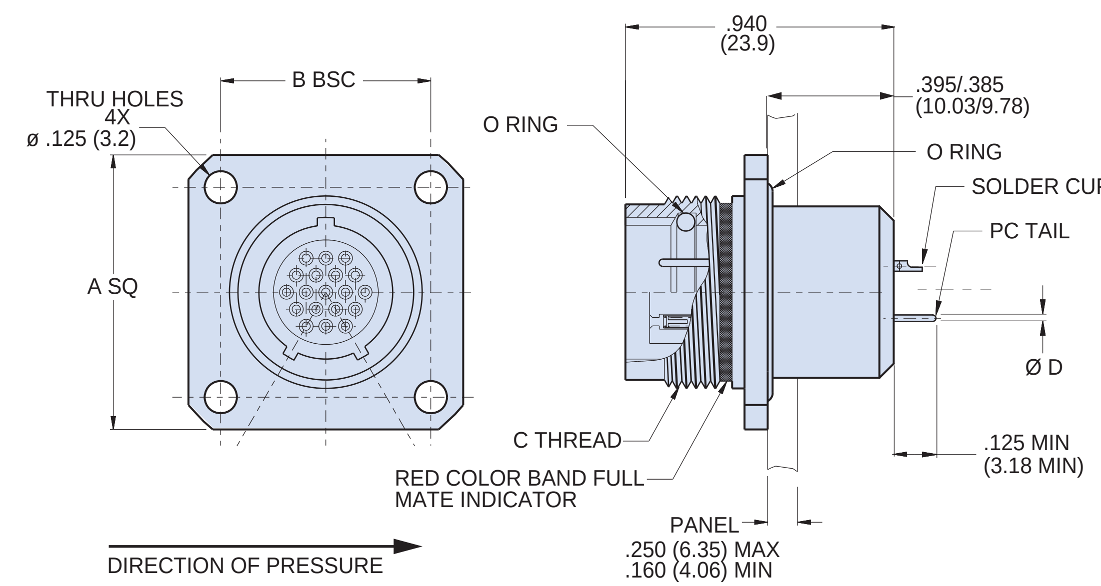





## 802-012 or 802-030 (FCR)
## Flange connector receptacle, front panel mount



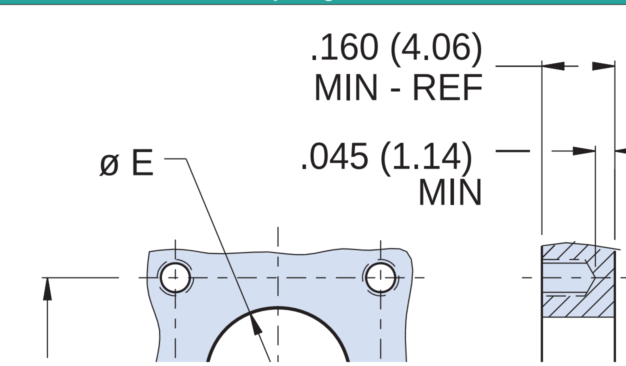
**FLANGE CONNECTOR RECEPTACLE (FCR), SOLDER CUP OR PC TAIL RECEPTACLE - SHELL STYLE 02**




**Dimensions**

| Shell Size | A Square | B Bsc. | C Mating Threads | Ø D Tail Dia. | Ø E |
|---|---|---|---|---|---|
| 5 | .885 (22.48) | .500 (12.70) | .4375-28 UNEF | #23 .018/.022 (0.46/0.56) | .327 (8.31) |
| 6 | 1.010 (25.65) | .625 (15.88) | .5625-20 UN | | .390 (9.91) |
| 7 | 1.072 (27.23) | .688 (17.48) | .6250-20 UN | #20 .024/.028 (0.61/0.71) | .515 (13.08) |
| 8 | 1.135 (28.83) | .750 (19.05) | .6875-20 UN | | .577 (14.66) |
| 9 | 1.195 (30.35) | .812 (20.62) | .7500-20 UNEF | | .640 (16.26) |
| 10 | 1.260 (32.00) | .875 (22.23) | .8125-20 UNEF | #16 .060/.064 (1.52/1.63) | .702 (17.83) |
| 12 | 1.323 (33.60) | .938 (23.83) | .8750-20 UNEF | | .765 (19.43) |
| 14 | 1.510 (38.25) | 1.125 (28.58) | 1.0625-20 UN | #12 .092/.096 (2.34/2.44) | .953 (24.21) |
| 15 | 1.573 (39.95) | 1.188 (30.18) | 1.1250-20 UN | | 1.015 (25.78) |
| 21 | 1.750 (44.45) | 1.375 (34.92) | 1.4375-20 UN | | 1.312 (33.32) |

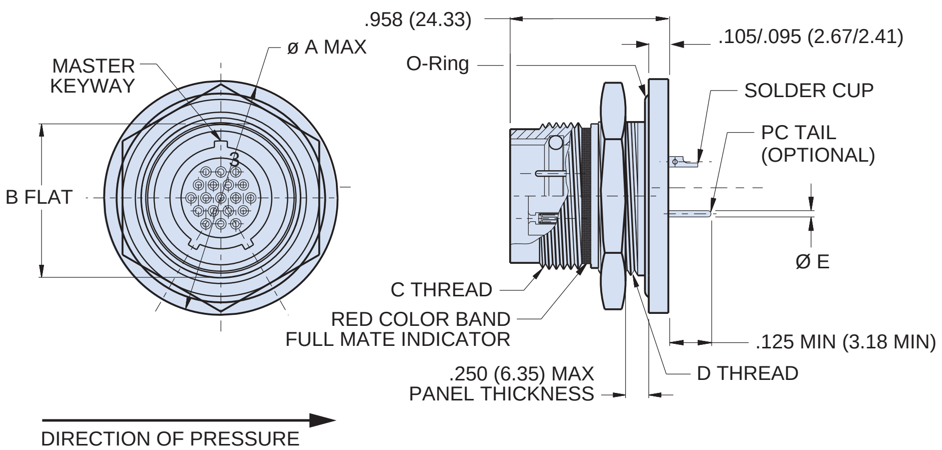
**Series 802 Sq Flange Panel Cutout**

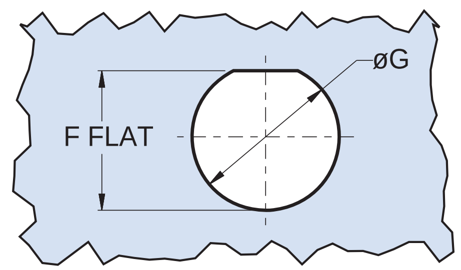


# 802-012 or 802-030
## Rear panel mount, jam nut receptacle



### REAR PANEL MOUNT, SOLDER CUP OR PC TAIL RECEPTACLE - SHELL STYLE 07




| Dimensions | | | | | | Panel Cutout | |
|---|---|---|---|---|---|---|---|
| Shell Size | Ø A Max. | B Flat ± .003 | C Mating Threads | D Threads | Ø E Tail Dia. | F Flat ± .003 | Ø G |
| 5 | .885 (22.48) | .466 (11.84) | .4375-28 UNEF | .5000-32 UN-2A | **#23** .018/.022 (0.46/0.56) **#20** .024/.028 (0.61/0.71) **#16** .060/.064 (1.52/1.63) **#12** .092/.096 (2.34/2.44) | .477 (12.12) | .510 (12.95) |
| 6 | 1.010 (25.65) | .591 (15.01) | .5625-20 UN | .6250-28 UN-2A | | .602 (15.29) | .635 (16.13) |
| 7 | 1.072 (27.23) | .653 (16.59) | .6250-20 UN | .6875-28 UN-2A | | .664 (16.87) | .697 (17.70) |
| 8 | 1.135 (28.83) | .716 (18.19) | .6875-20 UN | .7500-28 UN-2A | | .727 (18.47) | .760 (19.30) |
| 9 | 1.195 (30.35) | .778 (19.76) | .7500-20 UNEF | .8125-28 UN-2A | | .789 (20.04) | .822 (20.88) |
| 10 | 1.260 (32.00) | .827 (21.01) | .8125-20 UNEF | .8750-28 UN-2A | | .838 (21.29) | .885 (22.48) |
| 12 | 1.322 (33.58) | .890 (22.61) | .8750-20 UNEF | .9375-28 UN-2A | | .901 (22.89) | .948 (24.08) |
| 14 | 1.510 (38.35) | 1.077 (27.36) | 1.0625-20 UN | 1.1250-28 UN-2A | | 1.088 (27.64) | 1.135 (28.83) |
| 15 | 1.572 (39.93) | 1.140 (28.96) | 1.1250-20 UN | 1.1875-28 UN-2A | | 1.151 (29.24) | 1.198 (30.43) |
| 21 | 1.940 (49.28) | 1.463/1.467 | 1.4375-20 UN | 1.500-28 UN-2A | | 1.473 (37.41) | 1.510 (38.35) |

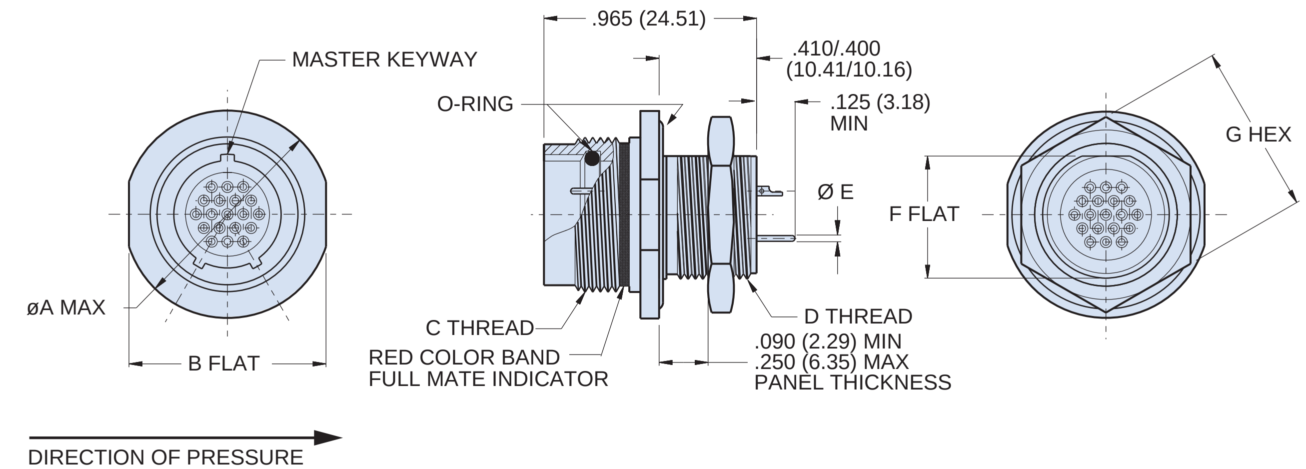





# 802-012 or 802-030
## Front panel mount, jam nut receptacle

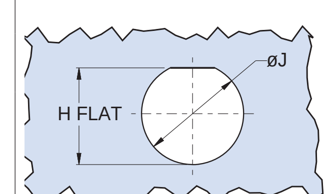


### FRONT PANEL MOUNT, SOLDER CUP OR PC TAIL RECEPTACLE - SHELL STYLE 00




| Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size | Ø A Max. | B Flat | C Mating Threads | D Threads | Ø E Tail Dia. | F Flat | G Hex |
| 5 | .72 (18.29) | .625 (15.88) | .4375-28 UNEF-2A | .312-28 UN-2A | **#23** .018/.022 (0.46/0.56) **#20** .024/.028 (0.61/0.71) **#16** .060/.064 (1.52/1.63) **#12** .092/.096 (2.34/2.44) | .281 (7.14) | .500 (12.70) |
| 6 | .78 (19.81) | .750 (19.05) | .5625-20 UN-2A | .438-28 UN-2A | | .344 (8.74) | .625 (15.88) |
| 7 | .91 (23.11) | .812 (20.62) | .6250-20 UN-2A | .500-32 UN-2A | | .469 (11.91) | .688 (17.48) |
| 8 | .96 (24.38) | .875 (22.23) | .6875-20 UN-2A | .562-28 UN-2A | | .531 (13.49) | .750 (19.05) |
| 9 | 1.03 (26.16) | .937 (23.80) | .7500-20 UNEF-2A | .625-28 UN-2A | | .594 (15.09) | .812 (20.62) |
| 10 | 1.09 (27.69) | 1.000 (25.40) | .8125-20 UNEF-2A | .687-28 UN-2A | | .656 (16.66) | .875 (22.23) |
| 12 | 1.16 (29.46) | 1.062 (26.97) | .8750-20 UNEF-2A | .750-28 UN-2A | | .719 (18.26) | .938 (23.83) |
| 14 | 1.34 (34.04) | 1.250 (31.75) | 1.0625-20 UN-2A | .938-28 UN-2A | | .893 (22.68) | 1.125 (28.58) |
| 15 | 1.41 (35.81) | 1.312 (33.32) | 1.1250-20 UN-2A | 1.000-28 UN-2A | | .955 (24.26) | 1.188 (30.18) |
| 21 | 1.70 (43.18) | 1.562 (39.67) | 1.4375-20 UN-2A | 1.312-28 UN | | 1.257 (31.93) | 1.500 (38.10) |

**Cutout Dimensions**




| Shell Size | H Flat | Ø J | Shell Size | H Flat | Ø J |
|---|---|---|---|---|---|
| 5 | .291 (7.39)<br>.291 (7.39) | .322 | 10 | .666 (16.92)<br>.661 (16.79) | .697 |
| 6 | .417 (10.59)<br>.412 (10.46) | .448 | 12 | .729 (18.52)<br>.724 (18.39) | .760 |
| 7 | .479 (12.17)<br>.474 (12.04) | .510 | 14 | .903 (22.94)<br>.898 (22.81) | .948 |
| 8 | .541 (13.74)<br>.536 (13.61) | .572 | 15 | .965 (24.51)<br>.960 (24.38) | 1.010 |
| 9 | .604 (15.34)<br>.599 (15.21) | .635 | 21 | 1.267 (32.18)<br>1.263 (32.08) | 1.322 |

# SERIES 802 2400M / 3500 PSI
# Ultraminiature Subsea Connectors
## 802-013 submersible hermetic PC tail or solder cup receptacles



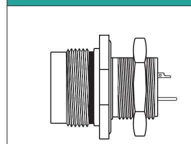
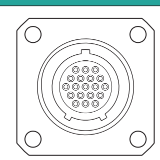
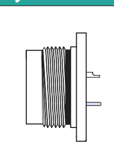
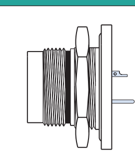
**Series 802 Hermetic Receptacles** feature gold plated iron alloy contacts and compression glass dielectric material. The 316 series stainless steel connector shell provides excellent corrosion protection and is suitable for e-beam welding. Viton® o-rings offer improved resistance to high temperature and harsh chemicals.

**1 x 10$^{-7}$ cc/Second Maximum Helium Leak Rate.** Open face (unmated) pressure rating is 1000 PSI. When mated, Series 802 connectors withstand 3500 PSI hydrostatic pressure.

### How To Order

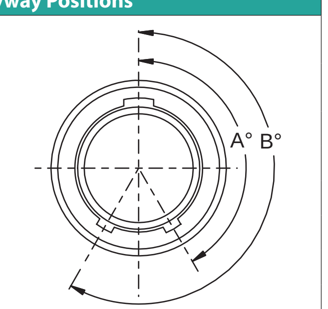
| Sample Part Number | 802-013 | -00 | Z1 | 9-200 | P | A |
|---|---|---|---|---|---|---|
| **Series** | **802-013** = Hermetic Receptacle | | | | | |
| **Shell Style (See Table I)** | **-00** = Jam Nut for Front Panel Mounting; **-03** = Weld Mount; **-02** = Square Flange Front Panel Mount; **-07** = Jam Nut Rear Panel Mount | | | | | |
| **Shell Material and Finish** | **Z1** = Stainless Steel / Passivated RoHS Compliant; **ZL** = Stainless Steel / Nickel Plated | | | | | |
| **Shell Size - Contact Arrangement** | See Contact Arrangements pages 4 - 6 | | | | | |
| **Contact Type** | **P** = Pin, PC Tail; **D** = Socket, PC Tail; **E** = Pin, Solder Cup; **S** = Socket, Solder Cup | | | | | |
| **Shell Key Position (See Table II)** | **A** = Normal **B** = Pos. B **C** = Pos. C **D** = Pos. D **E** = Pos. E **F** = Pos. F | | | | | |

### Table I: Shell Style

|  |  |  |  |
|---|---|---|---|
| **-00** Jam Nut for Front Panel Mounting | **-02** Square Flange | **-03** Weld Mount | **-07** Jam Nut for Rear Panel Mounting |

### Table II: Keyway Positions

| Key Position | Key Rotation A° | Key Rotation B° |
|---|---|---|
| A Normal | 150° | 210° |
| B | 75° | 210° |
| C | 95° | 230° |
| D | 140° | 275° |
| E | 75° | 275° |
| F | 9° | 210° |



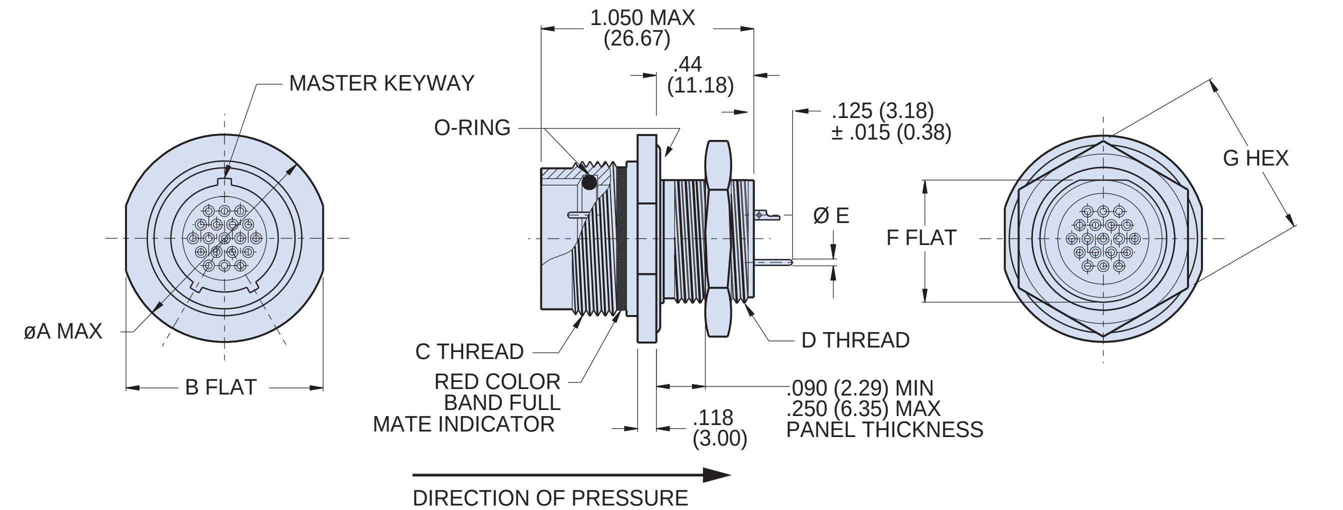




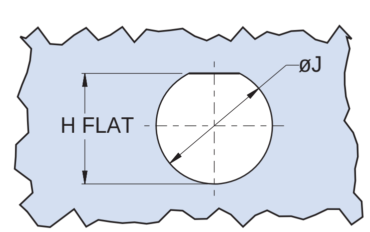

# SERIES 802 2400M / 3500 PSI
# Ultraminiature Subsea Connectors
## 802-013-00 submersible hermetic Front panel mount, jam nut receptacle



### FRONT PANEL MOUNT, SOLDER CUP OR PC TAIL JAM NUT RECEPTACLE - SHELL STYLE 00



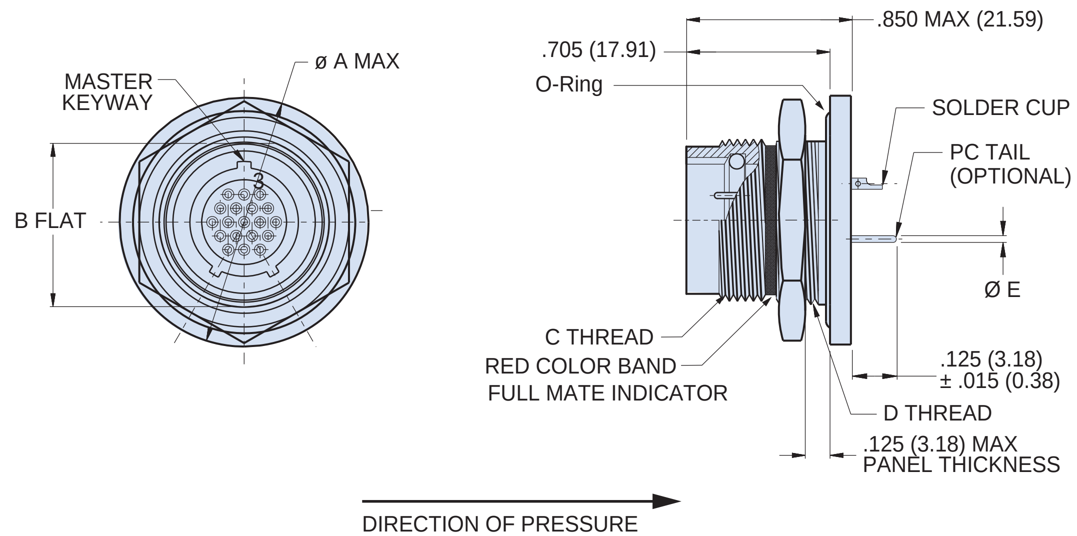

| Shell Size | Dimensions Ø A Max. | B Flat | C Threads | D Threads | Ø E Tail Dia. | F Flat | G Hex | Panel Cutout H Flat | Ø J |
|---|---|---|---|---|---|---|---|---|---|
| 5 | .72 (18.29) | .625 (15.88) | .4375-28 UNEF-2A | .312-28 UN-2A | **#23** .018/.022 (0.46/0.56) #20 .024/.028 (0.61/0.71) **#16** .060/.064 (1.52/1.63) **#12** .092/.096 (2.34/2.44) | .281 (7.14) | .500 (12.70) | .291 (.739)<br>.286 (7.26) | .322 (8.18) |
| 6 | .78 (19.81) | .750 (19.05) | .5625-20 UN-2A | .438-28 UN-2A | | .406 (10.31) | .625 (15.88) | .417 (10.59)<br>.412 (10.46) | .448 (11.38) |
| 7 | .91 (23.11) | .812 (20.62) | .6250-20 UN-2A | .500-32 UN-2A | | .469 (11.91) | .688 (17.48) | .479 (12.17)<br>.474 (12.04) | .510 (12.95) |
| 8 | .96 (24.38) | .875 (22.23) | .6875-20 UN-2A | .562-28 UN-2A | | .531 (13.49) | .750 (19.05) | .541 (13.74)<br>.536 (13.61) | .572 (14.53) |
| 9 | 1.03 (26.16) | .937 (23.80) | .7500-20 UNEF-2A | .625-20 UN-2A | | .594 (15.09) | .812 (20.62) | .604 (15.34)<br>.599 (15.21) | .635 (16.13) |
| 10 | 1.09 (27.69) | 1.000 (25.40) | .8125-20 UNEF-2A | .687-28 UN-2A | | .656 (16.66) | .875 (22.23) | .666 (16.92)<br>.661 (16.79) | .697 (17.70) |
| 12 | 1.16 (29.46) | 1.062 (26.97) | .8750-20 UNEF-2A | .750-28 UN-2A | | .719 (18.26) | .938 (23.83) | .729 (18.52)<br>.724 (18.39) | .760 (19.30) |
| 14 | 1.34 (34.04) | 1.250 (31.75) | 1.0625-20 UN-2A | .938-28 UN-2A | | .893 (22.68) | 1.125 (28.58) | .903 (22.94)<br>.898 (22.81) | .948 (24.08) |
| 15 | 1.41 (35.81) | 1.312 (33.32) | 1.1250-20 UN-2A | 1.000-28 UN-2A | | .955 (24.26) | 1.188 (30.18) | .965 (24.51)<br>.960 (24.38) | 1.010 (25.65) |
| 21 | 1.70 (43.18) | 1.562 (39.67) | 1.4375-20 UN-2A | 1.312-28 UN-2A | | 1.257 (31.93) | 1.500 (38.10) | 1.267 (32.18)<br>1.263 (32.08) | 1.322 (33.58) |

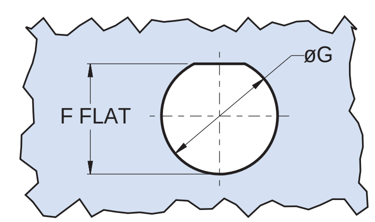


# 802-013-07 submersible hermetic
# Rear panel mount, jam nut receptacle



## REAR PANEL MOUNT, SOLDER CUP OR PC TAIL JAM NUT RECEPTACLE - SHELL STYLE 07




| Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size | A Max. | B Flat ± .003 (.08) | C Threads | D Threads | Ø E Tail Dia. | F Flat ± .003 (.08) | Ø G |
| 5 | .885 (22.48) | .466 (11.84) | .438-28 UNEF | .500-32 UN-2A | #23 .018/.022 (0.46/0.56) #20 .024/.028 (0.61/0.71) #16 .060/.064 (1.52/1.63) #12 .092/.096 (2.34/2.44) | .479 (12.17) / .474 (12.04) | .510 (12.95) |
| 6 | 1.010 (25.65) | .591 (15.01) | .562-20 UN | .625-20 UN-2A | | .604 (15.34) / .599 (15.21) | .635 (16.13) |
| 7 | 1.072 (27.23) | .653 (16.59) | .625-20 UN | .687-28 UN-2A | | .666 (16.92) / .661 (16.79) | .697 (17.70) |
| 8 | 1.135 (28.83) | .729 (18.52) / .725 (18.42) | .687-20 UN | .750-28 UN-2A | | .737 (18.72) / .733 (18.62) | .760 (19.30) |
| 9 | 1.195 (30.35) | .778 (19.76) | .750-20 UNEF | .812-28 UN-2A | | .791 (20.09) / .786 (19.96) | .822 (20.88) |
| 10 | 1.260 (32.00) | .827 (21.01) | .812-20 UNEF | .875-28 UN-2A | | .840 (21.34) / .835 (21.21) | .885 (22.48) |
| 12 | 1.322 (33.58) | .890 (22.61) | .875-20 UNEF | .938-28 UN-2A | | .903 (22.94) / .898 (22.81) | .948 (24.08) |
| 14 | 1.510 (38.35) | 1.077 (27.36) | 1.062-20 UN | 1.125-28 UN-2A | | 1.090 (27.69) / 1.085 (27.56) | 1.135 (28.83) |
| 15 | 1.572 (39.93) | 1.140 (28.96) | 1.125-20 UN | 1.188-28 UN-2A | | 1.153 (29.29) / 1.148 (29.16) | 1.198 (30.43) |
| 21 | 1.940 (49.28) | 1.467 (37.26) / 1.463 (37.16) | 1.4375-20 UN | 1.500-28 UN-2A | | 1.475 (37.47) / 1.471 (37.36) | 1.510 (38.35) |

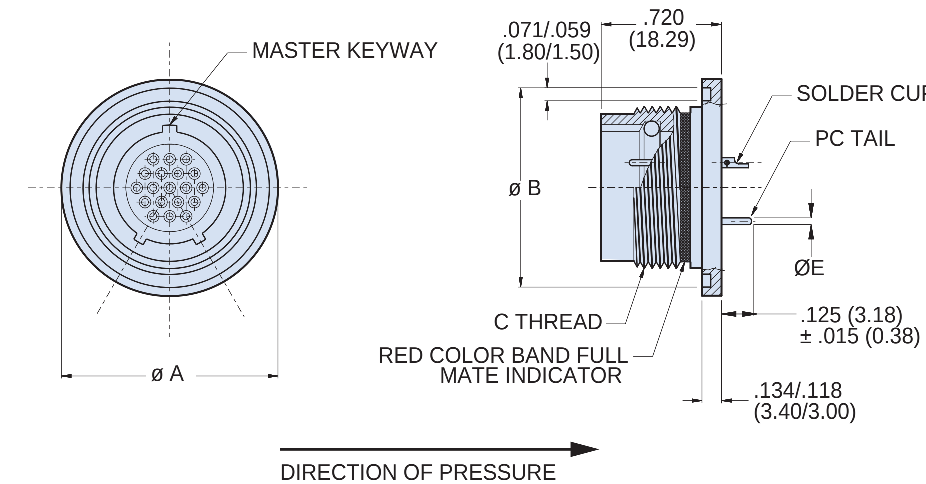





# 802-013-03 submersible hermetic
# Weld mount receptacle



## WELD MOUNT, SOLDER CUP OR PC TAIL RECEPTACLE - SHELL STYLE 03

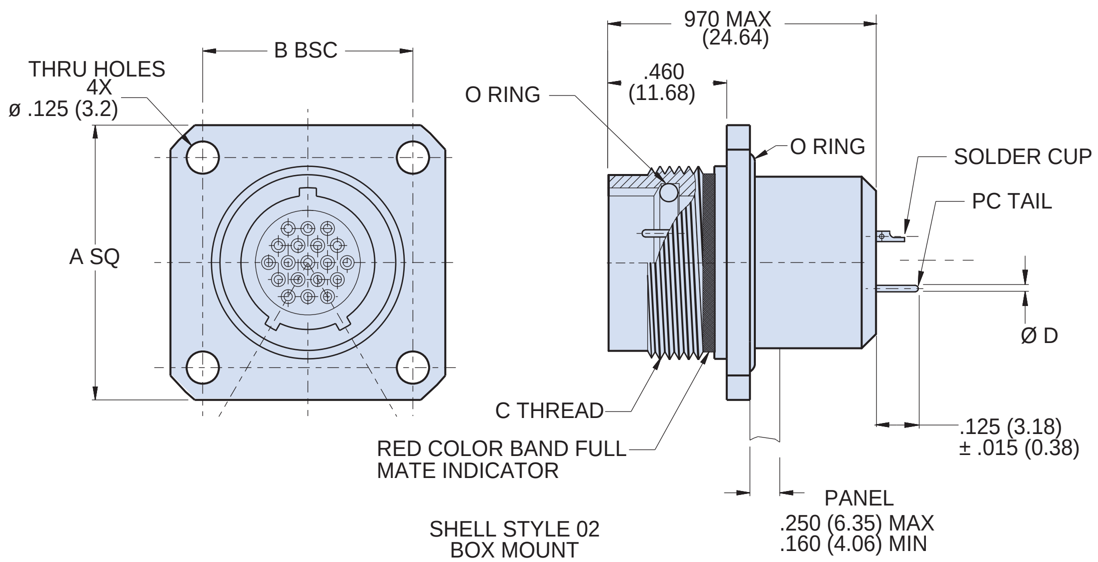



| Dimensions | | | | |
|---|---|---|---|---|
| Shell Size | Ø A ± .006 (.15) | Ø B ± .006 (.15) | C Mating Threads | Ø E Tail Dia. |
| 5 | .788 (20.02) | .745 (18.92) | .438-28 UNEF | #23 .018/.022 (0.46/0.56) #20 .024/.028 (0.61/0.71) #16 .060/.064 (1.52/1.63) #12 .092/.096 (2.34/2.44) |
| 6 | .912 (23.16) | .869 (22.07) | .562-20 UN | |
| 7 | .975 (24.76) | .933 (23.70) | .625-20 UN | |
| 8 | 1.038 (26.37) | .995 (25.27) | .687-20 UN | |
| 9 | 1.100 (27.94) | 1.057 (26.85) | .750-20 UNEF | |
| 10 | 1.162 (29.51) | 1.119 (28.42) | .812-20 UNEF | |
| 12 | 1.225 (31.12) | 1.182 (30.02) | .875-20 UNEF | |
| 14 | 1.412 (35.86) | 1.369 (34.77) | 1.062-20 UN | |
| 15 | 1.475 (37.47) | 1.432 (36.37) | 1.125-20 UN | |
| 21 | 1.795 (45.59) | 1.750 (44.45) / 1.744 (44.30) | 1.4375-20 UN | |

# 802-013-02 submersible hermetic receptacle flange connector receptacle (FCR)

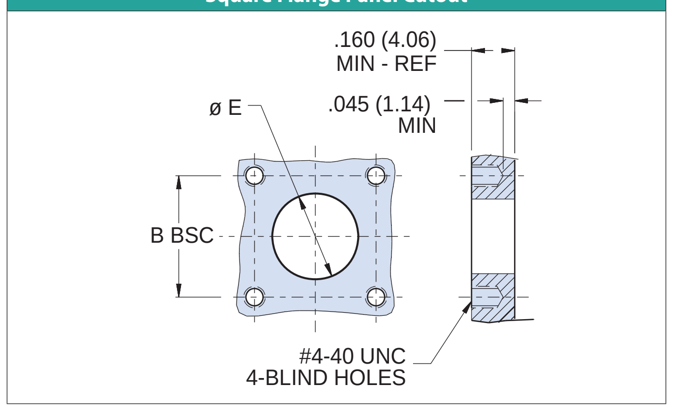


## SOLDER CUP OR PC TAIL FRONT PANEL MOUNT RECEPTACLE - SHELL STYLE 02




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | A Square | B Bsc. | C Mating Threads | Ø D Tail Dia. | Ø E |
| 5 | .885 (22.48) | .500 (12.70) | .438-28 UNEF | #23 .018/.022 (0.46/0.56) | .327 (8.31) |
| 6 | 1.010 (25.65) | .625 (15.88) | .562-20 UN | | .390 (9.91) |
| 7 | 1.072 (27.23) | .688 (17.48) | .625-20 UN | #20 .024/.028 (0.61/0.71) | .515 (13.08) |
| 8 | 1.135 (28.83) | .750 (19.05) | .687-20 UN | | .577 (14.66) |
| 9 | 1.195 (30.35) | .812 (20.62) | .750-20 UNEF | | .640 (16.26) |
| 10 | 1.260 (32.00) | .875 (22.23) | .812-20 UNEF | #16 .060/.064 (1.52/1.63) | .702 (17.83) |
| 12 | 1.323 (33.60) | .938 (23.83) | .875-20 UNEF | | .765 (19.43) |
| 14 | 1.510 (38.35) | 1.125 (28.58) | 1.062-20 UN | | .953 (24.21) |
| 15 | 1.573 (39.95) | 1.188 (30.18) | 1.125-20 UN | #12 .092/.096 (2.34/2.44) | 1.015 (25.78) |
| 21 | 1.750 (44.45) | 1.375 (34.92) | 1.4375-20 UN | | 1.312 (33.32) |

### Square Flange Panel Cutout








SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors

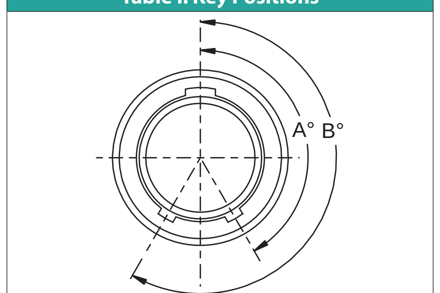
# 802-050 submersible hermetic receptacle Jam nut, bulkhead feed-thru

SUBSEA SHALLOW WATER: AQUAMOUSE™

**Series 802 Hermetic Jam Nut Mount Bulkhead Feed–Thru Receptacles** feature gold plated iron alloy contacts and compression glass dielectric material. The 316 series stainless steel connector shell provides excellent corrosion protection. Available with pin to pin contacts. Power applied to a given contact on one end will result in power to contact directly opposite, regardless of contact identification letter. Contact DWV ratings are as follows and measured pin to pin and pin to shell without breakdown: size #23 @ 750 VAC, size #20 @ 1000 VAC, size #16 and #12 @ 1800 VAC. Insulation resistance is rated at 20,000 megohms (test) @ 500 VDC minimum. Hermeticity is rated at: 5 x $10^{-8}$ sccHe/sec @ 1 atmosphere differential. 802-050 is designed to mate with Glenair 802 Series plugs. Shell sizes 5 thru 21 have a maximum open face rated test pressure of 1,000 PSI in one direction.

| How To Order | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sample Part Number | 802-050 | Z1 | 12-37 | P | P | A | 01 | N |
| Series | 802-050 = Bulkhead Feed–Thru Hermetic Receptacle | | | | | | | |
| Shell Material and Finish | Z1 = 316 Stainless Steel / Passivated RoHS Compliant | | | | | | | |
| Shell Size - Contact Arrangement | See Table III; see pages 4 - 6 | | | | | | | |
| Contact Type Jam Nut Side | P = Pin | | | | | | | |
| Contact Type Opposite Side | P = Pin | | | | | | | |
| Keyway Position (See Table I) | A = Normal B = Pos. B C = Pos. C D = Pos. D E = Pos. E F = Pos. F | | | | | | | |
| Panel Thickness (See Table II) | -01 = .500/1.000 -02 = 1.000/1.500 -03 = 1.500/2.000 -04 = 2.000/2.500 -05 = 2.500/3.000 -06 = 3.000/3.500 -07 = 3.500/4.000 | | | | | | | |
| O-ring Material | V = Viton N = Nitrile NA = No external o-rings supplied (suggested material: Nitrile) | | | | | | | |

### Table I: Key Positions




| Key Position | Key Rotation A° | Key Rotation B° |
|---|---|---|
| A Normal | 150° | 210° |
| B | 75° | 210° |
| C | 95° | 230° |
| D | 140° | 275° |
| E | 75° | 275° |
| F | 95° | 210° |

### Table II: Panel Thickness

| Panel Thickness Code | H Panel Thickness | J Maximum Length |
|---|---|---|
| -01 | .500/1.000 | 2.450 |
| -02 | 1.000/1.500 | 2.950 |
| -03 | 1.500/2.000 | 3.450 |
| -04 | 2.000/2.500 | 3.950 |
| -05 | 2.500/3.000 | 4.450 |
| -06 | 3.000/3.500 | 4.950 |
| -07 | 3.500/4.000 | 5.450 |

### Table III: Contacts Available

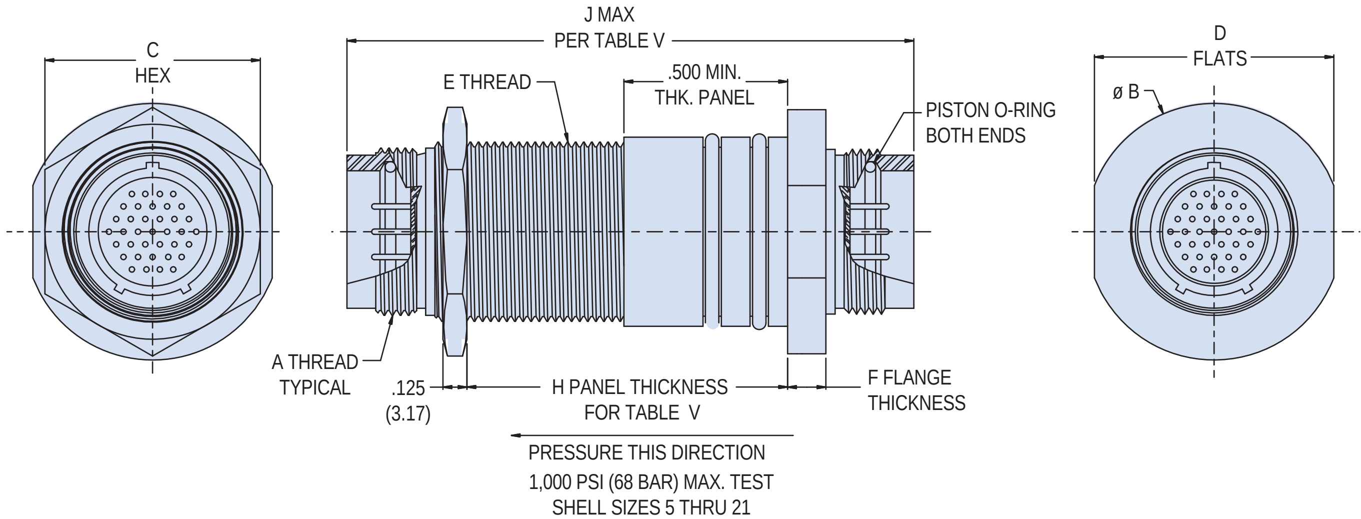
| Shell Size | Number of Contact by Shell Size |
|---|---|
| 5 | -3 |
| 6 | -1, -4, -6, -7, -23 |
| 7 | -1, -10, -25 |
| 8 | -1, -2, -13, -28, -200 |
| 9 | -4, -19, -200, -201, -210 |
| 10 | -2, -5, -26, -200, -201, -202 |
| 12 | -2, -3, -7, -37, -200, -201, -220 |
| 14 | -5, -12, -55, -235 |
| 15 | -3, -7, -14, -85, -241 |
| 21 | -12, -22, -130, -269 |

See pages 4 - 6 for contact arrangements

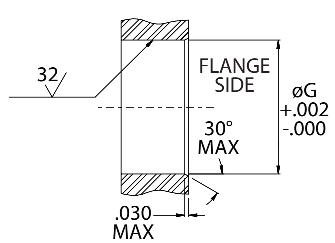
# 802-050 submersible hermetic receptacle Jam nut, bulkhead feed-thru



## JAM NUT MOUNT, SOLDER CUP OR PC TAIL BULKHEAD FEED–THRU




| Dimensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Shell Size | A Thread | Ø B Max | C Hex | D Flat | E Thread | Panel Cutout Ø G | Ext. O-Ring | F |
| 5 | .4375-28 UNEF | 0.950 (24.13) | 0.688 (17.48) | 0.880 (22.35)<br>0.870 (22.10) | .5000-32 UN-2A | .562 (14.27) | 2-013 | .260 (6.60) |
| 6 | .5625-20 UN | 1.150 (29.21) | 0.812 (20.62) | 1.010 (25.65)<br>1.000 (25.40) | .6250-20 UN-2A | .687 (17.45) | 2.-015 | .260 (6.60) |
| 7 | .6250-20 UN | 1.225 (31.12) | 0.875 (22.23) | 1.080 (27.43)<br>1.070 (27.18) | .6875-28 UN-2A | .750 (19.05) | 2-016 | .260 (6.60) |
| 8 | .6875-20 UN | 1.275 (32.39) | 0.938 (23.83) | 1.140 (28.96)<br>1.130 (28.70) | .7500-28 UN-2A | .812 (20.62) | 2-017 | .260 (6.60) |
| 9 | .7500-20 UNEF | 1.325 (33.65) | 1.000 (25.40) | 1.205 (30.61)<br>1.195 (30.35) | .8125-28 UN-2A | .875 (22.23) | 2-018 | .260 (6.60) |
| 10 | .8125-20 UNEF | 1.380 (35.05) | 1.000 (25.40) | 1.270 (32.26)<br>1.260 (32.00) | .8750-28 UN-2A | .937 (23.80) | 2-019 | .260 (6.60) |
| 12 | .8750-20 UNEF | 1.462 (37.13) | 1.125 (28.58) | 1.330 (33.78)<br>1.320 (33.53) | .9375-28 UN-2A | 1.000 (25.40) | 2-020 | .260 (6.60) |
| 14 | 1.0625-20 UN | 1.650 (41.91) | 1.312 (33.32) | 1.520 (38.61)<br>1.510 (38.35) | 1.1250-28 UN-2A | 1.187 (30.15) | 2-023 | .325 (8.25) |
| 15 | 1.1250-20 UN | 1.700 (43.18) | 1.375 (34.92) | 1.580 (40.13)<br>1.570 (39.88) | 1.1875-28 UN-2A | 1.250 (31.75) | 2-024 | .325 (8.25) |
| 21 | 1.4375-20 UN | 2.165 (54.99) | 1.700 (43.18) | 2.015 (51.18)<br>2.005 (50.93) | 1.5000-28 UN-2A | 1.625 (41.28) | 2-029 | .325 (8.25) |




RECOMMENDED PANEL CUTOUT FOR DOUBLE O-RING ONLY







# Overmolded, Shielded Submersible Cordsets Performance Overview



## Series 802 Harsh Environment Shielded Cordsets

Overmolded AquaMouse™ cordsets are used in oil and gas pipeline equipment and other hostile environments where interconnect reliability and survivability is essential. High performance cordsets feature easy ordering and fast delivery. These fully shielded and watertight assemblies withstand abrasion, temperature extremes and chemicals. Flexible overmolding provides rugged, watertight protection to wire and shield. Two styles are available. For oil and gas equipment or continuous water immersion, choose ***Style 1*** with thermoplastic polyurethane cable jacket and thermoset polyurethane overmolding. For non-critical general purpose applications, ***Style 2*** cordsets with polyurethane jackets and polyamide overmolds are a good choice if cost is a concern.

### *Product Features*

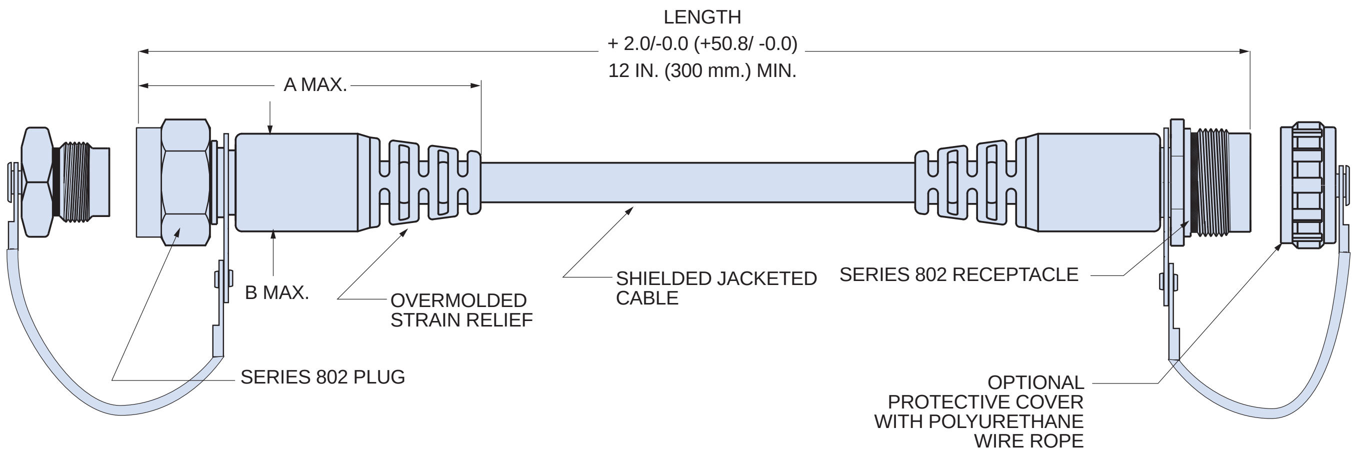
- 2500 PSI (Style 1)
- Rugged, watertight construction
- 100% electrically tested
- BandMaster ATS Shield Termination
- Abrasion Resistance
- Resistant to chemicals
- Withstands UV and ozone

| Harsh Environment Cordset Selection Guide | | |
|---|---|---|
| Property | Style 1<br>Polyurethane Jacket<br>Polyurethane Overmold | Style 2<br>Polyurethane Jacket<br>Polyamide Overmold |
| Cable jacket | Thermoplastic polyurethane (TPU), black | Thermoplastic polyurethane (TPU), black |
| Overmold | Thermoset polyurethane, black | Polyamide, black |
| Operating temperature | -40° C. to +105° C. | -30° C. to +105° C. |
| Flexibility | Good | Good |
| Water Resistance | 2500 PSI (mated) | 1 meter immersion |
| Solvent Resistance, Cable Jacket | Excellent | Good |
| Solvent Resistance, Overmold | Excellent | Fair |
| Weatherability | Excellent | Excellent |
| Abrasion Resistance | Excellent | Good |
| Flammability | Flame retardant UL 94 V-0 | Flame retardant UL 94 V-0 |
| Cost | $$$$ | $$ |

| Specifications | |
|---|---|
| Cable jacket | Thermoplastic polyurethane, black, low-smoke, zero-halogen |
| Overmold | Style 1: thermoset polyurethane<br>Style 2: polyamide |
| Cable shield | Tin-coated copper braid, 90% minimum coverage |
| Conductors | Silver coated stranded wire, TFE insulated, per M22759/11 |
| Shield Termination | Band-Master™ ATS stainless steel shield termination band |
| Current rating | #23–5 amps, #20–7.5 amps, #16–13 amps, #12–23 amps |
| Test voltage (DWV) | #23–500 Vac, #20–500 vac, #16 and #12–500 VAC sea level |
| Insulation resistance | 200 Megohms minimum |
| Shielding effectiveness | 50 dB minimum from 100MHz to 1000MHz. |

# Shielded overmolded submersible cordsets Dimensions

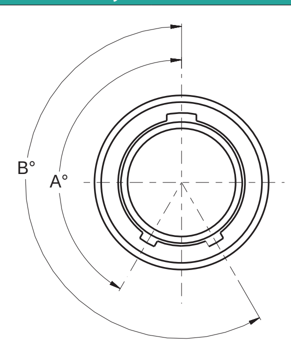





**Dimensions**

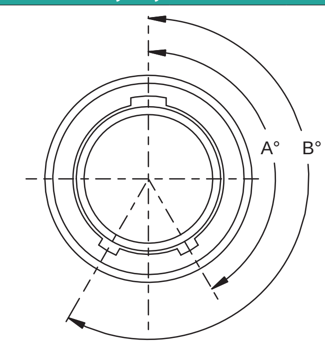
| Shell Size | A Max. | B Max. |
|---|---|---|
| 5 | 2.31 (58.67) | 0.5 (12.70) |
| 6 | 2.40 (60.96) | 0.55 (13.97) |
| 7 | 2.50 (63.50) | 0.65 (16.51) |
| 8 | 2.52 (64.01) | 0.71 (18.03) |
| 9 | 2.80 (71.12) | 0.78 (19.81) |
| 10 | 2.75 (69.85) | 0.82 (20.83) |
| 11 | 2.85 (72.39) | 0.87 (22.10) |
| 12 | 3.10 (78.74) | 0.9 (22.86) |
| 14 | 3.40 (86.36) | 1.1 (27.94) |
| 15 | 3.40 (86.36) | 1.2 (30.48) |

**Key Positions**




| Key Position | Key Rotation A° | Key Rotation B° |
|---|---|---|
| Normal (A) | 150° | 210° |
| B | 75° | 210° |
| C | 95° | 230° |
| D | 140° | 275° |
| E | 75° | 275° |
| F | 95° | 210° |

**Keyway Positions**




| Key Position | Key Rotation A° | Key Rotation B° |
|---|---|---|
| A | 150° | 210° |
| B | 75° | 210° |
| C | 95° | 230° |
| D | 140° | 275° |
| E | 75° | 275° |
| F | 95° | 210° |

## NOTES

1. Double-ended cordsets are wired pin #1 to pin #1, #2 to #2, and so on.
2. Wires are silver-coated stranded copper with TFE insulation, 600V, in accordance with M22759/11.
3. Wire color is IAW MIL-STD-681 for cables containing 10 wires or less. For cable containing more than 10 wires, wire color is white.




SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors

# Shielded overmolded submersible cordsets with Size #23 or #20HD contacts

SUBSEA SHALLOW WATER: AQUAMOUSE™

**Series 802 Cordsets with #23 Contacts**

Sample Part Number

| 802-019 | -A | C | 4 | M | 9-19 | N | A | -36 |
|---|---|---|---|---|---|---|---|---|
| Series | End A Connector | End B Connector | Wire Size | Shell Material/ Finish | Insert Arr. | Protective Cover | Key Pos. | Length |
| **802-022**<br>**Style 1**<br>Polyurethane Cable Jacket, Thermoset Polyurethane Overmold, 2500 PSI<br>**802-019**<br>**Style 2**<br>Polyurethane Cable Jacket, Polyamide Overmold, 1 Meter Immersion | **-A**<br>Plug, with Male Pin Contacts<br>**-B**<br>Plug, with Female Socket Contacts<br>**-C**<br>Receptacle, with Male Pin Contacts<br>**-D**<br>Receptacle, with Female Socket Contacts | **A**<br>Plug, with Male Pin Contacts<br>**B**<br>Plug, with Female Socket Contacts<br>**C**<br>Receptacle, with Male Pin Contacts<br>**D**<br>Receptacle, with Female Socket Contacts<br>**N**<br>No Connector (Single-Ended) | **2**<br>#22 AWG<br>**4**<br>#24 AWG | **Z1**<br>Stainless Steel Shell / Passivated<br>**ZM**<br>Stainless Steel Shell / Electroless Nickel Plated<br>**AB**<br>Marine Bronze Shell Unplated | See pages 4 - 6 for insert arr.<br>Consult Factory for Combo Arr. | **P**<br>Metal Protective Covers Included<br>**N**<br>No Covers Supplied | **A**<br>Normal<br>**B**<br>Pos. B<br>**C**<br>Pos. C<br>**D**<br>Pos. D<br>**E**<br>Pos. E<br>**F**<br>Pos. F | Overall Length In Inches<br>12 Inch Min. |

**Series 802 Cordsets with #20HD Contacts**

Sample Part Number

| 802-032 | -A | C | 0 | M | 9-19 | N | A | -36 |
|---|---|---|---|---|---|---|---|---|
| Series | End A Connector | End B Connector | Wire Size | Shell Material / Finish | Insert Arr. | Protective Cover | Key Pos. | Length |
| **802-033**<br>**Style 1**<br>Polyurethane Cable Jacket, Thermoset Polyurethane Overmold, 2500 PSI Rated<br>**802-032**<br>**Style 2**<br>Polyurethane Cable Jacket, Polyamide Overmold, 1 Meter Immersion | **-A**<br>Plug, with Male Pin Contacts<br>**-B**<br>Plug, with Female Socket Contacts<br>**-C**<br>Receptacle, with Male Pin Contacts<br>**-D**<br>Receptacle, with Female Socket Contacts | **A**<br>Plug, with Male Pin Contacts<br>**B**<br>Plug, with Female Socket Contacts<br>**C**<br>Receptacle, with Male Pin Contacts<br>**D**<br>Receptacle, with Female Socket Contacts<br>**N**<br>No Connector (Single-Ended) | **0**<br>#20 AWG<br>**2**<br>#22 AWG | **Z1**<br>Stainless Steel Shell / Passivated<br>**ZM**<br>Stainless Steel Shell / Electroless Nickel Plated<br>**AB**<br>Marine Bronze Shell Unplated | See page 4 - 6 for insert arr.<br>Consult Factory for Combo Arr. | **P**<br>Metal Protective Covers Included<br>**N**<br>No Covers Supplied | **A**<br>Normal<br>**B**<br>Pos. B<br>**C**<br>Pos. C<br>**D**<br>Pos. D<br>**E**<br>Pos. E<br>**F**<br>Pos. F | Overall Length In Inches<br>12 Inch Min. |

## Shielded overmolded submersible cordsets with size #16 or #12 contacts



**Series 802 Cordsets with #16 Contacts**

Sample Part Number

| 802-026 | -A | C | 6 | Z1 | 9-4 | N | A | -48 |
|---|---|---|---|---|---|---|---|---|
| Series | End A Connector | End B Connector | Wire Size | Shell Material/ Finish | Insert Arr. | Protective Cover | Shell Key Pos. | Length |
| **802-028**<br>**Style 1**<br>Polyurethane Cable Jacket, Thermoset Polyurethane Overmold, 2500 PSI Rated<br>**802-026**<br>**Style 2**<br>Polyurethane Cable Jacket, Polyamide Overmold, 1 Meter Immersion | **-A**<br>Plug, with Male Pin Contacts<br>**-B**<br>Plug, with Female Socket Contacts<br>**-C**<br>Receptacle, with Male Pin Contacts<br>**-D**<br>Receptacle, with Female Socket Contacts | **A**<br>Plug, with Male Pin Contacts<br>**B**<br>Plug, with Female Socket Contacts<br>**C**<br>Receptacle, with Male Pin Contacts<br>**D**<br>Receptacle, with Female Socket Contacts<br>**N**<br>No Connector (Single-Ended) | **6**<br>#16 AWG<br>**8**<br>#18 AWG | **Z1**<br>Stainless Steel Shell / Passivated<br>**ZM**<br>Stainless Steel Shell / Electroless Nickel Plated<br>**AB**<br>Marine Bronze Shell Unplated | See page B-3 for insert arr.<br>Consult Factory for Combo Arr. | **P**<br>Metal Protective Covers Included<br>**N**<br>No Covers Supplied | **A**<br>Normal<br>**B**<br>Pos. B<br>**C**<br>Pos. C<br>**D**<br>Pos. D<br>**E**<br>Pos. E<br>**F**<br>Pos. F | Overall Length In Inches<br>12 Inch Min. |

**Series 802 Cordsets with #12 Contacts**

Sample Part Number

| 802-027 | -A | C | 0 | M | 10-2 | N | A | -48 |
|---|---|---|---|---|---|---|---|---|
| Series | End A Connector | End B Connector | Wire Size | Shell Material / Finish | Insert Arr. | Protective Cover | Shell Key Pos. | Length |
| **802-029**<br>**Style 1**<br>Polyurethane Cable Jacket, Thermoset Polyurethane Overmold, 2500 PSI Rated<br>**802-027**<br>**Style 2**<br>Polyurethane Cable Jacket, Polyamide Overmold, 1 Meter Immersion | **-A**<br>Plug, with Male Pin Contacts<br>**-B**<br>Plug, with Female Socket Contacts<br>**-C**<br>Receptacle, with Male Pin Contacts<br>**-D**<br>Receptacle, with Female Socket Contacts | **A**<br>Plug, with Male Pin Contacts<br>**B**<br>Plug, with Female Socket Contacts<br>**C**<br>Receptacle, with Male Pin Contacts<br>**D**<br>Receptacle, with Female Socket Contacts<br>**N**<br>No Connector (Single-Ended) | **2**<br>#12 AWG<br>**4**<br>#14 AWG | **Z1**<br>Stainless Steel Shell / Passivated<br>**ZM**<br>Stainless Steel Shell / Electroless Nickel Plated<br>**AB**<br>Marine Bronze Shell Unplated | See page 4 - 6 for insert arr.<br>Consult Factory for Combo Arr. | **P**<br>Metal Protective Covers Included<br>**N**<br>No Covers Supplied | **A**<br>Normal<br>**B**<br>Pos. B<br>**C**<br>Pos. C<br>**D**<br>Pos. D<br>**E**<br>Pos. E<br>**F**<br>Pos. F | Overall Length In Inches<br>12 Inch Min. |





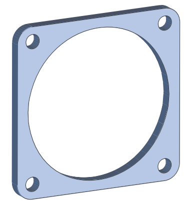


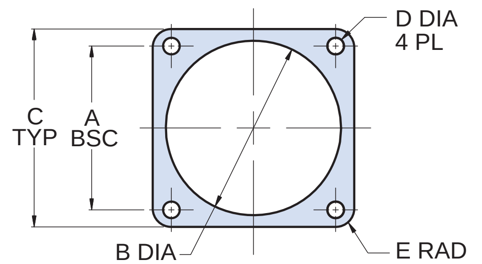
## Series 802 replacement flange gaskets, o-rings and piston rings



### FLANGE GASKETS FOR SERIES 802 MIGHTY MOUSE RECEPTACLES

These flange gaskets provide sealing between square flange receptacles and the mounting panel. Choose fluorosilicone, Viton, or neoprene material. Gaskets are .032" (0.8) thick.

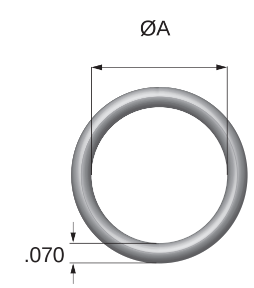





| Shell Size | Part Number | | | Dimensions | | | | |
|---|---|---|---|---|---|---|---|---|
| | Fluorosilicone | Viton® | Neoprene | A Bsc. | B Dia. | C Typ. | D Dia. | E Rad. |
| 5 | 809-108F51 | 809-108V51 | 809-108N51 | .500 (12.70) | .448 (11.38) | .885 (22.48) | .125 (3.18) | .105 (2.67) |
| 6 | 809-108F52 | 809-108V52 | 809-108N52 | .625 (15.88) | .572 (14.53) | 1.010 (25.65) | .125 (3.18) | .105 (2.67) |
| 7 | 809-108F53 | 809-108V53 | 809-108N53 | .688 (17.48) | .635 (16.13) | 1.072 (27.23) | .125 (3.18) | .105 (2.67) |
| 8 | 809-108F54 | 809-108V54 | 809-108N54 | .750 (19.05) | .698 (17.73) | 1.135 (28.83) | .125 (3.18) | .105 (2.67) |
| 9 | 809-108F55 | 809-108V55 | 809-108N55 | .812 (20.62) | .760 (19.30) | 1.195 (30.35) | .125 (3.18) | .105 (2.67) |
| 10 | 809-108F56 | 809-108V56 | 809-108N56 | .875 (22.23) | .822 (20.88) | 1.260 (32.00) | .125 (3.18) | .105 (2.67) |
| 12 | 809-108F57 | 809-108V57 | 809-108N57 | .938 (23.83) | .885 (22.48) | 1.323 (33.60) | .125 (3.18) | .105 (2.67) |
| 14 | 809-108F58 | 809-108V58 | 809-108N58 | 1.125 (28.58) | 1.072 (27.23) | 1.510 (38.35) | .125 (3.18) | .105 (2.67) |
| 15 | 809-108F59 | 809-108V59 | 809-108N59 | 1.188 (30.18) | 1.135 (28.83) | 1.573 (39.95) | .125 (3.18) | .105 (2.67) |
| 21 | 809-108F60 | 809-108V60 | 809-108N60 | 1.375 (34.92) | 1.448 (36.78) | 1.760 (44.70) | .125 (3.18) | .105 (2.67) |

### 802 REPLACEMENT O-RINGS FOR MIGHTY MOUSE RECEPTACLES

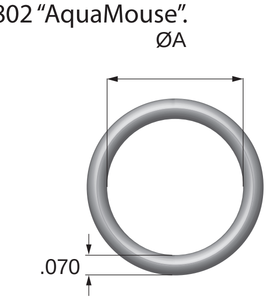
These Viton® O-rings fit Series 802 "AquaMouse" rear panel mount jam nut connector flanges.




**Flange O-rings for Series 802 Jam Nut and Square Flange Receptacles**

| Shell Size | Jam Nut Flange Style | | | Square Flange Style | | |
|---|---|---|---|---|---|---|
| | Viton® Part No. | O-Ring Size | Ø A Inside Dia. | Viton® Part No. | O-Ring Size | Ø A Inside Dia. |
| -05 | 809-165-05 | 2-015 | .551 (14.00) | 809-165-35 | 2-012 | .364 (9.25) |
| -06 | 809-165-06 | 2-017 | .676 (17.17) | 809-165-36 | 2-014 | .489 (12.42) |
| -07 | 809-165-07 | 2-018 | .739 (18.77) | 809-165-37 | 2-015 | .551 (14.00) |
| -08 | 809-165-08 | 2-019 | .801 (20.35) | 809-165-38 | 2-016 | .614 (15.60) |
| -09 | 809-165-09 | 2-020 | .864 (21.95) | 809-165-39 | 2-017 | .676 (17.17) |
| -10 | 809-165-10 | 2-021 | .926 (23.52) | 809-165-40 | 2-018 | .739 (18.77) |
| -12 | 809-165-12 | 2-022 | .989 (25.12) | 809-165-42 | 2-019 | .801 (20.35) |
| -14 | 809-165-14 | 2-025 | 1.176 (29.87) | 809-165-44 | 2-022 | .989 (25.12) |
| -15 | 809-165-15 | 2-026 | 1.239 (31.47) | 809-165-45 | 2-023 | 1.051 (26.70) |
| -21 | 809-165-21 | 2-030 | 1.614 (41.00) | 809-165-51 | 2-028 | 1.364 (34.65) |

These Viton® Piston O-rings fit Series 802 "AquaMouse".




**Piston O-rings for Series 802**

| Shell Size | Viton® Part No. | O-Ring ID x Width Dimensions | | Shell Size | Viton® Part No. | O-Ring ID x Width Dimensions | |
|---|---|---|---|---|---|---|---|
| | | In. | mm. | | | In. | mm. |
| -05 | 809-209-05 | .208 x .070 | 5.28 x 1.78 | 10 | 809-209-10 | .551 x .070 | 14.00 x 1.78 |
| -06 | 809-209-06 | .270 x .070 | 6.86 x 1.78 | 12 | 809-209-12 | .614 x .070 | 15.60 x 1.78 |
| -07 | 809-209-07 | .364 x .070 | 9.24 x 1.78 | 14 | 809-209-14 | .801 x .070 | 20.34 x 1.78 |
| -08 | 809-209-08 | .384 x .070 | 9.75 x 1.78 | 15 | 809-209-15 | .864 x .070 | 21.94 x 1.78 |
| -09 | 809-209-09 | .489 x .070 | 12.42 x 1.78 | 21 | 809-209-21 | 1.051 x .070 | 26.70 x 1.78 |

# 660-088 and 660-087 IP68 Protective cover



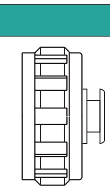
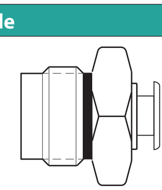
**Protect Connectors From Damage** – These covers prevent ingress of water and contamination. Stainless steel plug covers feature Viton® O-rings for IP68 sealing (one meter for one hour). Receptacle covers have a Viton® gasket and are made from marine bronze to minimize galling. Cover is designed for low PSI connector protection. For 3500 PSI protection, use part numbers 667-241 and 667-242

**Three Types of Attachment Rings**
Choose small diameter eye fittings for panel attachment. Larger rings fit under the jam nut or over cable jackets. Split rings can be installed on fully assembled cables.

**Polyurethane-Coated SST Wire Rope** offers high strength, excellent abrasion resistance and good flexibility. Or, choose Fluoropolymer jacket for high temperature exposure.

**Braided Nylon Rope** provides excellent flexibility and good abrasion resistance, and can be ordered with slip knot fittings for easy installation on any size cable.

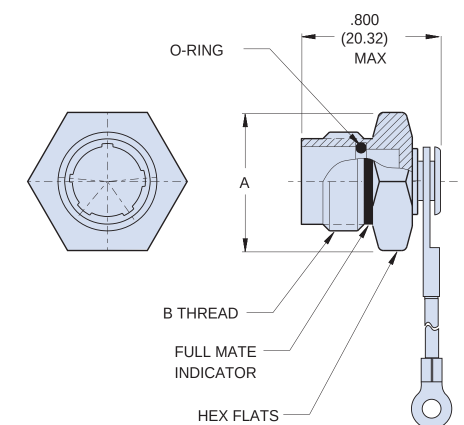
| How To Order | | | | | | |
|---|---|---|---|---|---|---|
| **Sample Part Number** | 667-088 | -9 | G | 04 | -6 | B |
| **Series (See Table I)** | 660-088 = Receptacle Cover<br>660-087 = Plug Cover | | | | | |
| **Shell Size** | -5, -6, -7, -8, -9, -10, -12, -14, -15, -21 | | | | | |
| **Attachment Type** | G = Nylon Rope<br>H = SST Wire Rope, Fluoropolymer Jacket<br>N = No Attachment<br>S = SST Sash Chain<br>SK = Nylon Rope With Slip Knot<br>T = SST Wire Rope, No Jacket<br>U = SST Wire Rope, Polyurethane Jacket<br><br>"SST" = Stainless Steel | | | | | |
| **Attachment Code (See Table II)** | Small Ring = 01, 02, 04, 06<br>Solid Ring = 16 thru 24<br>Split Ring = 50 thru 72 | | | | | |
| **Attachment Length (inches)** | Example "-6" equals six inch length<br>Omit for attachment Type N (No Attachment) | | | | | |
| **Alternate Key Position (660-087 Only)** | Omit for plug connectors with standard "A" key position, for all other positions indicate B, C or D<br>Omit if ordering 660-088 receptacle cover | | | | | |

| Table I: Cover Style | |
|---|---|
|  |  |
| **660-088**<br>Receptacle Cover | **660-087**<br>Plug Cover |

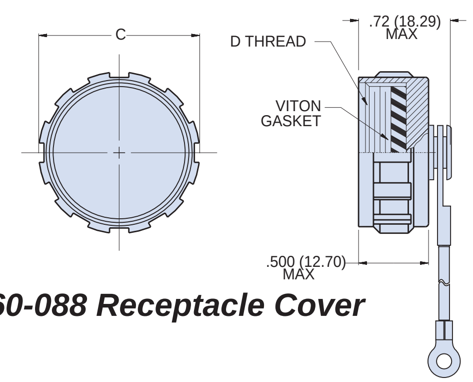




SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
660-088 and 660-087 IP68
Protective cover




**660-087 Plug Cover**

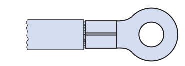
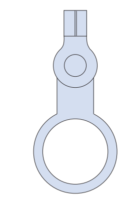
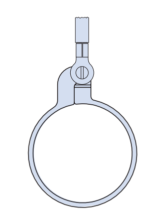
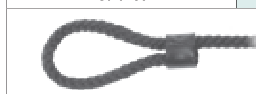



**660-088 Receptacle Cover**

| 660-087 & -088 Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | A Hex In. | A Hex mm. | B Thread Class 2A | Ø C Max. In. | Ø C Max. mm. | D Thread Class 2B |
| 5 | .500 | 12.70 | .438-28 UNEF | .59 | 15.0 | .438-28 UNEF |
| 6 | .625 | 15.88 | .562-20 UN | .72 | 18.3 | .562-20 UN |
| 7 | .688 | 17.48 | .625-20 UN | .78 | 19.8 | .625-20 UN |
| 8 | .750 | 19.05 | .687-20 UN | .84 | 21.3 | .687-20 UN |
| 9 | .812 | 20.62 | .750-20 UNEF | .90 | 22.9 | .750-20 UNEF |
| 10 | .875 | 22.23 | .812-20 UNEF | .97 | 24.6 | .812-20 UNEF |
| 12 | .938 | 23.83 | .875-20 UNEF | 1.03 | 26.2 | .875-20 UNEF |
| 14 | 1.125 | 28.58 | 1.062-20 UN | 1.22 | 31.0 | 1.062-20 UN |
| 15 | 1.188 | 30.18 | 1.125-20 UN | 1.28 | 32.5 | 1.125-20 UN |
| 21 | 1.562 | 39.67 | 1.438-20 UN | 1.61 | 40.9 | 1.438-20 UN |

## NOTES

*Materials and Finishes*
- Plug Cover: 316 stainless steel, passivated
- Receptacle Cover: marine bronze, unplated
- O-Ring: Viton rubber
- Gasket: Viton rubber
- Wire,Hardware: Stainless steel, passivated

| Table II: Attachment Options | | | | |
|---|---|---|---|---|
| | Attch. Code | Screw Size | Ring I.D. In. | Ring I.D. mm. |
|  Small Ring For Attaching Receptacle Covers to a Panel with a Screw | 01 | #4, M3 | .126 | 3.20 |
| | 02 | #6 | .145 | 3.68 |
| | 04 | #8, M4 | .188 | 4.78 |
| | 06 | #10 | .197 | 5.00 |
| | Attch. Code | Receptacle Cover Shell Size | Ring I.D. In. | Ring I.D. mm. |
|  Solid Ring for Attaching Receptacle Covers to Jam Nut Receptacles | 16 | 5 | .570 | 14.5 |
| | 17 | 6 | .635 | 16.1 |
| | 18 | 7 | .695 | 17.7 |
| | 19 | 8, 9, 10 | .885 | 22.5 |
| | 20 | 12 | 1.070 | 27.2 |
| | 21 | 14 | 1.135 | 28.8 |
| | 22 | 15 | 1.210 | 30.7 |
| | 24 | 21 | 1.530 | 38.9 |
| | Attch. Code | Max. Cable Dia. | Min. ID | |
|  Large Split Ring for Attaching Covers to Cables | 50 | .410 | .420 | 10.67 |
| | 52 | .470 | .480 | 12.19 |
| | 54 | .625 | .635 | 16.13 |
| | 56 | .735 | .745 | 18.92 |
| | 58 | .875 | .885 | 22.48 |
| | 60 | 1.000 | 1.010 | 25.65 |
| | 64 | 1.115 | 1.125 | 28.58 |
| | 68 | 1.335 | 1.345 | 34.16 |
| | 72 | 1.416 | 1.438 | 36.53 |
|  | Slip Knot (SK) for Attaching Covers to Cable | | | |

| Jam Nut Major Diameter Thread Reference | | | |
|---|---|---|---|
| Shell Size | Jam Nut Thread Major Dia. | Shell Size | Jam Nut Thread Major Dia. |
| 5 | .5000 | 10 | .8750 |
| 6 | .6250 | 12 | .9375 |
| 7 | .6875 | 14 | 1.1250 |
| 8 | .7500 | 15 | 1.1875 |
| 9 | .8125 | 21 | 1.5000 |

SUBSEA SHALLOW WATER: AQUAMOUSE™

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Dimensions in Inches (millimeters) are subject to change without notice.

# 667-241 and 667-242 3500 PSI Protective covers



**Protect Connectors From Damage** – These covers prevent ingress of water and contamination. Stainless steel plug covers feature Viton® O-rings for 3500 PSI sealing. Receptacle covers have a Viton® gasket and are made from marine bronze to minimize galling. For low-pressure IP68 receptacle sealing only, use part number 660-088.

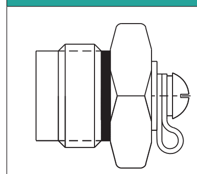
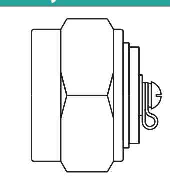
**Polyurethane-Coated SST Wire Rope** offers high strength, excellent abrasion resistance and good flexibility. Or, choose Fluoropolymer jacket for high temperature exposure.

**Braided Nylon Rope** provides excellent flexibility and good abrasion resistance, and can be ordered with slip knot fittings for easy installation on any size cable.

### How To Order

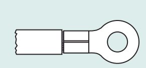
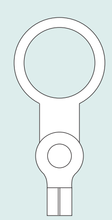
| Sample Part Number | 667-241 | -S | 6 | 03 | -6 |
|---|---|---|---|---|---|
| Series (See Table I) | 667-241 = Plug Cover<br>667-242 = Receptacle Cover | | | | |
| Attachment Type | -D = Bead Chain, Cres., Passivate<br>-F = Wire Rope, Nylon Jacket<br>-G = Nylon Rope<br>-H = SST Wire Rope, Fluoropolymer Jacket<br>-N = No Attachment<br>-R = Wire Rope, PVC Jacket<br>-S = SST Sash Chain<br>-T = SST Wire Rope, No Jacket<br>-U = SST Wire Rope, Polyurethane Jacket<br>"SST" = Stainless Steel | | | | |
| Shell Size | 5, 6, 7, 8, 9, 10, 12, 14, 15, 21 | | | | |
| Attachment Code (See Table II) | Small Ring = 01 thru 06<br>Solid Ring = 14 thru 33 | | | | |
| Attachment Length (inches) | Omit for attachment Type N (No Attachment) Example "-6" equals six inch length | | | | |

### Table I: Cover Style

|  |  |
|---|---|
| 667-241<br>High Pressure<br>Plug Cover | 667-242<br>High Pressure<br>Receptacle Cover |

### Table II: Attachment Code

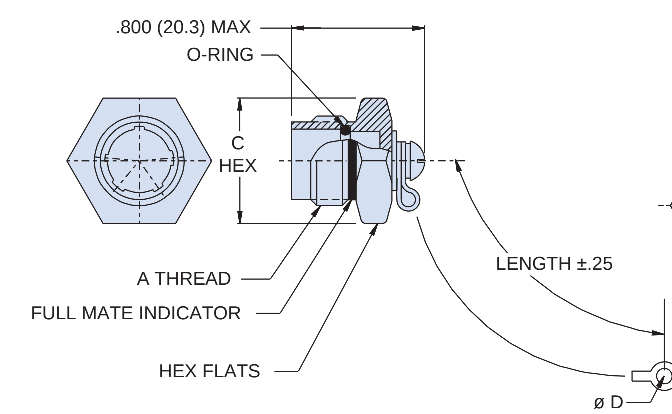
Omit for attachment Type **N** (No Attachment)

| | |
|---|---|
| <br>Small Ring | 01 – .125 (3.2) I.D.<br>02 – .140 (3.6) I.D.<br>04 – .182 (4.6) I.D.<br>06 – .197 (5.0) I.D. |
| <br>Solid Ring | 14 – .385 (9.8) I.D.<br>15 – .445 (11.3) I.D.<br>16 – .570 (14.5) I.D.<br>17 – .635 (16.1) I.D.<br>18 – .695 (17.7) I.D.<br>19 – .885 (22.5) I.D.<br>20 – 1.070 (27.2) I.D.<br>21 – 1.135 (28.8) I.D.<br>22 – 1.210 (30.7) I.D.<br>23 – 1.275 (32.4) I.D.<br>24 – 1.530 (38.9) I.D.<br>26 – .510 (13.0) I.D.<br>27 – .766 (19.5) I.D.<br>28 – 1.015 (25.8) I.D.<br>29 – .315 (8.0) I.D.<br>30 – 1.380 (35.1) I.D.<br>31 – .820 (20.8) I.D.<br>32 – .265 (6.7) I.D.<br>33 – .510 (13.0) I.D. |

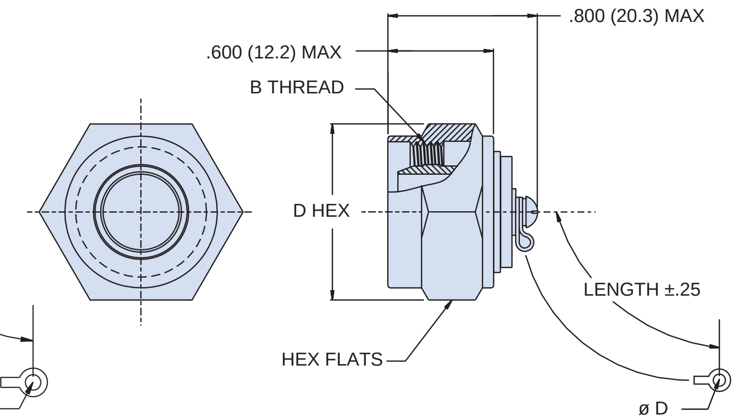




SERIES 802 2400M / 3500 PSI
Ultraminiature Subsea Connectors
667-241 and 667-242 3500 PSI
Protective covers




**667-241 High-Pressure Plug Cover**




**667-242 High-Pressure Receptacle Cover**

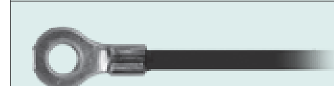
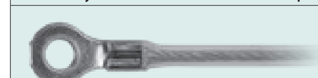
### 667-241 (Plug Cover) Dimensions

| Attachment Code | Shell Size | A Thread | C Hex. In. | C Hex. mm. |
|---|---|---|---|---|
| 32 | 5 | .4375-28 UNEF-2A | .500 | 12.70 |
| 14 | 6 | .5625-20 UN-2A | .625 | 15.88 |
| 33 | 7 | .6250-20 UN-2A | .688 | 17.48 |
| 16 | 8 | .6875-20 UN-2A | .750 | 19.05 |
| 17 | 9 | .7500-20 UNEF-2A | .812 | 20.62 |
| 17 | 10 | .8125 20 UNEF-2A | .875 | 22.23 |
| 18 | 12 | .8750-20 UNEF-2A | .938 | 23.83 |
| 19 | 14 | 1.0625-20 UN-2A | 1.125 | 28.58 |
| 26 | 15 | 1.1250-20 UN-2A | 1.188 | 30.18 |
| 23 | 21 | 1.4375-20 UN-2A | 1.562 | 39.67 |

### 667-242 (Receptacle Cover) Dimensions

| Attachment Code | Shell Size | B Thread | D Hex In. | D Hex mm. |
|---|---|---|---|---|
| 33 | 5 | .4375-28 UNEF-2B | .500 | 12.70 |
| 17 | 6 | .5625-20 UN-2B | .625 | 15.88 |
| 18 | 7 | .6250-20 UN-2B | .688 | 17.48 |
| 27 | 8 | .6875-20 UN-2B | .750 | 19.05 |
| 31 | 9 | .7500-20 UNEF-2B | .812 | 20.62 |
| 19 | 10 | .8125-20 UNEF-2B | .875 | 22.23 |
| 26 | 12 | .8750-20 UNEF-2B | .938 | 23.83 |
| 21 | 14 | 1.0625-20 UN-2B | 1.125 | 28.58 |
| 22 | 15 | 1.1250-20 UN-2B | 1.188 | 30.2 |
| 24 | 21 | 1.4375-20 UN-2B | 1.562 | 39.7 |

### Table V: Lanyard Options

| | |
|---|---|
| <br>Nylon Rope | -65° to +100°C., black, very flexible, very good abrasion resistance, good resistance to fuels, .120" (3mm) diameter |
| <br>Polyurethane Coated Wire Rope | Black polyurethane over stainless steel rope, -65° to +125°C., very flexible, excellent abrasion resistance, excellent resistance to fuels, .080" (2mm) diameter |
| <br>Fluoropolymer Jacketed Wire Rope | Translucent FEP jacket over stainless steel rope, -65° to +200°C., fair flexibility, good abrasion resistance, .100" diameter |
| <br>Sash Chain | Stainless steel, #8 chain, .240" (6mm) |

## NOTES

*Materials and Finishes*

- Plug Cover: 316 Stainless Steel
- Receptacle Cover: Nickel-Aluminum-Bronze.
- Receptacle Shell: 316 Stainless Steel
- Plug O-Ring: Viton
- Receptacle Gasket: Fluorosilicone

SUBSEA SHALLOW WATER: AQUAMOUSE™

Geo-Marine®

Glenair®

# Hermetic/high-pressure environmental connectors, tools and accessories - product selection guide








SERIES 22

# Geo-Marine®

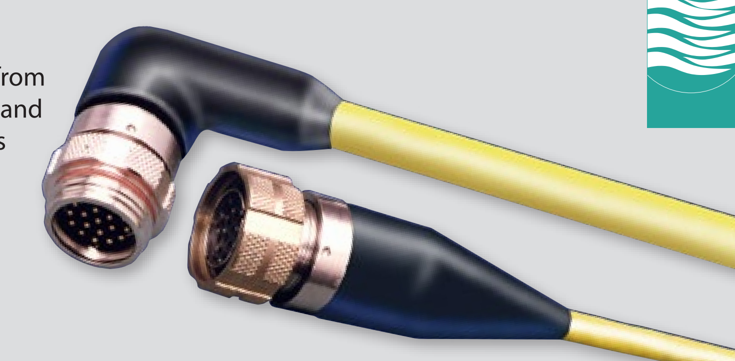
## High-pressure harsh-environment connectors and overmolded cables

## Applications

Designed for use in oceanographic, geophysical and other severe industrial environments, Glenair Series 22 Geo-Marine® Connectors and Cables are the ultimate harsh-environment power and signal connector solution. Built to withstand hydrostatic pressures up to 5,000 PSI and exposure to extreme temperatures and corrosives, the Series 22 Geo-Marine® is ideally suited for applications such as US Navy towed array sonar systems, military land vehicles, submersibles and ROV's, offshore-oil drilling equipment, seabed exploration, pipeline inspection systems, well monitoring equipment, and digital seismic streamers.

## Design

Geo-Marine® plugs are equipped with arctic coupling nuts—made from marine-grade naval bronze—with easy-to-grip castellated knurling and a powerful ratcheted anti-decoupling mechanism which guarantees reliable mating and demating performance in even the harshest environments. Supplied as discrete connectors—or more typically in build-to-print overmolded cable assemblies—the Series 22 Geo-Marine® has delivered reliable, proven performance for over four decades and is an excellent interconnect solution for high-pressure, harsh-environment applications.



Geo-Marine®

- **Marine Grade 316 stainless steel machined shells and Naval Bronze coupling rings**
- **High-pressure environmental and hermetically sealed receptacles for field applications**
- **Power and signal contact arrangements from 2 to 128 contacts**
- **Anti-vibration ratcheted coupling nuts with castellated knurling**
- **Available Viton® overmolded cable assemblies**

SUBSEA/SHALLOW WATER: GEO-MARINE®

# Hermetic/high-pressure environmental connectors



photo: Seismometer, geophysical observatory, Neumayer Station, Antarctica by Dr. Hannes Grobe

## Anti-Galling Arctic Coupling Nuts

One of the most valuable features of the Series 22 Geo-Marine® from the user's perspective is the specially-designed castellated and knurled coupling nut which facilitates rapid mating and demating in field applications. Single-start, stub Acme threads reduce thread fouling and binding, and are supplied with an anti-vibration/anti-decoupling device which prevents accidental loosening or decoupling. Plugs contribute to high-pressure sealing, up to 5,000 PSI in the mated condition, by means of rugged and durable interfacial and peripheral seals.

## Range of Offerings

Series 22 Geo-Marine® connectors are supplied with either fused-glass ("H" hermetic class–up to 5,000PSI open face rating) or high grade thermoplastic ("E" environmental class–5,000PSI in the mated condition) insulators. Both classes of connectors are supplied with rugged, corrosion-resistant materials. Low-profile and scoop-proof cable plugs and receptacles, as well as bulkhead feed-throughs are available. Specially-designed cable sealing backshells as well as EMI/RFI shield termination backshells and environmentally-sealed protective covers complete the range of discrete prduct offerings. 35 Contact Arrangements (contact sizes #12, #16, #20 and #22) are tooled and fully available.

**Receptacle Configurations:** High-pressure environmental ("E") and hermetic ("H") class receptacles are available for cable as well as box applications. Rugged o-ring piston seals located inside the receptacle barrel contribute to reliable high-pressure sealing in the mated condition. Glenair is able to supply Geo-Marine® customers with a wide range of receptacle configurations for unique requirements including low-profile and scoop-proof designs, pin and socket contact designs, solder cup and printed circuit board termination, unique flange shapes and mounting configurations, in-line cable receptacles, connector savers and gender changers.

## HIGH-PRESSURE ENVIRONMENTAL AND HERMETIC RECEPTACLE CONFIGURATIONS

Rear Panel Mount , Jam Nut

In-Line (CCP)

Square Flange (FCR)

Solder-Mount

Bulkhead Feed-Through







# Hermetic/high-pressure or environmental connectors - performance specifications



| Performance Specifications | |
|---|---|
| Hydrostatic Pressure Rating: | 5,000 PSI (fully mated) |
| Operating Temperature: | -65°C to +125°C |
| Durability: | 500 Cycles of mate/demate |
| Insulation Resistance: | 1000 Megohms minimum at 500 VDC |
| Class H Hermetic Receptacles | |
| Open-Face Pressure Rating | 1,000 to 5,000 PSI |
| Hermeticity | Less than 1 X $10^{-6}$ sccHe/second @ 1 atmosphere |

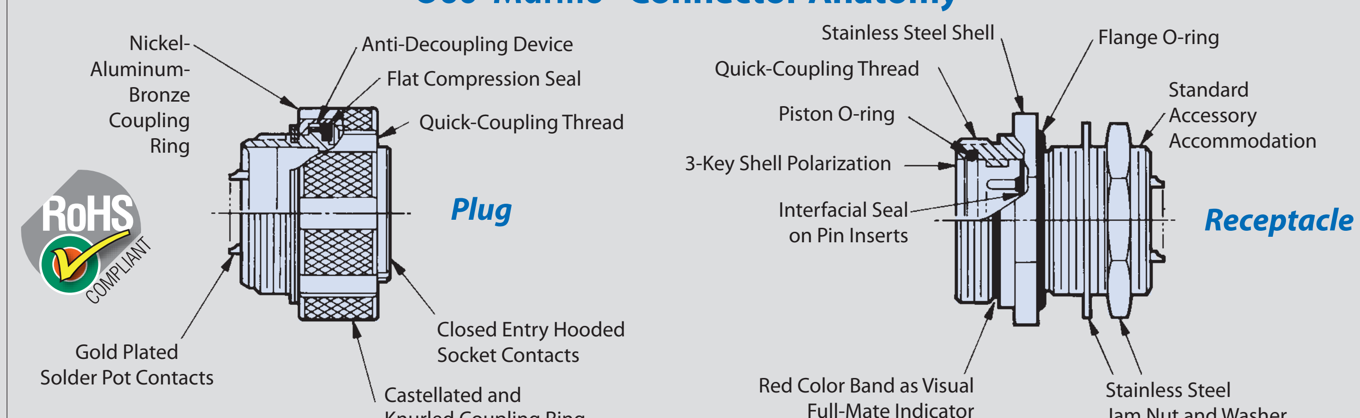
| Current Rating | | |
|---|---|---|
| Current Rating | Environmental | Hermetic |
| Size 22 Contact | 500 VDC, 5 amps | 500 VDC, 3 amps |
| Size 20 Contact | 500 VDC, 7.5 amps | 500 VDC, 5 amps |
| Size 16 Contact | 750 VDC, 13 amps | 750 VDC, 10 amps |
| Size 12 Contact | 750 VDC, 23 amps | 750 VDC, 17 amps |

| Service Rating | | | |
|---|---|---|---|
| Contact Size | Suggested Operational Voltage (Sea Level) | | Test Voltage (Sea Level) |
| | AC(RMS) | DC | |
| 22 GA | 400 | 550 | 1300 VDC |
| 20 GA | 600 | 850 | 1800 VDC |
| 16 GA | 900 | 1250 | 2300 VDC |
| 12 GA | 300 | 450 | 2300 VDC |

| Depth/Pressure Conversion | | | | | | | |
|---|---|---|---|---|---|---|---|
| Feet | Meters | P.S.I. | Bar | Feet | Meters | P.S.I. | Bar |
| 1 | .3 | .4 | .0296 | 1,000 | 304.8 | 433.0 | 29.8543 |
| 10 | 3.1 | 4.3 | .2965 | 1,500 | 457.2 | 649.5 | 44.7814 |
| 50 | 15.2 | 21.7 | 1.4962 | 2,500 | 762.0 | 1082.5 | 74.6357 |
| 100 | 30.5 | 43.3 | 2.9854 | 5,000 | 1524.0 | 2165.0 | 149.2715 |
| 250 | 76.2 | 108.3 | 7.4670 | 10,000 | 3048.0 | 4330.0 | 298.5430 |
| 500 | 152.4 | 216.5 | 14.9271 | 11,547 | 3519.35 | 5000.0 | 344.7379 |

| Cable/Wire D.C. Resistance | | | |
|---|---|---|---|
| Copper Conductors at Room Temperature | | | |
| AWG | Ohms per 1000 feet | AWG | Ohms per 1000 feet |
| 28 | 66.2 Max | 20 | 10.4 Max |
| 26 | 41.6 Max | 18 | 6.5 Max |
| 24 | 26.2 Max | 16 | 4.1 Max |
| 22 | 16.5 Max | 14 | 2.6 Max |
| | | 12 | 1.6 Max |

## Geo-Marine® Connector Anatomy



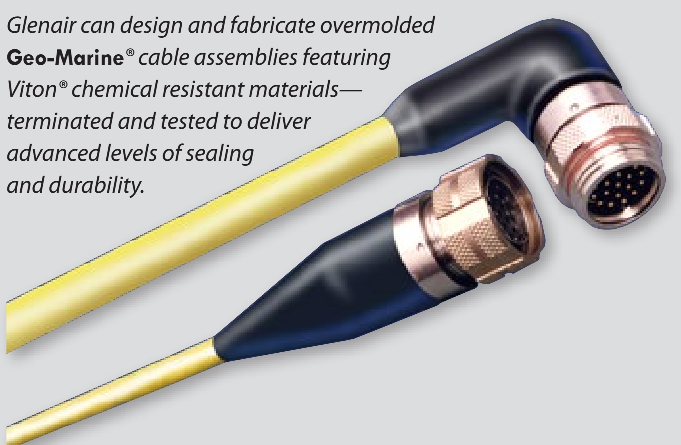
# Hermetic/high-pressure or environmental connectors - material and finish specifications

Geo-Marine®

**Geo-Marine**® is a registered trademark of Glenair, Inc.

| Materials/Potting | | |
|---|---|---|
| **Item** | **Material** | **Potting** |
| Connector Shells | CRS 316 SAE-AMS-QQ-S-763 | Stycast 2651/Catalyst 9 |
| Protective Covers | CRS 316 SAE-AMS-QQ-S-763 | |
| Solder Mount Receptacle | CRS 316 SAE-AMS-QQ-S-763 | |
| Plug Coupling Nut | Marine Bronze SAE AMS-4640 | |
| Molding Adapters and Backshells | See individual product pages | |
| Insulators, Class "E" | Epiall 1908, Diallyl Phthalate or Hysol CP2-4289 | |
| Insulators, Class "H" | Fused Vitreous Glass | |
| Contacts, Pin - Class "E" | Leaded Nickel Copper, CA 7021 | |
| Contacts, Pin - Class "H" | Nickel-Iron Alloy 52 - MIL-I-23011, Class 2 | |
| Contacts, Socket | Copper Alloy, CA7021 | |
| Contacts, Socket Hood | CRS, SAE-AMS-QQ-S-763 AISI 305 | |
| O-Rings | Nitrile (Buna-N) Rubber MIL-G-21569 | |
| Interfacial and Peripheral Seals | Flourosilicone Rubber MIL-DTL-25988 | |

*Glenair can design and fabricate overmolded* ***Geo-Marine***® *cable assemblies featuring Viton® chemical resistant materials—terminated and tested to deliver advanced levels of sealing and durability.*



| Caution |
|---|
| Electrical safety limits must be established by the user. Peak voltages, switching surges, transients, etc., should be used to determine the safety of application. |

## CATALOG NOTES

For all parts in this catalog:

- All parts will be identified with manufacturer's name and part number, space permitting.
- Glenair 600 series backshell assembly tools are recommended for assembly and installation.
- Electrical ratings are based on connectors only, not terminated to a cable or conductors, with proper cleaning and drying after hydrostatic testing.
- On all length callouts, tolerance is ± .060 unless otherwise specified.
- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only. Unless otherwise specified, the following other dimensional tolerances apply:

  .xx = ± .03 (0.8)
  .xxx = ± .015 (0.4)
  Lengths = ± .060 (1.52)
  Angles = ± 5°

SUBSEA/SHALLOW WATER: GEO-MARINE®



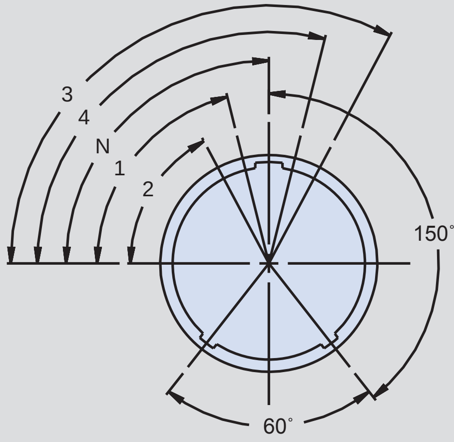


SERIES 22 5000M / 5000 PSI
Shallow Water Application
Glenair
Geo-Marine®

# Hermetic/high-pressure or environmental connectors - configuration options

## STANDARD AND CUSTOM CONTACT ARRANGEMENTS AND KEYWAY POSITIONS (POLARIZATION)

| Contact Arrangements | | | | | |
|---|---|---|---|---|---|
| | | Contact Size/Quantity | | | |
| **Shell Size** | **Series 22 Pattern** | **22** | **20** | **16** | **12** |
| 10 | 10-2 | | | 2 | |
| | 10-4 | | | 4 | |
| | 10-6 | | 6 | | |
| | 10-13 | 13 | | | |
| 12 | 12-8 | | | 8 | |
| | 12-10 | | 10 | | |
| | 12-22 | 22 | | | |
| 14 | 14-4 | | | | 4 |
| | 14-12 | | | 14 | |
| | 14-19 | | 19 | | |
| | 14-37 | 37 | | | |
| 16 | 16-6 | | | | 6 |
| | 16-19 | | | 19 | |
| | 16-26 | | 26 | | |
| | 16-55 | 55 | | | |
| 18 | 18-8 | | 8 | | |
| | 18-11 | | | 11 | |
| | 18-22 | | | 22 | |
| | 18-32 | | 32 | | |
| | 18-66 | 66 | | | |
| 20 | 20-11 | | | | 11 |
| | 20-30 | | | 30 | |
| | 20-38 | | 30 | 8 | |
| | 20-41 | | 41 | | |
| | 20-79 | 79 | | | |
| 22 | 22-19 | | | | 19 |
| | 22-38 | | | 38 | |
| | 22-50 | 48 | | | 2 |
| | 22-55 | | 55 | | |
| | 22-85 | 85 | | | |
| 24 | 24-24 | | | 12 | 12 |
| | 24-48 | | | 48 | |
| | 24-61 | | 61 | | |
| | 24-100 | 100 | | | |
| | 24-128 | 128 | | | |




FACE VIEW
RECEPTACLE

| Alternate Keyway Positions | | | | | |
|---|---|---|---|---|---|
| **Shell Size Desig.** | **N°** | **1°** | **2°** | **3°** | **4°** |
| 10 | 90 | 76 | 62 | 118 | 104 |
| 12 | 90 | 70 | 58 | 122 | 110 |
| 14 | 90 | 69 | 56 | 124 | 111 |
| 16 | 90 | 72 | 60 | 120 | 108 |
| 18 | 90 | 72 | 62 | 120 | 108 |
| 20 | 90 | 72 | 60 | 120 | 108 |
| 22 | 90 | 75 | 64 | 116 | 105 |
| 24 | 90 | 75 | 64 | 116 | 105 |

### Custom Contact Contact Arrangements

Series 22 inserts may be tooled for alternative contact Contact Arrangements including variably sized electrical contacts—from size 12 to 22—as well as hybrid arrangements incorporating fiber optic, Coax and other contact types. Glenair has produced hundreds of custom arrangements beyond those shown in this catalog. Please contact your local Glenair representative, or the factory, for assistance.

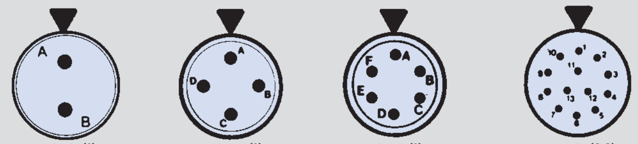
| Recommended Jam Nut Installation Torque Values | | |
|---|---|---|
| | Torque ± 5% | |
| **Shell Size** | **Inch - Lbs.** | **Newton - Meters** |
| 10 | 95 | 10.73 |
| 12 | 110 | 12.43 |
| 14 | 140 | 15.82 |
| 16 | 170 | 19.21 |
| 18 | 195 | 22.03 |
| 20 | 215 | 24.29 |
| 22 | 235 | 26.55 |
| 24 | 260 | 29.38 |

SUBSEA/SHALLOW WATER: GEO-MARINE®

# Hermetic/High-pressure or Environmental Connectors - Table I, Contact Arrangments

**Table I, Face View of Pin Inserts Illustrated - Service Ratings Indicated in Parentheses**

## 10

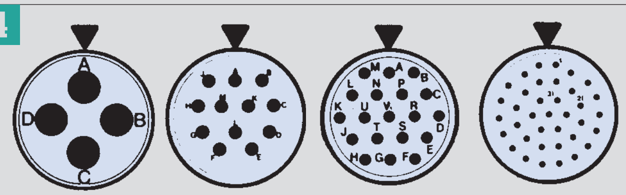


10-2 (I) | 10-4 (I) | 10-6 (I) | 10-13 (M)

## 12

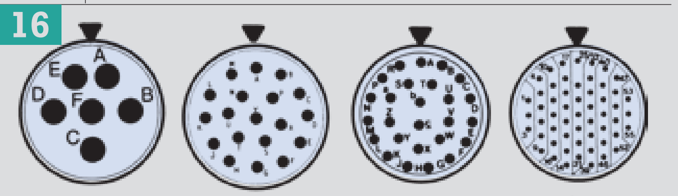
12-8 (I) | 12-10 (I) | 12-22 (M)

## 14



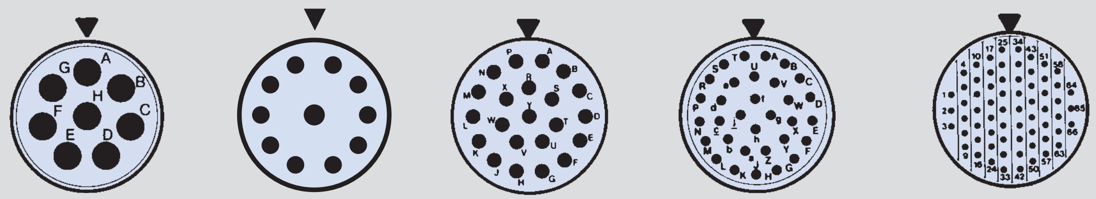
14-4 (I) | 14-12 (II) | 14-19 (I) | 14-37 (M)

## 16



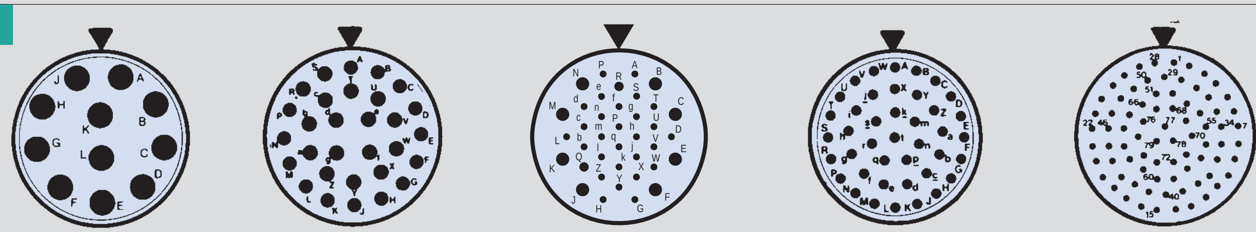
16-6 (I) | 16-19 (II) | 16-26 (I) | 16-55 (M)

## 18



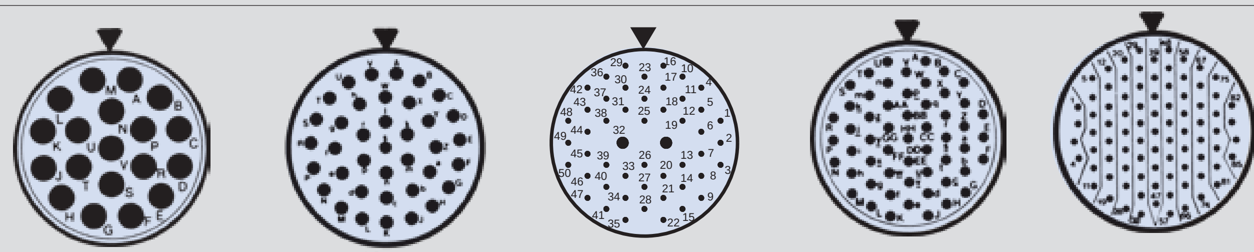
18-8 (I) | 18-11 (II) | 18-22 (II) | 18-32 (I) | 18-66 (M)

## 20



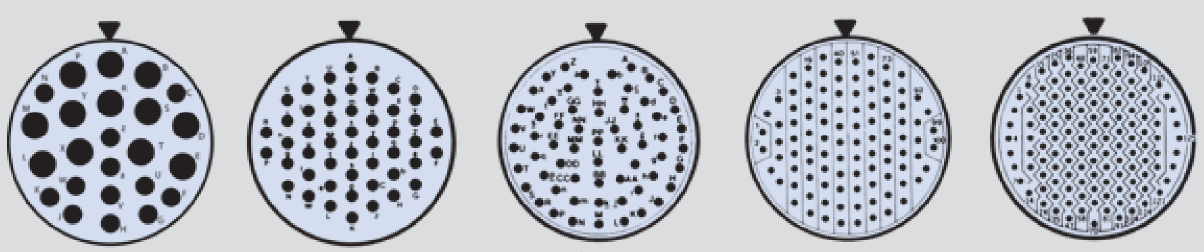
20-11 (I) | 20-30 (II) | 20-38 (I) | 20-41 (I) | 20-79 (M)

## 22



22-19 (I) | 22-38 (II) | 22-50 (M) | 22-55 (I) | 22-85 (M)

## 24



24-24 (I) | 24-48 (I) | 24-61 (I) | 24-100 (M) | 24-128 (M)



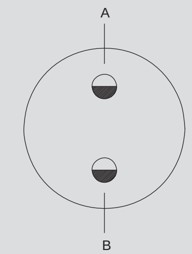




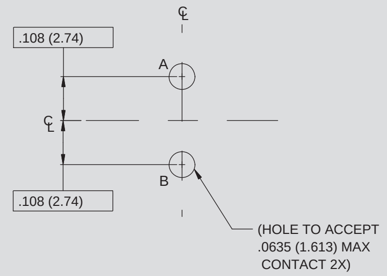
Geo-Marine®
SERIES 22 5000M / 5000 PSI
Shallow Water Application
Glenair

# Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 10

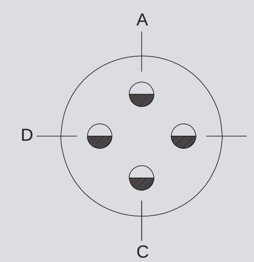
**Size 10 - Viewed from Connector Mounting Side, Pin Face**



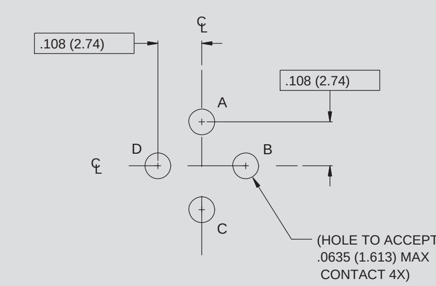

Insert Arrangement
10-2
2 #16 Contacts



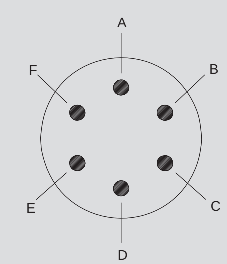

Pin Connector



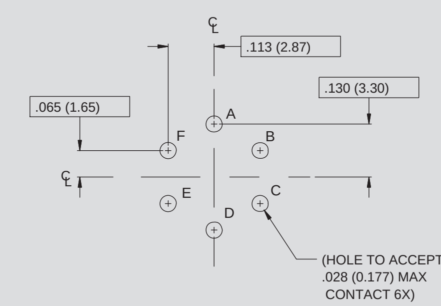

Insert Arrangement
10-4
4 #16 Contacts



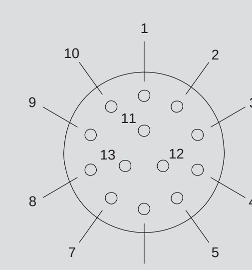

Pin Connector



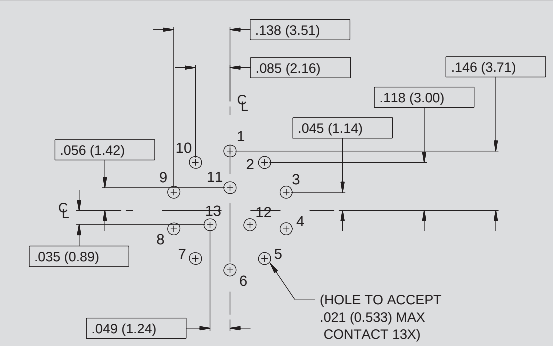

Insert Arrangement
10-6
6 #20 Contacts




Pin Connector




Insert Arrangement
10-13
13 #22 Contacts

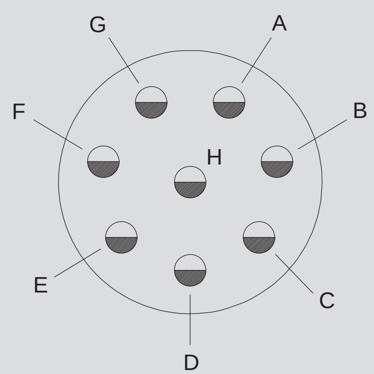



Pin Connector

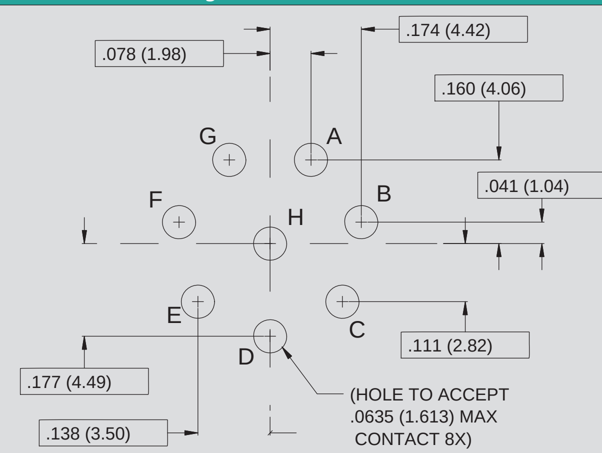
SUBSEA/SHALLOW WATER: GEO-MARINE®

# Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 12

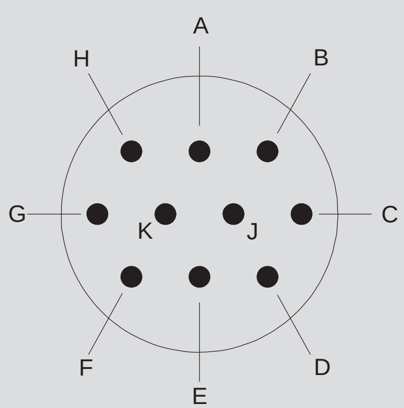
## Size 12 - Viewed from Connector Mounting Side, Pin Face



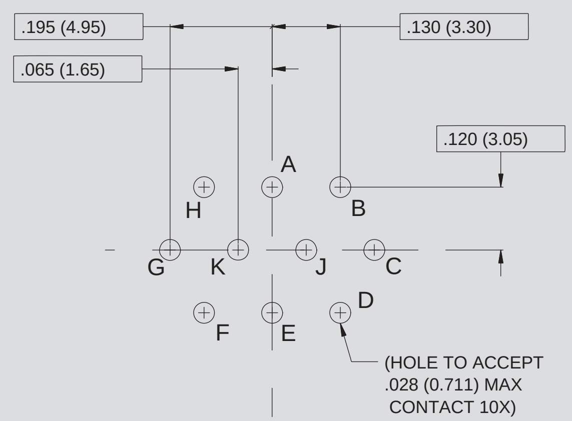

Insert Arrangement
12-08
8 #16 Contacts



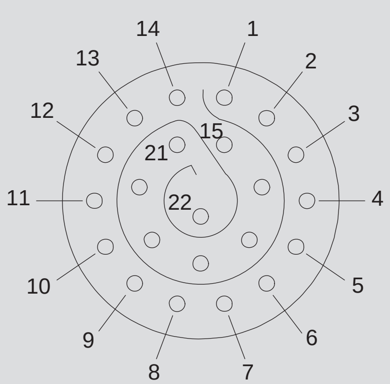

Pin Connector



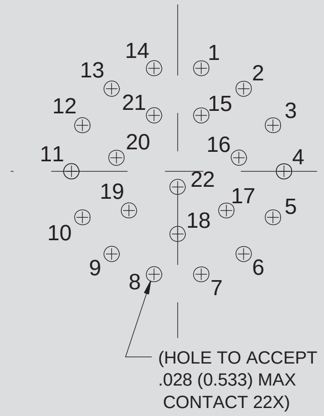

Insert Arrangement
12-10
10 #20 Contacts




Pin Connector




Insert Arrangement
12-22
22 #22 Contacts




Pin Connector

| I.D. NO. | X | Y |
|---|---|---|
| | In. mm. | In. mm. |
| 1 | .045 (1.14) | .197 (5.00) |
| 2 | .126 (3.20) | .158 (4.01) |
| 3 | .182 (4.62) | .088 (2.23) |
| 4 | .203 (5.15) | .000 (.000) |
| 5 | .182 (4.62) | -.088 (2.23) |
| 6 | .126 (3.20) | -.158 (-4.01) |
| 7 | .045 (1.14) | -.197 (-5.00) |
| 8 | -.045 (-1.14) | -.197 (-5.00) |
| 9 | -.126 (-3.20) | -.158 (-4.01) |
| 10 | -.182 (-4.62) | -.088 (-2.23) |
| 11 | -.203 (-5.15) | .000 (.000) |
| 12 | -.182 (-4.62) | .088 (2.23) |
| 13 | -.126 (-3.20) | .158 (4.01) |
| 14 | -.045 (-1.14) | .197 (5.00) |
| 15 | .045 (1.14) | .107 (2.72) |
| 16 | .117 (2.97) | .026 (0.660) |
| 17 | .093 (2.36) | -.075 (-1.90) |
| 18 | .000 (.000) | -.120 (-3.05) |
| 19 | -.093 (-2.36) | -.075 (-1.90) |
| 20 | -.117 (-2.97) | .026 (0.660) |
| 21 | -.045 (-1.14) | .107 (2.72) |
| 22 | .000 (.000) | -.030 (-0.762) |

SUBSEA/SHALLOW WATER: GEO-MARINE®

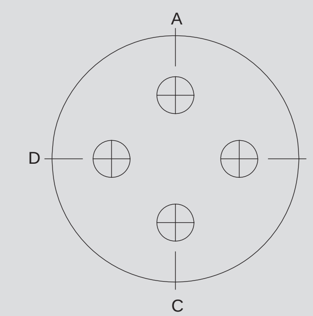




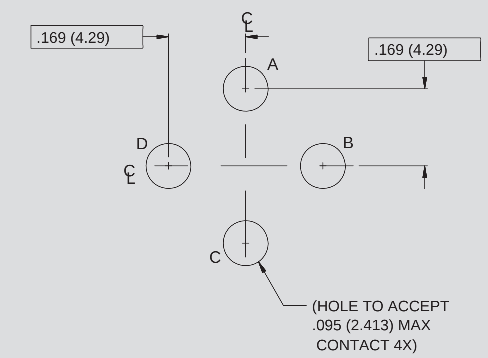
SERIES 22 5000M / 5000 PSI
Shallow Water Application

# Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 14

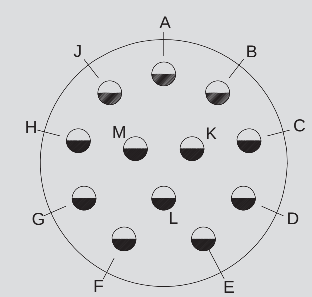
## Size 14 - Viewed from Connector Mounting Side, Pin Face



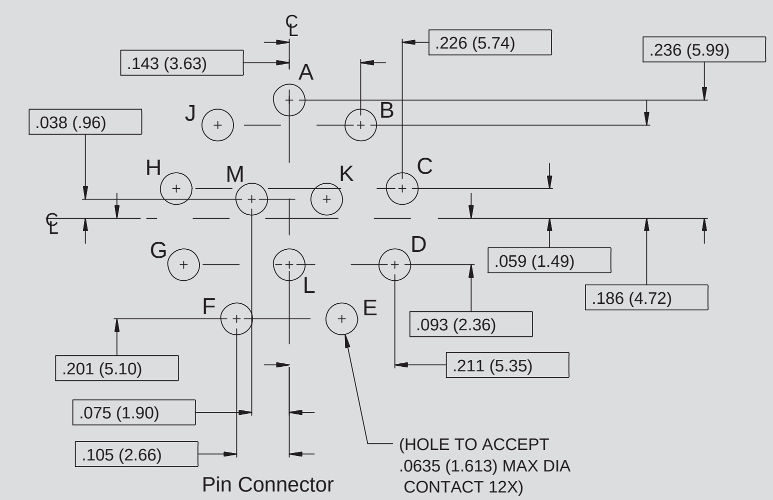

Insert Arrangement
14-4
4 #12 Contacts



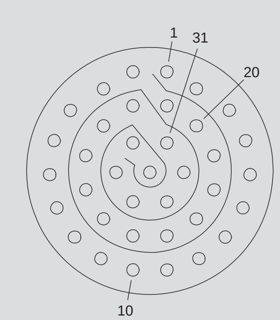

Pin Connector



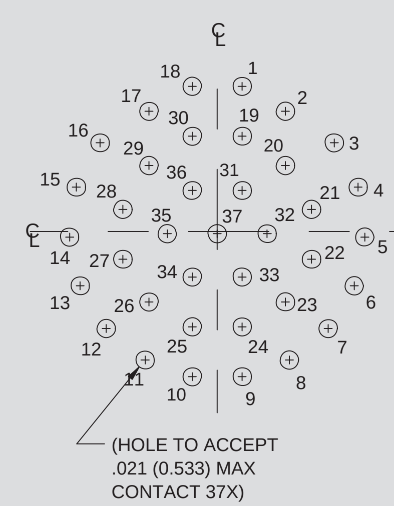

Insert Arrangement
14-12
12 #16 Contacts




Pin Connector




Insert Arrangement
14-37
37 #22 Contacts




Pin Connector

| I.D. NO. | X | Y | I.D. NO. | X | Y |
|---|---|---|---|---|---|
| | In. mm | In. mm | | In. mm | In. mm |
| 1 | .045 (1.14) | .262 (6.65) | 20 | .123 (3.12) | .119 (3.02) |
| 2 | .123 (3.12) | .217 (5.51) | 21 | .170 (4.31) | .040 (1.02) |
| 3 | .211 (5.35) | .160 (4.06) | 22 | .170 (4.31) | -.050 (-1.27) |
| 4 | .254 (6.45) | .080 (2.03) | 23 | .123 (3.12) | -.127 (-3.22) |
| 5 | .266 (6.75) | -.010 (-0.25) | 24 | .045 (1.14) | -.172 (-4.36) |
| 6 | .247 (6.27) | -.098 (-2.48) | 25 | -.045 (-1.14) | -.172 (-4.36) |
| 7 | .200 (5.08) | -.175 (-4.44) | 26 | -.123 (-3.12) | -.127 (-3.22) |
| 8 | .130 (3.30) | -.232 (-5.89) | 27 | -.170 (-4.31) | -.050 (-1.27) |
| 9 | .045 (1.14) | -.262 (-6.65) | 28 | -.170 (-4.31) | .040 (1.02) |
| 10 | -.045 (-1.14) | -.262 (-6.65) | 29 | -.123 (-3.12) | .119 (3.02) |
| 11 | -.130 (-3.30) | -.232 (-5.89) | 30 | -.045 (-1.14) | .172 (4.36) |
| 12 | -.200 (-5.08) | -.175 (-4.44) | 31 | .045 (1.14) | .074 (1.87) |
| 13 | -.247 (-6.27) | -.098 (-2.48) | 32 | .090 (2.28) | -.004 (-0.10) |
| 14 | -.266 (-6.75) | -.010 (-0.25) | 33 | .045 (1.14) | -.082 (-2.08) |
| 15 | -.254 (-6.45) | .080 (2.03) | 34 | -.045 (-1.14) | -.082 (-2.08) |
| 16 | -.211 (-5.35) | .160 (4.06) | 35 | -.090 (-2.28) | -.004 (-0.10) |
| 17 | -.123 (-3.12) | .217 (5.51) | 36 | -.045 (-1.14) | .074 (1.87) |
| 18 | -.045 (-1.14) | .262 (6.65) | 37 | .000 (0.00) | -.004 (-0.10) |
| 19 | .045 (1.14) | .172 (4.36) | | | |

SUBSEA/SHALLOW WATER: GEO-MARINE®

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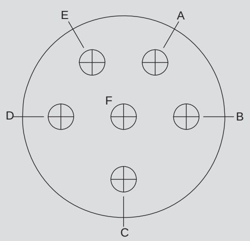
Dimensions in Inches (millimeters) are subject to change without notice.

# Shallow Water Application

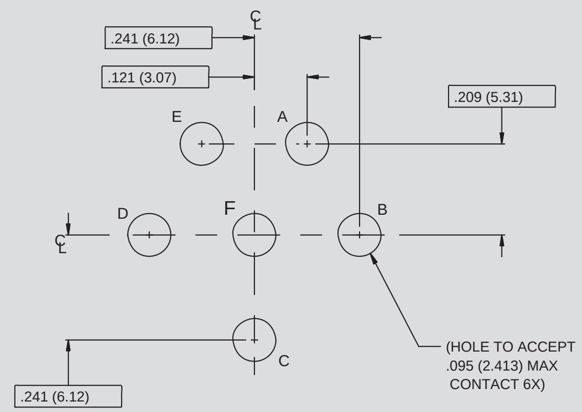
## Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 16



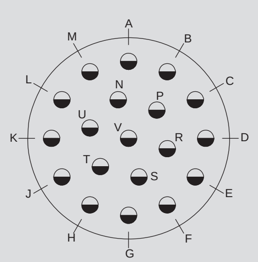
### Size 16 - Viewed from Connector Mounting Side, Pin Face



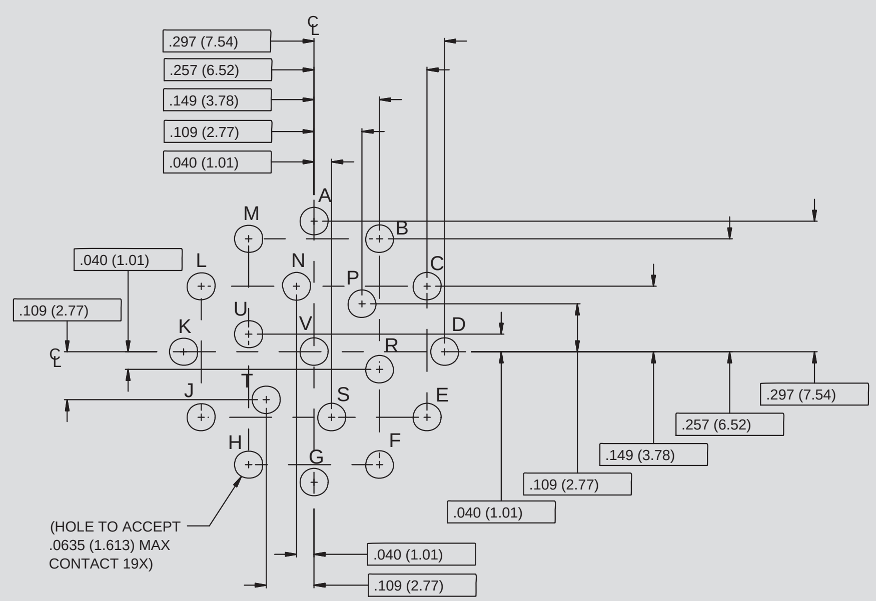
Insert Arrangement
16-6
6 #12 Contacts



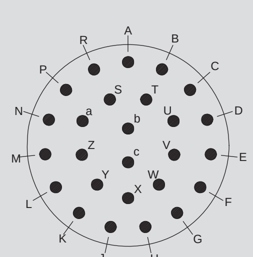

Pin Connector



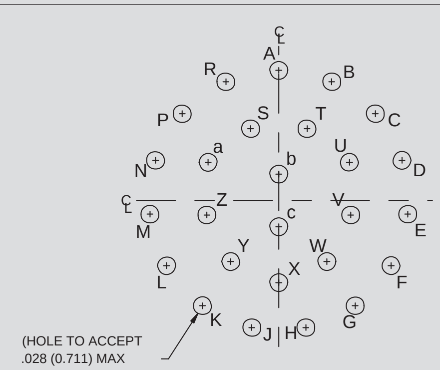
Insert Arrangement
16-19
19 #16 Contacts




Pin Connector



Insert Arrangement
16-26
26 #20 Contacts




Pin Connector

| I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm |
|---|---|---|---|---|---|
| A | .000 (0.00) | .321 (81.53) | P | -.239 (-6.07) | .214 (5.43) |
| B | .131 (3.32) | .293 (7.44) | R | -.131 (-3.32) | .293 (7.44) |
| C | .239 (6.07) | .214 (5.43) | S | -.070 (-1.77) | .177 (4.49) |
| D | .305 (7.74) | .099 (2.51) | T | .070 (1.77) | .177 (4.49) |
| E | .319 (8.10) | -.034 (-0.86) | U | .175 (4.44) | .094 (2.38) |
| F | .278 (7.06) | -.161 (-4.08) | V | .178 (4.52) | -.036 (-0.91) |
| G | .189 (4.80) | -.260 (-6.60) | W | .119 (3.02) | -.151 (-3.83) |
| H | .067 (1.70) | -.314 (-7.97) | X | .000 (0.00) | -.203 (-5.15) |
| J | -.067 (-1.70) | -.314 (-7.97) | Y | -.119 (-3.02) | -.151 (-3.83) |
| K | -.189 (-4.80) | -.260 (-6.60) | Z | -.178 (-4.52) | -.036 (-0.91) |
| L | -.278 (-7.06) | -.161 (-4.08) | a | -.175 (-4.44) | .094 (2.38) |
| M | -.319 (-8.10) | -.034 (-0.86) | b | .000 (0.00) | .065 (1.65) |
| N | -.305 (-7.74) | .099 (2.51) | c | .000 (0.00) | -.065 (-1.65) |



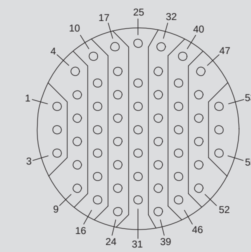



# Shallow Water Application

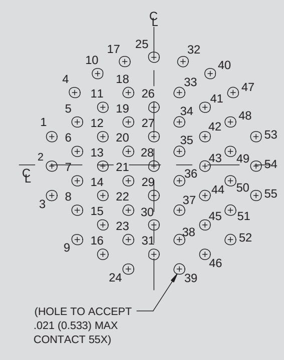
## Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 16 and 18



### Size 16 (continued) - Viewed fromConnector Mounting Side, Pin Face



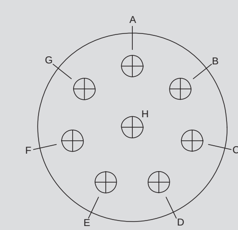
Insert Arrangement
16-55
55 #22 Contacts



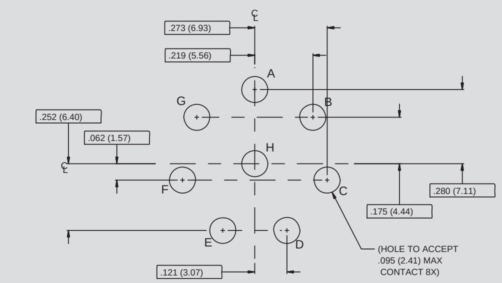

Pin Connector

| I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm |
|---|---|---|---|---|---|---|---|---|
| 1 | -.312 (-7.92) | .086 (2.18) | 20 | -.078 (-1.98) | .041 (1.04) | 39 | .078 (1.98) | -.319 (-8.10) |
| 2 | -.312 (-7.92) | -.004 (-0.10) | 21 | -.078 (-1.98) | -.049 (-1.24) | 40 | .172 (4.36) | .279 (7.08) |
| 3 | -.312 (-7.92) | -.094 (-2.38) | 22 | -.078 (-1.98) | -.139 (-3.53) | 41 | .156 (3.96) | .176 (4.47) |
| 4 | -.242 (-6.14) | .221 (5.61) | 23 | -.078 (-1.98) | -.229 (-5.81) | 42 | .156 (3.96) | .086 (2.18) |
| 5 | -.234 (-5.94) | .131 (3.32) | 24 | -.078 (-1.98) | -.319 (-8.10) | 43 | .156 (3.96) | -.004 (-0.10) |
| 6 | -.234 (-5.94) | .041 (1.04) | 25 | .000 (0.00) | .329 (8.35) | 44 | .156 (3.96) | -.094 (-2.38) |
| 7 | -.234 (-5.94) | -.049 (-1.24) | 26 | .000 (0.00) | .176 (4.47) | 45 | .156 (3.96) | -.184 (-4.67) |
| 8 | -.234 (-5.94) | -.139 (-3.53) | 27 | .000 (0.00) | .086 (2.18) | 46 | .156 (3.96) | -.274 (-6.95) |
| 9 | -.234 (-5.94) | -.229 (-5.81) | 28 | .000 (0.00) | -.004 (-0.10) | 47 | .242 (6.14) | .221 (5.61) |
| 10 | -.172 (-4.36) | .279 (7.08) | 29 | .000 (0.00) | -.094 (-2.38) | 48 | .234 (5.94) | .131 (3.32) |
| 11 | -.156 (-3.96) | .176 (4.47) | 30 | .000 (0.00) | -.184 (-4.67) | 49 | .234 (5.94) | .041 (1.04) |
| 12 | -.156 (-3.96) | .086 (2.18) | 31 | .000 (0.00) | -.274 (-6.95) | 50 | .234 (5.94) | -.049 (-1.24) |
| 13 | -.156 (-3.96) | -.004 (-0.10) | 32 | .089 (2.26) | .316 (8.02) | 51 | .234 (5.94) | -.139 (-3.53) |
| 14 | -.156 (-3.96) | -.094 (-2.38) | 33 | .078 (1.98) | .221 (5.61) | 52 | .234 (5.94) | -.229 (-5.81) |
| 15 | -.156 (-3.96) | -.184 (-4.67) | 34 | .078 (1.98) | .131 (3.32) | 53 | .312 (7.92) | .086 (2.18) |
| 16 | -.156 (-3.96) | -.274 (-6.95) | 35 | .078 (1.98) | .041 (1.04) | 54 | .312 (7.92) | -.004 (-0.10) |
| 17 | -.089 (-2.26) | .316 (8.02) | 36 | .078 (1.98) | -.049 (-1.24) | 55 | .312 (7.92) | -.094 (-2.38) |
| 18 | -.078 (-1.98) | .221 (5.61) | 37 | .078 (1.98) | -.139 (-3.53) | | | |
| 19 | -.078 (-1.98) | .131 (3.32) | 38 | .078 (1.98) | -.229 (-5.81) | | | |

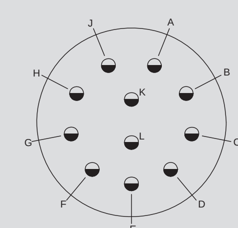
### Size 18 - Viewed fromConnector Mounting Side, Pin Face



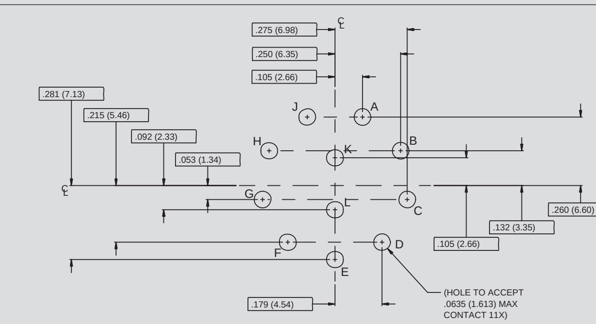
Insert Arrangement
18-8
8 #12 Contacts



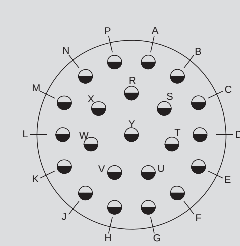

Pin Connector



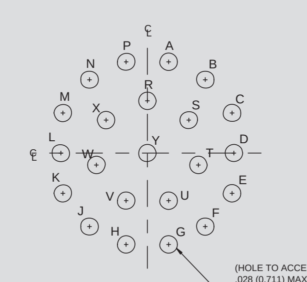
Insert Arrangement
18-11
11 #16 Contacts




Pin Connector



Insert Arrangement
18-22
22 #16 Contacts




Pin Connector

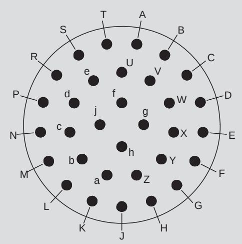
| I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm |
|---|---|---|---|---|---|
| A | .077 (1.95) | .332 (8.43) | M | -.307 (-7.79) | .146 (3.70) |
| B | .210 (5.33) | .267 (6.78) | N | -.210 (-5.33) | .267 (6.78) |
| C | .307 (7.79) | .146 (3.70) | P | -.077 (-1.95) | .332 (8.43) |
| D | .341 (8.66) | .000 (0.00) | R | .000 (0.00) | .190 (4.82) |
| E | .307 (7.79) | -.146 (-3.70) | S | .150 (3.81) | .120 (3.04) |
| F | .210 (5.33) | -.267 (-6.78) | T | .185 (4.69) | -.043 (-1.09) |
| G | .077 (1.95) | -.332 (-8.43) | U | .077 (1.95) | -.173 (-4.39) |
| H | -.077 (-1.95) | -.332 (-8.43) | V | -.077 (-1.95) | -.173 (-4.39) |
| J | -.210 (-5.33) | -.267 (-6.78) | W | -.185 (-4.69) | -.043 (-1.09) |
| K | -.307 (-7.79) | -.146 (-3.70) | X | -.150 (-3.81) | .120 (3.04) |
| L | -.341 (-8.66) | .000 (0.00) | Y | .000 (0.00) | .000 (0.00) |

# Shallow Water Application

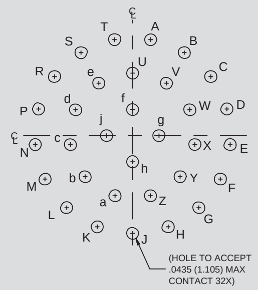
## Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 18 and 20



### Size 18 (continued) - Viewed fromConnector Mounting Side, Pin Face

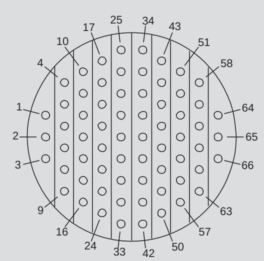


Insert Arrangement
18-32
32 #20 Contacts

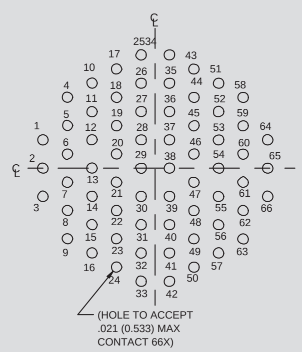



Pin Connector

| I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm |
|---|---|---|---|---|---|---|---|---|
| A | .066 (1.67) | .353 (8.96) | N | -.357 (-9.06) | -.033 (-0.83) | a | -.065 (-1.65) | -.221 (-5.61) |
| B | .189 (4.80) | .305 (7.74) | P | -.345 (-8.76) | .098 (2.48) | b | -.174 (-4.41) | -.151 (-3.83) |
| C | .286 (7.26) | .217 (5.51) | R | -.286 (-7.26) | .217 (5.51) | c | -.228 (-5.79) | -.033 (-0.83) |
| D | .345 (8.76) | .098 (2.48) | S | -.189 (-4.80) | .305 (7.74) | d | -.209 (-5.30) | .095 (2.41) |
| E | .357 (9.06) | -.033 (-0.83) | T | -.066 (-1.67) | .353 (8.96) | e | -.124 (-3.14) | .193 (4.90) |
| F | .321 (8.15) | -.160 (-4.06) | U | .000 (0.00) | .230 (5.84) | f | .000 (0.00) | .096 (2.43) |
| G | .242 (6.14) | -.265 (-6.73) | V | .124 (3.14) | .193 (4.90) | g | .096 (2.43) | .000 (0.00) |
| H | .130 (3.30) | -.335 (-8.50) | W | .209 (5.30) | .095 (2.41) | h | .000 (0.00) | -.096 (-2.43) |
| J | .000 (0.00) | -.359 (-9.11) | X | .228 (5.79) | -.033 (-0.83) | j | -.096 (-2.43) | .000 (0.00) |
| K | -.130 (-3.30) | -.335 (-8.50) | Y | .174 (4.41) | -.151 (-3.83) | | | |
| L | -.242 (-6.14) | -.265 (-6.73) | Z | .065 (1.65) | -.221 (-5.61) | | | |
| M | -.321 (-8.15) | -.160 (-4.06) | | | | | | |



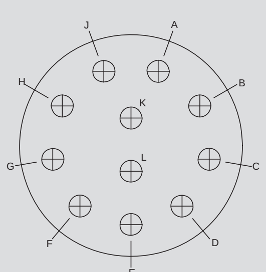
Insert Arrangement
18-66
66 #22 Contacts



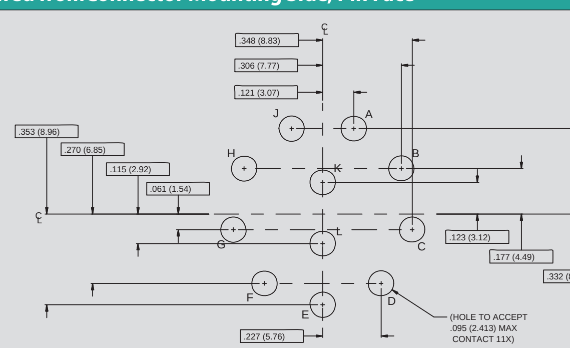

Pin Connector

| I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm |
|---|---|---|---|---|---|---|---|---|
| 1 | -.357 (-9.06) | .090 (2.28) | 23 | -.123 (-3.12) | -.225 (-5.71) | 45 | .123 (3.12) | .135 (3.42) |
| 2 | -.357 (-9.06) | .000 (0.00) | 24 | -.123 (-3.12) | -.315 (-8.00) | 46 | .123 (3.12) | .045 (1.14) |
| 3 | -.357 (-9.06) | -.090 (-2.28) | 25 | -.045 (-1.14) | .360 (9.14) | 47 | .123 (3.12) | -.045 (-1.14) |
| 4 | -.279 (-7.08) | .225 (5.71) | 26 | -.045 (-1.14) | .270 (6.85) | 48 | .123 (3.12) | -.135 (-3.42) |
| 5 | -.279 (-7.08) | .135 (3.42) | 27 | -.045 (-1.14) | .180 (4.57) | 49 | .123 (3.12) | -.225 (-5.71) |
| 6 | -.279 (-7.08) | .045 (1.14) | 28 | -.045 (-1.14) | .090 (2.28) | 50 | .123 (3.12) | -.315 (-8.00) |
| 7 | -.279 (-7.08) | -.045 (-1.14) | 29 | -.045 (-1.14) | .000 (0.00) | 51 | .201 (5.10) | .270 (6.85) |
| 8 | -.279 (-7.08) | -.135 (-3.42) | 30 | -.045 (-1.14) | -.090 (-2.28) | 52 | .201 (5.10) | .180 (4.57) |
| 9 | -.279 (-7.08) | -.225 (-5.71) | 31 | -.045 (-1.14) | -.180 (-4.57) | 53 | .201 (5.10) | .090 (2.28) |
| 10 | -.201 (-5.10) | .270 (6.85) | 32 | -.045 (-1.14) | -.270 (-6.85) | 54 | .201 (5.10) | .000 (0.00) |
| 11 | -.201 (-5.10) | .180 (4.57) | 33 | -.045 (-1.14) | -.360 (-9.14) | 55 | .201 (5.10) | -.090 (-2.28) |
| 12 | -.201 (-5.10) | .090 (2.28) | 34 | .045 (1.14) | .360 (9.14) | 56 | .201 (5.10) | -.180 (-4.57) |
| 13 | -.201 (-5.10) | .000 (0.00) | 35 | .045 (1.14) | .270 (6.85) | 57 | .201 (5.10) | -.270 (-6.85) |
| 14 | -.201 (-5.10) | -.090 (-2.28) | 36 | .045 (1.14) | .180 (4.57) | 58 | .279 (7.08) | .225 (5.71) |
| 15 | -.201 (-5.10) | -.180 (-4.57) | 37 | .045 (1.14) | .090 (2.28) | 59 | .279 (7.08) | .135 (3.42) |
| 16 | -.201 (-5.10) | -.270 (-6.85) | 38 | .045 (1.14) | .000 (0.00) | 60 | .279 (7.08) | .045 (1.14) |
| 17 | -.123 (-3.12) | .315 (8.00) | 39 | .045 (1.14) | -.090 (-2.28) | 61 | .279 (7.08) | -.045 (-1.14) |
| 18 | -.123 (-3.12) | .225 (5.71) | 40 | .045 (1.14) | -.180 (-4.57) | 62 | .279 (7.08) | -.135 (-3.42) |
| 19 | -.123 (-3.12) | .135 (3.42) | 41 | .045 (1.14) | -.270 (-6.85) | 63 | .279 (7.08) | -.225 (-5.71) |
| 20 | -.123 (-3.12) | .045 (1.14) | 42 | .045 (1.14) | -.360 (-9.14) | 64 | .357 (9.06) | .090 (2.28) |
| 21 | -.123 (-3.12) | -.045 (-1.14) | 43 | .123 (3.12) | .315 (8.00) | 65 | .357 (9.06) | .000 (0.00) |
| 22 | -.123 (-3.12) | -.135 (-3.42) | 44 | .123 (3.12) | .225 (5.71) | 66 | .357 (9.06) | -.090 (-2.28) |

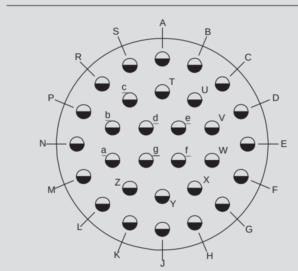
### Size 20 - Viewed fromConnector Mounting Side, Pin Face



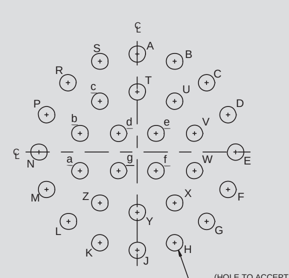
Insert Arrangement
20-11
11 #12 Contacts




Pin Connector



Insert Arrangement
20-30
30 #16 Contacts




Pin Connector

| I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm |
|---|---|---|---|---|---|---|---|---|
| A | .000 (0.00) | .399 (10.13) | L | -.282 (-7.16) | -.282 (-7.16) | X | .152 (3.86) | -.207 (-5.25) |
| B | .152 (3.86) | .369 (9.37) | M | -.369 (-9.37) | -.152 (-3.86) | Y | .000 (0.00) | -.245 (-6.22) |
| C | .282 (7.16) | .282 (7.16) | N | -.400 (-10.16) | .000 (0.00) | Z | -.152 (-3.86) | -.207 (-5.25) |
| D | .369 (9.37) | .152 (3.86) | P | -.369 (-9.37) | .152 (3.86) | a | -.233 (-5.91) | -.076 (-1.93) |
| E | .400 (10.16) | .000 (0.00) | R | -.282 (-7.16) | .282 (7.16) | b | -.233 (-5.91) | .076 (1.93) |
| F | .369 (9.37) | -.152 (-3.86) | S | -.152 (-3.86) | .369 (9.37) | c | -.152 (-3.86) | .207 (5.25) |
| G | .282 (7.16) | -.282 (-7.16) | T | .000 (0.00) | .245 (6.22) | d | -.076 (-1.93) | .076 (1.93) |
| H | .152 (3.86) | -.369 (-9.37) | U | .152 (3.86) | .207 (5.25) | e | .076 (1.93) | .076 (1.93) |
| J | .000 (0.00) | -.399 (-10.13) | V | .233 (5.91) | .076 (1.93) | f | .076 (1.93) | -.076 (-1.93) |
| K | -.152 (-3.86) | -.369 (-9.37) | W | .233 (5.91) | -.076 (-1.93) | g | -.076 (-1.93) | -.076 (-1.93) |





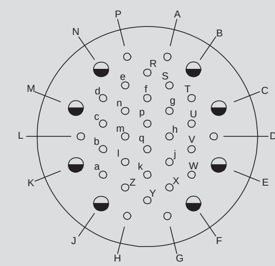


# Shallow Water Application

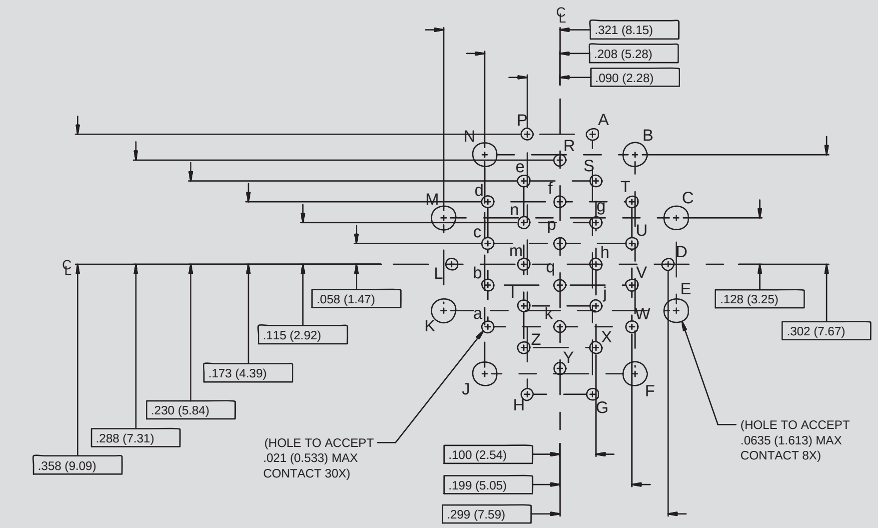
## Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 20



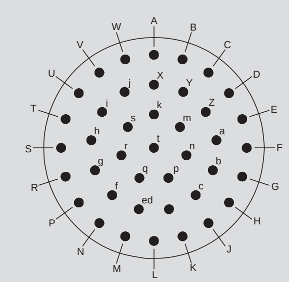
### Size 20 Viewed from Connector Mounting Side, Pin Face



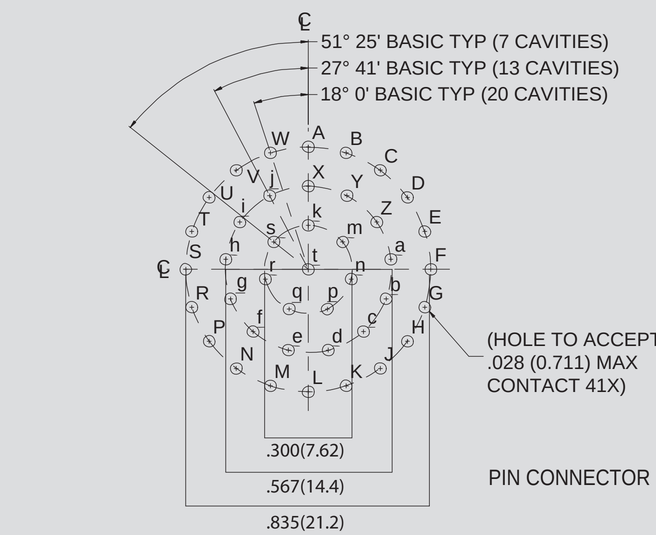
Insert Arrangement
20-38
8 #16 Contacts
30 #22 Contacts



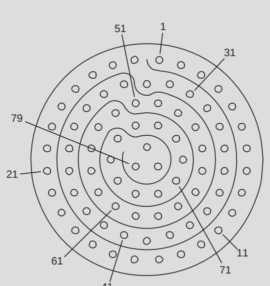

Pin Connector



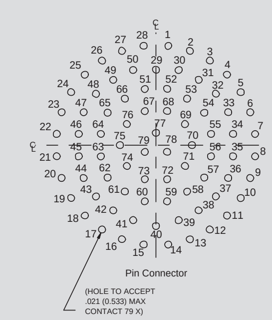
Insert Arrangement
20-41
41 #20 Contacts




PIN CONNECTOR



Insert Arrangement
20-79
79 #22 Contacts



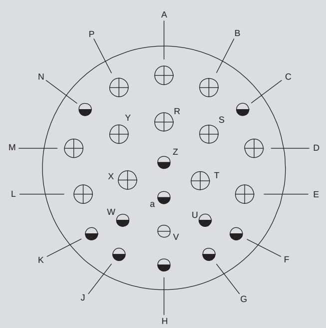

Pin Connector

| I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm | I.D. NO | X In. mm | Y In. mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .053 (1.35) | .426 (10.82) | 21 | -.427 (-10.84) | -.048 (-1.22) | 41 | -.098 (-2.48) | -.322 (-8.18) | 61 | -.134 (-3.40) | -.199 (-5.05) |
| 2 | .146 (3.71) | .404 (10.26) | 22 | -.427 (-10.84) | .048 (1.22) | 42 | -.184 (-4.67) | -.280 (7.11) | 62 | -.208 (-5.28) | -.139 (-3.53) |
| 3 | .232 (5.89) | .362 (9.19) | 23 | -.406 (-10.31) | .141 (3.58) | 43 | -.258 (-6.55) | -.220 (-5.59) | 63 | -.237 (-6.02) | -.048 (-1.22) |
| 4 | .306 (7.77) | .302 (7.67) | 24 | -.365 (-9.27) | .227 (5.76) | 44 | -.311 (-7.90) | -.141 (-3.58) | 64 | -.237 (-6.02) | .048 (1.22) |
| 5 | .365 (9.27) | .227 (5.76) | 25 | -.306 (-7.77) | .302 (7.67) | 45 | -.332 (-8.43) | -.048 (-1.22) | 65 | -.208 (-5.28) | .139 (3.53) |
| 6 | .406 (10.31) | .141 (3.58) | 26 | -.232 (-5.89) | .362 (9.19) | 46 | -.332 (-8.43) | .048 (1.22) | 66 | -.134 (-3.40) | .199 (5.05) |
| 7 | .427 (10.84) | .048 (1.22) | 27 | -.146 (-3.71) | .404 (10.26) | 47 | -.311 (-7.90) | .141 (3.58) | 67 | -.048 (-1.22) | .146 (3.71) |
| 8 | .427 (10.84) | -.048 (-1.22) | 28 | -.053 (-1.35) | .426 (10.82) | 48 | -.258 (-6.55) | .220 (5.59) | 68 | .048 (1.22) | .146 (3.71) |
| 9 | .406 (10.31) | -.141 (-3.58) | 29 | .000 (0.00) | .323 (8.20) | 49 | -.184 (-4.67) | .280 (7.11) | 69 | .125 (3.17) | .090 (2.28) |
| 10 | .365 (9.27) | -.227 (-5.76) | 30 | .098 (2.48) | .322 (8.18) | 50 | -.098 (-2.48) | .322 (8.18) | 70 | .155 (3.94) | .000 (0.00) |
| 11 | .306 (7.77) | -.302 (-7.67) | 31 | .184 (4.67) | .280 (7.11) | 51 | -.048 (-1.22) | .241 (6.12) | 71 | .125 (3.17) | -.090 (-2.28) |
| 12 | .232 (5.89) | -.362 (-9.19) | 32 | .258 (6.55) | .220 (5.59) | 52 | .048 (1.22) | .241 (6.12) | 72 | .048 (1.22) | -.146 (-3.71) |
| 13 | .146 (3.71) | -.404 (-10.26) | 33 | .311 (7.90) | .141 (3.58) | 53 | .134 (3.40) | .199 (5.05) | 73 | -.048 (-1.22) | -.146 (-3.71) |
| 14 | .053 (1.35) | -.426 (-10.82) | 34 | .332 (8.43) | .048 (1.22) | 54 | .208 (5.28) | .139 (3.53) | 74 | -.125 (-3.17) | -.090 (-2.28) |
| 15 | -.053 (-1.35) | -.426 (-10.82) | 35 | .332 (8.43) | -.048 (-1.22) | 55 | .237 (6.02) | .048 (1.22) | 75 | -.155 (-3.94) | .000 (0.00) |
| 16 | -.146 (-3.71) | -.404 (-10.26) | 36 | .311 (7.90) | -.141 (-3.58) | 56 | .237 (6.02) | -.048 (-1.22) | 76 | -.125 (-3.17) | .090 (2.28) |
| 17 | -.232 (-5.89) | -.362 (-9.19) | 37 | .258 (6.55) | -.220 (-5.59) | 57 | .208 (5.28) | -.139 (-3.53) | 77 | .000 (0.00) | .053 (1.35) |
| 18 | -.306 (-7.77) | -.302 (-7.67) | 38 | .184 (4.67) | -.280 (-7.11) | 58 | .134 (3.40) | -.199 (-5.05) | 78 | .048 (1.22) | -.029 (-0.74) |
| 19 | -.365 (-9.27) | -.227 (-5.76) | 39 | .098 (2.48) | -.322 (-8.18) | 59 | .048 (1.22) | -.241 (-6.12) | 79 | -.048 (-1.22) | -.029 (-0.74) |
| 20 | -.406 (-10.31) | -.141 (-3.58) | 40 | .000 (0.00) | -.347 (-8.81) | 60 | -.048 (-1.22) | -.241 (-6.12) | | | |

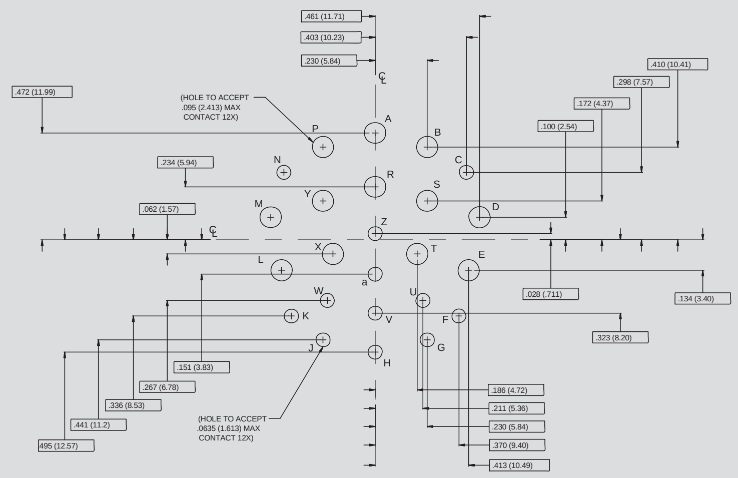
# Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 24



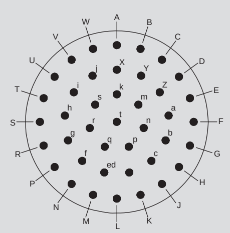
## Size 24 Viewed from Connector Mounting Side, Pin Face



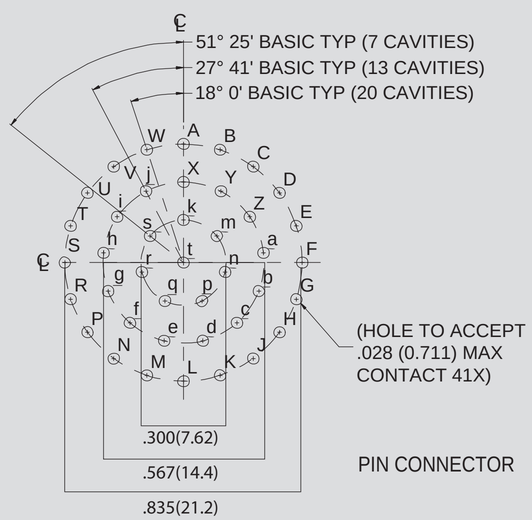
Insert Arrangement
24-24
12 #16 Contacts
12 #12 Contacts

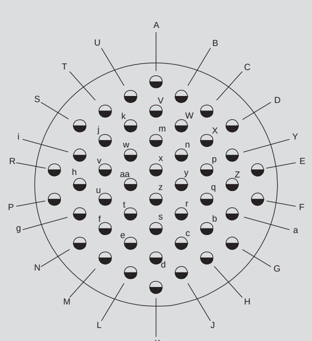



Pin Connector

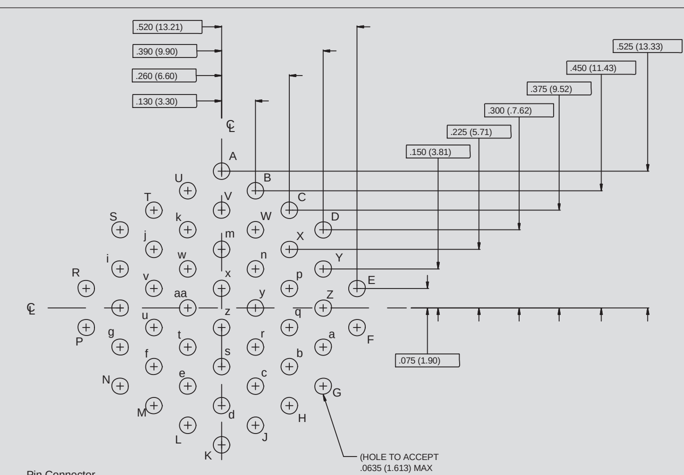


Insert Arrangement
20-41
41 #20 Contacts



Insert Arrangement
24-48
48 #16 Contacts




Pin Connector



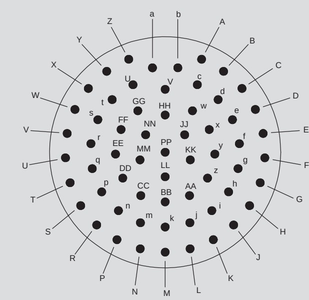




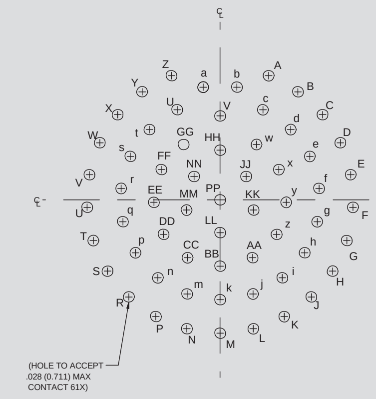
Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 24



Size 24 Viewed from Connector Mounting Side, Pin Face

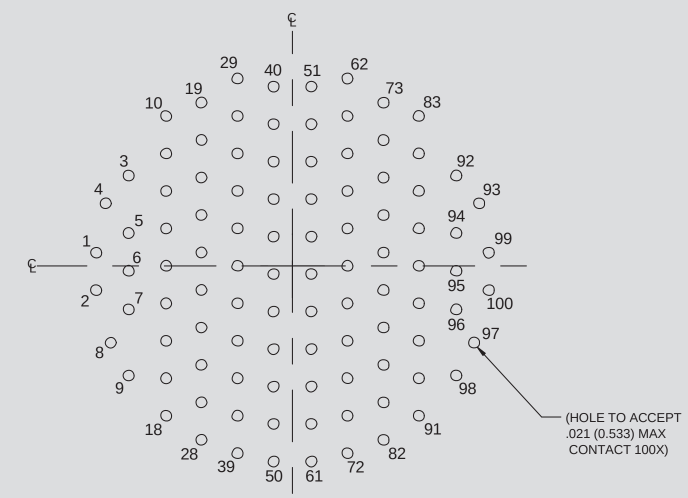


Insert Arrangement
24-61
61 #20 Contacts

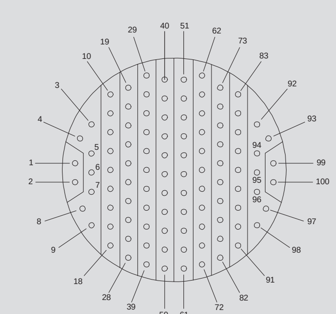



Pin Connector

| I.D. NO. | X In. mm. | Y In. mm. | I.D. NO. | X In. mm. | Y In. mm. | I.D. NO. | X In. mm. | Y In. mm. |
|---|---|---|---|---|---|---|---|---|
| A | .196 (4.98) | .500 (12.7) | a | .068 (1.72) | .454 (11.53) | AA | .131 (3.33) | - .233 (-5.92) |
| B | .314 (7.98) | .435 (11.05) | b | - .068 (-1.72) | .454 (11.53) | BB | .000 (.000) | - .267 (-6.78) |
| C | .413 (10.5) | .343 (8.71) | c | .173 (4.39) | .363 (9.22) | CC | - .131 (-3.33) | - .233 (-5.92) |
| D | .485 (12.3) | .230 (5.84) | d | .285 (7.24) | .283 (7.19) | DD | - .228 (-5.79) | - .139 (-3.53) |
| E | .527 (13.4) | .101 (2.57) | e | .362 (9.19) | .175 (4.44) | EE | - .267 (-6.78) | - .010 (-.254) |
| F | .536 (13.6) | - .030 (-.762) | f | .399 (10.1) | .046 (1.17) | FF | - .237 (-6.02) | .122 (3.099) |
| G | .511 (13.0) | - .164 (-4.165) | g | .392 (9.95) | - .088 (-2.24) | GG | - .147 (-3.73) | .223 (5.66) |
| H | .454 (11.5) | - .287 (-7.29) | h | .341 (8.66) | - .213 (-5.41) | HH | .000 (.000) | .200 (5.08) |
| J | .368 (9.34) | - .391 (-9.93) | i | .251 (6.37) | - .314 (-7.97) | JJ | .105 (2.67) | .094 (2.39) |
| K | .259 (6.58) | - .470 (-11.94) | j | .133 (3.38) | - .379 (-9.63) | KK | .135 (3.43) | - .041 (-1.04) |
| L | .134 (3.40) | - .519 (-13.18) | k | .000 (.000) | - .402 (-10.21) | LL | .000 (.000) | - .132 (-3.35) |
| M | .000 (.000) | - .537 (-13.64) | m | - .133 (-3.38) | - .379 (-9.63) | MM | - .135 (-3.43) | - .041 (-1.04) |
| N | - .134 (-3.40) | - .519 (-13.18) | n | - .251 (-6.37) | - .314 (-7.97) | NN | - .105 (-2.67) | .094 (2.39) |
| P | - .259 (-6.58) | - .470 (-11.94) | p | - .341 (-8.66) | - .213 (-5.41) | PP | .000 (.000) | .000 (.000) |
| R | - .368 (-9.34) | - .391 (-9.93) | q | - .392 (-9.95) | - .088 (-2.24) | | | |
| S | - .454 (-11.5) | - .287 (-7.29) | r | - .399 (-10.1) | .046 (1.17) | | | |
| T | - .511 (-13.0) | - .164 (-4.16) | s | - .362 (-9.19) | .175 (4.44) | | | |
| U | - .536 (-13.6) | - .030 (-.762) | t | - .285 (-7.24) | .283 (7.19) | | | |
| V | - .527 (-13.4) | .101 (2.56) | u | - .173 (-4.39) | .363 (9.22) | | | |
| W | - .485 (-12.3) | .230 (5.84) | v | .000 (.000) | .338 (8.58) | | | |
| X | - .413 (-10.5) | .343 (8.71) | w | .147 (3.73) | .223 (5.66) | | | |
| Y | - .314 (-7.98) | .435 (11.05) | x | .237 (6.02) | .122 (3.099) | | | |
| Z | - .196 (-4.98) | .500 (12.7) | y | .267 (6.78) | - .010 (-.254) | | | |
| | | | z | .228 (5.79) | - .139 (-3.53) | | | |




Pin Connector

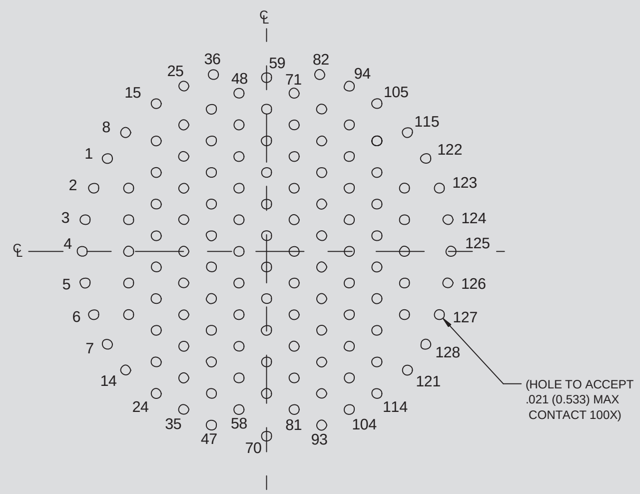


Insert Arrangement
24-100
100 #22 Contacts

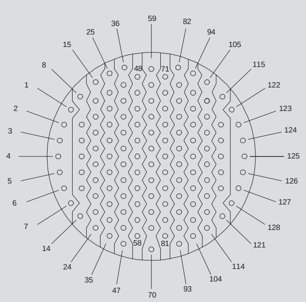
| I.D. NO. | X In. mm. | Y In. mm. | I.D. NO. | X In. mm. | Y In. mm. | I.D. NO. | X In. mm. | Y In. mm. | I.D. NO. | X In. mm. | Y In. mm. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - .550 (-13.97) | .039 (.990) | 26 | .255 (-6.48) | - .278 (-7.06) | 51 | .053 (1.35) | .502 (12.75) | 76 | .255 (6.48) | .142 (3.607) |
| 2 | - .550 (-13.97) | - .068 (-1.73) | 27 | .255 (-6.48) | - .383 (-9.73) | 52 | .053 (1.35) | .397 (10.08) | 77 | .255 (6.48) | .037 (.940) |
| 3 | - .459 (-11.67) | .253 (6.42) | 28 | .255 (-6.48) | - .488 (-12.39) | 53 | .053 (1.35) | .292 (7.42) | 78 | .255 (6.48) | - .068 (-1.73) |
| 4 | - .523 (-13.3) | .175 (4.44) | 29 | .154 (-3.91) | .525 (13.34) | 54 | .053 (1.35) | .187 (4.75) | 79 | .255 (6.48) | - .173 (-4.39) |
| 5 | - .459 (-11.67) | .092 (2.34) | 30 | - .154 (-3.91) | .420 (10.67) | 55 | .053 (1.35) | .082 (2.083) | 80 | .255 (6.48) | - .278 (-7.06) |
| 6 | - .459 (-11.67) | - .014 (-.355) | 31 | - .154 (-3.91) | .315 (8.00) | 56 | .053 (1.35) | - .023 (-.584) | 81 | .255 (6.48) | - .383 (-9.73) |
| 7 | - .459 (-11.67) | - .122 (-3.099) | 32 | - .154 (-3.91) | .210 (5.33) | 57 | .053 (1.35) | - .128 (-3.25) | 82 | .255 (6.48) | - .488 (-12.39) |
| 8 | - .509 (-12.9) | - .215 (-5.46) | 33 | - .154 (-3.91) | .105 (2.67) | 58 | .053 (1.35) | - .233 (-5.92) | 83 | .354 (8.99) | .420 (10.67) |
| 9 | - .459 (-11.67) | - .307 (-7.80) | 34 | .154 (-3.91) | .000 (.000) | 59 | .053 (1.35) | - .338 (-8.58) | 84 | .354 (8.99) | .315 (8.00) |
| 10 | - .354 (-8.99) | .420 (10.67) | 35 | - .154 (-3.91) | - .105 (-2.67) | 60 | .053 (1.35) | - .443 (-11.25) | 85 | .354 (8.99) | .210 (5.33) |
| 11 | - .354 (-8.99) | .315 (8.00) | 36 | - .154 (-3.91) | - .210 (-5.33) | 61 | .053 (1.35) | - .548 (-13.92) | 86 | .354 (8.99) | .105 (2.67) |
| 12 | - .354 (-8.99) | .210 (5.33) | 37 | - .154 (-3.91) | - .315 (-8.00) | 62 | .154 (3.91) | .525 (13.34) | 87 | .354 (8.99) | .000 (.000) |
| 13 | - .354 (-8.99) | .105 (2.67) | 38 | - .154 (-3.91) | - .420 (-10.67) | 63 | .154 (3.91) | .420 (10.67) | 88 | .354 (8.99) | - .105 (-2.67) |
| 14 | - .354 (-8.99) | .000 (.000) | 39 | .154 (-3.91) | - .525 (-13.34) | 64 | .154 (3.91) | .315 (8.00) | 89 | .354 (8.99) | - .210 (-5.33) |
| 15 | - .354 (-8.99) | - .105 (-2.67) | 40 | .053 (-1.35) | .502 (12.75) | 65 | .154 (3.91) | .210 (5.33) | 90 | .354 (8.99) | - .315 (-8.00) |
| 16 | - .354 (-8.99) | - .210 (-5.33) | 41 | - .053 (-1.35) | .397 (10.08) | 66 | .154 (3.91) | .105 (2.67) | 91 | .354 (8.99) | - .420 (-10.67) |
| 17 | - .354 (-8.99) | - .315 (-8.00) | 42 | - .053 (-1.35) | .292 (7.42) | 67 | .154 (3.91) | .000 (.000) | 92 | .459 (11.66) | .253 (6.42) |
| 18 | - .354 (-8.99) | - .420 (-10.67) | 43 | - .053 (-1.35) | .187 (4.75) | 68 | .154 (3.91) | - .105 (-2.67) | 93 | .523 (13.28) | .175 (4.44) |
| 19 | - .255 (-6.47) | .457 (11.60) | 44 | - .053 (-1.35) | .082 (2.08) | 69 | .154 (3.91) | - .210 (-5.33) | 94 | .459 (11.66) | .092 (2.34) |
| 20 | - .255 (-6.47) | .352 (8.94) | 45 | - .053 (-1.35) | - .023 (-.58) | 70 | .154 (3.91) | - .315 (-8.00) | 95 | .459 (11.66) | - .014 (-.356) |
| 21 | - .255 (-6.47) | .247 (6.27) | 46 | - .053 (-1.35) | - .128 (-3.25) | 71 | .154 (3.91) | - .420 (-10.67) | 96 | .459 (11.66) | - .122 (-3.10) |
| 22 | - .255 (-6.47) | .142 (3.61) | 47 | - .053 (-1.35) | - .233 (-5.92) | 72 | .154 (3.91) | - .525 (-13.34) | 97 | .509 (12.93) | - .215 (-5.46) |
| 23 | - .255 (-6.47) | .037 (.94) | 48 | - .053 (-1.35) | - .338 (-8.58) | 73 | .255 (6.48) | .457 (11.60) | 98 | .459 (11.66) | - .307 (-7.80) |
| 24 | - .255 (-6.47) | - .068 (-1.73) | 49 | - .053 (-1.35) | - .443 (-11.25) | 74 | .255 (6.48) | .352 (8.94) | 99 | .550 (13.97) | .039 (.991) |
| 25 | - .255 (-6.47) | - .173 (-4.39) | 50 | - .053 (-1.35) | - .548 (-13.92) | 75 | .255 (6.48) | .247 (6.27) | 100 | .550 (13.97) | - .068 (-1.73) |

# Hermetic/High-pressure or Environmental Connectors - PCB Footprints - Size 24

**Size 24 Viewed from Connector Mounting Side, Pin Face**




Pin Connector



Insert Arrangement
24-128
61 #20 Contacts

| I.D. NO. | X In. mm. | Y In. mm. | I.D. NO. | X In. mm. | Y In. mm. | I.D. NO. | X In. mm. | Y In. mm. | I.D. NO. | X In. mm. | Y In. mm. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | -.479 (-12.17) | .279 (7.09) | 33 | -.249 (-6.32) | -.285 (-7.24) | 65 | .000 (.000) | -.047 (-1.19) | 97 | .249 (6.32) | .190 (4.82) |
| 2 | -.520 (-13.21) | .190 (4.82) | 34 | -.249 (-6.32) | -.380 (-9.65) | 66 | .000 (.000) | -.142 (-3.607) | 98 | .249 (6.32) | .095 (2.41) |
| 3 | -.546 (-13.87) | .095 (2.41) | 35 | -.249 (-6.32) | -.475 (-12.06) | 67 | .000 (.000) | -.237 (-6.02) | 99 | .249 (6.32) | .000 (.000) |
| 4 | -.555 (-14.1) | .000 (.000) | 36 | -.160 (-4.06) | .531 (13.48) | 68 | .000 (.000) | -.332 (-8.43) | 100 | .249 (6.32) | .095 (-2.41) |
| 5 | -.546 (-13.87) | -.095 (-2.41) | 37 | -.166 (-4.21) | .427 (10.84) | 69 | .000 (.000) | -.427 (-10.84) | 101 | .249 (6.32) | .190 (-4.82) |
| 6 | -.520 (-13.2) | -.190 (-4.82) | 38 | -.166 (-4.21) | .332 (8.43) | 70 | .000 (.000) | -.555 (-14.1) | 102 | .249 (6.32) | .285 (-7.24) |
| 7 | -.479 (-12.17) | -.279 (-7.09) | 39 | -.166 (-4.21) | .237 (6.02) | 71 | .083 (2.11) | .475 (12.06) | 103 | .249 (6.32) | .380 (-9.65) |
| 8 | -.424 (-10.77) | .357 (9.07) | 40 | -.166 (-4.21) | .142 (3.607) | 72 | .083 (2.11) | .380 (9.65) | 104 | .249 (6.32) | .475 (-12.06) |
| 9 | -.415 (-10.54) | .190 (4.82) | 41 | -.166 (-4.21) | .047 (1.19) | 73 | .083 (2.11) | .285 (7.24) | 105 | .332 (8.43) | .444 (11.27) |
| 10 | -.415 (-10.54) | .095 (2.41) | 42 | -.166 (-4.21) | -.047 (-1.19) | 74 | .083 (2.11) | .190 (4.82) | 106 | .332 (8.43) | .332 (8.43) |
| 11 | -.415 (-10.54) | .000 (.000) | 43 | -.166 (-4.21) | -.142 (-3.607) | 75 | .083 (2.11) | .095 (2.41) | 107 | .332 (8.43) | .237 (6.02) |
| 12 | -.415 (-10.54) | -.095 (-2.41) | 44 | -.166 (-4.21) | -.237 (-6.02) | 76 | .083 (2.11) | .000 (.000) | 108 | .332 (8.43) | .142 (3.607) |
| 13 | -.415 (-10.54) | -.190 (-4.82) | 45 | -.166 (-4.21) | -.332 (-8.43) | 77 | .083 (2.11) | -.095 (-2.41) | 109 | .332 (8.43) | .047 (1.19) |
| 14 | -.424 (-10.77) | -.357 (-9.07) | 46 | -.166 (-4.21) | -.427 (-10.84) | 78 | .083 (2.11) | -.190 (-4.82) | 110 | .332 (8.43) | .047 (-1.19) |
| 15 | -.332 (-8.43) | .444 (11.27) | 47 | -.166 (-4.21) | -.522 (-13.26) | 79 | .083 (2.11) | -.285 (-7.24) | 111 | .332 (8.43) | .142 (-3.607) |
| 16 | -.332 (-8.43) | .332 (8.43) | 48 | -.083 (-2.11) | .475 (12.06) | 80 | .083 (2.11) | -.380 (-9.65) | 112 | .332 (8.43) | .237 (-6.02) |
| 17 | -.332 (-8.43) | .237 (6.02) | 49 | -.083 (-2.11) | .380 (9.65) | 81 | .083 (2.11) | -.475 (-12.06) | 113 | .332 (8.43) | .332 (-8.43) |
| 18 | -.332 (-8.43) | .142 (3.607) | 50 | -.083 (-2.11) | .285 (7.24) | 82 | .160 (4.06) | .531 (13.5) | 114 | .332 (8.43) | .427 (-10.84) |
| 19 | -.332 (-8.43) | .047 (1.19) | 51 | -.083 (-2.11) | .190 (4.82) | 83 | .166 (4.21) | .427 (10.84) | 115 | .424 (10.77) | .357 (9.07) |
| 20 | -.332 (-8.43) | -.047 (-1.19) | 52 | -.083 (-2.11) | .095 (2.41) | 84 | .166 (4.21) | .332 (8.43) | 116 | .415 (10.54) | .190 (4.82) |
| 21 | -.332 (-8.43) | -.142 (-3.607) | 53 | -.083 (-2.11) | .000 (.000) | 85 | .166 (4.21) | .237 (6.02) | 117 | .415 (10.54) | .095 (2.41) |
| 22 | -.332 (-8.43) | -.237 (-6.02) | 54 | -.083 (-2.11) | -.095 (-2.41) | 86 | .166 (4.21) | .142 (3.607) | 118 | .415 (10.54) | .000 (.000) |
| 23 | -.332 (-8.43) | -.332 (-8.43) | 55 | -.083 (-2.11) | -.190 (-4.82) | 87 | .166 (4.21) | .047 (1.19) | 119 | .415 (10.54) | .095 (2.41) |
| 24 | -.332 (-8.43) | -.427 (-10.84) | 56 | -.083 (-2.11) | -.285 (-7.24) | 88 | .166 (4.21) | -.047 (-1.19) | 120 | .415 (10.54) | .190 (-4.82) |
| 25 | -.249 (-6.32) | .496 (12.6) | 57 | -.083 (-2.11) | -.380 (-9.65) | 89 | .166 (4.21) | -.142 (-3.607) | 121 | .424 (10.77) | .357 (-9.07) |
| 26 | -.249 (-6.32) | .380 (9.65) | 58 | -.083 (-2.11) | -.475 (-12.06) | 90 | .166 (4.21) | -.237 (-6.02) | 122 | .479 (12.17) | .279 (7.08) |
| 27 | -.249 (-6.32) | .285 (7.24) | 59 | .000 (.000) | .522 (13.26) | 91 | .166 (4.21) | -.332 (-8.43) | 123 | .520 (13.2) | .190 (4.82) |
| 28 | -.249 (-6.32) | .190 (4.82) | 60 | .000 (.000) | .427 (10.84) | 92 | .166 (4.21) | -.427 (-10.84) | 124 | .546 (13.87) | .095 (2.41) |
| 29 | -.249 (-6.32) | .095 (2.41) | 61 | .000 (.000) | .332 (8.43) | 93 | .166 (4.21) | -.522 (-13.26) | 125 | .555 (14.1) | .000 (.000) |
| 30 | -.249 (-6.32) | .000 (.000) | 62 | .000 (.000) | .237 (6.02) | 94 | .249 (6.32) | .496 (12.6) | 126 | .546 (13.87) | .095 (-2.41) |
| 31 | -.249 (-6.32) | -.095 (-2.41) | 63 | .000 (.000) | .142 (3.607) | 95 | .249 (6.32) | .380 (9.65) | 127 | .520 (13.2) | .190 (-4.82) |
| 32 | -.249 (-6.32) | -.190 (-4.82) | 64 | .000 (.000) | .047 (1.19) | 96 | .249 (6.32) | .285 (7.24) | 128 | .479 (12.17) | .279 (-7.08) |

SUBSEA/SHALLOW WATER: GEO-MARINE®







# 220-06 and 220-16 (CCP) Cable connector plug, inline

## ENVIRONMENTAL–5000 PSI MATED OR HERMETIC–5000 PSI OPEN FACE PLUG

**How To Order**

| Sample Part Number | 220-06 | E | 24-61 | S | N |
|---|---|---|---|---|---|
| Series and Shell Style | 220-06 - Standard; 220-16 - Scoop-Proof | | | | |
| Class | E = High-Pressure Environmental | | | | |
| Shell Size - Contact Arrangement | See pages 65-66 | | | | |
| Contact Style | P = Pin S = Socket | | | | |
| Polarization | N, 1, 2, 3, 4 See page 65 | | | | |

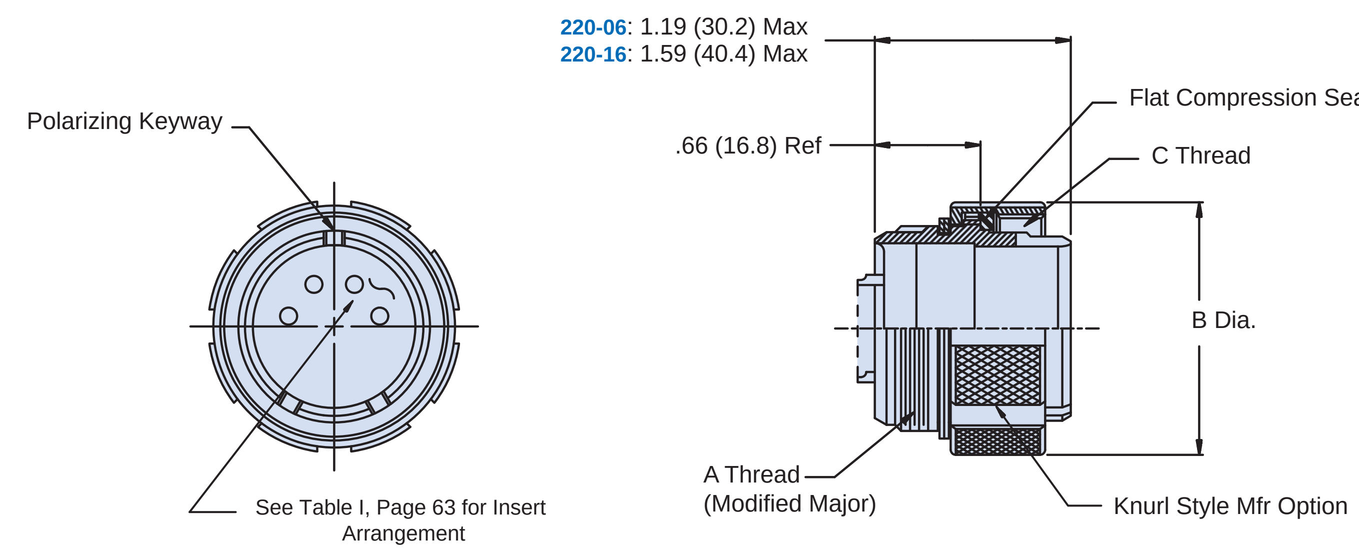



**Table II: Dimensions**

| Shell Size | A Thread Class 2A | Ø B Max | C Thread Class 2B |
|---|---|---|---|
| 10 | 5/8 - 24 UNEF | 1.000 (25.4) | .750 - .1P - .1L |
| 12 | 3/4 - 20 UNEF | 1.125 (28.6) | .875 - .1P - .1L |
| 14 | 7/8 - 20 UNEF | 1.250 (31.8) | 1.000 - .1P - .1L |
| 16 | 1 - 20 UNEF | 1.375 (34.9) | 1.125 - .1P - .1L |
| 18 | 1 1/18 - 16 UN | 1.594 (40.5) | 1.250 - .1P - .1L |
| 20 | 1 1/4 - 16 UN | 1.719 (43.7) | 1.375 - .1P - .1L |
| 22 | 1 3/8 - 16 UN | 1.894 (48.1) | 1.500 - .1P - .1L |
| 24 | 1 1/2 - 16 UN | 1.969 (50.0) | 1.625 - .1P - .1L |

**Replacement Flat Compression Seal Part Number**

| Shell Size | Glenair Part No. |
|---|---|
| 10 | G70653-10 |
| 12 | G70653-12 |
| 14 | G70653-14 |
| 16 | G70653-16 |
| 18 | G70653-18 |
| 20 | G70653-20 |
| 22 | G70653-22 |
| 24 | G70653-24 |

SUBSEA/SHALLOW WATER: GEO-MARINE®

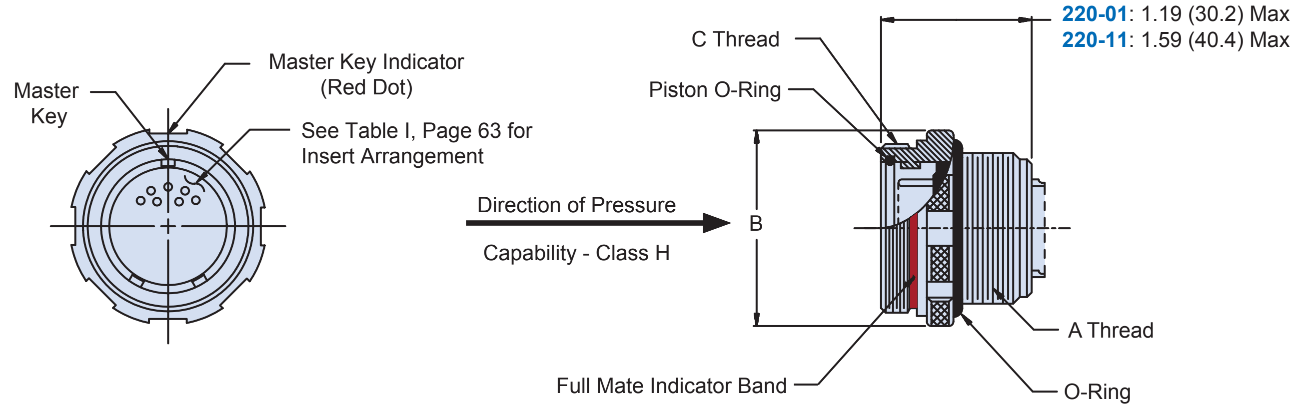
Geo-Marine®

Glenair.

# 220-01 and 220-11 (CCR)
## Cable connector receptacle, In-line

### ENVIRONMENTAL–5000 PSI MATED OR HERMETIC–5000 PSI OPEN FACE RECEPTACLE

| How To Order | | | | | |
|---|---|---|---|---|---|
| Sample Part Number | 220-01 | E | 24-61 | P | N |
| Series and Shell Style | 220-01 = Standard<br>220-11 = Scoop Proof | | | | |
| Class | E = Environmental H = Hermetic | | | | |
| Shell Size - Contact Arrangement | See pages 65-66 | | | | |
| Contact Style | P = Pins S = Sockets | | | | |
| Polarization | N, 1, 2, 3, 4 See page 65 | | | | |




| Dimensions | | | |
|---|---|---|---|
| Shell Size | A Thread Class 2A | Ø B Max | C Thread Class 2A |
| 10 | 5/8 - 24 UNEF | .906 (23.0) | .750 - .1P - .1L |
| 12 | 3/4 - 20 UNEF | 1.031 (26.2) | .875 - .1P - .1L |
| 14 | 7/8 - 20 UNEF | 1.156 (29.4) | 1.000 - .1P - .1L |
| 16 | 1 - 20 UNEF | 1.359 (34.5) | 1.125 - .1P - .1L |
| 18 | 1 1/18 - 16 UN | 1.531 (38.9) | 1.250 - .1P - .1L |
| 20 | 1 1/4 - 16 UN | 1.656 (42.1) | 1.375 - .1P - .1L |
| 22 | 1 3/8 - 16 UN | 1.781 (45.2) | 1.500 - .1P - .1L |
| 24 | 1 1/2 - 16 UN | 1.906 (48.4) | 1.625 - .1P - .1L |

**Replacement O-Ring Part Numbers***

| Shell Size | Piston O-Ring |
|---|---|
| 10 | 2-014 |
| 12 | 2-016 |
| 14 | 2-018 |
| 16 | 2-020 |
| 18 | 2-022 |
| 20 | 2-024 |
| 22 | 2-026 |
| 24 | 2-028 |

*Parker O-Ring Part Numbers.
Compound N674-70 or Equivalent









Geo-Marine®

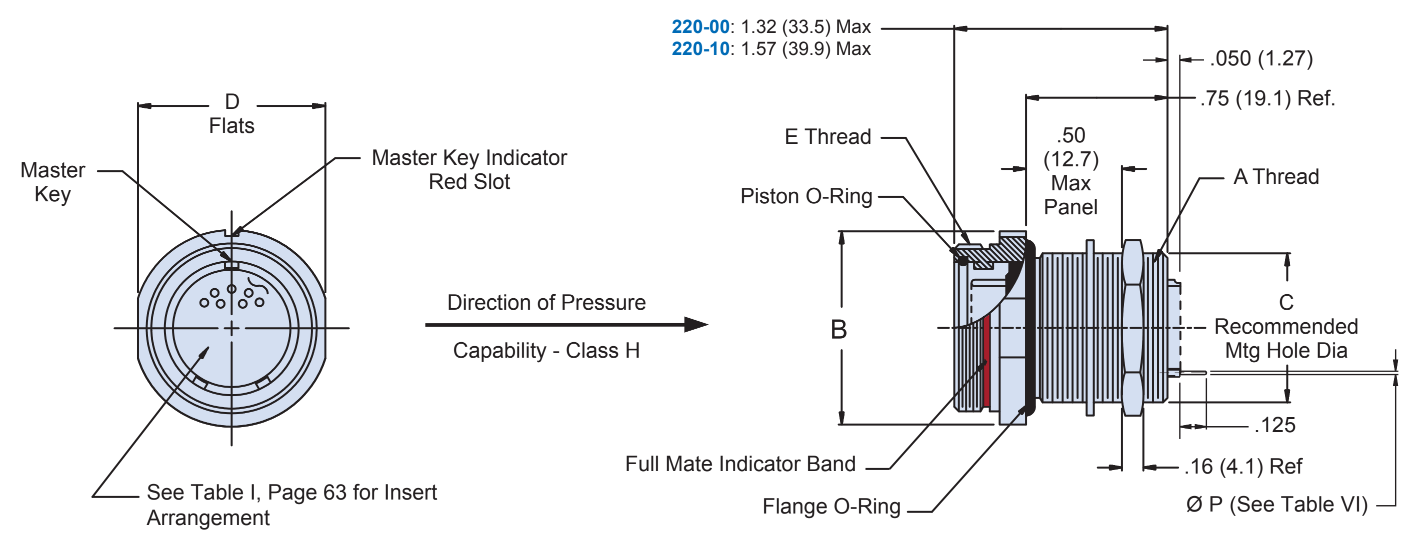
Glenair.

# 220-00 and 220-10
## Jam nut bulkhead receptacle, front panel mount

### ENVIRONMENTAL–5000 PSI MATED OR HERMETIC–5000 PSI OPEN FACE RECEPTACLE

| How To Order | | | | | |
|---|---|---|---|---|---|
| Sample Part Number | 220-00 | E | 24-61 | P | N |
| Series and Shell Style | 220-00 = Standard<br>220-10 = Scoop Proof | | | | |
| Class | E = Environmental H = Hermetic | | | | |
| Shell Size - Contact Arrangement | See pages 65-66 | | | | |
| Contact Style | P = Pins C = Pin PC Tail<br>S = Sockets D = Socket PC Tail | | | | |
| Polarization | N, 1, 2, 3, 4 See page 65 | | | | |

Prior to use, lubricate O-rings with high grade silicone lubricant (Moly-kote M55 or equivalent).




| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | A Thread Class 2A | Ø B Max | C ±.005 ±(0.1) | D Flats | E Thread Class 2A |
| 10 | 5/8 - 24 UNEF | 1.03 (25.4) | .635 (16.1) | .875 (22.2) | .750 - .1P - .1L |
| 12 | 3/4 - 20 UNEF | 1.16 (28.6) | .760 (19.3) | 1.000 (25.4) | .875 - .1P - .1L |
| 14 | 7/8 - 20 UNEF | 1.28 (31.8) | .885 (22.5) | 1.125 (28.6) | 1.000 - .1P - .1L |
| 16 | 1 - 20 UNEF | 1.41 (34.9) | 1.010 (25.7) | 1.250 (31.8) | 1.125 - .1P - .1L |
| 18 | 1 1/18 - 16 UN | 1.66 (40.5) | 1.135 (28.8) | 1.500 (38.1) | 1.250 - .1P - .1L |
| 20 | 1 1/4 - 16 UN | 1.78 (43.7) | 1.260 (32.0) | 1.625 (41.3) | 1.375 - .1P - .1L |
| 22 | 1 3/8 - 16 UN | 1.91 (48.1) | 1.385 (35.2) | 1.750 (44.5) | 1.500 - .1P - .1L |
| 24 | 1 1/2 - 16 UN | 2.03 (50.0) | 1.510 (38.4) | 1.875 (47.6) | 1.625 - .1P - .1L |

| PC Tail Diameter | | |
|---|---|---|
| | Ø P | |
| Contact Size | Max | Min |
| 22D | .021 | .018 |
| 20 | .024 | .028 |
| 16 | .0635 | .0615 |
| 12 | .095 | .093 |

Replacement O-Ring Part Numbers*

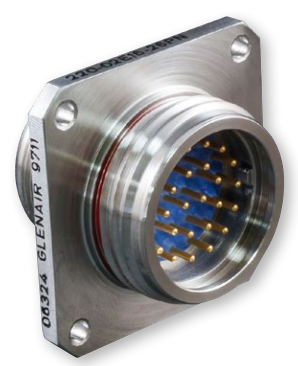
| Shell Size | Piston O-Ring | Flange O-Ring | Shell Size | Piston O-Ring | Flange O-Ring | Shell Size | Piston O-Ring | Flange O-Ring |
|---|---|---|---|---|---|---|---|---|
| 10 | 2-014 | 2-017 | 16 | 2-020 | 2-023 | 22 | 2-026 | 2-029 |
| 12 | 2-016 | 2-019 | 18 | 2-022 | 2-025 | 24 | 2-028 | 2-030 |
| 14 | 2-018 | 2-021 | 20 | 2-024 | 2-027 | | | |

*Parker O-Ring Part Numbers.
Compound N674-70 Or Equivalent

# 220-02 and 220-12
## Flange connector receptacle (FCR), FPM bulkhead



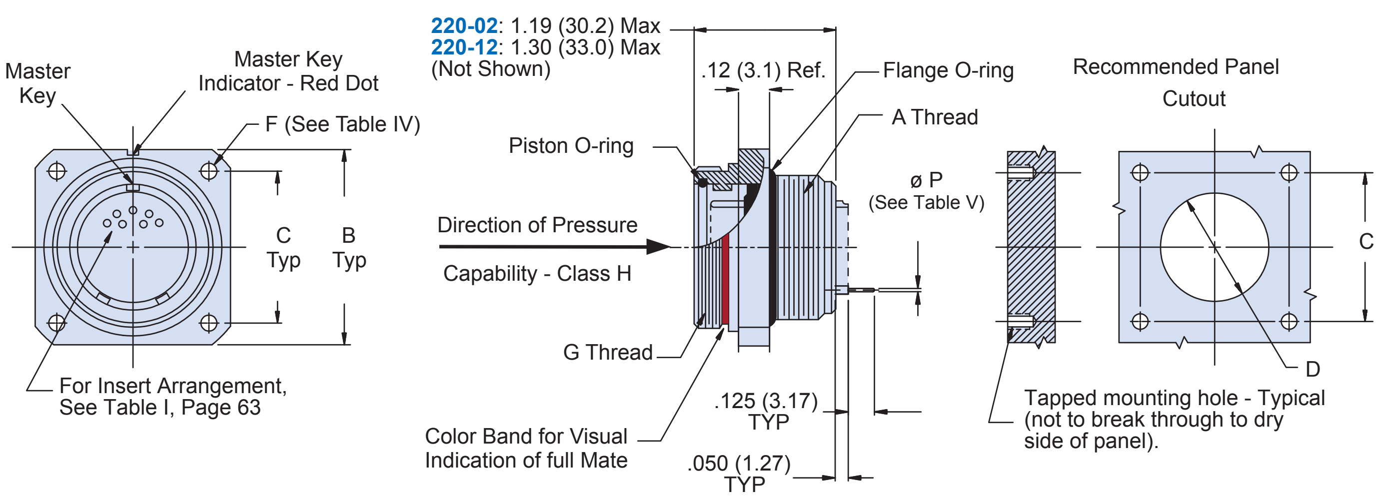
### ENVIRONMENTAL–5000 PSI MATED OR HERMETIC–5000 PSI OPEN FACE RECEPTACLE



**How To Order**

| Sample Part Number | 220-02E | H | 24-61 | P | N |
|---|---|---|---|---|---|
| **Series and Shell Style** | 220-02 = Standard<br>220-12 = Scoop Proof | | | | |
| **Class** | E = Environmental H = Hermetic | | | | |
| **Shell Size - Contact Arrangement** | See pages 65-66 | | | | |
| **Contact Style** | P = Pin, Solder Cup C = Pin, PC Tail<br>S = Socket, Solder Cup D = Socket, PC Tail | | | | |
| **Polarization** | N, 1, 2, 3, 4 See page 65 | | | | |

Prior to use, lubricate O-rings with high grade silicone lubricant (Moly-kote M55 or equivalent).




**Dimensions**

| Shell Size | A Thread Class 2A | B Dim | C Dim | D Dia +.015 +(0.4) -.000 -(0.0) | G Thread Class 2A |
|---|---|---|---|---|---|
| 10 | 5/8 - 24 UNEF | 1.188 (30.2) | .938 (23.8) | .844 (21.4) | .750 - .1P - .1L |
| 12 | 3/4 - 20 UNEF | 1.312 (33.3) | 1.062 (27.0) | .969 (24.6) | .875 - .1P - .1L |
| 14 | 7/8 - 20 UNEF | 1.438 (36.5) | 1.188 (30.2) | 1.078 (27.4) | 1.000 - .1P - .1L |
| 16 | 1 - 20 UNEF | 1.562 (39.7) | 1.250 (31.8) | 1.219 (31.0) | 1.125 - .1P - .1L |
| 18 | 1 1/8 - 16 UN | 1.750 (44.5) | 1.375 (34.9) | 1.359 (34.5) | 1.250 - .1P - .1L |
| 20 | 1 1/4 - 16 UN | 1.875 (47.6) | 1.500 (38.1) | 1.515 (38.5) | 1.375 - .1P - .1L |
| 22 | 1 3/8 - 16 UN | 2.000 (50.8) | 1.625 (41.3) | 1.640 (41.7) | 1.500 - .1P - .1L |
| 24 | 1 1/2 - 6 UN | 2.125 (54.0) | 1.750 (44.5) | 1.765 (44.8) | 1.625 - .1P - .1L |

**PC Tail Diameter**

| Contact Size | Ø P |
|---|---|
| 22D | .021 (0.53)<br>.018 (0.46) |
| 20 | .024 (0.61)<br>.028 (0.71) |
| 16 | .0635 (1.61)<br>.0615 (1.56) |
| 12 | .095 (2.41)<br>.093 (2.36) |

**Mounting/Hardware Dim.**

| Shell Size | F Dia | Mtg Screw Ref. |
|---|---|---|
| 10 | .125 (3.2) | No. 4 |
| 12 | .125 (3.2) | No. 4 |
| 14 | .125 (3.2) | No. 4 |
| 16 | .125 (3.2) | No. 4 |
| 18 | .125 (3.2) | No. 4 |
| 20 | .125 (3.2) | No. 4 |
| 22 | .125 (3.2) | No. 4 |
| 24 | .156 (4.0) | No. 6 |

**Replacement O-Ring Part Numbers***

| Shell Size | Piston O-Ring | Flange O-Ring | Shell Size | Piston O-Ring | Flange O-Ring | Shell Size | Piston O-Ring | Flange O-Ring |
|---|---|---|---|---|---|---|---|---|
| 10 | 2-014 | 2-021 | 16 | 2-020 | 2-027 | 22 | 2-026 | 2-031 |
| 12 | 2-016 | 2-023 | 18 | 2-022 | 2-029 | 24 | 2-028 | 2-032 |
| 14 | 2-018 | 2-025 | 20 | 2-024 | 2-030 | | | |

*Parker O-ring part numbers
Compound N674-70 or equivalent.





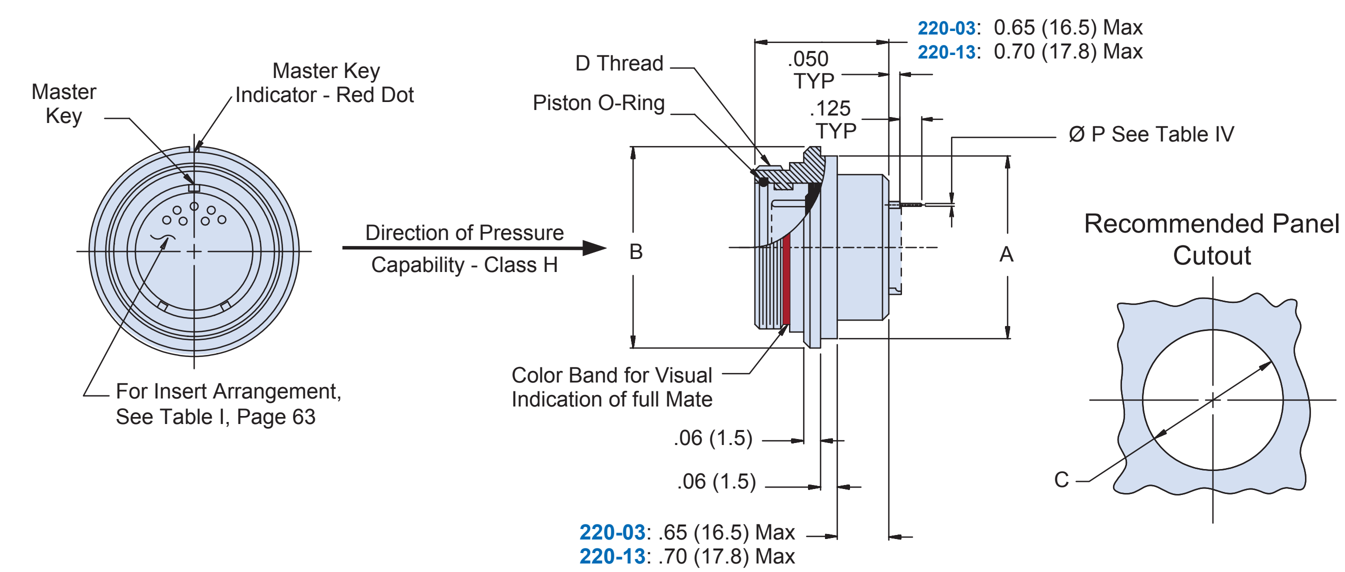

# 220-03 and 220-13
## Solder mount, bulkhead receptacle

### ENVIRONMENTAL–5000 PSI MATED OR HERMETIC–5000 PSI OPEN FACE RECEPTACLE

**How To Order**

| Sample Part Number | 220-03 | H | 24-61 | P | N |
|---|---|---|---|---|---|
| **Series and Shell Style** | 220-03 = Standard<br>220-13 = Scoop-Proof | | | | |
| **Class** | H = Hermetic | | | | |
| **Shell Size - Contact Arrangement** | See pages 65-66 | | | | |
| **Contact Style** | P = Pin, Solder Cup C = Pin, PC Tail<br>S = Sockets, Solder Cup D = Socket, PC Tail | | | | |
| **Polarization** | N, 1, 2, 3, 4 See page 65 | | | | |

Prior to use, lubricate O-rings with high grade silicone lubricant (Moly-kote M55 or equivalent).




**Dimensions**

| Shell Size | A Dia Max | B Dia | C Dia +.010 +(0.3) -.000 -(0.0) | D Thread Class 2A |
|---|---|---|---|---|
| 10 | .870 (22.1) | 1.00 (25.4) | .875 (22.2) | .750 - .1P - .1L |
| 12 | .995 (25.3) | 1.13 (28.7) | 1.000 (25.4) | .875 - .1P - .1L |
| 14 | 1.120 (28.4) | 1.25 (31.8) | 1.125 (28.6) | 1.000 - .1P - .1L |
| 16 | 1.245 (31.6) | 1.38 (35.1) | 1.250 (31.8) | 1.125 - .1P - .1L |
| 18 | 1.370 (34.8) | 1.50 (38.1) | 1.375 (34.9) | 1.250 - .1P - .1L |
| 20 | 1.495 (38.0) | 1.63 (41.4) | 1.500 (38.1) | 1.375 - .1P - .1L |
| 22 | 1.620 (41.1) | 1.75 (44.5) | 1.625 (41.3) | 1.500 - .1P - .1L |
| 24 | 1.745 (44.3) | 1.88 (47.8) | 1.750 (44.5) | 1.625 - .1P - .1L |

**PC Tail Diameter**

| Contact Size | Ø P |
|---|---|
| 22D | .021 (0.53)<br>.018 (0.46) |
| 20 | .024 (0.61)<br>.028 (0.71) |
| 16 | .0635 (1.61)<br>.0615 (1.56) |
| 12 | .095 (2.41)<br>.093 (2.36) |

**Replacement O-Ring Part Numbers***

| Shell Size | Piston O-Ring |
|---|---|
| 10 | 2-014 |
| 12 | 2-016 |
| 14 | 2-018 |
| 16 | 2-020 |
| 18 | 2-022 |
| 20 | 2-024 |
| 22 | 2-026 |
| 24 | 2-028 |

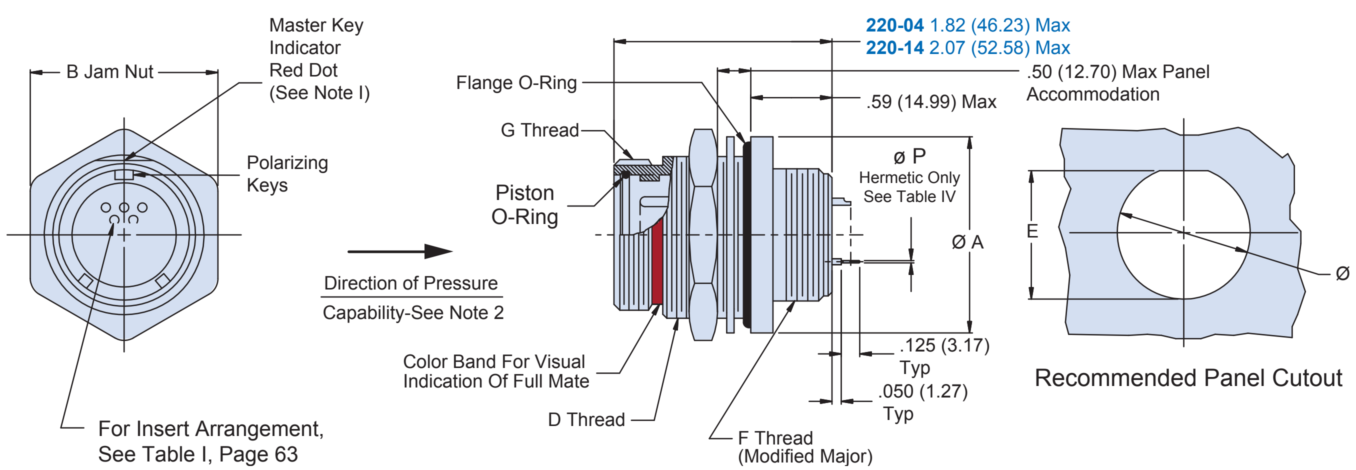
* Parker O-ring part numbers.
Compound N674-70 or equivalent.

# 220-04 and 220-14
## Jam nut receptacle, rear bulkhead mount

**ENVIRONMENTAL–5000 PSI MATED OR HERMETIC–5000 PSI OPEN FACE RECEPTACLE**

| How To Order | | | | | |
|---|---|---|---|---|---|
| Sample Part Number | 220-04 | E | 24 -61 | P | N |
| Series and Shell Style | 220-04 - Standard with Accessory Thread<br>220-14 - Scoop-Proof with Accessory Thread | | | | |
| Class | H = Hermetic E = Environmental | | | | |
| Shell Size-Contact Arrangement | See pages 65-66 | | | | |
| Contact Style | P = Pin, Solder Cup C = Pin, PC Tail (hermetic Only)<br>S = Sockets, Solder Cup D = Socket, PC Tail (Hermetic Only) | | | | |
| Polarization | N, 1, 2, 3, 4 See page 65 | | | | |

Prior to use, lubricate O-rings with high grade silicone lubricant (Moly-kote M55 or equivalent).




| Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Shell Size | A Dia | B Flats | C Dia ±.005±(0.1) | D Thread Class 2A | E ±.005 ±(0.1) | F Thread Class 2A | G Thread Class 2A |
| 10 | 1.25 (31.8) | 1.125 (28.6) | .885 (22.5) | 7/8 - 20 UNEF | .835 (21.2) | 5/8 - 24 UNEF | .750 - .1P - .1L |
| 12 | 1.38 (35.1) | 1.250 (31.8) | 1.010 (25.7) | 1 - 20 UNEF | .960 (24.4) | 3/4 - 20 UNEF | .875 - .1P - .1L |
| 14 | 1.50 (38.1) | 1.500 (38.1) | 1.135 (28.8) | 1 1/8 - 16 UN | 1.085 (27.6) | 7/8 - 20 UNEF | 1.000 - .1P - .1L |
| 16 | 1.63 (41.4) | 1.625 (41.3) | 1.260 (32.0) | 1 1/4 - 16 UN | 1.210 (30.7) | 1 - 20 UNEF | 1.125 - .1P - .1L |
| 18 | 1.75 (44.5) | 1.750 (44.5) | 1.385 (35.2) | 1 3/8 - 16 UN | 1.335 (33.9) | 1 1/8 - 16 UN | 1.250 - .1P - .1L |
| 20 | 1.88 (47.8) | 1.875 (47.6) | 1.510 (38.4) | 1 1/2 - 16 UN | 1.460 (37.1) | 1 1/4 - 16 U N | 1.375 - .1P - .1L |
| 22 | 2.00 (50.8) | 2.000 (50.8) | 1.635 (41.5) | 1 5/8 - 16 UN | 1.585 (40.3) | 1 3/8 - 16 UN | 1.500 - .1P - .1L |
| 24 | 2.12 (53.8) | 2.125 (54.0) | 1.760 (44.7) | 1 3/4 - 16 UN | 1.710 (43.4) | 1 1/2 - 16 UN | 1.625 - .1P - .1L |

| PC Tail Diameter | |
|---|---|
| Contact Size | Ø P |
| 22D | .021 (0.53)<br>.018 (0.46) |
| 20 | .024 (0.61)<br>.028 (0.71) |
| 16 | .0635 (1.61)<br>.0615 (1.56) |
| 12 | .095 (2.41)<br>.093 (2.36) |

**Replacement O-Ring Part Numbers ***

| Shell Size | Piston O-Ring | Flange O-Ring |
|---|---|---|
| 10 | 2-014 | 2-021 |
| 12 | 2-016 | 2-023 |
| 14 | 2-018 | 2-025 |
| 16 | 2-020 | 2-027 |
| 18 | 2-022 | 2-029 |
| 20 | 2-024 | 2-030 |
| 22 | 2-026 | 2-031 |
| 24 | 2-028 | 2-032 |

* Parker O-ring part numbers. Compound N674-70 or equivalent.





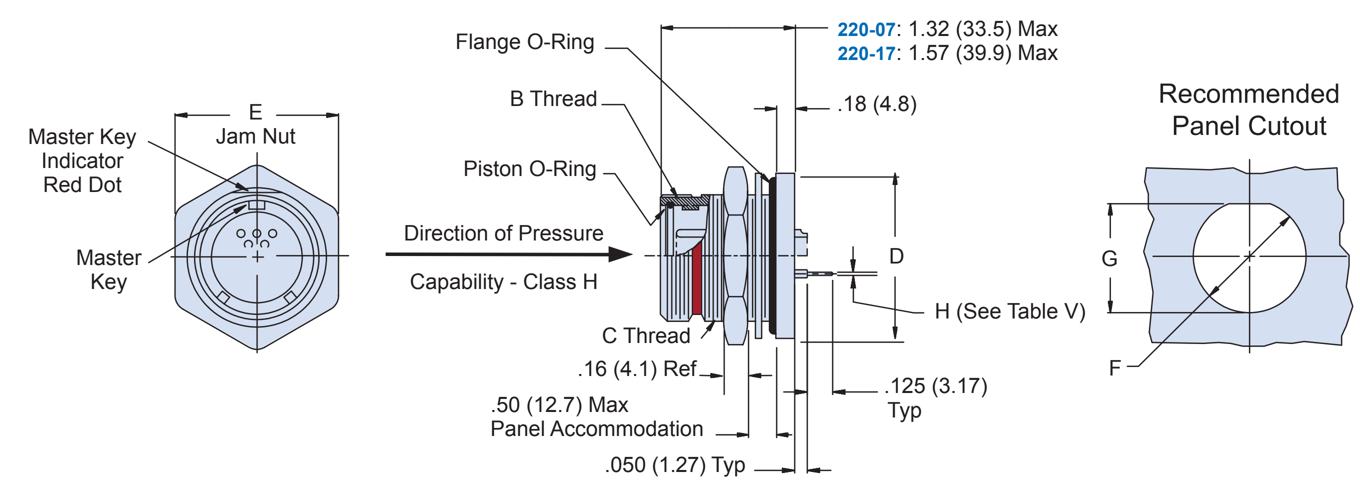



# 220-07 and 220-17
## Jam nut receptacle, rear box mount

**ENVIRONMENTAL–5000 PSI MATED OR HERMETIC–5000 PSI OPEN FACE RECEPTACLE**

| How To Order | | | | | |
|---|---|---|---|---|---|
| Sample Part Number | 220-07 | H | 24-61 | P | N |
| Series and Shell Style | 220-07 - Standard<br>220-17 - Scoop-Proof | | | | |
| Class | H = Hermetic E = Environmental | | | | |
| Shell Size-Contact Arrangement | See pages 65-66 | | | | |
| Contact Style | P = Pin, Solder Cup C = Pin, PC Tail<br>S = Socket , Solder Cup D = Socket, PC Tail | | | | |
| Polarization | N, 1, 2, 3, 4 See page 65 | | | | |

Prior to use, lubricate O-rings with high grade silicone lubricant (Moly-kote M55 or equivalent).




| Dimensions | | | | | | |
|---|---|---|---|---|---|---|
| Shell Size | B Thread Class 2A | C Thread Class 2A | D Dia | E Flats | F Dia ±.005± (0.1) | G ±.005± (0.1) |
| 10 | .750 - .1P - .1L | 7/8 - 20 UNEF | 1.25 (31.8) | 1.125 (28.6) | .885 (22.5) | .835 (21.2) |
| 12 | .875 - .1P - .1L | 1 - 20 UNEF | 1.38 (35.1) | 1.250 (31.8) | 1.010 (25.7) | .960 (24.4) |
| 14 | 1.000 - .1P - .1L | 1 1/8 - 16 UN | 1.50 (38.1) | 1.500 (38.1) | 1.135 (28.8) | 1.085 (27.6) |
| 16 | 1.125 - .1P - .1L | 1 1/4 - 16 UN | 1.63 (41.4) | 1.625 (41.3) | 1.260 (32.0) | 1.210 (30.7) |
| 18 | 1.250 - .1P - .1L | 1 3/8 - 16 UN | 1.75 (44.5) | 1.750 (44.5) | 1.385 (35.2) | 1.335 (33.9) |
| 20 | 1.375 - .1P - .1L | 1 1/2 - 16 UN | 1.88 (47.8) | 1.875 (47.6) | 1.510 (38.4) | 1.460 (37.1) |
| 22 | 1.500 - .1P - .1L | 1 5/8 - 16 UN | 2.00 (50.8) | 2.000 (50.8) | 1.635 (41.5) | 1.585 (40.3) |
| 24 | 1.625 - .1P - .1L | 1 3/4 - 16 UN | 2.12 (53.8) | 2.125 (54.0) | 1.760 (44.7) | 1.710 (43.4) |

| PC Tail Diameter | |
|---|---|
| Contact Size | Ø P |
| 22D | .021 (0.53)<br>.018 (0.46) |
| 20 | .024 (0.61)<br>.028 (0.71) |
| 16 | .0635 (1.61)<br>.0615 (1.56) |
| 12 | .095 (2.41)<br>.093 (2.36) |

**Replacement O-Ring Part Numbers ***

| Shell Size | Piston O-Ring | Flange O-Ring |
|---|---|---|
| 10 | 2-014 | 2-020 |
| 12 | 2-016 | 2-023 |
| 14 | 2-018 | 2-025 |
| 16 | 2-020 | 2-027 |
| 18 | 2-022 | 2-029 |
| 20 | 2-024 | 2-030 |
| 22 | 2-026 | 2-031 |
| 24 | 2-028 | 2-032 |

* Parker O-ring part numbers. Compound N674-70 or equivalent.

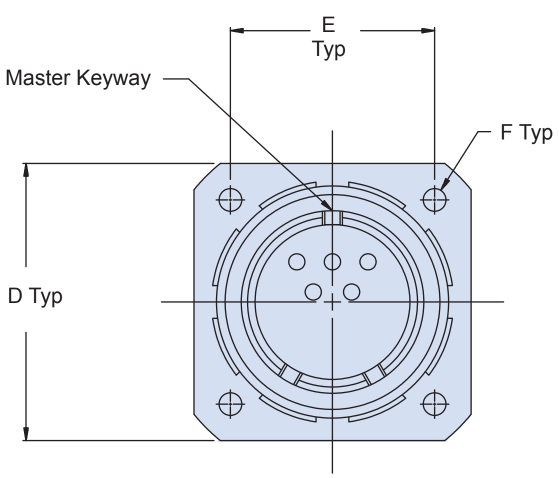
# 220-09 and 220-19
## Plug connector, box-mount

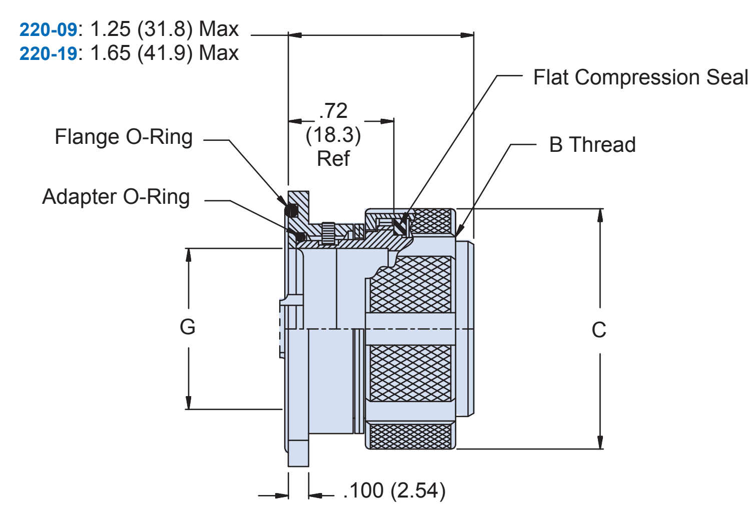


### ENVIRONMENTAL–5000 PSI MATED OR HERMETIC–5000 PSI OPEN FACE RECEPTACLE

**How To Order**

| Sample Part Number | 220-09 | E | 24-61 | P | N |
|---|---|---|---|---|---|
| Series and Shell Style | 220-09 - Standard<br>220-19 - Scoop-Proof | | | | |
| Class | E = High-Pressure Environmental | | | | |
| Shell Size - Contact Arrangement | See pages 65-66 | | | | |
| Contact Style | P = Pin S = Socket | | | | |
| Polarization | N, 1, 2, 3, 4 See page 65 | | | | |




**Dimensions**

| Shell Size | B Thread Class 2B | C Dia Max | D Dim | E Dim | F Dia | Mtg Screw Ref. | G Panel Cutout |
|---|---|---|---|---|---|---|---|
| 10 | .750 - .1P - .1L | 1.000 (25.4) | 1.09 (27.7) | .844 (21.4) | .125 (3.2) | No. 4 | .625 (15.9) |
| 12 | .875 - .1P - .1L | 1.125 (28.6) | 1.19 (30.2) | .938 (23.8) | .125 (3.2) | No. 4 | .750 (19.1) |
| 14 | 1.000 - .1P - .1L | 1.250 (31.8) | 1.25 (31.8) | 1.000 (25.4) | .125 (3.2) | No. 4 | .875 (22.2) |
| 16 | 1.125 - .1P - .1L | 1.375 (34.9) | 1.34 (34.0) | 1.094 (27.8) | .125 (3.2) | No. 4 | 1.000 (25.4) |
| 18 | 1.250 - .1P - .1L | 1.594 (40.5) | 1.44 (36.6) | 1.188 (30.2) | .125 (3.2) | No. 4 | 1.125 (28.6) |
| 20 | 1.375 - .1P - .1L | 1.719 (43.7) | 1.55 (39.4) | 1.281 (32.5) | .125 (3.2) | No. 4 | 1.250 (31.8) |
| 22 | 1.500 - .1P - .1L | 1.844 (46.8) | 1.72 (43.7) | 1.375 (34.9) | .125 (3.2) | No. 4 | 1.375 (34.9) |
| 24 | 1.625 - .1P - .1L | 1.969 (50.0) | 1.85 (47.0) | 1.500 (38.1) | .156 (4.0) | No. 6 | 1.500 (38.1) |

**Seal Replacement Part Numbers**

| Shell Size | Adapter O-Ring | Flange O-Ring | Compression Flat Seal |
|---|---|---|---|
| 10 | 2-014 | 2-019 | G70653-10 |
| 12 | 2-016 | 2-021 | G70653-12 |
| 14 | 2-018 | 2-022 | G70653-14 |
| 16 | 2-020 | 2-024 | G70653-16 |
| 18 | 2-022 | 2-025 | G70653-18 |
| 20 | 2-024 | 2-027 | G70653-20 |
| 22 | 2-026 | 2-029 | G70653-22 |
| 24 | 2-028 | 2-030 | G70653-24 |

*Parker O-ring part numbers.
Compound N674-70 or equivalent.







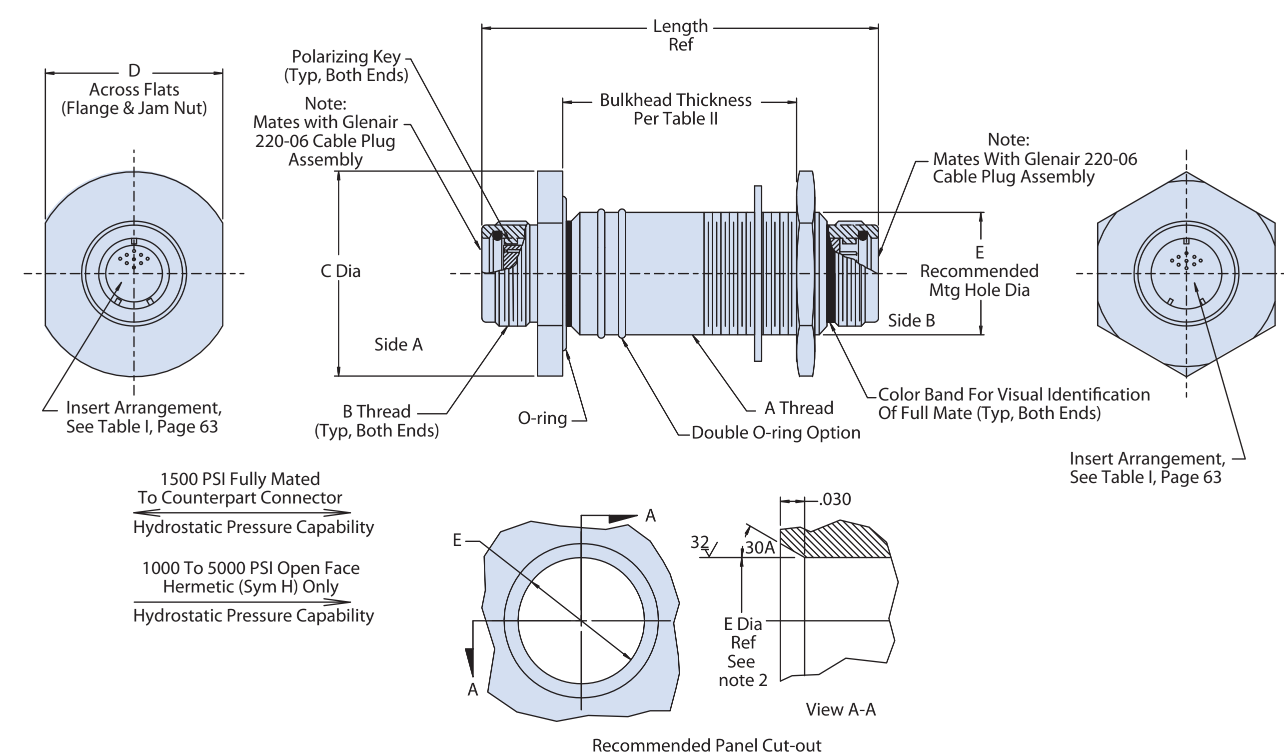
# 227-039 and 227-040
## Jam nut receptacle, bulkhead feed-through



### ENVIRONMENTAL–1500 PSI MATED OR HERMETIC UP TO –5000 PSI OPEN FACE RECEPTACLE

**How To Order**

| Sample Part Number | 227-040 | -24-61 | S | N | P | N | 03 | D |
|---|---|---|---|---|---|---|---|---|
| Series and Shell Style | 227-039 - Standard shell (mates with 220-06 plug)<br>227-040 - Scoop-Proof shell (mates with 220-016) | | | | | | | |
| Shell Size - Contact Arrangement | See pages 65-66 | | | | | | | |
| Side A Contact Style | P = Pins S = Sockets H = Hermetic Pin | | | | | | | |
| Side A Polarization | N, 1, 2, 3, 4 See page B-63 | | | | | | | |
| Side B Contact Style | P = Pin S = Socket H = Hermetic Pin | | | | | | | |
| Side B Polarization | N, 1, 2, 3, 4 See page 65 | | | | | | | |
| Bulkhead Thickness Dash No. | See Table III | | | | | | | |
| Double O-Ring Option | D (Omit for None) | | | | | | | |



# 227-039 and 227-040 Receptacle Jam Nut, Bulkhead Feed-through

| Dimensions | | | | | |
|---|---|---|---|---|---|
| Shell Size | A Thread Class 2A | B Thread Class 2A | C Dia | D Flat | E Dia * |
| 10 | 7/8-20 UNEF | .750-.1P-.1L | 1.41 (35.8) | 1.250 (31.8) | .875 (22.2) |
| 12 | 1-20 UNEF | .875-.1P-.1L | 1.53 (38.9) | 1.375 (34.9) | 1.000 (25.4) |
| 14 | 1 1/8-18 UNEF | 1.000-.1P-.1L | 1.66 (42.2) | 1.500 (38.1) | 1.125 (28.6) |
| 16 | 1 1/4-16 UN | 1.125-.1P-.1L | 1.78 (45.2) | 1.625 (41.3) | 1.250 (31.8) |
| 18 | 1 3/8-16 UN | 1.250-.1P-.1L | 1.91 (48.5) | 1.750 (44.5) | 1.375 (34.9) |
| 20 | 1 1/2-16 UN | 1.375-.1P-.1L | 2.03 (51.6) | 1.875 (47.6) | 1.500 (38.1) |
| 22 | 1 5/8-16 UN | 1.500-.1P-.1L | 2.16 (54.9) | 2.000 (50.8) | 1.625 (41.3) |
| 24 | 1 3/4-16 UN | 1.625-.1P-.1L | 2.28 (57.9) | 2.125 (54.0) | 1.750 (44.5) |
| * Standard Shell +.010 (.254) -.000 (.0) | | | * Double "O" Ring Option +.002 (.05) -.000 (.0) | | |

| Bulkhead Thickness | | | | |
|---|---|---|---|---|
| | | | Length (Ref.) | |
| Dash No. | Panel Min | Panel Max | Standard Shell Length | Scoop-Proof Shell Length |
| 01 | .03 (.8) | 1.00 (25.4) | 2.30 (58.4) | 3.00 (76.2) |
| 02 | 1.00 (25.4) | 2.00 (50.8) | 3.30 (83.8) | 4.00 (101.6) |
| 03 | 2.00 (50.8) | 3.00 (76.2) | 4.30 (109.2) | 5.00 (127.0) |
| 04 | 3.00 (76.2) | 4.00 (101.6) | 5.30 (134.6) | 6.00 (152.4) |
| 05 | 4.00 (101.6) | 5.00 (127.0) | 6.30 (160.0) | 7.00 (177.8) |
| 06 | 5.00 (127.0) | 6.00 (152.4) | 7.30 (185.4) | 8.00 (203.2) |
| 07 | 6.00 (152.4) | 7.00 (177.8) | 8.30 (210.8) | 9.00 (228.6) |
| 08 | 7.00 (177.8) | 8.00 (203.2) | 9.30 (236.2) | 10.00 (254.0) |

## NOTES

1. Power to a given contact on one end will result in power to contact directly opposite, regardless of identification letter.
2. For standard o-ring option, $\sqrt[32]{}$ does not apply and E dia s/b $^{+.010}_{-.000}$
3. For pin/pin and skt/skt, symmetrical layouts only, consult factory for available Contact Arrangements.
4. Performance capabilities

Current Rating:

| | |
|---|---|
| Size 12 contact | 17 amps at 750 VDC |
| Size 16 contact | 10 amps at 750 VDC |
| Size 20 contact | 5 amps at 500 VDC |
| Size 22 contact | 3 amps at 500 VDC |

Insulation Resistance:
1000 MegOhms min, at 500 VDC, Between contacts and contacts to shell

Hermeticity:
Less than 10^-6 cc/sec leakage at 1 atmosphere

SUBSEA/SHALLOW WATER: GEO-MARINE®






# 290-011 and 290-012 Stainless Steel Molding Adapters

## STAINLESS STEEL MOLDING ADAPTERS, STANDARD OR WITH OPTIONAL CABLE ENTRY DIAMETERS

| How To Order | | |
|---|---|---|
| Sample Part Number | 290WS011 | –18 |
| Basic Number | 290WS011 | |
| Shell Size | See Table I | |

| How To Order | | | |
|---|---|---|---|
| Sample Part Number | 290WS012 | –18 | 12 |
| Basic Number | 290WS012 | | |
| Shell Size | See Table II | | |
| Cable Entry Size | See Table II | | |

### *Tips*

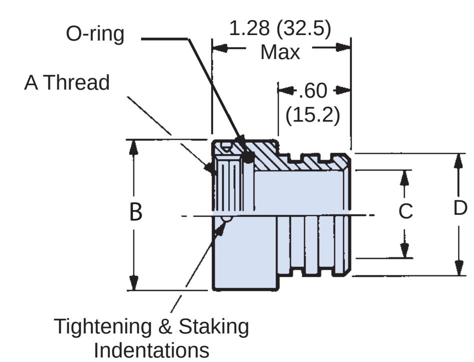
To select the appropriate molding adapter, consider the following basic suggestions to ensure a high integrity, quality molded termination:

- Select a molding adapter which will provide adequate inside working room to accept the termination envelope, especially if there are shield terminations, splices, etc.
- If the termination is to be molded with neoprene or other material using a transfer molding process, select the molding adapter cable entry diameter close to the outside diameter of the cable or termination envelope.

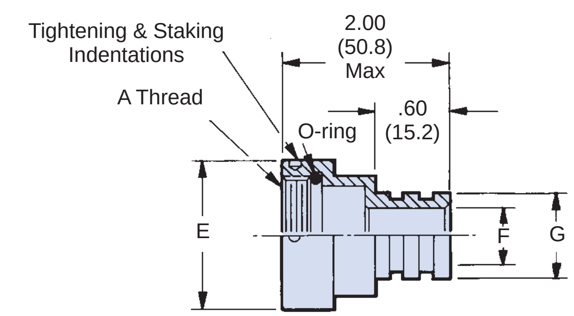
## NOTES

1. Prior to use, lubricate O-rings with high grade silicone lubricant (Molykote M55 or equivalent).
2. Material:
   Adapter - stainless steel.
   O-ring - nitrile

### 290WS011 STANDARD




### 290WS012 OPTIONAL CABLE ENTRY DIAMETERS




SUBSEA/SHALLOW WATER: GEO-MARINE®

# 290-011 and 290-012 Stainless Steel Molding Adapters

| Table I: 290WS011 Fixed Entry Dimensions | | | | |
|---|---|---|---|---|
| **Shell Size** | **A Thread Class 2B** | **B Dia Max** | **C Dia** | **D Dia** |
| 10 | 5/8 - 24 UNEF | .855 (21.7) | .430 (10.9) | .670 (17.0) |
| 12 | 3/4 - 20 UNEF | .965 (24.5) | .535 (13.6) | .780 (19.8) |
| 14 | 7/8 - 20 UNEF | 1.090 (27.7) | .660 (16.8) | .905 (23.0) |
| 16 | 1 - 20 UNEF | 1.220 (31.0) | .785 (19.9) | 1.020 (25.9) |
| 18 | 1 1/8 - 16 UN | 1.370 (34.8) | .880 (22.4) | 1.135 (28.8) |
| 20 | 1 1/4 - 16 UN | 1.525 (38.7) | 1.005 (25.5) | 1.250 (31.8) |
| 22 | 1 3/8 - 16 UN | 1.655 (42.0) | 1.130 (28.7) | 1.383 (35.1) |
| 24 | 1 1/2 - 16 UN | 1.775 (45.1) | 1.255 (31.9) | 1.510 (38.4) |

| Table II: 290WS012 Variable Entry Dimensions | | | | | |
|---|---|---|---|---|---|
| **Shell Size** | **A Thread Class 2B** | **E Dia Max** | **Max Entry** | **F Dia** | **G Dia** |
| 10 | 5/8 - 24 UNEF | .855 (21.7) | | .430 (10.9) | .670 (17.0) |
| 12 | 3/4 - 20 UNEF | .965 (24.5) | 12 | .535 (13.6) | .780 (19.8) |
| 14 | 7/8 - 20 UNEF | 1.090 (27.7) | | .660 (16.8) | .905 (23.0) |
| 16 | 1 - 20 UNEF | 1.220 (31.0) | 16 | .785 (19.9) | 1.020 (25.9) |
| 18 | 1 1/8 - 16 UN | 1.370 (34.8) | | .880 (22.4) | 1.135 (28.8) |
| 20 | 1 1/4 - 16 UN | 1.525 (38.7) | 20 | 1.005 (25.5) | 1.250 (31.8) |
| 22 | 1 3/8 - 16 UN | 1.655 (42.0) | | 1.130 (28.7) | 1.383 (35.1) |
| 24 | 1 1/2 - 16 UN | 1.775 (45.1) | 24 | 1.255 (31.9) | 1.510 (38.4) |

| Table IV: Torque Values | |
|---|---|
| **Entry No.** | **Torque ± 5 In. Lbs.** |
| 10 | 80 |
| 12 | 100 |
| 14 | 120 |
| 16 | 120 |
| 18 | 140 |
| 20 | 140 |
| 22 | 140 |
| 24 | 150 |

| Table V: Replacement O-Ring Part Numbers * | |
|---|---|
| **Shell Size** | **Piston O-Ring** |
| 10 | 2-014 |
| 12 | 2-016 |
| 14 | 2-018 |
| 16 | 2-020 |
| 18 | 2-022 |
| 20 | 2-024 |
| 22 | 2-026 |
| 24 | 2-028 |

* Parker o-ring part numbers. Compound N674-70 or equivalent.

## INSTRUCTIONS FOR USING CABLE MOLDING ADAPTERS

1. Slide 290WS011/012 adapter over cable
2. Prepare cable and wires
3. If using shrink sleeves, slide them over wire insulation and solder terminated wires to solder cup contacts; slide shrink sleeves to correct position and apply recommended heat.
4. Slide 290WS011/012 adapter and attach hand-tight to plug connector.
5. Use Plug Holding Tool (P/N 600-005) along with Hand Held Torque Wrench (P/N 600-076) and Spanner Wrench (P/N 600-171) to tighten to recommended torque value.

*Please note that the "tightening/staking indentations" are on the 290WS011/012 Adapter, NOT on the Marine Bronze Coupling Nut. The "holes" in the coupling nut retain the spring for the anti-decoupling feature of the cable plug.*

*The TG70 Strap Wrench and the 600-076 Torque Wrench should be utilized to properly torque the cable/plug assembly to the appropriate receptacle*





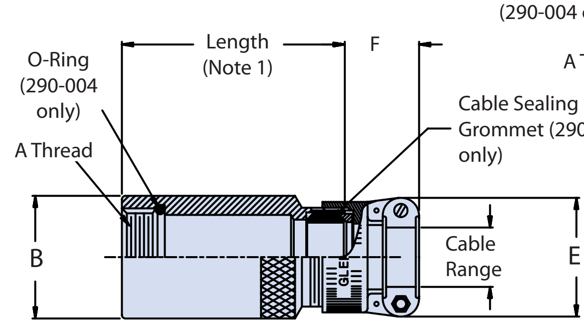



# 290-003 and 290-004 Environmental Backshell with Strain-Relief Clamp

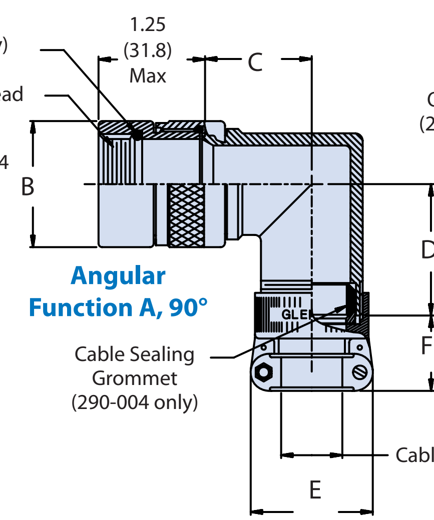
## 90°, 45° OR STRAIGHT ENVIRONMENTAL BACKSHELL AND/OR CABLE CLAMP

| How To Order | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Sample Part Number** | 290 | W | A | 003 | NF | –16 | 10 | H | 6 |

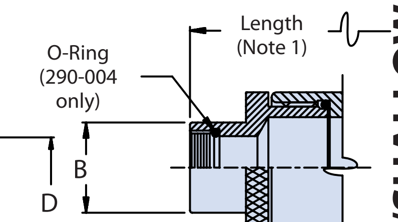
| | |
|---|---|
| **Product Series** | 290 |
| **Connector Designator** | W |
| **Angular Function** | **A** = 90°<br>**H** = 45°<br>**S** = Straight |
| **Basic Part Number** | **003** = Strain Relief<br>**004** = Environmental Seal/Strain Relief |
| **Material/Finish** | **B, G, M, GB, NF, Z1** See Table IV, |
| **Shell Size** | **-10, -12, -14, -16, -18, -20, -22, -24, -28** See Table I |
| **Cable Entry Dash No.** | **04, 06, 08, 10, 12, 16, 18, 20, 24, 28,**<br>See Table II |
| **Strain Relief Style** | **H** = Cable Clamp, Table II **K** = Cable Grip, Table III |
| **Length (S Only)** | 1/2 inch Increments, e.g. **6** = 3.0 inches; See Note 2 |



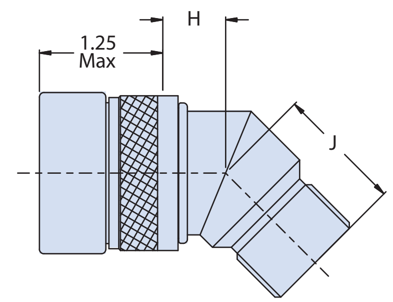

**Direct-Coupling Style 1**



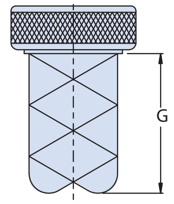

**Angular Function A, 90°**




**Stepped Coupling Style 2**
(Note 2)




**Angular Function H, 45°**




**Strain-Relief Style K**
Cable Grip
Table III

# 290-003 and 290-004 Environmental Backshell with Strain-Relief Clamp



**Table I: Connector Mating Dimensions**

| Shell Size | A Thread Class 2B | B Dia Max | |
|---|---|---|---|
| 10 | 5/8-24 UNEF | 0.781 | (19.8) |
| 12 | 3/4-20 UNEF | 0.906 | (23.0) |
| 14 | 7/8-20 UNEF | 1.031 | (26.2) |
| 16 | 1 -20 UNEF | 1.156 | (29.4) |
| 18 | 1 1/8-16 UN | 1.281 | (32.5) |
| 20 | 1 1/4-16 UN | 1.406 | (35.7) |
| 22 | 1 3/8-16 UN | 1.531 | (38.9) |
| 24 | 1 1/2-16 UN | 1.656 | (42.1) |
| 28 | 1 5/8-18 UNEF | 1.781 | (45.2) |

**Table II: Backshell and Style H Dimension**

| Dash No. | C Max | | D Max | | E Max | | F Max | | H Max | | J Max | | Cable Entry Min | | Cable Entry Max | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04 | 0.94 | (23.9) | 1.16 | (29.5) | 0.957 | (24.3) | 0.780 | (19.8) | 0.74 | (18.8) | 0.95 | (24.1) | 0.125 | (3.2) | 0.312 | (7.9) |
| 06 | 0.98 | (24.9) | 1.22 | (31.0) | 1.145 | (29.1) | 0.780 | (19.8) | 0.76 | (19.3) | 0.98 | (24.9) | 0.250 | (6.4) | 0.437 | (11.1) |
| 08 | 1.03 | (26.2) | 1.25 | (31.8) | 1.332 | (33.8) | 0.780 | (19.8) | 0.78 | (19.8) | 1.00 | (25.4) | 0.312 | (7.9) | 0.562 | (14.3) |
| 10 | 1.09 | (27.7) | 1.32 | (33.5) | 1.332 | (33.8) | 0.780 | (19.8) | 0.80 | (20.3) | 1.03 | (26.2) | 0.350 | (8.9) | 0.625 | (15.9) |
| 12 | 1.12 | (28.4) | 1.36 | (34.5) | 1.551 | (39.4) | 0.811 | (20.6) | 0.82 | (20.8) | 1.05 | (26.7) | 0.500 | (12.7) | 0.750 | (19.1) |
| 16 | 1.25 | (31.8) | 1.45 | (36.8) | 1.770 | (45.0) | 0.905 | (23.0) | 0.87 | (22.1) | 1.09 | (27.7) | 0.625 | (15.9) | 0.937 | (23.8) |
| 20 | 1.41 | (35.8) | 1.65 | (41.9) | 2.113 | (53.7) | 1.092 | (27.7) | 1.14 | (29.0) | 1.35 | (34.3) | 0.875 | (22.2) | 1.250 | (31.8) |
| 24 | 1.41 | (35.8) | 1.65 | (41.9) | 2.363 | (60.0) | 1.124 | (28.5) | 1.14 | (29.0) | 1.35 | (34.3) | 1.000 | (25.4) | 1.375 | (34.9) |
| 28 | 1.60 | (40.6) | 1.88 | (47.8) | 2.770 | (70.4) | 1.399 | (35.5) | 1.27 | (32.3) | 1.43 | (36.3) | 1.250 | (31.8) | 1.625 | (41.3) |
| 32 | 1.60 | (40.6) | 1.88 | (47.8) | 3.020 | (76.7) | 1.399 | (35.5) | 1.27 | (32.3) | 1.43 | (36.3) | 1.437 | (36.5) | 1.875 | (47.6) |

**Table III: Style K Dimensions**

| Dash No | G Length Ref | | Grip Range Min | | Grip Range Max | |
|---|---|---|---|---|---|---|
| 03 | 2.12 | (53.8) | 0.180 | (4.6) | 0.210 | (5.3) |
| 04 | 2.75 | (69.9) | 0.210 | (5.3) | 0.310 | (7.9) |
| 06 | 4.00 | (101.6) | 0.310 | (7.9) | 0.438 | (11.1) |
| 08 | 4.12 | (104.6) | 0.438 | (11.1) | 0.500 | (12.7) |
| 10 | 4.37 | (111.0) | 0.500 | (12.7) | 0.625 | (15.9) |
| 12 | 6.00 | (152.4) | 0.625 | (15.9) | 0.750 | (19.1) |
| 14 | 5.00 | (127.0) | 0.750 | (19.1) | 0.875 | (22.2) |
| 16 | 6.00 | (152.4) | 0.875 | (22.2) | 1.000 | (25.4) |
| 20 | 6.25 | (158.8) | 1.000 | (25.4) | 1.250 | (31.8) |
| 24 | 7.25 | (184.2) | 1.125 | (28.6) | 1.375 | (34.9) |

**Table IV: Finish**

| Sym | Finish Description |
|---|---|
| B | Cadmium Plate/Olive Drab |
| G | Hard Coat, Mil-A-8625 Color Gray |
| M | Electroless Nickel |
| N | Cadmium Plate/Olive Drab Over Nickel Plate |
| GB | Hard Coat, Mil-A-8625 Color Black |
| NF | Cad/O. D. Over Electroless Nickel (1000 Hour Salt Spray) |
| Z1 | Stainless Steel Material Passivate Per QQ-P-35 |

## NOTES

1. Assembly identified with manufacturer's name and P/N, space permitting.
2. Standard minimum length for Style I is 1.50 Inch, for Style II is 2.00 Inches. For shorter length, consult factory. Note: applies to Sym S, straight, only.
3. When cable diameter exceeds inside diameter or connector shell, Style II will be supplied.
4. Glenair 600 series backshell assembly tools are recommended for assembly and installation.
5. Material/finish:
   Elbows, adapter, coupling & gland nuts, clamp - Al alloy or CRES/see Table II.
   Grip, hardware - CRES/passivate.





Geo-Marine®

SERIES 22 5000M / 5000 PSI

Shallow Water Application

Glenair.

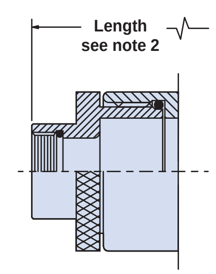
# 297W EMI/RFI Strain Relief Backshell Cable Sealing for Geo-Marine® Connectors

SUBSEA/SHALLOW WATER: GEO-MARINE®

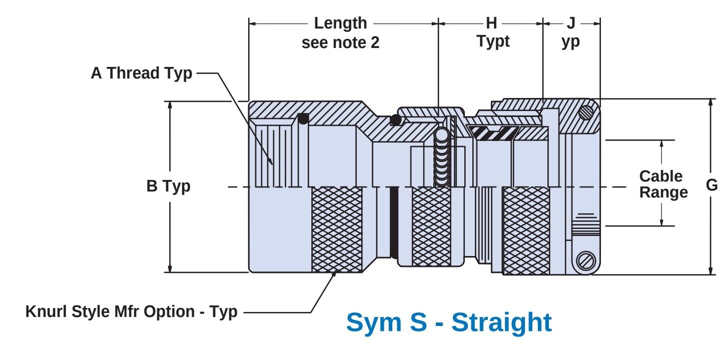
## ENVIRONMENTAL 45°, 90° AND STRAIGHT STRAIN RELIEF BACKSHELLS

**How To Order**

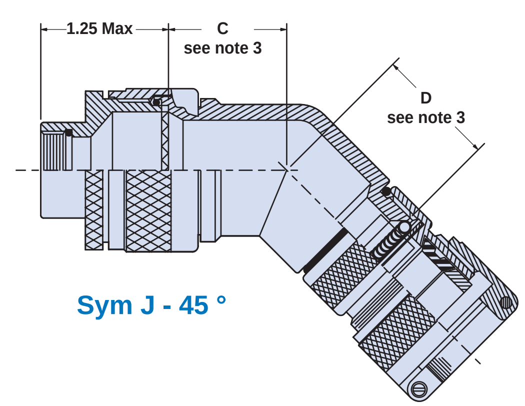
| Sample Part Number | 297W | S | 003 | 16 | 10 | D | 6 |
|---|---|---|---|---|---|---|---|
| Product Series and Connector Designator | 297W | | | | | | |
| Angular Function | H = 45° J = 90° S = Straight | | | | | | |
| Basic Number | 003 | | | | | | |
| Shell Size | See Table I | | | | | | |
| Cable Entry Dash No. | See Table II | | | | | | |
| Gland Nut | D = Gland Nut Omit for Clamp, Substitute Dash | | | | | | |
| Length | 1/2 Inch Increments; E.G. 6 = 3 Inches See Note 2<br>Length "F Dim" for 90A in 1/2 Inch Increments<br>Length "D Dim" for 45A in 1/2 Inch Increments<br>Omit for Standard Length D & F on 45A and 90A Assembly | | | | | | |



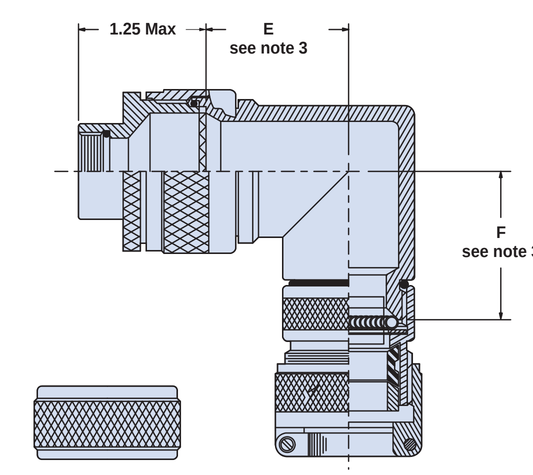

Syle II
see note 3




Sym S - Straight




Sym J - 45 °




Sym D - Gland Nut Sym J - 90°

# 297W EMI/RFI Strain Relief Backshell Cable Sealing for Geo-Marine® Connectors



**Table I: Dimensions**

| Shell Size | A Thread Class 2B | B Max | | C Max | | D (Standard) Max | | E Max | | F (Standard) Max | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 5/8-24 UNEF | .781 | (19.8) | .688 | (17.5) | .86 | (21.8) | .87 | (22.1) | 1.04 | (26.4) |
| 12 | 3/4-20 UNEF | .906 | (23.0) | .705 | (17.9) | .89 | (22.6) | .97 | (24.6) | 1.11 | (28.2) |
| 14 | 7/8-20 UNEF | 1.031 | (26.2) | .732 | (18.6) | .91 | (23.1) | .98 | (24.9) | 1.17 | (29.7) |
| 16 | 1-20 UNEF | 1.156 | (29.4) | .748 | (19.0) | .92 | (23.4) | 1.02 | (25.9) | 1.19 | (30.2) |
| 18 | 1 1/8-16 UN | 1.281 | (32.5) | .773 | (19.6) | .94 | (23.9) | 1.08 | (27.4) | 1.25 | (31.8) |
| 20 | 1 1/4-16 UN | 1.406 | (35.7) | .800 | (20.3) | .98 | (24.9) | 1.14 | (29.0) | 1.33 | (33.8) |
| 22 | 1 3/8-16 UN | 1.531 | (38.9) | .823 | (20.9) | 1.01 | (25.7) | 1.20 | (30.5) | 1.40 | (35.6) |
| 24 | 1 1/2-16 UN | 1.656 | (42.1) | 1.041 | (26.4) | 1.18 | (30.0) | 1.48 | (37.6) | 1.64 | (41.7) |

**Table II: Cable Entry Dash Number Dimensions**

| Dash No | Cable Entry Min | | Cable Entry Max | | G Max | | H Ref | | J Ref | |
|---|---|---|---|---|---|---|---|---|---|---|
| 03 | .156 | (4.0) | .250 | (6.4) | .844 | (21.4) | 1.03 | (26.2) | .760 | (19.3) |
| 04 | .188 | (4.8) | .312 | (7.9) | .906 | (23.0) | 1.03 | (26.2) | .760 | (19.3) |
| 06 | .281 | (7.1) | .4381 | (11.1) | 1.903 | (48.3) | 1.03 | (26.2) | .760 | (19.3) |
| 08 | .344 | (8.7) | .5621 | (14.3) | 1.187 | (30.1) | 1.03 | (26.2) | .760 | (19.3) |
| 10 | .375 | (9.5) | .6251 | (15.9) | 1.281 | (32.5) | 1.19 | (30.2) | .760 | (19.3) |
| 12 | .438 | (11.1) | .750 | (19.1) | 1.500 | (38.1) | 1.19 | (30.2) | .760 | (19.3) |
| 16 | .562 | (14.3) | .938 | (23.8) | 1.719 | (43.7) | 1.19 | (30.2) | 1.073 | (27.3) |
| 20 | .750 | (19.1) | 1.250 | (31.8) | 2.062 | (52.4) | 1.19 | (30.2) | 1.323 | (33.6) |
| 24 | .781 | (19.8) | 1.375 | (34.9) | 2.312 | (58.7) | 1.19 | (30.2) | 1.323 | (33.6) |
| 28 | .969 | (24.6) | 1.625 | (41.3) | 2.719 | (69.1) | 1.19 | (30.2) | 1.572 | (39.9) |
| 32 | 1.125 | (28.6) | 1.875 | (47.6) | 2.969 | (75.4) | 1.19 | (30.2) | 1.572 | (39.9) |
| 40 | 1.469 | (37.3) | 2.375 | (60.3) | 3.531 | (89.7) | 1.19 | (30.2) | 1.572 | (39.9) |

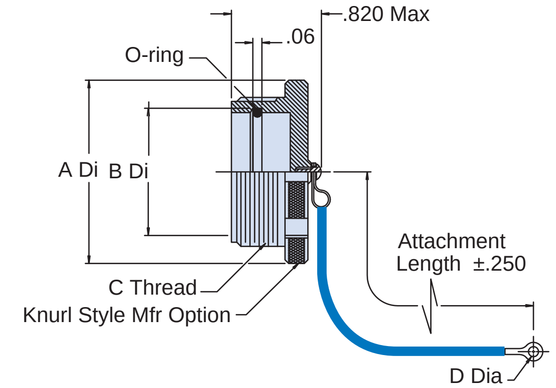
## NOTES

1. Assembly identified with manufacturer's name and P/N, space permitting.
2. Standard minimum length for Style I is 1.50 Inch, for Style II is 2.00 Inches. For shorter length, consult factory. Note: applies to Sym S, straight, only.
3. When maximum cable range exceeds inside diameter of connector shell:
   Sym S: Style II will be supplied.
   Sym H and Sym J: dimension C, D, E & F does not apply.
4. Glenair 600 series backshell assembly tools are recommended for assembly and installation.
5. Material/Finish:
   - Elbow, adapter, clamp, hardware, spring follower, coupling and gland nuts - CRES/pasivate
   - Washer - Fluoropolymer/n.a.
   - Grommet, o-rings - silicone/n.a.




SERIES 22 5000M / 5000 PSI
Shallow Water Application
Geo-Marine®
Glenair®

# 290-009 Cover for Standard Plug (Non-Scoop-Proof) Series 22 Connectors




**How To Order Plug Cover**

| Sample Part Number | 290-009 | S | 18 | 03- | 5 |
|---|---|---|---|---|---|
| Series - Shell Style | 290-009 = Standard Plug | | | | |
| Attachment Type | See Table III | | | | |
| Shell Size | See Table I | | | | |
| Dash No. | See Table II or Table IV | | | | |
| Attachment Length | 5 = 5 inches | | | | |

## NOTES:

1. Assembly identified with manufacturer's name and P/N, space permitting.
2. Protective cover is capable of hydrostatic sealing pressures to 5000 PSI, when fully mated with counterpart plug.
3. Material/finish:
   Cover, hardware & split ring - 300 series stainless steel/passivate
   Wire rope - CRES, see Table III/passivate
   O-ring - nitrile/n.a.

**Table I: Dimensions**

| Shell Size | A Max | B Max | C Thread Class 2A | Piston O-Ring Size* |
|---|---|---|---|---|
| 10 | 0.900 (22.9) | 0.602 (15.3) | .750 -.1P-.1L | 2-014 |
| 12 | 1.025 (26.0) | 0.727 (18.5) | .875 -.1P-.1L | 2-016 |
| 14 | 1.150 (29.2) | 0.852 (21.6) | 1.000 -.1P-.1L | 2-018 |
| 16 | 1.275 (32.4) | 0.977 (24.8) | 1.125 -.1P-.1L | 2-020 |
| 18 | 1.525 (38.7) | 1.102 (28.0) | 1.250 -.1P-.1L | 2-022 |
| 20 | 1.650 (41.9) | 1.227 (31.2) | 1.375 -.1P-.1L | 2-024 |
| 22 | 1.775 (45.1) | 1.352 (34.3) | 1.500 -.1P-.1L | 2-026 |
| 24 | 1.900 (48.3) | 1.477 (37.5) | 1.625 -.1P-.1L | 2-028 |

* Reference piston o-ring P/N when purchasing replacement rings

**Table II: Solid Ring Dia.**

| Dash No | D Dia |
|---|---|
| 01 | 0.125 (31.8) |
| 02 | 0.140 (3.6) |
| 03 | 0.167 (4.2) |
| 04 | 0.182 (4.6) |
| 05 | 0.191 (4.9) |
| 06 | 0.197 (5.0) |

**Table III: Attachment Type**

| Sym | Attachment | Sym | Attachment | Sym | Attachment |
|---|---|---|---|---|---|
| D | Bead chain, CRES, passivated, with terminal | G | Bead chain, CRES, passivated, no terminal | T | Wire rope, no jacket, w/terminal |
| E | Link chain, CRES, passivated, with clevis terminal | H | Wire rope, Fluoropolymer jacket w/ terminal | K | Nylon rope |
| F | Wire rope, nylon jacket w/terminal | N | Attachment omited | S | #8 Sash chain, CRES, passivate |
| | | R | Wire rope, pvc jacket w/terminal | U | Wire rope, polyurethane jacket, with terminal |

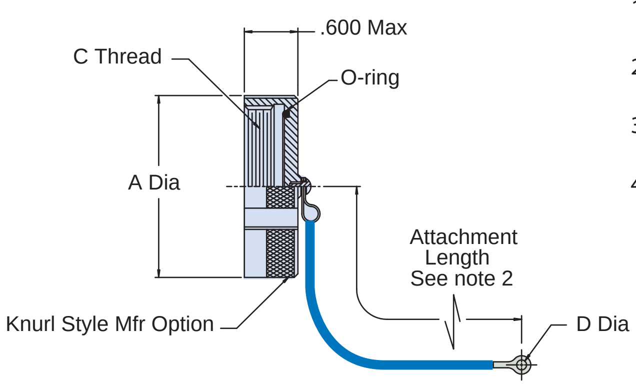
**Table IV: Split Ring Dia.**

| Dash No | E Dia | Dash No | E Dia |
|---|---|---|---|
| 50 | 0.425 (10.8) | 66 | 1.250 (31.8) |
| 52 | 0.485 (12.3) | 68 | 1.350 (34.3) |
| 54 | 0.640 (16.3) | 70 | 1.375 (34.9) |
| 56 | 0.750 (19.1) | 72 | 1.485 (37.7) |
| 58 | 0.890 (22.6) | 74 | 1.625 (41.3) |
| 60 | 1.015 (25.8) | 76 | 1.750 (44.5) |
| 62 | 1.095 (27.8) | 78 | 1.875 (47.6) |
| 64 | 1.130 (28.7) | 80 | 1.980 (50.3) |
| | | 82 | 2.060 (52.3) |

SUBSEA/SHALLOW WATER: GEO-MARINE®

# 290-010 Cover for Standard Receptacle (Non-Scoop-Proof) Series 22 Connectors


| How To Order Receptacle Cover | | | | | |
|---|---|---|---|---|---|
| Sample Part Number | 290-010 | S | 18 | 03 | -6 |
| Series - Shell Style | 290-010 = Scoop Proof | | | | |
| Attachment Type | See Table III | | | | |
| Shell Size | See Table I | | | | |
| Dash No. | See Table II or Table IV | | | | |
| Attachment Length | 5 = 5 inches | | | | |




## NOTES:

1. Assembly identified with manufacturer's name and P/N, space permitting.
2. Length tolerance for link chain (e) and sash chain (s) is ± one (1) link, for all other attachments ±.25.
3. Protective cover is capable of hydrostatic sealing pressures to 5000 PSI, when fully mated with counterpart plug.
4. Material/finish:
   Cover, hardware & split ring - 300 series stainless steel/passivate
   Attachment - see Table III/passivate
   O-ring - nitrile/n.a.

**Table I: Dimensions**

| Shell Size | A Max | B Max | C Thread Class 2B | Piston O-Ring Size* |
|---|---|---|---|---|
| 10 | 0.900 (22.9) | 0.430 (10.9) | .750 -.1P-.1L | 2-014 |
| 12 | 1.025 (26.0) | 0.555 (14.1) | .875 -.1P-.1L | 2-016 |
| 14 | 1.150 (29.2) | 0.680 (17.3) | 1.000 -.1P-.1L | 2-018 |
| 16 | 1.275 (32.4) | 0.805 (20.4) | 1.125 -.1P-.1L | 2-020 |
| 18 | 1.525 (38.7) | 0.930 (23.6) | 1.250 -.1P-.1L | 2-022 |
| 20 | 1.650 (41.9) | 1.055 (26.8) | 1.375 -.1P-.1L | 2-024 |
| 22 | 1.775 (45.1) | 1.180 (30.0) | 1.500 -.1P-.1L | 2-026 |
| 24 | 1.900 (48.3) | 1.305 (33.1) | 1.625 -.1P-.1L | 2-028 |

* Reference piston o-ring P/N when purchasing replacement rings

**Table II: Solid Ring Dia.**

| Dash No | D Dia |
|---|---|
| 01 | 0.125 (3.2) |
| 02 | 0.140 (3.6) |
| 03 | 0.167 (4.2) |
| 04 | 0.182 (4.6) |
| 05 | 0.191 (4.9) |
| 06 | 0.197 (5.0) |
| 10 | 0.266 (6.8) |

**Table III: Attachment Type**

| Sym | Attachment | Sym | Attachment | Sym | Attachment |
|---|---|---|---|---|---|
| D | Bead chain, CRES, passivated, with terminal | G | Bead chain, CRES, passivated, no terminal | T | Wire rope, no jacket, w/terminal |
| E | Link chain, CRES, passivated, with clevis terminal | H | Wire rope, Fluoropolymer jacket w/ terminal | K | Nylon rope |
| F | Wire rope, nylon jacket w/terminal | N | Attachment omited | S | #8 Sash chain, CRES, passivate |
| | | R | Wire rope, pvc jacket w/terminal | U | Wire rope, polyurethane jacket, with terminal |

**Table IV: Split Ring Dia.**

| Dash No | E Dia | Dash No | E Dia |
|---|---|---|---|
| 50 | 0.425 (10.8) | 72 | 1.485 (37.7) |
| 52 | 0.485 (12.3) | 74 | 1.625 (41.3) |
| 54 | 0.640 (16.3) | 76 | 1.750 (44.5) |
| 56 | 0.750 (19.1) | 78 | 1.875 (47.6) |
| 58 | 0.890 (22.6) | 80 | 1.980 (50.3) |
| 60 | 1.015 (25.8) | 82 | 2.060 (52.3) |
| 62 | 1.095 (27.8) | 84 | 2.235 (56.8) |
| 64 | 1.130 | 86 | 2.310 (58.7) |
| 66 | 1.250 (31.8) | 88 | 2.475 (62.9) |
| 68 | 1.350 (34.3) | 90 | 2.655 (67.4) |
| 70 | 1.375 (34.9) | 92 | 2.810 (71.4) |
| | | 94 | 3.045 (77.3) |

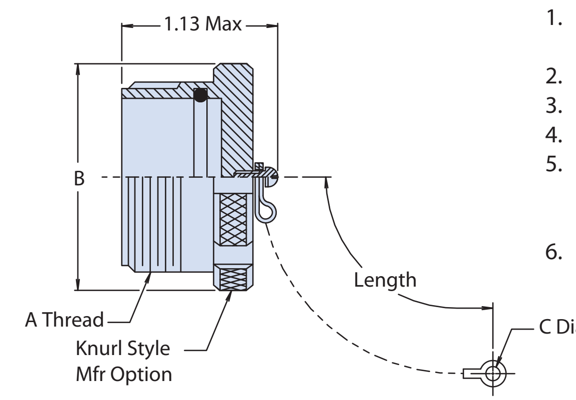





SERIES 22 5000M / 5000 PSI
Shallow Water Application

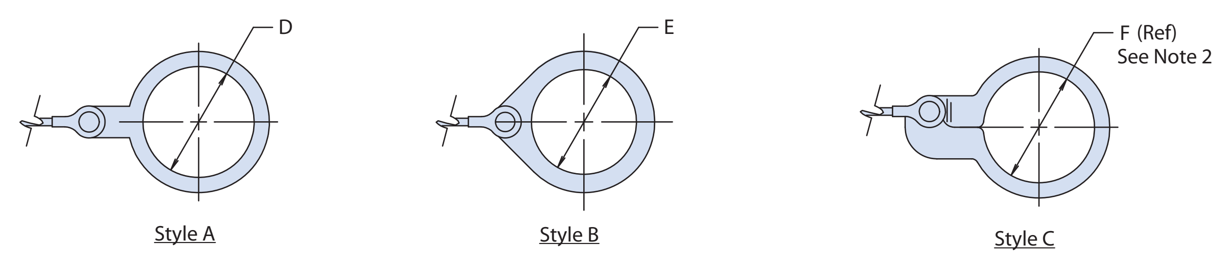
# 290-016 Metal Plug Protective Covers for Scoop-Proof Series 22 Connectors

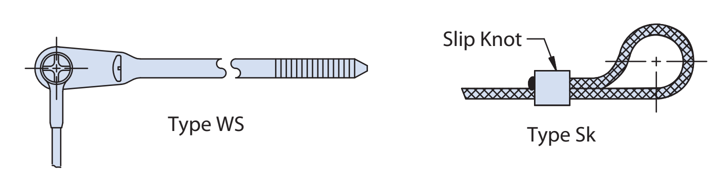
| How To Order Receptacle Cover | | | | | |
|---|---|---|---|---|---|
| Sample Part Number | 290-016 | S | 18 | 03- | 6 |
| Series - Shell Style | 290-016 = Scoop Proof | | | | |
| Attachment Type | See Table III | | | | |
| Shell Size | See Table I | | | | |
| Dash No. | See Table II, IV, V or VI, omit for Type SK | | | | |
| Attachment Length | In Inches; ± .25 for Rope, ± Link for Chain | | | | |




## NOTES:

1. Assembly identified with manufacturer's name and P/N, space permitting.
2. Max. diameter mandrel over which assembled ring will rotate freely.
3. If retaining ring is desired, use Tables IV & V (solid) or Table VI (split ring).
4. For terminal lug or type "WS", use Table II.
5. Material/finish:
   Cover, attachment, clevis, hardware - CRES/passivate
   O-ring - nitrile/n.a.
6. For use with scoop-proof Geo-Marine receptacles



# 290-016 Metal Plug Protective Covers for Scoop-Proof Series 22 Connectors

**Table I: Dimensions**

| Dash No | A Thread Class 2A | B Max | |
|---|---|---|---|
| 10 | 0.750 -.1P-.1L | 0.900 | (22.9) |
| 12 | 0.875 -.1P-.1L | 1.025 | (26.0) |
| 14 | 1.000 -.1P-.1L | 1.150 | (29.2) |
| 16 | 1.125 -.1P-.1L | 1.275 | (32.4) |
| 18 | 1.250 -.1P-.1L | 1.525 | (38.7) |
| 20 | 1.375 -.1P-.1L | 1.650 | (41.9) |
| 22 | 1.500 -.1P-.1L | 1.775 | (45.1) |
| 24 | 1.625 -.1P-.1L | 1.900 | (48.3) |

**Table II: Split Ring Dimensions**

| Dash No. | C Dia. | |
|---|---|---|
| 01 | 0.125 | (3.2) |
| 02 | 0.140 | (3.6) |
| 03 | 0.167 | (4.2) |
| 04 | 0.182 | (4.6) |
| 05 | 0.191 | (4.9) |
| 06 | 0.197 | (5.0) |
| WS | With Strap | |

**Table III: Attachment Type**

| Sym | Attachment |
|---|---|
| B | Bead chain, brass, nickel plated, with terminal |
| C | Link chain, brass, nickel plated, with clevis terminal |
| D | Bead chain, CRES, passivated, with terminal |
| E | Link chain, CRES, passivated, with clevis terminal |
| F | Wire rope, nylon jacket w/terminal |
| H | Wire rope, Fluoropolymer jacket w/ terminal |
| K | Nylon rope |
| N | Attachment omitted |
| R | Wire rope, PVC jacket w/terminal |
| T | Wire rope, no jacket, w/terminal |
| S | #8 Sash chain, CRES, passivated |
| SK | Nylon rope, (black) with slip knot |
| U | Wire rope, polyurethane jacket with terminal |

**Table IV: Style A Solid Ring Dimensions**

| Dash No | D Dia ±.015 | |
|---|---|---|
| 095 | 0.312 | (7.9) |
| 100 | 0.391 | (9.9) |
| 101 | 0.516 | (13.1) |
| 102 | 0.583 | (14.8) |
| 103 | 0.641 | (16.3) |
| 104 | 0.708 | (18.0) |
| 105 | 0.766 | (19.5) |
| 205 | 0.788 | (20.0) |
| 106 | 0.896 | (22.8) |
| 206 | 0.907 | (23.0) |
| 107 | 1.016 | (25.8) |
| 207 | 1.025 | (26.0) |
| 108 | 1.141 | (29.0) |
| 308 | 1.188 | (30.2) |
| 208 | 1.203 | (30.6) |
| 109 | 1.266 | (32.2) |
| 209 | 1.312 | (33.3) |
| 110 | 1.391 | (35.3) |
| 210 | 1.438 | (36.5) |
| 111 | 1.521 | (38.6) |
| 211 | 1.536 | (39.0) |
| 112 | 1.641 | (41.7) |
| 113 | 1.766 | (44.9) |
| 213 | 1.812 | (46.0) |
| 114 | 1.891 | (48.0) |
| 214 | 1.938 | (49.2) |
| 115 | 2.078 | (52.8) |
| 116 | 2.406 | (61.1) |
| 117 | 2.510 | (63.8) |

**Table V: Style B Solid Ring Dimensions**

| Dash No | E Dia ±.015 | |
|---|---|---|
| 08 | 0.468 | (11.9) |
| 10 | 0.593 | (15.1) |
| 12 | 0.718 | )(18.2) |
| 13 | 0.765 | (19.4) |
| 14 | 0.844 | (21.4) |
| 15 | 0.890 | (22.6) |
| 16 | 0.968 | (24.6) |
| 17 | 1.015 | (25.8) |
| 18 | 1.093 | (27.8) |
| 19 | 1.140 | (29.0) |
| 20 | 1.203 | (30.6) |
| 21 | 1.265 | (32.1) |
| 22 | 1.343 | (34.1) |
| 23 | 1.453 | (36.9) |
| 24 | 1.484 | (37.7) |
| 25 | 1.577 | (40.1) |
| 27 | 1.640 | (41.7) |
| 28 | 1.687 | (42.8) |
| 29 | 1.765 | (44.8) |
| 30 | 1.890 | (48.0) |
| 31 | 1.953 | (49.6) |
| 32 | 1.968 | (50.0) |
| 33 | 2.077 | (52.8) |
| 35 | 2.140 | (54.4) |
| 36 | 2.187 | (55.5) |
| 40 | 2.406 | (61.1) |
| 44 | 2.656 | (67.5) |
| 48 | 3.031 | (77.0) |

**Table Vi: Style C Ring Dimensions**

| Dash No | F Dia | |
|---|---|---|
| 50 | 0.425 | (10.8) |
| 52 | 0.485 | (12.3) |
| 54 | 0.640 | (16.3) |
| 56 | 0.750 | (19.1) |
| 58 | 0.890 | (22.6) |
| 60 | 1.015 | (25.8) |
| 62 | 1.095 | (27.8) |
| 64 | 1.130 | (28.7) |
| 66 | 1.250 | (31.8) |
| 68 | 1.350 | (34.3) |
| 70 | 1.375 | (34.9) |
| 72 | 1.485 | (37.7) |
| 74 | 1.625 | (41.3) |
| 76 | 1.750 | (44.5) |
| 78 | 1.875 | (47.6) |
| 80 | 1.980 | (50.3) |
| 82 | 2.060 | (52.3) |
| 84 | 2.235 | (56.8) |
| 86 | 2.310 | (58.7) |
| 88 | 2.475 | (62.9) |
| 90 | 2.655 | (67.4) |
| 92 | 2.810 | (71.4) |
| 94 | 3.045 | (77.3) |









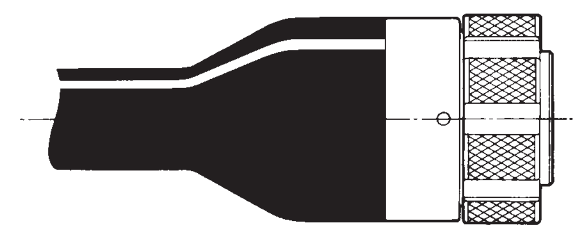
# Custom Overmolded Geo-Marine® Cable Assemblies

All Series 22 connectors can be supplied complete with molded cable terminations or open wire bundles to meet specific application requirements. **Custom Overmolded Cable Assemblies**, built in our tightly controlled, 100% inspection and test faciliites, are a turnkey solution to the complex requirements of harsh environment interconnect systems.

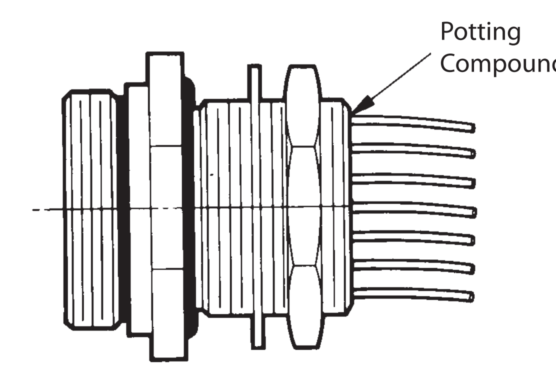
Glenair offers users of Series 22 Geo-Marine® connectors a complete custom cabling service, designing and producing cable assemblies or harnesses to meet the user's specific application requirements.

Glenair has over 30 years experience and expertise in designing and producing cable assemblies to meet many unique environmental conditions, supported by test facilities to provide the user with proven reliability and performance.

**CABLE RECEPTACLE WITH MOLDED CABLE**



**CABLE PLUG WITH MOLDED CABLE**




**BULKHEAD RECEPTACLE WITH PIGTAILS**

Molded connector-to-cable terminations are the common application for Series 22 connectors, with materials and compounds available to satisfy the most stringent application. Typical molding and cable jacketing materials include:

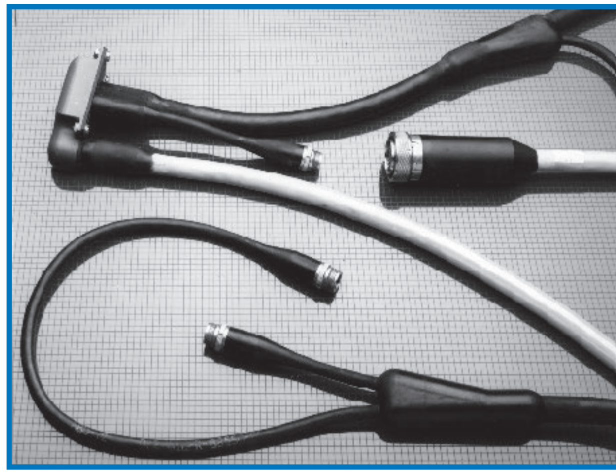
- Neoprene
- Polyurethane
- Viton

Conductor insulation on wire is selected for compatability with the molding and jacket materials for optimum performance and cost-effectiveness.

Additional custom features include items such as EMI shielding, Kevlar stress members, multiple breakouts, as well as open wire bundles or "pigtails" which are terminated with a non-hydroscopic potting compound.

Special molded shapes are available to accommodate unusual space limitations or cable routing.

Contact Glenair's ABC Division for further information on complete cable assemblies using the Series 22 Geo-Marine® connectors.



Depicted here is a typical cable assembly designed to withstand pressure to 5000 PSI. Glenair's standard molding material is solvent and oil resistant neoprene per MIL-S-6855 molded to neoprene jacketed cable containing either rubber or fluoropolymer insulated, fine stranded, copper conductors. Special molded shapes and cable configurations are available per customer requirements.

# Custom Overmolded Geo-Marine® Cable Assemblies - Application Worksheet



Glenair specializes in the manufacture of fast-turnaround cable assemblies, and our ability to rapidly respond to requests for our unique, overmolded Geo-Marine® Cables is well known throughout the industry. For a fast quote on your next point-to-point cable, just photocopy this page and fax or mail the completed form to your local Glenair representative, or directly to the Glenair factory. For multi-branch cables, or more complex assemblies, please call the factory to speak directly with an application engineer, or submit your drawing via fax or E-mail.

**Originator Contact Information**

Contact Name and Title ____________________

Company Name/Division ____________________

Street Address ____________________

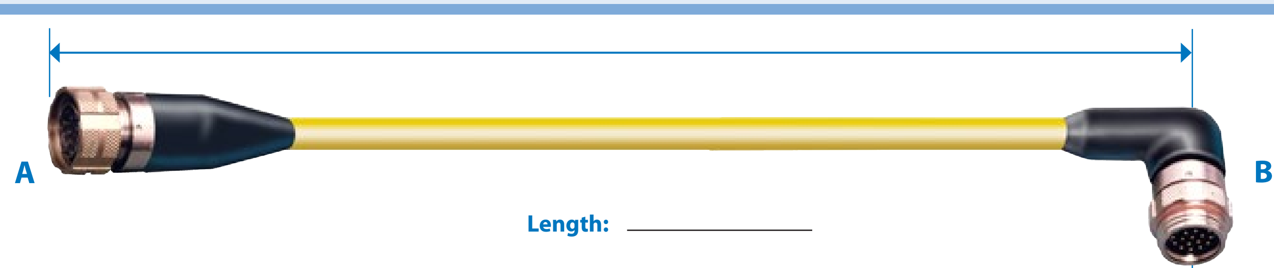
City and State/Province ____________________

Country and Postal Code/Zip ____________________

Telephone ____________ Fax ____________ Email ____________

Name of Project or Program ____________ Description ____________

Initial Quantity ____________ Required Delivery Date ____________ Potential Long-Term Quantity ____________




**Length:** ____________

**Wire Gauge:** ☐ 12 ☐ 16 ☐ 20 ☐ 22 **Kevlar Strength Members:** ☐ Yes ☐ No

**Overmolding Material Type:** ☐ Neoprene ☐ Viton ☐ Polyurethane

**Tin/Copper EMI Shielding:** ☐ None ☐ Single Overall Shield ☐ Double Overall **Other:** Consult Factory

**Connector B:**

**Gender:** ☐ Pin ☐ Socket
**Type:** ☐ 06 ☐ 16 ☐ 01 ☐ 11
**Class:** ☐ Environmental ☐ Hermetic
**Polarization:** ☐ N ☐ 1 ☐ 2 ☐ 3 ☐ 4

**Shell Size and Contact Arrangements:**
_______-______ (See Section A)

**Cable Exit Angle:** ☐ Straight ☐ 45° ☐ 90°

**Dust Cover:** ☐ Yes ☐ No

**Marking Instructions:** ____________________

**Connector B:**

**Gender:** ☐ Pin ☐ Socket
**Type:** ☐ 06 ☐ 16 ☐ 01 ☐ 11
**Class:** ☐ Environmental ☐ Hermetic
**Polarization:** ☐ N ☐ 1 ☐ 2 ☐ 3 ☐ 4

**Shell Size and Contact Arrangements:**
_______-______ (See Section A)

**Cable Exit Angle:** ☐ Straight ☐ 45° ☐ 90°

**Dust Cover:** ☐ Yes ☐ No

**Marking Instructions:** ____________________







# Other ruggedized harsh-environment interconnect solutions available from Glenair

## Selection guide

### GLASS-TO-METAL SEAL HERMETIC

Resolve gas, moisture and particle ingress problems with advanced-performance glass-sealed hermetic connectors

### CODE RED LIGHTWEIGHT ENCAPSULANT-SEAL HERMETIC


Lightweight hermetic encapsulant sealing solution with better than $1X10^{-7}$ leak rate performance

### QUALIFIED MIL-DTL-28840 CONNECTORS AND ACCESSORIES

Qualified military standard electrical connectors and accessories for shipboard—and all rugged environmental applications

### QPL AND COMMERCIAL MIL-PRF-28876 FIBER OPTIC CONNECTION SYSTEM

Qualified MIL-PRF-28876 fiber optic connectors and MIL-PRF-29504 termini—Navy approved, in stock, and ready for immediate shipment

### FIBER OPTIC AND PHOTONIC INTERCONNECT SOLUTIONS

Unlock the huge bandwidth of fiber optic connectors, cables, and ruggedized transceiver technologies

## HIGH-RELIABILITY

# Glass-sealed Hermetic Connectors

### Resolve gas, moisture and particle ingress problems with advanced-performance glass-sealed hermetic connectors

**VITREOUS GLASS TECHNOLOGY ADVANTAGES**

- **Superior pressure resistance to 32,000+ PSI**
- **Hundreds of designs, including long-length bulkhead feed-thrus and penetrators**
- **Higher resistance to extreme operating temperatures to 260°+ C**
- **Superior mechanical strength**
- **No material breakdown or aging over time**
- **Helium leak rate <1X10$^{-7}$ cc/sec to 1X10$^{-10}$**

## CIRCULAR GLASS-SEALED HERMETIC CONNECTORS AVAILABLE WITH ACCELERATED LEAD TIMES


MIL-DTL-26482


MIL-DTL-83723


MIL-DTL-38999 (QPL)


MIL-DTL-5015


Series 80 Mighty Mouse

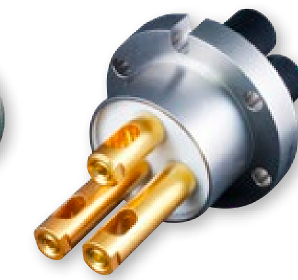






## GEOPHYSICAL AND OFFSHORE CONFIGURATIONS


GeoMarine® double-start hermetic connector


Hermetic power connector


Single-way tool joint hermetic connector


Hermetic probe connector


Hermetic bulkhead penetrator

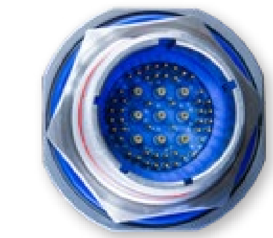
## HIGH-SPEED/SHIELDED DESIGNS


Triax hermetic


Hybrid coax/signal hermetic


Quadrax hermetic


MT ribbon fiber optic hermetic


Hybrid coax/signal hermetic

## RECTANGULAR PACKAGES


MIL-DTL-24308 QPL hermetic


Series 79 Micro-Crimp hermetic


MIL-DTL-83513 type micro-D hermetics


Sealed panel-mount micro-D hermetic

ALSO AVAILABLE:


Well-Master™ 260° high-temperature Micro-D

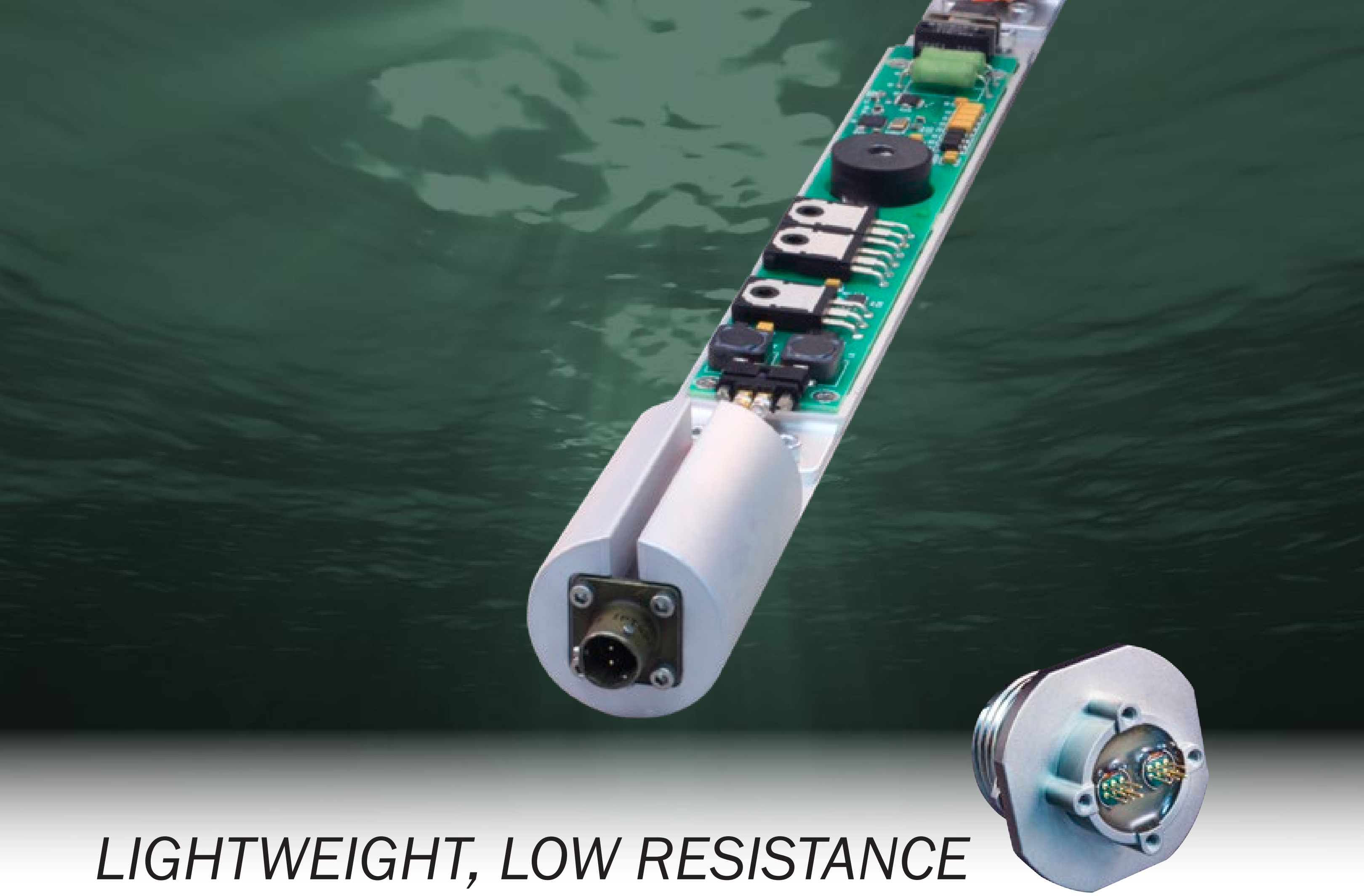
## MIL-DTL-38999 QPL PIN AND SOCKET HERMETICS


Series I
Scoop-proof
3 Point Bayonet Coupling


Series II
Low-profile
3 Point Bayonet Coupling


Series III
Scoop-proof
Triple Start, Self-Locking


Series IV
Scoop-proof
Breech Lock



*LIGHTWEIGHT, LOW RESISTANCE*

# CODE RED

## “Mission-Critical” hermetic sealing with 1X10$^{-7}$ leak-rate performance

Hermetically-sealed interconnects used in vacuum or high-altitude applications prevent moisture and other contaminants from damaging sensitive electronic equipment. Glass-to-metal hermetic sealing has been the gold standard in the aerospace and petrochemical industries for decades due to the strength and long-term durability of the materials used. But glass-to-metal seal hermetics come with a big price tag in both weight and electrical resistance.

CODE RED is an innovative sealing encapsulant and application process—invented by Glenair—that provides durable hermetic sealing in a lightweight aluminum package. CODE RED allows for the use of conventional gold-plated copper alloy contacts, significantly improving electrical performance. CODE RED hermetic connectors are available now in Glenair SuperNine® (D38999 Series III type metal and composite), Series 80 Mighty Mouse, and M24308 D-Sub; and deliver reliable, life-of-system 1X10$^{-7}$ max leak-rate hermetic sealing. Special non-magnetic (zero residual magnetism) versions are also available, consult factory.

- **Full hermetic sealing, 1X10$^{-7}$ in a lightweight aluminum shell with low electrical resistance gold-plated copper contacts**
- **Passed full D38999/23 qualification testing**
- **Meets NASA outgassing requirements, as well as aerospace temperature and corrosion resistance standards**
- **Operating temperature -65°C to +200°C**
- **Available today in Mighty Mouse 806 Mil-Aero, M24308/9 D-Sub and D38999/23**
- **Significant weight savings—up to +50%**
- **Order-of-magnitude improvement in current carrying capacity and electrical resistance compared to Kovar/ Inconel solutions**





## “Mission-Critical” hermetic sealing solution

### CODE RED LIGHTWEIGHT HERMETIC CONNECTOR TESTING AND VALIDATION

Connectors utilizing CODE RED hermetic encapsulant sealing underwent a grueling qualification test and validation process to prove material durability and hermeticity. Validation testing including 100 cycles of thermal shock IAW EIA-364-32 Test Condition A -65°C to +200°C while maintaining hermeticity followed by 1000 hours of thermal aging at 200°C. Additional tests included:

- DWV, DWV at altitude
- IR, IR at temperature
- Highly Accelerated Life Testing (HALT)
- Insert and contact retention
- Mating durability
- Random vibration at temperature IAW MIL-DTL-38999
- Hermetic seal at 30 psi

The entire qualification test cycle was repeated successfully a second time with new parts to validate complete reliability.

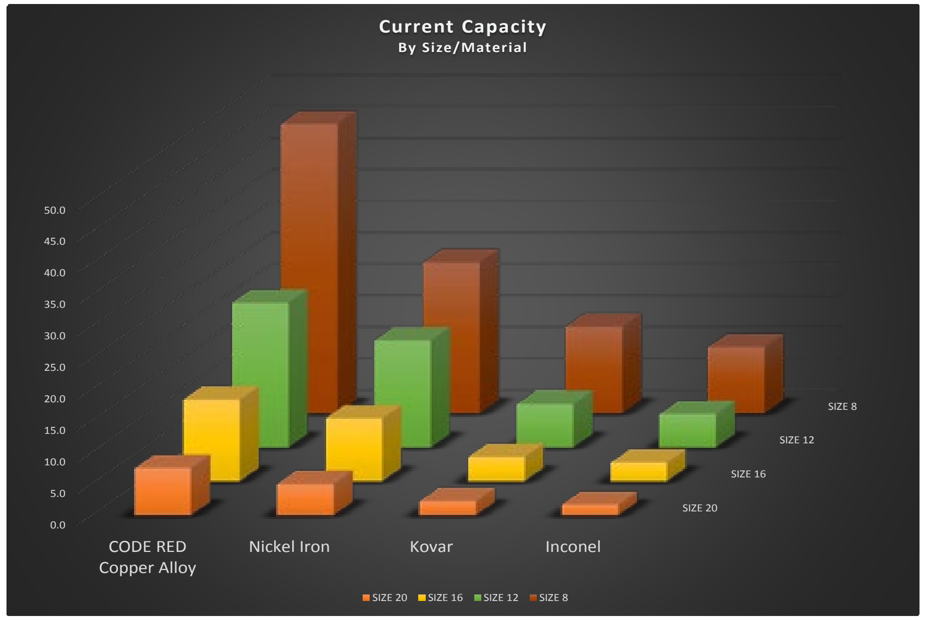
### CODE RED USES PROVEN-PERFORMANCE CONNECTOR AND CONTACT MATERIALS

| CODE RED Materials / Finish | |
|---|---|
| Sealing Adhesive | Proprietary Glenair compound |
| Contacts* | Gold-plated beryllium copper alloy per ASTM B 197 or equivalent |
| Insulator | Rigid plastic |
| Seals | Blended fluorosilicone/ silicone elastomer |
| Receptacle Shell and Jam Nut* | Aluminum alloy 6061-T6 per ASTM B 221 |
| Finish* | Electroless nickel per ASTM B 733 |

*zero residual magnetism materials also available

| Percentage Weight Savings CODE RED vs. Glass-to-Metal MIL-DTL-38999 Sr. III | |
|---|---|
| **Shell Size/Insert Arr.** | **Weight Reduction** |
| 9-35 | 52% |
| 11-98 | 47% |
| 13-35 | 47% |
| 15-97 | 42% |
| 19-32 | 40% |
| 21-11 | 32% |
| 23-21 | 28% |
| 25-08 | 43% |

Graph illustrates Current Carrying Capacity of CODE RED copper alloy contacts compared to the Inconel, Kovar, and nickel iron contacts used in conventional glass-to-metal seal hermetics.




**APPLICATION NOTES:** CODE RED is a viable drop-in solution for conventional glass-to-metal seal hermetic connectors with the following exceptions:

**1. Fuel Cells:** Although CODE RED exhibits outstanding resistance to caustic chemicals and fuels, its use in fuel tanks/fuel cell applications is not recommended.

**2. Cryogenics:** CODE RED has been tested and qualified to -65°C IAW MIL-DTL-38999

**3. Sustained High-Operating Temperatures:** CODE RED has been tested and qualified to +200°C IAW MIL-DTL-38999

**4. High Radiation:** Exposure to no more than 6 Megarads of radiation

**5. Deep Subsea:** CODE RED is ideally suited for aerospace and downhole applications that do not exceed 3 BAR (50 psi) atmospheric pressure differential.

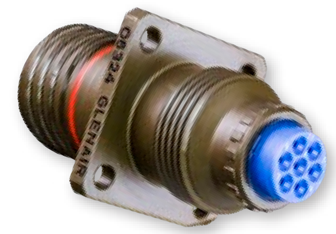
**6. Space Life Support Systems:** Requires additional qualification testing not yet performed by Glenair.

MIL-DTL-28840 qualified connectors in-stock and ready for immediate, same-day shipment

- **High density, scoop proof contact arrangements**
- **Flange mount, box mount, jam-nut and in-line receptacles**
- **Straight, 45° and 90° strain reliefs and backshell assemblies**
- **Sav-Con® connector savers**
- **MIL-DTL-28840 qualified**
- **Additional glenair commercial part numbers with features not available in the mil-spec**

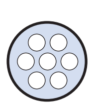
## Qualified military standard electrical connectors and accessories for shipboard—and all rugged environmental applications

| Performance Specifications | |
|---|---|
| Current Rating (Maximum) | Size #20 Contact with 20AWG wire=7.5Amps, with 22AWG wire=5.0Amps |
| Test Voltage (DWV) | 1000 VAC RMS at sea level. Test per EIA-364-20 |
| Insulation Resistance | 5000 megohms minimum (at ambient temperature) per EIA-364-21 |
| Contact Resistance | Per SAE-AS39029 |
| Operating Temperature | -55° C to +200° C |
| Immersion | per test method EIA-364-09 |
| Shock | in accordance with MIL-S-901 grade A |
| Vibration | per EIA-364-28 test procedure |
| Magnetic Permeability | 2.0 µ (Aluminum), 5.0 µ (Stainless Steel) maximum; ASTM-A342/A342M |

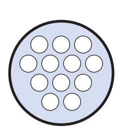


Splined MIL-DTL-28840 connector-to-backshell interface is ideally suited for heavy backshells and cables

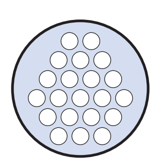
### AVAILABLE CONTACT ARRANGEMENTS



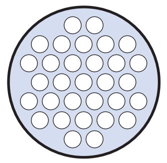
Shell Size 11
7 Contacts



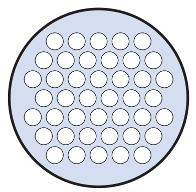
Shell Size 13
12 Contacts



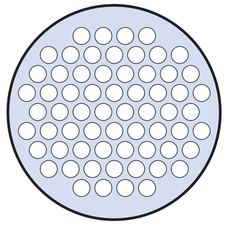
Shell Size 15
21 Contacts



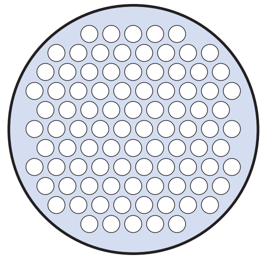
Shell Size 17
31 Contacts



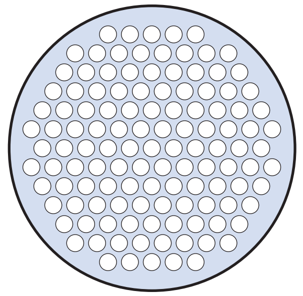
Shell Size 19
42 Contacts



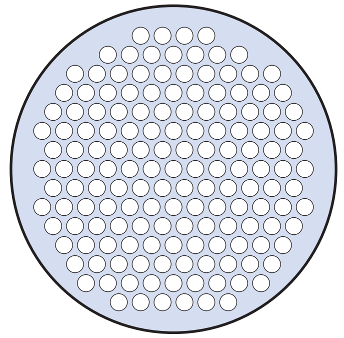
Shell Size 23
64 Contacts



Shell Size 25
92 Contacts



Shell Size 29
121 Contacts



Shell Size 33
155 Contacts





*QUALIFIED*
MIL-DTL-28840 Naval
Connectors and Accessories

### STANDARD PIN CRIMP CONTACT FOR MIL-DTL-28840 CONNECTORS

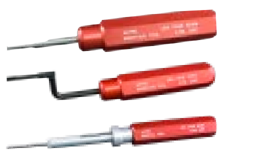
| Mating End Size | Wire Accomodation | Military Part Number | Glenair Part Number |
|---|---|---|---|
| 20 | 28-32 AWG | M39029/83-451 | 850-004-20-451 |
| 20 | 22-26 AWG | M39029/83-450 | 850-004-20-450 |
| 20 | 20-24 AWG | M39029/83-508 | 850-004-20-508 |

### STANDARD SOCKET CRIMP CONTACT FOR MIL-DTL-28840 CONNECTORS

| Mating End Size | Wire Accomodation | Military Part Number | Glenair Part Number |
|---|---|---|---|
| 20 | 28-32 AWG | M39029/84-453 | 850-005-20-453 |
| 20 | 22-26 AWG | M39029/84-452 | 850-005-20-452 |
| 20 | 20-24 AWG | M39029/84-509 | 850-005-20-509 |

**Crimping Tools**

M22520/34-01 Basic Crimp Tool
M22520/34-02 Positioner
M22520/35 Gage



**Insertion & Removal Tools**

M81969/33-01 Straight Insertion Tool
M81969/33-02 Offset Insertion Tool
M81969/34-01 Removal Tool

**Pin Contact**

M39029/83 Standard Duty Electrical Pin Contact

**Socket Contact**

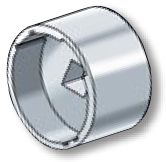
M39029/84 Standard Duty Electrical Socket Contact

**Environmental Backshells**

M28840/6 B Straight
M28840/9 B 45°
M28840/8 B 90°

**EMI/RFI Environmental Backshells**

M28840/6 A Straight
M28840/8 A 90°
M28840/9 A 45°



**Connector Sockets**

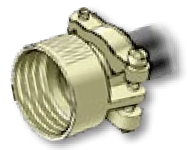
600G005

**"E" Nuts**

**Non-Self-Locking**

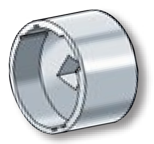
M28840/23

**Strain Reliefs**



**Non-Self-Locking**

M28840/1 Straight
M28840/3 45°
M28840/2 90°



**Dummy Stowage Receptacles**

M28840/7

**Protective Plug Covers**

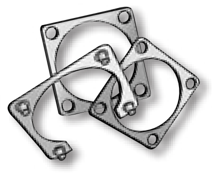
M28840/15

**Protective Receptacle Covers**

M28840/13

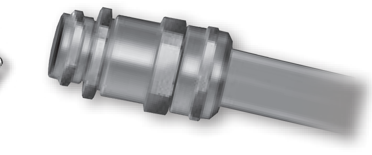
**Jam Nuts**

MS3186



**Mounting Flanges and Gaskets**

M28840/24
Gasket



**MIL-PRF-24758A Conduit Fittings**

M24758-14 Straight
(M24758/14 Straight.)
M28840/5 Straight • M28840/25 90° •
M28840/27 45° • M28840/30 Coupling

# QPL AND COMMERCIAL

# MIL-PRF-28876

## Fiber optic connection system

**Qualified MIL-PRF-28876 fiber optic connectors and MIL-PRF-29504 termini—Navy approved, in stock, and ready for immediate shipment**

- **Connectors qualified to the complete requirements of MIL-PRF-28876 including plugs, wall-mount receptacles, jam-nut mount receptacles and in-line receptacles**
- **Multiple shell sizes and Contact Arrangements, including 2, 4, 6, 8, 18 and 31 channel layouts**
- **Backshells in straight, 45° and 90° configurations**
- **Corrosion-resistant and environmentally sealed**
- **Qualified MIL-PRF-29504/14 and /15 pin and socket termini and /3 dummy terminus**
- **Connectors, backshells and protective covers available for immediate, same-day shipment**

M28876/11 jam nut receptacle

M28876/7 plug with backshell

M28876/2 receptacle with backshell





Rugged Fiber Optic CONNECTORS

*QPL AND COMMERCIAL*

# MIL-PRF-28876

## Fiber optic connection system

Glenair.

**Connector/Backshell Types**

| Connector Type | Backshell Type | MIL-Spec | Commercial Connector Type Code |
|---|---|---|---|
| Wall Mount Receptacle | None | M28876/1 | 03 |
| | Straight | M28876/2 | 13 |
| | 45° | M28876/3 | 23 |
| | 90° | M28876/4 | 33 |
| In-Line Receptacle | Straight | M28876/5 | 15 |
| Plug | None | M28876/6 | 06 |
| | Straight | M28876/7 | 16 |
| | 45° | M28876/8 | 26 |
| | 90° | M28876/9 | 36 |
| Jam Nut Receptacle | None | M28876/11 | 04 |
| | Straight | M28876/12 | 14 |
| | 45° | M28876/13 | 24 |
| | 90° | M28876/14 | 34 |

Qualified QPL-29504 pin and socket termini

**Qualified Fiber Optic Termini**

| Type | Military Part Number | A Dia (Microns) | Typical Fiber Type |
|---|---|---|---|
| Pin Termini | M29504/14-4131C | 126.0 | Multi Mode |
| | M29504/14-4132C | 127.0 | Multi Mode |
| | M29504/14-4135C | 142.0 | Multi Mode |
| Socket Termini | M29504/15-4171C | 126.0 | Multi Mode |
| | M29504/15-4172C | 127.0 | Multi Mode |
| | M29504/15-4175C | 142.0 | Multi Mode |
| Dummy Terminus | M29504/3-4038 | | |

Crimp sleeve is supplied with terminus assembly and may be ordered separately (see Table II). For terminus less crimp sleeve, omit **C** from end of part number. Consult factory for additional sizes.

Terminated and tested MIL-PRF-28876 fiber optic cable assembly

| Test Description | Performance Requirements/Specifications |
|---|---|
| Optical Insertion Loss, Multimode | -0.3 dB Typical (62.5/125) |
| Optical Insertion Loss, Singlemode | -0.3 dB Typical (9/125) |
| Optical Back Reflection, Singlemode | Better than -40 dB - PC Polish • Better than -50 dB - Enhanced PC Polish |
| Operating Temperature | -28°C to +65°C (MIL-Spec Epoxy and Cable) -55°C to +125°C (alternative Epoxy and Cable) |
| Temperature (Thermal) Shock | -40°C to +70°C, 5 Cycles |
| Temperature Cycling | -28°C to +65°C, 5 Cycles |
| Temperature/Humidity Cycling | -10°C to +65°C, 10 Cycles, 240 hours, 98% RH |
| Temperature Life Aging | +110°C, 240 hours, Dry Air |
| Mating Durability | 500 cycles |
| Vibration - Sinusoidal | 10 g Peak, 5-500 Hz sin./ 10.2 g RMS, 50-2000 Hz random |
| Impact | 8 Drops from 8 feet |
| Crush Resistance | 281 lbs, 7 Cycles |
| Cable Pull Out Force - Termini | Termini: 22 lbs min for 1 minute Connector: 162 lbs min for 10 minutes |
| Fluid Immersion | Turbine Fuel, Isopropyl Alcohol, Hydraulic Fluid, Lubricating Oil, Coolant, Tap- and seawater, 24 hrs |
| Water Pressure | 32 feet for 48 hours at +10°C to +35°C |
| Mechanical Shock (High Impact) | MIL-S-901, Grade A, Type B, Class I |
| Corrosion Resistance (Salt Spray) | 500 hours |
| Sand and Dust | 12 hours |
| Flammability | 0.75 inch flame for 10 sec. mated, 1.50 inch flame for 60 sec. unmated |

*Performance Specifications/Requirements based on the use of MIL-PRF-24792 Epoxy and MIL-PRF-85045 Simplex and Breakout Shipboard Optical Fiber.

### Contact Arrangements

Pin Insert Face — Insert Key — Socket Insert Face

Size **A** or Size 11
Ins. Desig. 1
2 channels.

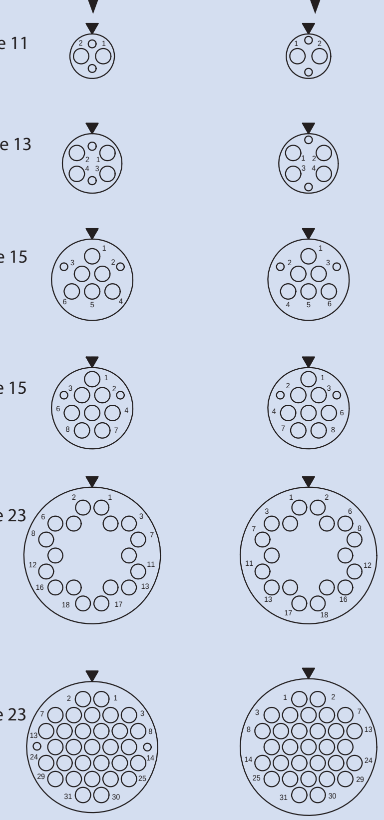
Size **B** or Size 13
Ins. Desig. 1
4 channels.

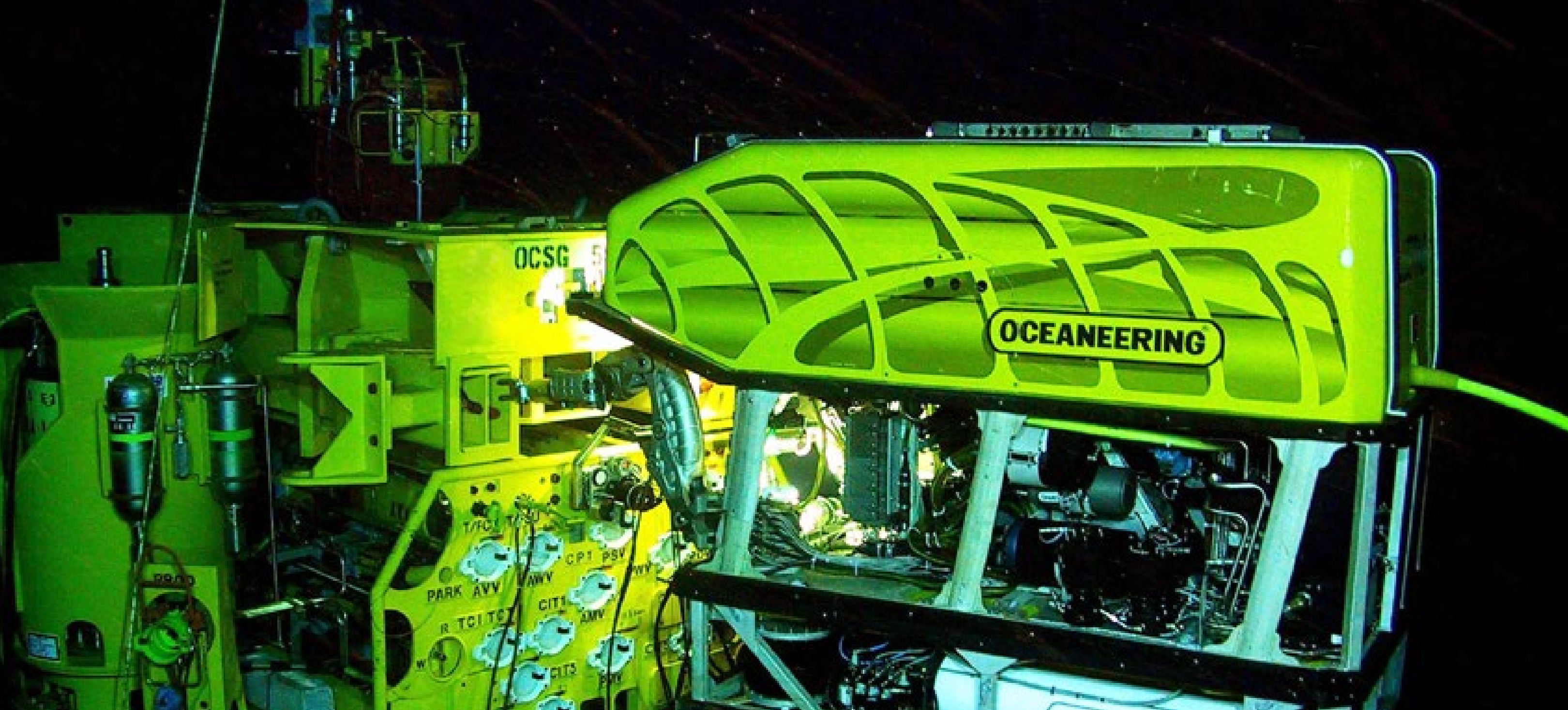
Size **C** or Size 15
Ins. Desig. 2
6 channels.

Size **C** or Size 15
Ins. Desig. 1
8 channels.

Size **F** or Size 23
Ins. Desig. 2
18 channels.

Size **F** or Size 23
Ins. Desig. 1
31 channels.

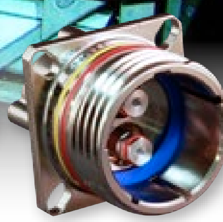





*HARSH-ENVIRONMENT*

# Fiber Optic Interconnect Solutions

In-line fiber optic to copper media converter



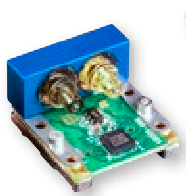
Photonic contacts and connectors

## Unlock the huge bandwidth of fiber optic connectors, cables, and ruggedized transceiver technologies

Glenair harsh-environment fiber optic connectors and board-level transceiver technologies are designed for harsh land, air, sea, and space environments and will operate reliably over very wide temperature ranges and high shock and vibration conditions. These proven technologies have been optimized to minimize size, weight and power and offer electrical-to-fiber conversion for Ethernet, video, signal aggregation and high-speed digital signals. Glenair also offers integration of electronics or opto-electronics into rugged connector packages and cable assemblies per specific customer requirements. We offer rapid response in-house electrical/PCB design, and mechanical connector/backshell engineering from our vertically integrated factory.

GLENAIR FIBER OPTICS

- **Reduced size, weight, and power consumption**
- **Total EMI immunity, network security, increased transmission distance and ultra-high bandwidth**
- **High shock and vibration to support mission critical applications**
- **Wide operating temperature range: -40°C to +85°C and beyond**
- **Qualified, proven opto-electronic and fiber optic interconnect technologies for both commercial oil & gas and naval/defense applications.**



Small form-factor transceiver

Signal aggregation media converter

7-port Ethernet switch

DVI video media converter





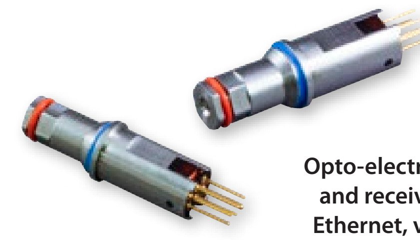
*FIBER OPTICS AND OPTO-ELECTRONICS*

# Harsh-Environment, Small Form-Factor Optical Interconnect Solutions

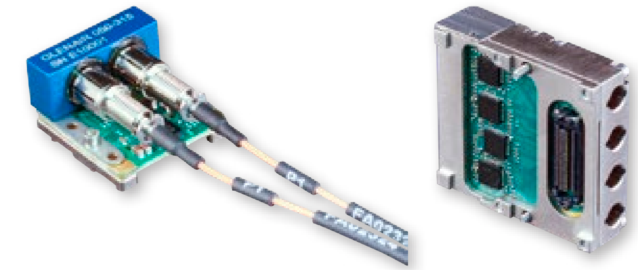
## for Ethernet, video, and high-speed data

Photonics™

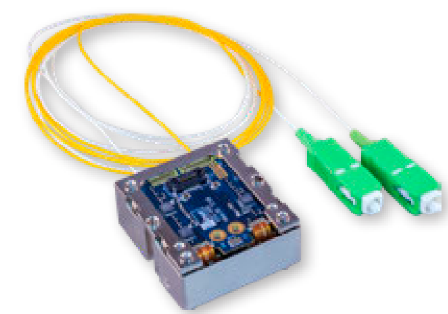
### HARSH ENVIRONMENT FIBER OPTIC CONNECTORS AND OPTO-ELECTRONIC TRANSCEIVERS



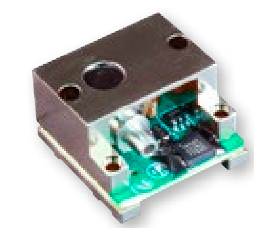
Opto-electronic transmitter and receiver contacts for Ethernet, video, and high-speed data



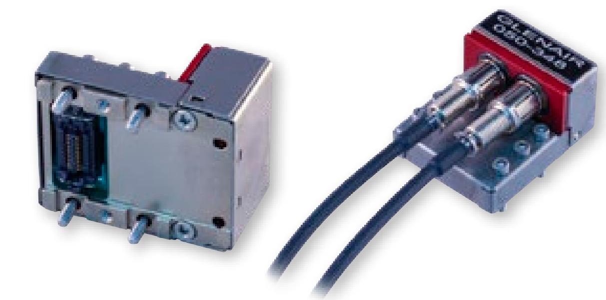
High vibration and shock board-mount transmitters and receivers with Samtec surface-mount connectors



RF-over-fiber board-mount transceiver



High vibration and shock Bi-directional transceiver

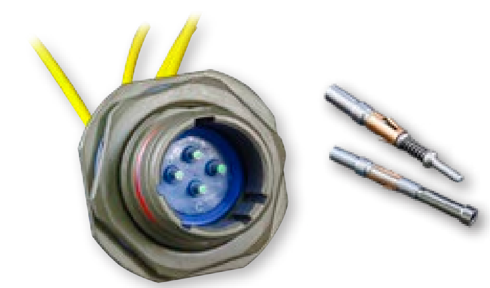


EMI shielded PCB transceiver showing Samtec surface-mount connector and Glenair GC F/O interconnects

Harsh-environment opto-electronic connectors for Ethernet, video, and high-speed data

MIL-PRF-28876 US Navy qualified fiber optic connectors and termini

Eye-Beam® GMA Expanded-Beam IAW M83526



Eye-Beam® GLT Expanded Beam Fiber Optic

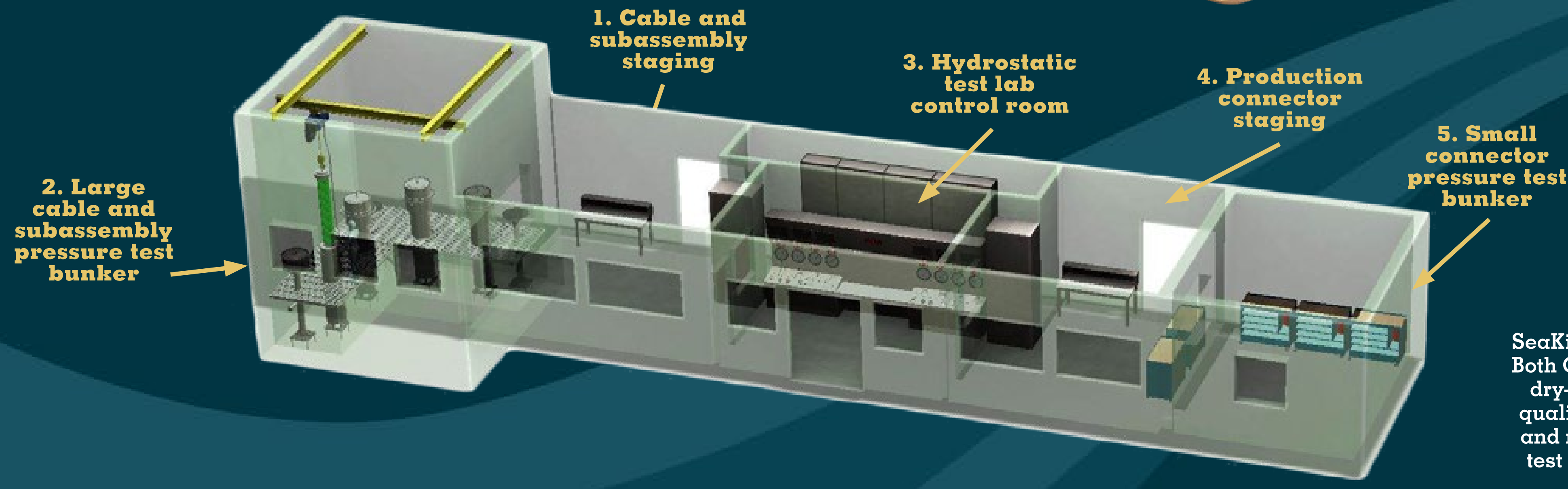
# Hydrostatic test lab

The Glenair marine/subsea technology team is unique in the industry having the ability to design, produce, validate, and test its complete range of subsea interconnect technologies using 100% in-house resources. Glenair's hydrostatic lab is a dual-mode pressure test facility equipped with both large form-factor pressure vessels for testing complete cable assemblies, mated cable connectors, and even customer sub-assemblies. In addition, a small pressure vessel cell provides qualification and validation testing on discrete connector inserts and bulkhead connectors. Both the large pressure vessel and small pressure vessel systems can validate and test up to 16.5K psi, or 1 ½ times Glenair's standard 10,000 psi subsea connector rating.

DISCRETE CONNECTOR TESTING: All Glenair subsea interconnects are subjected to 100% inspection and test

CONTROL ROOM: The modular consoles in the control room provide for up to 8 pressure circuits, operating in Manual mode or Automated. Each circuit is capable of a maximum of 16.5K psi. Monitors display: Automated Test Profiles, Data Acquisition, remote viewing of Test rooms and more. System is network connected for access to Profiles and distribution of test reports.

LARGE PRESSURE VESSELS: Built to accommodate complete cable assemblies, mated connectors, and customer-supplied sub-assemblies. Each unit contains a 12" diameter X 72" depth test chamber accommodating speciment weights up to 1500 lbs.




SeaKing™ and SuperG55™ QUALIFICATION TESTING: Both Glenair Series 70 SeaKing and SuperG55 rugged dry-mate subsea connectors have been tested and qualified to their 10K psi pressure rating—open-face and mated—in Glenair's state-of-the-art hydrostatic test lab. Additional testing included mating cycles, salt spray, and electrical continuity

TECHNICAL STAFF: Knowledgable and trained subsea specialists perform both in-house product qualification testing, as well as customer subassemblies.

| Glenair Hydrostatic Test Lab Technical Specifications and Pressure Test Standards | |
|---|---|
| Pressure test profiles | Automated or manual |
| Maximum test pressure | 16.5K psi |
| Data acquisition types | Pressure, time, temperature, and electrical performance |
| Performance monitoring under pressure | I/R, continuity, insertion loss, and backreflection (optical) |
| Industry profiles | All major oil & gas standards |
| Custom profiles | Yes, including customer-supplied subassemblies |
| Capacity (large pressure vessels) | Working volume = 12" diameter x 72" depth; Test specimen weight up to 1500 lbs. |

*Out of This World*

# INTERCONNECT SOLUTIONS

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