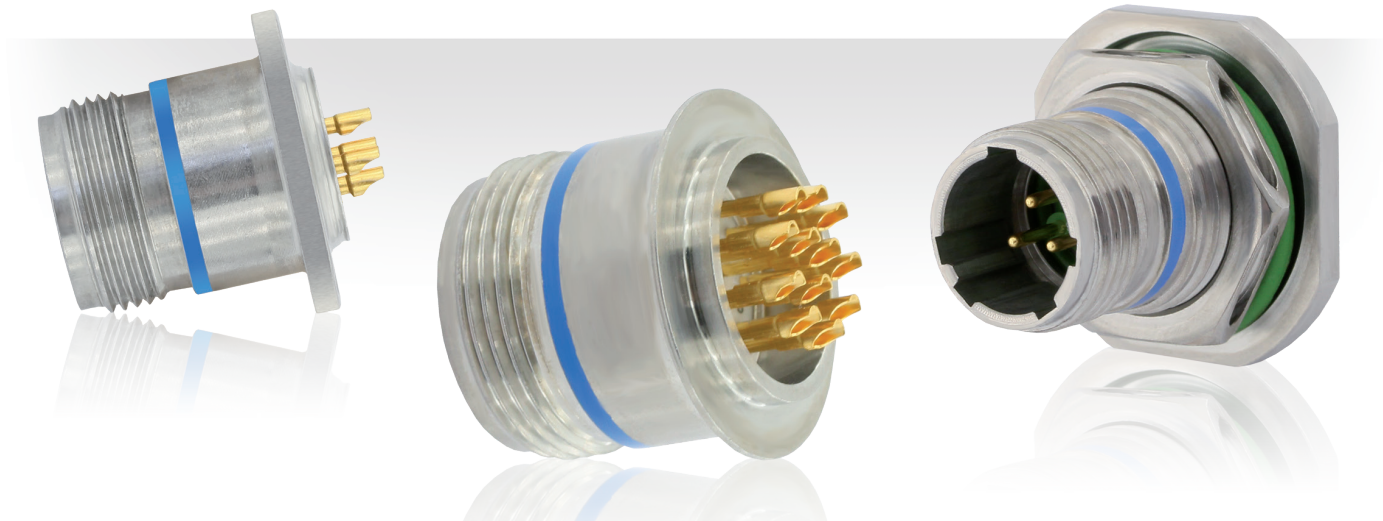


EN2997

## Hermetic Connectors

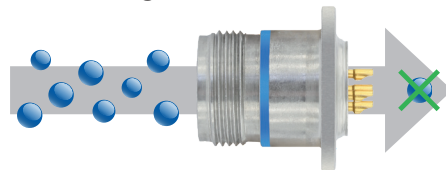


# Compact Low Profile Connectors with High Hermeticity Performance

Adapted to sensor applications under high aeronautical constraints, such as engine & landing gear environments.

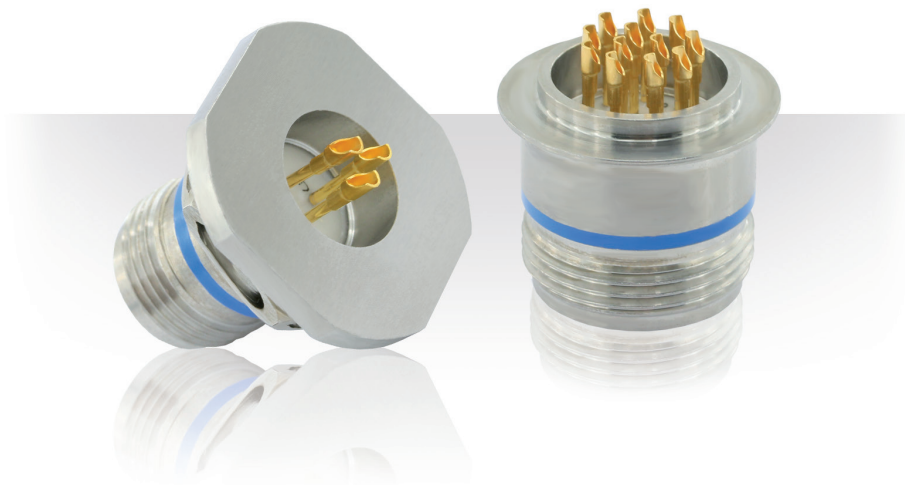
**High performance solution** ■ Robust screw coupling.  
Corrosion and fire resistant connector qualified per EN2997 & ESC10.

**High hermeticity performance** ■ Glass to metal sealing:  
Helium leakage of less than  $10^{-7}$  atm.cm<sup>3</sup>/s.



**Compact profile** ■ No need for sealing accessory: 1/3 space saving.

**Special fuel tank version** ■ Specific materials to guarantee minimum 90,000 hours in fuel immersion.  
Unique crimp contact version on request.



## Description

- EN2997 and ESC10 robust screw coupling qualified connector.
- Glass sealed hermetic:
  - . high hermeticity performance
  - . compact low profile
- Fully interchangeable with MIL 83723 hermetic connectors
- Various mounting styles:
  - . compact solder mount receptacle
  - . easy to install square flange receptacle
  - . easy to replace jam nut receptacle
- Signal and power solder cup contacts
- PCB contact version available
- Special fuel tank versions
- 230V qualified versions where higher voltage is used to reduce cable weight

## Technical features

### Mechanical

- **Shell:**
  - . Passivated Stainless steel
- **Seals:**
  - . Silicone elastomer
- **Contact:**
  - . Ferrous alloy
- **Contact plating:**
  - . Gold
- **Shock:**
  - . 300 m/s<sup>2</sup> (30g) during 3 ms
- **Endurance:**
  - . 500 mating/unmating operations
- **Vibration:**
  - . Random 5 Hz to 2000 Hz at 1G<sup>2</sup>/Hz (2 x 8 hours)

### Electrical

- **Max current rating per contact:**

Contact size	20	16	12	6	4
Rating (A)	5	10	17	46	60

- **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

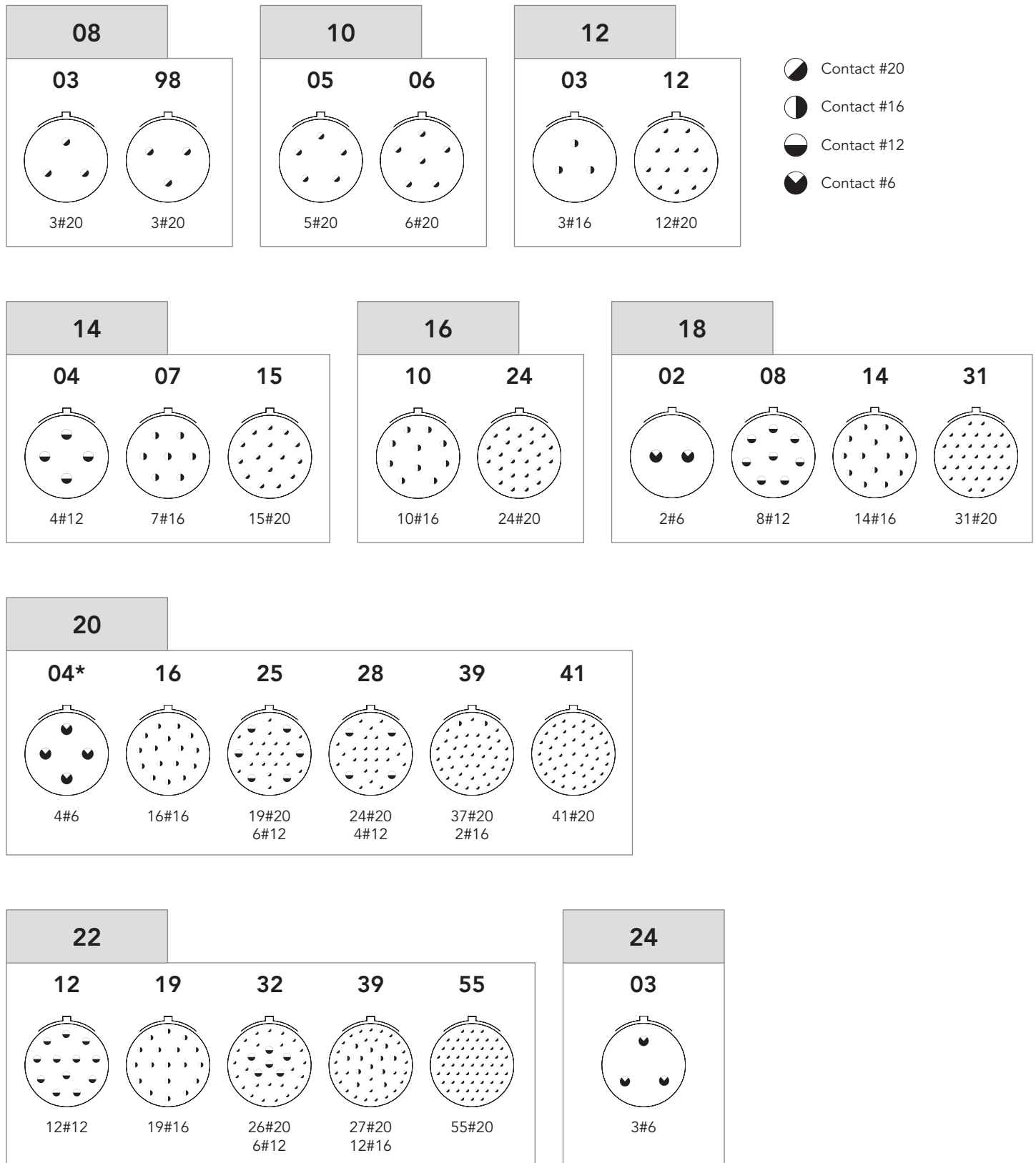
- **Contact resistance at rated current:**
  - . Maximum initial contact resistance at ambient temperature

Contact size	20	16	12	6	4
Resistance mΩ	12	8.5	5	2	2

### Environmental

- **Operating temperature:**
  - . Class Y : -65°C to 200°C
  - . Class YE : -65°C to 260°C cyclic
- **Hermeticity:**
  - . Leak rate <10<sup>-7</sup> atm.cm<sup>3</sup>/s (helium gas test)
- **Damp heat:**
  - . As per EN 2997 and NFL 54143: 10 cycles of 24h
- **Salt spray:**
  - . 500 hours
- **Resistance to fluids:**
  - . MIL-H 5606 - SKYDROL 500 B4 - LD4 - JP5 - MIL-L 7870A - MIL-L 23699 - MIL- L 7808 - MIL-C 25769 - MIL-A 8243
- **Fuel immersion version:**
  - . 105°C max
  - . As per PrEN3645

### 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

<b>Basic series</b>	<b>8533</b>	<b>1</b>	<b>Y</b>	<b>10</b>	<b>05</b>	<b>P</b>	<b>N</b>	<b>-</b>
<b>Shell type:</b>								
1: Solder mount receptacle								
2: Square flange receptacle								
7: Jam nut receptacle								
<b>Class:</b>								
Y: 200°C								
YE: 260°C								
<b>Shell size: 08 - 10 - 12 - 14 - 16 - 18 - 20 - 22 - 24</b>								
<b>Contact layout:</b> See page 3								
<b>Contact type:</b>								
P: Pin								
<b>Orientation: N - 6 - 7 - 8 - 9 - T - V - Y</b> (see page 8)								
<b>Specification</b> (other specification: see page 9):								
None: Standard hermetic version (solder cup) - except for layout 20-04								
112: Standard hermetic version (solder cup) - for layout 20-04 only								
22: Hermetic 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

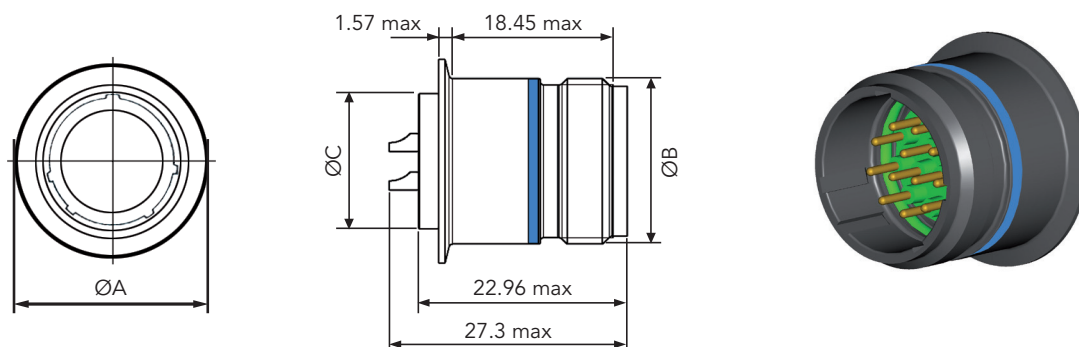
<b>Basic series</b>	<b>EN 2997</b>	<b>Y</b>	<b>0</b>	<b>08</b>	<b>03</b>	<b>M</b>	<b>N</b>
<b>Class:</b>							
Y: 200°C							
YE: 260°C							
<b>Shell type:</b>							
0: Square flange receptacle							
1: Solder mount receptable							
7: Jam nut receptable							
<b>Shell size: 08 - 10 - 12 - 14 - 16 - 18 - 20 - 22</b>							
<b>Contact layout:</b> See page 3							
<b>Contact type:</b>							
M: Pin							
<b>Orientation: N - 6 - 7 - 8 - 9 - Y</b> (see page 8)							

### ESC10 qualified products

<b>Basic series</b>	<b>ESC 10</b>	<b>YE</b>	<b>1</b>	<b>08</b>	<b>03</b>	<b>P</b>	<b>N</b>	<b>0</b>
<b>Class:</b>								
YE: 260°C								
<b>Shell type:</b>								
1: Solder mount receptacle								
2: Square flange receptacle								
3: Jam nut receptable								
<b>Shell size: 08 - 10 - 12 - 14 - 16 - 18 - 20 - 22</b>								
<b>Contact layout:</b> See page 3								
<b>Contact type:</b>								
P: Pin								
<b>Orientation: N - 6 - 7 - 8 - 9 - Y</b> (see page 8)								
0: variant identifier								

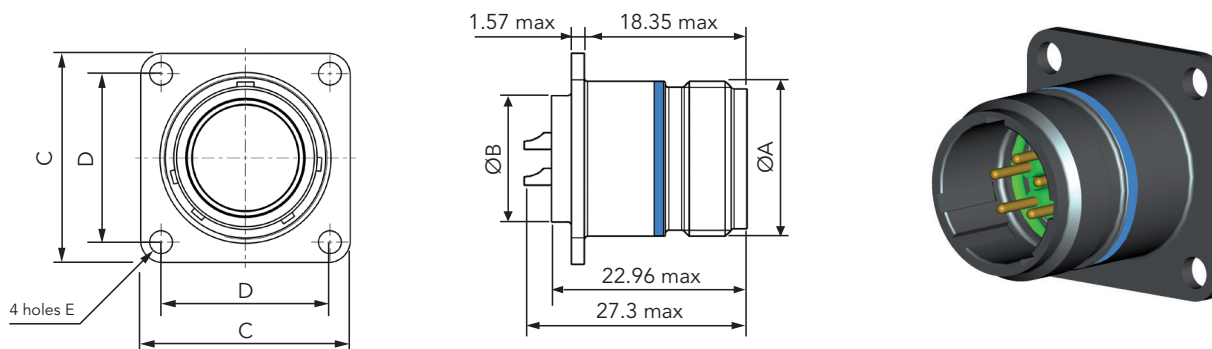
## Dimensions

### 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

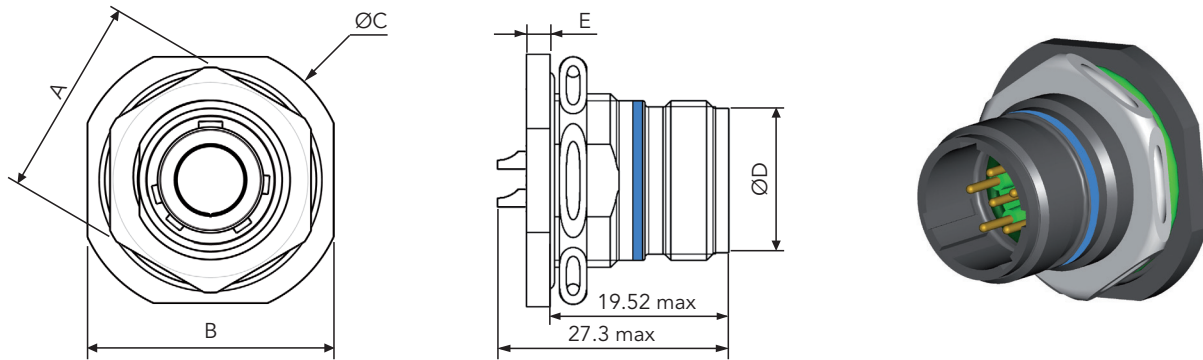
### Square flange hermetic receptacle (Class Y & YE)



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

Note: All dimensions are in millimeters (mm)

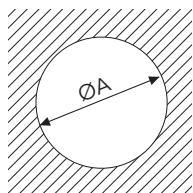
Jam nut hermetic receptacle (Class Y & YE)



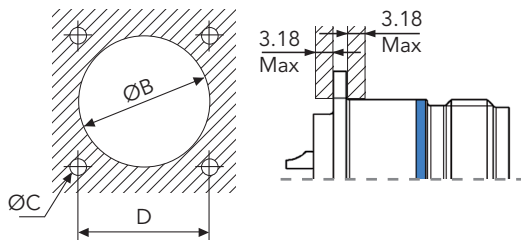
Shell size	8	10	12	14	16	18	20	22	24	
A Max	21.06	24.23	29.01	30.61	33.76	36.96	40.11	43.31	46.46	
B Max	24.89	28.04	32.79	35.33	38.51	41.68	44.86	49.63	52.81	
ØC Max	27.38	30.28	35.05	38.51	41.68	44.86	49.63	52.78	55.42	
ØD Max	14.29	17.46	22.22	23.81	26.99	30.16	33.34	36.51	39.69	
E Max	3.48						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

Panel cut out

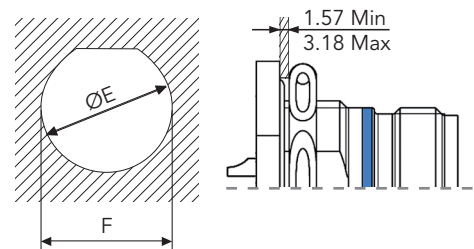
Type 1  
Solder mount receptacle



Type 2  
Square flange receptacle



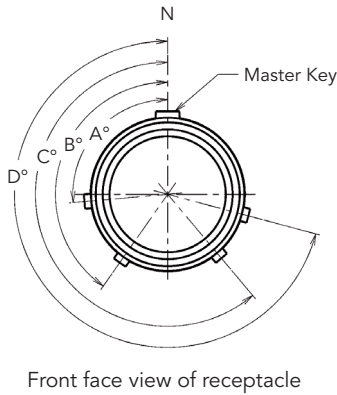
Type 7  
Jam nut receptacle



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)

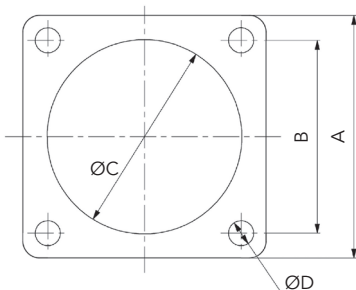
Orientation



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

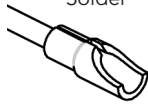
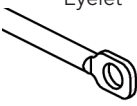

Shell size	08	10	12	14	16	18	20	22	24
A <sup>±0.4</sup>	20.62	24.00	26.18	28.56	30.93	33.32	36.50	39.67	42.86
B <sup>±0.12</sup>	15.09	18.00	20.62	23.01	24.61	26.97	29.37	31.75	34.92
∅C <sup>+0.4 +0</sup>	12.70	17.20	19.05	22.23	25.40	28.58	31.75	34.93	38.10
∅D <sup>+0.12 +0</sup>	3.30	3.20	3.30						4.00

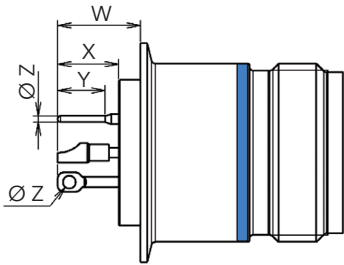
Note: All dimensions are in millimeters (mm)



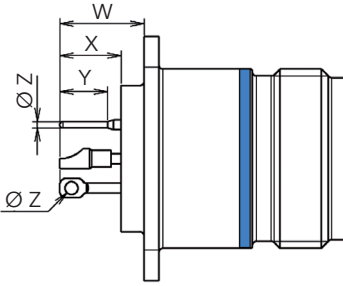
## Contact variations

### Contact variations summary

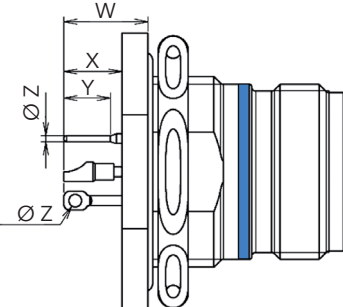
Contact variations		
 <p>Solder</p>	 <p>Eyelet</p>	 <p>PCB</p>



**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
<b>PCB contacts</b>	<b>05</b>	20	8.78	4.78	4.50	0.65	PCB contact
	<b>118</b>	20	10.88	6.88	6.25	0.65	Long PCB contact
<b>Eyelet contacts</b>	<b>105</b>	20	6.98	2.98	4.05 <sup>+0.2</sup>	1.25 <sub>0.15</sub>	Eyelet contact
<b>Solder cup contacts</b>	<b>Without specification or specification 22</b>	20-16-12	7.78	2.98	-	-	Standard Solder cup contact
	<b>112</b>	6	9.03	5.13	-	-	
	<b>62</b>	20-16-12	7.78	2.98	-	-	Solder cup contact tin plated on rear part

Note: All dimensions are in millimeters (mm)

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[technical.americas@souriau.com](mailto:technical.americas@souriau.com) (North America)  
 or visit our web site [www.souriau.com](http://www.souriau.com)