

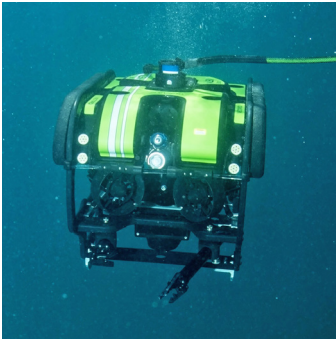
Subsea connectors and cable assemblies



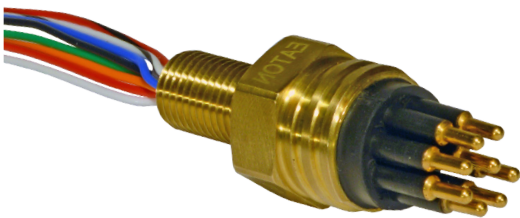
Commercial and military subsea connectors and cable assemblies

Eaton’s 40-year track record of uncompromised reliability in subsea-connectivity applications includes Burton™ standard and custom solutions. This extensive commercial and military program heritage includes:

- Remotely and autonomously operated vehicles and oceanographic-research instrumentation.
- Submarine launch-tube control and secondary propulsion, motor-control cable assemblies.
- Mine-detection-sled tow cables with integrated power-and-data connectivity and fuel delivery capabilities.
- Mine-hunting sonar, tether-cable assemblies.



Micro-Wet-Mate MCBH & MCIL Solutions



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Micro-Dry-Mate Shell Sizes 9 & 12



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Heritage-proven technologies accelerate custom-solution development

Eaton combines Burton™ standard-product technologies with advanced engineering tools and an extensive array of manufacturing resources to quickly deliver custom connectors and cable assemblies. Custom-solution capabilities include:

- Application-specific shells, insert arrangements and EMI/RFI filtering and shielding for high currents and voltages, high-speed data, radio frequency and acoustic-signal applications.
- Harsh environments including extreme temperatures, shock, vibration, radiation, corrosive media, and pressures.
- Mechanical tow, fluid and gas delivery, and connector/cable separation and release.

This page describes just a few of the hundreds of custom solutions that comprise Eaton's 40-year track record of uncompromised reliability. Please contact Eaton to discuss your application-specific requirements.



Eaton developed custom shells and insert arrangements for this submarine control-cable application. NAVSEA S9320-AM-PRO-020 certified overmolding using clear polyurethane facilitates inspection of wiring terminations.



These custom connectors feature application-specific shells and inserts that support blind mating and staged engagements of signal, power and ground contacts.



Custom penetrators are available to meet a broad array of mounting, environmental, voltage and current requirements.



In addition to overmolded cables, quick-turn deliveries of bulkhead mounted and Pressure Balanced Oil Filled (PBOF) cable assemblies for Ethernet, signal and power applications are facilitated by Eaton's broad range of wet and dry mate, standard products.

Micro-wet-mate connectors and cable assemblies

Eaton’s micro-wet-mate solutions incorporate rugged designs that provide 10,000 PSI pressure ratings and survive 1,000 mate and demate cycles.

These high-contact-density Burton™ connectors and cable assemblies are available in bulkhead, inline overmolded, and dummy-plug configurations:

- Up to 8 contacts in 0.61” (15.5mm) diameter shells
- Up to 16 contacts in 0.98” (25mm) diameter shells

Quick turn, application-specific-solution capabilities include:

- High voltages and currents
- High-speed-data including Ethernet
- Harsh environments including extreme pressures, temperatures, mechanical stresses, and corrosive agents

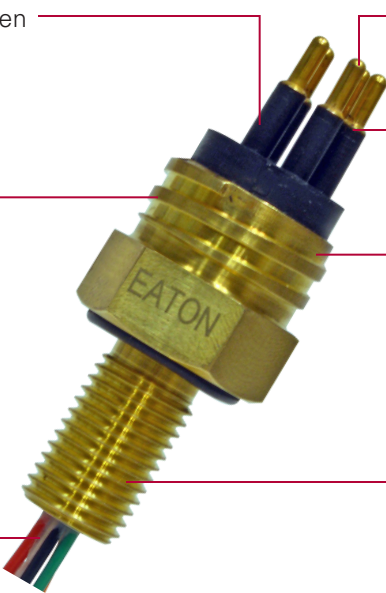


Shell Diameter	Number of Contacts	Max. Current	Max. Voltage	Dielectric Withstand	Inline Wire Sizes	Bulkhead Wire Sizes
0.61” (15.5mm)	3	7A	600V	<10uA @ 2000VDC	18AWG	20AWG
	4	7A	600V	<10uA @ 2000VDC	18AWG	20AWG
	5	3.5A	300V	<10uA @ 1500VDC	20AWG	22AWG
	6	3.5A	300V	<10uA @ 1500VDC	20AWG	22AWG
	8	3.5A	300V	<10uA @ 1500VDC	20AWG	22AWG
0.98” (25.4mm)	10	3A	300V	<10uA @ 1500VDC	20AWG	22AWG
	16	2.5A	300V	<10uA @ 1500VDC	20AWG	22AWG

Miniaturized solutions available with seven industry-standard contact arrangements

Integral threads facilitate rapid locking-sleeve installation (shell size M bulkhead connectors)

Color coded leads simplify conductor tracing



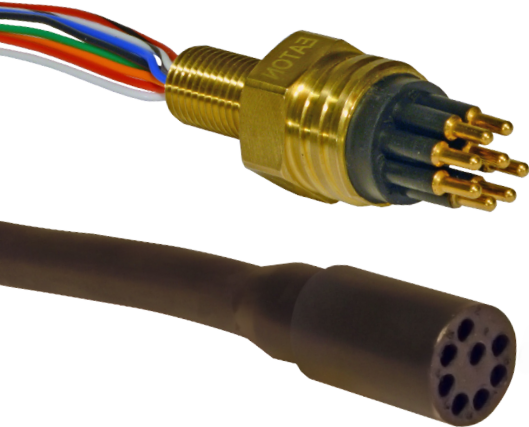
Gold plated, radiused pins resist corrosion and reduce mating forces

Radiused pin shoulders protect insulators from fraying

Reinforced neck resists damage during off-axis demating

Bulkhead connectors available in brass, stainless steel, aluminum, titanium and customer-defined materials

High-contact-density power, signal and Ethernet solutions



Parameter	Ratings
Open face pressure	10,000 PSI
Mated pressure	10,000 PSI
Operating temperature	-40° to 90°C, -40° to 194°F
Mating cycles	1000
Hi-pot voltage	3 and 4 Contacts: 2000VDC
	5 to 16 Contacts: 1500VDC
Insulation resistance	> 200 Megaohms @ 1000 VDC

Component	Materials and Platings*
Bulkhead shell	Brass (UNS C36000), Stainless Steel (UNS 31600/UNS 31603), Titanium (6AL/4V, UNS R56400), or Aluminum (6061-T6/T651, UNS A96061)
Body	Proprietary neoprene blend
Contacts	Gold-plated beryllium copper C173/C172 per ASTM B196
Orientation Pin	303/304 Stainless steel
Cable Jacketing	Neoprene
Wire Insulation	Bulkhead connectors: extruded TFE, inline configurations: EPDM
Locking Sleeves	Delrin bodies and 302 stainless-steel snap rings
Dummy Plugs	Proprietary neoprene blend

* Contact Eaton to discuss application-specific materials and platings

Rugged designs survive 1,000 mating cycles & 10,000 PSI open faced pressures



Eaton’s comprehensive range of micro-wet-mate subsea solutions includes locking sleeves, dummy plugs and quick turn, custom-cable assemblies. Contact Eaton to discuss pressure balanced oil filled, wet-mate connectors.

Part number configuration – micro-wet-mate subsea connectors

B-MC BH 8 M - S 001

Burton™ Micro-Wet-Mate Connector

Shell Type
(Table Below)

of Contacts
(Drawings Below)

Contact Type: **M = Male Pin, F = Female Socket**

Contact Eaton
to Discuss Your
Ethernet Requirements

Configuration	Bulkhead Materials	Cable Length
Dummy Plugs	Leave Blank	Leave Blank
Bulkhead Receptacles	Select from Table Below	Standard: 001 (1 foot length) Optional: Enter any Whole Number up to 999
In-Line	Enter a Zero	Standard: 002 (2 Feet Length) Optional: Enter any Whole Number up to 999

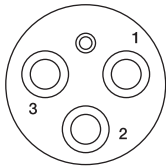
Connectors do not include locking sleeves, please refer to the table below for locking-sleeve ordering information

Type	Shell Type
BH	Bulkhead connector
DC	Dummy connector
IL	Inline connector with overmolded cable

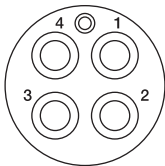
Type	Bulkhead Materials	Type	Bulkhead Materials
B	Brass	A	Aluminum
S	Stainless steel	T	Titanium

Shell size M insert arrangements 0.61" (15.5mm) diameter shells

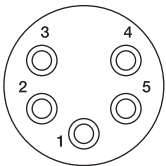
Depicted with male-pin connectors



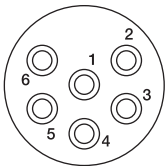
Three contacts with alignment pin



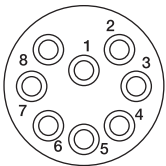
Four contacts with alignment pin



Five contacts



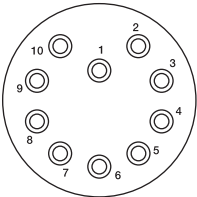
Six contacts



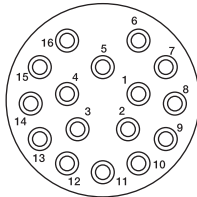
Eight contacts

Shell size A insert arrangements 0.98" (25mm) diameter shells

Depicted with male-pin connectors



Ten contacts

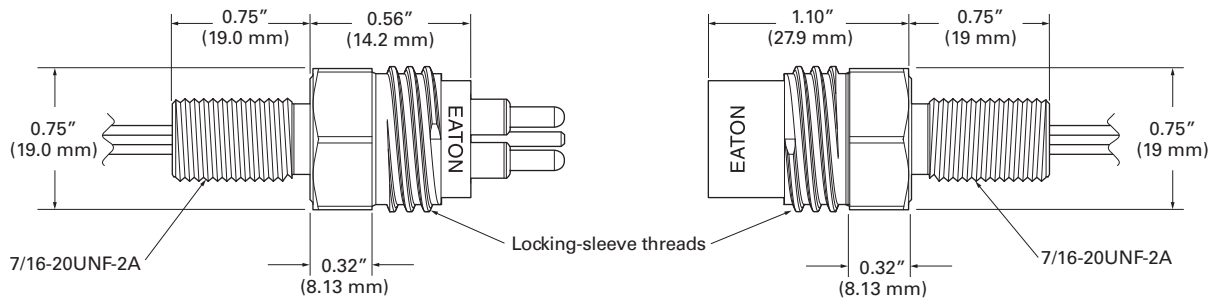


Sixteen contacts

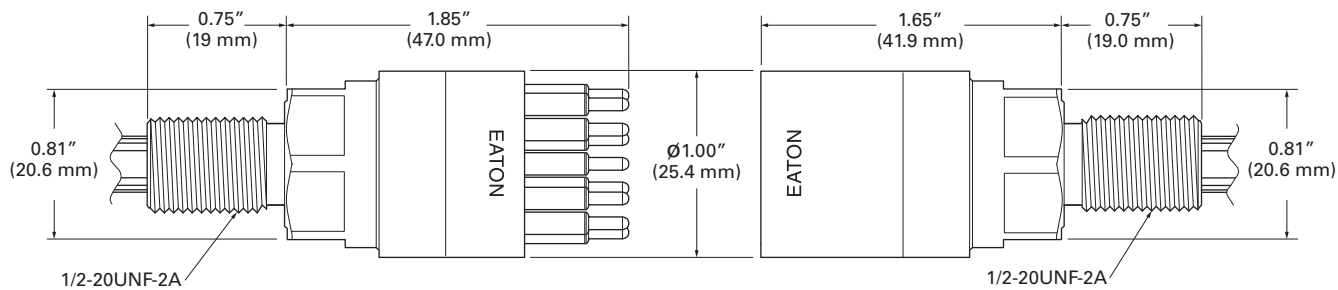


Mechanical drawings – micro-wet-mate subsea connectors

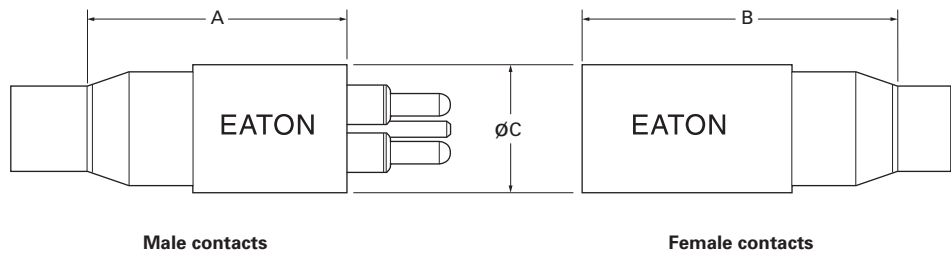
Shell size M bulkhead connectors



Shell size A bulkhead connectors



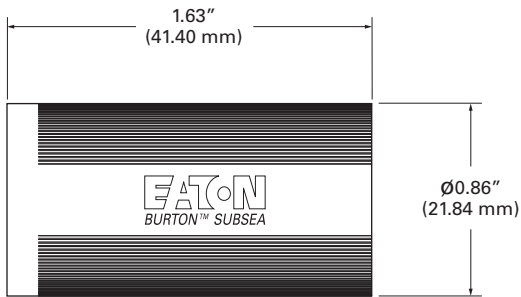
Inline connectors



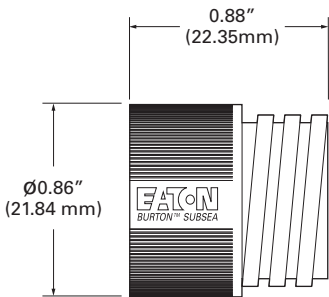
	Shell Size M	Shell Size A
A	1.32" (33.4mm)	1.99" (50.5mm)
B	1.55" (39.4mm)	2.37" (60.2mm)
ØC	0.61" (15.5mm)	0.98" (25.4mm)

Mechanical drawings – micro-wet-mate locking sleeves

Shell size M (3 to 8 contacts) locking sleeves

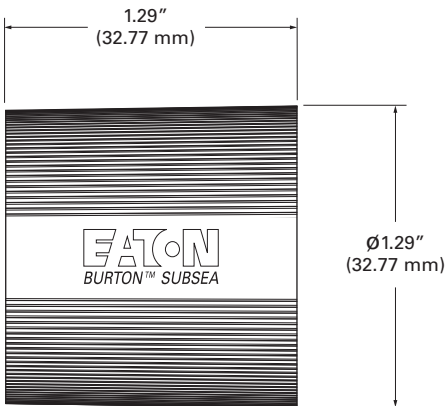


B-MCDLSF
Used with connectors with socket contacts

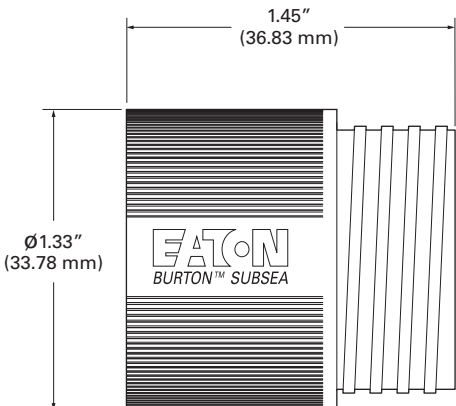


B-MCDLSM
Used with connectors with pin contacts

Shell size A (10 and 16 contacts) locking sleeves



B-DLSAF
Used with connectors with socket contacts



B-DLSAM
Used with connectors with pin contacts

Installation instructions – micro-wet-mate subsea connectors

Greasing and Mating

Above Water Mating

Apply a silicone grease, such as Molykote 44 Medium, to approximately 10% of the depth of the female contact socket cavities.

Confirm that the openings of all female sockets are sealed with grease and that a thin layer of grease covers the face of the female-contact connector.

Mate and demate the connector and inspect for grease on all male contacts before final remating.

Mate and demate by pushing straight in and pulling straight out and never at an angle. Always grasp the connector body and never try to demate by pulling on the cable.

Repeat these processes using new grease whenever male and female connectors are demated and remated.

Submerged Mating in Depths Less Than Three Meters

Apply a silicone grease, such as Molykote 44 Medium, to approximately 30% of the depth of the female contact socket cavities.

Fully mate the connector and remove excess grease.

Wiring Color Codes

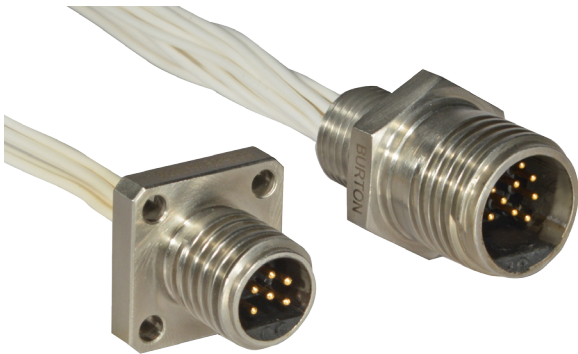
Contact #	Wire Color	Contact #	Wire Color	Contact #	Wire Color
1	Black	7	White & Black	13	Red & White
2	White	8	Red & Black	14	Green & White
3*	Red	9	Green & Black	15	Blue & White
4	Green	10	Orange & Black	16	Black & Red
5	Orange	11	Blue & Black		
6	Blue	12	Black & White		

* Three-pin connectors utilize a green wire on pin #3.

Micro-dry-mate subsea connectors – shell sizes 9 and 12

Eaton’s high contact density, shell size 9 and 12 dry-mate connectors are available with 6, 8, and 14 contacts; custom contact arrangements are also available. Additional features include:

- 10,000 PSI open-faced pressure ratings
- Gold plated, copper-alloy contacts
- Standard 600-volt dielectric ratings
- Cable assemblies available in overmolded and Pressure Balanced Oil Filled (PBOF) configurations.
- Contact Eaton to discuss solutions for Ethernet and high-voltage applications.

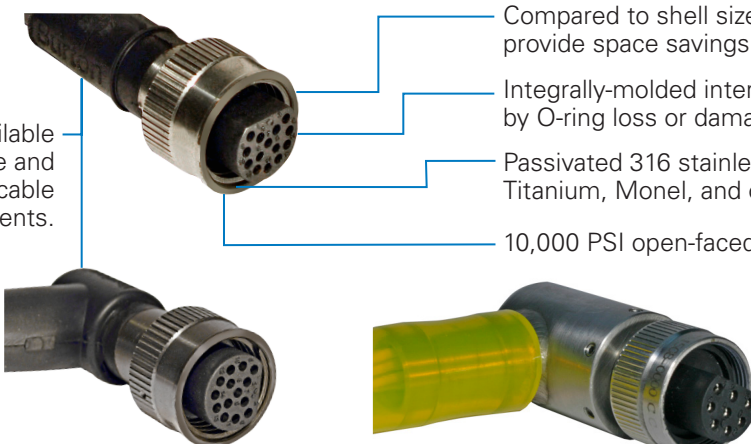


Materials and Finishes	
Contacts / Inserts	Gold plated, copper alloy / Proprietary neoprene compounds
Shells and coupling rings	Passivated 316 stainless steel, other materials available upon request
Overmold	Neoprene, other materials available upon request
Cable / Pigtails	UL SOW-A or MIL-C-915 / NEMA HP3, SAE-AS22759

Performance and Environmental	
Pressure rating	10,000 PSI open faced pressure rating, standard, Contact Eaton to discuss application-specific pressure requirements
Mating cycles	Rated for 500 mate/demate cycles
Operating temperature range	- 40 to 90°C, - 40 to 194°F
Operating voltage ratings	600V standard; contact Eaton to discuss high-voltage configurations

High-contact-density solutions for subsea Ethernet, signal and power applications

Connectors available with in-line and right-angle cable attachments.



Compared to shell size 20 connectors, shell sizes 9 and 12 provide space savings of 58% and 40%, respectively.

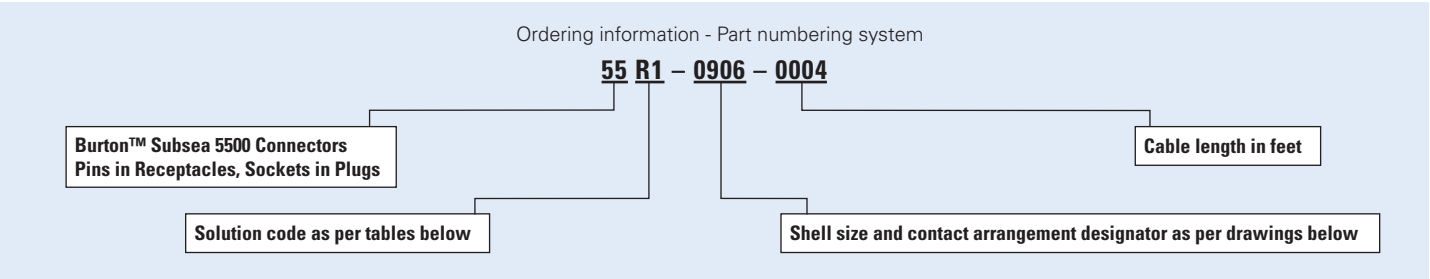
Integrally-molded interfacial seals eliminate failures caused by O-ring loss or damage

Passivated 316 stainless steel shells and coupling rings. Titanium, Monel, and other materials available upon request.

10,000 PSI open-faced pressure ratings

Quick-turn, custom-cable capabilities include Pressure Balanced Oil Filled (PBOF) solutions.

Part number configuration – micro-dry-mate subsea connectors



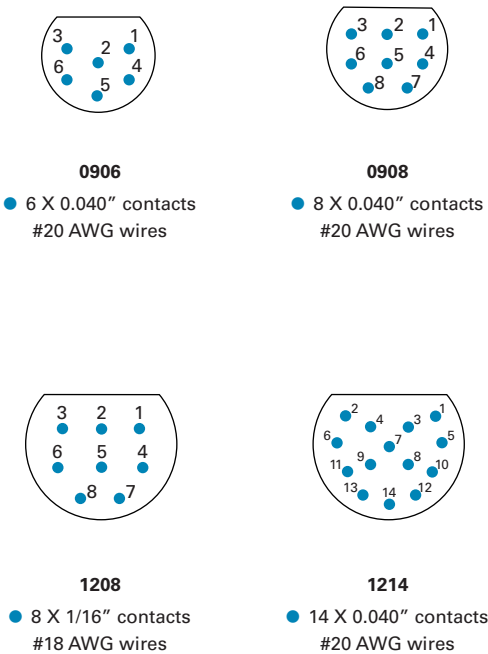
Type	Configuration	Solution Code
Factory overmolded cables	In-line plugs	01
	In-line receptacles	02
	Right-angle plugs	R1
Flange/bulkhead receptacles	Flange-mount	06
	Bulkhead mount	07
Dummy plugs and receptacles	Specify 01 or 02 code with "0000" cable length	

Type	Configuration	Solution Code
Attachables for customer overmolding*	In-line plugs	A1
	In-line receptacles	A2
	In-line plugs	P1
Pressure balanced oil filled attachables*	In-line receptacles	P2
	Right-angle – specify P1 or P2 code with "RA00" cable length	

*Specify "0000" cable length when ordering

Contact arrangements

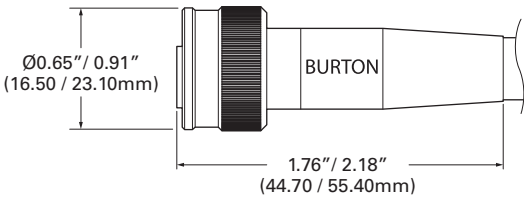
Face view of pin connectors shown, shell/contact arrangement designators are followed by contact sizes and suggested wire gauges



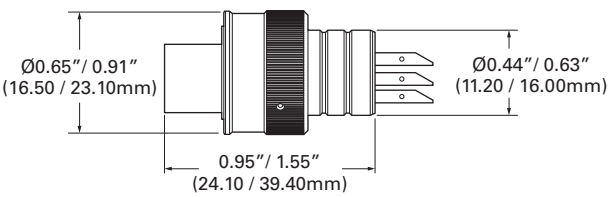
Gigabit Ethernet solutions include custom cable lengths and shielding configurations

Mechanical drawings – micro-dry-mate subsea connectors

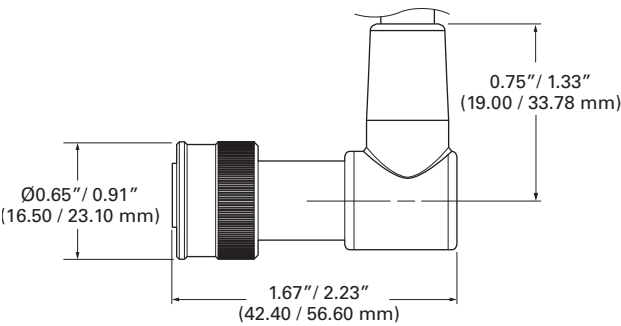
Dimensions are stated as shell size 9 / shell size 12



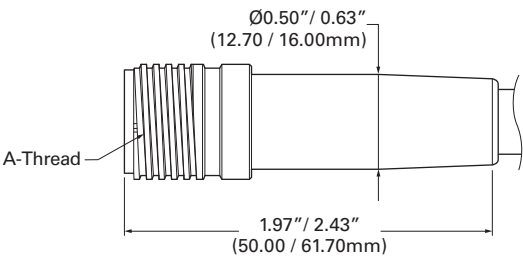
In-Line Plugs



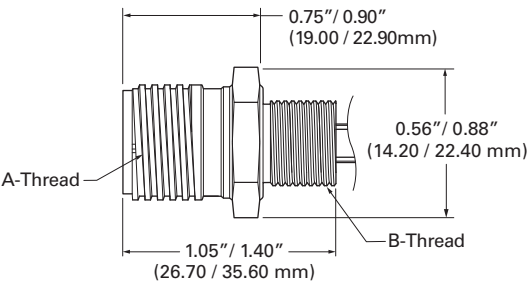
Attachable Plugs



Right-Angle Plugs



In-Line Receptacles



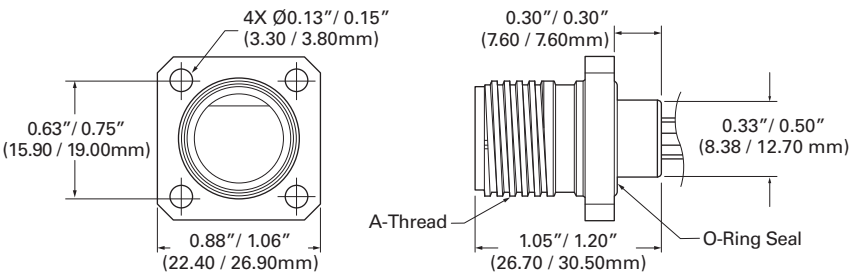
Bulkhead Receptacles

Thread Information

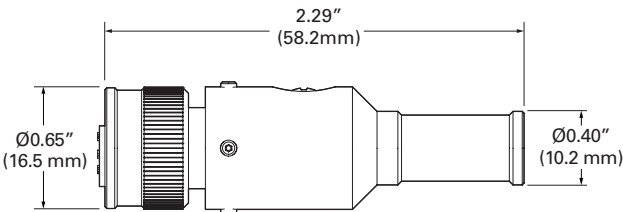
Shell	A-Thread	B-Thread
09	9/16 – 12 Stub Acme	3/8 -24 UNF-2A
12	¾ - 12 Stub Acme	9/16-18 UNF

Mechanical drawings – micro-dry-mate subsea connectors (continued)

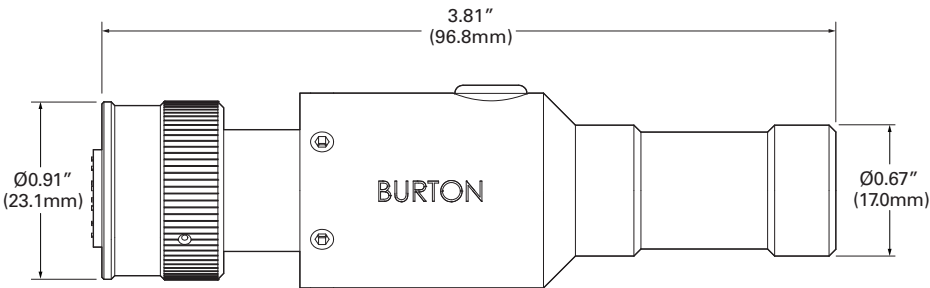
Dimensions are stated as shell size 9 / shell size 12



Flange-Mount Receptacles



Shell Size 9 Pressure Balanced Oil Filled



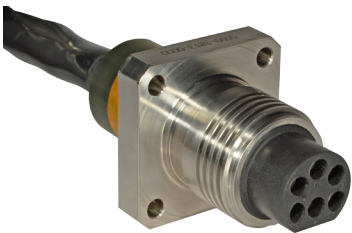
Shell Size 12 Pressure Balanced Oil Filled

Dry-mate subsea connectors – shell sizes 15 to 48

Eaton’s subsea solutions include Burton™ dry-mate connectors in shell sizes 15 to 48. These 10,000 PSI-rated interconnects have been field proven for over 40 years and feature integrally molded interfacial seals that, unlike O-rings, cannot fall off.

Additional harsh-environment design features include:

- Stub ACME threads (size 16 and larger shells) provide protection against cross threading and damage.
- Factory-overmolded solutions feature crimped contacts that are more resistant to damage from flexing than soldered terminals.
- High-temperature overmolding is performed under several thousand pounds of pressure to ensure a robust bond that eliminates water intrusion.



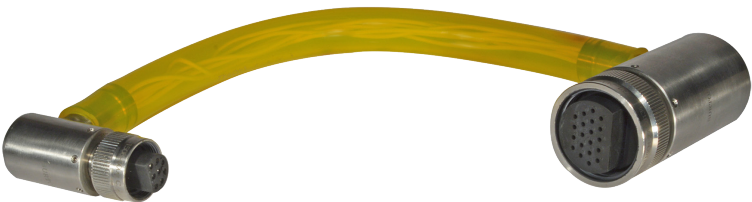
Eaton offers a broad range of custom solutions. This cable assembly features NAVSEA-PRO-20 certified polyurethane overmolding, shielded twisted pairs, and a 1000V rating.

Dry-Mate Connectors Overview - Shell Sizes 15 to 48

Plug configurations	<ul style="list-style-type: none">• In-line and right angle, factory-overmolded cable assemblies• Pressure Balanced Oil Filled (PBOF), shell sizes 15 to 32• Attachable, in-line solutions for customer overmolding
Receptacle configurations	<ul style="list-style-type: none">• Square flange and bulkhead-mount configurations• Attachable, in-line solutions for customer overmolding
Contacts and terminations	<ul style="list-style-type: none">• Pins in receptacles, sockets in plugs (5500 connectors)• Pins in plugs, sockets in receptacles (6600 connectors)• Factory-overmolded solutions utilize crimped terminations, attachable and PBOF connectors utilize soldered terminations
Ethernet solutions	<ul style="list-style-type: none">• Standard Ethernet/power and pure Ethernet cables in shell sizes 15 and 20 rated for 1 Gb/sec. up to 75 meters cable length• Contact Eaton to discuss application-specific Ethernet solutions in other shell sizes



End-to-end solutions include factory overmolded and Pressure Balanced Oil Filled (PBOF) cable assemblies for Ethernet, signal, power and hybrid applications. The overmolded solution depicted to the left features abrasion-resistant jacketing and anti-capillary water blocking.



Solutions include Ethernet and high-voltage cable assemblies

Materials and Finishes

Contacts	Gold plated, copper alloy
Inserts	Proprietary neoprene compounds
Shells and coupling rings	Passivated 316 stainless steel, other materials available upon request
Overmold	Neoprene, other materials available upon request
Cable	UL SOW-A or MIL-C-915
Pigtails	MIL-W-16878

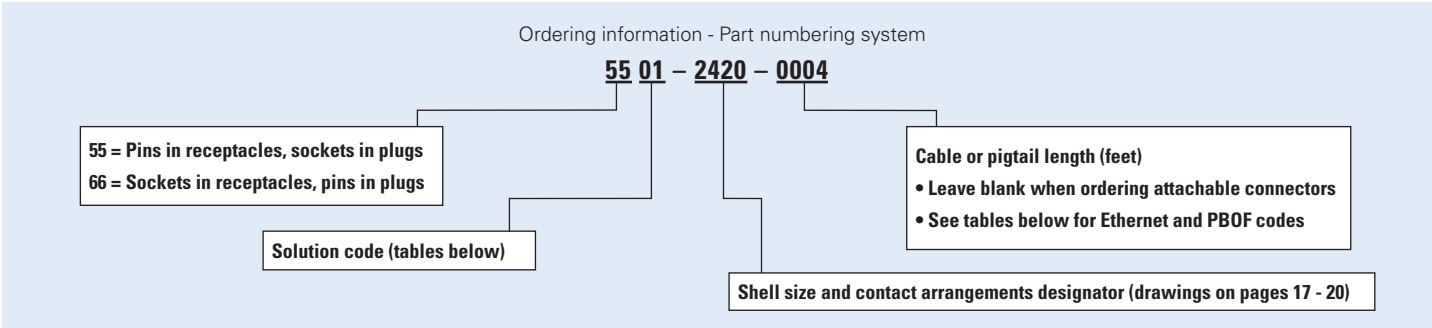
Performance and Environmental

Pressure rating	10,000 PSI open faced pressure rating standard. Contact Eaton to discuss application-specific pressure requirements
Mating cycles	Rated for 500 mate/demate cycles
Operating-temperature range	- 40 to 90°C, - 40 to 194°F
Operating-voltage ratings	<ul style="list-style-type: none">• 600V ratings standard on all contact arrangements• 1000V to 5000V ratings available on selected contact arrangements. Please refer to page 21 for additional information



Eaton offers the industry's broadest range of dry-mate solutions with integrally-molded interfacial seals; eliminating failures caused by O-ring loss or damage

Ordering information – Ethernet and 600V-rated subsea solutions



Type	Configuration	Solution Code
Factory overmolded cables	In-line plugs	01
	In-line receptacles	02
	Right-angle plugs	R1
	Right-angle receptacles	R2
Flange/bulkhead receptacles	Flange mount	06
	Bulkhead mount	07
Dummy plugs and receptacles	Specify 01 or 02 code with "0000" cable length	

Type	Configuration	Solution Code
Attachables for customer overmolding	In-line plugs	A1
	In-line receptacles	A2
Pressure Balanced Oil Filled (PBOF) for customer attachment*	In-line plugs	P1
	In-line receptacles	P2
	Right-angle – specify P1 or P2 code with "RA00" cable length	

*JIC fittings are available to facilitate the use of hydraulic hose instead of clear tubing. Contact Eaton for additional information.



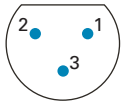
Eaton’s overmolding capabilities include neoprene, polyurethane and NAVSEA-PRO-20

Ethernet / Power Configurations	Connector Style	Shell Size	Number Contacts	Part Numbers (XXX = Cable Length)
Ethernet and power	Bulkhead receptacles	20	13	5507-2013-XXXX
		20	21	5507-2021-XXXX
	Flange mount receptacles	20	13	5506-2013-XXXX
		20	21	5506-2021-XXXX
Ethernet only	Bulkhead receptacles	15	8	5507-1508-XXXX
	Flange mount receptacles	15	8	5506-1508-XXXX
	Single ended plug/cable	15	8	5501-1508-XXXX

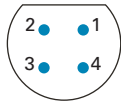
Contact Eaton to discuss application-specific Ethernet solutions including double-ended cables.

Contact arrangements – dry-mate 5500 subsea connectors

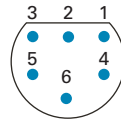
Face view of pin connectors shown, insert arrangement designators are followed by contact sizes and suggested wire gauges



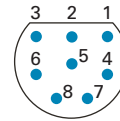
1503
● 2 X 3/32" contacts
#16 AWG wires



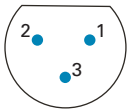
1504
● 4 X 1/16" contacts
#18 AWG wires



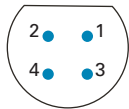
1506
● 6 X 1/16" contacts
#18 AWG wires



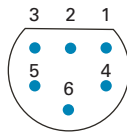
1508
● 8 X 1/16" contacts
#18 AWG wires



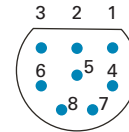
1603
● 3 X 3/32" contacts
#16 AWG wires



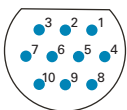
1604
● 4 X 1/16" contacts
#18 AWG wires



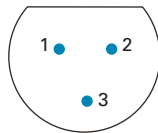
1606
● 6 X 1/16" contacts
#18 AWG wires



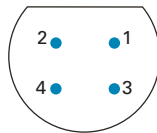
1608
● 8 X 1/16" contacts
#18 AWG wires



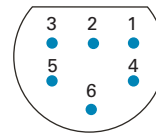
1610
● 10 X 1/16" contacts
#18 AWG wires



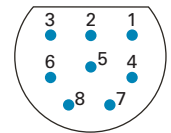
2003
● 3 X 1/8" contacts
#16 AWG wires



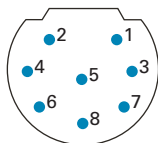
2004
● 4 X 1/8" contacts
#16 AWG wires



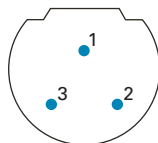
2006
● 6 X 1/8" contacts
#16 AWG wires



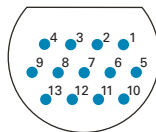
2008
● 8 X 3/32" contacts
#16 AWG wires



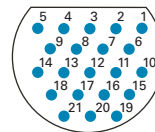
20A8
● 8 X 3/32" contacts
#16 AWG wires



20B3
● 3 X 1/8" contacts
#16 AWG wires



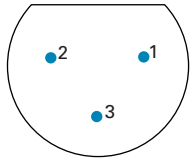
2013
● 13 X 1/16" contacts
#18 AWG wires



2021
● 21 X 1/16" contacts
#18 AWG wires

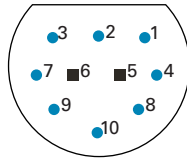
Contact arrangements – dry-mate 5500 subsea connectors

Face view of pin connectors shown, insert arrangement designators are followed by contact sizes and suggested wire gauges



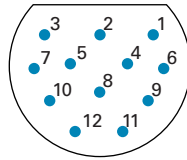
2403

● 3 X 3/32" contacts
#16 AWG wires



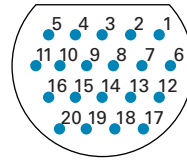
2410

● 8 X 1/8" contacts
■ 2 X 3/32" contacts
#16 AWG wires



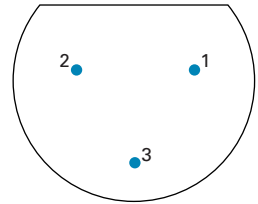
2412

● 12 X 3/32" contacts
#16 AWG wires



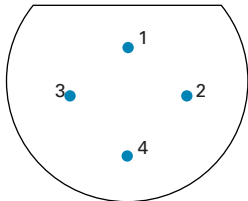
2420

● 20 X 1/16" contacts
#18 AWG wires



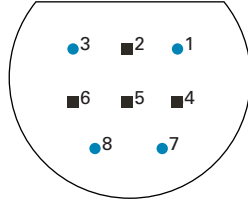
3203

● 3 X 3/16" contacts
#8 AWG wires



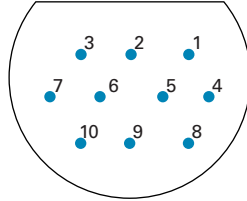
3204

● 4 X 3/16" contacts
#8 AWG wires



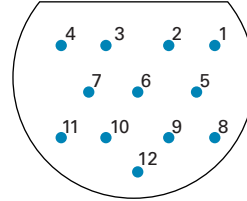
3208

● 4 X 3/32" contacts
■ 4 X 3/16" contacts
#16 & #8 AWG wires



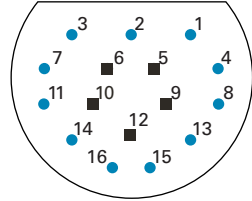
3210

● 10 X 5/32" contacts
#16 AWG wires



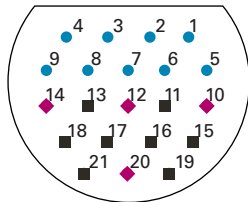
3212

● 12 X 5/32" contacts
#16 AWG wires



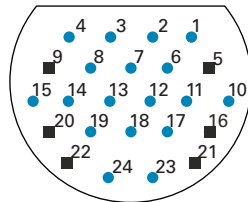
3216

● 11 X 3/32" contacts
■ 5 X 1/8" contacts
#16 AWG wires



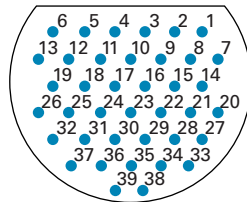
3221

● 9 X 3/32" contacts
■ 8 X 1/8" contacts
◆ 4 X 5/32" contacts
#16 AWG wires



3224

● 18 X 3/32" contacts
■ 6 X 1/8" contacts
#16 AWG wires

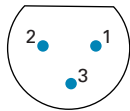


3239

● 39 X 1/16" contacts
#18 AWG wires

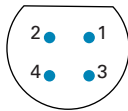
Contact arrangements – dry-mate 6600 subsea connectors

Face view of pin connectors shown, insert arrangement designators are followed by contact sizes and suggested wire gauges



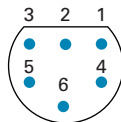
1603

● 3 X 3/32" contacts
#16 AWG wires



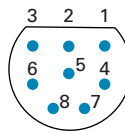
1604

● 4 X 1/16" contacts
#18 AWG wires



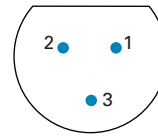
1606

● 6 X 1/16" contacts
#18 AWG wires



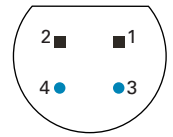
1608

● 8 X 1/16" contacts
#18 AWG wires



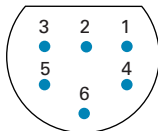
2003

● 3 X 1/8" contacts
#16 AWG wires



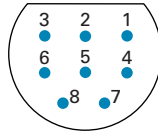
2004

● 2 X 1/8" contacts
■ 2 X 5/32 contact
#16 AWG wires



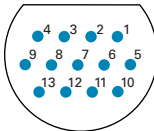
2006

● 6 X 1/16" contacts
#18 AWG wires



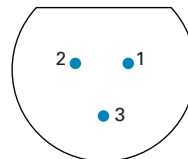
2008

● 8 X 1/16" contacts
#18 AWG wires



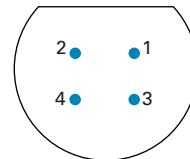
2013

● 13 X 1/16" contacts
#18 AWG wires



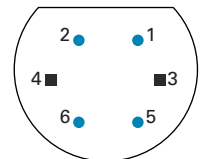
2403

● 3 X 3/32" contacts
#16 AWG wires



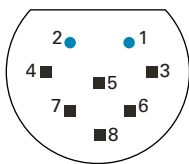
2404

● 4 X 5/32" contacts
#12 AWG wires



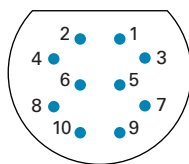
2406

● 4 X 1/8" contacts
■ 2 X 5/32" contacts
#16 AWG wires



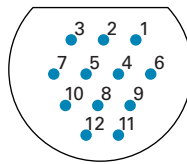
2408

● 2 X 3/32" contacts
■ 6 X 1/8" contacts
#16 AWG wires



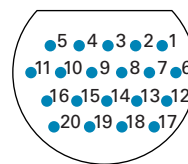
2410

● 10 X 3/32" contacts
#16 AWG wires



2412

● 12 X 3/32" contacts
#16 AWG wires

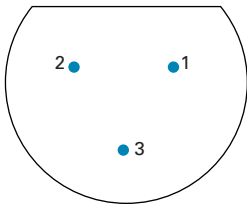


2420

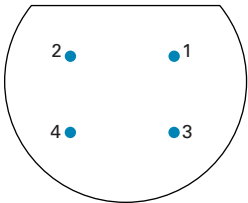
● 20 X 1/16" contacts
#18 AWG wires

Contact arrangements – dry-mate 6600 subsea connectors

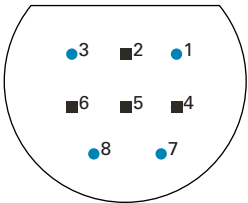
Face view of pin connectors shown, insert arrangement designators are followed by contact sizes and suggested wire gauges



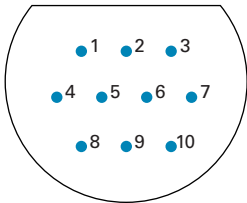
3203
● 3 X 3/16" contacts
#8 AWG wires



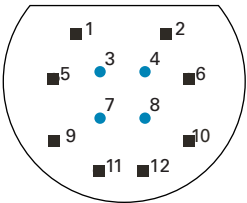
3204
● 4 X 3/16" contacts
#8 AWG wires



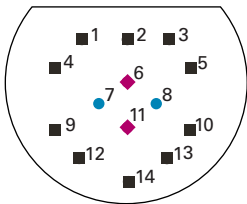
3208
● 4 X 3/32" contacts
■ 4 X 3/16" contacts
#16 & #8 AWG wires



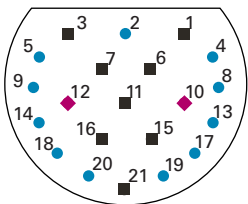
3210
● 10 X 5/32" contacts
#16 AWG wires



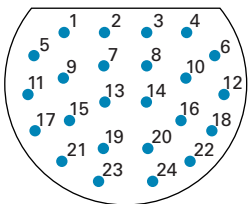
3212
● 4 X 1/8" contacts
■ 8 X 5/32" contacts
#16 AWG wires



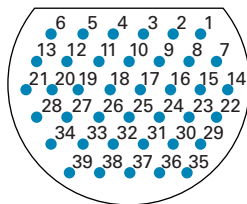
3214
● 2 X 1/8" contacts
■ 10 X 5/32" contacts
◆ 2 X 3/32" contacts
#16 AWG wires



3221
● 11 X 3/32" contacts
■ 8 X 1/8" contacts
◆ 2 X 5/32" contacts
#16 AWG wires

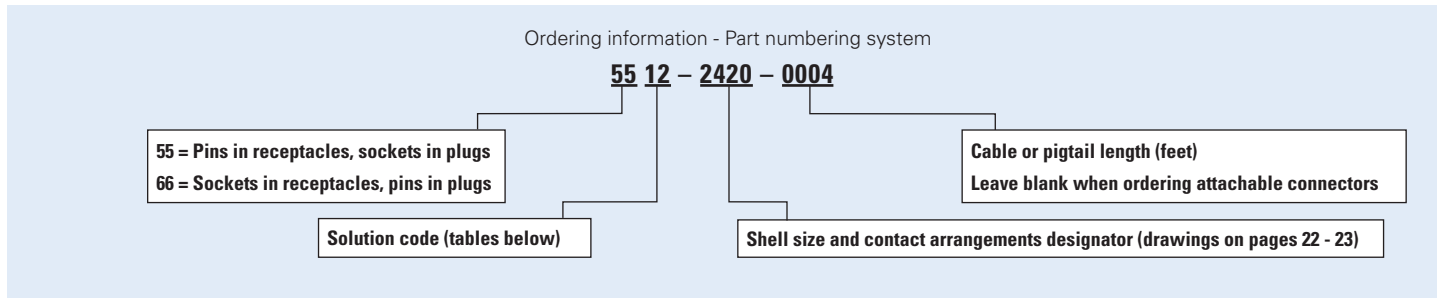


3224
● 24 X 3/32" contacts
#16 AWG wires



3239
● 39 X 1/16" contacts
#18 AWG wires

Ordering information – high voltage, dry-mate subsea connectors



Contact Eaton to discuss application-specific configurations not listed below

Solution code X values: 1 = 1000V, 2 = 2000V, 3 = 3000V, 5 = 5000V

Type	Configuration	Solution Code*
Factory overmolded cables	In-line plugs	X1
	In-line receptacles	X2
	Right-angle plugs	XR
Flange/bulkhead receptacles	Flange-mount	X6
	Bulkhead mount	X7

*Please refer to the contact-arrangement drawings on the next two pages to determine voltage-rating availability

Type	Configuration	Solution Code*
Attachables for customer overmolding**	In-line plugs	XA
Pressure balanced oil filled attachables**	In-line plugs	XP
Dummy plugs and receptacles	Specify X1 or X2 in-line cable code with "0000" cable length	

**Specify "0000" cable length when ordering attachables

Shell size 48 subsea connectors – 5000V ratings

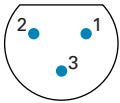


Part number	Type	Configuration
5551-4803-XXXX	In-line overmolded plug	Three contacts; rated for 220A
5556-4803-XXXX	Flange-mount receptacle	
5552-4803-0000	Dummy receptacle	
5551-4806-XXXX	In-line overmolded plug	Six contacts; #2 AWG and #6 AWG pigtails
5556-4806-XXXX	Flange-mount receptacle	
5552-4806-0000	Dummy receptacle	

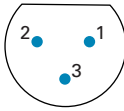
Shell size 48 solutions are available with 5000V, 220A ratings. Contact Eaton to discuss Pressure Balanced Oil Filled (PBOF) configurations.

Contact arrangements – high voltage 5500 subsea connectors

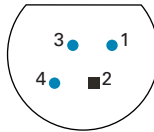
Face view of pin connectors shown, insert arrangement designators are followed by contact sizes and suggested wire gauges



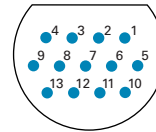
1503
● 3 X 1/16" contacts
#18 AWG wires
1000V, 2000V



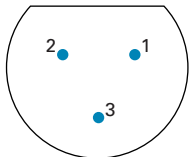
1603
● 3 X 1/16" contacts
#16 AWG wires
1000V, 2000V



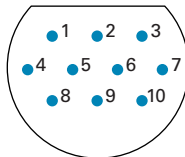
2004
● 3 X 1/8" contacts
■ 1 X 5/32 contact
#14 AWG wires
1000V, 2000V, 3000V



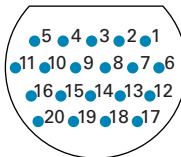
2013
● 13 X 1/16" contacts
#18 AWG wires
1000V



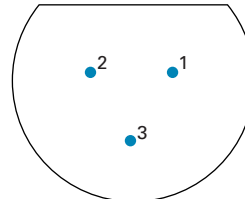
2403
● 3 X 3/32" contacts
#14 AWG wires
1000V, 2000V, 3000V



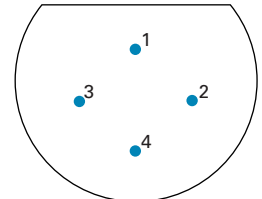
2410
● 10 X 3/32" contacts
#16 AWG wires
1000V, 2000V



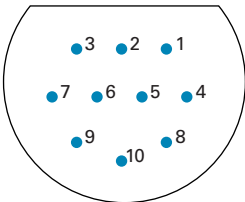
2420
● 20 X 1/16" contacts
#18 AWG wires
1000V



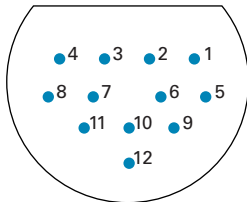
3203
● 3 X 3/16" contacts
#8 AWG wires
1000V, 2000V, 3000V, 5000V



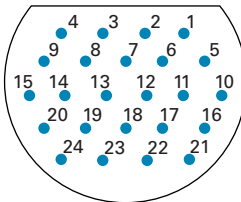
3204
● 4 X 3/16" contacts
#8 AWG wires
1000V, 2000V, 3000V, 5000V



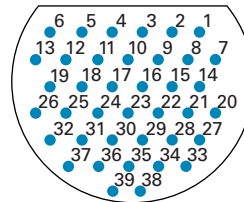
3210
● 10 X 5/32" contacts
#14 AWG wires
1000V, 2000V, 3000V



3212
● 12 X 1/8" contacts
#14 AWG wires
1000V, 2000V, 3000V



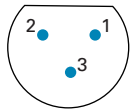
3224
● 24 X 1/16" contacts
#18 AWG wires
1000V



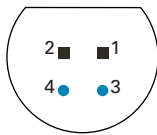
3239
● 39 X 1/16" contacts
#18 AWG wires
1000V

Contact arrangements – high voltage 6600 subsea connectors

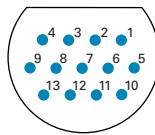
Face view of pin connectors shown, insert arrangement designators are followed by contact sizes and suggested wire gauges



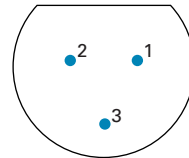
1603
● 3 X 3/32" contacts
#16 AWG wires
1000V, 2000V



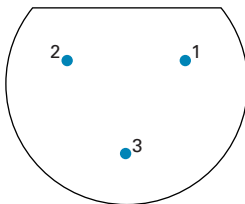
2004
● 2 X 1/8" contacts
■ 2 X 5/32 contact
#14 AWG wires
1000V, 2000V, 3000V



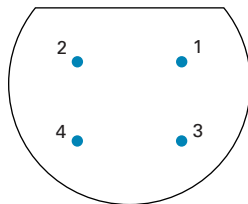
2013
● 13 X 1/16" contacts
#18 AWG wires
1000V



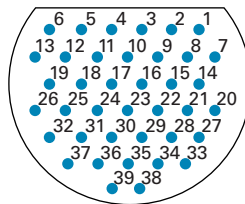
2403
● 3 X 3/32" contacts
#16 AWG wires
1000V, 2000V, 3000V



3203
● 3 X 3/16" contacts
#8 AWG wires
1000V, 2000V, 3000V



3204
● 4 X 3/16" contacts
#8 AWG wires
1000V, 2000V, 3000V

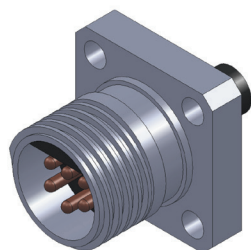


3239
● 39 X 1/16" contacts
#18 AWG wires
1000V

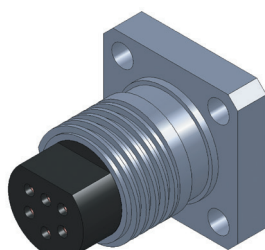
Contact Eaton to discuss quick turn,
custom high voltage solutions

Mechanical drawings – flange mount and bulkhead receptacles

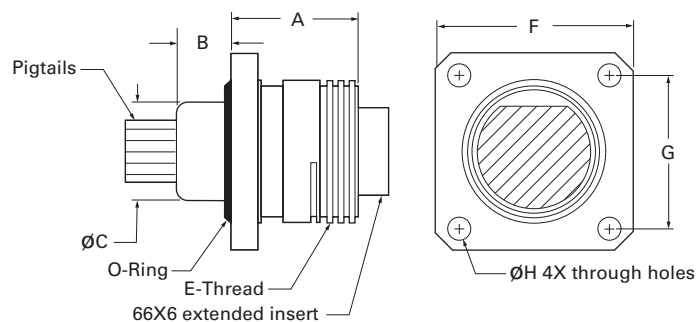
Flange Mount Receptacles



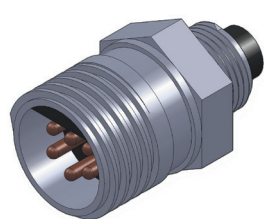
55X6 Connectors
Pin contacts



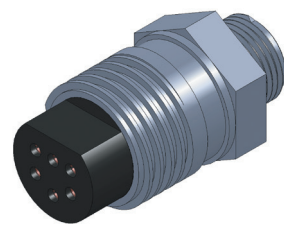
66X6 Connectors
Socket contacts



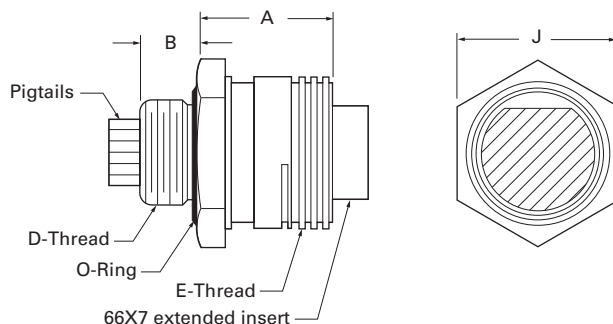
Bulkhead Receptacles



55X7 Connectors
Pin contacts



66X7 Connectors
Socket contacts

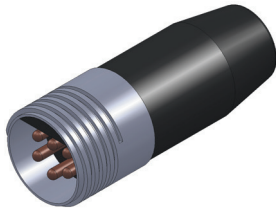


Shell Size	A	B	ØC	D-Thread	E-Thread	F	G	ØH	J
15	1.25" (31.75)	0.50" (12.70)	0.63" (16.00)	5/8 – 18 UNF-2A	15/16 – 20 UNEF-2A	1.50" (38.10)	1.00" (25.40)	0.22" (5.59)	1.13" (28.70)
16	1.50" (38.10)	0.50" (12.70)	0.62" (15.75)	5/8 – 18 UNF-2A	1 – 9 Stub Acme	1.63" (41.40)	1.13" (28.70)	0.22" (5.59)	1.13" (28.70)
20	1.50" (38.10)	0.50" (12.70)	0.74" (18.80)	3/4 – 16 UNF-2A	1 1/4 – 9 Stub Acme	1.75" (44.45)	1.25" (31.75)	0.28" (7.11)	1.25" (31.75)
24	1.50" (38.10)	0.50" (12.70)	0.99" (25.15)	1 – 14 UNF-2A	1-1/2 – 9 Stub Acme	2.00" (50.80)	1.50" (38.10)	0.28" (7.11)	1.50" (38.10)
32	1.50" (38.10)	0.50" (12.70)	1.49" (37.85)	1 1/2–12 UNF-2A	2 – 9 Stub Acme	2.63" (66.80)	2.00" (50.80)	0.34" (8.64)	2.00" (50.80)
48	4.75" (120.65)	N/A	2.00" (50.80)	N/A	3 – 5 Stub Acme	4.00" (101.60)	3.00" (76.20)	0.44" (11.18)	N/A

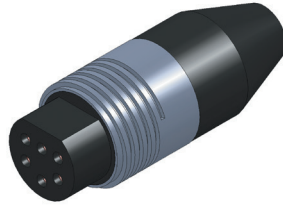
Dimensions are stated as inches (mm).

Mechanical drawings – cable-mount receptacles

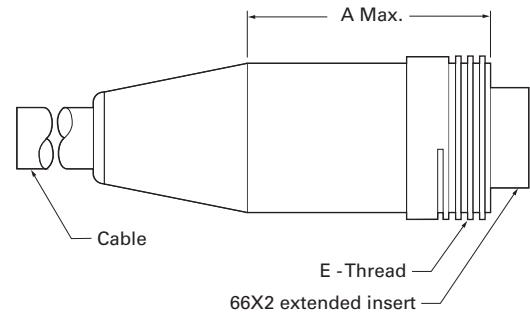
Factory Overmolded Cable Mount Receptacles



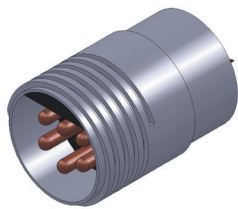
55X2 Connectors
Pin contacts



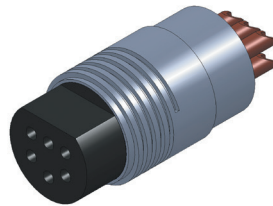
66X2 Connectors
Socket contacts



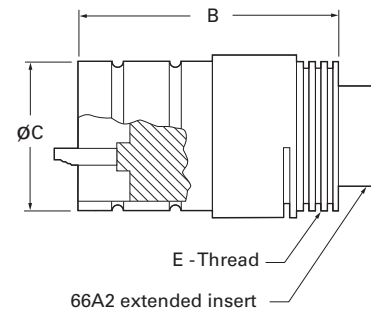
Attachable Cable-Mount Receptacles



55A2 Connectors
Pin contacts



66A2 Connectors
Socket contacts



Shell Size	A Max.	B	ØC	E-Thread
15	2.20" (55.88)	1.47" (37.34)	0.78" (19.81)	15/16 – 20 UNEF-2A
16	2.20" (55.88)	1.50" (38.10)	0.84" (21.34)	1 – 9 Stub Acme
20	2.00" (50.80)	1.59" (40.39)	1.06" (26.92)	1-1/4 – 9 Stub Acme
24	2.88" (73.15)	1.68" (42.67)	1.32" (33.53)	1-1/2 – 9 Stub Acme
32	3.90" (99.06)	1.70" (43.18)	1.81" (45.97)	2 – 9 Stub Acme

Dimensions are stated as inches (mm).

Mechanical drawings – cable-mount overmolded plugs

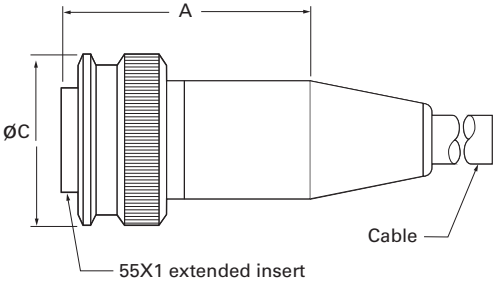
In-line plugs



55X1 Connectors
Socket Contacts



66X1 Connectors
Pin Contacts



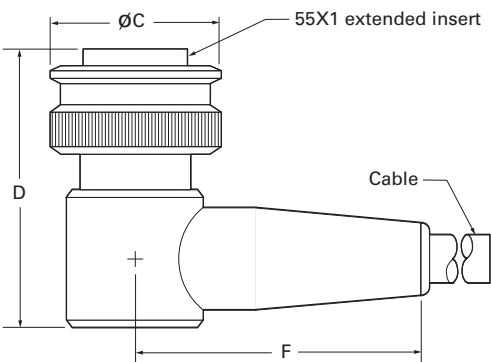
Right-angle plugs



55R1 Connectors
Socket Contacts



66R1 Connectors
Pin Contacts



Shell Size	A-55X1	A-66X1	ØC	D-55R1	F-55R1	D-66R1	F-66R1
15	1.78" (45.21)	N/A	1.09" (27.69)	2.75" (69.85)	2.13" (54.10)	N/A	N/A
16	2.45" (62.23)	2.15" (54.61)	1.17" (29.72)	3.00" (76.20)	2.51" (63.75)	2.56" (65.02)	2.44" (61.98)
20	2.45" (62.23)	1.64" (41.66)	1.50" (38.10)	3.24" (82.30)	3.00" (76.20)	2.65" (67.31)	2.90" (73.66)
24	2.80" (71.12)	2.33" (59.18)	1.75" (44.45)	3.87" (98.30)	3.25" (82.55)	3.25" (82.55)	3.57" (90.68)
32	4.00" (101.60)	3.50" (88.90)	2.24" (56.90)	4.51" (114.55)	4.70" (119.38)	3.88" (98.55)	4.59" (116.59)
48	6.55" (166.37)	N/A	3.48" (88.39)	N/A	(N/A)	(N/A)	(N/A)

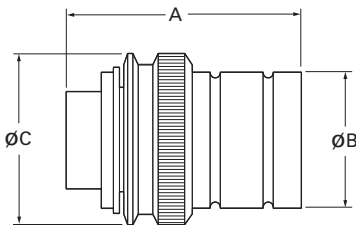
Dimensions are stated as inches (mm).

Mechanical drawings – attachable cable-mount plugs

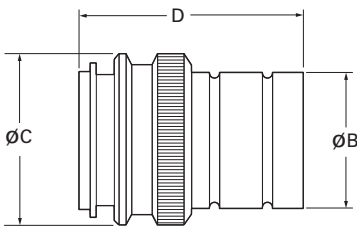
Attachable cable-mount plugs



5500 Connectors
Socket contacts



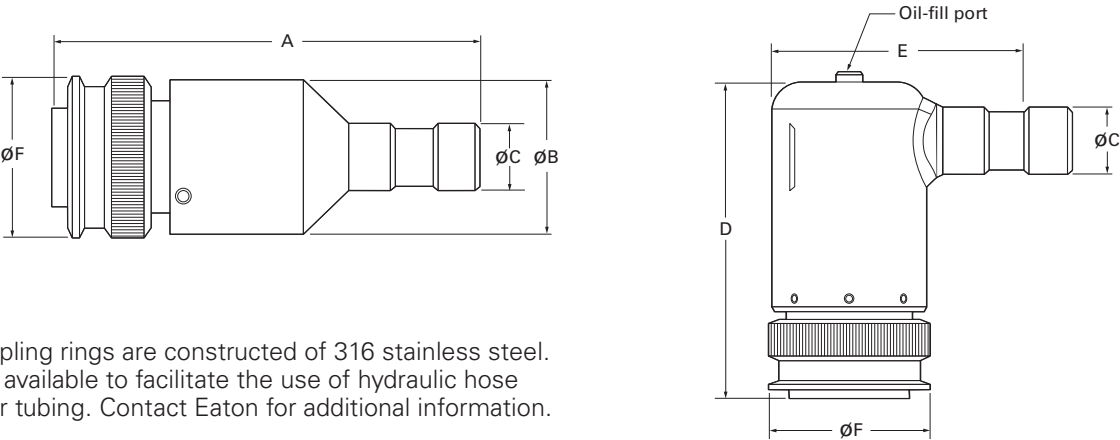
6600 Connectors
Socket Contacts



Shell Size	A	ØB	ØC	D
15	1.55" (39.40)	0.68" (17.30)	1.09" (27.70)	1.67" (42.40)
16	1.66" (42.20)	0.84" (21.30)	1.17" (29.70)	1.72" (43.70)
20	1.66" (42.20)	1.09" (27.70)	1.50" (38.10)	1.62" (41.10)
24	1.66" (42.20)	1.32" (33.50)	1.75" (44.50)	1.62" (41.10)
32	1.78" (45.20)	1.81" (46.00)	2.25" (57.20)	1.62" (41.10)

Dimensions are stated as inches (mm).

Mechanical drawings – Pressure Balanced Oil Filled (PBOF)



Shells and coupling rings are constructed of 316 stainless steel. JIC fittings are available to facilitate the use of hydraulic hose instead of clear tubing. Contact Eaton for additional information.

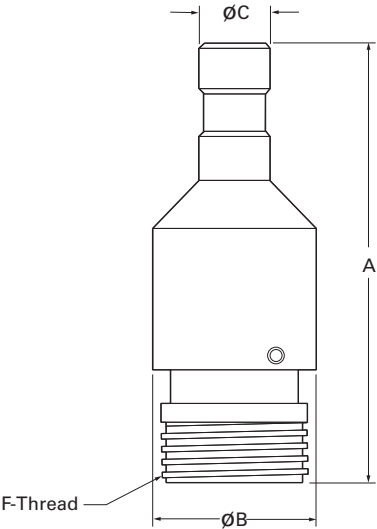
PBOF Plug Dimensions

Shell Size	A-5500	A-6600	ØB	ØC	D-5500***	E-5500***	ØF
15	3.80" (96.52)*	N/A	1.12" (28.45)	0.67" (17.02)	2.76" (70.10)	2.51" (63.75)	1.09" (27.69)
16	3.95"(100.33)	4.02" (102.11)	1.25" (31.75)	0.67" (17.02)**	Contact Eaton		1.17" (29.72)
20	4.04" (102.62)	4.00" (101.60)	1.50" (38.10)	0.67"(17.02)	3.25" (82.55)	2.60" (66.04)	1.50" (38.10)
24	4.19" (106.43)	4.29" (108.97)	1.75" (44.45)	0.67" (17.02)	Contact Eaton		1.75" (44.45)
32	4.45" (113.03)	4.29" (108.97)	2.25" (57.15)	1.00" (25.40)	4.51" (114.55)	3.63" (92.20)	2.24" (56.90)

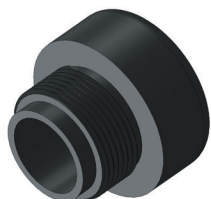
*55P1-1503 length is 3.56" (90.42mm), **66P1-1608 is 0.64" (16.26mm) *** Contact Eaton for right angle, 6600-plug dimensions

5500 PBOF Receptacle Dimensions

Shell Size	A	ØB	ØC	F-Thread
15	3.71" (94.23)	1.13" (28.70)	0.67" (17.02)	15/16 - 20 UNEF-2A
16	Contact Eaton			
20	4.00" (102.60)	1.50" (38.10)	0.67" (17.02)	1 ¼ - 9 Stub Acme
24	4.36" (110.74)	1.75" (44.45)	0.67" (17.02)	1 1/2 - 9 Stub Acme
32	4.37" (110.99)	2.24" (56.90)	1.00" (25.40)	2 - 9 Stub Acme

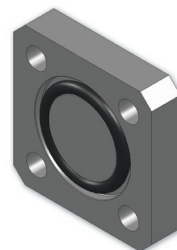


Accessories – dry-mate subsea connectors



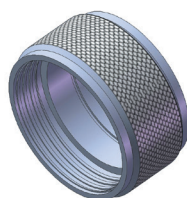
Plug Dust Caps – Hard Rubber

Shell Size	5500 Connectors	6600 Connectors
15	6700-0125-0151	n/a
16	6700-0125-0161	6700-0125-0161
20	6700-0125-0201	6700-0125-0201
24	6700-0125-0241	6700-0125-0241
32	6700-0125-0321	6700-0125-0321



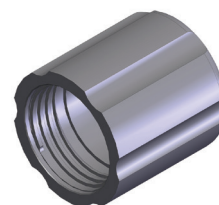
Flanged Receptacle Mounting Hole Covers

Shell Size	5500 Connectors	6600 Connectors
15	5106-1500-0000	n/a
16	5506-1600-0000	5506-1600-0000
20	5506-2000-0000	5506-2000-0000
24	5506-2400-0000	5506-2400-0000
32	5506-3200-0000	5506-3200-0000



Receptacle Pressure Caps – Stainless Steel

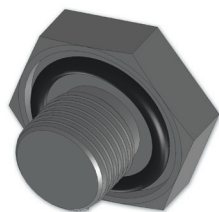
Shell Size	5500 Connectors	6600 Connectors
15	5501-1500-0000	N/A
16	5501-1600-0000	6601-1600-0000
20	5501-2000-0000	6601-2000-0000
24	5501-2400-0000	6601-2400-0000
32	5501-3200-0000	6601-3200-0000



Receptacle Pressure Caps – Hard Rubber

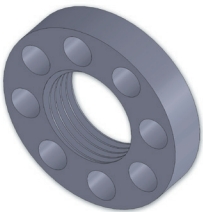
Shell Size	5500 Connectors	6600 Connectors
15	6700-0124-0151	N/A
16	6700-0124-0161	6700-0520-0161
20	6700-0124-0201	6700-0520-0201
24	6700-0124-0241	6700-0520-0241
32	6700-0124-0321	6700-0520-0321

Accessories – dry-mate subsea connectors (continued)



Bulkhead Receptacle Mounting-Hole Plugs

Shell Size	5500 Connectors	6600 Connectors
15	5507-1500-0000	N/A
16	5507-1600-0000	5507-1600-0000
20	5507-2000-0000	5507-2000-0000
24	5507-2400-0000	5507-2400-0000
32	5507-3200-0000	5507-3200-0000



Bulkhead Receptacle Retaining Rings

Shell Size	5500 Connectors	6600 Connectors
15	5509-1500-0000	N/A
16	5509-1600-0000	5509-1600-0000
20	5509-2000-0000	5509-2000-0000
24	5509-2400-0000	5509-2400-0000
32	5509-3200-0000	5509-3200-0000

Installation instructions – dry-mate subsea connectors

Receptacle installation

The O-ring sealing surfaces of the receptacles and pressure vessels require an RMS 32 finish, free of scratches, dents, or nicks.

- Apply a thin coat of Dow Corning DC-4 silicone grease to the O-ring and install the O-ring in its groove.
- Remove O-rings only with non-metallic objects (such as a wooden tooth pick).
- For bulkhead receptacles, apply oil or anti-seize compound to the mounting threads before installation.

The torque values provided in the tables below are minimum values which will be acceptable. They may be increased depending on the bolt diameter, thread pitch and material used for the bolts and the housing.

P Bulkhead receptacle torque specifications

Shell size	Torque lb.-in.
15	125
16	125
20	165
24	225
32	335

Panel-mount receptacle torque specifications

Shell size	Bolt size	Torque lb.-in.
15	#10	25
16	#10	25
20	1/4	45
24	1/4	45
32	5/16	85

Connector engagement

- Lightly coat the face, sides and sealing surface of the plug with clean Dow Corning DC-4 silicone grease. Be sure there is no moisture on the components.
- Align the polarizing keyway in plug and receptacle and push to engage the contacts. Push the plug in until the rubber sealing surface and the metal sealing surface touch. A gentle rocking motion will allow trapped air to escape. On 32 size connectors with many contacts it takes quite a bit of push. Using the coupling nut as an aid to engagement is acceptable but never use a wrench.
- When the sealing surfaces touch, engage the coupling nut until it just touches and give it an additional one half turn (1 full turn on 15 size). Caution: The sealing surfaces must be touching for the additional half turn to seal the connector properly. If the coupling nut is used as an aid to engagement, back the nut off completely to obtain visual confirmation of the sealing surface contact. Then spin the nut back on and add the turn. Applying more turns than specified will distort the rubber, possibly resulting in leakage and/or physical damage.

Connector engagement

- Unscrew the coupling nut completely. Note: After deep initial dives the nut may be loose; this is normal.
- Grasp the connector body firmly and pull the plug out. A gentle rocking motion may ease pull. Caution: Do not disengage the plug by pulling on the cable; it may break a wire inside the connector.

Cleaning and reuse

- Clean the plug and receptacle carefully by hand. Use only a bristle brush (no metal allowed), liquid soap and water.
- Dry the connection by shaking off excess water then use alcohol to eliminate the remaining water as described below.
- Flood the connector with alcohol, then pour it out and allow the connector to air dry. Caution: compressed air contains many contaminants such as water, oil and dust and should not be used.

Inspection

- Inspect the connector for bent or otherwise damaged pins and corrosion.
- Metal sealing surfaces must have an RMS 32 finish and be free of scratches, nicks and dents. This applies to both O-ring sealing surfaces and connector sealing surfaces.
- The rubber sealing surfaces must be free of cuts, nicks and tears. On used connectors, the rubber sealing surface may have an impression of the metal sealing surface on it; this is normal.
- The cable and rubber-molded plug must be free of cuts, tears and separations. Carefully inspect the rubber condition near the metal shell. Tears are common here, caused by using the connector in a bent position or using it as a handle.
- When the connectors are being re-used, remember to always use new O-rings in the receptacles and to inspect the threads of the coupling nut for the presence of dry-film lubrication used to prevent galling of the metal. A light coat of moly lube may be used if necessary.
- Apply a thin coat of silicone grease. It is of the utmost importance to use silicone grease sparingly. Light films reduce friction and allow the components to work as they are designed. Larger quantities create the equivalent of a "hydraulic lock" and completely destroy the function of the O-ring and connector.

For additional information

- Visit www.eaton.com/interconnect
- Call 805.484.0543
- Email cicustomer.service@eaton.com

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