

38999 Series III ELIO® Singlemode Fiber Optic



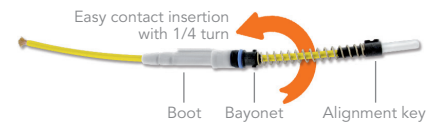
Robust Multiways Singlemode Connection

Singlemode fast-rate optic fiber for harsh environment available with ELIO® technology.

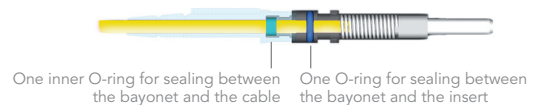
Hybrid ■ Singlemode, multimode and electrical mix inside the same connector.

Scratch & FOD protected termini ■ The female contact is slightly recessed to prevent from touching (finger test).
Large cavity aperture for female termini access with swab or pen.

User friendly ■ No extra tool needed for insertion or extraction.

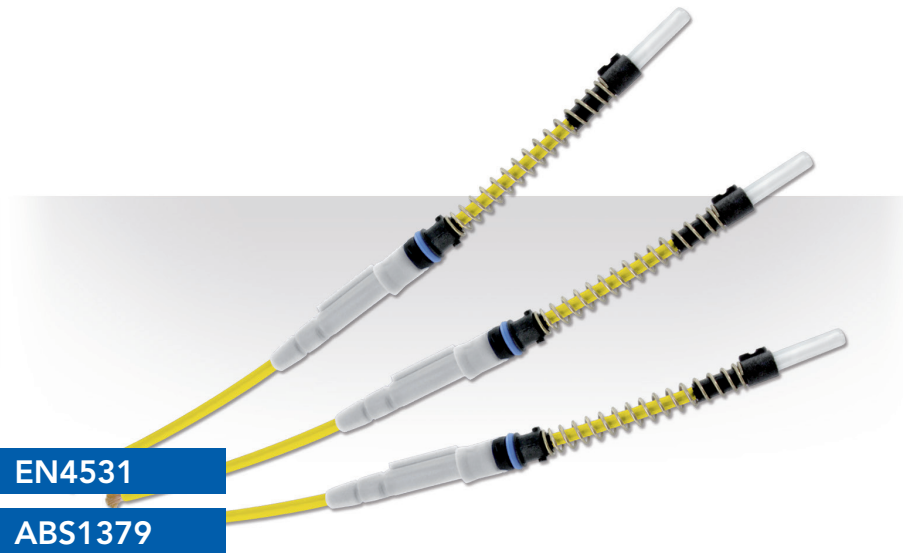


Sealed contact without backshell (IP67).



Description

- Robust 2.5mm ferrule
- Quick bayonet locking system. No tool needed
- Boot seal for sealing and bending restriction
- Compatible with tight and loose structure cable



Technical features

Mechanical

- **Endurance:**
Minimum 500 mating/unmating operations
- **Shock:**
300 g, 3 ms as per EN 2591-6402 method A
- **Vibration:**
In MIL-DTL-38999 Series III/EN3645 connectors:
- Sine 5Hz to 3000Hz as per EN2591-6403 method A
- Random as per EN2591-6403 method B
- **Cable cyclic flexing*:**
100 cycles, load 40N as per EN2591-609
- **Cable pulling*:** 111N
- **Cable torsion*:**
100 cycles, load 40N as per EN2591-611

Environmental

- **Salt spray:**
See the connector standard
- **Temperature range*:**
- 65°C to +125°C (1000 hours)
- **Rapid temperature change:**
10 cycles - 65°C / +150°C (30min/30min)
- **Air leakage:**
Max leakage 16 cm³/h, 2 hours, 40kPa differential pressure
- **Damp heat and low temperature:**
5 cycles of 48h -65°C/+70°C with stage at 40°C with 95% of humidity as per EN2591- 6303 method A

Optical

- **Insertion Loss (IL):**
0.3dB typical
< 0.5dB over 95% of the samples as per EN2591-601,
< 0.9dB maximum on 100% of the samples after tests
- **Return Loss (RL):**
> 55dB typical and > 50dB minimum

Resistance to fluids as per MIL-DTL-38999/EN3645 standard

- **Fuel:** JP5
- **Mineral Hydraulic fluid:**
MIL-PRF-5606 (NATO H-515)
- **Synthetic hydraulic fluid:**
AS1241 (Skydrol 500B4, LD4)
- **Mineral lubricant:**
MIL-PRF-7870 (NATO O-142)
- **Synthetic lubricant:**
MIL-PRF-23699 (NATO O-156),
MIL-PRF-7808 (NATO O-148)
- **Cleaning fluid:**
MIL-PRF-87937 diluted, Propanol, white spirit, Azeotrope R113 + Methanol
- **De-icing fluid:**
AMS 1424 (NATO S-742)
- **Extinguishing fluid:**
Chlorobromethane
- **Cooling fluid:**
Coolanol

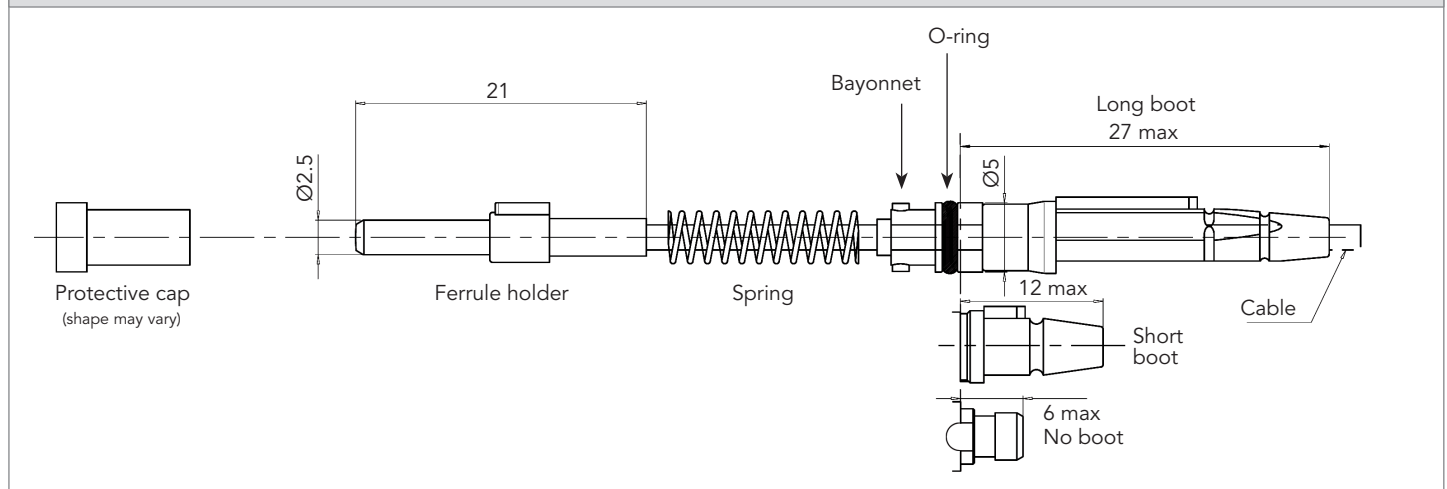
* With multimode EN4641-100 cable and following the cabling process described in the "Technical Bulletin N°204 - ELIO® assembly wiring instructions" and the maintenance procedure in the document "Technical Bulletin N°170 - Fiber optics installation and maintenance procedure".

ELIO® singlemode contact Ordering information

ELIO	09N	E	L	A
Cable external diameter & Contact sealing:				
09N: 0.9±0.1mm. Non waterproof				
18N: from 1.5mm to 1.9mm. Non waterproof				
18W: 1.8±0.1mm. Waterproof				
20N: from 1.7mm to 2.1mm. Non waterproof				
20W: 2.0±0.1mm. Waterproof				
Fibre type:				
E: ELIO® Singlemode 9/125, PC polish				
Boot type:				
L: Long boot				
S: Short boot				
N: No boot (non waterproof version only)				
Contact version index				



ELIO® contact dimensions



Recommended cables

SOURIAU can offer a wide range of cables in its assemblies, from low cost to high performance aeronautical cables. ELIO® contact is compatible with singlemode and multimode cable, with tactical and breakout cable. ELIO® contact is suitable with loose and tight structure cable.

See SOURIAU «ELIO® Fiber Optic Technology» catalogs for more information.

Note: All dimensions are in millimeters (mm)

**MIL-DTL-38999
Series III/EN3645
ELIO® high density insert
with singlemode contact**

- Standard MIL-DTL-38999/EN3645 shells without shielding ring (aluminum, composite, stainless steel, bronze)
- Environmental performance as per EN4531 based on MIL-DTL-38999/EN3645
- Temperature range: - 65°C to +125°C (cable limitation)



EN4531

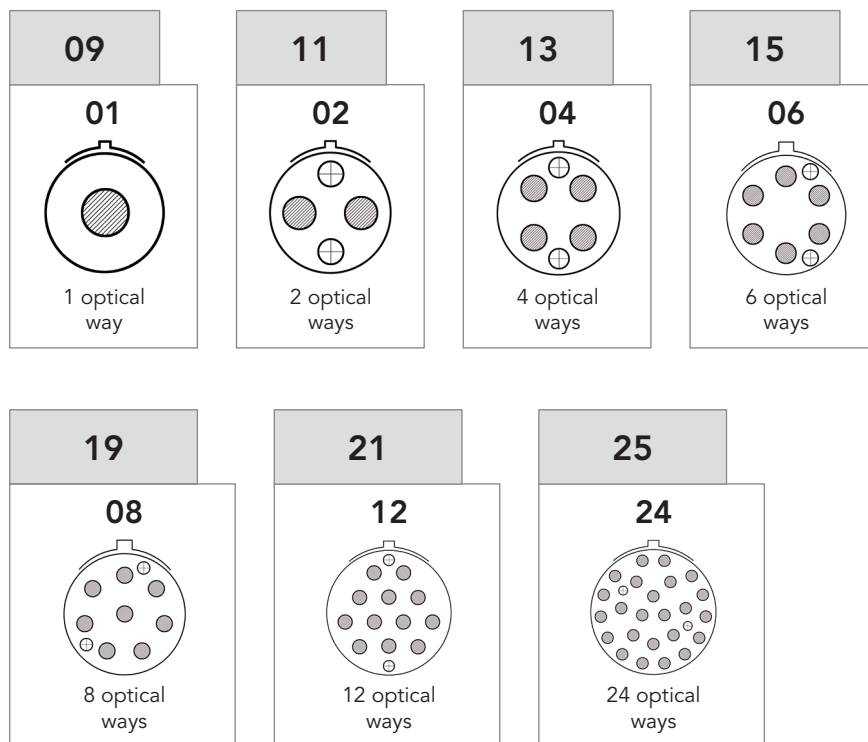
ABS1213

ARINC 801

Applications

- Fiber optic connector for all military and aeronautical applications wherever severe vibration or mechanical resistance are required:
 - Ground army,
 - Civil aircraft,
 - Marine,
 - Military aircraft,
 - Rotary wing

Layouts



Note: Layouts 15-06 and 21-12 limited availability, please consult us.

ELIO® high density insert with singlemode contact

Ordering information - Connectors delivered without contact

Composite, Aluminum & Stainless Steel

	8D	5	E	11	W	02	A	N	
	8D	5	E	11	W	02	B	N	674
Shell type:									
5: Plug									
0: Receptacle with 4-hole square flange fixing									
7: Receptacle with single hole jam nut fixing (aluminum & stainless steel)									
Designation:									
E: ELIO® optical connector									
Shell size:									
09 - 11 - 15 - 13 - 19 - 21 - 25									
Plating:									
Aluminum:			Composite:			Stainless steel:			
Z: Zinc nickel			J: Olive green cadmium			K: Passivated			
ZC: Zinc cobalt			M: Nickel			S: Nickel			
W: Olive green cadmium			X: Without plating						
F: Nickel									
Layouts: See previous page									
Insert type:									
A: Male insert									
B: Female insert with ceramic alignment sleeves - Specification 674 mandatory									
Polarization:									
N, A, B, C, D, E									
U (universal connector for testing - mates with any other polarization)									
Specification:									
empty: Male insert type A									
674: Female insert type B - mandatory									

JVS Bronze

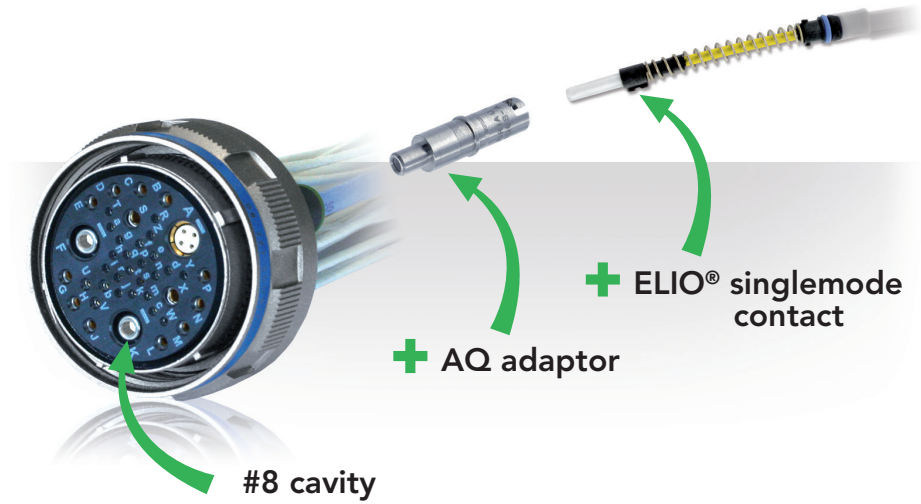
	JVS	E	6	A	11	02	A	N	
	JVS	E	6	A	11	02	B	N	674
Designation:									
E: ELIO® optical connector									
Shell type:									
6: Plug									
0: Receptacle with 4-hole square flange fixing									
7: Receptacle with single hole jam nut fixing									
Material:									
A: Bronze									
Shell size: 09 - 11 - 15 - 13 - 19 - 21 - 25									
Layouts: See previous page									
Insert type:									
A: Male insert									
B: Female insert with ceramic alignment sleeves - Specification 674 mandatory									
Polarization: N, A, B, C, D, E									
Specification:									
empty: Male insert type A									
674: Female insert type B - mandatory									

Connector dimensions

See SOURIAU «ELIO® Fiber Optic Technology» catalog.

**MIL-DTL-38999
Series III/EN3645
with ELIO® singlemode contact
and ELIO® AQ Adaptor for
Quadrax #8 cavities**



- ELIO® AQ is an adaptor to enable the ELIO® contact to fit in any #8 cavities
- Multiple possibilities to mix optical and electrical signals in the same insert
- Compatible with standard MIL-DTL-38999 Series III/EN3645 connectors (aluminum, composite, stainless steel, bronze)
- Design ensures ELIO® optical performance
- Environmental performance as per MIL-DTL-38999 and EN3645 standard
- Temperature range: - 65°C to +150°C (cable limitation)



Applications

- Fiber optic connector for all military and aeronautical applications wherever severe vibration or mechanical resistance are required.

**ELIO® AQ
Adaptor for Quadrax #8 cavities**

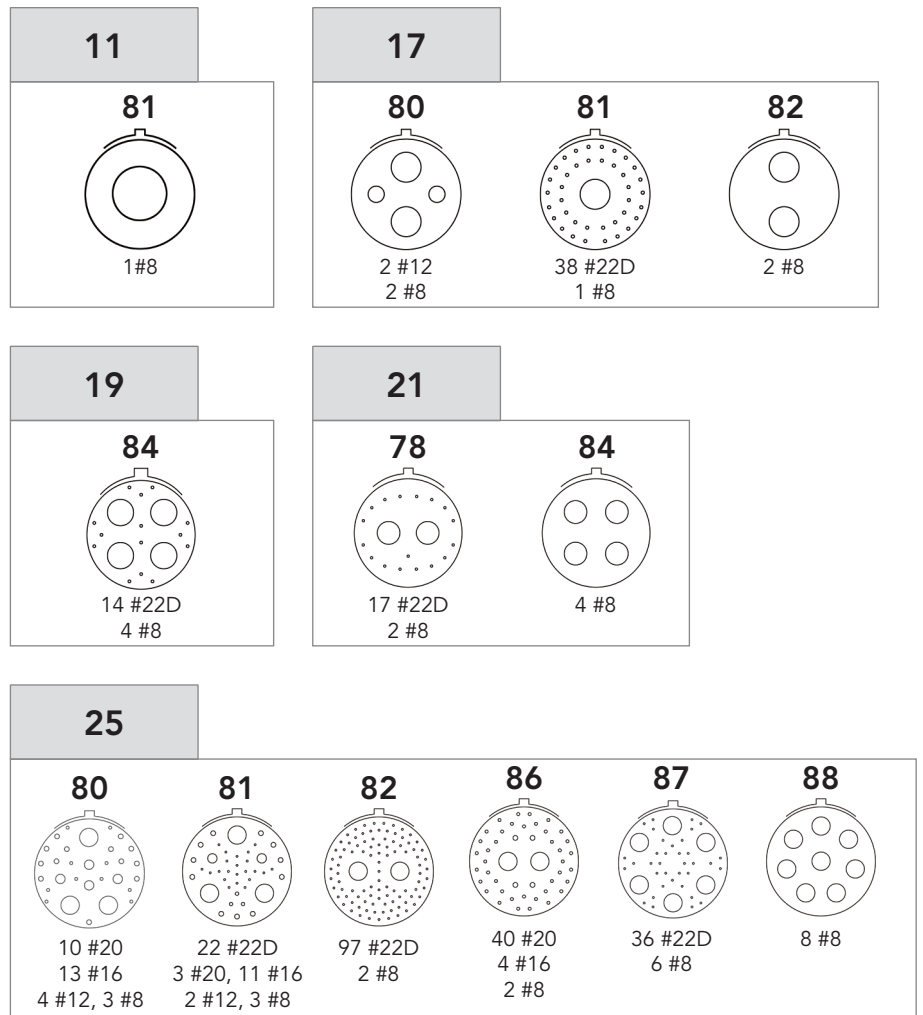
Insert type	Part Number
Male Insert	 ELIOAQ6PB
female Insert	 ELIOAQ6SB674

Delivered with alignment boot.

**Ordering information
& connector dimensions**

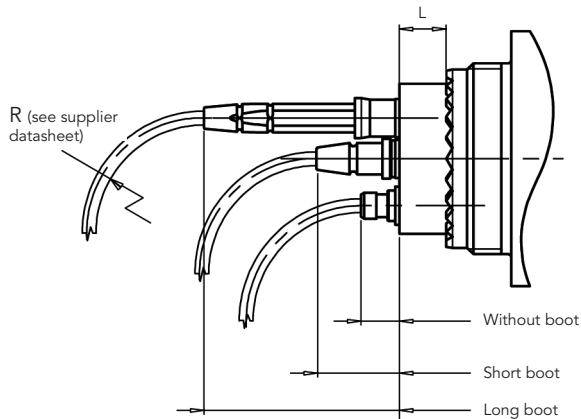
See SOURIAU «8D Series - MIL-DTL-38999 Series III» & «ELIO® Fiber Optic Technology» catalogs.

Layouts

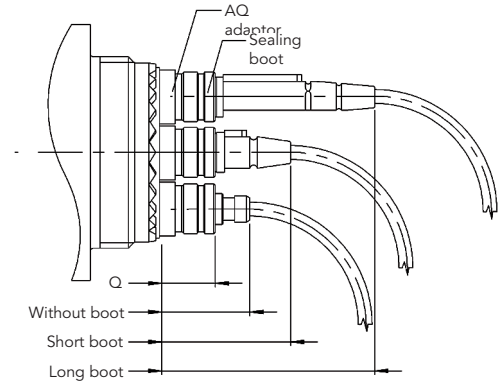


Dimensions

38999 Series III/EN3645 with ELIO® contacts in ELIO® high-density insert



38999 Series III/EN3645 with ELIO® contacts in ELIO® AQ adaptors



	ELIO® high density insert					ELIO® AQ adaptors							
	L		Contact length			Q		Contact length					
	Male insulator	Female insulator	Without boot	Short boot	Long boot			Long boot		Short boot		Without boot	
					Male insulator	Female insulator	Male insulator	Female insulator	Male insulator	Female insulator	Male insulator	Female insulator	
Plug						12 Max	9.5 Max	34.5 Max	32 Max	19.5 Max	17 Max	12.5 Max	10 Max
Square flange receptacle	4 Max	6.60 Max	6 Max	12 Max	27 Max	12.5 Max	10 Max	35 Max	32.5 Max	20 Max	17.5 Max	13 Max	10.5 Max
Jam nut receptacle						12 Max	9.5 Max	34.5 Max	32 Max	19.5 Max	17 Max	12.5 Max	10 Max

Note: All dimensions are in millimeters (mm)

Assesories, Tooling & Harnesses

See SOURIAU «ELIO® Fiber Optic Technology» catalog.

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technical.americas@souriau.com (North America)
 or visit our web site www.souriau.com