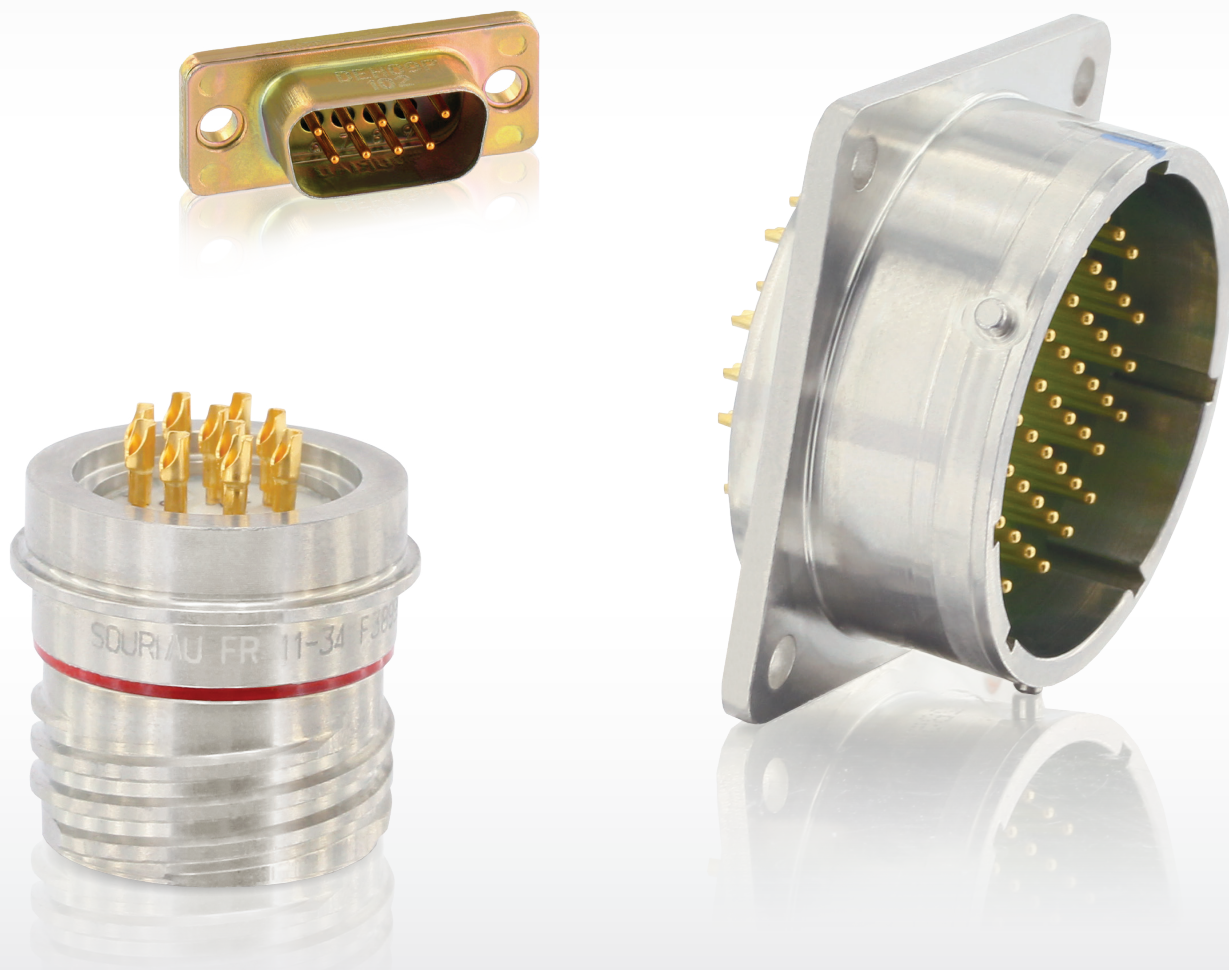




Hermetic Connectors

High Performance Sealing Solutions

Алматы (7273)495-231
 Ангарск (3955)60-70-56
 Архангельск (8182)63-90-72
 Астрахань (8512)99-46-04
 Барнаул (3852)73-04-60
 Белгород (4722)40-23-64
 Благовещенск (4162)22-76-07
 Брянск (4832)59-03-52
 Владивосток (423)249-28-31
 Владикавказ (8672)28-90-48
 Владимир (4922)49-43-18
 Волгоград (844)278-03-48
 Вологда (8172)26-41-59
 Воронеж (473)204-51-73
 Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
 Ижевск (3412)26-03-58
 Иркутск (395)279-98-46
 Казань (843)206-01-48
 Калининград (4012)72-03-81
 Калуга (4842)92-23-67
 Кемерово (3842)65-04-62
 Киров (8332)68-02-04
 Коломна (4966)23-41-49
 Кострома (4942)77-07-48
 Краснодар (861)203-40-90
 Красноярск (391)204-63-61
 Курск (4712)77-13-04
 Курган (3522)50-90-47
 Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
 Москва (495)268-04-70
 Мурманск (8152)59-64-93
 Набережные Челны (8552)20-53-41
 Нижний Новгород (831)429-08-12
 Новокузнецк (3843)20-46-81
 Ноябрьск (3496)41-32-12
 Новосибирск (383)227-86-73
 Омск (3812)21-46-40
 Орел (4862)44-53-42
 Оренбург (3532)37-68-04
 Пенза (8412)22-31-16
 Петрозаводск (8142)55-98-37
 Пермь (8112)59-10-37
 Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
 Рязань (4912)46-61-64
 Самара (846)206-03-16
 Санкт-Петербург (812)309-46-40
 Саратов (845)249-38-78
 Севастополь (8692)22-31-93
 Саранск (8342)22-96-24
 Симферополь (3652)67-13-56
 Смоленск (4812)29-41-54
 Сочи (862)225-72-31
 Ставрополь (8652)20-65-13
 Сургут (3462)77-98-35
 Сыктывкар (8212)25-95-17
 Тамбов (4752)50-40-97
 Тверь (4822)63-31-35

Тольятти (8482)63-91-07
 Томск (3822)98-41-53
 Тула (4872)33-79-87
 Тюмень (3452)66-21-18
 Ульяновск (8422)24-23-59
 Улан-Удэ (3012)59-97-51
 Уфа (347)229-48-12
 Хабаровск (4212)92-98-04
 Чебоксары (8352)28-53-07
 Челябинск (351)202-03-61
 Череповец (8202)49-02-64
 Чита (3022)38-34-83
 Якутск (4112)23-90-97
 Ярославль (4852)69-52-93

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Hermetic Connectors



Presentation

Based on glass to metal seal technology, **SOURIAU** offers hermetic connectors to cover applications which require performances that supersede standard watertight connectors capability, such as high pressure, high temperature variations resistance, secured hermetic protection, ...

In addition to the various connector standards on which this technology has been developed, **SOURIAU** supports customers specific needs, from a shell or contact change to more complex and innovative solutions.

This hermetic connectors catalog aims to give an extensive outlook of **SOURIAU**'s offering. After an overall view of the hermetic technology, you will find a detailed description of each connector range specifics features, as well as dimensions and ordering details. The end of the catalog will give you a flavor of some of the various specific extensions. Enjoy the reading!

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Hermetic

Overview

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■ Features & Benefits	7
■ Standard glass to metal sealing technologies	8
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Typical applications



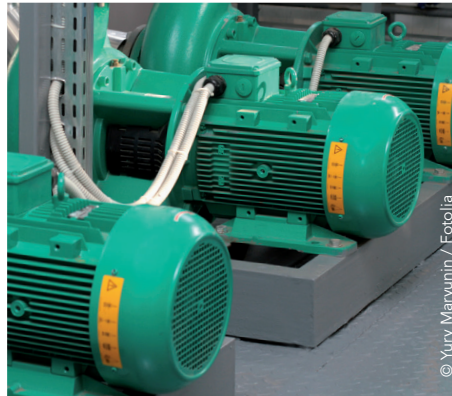
Actuators - Monitoring



Sensors



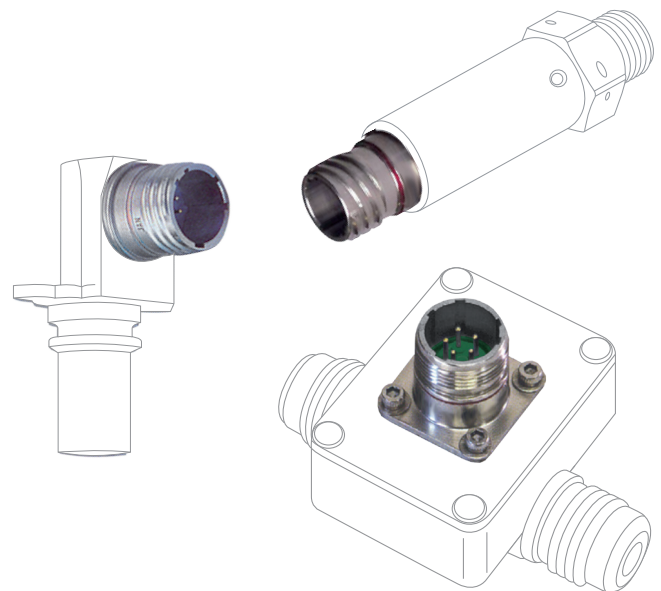
Valves - Flowmeters



Vacuum Pumps



High-Tech Cameras



Features & Benefits

HIGH SEALING

Hermetic connector

Leak rate less than $10^{-7}\text{cm}^3/\text{s}$ at 1 bar pressure difference under helium.

Less than 1 cm^3 leaks in 4 months.

SPACE SAVING

Compacity

No need of additional rear accessories.

1/3 shorter than watertight connector equivalent.

Solder mount option for full equipment integration.

LARGE OFFER

Wide range of standards

Large connectors offer available in circular as well as rectangular ranges: EN2997, MIL-C-26482 Series I & II, EN3646, MIL-C-38999, micro38999, D-Sub, ...

CUSTOM SOLUTION

Adapted to specific need

Wide range of custom solutions based on standard definition: specific shell, materials, contact length, grounding, ...

ROHS

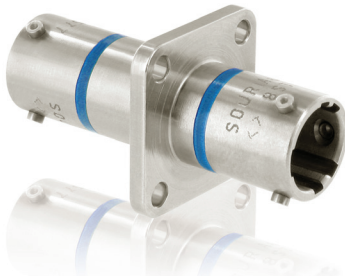
Environment friendly

No lead content.

Standard glass to metal

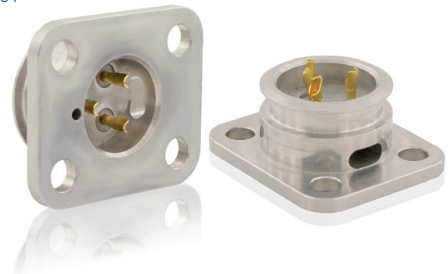
Feedthrough

Easy MRO (Maintenance, Repair and Operations)
See page 63



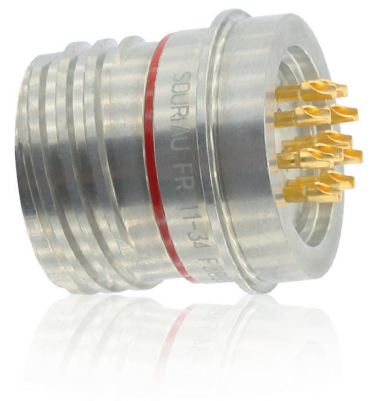
Solder contacts on both sides

Compact design
See page 64



Standard hermetic

Glass to metal sealing



+ Added functions

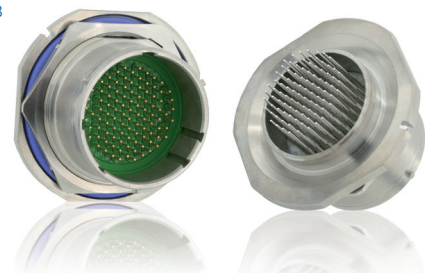
Removable crimp contacts

Ideal for fuel immersion
See page 62



Rack & panel

Blind mating
See page 63



sealing technologies

Contact grounded on the shell

Integrated grounded function

See page 65



Thermocouples

Accurate temperature data communication

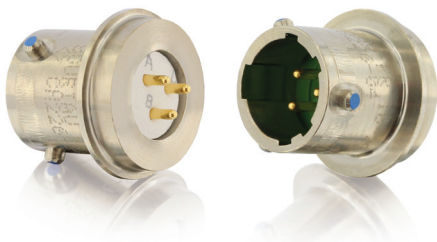
See page 65



+ Added functions

Titanium

30% weight saving



PCB contacts / Stand-offs

Robust PCB mount design

See page 62



Standard glass to metal sealing technologies

Capability to Provide Custom Solutions

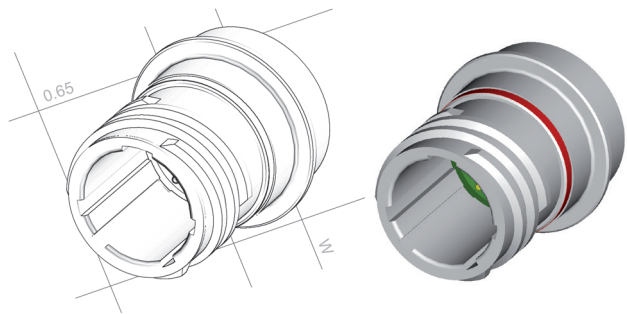
- ▶ Tight tolerances,
- ▶ Specific shells,
- ▶ Specific contacts,
- ▶ Filtering, ...



Ex: Custom EN2997

Technical Support

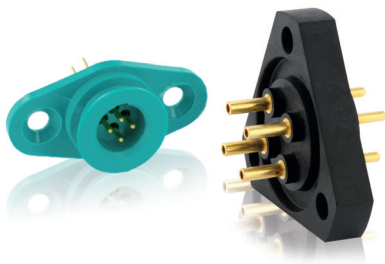
- ▶ SOURIAU engineering team will proactively support your new designs. Contact us!



Alternative sealing technologies

Full plastic hermetic

Big volume low weight hermetic



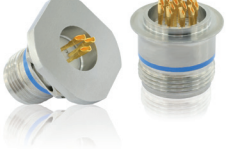
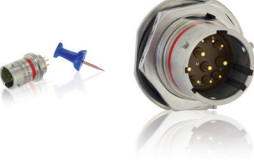
Resin sealed

Flexible low weight hermetic

See page 66



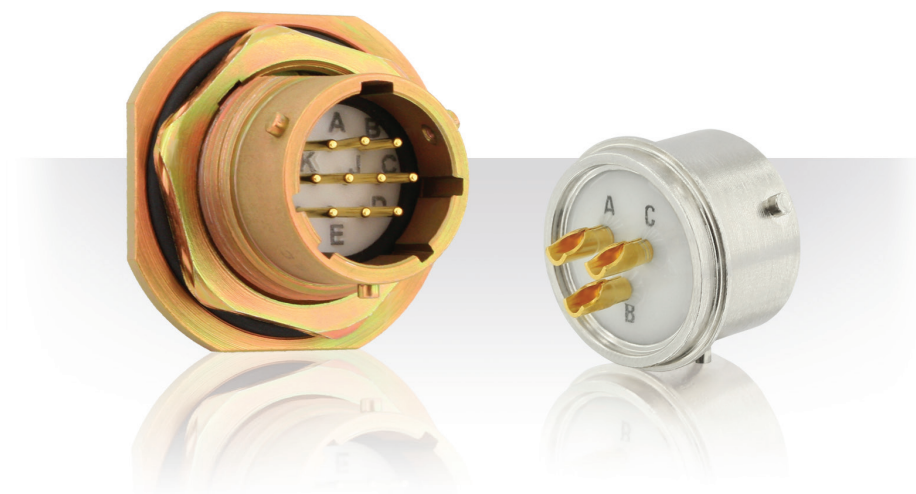
Hermetic range selector guide

	► Standard	► Main feature	► Material
► 851 Series see p.14 	MIL-C 26482 Series I	Economic	Steel housing
► 8525 Series see p.20 	EN3646	Quick and robust bayonet coupling	Passivated stainless steel housing
► 8526 Series see p.29 	MIL-C 26482 Series II	Quick and robust bayonet coupling	Tin plated steel housing
► 8533 Series see p.36 	EN2997/ESC10	High temperature and high vibration (engine conditions)	Passivated stainless steel housing
► 8D Series see p.44 	MIL-C-38999 Series III	High density	Passivated stainless steel housing
► 8STA Series see p.53 	Derived from MIL-DTL-38999	Micro-miniature	Passivated stainless steel housing
► D-Sub Series see p.56 	MIL-DTL-24308	Rectangular	Tin or cadmium plated steel housing

Hermetic

Product Series

■ 851 Series	14
■ 8525 Series	20
■ 8526 Series	29
■ 8533 Series	36
■ 8D Series	44
■ 8STA Series	53
■ D-Sub Series	56



Description

- Bayonet coupling connector
- MIL-DTL-26482 Series I, HE301 compliant and VG95328 qualified
- Glass sealed hermetic:
 - . high hermeticity performance
 - . compact low profile
- Various mounting styles:
 - . compact solder mount receptacle
 - . easy to install square flange receptacle
 - . easy to replace jam nut receptacle
- Solder cup or PC tail contacts

Technical features

Materials

- **Shell:**
Steel
- **Plating:**
Iridescent yellow cadmium
Nickel
- **Contact:**
Gold plated ferrous alloy
- **Seal:**
Fluorocarbon elastomer

Electrical

- Max current rating per contact:

Contact size	20	16
Rating (A)	5	10

- Dielectric withstanding voltage:

Service	Standard pressure	10 mbar pressure
I	1 500 Vrms	200 Vrms
II	2 300 Vrms	300 Vrms

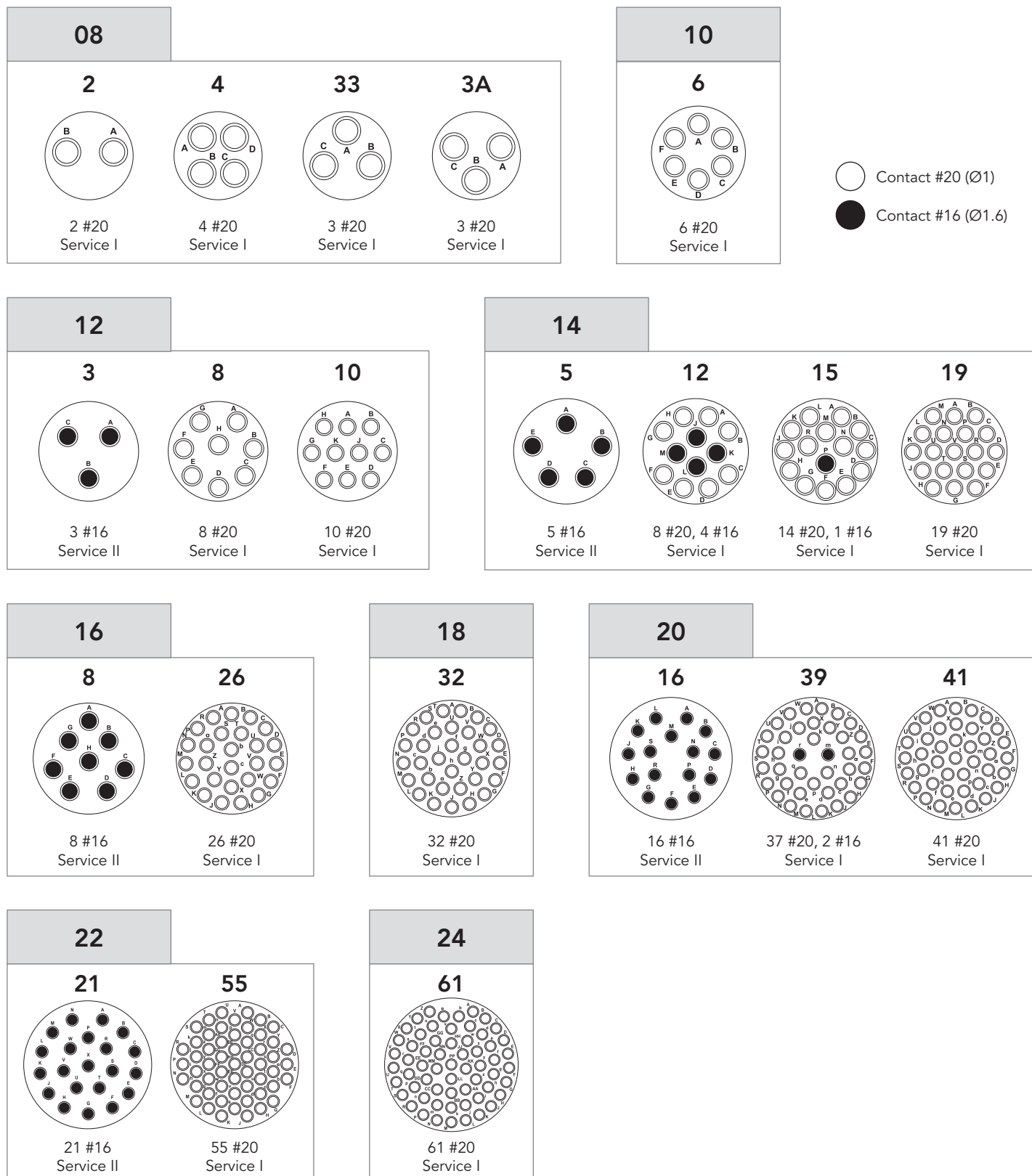
- **Contact resistance:**

Size 20 $\leq 30 \text{ m}\Omega$
Size 16 $\leq 14 \text{ m}\Omega$

Environmental

- **Operating temperature:**
-55°C to +125°C
- **Hermeticity:**
Leak rate $< 1.10^{-7} \text{ atm.cm}^3/\text{s}$
(helium gas test)
- **Salt spray:**
48 hours min

Contact layouts



Ordering information

SOURIAU part numbers

Basic series	851	02H	18	32	P	50
Shell type:						
IH: Solder mount receptacle						
02H: Square flange receptacle						
07H: Jam nut receptacle						
Shell size:						
08, 10, 12, 14, 16, 18, 20, 22, 24						
Contact layout:						
See previous page						
Contact type:						
P: Pin						
Orientation:						
None: Normal (N)						
W, X, Y, Z - see page 19						
Mandatory suffix:						
50: Gold plating for contact size 20 and size 16						
Specification:						
None: Yellow cadmium plating - 02H and 07H only						
Nickel plated - IH only						
44: Nickel plated - 02H and 07H only						

VG95328 qualified products

Basic series	VG95328	F	18	32	P	N
Shell type:						
G: Solder mount receptacle						
P: Square flange receptacle						
F: Jam nut receptacle						
Shell size:						
08, 10, 12, 14, 16, 18, 20, 22, 24						
Contact layout:						
See previous page						
Contact type:						
P: Pin						
Orientation:						
N, W, X, Y, Z - see page 19						

Contact layouts (matrix)

Shell size	Layout	Hermetic			Number of contacts	
		851	MIL-DTL-26482G	VG95328	#20	#16
08	8-2	OK	OK		2	
	8-3	Available on request, please consult us			3	
	8-3A	OK		Q	3	
	8-98		OK		3	
	8-33	OK	OK		3	
	8-4	OK	OK		4	
10	10-6	OK	OK	Q	6	
	10-7	Available on request, please consult us			7	
	10-98	Available on request, please consult us			6	
12	12-2	Available on request, please consult us				2
	12-3	OK	OK	Q		3
	12-8	OK	OK		8	
	12-10	OK	OK	Q	10	
	12-14	Available on request, please consult us			14	
14	14-5	OK	OK	Q		5
	14-12	OK	OK	Q	8	4
	14-15	OK	OK	Q	14	1
	14-18	Available on request, please consult us			18	
	14-19	OK	OK	Q	19	

Shell size	Layout	Hermetic			Number of contacts	
		851	MIL-DTL-26482G	VG95328	#20	#16
16	16-8	OK	OK	Q		8
	16-23	Available on request, please consult us			22	1
	16-26	OK	OK	Q	26	
18	18-11	Available on request, please consult us				11
	18-32	OK	OK	Q	32	
	18-30	Available on request, please consult us			29	1
20	20-16	OK	OK	Q		16
	20-24	Available on request, please consult us			24	
	20-25	Available on request, please consult us			25	
	20-27	Available on request, please consult us			27	
	20-39	OK	OK	Q	37	2
	20-41	OK	OK	Q	41	
22	22-21	OK	OK	Q		21
	22-32	Available on request, please consult us			32	
	22-34	Available on request, please consult us			34	
	22-36	Available on request, please consult us			36	
	22-55	OK	OK	Q	55	
24	24-61	OK	OK	Q	61	

OK = SOURIAU's layout
Q = SOURIAU's qualified layout

Cross reference list

SOURIAU	NFC 93422 HE 301B	MIL-DTL-26482G Series I Not QPL
851 02H •••• P □ 50	HE 301 B 02 H •••• P □ 3A	-
851 07H •••• P □ 50	HE 301 B 07 H •••• P □ 3A	MS 3114 H •• C •• P □
851 IH •••• P □ 50	HE 301 B 1 H •••• P □ 3A	MS 3113 H •• C •• P □

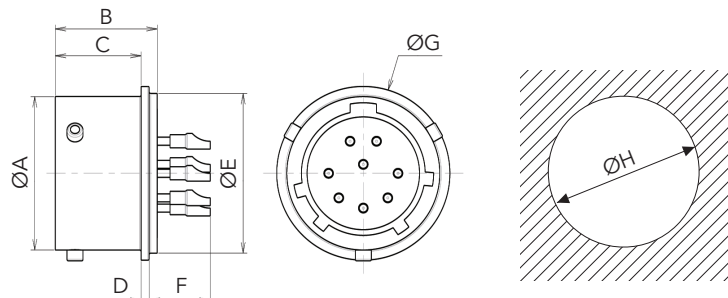
•• Shell size
□ □ Layout
□ Orientation. Empty if orientation N - only for «Souriau», «NFC93422» and «MIL-DTL-26482G Series I»

Maximum connector weights (in grams)

Shell size	8	10	12	14	16	18	20	22	24
Shell type									
Solder mount receptacle (type IH)	7	9	13	17	21	26	32	37	43
Square flange receptacle (type 02H)	10	12	16	21	26	33	41	47	55
Jam nut receptacle (type 07H)	20	25	38	45	52	63	86	96	115

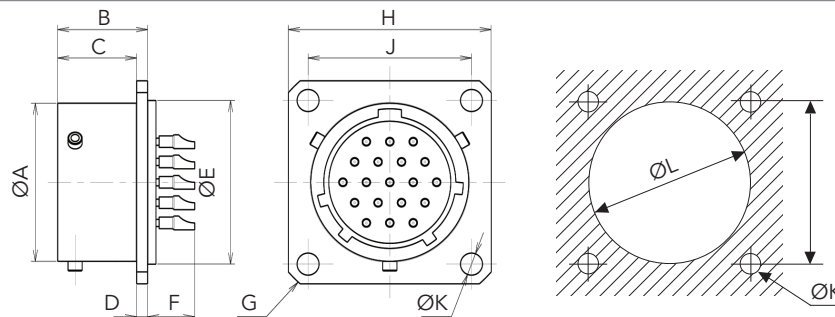
Dimensions

Solder mount receptacle (type IH)



Shell size	A max	B ±0.2	C ±0.2	D ±0.14	E $\begin{smallmatrix} +0.02 \\ -0.13 \end{smallmatrix}$	F max	G max	H ±0.1
8	12.03	13.84	10.70	0.80	14.27	8.60	16.40	14.70
10	15.01	13.84	10.70	0.80	17.07	8.60	19.40	17.50
12	19.07	13.84	10.70	0.80	19.84	8.60	21.80	20.20
14	22.25	13.84	10.70	0.80	23.01	8.60	25.00	23.40
16	25.42	13.84	10.70	0.80	26.19	8.60	28.10	26.60
18	28.60	13.84	10.70	0.80	29.36	8.60	31.30	29.80
20	31.77	15.42	12.70	0.80	31.75	8.60	33.70	32.10
22	34.95	16.23	12.70	0.80	34.92	8.60	36.90	35.30
24	38.12	17.04	13.10	0.80	38.10	7.80	40.10	38.40

Square flange receptacle (type 02H)

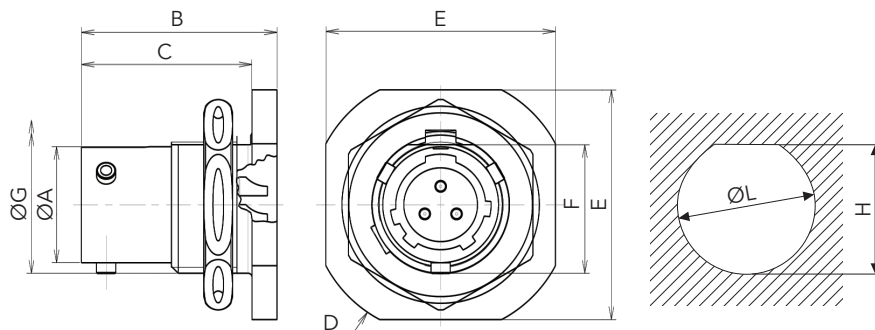


Shell size	A max	B ±0.2	C ±0.2	D ±0.14	E $\begin{smallmatrix} +0.02 \\ -0.13 \end{smallmatrix}$	F max	G max	H max	J	K ±0.1	L min
8	12.03	13.84	11.24	1.55	14.27	7.5	27.09	21.03	15.09	3.15	15.55
10	15.01	13.84	11.24	1.55	17.07	7.5	31.87	24.23	18.26	3.15	18.80
12	19.07	13.84	11.24	1.55	19.84	7.5	35.04	26.59	20.62	3.15	22.15
14	22.25	13.84	11.24	1.55	23.01	7.5	38.22	28.98	23.00	3.15	25.30
16	25.42	13.84	11.24	1.55	26.19	7.5	41.39	31.34	24.61	3.15	28.45
18	28.60	13.84	11.24	1.55	29.36	7.5	44.57	33.73	26.97	3.15	31.65
20	31.77	15.42	12.00	2.36	31.75	7.5	47.74	36.91	29.36	3.15	34.80
22	34.95	16.23	12.00	2.36	34.92	7.5	50.92	40.10	31.75	3.15	38.00
24	38.12	17.04	12.81	2.36	38.10	6.7	55.69	43.27	34.92	3.82	41.20

Note: All dimensions are in millimeters (mm)

Dimensions

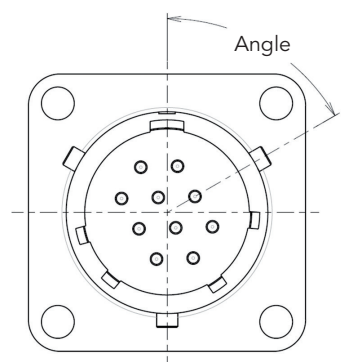
Jam nut receptacle (type 07H)



Shell size	A max	B max	C ±0.25	D max	E max	F ±0.1	G max	H ±0.1	L ±0.1
8	12.03	20.60	17.93	27.37	24.07	13.33	14.26	13.75	14.60
10	15.01	20.60	17.93	30.57	27.22	16.51	17.43	16.95	17.75
12	19.07	20.60	17.93	35.32	32.00	20.63	22.19	21.50	22.50
14	22.25	20.60	17.93	38.50	35.17	23.78	25.36	24.20	25.70
16	25.42	20.60	17.93	41.67	38.35	26.93	28.54	27.35	28.85
18	28.60	20.60	17.93	44.85	41.52	30.10	31.71	30.55	32.05
20	31.77	26.15	22.70	49.62	46.27	33.28	34.89	33.70	35.20
22	34.95	26.15	22.70	52.77	49.47	36.45	38.06	36.90	38.40
24	38.12	26.98	23.54	55.97	52.62	39.63	41.24	40.05	41.55

Orientation

Polarization code



Viewed from receptacle front face.
Insulator rotated inside metal body.

Shell size	Layout	Angle in degrees			
		W	X	Y	Z
8	2	58	122	-	-
	4	45	-	-	-
	33	90	-	-	-
	3A	60	210	-	-
10	6	90	-	-	-
12	3	-	-	180	-
	8	90	112	203	292
	10	60	155	270	295
14	5	40	92	184	273
	12	43	90	-	-
	15	17	110	155	234
	19	30	165	315	-

Shell size	Layout	Angle in degrees			
		W	X	Y	Z
16	8	54	152	180	331
	26	60	-	275	338
18	32	85	138	222	265
20	16	238	318	333	347
	41	45	126	225	-
22	21	16	135	175	349
	55	30	142	226	314
24	61	90	180	270	324

Description

- EN3646 standard qualified robust bayonet coupling according to HE302 standard
- Glass sealed hermetic
- Compact low profile - 30% shorter than the standard version
- Solder cup contacts as well as PCB contacts
- Specific fuel tank version for long term fuel immersion
- Specific large square flange option to adapt an O'ring for an improved panel to connector sealing

Technical features

Mechanical

- **Shell:**
Passivated stainless steel
- **Seals:**
Silicone elastomer
- **Contact:**
Gold plated ferrous alloy
- **Shock:**
As per EN3646
- **Endurance:**
500 mating/unmating operations
- **Vibrations:**
5Hz to 3000Hz at constant acceleration of 10g (3 x 4 hours)

Electrical

- **Max current rating per contact:**

Contact size	20	16	12
Rating (A)	5	10	17

- **Dielectric withstanding voltage:**

Service	Sea level	21 000 m
I	1 500 Vrms	375 Vrms
II	2 300 Vrms	500 Vrms

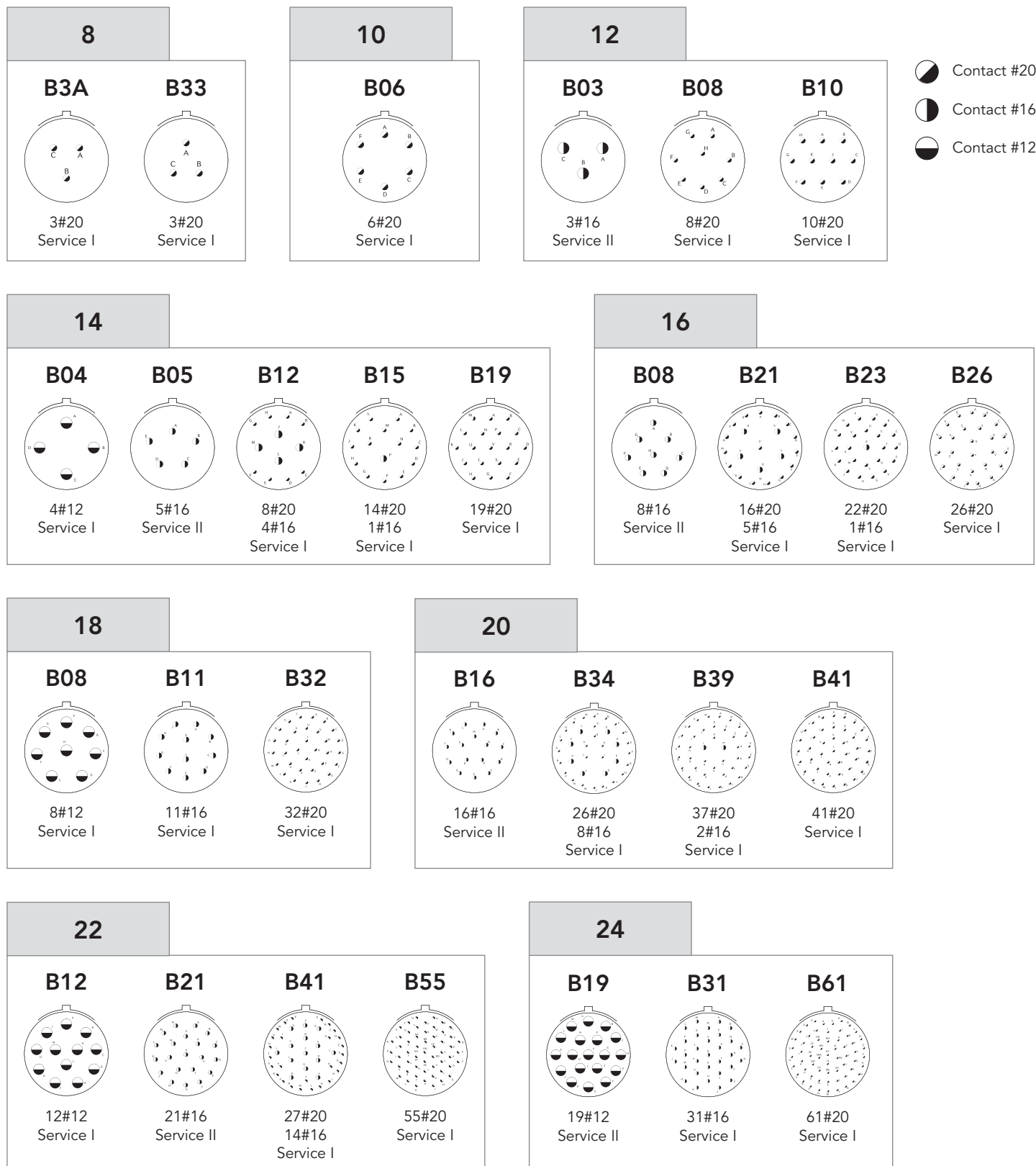
- **Shell continuity:**
≤ 50 mΩ
- **Contact resistance at rated current:**
Maximum initial contact resistance at ambient temperature

Contact size	20	16	12
Resistance mΩ	12	8	5

Environmental

- **Operating temperature:**
-65°C to 200°C
- **Hermeticity:**
1.10⁻⁷ atm.cm³/s under a1 bar differential pressure
- **Salt spray:**
48 hours min. as per EN3646
- **Resistance to fluids (standard):**
As per EN3646, including fuel, hydraulic fluids and oils
- **Fuel immersion version:**
 - . JP5 long term immersion
 - . 105°C maximum

Contact layouts



Contact layouts (matrix)

Shell size	Layout	Hermetic 8525	Hermetic EN3646	8525 spec. 002	8525 spec. 022	8525 spec. A76	Number of contacts		
							#20	#16	#12
08	8B3A	OK	Q	OK	OK		3		
	8B33	OK	Q	OK			3		
10	10B6	OK	Q	OK			6		
12	12B3	OK	Q	OK				3	
	12B8	Available on request, please consult us					8		
	12B10	OK	Q	OK	OK	OK	10		
14	14B4	OK	Q	OK	OK				4
	14B5	OK	Q	OK				5	
	14B12	OK	Q	OK			8	4	
	14B15	OK	Q	OK			14	1	
	14B19	OK	Q	OK	OK	OK	19		
16	16B8	OK	Q	OK				8	
	16B21	OK	Q	OK			16	5	
	16B23	Available on request, please consult us					22	1	
	16B26	OK	Q	OK	OK		26		
18	18B8	OK	Q	OK					8
	18B11	Available on request, please consult us						11	
	18B32	OK	Q	OK			32		

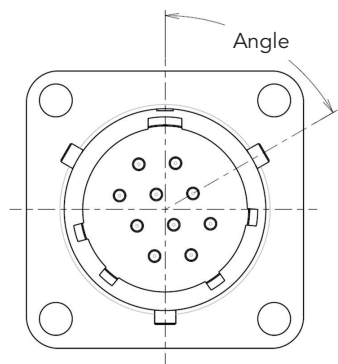
Shell size	Layout	Hermetic 8525	Hermetic EN3646	8525 spec. 002	8525 spec. 022	8525 spec. A76	Number of contacts		
							#20	#16	#12
20	20B16	OK	Q	OK				16	
	20B34	Available on request, please consult us					26	8	
	20B39	OK		OK			37	2	
	20B41	OK	Q	OK	OK	OK	41		
22	22B12	Available on request, please consult us							12
	22B21	OK	Q	OK				21	
	22B41	OK	Q	OK			27	14	
	22B55	OK	Q	OK	OK		55		
24	24B19	Available on request, please consult us							19
	24B31	Available on request, please consult us						31	
	24B61	OK	Q	OK			61		

OK = SOURIAU's layout

Q = SOURIAU's qualified layout

Orientation

Polarization code



Viewed from receptacle front face.
Insulator rotated inside metal body.

Shell size	Layout	N	W	X	Y	Z
08	B3A	0	60	210	-	-
	B33	0	90	-	-	-
10	B6	0	90	-	-	-
12	B3	0	140	220	180	-
	B10	0	60	155	270	295
14	B4	0	45	-	-	-
	B5	0	40	92	184	273
	B12	0	43	90	-	-
	B15	0	17	110	155	234
	B19	0	30	165	315	-

Shell size	Layout	N	W	X	Y	Z
16	B8	0	54	152	180	331
	B21	0	-	-	-	-
	B26	0	60	-	275	338
18	B8	0	180	-	-	-
	B32	0	85	138	222	265
20	B16	0	238	318	333	347
	B39	0	63	144	252	333
	B41	0	45	126	225	-
22	B21	0	16	135	175	349
	B41	0	39	135	264	-
	B55	0	30	142	226	314
24	B61	0	90	180	270	324

Ordering information

SOURIAU part numbers

Basic series	8525	IH	18B32	P	N	H
Shell type:						
IH: Solder mount receptacle						
02H: Square flange receptacle						
07H: Jam nut receptacle						
Contact layout:						
See page 21						
Contact type:						
P: Pin						
Orientation:						
N, W, X, Y, Z - see page 22						
Specification (see previous page for available layouts):						
H: Standard hermetic version						
H002: Large flange - 02H version only						
H005: Short PC tail contacts - see page 28						
022: Fuel tank version						
H275: Long PC tail contacts - see page 28						
HA76: Fuel tank version with crimp contacts - Jam nut only						

EN3646 qualified products

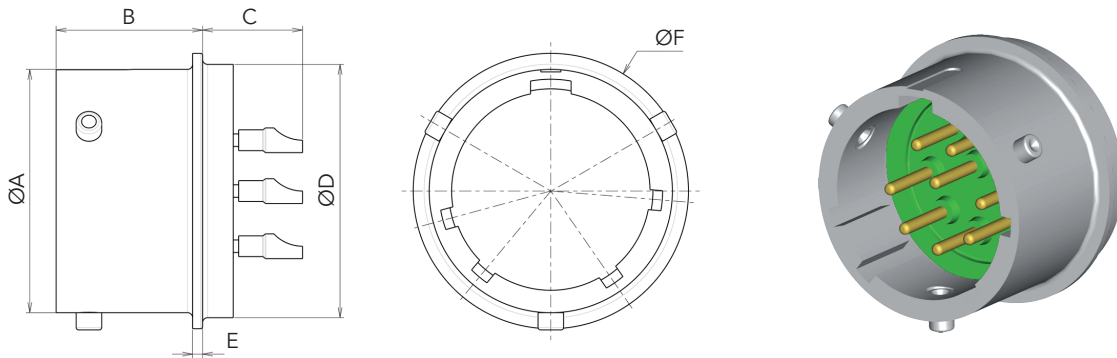
Basic series	EN3646	Y	0	08	03	M	N
Mandatory suffix:							
Y: Hermetic							
Shell type:							
0: Square flange receptacle							
1: Solder mount receptacle							
7: Jam nut receptacle							
Shell size:							
08, 10, 12, 14, 16, 18, 20, 22, 24							
Contact layout:							
See page 21							
Contact type:							
M: Pin							
Orientation:							
N, W, X, Y, Z - see page 22							

Maximum connector weights (in grams)

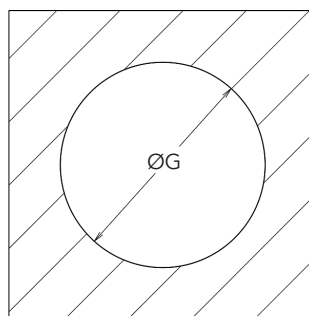
Shell type \ Shell size	8	10	12	14	16	18	20	22	24
Solder mount receptacle (type IH)	7	9	13	17	21	26	32	37	43
Square flange receptacle (type 02H)	10	12	16	21	26	33	41	47	55
Large square flange receptacle (type 02H spec. 002)	16	18	24	29	34	40	56	60	70
Jam nut receptacle (type 07H)	20	25	38	45	52	63	86	96	115

Dimensions

Solder mount receptacle (type IH)



Shell size	A max	B ± 0.5	C max	D $^{+0.02}_{-0.13}$	E ± 0.14	F max	G $^{+0.25}_0$
8	12.02	11.5	10	14.27	0.8	16.1	14.79
10	14.99	11.5	10	17.07	0.8	19.3	17.59
12	19.05	11.5	10	19.84	0.8	21.7	20.36
14	22.23	11.5	10	23.01	0.8	24.9	23.53
16	25.4	11.5	10	26.19	0.8	28.1	26.71
18	28.58	11.5	10	29.36	0.8	31.2	29.88
20	31.75	13.5	10	31.75	0.8	33.8	32.27
22	34.93	13.5	11	34.92	0.8	36.8	35.42
24	38.1	13.9	11	38.1	0.8	40	38.60

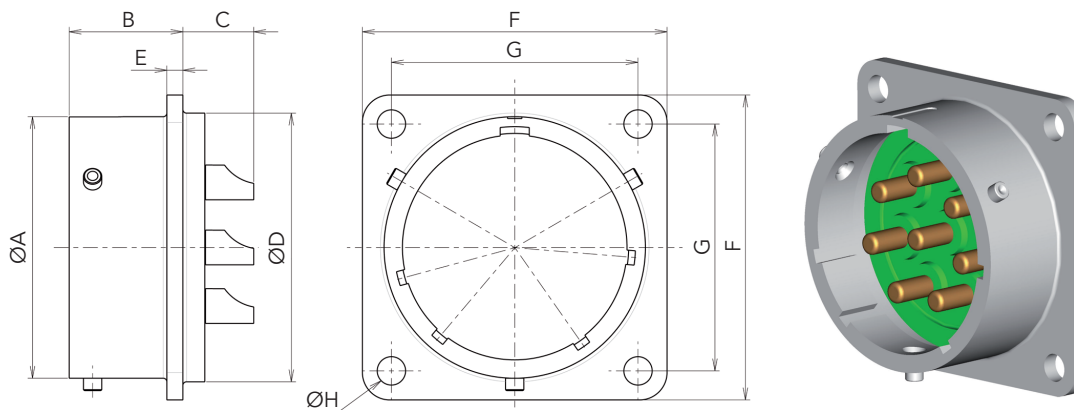


Panel cut-out

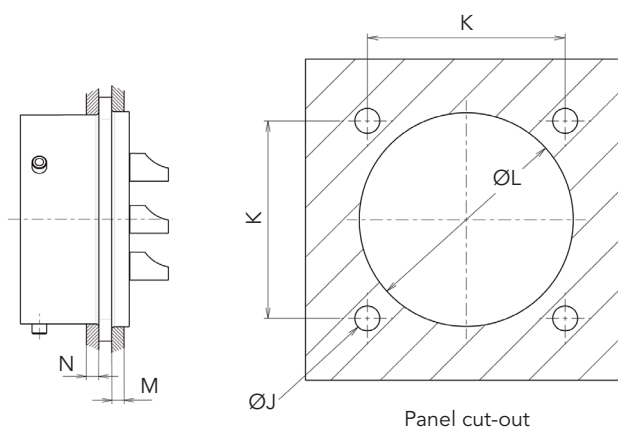
Note: All dimensions are in millimeters (mm)

Dimensions

Square flange receptacle (type 02H)

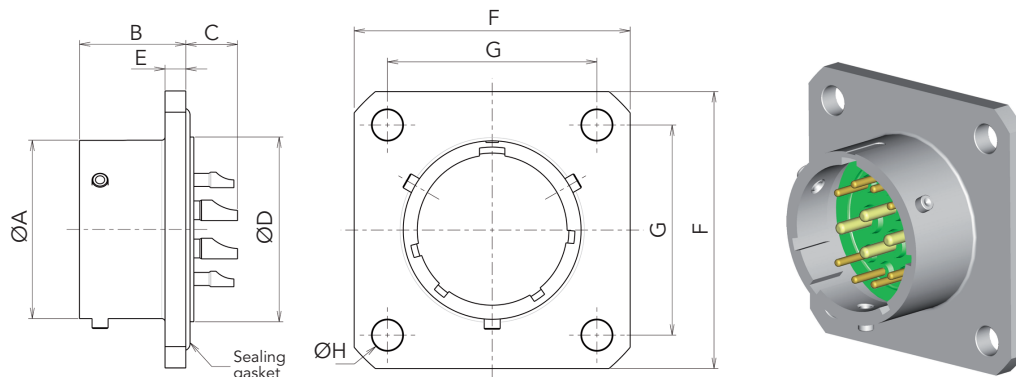


Shell size	A max	B ±0.55	C max	D ⁺⁰ _{-0.3}	E	F max	G	H ±0.15	J ±0.15	K	L ⁺⁰ _{-0.3}	M	N max
8	12.02	12.65	8.4	14.3	1.63±0.28	21.03	15.1	3.15	3.15	15.1	14.79	3.5	2.3
10	14.99	12.65	8.4	17.1	1.63±0.28	24.23	18.26	3.15	3.15	18.26	17.59	3.5	2.3
12	19.05	12.65	8.4	19.9	1.63±0.28	26.59	20.62	3.15	3.15	20.62	20.36	3.5	2.3
14	22.23	12.65	8.4	23.05	1.63±0.28	28.98	23.01	3.15	3.15	23.01	23.53	3.5	2.3
16	25.4	12.65	8.4	26.25	1.63±0.28	31.34	24.61	3.15	3.15	24.61	26.71	3.5	2.3
18	28.58	12.65	8.4	29.4	1.63±0.28	33.73	26.97	3.15	3.15	26.97	29.88	3.5	2.3
20	31.75	14.25	9.6	31.8	1.93±0.58	36.91	29.36	3.15	3.15	29.36	32.27	3.5	5.4
22	34.93	14.25	9.6	35	1.93±0.58	40.1	31.75	3.15	3.15	31.75	35.42	3.5	5.4
24	38.1	15.05	9.6	38.2	1.93±0.58	43.27	34.92	3.73	3.73	34.92	38.60	3.5	5.4

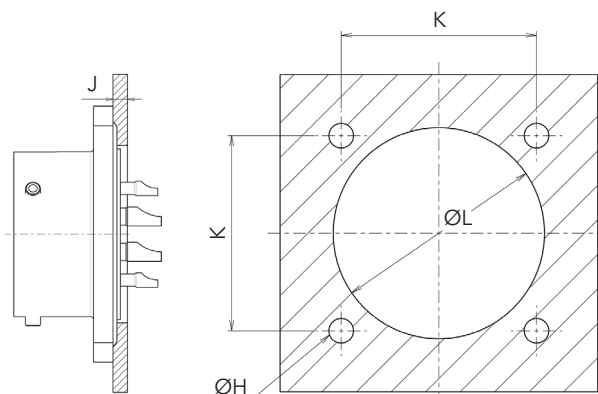


Dimensions

Large square flange receptacle (type 02H spec. 002)



Shell size	A max	B max	C		D max	E max	F max	G	H	J	K	L ⁺⁰ _{-0.3}
			#20	#12/#16								
8	12.02	13.14	6.8	-	14.27	2.6	26.4	18.1	3.8	3.5	18.1	14.79
10	14.99	13.14	6.8	-	17.06	2.6	28.9	20.62	3.8	3.5	20.62	17.59
12	19.05	13.14	6.8	7.1	19.83	2.6	32.1	23.82	3.8	3.5	23.82	20.36
14	22.23	13.14	6.8	7.1	23.01	2.6	34.5	26.18	3.8	3.5	26.18	23.53
16	25.4	13.14	6.8	7.1	26.18	2.6	36.8	28.57	3.8	3.5	28.57	26.71
18	28.58	13.14	6.8	7.1	29.36	2.6	38.8	30.55	3.8	3.5	30.55	29.88
20	31.75	15.84	6	6.3	31.74	3.4	42.8	32.94	3.8	3.5	32.94	32.27
22	34.93	15.84	6	6.3	34.92	3.4	44.8	34.92	3.8	3.5	34.92	35.42
24	38.1	16.64	5.2	5.5	38.09	3.4	47.9	38.1	3.8	3.5	38.1	38.60

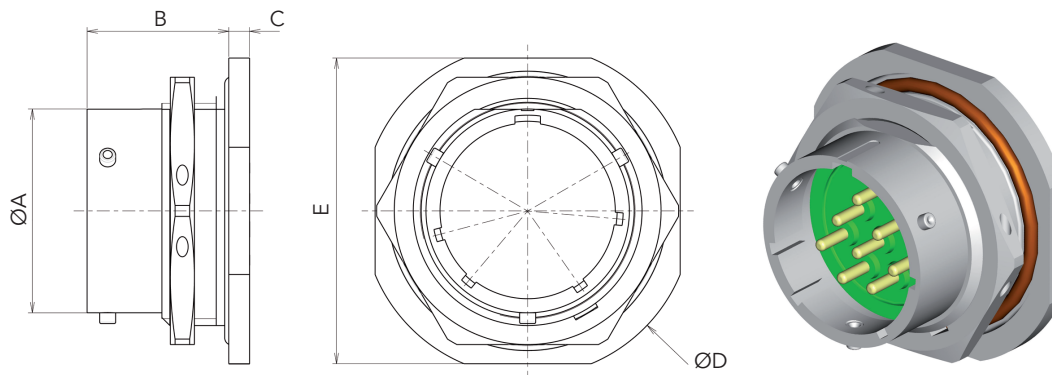


Panel cut-out

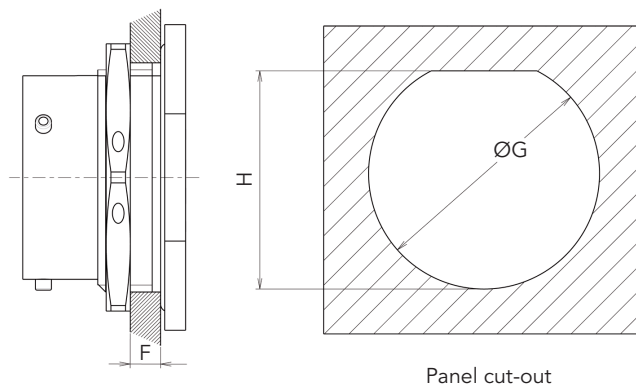
Note: All dimensions are in millimeters (mm)

Dimensions

Jam nut receptacle (type 07H)



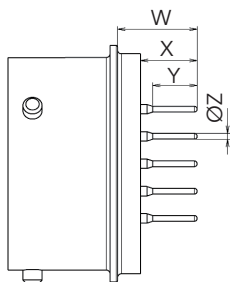
Shell size	A max	B max	C ± 0.5	D max	E ± 0.25	F		G $^{+0.25}_{-0}$	H $^{+0.25}_{-0}$
						min	max		
8	12.02	18.34	2.4	27.37	23.82	1.57	4.75	14.4	13.48
10	14.99	18.34	2.4	30.57	26.97	1.57	4.75	17.58	16.66
12	19.05	18.34	2.4	35.32	31.75	1.57	4.75	22.6	20.8
14	22.23	18.34	2.4	38.5	34.92	1.57	4.75	25.52	23.95
16	25.4	18.34	2.4	41.67	38.1	1.57	4.75	28.7	27.1
18	28.58	18.34	2.4	44.85	41.27	1.57	4.75	31.87	30.27
20	31.75	23.12	3.2	49.62	46.02	1.57	6.35	35.05	33.45
22	34.93	23.12	3.2	52.77	49.22	1.57	6.35	38.22	36.62
24	38.1	23.95	3.2	55.97	52.37	1.57	5.56	41.4	39.8



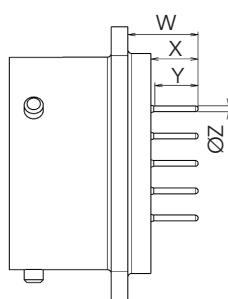
Panel cut-out

Contact variations

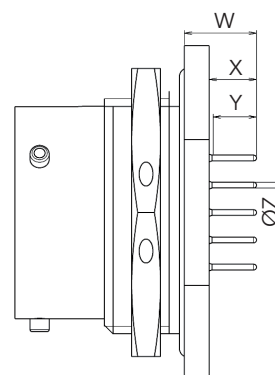
Contact variations summary



Type IH: Solder mount receptacle



Type 02H: Square flange receptacle



Type 07H: Jam nut receptacle

Type of contact	Specification	Shell type	Contact size	W Max	X Min	Y Min	Ø Z Max
Short PCB contact	005	IH	20	9.1	4.55	4.5	0.65
		02H	20	8.4	3.35	4.5	0.65
		07H	20	8.05	3.75	4.5	0.65
Long PCB contact	275	IH	20	13.87	8.5	6	0.65
		02H	20	12.9	7.3	6	0.65
		07H	20	12	7.7	6	0.65

Note: for other contact length, please consult us.

Gaskets & O'rings

Shell size	Gasket for receptacle Type 0 (not delivered with connector)		O ring for receptacle Type 7 (delivered with connector)	
	Part number	Material	Part number	Material
08	85251431	Fluorosilicone	AS3582-016	Silicone
10	85251432	Fluorosilicone	AS3582-018	Silicone
12	85251433	Fluorosilicone	AS3582-021	Silicone
14	85251434	Fluorosilicone	AS3582-023	Silicone
16	85251435	Fluorosilicone	AS3582-025	Silicone
18	85251436	Fluorosilicone	AS3582-027	Silicone
20	85251437	Fluorosilicone	AS3582-029	Silicone
22	85251438	Fluorosilicone	AS3582-030	Silicone
24	85251439	Fluorosilicone	AS3582-031	Silicone

Note: All dimensions are in millimeters (mm)



Description

- Bayonet coupling connector
- Derived from HE312 standard
Qualified per MIL-C 26482 Series 2 standard and PAN 6432
- Glass sealed hermetic:
 - . high hermeticity performance
 - . compact low profile
- Various mounting styles:
 - . compact solder mount receptacle
 - . easy to install square flange receptacle
 - . easy to replace jam nut receptacle
- Solder cup or PC tail contacts
- Specific fuel tank version for long term fuel immersion

Technical features

Mechanical

- **Shell:**
Tin lead (no RoHS) over nickel plated steel
- **Seals:**
Silicone elastomer
- **Contact:**
Gold plated ferrous alloy
- **Endurance:**
500 mating/unmating operations

Electrical

- **Max current rating per contact:**

Contact size	20	16	12
Rating (A)	5	10	17

- **Dielectric withstanding voltage:**

Service	Sea level	21 000 m
I	1 500 Vrms	375 Vrms
II	2 300 Vrms	500 Vrms

- **Shell continuity:**
≤ 50 mΩ

- **Contact resistance at rated current:**
Maximum initial contact resistance at ambient temperature

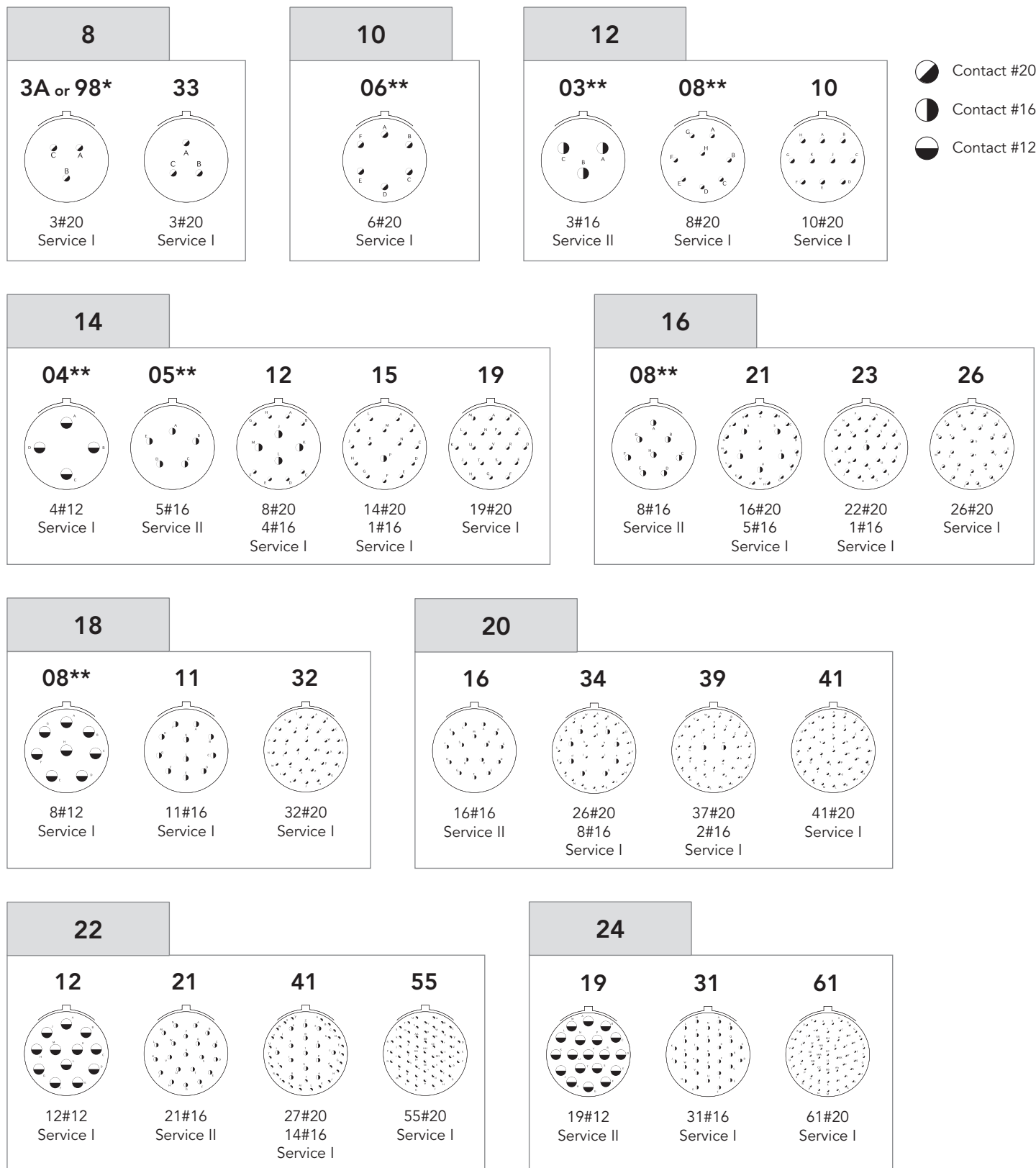
Contact size	20	16	12
Resistance mΩ	12	8	5

- **Insulation resistance:**
≥ 5000 MΩ at 500 Vdc

Environmental

- **Operating temperature:**
-55°C to 200°C
- **Hermeticity:**
Leak rate < 1.10⁻⁷ atm.cm³/s (helium gas test)
- **Salt spray:**
48 hours

Contact layouts



* 3A for 8526 part numbering / 98 for MS part numbering.

** Remove digit "0" for MS part numbering.

Contact layouts (matrix)

Shell size	Layout	Hermetic 8526	MIL-C 26482 G	PAN 6432	Number of contacts		
					#20	#16	#12
08	83A	OK		Q	3		
	898	OK		Q	3		
	833	OK	Q	Q	3		
10	106	OK	Q	Q	6		
12	123	OK	Q	Q		3	
	128	Available on request, please consult us			8		
	1210	OK	Q	Q	10		
14	144	OK		Q			4
	145	OK	Q	Q		5	
	1412	OK	Q	Q	8	4	
	1415	OK	Q		14	1	
	1419	OK	Q	Q	19		
16	168	OK	Q	Q		8	
	1621	OK			16	5	
	1623	Available on request, please consult us			22	1	
	1626	OK	Q	Q	26		
18	188	OK		Q			8
	1811			Q		11	
	1832	OK	Q	Q	32		

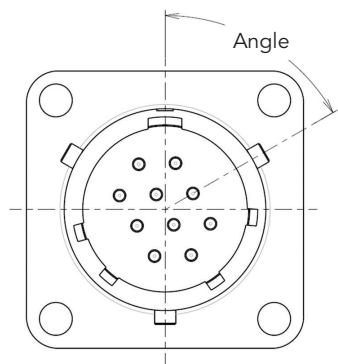
Shell size	Layout	Hermetic 8526	MIL-C 26482 G	PAN 6432	Number of contacts		
					#20	#16	#12
20	2016	OK	Q	Q		16	
	2034	Available on request, please consult us			26	8	
	2039	OK			37	2	
	2041	OK	Q	Q	41		
22	2212	Available on request, please consult us					12
	2221	OK	Q	Q		21	
	2241	OK	Q	Q	27	14	
	2255	OK	Q	Q	55		
24	2419			Q			19
	2431			Q		31	
	2461	OK	Q	Q	61		

OK = SOURIAU's layout

Q = SOURIAU's qualified layout

Orientation

Polarization code



Viewed from receptacle front face.
Insulator rotated inside metal body.

Shell size	Layout	N	W	X	Y	Z
08	B3A	0	60	210	-	-
	B33	0	90	-	-	-
10	B6	0	90	-	-	-
12	B3	0	140	220	180	-
	B10	0	60	155	270	295
14	B4	0	45	-	-	-
	B5	0	40	92	184	273
	B12	0	43	90	-	-
	B15	0	17	110	155	234
	B19	0	30	165	315	-

Shell size	Layout	N	W	X	Y	Z
16	B8	0	54	152	180	331
	B21	0	-	-	-	-
	B26	0	60	-	275	338
18	B8	0	180	-	-	-
	B32	0	85	138	222	265
20	B16	0	238	318	333	347
	B39	0	63	144	252	333
	B41	0	45	126	225	-
22	B21	0	16	135	175	349
	B41	0	39	135	264	-
	B55	0	30	142	226	314
24	B61	0	90	180	270	324

Ordering information

SOURIAU part numbers

Basic series	8526	2H	10	06	P	N
Shell type:						
1H: Solder mount hermetic receptacle						
2H: Square flange hermetic receptacle						
7H: Jam nut hermetic receptacle						
Shell size:						
08, 10, 12, 14, 16, 18, 20, 22, 24						
Contact layout:						
See page 30						
Contact type:						
P: Pin						
Orientation:						
N, W, X, Y, Z - see previous page						

MS qualified products

Basic series	MS	3440H	10	C	6	P
Shell type:						
3440H: Square flange hermetic receptacle						
3443H: Solder mount hermetic receptacle						
3449H: Jam nut hermetic receptacle						
Shell size:						
08, 10, 12, 14, 16, 18, 20, 22, 24						
Materials and terminal:						
C: Steel, solder bucket						
Contact layout:						
See page 30						
Contact type:						
P: Pin						
Orientation:						
None: Normal (N)						
W, X, Y, Z - see previous page						

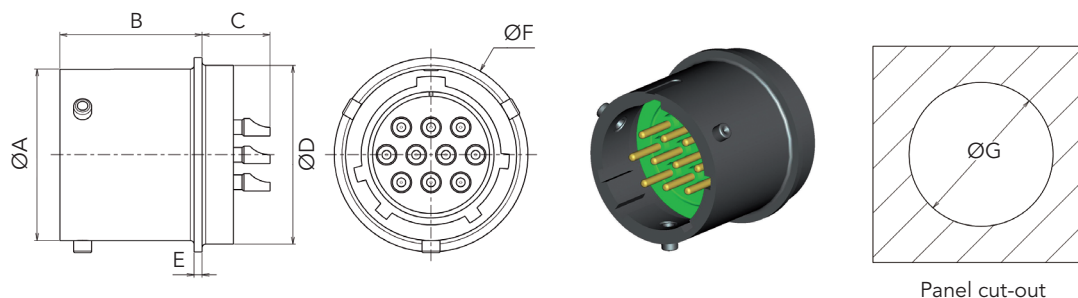
Cross reference list

Receptacle type	SOURIAU	HE312
Solder mount	8526 1H ••••• P □	HE312 1H ••••• P □ 2
Square flange	8526 2H ••••• P □	HE312 2H ••••• P □ 2
Jam nut	8526 7H ••••• P □	HE312 7H ••••• P □ 2

••••• Shell size & layout □ Orientation

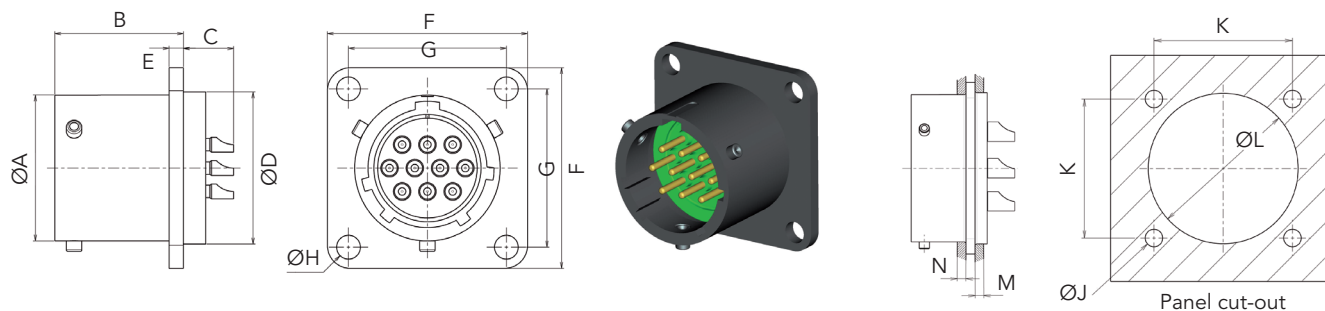
Dimensions

Solder mount receptacle (type 1H)



Shell size	ØA max	B ±0.3	C max	ØD ⁺⁰ _{-0.15}	E ±0.15	F max	ØG ±0.1
8	12.04	15.8	6.9	14.3	0.89	16.08	14.48
10	15.01	15.8	6.9	17.09	0.89	19.25	17.27
12	19.08	15.8	6.9	19.86	0.89	21.64	20.04
14	22.25	15.8	6.9	23.04	0.89	24.82	23.22
16	25.43	15.8	6.9	26.21	0.89	27.99	26.39
18	28.6	15.8	6.9	29.39	0.89	31.14	29.57
20	31.78	17.37	6.9	31.78	0.89	33.53	31.95
22	34.95	17.37	6.9	34.95	0.89	36.73	35.13
24	38.13	17.37	6.9	38.13	0.89	39.93	38.3

Square flange receptacle (type 2H)

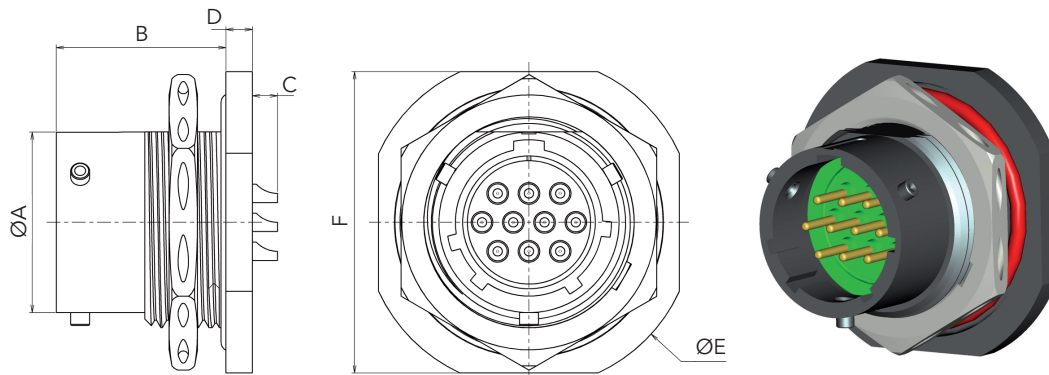


Shell size	ØA max	B ±0.15	C max	ØD ⁺⁰ _{-0.15}	E ±0.1	F max	G	ØH ±0.15	ØJ ±0.15	K	ØL ±0.1	M max	N max
8	12.04	16.79	7.1	14.3	1.86	21.03	15.09	3.05	3.05	15.09	14.48	3.15	3
10	15.01	16.79	7.1	17.09	1.86	24.23	18.26	3.05	3.05	18.26	17.27	3.15	3
12	19.08	16.79	7.1	19.86	1.86	26.59	20.62	3.05	3.05	20.62	20.04	3.15	3
14	22.25	16.79	7.1	23.04	1.86	28.98	23.01	3.05	3.05	23.01	23.22	3.15	3
16	25.43	16.79	7.1	26.21	1.86	31.34	24.61	3.05	3.05	24.61	26.39	3.15	3
18	28.6	16.79	7.1	29.39	1.86	33.73	26.97	3.05	3.05	26.97	29.57	3.15	3
20	31.78	18.78	6.7	31.78	2.27	36.91	29.36	3.05	3.05	29.36	31.95	3.15	5.4
22	34.95	18.78	6.7	34.95	2.27	40.08	31.75	3.05	3.05	31.75	35.13	3.15	5.4
24	38.13	18.78	6.7	38.13	2.27	43.26	34.93	3.73	3.73	34.93	38.3	3.15	5.4

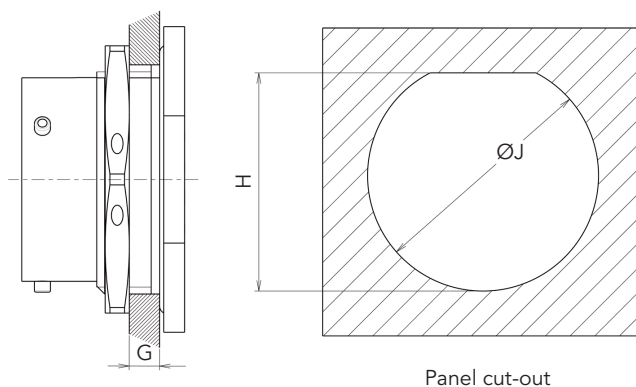
Note: All dimensions are in millimeters (mm)

Dimensions

Jam nut receptacle (type 7H)



Shell size	ØA max	B max	C max	D ⁺⁰ _{-0.1}	ØE max	F max	G		H	ØJ ^{±0.1}
							min	max		
8	12.04	17.96	3.2	2.8	27.38	24.23	1.57	4.75	13.61	14.53
10	15.01	17.96	3.2	2.8	30.56	27.38	1.57	4.75	16.79	17.7
12	19.08	17.96	3.2	2.8	35.33	32.16	1.57	4.75	20.93	22.73
14	22.25	17.96	3.2	2.8	38.51	35.33	1.57	4.75	24.08	25.65
16	25.43	17.96	3.2	2.8	41.68	38.51	1.57	4.75	27.23	28.83
18	28.6	17.96	3.2	2.8	44.86	41.68	1.57	4.75	30.4	32
20	31.78	19.61	2.45	3.6	49.63	46.43	1.57	6.35	33.58	35.18
22	34.95	19.61	2.45	3.6	52.78	49.63	1.57	6.35	36.75	38.35
24	38.13	20.4	1.7	3.7	55.96	52.78	1.57	6.35	39.93	41.35



Panel cut-out

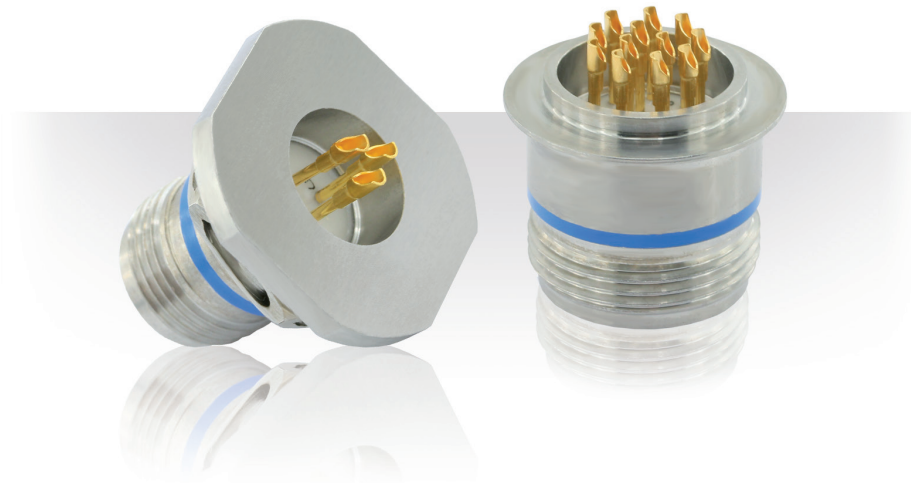
Note: All dimensions are in millimeters (mm)

Maximum connector weights (in grams)

Shell type \ Shell size	8	10	12	14	16	18	20	22	24
Solder mount receptacle (type 1)	7.5	10.6	15	19	23.3	29.4	31	41	46.7
Square flange receptacle (type 2)	11	13.6	18	23	28.3	36.4	42	49	57
Jam nut receptacle (type 7)	20	25	38	44	51.5	62	85	94	116

Gaskets & O'rings

Shell size	Gasket for receptacle Type 0 (not delivered with connector)		O ring for receptacle Type 7 (delivered with connector)	
	Part number	Material	Part number	Material
08	85251431	Fluorosilicone	AS3582-016	Silicone
10	85251432	Fluorosilicone	AS3582-018	Silicone
12	85251433	Fluorosilicone	AS3582-021	Silicone
14	85251434	Fluorosilicone	AS3582-023	Silicone
16	85251435	Fluorosilicone	AS3582-025	Silicone
18	85251436	Fluorosilicone	AS3582-027	Silicone
20	85251437	Fluorosilicone	AS3582-029	Silicone
22	85251438	Fluorosilicone	AS3582-030	Silicone
24	85251439	Fluorosilicone	AS3582-031	Silicone



Description

- Thread coupling connector
- EN2997 and ESC10 qualified connector
- High temperature and high vibration resistance (engine environment)
- Glass sealed hermetic:
 - . high hermeticity performance
 - . compact low profile
- Various mounting styles:
 - . compact solder mount receptacle
 - . easy to install square flange receptacle
 - . easy to replace jam nut receptacle
- Fully interchangeable with MIL 83723 hermetic connectors
- 230V qualified versions where higher voltage is used to reduce cable weight
- Solder cup or PC tail contacts
- Specific fuel tank version for long term fuel immersion

Technical features

Mechanical

- **Shell:**
Passivated Stainless steel
- **Seals:**
Silicone elastomer
- **Contact:**
Ferrous alloy
- **Contact plating:**
Gold
- **Endurance:**
500 mating/unmating operations

Electrical

- **Max current rating per contact:**

Contact size	20	16	12	6
Rating (A)	5	10	17	46

- **Dielectric withstanding voltage:**

Altitude	Service I
Sea level	1500 Vrms
15 000 m	600 Vrms
21 000 m	400 Vrms
33 000 m	200 Vrms

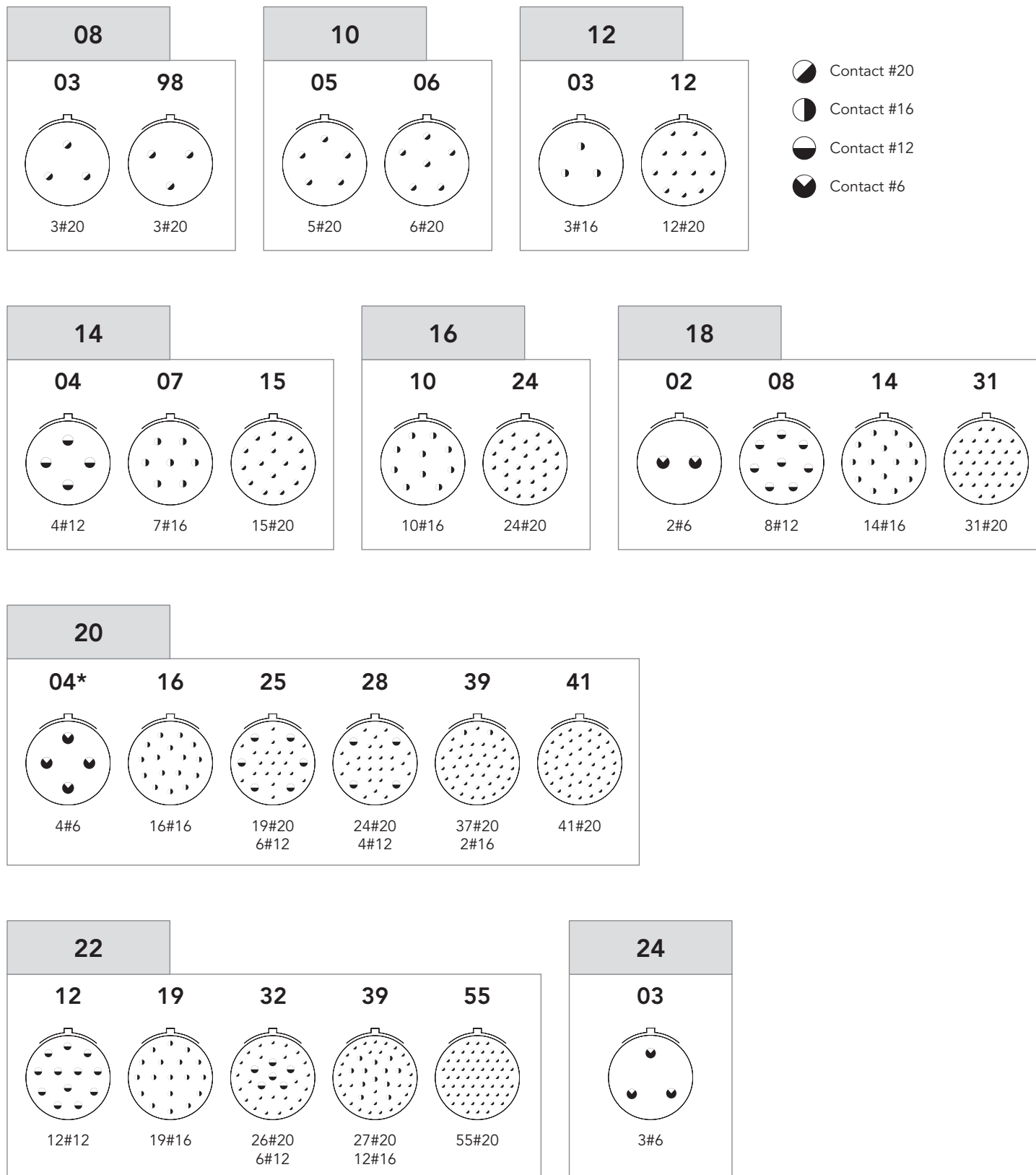
- **Contact resistance at rated current:**
Maximum initial contact resistance at ambient temperature

Contact size	20	16	12	6
Resistance mΩ	12	8.5	5	2

Environmental

- **Operating temperature:**
Class Y : -65°C to 200°C
Class YE : -65°C to 260°C cyclic
- **Hermeticity:**
Leak rate < 1.10⁻⁷ atm.cm³/s (helium gas test)
- **Salt spray:**
500 hours

Contact layouts



* ABS Power correspondance.

Contact layouts (matrix)

Shell size	Layout	8533 hermetic	EN2997 hermetic	ESC10 hermetic	8533 spec. 22	Number of contacts				
						#22D	#20	#16	#12	#6
08	08-03	OK	Q	Q	OK		3			
	08-06	Available on request, please consult us				6				
	08-98	OK	Q	Q			3			
10	10-05	OK	Q	Q			5			
	10-06	OK	Q		OK		6			
	10-12	Available on request, please consult us				12				
12	12-03	OK	Q	Q				3		
	12-12	OK	Q	Q	OK		12			
	12-21	Available on request, please consult us				21				
14	14-04	OK	Q	Q					4	
	14-07	OK	Q	Q	OK			7		
	14-15	OK	Q	Q			15			
16	16-10	OK	Q	Q				10		
	16-24	OK	Q	Q			24			
18	18-02	Available on request, please consult us								2
	18-08	Available on request, please consult us							8	
	18-14	Available on request, please consult us						14		
	18-31	OK	Q	Q			31			
20	20-04	OK								4
	20-16	Available on request, please consult us						16		
	20-25	Available on request, please consult us					19		6	
	20-28	Available on request, please consult us					24		4	
	20-39	Available on request, please consult us					37	2		
	20-41	OK	Q	Q	OK		41			
22	22-12	Available on request, please consult us							12	
	22-19	Available on request, please consult us						19		
	22-32	Available on request, please consult us					26		6	
	22-39	Available on request, please consult us					27	12		
	22-55	OK	Q	Q			55			
24	24-03	OK								3

OK = SOURIAU's layout

Q = SOURIAU's qualified layout

Connector weights (in grams)

Shell size	Square flange receptacle	Jam nut receptacle	Solder mount receptacle
08	18	29	15
10	24	37	21
12	31	50	31
14	40	58	35
16	49	72	46
18	54	79	51
20	62	87	59
22	77	108	73
24	88	122	86

Cross reference list

SOURIAU	MIL 83723
85332Y • • • • P □	M83723/88Y • • • • □
85337Y • • • • P □	M83723/89Y • • • • □
85331Y • • • • P □	M83723/90Y • • • • □

• • • • Shell size & layout □ Orientation

Ordering information

SOURIAU part numbers

Basic series	8533	1	Y	10	05	P	N
Shell type: 1: Solder mount receptacle 2: Square flange receptacle 7: Jam nut receptacle							
Class: Y: 200°C YE: 260°C							
Shell size: 08 - 10 - 12 - 14 - 16 - 18 - 20 - 22 - 24							
Contact layout: See page 37							
P: Pin contacts							
Orientation: N - 6 - 7 - 8 - 9 - T - V - Y (see page 43)							
Specification (other specification: see page 42): None: Standard hermetic version (solder cup) - except for layout 20-04 and 24-03 112: Standard hermetic version (solder cup) - for layout 20-04 and 24-03 only 22: Fuel tank version (solder cup) 600: 230V qualified connector, delivered with contacts (layouts 12-03, 14-04, 14-07 & 20-04 - orientation T & V)							

EN2997 qualified products

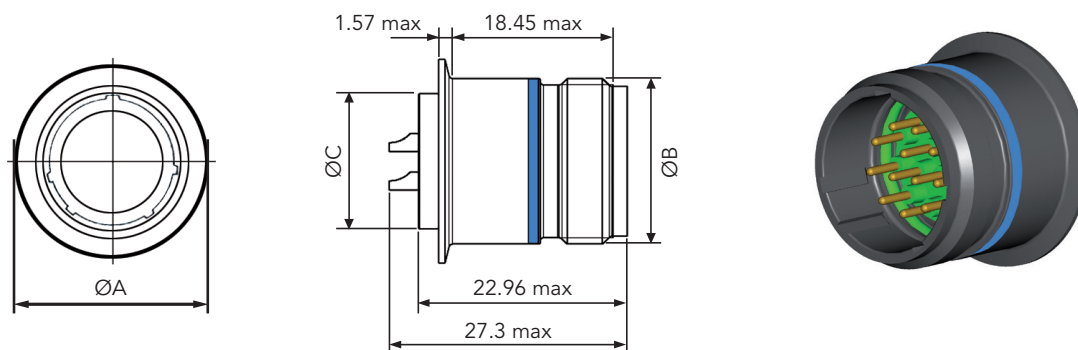
Basic series	EN 2997	Y	0	08	03	M	N
Class: Y: 200°C YE: 260°C							
Shell type: 0: Square flange receptacle 1: Solder mount receptable 7: Jam nut receptable							
Shell size: 08 - 10 - 12 - 14 - 16 - 18 - 20 - 22							
Contact layout: See page 37							
M: Pin contacts							
Orientation: N - 6 - 7 - 8 - 9 - Y (see page 43)							

ESC10 qualified products

Basic series	ESC 10	YE	1	08	03	P	N	0
Class: YE: 260°C								
Shell type: 1: Solder mount receptacle 2: Square flange receptacle 3: Jam nut receptable								
Shell size: 08 - 10 - 12 - 14 - 16 - 18 - 20 - 22								
Contact layout: See page 37								
P: Pin contacts								
Orientation: N - 6 - 7 - 8 - 9 - Y (see page 43)								
Contact termination: 0: Solder cup contacts B: Eyelet contacts								

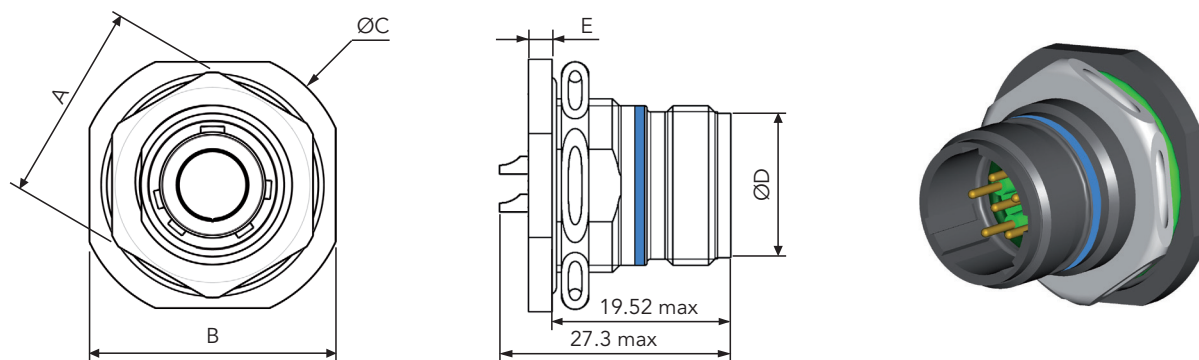
Dimensions

Solder mount hermetic receptacle (Class Y & YE)



Shell size	8	10	12	14	16	18	20	22	24
ØA Max	18.36	21.59	26.80	27.94	30.99	34.39	37.34	40.64	43.68
ØB Max	14.29	17.46	22.22	23.81	26.99	30.16	33.34	36.51	39.69
ØC Max	12.70	14.27	19.05	20.62	23.80	26.97	30.15	33.32	36.50

Jam nut hermetic receptacle (Class Y & YE)

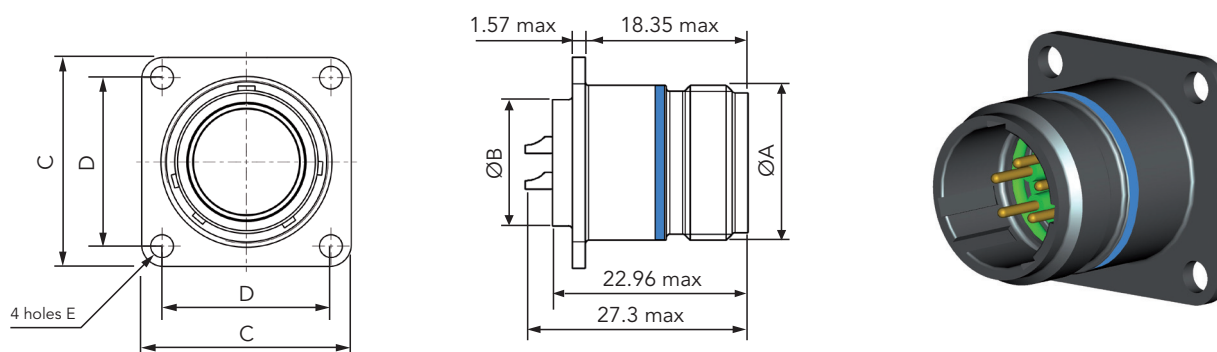


Shell size	8	10	12	14	16	18	20	22	24
A Max	21.06	24.23	29.01	30.61	33.76	36.96	40.11	43.31	46.46
B Max	24.89	28.04	32.79	35.33	38.51	41.68	44.86	49.63	52.81
ØC Max	27.38	30.28	35.05	38.51	41.68	44.86	49.63	52.78	55.42
ØD Max	14.29	17.46	22.22	23.81	26.99	30.16	33.34	36.51	39.69
E Max	3.48							3.76	
Tightening torque of attachment nut Torque in N.m $\pm 10\%$	7	10	12	15	18	22	25	27	29

Note: All dimensions are in millimeters (mm)

Dimensions

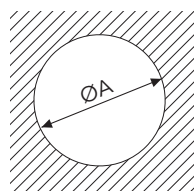
Square flange hermetic receptacle (Class Y & YE)



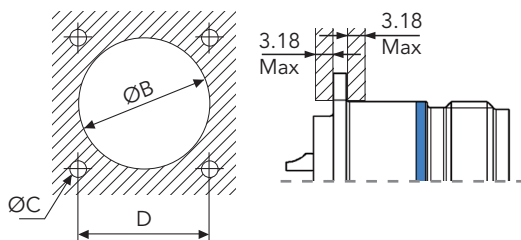
Shell size	8	10	12	14	16	18	20	22	24
Ø A Max	14.27	17.67	22.22	23.77	26.97	30.15	33.32	36.49	39.67
Ø B Max	12.70	14.27	19.05	20.62	23.80	26.97	30.15	33.82	36.50
C Max	20.75	23.93	26.32	28.71	31.88	34.24	36.63	39.80	43.36
D	15.09	18.26	20.62	23.01	24.61	26.97	29.36	31.75	34.92
E Max	3.30								3.91

Panel cut out

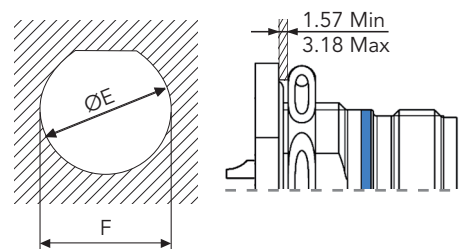
Type 1
Solder mount receptacle



Type 2
Square flange receptacle



Type 7
Jam nut receptacle

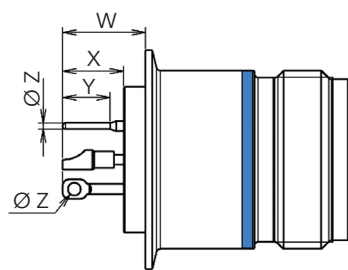
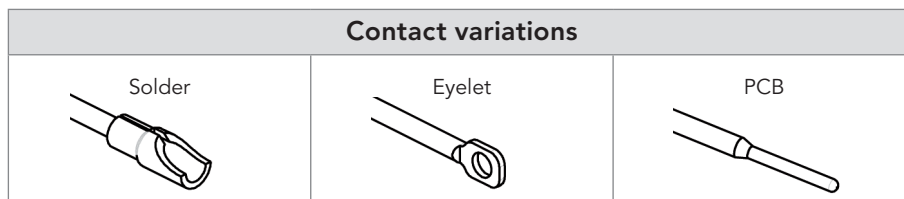


Shell size	8	10	12	14	16	18	20	22	24	28
ØA Min	12.96	14.53	19.30	20.88	24.05	27.23	30.40	33.58	36.75	-
B min	15.8	18.7	23.4	24.9	28.3	31.1	34.5	37.5	40.6	48
C	3.2								3.8	
D	15.09	18.26	20.62	23.01	24.61	26.97	39.36	31.75	34.92	39.67
E	16.00	19.17	23.92	25.52	28.70	31.87	35.05	38.22	41.40	-
F	15.24	18.41	23.16	24.76	27.94	30.99	34.16	37.33	40.51	-

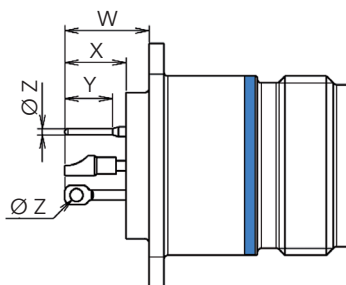
Note: All dimensions are in millimeters (mm)

Contact variations

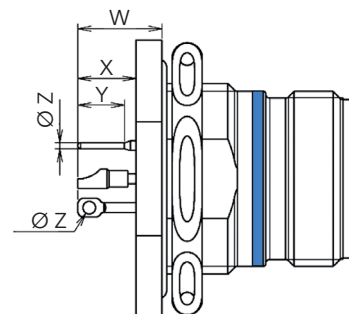
Contact variations summary



Type 1: Solder mount receptacle



Type 2: Square flange receptacle

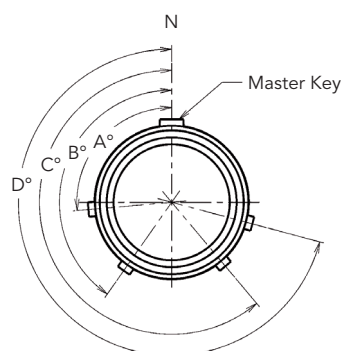


Type 7: Jam nut receptacle

Type of contact	Specification	Contact size	W Max	X Min	Y Min	Ø Z Max	Designation
PCB contacts	05	20	8.78	4.78	4.50	0.65	PCB contact
	118	20	10.88	6.88	6.25	0.65	Long PCB contact
Eyelet contacts	105	20	6.98	2.98	4.05 ^{+0.2}	1.25 ^{0.15}	Eyelet contact
Solder cup contacts	Without specification or specification 22	20-16-12	7.78	2.98	-	-	Standard Solder cup contact
	112	6	9.03	5.13	-	-	
	62	20-16-12	7.78	2.98	-	-	Solder cup contact tin plated on rear part

Note: for other contact length, please consult us.

Orientation

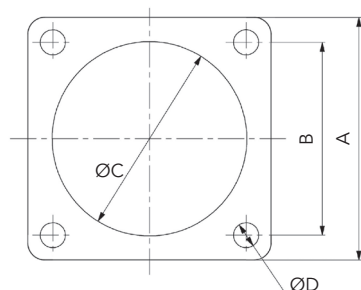


Front face view of receptacle

Shell size	Angles	N	6	7	8	9	T	V	Y
08	A°	105	102	80	35	64	-	-	-
	B°	140	132	118	140	155			
	C°	215	248	230	205	234			
	D°	265	320	312	275	304			
10	A°	105	102	80	35	64	-	-	25
	B°	140	132	118	140	155			115
	C°	215	248	230	205	234			220
	D°	265	320	312	275	304			270
12 & 14	A°	105	18	92	84	24	55	50	98
	B°	140	149	152	152	135	145	156	152
	C°	215	192	222	204	199	228	218	268
	D°	265	259	342	334	240	280	290	338
20	A°	105	18	92	84	24	45	60	98
	B°	140	149	152	152	135	160	165	152
	C°	215	192	222	204	199	210	235	268
	D°	265	259	342	334	240	300	285	338
16, 18, 22 & 24	A°	105	18	92	84	24	-	-	98
	B°	140	149	152	152	135			152
	C°	215	192	222	204	199			268
	D°	265	259	342	334	240			338

Gaskets & O'rings

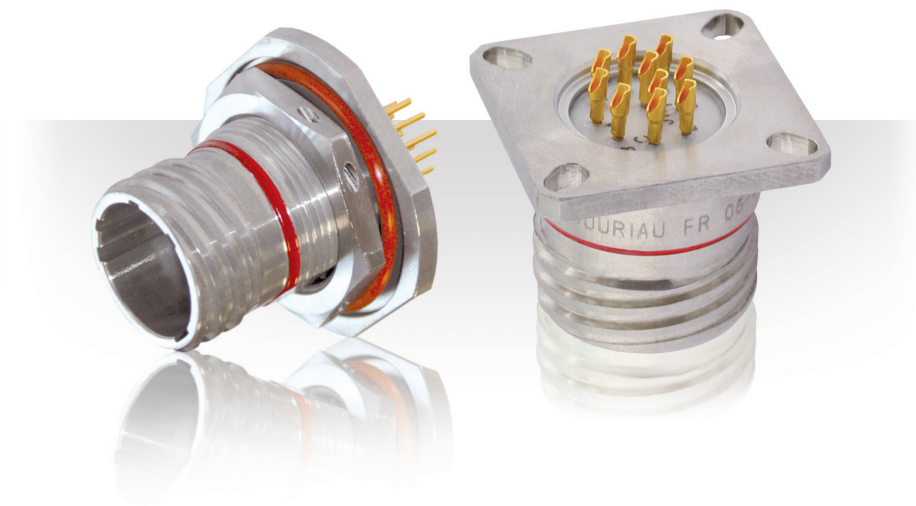
Shell size	Gasket for square flange receptacle (not delivered with connector)		O'ring for jam nut receptacle 200°C Class (delivered with connector)		O'ring for jam nut receptacle 260°C Class (delivered with connector)	
	Part number	Material	Part number	Material	Part number	Material
08	85251431	Fluorosilicone	8530455	Silicone	85227654	Silicone THT
10	85251432	Fluorosilicone	85300795	Silicone	85227655	Silicone THT
12	85251433	Fluorosilicone	8530458	Silicone	85227656	Silicone THT
14	85251434	Fluorosilicone	8530796	Silicone	85227632	Silicone THT
16	85251435	Fluorosilicone	8530797	Silicone	85227657	Silicone THT
18	85251436	Fluorosilicone	8530798	Silicone	85227658	Silicone THT
20	85251437	Fluorosilicone	85301548	Silicone	85227927	Silicone THT
22	85251438	Fluorosilicone	8530800	Silicone	85227659	Silicone THT
24	85251439	Fluorosilicone	-	-	-	-



Gasket for square flange receptacle

Shell size	08	10	12	14	16	18	20	22	24
A ^{±0.4}	20.62	24.00	26.18	28.56	30.93	33.32	36.50	39.67	42.86
B ^{±0.12}	15.09	18.00	20.62	23.01	24.61	26.97	29.37	31.75	34.92
ØC ^{+0.4 +0}	12.70	17.20	19.05	22.23	25.40	28.58	31.75	34.93	38.10
ØD ^{+0.12 +0}	3.30	3.20	3.30						4.00

Note: All dimensions are in millimeters (mm)



Description

- Thread coupling connector
- MIL-DTL-38999 Series III qualified
EN3645 compliant
- Glass sealed hermetic:
 - . high hermeticity performance
 - . compact low profile
- Various mounting styles:
 - . compact solder mount receptacle
 - . easy to install square flange receptacle
 - . easy to replace jam nut receptacle
- Signal and power contacts - up to size #4
- Special fuel tank versions for long term fuel immersion
- 230V qualified versions where higher voltage is used to reduce cable weight
- Solder cup, PC tail or eyelet contacts

Technical features

Mechanical

- **Shell:**
Class Y: passivated stainless steel
Class N: nickel plated stainless steel
- **Seals:**
Silicone elastomer
- **Contact:**
Gold plated ferrous alloy
- **Endurance:**
500 mating/unmating operations

Electrical

- Max current rating per contact:

Contact size	22D	20	16	12	8	4
Rating (A)	3	5	10	17	33	60

- Dielectric withstanding voltage:

Service	Sea level	30 000 m
M	1 300 Vrms	800 Vrms
I	1 800 Vrms	1 000 Vrms
II	2 300 Vrms	1 000 Vrms

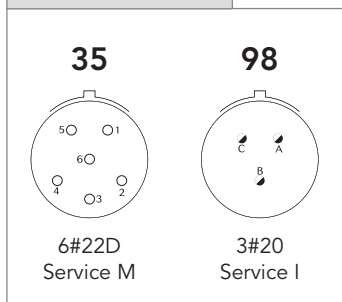
- **Insulation resistance:**
5000 MΩ (under 500 Vdc)

Environmental

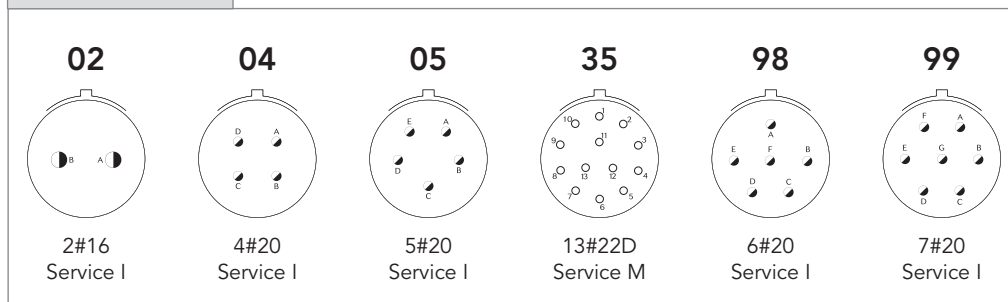
- **Operating temperature:**
-65°C to 200°C
- **Hermeticity:**
Leak rate < 1.10⁻⁷ atm.cm³/s
(helium gas test)
- **Salt spray:**
Class Y: 500 hours
Class N: 48 hours

Contact layouts

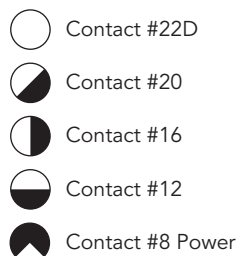
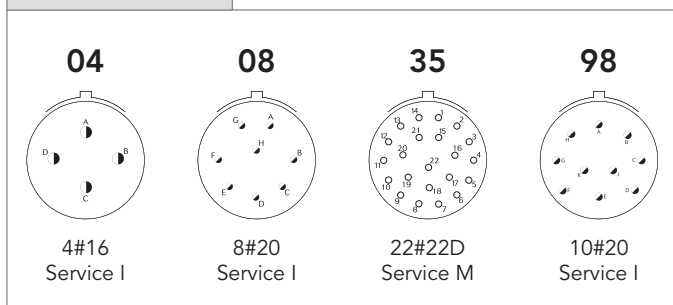
09 / A



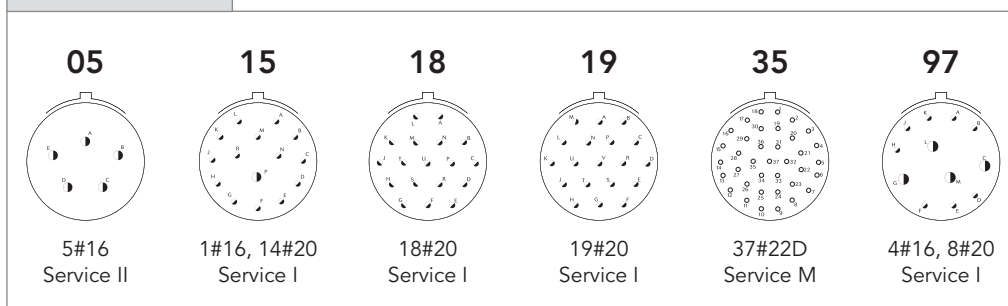
11 / B



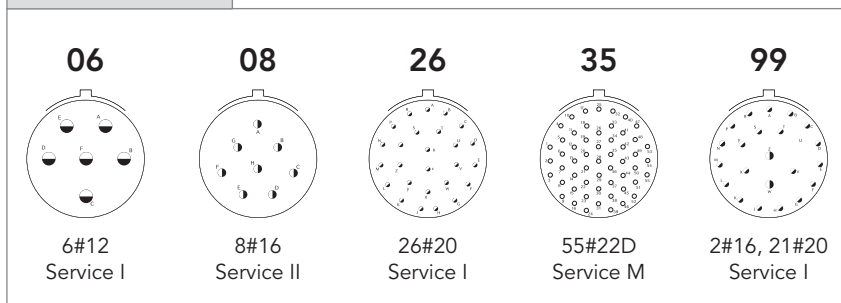
13 / C



15 / D

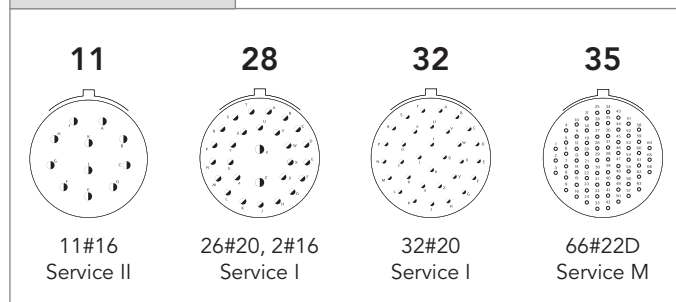


17 / E

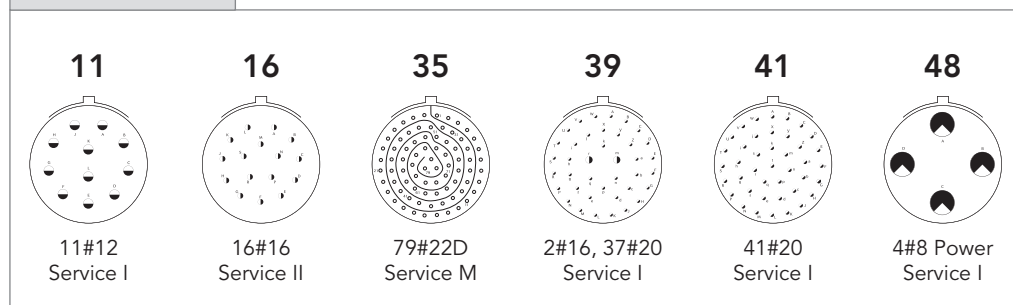


Contact layouts

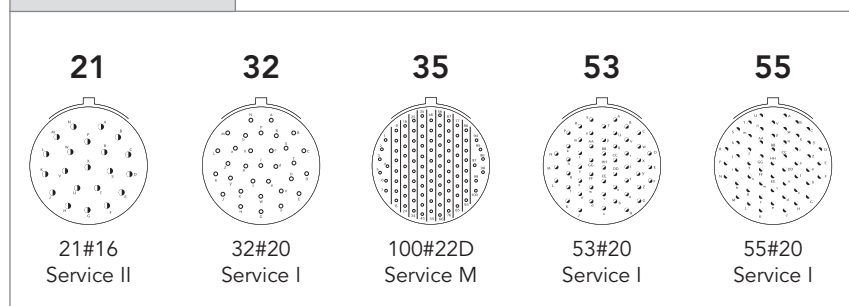
19 / F



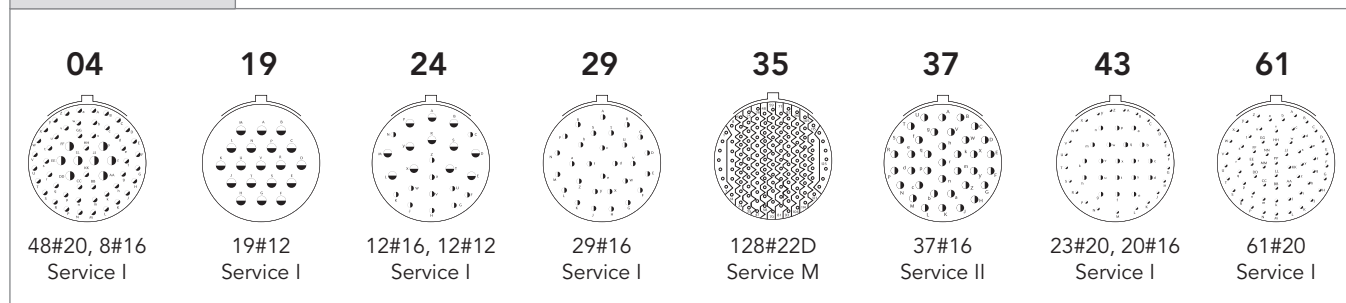
21 / G



23 / H



25 / J



Contact layouts (matrix)

Shell size	Layout	D38999 QPL	8D type 21 Spec. 600*	8D Spec. 022*	8D Spec. 840 & 850*	8D Spec. A76*	Number of contacts					
							#22D	#20	#16	#12	#8	#4
09 / A	09-35	Q		OK	OK		6					
	09-98	Q		OK	OK			3				
11 / B	11-02	Q			OK				2			
	11-04	Q			OK			4				
	11-05	Q			OK			5				
	11-12	OK	Available on request, please consult us							1		
	11-22	OK	Available on request, please consult us				4					
	11-35	Q		OK	OK	OK	13					
	11-98	Q			OK			6				
	11-99	Q		OK	OK			7				
13 / C	13-03	OK	Available on request, please consult us						3			
	13-04	Q	OK		OK				4			
	13-08	Q			OK			8				
	13-26	OK	Available on request, please consult us				6			2		
	13-35	Q		OK	OK		22					
	13-98	Q			OK			10				
15 / D	15-05	Q	Available on request, please consult us						5			
	15-15	Q	Available on request, please consult us					14	1			
	15-18	Q			OK			18				
	15-19	Q		OK	OK			19				
	15-35	Q		OK	OK	OK	37					
	15-97	Q	Available on request, please consult us					8	4			
17 / E	17-06	Q	OK	OK						6		
	17-08	Q	OK		OK				8			
	17-20	OK	Available on request, please consult us				16			4		
	17-26	Q			OK			26				
	17-35	Q		OK	OK	OK	55					
	17-99	Q	Available on request, please consult us					21	2			
19 / F	19-11	Q	Available on request, please consult us						11			
	19-28	Q	Available on request, please consult us					26	2			
	19-32	Q	Available on request, please consult us					32				
	19-35	Q			OK		66					
21 / G	21-11	Q								11		
	21-16	Q	Available on request, please consult us						16			
	21-35	Q		OK	OK		79					
	21-39	Q	Available on request, please consult us					37	2			
	21-41	Q			OK			41				
	21-48	OK	OK								4	
	21-59	OK	Available on request, please consult us				55			4		
23 / H	23-21	Q			OK				21			
	23-32	Q	Available on request, please consult us					32				
	23-35	Q			OK		100					
	23-53	Q			OK			53				
	23-54	OK	Available on request, please consult us				40		9	4		
	23-55	Q			OK			55				
25 / J	25-04	Q			OK			48	8			
	25-19	Q								19		
	25-24	Q	Available on request, please consult us						12	12		
	25-29	Q			OK				29			
	25-35	Q	Available on request, please consult us				128					
	25-37	Q	Available on request, please consult us						37			
	25-43	Q	Available on request, please consult us					23	20			
	25-44	OK	Available on request, please consult us						4			4
	25-61	Q	Available on request, please consult us					61				

OK = SOURIAU's layout

Q = SOURIAU's qualified layout

* see next page for specifications details

Connector part numbers

MIL-DTL-38999 part number

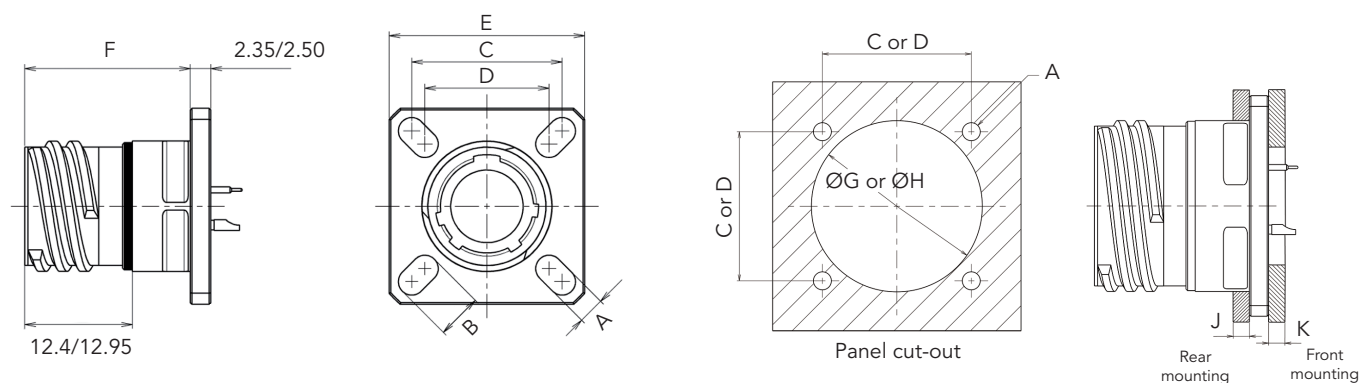
Basic Series	D38999	21	Y	A	35	P	N
Shell style:							
21: Square flange receptacle							
23: Jam nut receptacle							
25: Solder mount receptacle							
27: Weld mount receptacle							
Class:							
Y: Passivated stainless steel							
N: Nickel plated stainless steel							
Shell size:							
09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J							
Contact layout:							
See pages 45 & 46							
Contact type:							
P: Male solder cup							
C: Male PC tail contacts							
X: Male eyelet contacts							
Orientation:							
N, A, B, C, D, E							

SOURIAU part number

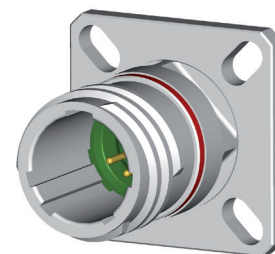
Basic Series	8D	0	Y	13	35	P	N	022
Shell style:								
0: Square flange receptacle								
1: Solder mount receptacle								
4: Weld mount receptacle								
7: Jam nut receptacle								
Class:								
Y: Passivated stainless steel								
N: Nickel plated stainless steel								
Shell size:								
09, 11, 13, 15, 17, 19, 21, 23, 25								
Contact layout:								
See pages 45 & 46								
Contact type:								
P: Male solder cup								
C: Male PC tail contacts								
X: Male eyelet contacts								
Orientation:								
N, A, B, C, D, E								
Specification:								
022: Fuel tank version								
840: Short PCB contact								
850: Long PCB contact								
600: 230V qualified connector (layouts 13-04, 17-06, 17-08 & 21-48 - orientation T & V)								
A76: Fuel tank version with crimp removable contacts - Jam nut only								

Dimensions

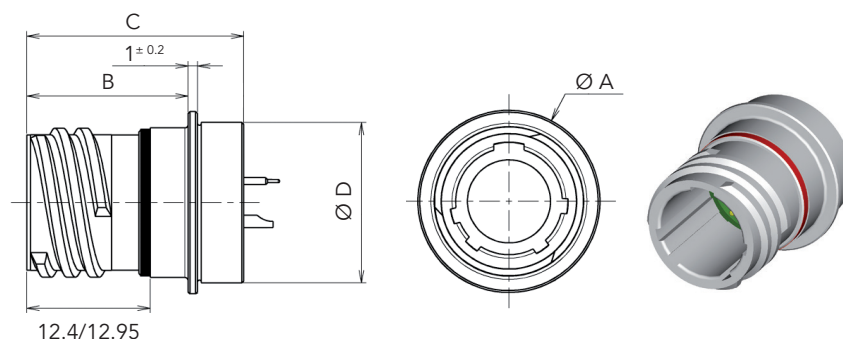
Square flange receptacle (type 21)



Shell size	A ± 0.20	B ± 0.20	C	D	E ± 0.30	F max	$\varnothing G$ Front mounting	$\varnothing H$ Rear mounting	J max	K max
A (9)	3.25	5.49	18.26	15.09	23.80	20.40	13.11	16.66	2.5	3.2
B (11)		4.93	20.62	18.26	26.20		15.88	20.22		
C (13)			23.01	20.62	28.60		19.05	23.42		
D (15)		4.39	24.61	23.01	31.00		23.01	26.59		
E (17)		4.93	26.97	24.61	33.30		25.81	30.96		
F (19)			29.36	26.97	36.50		28.98	32.94		
G (21)	3.91	6.15	31.75	29.36	39.70	20.40	32.16	36.12	2.5	3.2
H (23)			34.93	31.75	42.90		34.93	39.29		
J (25)			38.10	34.93	46.00		37.69	42.47		



Solder mounting receptacle (type 25)

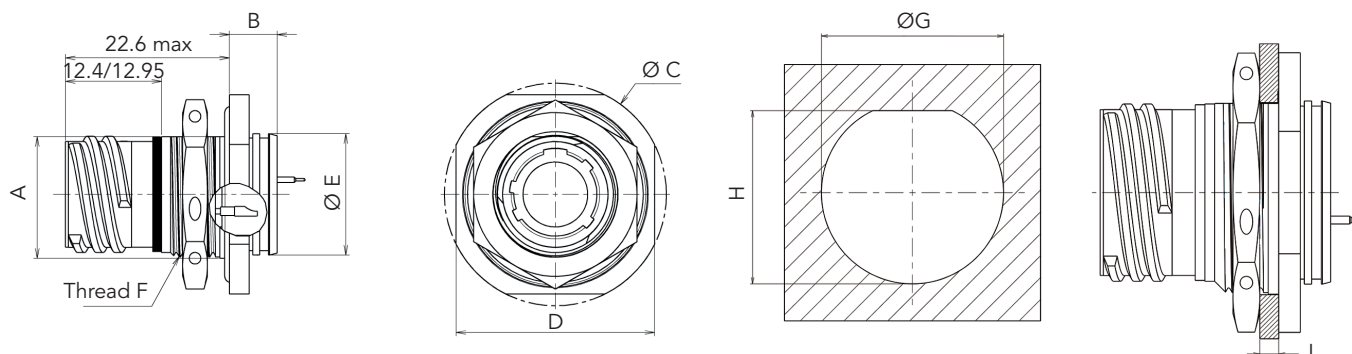


Shell size	$\varnothing A$ max	B max	C max	D max
A (9)	19.40	17.20	23.80	17.10
B (11)	21.80			19.90
C (13)	24.90			23.10
D (15)	28.10			26.20
E (17)	31.30			29.40
F (19)	33.60			31.80
G (21)	36.80	24.60	24.60	35.00
H (23)	40.00			38.20
J (25)	43.20			41.30

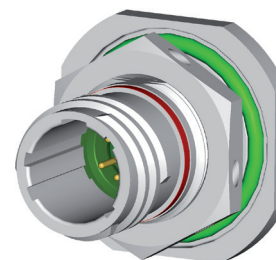
Note: All dimensions are in millimeters (mm)

Dimensions

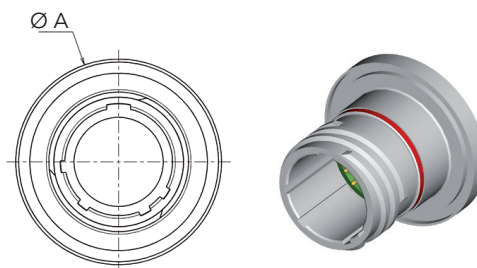
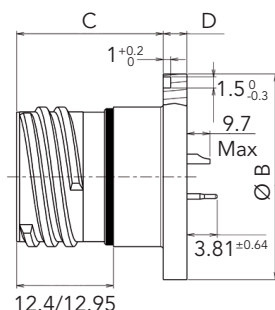
Jam nut receptacle (type 23)



Shell size	A flat $+0.10/-0.15$	B max	ØC ± 0.30	D ± 0.40	ØE $\pm 0.30/0$	F thread	ØG $+0.25/0$	H	J
A (9)	16.53	9.10	30.20	27.00	16.30	M17 x 1-6g	17.60	$16.70^{+0.10/-0.06}$	3.2
B (11)	19.07		34.90	31.80	19.40	M20 x 1-6g	20.96	$19.59^{0/-0.25}$	
C (13)	23.82		38.10	34.90	22.70	M25 x 1-6g	25.65	$24.26^{0/-0.25}$	
D (15)	26.97		41.30	38.10	25.90	M28 x 1-6g	28.83	$27.56^{0/-0.25}$	
E (17)	30.15		44.50	41.30	29.00	M32 x 1-6g	32.01	$30.73^{0/-0.25}$	
F (19)	33.32	9.70	49.20	46.00	32.20	M35 x 1-6g	35.18	$33.91^{0/-0.25}$	
G (21)	36.50		52.40	49.20	35.40	M38 x 1-6g	38.35	$37.08^{0/-0.25}$	
H (23)	39.67		55.60	52.40	38.60	M41 x 1-6g	41.53	$40.26^{0/-0.25}$	
J (25)	42.85		58.70	55.60	41.70	M44 x 1-6g	44.70	$43.43^{0/-0.25}$	



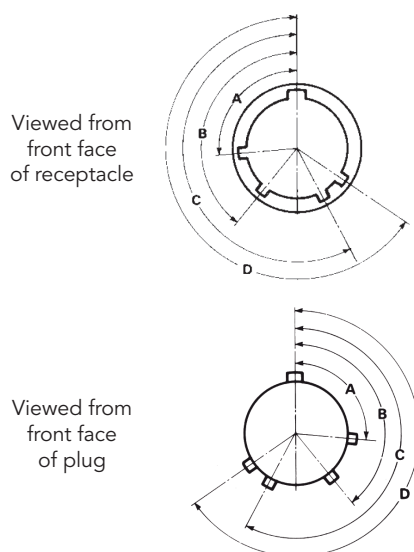
Weld mounting receptacle (type 27)



Shell size	Ø A $+0.3/0$	Ø B ± 0.3	C max	D ± 0.2
A (9)	24.70	23.90	23.20	3.20
B (11)	27.80	27.00		
C (13)	31.00	30.20		
D (15)	34.20	33.40		
E (17)	36.40	35.60		
F (19)	40.10	39.30	24.00	4.00
G (21)	43.70	42.90		
H (23)	47.90	47.10		
J (25)	50.10	49.30		

Note: All dimensions are in millimeters (mm)

Orientations



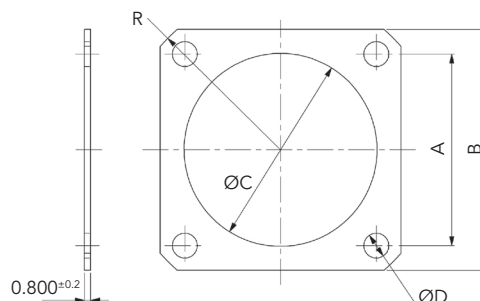
Shell size	Angles	N	A	B	C	D	E	T	V
9 (A)	A°	105	102	80	35	64	91	-	-
	B°	140	132	118	140	155	131		
	C°	215	248	230	205	234	197		
	D°	265	320	312	275	304	240		
11 (B) 15 (D)	A°	95	113	90	53	119	51	-	-
	B°	141	156	145	156	146	141		
	C°	208	182	195	220	176	184		
	D°	236	292	252	255	298	242		
13 (C)	A°	95	113	90	53	119	51	70	75
	B°	141	156	145	156	146	141	136	138
	C°	208	182	195	220	176	184	218	224
	D°	236	292	252	255	298	242	261	268
17 (E) 21 (G)	A°	80	135	49	66	62	79	58	85
	B°	142	170	169	140	145	153	162	150
	C°	196	200	200	200	180	197	188	191
	D°	293	310	244	257	280	272	316	307
19 (F) 23 (H) 25 (J)	A°	80	135	49	66	62	79	-	-
	B°	142	170	169	140	145	153		
	C°	196	200	200	200	180	197		
	D°	293	310	244	257	280	272		

Gaskets & O'rings

Shell size	Gasket for receptacle Type 0 (not delivered with connector)		O ring for receptacle Type 7 (delivered with connector)	
	Part number	Material	Part number	Material
09 (A)	85995541	Fluorosilicone	AS3582-019	Silicone
11 (B)	85995542	Fluorosilicone	AS3582-022	Silicone
13 (C)	85995543	Fluorosilicone	AS3582-024	Silicone
15 (D)	85995544	Fluorosilicone	AS3582-026	Silicone
17 (E)	85995545	Fluorosilicone	AS3582-028	Silicone
19 (F)	85995546	Fluorosilicone	AS3582-128	Silicone
21 (G)	85995547	Fluorosilicone	AS3582-130	Silicone
23 (H)	85995548	Fluorosilicone	AS3582-132	Silicone
25 (J)	85995549	Fluorosilicone	AS3582-134	Silicone

Gasket for square flange receptacle

Shell size	9	11	13	15	17	19	21	23	25
A ± 0.2	23.83	26.19	28.58	30.96	33.32	36.53	39.67	42.88	46.02
B ± 0.2	18.26	20.62	23.01	24.61	26.97	29.36	31.75	34.92	38.10
R ± 0.2	15.90	16.90	18.90	20.40	22.20	23.90	25.90	28.40	30.40
$\varnothing C_{\pm 0.2}$	14.60	17.80	21.60	24.80	28.00	30.70	33.90	37.10	40.20
$\varnothing D_{\pm 0.4}$	3.20							3.70	



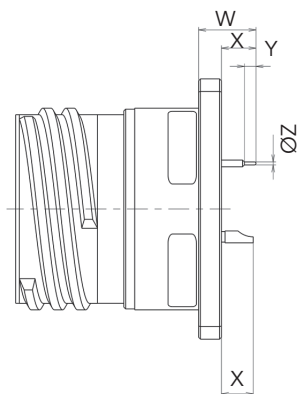
Maximum connector weight (in grams)

Shell size	09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
Square flange receptacle	23	28	35	41	57	60	65	75	91
Jam nut receptacle	39	53	63	73	92	106	118	132	154
Solder mount receptacle	21	25	31	38	53	55	57	68	83

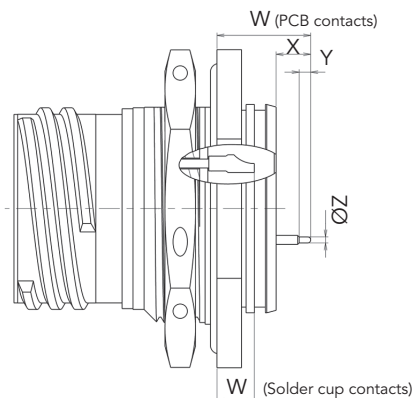
Note: All dimensions are in millimeters (mm)

Contact variations

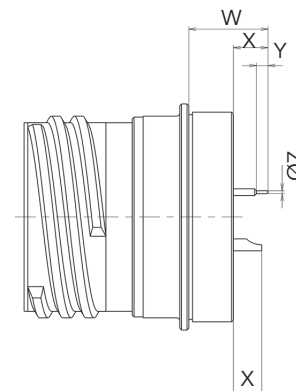
Contact variations summary



Type 21: Square flange receptacle



Type 23: Jam nut receptacle



Type 25: Solder mount receptacle

Type of contact	Specification	Type of shell	Contact size	W max	X min	Y min	ØZ max
Solder cup (P)	D38999	21	20 & 22	N/A	3.45	N/A	N/A
		23	20 & 22	4.5	N/A	N/A	N/A
		25	20 & 22	N/A	2.3	N/A	N/A
PCB (C)	D38999	21	16	6.65	3.45	N/A	N/A
			20			0.89	0.71
			22			0.89	0.38
		23	16	11.5	3.3	N/A	N/A
			20			0.89	0.71
			22			0.89	0.38
		25	16	10.75	3.4	N/A	N/A
			20	12.15		0.89	0.71
			22	13.55		0.89	0.38
	840 (8D)	21	20	8.13	4.81	4.26	0.64
			22	7.39	4.08	3.57	0.55
		23	20	11.87	4.36	4.26	0.60
			22	10.67	3.16	5.51	0.55
		25	20	10.22	4.46	4.26	0.64
			22	9.49	3.73	3.58	0.55
	850 (8D)	21	20	13.08	9.76	5.76	0.64
			22	10.77	7.45	7.11	0.55
		23	20	15.37	7.89	6.01	0.64
			22	16.27	8.76	9.01	0.47
		25	20	15.17	9.41	6.11	0.64
			22	12.86	7.10	7.11	0.55

Note: for other contact length, please consult us.



Description

- Bayonet coupling connector
- Micro miniature connector derivated from VG96912, EN3372 and JN1003
- Glass sealed hermetic:
 - . high hermeticity performance
 - . compact low profile
- Various mounting styles:
 - . compact solder mount receptacle
 - . easy to replace jam nut receptacle
- Solder cup or PC tail contacts
- Specific fuel tank version for long term fuel immersion

Technical features

Mechanical

- **Shell:** Stainless steel
- **Shell plating:** Passivated
- **Insulator:** Glass bead
- **Contact:** Nickel iron
- **Contact plating:** Gold
- **Endurance:** 500 mating cycles

Electrical

- **Test voltage:**
 - Service I: 1800V
 - Service M: 1300V
- **Contact resistance:** 2 mΩ
- **Insulation resistance:**
 - ≥ 5000MΩ (at 500Vdc)
- **Contact rating:**
 - Size 16: 10 A
 - Size 20: 5 A
 - Size 22D: 3 A
 - Size 26: 1.8 A

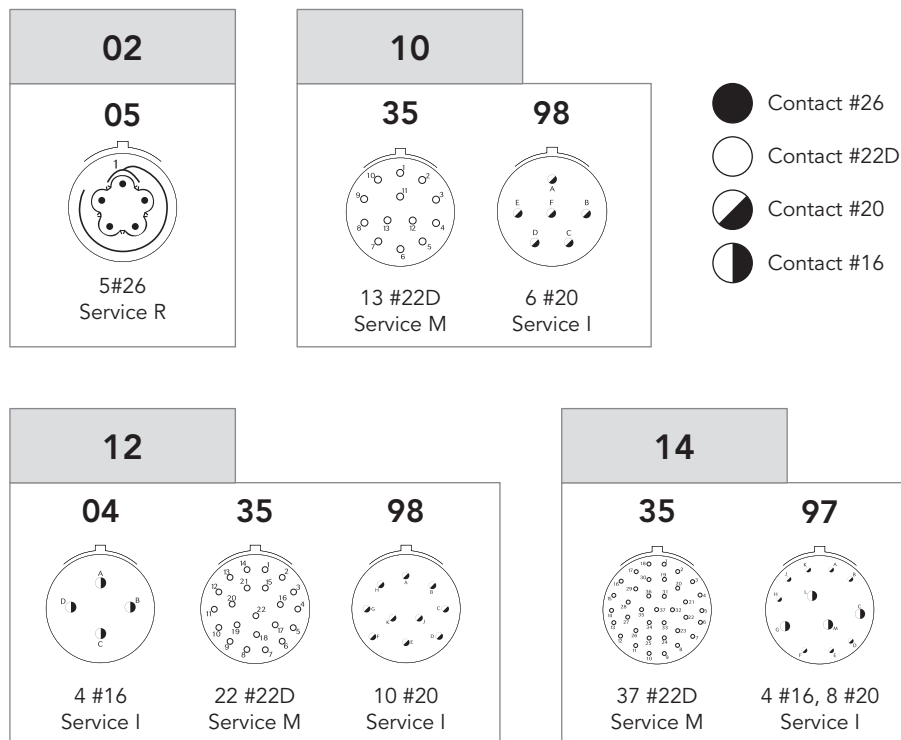
Environmental

- **Operating temperature:**
 - 55°C to +175°C
- **Sealing mated connectors:**
 - IP67 (1 meter for 30 min minimum)
- **Salt spray:** 48 hours
- **Hermeticity:**
 - Leak rate < 1.10⁻⁷ atm.cm³/s (helium gas test)

Ordering information

Basic series	8STA	1	Y	02	05	P	N	A73
Shell type								
1: Solder flange								
7: Jam nut receptacle								
Class								
Y: Hermetic version								
Shell size: 02, 04, 06, 08, 10, 12, 14								
Contact layout: See next page for available layouts								
Type of contact								
C: Male PC tail contacts								
P: Male solder cup contacts								
Orientation								
N: Red / A: Yellow / B: Blue / C: Orange / D: Green								
Specification (mandatory)								
022: Fuel immersible version								

Contact layouts (viewed from front face of male insulator)



Contact layouts (matrix)

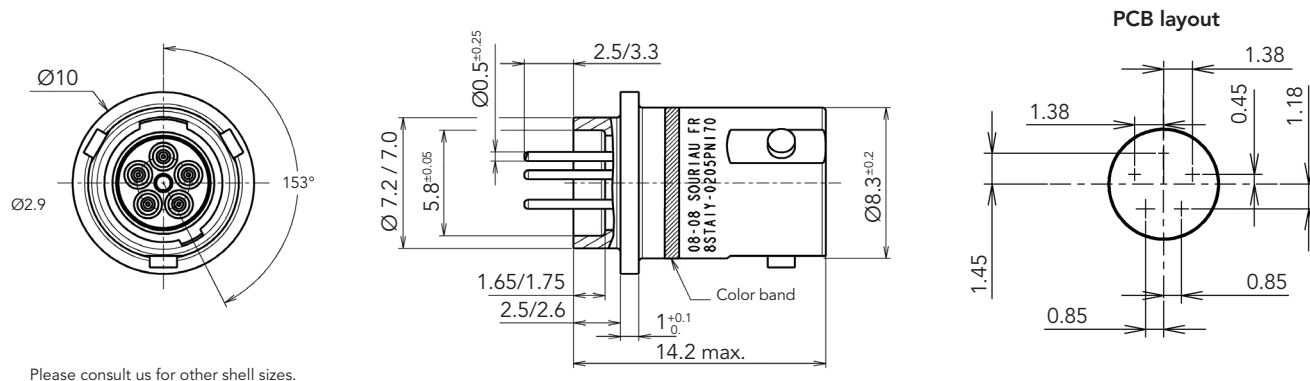
Shell size	Layout	Hermetic 8STA	Number of contacts			
			#26	#22D	#20	#16
02	02-05	OK	5			
	02-35	Available on request, please consult us		3		
04	04-05	Available on request, please consult us	5			
	04-06	Available on request, please consult us	6			
	04-35	Available on request, please consult us		3		
06	06-05	Available on request, please consult us	5			
	06-09	Available on request, please consult us	9			
	06-35	Available on request, please consult us		5		
08	08-12	Available on request, please consult us	12			
	08-35	Available on request, please consult us		6		
	08-98	Available on request, please consult us			3	
10	10-02	Available on request, please consult us				2
	10-04	Available on request, please consult us			4	
	10-05	Available on request, please consult us			5	
	10-22	Available on request, please consult us		4		
	10-26	Available on request, please consult us	26			
	10-35	OK		13		
	10-98	OK			6	

Shell size	Layout	Hermetic 8STA	Number of contacts				
			#26	#22D	#20	#16	#12
12	12-03	Available on request, please consult us				3	
	12-04	OK				4	
	12-08	Available on request, please consult us			8		
	12-26	Available on request, please consult us		6			2
	12-35	OK		22			
	12-43	Available on request, please consult us	43				
	12-98	OK			10		
14	14-05	Available on request, please consult us				5	
	14-15	Available on request, please consult us			14	1	
	14-18	Available on request, please consult us			18		
	14-19	Available on request, please consult us			19		
	14-35	OK		37			
	14-68	Available on request, please consult us	68				
	14-97	OK			8	4	

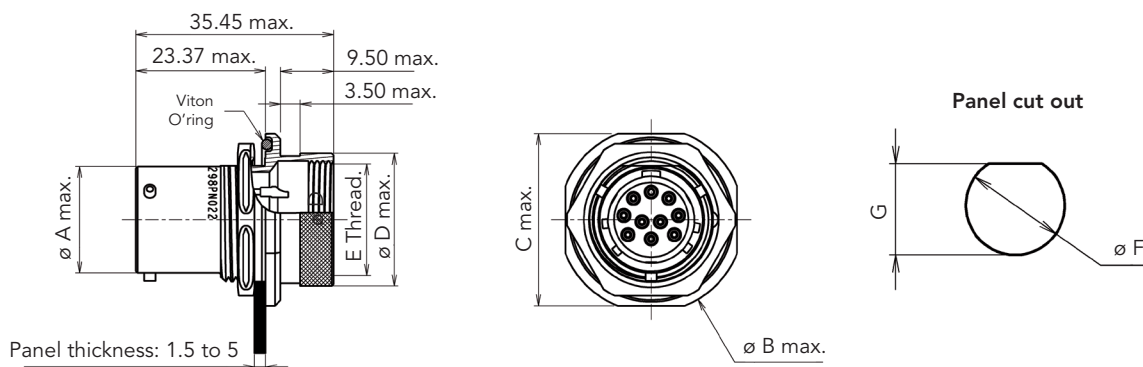
OK = SOURIAU's layout

Dimensions

Solder flange receptacle - size 02



Jam nut receptacle - sizes 10 to 14

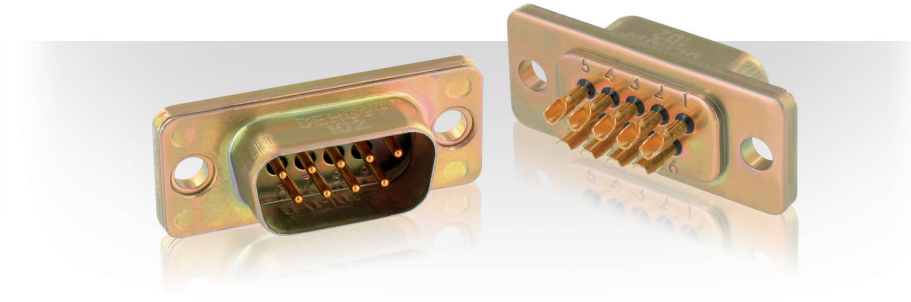


Shell size	$\varnothing A \text{ max.}$	$\varnothing B \text{ max.}$	C max.	$\varnothing D \text{ max.}$	E Thread	Panel cut out	
						$\varnothing F \pm 0.10$	$G \pm 0.20$
10	15.04	28.40	25.95	20.50	M18 x 1	17.70	16.80
12	19.09	33.00	30.75	23.67	M21 x 1	22.70	20.90
14	22.26	36.30	33.85	26.84	M24 x 1	25.70	24.10

Please consult us for other shell sizes.

Description

- Rackable/screw coupling connector
- MIL C 24308 C compliant
- High density D-Sub interface
- Glass sealed hermetic
- 2 fixing types:
 - . Fast and interchangeable screw mounting
 - . Hermetic solder mounting
- Solder cup or PC tail contacts
- Large shell plating type:
 - . Gold
 - . Tin
 - . Cadmium



Technical features

Mechanical

- **Shell:**
Steel
- **Shell plating:**
Cadmium, gold, bright tin lead, mat RoHS tin
- **Contact:**
Ferrous alloy
- **Contact plating:**
Gold, mat tin
- **Endurance:**
500 mating/unmating operations

Electrical

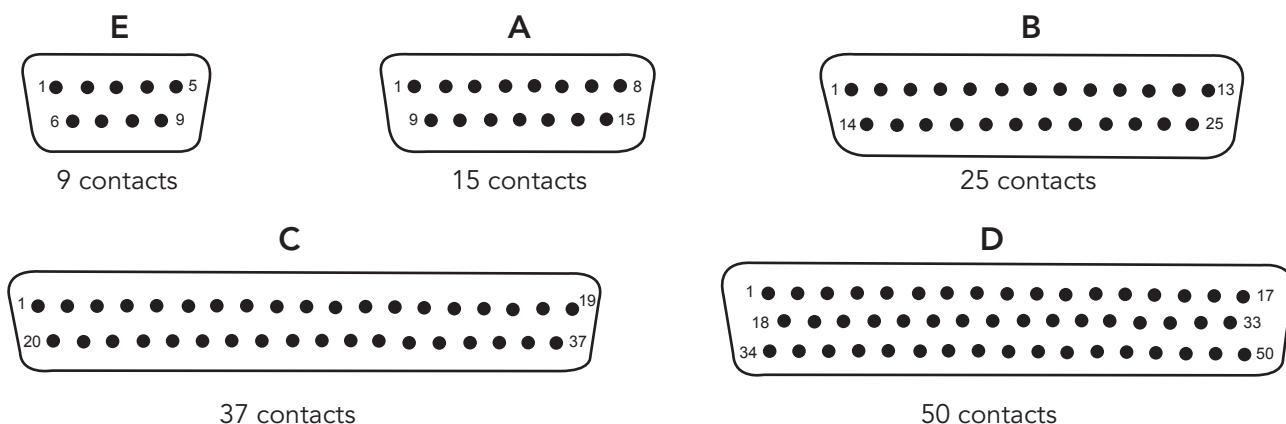
- **Contact rating:**
5A max
- **Test voltage:**
750 Vrms (max Vrms/50Hz)
- **Insulation resistance:**
 $\geq 5000 \text{ M}\Omega$
- **Contact resistance:**
 $\leq 14 \text{ m}\Omega$

Environmental

- **Operating temperature:**
-55°C to 125°C
- **Hermeticity:**
Leak rate $< 1.04 \cdot 10^{-5} \text{ atm.cm}^3/\text{s}$
(helium gas test)
- **Salt spray:**
48 hours (cadmium)
24 hours (tin)

Contact layouts

Viewed from front face of male insulator. Contacts are individually numbered on both side of insulator.



Ordering information

Basic Series						D	E	H	09	P	002
Shell size:						E, A, B, C, D					
Class:						H: Hermetic					
Number of contacts:						09 (E), 15 (A), 25 (B), 37 (C), 50 (D)					
Contact type:						P: Pin					
Specification:											
Shell plating	Contacts plating	Solder mounting				Screw mounting					
		with locking stub		without locking stub							
		Solder bucket	Straight PCB contact	Solder bucket	Straight PCB contact	Solder bucket	Straight PCB contact				
Cadmium	Gold	006	008	002	004	102	104				
Tin lead	Gold	005	010	007	016	107	116				
Mat tin	Mat tin	-	009	-	-	-	-				
	Gold	-	-	-	026	-	-				
Gold	Gold	-	-	-	-	122	124				

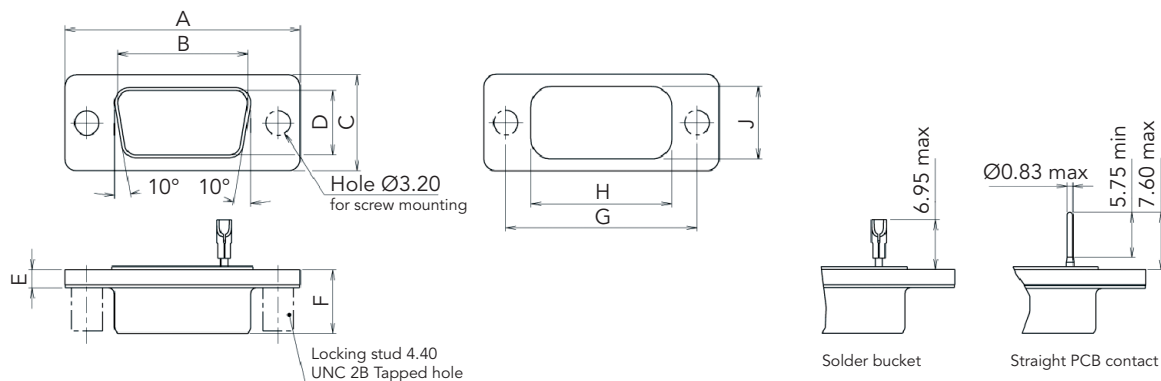
Cross reference list

SOURIAU	M24308 (not QPL)
DEH09P005	M24308/9-1
DAH15P005	M24308/9-2
DBH25P005	M24308/9-3
DCH37P005	M24308/9-4
DDH50P005	M24308/9-5

SOURIAU	M24308 (not QPL)
DEH09P007	M24308/9-11
DAH15P007	M24308/9-12
DBH25P007	M24308/9-13
DCH37P007	M24308/9-14
DDH50P007	M24308/9-15

Dimensions

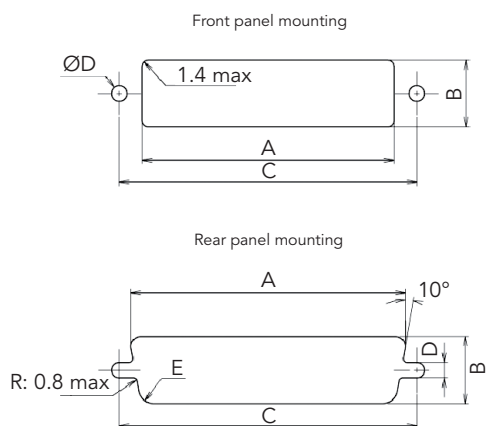
D-Sub hermetic



Shell size	A ^{0/+0.30}	B	C ^{0/+0.30}	D	E ^{+0.10 -0.20}	F max	G ^{screw mounting}	H ^{±0.20}	J ^{±0.20}	
E	30.80	16.94	12.54	8.41	2.50	8.65	24.99	18.40	9.40	
A	39.14	25.27					33.32	23.70		
B	53.03	39.00			2.70		47.04	37.56		
C	69.29	55.45					63.50	53.97		
D	66.92	52.86	15.36	11.10			61.11	50.80	12.70	

Panel cut-out

Screw mounting

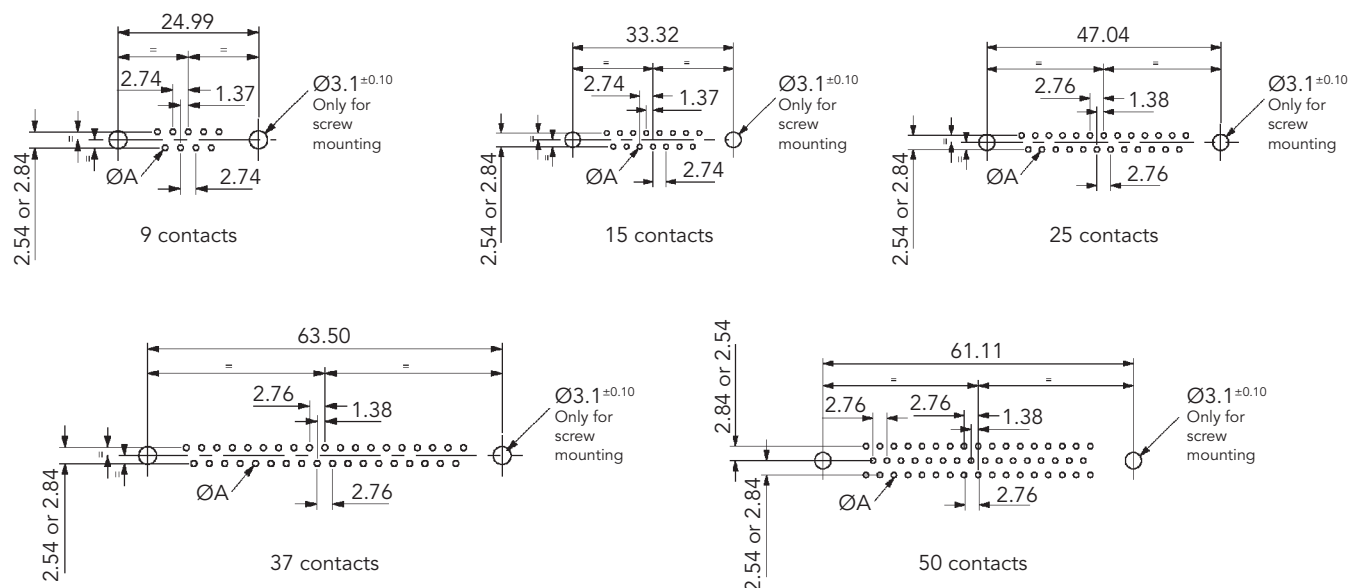


Shell size	Mounting type	A ± 0.1	B ± 0.1	C ± 0.1	D ± 0.05 only for screw mounting	E ± 0.1
E	Front	18.80	9.90	24.99	3.20	-
	Rear	20.50	11.40			3.30
A	Front	24.10	9.90	33.32	3.20	-
	Rear	28.80	11.40			3.30
B	Front	37.90	9.90	47.04	3.20	-
	Rear	42.50	11.40			3.30
C	Front	54.30	9.90	63.50	3.20	-
	Rear	59.10	11.40			3.30
D	Front	51.20	13.20	61.11	3.20	-
	Rear	56.30	14.10			3.30

Note: All dimensions are in millimeters (mm)

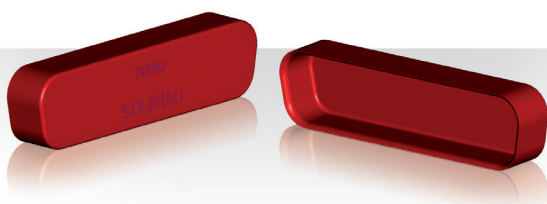
PCB drilling

PCB contact version



Accessories

D-Sub hermetic cap



Shell size	Cap part number
E	70 508
A	70 509
B	70 510
C	70 511
D	70 512

Алматы (7273)495-231
 Ангарск (3955)60-70-56
 Архангельск (8182)63-90-72
 Астрахань (8512)99-46-04
 Барнаул (3852)73-04-60
 Белгород (4722)40-23-64
 Благовещенск (4162)22-76-07
 Брянск (4832)59-03-52
 Владивосток (423)249-28-31
 Владикавказ (8672)28-90-48
 Владимир (4922)49-43-18
 Волгоград (844)278-03-48
 Вологда (8172)26-41-59
 Воронеж (473)204-51-73
 Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
 Ижевск (3412)26-03-58
 Иркутск (395)279-98-46
 Казань (843)206-01-48
 Калининград (4012)72-03-81
 Калуга (4842)92-23-67
 Кемерово (3842)65-04-62
 Киров (8332)68-02-04
 Коломна (4966)23-41-49
 Кострома (4942)77-07-48
 Краснодар (861)203-40-90
 Красноярск (391)204-63-61
 Курск (4712)77-13-04
 Курган (3522)50-90-47
 Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
 Москва (495)268-04-70
 Мурманск (8152)59-64-93
 Набережные Челны (8552)20-53-41
 Нижний Новгород (831)429-08-12
 Новокузнецк (3843)20-46-81
 Ноябрьск (3496)41-32-12
 Новосибирск (383)227-86-73
 Омск (3812)21-46-40
 Орел (4862)44-53-42
 Оренбург (3532)37-68-04
 Пенза (8412)22-31-16
 Петрозаводск (8142)55-98-37
 Псков (8112)59-10-37
 Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
 Рязань (4912)46-61-64
 Самара (846)206-03-16
 Санкт-Петербург (812)309-46-40
 Саратов (845)249-38-78
 Севастополь (8692)22-31-93
 Саранск (8342)22-96-24
 Симферополь (3652)67-13-56
 Смоленск (4812)29-41-54
 Сочи (862)225-72-31
 Ставрополь (8652)20-65-13
 Сургут (3462)77-98-35
 Сыктывкар (8212)25-95-17
 Тамбов (4752)50-40-97
 Тверь (4822)63-31-35

Тольятти (8482)63-91-07
 Томск (3822)98-41-53
 Тула (4872)33-79-87
 Тюмень (3452)66-21-18
 Ульяновск (8422)24-23-59
 Улан-Удэ (3012)59-97-51
 Уфа (347)229-48-12
 Хабаровск (4212)92-98-04
 Чебоксары (8352)28-53-07
 Челябинск (351)202-03-61
 Череповец (8202)49-02-64
 Чита (3022)38-34-83
 Якутск (4112)23-90-97
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