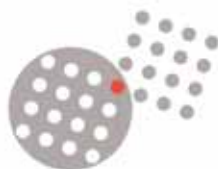


MIL-DTL-38999 series III and range extension



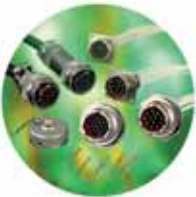
SOURIAU
Connection Technology



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

A Universal platform



Standard series



Range extension series



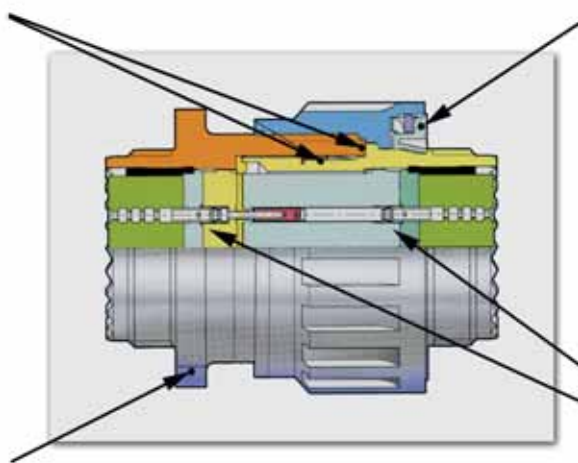
From standard broadline to high-tech system to meet all customer requirements



General Characteristics

EMI / RFI high shielding level effectiveness.
Protection with grounding fingers and shell to shell bottoming.

High reliability of the locking concept.
500 cycles (mating / unmating).
Protection of the mechanism against dust deposit



Corrosion resistance.
Composite shell > 2000 hours of salt spray

High contact retention
Thanks to metallic clip

Performances :

- **Insulator** : Thermoplastic
- **Grommet & interfacial seal** : Silicone elastomer
- **Shocks** : High impact as per MIL-S901, 300g - 3ms
- **Vibration** : Sine : 10 to 2000Hz, 3 x 12hrs
(60g, 140 - 2000Hz) with temperature cycling
Random : 50 to 2000Hz, 2 x 8hrs
(1g²/Hz, 100 - 2000Hz) at temperature max
25 to 2000Hz, 2 x 8hrs
(5g²/Hz, 100 - 300Hz) at ambient temperature

• **Contact resistance** : resistance of wire included in measurement :

Size 22D	: 14.6 mΩ
Size 20	: 7.5 mΩ
Size 16	: 3.8 mΩ
Size 12	: 3.5 mΩ
Size 8	: 3 mΩ
Size 4	: 2 mΩ

• **Shell plating** : See page 7-8

• **Contact rating** :

Size 22D	: 5 A
Size 20	: 7.5 A
Size 16	: 13 A
Size 12	: 23 A
Size 8	: 45 A
Size 4	: 80 A

• **Test voltage rating (Vrms)** :

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

• **Weight saving :**
(ex :plug body shell size 15)

40 % lighter



Materials	Weight
Stainless steel	58.80 gr
Titanium	33.90 gr
Aluminium	20.35 gr
Composite	14.30 gr



42 % lighter



30 % lighter

Features and benefits



Features		Benefits	
<u>MIL-DTL-38999</u>			
<ul style="list-style-type: none">• High density up to 128 #22D contacts.• 12 shell sizes (9 according to MIL spec & 3 for additional sizes compact series).• Crimp, PC Tails, Coax, Triax, Quadrax, Optical (ELIO), Power, Thermocouple contacts.• Scoop proof design• 5 non engaging keys.• Panel mount with 38999 series I.		<ul style="list-style-type: none">• Compact solution.• Always a solution in matter of dimensions.• A contact solution always available.• Robust, trouble free.• Positive non-mate.• Upgrading.	
<u>SOURIAU MIL-DTL-38999</u>			
<ul style="list-style-type: none">• High performance thermoplastic material for all the range• Metal clip• Compact series with integrated backshell.• Exclusive locking system• Cadmium free		<ul style="list-style-type: none">• Temperature resistance• Audible "Click" when contacts in right position.• Vibration performances, contacts retention• The smallest connector available on market (autosport,UAV)• Unmating equal twice mating force locking under vibration.• Zinc Nickel and Zinc Cobalt plating available	
<u>Shell material</u>			
<ul style="list-style-type: none">• Composite version :<ul style="list-style-type: none">30% weight saving as compared to aluminium.Non magneticDe-sophisticated range (8D...X....).• Stainless steel version.<ul style="list-style-type: none">Fire wall test 2000°C during 20mn.500 h salt spray test.• Aluminium bronze version.• Titanium version.		<ul style="list-style-type: none">• The RoHS compliance solution, better corrosion resistance<ul style="list-style-type: none">• Best compromise to save weight.• Stealth / radar non-sensitive.• 38999 #22D density for the 26482 #20 price.• Resistance to unusual engine environment.<ul style="list-style-type: none">• Survival to high corrosion level.• Continue salt spray exposure.• Very high corrosion resistance, high mechanical resistance.• Very high corrosion resistance, high mechanical resistance<ul style="list-style-type: none">• Weight saving as compared to stainless steel.• Unplated and nickel plated versions available	

Standard series part numbering



SOURIAU

BASIC SERIES				8D	0	–	11	W	35	P	N	–
Style : 0 : Square flange receptacle 5 : Plug with RFI shielding 7 : Jam nut receptacle (not available for composite version)												
Type : - : Crimp contact E : Optical fiber (Elio) Q : Quadrax crimp contacts												
Shell size : 09 – 11 – 13 – 15 – 17 – 21 – 23 – 25												
Plating : (according shell material – see below)												
Aluminium shell : W : Olive green Cadmium F : Nickel L : Black Zinc Nickel Z : Green Zinc Cobalt												
Composite Shell : J : Olive green Cadmium M : Nickel X : Without plating												
Stainiess steel shell : K : Corrosion resistant S : Nickel												
Titanium Shell : TT : Without plating TF : Nickel												
Insert arrangement : See page 9 to 11 for layouts												
Contact style : P : Pin contact A : Male connector supplied without contact. S : Socket contact B : Female connector supplied without contact.												
Orientation : N – A – B – C – D – E												
Specification : 251 : Supplied with power cts #8 instead of cts #8 triax 284 : Quadrax contacts grounded 308 : Quadrax contacts not grounded												

MIL-DTL-38999

BASIC SERIES		D38999	20	W	B	35	P	N
Style : 20 : Square flange receptacle 24 : Jam nut receptacle (not available for composite version) 26 : Plug with RFI shielding								
Plating : (according shell material – see below)								
Aluminium shell : W : Olive green Cadmium F : Nickel								
Composite Shell : J : Olive green Cadmium M : Nickel X : Without plating								
Stainiess steel shell : K : Corrosion resistant S : Nickel								
Shell size : A – B – C – D – E – F – G – H – J								
Insert arrangement : See page 9 to 11								
Contact style :	P : Pin contact	A : Male connector supplied without contact.						
	S : Socket contact	B : Female connector supplied without contact.						
Orientation : N – A – B – C – D – E								

Standard series part numbering



JVS (bronze) serie

BASIC SERIES	JVS	-	00A	09	35	P	N	-
Type : - : Crimp contact E : Optical fiber (Elio) Q : Quadrax crimp contacts								
Style : 00A : Square flange receptacle 16A : Plug 07A : Jam nut receptacle								
Shell size : 09 – 11 – 13 – 15 – 17 – 21 – 23 – 25								
Insert arrangement : See page 9 to 11								
Contact style : P : Pin contact A : Male connector supplied without contact. S : Socket contact B : Female connector supplied without contact.								
Orientation : N – A – B – C – D – E								
Specification : 251 : Supplied with power cts #8 instead of cts #8 triax or coax 284 : Quadrax contacts grounded 308 : Quadrax contacts not grounded								

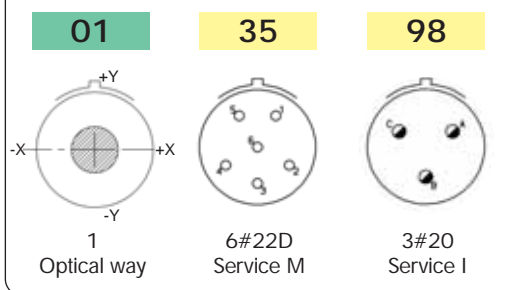
CECC

BASIC SERIES	CECC 75 201 002*	B	B	98	M	C	N	A	0	1	G
Style : A : Plug B : Square flange receptacle C : Jam nut receptacle											
Shell size : A – B – C – D – E – F – G – H – J											
Insert arrangement : See page 9 to 11											
Contact style : M : Male contacts F : Female contact											
Type of contact termination : C : Crimp contacts											
Orientation : N – A – B – C – D – E											
Shell material : A : Aluminium bronze											
Supply code : 0 = Connectors supplied with contacts, sealing plug & insertion / extraction tools. 1 = Connectors supplied without contacts, sealing plug & insertion / extraction tools.											
Assessment level : 1 : Level 1											
Performance level : G : Level G											

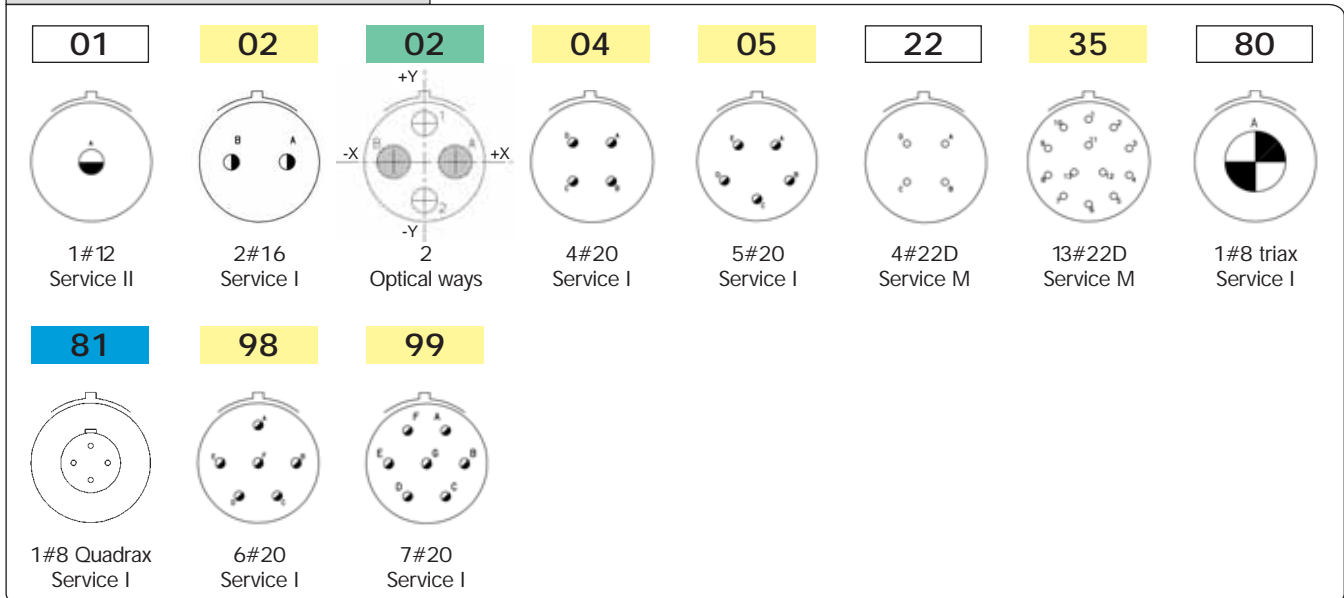
Contact layouts



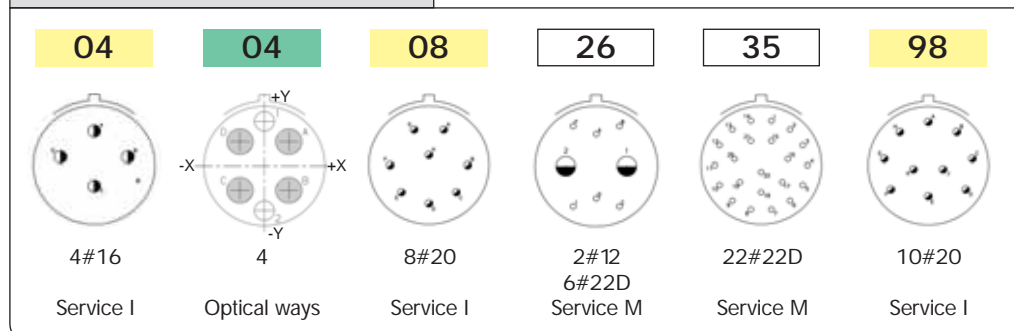
09 A



11 B



13 C



Standard
 QPL qualified
 Elio fiber optics
 Ethernet Quadrax

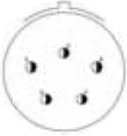
For JVS range : 1#12, the layout is 11-12
 For JVS range : 1#8, the layout is 11-01

Contact layouts



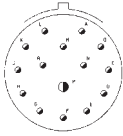
15 D

05



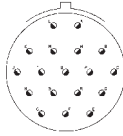
5#16
Service II

15



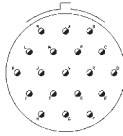
1#16
14#20
Service I

18



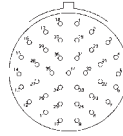
18#20
Service I

19



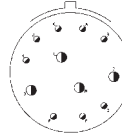
19#20
Service I

35



37#22D
Service M

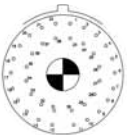
97



4#16
8#20
Service I

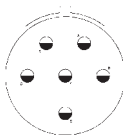
17 E

02



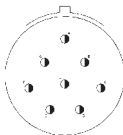
38#22D
1#8 triax
Service M

06



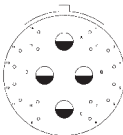
6#20
Service I

08



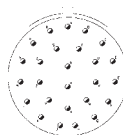
18#16
Service II

20



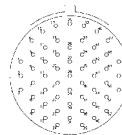
4#12
16#22D
Service M

26



36#20
Service II

35



55#22D
Service M

75



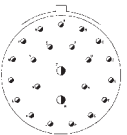
2#8 triax
Service M

82



2 Quadrax

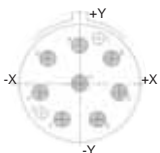
99



2#16
21#20
Service I

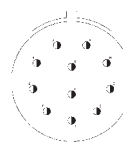
19 F

08



8
Optical ways

11



11#16
Service II

28



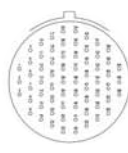
26#20
2#16
Service I

32

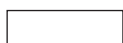


32#20
Service I

35



66#22D
Service M



Standard



QPL qualified



Elio fiber optics



Ethernet Quadrax

Contact layouts



21 G

11	16	35	39	41	48	75	84
11#12	16#16	79#22D	2#16 37#20	41#20	4#8 power	4#8 triax	4 Quadrax
Service I	Service II	Service M	Service I	Service I	Service I	Service M	

23 H

21	35	53	54	55
21#16	100#22D	53#20	4#12 9#16 40#22D	55#20
Service II	Service M	Service I	Service M	Service I

25 J

04	07	08	11	19	20	24	24
8#16 48#20	2#8 triax 97#22D	8#8 triax	2#20 9#10	19#20	10#10 4#12 13#16 3#8	12#16 12#12	24 Optical Ways
Service I	Service M	Service M	Service N	Service I	Service I	Service II	Service I

29	35	37	41	43	44	46	61	88
29#16	128#22D	37#16	22#22D 3#20 11#16 2#12 3#8 triax	23#20 20#16	4#4 power 4#16	40#20 4#16 2#8 coax	61#20	8 Quadrax
Service I	Service M	Service I	Service M	Service I	Service I	Service I	Service I	

Standard
QPL qualified
Elio fiber optics
Ethernet Quadrax



D38999 with USB or RJ45 Ethernet ports



- Available in feed through, solder out and pigtail versions.
- Uplinks
- RJ 45 = shell size 19 & USB = shell size 17

Compact series



- Compatible with shrink boot rear accessory.
- Available also in composite for shell size 06-35.
- Small shell size 02, 04, 06 available with #22D and #26 removable contacts.
- Especially designed for all harsh environments requiring : Compacity and/or light weight, quick installation and quick connection / disconnection

Rack-panel



- Applications of interconnection between a fixed unit (panel) and a mobile
- Unit (rack) without any coupling / uncoupling system, but with sealing,
- EMI performances and overtravel capability features.

EMI/RFI Filter



- Filter solutions saving space, weight, and design time
- 100% Interchangeable with standard non-filtered 38999 shells.
- Available in all 38999 insert arrangements
- Available in all 38999 shell materials and finishes including composite and marine bronze.
- Transient Voltage Suppression solutions also available (as per DO 160-D and MIL-STD 461E).

Derived Series



Lanyard Release

- Quick disconnect requirement according to D38999-31 specification and MIL-STD-1760 type1
- Triple thread coupling according to MIL-DTL-38999.



Push Pull

- Defense and aerospace applications
- Easy mating with safety check of mating = Plug ring rotates when mated
- Scoop proof
- Blind mating provision (provision to ensure proper mating of connector even in blind mating condition).



Through Bulkhead

- Receptacle allows disconnection both side of the bulkhead



Hermetic

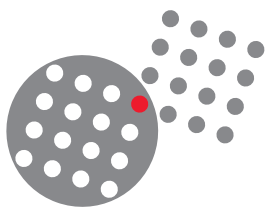
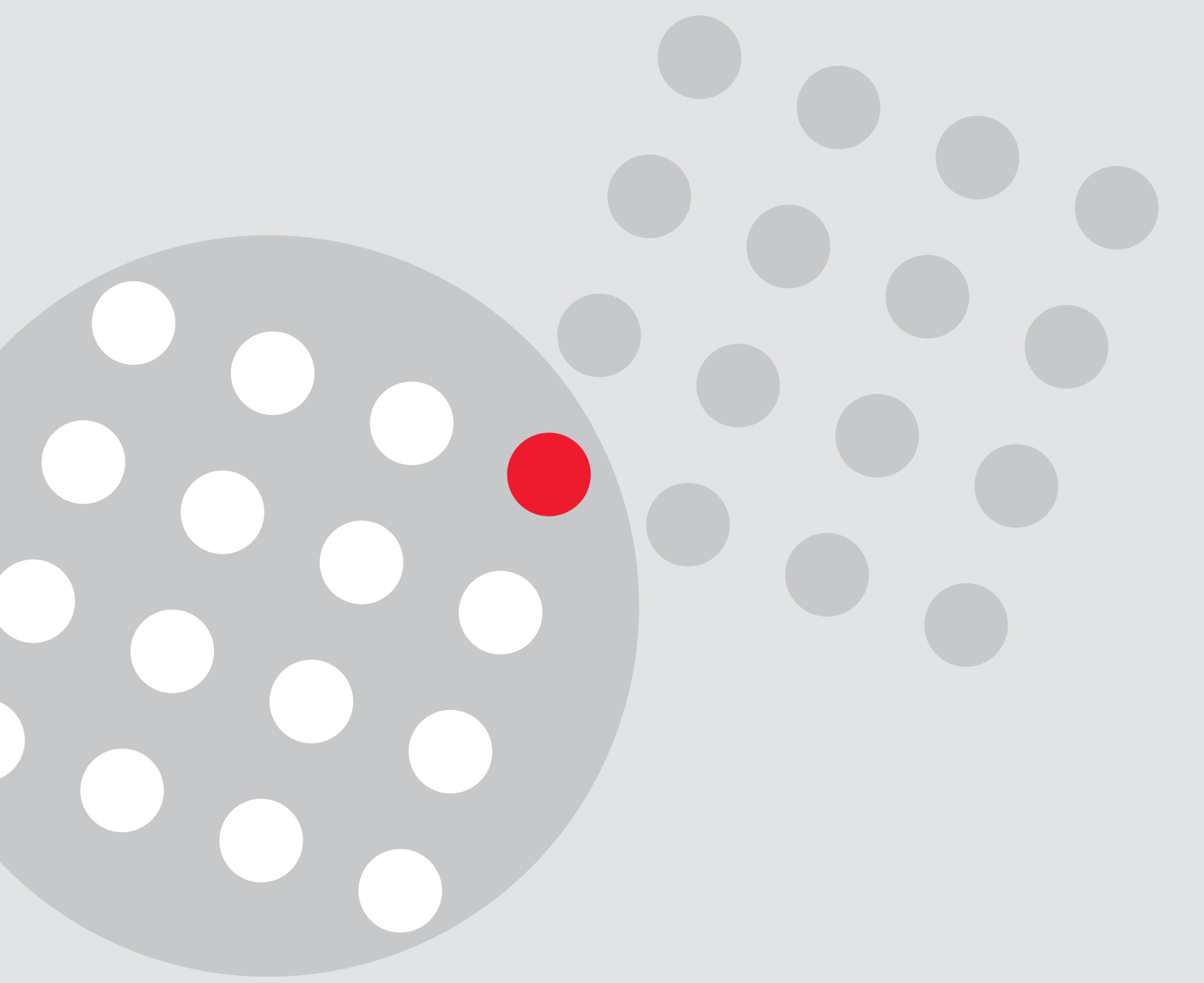
- Glass sealed version (helium leakage test)
- Low profile for compacity requirements



Potted

- Reinforced sealing : Souriau's economical answer to harsh environments
- Better shock resistance than hermetic glass seal.
- Weight saving vs hermetic version
- Low profile for compacity requirements
- Male & female contact availability

Notes



SOURIAU
Connection Technology

www.souriau.com