SEACON[®]

WET-CON/ Micro WET-CON/ Micro WET-CON SPLIT

UNDERWATER ELECTRICAL WET-MATE CONNECTORS

SEACON®



WET-CON SERIES

UNDERWATER ELECTRICAL WET-MATE CONNECTORS

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PRODUCT NEWS

WET-CON SERIES CONNECTOR ENHANCEMENTS

INTRODUCTION

As part of our continuous improvement process the SEA CON® Group consistently reviews it's product ranges through both customer feedback and internal improvements. It is via these processes that SEA CON® identified a design enhancement to the WET-CON connector ranges.

DESIGN FEATURES

The design change is associated with the Male Pin connectors only and has been introduced to improve and extend the life of the connectors by decreasing the stresses that are applied to the sealing interface between the male contact pin and the sealing rubber around the pin during the connectors mate and de-mate cycles.

The newly designed male contact has a "Lead in" as part of the contact pin itself which replaces the current rubber lead in. The introduction of the new pin removes any potential wear to the sealing interface between the male contact pin and the sealing rubber around the pin which may occur with many repeated make and breaks of the connector pairs. The new pin will maintain the full connector sealing properties and will provide a greater life expectancy of the connectors.

The incorporation of this design change to the Male Pin connectors will not affect the existing Female Socket connectors currently being used by **SEA CON®**'s customers and therefore full intermateability will be maintained. In addition, **SEA CON®** would also like to confirm that pricing will also not be affected.

TESTING

This new pin design concept has been fully tested and has been utilized in both the U-MATE and SEA-MATE connector ranges for a number of years.

IP68 AND IPX8 CERTIFICATION AWARDED TO SEACON (europe) LTD

SEACON (europe) Ltd is pleased to advise that it's **WET-CON** connector series is now approved to IP Codes (Ingress Protection) 68 and X8. These two international standards classify the level of protection provided against the intrusion of dust and water in electrical enclosures.

In order to meet the requirements of the IP68 and IPX8 standards, sample connectors were sent to an independent testing house and subjected to various tests as per the agreed program including pressure testing to 101 bar for a 24 hour period. All test samples successfully passed and therefore conform to the following conditions:

- · Dust tight No ingress of dust, complete protection against contact with dust.
- · Immersion beyond 1 meter Suitable for continuous immersion in water, under conditions specified by SEACON (europe) Ltd.



INTRODUCTION

SEA CON®'s WET-CON connector series was developed to provide inexpensive yet reliable rubber molded connectors that allow the user to make and break connections both on the surface and underwater.

Manufactured using only high quality materials, the wET-CON bulkhead connector's metal shell is produced using DGS 1043 (UK spec) or CA630 per QQ-C-465 as standard, although other materials are available upon request including PEEK (Polyetheretherketone) which offers superior chemical resistance, excellent electrical properties, wear and abrasion resistance and is light weight. Contacts are gold plated to ASTM B488 providing superior corrosion resistance and stainless steel guide pins ensure "no miss" mating.

AVAILABILITY

This connector range is available in a number of configurations ranging from 1 to 16 contacts rated upto 19 amps maximum current (dependent on cable) and a mated pressure rating of upto 20,000 psi.

The wET-CON series is also available with a metal shell body, individual single tail, extended metal shoulder and a water-blocked version which is suitable where there will be reverse pressure applied to the connector i.e. subsea electronics pods or ROV systems. For further information please contact SEA CON®.

APPLICATIONS

The WET-CON series is suitable for a variety of applications including underwater television and lights, diver communications, ROV systems, recreational submersibles, towed-array cable systems, current meters, animal migration and research and food processing equipment.

SPECIAL ASSEMBLIES

SEA CON® maintains all facilities necessary to furnish complete underwater and environmental electrical connector/cable systems, including Research and Development, Engineering, Manufacturing, Quality Control and Pressure Testing.

As well as supplying our standard 'off-the-shelf' items, we have the capability to design and manufacture SPECIAL CUSTOMIZED CONNECTORS AND CABLE ASSEMBLIES to suit your individual needs.

SEA CON® also prides itself with the ability to perform stringent quality conformance testing procedures which are in accordance with the MIL-SPEC programs.

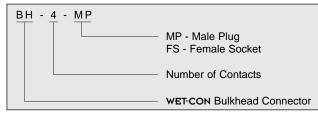
NOTES:

WET-CON connectors are intended to mate with WET-CON connectors only. Although the WET-CON and ALL-WET connectors look similar, the numbering pattern and color codes are not the same.

We recommend, as general practice, to verify color code and pin location before installation.

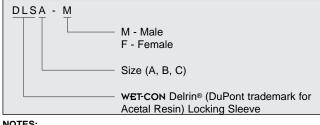
PART NUMBER SYSTEM - EXAMPLE

WET-CON BULKHEAD CONNECTORS



WET-CON LOCKING SLEEVES

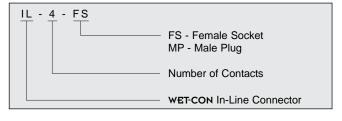
Locking Sleeves are available for WET-CON connectors as an option.



NOTES:

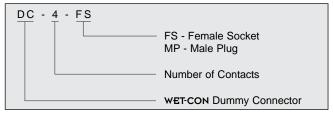
- · Size A fits 2, 3 and 4 contact patterns.
- · Size B fits 6, 8 and 10 contact patterns.
- · Size C fits 12 and 16 contact patterns.

WET-CON IN-LINE CONNECTORS



WET-CON DUMMY CONNECTORS

Dummy connectors are available parts in the WET-CON Series.



GENERAL INFORMATION

COMPONENT	MATERIAL
BULKHEAD BODY: STANDARD: OPTIONAL:	DGS 1043 or CA630 per QQ-C-465 316 Stainless Steel (no cost option), 6061-T6 Aluminum, Hard Anodized
CONNECTOR BODY: STANDARD: OPTIONAL:	Neoprene per B/A X5727 Hypalon per B/A X6830 or PEEK (Polyetheretherketone)
CONTACTS	Copper Alloy Gold Plated per ASTM B488
GUIDE PINS	304 Stainless Steel
O-RINGS	Nitrile (formerly known as Buna N)
IN-LINE CABLE	#18 AWG SO Cable as standard #14 or #16 AWG SO Cable available dependent on connector size
BULKHEAD PIGTAILS	Teflon [®] (Registered trademark for DuPont) type E hook-up wire, 18 inches

CATEGORY	VALUE	
OPEN FACE PRESSURE BULKHEAD	Up to 1,000 psi (2,300 ft)	
MATED PRESSURE BULKHEAD	Up to 10,000 psi (23,000 ft)	
MATED PRESSURE IN-LINES	Up to 20,000 psi (46,000 ft)	
VOLTAGE	600 VDC (with standard cable)	
CURRENT	Up to 19 amps per contact	
CONTACT RESISTANCE	<0.01 ohms	
INSULATION RESISTANCE	>500 megohms after wet mating	
MATING CYCLES	>500 wet matings	

NOTES:

· Locking sleeves are not standard and must be ordered separately. Available in Delrin® (DuPont trademark for Acetal Resin).

- · Bulkhead nut/washer is not standard and must be ordered separately. Available in Brass or 316 Stainless Steel.
- · In-line cable and hook up wire is 18 inch standard length. Longer length to be specified when ordering.
- . In-line cable is available in #14 or #16 AWG SO. Cable other than SO will be terminated and over-molded to a bulkhead connector.

AMPACITY CHART FOR STANDARD PARTS (18 AWG SO CABLE)

PART DESCRIPTION NUMBER OF CONTACTS	AMPACITY
IL-BH-2	7 amps
IL-BH-3	7 amps
IL-BH-4	5.6 amps
IL-BH-6	5.6 amps

PART DESCRIPTION NUMBER OF CONTACTS	AMPACITY
IL-BH-8	4.9 amps
IL-BH-10	3.5 amps
IL-BH-12	3.5 amps
IL-BH-16	3.5 amps

NOTE:

· Higher ampacities are available.

STANDARD IN-LINE WIRING COLOR CODE (SO CABLE)

CONTACT #	COLOR
1	BLACK
2	WHITE
3	RED *
4	GREEN
5	ORANGE
6	BLUE
7	WHITE/BLACK
8	RED/BLACK

CONTACT #	COLOR		
9	GREEN/BLACK		
10	ORANGE/BLACK		
11	BLUE/BLACK		
12	BLACK/WHITE		
13	RED/WHITE		
14	GREEN/WHITE		
15	BLUE/WHITE		
16	BLACK/RED		

NOTE:

· * For 3 contact configurations wiring color code is GREEN.

CAUTION:

WET-CON connectors are intended to mate with WET-CON connectors only. Although the WET-CON and ALL-WET connectors look similar, the numbering pattern and color codes are not the same. We recommend, as general practice, to verify color code and pin location before installation.

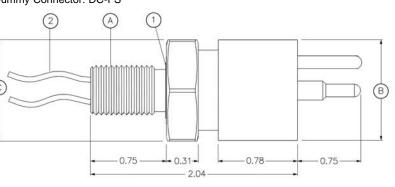
WET-CON SERIES BH-MP

(2 - 10 contacts)

WET-CON Bulkhead Connector Male Plug Mates with IL-FS

Dummy Connector: DC-FS

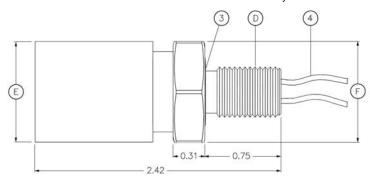




CONNECTOR	A - THREAD	1 - O-RING	B - Ø (INCHES)	C - HEX FLATS (INCHES)	2 - HOOK-UP WIRE
BH-2-MP	7/16-20 UNF-2A	2-014	1.00	0.75	18 AWG
BH-3-MP	7/16-20 UNF-2A	2-014	1.00	0.75	18 AWG
BH-4-MP	7/16-20 UNF-2A	2-014	1.00	0.75	18 AWG
BH-6-MP	5/8-18 UNF-2A	2-017	1.25	1.00	18 AWG
BH-8-MP/MPX*	5/8-18 UNF-2A	2-017	1.25	1.00	18 AWG
BH-10-MP	5/8-18 UNF-2A	2-017	1.25	1.00	18 AWG

WET-CON SERIES BH-FS (2 - 10 contacts)

WET-CON Bulkhead Connector Female Socket Mates with IL-MP Dummy Connector: DC-MP





CONNECTOR	D - THREAD	3 - O-RING	E - Ø (INCHES)	F - HEX FLATS (INCHES)	4 - HOOK-UP WIRE
BH-2-FS	7/16-20 UNF-2A	2-014	1.00	0.75	18 AWG
BH-3-FS	7/16-20 UNF-2A	2-014	1.00	0.75	18 AWG
BH-4-FS	7/16-20 UNF-2A	2-014	1.00	0.75	18 AWG
BH-6-FS	5/8-18 UNF-2A	2-017	1.25	1.00	18 AWG
BH-8-FS/FSX*	5/8-18 UNF-2A	2-017	1.25	1.00	18 AWG
BH-10-FS	5/8-18 UNF-2A	2-017	1.25	1.00	18 AWG

NOTES:

· Bulkhead mounting torque: 7/16 thread = 50 inch pounds. 5/8 thread = 85 inch pounds.

· Nut and washer: Optional.

· Dummy Connector: Optional.

Dummy Storting Plug: Optional.
O-Ring: Nitrile (formerly known as Buna N).

· Bulkhead leads are tagged with pin number.

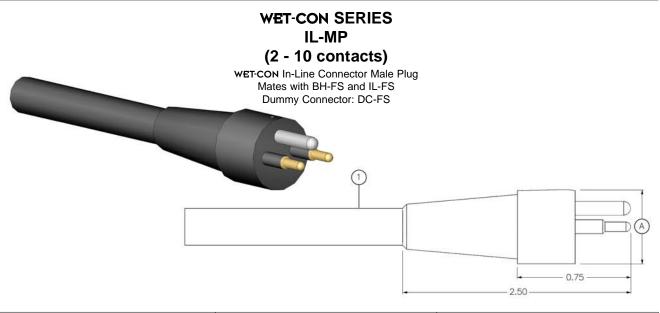
· Connectors must be lubricated prior to mating.

· Torque values referenced in this literature assume installation into dry metal threads. For other applications, please contact SEA CON® for recommendations.

· Connectors are designed for installation on one atmosphere vessels. Contact SEA CON® for recommendations if using compensated vessels.

· For contact configurations please refer to page 14.

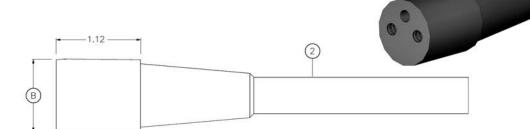
* No guide pin. MPX/FSX connectors are recommended for new applications.



CONNECTOR	A - Ø (INCHES)	1 - CABLE
IL-2-MP	1.00	18/2 SO
IL-3-MP	1.00	18/3 SO
IL-4-MP	1.00	18/4 SO
IL-6-MP	1.25	18/6 SO
IL-8-MP/MPX*	1.25	18/8 SO
IL-10-MP	1.25	18/10 SO



WET-CON In-Line Connector Female Socket Mates with BH-MP and IL-MP Dummy Connector: DC-MP



CONNECTOR	B - Ø (INCHES)	2 - CABLE
IL-2-FS	1.00	18/2 SO
IL-3-FS	1.00	18/3 SO
IL-4-FS	1.00	18/4 SO
IL-6-FS	1.25	18/6 SO
IL-8-FS/FSX*	1.25	18/8 SO
IL-10-FS	1.25	18/10 SO

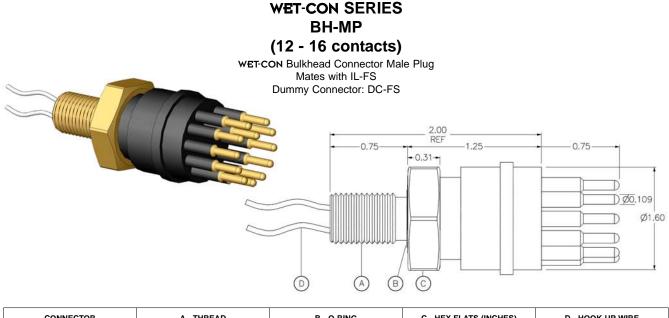
NOTES:

· Locking Sleeve: Optional (see page 10).

Dummy Connector: Optional.
 Dummy Shorting Plug: Optional.

· Connectors must be lubricated prior to mating.

· * No guide pin. MPX/FSX connectors are recommended for new applications.

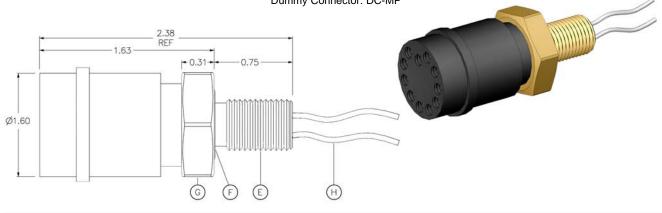


CONNECTOR	A - THREAD	B - O-RING	C - HEX FLATS (INCHES)	D - HOOK-UP WIRE
BH-12-MP	5/8-18 UNF-2A	2-017	1.00	18 AWG
BH-16-MP	3/4-16 UNF-2A	2-118	1.25	18 AWG

WET-CON SERIES BH-FS

(12 - 16 contacts) WET-CON Bulkhead Connector Female Socket Mates with IL-MP

Dummy Connector: DC-MP



CONNECTOR	E - THREAD	F - O-RING	G - HEX FLATS (INCHES)	H - HOOK-UP WIRE
BH-12-FS	5/8-18 UNF-2A	2-017	1.00	18 AWG
BH-16-FS	3/4-16 UNF-2A	2-118	1.25	18 AWG

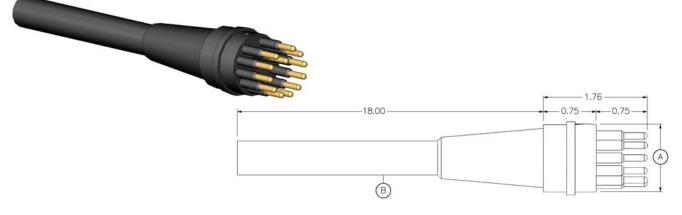
NOTES:

- Bulkhead Mounting Torque: 5/8 Thread = 85 inch pounds. 3/4 Thread = 85 inch pounds.
- · Locking Sleeve: Optional (see page 10).
- · Nut and washer: Optional.
- · Dummy Connector: Optional.
- Dummy Shorting Plug: Optional.
 O-Ring: Nitrile (formerly known as Buna N).
 Bulkhead leads are tagged with pin number.
- · Connectors must be lubricated before mating.
- · Torque values referenced in this literature assume installation into dry metal threads. For other applications, please contact SEA CON® for recommendations.
- · Connectors are designed for installation on one atmosphere vessels. Contact SEA CON® for recommendations if using compensated vessels.
- · For contact configurations please refer to page 14.



WET-CON SERIES IL-MP (12 - 16 contacts)

WET-CON In-Line Connector Male Plug Mates with BH-FS and IL-FS Dummy Connector: DC-FS



CONNECTOR	A - Ø (INCHES)	B - CABLE
IL-12-MP	1.60	18/12 SO
IL-16-MP	1.60	18/16 SO



CONNECTOR	C - Ø (INCHES)	D - CABLE
IL-12-FS	1.60	18/12 SO
IL-16-FS	1.60	18/16 SO

NOTES:

- · IL-16-MP WOC is not available, substitute with BH-16-MP.
- · Locking Sleeve: Optional (see page 10).
- · Dummy Connector: Optional.
- · Connectors must be lubricated prior to mating.
- Shorting plugs are available should you require the ability of looping together 'like' circuits for testing purposes within the dummy. Pin to pin shorting details need to be supplied at time of order placement.



WET-CON SERIES DLS-F

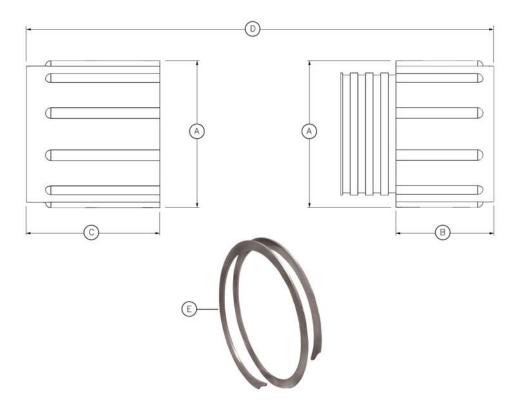
WET-CON Locking Sleeve Female

WET-CON SERIES

DLS-M

WET-CON Locking Sleeve Male

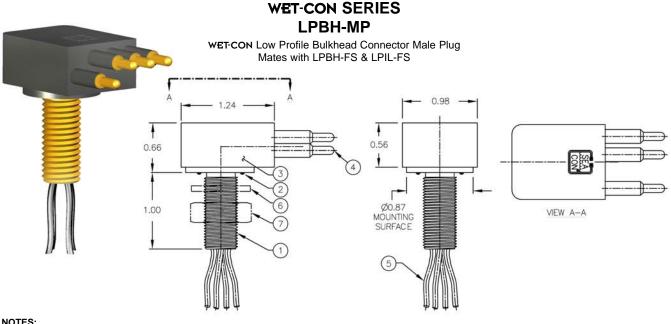




LOCKING SLEEVE	A - Ø (INCHES)	B - (INCHES)	C - (INCHES)	D - MATED LENGTH (INCHES)	E - SPIROLOX*
DLSA-M	1.40	0.90	-	2.19	RR 103
DLSA-F	1.40	-	1.29	2.19	RR 103
DLSB-M	1.62	0.94	-	2.26	RR 125
DLSB-F	1.62	-	1.32	2.26	RR 125
DLSC-M	2.37	0.78	-	1.95	RR 187
DLSC-F	2.38	-	1.17	1.95	RR 187





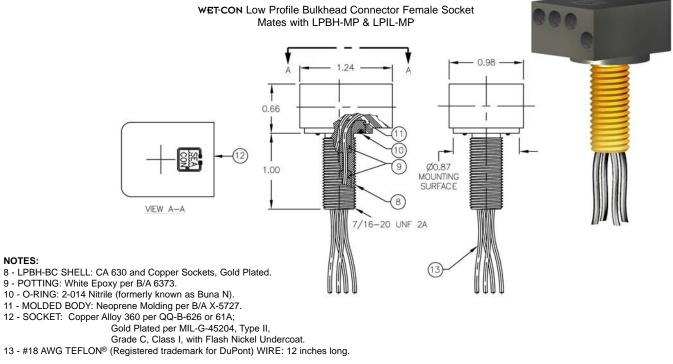


- 1 LPBH-BC SHELL: CA 630 and Copper Contacts, Gold Plated.
- 2 O-RING: 2-014 Nitrile (formerly known as Buna N).
- 3 LPBH-3/4-MP: Neoprene Molding per B/A X-5727.
- 4 PIN: Copper Alloy and Gold Plated per MIL-G-45204.
- 5 #18 AWG TEFLON® (Registered trademark for DuPont) WIRE: 12 inches long.
- 6 WASHER (OPTIONAL): Brass.
- 7 HEX NUT (OPTIONAL): Brass.

· MOUNTING TORQUE: 40 inch lbs.

· PRESSURE RATING: 20,000 psi mated.

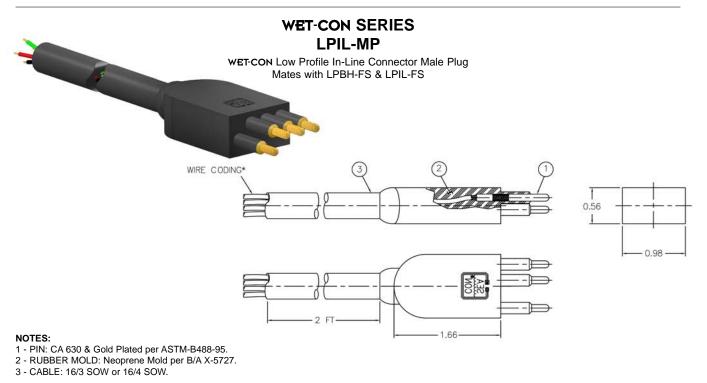
WET-CON SERIES LPBH-FS



MOUNTING TORQUE: 40 inch lbs.

· PRESSURE RATING: 20,000 psi mated.

NOTES:

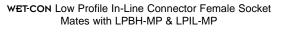


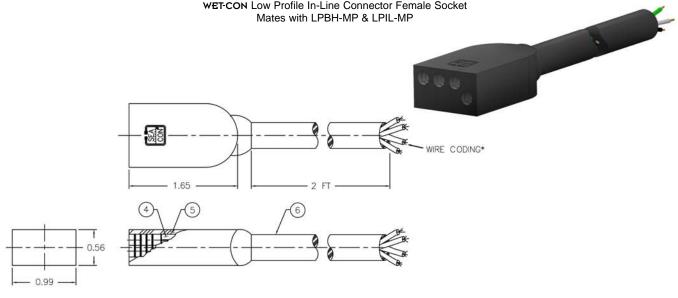
· PRESSURE RATING: 20,000 psi mated.

WIRE COLOR CODE

CONTACT NUMBER	COLOR
1	BLACK
2	WHITE
3	RED
4	GREEN

WET-CON SERIES LPIL-FS





NOTES:

1 - SOCKET: CA 630 per MSBA-019.

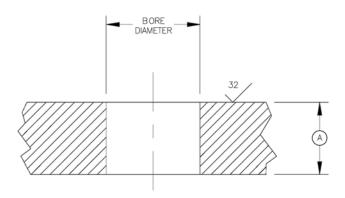
2 - RUBBER MOLD: Neoprene per MSNBA-027.

3 - CABLE: 16/3 SOW or 16/4 SOW.

· PRESSURE RATING: 20,000 psi mated.

WET-CON SERIES BH-MP/FS THROUGH BORE OPTION

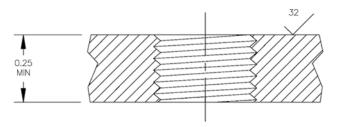
wET-CON Bulkhead Connector Male Plug/Female Socket



THROUGH BORE OPTION

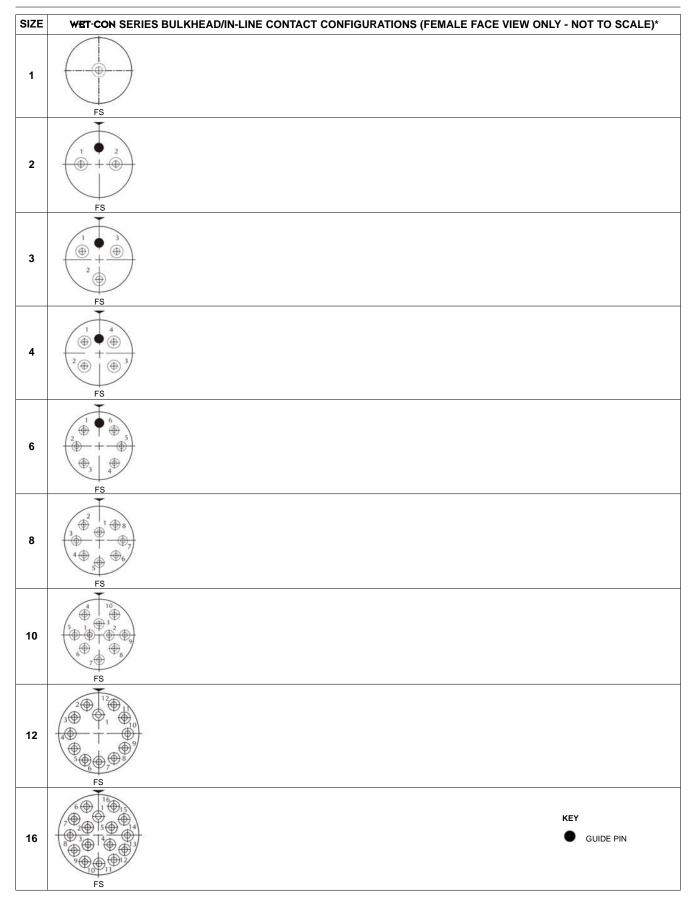
WET-CON SERIES BH-MP/FS THREADED MOUNTING OPTION

WET-CON Bulkhead Connector Male Plug/Female Socket



THREADED MOUNTING OPTION

CONNECTOR	THREAD	BORE Ø (INCHES)	MOUNTING TORQUE (INCH POUNDS)	SPOT FACE Ø (INCHES)	A - MAX (INCHES)
BH-MP/FS (2/3/4)	7/16-20 UNF-2B	0.437 +0.015 - 0.000	50	1.00	0.44
BH-MP/FS (6/8/10/12)	5/8-18 UNF-2B	0.625 +0.015 - 0.000	85	1.25	0.44
BH-MP/FS (16)	3/4-16 UNF-2B	0.750 +0.015 - 0.000	85	1.50	0.44



NOTES:

· * For male face view contact configurations please contact SEA CON®.

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Micro WET-CON SERIES

UNDERWATER ELECTRICAL WET-MATE CONNECTORS

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PRODUCT NEWS

Micro WET-CON and Micro WET-CON SPLIT SERIES CONNECTOR ENHANCEMENTS

INTRODUCTION

As part of our continuous improvement process the SEA CON[®] Group consistently reviews it's product ranges through both customer feedback and internal improvements. It is via these processes that SEA CON[®] identified a design enhancement to the Micro WET-CON connector ranges. This new design improvement has now been implemented not only across this connector range, but also the new Micro WET-CON Split Series.

DESIGN FEATURES

The design change is associated with the Male Pin connectors only and has been introduced to improve and extend the life of the connectors by decreasing the stresses that are applied to the sealing interface between the male contact pin and the sealing rubber around the pin during the connectors mate and de-mate cycles.

The newly designed male contact has a "Lead in" as part of the contact pin itself which replaces the current rubber lead in. The introduction of the new pin removes any potential wear to the sealing interface between the male contact pin and the sealing rubber around the pin which may occur with many repeated make and breaks of the connector pairs. The new pin will maintain the full connector sealing properties and will provide a greater life expectancy of the connectors.

The incorporation of this design change to the Male Pin connectors will not affect the existing Female Socket connectors currently being used by **SEA CON®**'s customers and therefore full intermateability will be maintained. In addition, **SEA CON®** would also like to confirm that pricing will also not be affected.

TESTING

This new pin design concept has been fully tested and has been utilized in both the U-MATE and SEA-MATE connector ranges for a number of years.

MCAT ATTACHABLE Micro WETCON

Due to global demand to terminate standard rubber molded connectors onto specialized or customer furnished cable, **SEA CON** Global Production has introduced an MCAT version of the successful **Micro WET-CON** connector series.

This new connector can be terminated virtually anywhere eliminating the need for shipping bulky long lengths of cable. In addition the end user is able to produce a reduced length termination without the need for additional cable splices and have one continuous cable diameter for the total length of the cable.

The MCAT connector is fully inter-mateable with like configured Micro WET-CON inline and bulkhead connectors. For further information and for cable jacket materials that can be accommodated please contact **SEA CON**[®].





INTRODUCTION

The Micro WET-CON connector series was developed to provide all the features of SEA CON®'s ALL-WET connector series, but in a miniature, industry standard configuration. The small size offers the same flexibility and reliability as our rubber molded connectors, in a light-weight and user friendly model.

The Micro WET-CON series allows for smaller through ports in a pressure vessel and a greater density of conductors in a compact area. The smaller cables decrease the overall weight and drag of an ROV or other vessel. This connector range is wet-mateable and therefore enables connections to be made underwater, on-deck or in any weather condition.

AVAILABILITY

The Micro WET-CON series is a stocked item, which ensures quick delivery (in reasonable quantities) of standard configurations. Custom cable lengths are available upon request. Shorting plugs are available should you require the ability of looping together 'like' circuits for testing purposes within the dummy. Pin to pin shorting details need to be supplied at time of order placement.

MATERIALS

The Micro WET-CON is made from a proprietary grade Neoprene. The standard locking sleeves are Delrin[®] (DuPont trademark for Acetal Resin), which is lightweight, durable and user-friendly in the working environment (Brass and Stainless Steel are also available upon request).

APPLICATIONS

Possible applications include: underwater television and lights, diver communications, ROV systems, submersibles, towed-array cable systems, current meters, animal migration research and food processing equipment.

TESTING

The Micro WET-CON range has undergone complete Qualification testing including low pressure soak tests, full mate/de-mate and high pressure cycling to 10,000 psi.

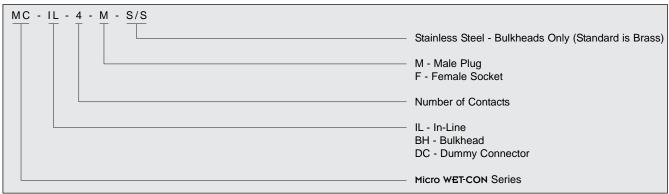
SPECIAL ASSEMBLIES

SEA CON® maintains all facilities necessary to furnish complete underwater and environmental electrical connector/cable systems, including Research and Development, Engineering, Manufacturing, Quality Control and Pressure Testing.

As well as supplying our standard 'off-the-shelf' items, we have the capability to design and manufacture **SPECIAL CUSTOMIZED CONNECTORS AND CABLE ASSEMBLIES** to suit your individual needs.

SEA CON® also prides itself with the ability to perform stringent quality conformance testing procedures which are in accordance with the MIL-SPEC programs.

PART NUMBER SYSTEM - EXAMPLE



NOTES:

[·] For Locking Sleeves see page MWC 14.

GENERAL INFORMATION

COMPONENT	MATERIAL
MOLDED BODY	Neoprene
BULKHEAD BODY	Brass (CA #360)
CONTACTS	Brass-gold plated (CA #360)
GUIDE PINS	Stainless Steel (303 SS or 304 SS)
BULKHEAD N & W	Brass (CA #360)
O-RING	Nitrile (formerly known as Buna N)
LOCKING SLEEVE	Delrin® (DuPont trademark for Acetal Resin)
IN-LINE CABLE (2, 3 & 4 PIN): (5, 6, 8, 10, 12 & 16 PIN): STANDARD LENGTH:	Neoprene, #18 AWG (SO Cable) Neoprene, #20 AWG 24 inches (60cm)
HOOK-UP WIRE (BC)	Teflon® (Registered trademark for DuPont), #20 AWG Standard length 13 inches (33cm)

CATEGORY	VALUE
OPEN FACE PRESSURE	10,000 psi (700 bar) optional and needs to be specified Dummy cap recommended above 100 psi
MATED PRESSURE	10,000 psi (700 bar)
VOLTAGE RATING	2, 3 & 4 pin 600 VDC 5, 6, 8, 10, 12 & 16 pin 300 VDC
CURRENT RATING	Up to 19 amps per contact
INSULATION RESISTANCE	>200 megohms @ 300 VDC
CONTACT RESISTANCE	<0.01 ohms
AIR MATE	>1,000 cycles
UNDERWATER MATE	>500
OPERATING TEMPERATURE	25° to 140°F (-4° to 60°C)
MOUNTING TORQUE	50 in-lb In dry stainless 1/2" long Female threads

NOTES:

Contact SEA CON[®] for special order materials.
 Incorporation of special order cables will be determined on a case by case basis.

· Connectors are designed for installation on one atmosphere vessels. Contact SEA CON® for recommendations if using compensated vessels.

AMPACITY CHART FOR STANDARD PARTS (18 & 20 AWG SO CABLE)

PART DESCRIPTION NUMBER OF CONTACTS	AMPACITY	PART DESCRIPTION NUMBER OF CONTACTS	AMPACITY
MCBH/IL-2	10 amps	MCBH/IL-8	3 amps
MCBH/IL-3	6 amps	MCBH/IL-10	2.5 amps
MCBH/IL-4	6 amps	MCBH/IL-12	2.5 amps
MCBH/IL-5	3 amps	MCBH/IL-16	2 amps
MCBH/IL-6	3 amps	<u> </u>	

STANDARD IN-LINE WIRING COLOR CODE (SO CABLE)

CONTACT #	COLOR
1	BLACK
2	WHITE
3	RED *
4	GREEN
5	ORANGE
6	BLUE
7	WHITE/BLACK
8	RED/BLACK

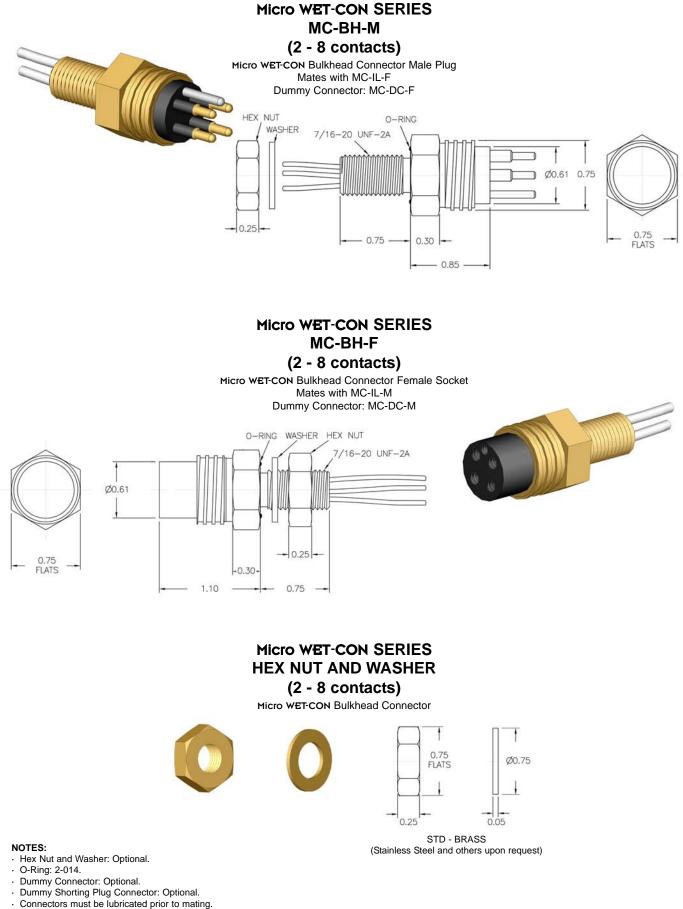
CONTACT #	COLOR
9	GREEN/BLACK
10	ORANGE/BLACK
11	BLUE/BLACK
12	BLACK/WHITE
13	RED/WHITE
14	GREEN/WHITE
15	BLUE/WHITE
16	BLACK/RED

NOTE:

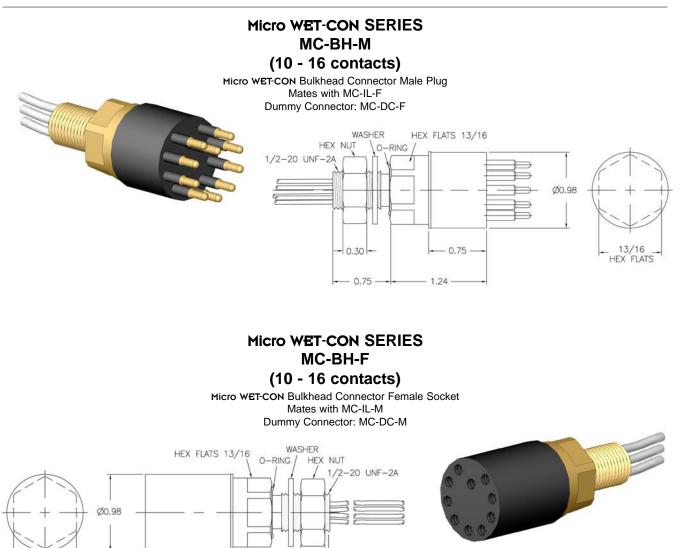
· * For 3 contact configurations wiring color code is GREEN.

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 Torque values referenced in this literature assume installation into dry metal threads. For other applications, please contact SEA CON® for recommendations. · Connectors are designed for installation on one atmosphere vessels. Contact SEA CON® for recommendations if using compensated vessels.

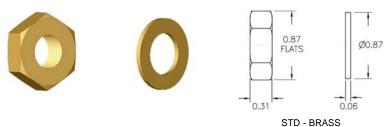


Micro WET-CON SERIES HEX NUT AND WASHER (10 - 16 contacts)

0.31

0.75 -

Micro WET-CON Bulkhead Connector



(Stainless Steel and others upon request)

NOTES:

- · Bulkhead Locking Sleeve: Optional.
- · Hex Nut and Washer: Optional.
- · O-Ring: 2-015.

13/16 HEX FLATS

- Dummy Connector: Optional.
- Dummy Shorting Plug Connector: Optional.
- Connectors must be lubricated prior to mating.
- · Connectors must be lubicated phot to mating.

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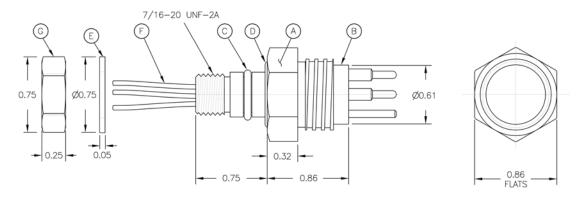
- 1.61 -

Torque values referenced in this literature assume installation into dry metal threads. For other applications, please contact SEA CON[®] for recommendations.
 Connectors are designed for installation on one atmosphere vessels. Contact SEA CON[®] for recommendations if using compensated vessels.



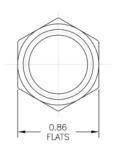
Micro WET-CON SERIES MC-BH-M-DO (DOUBLE O-RING) (2 - 8 contacts)

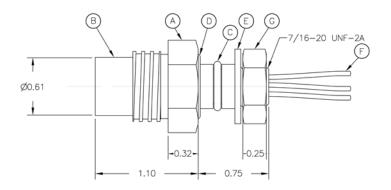
Micro WET-CON Bulkhead Connector Male Plug with Double O-Ring Mates with MC-IL-F Dummy Connector: MC-DC-F



Micro WET-CON SERIES MC-BH-F-DO (DOUBLE O-RING) (2 - 8 contacts)

Micro WET-CON Bulkhead Connector Female Socket with Double O-Ring Mates with MC-IL-M Dummy Connector: MC-DC-M





PART NUMBER	PART DESCRIPTION
A	MC-BH DOUBLE O-RING SHELL
В	NEOPRENE MOLDING
С	O-RING 2-012
D	O-RING 06-10525-1
E	WASHER
F	BULKHEAD LEADS
G	HEX NUT 7/16 - 20

NOTES:

· Bulkhead Locking Sleeve: Optional.

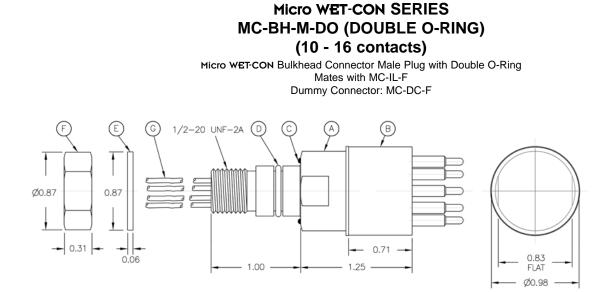
· Hex Nut and Washer: Optional.

· Dummy Connector: Optional.

• Dummy Shorting Plug Connector: Optional. (Shorting plugs are available should you require the ability of looping together 'like' circuits for testing purposes within the dummy. Pin to pin shorting details need to be supplied at time of order placement).

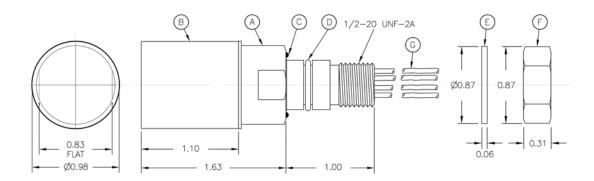
· Connectors must be lubricated prior to mating.

Torque values referenced in this literature assume installation into dry metal threads. For other applications, please contact **SEA CON®** for recommendations.
 Connectors are designed for installation on one atmosphere vessels. Contact **SEA CON®** for recommendations if using compensated vessels.



Micro WET-CON SERIES MC-BH-F-DO (DOUBLE O-RING) (10 - 16 contacts)

Micro WET-CON Bulkhead Connector Female Socket with Double O-Ring Mates with MC-IL-M Dummy Connector: MC-DC-M



PART NUMBER	PART DESCRIPTION
Α	MC-BH DOUBLE O-RING SHELL
В	NEOPRENE MOLDING
C	O-RING 06-10583-1
D	O-RING 06-10437-1
E	WASHER
F	HEX NUT 1/2-20
G	BULKHEAD LEADS

NOTES:

· Bulkhead Locking Sleeve: Optional.

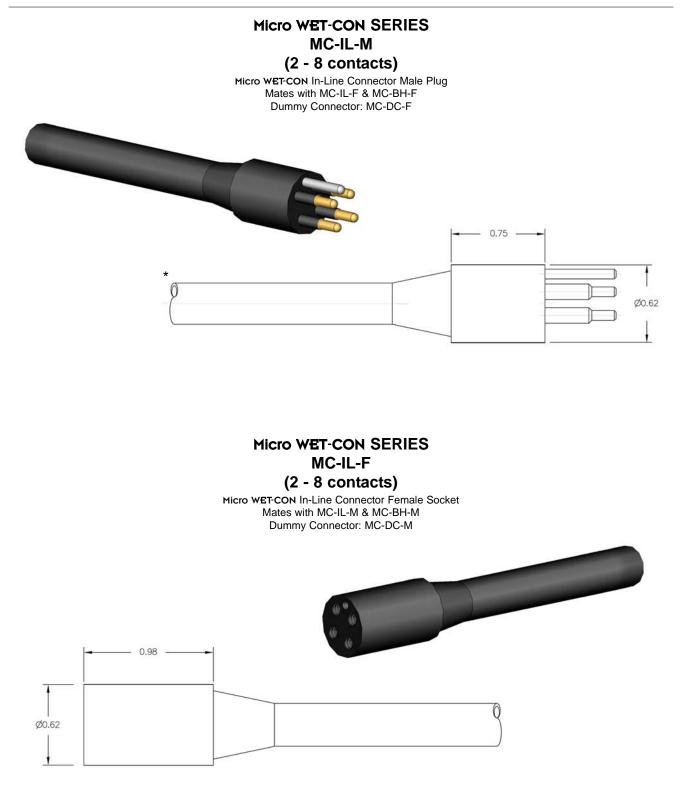
· Hex Nut and Washer: Optional.

· Dummy Connector: Optional.

• Dummy Shorting Plug Connector: Optional. (Shorting plugs are available should you require the ability of looping together 'like' circuits for testing purposes within the dummy. Pin to pin shorting details need to be supplied at time of order placement).

· Connectors must be lubricated prior to mating.

Torque values referenced in this literature assume installation into dry metal threads. For other applications, please contact **SEA CON®** for recommendations.
 Connectors are designed for installation on one atmosphere vessels. Contact **SEA CON®** for recommendations if using compensated vessels.



· Locking Sleeve: Optional (see page MWC 14).

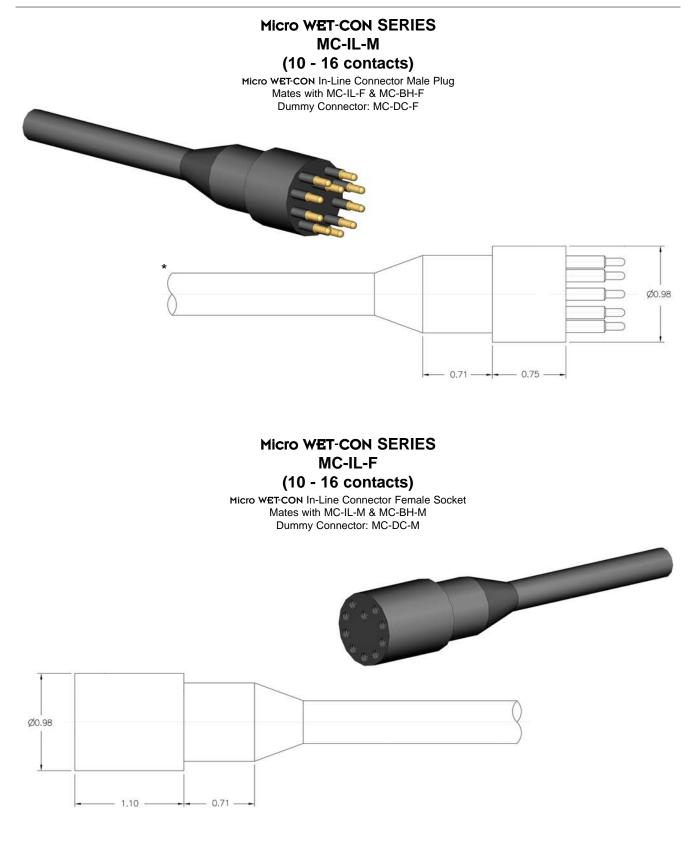
Dummy Connector: Optional.

Dummy Shorting Plug Connector: Optional. (Shorting plugs are available should you require the ability of looping together 'like' circuits for testing purposes within the dummy. Pin to pin shorting details need to be supplied at time of order placement).

· Connectors must be lubricated prior to mating.

* Incorporation of special order cables will be determined on a case-by-case basis.





Locking Sleeve: Optional (see page MWC 14).

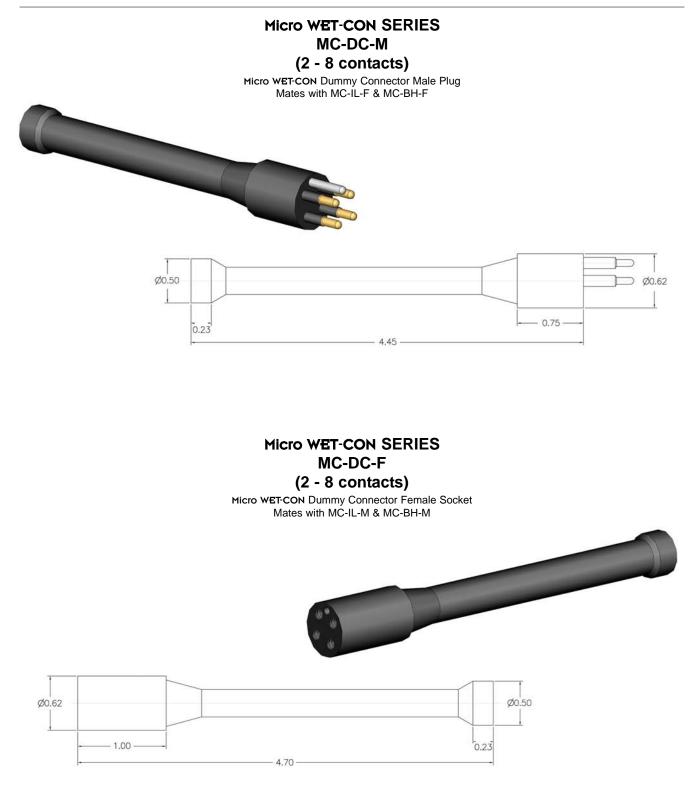
· Dummy Connector: Optional.

• Dummy Shorting Plug Connector: Optional. (Shorting plugs are available should you require the ability of looping together 'like' circuits for testing purposes within the dummy. Pin to pin shorting details need to be supplied at time of order placement).

· Connectors must be lubricated prior to mating.

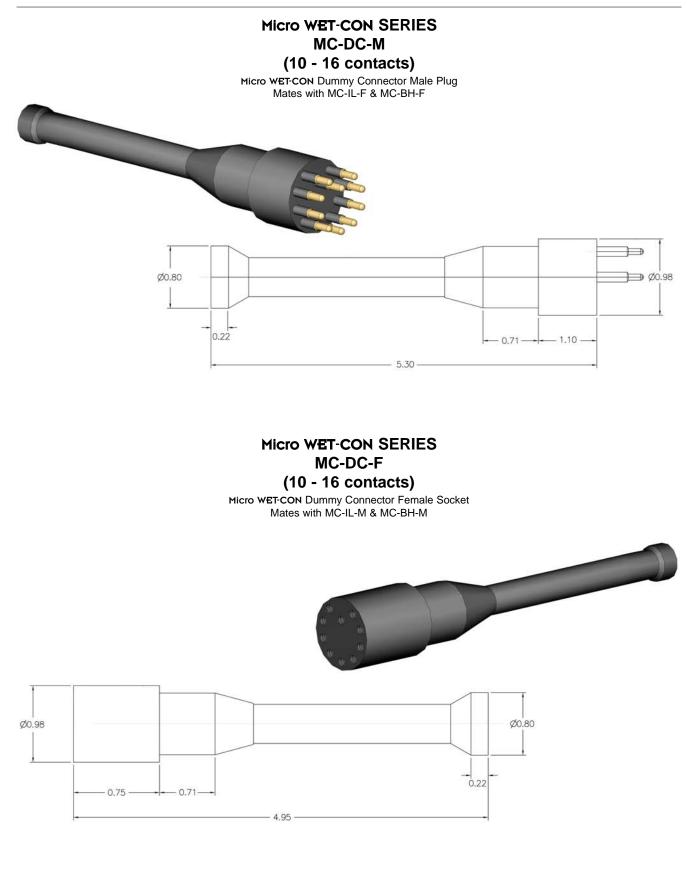


^{· *} Incorporation of special order cables will be determined on a case-by-case basis.



· Locking Sleeve: Optional (see page MWC 14).

Dummy Shorting Plug Connector: Optional. (Shorting plugs are available should you require the ability of looping together 'like' circuits for testing purposes within the dummy. Pin to pin shorting details need to be supplied at time of order placement).
 Connectors must be lubricated prior to mating.



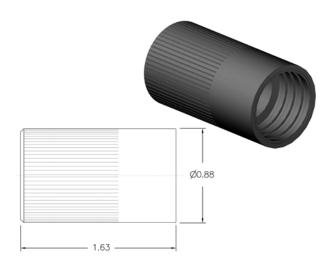
- · Locking Sleeve: Optional (see page MWC 14).
- Dummy Shorting Plug Connector: Optional. (Shorting plugs are available should you require the ability of looping together 'like' circuits for testing purposes within the dummy. Pin to pin shorting details need to be supplied at time of order placement).
 Connectors must be lubricated prior to mating.

Micro WET-CON SERIES MC-DLS-F (2 - 8 contacts)

Micro WET-CON Dummy Locking Sleeve Female Socket

Micro WET-CON SERIES MC-DLS-M (2 - 8 contacts)

Micro WET-CON Dummy Locking Sleeve Male Plug

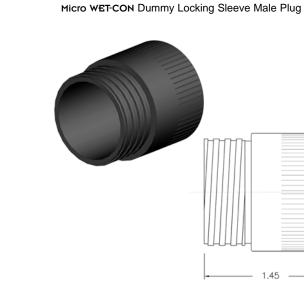




Micro WET-CON SERIES MC-DLS-F (10 - 16 contacts) Micro WET-CON Dummy Locking Sleeve Female Socket

Micro WET-CON SERIES MC-DLS-M (10 - 16 contacts)





NOTES:

* Not required for 2 to 8 way Bulkhead connectors. For In-Lines only.
 Locking Sleeves: Delrin[®] (DuPont trademark for Acetal Resin).

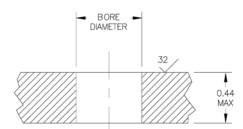
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Micro WET-CON SERIES MC-BH-M/F THROUGH BORE OPTION

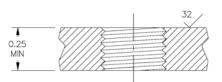
Micro WET-CON Bulkhead Connector Male/Female



THROUGH BORE OPTION

Micro WET-CON SERIES MC-BH-M/F THREADED MOUNTING OPTION

Micro WET-CON Bulkhead Connector Male/Female

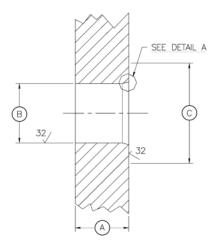


THREADED MOUNTING OPTION

CONNECTOR	BORE Ø (INCHES)	THREAD	SPOT FACE Ø (INCHES)
MC-BH (2-8)	0.437 +0.015 -0.000	7/16-20 UNF-2B	0.88
MC-BH (10-16)	0.500 ^{+0.015} -0.000	1/2-20 UNF-2B	0.94

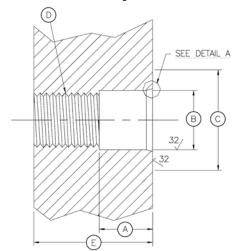
Micro WET-CON SERIES MC-BH-M/F-DO (DOUBLE O-RING) THROUGH BORE OPTION

Micro WET-CON Bulkhead Connector Male/Female with Double O-Ring



Micro WET-CON SERIES MC-BH-M/F-DO (DOUBLE O-RING) THREADED MOUNTING OPTION

Micro WET-CON Bulkhead Connector Male/Female with Double O-Ring



CONNECTOR	A - LENGTH (INCHES)	B - Ø (INCHES)	C - Ø (INCHES)	D - THREAD	E - Ø (INCHES)
MC-BH-DO (2-8)	0.425	0.475 0.473	0.88	7/16-20 UNF-2B	0.750 MIN
MC-BH-DO (10-16)	0.500	0.553 0.552	0.94	1/2-20 UNF-2B	1.000 MIN

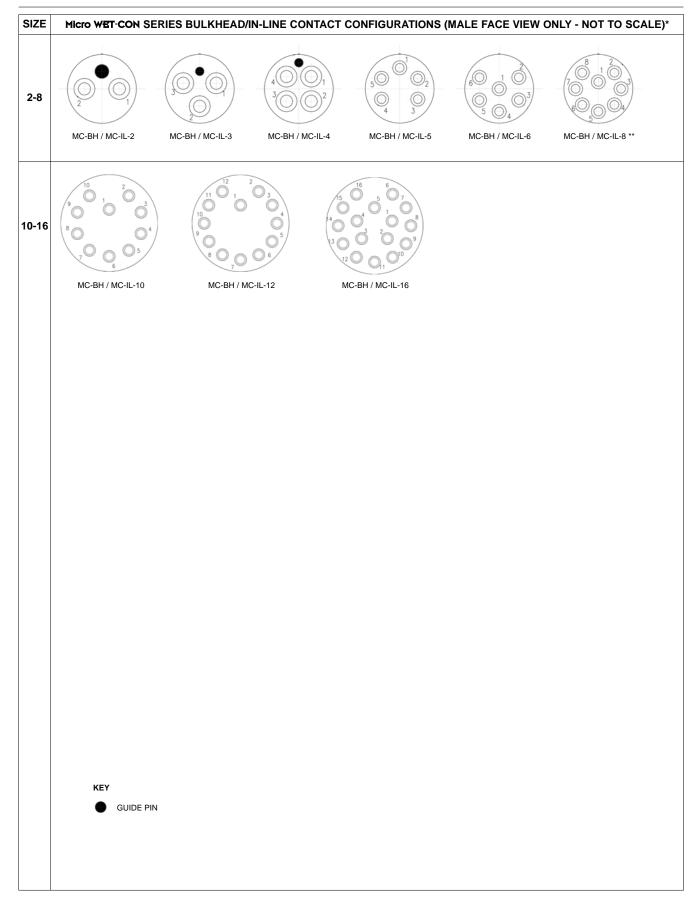
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DETAIL A

32

Micro WET-CON SERIES

CONTACT CONFIGURATIONS



NOTES:

* For female face view contact configurations available please contact SEA CON[®].
 ** Ethernet version available.

SEACON®



Micro WET-CON SPLIT SERIES

UNDERWATER ELECTRICAL WET-MATE CONNECTORS

SECTION

WET-CON SPLIT SERIES

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ApplicationsM	WC 19
TestingM	WC 19
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In-Line CableM	WC 19
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MC-IL-M (6 Contacts) M	WC 20
MC-DLS-F (6 Contacts) M	WC 20
MC-BH-F (12 to 16 Contacts)M	WC 21
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MC-DLS-F/M (12 to 16 Contacts)M	WC 21
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PAGE

INTRODUCTION

SEA CON® has added a range of split connectors to it's popular Micro WET-CON wet-mate series. This series of connectors was originally developed to provide all the features of the ALL-WET connector range, but in a miniature industry standard configuration. The split connector range prevents costly 'Y' assemblies and allows ease of replacement of break-outs by the customer. This smaller connector series offers the same flexibility and reliability as SEA CON®'s standard rubber molded connectors, in a lightweight and user-friendly model.

AVAILABILITY

The Micro WET-CON Split series is currently available in six different configurations ranging from 6 to 16 contacts rated upto 600 VDC (dependent on cable) with a mated pressure rating of 10,000 psi.

APPLICATIONS

Applications include underwater television and lights, diver communications, ROV systems, submersibles, towed-array cable systems, current meters, animal migration research and food processing equipment.

TESTING

The Micro WET-CON Split range has undergone complete Qualification testing including low pressure soak tests, full mate/demate and high pressure cycling to 10,000 psi.

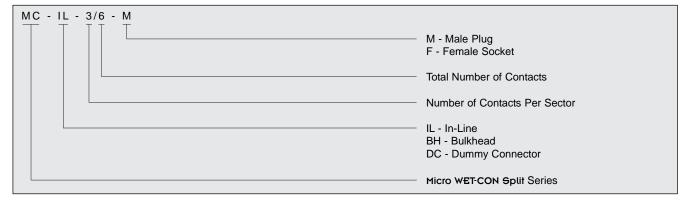
SPECIAL ASSEMBLIES

SEA CON® maintains all facilities necessary to furnish complete underwater and environmental electrical connector/cable systems, including Research and Development, Engineering, Manufacturing, Quality Control and Pressure Testing.

As well as supplying our standard 'off-the-shelf' items, we have the capability to design and manufacture **SPECIAL CUSTOMIZED CONNECTORS AND CABLE ASSEMBLIES** to suit your individual needs.

SEA CON® also prides itself with the ability to perform stringent quality conformance testing procedures which are in accordance with the MIL-SPEC programs.

PART NUMBER SYSTEM - EXAMPLE



GENERAL INFORMATION

COMPONENT	MATERIAL
MOLDED BODY	Neoprene
BULKHEAD BODY	Brass (CA #360)
CONTACTS	Brass-gold plated
BULKHEAD N & W	Brass (CA #360)
O-RING	Nitrile (formerly known as Buna N)
LOCKING SLEEVE	Delrin® (DuPont trademark for Acetal Resin)
HOOK-UP WIRE	Teflon® (Registered trademark for DuPont), #20 AWG

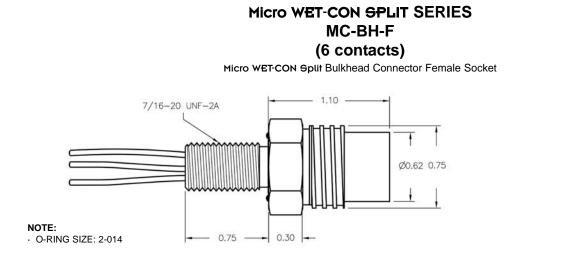
CATEGORY	VALUE
OPEN FACE PRESSURE	Up to 10,000 psi (700 bar) optional and needs to be specified
MATED PRESSURE	Up to 10,000 psi (700 bar)
VOLTAGE RATING	Up to 600 VDC (dependent on cable)
CURRENT RATING	Up to 19 amps per contact*
INSULATION RESISTANCE	>200 megohms @ 300 VDC
CONTACT RESISTANCE	<0.01 ohms
AIR MATE	>1,000 cycles
UNDERWATER MATE	>500
OPERATING TEMPERATURE	25° to 140°F (-4° to 60°C)
MOUNTING TORQUE	50 in-lb In dry stainless 1/2" long Female threads

IN-LINE CABLE

MC-5/15	20/5 Neoprene jacket, rubber insulated 2.8 amp (300V). Color code: Contact 1 Black, Contact 2 White, Contact 3 Red, Contact 4 Green, Contact 5 Orange.
MC-2/6 & MC-2/12	22/2 Neoprene jacket, Teflon [®] (Registered trademark for DuPont) insulated 1.5 amp (600V). All contacts white and individually identified by color or flagged ends.
MC-8/16	22/8 Neoprene jacket, Teflon [®] (Registered trademark for DuPont) insulated 1.0 amp (600V). All contacts white and individually identified by color or flagged ends.
MC-3/6 & MC-3/15	22/TSP Neoprene jacket, TSP (Twisted Shielded Pair), Teflon® (Registered trademark for DuPont) insulated 1.5 amp (600V). Color code: Contact 1 Black, Contact 2 White, Contact 3 Shield.
NOTES:	

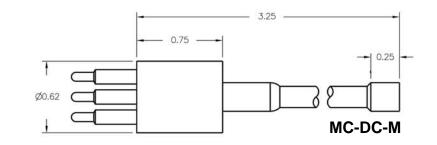
· * Maximum carrying capacity for contacts may be affected by cable selection.

· Connectors are designed for installation on one atmosphere vessels. Contact SEA CON® for recommendations if using compensated vessels.



Micro WET-CON SPLIT SERIES MC-IL-M (6 contacts)

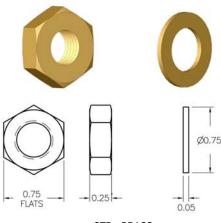
Micro WET-CON Split In-Line Connector Male Plug



OPTIONAL PARTS

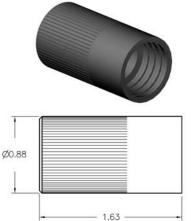
Micro WET-CON SPLIT SERIES MC-DLS-F (6 contacts) Micro WET-CON SPLIT SERIES HEX NUT AND WASHER (6 contacts)

Micro WET-CON Split Bulkhead Connector



STD - BRASS (Stainless Steel and others upon request)

Micro WET-CON Split Dummy Locking Sleeve Female Socket



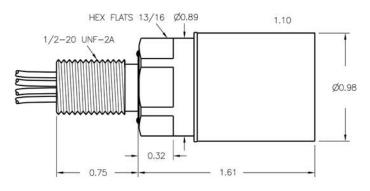
NOTES:

For interface details please contact SEA CON[®].



Micro WET-CON SPLIT SERIES MC-BH-F (12 - 16 contacts)

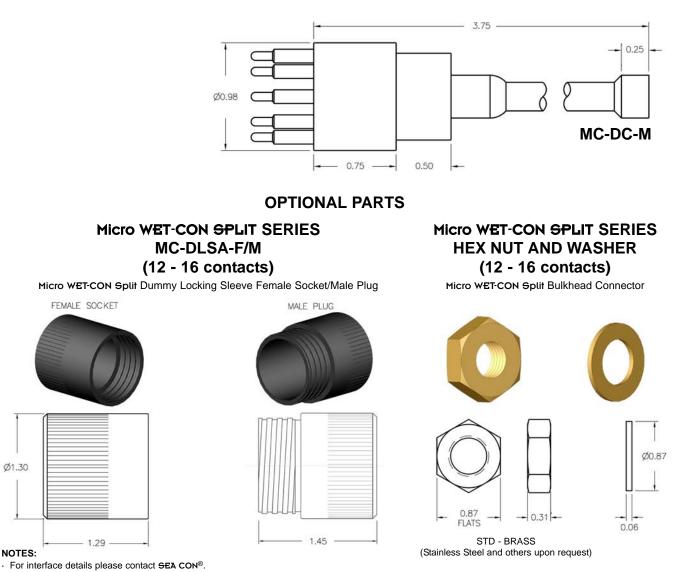
Micro WET-CON Split Bulkhead Connector Female Socket



Micro WET-CON SPLIT SERIES MC-IL-M

(12 - 16 contacts)

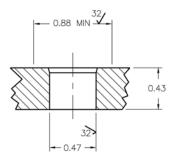
Micro WET-CON Split In-Line Connector Male Plug



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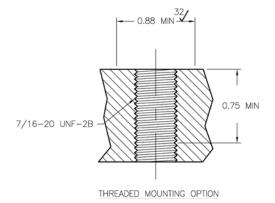
Micro WET-CON SPLIT SERIES MC-BH * (6 contacts) THROUGH BORE OPTION Micro WET-CON Bulkhead Connector



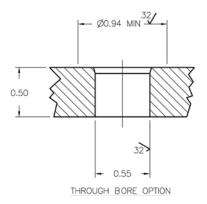
THROUGH BORE OPTION

Micro WET-CON SPLIT SERIES MC-BH (6 contacts) THREADED MOUNTING OPTION

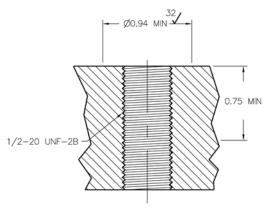
Micro WET-CON Bulkhead Connector



Micro WET-CON SPLIT SERIES MC-BH ** (12 - 16 contacts) THROUGH BORE OPTION Micro WET-CON Bulkhead Connector



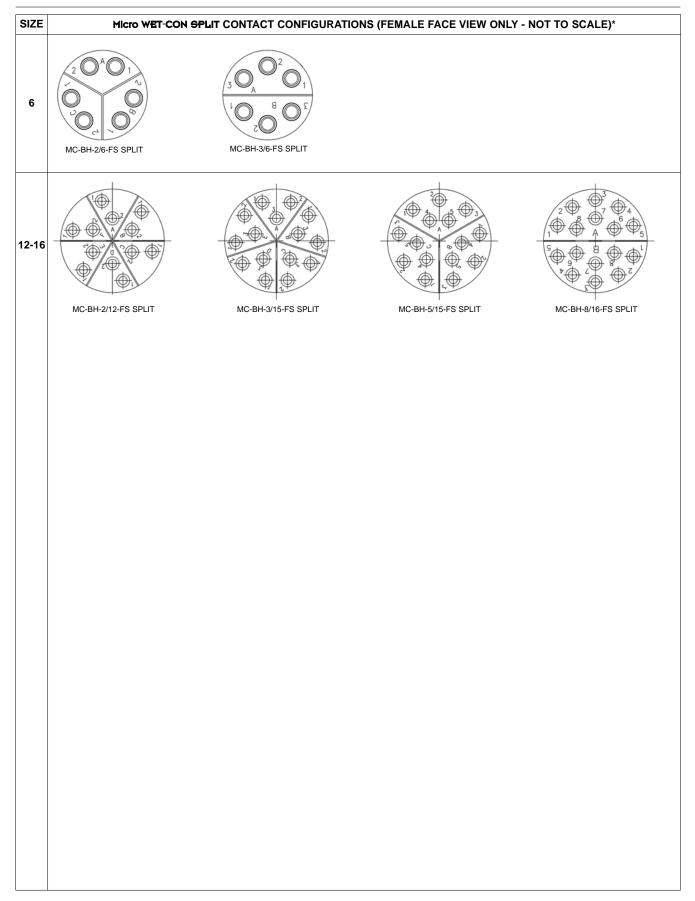
Micro WET-CON SPLIT SERIES MC-BH (12 - 16 contacts) THREADED MOUNTING OPTION Micro WET-CON Bulkhead Connector



THREADED MOUNTING OPTION

NOTES:

* This option requires the 7/16 Hex Nut, Washer and MIN Ø0.88 clearance on low pressure side of wall.
 * * This option requires the 7/16 Hex Nut, Washer and MIN Ø0.94 clearance on low pressure side of wall.



NOTES: • * For male face view contact configurations available please contact SEA CON®.

SPECIAL CAPABILITIES

SEACON SEA CON GLOBAL PRODUCTION GLOBAL Callejon Terrazos #8, Local 2-C,

Callejon Terrazos #0, Local 2-C, Las Brisas 1ra. Seccion, Tijuana, B.C., Mexico C.P. 22610. TEL: +52 (664) 626-2726 FAX: +52 (664) 686-8922 E-Mail: sales@seaconglobal.com Website: www.seaconglobal.com Dial from U.S.A. TEL: +1 (619) 308-7901 TOLL FREE: (888) 562-7072 FAX: +1 (619) 308-7900

SEACON° SEACON

1700 Gillespie Way, El Cajon, California 92020, USA. TEL: +1 (619) 562-7071 FAX: +1 (619) 562-9706 E-Mail: seacon@seaconworldwide.com Website: www.seaconworldwide.com

SEACON[®] SEACON US GULF AREA SALES OFFICE

14511 Old Katy Road, Suite 300, Houston, Texas 77079, USA. TEL: +1 (281) 599-3509 FAX: +1 (281) 599-3517 E-Mail: gulfcoastsales@seaconworldwide.com Website: www.seaconworldwide.com

SEACONS SEACON US EAST COAST SALES OFFICE 50 Airport Road, Next set Di 2000

Westerly, RI 02891, USA. TEL: +1 (401) 348-0155 FAX: +1 (401) 348-0227 E-Mail: eastcoastsales@seaconworldwide.com Website: www.seaconworldwide.com

S E A C O N° SEA CON FLORIDA SALES OFFICE

Building B, Suite 22, 3959 South Nova Road, Port Orange, Florida 32127, USA. TEL: +1 (281) 802-5504 E-Mail: steven.thumbeck@seacon-ap.com Website: www.seaconworldwide.com

SEACON advanced

1321 Nelius Road, P.O. Box 767, Bellville, Texas 77418, USA. TEL: +1 (979) 865-8846 FAX: +1 (979) 865-8859 E-Mail: sales@seacon-ap.com Website: www.seacon-ap.com

SEACON brazil

Rua Conde de Bonfim 120 sala 212, Tijuca, Rio de Janeiro, Brazil, CEP: 20520-053. TEL #1: +55 (21) 3592-0920 TEL #2: +55 (21) 3594-0920 CELL: +55 (21) 8849-3336 E-Mail: renata@seacon-ap.com Website: www.seaconworldwide.com

SEACON

Seacon House, Hewett Road, Gapton Hall Industrial Estate, Great Yarmouth, Norfolk, NR31 0RB, UK. TEL: +44 (0) 1493-652733 FAX: +44 (0) 1493-652840 E-Mail: sales@seaconeurope.com Website: www.seaconeurope.com

SEACON SEACON PHOENIX, LLC phoenix 15 Gray Lane, Suite 108,

15 Gray Lane, Suite 108, Hopkinton Industrial Park, Ashaway, RI 02804, USA. TEL: +1 (401) 637-4952 FAX: +1 (401) 637-4953 E-Mail: sales@seaconphoenixllc.com Website: www.seaconphoenixllc.com

REV VII

SEACON

Even though these procedures appear simple, only qualified technicians should perform the installation and maintenance.

Connectors are designed for installation on one atmosphere vessels. Contact **SEA CON®** for recommendations if using compensated vessels.

INSTALLATION PROCEDURES

Torque values referenced in this literature assume installation into dry metal threads. For other applications, please contact **SEA CON®** for recommendations.

BULKHEAD CONNECTOR (BC): The BC may be installed using one of two methods. The preferred method is to spotface the bulkhead surface and thread the hole, then screw the connector by means of a nut and washer. The bored hole (or threaded hole) should be free of any "burrs" and all o-ring sealing surfaces polished to a number 32 finish. Lubricate the BC o-ring with an appropriate silicone spray or grease before installing. This lubrication should be applied to form an adequate film. Excessive lubrication is detrimental to the operation of the connector. Bulkhead nut, if used, should not be over-torqued.

IN-LINE CONNECTOR: Lubricate the sealing areas around the male pins, using an appropriate silicone spray, or grease lightly.

CARE AND MAINTENANCE

The **WET-CON** and **Micro WET-CON** connectors require very little maintenance. They are designed to be used in harsh environments and thus limited amounts of dirt and grit do not affect their performance.

It is recommended that, upon disconnecting or retrieving the system, the connectors be cleaned, to storage (if possible, remate with dummy plugs). Prior to deployment the following maintenance procedure is recommended:

- 1. Demate the connector set.
- 2. Flush connector interface with fresh water (deionized water if available), remove all dirt, grit and grease.
- Inspect for damage in sealing areas, excessive corrosion, debonding of the cable and connector interface and cuts in the cable jacket.
- 4. Apply thin film of dilectric compound (DC) grease, silicon based, to sealing areas of male connector and across the face of the female connector*. If the BC is removed from it's housing then replace facial o-ring and make sure that o-rings are lubricated and in good condition.
- 5. Mate the connector halves, wipe away any excess grease off the interface line of the mated set.

* **CAUTION:** The use of some oil-based propellants in spray cans can cause conductivity problems in neoprene.

CABLE AND CONTINUITY PRESERVATION

Avoid sharp bends in cables. Cables subjected to vibration or exposed to seawater drag should be adequately clamped to prevent conductor fatigue and ultimate failure.

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