

310 SERIES

Underwater Fibre Optic Dry Mate Connectors



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Introduction

Connector Overview

Designed and manufactured specifically for subsea & harsh environment applications, the 310 Series connector utilises physical contact fibre optic technology.

Its piston and face mounted coupling O-rings provide dependable and easy to maintain sealing.

Cable plugs are factory fitted to a choice of bespoke cables or oil filled tubes, whilst Flanged and Bulkhead Receptacles provide openface "fail safe" pressure resistance and come as standard with a choice of fibre optic tails.



SPECIFICATIONS	
Shell Sizes:	4
Contacts:	1 to 4
Return Loss:	(Single Mode) <-40dB (Multi Mode) <-40dB
Insertion Loss:	(Single Mode) <0.5dB, Typ. <0.3dB* (Multi Mode) <0.5dB, Typ. <0.3dB*
Pressure Rating:	(Mated) Up to 5800 psi / 400 Bar** (Open Face) Up To 5800psi / 400 Bar***
Temp Rating:	-20°C to 70°C
Mating Cycles:	>2000

* Typical values against master connector.

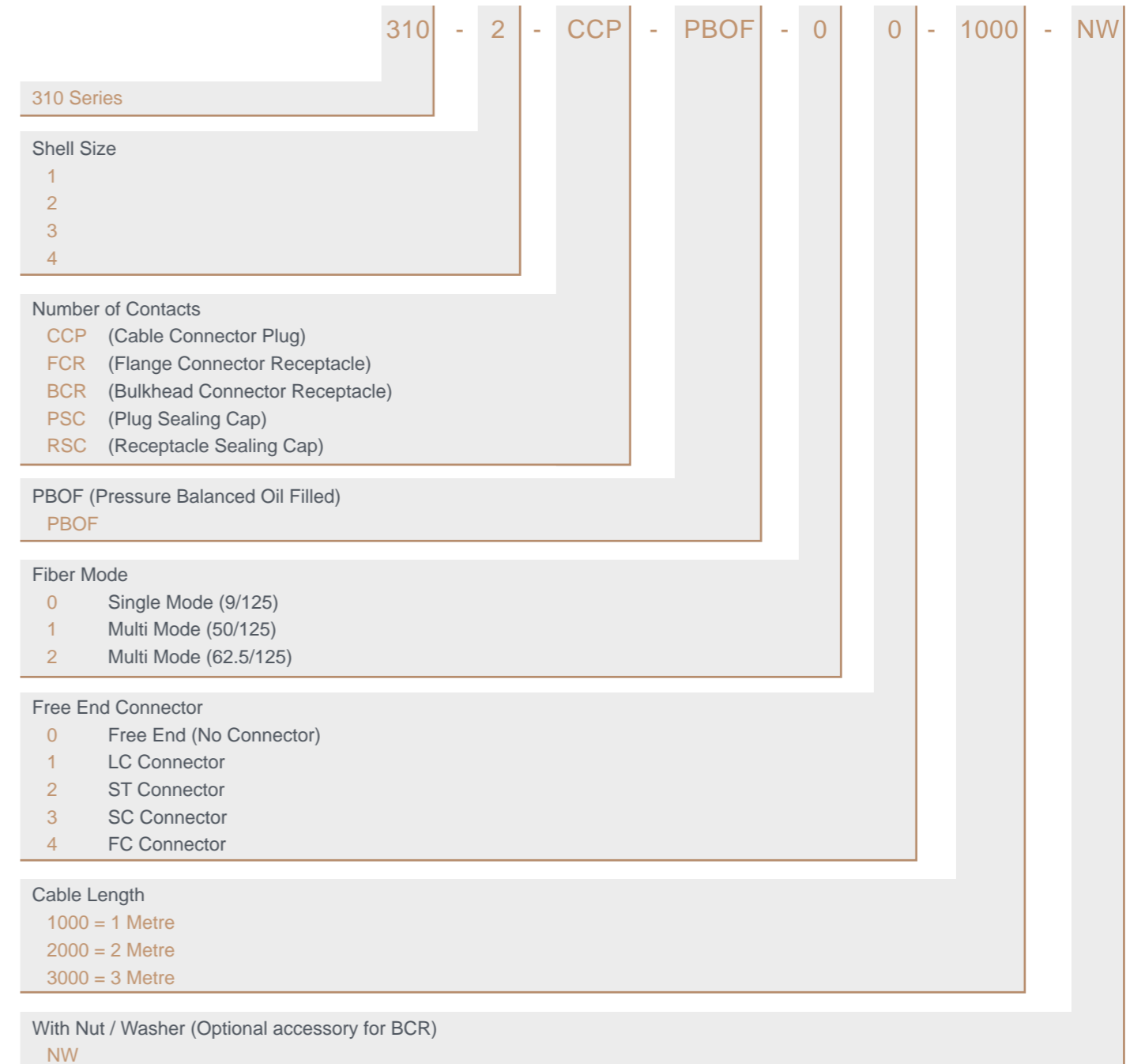
** Pressure rating subject to shell material and termination method.

*** Open face pressure rating is a safety "fail safe" feature only, the connector must be used mated or with pressure sealing caps.

MATERIALS	
Connector Shell:	316L S/Stl as standard. Also available in Titanium, PEEK, Super Duplex, Inconel, Monel & Aluminium.
Coupling Nut:	Nickel Ali Bronze as standard. Also available in Titanium, PEEK, Inconel, Monel & Aluminium.
Contacts:	Brass CZ112 with Zirconia Ceramic Ferrule.



Connector Part Numbering

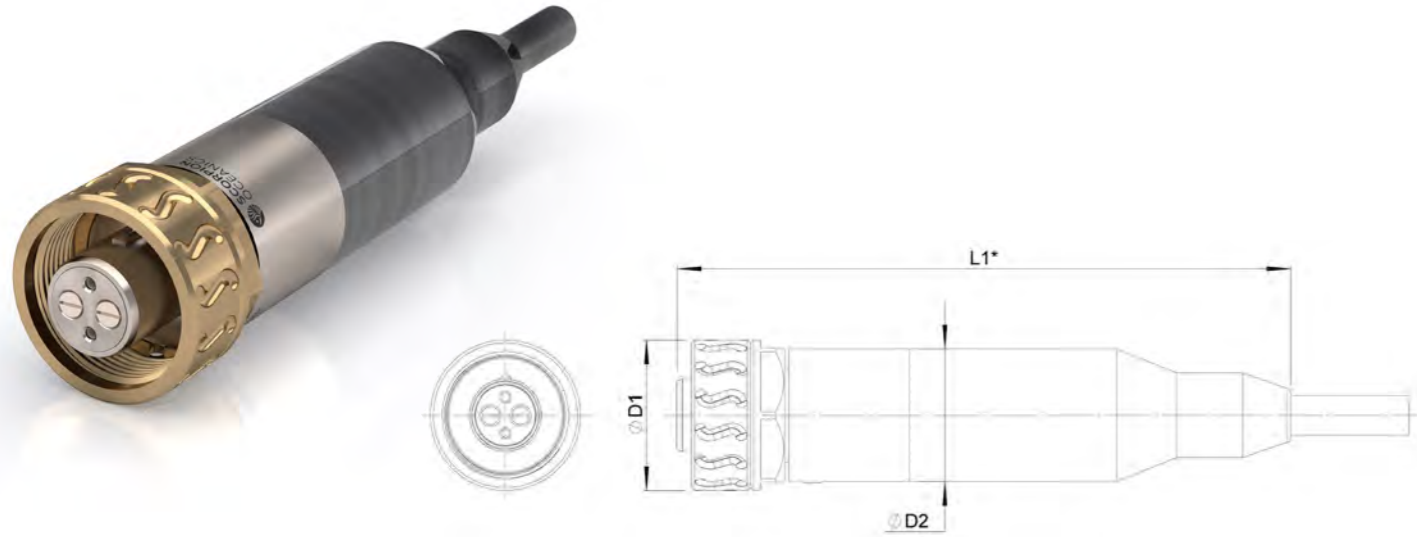


PART NUMBER EXAMPLES	
Description:	310 Series: Size 2, PBOF Plug to PBOF Plug c/w 2Mtr SM (9/125) Fibres.
Part Number:	310-2-CCP-CCP-PBOF-00-2000
Description:	310 Series: Size 3, Flanged Receptacle c/w 3Mtr MM (62.5/125) Fibres with SC Connectors.
Part Number:	310-3-FCR-23-3000

Scorpion Oceanics holds a wide range of Electrical & Optical Cables sheathed in PU, PE & Neoprene together with oil resistant hose and equipment wire all ideally suited to the "310 Series" for the manufacture of stock and bespoke assemblies.

Connector Dimensions - Moulded

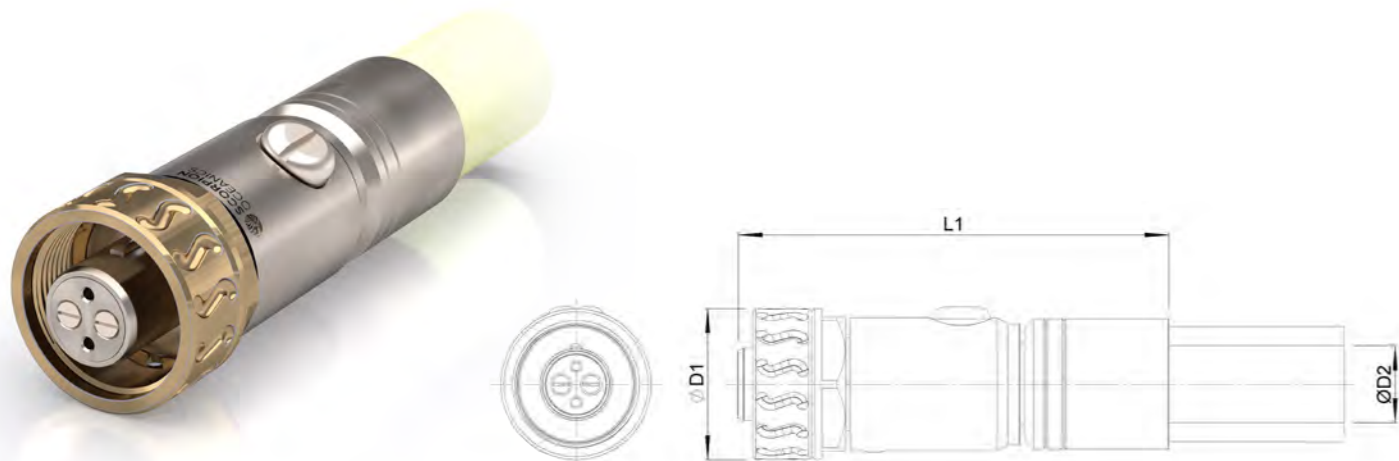
CCP (Cable Connector Plug)



Shell Size	Part Number	L1mm (In)	ØD1mm (In)	ØD2mm (In)
1	310-1-CCP-00-####	81.00 / (3.19)	16.00 / (0.63)	14.90 / (0.59)
2	310-2-CCP-00-####	102.00 / (4.02)	25.00 / (0.98)	22.00 / (0.87)
3	310-3-CCP-00-####	105.00 / (4.13)	27.00 / (1.06)	23.90 / (0.94)
4	310-4-CCP-00-####	107.00 / (4.21)	29.00 / (1.14)	25.90 / (1.02)

* Moulded length is given as a typical guide and can be amended to suit different applications and cable types.

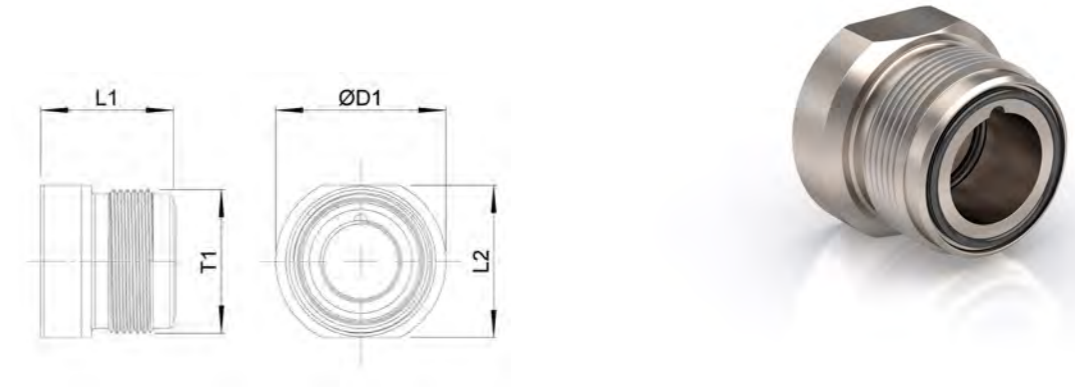
CCP-PBOF (Oil Filled Connector Plug)



Shell Size	Part Number	L1mm (In)	ØD1mm (In)	ØD2mm (In)
1	310-1-CCP-PBOF-00-####	61.00 / (2.40)	16.00 / (0.63)	9.53 / (0.38)
2	310-2-CCP-PBOF-00-####	71.75 / (2.83)	25.00 / (0.98)	12.70 / (0.50)
3	310-3-CCP-PBOF-00-####	77.20 / (3.04)	27.00 / (1.06)	12.70 / (0.50)
4	310-4-CCP-PBOF-00-####	79.00 / (3.11)	29.00 / (1.14)	12.70 / (0.50)

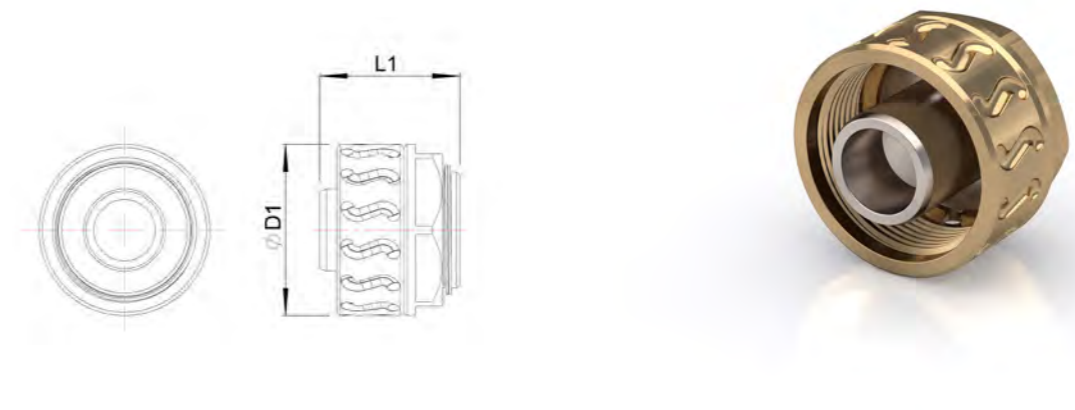
Connector Dimensions - Sealing Caps

PSC (Plug Sealing Cap)



Shell Size	Part Number	L1mm (In)	L2mm (In) A/F	ØD1mm (In)	T1
1	310-1-PSC	19.50 / (0.77)	15.00 / (0.59)	16.00 / (0.63)	M12x1.0
2	310-2-PSC	19.50 / (0.77)	22.25 / (0.88)	25.00 / (0.98)	M21x1.0
3	310-3-PSC	19.50 / (0.77)	24.00 / (0.95)	27.00 / (1.06)	M23x1.0
4	310-4-PSC	19.50 / (0.77)	26.00 / (1.02)	29.00 / (1.14)	M25x1.0

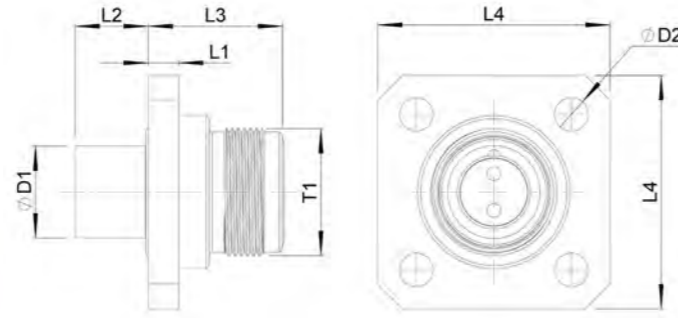
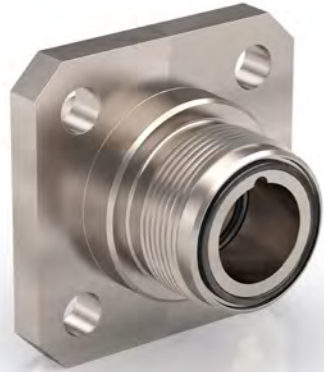
RSC (Receptacle Sealing Cap)



Shell Size	Part Number	L1mm (In)	ØD1mm (In)
1	310-1-RSC	20.50 / (0.81)	16.00 / (0.63)
2	310-2-RSC	20.50 / (0.81)	25.00 / (0.98)
3	310-3-RSC	20.50 / (0.81)	27.00 / (1.06)
4	310-4-RSC	20.50 / (0.81)	29.00 / (1.14)

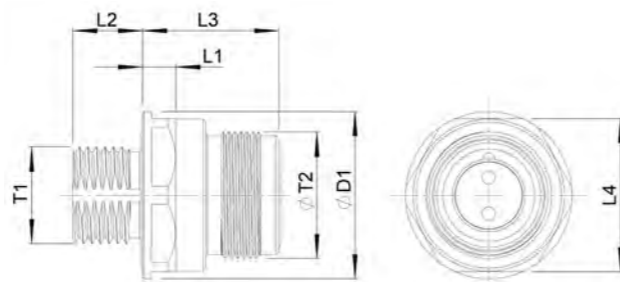
Connector Dimensions – Mounted Receptacles

FCR (Flanged Connector Receptacle)



Shell Size	Part Number	L1mm (In)	L2mm (In)	L3mm (In)	L4mm (In) A/F	ØD1mm (In)	ØD2mm (In)	T1
1	310-1-FCR-00-####	4.00 / (0.16)	14.50 / (0.57)	21.00 / (0.83)	22.00 / (0.87)	9.60 / (0.38)	3.20 / (0.13)	M12x1.0
2	310-2-FCR-00-####	5.00 / (0.20)	12.00 / (0.47)	22.00 / (0.87)	38.10 / (1.50)	15.00 / (0.59)	5.50 / (0.22)	M21x1.0
3	310-3-FCR-00-####	5.50 / (0.22)	11.50 / (0.45)	22.50 / (0.89)	44.45 / (1.75)	19.00 / (0.75)	7.15 / (0.28)	M23x1.0
4	310-4-FCR-00-####	5.50 / (0.22)	11.50 / (0.45)	22.50 / (0.89)	44.45 / (1.75)	19.00 / (0.75)	7.15 / (0.28)	M25x1.0

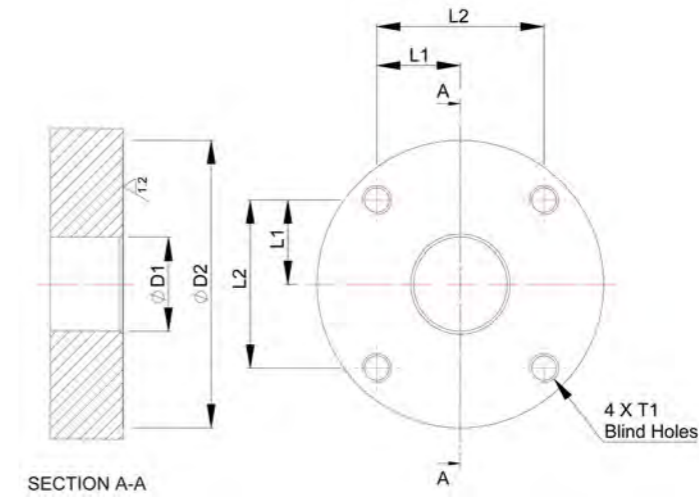
BCR (Bulkhead Connector Receptacle)



Shell Size	Part Number	L1mm (In)	L2mm (In)	L3mm (In)	L4mm (In) A/F	ØD1mm (In)	T1	T2
1	310-1-BCR-00-####	5.50 / (0.22)	13.00 / (0.51)	22.50 / (0.89)	17.00 / (0.67)	18.50 / (0.73)	7/16 - 20 UNF-2A	M12x1.0
2	310-2-BCR-00-####	5.50 / (0.22)	11.50 / (0.45)	22.50 / (0.89)	25.15 / (0.99)	27.50 / (1.08)	5/8 - 18 UNF-2A	M21x1.0
3	310-3-BCR-00-####	5.50 / (0.22)	11.50 / (0.45)	22.50 / (0.89)	28.00 / (1.10)	29.50 / (1.16)	3/4 - 16 UNF-2A	M23x1.0
4	310-4-BCR-00-####	5.50 / (0.22)	11.50 / (0.45)	22.50 / (0.89)	30.00 / (1.18)	31.50 / (1.24)	3/4 - 16 UNF-2A	M25x1.0

Mounted Receptacle Interface Machining Detail

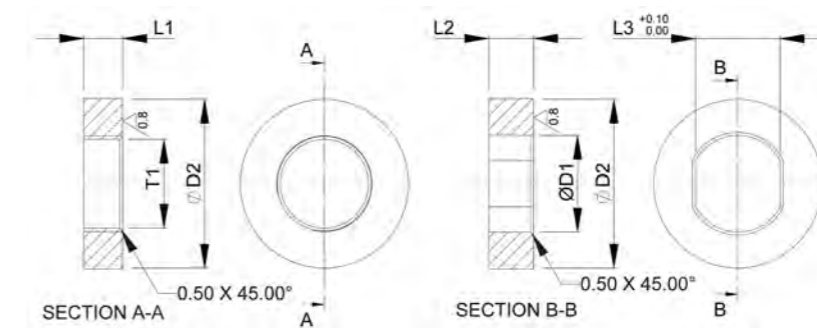
FCR (Flanged Connector Receptacle)



Shell Size	L1mm (In)	L2mm (In)	ØD1mm (In)	ØD2mm (In)	T1
1	8.00 / (0.32)	16.00 / (0.63)	10.00 / (0.39)	30.50 / (1.20)	M3x0.5
2	12.70 / (0.50)	25.40 / (1.00)	15.50 / (0.61)	49.00 / (1.93)	M5x0.8
3	15.90 / (0.63)	31.80 / (1.25)	19.50 / (0.77)	58.50 / (2.30)	M6x1.0
4	15.90 / (0.63)	31.80 / (1.25)	19.50 / (0.77)	58.50 / (2.30)	M6x1.0

General tolerance of ±0.10 applies to all dimensions unless otherwise stated.

BCR (Bulkhead Connector Receptacle)



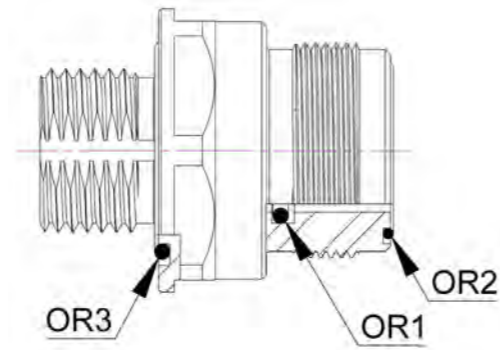
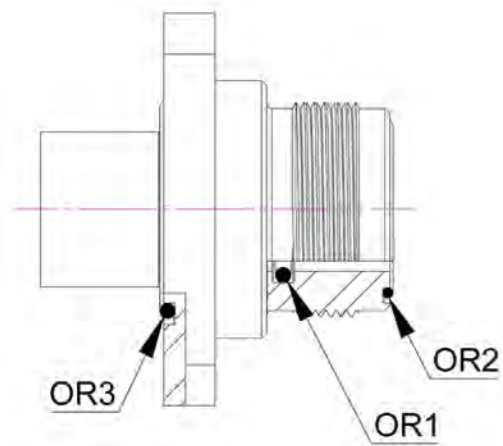
Shell Size	L1mm (In) Min.	L2mm (In) Max.	L3mm (In) ^{+0.1} / _{-0.0} A/F	ØD1mm (In)	ØD2mm (In)	T1	Installation Torque Nm (inch-lb)
1	9.50 / (0.37)	9.00 / (0.35)	9.70 / (0.38)	11.30 / (0.45)	19.00 / (0.75)	7/16 - 20 UNF-2B	9.60 / (85)*
2	11.50 / (0.45)	7.5 / (0.30)	14.20 / (0.56)	16.10 / (0.63)	28.00 / (1.10)	5/8 - 18 UNF-2B	14.12 / (125)*
3	11.50 / (0.45)	7.5 / (0.30)	17.20 / (0.68)	19.25 / (0.76)	30.00 / (1.18)	3/4 - 16 UNF-2B	18.64 / (165)*
4	11.50 / (0.45)	7.5 / (0.30)	17.20 / (0.68)	19.25 / (0.76)	32.00 / (1.26)	3/4 - 16 UNF-2B	18.64 / (165)*

General tolerance of ±0.10 applies to all dimensions unless otherwise stated.
* Value based on installation into suitable parent material and dry metal threads.

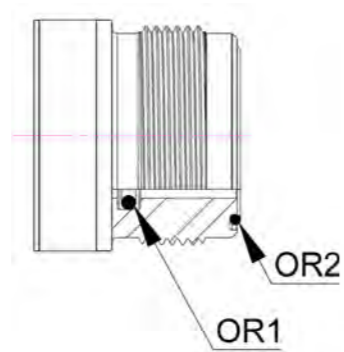
Connector O-Rings

FCR (Flanged Connector Receptacle)

BCR (Bulkhead Connector Receptacle)



RSC (Receptacle Sealing Cap)

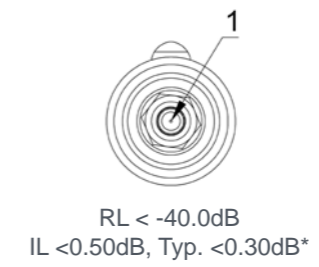


Shell Size	OR1	OR2	OR3
1	Ø6.00ID x Ø1.50CS	N/A	Ø13.00ID x Ø1.00CS
2	Ø12.00ID x Ø1.50CS	Ø15.00ID x Ø1.00CS	Ø18.00ID x Ø1.50CS
3	Ø14.00ID x Ø1.50CS	Ø16.50ID x Ø1.00CS	Ø22.00ID x Ø1.50CS
4	Ø16.00ID x Ø1.50CS	Ø18.50ID x Ø1.00CS	Ø21.89ID x Ø2.62CS

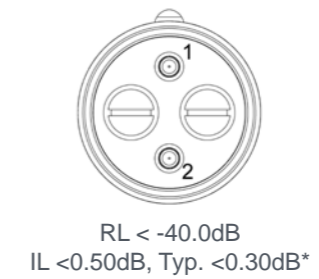
All measurements in mm.
All O-rings are Nitrile 70 as standard.

Contact Configurations & Specifications

Shell Size 1



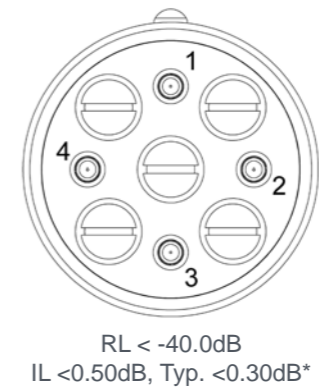
Shell Size 2



Shell Size 3



Shell Size 4



Notes:
Contact configuration shown is of front face of CCP.
Figures above are for both Single Mode and Multi Mode.
Figure above are typical for all OM / OS cable types.
* Typical values against master connector.

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