



SEACON CS-MS Electrical Dry-Mate Connectors

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Offer Small and Lightweight Connectivity
Solutions for Underwater Applications

SEACON

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Small and Lightweight Connectivity Solutions for Underwater Applications

KEY FEATURES

- Dry-mate connector
- 2 shell sizes (J & K)
- Up to 10 contacts
- Up to 7,000 psig (approx. 16,000ft / 4,780m) mated or open face
- Insulation resistance >1 Gohms @ 500 VDC
- Dielectric with standing voltage <0.5 mA @ 1,000 VAC
- 90 degree CCP adapter available
- Overmold options available (neoprene/polyurethane)
- Up to 13 amps
- Optic, oil filled versions available
- Aluminum, glass reinforced epoxy
- Stainless steel, copper alloy also available
- Typical uses: ROV's, cameras, lights and where size and weight is restricted



TE Connectivity (TE)'s SEACON CS-MS connector range was designed for Remotely Operated Vehicle (ROV) applications. It has high density contact patterns and uses aluminum shells as standard in an effort to keep both size and weight to a minimum.

The CS-MS connector is also designed to be used with field configurable oil filled hoses for mission flexibility and quick field service.

This connector was developed specifically to meet the needs of ROV manufacturers and their equipment suppliers.



APPLICATION

- Underwater Cameras and Lights
- ROV's/AUV's
- Diver Communications
- BOP (Blow Out Preventer) Monitoring Equipment
- Neutrino Detection
- Stress Monitoring
- Downhole Applications

SPECIFICATIONS

- **Open Face Pressure:** 5,900 psi / 4,000m (J size)
7,000 psi / 4,780m (K size)
- **Mated Pressure:** 5,900 psi / 4,000m (J size)
7,000 psi / 4,780m (K size)
- **Operating Pressure:** -30°C to 70°C (-22°F to 158°F)
- **Bulkhead Mounting Torque:** 100 inch lbs (installation into dry metal threads)
20 inch lbs (installation into dry plastic threads)
- **Insulation Resistance:** >1 Gohms @ 500 VDC
- **Dielectric Withstanding Voltage:** <0.5 mA @ 1,000 VAC
- **Mating Cycles with No Changes in Resistance or IR Reading:** >250

MATERIALS

BCR/CCP/SCP/SCR/BMHB Body:

- **Standard:** Aluminum 6061-T6, Hard Anodized
- **Optional:** 316 Stainless Steel / Titanium

- **Contacts:** Copper Alloy Gold Plated
- **O-Ring:** Nitrile (formerly known as Buna N)
- **Engaging Nut:** Aluminum 6061-T6, Hard Anodized
- **Retaining Ring:** Stainless Steel 420
- **Washer:** Black Polyacetal
- **CCP Overmold*:** CS-3, 5 & 7 pin Neoprene #18 AWG (SO Cable)
CS-9 & 10 pin Neoprene #20 AWG
- **Standard Length:** 18 inches

TESTING

The CS-MS has undergone complete Qualification testing including:-

- Insulation resistance testing at >1 Gohms @ 500 VDC.
- Pressure testing up to 7,000 psi.
- Durability testing with 250 mate and de-mate cycles with no change in conductor or insulation resistance readings.

Notes:

- Contact TE for special order materials.
- Connectors are designed for installation on 1 atmosphere vessels. Contact TE for recommendations if using compensated vessels.
- * Incorporation of special cables will be determined on a case by case basis.



Special Assemblies

TE 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. TE also prides itself with the ability to perform stringent quality conformance testing procedures which meet MIL-SPEC programs.

Please contact TE for further information.



In-Line Cable

CS-MS-J-3#16	18/3 SO Neoprene jacket, rubber insulated 7 amp (500 VDC). Color code; contact 1 white, contact 2 black, contact 3 green.
CS-MS-J-5#16	18/5 SO Neoprene jacket, rubber insulated 6 amp (400 VDC). Color code; contact 1 white, contact 2 black, contact 3 green, contact 4 red, contact 5 orange.
CS-MS-J-9#20	20/10 Neoprene jacket, rubber insulated 2.5 amp (300 VDC). Color code; contact 1 white, contact 2 black, contact 3 green, contact 4 red, contact 5 orange, contact 6 blue, contact 7 white/black, contact 8 red/black, contact 9 green/black, contact 10 orange/black (not connected).
CS-MS-K-7#16	18/7 SO Neoprene jacket, rubber insulated 5 amp (500 VDC). Color code; contact 1 white, contact 2 black, contact 3 green, contact 4 red, contact 5 orange, contact 6 blue, contact 7 white/black.
CS-MS-K-10#20	20/10 Neoprene jacket, rubber insulated 2.5 amp (200 VDC). Color code; contact 1 white, contact 2 black, contact 3 green, contact 4 red, contact 5 orange, contact 6 blue, contact 7 white/black, contact 8 red/black, contact 9 green/black, contact 10 orange/black.



CS-MS Connectors

Ordering Information

Family Designator _____

CS-MS

Material _____

A Aluminum

S Stainless Steel

Shell Size _____

J

K

Number of Contacts _____

Connector Type _____

BCR Bulkhead Connector Receptacle

CCP Cable Connector Plug

SCR Sealing Cap Receptacle

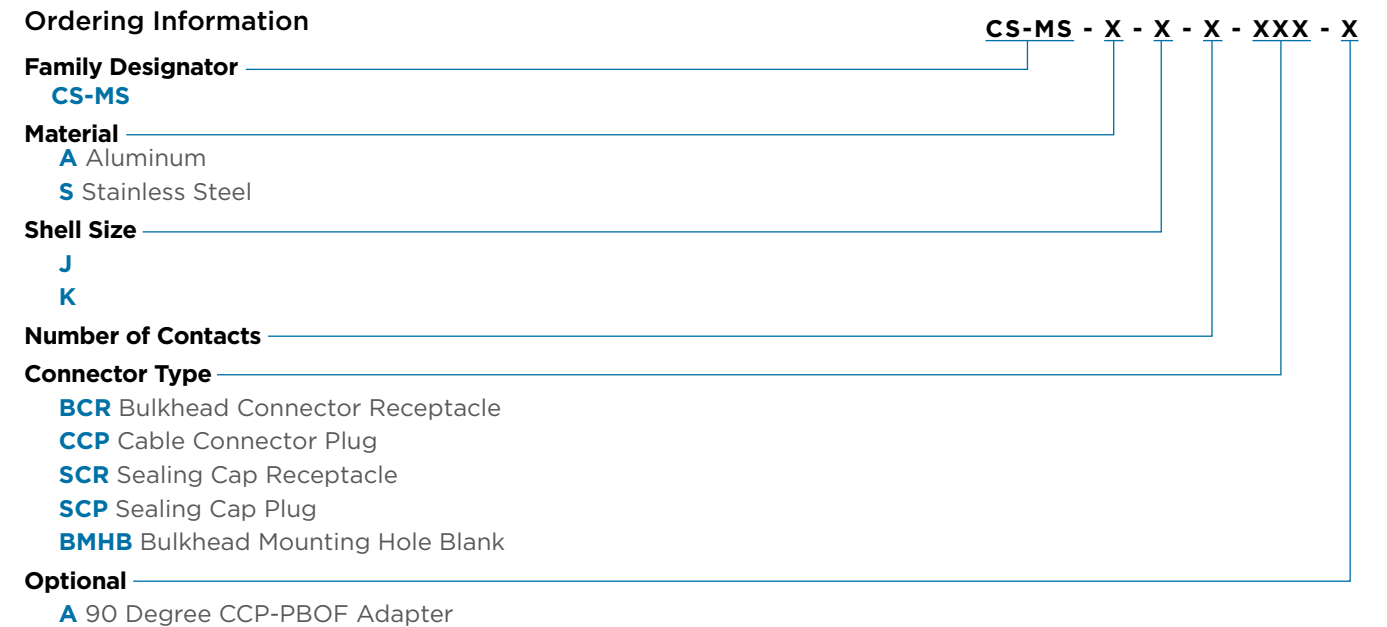
SCP Sealing Cap Plug

BMHB Bulkhead Mounting Hole Blank

Optional _____

A 90 Degree CCP-PBOF Adapter

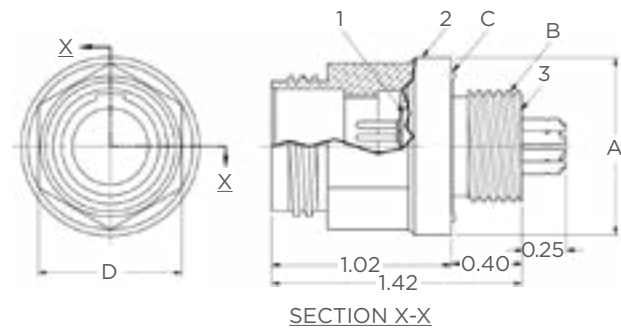
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CS-MS-BCR

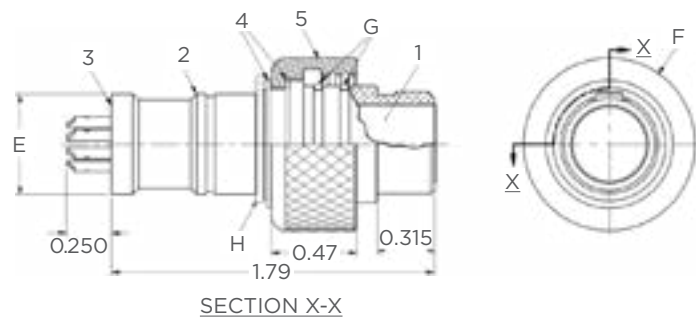
Bulkhead Connector Receptacle



Shell Size	A Ø (In)	B Thread	C O-Ring	D Hex Flats (In)	Part Number
J	0.95	9/16-18 UNF-2A	5-254	0.75	CSMS-X-J-X-BCR
K	1.00	5/8-18 UNF-2A	06-10707-1	0.81	CSMS-X-K-X-BCR

CS-MS-CCP

Cable Connector Plug



Shell Size	E Ø (In)	F Ø (In)	G O-Ring	H Retaining Ring	Part Number
J	0.51	0.88	2-013	11-40393-1	CSMS-X-J-X-CCP
K	0.55	0.96	06-10531-1	11-40551-1	CSMS-X-K-X-CCP

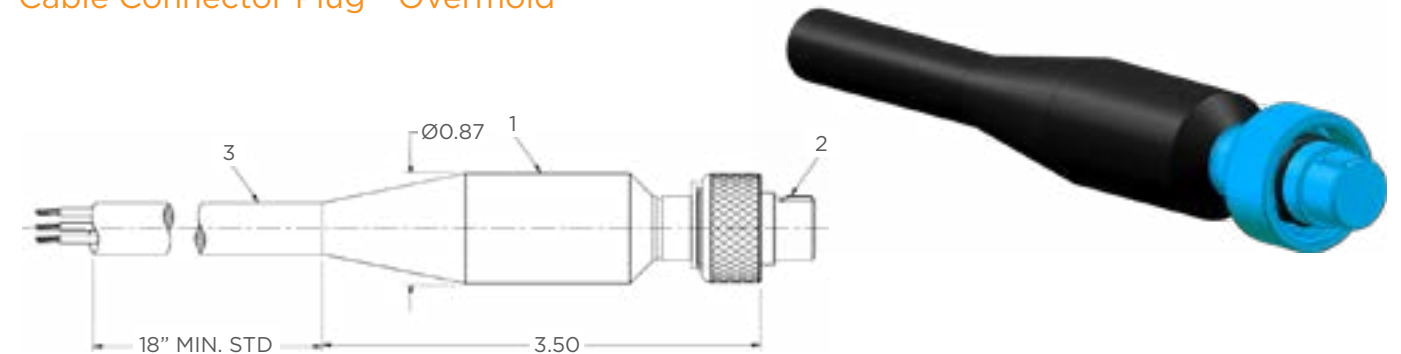
Notes:

- 1 CS-MS-CIR/CIP: Glass Reinforced Epoxy and Copper Alloy Gold Plated contacts / sockets.
- 2 CS-MS-BCR/CCP SHELL: Aluminum 6061-T6, Hard Anodized.
- 3 POTTING: White Epoxy.
- 4 WASHER: Polyacetal.
- 5 ENGAGING NUT: Aluminum 6061-T6, Hard Anodized.
- O-ring is shown as reference only, it is not installed and is supplied separately. Insert o-ring is supplied fitted.
- Overmolding optional please see page 7 for details.
- Please refer to page 10 for Bulkhead Mounting Hole Blank details.
- Please refer to page 11 for contact configurations available.

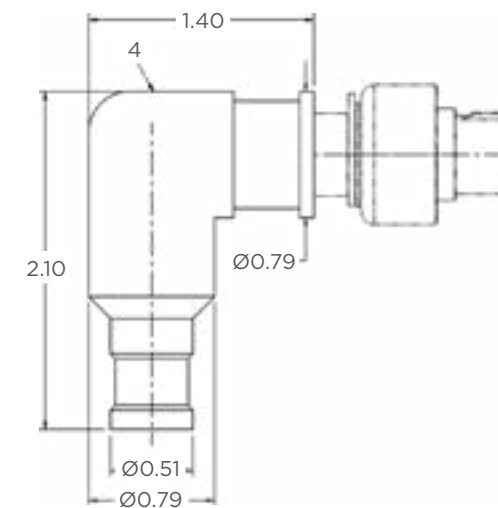


CS-MS-CCP Overmold (J & K Size)

Cable Connector Plug - Overmold



90 Degree CCP-PBOF Adapter (J & K Size)



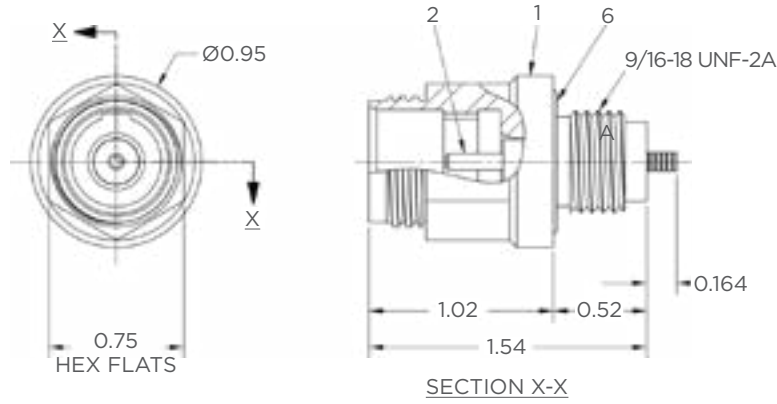
Notes:

- 1 - CS-MS-CCP OVERMOLD: Neoprene.
- 2 - CS-MS-CCP ASSY: Metal Shell & Glass Reinforced Epoxy insert.
- 3 - CABLE: Neoprene. Maximum cable diameter 0.55.
- 4 - 90 DEGREE CCP-PBOF ADAPTER: Black Polyurethane body & Stainless Steel barb. Sold separately.
- CS-MS-CCP OVERMOLD: Right angle version available.
- 90 DEGREE CCP-PBOF ADAPTER: Please see page 3 for further information.



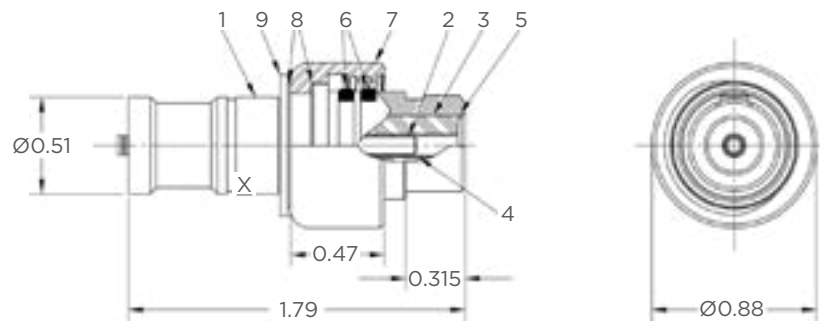
CS-MS-1FO-BCR

Fiber Optic Bulkhead Connector Receptacle



CS-MS-1FO-CCP

Fiber Optic Cable Connector Plug



Notes:

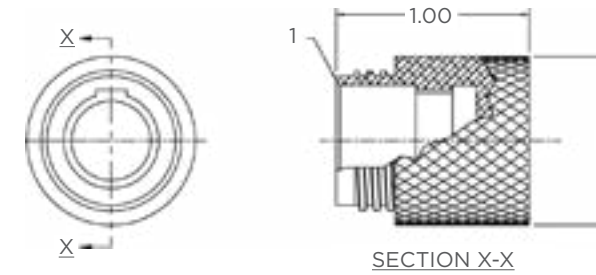
- 1 - CS-MS-BCR/CCP SHELL: Aluminum 6061-T6 or 6061-T6511. Hard Anodized.
- 2 - FIBER OPTIC CONTACT ASSEMBLY: HOUSING: 316 Stainless Steel.
CONTACT: Zirconia Ceramic.
- 3 - ALIGNMENT SLEEVE ADAPTER: Polyacetal.
- 4 - ALIGNMENT SLEEVE: Zirconia Ceramic.
- 5 - INTERNAL RETAINING RING: 316 Stainless Steel.
- 6 - O-RING: Nitrile (formerly known as Buna N).
- 7 - ENGAGING NUT: Aluminum 6061-T6 or 6061-T6511. Hard Anodized.
- 8 - WASHER: Polyacetal.
- 9 - RETAINING RING (P/N: 11-40393-1): 420 Stainless Steel.

- Typical insertion loss <0.3dB.
- CS-MS-1FO-CCP - Pressure Balanced Oil Filled (PBOF) version only.



CS-MS-SCR

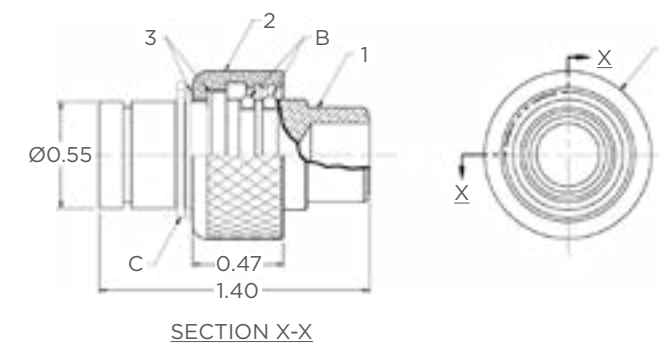
Sealing Cap Receptacle



Shell Size	A Ø (In)	Part Number
J	0.88	CS-MS-X-J-SCR
K	0.96	CS-MS-X-K-SCR

CS-MS-SCP

Sealing Cap Plug



Shell Size	A Ø (In)	B O-Ring (In)*	C Retaining Ring	Part Number
J	0.88	2-013	11-40551-1	CS-MS-X-J-SCP
K	0.96	06-10531-1	11-40551-1	CS-MS-X-K-SCP

Notes:

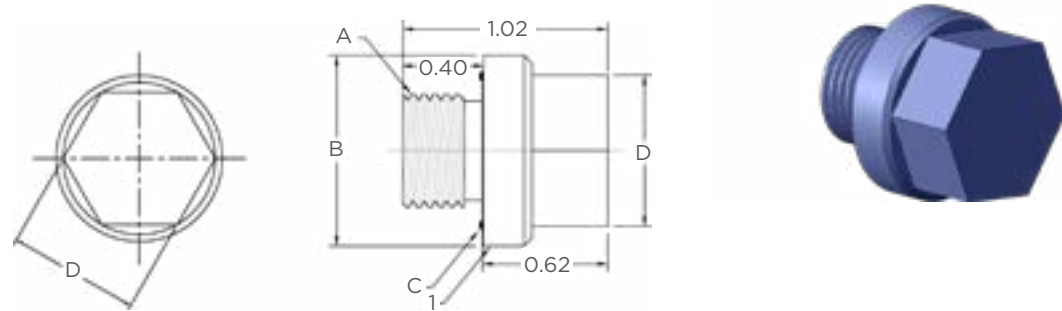
- 1 - CS-MS-SCR / SCP SHELL: Aluminum 6061-T6, Hard Anodized.
- 2 - ENGAGING NUT: Aluminum 6061-T6, Hard Anodized.
- 3 - WASHER: Polyacetal.

- * O-ring is shown as reference only, it is not installed and is supplied separately.



CS-MS-BMHB

Bulkhead Mounting Hole Blank

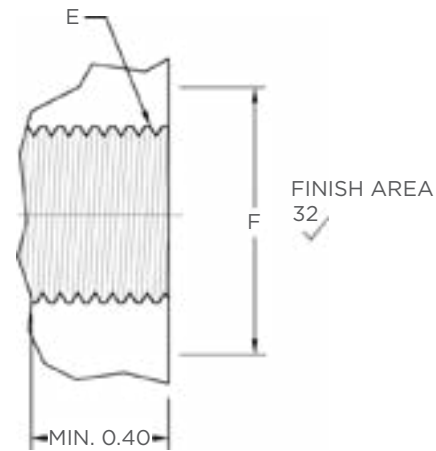


Shell Size	A Thread	B Ø (In)	C O-Ring*	D Hex Flats (In)	Part Number
J	9/16-18 UNF-2A	0.95	5-254	0.75	CSMS-X-J-BHMB
K	5/8-18 UNF-2A	1.00	06-10707-1	0.81	CSMS-X-K-BHMB

Interface Details

CS-MS

Mounting Information



Shell Size	E Thread	F Min. Ø (In)	Mounting Torque (Inch-Pounds)**	
			Metallic Housing	Non-Metallic Housing
J	9/16-18 UNF-2A	1.00	100	20
K	5/8-18 UNF-2A	1.06	100	25

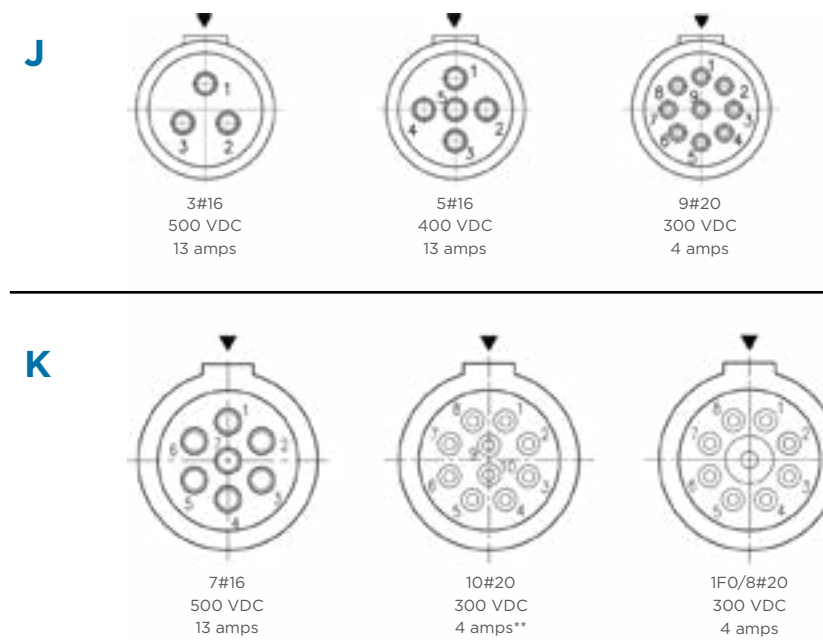
Note:

- ** Torque values refers to installation into dry threads.



Contact Configurations

BCR Face View Only* - Not to Scale



Fiber Optic Series Contact Configurations

BCR Face View Only* - Not to Scale



Notes:

- * For CCP face view contact configurations available please contact TE.
- ** For aluminum only.

Cable selection can impact voltage and amperage ratings.

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