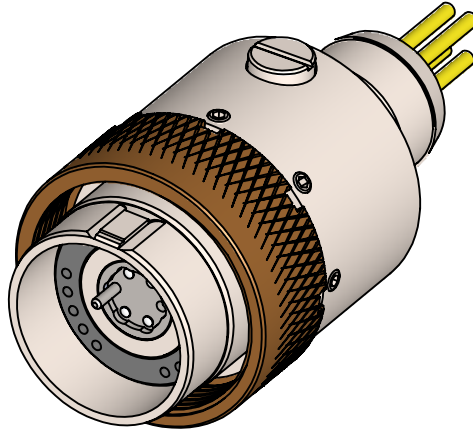


'D' Opto-Electrical Connector System Subsea / Underwater / Marine



Introduction:

CRE's range of metal shell Fibre Optic Fully Sealed Hermaphroditic Connectors focus on delivering high reliability in tough environments. The design offers a high integrity sealing arrangement, metal keyways, multiple options on size, along with our ability to design specific solutions for your application. They are designed for heavy duty use in the most rigorous underwater applications on the planet. Made of 316 stainless steel or custom built with any material specified, they come as standard with high open face pressure resistance. These robust and versatile connectors are rated to 6,000m and are designed for use with moulded or oil filled assemblies and tailored for the heaviest power, signal and electro-mechanical applications.

The most common applications:

- ROV
- Dive Bell Connectors
- Underwater Thruster

Key Features:

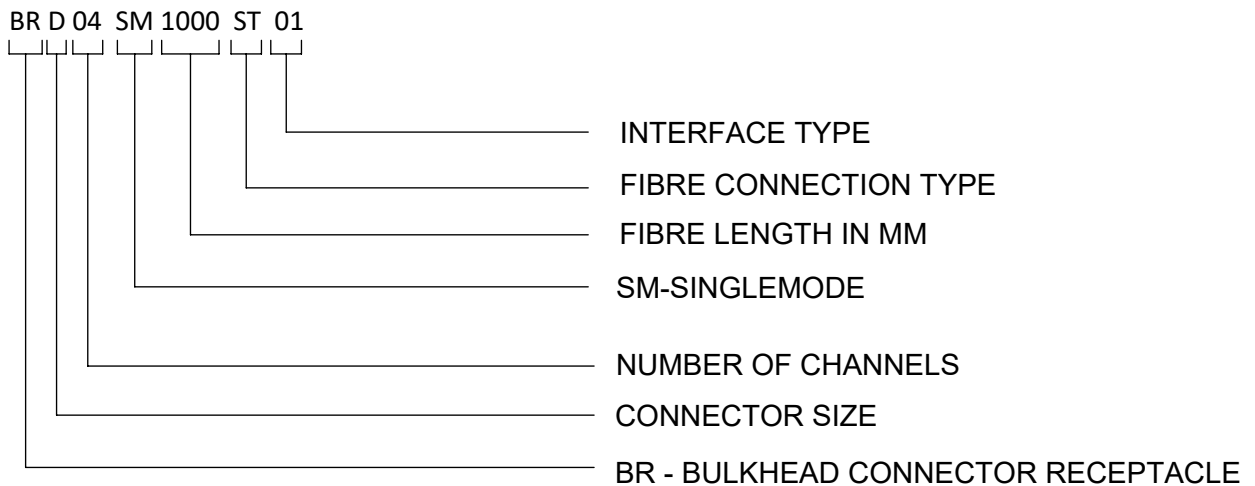
- Multi size shell body
- 15 contacts
- 4 to 8 Channel Configurations
- Multimode 50/125 and 62.5/125 versions
- Singlemode 9/125 Fibre
- Available as Patchcords and Pigtailed Bulkheads
- Right angled Plug End also available
- Pressure up to 9,300 Psi (Mated)
- Open face pressure up to 6000 Psi
- Oil filled available as standard (OF)
- Up to a working voltage of 1000 VDC dependant on pin/contact density and wire specification used.
- Up to 26amps - single pin see page 8



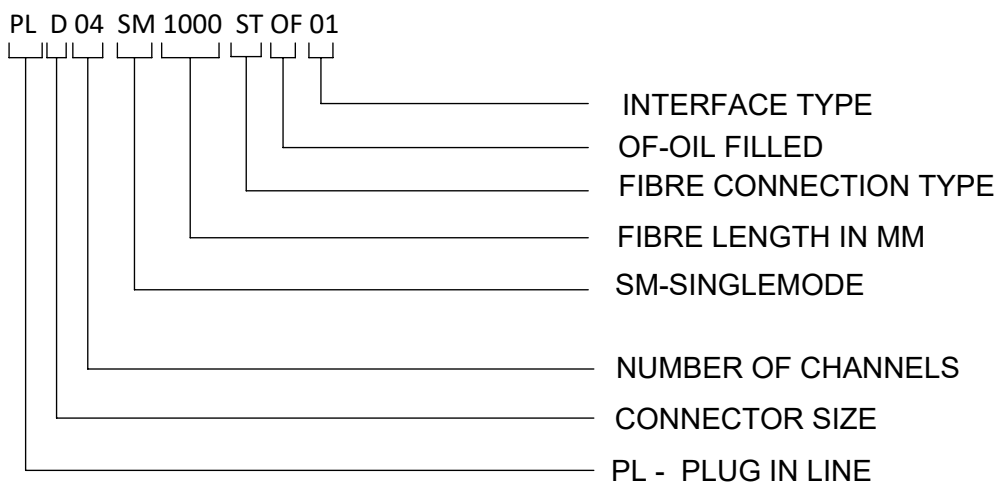
Options:

- Field Installable
- Bespoke design/configuration to suit customer requirements at no extra cost
- Available in alternative materials: Aluminium, Titanium etc.
- **Testing:**
 - Pressure testing up to 9,300 Psi
 - Durability testing with 100 mate and re-mate cycles
 - Open face pressure testing up to 6000 Psi

Part Numbering System - Bulkhead Example



Part Numbering System - Connector Example





Standard Mechanical Specification:

COMPONENT	MATERIAL
Shell Body	Stainless Steel 316L
Retaining Nut	Stainless Steel/Aluminium Bronze
'O' Rings	Nitrile NI70
Contact Insert	Peek
Electrical Contacts	Leaded Nickel Copper C97 or K41
Plating Details	1um Acid Gold over 2.5um Nickel Copper Flash
Backing Washer	Black Acetal

Contact CRE for special order materials.

Electrical and Enviromental:

- Singlemode Insertion Loss: 9/125 Fibre @ 1,310nm/1,1550nm : Up To 2.0dB
- Multimode Insertion Loss: 50/125 & 62.5/125 @850nm/1300nm : Up To 1.0dB
- Operating Temperature: -40C to + 85C
- Storage Temperature: -55C to + 85C
- Durability: 2000 Matings minimum
- Depth Rating: 4000 Metres

Fibre Characteristics:

Singlemode - 9/125 (SM)

- Attenuation: 0.38dB/km @ 1,310nm
- Attenuation: 0.25dB/km @ 1,550nm
- Dispertion: 3.5ps/nm.km @ 1310nm
- Dispertion: 18.0ps/nm.km @ 1,550nm
- NA: 1.470

Multimode - 50/125 (MM)

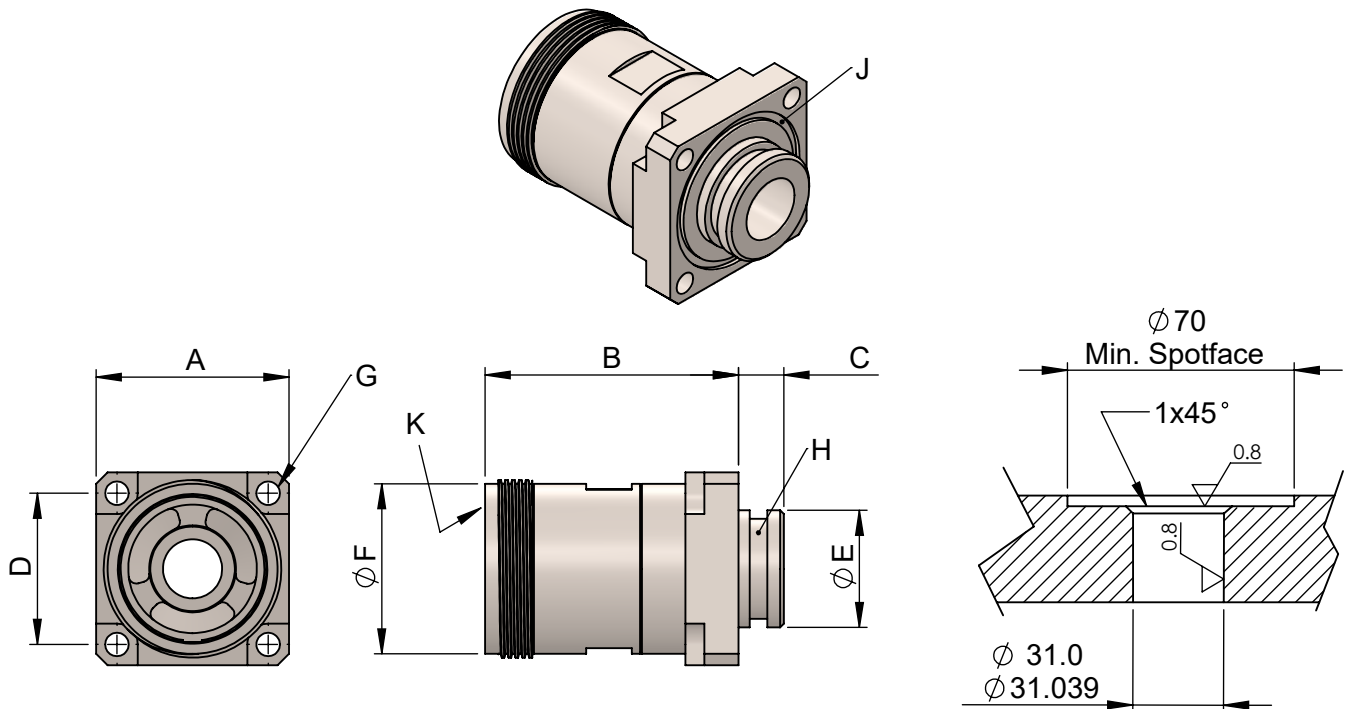
- Attenuation: 2.8dB/km @ 850nm
- Attenuation: 0.8dB/km @ 1,300nm
- Bandwidth: 500MHz/km @ 850nm
- Bandwidth: 500MHz/km @1,300nm
- NA: 0.20
-

Multimode - 62.5/125 (MM)

- Attenuation: 3.0dB/km @ 850nm
- Attenuation: 1.0dB/km @ 1,300nm
- Bandwidth: 200MHz/km @ 850nm
- Bandwidth: 500MHz/km @1,300nm
- NA: 0.27
-

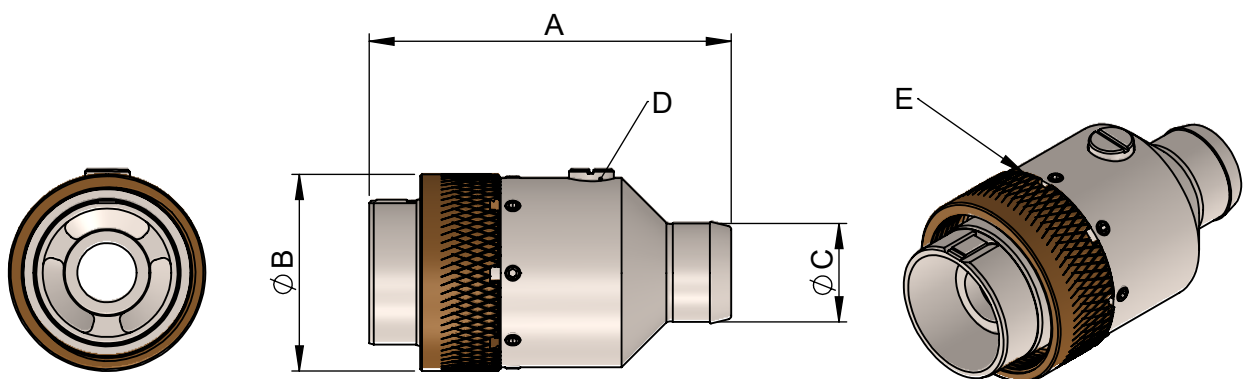
Reference Dimensions 'D' Opto-Electrical Connector

Flanged Bulkhead Connector Receptacle-Composite (FR)



A	B	C	D	E	F	G	H-O'Ring	J-O'Ring	K-O'Rings	TYPE
51	67	12	40	31	45	6.2	BS120	BS029	BS029 + CB0269	01

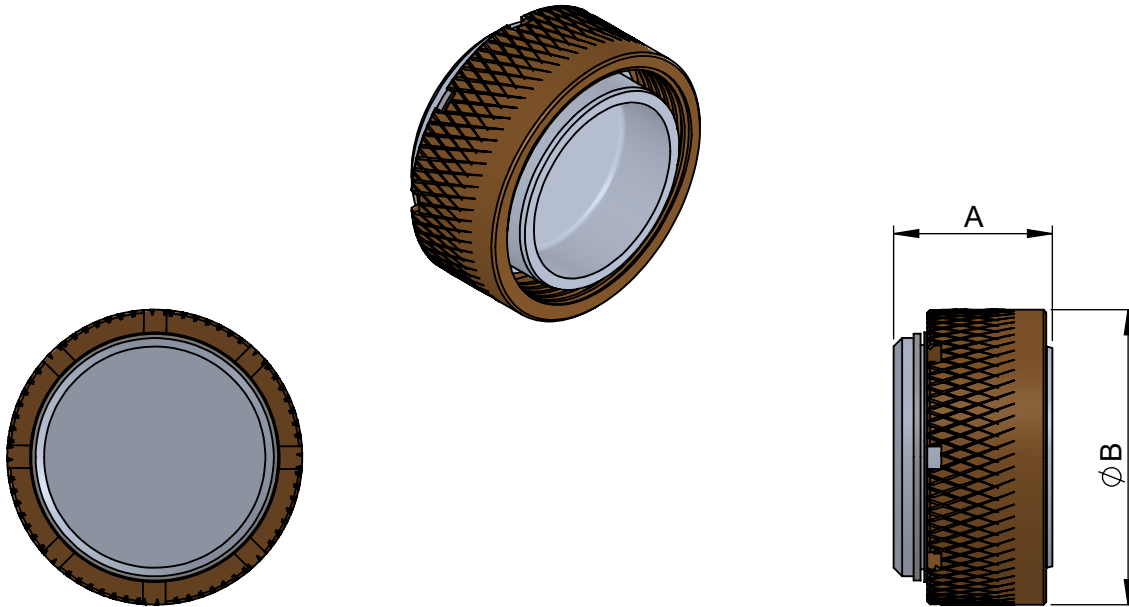
Backshell Cable Connector Receptacle-Composite (PL)



A	B	C	D-O'Ring	E-O'Ring	TYPE
95.75	52	26	6 x 1.5	BS030	01

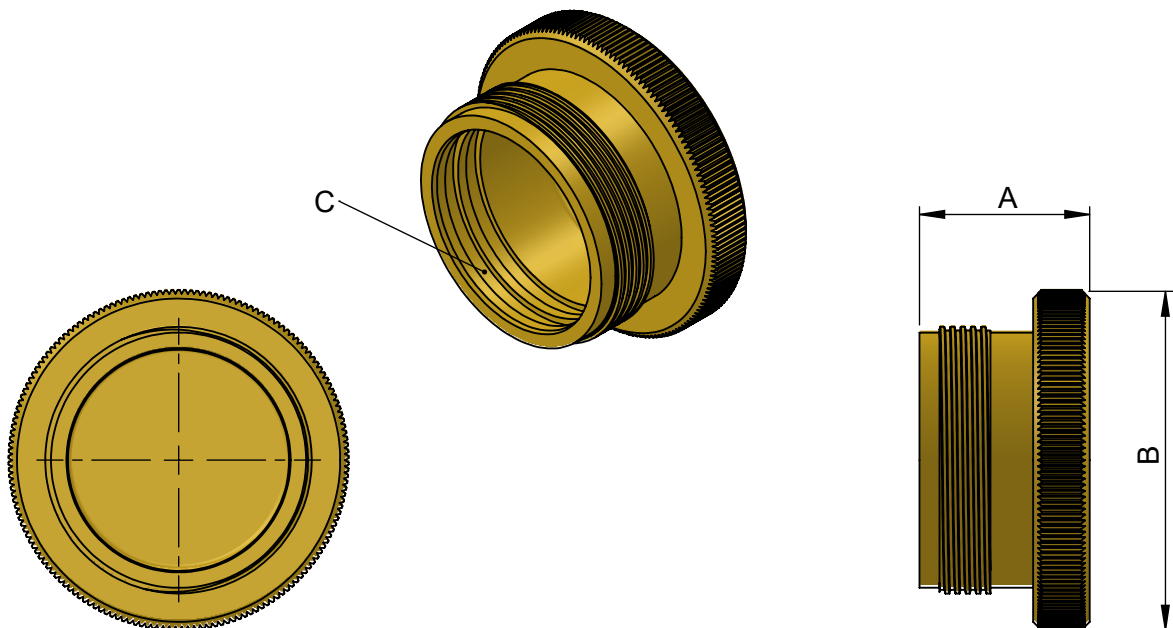
Reference Dimensions 'D' Opto-Electrical Connector

Bulkhead Blanking Plug - PLDBC



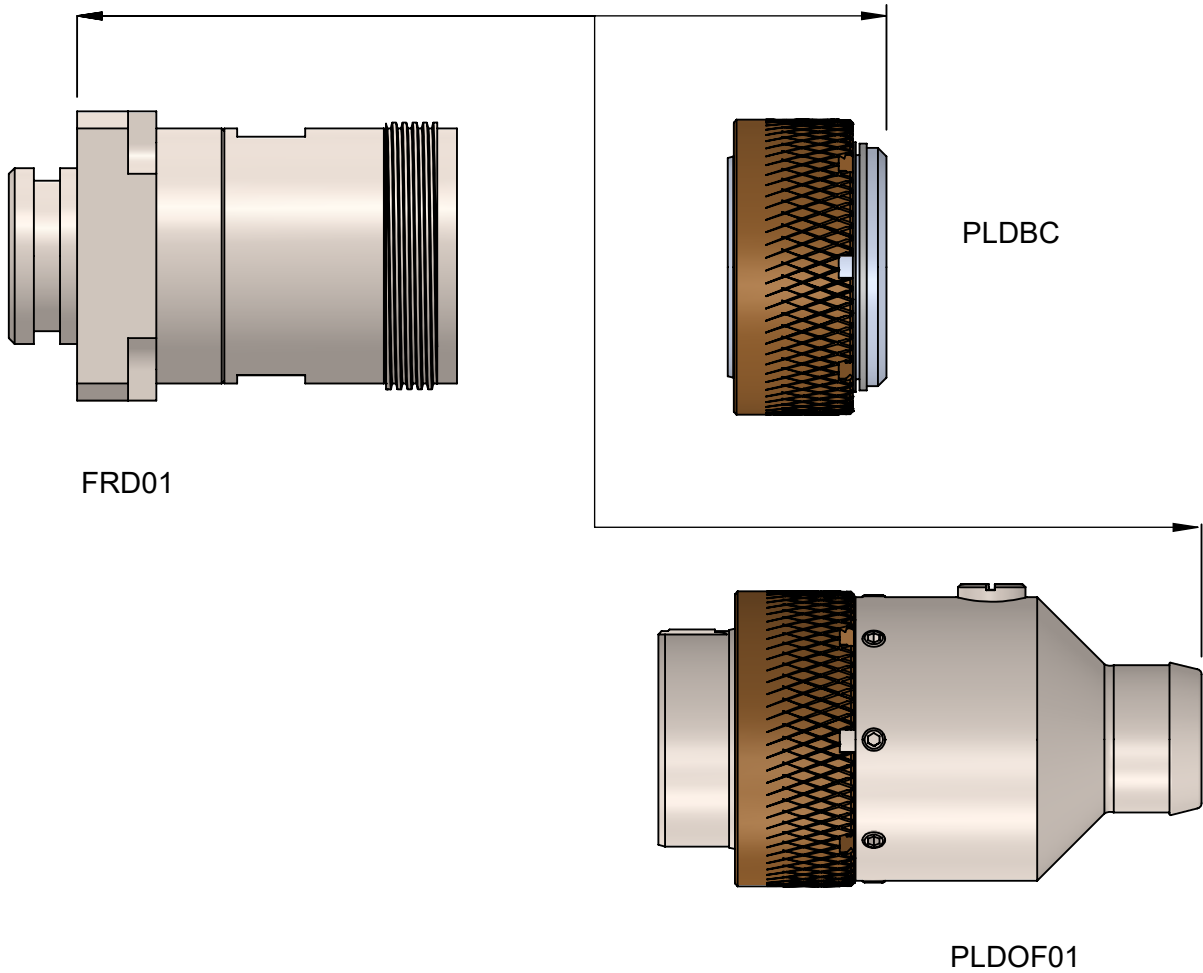
A	B
28	52

Cable Connector Blanking Plug - BRDBC



A	B	C-'O'Ring
30	60	BS029

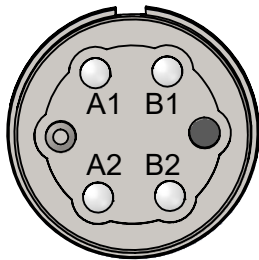
Assembled Dimensions 'D' Opto-Electrical Connector



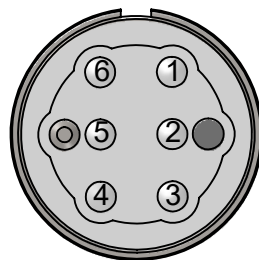
	PLDBC	PLDOF01
FRD01	79	137

Note: Step files for design purposes available from engineering @CRE-marine.com

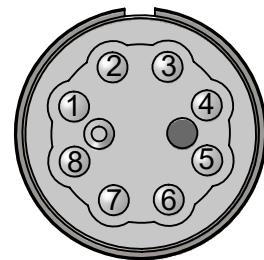
Face View



4 CHANNEL



6 CHANNEL

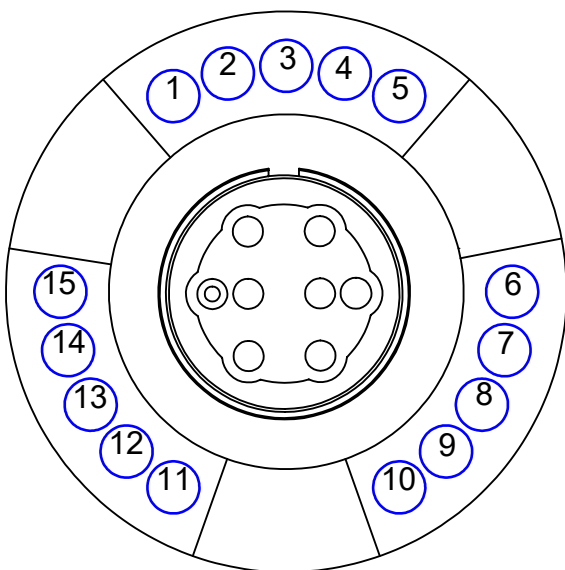


8 CHANNEL

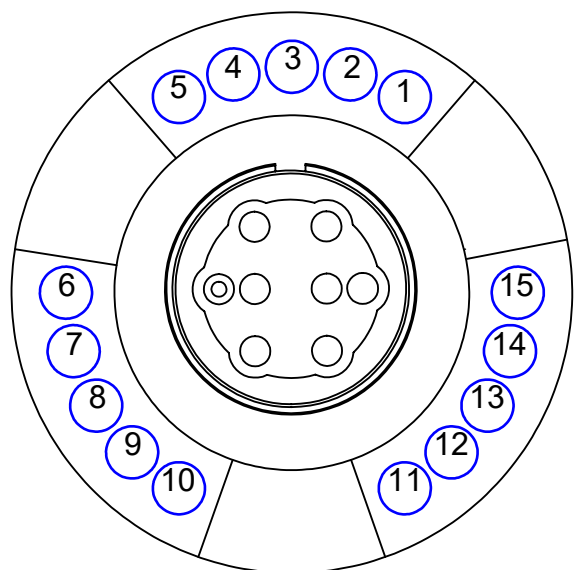
FIBRE TYPE-----SM / MM

TAILS WITH CONNECTION TO SUIT-ST/SC ETC.

Pin Face View



Socket Face View



∅ 1.56 Pin

For current carrying capacity and wire recommendations see page 8

Current Capacity and Wire Recommendations

- The current rating may be impacted by cable selection and the ambient temperature.
- The amount of heat generated should not exceed the maximum temperature rating of the insulation material.
- Heat dissipation is lessened as the number of individually insulated conductors bundled together is increased.
- A derating factor must be applied for bundled conductors. See chart below.
- Current ratings shown below are for single conductors in free air at 30deg C ambient temp. Where applicable, alternative pin & current ratings are available. See chart below.
- Up to a working voltage of 1000 VDC dependant on pin/contact density and wire specification used.
- For different pin configurations contact CRE

Pin Diameter	1.56
Wire Size	16 awg
Current	26 amps
Current ratings based on PTFE type C cable	

Derating Factors for Bundled Conductors	
Bundle #	Derating Factor (x Amps)
2 - 5	0.8
6 - 15	0.7
16 - 30	0.5

Notes:

- Larger solder bucket options are not available on all contact configurations, please contact CRE Engineering to confirm your requirement is possible.
- Final wiring detail depends on through bore of Interface chosen, please contact CRE Engineering to confirm your requirement is possible.