

8STA shell sizes 08 to 24



Features & Benefits

- Derived from MIL-DTL-38999 (Eurofighter JN 1003 connector), 8STA connector utilises the extensive SOURIAU range of 38999 medium, high density, power, coaxial and triaxial contact layouts
- Rugged aluminium body to ensure long service life in the harshest environment
- The 8STA range covers connectors from shell sizes 08 to 24 in 5 shell styles:
 - . 100% scoop-proof
 - . EMI-RFI shielding and shell to shell continuity is provided by conductive plating and integral grounding ring fitting to the plug
 - . Environment sealing from interfacial seal and rear grommet (sealing IP67)
 - . Positive locking mechanism with locked colour indicator
 - . 6 colour-coded keyway orientations
 - . Boot termination feature

Technical characteristics

Mechanical

• Shell	Aluminium alloy
• Shell plating	Conductive black zinc
• Insulator	Thermoplastic
• Grommet & seal	Liquid silicone rubber
• Contact	Copper alloy
• Contact plating	Gold
• Endurance	500 matings/unmatings
• Shock	300 g for 3 ms and EIA-364-27
• Vibration	147 m/s ² , 10 to 2000 Hz
• Contact retention	Size 22D 45 N Size 20 60 N Size 16 100 N Size 12 100 N Size 8 110 N Size 4 200 N

Climatic

• Temperature range	-55°C to +175°C
• Sealing mated connectors	IP67 (1 metre for 30 min. minimum)
• Salt spray	48 hours

Electrical

- Test voltage

Service	M	N	I	II
Sea level	1300	1000	1800	2300

- Contact resistance

Size 22D	14.6 mΩ
Size 20	7.3 mΩ
Size 16	3.8 mΩ
Size 12	3.5 mΩ
Size 8	3 mΩ
Size 4	2 mΩ
- Insulation resistance

≥ 5000 mΩ (at 500 Vdc)

- 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
- Shell continuity

≤ 10 mΩ

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How to order

Connector

Basic series	8STA	0	10	35	P	N	-
Shell style	0: Oval flange receptacle 1: In-line receptacle 2: Oval flange receptacle with PCB contacts 6: Plug 7: Jam nut receptacle						
Shell size	08 - 10 - 12 - 14 - 16 - 18 - 20 - 22 - 24						
Contact layouts	See page 6-8						
Type of contacts	P: Pin contacts S: Socket contacts						
Orientations	N: Red / A: Yellow / B: Blue / C: Orange / D: Green / U: Universal						
Specification	- : Standard version 499: Integrated nut on the flange - M3 insert (only for shell style 0 & 2) - <i>for more details, please see page 45-48</i> 523: Lightweight In-line receptacle (shell style 1) 022: Fuel immersible version - <i>for more details, please see page 53-56</i>						

Protective cap

Basic series	8STA	8	10
Shell style	8: Plug protective cap 9: Receptacle protective cap		
Shell size	08 - 10 - 12 - 14 - 16 - 18 - 20 - 22 - 24		

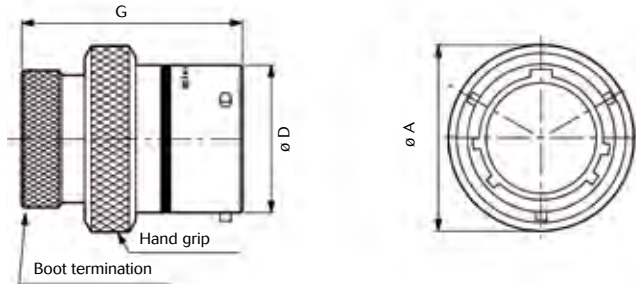
Range presentation

Plug																									
	<table border="1"> <thead> <tr> <th>Shell size</th> <th>ø A max.</th> <th>B max.</th> </tr> </thead> <tbody> <tr> <td>08</td> <td>18.70</td> <td rowspan="5">18.55</td> </tr> <tr> <td>10</td> <td>21.50</td> </tr> <tr> <td>12</td> <td>25.10</td> </tr> <tr> <td>14</td> <td>29.00</td> </tr> <tr> <td>16</td> <td>32.20</td> </tr> <tr> <td>18</td> <td>35.40</td> <td rowspan="3">19.30</td> </tr> <tr> <td>20</td> <td>38.20</td> </tr> <tr> <td>22</td> <td>41.30</td> </tr> <tr> <td>24</td> <td>44.50</td> <td>19.05</td> </tr> </tbody> </table>	Shell size	ø A max.	B max.	08	18.70	18.55	10	21.50	12	25.10	14	29.00	16	32.20	18	35.40	19.30	20	38.20	22	41.30	24	44.50	19.05
	Shell size	ø A max.	B max.																						
	08	18.70	18.55																						
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	20	38.20																							
22	41.30																								
24	44.50	19.05																							

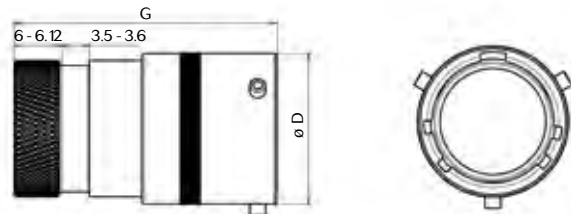
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In-line receptacle

Standard version

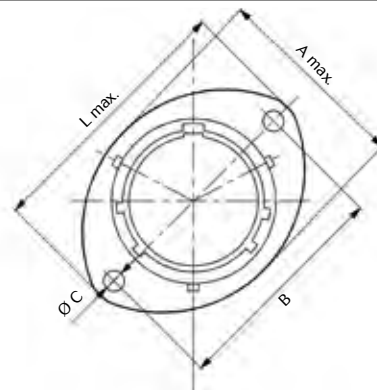
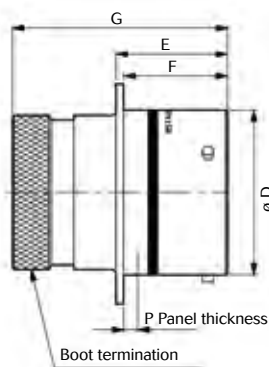


Lightweight version (specification 523)

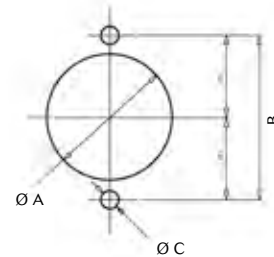


Shell size	ø A max.	ø D ^{+0.20} / _{-0.13}	G max.
08	17.60	12.00	33.50
10	20.70	15.00	
12	25.10	19.05	
14	28.30	22.22	
16	31.40	25.40	
18	34.70	28.57	
20	38.10	31.75	
22	41.20	34.92	
24	44.70	38.10	

Oval flange receptacle



PANEL CUT OUT



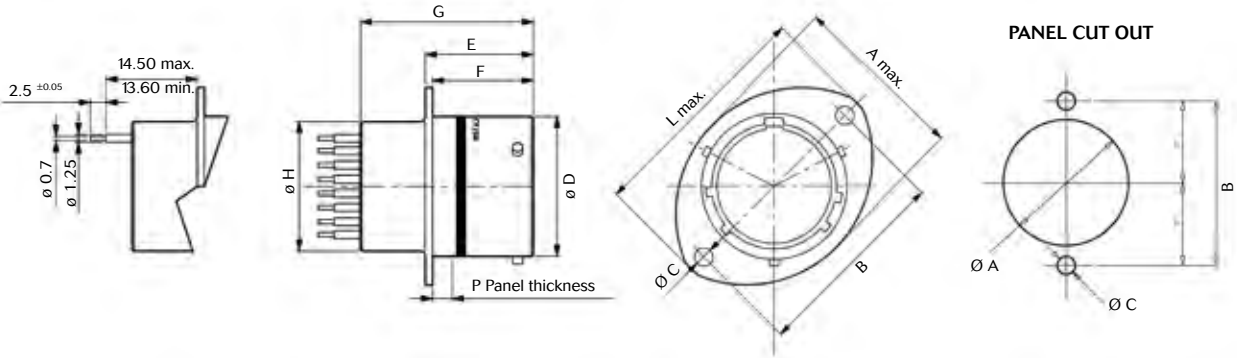
Shell size	A max.	B ^{±0.20}	ø C _{0,1}	ø D ^{+0.2} / _{-0.13}	E _{0,15}	F _{0,13}	G max.	L max.	P max.	PANEL CUT OUT		
										ø A ^{±0.10}	B ^{±0.20}	ø C ^{±0.20}
08	16.50	21.40	3.20	12.00	17.21	16.05	33.50	27.20	3.00	14.50	21.40	3.60
10	19.50	25.90		15.00				32.00		17.40	25.90	
12	24.00	29.10		19.05				35.20		21.90	29.10	
14	27.00	32.50		22.22				38.40		25.00	32.50	
16	30.30	34.80		25.40				41.00		28.20	34.80	
18	33.70	38.20		28.57				44.70		31.40	38.20	
20	37.00	41.60		31.75				47.90		34.60	41.60	
22	40.40	45.00		34.90				51.00		37.60	45.00	
24	43.40	49.50		3.77				38.10		18.20	15.29	

Note : all dimensions are in mm

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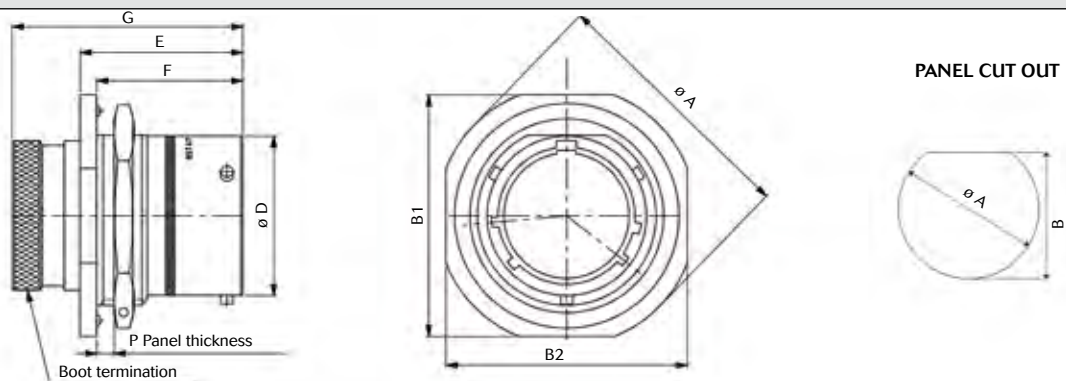


Oval flange receptacle with PCB contacts



Shell size	A max.	B ± 0.20	$\phi C_{\pm 0.1}$	$\phi D_{\pm 0.13}$	E ± 0.15	F ± 0.13	G max.	ϕH max.	L max.	P max.	PANEL CUT OUT		
											$\phi A_{\pm 0.10}$	B ± 0.20	$\phi C_{\pm 0.20}$
08	16.50	21.40	3.20	12.00	17.21	16.05	2765	11.10	27.20	3.00	14.50	21.40	3.60
10	19.50	25.90		14.97				13.90	32.00		17.40	25.90	
12	24.00	29.10		19.05				17.35	35.20		21.90	29.10	
14	26.90	32.50		22.22				20.50	38.40		25.00	32.50	
16	30.30	34.80		25.40				23.70	41.00		28.20	34.80	
18	33.70	38.20		28.57				26.91	44.70		31.40	38.20	
20	37.00	41.60		31.77				30.11	47.80		34.60	41.60	
22	40.40	45.00		34.90				33.20	51.00		37.60	45.00	
24	43.40	49.50	3.77	38.10	18.20	15.29	36.40	55.80	41.00	49.50	4.10		

Jam nut receptacle



Shell size	$\phi A_{\pm 0.03}$	B1-B2 ± 0.24	$\phi D_{\pm 0.12}$	E ± 0.10	F ± 0.24	G ± 0.3	P max.	PANEL CUT OUT	
								$\phi A_{\pm 0.10}$	B ± 0.20
08	26.90	24.10	11.97	25.91	23.24	36.71	3.00	14.50	13.60
10	30.15	27.30	14.94					17.70	16.80
12	34.89	32.10	19.01					22.70	20.90
14	38.06	34.92	22.18					25.70	24.10
16	41.25	38.40	25.36					28.80	27.20
18	44.41	41.60	28.53	26.71	37.51	3.00	32.00	30.40	
20	49.19	46.30	31.71				35.10	33.60	
22	52.33	49.50	34.88				38.00	36.80	
24	55.50	52.45	38.06				42.00	39.90	

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New versions

Lightweight In-line receptacle (specif. 523)

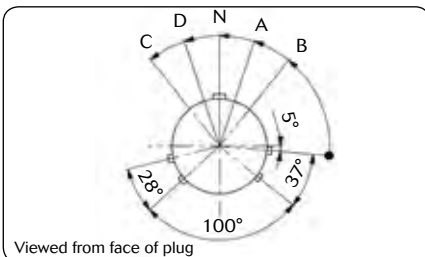
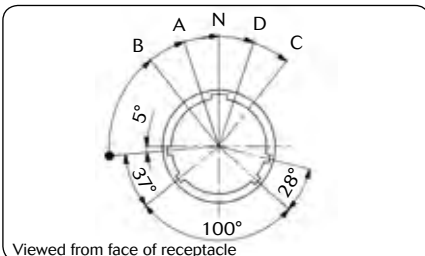


Version with integrated nut (specif 499)



See pages 45-48

Orientation



Shell size	Orientations				
	N Red	A Yellow	B Blue	C Orange	D Green
08	95°	77°	-	-	113°
10	95°	81°	67°	123°	109°
12	95°	75°	63°	127°	116°
14	95°	74°	61°	129°	116°
16	95°	77°	65°	125°	113°
18	95°	77°	65°	125°	113°
20	95°	77°	65°	125°	113°
22	95°	80°	69°	121°	110°
24	95°	80°	69°	121°	110°

For each shell size, U orientation can be mateable with any other orientations.

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Contacts

Crimped & PCB contacts									
Contact size	Contact type	Contact Ø max.	Part numbers	Admissible wire section				External dia. over insulation (mm)	
				AWG		mm ²		Min.	Max.
Crimp contact				Min.	Max.	Min.	Max.		
22D signal contact	Male	0.76	8599-0702 JJ	28	22	0.09	0.38	0.76	1.37
	Female		8599-0706 900						
20 signal contact	Male	1.00	8599-0703 SA	24	20	0.21	0.60	1.02	2.11
	Female		8599-0707 900						
16 signal contact	Male	1.60	8599-0704 MJ	20	16	0.60	1.34	1.65	2.77
	Female		8599-0708 900						
16 coaxial contact	Male	1.60	M39029/76 424	RG 174 RG 179 RG 316				1.65	2.60
	Female		M39029/77 428						
12 signal contact	Male	2.40	8599-0705 MJ	14	12	1.91	3.18	2.46	3.61
	Female		8599-0709 900						
12 coaxial contact	Male	2.40	M39029/28 211	RG 174 RG 179 RG 316				2.40	2.60
	Female		M39029/75 416						
08 power contact	Male	3.64	8599-7544	-	8	-	8.98	4.50	6.50
	Female		8599-7541						
	Boot		8599-4542						
	Reductor**		8599-7645						
08 coaxial contact	Male	3.64	M39029/59 366	RG 188A/U				-	2.80
	Female		M39029/60 367						
	Boot		8590-4571						
08 triaxial contact	Male	3.64	M39029/90-529	MIL-C 17/176 00002 FILECA F2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002				3.15	3.40
	Female		M39029/91-530						
	Boot		8590-4571						
04 power contact	Male	5.75	8599-7520A 900	7	10	According to wire used			
	Female		8599-7521A 900						
	Boot		8599-4590						
	Reductor*		8400-2351A						
	Male		8599-7520A 900	4	16				
	Female		8599-7521A 900						
	Boot		8599-4591						

PCB contact***			Part numbers
22D signal contact	Male	0.76	F1P1P3E-0001ALY
	Female		F1P1ES3-2201A00
20 signal contact	Male	1.03	F1P1P3E0020ALY
	Female		F1P1ES32001A00

* Reductor must be used for wire 8 & 10 mm²
** Reductor must be used for wire 8 mm²
*** For shell type 2

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Crimping tools

Contact size	Type	Pliers						
		M22520/1-01		M22520/2-01		M300BT	M22520/23-01*	
		Turret Part number		Locator Part number		Locator Part number	Die Part number	Locator Part number
		Spec.	SOURIAU	Spec.	SOURIAU	Spec.	Spec.	Spec.
22D	Male	-	-	M22520/2-09	8476-09			
	Female			M22520/2-07	8476-07			
20	Male	M22520/1-04	8365-04	M22520/2-10	8476-10			
	Female							
16	Male							
	Female							
12	Male							
	Female							
8	Male					SP 593	M22520/23-02	8599-9601
	Female							
4	Male						M22520/23-04	M22520/23-11
	Female							

* Pneumatic pliers

M22520/1-01+ M22520/1-04



M22520/2-01 + M22520/2-09 & M22520/2-07



M22520/23-01



Wire stripping



	Contact size						
	26	22D	20	16	12	8	4
L (mm)	4		6			12	

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Accessories

Shrinkable termination detail					
	Shell size	øA	ø B ^{+0.05}	C ^{+0.05}	D
	08	10.62	9.70	6	3.5
	10	13.72	12.65		
	12	17.26	16.02		
	14	20.41	19.00		
	16	23.60	22.23		
	18	26.76	25.22		
	20	29.93	28.37		
	22	33.11	31.86		
	24	36.30	34.67		

Metal protective caps						
	Shell size	Plug cap		Receptacle cap		
		ø A	B	øA	ø B	
		08	17.50	21.00	19.00	14.20
		10	20.50		21.80	
		12	24.50		26.10	
		14	27.70		29.30	
		16	30.90		32.50	15.00
		18	34.00		35.30	
		20	37.20		38.80	
		22	40.40		42.00	
24		43.50	45.10		15.85	

Insertion & extraction tools						
	Contact size	Material	Part numbers		Colour	
			Spec.	SOURIAU	Insertion	Extraction
	22D	Plastic	M81969/14-01	-	Green	White
	20	Plastic	M81969/14-10	-	Red	Orange
	16	Plastic	M81969/14-03	-	Blue	White
	12	Plastic	M81969/14-04	-	Yellow	
	8	Plastic	M81969/14-06	-	-	Red
		Metallic	-	8660-197		-
	4	Plastic	M81969/14-07	-	-	Blue
		Metallic	-	8533-8175		-

Filler plug				
	Contact size	Part numbers		Colour
		Spec.	SOURIAU	
	22D	MS27488-22	8660-212	Black
	20	MS27488-20	8522-389A	Red
	16	MS27488-16	8522-390A	Blue
12	MS27488-12	8522-391A	Yellow	