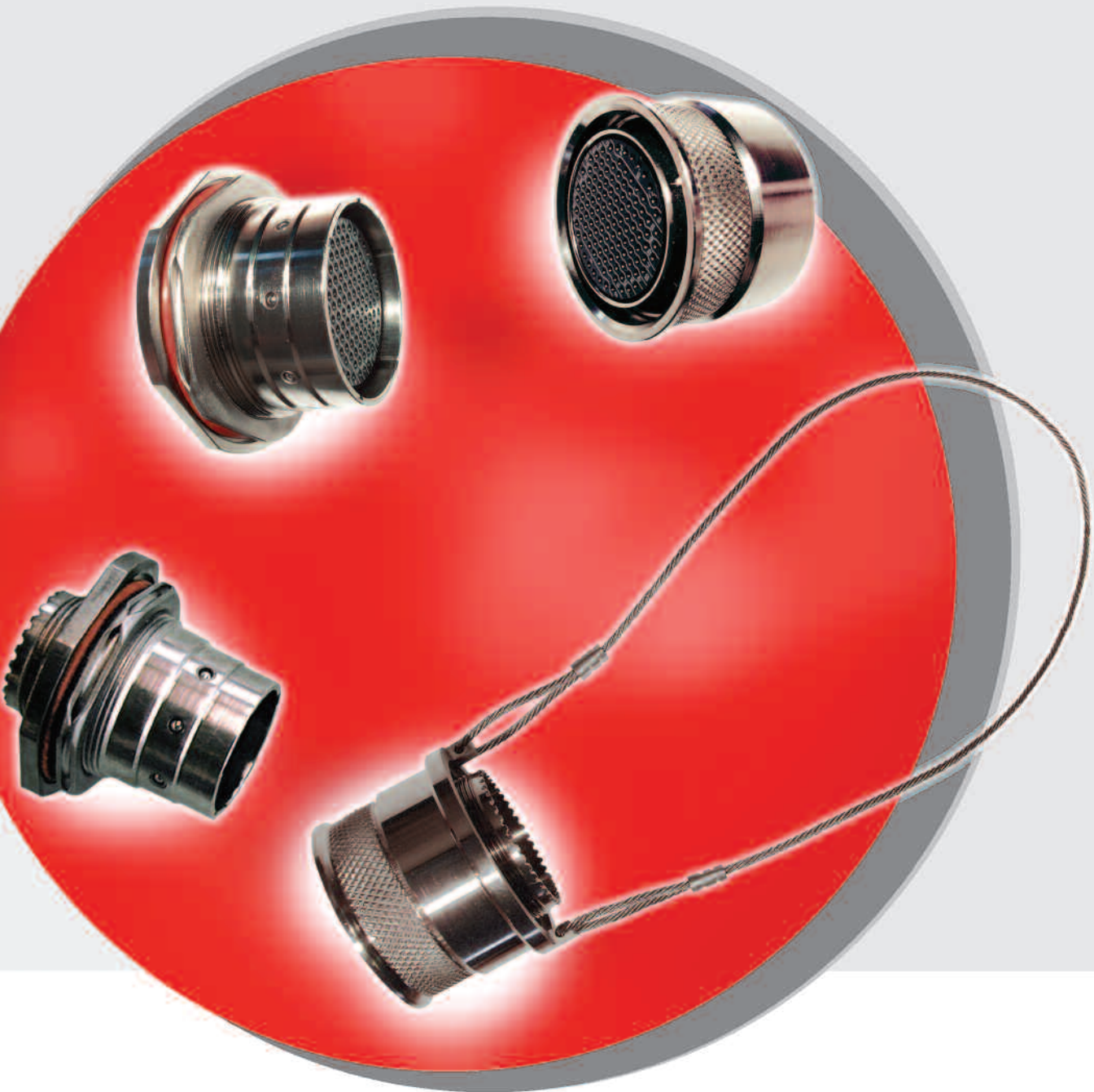
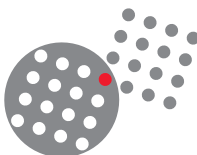




8D8/8D9 series

38999 Push-pull / Quick release



SOURIAU
Connection Technology

8D8 / 8D9 series

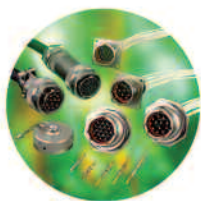


SOURIAU

Connectors and interconnect systems for harsh environments

The company designs, manufactures and markets high performance interconnect solutions for severe environments from industrial broadband and universal ranges to complex system with integrated functions:

filtering, high speed data transmission, hermetic seal, separation mechanism, remote handling, underwater mating, ...



Industrial



Aeronautical



Equipment & system

The dedicated end markets for SOURIAU's products are aeronautical, defense-space and industrial.



Railway
Geophysics
Manufacturing environment
Instrumentation
Automation & process



Civil & military aircraft
Helicopter
Weapon delivery system
Avionics



Military marine
Communications
Satellites
Launcher & missile

SOURIAU was established in 1917 and has been created by successive acquisitions of the industrial, aeronautical, defense and space activities of SOURIAU, JUPITER and BURNDY.

The Group's products are engineered and manufactured in the USA and Dominican Republic, Europe and Morocco, Japan and India, and sold by a worldwide sales and marketing organization, and in addition to SOURIAU's offices, a large network of licensed distributors and agents.

SOURIAU complies with most of national and international Quality Assurance Standards, production unit with ISO 14001.

**Quality Certificate
Management System**

ISO 9001

**Environment Certificate
Management System**

ISO 14001

**Quality Certificate
Management System**

Aeronautic Industry : EN 9100

8D8 / 8D9 series



Contents

- Range presentation 4
- Features and benefits 5
- Applications 9
- Description 10
- Ordering information 11
- Mounting information 14
- Contact layouts 15
- Contact layouts matrix..... 17
- Mating/Unmating forces 18
- Key polarisation 19

8D8 / 8D9 series



Range Presentation

Push pull cable plug = 8D8 series



- Launcher
- Armoured vehicle
- Military A/C
- Radio communications

Quick disconnect cable plug = 8D9 series



- Launcher
- Artillery
- UAV
- Military A/C and helicopter

Receptacle = same for 8D8 and 8D9 series



All possible configuration:

- Cable receptacle
- PCB receptacle
- Jam Nut & Square Flange

8D8 / 8D9 series



Features & benefits

Housing with all SOURIAU's 38999 layouts

Signal, power, coax, triax, fiber optics, quadrx Ethernet

example:



18-08
8 ELIO Optical ways



25-20
MIL-STD-1760 interface



Highest contact density available in 38999 Push-Pull design

Thanks to a special Low Insertion Force size 22 contact design (MIL 38999 Qualified), 8D8/8D9 series can provide:

- 79 contacts in shell size 21
- 100 contacts in shell size 23
- 128 contacts in shell size 25

with an unmating force between 130 and 180 Newtons



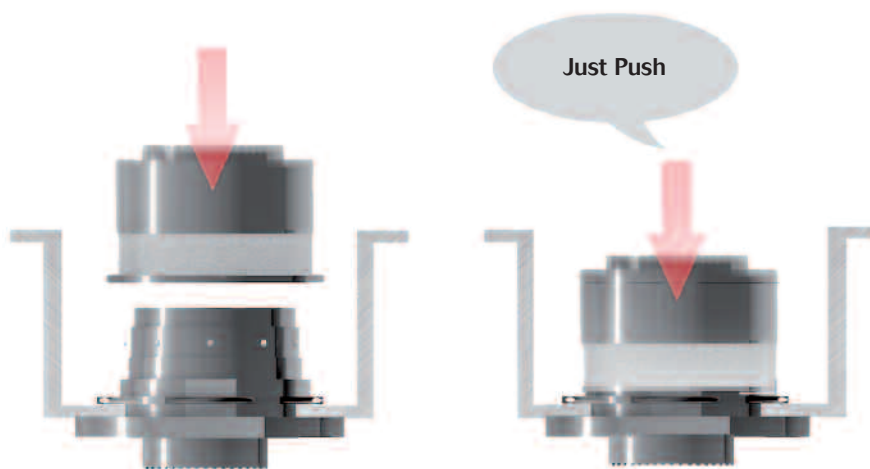
8D8 / 8D9 series



Features & benefits

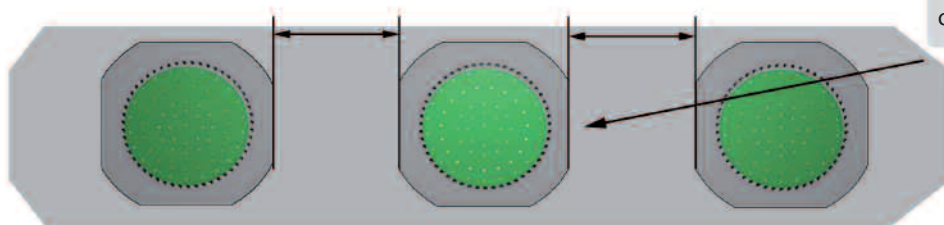
Connection in restricted space

Where screw or bayonet coupling are not possible

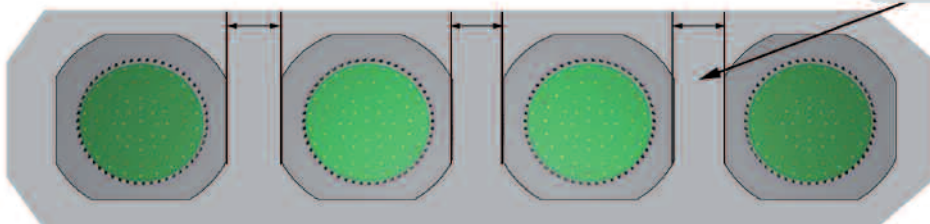


Shortest distance between connectors

With screw or bayonet connectors



With 8D8 - 8D9 series



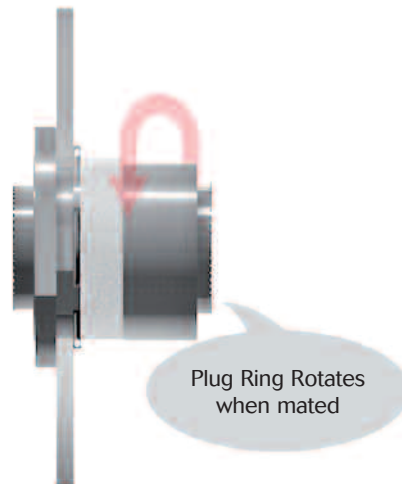
HIGHER CONNECTOR DENSITY POSSIBLE

8D8 / 8D9 series

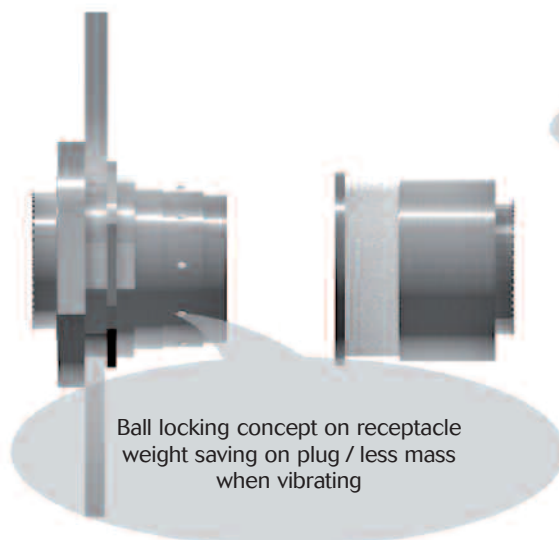


Features & benefits

Check of locking when mated = Safety and Reliability



High vibration performances



44g loads performances in 3 axis

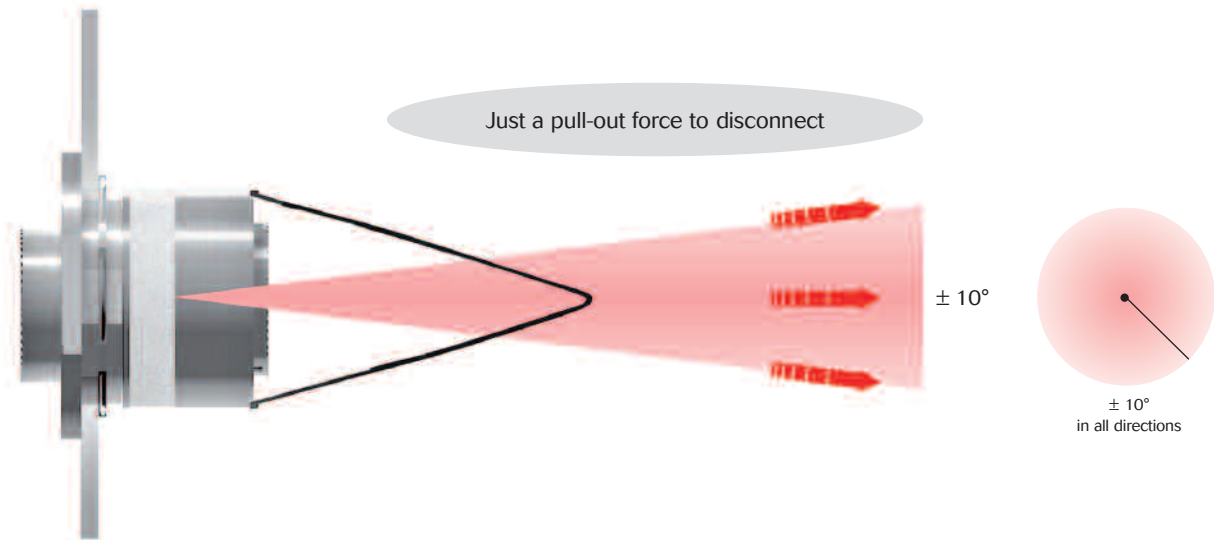
8D8 / 8D9 series



Features & benefits

Quick disconnect with angle of separation

Quick disconnect with lanyard = 8D9 series



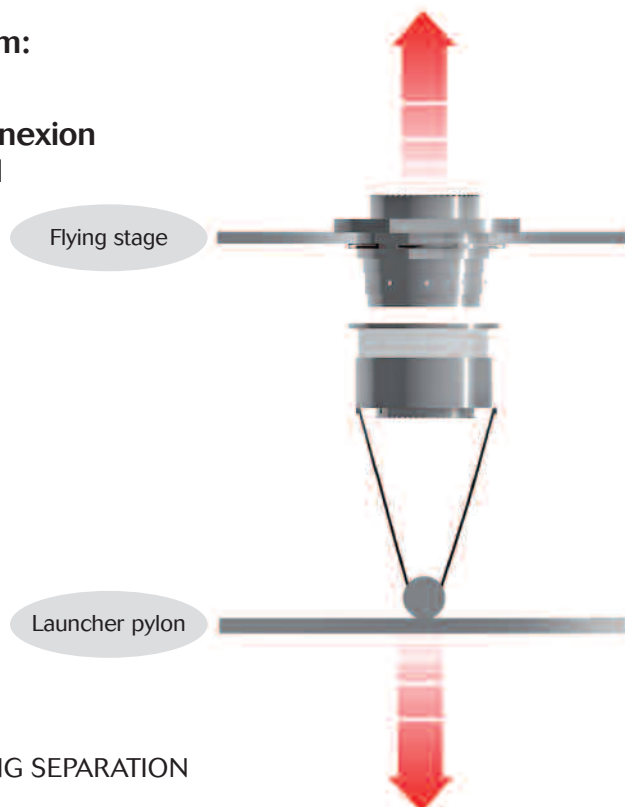
Lowest disconnect force required compared to competition

Thanks to an optimised unlocking system:

Half disconnection force is needed
compared to standard quick release connexion
(MIL-DTL 38999/31, /36 or any Push-Pull
with lanyard solution)

Maximum velocity for "flying stage"

See unmating forces in table page 18



➔ ENSURE MAXIMUM ACCELERATION DURING SEPARATION

8D8 / 8D9 series

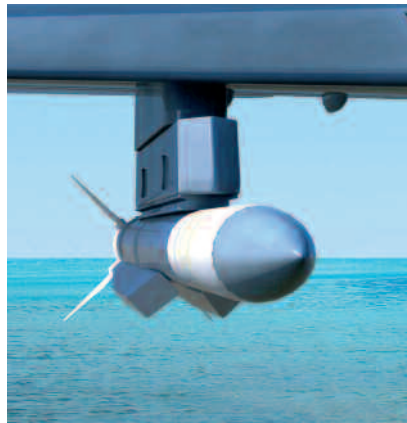


Applications

Defence & Aerospace: Launchers & Missiles



Launcher umbilical
Interstage and bottom umbilicals
Booster separation
Missile umbilicals
UAV



Defence & Aerospace: Miscellaneous



Ejection seat
Removable pods
Auxiliary Fuel tanks
Portable radars
Armored vehicles



8D8 / 8D9 series



Description

Performances upon MIL-DTL-38999

- MIL-DTL-38999 Layouts and Contacts
- MIL-DTL-38999 Series electric performances
- Scoop Proof
- Easy Mating (Push mating).
- Push Pull plug (8D8) or Push Pull plug lanyard release (8D9) available
- Lanyard Release up to $\pm 10^\circ$ (Demating by pulling)
- Blind Mating Provision (Provision to ensure Proper mating of connector even in Blind mating condition)
- Small Envelope
- Backshells: compatible with standard backshells 38999 series III

Technical Features

Mechanical

- Shell: Aluminum Alloy
- Shell plating: Nickel
Olive drab cadmium
- Insulator: Thermoplastic or Thermoset
- Grommet and Interfacial seal: Silicone elastomer
- Contact: Copper alloy
- Contact plating: Gold over Nickel plated
- Lanyard: Stainless steel cable crimped
- Endurance:
500 Mating / Demating (8D8)
100 Mating / Demating (8D9)
- Random vibrations:
44 G RMS / 3 axis / 5' per axis
(1 G²/Hz 20-2000 Hz)
- Sine vibrations (except for Elio optical):
Sine: 10-2000 Hz 20 g / 3 axis / 4 hours per axis
- Shocks: ± 150 G / 11 ms / 3 axis

Resistance to fluids

To MIL-DTL-38999 standard:

- Gasoline: JP5 (OTAN F44)
- Mineral hydraulic fluid: MIL-H-5606 (OTAN H515)
- Synthetic hydraulic fluid: Skydrol 500 B4

LD4 (SAE AS 1241)

- Mineral lubricating: MIL-L-7870A (OTAN 0142)
- Synthetic lubricating: MIL-L-23699 (OTAN 0156), MIL-L-7808
- Cleaning fluid: MIL-DTL-25769 diluted
- De-icing fluid: MIL-A-8243
- Extinguishing fluid: Chlorobromethane
- Cooling fluid: Coolanol

Climatics

- Temperature range:
Nickel plating (F): -65°C + 200°C
Cadmium plating (W): -65°C + 175°C
- Salt spray: 48 hours
Nickel plating (F): 48 hours
Cadmium plating (W): 500 hours

Electrical

- Test Voltage rating (Vrms)

Service	Sea level	At 21 000 m
M	1 300 V	800 V
N	1 000 V	600 V
I	1 800 V	1 000 V
II	2 300 V	1 000 V

- Insulation resistance: > 5000 M Ω (at 500 Vdc)
- EMI enhanced protection by shielding ring
- Contact resistance (as per SAE AS39029):
Wire resistance included in measurement:

Size	
22D	14.6 m Ω
20	7.5 m Ω
16	3.8 m Ω
12	3.5 m Ω
8	3 m Ω

- Contact rating (as per SAE AS39029):

Size	
22D	5 A
20	7.5 A
16	13 A
12	23 A
8	45 A

- Wiring Tools: compatible with standard 38999

8D8 / 8D9 series



Ordering information/Connector Part number

Push Pull Plug		8D8 P	15	W	35	S	N
Shell size	13, 15, 17, 19, 21, 23, 25						
Plating	F: Nickel W: Olive drab cadmium						
Contact layout	See pages 15 to 17						
Contact type	S: Socket L: Low Insertion Force AWG 22 socket contact B: Connector supplied without socket contact P: Pin A: Connector supplied without pin contact						
Key polarization	N: Normal A - B - C - D (see table page 19)						

Quick Release Plug		8D9 P	15	W	35	S	N	D
Shell size	13, 15, 17, 19, 21, 23, 25							
Plating	F: Nickel W: Olive drab cadmium							
Contact layout	See pages 15 to 17							
Contact type	S: Socket L: Low Insertion Force AWG 22 socket contact B: Connector supplied without socket contact P: Pin A: Connector supplied without pin contact							
Key polarization	N: Normal A - B - C - D (see table page 19)							
Lanyard length	D - E - F - G - H - I - J - K - L (see table page 12)							

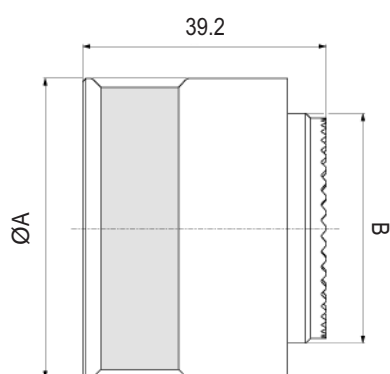
Receptacle (for Push-pull and Quick release plugs)		8D8 R	J	-	15	W	35	P	N	...
Style	J: Jam Nut S: Square Flange									
Type	-: Connecteur with standard crimp contacts L: with long spill (male and female # 22D) C: with short spill (male and female # 22D, #20, #16)									
Shell size	13, 15, 17, 19, 21, 23, 25									
Plating	F: Nickel W: Olive drab cadmium									
Contact layout	See pages 15 to 17									
Contact type	P: Pin A: Connector supplied without pin contact S: Socket L: Low Insertion Force AWG 22 socket contact B: Connector supplied without socket contact									
Key polarization	N: Normal A - B - C - D (see table page 19)									
Specification	046 : Tinned straight spills									

* Layouts 21-35, 23-35, 25-07, 25-35 and 25-82 only available with Low Insertion Force AWG 22 socket contacts ("L" contact type).

8D8 / 8D9 series

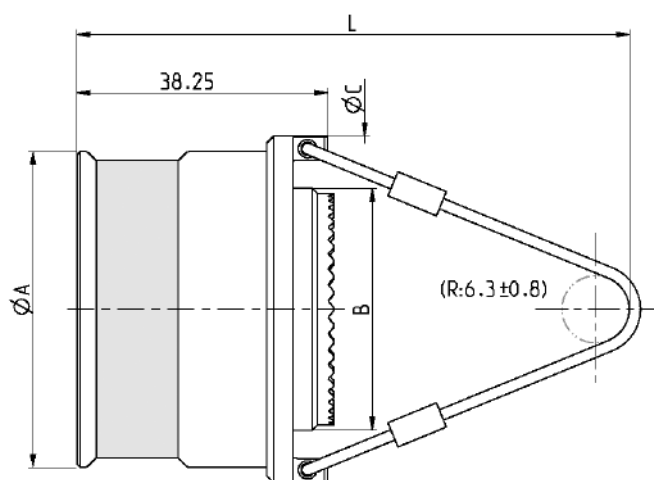


8D8 Push pull plug



Shell Size	ØA mm	B
13 (C)	30.19	M18 x 1
15 (D)	33.30	M22 x 1
17 (E)	36.80	M25 x 1
19 (F)	39.12	M28 x 1
21 (G)	42.30	M31 x 1
23 (H)	45.47	M34 x 1
25 (J)	48.30	M37 x 1

8D9 Push pull lanyard plug



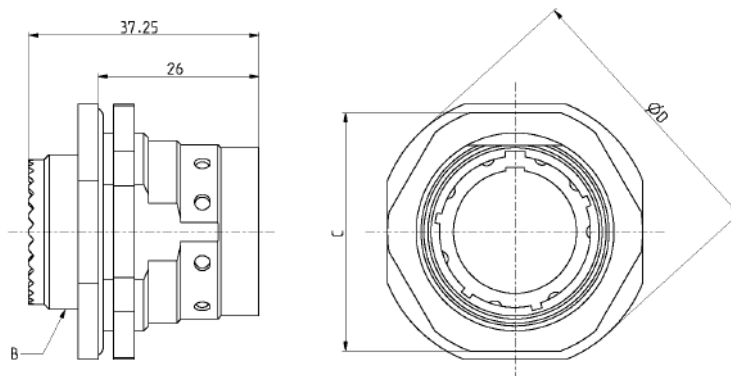
Shell Size	ØA mm	B	ØC
13 (C)	30.19	M18 x 1	34.89
15 (D)	33.30	M22 x 1	38.00
17 (E)	36.80	M25 x 1	41.50
19 (F)	39.12	M28 x 1	43.82
21 (G)	42.30	M31 x 1	47.00
23 (H)	45.47	M34 x 1	50.17
25 (J)	48.30	M37 x 1	53.00

Code	D	E	F	G	H	I	J	K	L
L ^{±2} (mm)	135	148	161	173	186	198	211	224	237

8D8 / 8D9 series

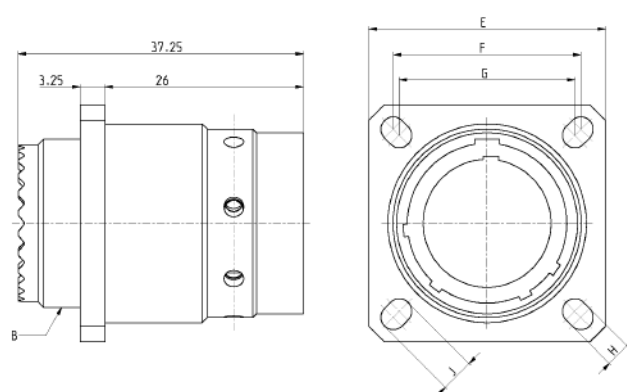


8D8 Jam nut receptacle



Shell Size	ØD mm	B	C
13 (C)	41.25	M22 x 1	31.00
15 (D)	41.25	M22 x 1	34.00
17 (E)	44.50	M25 x 1	37.50
19 (F)	49.15	M28 x 1	41.82
21 (G)	52.35	M31 x 1	46.00
23 (H)	55.55	M34 x 1	47.17
25 (J)	58.65	M37 x 1	52.00

8D8 Square flange receptacle



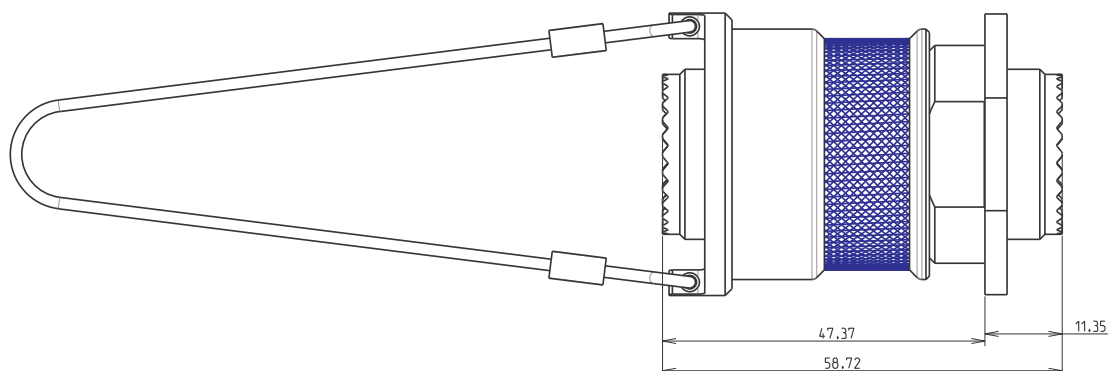
Shell Size	ØB	E	F	G	H	J
13 (C)	M18 x 1	28.60	23.01	20.62	3.25	4.93
15 (D)	M22 x 1	31.00	24.61	23.01	3.25	4.93
17 (E)	M25 x 1	33.30	26.97	24.61	3.25	4.93
19 (F)	M28 x 1	36.50	29.36	26.91	3.25	4.93
21 (G)	M31 x 1	39.70	31.75	29.36	3.25	4.93
23 (H)	M34 x 1	42.90	34.93	31.75	3.91	6.15
25 (J)	M37 x 1	46.00	38.10	34.93	3.91	6.15

8D8 / 8D9 series

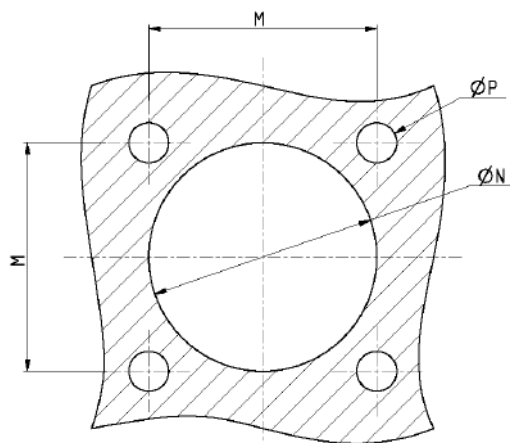


Mounting information

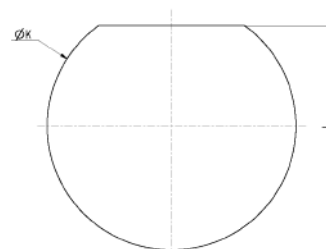
Mated dimensions



Panel cut-out



Sq. Flange Receptacle



Jam Nut Receptacle

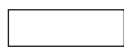
Shell Size	ØK mm ± 0.25	L mm ± 0.25	M mm	ØN mm Min.	ØP mm Min.
13 (C)	25.58	24.26	23.01	23.42	3.25
15 (D)	28.80	27.53	24.61	26.59	3.25
17 (E)	31.98	30.68	26.97	30.96	3.25
19 (F)	35.15	33.86	29.36	32.94	3.25
21 (G)	38.28	37.06	31.75	36.12	3.25
23 (H)	41.50	40.24	34.93	39.29	3.91
25 (J)	44.68	43.41	38.10	42.47	3.91

Maximum Thickness of Panel: 2.5 mm

8D8 / 8D9 series



Contact layouts



Standard



QPL qualified (Contacts and Insulators)



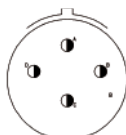
Elio fiber optics



Ethernet Quadrx

13 (C)

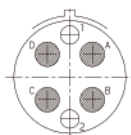
04



4#16

Service I

04*



4

Optical ways

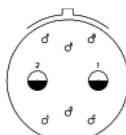
08



8#20

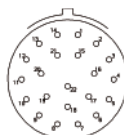
Service I

26



2#12
6#22D
Service M

35*



22#22D

Service M

98



10#20

Service I



Contact #22D



Contact #8 Triax



Contact #20



Contact #8 Power



Contact #16



Contact #8 Quadrx



Contact #12



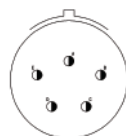
Contact #4 Power



Contact #10

15 (D)

05



5#16

Service II

15



1#16
14#20
Service I

18



18#20

Service I

19



19#20

Service I

35*



37#22D

Service M

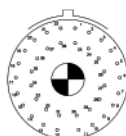
97



4#16
8#20
Service I

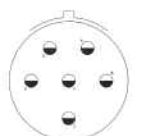
17 (E)

02



38#22D
1#8 Triax
Service M

06*



6#12
or 6#12 Coax
Service I

08



8#16

Service II

20



4#12
16#22D
Service M

26



26#20

Service II

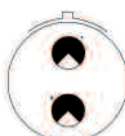
35*



55#22D

Service M

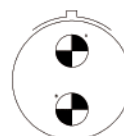
75



2#8 Power

Service M

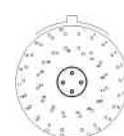
75



2#8 Triax

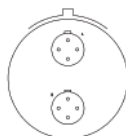
Service M

81



32#22D
1#8
Quadrx

82



2 Quadrx

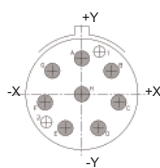
99



2#16
21#20
Service I

19 (F)

08*



8
Optical ways

11



11#16

Service II

28



26#20
2#16

Service I

32



32#20

Service I

35



66#22D

Service M

* For these layouts, please consult us

8D8 / 8D9 series



Contact layouts



Standard



QPL qualified (Contacts and Insulators)



Elio fiber optics



Ethernet Quadrx

21 (G)

11



11#12

Service I

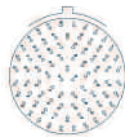
16



16#16

Service II

35*



79#22D

Service M

39



2#16
37#20
Service I

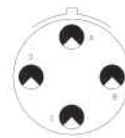
41



41#20

Service I

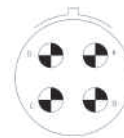
48



4#8 Power

Service I

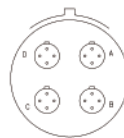
75



4#8 Triax

Service M

84



4 Quadrx

23 (H)

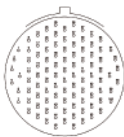
21



21#16

Service II

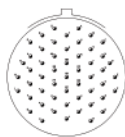
35*



100#22D

Service M

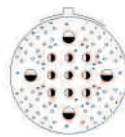
53



53#20

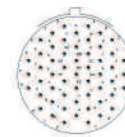
Service I

54



4#12, 9#16
40#22D
Service M

55

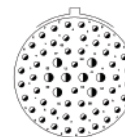


55#20

Service I

25 (J)

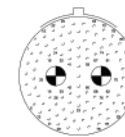
04



8#16
48#20

Service I

07*



2#8 Triax
97#22D

Service M

08



8#8 Triax

Service M

11



2#20
9#10

Service N

19



19#20

Service I

20



10#10
4#12
13#16
3#8

Service I

24



12#16
12#12

Service II

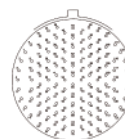
29



29#16

Service I

35*



128#22D

Service M

37



37#16

Service I

41



22#22D
3#20
11#16
2#12
3#8 Triax
Service M

Service M

43



23#20
20#16

Service I

44*



4#4 Power
4#16

Service I

46



40#20
4#16
2#8 Coax

Service I

61



61#20

Service I

80



10#20
13#16
4#12
3#8 Quadrx

Service N

81



22#22D
3#20
11#16
2#12
3#8 Quadrx

Service N

82*



97#22D
2#8 Quadrx

Service M

86



40#20
4#16
2#8 Quadrx

Service I

88



8 Quadrx

Service I

* For these layouts, please consult us

8D8 / 8D9 series



Contact layouts matrix

Shell Size	Layout	Service	Number of contacts	#22D	#20	#16	#12	#10	#8
13 (C)	13 - 04	I	4			4			
	13 - 04	-	4						
	13 - 08	I	8		8				
	13 - 26	M	8	6			2		
	13 - 35	M	22	22					
15 (D)	13 - 98	I	10		10				
	15 - 05	II	5			5			
	15 - 15	I	15		14	1			
	15 - 18	I	18		18				
	15 - 19	I	19		19				
	15 - 35	M	37	37					
17 (E)	15 - 97	I	12		8	4			
	17 - 02	M	39	38					1 Triax
	17 - 06	I	6				6 or 6 coax		
	17 - 08	II	8			8			
	17 - 20	M	20	16			4		
	17 - 26	I	26		26				
	17 - 35	M	55	55					
	17 - 75	M	2						2 or 2 Triax
	17 - 81	-	33	32					1 Quadrax
19 (F)	17 - 82	-	2						2 Quadrax
	17 - 99	I	23		21	2			
	19 - 08	-	8						
	19 - 11	II	11			11			
	19 - 28	I	28		26	2			
	19 - 32	I	32		32				
21 (G)	19 - 35	M	66	66					
	21 - 11	I	11				11		
	21 - 16	II	16			16			
	21 - 35	M	79	79**					
	21 - 39	I	39		37	2			
	21 - 41	I	41		41				
	21 - 48	I	4						4 Power
	21 - 75	-	4						4 Triax
23 (H)	21 - 84	-	4						4 Quadrax
	23 - 21	II	21			21			
	23 - 35	M	100	100**					
	23 - 53	I	53		53				
	23 - 54	M	53	40		9	4		
25 (J)	23 - 55	I	55		55				
	25 - 04	I	56		48	8			
	25 - 07	M	99	97**					2 Triax
	25 - 08	-	8						8 Triax
	25 - 11	N	11		2			9	
	25 - 19	I	19				19		
	25 - 20	N	30		10	13	4 Coax		3 Triax
	25 - 24	II	24			12	12		
	25 - 29	I	29			29			
	25 - 35	M	128	128**					
	25 - 37	I	37			37			
	25 - 41	N	41	22	3	11	2		3 Triax
	25 - 43	I	43		23	20			
	25 - 44	I	8			4			
	25 - 46	I	46		40	4			2 Coax
	25 - 61	I	61		61				
	25 - 80	N	30		10	13	4		3 Quadrax
	25 - 81	N	41	22	3	11	2		3 Quadrax
	25 - 82	M	99	97**					2 Quadrax
	25 - 86	I	46		40	4			2 Quadrax
	25 - 88	-	8						8 Quadrax

** Low Insertion Force AWG 22 contacts

8D8 / 8D9 series



8D8/8D9 Mating/Unmating forces (for information)

Shell size 13 (C)

MIL DTL 38999 Layout	13-04	13-08	13-26	13-35	13-35 **	13-98
Mating force (Newtons)	135	137	137	152	136	141
Release force* (Newtons)	65	67	67	82	66	71

Shell size 15 (D)

MIL DTL 38999 Layout	15-05	15-15	15-18	15-19	15-35	15-35 **	15-97
Mating force (Newtons)	138	153	158	160	174	154	152
Release force* (Newtons)	68	83	88	90	104	84	82

Shell size 17 (E)

MIL DTL 38999 Layout	17-02	17-06	17-08	17-20	17-26	17-35	17-35 **	17-75	17-82	17-99
Mating force (Newtons)	194	143	149	159	175	200	165	157	157	172
Release force* (Newtons)	124	73	79	89	105	130	92	87	87	102

Shell size 19 (F)

MIL DTL 38999 Layout	19-11	19-32	19-35	19-35 **
Mating force (Newtons)	161	187	216	190
Release force* (Newtons)	91	117	146	115

Shell size 21 (G)

MIL DTL 38999 Layout	21-11	21-16	21-35 **	21-39	21-41	21-48	21-75	21-84
Mating force (Newtons)	163	179	199	205	206	194	194	194
Release force* (Newtons)	93	109	129	135	136	124	124	124

Shell size 23 (H)

MIL DTL 38999 Layout	23-21	23-35 **	23-53	23-55
Mating force (Newtons)	197	220	231	236
Release force* (Newtons)	127	150	161	166

Shell size 25 (J)

MIL DTL 38999 Layout	25-05	25-07 **	25-08	25-11	25-19	25-20	25-24	25-29	25-35 **	25-37	25-43	25-44	25-46	25-61	25-88
Mating force (Newtons)	250	235	267	225	194	260	211	227	248	256	242	247	256	248	267
Release force* (Newtons)	180	169	197	155	124	190	141	157	178	186	172	177	186	178	197

* Release forces for 0° disconnection angle

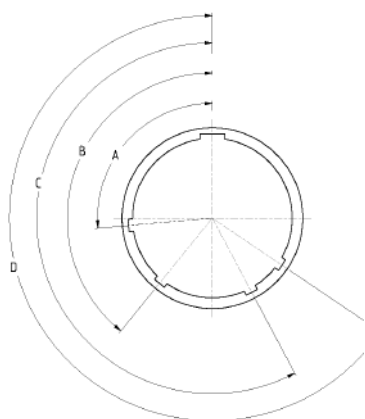
** Low Insertion Force AWG 22 contacts

8D8 / 8D9 series

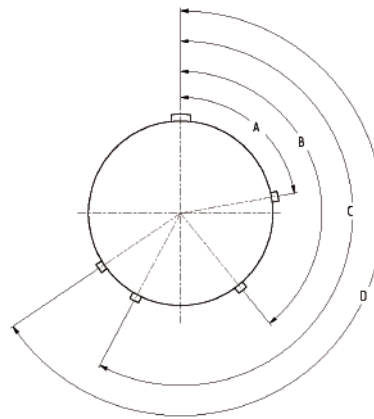


Key polarisation

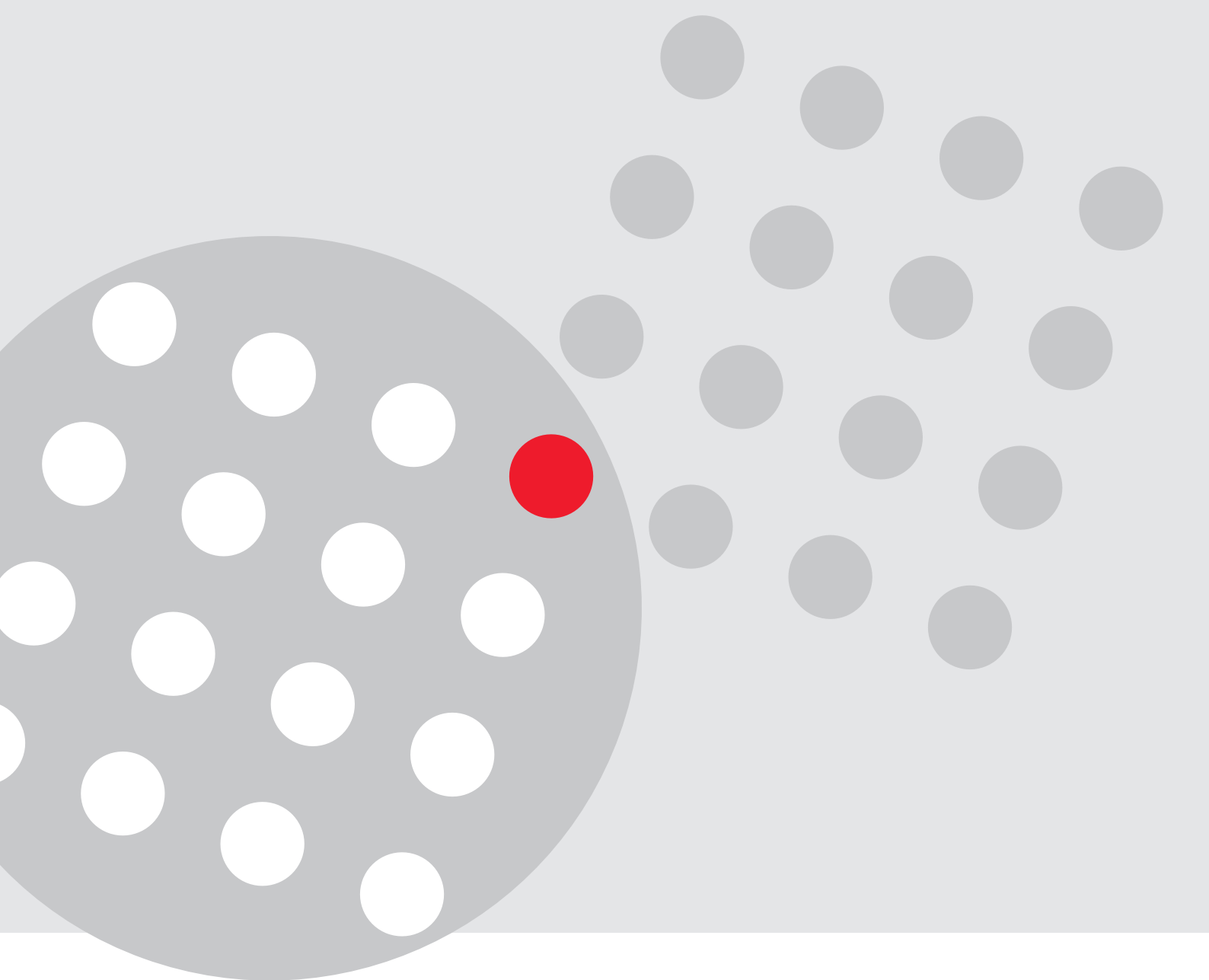
Viewed from face of receptacle



Viewed from front of plug



Contact size	MS Shell size	Angles	N	A	B	C	D
13	C	A°	95	113	90	53	119
		B°	141	156	145	156	146
		C°	208	182	195	220	176
		D°	236	292	252	255	298
15	D	A°	95	113	90	53	119
		B°	141	156	145	156	146
		C°	208	182	195	220	176
		D°	236	292	252	255	298
17	E	A°	80	135	49	66	62
		B°	142	170	169	140	145
		C°	196	200	200	200	180
		D°	293	310	244	257	280
19	F	A°	80	135	49	66	62
		B°	142	170	169	140	145
		C°	196	200	200	200	180
		D°	293	310	244	257	280
21	G	A°	80	135	49	66	62
		B°	142	170	169	140	145
		C°	196	200	200	200	180
		D°	293	310	244	257	280
23	H	A°	80	135	49	66	62
		B°	142	170	169	140	145
		C°	196	200	200	200	180
		D°	293	310	244	257	280
25	J	A°	80	135	49	66	62
		B°	142	170	169	140	145
		C°	196	200	200	200	180
		D°	293	310	244	257	280



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