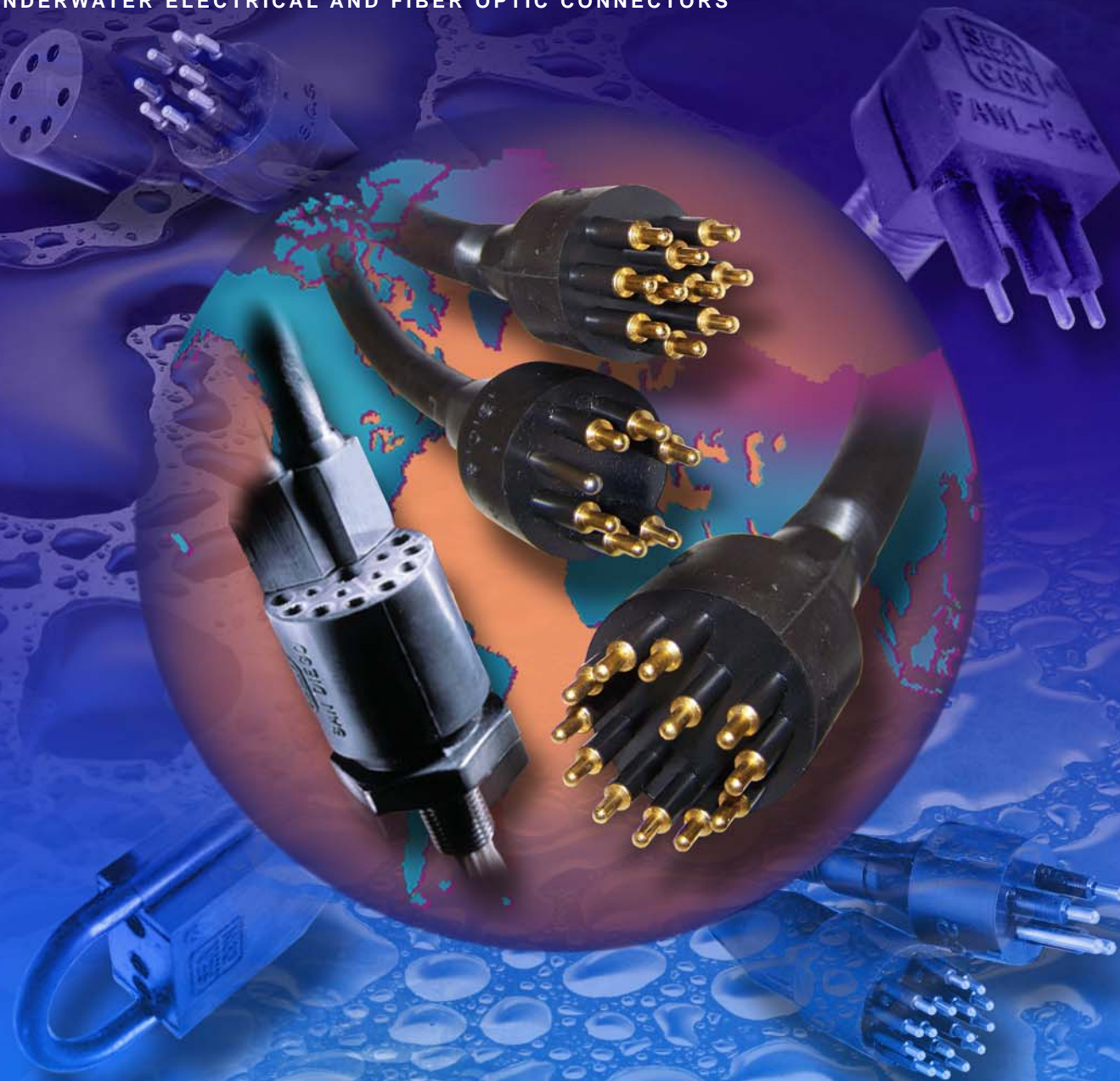


SEACON®

UNDERWATER ELECTRICAL AND FIBER OPTIC CONNECTORS



ALL-WET

UNDERWATER ELECTRICAL WET-MATE CONNECTORS

S E A C O N[®]



ALL-WET ROUND SERIES

PRODUCT NEWS

ALL-WET 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 ALL-WET 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.

Please note that the new Male Pin is not yet available across the entire ALL-WET range. Please contact SEA CON® for details.

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.

UNDERWATER ELECTRICAL WET-MATE CONNECTORS

INTRODUCTION

SEA CON®'s ALL-WET 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 ALL-WET bulkhead connector's metal shell is produced using CA630 per QQ-C 465 as standard, although other materials are available upon request. Contacts are gold plated to ASTM B488 providing superior corrosion resistance.

AVAILABILITY

The ALL-WET range offers four different style types; round (AW), split (AW), flat (FAW) and miniature hermaphroditic (MAW) with a number of configurations ranging from 2 to 54 contacts rated upto 50 amps maximum current (dependent on cable) and a mated pressure rating of upto 20,000 psi.

APPLICATIONS

The ALL-WET 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.

NOTE:

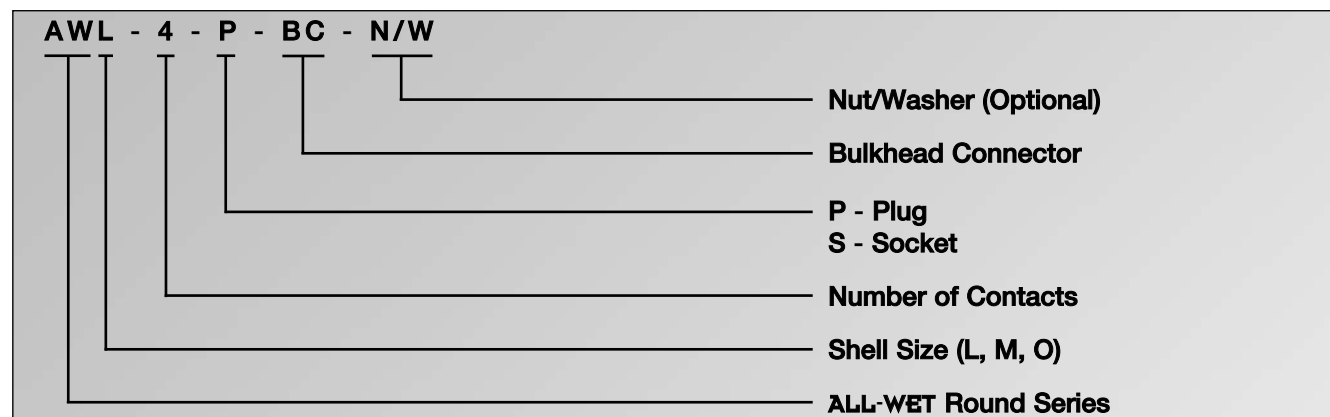
ALL-WET connectors are intended to mate with ALL-WET connectors only. Although the ALL-WET and WET-CON connectors look similar, the numbering pattern and color codes are not the same.

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

ALL-WET SERIES PART NUMBER SYSTEM

ROUND SERIES BULKHEAD CONNECTORS

EXAMPLE:



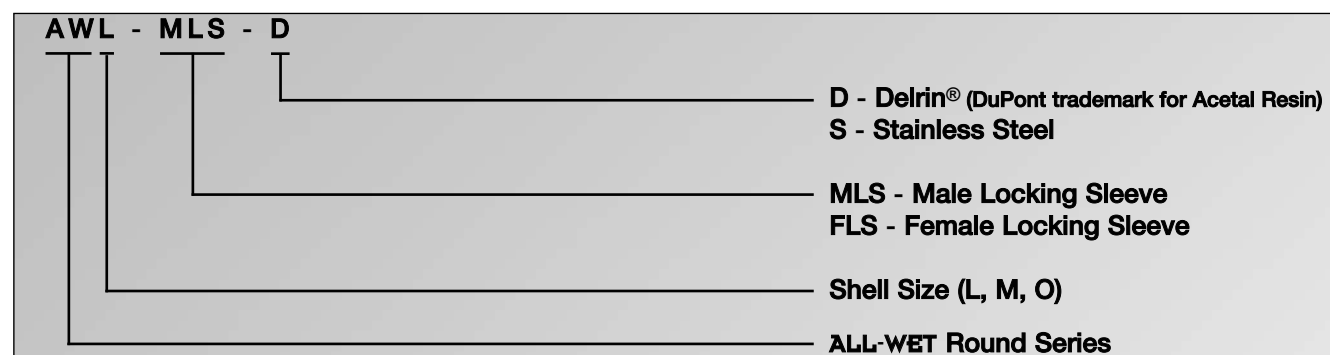
ROUND SERIES IN-LINE CONNECTORS

EXAMPLE:



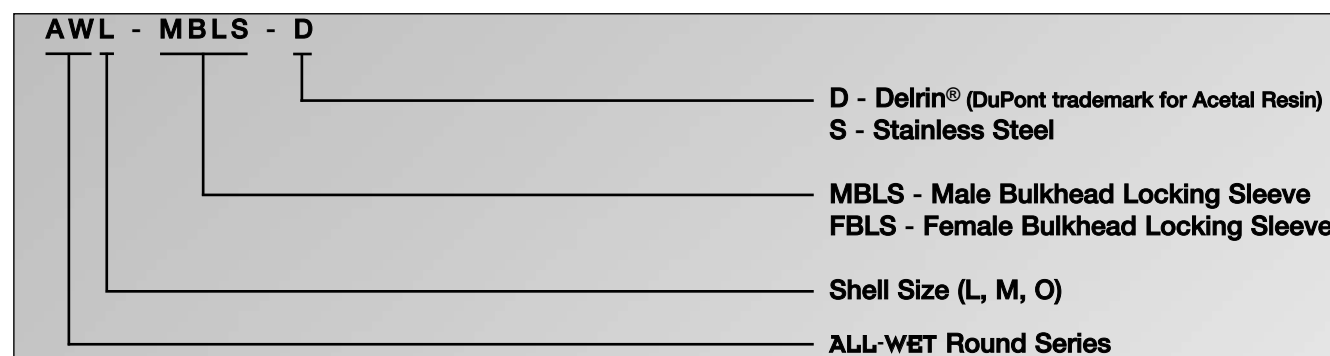
ROUND SERIES IN-LINE LOCKING SLEEVES

EXAMPLE:



ROUND SERIES BULKHEAD LOCKING SLEEVES

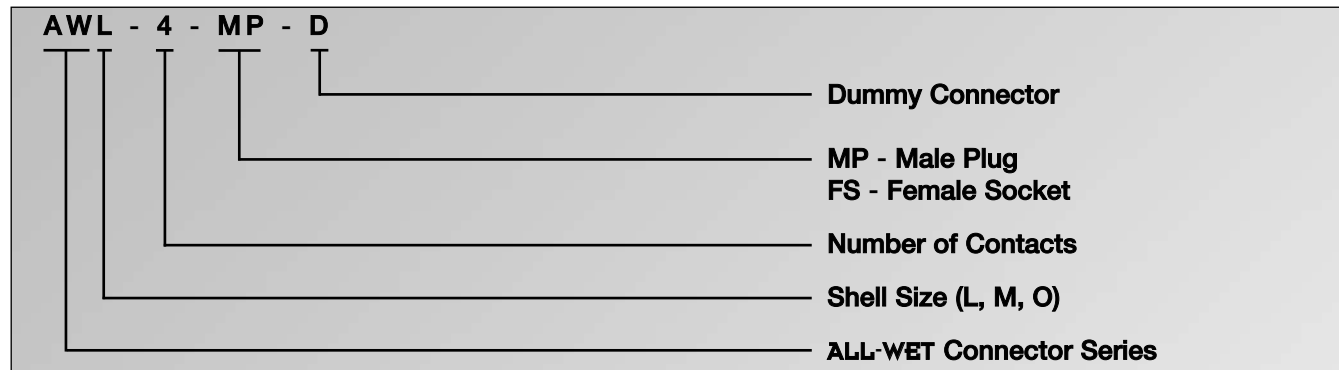
EXAMPLE:



ALL-WET ROUND SERIES

ROUND SERIES DUMMY CONNECTORS

EXAMPLE:



GENERAL INFORMATION

COMPONENT	MATERIAL
BULKHEAD BODY	
STANDARD	CA630 per QQ-C-465
OPTIONAL	Many materials including 316 Stainless Steel and Glass Reinforced Epoxy (GRE). Other materials available on request.
CONNECTOR BODY	Neoprene per B/A X5727
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 as standard
BULKHEAD PIGTAILS	Teflon® type E hook-up wire (Registered trademark for DuPont)

CATEGORY	VALUE
OPEN FACE PRESSURE	Upto 1,000 psi (contact SEA CON® for higher ratings)
MATED PRESSURE BULKHEADS	Upto 10,000 psi
MATED PRESSURE IN-LINES	20,000 psi
VOLTAGE	600 VDC based on standard cable (contact SEA CON® for higher ratings)
CURRENT	Upto 50 amps per contact available. Please contact SEA CON®
CONTACT RESISTANCE	<0.01 ohms
INSULATION RESISTANCE	>500 megohms after wet mating

NOTES:

- Locking sleeves are at additional charge and must be specified. We recommend that bulkhead locking sleeves are specified to be installed at the factory.
- Bulkhead nut/washer is not standard and must be ordered separately. Available in Stainless Steel although other materials are available on request.
- In-line cable and hook up wire is 18 inch as standard, longer lengths to be specified when ordering.
- Please contact SEA CON® for your non standard cable requirements. Some cables may require terminating to a bulkhead connector and overmolding.

AMPACITY CHART FOR STANDARD PARTS

PART DESCRIPTION NUMBER OF CONTACTS	AMPACITY
AWL - 2	7 amps
AWL - 3	7 amps
AWL - 4	5.6 amps
AWL - 5	5.6 amps

PART DESCRIPTION NUMBER OF CONTACTS	AMPACITY
AWM - 6	5.6 amps
AWM - 8	4.9 amps
AWO - 12	3.5 amps

NOTES: Amperage ratings are based on #18 AWG SO cable.

STANDARD WIRING COLOR CODE

STANDARD IN-LINE COLOR CODE (SO CABLE)

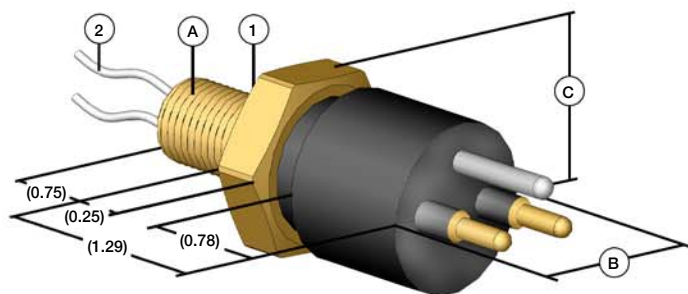
CONTACT #	COLOR
1	WHITE
2	BLACK
3	GREEN
4	RED
5	ORANGE
6	BLUE

CONTACT #	COLOR
7	WHITE/BLACK
8	RED/BLACK
9	GREEN/BLACK
10	ORANGE/BLACK
11	BLUE/BLACK
12	BLACK/WHITE

CAUTION

ALL-WET connectors are intended to mate with ALL-WET connectors only. Although the ALL-WET and WET-CON 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.

DIMENSION DETAILS



ALL-WET SERIES AW-P-BC

ALL-WET Round Bulkhead Connector
Mates with AW-FS
Dummy Connector: AW-FSD

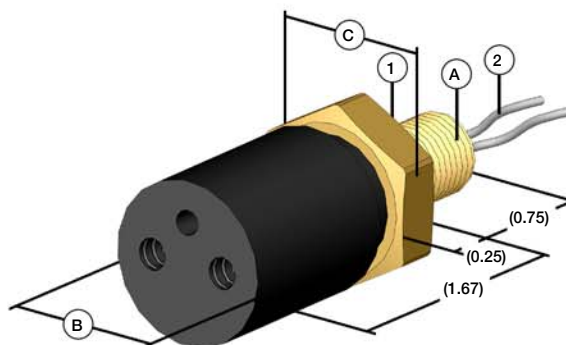
CONNECTOR	A - THREAD	B - DIAMETER (INCHES)	C - HEX FLATS (INCHES)	1 - O-RING	2 - HOOK-UP WIRE	BULKHEAD MOUNTING TORQUE (INCH POUNDS)
AWL-P-BC	1/2-20 UNF-2A	1.00	1.00	2-114	18 AWG	50
AWM-P-BC	3/4-16 UNF-2A	1.25	1.25	2-118	18 AWG	85
AWO-P-BC	1-14 UNS-2A	1.60	1.62	2-122	18 AWG	125

GRE SPECIAL ORDER SIZES

CONNECTOR	A - THREAD	B - DIAMETER (INCHES)	C - HEX FLATS (INCHES)	1 - O-RING	2 - HOOK-UP WIRE	BULKHEAD MOUNTING TORQUE (INCH POUNDS)
AWL-P-BC	1/2-20 UNF	1.00	1.00	2-114	18 AWG	15
AWL-P-BC	3/4-16 UNS*	1.00	1.25	2-118	18 AWG	50
AWM-P-BC	3/4-16 UNF	1.25	1.25	2-118	18 AWG	50
AWM-P-BC	1-14 UNS*	1.25	1.50	2-122	18 AWG	85
AWO-P-BC	1-14 UNS	1.60	1.62	2-122	18 AWG	85

ALL-WET SERIES AW-S-BC

ALL-WET Round Bulkhead Connector
Mates with AW-MP
Dummy Connector: AW-MPD



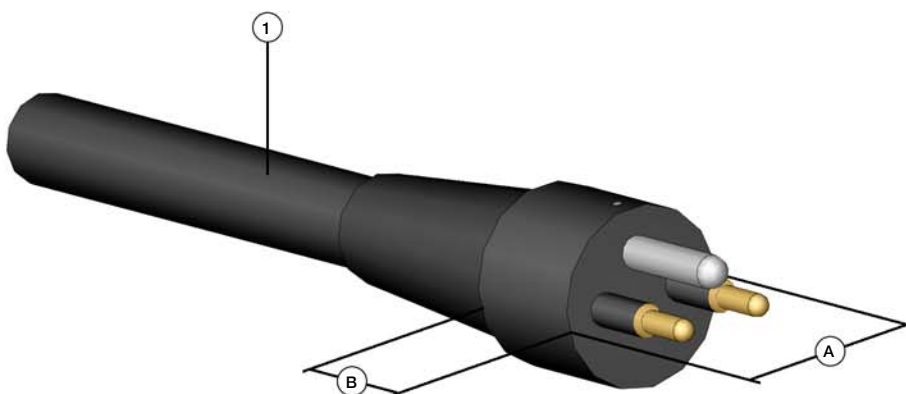
NOTES:

- * Optional, more robust design.
- Bulkhead Locking Sleeve: Optional; Factory installation only for AWL/M/O-BC (see page 15).
- Nut and washer: Optional.
- Dummy Connector: Optional.
- Dummy Shorting Plug Connector: Optional.
- 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.

DIMENSION DETAILS

ALL-WET SERIES AW-MP

ALL-WET Round In-Line Connector
Mates with AW-FS and AW-S-BC
Dummy Connector: AW-FSD



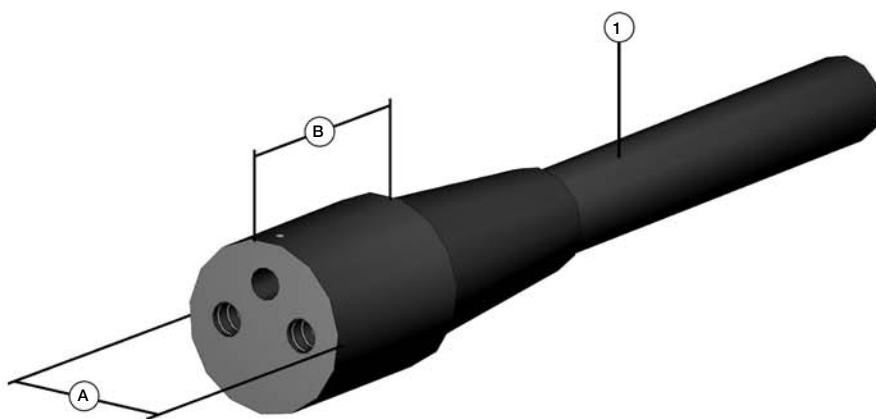
CONNECTOR	A - DIAMETER (INCHES)	B - (INCHES)	1 - STANDARD CABLE	MAXIMUM CABLE O.D.
AWL-MP	1.00	0.78	18 AWG SO	1/2 (0.500)
AWM-MP	1.25	0.78	18 AWG SO	7/8 (0.875)
AWO-MP	1.60	0.78	18 AWG SO	1 1/4 (1.250)

NOTES:

- Locking Sleeve: Optional (see page 15).
- Dummy Connector: Optional.
- Dummy Shorting Plug Connector: Optional.
- Connectors must be lubricated prior to mating.

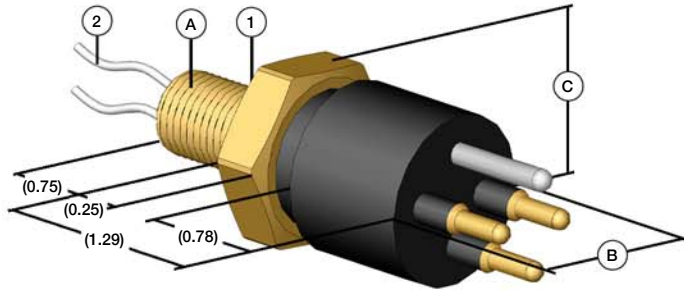
ALL-WET SERIES AW-FS

ALL-WET Round In-Line Connector
Mates with AW-MP and AW-P-BC
Dummy Connector: AW-MPD



CONNECTOR	A - DIAMETER (INCHES)	B - (INCHES)	1 - STANDARD CABLE	MAXIMUM CABLE O.D.
AWL-FS	1.00	1.16	18 AWG SO	1/2 (0.500)
AWM-FS	1.25	1.16	18 AWG SO	7/8 (0.875)
AWO-FS	1.60	1.16	18 AWG SO	1 1/4 (1.250)

DIMENSION DETAILS



ALL-WET SERIES
AW-P-BC with Ground (w/G)
 ALL-WET Round Bulkhead Connector
 Mates with AW-FS
 Dummy Connector: AW-FSD

This series offers a ground pin that will make contact prior to the line pins and break contact last upon demating.

CONNECTOR	A - THREAD	B - DIAMETER (INCHES)	C - HEX FLATS (INCHES)	1 - O-RING	2 - HOOK-UP WIRE	BULKHEAD MOUNTING TORQUE (INCH POUNDS)
AWL-P-BC	1/2-20 UNF-2A	1.00	1.00	2-114	18 AWG	50
AWM-P-BC	3/4-16 UNF-2A	1.25	1.25	2-118	18 AWG	85
AWO-P-BC	1-14 UNS-2A	1.60	1.62	2-122	18 AWG	125

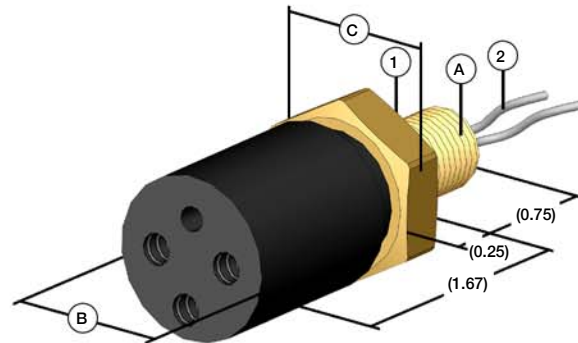
GRE SPECIAL ORDER SIZES

CONNECTOR	A - THREAD	B - DIAMETER (INCHES)	C - HEX FLATS (INCHES)	1 - O-RING	2 - HOOK-UP WIRE	BULKHEAD MOUNTING TORQUE (INCH POUNDS)
AWL-P-BC	1/2-20 UNF	1.00	1.00	2-114	18 AWG	15
AWL-P-BC	3/4-16 UNS*	1.00	1.25	2-118	18 AWG	50
AWM-P-BC	3/4-16 UNF	1.25	1.25	2-118	18 AWG	50
AWM-P-BC	1-14 UNS*	1.25	1.50	2-122	18 AWG	85
AWO-P-BC	1-14 UNS	1.60	1.62	2-122	18 AWG	85

NOTES:

- * Optional, more robust design.
- Optional thread sizes: AWL-7/16-20 UNF-2A. AWM-5/8-18 UNF-2A.
- Bulkhead Locking Sleeve: Optional; Factory installation only for AWL/M/O-BC (see page 15).
- Nut and washer: Optional.
- Dummy Connector: Optional.
- Dummy Shorting Plug Connector: Optional.
- 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.

ALL-WET SERIES
AW-S-BC with Ground (w/G)
 ALL-WET Round Bulkhead Connector
 Mates with AW-MP
 Dummy Connector: AW-MPD

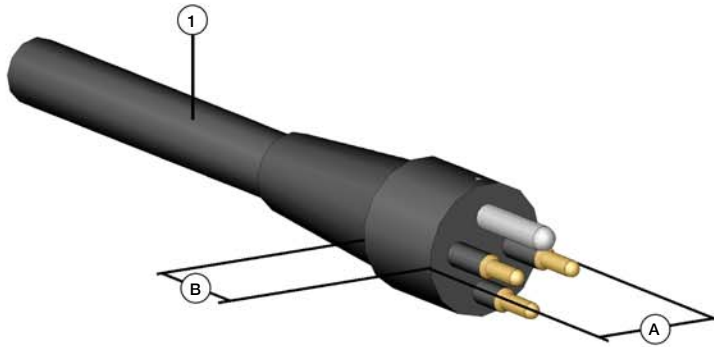


CONNECTOR	A - THREAD	B - DIAMETER (INCHES)	C - HEX FLATS (INCHES)	1 - O-RING	2 - HOOK-UP WIRE	BULKHEAD MOUNTING TORQUE (INCH POUNDS)
AWL-S-BC	1/2-20 UNF-2A	1.00	1.00	2-114	18 AWG	50
AWM-S-BC	3/4-16 UNF-2A	1.25	1.25	2-118	18 AWG	85
AWO-S-BC	1-14 UNS-2A	1.60	1.62	2-122	18 AWG	125

GRE SPECIAL ORDER SIZES

CONNECTOR	A - THREAD	B - DIAMETER (INCHES)	C - HEX FLATS (INCHES)	1 - O-RING	2 - HOOK-UP WIRE	BULKHEAD MOUNTING TORQUE (INCH POUNDS)
AWL-S-BC	1/2-20 UNF	1.00	1.00	2-114	18 AWG	15
AWL-S-BC	3/4-16 UNS*	1.00	1.25	2-118	18 AWG	50
AWM-S-BC	3/4-16 UNF	1.25	1.25	2-118	18 AWG	50
AWM-S-BC	1-14 UNS*	1.25	1.50	2-122	18 AWG	85
AWO-S-BC	1-14 UNS	1.60	1.62	2-122	18 AWG	85

DIMENSION DETAILS



**ALL-WET SERIES
AW-MP with Ground (w/G)**
ALL-WET Round with Ground In-Line Connector
Mates with AW-FS and AW-S-BC
Dummy Connector: AW-FSD

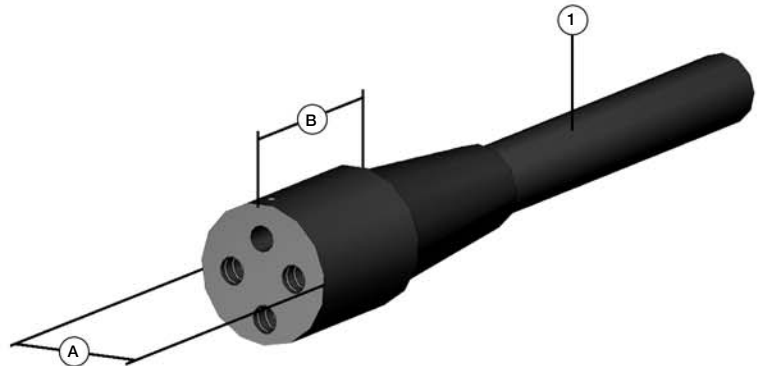
This series offers a ground pin that will make contact prior to the line pins and break contact last upon demating.

CONNECTOR	A - DIAMETER (INCHES)	B - (INCHES)	1 - STANDARD CABLE	MAXIMUM CABLE O.D.
AWL-MP	1.00	0.78	18 AWG SO	1/2 (0.500)
AWM-MP	1.25	0.78	18 AWG SO	7/8 (0.875)
AWO-MP	1.60	0.78	18 AWG SO	1 1/4 (1.250)

NOTES:

- Locking Sleeve: Optional (see page 15).
- Dummy Connector: Optional.
- Dummy Shorting Plug Connector: Optional.
- Connectors must be lubricated prior to mating.
- For Bulkhead Connectors, please contact SEA CON® for availability.
- AWO-15 w/G has one pin that makes contact last.

**ALL-WET SERIES
AW-FS with Ground (w/G)**
ALL-WET Round with Ground In-Line Connector
Mates with AW-MP and AW-P-BC
Dummy Connector: AW-MPD



CONNECTOR	A - DIAMETER (INCHES)	B - (INCHES)	1 - STANDARD CABLE	MAXIMUM CABLE O.D.
AWL-FS	1.00	1.16	18 AWG SO	1/2 (0.500)
AWM-FS	1.25	1.16	18 AWG SO	7/8 (0.875)
AWO-FS	1.60	1.16	18 AWG SO	1 1/4 (1.250)

STANDARD IN-LINE w/GROUND COLOR CODE

AWL-2 w/G-MP/FS

CONTACT #	COLOR
1	WHITE
2	BLACK
G	GREEN

AWL-3 w/G-MP/FS AWM-3 w/G-MP/FS

CONTACT #	COLOR
1	WHITE
2	BLACK
3	RED
G	GREEN

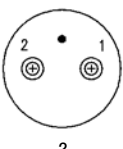
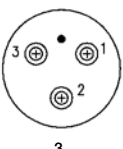
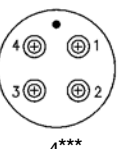
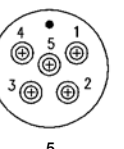
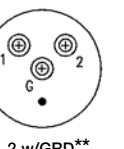
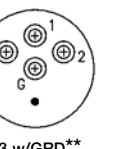
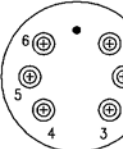
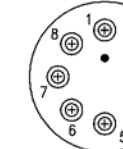
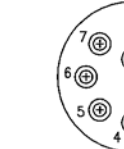
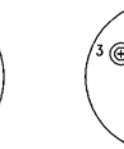
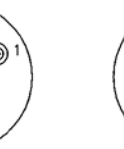
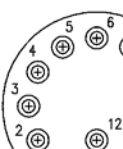

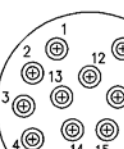
AWM-5 w/G-MP/FS

CONTACT #	COLOR
1	WHITE
2	BLACK
3	RED
4	ORANGE
5	BLUE
G	GREEN

AWO-15 w/G-MP/FS

CONTACT #	COLOR
1	WHITE
2	BLACK
3	RED
4	ORANGE
5	BLUE
6	WHITE/BLACK
7	RED/BLACK
8	GREEN/BLACK
9	ORANGE/BLACK
10	BLUE/BLACK
11	BLACK/WHITE
12	GREEN/WHITE
13	RED/WHITE
14	BLUE/WHITE
15	BLACK/RED
G	GREEN

CONTACT CONFIGURATIONS

SIZE	ALL-WET SERIES ROUND CONTACT CONFIGURATIONS AVAILABLE (FEMALE FACE VIEW ONLY)*					
L	 2	 3	 4***	 5	 2 w/GRD**	 3 w/GRD**
M	 6	 8	 8x	 3 w/GRD**	 5 w/GRD**	
O	 12S	 3 w/GRD**	 15 w/GRD**			

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

** ALL-WET series w/Ground.

***AWL-4-S mates with AWL-2/4-MP Split connectors.

S E A C O N[®]



ALL-WET SPLIT SERIES

ALL - WET SPLIT SERIES

GENERAL INFORMATION

COMPONENT	MATERIAL
BULKHEAD BODY	
STANDARD	CA630 per QQ-C-465*
OPTIONAL	Many materials including 316 Stainless Steel, 6A14V Titanium, Glass Reinforced Epoxy (GRE)
CONNECTOR BODY	
STANDARD	Neoprene per B/A X5727
OPTIONAL	Hypalon per B/A X6830
CONTACTS	Copper Alloy Gold Plated per ASTM B488
GUIDE PINS	304 Stainless Steel
O-RINGS	Nitrile (formerly known as Buna N)

CATEGORY	VALUE
OPEN FACE PRESSURE	Up to 1,000 psi
MATED PRESSURE	Up to 10,000 psi
VOLTAGE	Will vary by pattern, determined by the cable
CURRENT	Up to 13 amps per contact**
CONTACT RESISTANCE	<0.01 ohms
INSULATION RESISTANCE	>500 megohms after wet mating
MATING CYCLES	>500 wet matings***

NOTES:

* Except AWM-2/12S-BC (Standard = 316 Stainless Steel).

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

*** Provided proper handling procedures are adhered to.

- Locking sleeves are not standard and must be ordered separately. Available in Delrin® (DuPont trademark for Acetal Resin) or Stainless Steel.
- Bulkhead nut/washer is not standard and must be ordered separately. Available in Stainless Steel.

AMPACITY CHART FOR STANDARD PARTS

Please see page 14 of this ALL-WET Split section.

STANDARD WIRING COLOR CODE

STANDARD IN-LINE COLOR CODE (SO CABLE)

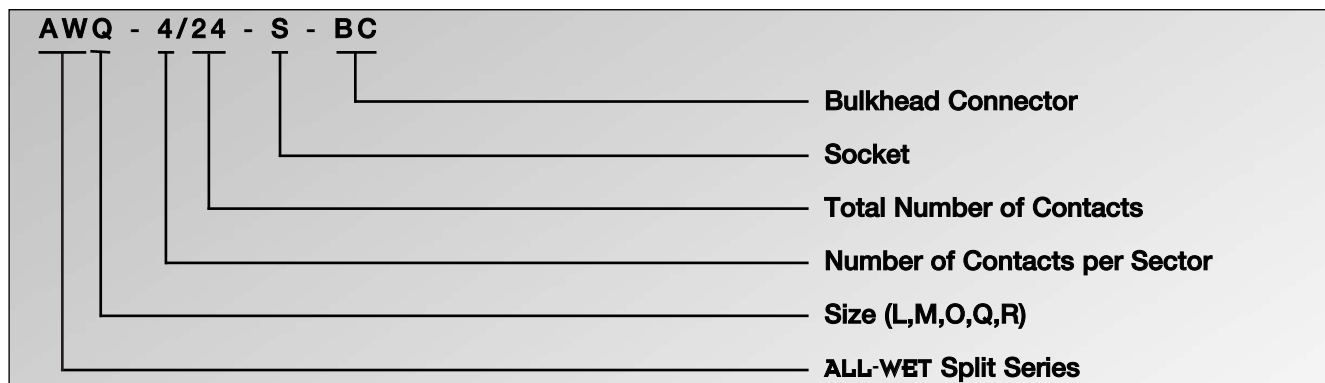
CONTACT #	COLOR
1	WHITE
2	BLACK
3	GREEN
4	RED
5	ORANGE
6	BLUE

CONTACT #	COLOR
7	WHITE/BLACK
8	RED/BLACK
9	GREEN/BLACK
10	ORANGE/BLACK
11	BLUE/BLACK
12	BLACK/WHITE

ALL-WET SPLIT SERIES PART NUMBER SYSTEM

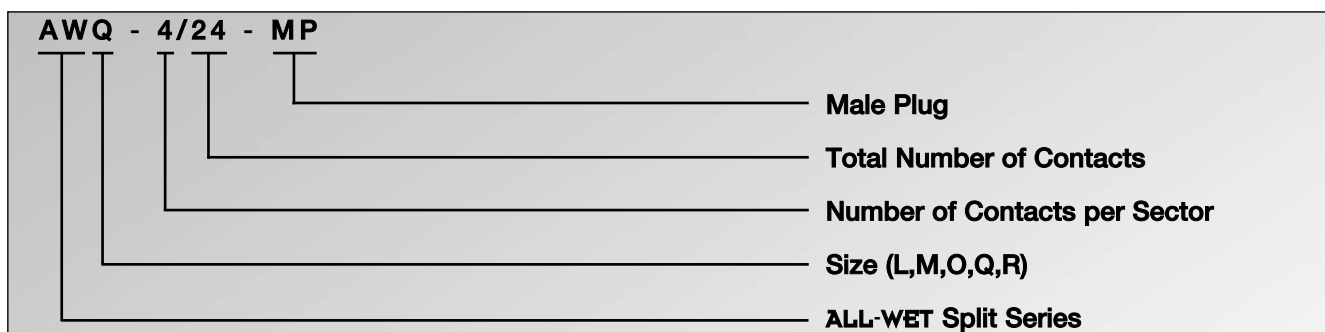
SPLIT SERIES BULKHEAD CONNECTORS

EXAMPLE:



SPLIT SERIES IN-LINE CONNECTORS

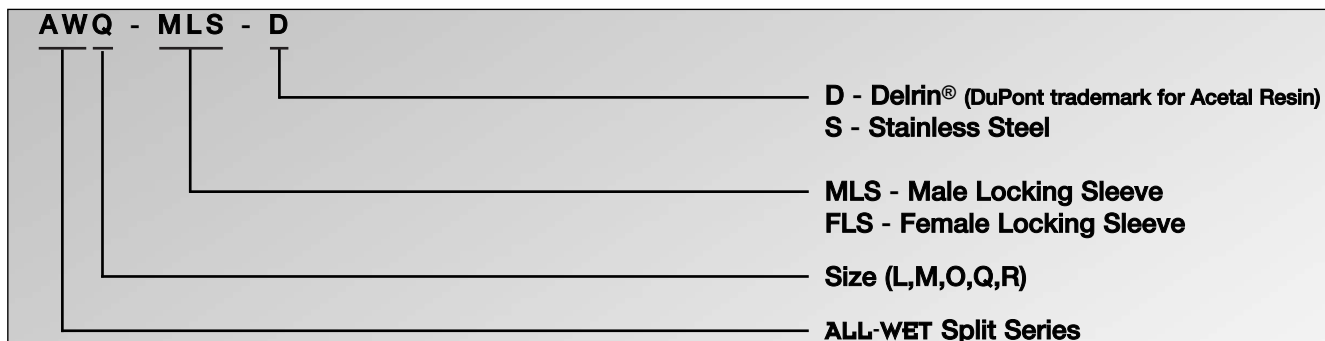
EXAMPLE:



SPLIT SERIES LOCKING SLEEVES

Locking sleeves are available for ALL-WET Split Series connectors as an option, see page 15.

EXAMPLE:

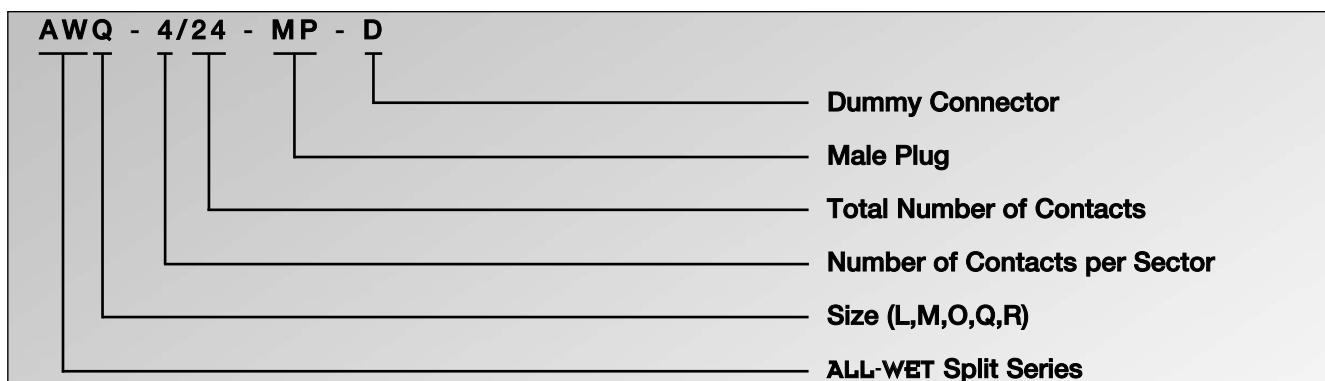


DUMMY CONNECTORS

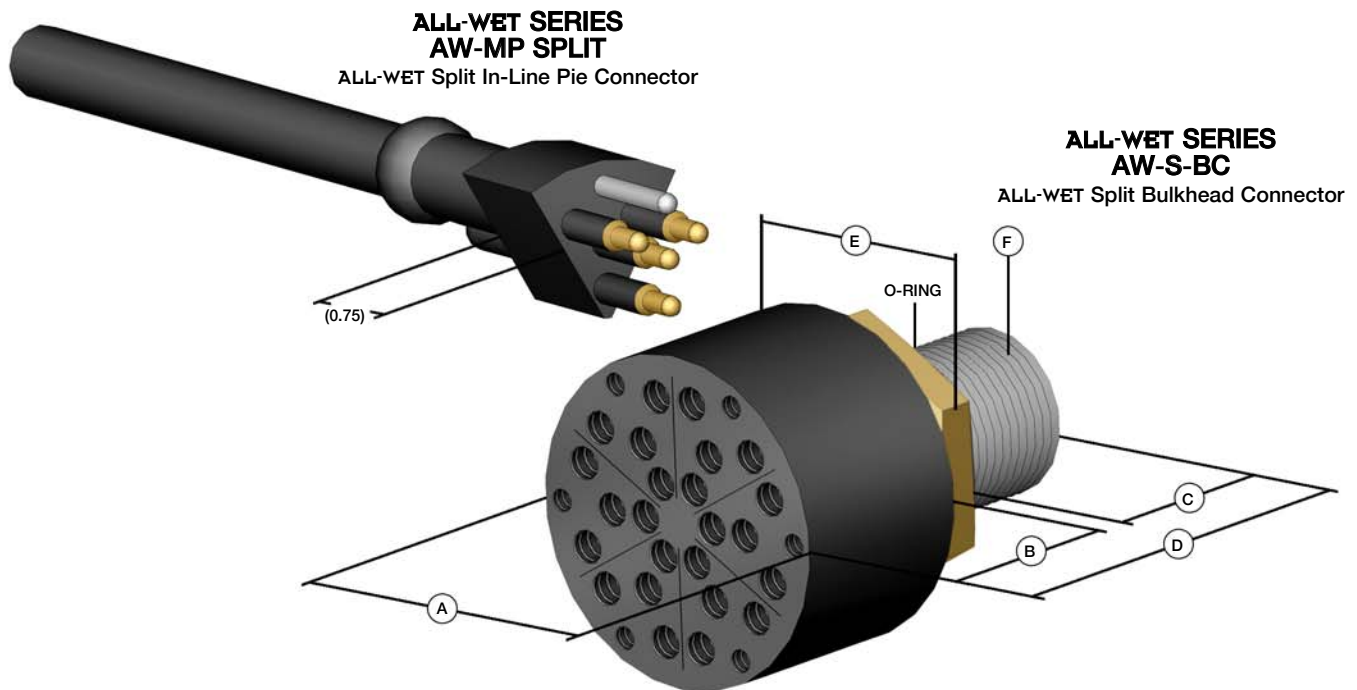
Dummy male plug connectors are available for all bulkhead connectors in the ALL-WET Split Series.

To order, add the suffix-D after the part number.

EXAMPLE:



DIMENSION DETAILS AND RATINGS



Multiple connectors required to fill all sectors of bulkhead connector.

CONNECTOR	A - DIAMETER (INCHES)	B - (INCHES)	C - (INCHES)	D - (INCHES)	E - (INCHES)	F - THREAD	O - RING	BC 18" TEFLON® ** TYPE E HOOK-UP WIRE	MP w/18" CABLE	VDC	AMP PER CONTACT	CABLE AMPACITY	BULKHEAD MOUNTING TORQUE (INCH POUNDS)
AWL-2/4*	1.00	1.16	0.75	2.42	1.00	1/2-20 UNF-2A	2-114	18 AWG	18/2 SJO	300	19	7.0	50
AWM-2/12	1.25	1.16	0.75	2.42	1.25	1/2-20 UNF-2A	2-114	20 AWG	18/2 SJO	300	19	7.0	50
AWO-2/12	For dimension details and ratings please contact SEA CON®.												
AWQ-2/8	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	18 AWG	18/2 SO	600	19	7.0	125
AWQ-6/12	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	18 AWG	18/6 SO	600	19	5.6	125
AWQ-2/16	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	18 AWG	18/2 SO	600	19	7.0	125
AWQ-2/24	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	18 AWG	18/2 SJO	300	10	7.0	125
AWQ-4/24	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	18 AWG	18/4 SO	600	19	5.6	125
AWQ-4/28	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	18 AWG	18/4 SO	600	19	5.6	125
AWQ-8/24	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	18 AWG	18/8 SO	600	19	4.9	125
AWQ-8/32	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	18 AWG	18/8 SO	600	10	4.9	125
AWQ-6/36	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	20 AWG	18/6 SO	600	10	5.6	125
AWQ-12/36	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	20 AWG	18/12 SO	600	10	3.5	125
AWQ-7/42	2.00	1.28	1.00	2.80	1.50	1-14 UNS-2A	2-123	20 AWG	18/7 SO	600	10	4.9	125

GRE SPECIAL ORDER SIZES

CONNECTOR	THREAD	HEX FLATS (INCHES)	BULKHEAD MOUNTING TORQUE (INCH POUNDS)
AWL	1/2-20 UNF-2A	1.00	50
AWM	3/4-16 UNF-2A	1.25	85
AWO	1-14 UNS-2A	1.62	125
AWQ	1-14 UNS-2A	1.50	85

NOTES:

- Pressure Rating: 10,000 psi, mated/1,000 psi, open face.
- Dummy Connector: Optional. Please contact SEA CON® for availability.
- Dummy Shorting Plug Connector: Optional.
- Connectors must be lubricated prior to mating.
- Locking Sleeves: Optional (see page 15).
- Nut and washer: Optional.
- Torque values referenced in this literature assume installation into dry metal threads. For other applications, please contact SEA CON® for recommendations.
- Contact SEA CON® for custom cable molding needs.
- Bulkhead Locking Sleeve. Factory installation only for AWL/M-BC (see page 15)
- Connectors are designed for installation onto one atmosphere vessels. Contact SEA CON® for recommendations if using compensated vessels.
- * AWL-2/4 is available in 2 different MP's. 1) Has guide pin along with pins 1 & 4; 2) Has no guide pin and pins 3 & 4.
- ** Registered trademark for DuPont.

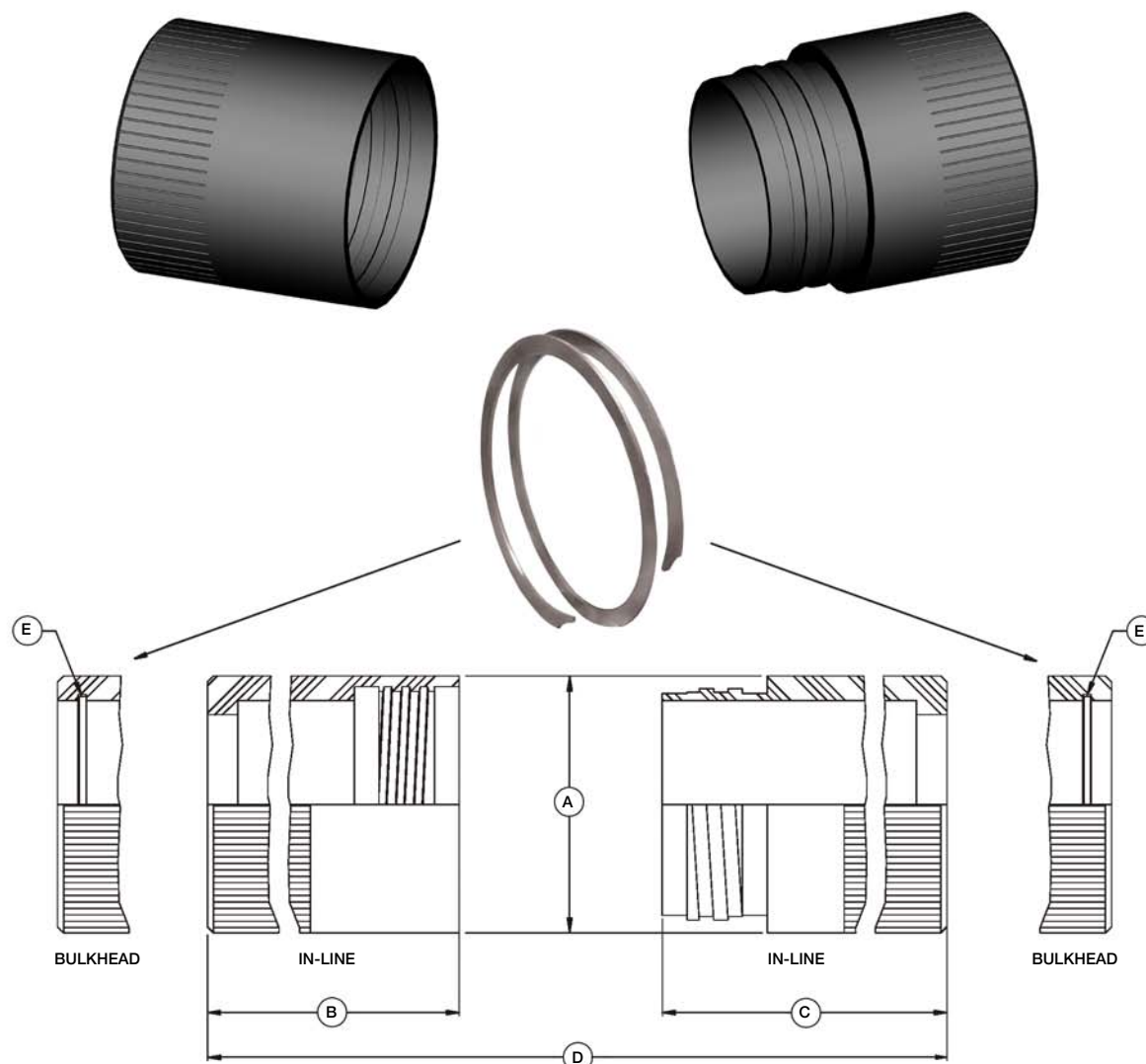
DIMENSION DETAILS

ALL-WET SERIES FLS

ALL-WET Female Locking Sleeve

ALL-WET SERIES MLS

ALL-WET Male Locking Sleeve


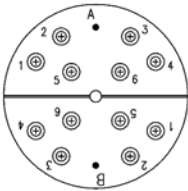
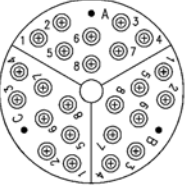

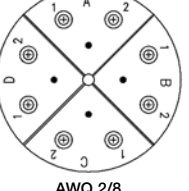
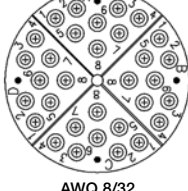
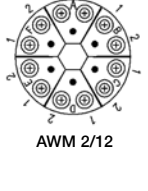
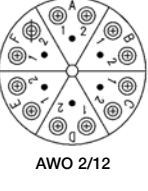
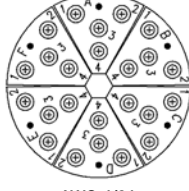
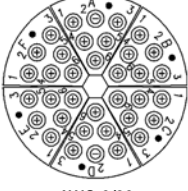

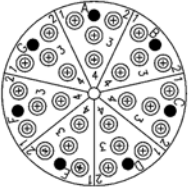




ALL-WET LOCKING SLEEVES		A - DIAMETER	B - (INCHES)	C - (INCHES)	D - (INCHES)	E - SPIROLOX
IN-LINE	BULKHEAD	(INCHES)				
AWL-FLS	AWL-FBLS	1.25	1.23	-	2.10	RR-100
AWL-MLS	AWL-MBLS	1.25	-	1.38	2.10	RR-100
AWM-FLS	AWM-FBLS	1.50	1.23	-	2.10	RR-125
AWM-MLS	AWM-MBLS	1.50	-	1.38	2.10	RR-125
AWO-FLS	AWO-FBLS	1.85	1.23	-	2.10	RR-162
AWO-MLS	AWO-MBLS	1.85	-	1.38	2.10	RR-162
-	AWQ-FBLS	2.50	1.44	-	2.94	-
AWQ-MLS	-	2.50	-	2.00	2.94	-

NOTES:

- D - Delrin® (DuPont trademark for Acetal Resin).
- S - Stainless Steel.
- Locking Sleeves will fit standard ALL-WET Connectors and ALL-WET Split Connectors.
- Specify Bulkhead or In-Line type locking sleeve.
- Bulkhead Locking Sleeve: Optional.
- If locking sleeves are required for AWL/M/O bulkhead connectors, they must be specified at time of connector order as they are factory installations only.

CONTACT CONFIGURATIONS

ALL-WET SERIES SPLIT CONTACT CONFIGURATIONS AVAILABLE	
2	 AWL 2/4*  AWQ 6/12
3	 AWQ 8/24  AWQ 12/36
4	 AWQ 2/8  AWQ 8/32
6	 AWM 2/12  AWO 2/12  AWQ 4/24  AWQ 6/36  AWQ 7/42
7	 AWQ 4/28
8	 AWQ 2/16
12	 AWQ 2/24

NOTES:

All configurations shown are the face view of the Bulkhead Connector (BC). Standard bulkhead contacts are female.
The mating male plugs (MP) are "split" into equally shaped sections.

For customer configurations or special applications contact SEA CON® or sales representative.

* AWL-2/4-MP mates with standard AWL-4S-BC.

SEACON[®]



ALL-WET FLAT SERIES

ALL-WET FAW/FLAT AND ALL-WET MAW/HERMAPHRODITIC SERIES

GENERAL INFORMATION

COMPONENT	MATERIAL
BULKHEAD BODY	
STANDARD	CA630 per QQ-C-465
OPTIONAL	Many materials including 316 Stainless Steel and 6A14V Titanium, Hard Anodized
CONNECTOR BODY	
STANDARD	Neoprene per B/A X5727
OPTIONAL	Hypalon per B/A X6830
CONTACTS	Copper Alloy Gold Plated per ASTM B488
O-RINGS	Nitrile (formerly known as Buna-N)
IN-LINE CABLE FAWL FAWM 8 FAWM 10 MAW	#18 AWG SO* #20 AWG SO* #22 AWG SO* IN2*
BULKHEAD NUT/WASHER	Brass
BULKHEAD PIGTAILS	Teflon® Type E Hook-up wire* (Registered trademark for DuPont) FAWL #18 AWG* FAWM 8 #20 AWG* FAWM 10 #22 AWG* MAW IN2*

CATEGORY	VALUE
OPEN FACE PRESSURE BULKHEAD	Up to 1,000 psi
MATED PRESSURE BULKHEADS	Up to 10,000 psi
MATED PRESSURE IN-LINES	Up to 10,000 psi
VOLTAGE	
FAW	600 VDC except FAWM-10***
MAW	300 VDC
CURRENT	
FAW	Up to 10 amps per contact**
MAW	Up to 3 amps per contact**
CONTACT RESISTANCE	<0.01 ohms
INSULATION RESISTANCE	>500 megohms after wet mating
MATING CYCLES	>500 wet matings****

NOTES:

* 18 inch standard length.

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

*** Rated to 300 VDC.

**** Provided proper handling procedures are adhered to.

AMPACITY CHART FOR STANDARD PARTS

PART DESCRIPTION NUMBER OF CONTACTS	AMPACITY
FAWL - 2	7 amps
FAWL - 3	7 amps
FAWL - 4	5.6 amps
FAWL - 5	5.6 amps
FAWM - 8	4.9 amps
FAWM - 10	2.5 amps

Higher ampacities are available

STANDARD WIRING COLOR CODE

STANDARD IN-LINE COLOR CODE

CONTACT #	COLOR
1	WHITE
2	BLACK
3	GREEN
4	RED
5	ORANGE

CONTACT #	COLOR
6	BLUE
7	WHITE/BLACK
8	RED/BLACK
9	GREEN/BLACK
10	ORANGE/BLACK

PART NUMBER SYSTEM

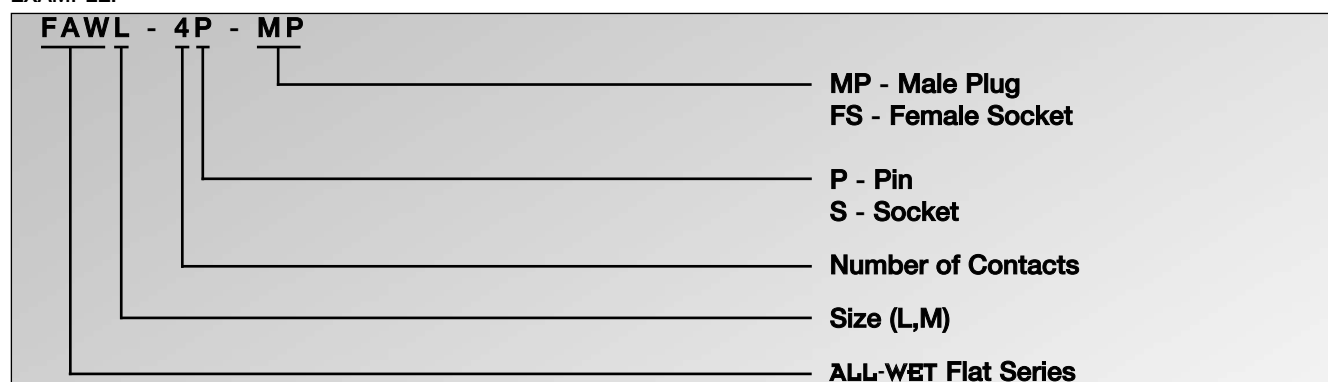
FAW BULKHEAD CONNECTORS

EXAMPLE:



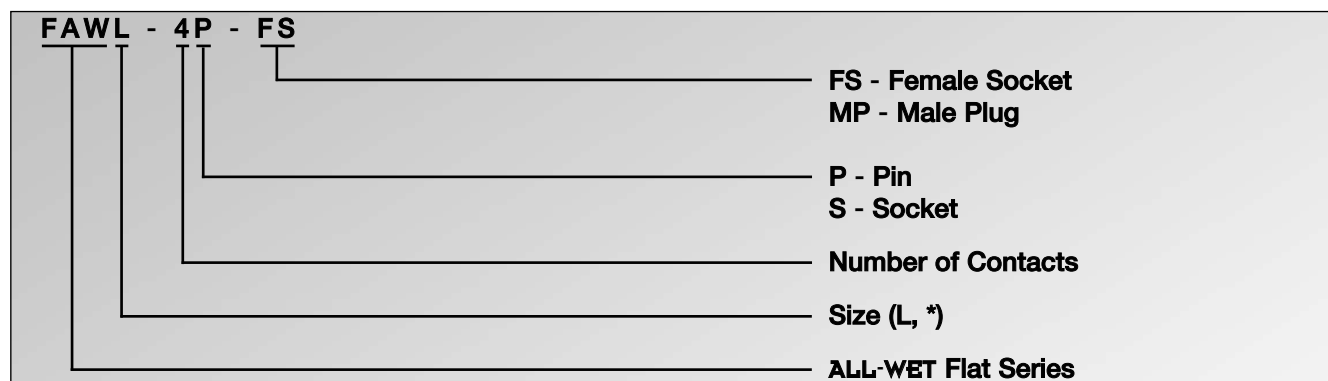
FAW IN-LINE MP CONNECTORS

EXAMPLE:



FAW IN-LINE FS CONNECTORS

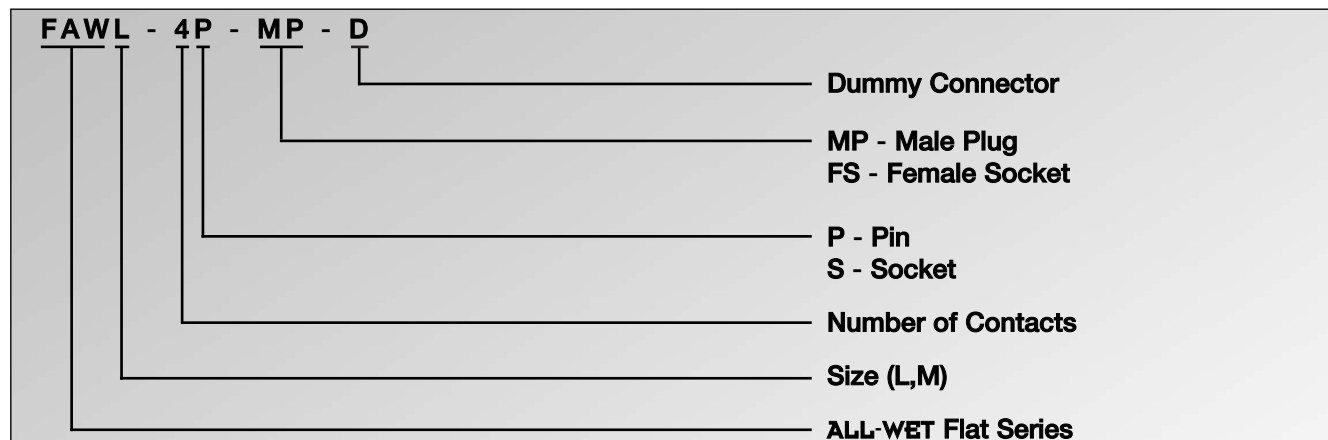
EXAMPLE:



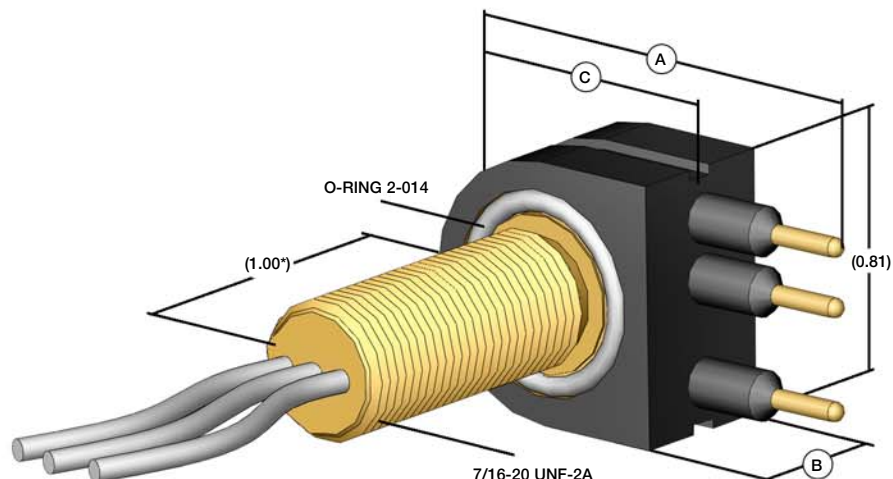
DUMMY CONNECTORS

Dummy connectors are available for all connectors in the ALL-WET Flat Series. To order, add the suffix-D after the part number.

EXAMPLE:



DIMENSION DETAILS



**ALL-WET SERIES
FAW-P-BC-R/A**
ALL-WET Flat Bulkhead Connector
Mates with FAW-S-MP
Dummy Connector: FAW-S-MPD

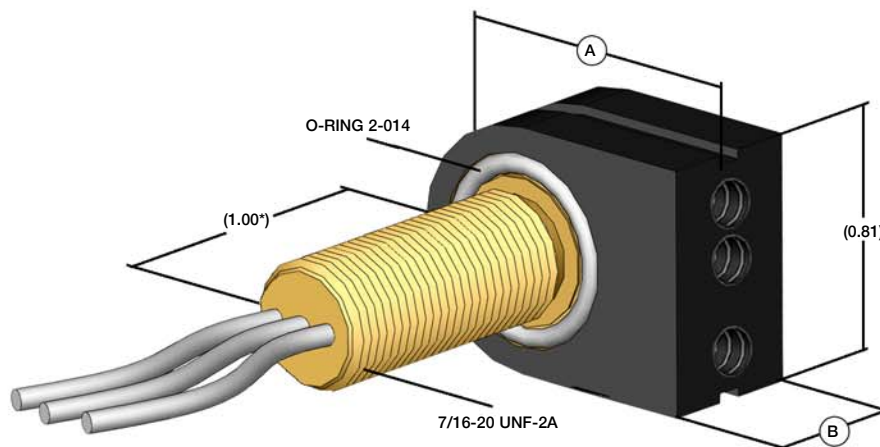
CONNECTOR	A - (INCHES)	B - (INCHES)	C - (INCHES)
FAWL-P-BC-R/A	1.34	0.50	0.81
FAWM-P-BC-R/A	1.48	0.63	0.95

NOTES:

- Thread length is 1.00" standard. If shorter thread is required, specify as follows: FAW-P(or S)-BC-R/A (1/2" thread length).*
- Available thread length: 1/2", 3/4" and 1".*
- Bulkhead mounting torque: 40 inch pounds.
- Nuts and washer supplied.
- Connectors must be lubricated prior to mating.
- Connectors are designed for installation on one atmosphere vessels. Contact SEA CON® for recommendations if using compensated vessels.
- Dummy Connectors: Optional.
- Dummy Shorting Plug: Optional.

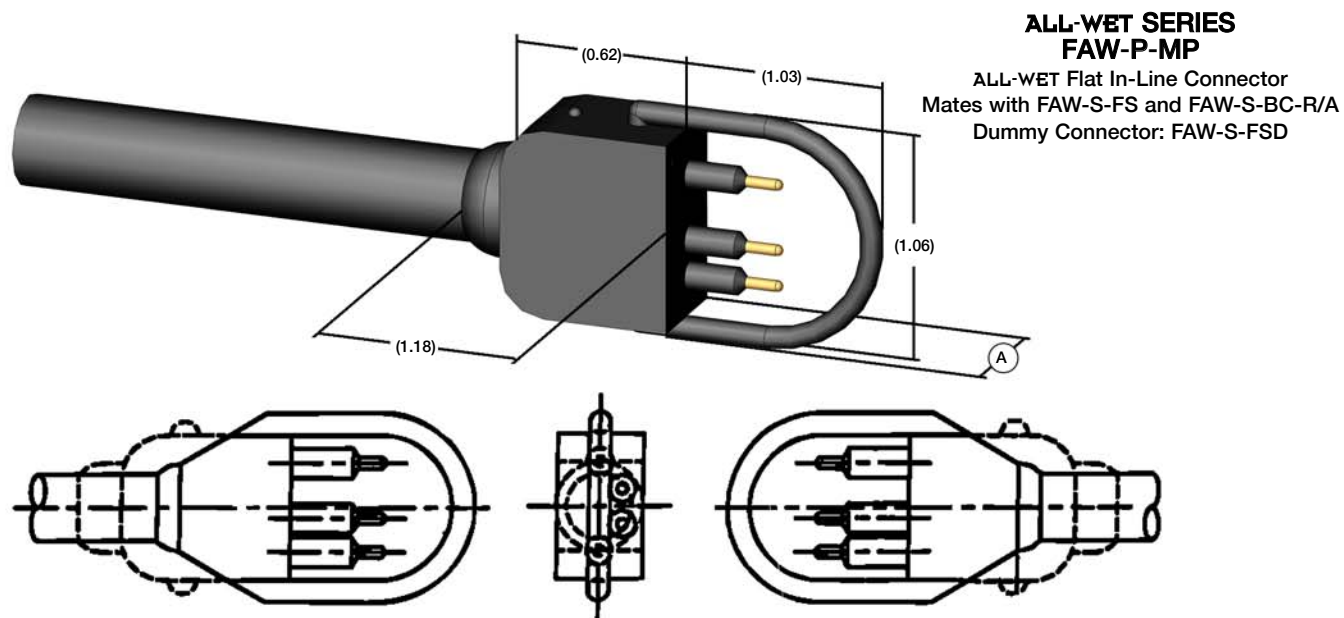
ALL-WET SERIES FAW-S-BC-R/A

ALL-WET Flat Bulkhead Connector
Mates with FAW-P-MP
Dummy Connector: FAW-P-MPD



CONNECTOR	A - (INCHES)	B - (INCHES)
FAWL-S-BC-R/A	1.05	0.50
FAWM-S-BC-R/A	1.12	0.63

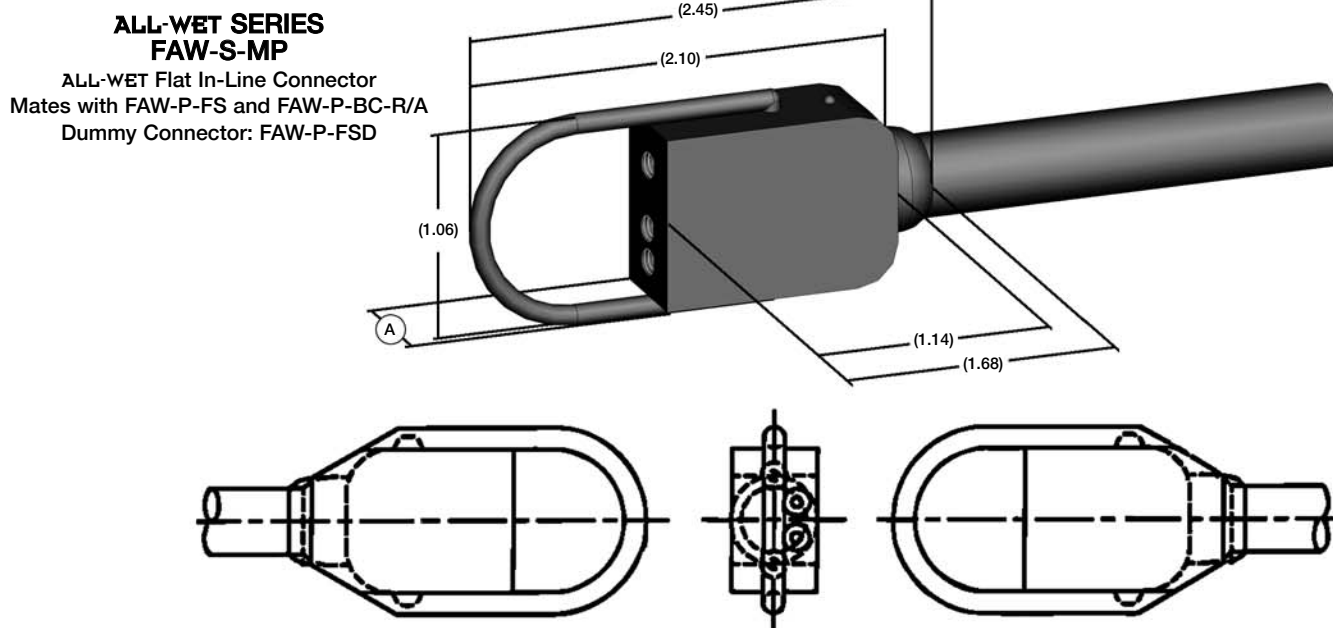
DIMENSION DETAILS



CONNECTOR	A - (INCHES)
FAWL-P-MP	0.50
FAWM-P-MP	0.63

NOTES:

- Neoprene lanyard wraps around groove on in-line or bulkhead mate.
- Dummy connectors: Optional.
- Dummy Shorting Plug: Optional.
- Connectors must be lubricated prior to mating.
- The broken lines show the body of the FAWM-P/S-MP.

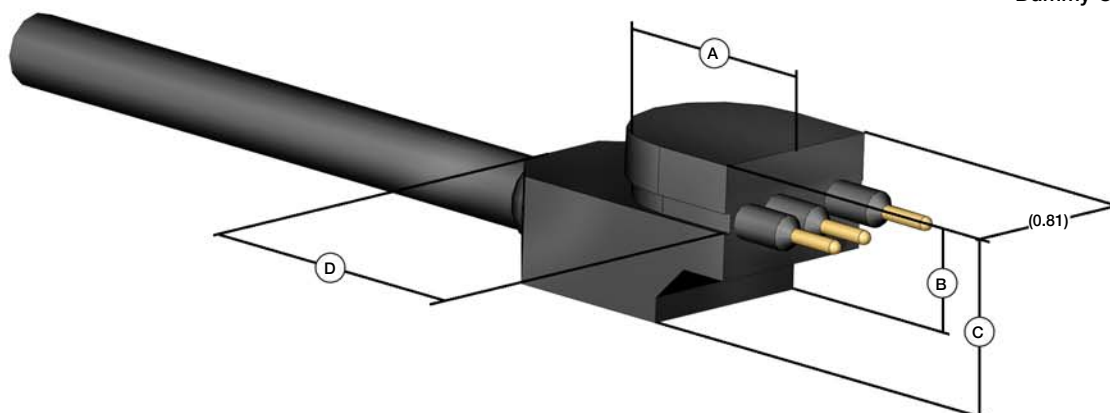


CONNECTOR	A - (INCHES)
FAWL-S-MP	0.50
FAWM-S-MP	0.63

DIMENSION DETAILS

ALL-WET SERIES FAW-P-FS

ALL-WET Flat In-Line Connector
Mates with FAWL-S-MP
Dummy Connector: FAW-S-MPD



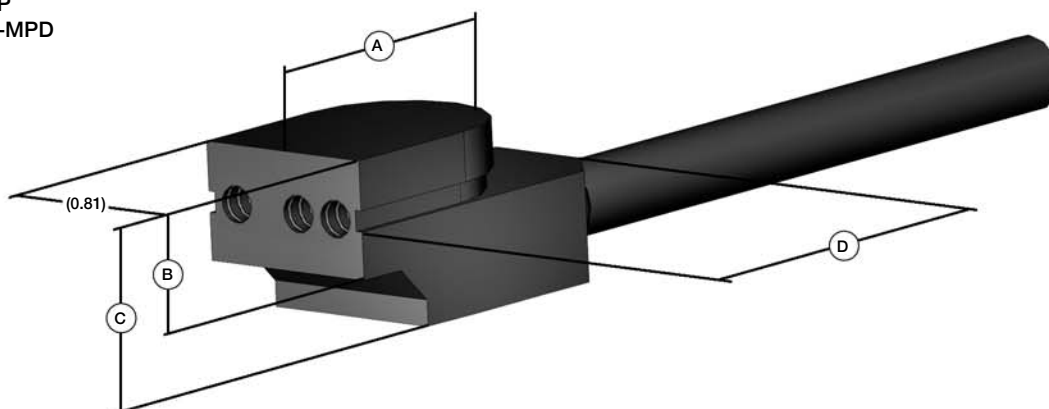
CONNECTOR	A - (INCHES)	B - (INCHES)	C - (INCHES)	D - (INCHES)
FAWL-P-FS	0.81	0.50	0.88	1.31
FAWM-P-FS	0.98	0.63	0.94	1.33

NOTES:

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

ALL-WET SERIES FAW-S-FS

ALL-WET Flat In-Line Connector
Mates with FAWL-P-MP
Dummy Connector: FAW-P-MPD

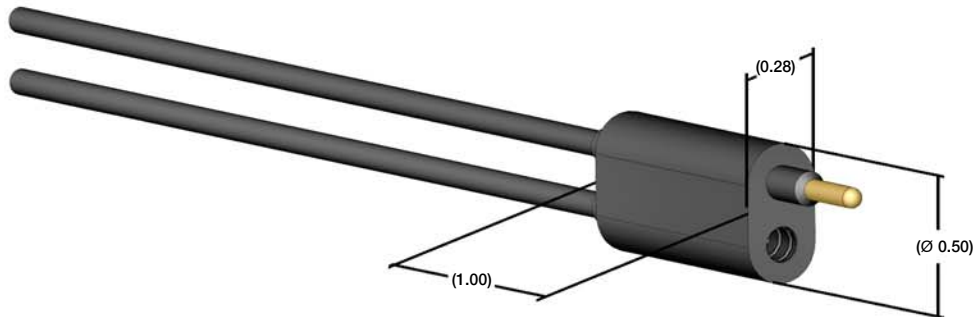


CONNECTOR	A - (INCHES)	B - (INCHES)	C - (INCHES)	D - (INCHES)
FAWL-S-FS	1.05	0.50	0.88	1.55
FAWM-S-FS	1.15	0.63	0.94	1.52

DIMENSION DETAILS

ALL-WET SERIES MAW-2-HC w/IN2 CABLE

ALL-WET Miniature Hermaphroditic In-Line Connector
Mates with itself and MAW-2-HC-BC-R/A

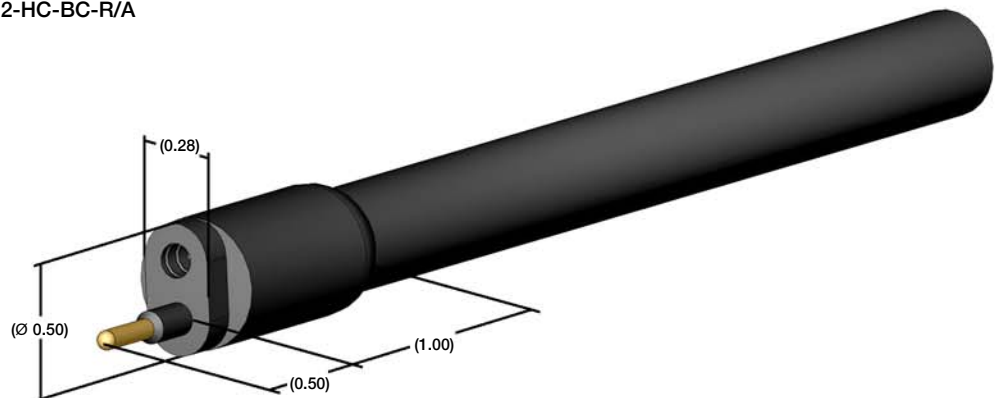


NOTES:

- Current-carrying capacity: MAW-2-HC w/IN2 CABLE - 3 amps per contact.
MAW-2-HC w/18/2 SJO CABLE - 7 amps per contact.
- Operating pressure: 10,000 psi.
- Open face pressure: 1,000 psi.
- Working voltage: 300 VDC.
- Dummy Connector: Optional.
- Dummy Shorting Plug: Optional.
- Connectors must be lubricated prior to mating.

ALL-WET SERIES MAW-2-HC w/18/2 SJO CABLE

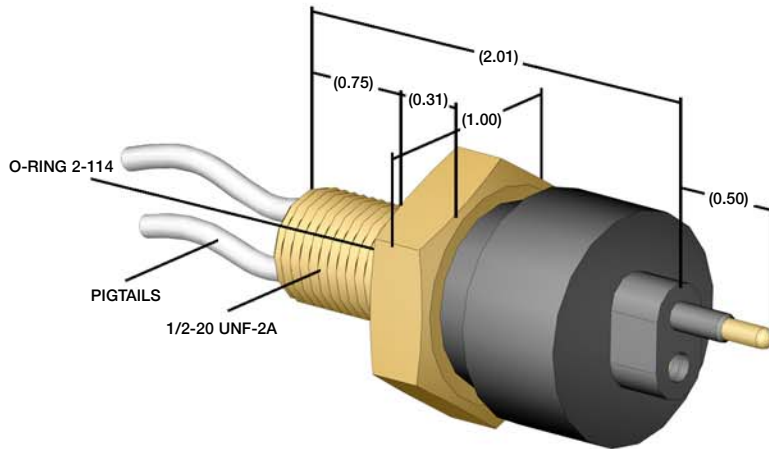
ALL-WET Miniature Hermaphroditic In-Line Connector
Mates with itself and MAW-2-HC-BC-R/A



DIMENSION DETAILS

ALL-WET SERIES MAW-2-HC-BC

ALL-WET Miniature Hermaphroditic Bulkhead Connector
Mates with MAW-2-HC

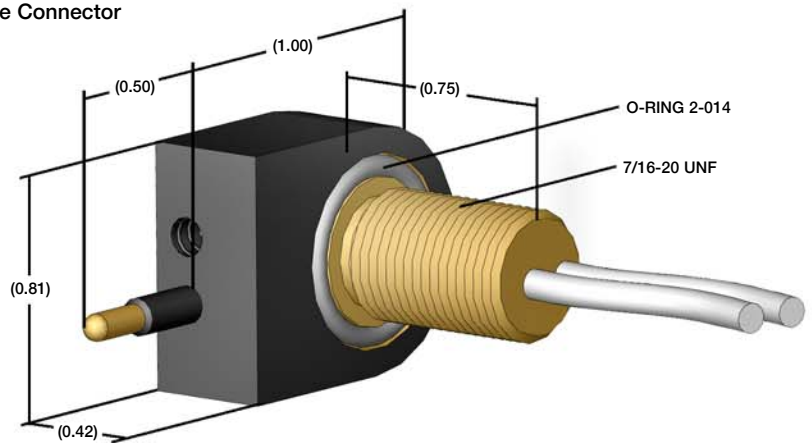


NOTES:

- Dummy connector: Optional.
- Dummy Shorting Plug: Optional.
- Pigtails: 18 AWG Type E, 18 inches long.
- Connectors must be lubricated prior to mating.
- Nut and washer: Optional.
- For GRE bulkhead mounting torques please contact SEA CON®
Torque value 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.

ALL-WET SERIES MAW-2-HC-BC-R/A

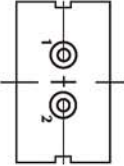
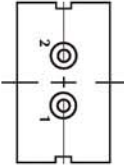
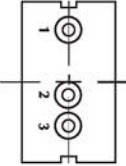
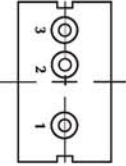
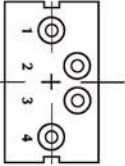
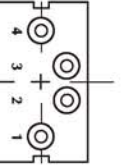
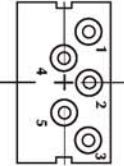
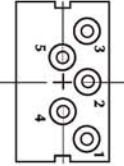
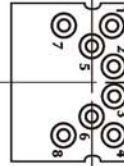



ALL-WET Miniature Hermaphroditic Bulkhead Right Angle Connector
Mates with MAW-2-HC



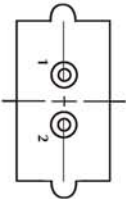
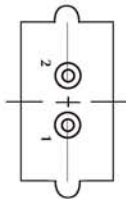
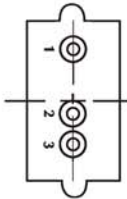
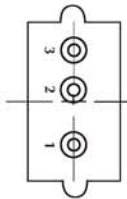
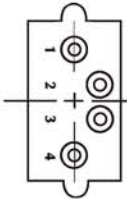
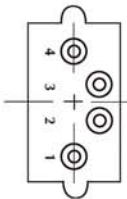
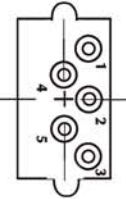
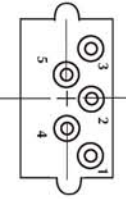
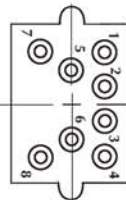
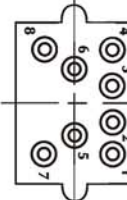
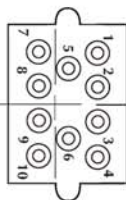
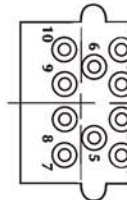
NOTES:

- Dummy connector: Optional.
- Dummy Shorting Plug: Optional.
- Connectors must be lubricated prior to mating.
- Nuts and washer supplied.
- Connectors are designed for installation on one atmosphere vessels. Contact SEA CON® for recommendations if using compensated vessels.


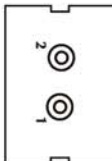
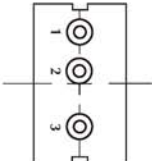
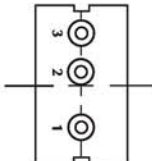
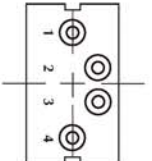
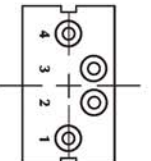
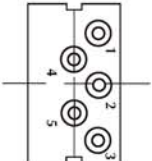
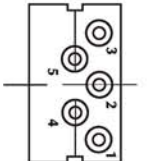
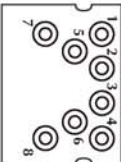
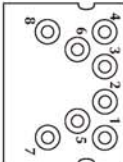
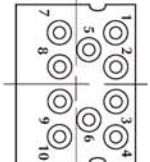
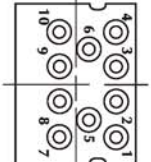
CONTACT CONFIGURATIONS

SIZE		ALL-WET FAW/FLAT SERIES RIGHT ANGLE BULKHEAD CONTACT CONFIGURATIONS AVAILABLE					
L							
		FAWL-2P-BC-R/A	FAWL-2S-BC-R/A	FAWL-3P-BC-R/A	FAWL-3S-BC-R/A	FAWL-4P-BC-R/A	FAWL-4S-BC-R/A
L							
		FAWL-5P-BC-R/A	FAWL-5S-BC-R/A				
M							
		FAWM-8P-BC-R/A	FAWM-8S-BC-R/A	FAWM-10P-BC-R/A	FAWM-10S-BC-R/A		

CONTACT CONFIGURATIONS

SIZE	ALL-WET FAW/FLAT SERIES IN-LINE CONTACT CONFIGURATIONS AVAILABLE					
L	 <p>FAWL-2P-MP</p>	 <p>FAWL-2S-MP</p>	 <p>FAWL-3P-MP</p>	 <p>FAWL-3S-MP</p>	 <p>FAWL-4P-MP</p>	 <p>FAWL-4S-MP</p>
	 <p>FAWL-5P-MP</p>	 <p>FAWL-5S-MP</p>				
M	 <p>FAWM-8P-MP</p>	 <p>FAWM-8S-MP</p>	 <p>FAWM-10P-MP</p>		 <p>FAWM-10S-MP</p>	

CONTACT CONFIGURATIONS

SIZE	ALL-WET FAW/FLAT SERIES IN-LINE CONTACT CONFIGURATIONS AVAILABLE	
L	<div data-bbox="250 235 360 394"></div> <div data-bbox="250 405 354 426">FAWL-2P-FS</div> <div data-bbox="441 235 552 394"></div> <div data-bbox="441 405 545 426">FAWL-2S-FS</div> <div data-bbox="626 235 776 394"></div> <div data-bbox="651 405 755 426">FAWL-3P-FS</div> <div data-bbox="821 235 971 394"></div> <div data-bbox="846 405 950 426">FAWL-3S-FS</div> <div data-bbox="1016 235 1166 394"></div> <div data-bbox="1036 405 1140 426">FAWL-4P-FS</div> <div data-bbox="1211 235 1360 394"></div> <div data-bbox="1227 405 1331 426">FAWL-4S-FS</div> <div data-bbox="230 487 380 646"></div> <div data-bbox="250 657 354 678">FAWL-5P-FS</div> <div data-bbox="428 487 578 646"></div> <div data-bbox="451 657 555 678">FAWL-5S-FS</div>	
M	<div data-bbox="250 770 370 930"></div> <div data-bbox="256 945 360 966">FAWM-8P-FS</div> <div data-bbox="509 770 630 930"></div> <div data-bbox="516 945 620 966">FAWM-8S-FS</div> <div data-bbox="763 770 912 930"></div> <div data-bbox="782 945 886 966">FAWM-10P-FS</div> <div data-bbox="1036 770 1185 930"></div> <div data-bbox="1052 945 1156 966">FAWM-10S-FS</div>	

HANDLING PROCEDURES AND SPECIAL CAPABILITIES



SEA CON GLOBAL PRODUCTION

Callejon Terrazos #8, 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



SEA CON®

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



SEA CON 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



SEA CON US EAST COAST SALES OFFICE

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



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



SEA CON ADVANCED PRODUCTS, LLC

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



SEA CON 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



SEA CON (europe) LTD

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



SEA CON PHOENIX, LLC

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

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 **ALL-WET** 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.
3. 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 dielectric 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 its 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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