QPC

ENGINEERED FIBER OPTIC SOLUTIONS

JOWO Systemtechnik AG

Official distributor:

JOWO - Systemtechnik AG
Lange Wand 12
27753 Delmenhorst

WEB: www.jowo.ag

QPlex Expanded Beam Connectors

QPC is ISO 9001:2015 and AS9100D Certified

Military Aerospace Shipboard Industrial Mining Transportation Oil & Gas Broadcast Manufacturing Marine Energy Medical

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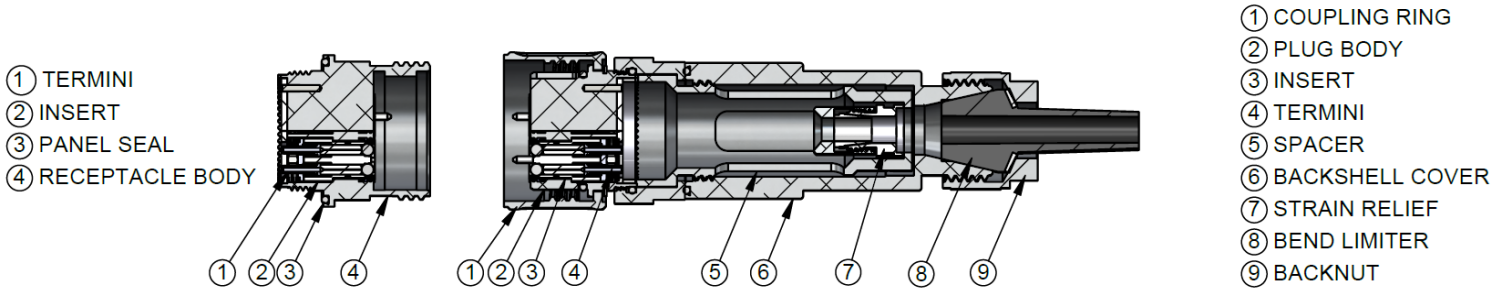
QPlex Expanded Beam Connectors

QPC's QPlex Expanded Beam Fiber Optic Connectors are modular 2-24 Channel connectors featuring all the benefits of QPC's existing expanded beam connectors in a larger and more rugged shell. To achieve higher channel counts, QPlex Connectors hold multiple QMicro optical inserts, the larger housings can hold 3, 4, or 6 of these inserts.

Expanded Beam fiber optic connectors are designed to operate in harsh environments, they use non-physical contact fiber optic termini that are fully sealed behind an anti-reflective coated ball lens. This lens expands the beam to many times its original size aiding optical alignment and minimizing the effects of dust, debris, vibration, and other environmental conditions. Because there is no wear on the optical surfaces / end faces of the termini during use, the QPlex connector has excellent durability, in excess of 3,000 mating cycles, providing a long service life interconnect solution.

QPlex Connectors are used in Military, Aerospace, Defense, Mining, Oil & Gas, Factory Automation, Heavy Equipment, Marine, Broadcast, Entertainment, and Pro-Audio for Communications, Audio / Video, and Sensing Applications.

- 2Ch - 24Ch Threaded Modular Expanded Beam Connector System
- Plugs: Three, Four, and Six Insert Positions with Straight Backshells
- Receptacles: Three, Four, and Six Insert Positions, Jam Nut and Flange Mount, with or without Backshells
- Standard Cable OD up to 11.5mm for QPlex3 / QPlex4
- Standard Cable OD up to 17.5mm for QPlex6
- Sealed to IP68



Specifications:

Insertion Loss: SM (9/125µm)	0.75-2.0dB Max.
MM (50/125µm)	0.50-1.5dB Max.
MM (62.5/125µm)	0.50-1.5dB Max.
Return Loss: SM (9/125µm)	-34dB
Operating Temperature:	-46°C to +85°C
Vibration:	10 to 500Hz / 10g
Mating Durability:	3000 Cycles
Impact:	8 Impacts @ 8FT (2.5MT), EIA/TIA-455-2
Shock:	50g for 11ms, EIA/TIA-455-14, Condition A
IP Rating:	IP68 - Dust Tight; No ingress of dust; complete protection against contact; Water Immersion Beyond 1 Meter Testing Conditions & Duration – Plug with Dust Cover and Mated Plug / Receptacle, 3 Meters for 24 Hours
Material & Plating Specification:	Black Hard Anodize: 6061-T6 Aluminum; Anodize per MIL-A-8625 TYPE III CLASS 2, .0022/.0018 Thick (50% Penetration), Black Stainless Steel: 303 Stainless Steel; PASSIVATE PER QQ-P-35

Specifications Notes:

* All Dimensions in this document are shown in Inches (Millimeters)

Part Number Builder - QPlex Plugs and Receptacles:

Sample Part Number: QPLEX3-PMN-12SM-S075	QPLEX3	-	PM	N	-	12	SM	-	S075

1 Series
QPLEX3 (3x Inserts, up to 12CH)
QPLEX4 (4x Inserts, up to 16CH)
QPLEX6 (6x Inserts, up to 24CH)

2 Product Type
PM - PLUG, MALE DUST COVER
RFF - RECEPTACLE FLANGE MOUNT, FEMALE DUST COVER
RJF - RECEPTACLE JAM NUT, FEMALE DUST COVER

3 Material & Finish Code
N - ALUMINUM, HARD ANODIZE, BLACK
S - STAINLESS STEEL, PASSIVATED
(CONSULT QPC FOR OTHER OPTIONS)

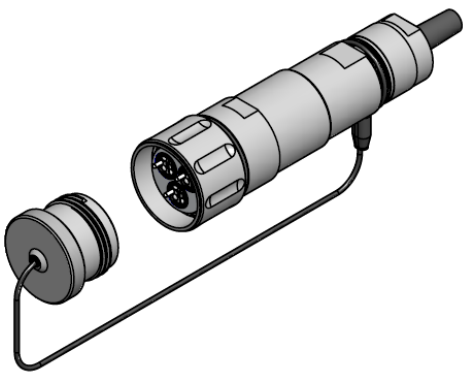
4 Channel Count
02 - 2 CHANNEL, 2x 125.5µm TERMINI
04 - 4 CHANNEL, 4x 125.5µm TERMINI
06 - 6 CHANNEL, 6x 125.5µm TERMINI
08 - 8 CHANNEL, 8x 125.5µm TERMINI
10 - 10 CHANNEL, 10x 125.5µm TERMINI
12 - 12 CHANNEL, 12x 125.5µm TERMINI
14 - 14 CHANNEL, 14x 125.5µm TERMINI
16 - 16 CHANNEL, 16x 125.5µm TERMINI
18 - 18 CHANNEL, 18x 125.5µm TERMINI
20 - 20 CHANNEL, 20x 125.5µm TERMINI
22 - 22 CHANNEL, 22x 125.5µm TERMINI
24 - 24 CHANNEL, 24x 125.5µm TERMINI

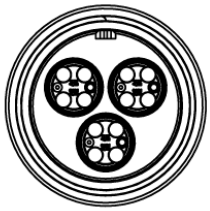
5 Fiber Type
SM - SINGLEMODE, 1310/1550nm
MM - MULTIMODE, 850/1300nm
(CONSULT QPC FOR HYBRID SM / MM OPTIONS)

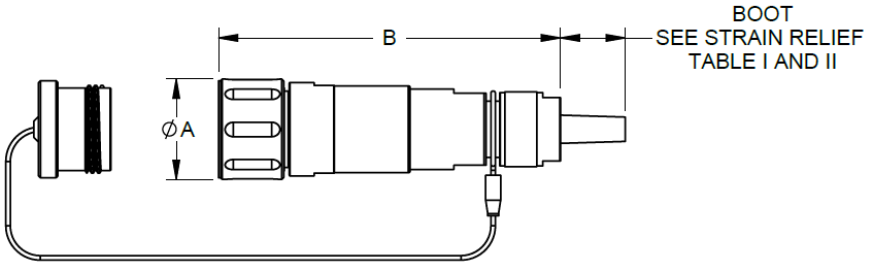
6 Strain Relief Identifier
See Table I, II, & III

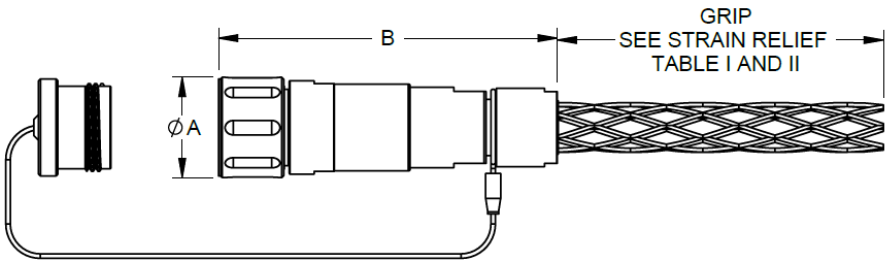
QPlex, Plug, Male Dust Cover (QPlex3 Shown):

QPLEX-PMX-XXXX-XXXX





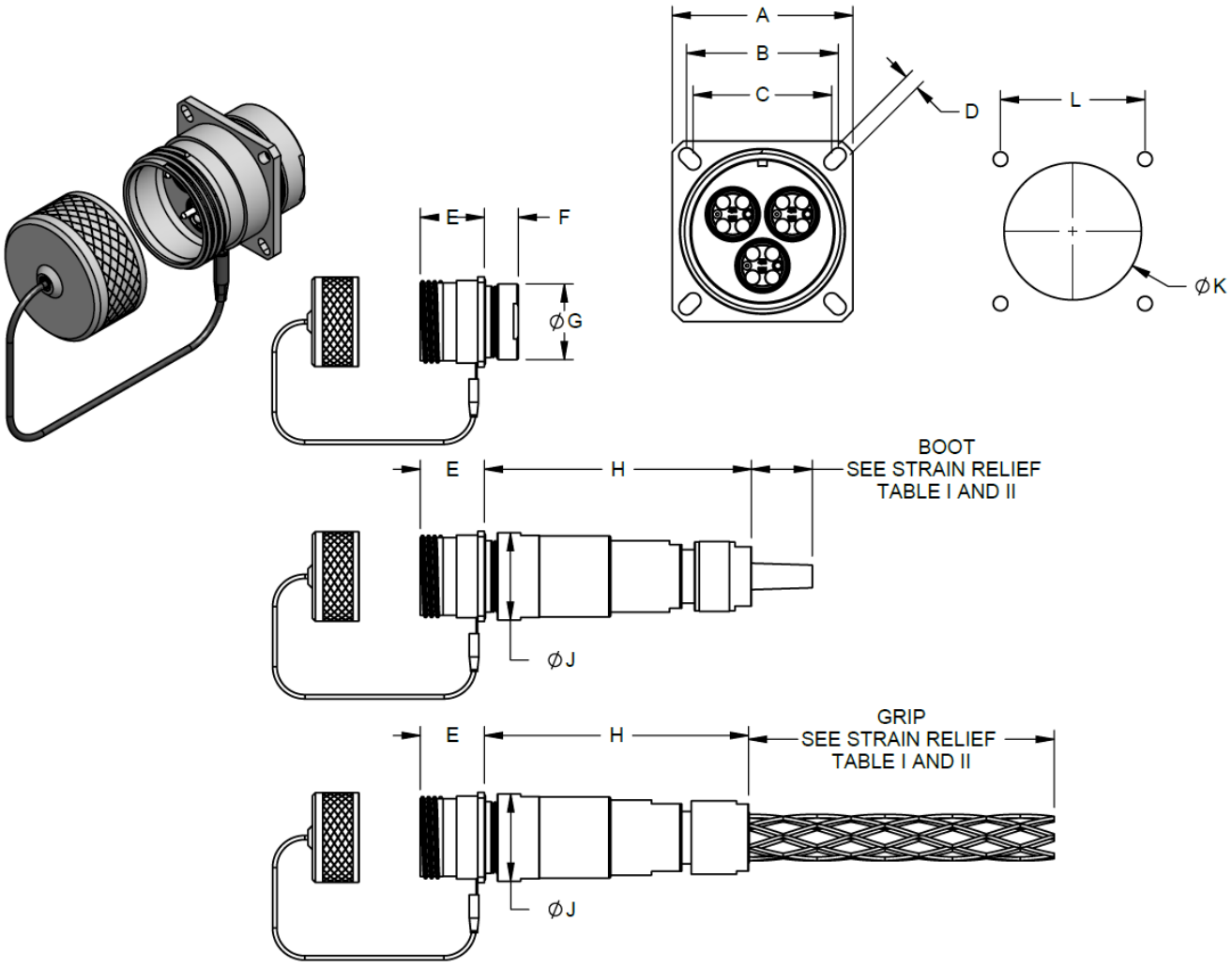




NOMINAL DIMENSIONS in (mm)		
SERIES	A	B
QPLEX3	1.260 (32.0)	5.32 (135.2)
QPLEX4	1.500 (38.1)	5.32 (135.2)
QPLEX6	2.240 (56.9)	5.32 (135.2)

QPlex, Receptacle, Flange Mount, Female Dust Cover (QPlex3 Shown):

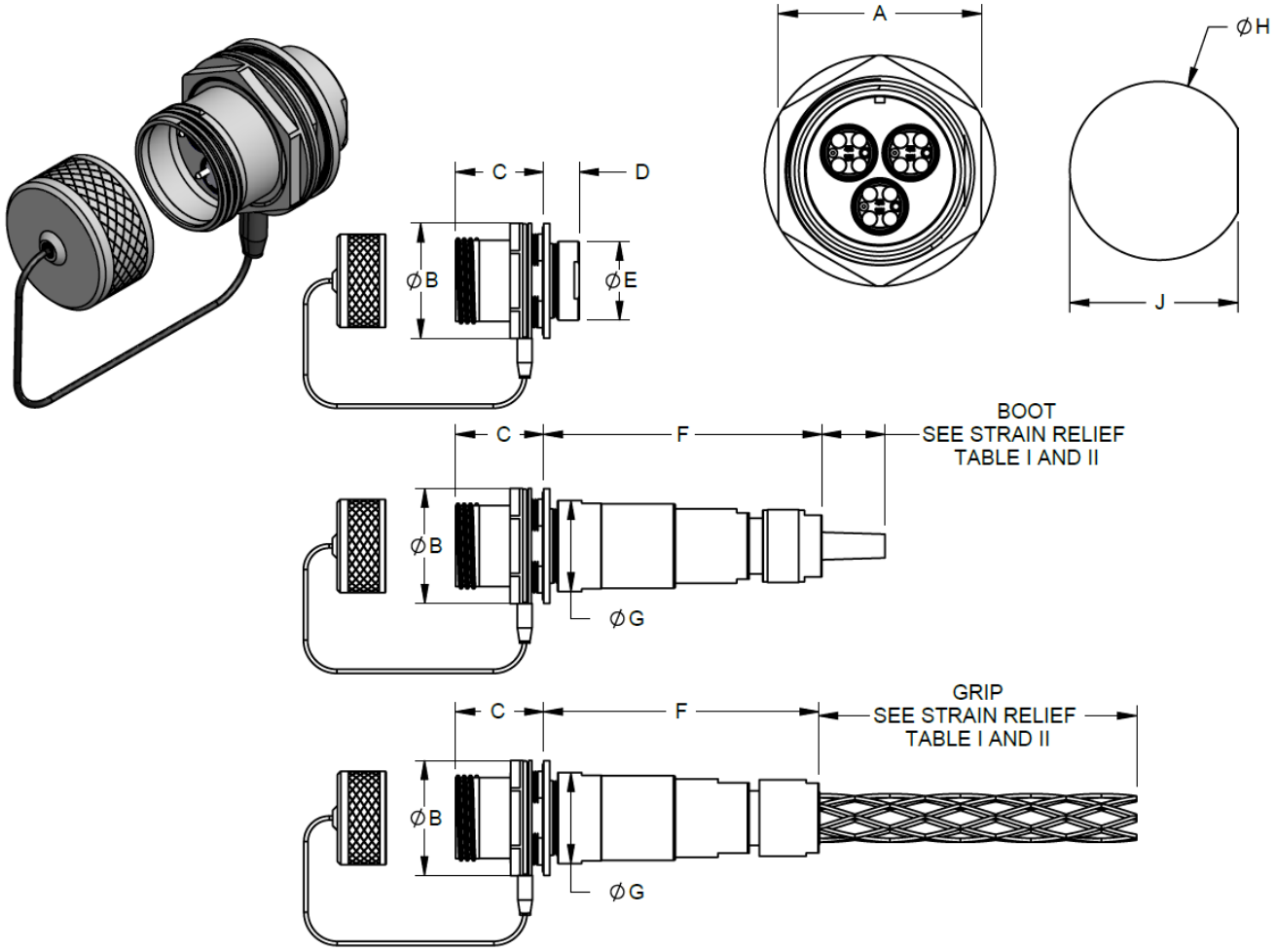
QPLEX-RFFX-XXXX-XXXX



NOMINAL DIMENSIONS $\frac{\text{in}}{(\text{mm})}$											
SERIES	A	B	C	D	E	F	G	H	J	K	L
QPLEX3	1.500 (38.1)	1.260 (32.0)	1.150 (29.2)	0.128 (3.3)	1.060 (26.9)	0.560 (14.2)	1.260 (32.0)	4.430 (112.5)	1.450 (36.8)	1.270 (32.3)	1.205 (30.6)
QPLEX4	1.950 (49.5)	1.625 (41.3)	1.500 (38.1)	0.128 (3.3)	1.060 (26.9)	0.670 (17.0)	1.500 (38.1)	4.540 (115.3)	1.732 (44.0)	1.510 (38.4)	1.563 (39.7)
QPLEX6	2.470 (62.7)	1.967 (50.0)	1.847 (46.9)	0.141 (3.6)	1.050 (26.7)	0.850 (21.6)	2.060 (52.3)	4.340 (110.2)	2.060 (52.3)	2.090 (53.1)	1.905 (48.4)

QPlex, Receptacle, Jam Nut, Female Dust Cover (QPlex3 Shown):

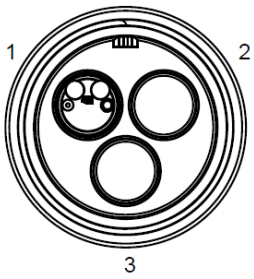
QPLEX-RJFX-XXXX-XXXX



NOMINAL DIMENSIONS in (mm)									
SERIES	A	B	C	D	E	F	G	H	J
QPLEX3	1.620 (41.1)	1.840 (46.7)	1.060 (26.9)	0.560 (14.2)	1.260 (32.0)	4.430 (112.5)	1.450 (36.8)	1.260 (32.0)	1.150 (29.2)
QPLEX4	1.740 (44.2)	1.900 (48.3)	1.060 (26.9)	0.670 (17.0)	1.500 (38.1)	4.540 (115.3)	1.732 (44.0)	1.625 (41.3)	1.500 (38.1)
QPLEX6	1.870 (47.5)	3.125 (79.4)	1.050 (26.7)	0.850 (21.6)	2.060 (52.3)	4.340 (110.2)	2.060 (52.3)	2.260 (57.4)	2.060 (52.3)

*** For Jam Nut QPlex Receptacles: Maximum Panel Thickness: 0.25" (6.35mm)**

QPlex3 Insert Layout Options (Plugs Shown, Receptacles are Mirrored):



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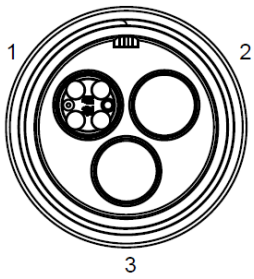

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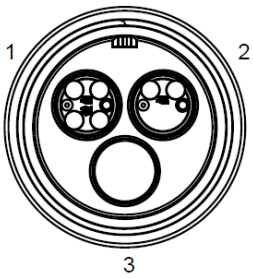

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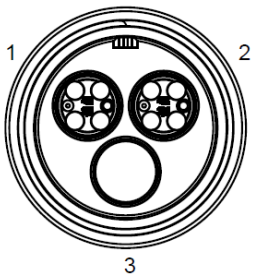

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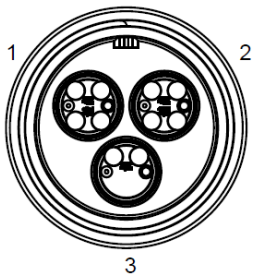

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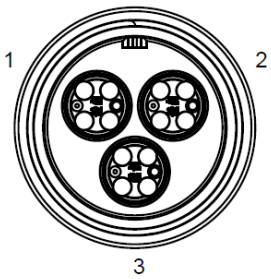
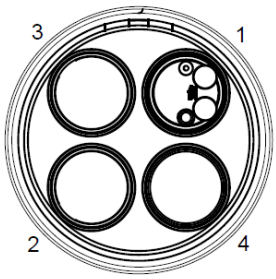


12 CHANNEL

QPlex4 Insert Layout Options (Plugs Shown, Receptacles are Mirrored):



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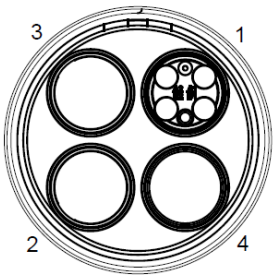

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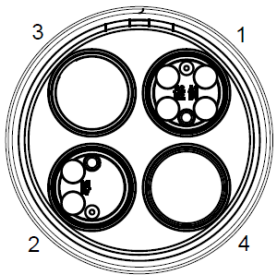

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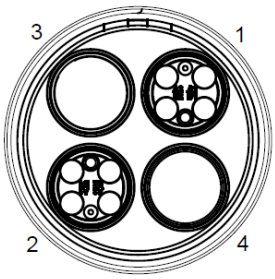

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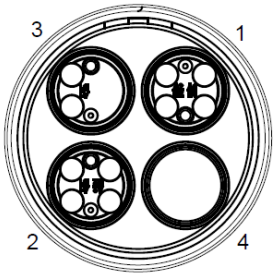

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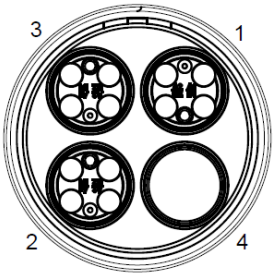

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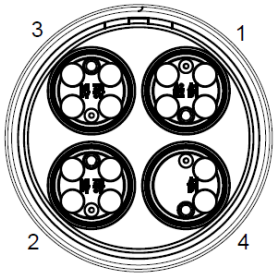

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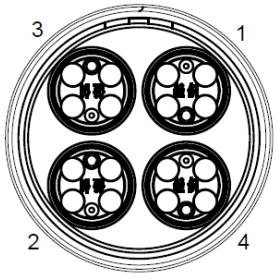
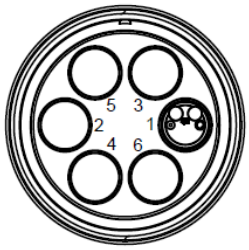


16 CHANNEL

QPlex6 Insert Layout Options (Plugs Shown, Receptacles are Mirrored):



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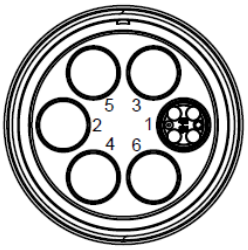

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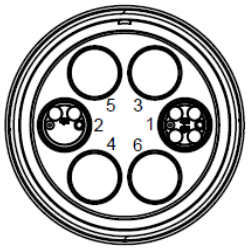

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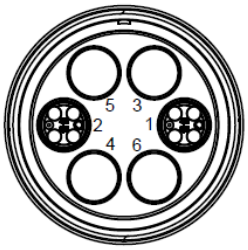

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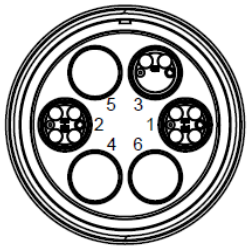

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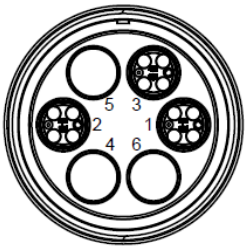

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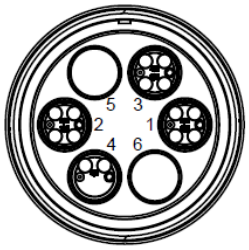

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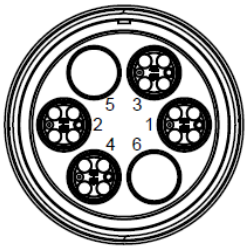

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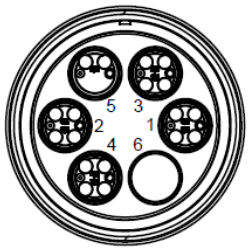

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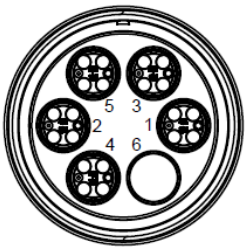

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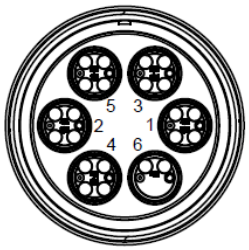

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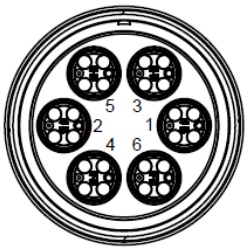


24 CHANNEL

Table I – QPlex3 / QPlex 4 Strain Relief Options (Plugs / Receptacles with Backshell):

Cable OD in (mm)	Boot / Bend Limiter		Wire Mesh Grip	
	Strain Relief Identifier	Length in (mm)	Strain Relief Identifier	Length in (mm)
0.142 - 0.177 (3.6 - 4.5)	S045	1.45 (36.8)	-	-
0.181 - 0.217 (4.6 - 5.5)	S055	1.45 (36.8)	-	-
0.220 - 0.256 (5.6 - 6.5)	S065	1.45 (36.8)	-	-
0.260 - 0.295 (6.6 - 7.5)	S075	0.97 (24.6)	G075	6.00 (152.4)
0.299 - 0.335 (7.6 - 8.5)	S085	0.38 (9.7)	G085	6.00 (152.4)
0.339 - 0.374 (8.6 - 9.5)	S095	0.38 (9.7)	G095	6.00 (152.4)
0.378 - 0.413 (9.6 - 10.5)	-	-	G105	6.75 (171.4)
0.417 - 0.453 (10.6 - 11.5)	-	-	G115	6.75 (171.4)

Table II – QPlex6 Strain Relief Options (Plugs / Receptacles with Backshell):

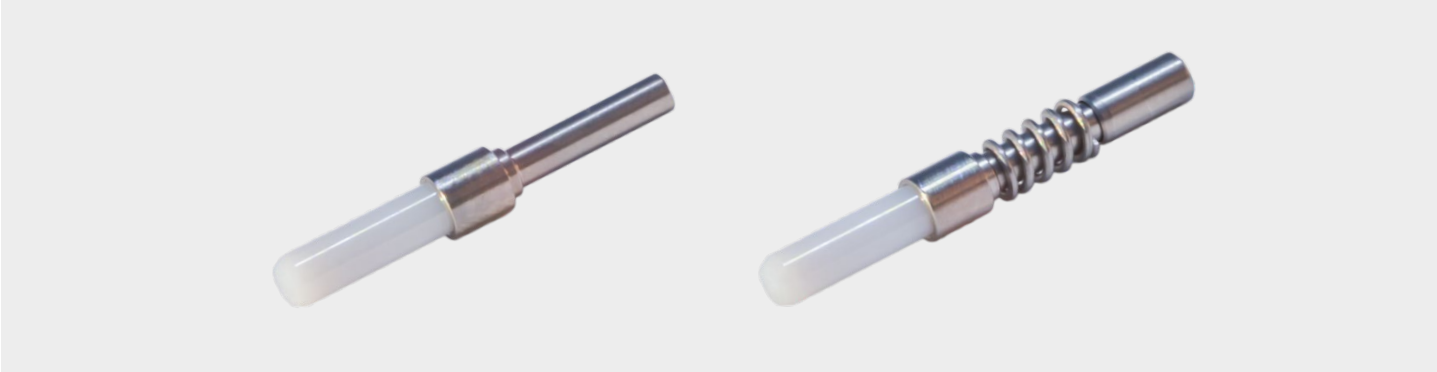
Cable OD in (mm)	Boot / Bend Limiter		Wire Mesh Grip	
	Strain Relief Identifier	Length in (mm)	Strain Relief Identifier	Length in (mm)
0.142 - 0.177 (3.6 - 4.5)	S045	1.45 (36.8)	-	-
0.181 - 0.217 (4.6 - 5.5)	S055	1.45 (36.8)	-	-
0.220 - 0.256 (5.6 - 6.5)	S065	1.45 (36.8)	-	-
0.260 - 0.295 (6.6 - 7.5)	S075	1.45 (36.8)	G075	6.00 (152.4)
0.299 - 0.335 (7.6 - 8.5)	S085	1.45 (36.8)	G085	6.00 (152.4)
0.339 - 0.374 (8.6 - 9.5)	S095	1.45 (36.8)	G095	6.00 (152.4)
0.378 - 0.413 (9.6 - 10.5)	S105	1.45 (36.8)	G105	6.75 (171.4)
0.417 - 0.453 (10.6 - 11.5)	S115	1.45 (36.8)	G115	6.75 (171.4)
0.457 - 0.492 (11.6 - 12.5)	S125	1.45 (36.8)	G125	6.75 (171.4)
0.496 - 0.531 (12.6 - 13.5)	-	-	G135	7.24 (184.1)
0.535 - 0.571 (13.6 - 14.5)	-	-	G145	7.24 (184.1)
0.575 - 0.610 (14.6 - 15.5)	-	-	G155	7.24 (184.1)
0.614 - 0.689 (15.6 - 17.5)	-	-	G175	9.00 (228.6)

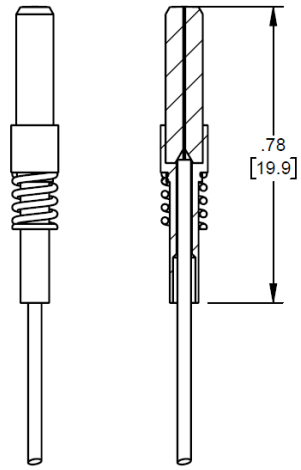
Table III – QPlex3 / QPlex4 / QPlex6 Receptacles without Backshells:

Cable OD	Strain Relief Identifier
900µm	S00
2mm	SE2

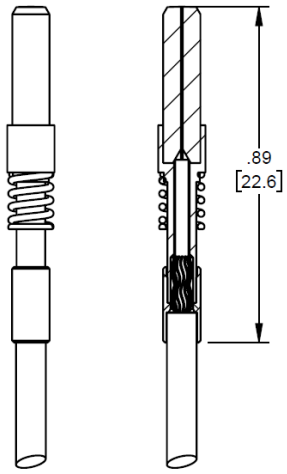
*QPlex Connectors without backshells, using 2mm OD simplex cables will require Epoxy Cup Termini (SE2), see page 11 for details.

QPlex Termini:





QM-TRM
(No Crimp, 900µm Fiber)



QM-TRM-E2
(Epoxy Cup, 2mm Cable)

PART NUMBER	DESCRIPTION
QM-TRM	Terminus Assembly; QPlex; 2.5mm Ferrule OD; 125.5µm Singlemode / Multimode
QM-TRM-E2	Terminus Assembly; QPlex; 2.5mm Ferrule OD; 125.5µm Singlemode / Multimode; Epoxy Cup for 2mm Cable OD

* Due to the channel spacing on the QPlex (QMicro) Inserts, traditional cable crimps are not an option.
To retain a 2mm jacketed cable or subunit, please use the E2 Style Epoxy Cup Terminus.

QPlex Inserts:

PART NUMBER	DESCRIPTION
QMICRO-INS-02SM	QMicro Insert; 2 Channel; Singlemode (1310/1550nm); Includes Termini Retainer Plate and Screw
QMICRO-INS-02MM	QMicro Insert; 2 Channel; Multimode (850/1300nm); Includes Termini Retainer Plate and Screw
QMICRO-INS-04SM	QMicro Insert; 4 Channel; Singlemode (1310/1550nm); Includes Termini Retainer Plate and Screw
QMICRO-INS-04MM	QMicro Insert; 4 Channel; Multimode (850/1300nm); Includes Termini Retainer Plate and Screw
QMICRO-INS-00XX	QMicro Dummy Insert

*QPlex uses the QMicro Insert

QPlex Replacement Dust Covers:

PART NUMBER	DESCRIPTION
QPLEX3-DCPN	Dust Cover; QPlex3 Plug; Aluminum; Hard Anodize; Black
QPLEX3-DCPS	Dust Cover; QPlex3 Plug; Stainless Steel; Passivated
QPLEX3-DCRN	Dust Cover; QPlex3 Receptacle; Aluminum; Hard Anodize; Black
QPLEX3-DCRS	Dust Cover; QPlex3 Receptacle; Stainless Steel; Passivated
QPLEX4-DCPN	Dust Cover; QPlex4 Plug; Aluminum; Hard Anodize; Black
QPLEX4-DCPS	Dust Cover; QPlex4 Plug; Stainless Steel; Passivated
QPLEX4-DCRN	Dust Cover; QPlex4 Receptacle; Aluminum; Hard Anodize; Black
QPLEX4-DCRS	Dust Cover; QPlex4 Receptacle; Stainless Steel; Passivated
QPLEX6-DCPN	Dust Cover; QPlex6 Plug; Aluminum; Hard Anodize; Black
QPLEX6-DCPS	Dust Cover; QPlex6 Plug; Stainless Steel; Passivated
QPLEX6-DCRN	Dust Cover; QPlex6 Receptacle; Aluminum; Hard Anodize; Black
QPLEX6-DCRS	Dust Cover; QPlex6 Receptacle; Stainless Steel; Passivated

QPlex3 Tools:

PART NUMBER	DESCRIPTION
TK-051	QPlex3 Tool Kit (Includes all items below)
PT-389	QPlex3 Torque Fixture

QPlex4 Tools:

PART NUMBER	DESCRIPTION
TK-052	QPlex4 Tool Kit (Includes all items below)
PT-390	QPlex4 Torque Fixture

QPlex6 Tools:

PART NUMBER	DESCRIPTION
TK-056	QPlex6 Tool Kit (Includes all items below)
PT-554	QPlex6 Torque Fixture

QPC

ENGINEERED FIBER OPTIC SOLUTIONS

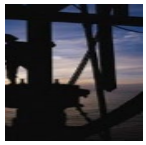
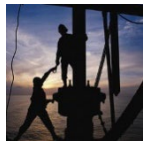
JOWO

Systemtechnik AG

Official distributor:

JOWO - Systemtechnik AG
Lange Wand 12
27753 Delmenhorst
Deutschland

WEB: www.jowo.ag
Mail: info@jowo.ag

Telefon: +49 4221 916495 - 0
Telefax: +49 4221 916495 - 59

Military Aerospace Shipboard Industrial Mining Transportation Oil & Gas Broadcast Manufacturing Marine Energy Medical