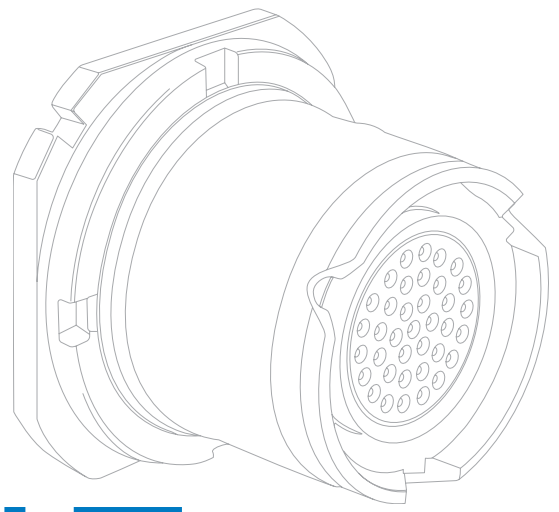


MIL-DTL- 38999 Series I bayonet connectors
Souriau 8LT series



Powering Business Worldwide



Souriau 8LT

MIL-DTL-38999 Series I

Typical applications



Table of contents

Overview	4
Technical specifications	4
Contact layouts	5
Ordering information	11
Dimensions	13
Aluminum backshells	18
Ordering information	18
Dimensions	18
Installation information	21
8LT rack & panel	22
Technical specifications	22
Rack and panel - ordering information	23
Dimensions	24
8LT resin sealed	26
Technical specifications	26
Ordering information	26
Contacts & tooling	27
Contacts	27
Wiring instruction	32
Tooling	33
Common elements	35
Protective caps, reducers and boots	35
Orientations	36
Panel gasket & dummy receptacles	37
Cross reference list	38
Coordinates	39



Souriau 8LT series

Technical specifications



Description

- High contact density
- Bayonet coupling
- 100% Scoop-proof
- Shell size from 9 to 25
- Accessories available (protective caps, backshells, etc.)
- RFI - EMI shielding and shell to shell continuity
- Hermetic
- Aluminum alloy, protection by cadmium, nickel, green zinc cobalt or black zinc nickel plating

Mechanical

Shell

Aluminum alloy

Plating

- Black zinc nickel (Z)
- Olive green cadmium (B)
- Nickel (F)
- Green zinc cobalt (ZC)

Insulator

Thermoplastic or metallic version available for specification 284 & 384

Grommet or seal

Liquid silicone rubber or fluorocarbon elastomer for specification 022

Contact

Copper alloy

Plating contact

Gold over nickel

Endurance

500 mating / unmating operations

Shock

300 g during 3 ms and per MIL S 901 Grade A

Vibration

- Sine 10 to 2000 Hz - 30 g
- Random 100 à 300 Hz - 5 g²/Hz

Contact retention (min force in N)

Contacts size	22	20	16	12	8	4
Min force in N	44	67	111	111	111	200

Electrical

Test voltage (Vrms)

Service	sea level	at 21000 m
R	400	N/A
M	1 300	800
N	1 000	600
I	1 800	1 000
II	2 300	1 000

Insulation resistance

≥ 5 000 MΩ (at 500 Vdc)

Contact resistance

Contacts size	26	22	20	16	12	8	4
Resistance mΩ	16	14.6	7.3	3.8	3.5	3	2

Contact rating

Contacts size	26	22	20	16	12	8	4
Rating (A)	3	5	7.5	13	23	45	80

Shell continuity

- Black zinc nickel: 2.5 mΩ
- Olive green plating: 2.5 mΩ
- Nickel plating: 1 mΩ
- Green zinc cobalt: 2.5 mΩ

Shielding

- 90 db at 100 MHz
- 50 db at 10 000 MHz

Electrical continuity between contact and shell for specification 284 & 384

10 mΩ max

Environment

Temperature range

- Black zinc nickel plating (Z)
- 65°C to +175°C
- Olive green cadmium plating (B)
- 65°C to +175°C
- Nickel plating (F)
- 65°C to +200°C
- Green zinc cobalt plating (ZC)
- 65°C to +200°C

Sealing mated connectors

- Differential pressure 1 bar:
leakage ≤ 16 cm³/h

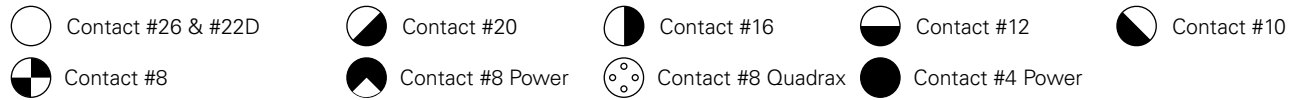
Salt spray

- MIL STD 1344 method 1001
 - 500 hours (plating B, ZC and Z)
 - 48 hours (plating F)
- NFC 93422
 - 48 hours (plating F)

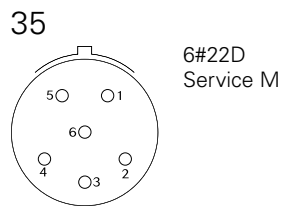
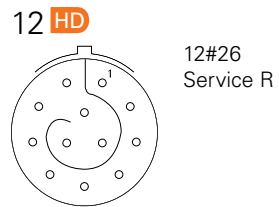
Resistance to fluids

- Per MIL DTL 38999, hydraulic fluids, solvents
- Specification 022 for fuel immersion

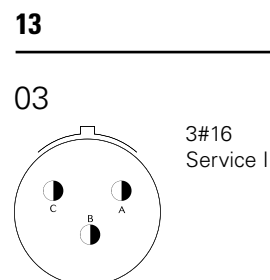
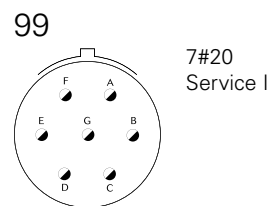
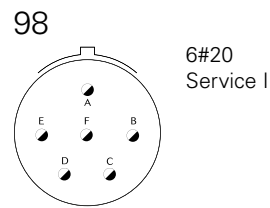
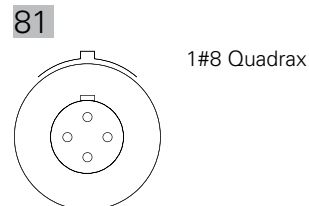
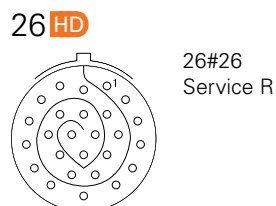
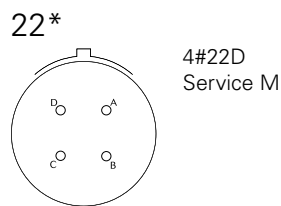
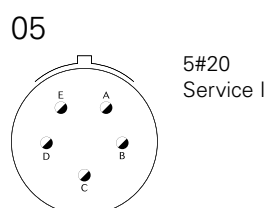
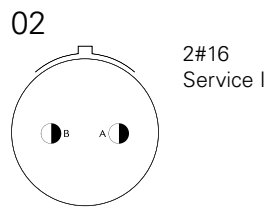
Contact layouts



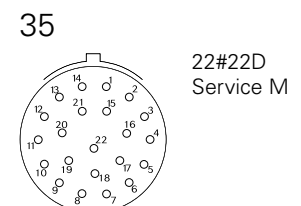
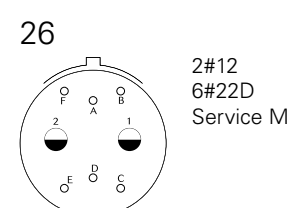
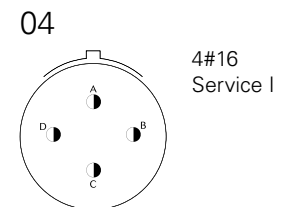
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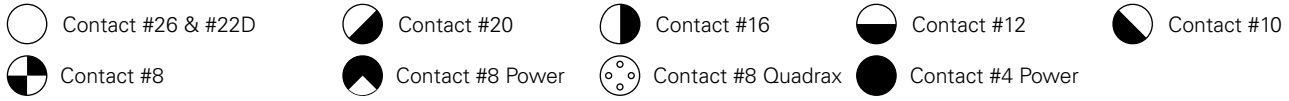


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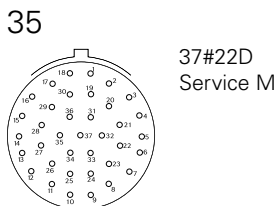
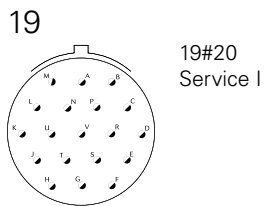
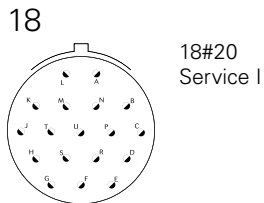
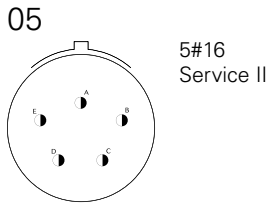


Contact layouts

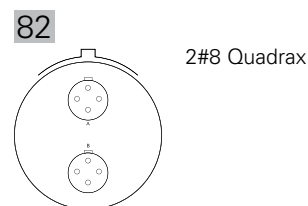
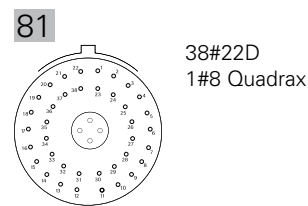
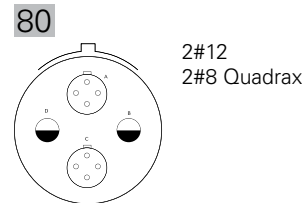
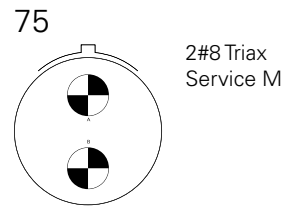
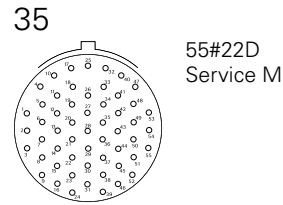
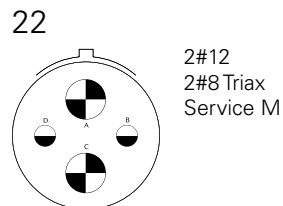
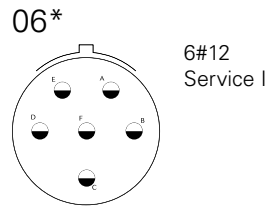
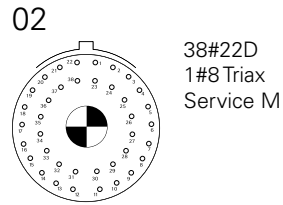
Contact layouts



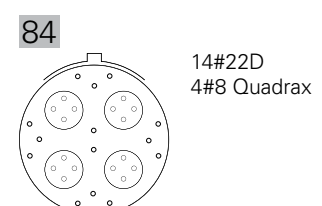
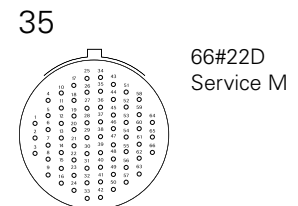
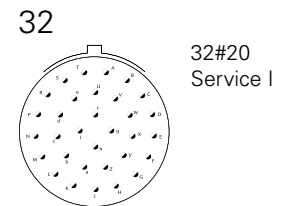
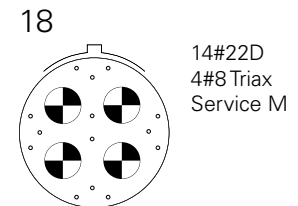
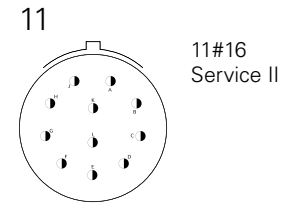
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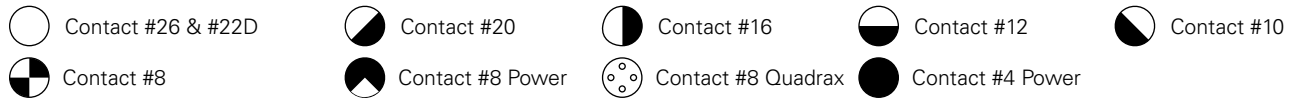
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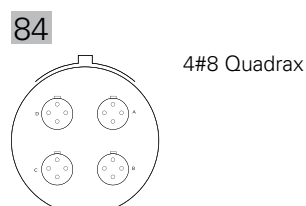
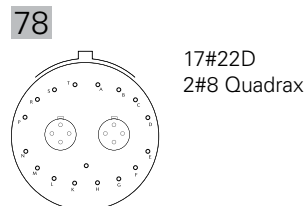
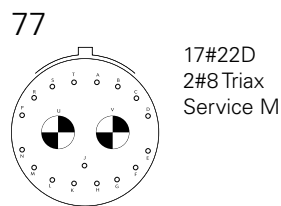
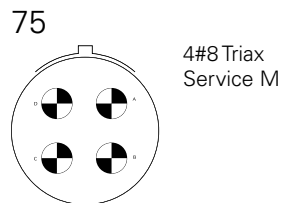
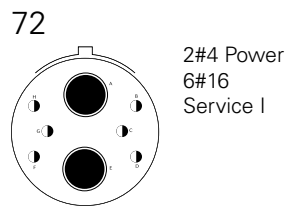
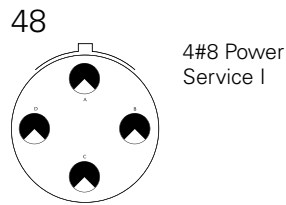
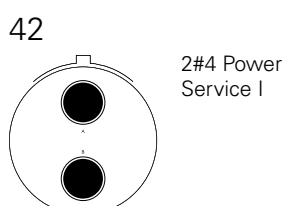
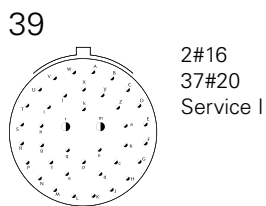
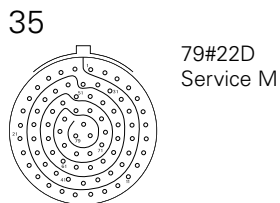
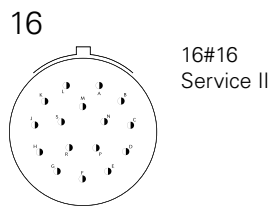
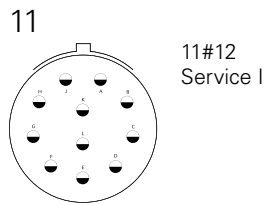
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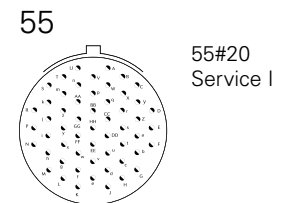
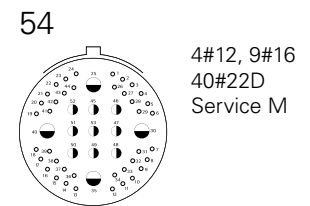
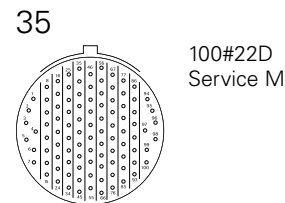
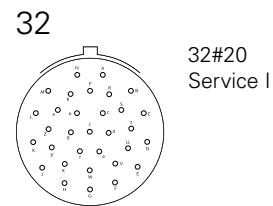
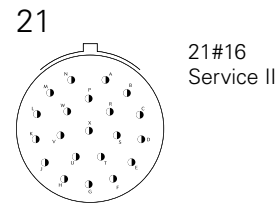
Contact layouts



21



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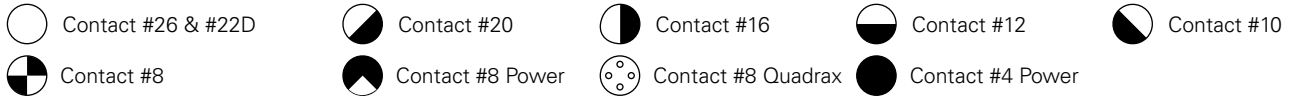


Ethernet Quadrax

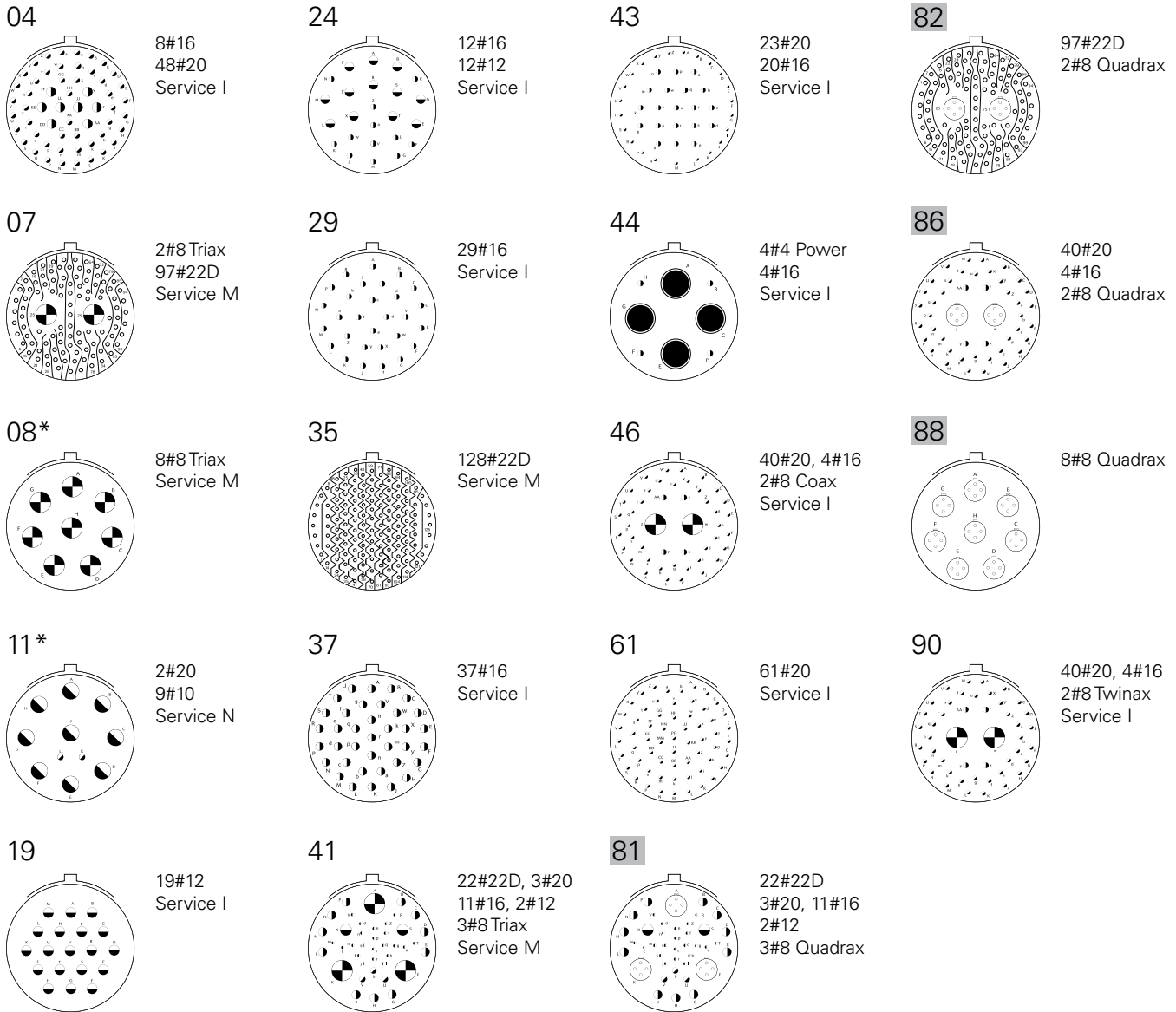
Souriau 8LT series

Contact layouts

Contact layouts



25



Contact layouts (matrix)

Shell Size	Layout	Service	8LT	8LT2	MIL-DTL-38999 (QPL)			HE 308	Rack	Nber of Contacts	#26	#22D	#20	#16	#12	#10	#8	#4 Power
					MS (1)	MS27505	Not Rack											
09	09-12	R	OK							12	12							
	09-35	M	OK	OK	Q	Q	O	X		6		6						
	09-98	I	OK	OK	Q		O	X		3			3					
10	11-02	I	OK		Q				•	2				2				
	11-04	I	OK		Q				•	4			4					
	11-05	I	OK		Q				•	5			5					
	11-22	M	OK							4		4						
	11-26	R	OK							26	26							
	11-35	M	OK	OK	Q	Q	O	X	•	13		13						
	11-80	I	OK							1							1 Triax	
	11-81	-	OK							1							1 Qdx	
	11-98	I	OK	OK	Q	Q	O	X	•	6			6					
	11-99	I	OK	OK	Q				•	7			7					
13	13-03	I	OK	OK						3				3				
	13-04	I	OK		Q		O		•	4				4				
	13-08	I	OK		Q				•	8			8					
	13-26	M	OK							8		6			2			
	13-35	M	OK	OK	Q	Q	O	X	•	22		22						
	13-43	R	OK							43	43							
	13-98	I	OK	OK	Q	Q	O	X	•	10			10					
15	15-05	II	OK		Q		O	X	•	5				5				
	15-15	I	OK		Q				•	15			14	1				
	15-18	I	OK	OK	Q	Q	O		•	18			18					
	15-19	I	OK	OK	Q	Q	O	X	•	19			19					
	15-35	M	OK	OK	Q	Q	O	X	•	37		37						
	15-97	I	OK	OK	Q	Q	O	X	•	12			8	4				
17	17-02	M	OK							39		38					1 Triax	
	17-06	I	OK	OK	Q	Q	O		•	6			6					
	17-08	II	OK		Q		O	X	•	8				8				
	17-20	M	OK							20		16			4			
	17-22	M	OK							4					2		2 Triax	
	17-26	I	OK	OK	Q	Q	O	X	•	26			26					
	17-35	M	OK	OK	Q	Q	O	X	•	55		55						
	17-75	M	OK						•	2							2 Triax	
	17-80	-	OK							4					2		2 Qdx	
	17-81	-	OK							39		38					1 Qdx	
	17-82	-	OK							2							2 Qdx	
	17-99	I	OK	OK	Q	Q	O	X	•	23			21	2				
19	19-11	II	OK		Q		O	X	•	11				11				
	19-18	M	OK							18		14					4 Triax	
	19-28	I	OK	OK	Q	Q			•	28			26	2				
	19-32	I	OK	OK	Q	Q	O	X	•	32			32					
	19-35	M	OK	OK	Q	Q	O	X	•	66		66						
	19-84	-	OK							18		14					4 Qdx	

OK Souriau's layout

Q Qualified layout (QPL) MIL - DTL 38999

(1) Available MS27466 & MS27467 & MS27468 & MS27656

O Layout according to UTE C 93-422 norm

X Qualified layout HE308 for DGA DTAT

• Layout according to C5935X0005 norm

#8 Pow: Power; Qdx: Quadrax

Souriau 8LT series

Contact layouts

Contact layouts (matrix)

Shell Size	Layout	Service	8LT	8LT2	MIL-DTL-38999 (QPL)		HE 308		Rack	Nber of Contacts	#26	#22D	#20	#16	#12	#10	#8	#4 Power
					MS (1)	MS27505	Not Rack											
21	21-11	I	OK		Q		0	X	•	11					11			
	21-16	II	OK	OK	Q	Q	0	X	•	16				16				
	21-35	M	OK	OK	Q	Q	0	X	•	79		79						
	21-39	I	OK	OK	Q	Q	0		•	39			37	2				
	21-41	I	OK	OK	Q	Q	0	X	•	41			41					
	21-42	I	OK							2								2
	21-48	I	OK							4							4 Pow	
	21-72	I	OK							8				6				2
	21-75	-	OK		Q				•	4							4 Triax	
	21-77	M	OK							19		17					2 Triax	
	21-78	-	OK							19		17					2 Qdx	
	21-84	-	OK							4							4 Qdx	
23	23-21	II	OK		Q		0		•	21				21				
	23-32	I	OK	OK	Q	Q				32			32					
	23-35	M	OK	OK	Q	Q	0	X	•	100		100						
	23-53	I	OK		Q		0	X	•	53			53					
	23-54	M	OK							53		40		9	4			
	23-55	I	OK		Q	Q			•	55			55					
25	25-04	I	OK		Q	Q				56			48	8				
	25-07	M	OK		Q					99		97					2 Triax	
	25-08	-	OK		Q					8							8 Triax	
	25-11	N	OK							11			2			9		
	25-19	I	OK		Q		0	X		19					19			
	25-24	II	OK		Q					24				12	12			
	25-29	I	OK		Q		0	X		29				29				
	25-35	M	OK	OK	Q	Q	0	X		128		128						
	25-37	I	OK		Q					37				37				
	25-41	N	OK							41		22	3	11	2		3 Triax	
	25-43	I	OK		Q					43			23	20				
	25-44	I	OK							8				4				4
	25-46	I	OK		Q					46			40	4			2 Coax	
	25-61	I	OK		Q		0	X		61			61					
	25-81	N	OK							41		22	3	11	2		3 Qdx	
	25-82	M	OK							99		97					2 Qdx	
	25-86	I	OK							46			40	4			2 Qdx	
	25-88	-	OK							8							8 Qdx	
	25-90	I	OK							46			40	4			2 Triax	

OK Souriau's layout

Q Qualified layout (QPL) MIL - DTL 38999

(1) Available MS27466 & MS27467 & MS27468 & MS27656

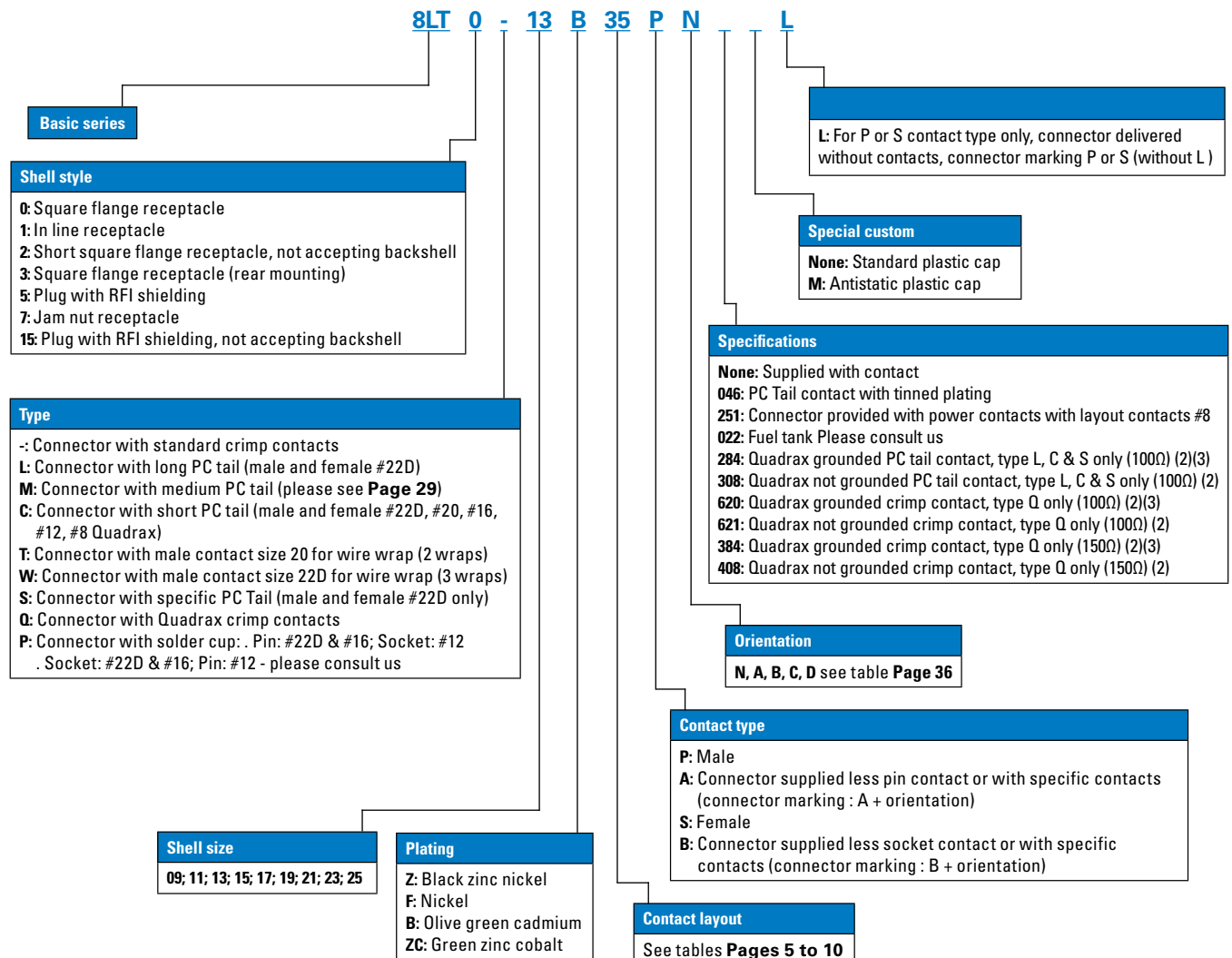
O Layout according to UTE C 93-422 norm

X Qualified layout HE308 for DGA DTAT

• Layout according to C5935X0005 norm

#8 Pow: Power; Qdx: Quadrx

Part numbers



(1) Orientations B & C not developed for shell size number 9.

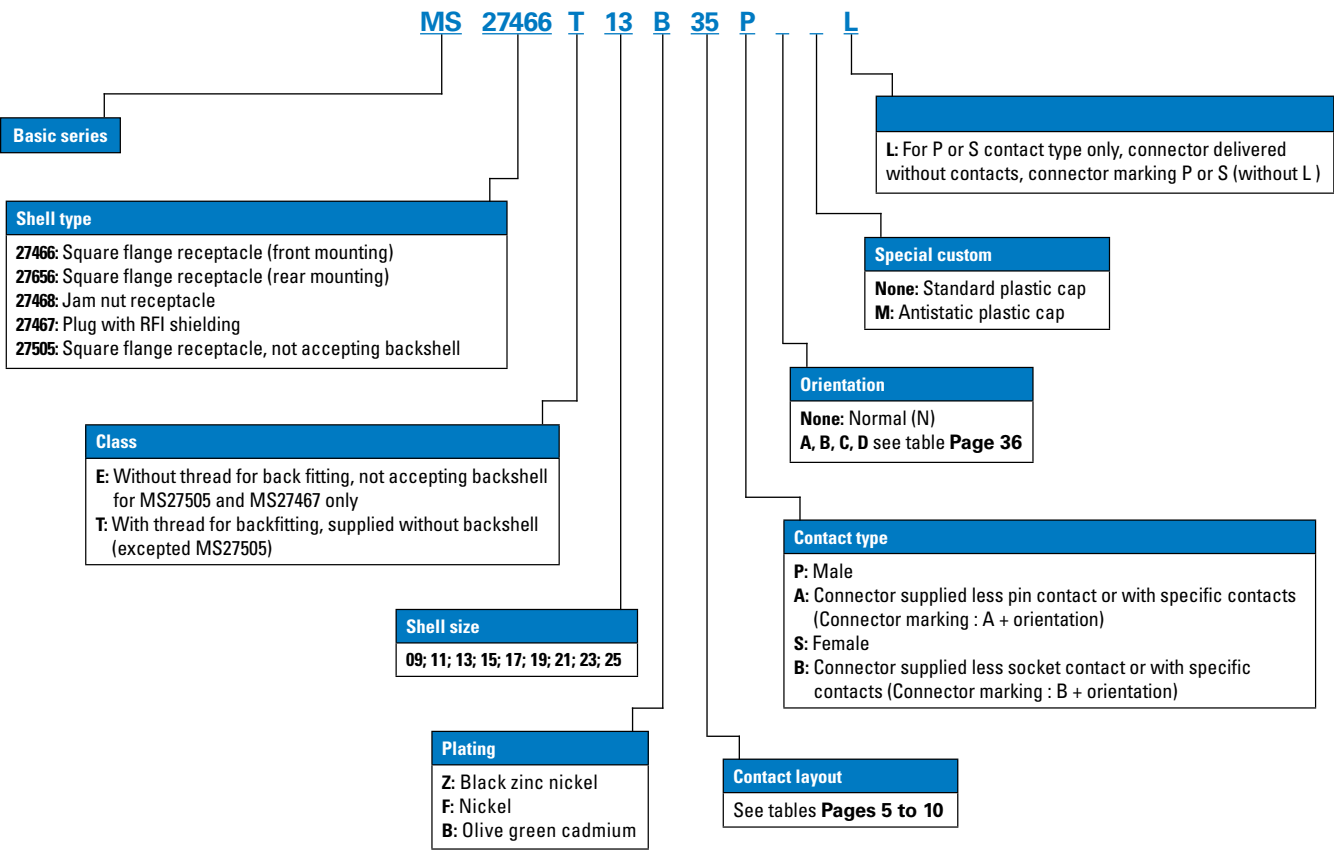
(2) Type shell 0, 3 and 5 available only.

(3) Excepted mixed layouts with Quadrax and signal contacts.

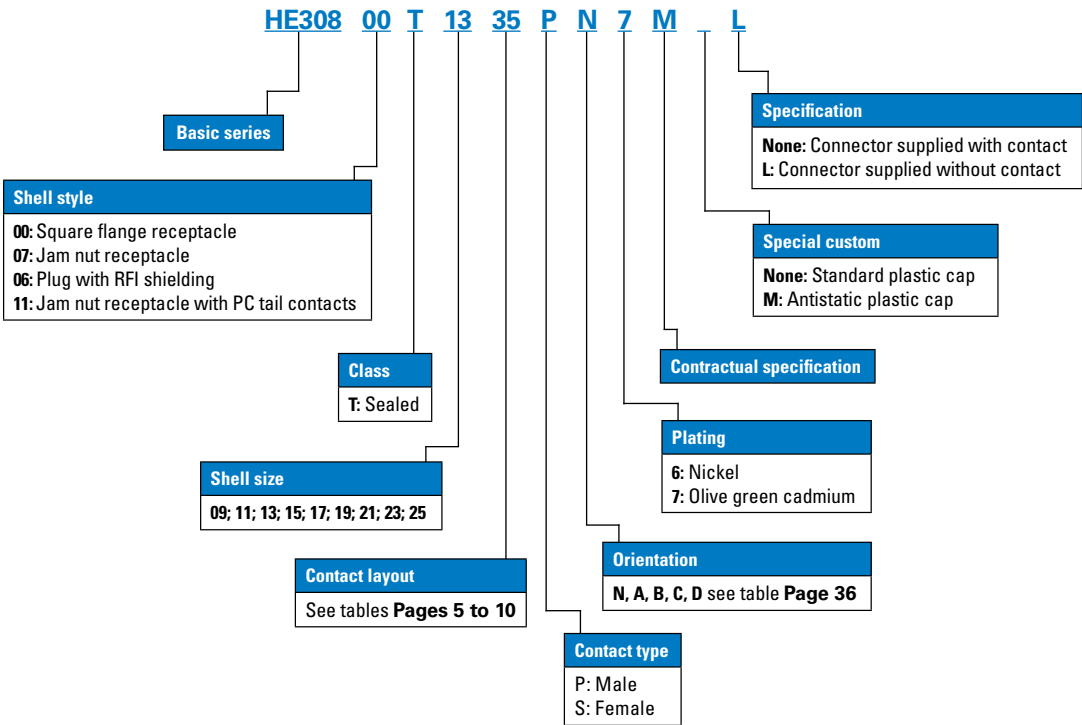
Souriau 8LT series

Ordering information

MIL-DTL-38999 connector part numbers

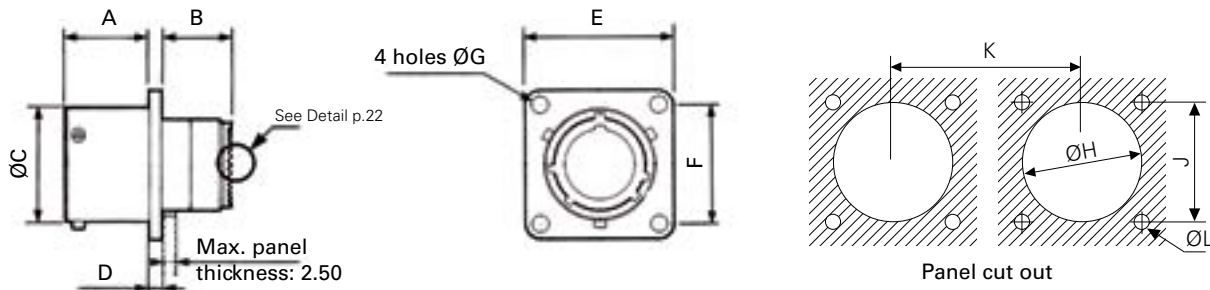


HE 308 connector part numbers



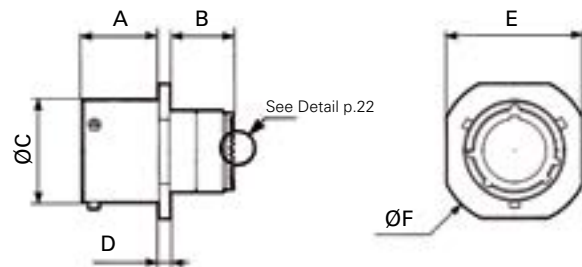
Dimensions

Type 0 - Square flange receptacle



Shell size	A		B		ØC		D		E		F	ØG		ØH		J	K Min	L ^{±0.15}
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		Min	Max	Min	Max			
09	15.93	16.05	13.23	13.49	14.40	14.53	2.14	2.54	23.70	24.30	18.26	3.25	3.35	15.70	18.26	24.60	3.25	
11	15.93	16.05	13.23	13.49	17.65	17.78	2.14	2.54	26.05	26.70	20.62	3.25	3.35	18.70	20.62	27.00	3.25	
13	15.93	16.05	13.23	13.49	21.40	21.59	2.14	2.54	28.50	29.05	23.01	3.25	3.35	21.80	23.01	30.20	3.25	
15	15.93	16.05	13.23	13.49	24.65	24.77	2.14	2.54	30.85	31.45	24.61	3.25	3.35	25.00	24.61	33.30	3.25	
17	15.93	16.05	13.23	13.49	27.82	27.94	2.14	2.54	33.20	33.80	26.97	3.25	3.35	28.30	26.97	36.50	3.25	
19	15.93	16.05	13.23	13.49	29.24	30.66	2.14	2.54	36.40	37.00	29.36	3.25	3.35	31.00	29.36	39.30	3.25	
21	15.17	15.29	13.23	13.49	33.70	33.83	2.90	3.30	39.55	40.15	31.75	3.25	3.35	34.20	31.75	42.50	3.25	
23	15.17	15.29	13.23	13.49	36.92	37.00	2.90	3.30	42.75	43.35	34.93	3.73	3.83	37.30	34.92	45.70	3.91	
25	15.17	15.29	13.23	13.49	40.06	40.18	2.90	3.30	46.00	46.50	38.10	3.73	3.83	40.50	38.10	48.80	3.91	

Type 1 - Cable connecting receptacle



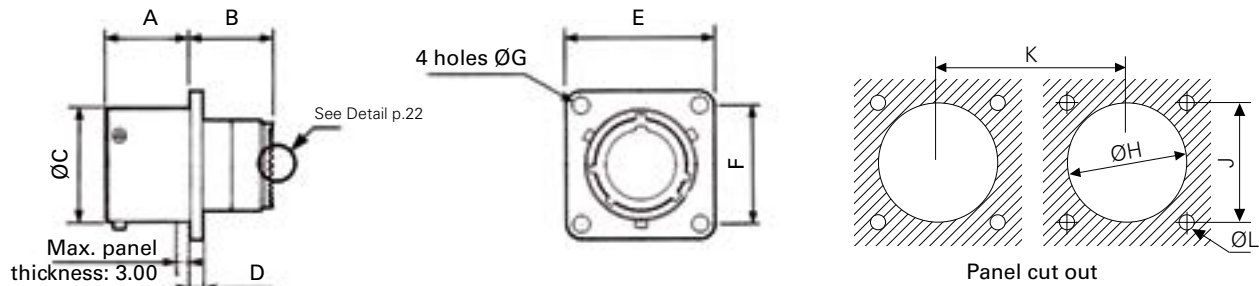
Shell size	A		B		ØC		D		E		ØF	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
9	15.93	16.05	13.23	13.49	14.40	14.53	2.14	2.54	18.35	18.92	21.80	22.35
11	15.93	16.05	13.23	13.49	17.65	17.78	2.14	2.54	21.65	22.22	25.10	25.65
13	15.93	16.05	13.23	13.49	21.40	21.59	2.14	2.54	25.05	25.62	28.50	29.05
15	15.93	16.05	13.23	13.49	24.65	24.77	2.14	2.54	27.25	27.82	30.70	31.25
17	15.93	16.05	13.23	13.49	27.82	27.94	2.14	2.54	30.78	31.35	34.10	34.65
19	15.93	16.05	13.23	13.49	29.24	30.66	2.14	2.54	34.05	34.62	37.50	38.05
21	15.17	15.29	13.23	13.49	33.70	33.83	2.90	3.30	37.45	38.02	40.90	41.45
23	15.17	15.29	13.23	13.49	36.92	37.00	2.90	3.30	41.45	42.02	44.90	45.45
25	15.17	15.29	13.23	13.49	40.06	40.18	2.90	3.30	45.93	46.50	49.40	49.95

Note: All dimensions are in millimeters (mm)

Souriau 8LT series

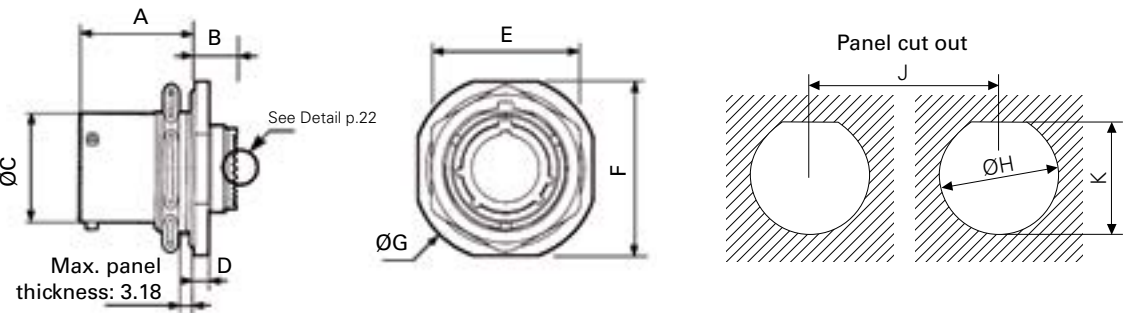
Dimensions

Square flange receptacle (rear mounting)



Shell size	A		B		ØC		D		E		F	ØG		ØH		J	K		L±0.15
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		Min	Max	Min	Max		Min	Max	
09	20.71	20.83	10.40	11.90	14.40	14.53	2.14	2.54	23.70	24.30	18.26	3.25	3.35	16.66	18.26	24.60	3.25		
11	20.71	20.83	10.40	11.90	17.65	17.78	2.14	2.54	26.05	26.70	20.62	3.25	3.35	20.22	20.62	27.00	3.25		
13	20.71	20.83	10.40	11.90	21.40	21.59	2.14	2.54	28.50	29.05	23.01	3.25	3.35	23.42	23.01	30.20	3.25		
15	20.71	20.83	10.40	11.90	24.65	24.77	2.14	2.54	30.85	31.45	24.61	3.25	3.35	26.59	24.61	33.30	3.25		
17	20.71	20.83	10.40	11.90	27.82	27.94	2.14	2.54	33.20	33.8	26.97	3.25	3.35	30.96	26.97	36.50	3.25		
19	20.71	20.83	10.40	11.90	29.24	30.66	2.14	2.54	36.40	37.00	29.36	3.25	3.35	32.94	29.36	39.30	3.25		
21	19.96	20.08	11.15	12.70	33.70	33.83	2.90	3.30	39.55	40.15	31.75	3.25	3.35	36.12	31.75	42.50	3.25		
23	19.96	20.08	11.15	12.70	36.92	37.00	2.90	3.30	42.75	43.35	34.93	3.73	3.83	39.29	34.92	45.70	3.91		
25	19.96	20.08	11.15	12.70	40.06	40.18	2.90	3.30	46.00	46.50	38.10	3.73	3.83	42.47	38.10	48.80	3.91		

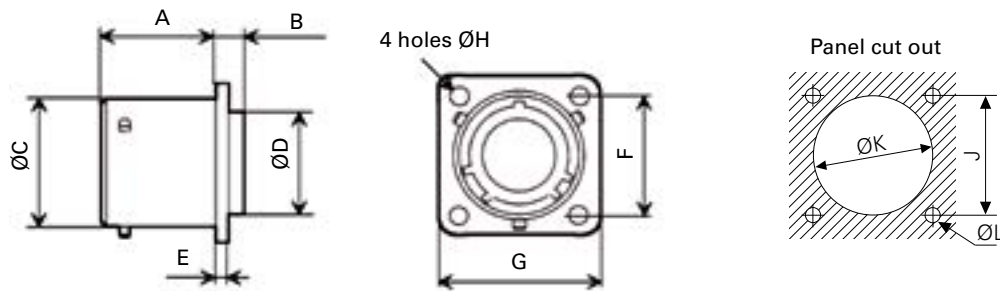
Type 7 - Jam nut receptacle Type 11 - HE 308



Shell size	F		E		ØC		ØG		A		B		D		ØH	J Min	K
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max			
09	26.60	27.35	21.95	22.35	14.40	14.53	29.90	30.58	23.12	23.36	8.18	8.32	2.60	3.00	17.70	27.80	16.99
11	31.40	32.10	25.15	25.55	17.65	17.78	34.60	35.30	23.12	23.36	8.18	8.32	2.60	3.00	20.86	32.60	19.53
13	34.60	35.31	29.80	30.30	21.40	21.59	37.75	38.50	23.12	23.36	8.18	8.32	2.60	3.00	25.58	36.00	24.26
15	37.80	38.49	33.05	33.45	24.65	24.77	41.00	41.65	23.12	23.36	8.18	8.32	2.60	3.00	28.80	39.60	27.53
17	40.90	41.63	36.25	36.65	27.82	27.94	44.11	44.85	23.12	23.36	8.18	8.32	2.60	3.00	31.98	43.30	30.68
19	45.63	46.37	39.40	39.80	29.24	30.66	48.90	49.60	23.12	23.36	8.18	8.32	3.35	3.79	35.15	47.00	33.86
21	48.84	49.58	42.60	43.00	33.70	33.83	52.00	52.75	23.12	23.36	8.18	8.32	3.35	3.79	38.28	50.60	37.06
23	52.02	52.76	45.75	46.15	36.92	37.00	55.30	55.94	23.12	23.36	8.18	8.32	3.35	3.79	41.50	54.20	40.01
25	55.19	55.93	50.65	50.95	40.06	40.18	58.40	59.10	23.12	23.36	8.18	8.32	3.35	3.79	44.68	59.70	43.41

Note: All dimensions are in millimeters (mm)

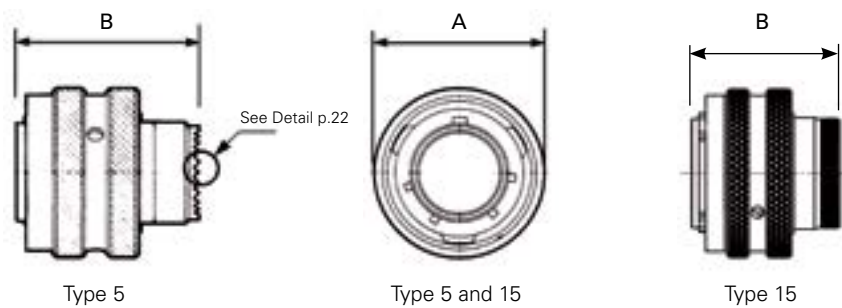
Type 2 - Short square flange receptacle (not accepting backshell)



Shell size	A		B		ØC		ØD		E		F	G		ØH		J	ØK	ØL
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		Min	Max	Min	Max			
09	20.71	20.83	5.40	5.55	14.40	14.53	9.85	9.95	2.14	2.54	18.26	23.70	24.30	3.25	3.35	18.26	16.66	3.83
11	20.71	20.83	5.40	5.55	17.65	17.78	12.80	12.90	2.14	2.54	20.62	26.05	26.70	3.25	3.35	20.62	20.22	3.83
13	20.71	20.83	5.40	5.55	21.40	21.59	16.00	16.10	2.14	2.54	23.01	28.50	29.05	3.25	3.35	23.01	23.42	3.83
15	20.71	20.83	5.40	5.55	24.65	24.77	18.95	19.05	2.14	2.54	24.61	30.85	31.45	3.25	3.35	24.61	26.59	3.83
17	20.71	20.83	5.40	5.55	27.82	27.94	22.10	22.20	2.14	2.54	26.97	33.20	33.80	3.25	3.35	26.97	30.96	3.83
19	20.71	20.83	5.40	5.55	29.24	30.66	25.10	25.20	2.14	2.54	29.36	36.40	37.00	3.25	3.35	29.36	32.94	3.83
21	19.96	20.08	6.15	6.35	33.70	33.83	28.25	28.35	2.90	3.30	31.75	39.55	40.15	3.25	3.35	31.75	36.12	3.83
23	19.96	20.08	6.15	6.35	36.92	37.00	31.40	31.50	2.90	3.30	34.93	42.75	43.35	3.73	3.83	34.92	39.29	3.91
25	19.96	20.08	6.15	6.35	40.06	40.18	34.60	34.70	2.90	3.30	38.10	46.00	46.50	3.73	3.83	38.10	42.47	3.91

Type 5 - Plug with RFI shielding

Type 15 - Plug with RFI shielding (not accepting backshell)



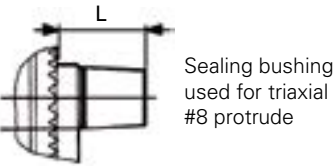
Shell size		09	11	13	15	17	19	21	23	25
A	Max	21.80	25.00	29.30	32.50	35.70	38.50	41.70	44.90	48.00
B	Min	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28
	Max	31.35	31.35	31.35	31.35	31.35	31.35	31.35	31.35	31.35

Note: All dimensions are in millimeters (mm)

Souriau 8LT series

Dimensions

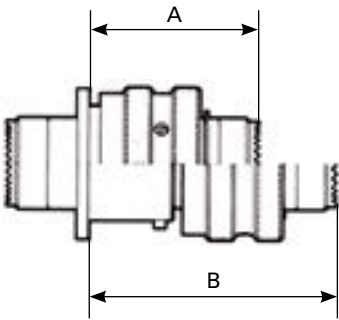
Detail



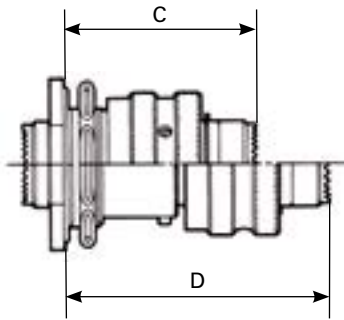
Shell Type	Type 0	Type 1	Type 3	Type 5	Type 7
L max	13.39	13.58	13.58	13.54	13.58

Mated connectors dimensions

Square flange receptacle (type 0)
with plug (type 5)



Jam nut receptacle (type 7)
with plug (type 5)



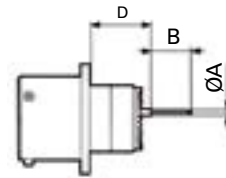
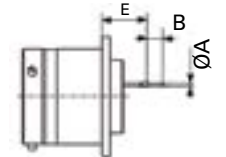
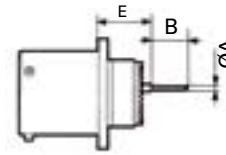
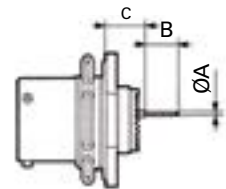
Shell size	A Max	B Max	C Max	D Max
09	33.30	47.40	40.60	54.70
11	33.30	47.40	40.60	54.70
13	33.30	47.40	40.60	54.70
15	33.30	47.40	40.60	54.70
17	33.30	47.40	40.60	54.70
19	33.30	47.40	40.60	54.70
21	32.50	46.70	40.60	54.70
23	32.50	46.70	40.60	54.70
25	32.50	46.70	40.60	54.70

Note: All dimensions are in millimeters (mm)

Receptacle with PC tail contact

Shell size

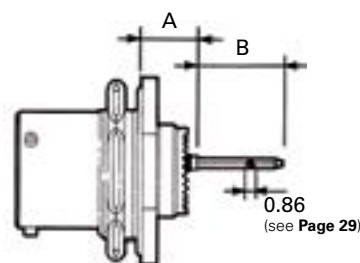
	Contact size	Contact type ⁽¹⁾	PC tail contact ⁽²⁾		09	11	13	15	17	19	21	23	25
ØA	#22D	M & F	C & L		0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
			S		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
		M	M		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	#20	M & F	C		0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
	#16	M & F	C		1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
B	#22D	M & F	C		4 ^{+0.1} _{-0.20}	4 ^{+0.1} _{-0.20}	4 ^{+0.1} _{-0.20}	4 ^{+0.1} _{-0.20}	4 ^{+0.1} _{-0.20}	4 ^{+0.1} _{-0.20}	4 ^{+0.1} _{-0.20}	4 ^{+0.1} _{-0.20}	4 ^{+0.1} _{-0.20}
			S		5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}
			L		8.5 ^{+0.1} _{-0.20}	8.5 ^{+0.1} _{-0.20}	8.5 ^{+0.1} _{-0.20}	8.5 ^{+0.1} _{-0.20}	8.5 ^{+0.1} _{-0.20}	8.5 ^{+0.1} _{-0.20}	8.5 ^{+0.1} _{-0.20}	8.5 ^{+0.1} _{-0.20}	8.5 ^{+0.1} _{-0.20}
	#20	M & F	M		6 ^{+0.1}	6 ^{+0.1}	6 ^{+0.1}	6 ^{+0.1}	6 ^{+0.1}	6 ^{+0.1}	6 ^{+0.1}	6 ^{+0.1}	6 ^{+0.1}
			C		5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}
			C		5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}
	#16	M & F	C		5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}	5 ^{+0.1}
	8LT	M	C & L	Max	10.06	10.06	10.06	10.06	10.06	10.06	10.06	10.06	10.06
				Min	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07
			M	Max	10.21	10.21	10.21	10.21	10.21	10.21	10.21	10.21	10.21
C type 7	#22D	M	C & L	Max	10.06	10.06	10.06	10.06	10.06	10.06	10.06	10.06	10.06
				Min	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07	9.07
			M	Max	10.21	10.21	10.21	10.21	10.21	10.21	10.21	10.21	10.21
	8LT7S HE308 #22D	M	C & L	Max	10.06	10.06	10.06	10.06	10.06	10.06	10.06	10.06	10.06
				Min	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74
			S	Max	10.23	10.23	10.23	10.23	10.23	10.23	10.23	10.23	10.23
	8LT/HE308 #22D	M	C & L	Max	10.23	10.23	10.23	10.23	10.23	10.23	10.23	10.23	10.23
				Min	9.24	9.24	9.24	9.24	9.24	9.24	9.24	9.24	9.24
			S	Max	10.23	10.23	10.23	10.23	10.23	10.23	10.23	10.23	10.23
	8LT/HE308 M & F #20 & #16	M	C & L	Max	10.23	10.23	10.23	10.23	10.23	10.23	10.23	10.23	10.23
				Min	9.24	9.24	9.24	9.24	9.24	9.24	9.24	9.24	9.24
D type 0	#22D	M	C & L	Max	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
				Min	13.91	13.91	13.91	13.91	13.91	13.91	13.91	13.91	13.91
			M	Max	15.22	15.22	15.22	15.22	15.22	15.22	15.22	15.22	15.22
	#20	M	C & L	Max	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
				Min	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58
			S	Max	15.25	-	-	-	-	-	-	-	15.25
	#16	M	C & L	Max	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
				Min	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58
			S	Max	15.25	-	-	-	-	-	-	-	15.25
	#20 & #16	M	C & L	Max	15.25	-	-	-	-	-	-	-	15.25
				Min	13.75	-	-	-	-	-	-	-	13.75
E type 2 type 3	#22D	M	C & L	Max	12.47	12.47	12.47	12.47	12.47	12.47	13.22	13.22	13.22
				Min	11.60	11.60	11.60	11.60	11.60	11.60	12.35	12.35	12.35
			M	Max	12.47	12.47	12.47	12.47	12.47	12.47	13.22	13.22	13.22
	#20	M	C & L	Max	12.47	12.47	12.47	12.47	12.47	12.47	13.22	13.22	13.22
				Min	11.27	11.27	11.27	11.27	11.27	11.27	12.02	12.02	12.02
			S	Max	12.64	-	-	-	-	12.64	13.39	13.39	13.39
	#16	M	C & L	Max	12.64	-	-	-	-	12.64	13.39	13.39	13.39
				Min	11.77	-	-	-	-	11.77	12.52	12.52	12.52
			S	Max	12.64	-	-	-	-	12.64	13.39	13.39	13.39
	#20 & #16	M	C & L	Max	12.64	-	-	-	-	12.64	13.39	13.39	13.39
				Min	11.44	-	-	-	-	11.44	12.19	12.19	12.19
			S	Max	12.64	-	-	-	-	12.64	13.39	13.39	13.39
	#20 & #16	M	C & L	Max	12.64	-	-	-	-	12.64	13.39	13.39	13.39
				Min	11.77	-	-	-	-	11.77	12.52	12.52	12.52
			S	Max	12.64	-	-	-	-	12.64	13.39	13.39	13.39
	#20 & #16	M	C & L	Max	12.64	-	-	-	-	12.64	13.39	13.39	13.39
				Min	11.77	-	-	-	-	11.77	12.52	12.52	12.52
			S	Max	12.64	-	-	-	-	12.64	13.39	13.39	13.39

Type 0
Square flange receptacleType 2
Short square flange receptacleType 3
Square flange receptacle
(rear mounting)Type 7
Jam nut receptacle

(1) M: Male Contact
F: Female Contact
(2) C: Short PC tail
M: Medium PC tail
L: Long PC tail
S: Specific PC tail

Type 7 receptacle with wire wrap contacts

Contact size	Contact type	A	B Max
#22D	W (3 wraps)	9.07 / 10.06	16.00
#20	T (2 wraps)	9.7 / 10.06	12.60

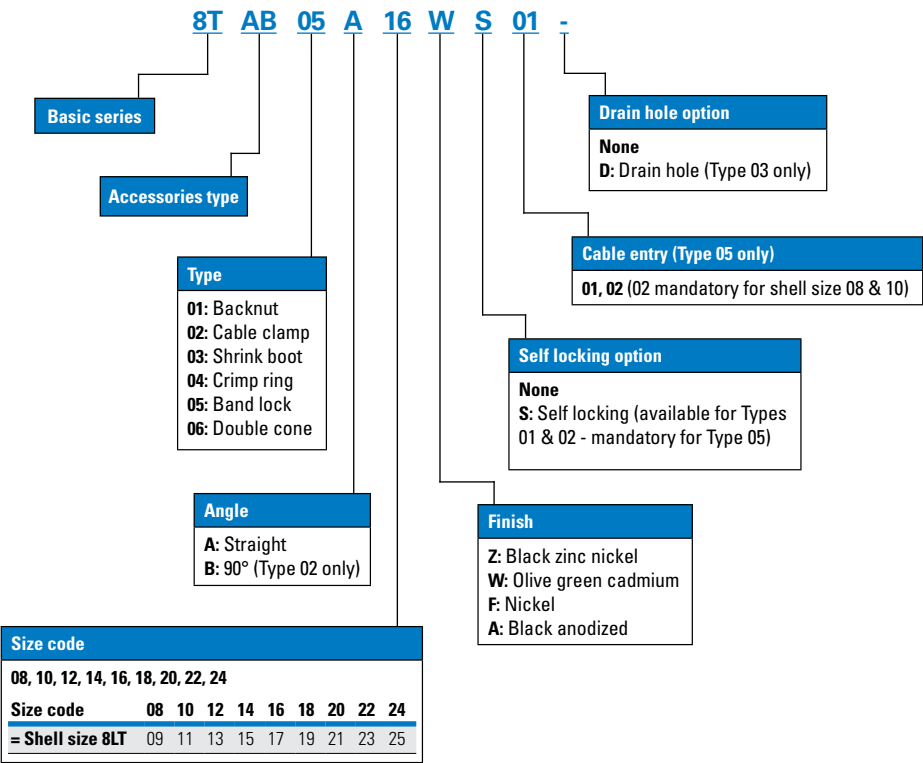


Note: All dimensions are in millimeters (mm)

Souriau 8LT series

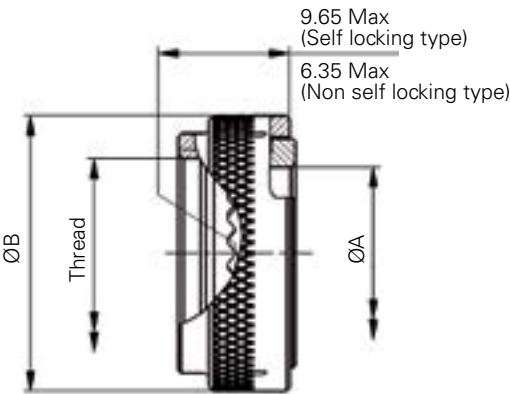
Aluminum backshells

Ordering information



Dimensions

Aluminum backshell type 01 - Backnut



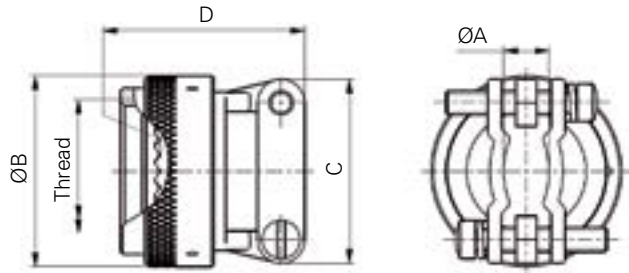
Shell size	ØA Min	ØB Max
09	6.7	17.9
11	9.95	20.9
13	12.85	24.3
15	17.0	27.9
17	19.25	31.3
19	21.7	35.3
21	24.7	38.1
23	27.8	41.5
25	32.0	44.5

Thread: See Page 21 for information.

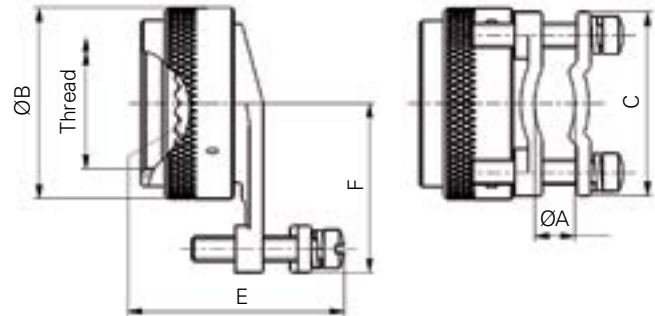
Note: All dimensions are in millimeters (mm)

Aluminum backshell type 02 - Cable clamp

A Angle - straight



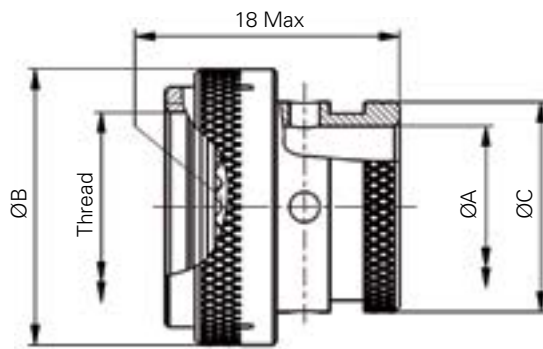
B Angle - 90°



Shell size	ØA		ØB Max	C Max	D Max	E Max	F Max
	Min	Max					
09	2.49	5.94	17.9	21.5	23.1	29.5	20
11	3.89	5.94	20.9	21.5	23.1	29.5	21.5
13	4.83	8.33	24.3	24.5	25.6	31.5	23.5
15	6.60	11.61	27.9	27.5	26.9	35.8	25.5
17	7.19	15.6	31.3	31.5	29.4	40.1	27.5
19	8.26	16.1	35.3	35.5	35.8	40.6	30.5
21	8.71	17.73	38.1	37	38.3	42.7	31.5
23	9.68	20.9	41.5	40.5	42.1	46.2	34.5
25	10.62	21.67	44.5	45	44.7	49	36.5

Thread: See **Page 21** for information.

Aluminum backshell type 03 - Shrink boot



Shell size	ØA Min	ØB Max	C Max
09	6.7	19.0	11.3
11	9.95	21.5	14.9
13	12.85	25.3	17.8
15	16.05	29.1	21.27
17	19.2	31.7	24.3
19	21.5	35.5	26.4
21	24.7	39.3	30.8
23	27.8	41.8	34.1
25	31	46.9	36.6

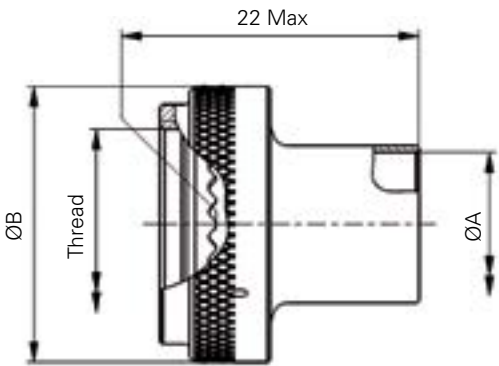
Thread: See **Page 21** for information.

Note: All dimensions are in millimeters (mm)

Souriau 8LT series

Aluminum backshells

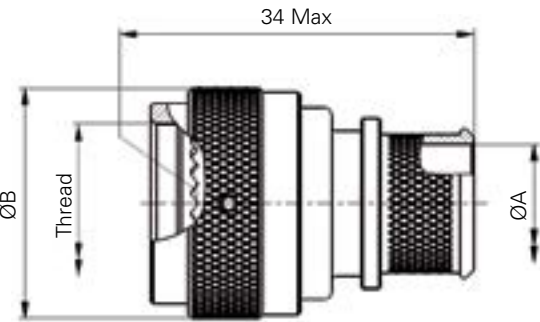
Aluminum backshell type 04 - Crimp ring



Shell size	ØA Min	ØB Max
09	6	17.9
11	8.2	20.9
13	10.5	24.3
15	13.6	27.9
17	16.9	31.3
19	20	34.3
21	23.2	38.1
23	26.1	41.5
25	28.1	44.4

Thread: See Page 21 for information.

Aluminum backshell type 05 - Band lock

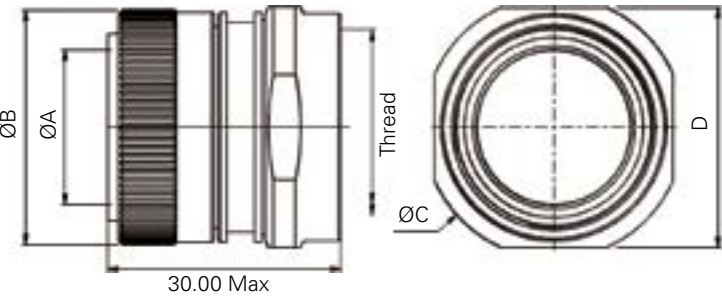


Shell size	ØA Max - Entry size		ØB Max
	01	02	
09	-	6.6	17.9
11	-	8	24.9
13	8	11.2	29.3
15	11.2	14.4	32.4
17	12.8	16	35.6
19	16	19.1	38.4
21	16	20.7	41.6
23	17.6	23.9	44.8
25	19.1	25.5	47.9

Thread: See Page 21 for information.

Aluminum backshell type 06 - Double cone

HE 308 standard - Screen termination and heat shrink boot



Shell size	ØA ^{±0.07}	ØB ^{±0.12}	ØC ^{±0.12}	D ^{±0.07}
09	7.1	15.55	19.35	16.7
11	10.25	18.45	23.35	20.7
13	13.05	21.85	25.35	22.7
15	15.25	25.05	28.35	25.7
17	18.45	28.05	31.35	28.7
19	20.65	31.05	34.35	31.7
21	23.85	34.45	38.35	35.7
23	26.95	37.45	41.35	38.7
25	30.15	40.75	44.35	41.7

Thread: See Page 21 for information.

Note: All dimensions are in millimeters (mm)

Thread information

Shell size	UNEF thread
09	7/16-28 2B
11	9/16-24 2B
13	11/16-24 2B
15	13/16-20 2B
17	15/16-20 2B
19	1 1/16 -18 2B
21	1 3/16 -18 2B
23	1 5/16 -18 2B
25	1 7/16 -18 2B

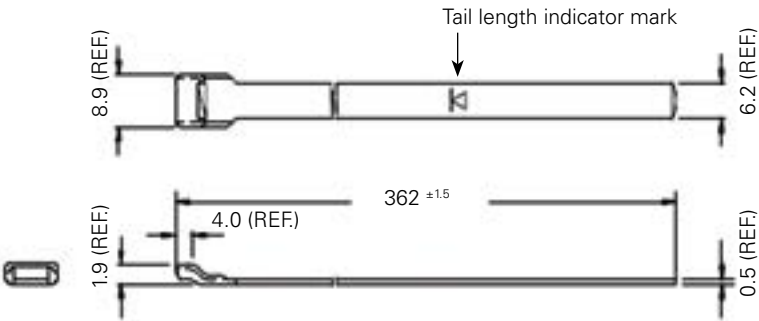
Recommended installation torque

Shell size	Installation torque (inch-pounds)
09	40
11	40
13	40
15	40
17	40
19	40
21	80
23	80
25	80

Note: Torque values are based on 80% of the coupling thread strength specified in SAE-AS85049 standard.

Band-it

Designation	Flat stainless steel standard band	Pre-coiled stainless steel standard band	Hand banding tool
Part number	M85049/128-3	M85049/128-4	8599-9346



MIL specification

For aluminum backshells MIL specification, please contact us.

Note: All dimensions are in millimeters (mm)

Souriau 8LT series

Rack and panel

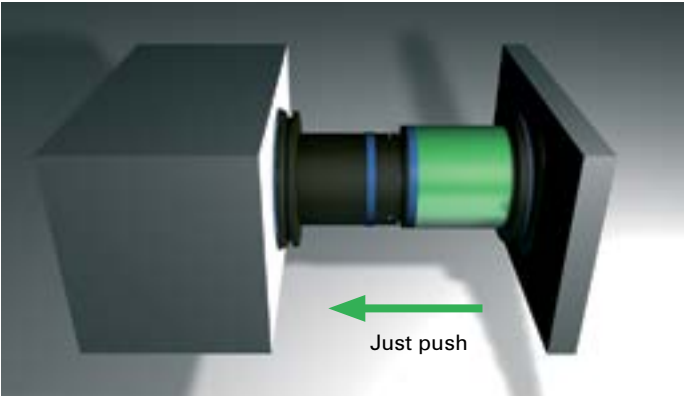


Technical specifications

- Signal and power connector
- Easy and fast connection without any coupling/uncoupling between a float-mounting unit and a fixed unit
- 100% Scoop-proof
- Plug misalignment allowed
- Rear accessories available
- 8 shell sizes available, from 11 to 23 with DTAT-C5935-X0005 layout including power contact cavities
- Sealing per HE 308
- EMI performance according to DTAT-C5935-X0005

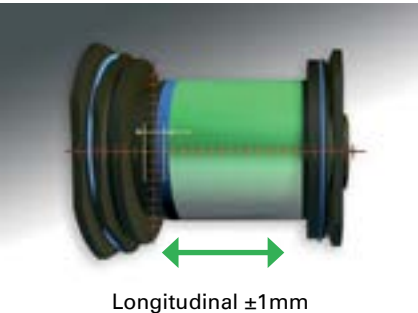
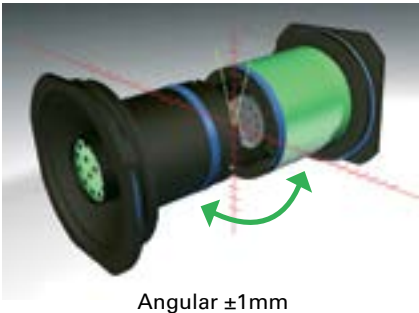
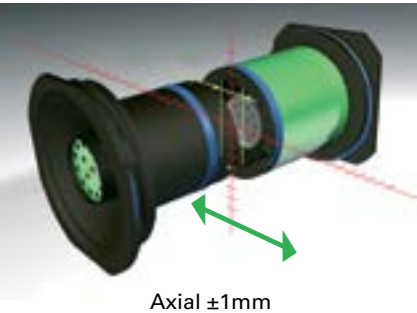
Shell size	Mated force (daN)	Unmated force (daN)
11	20	12
13	30	13
15	35	15
17	50	16
19	55	18
21	65	22
23	80	27
25	-	-

Blind mateable connector

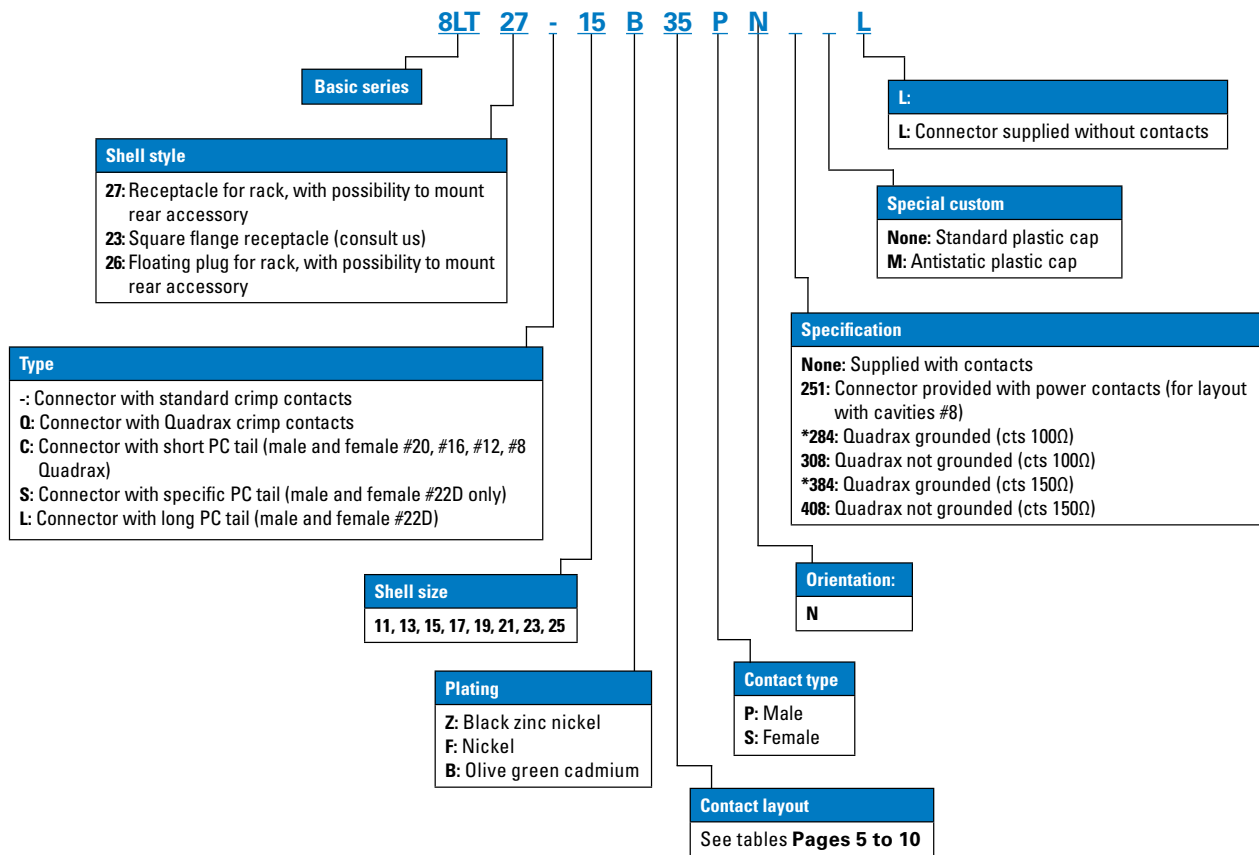


Just push to connect... and release to disconnect

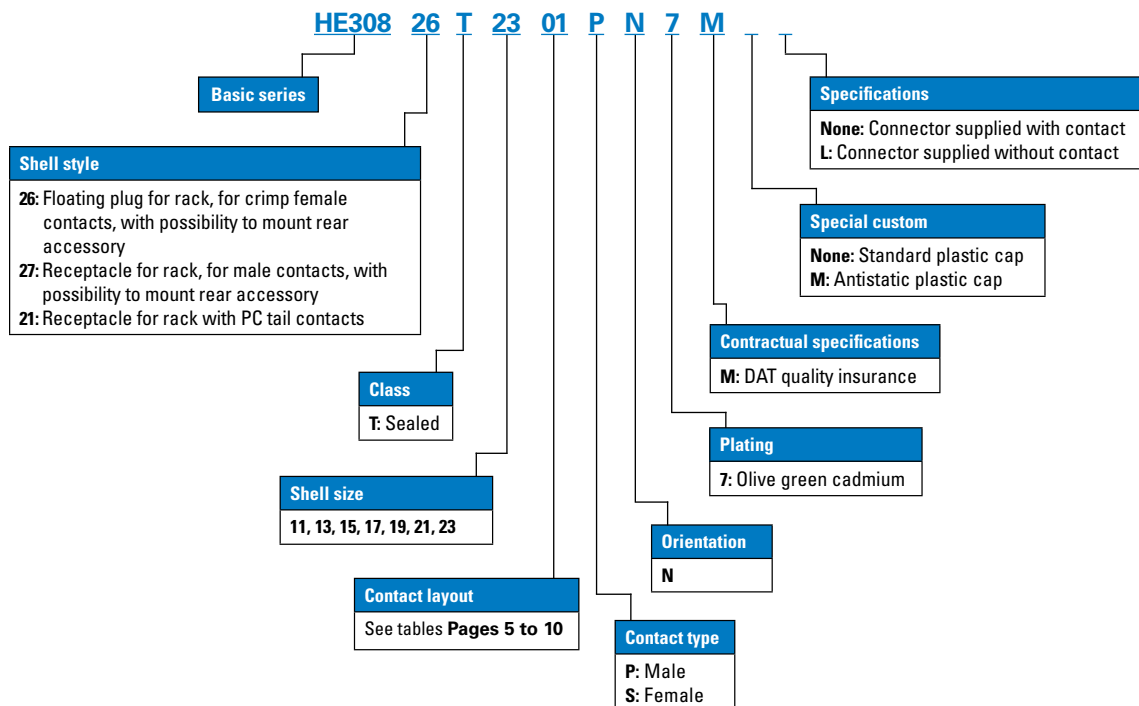
Superior misalignment allowances



Souriau rack and panel connectors part numbers



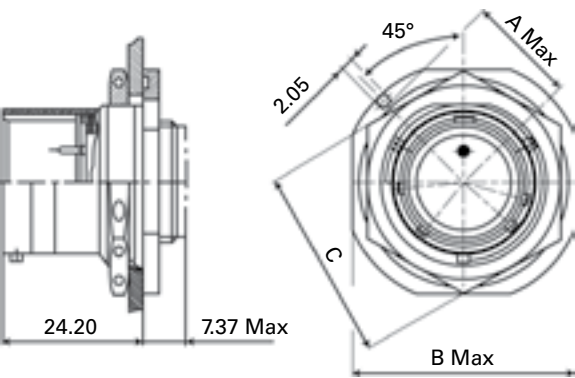
HE 308 rack and panel connectors part numbers



Souriau 8LT series

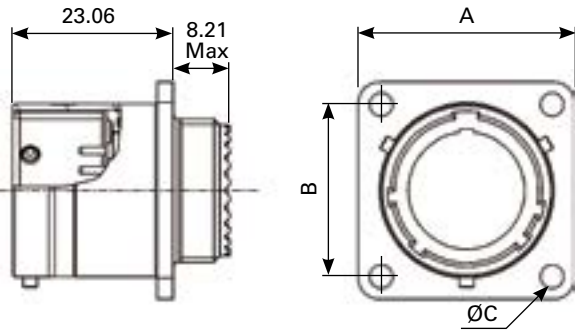
Rack and panel dimensions

Equipment receptacle (type 27)



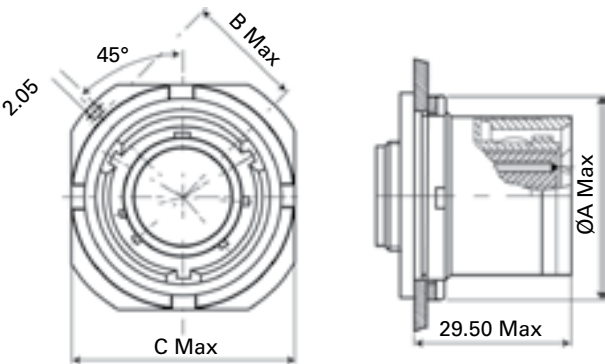
Shells	11	13	15	17	19	21	23	25
A Max	15.33	16.92	18.51	20.1	22.67	24.26	25.84	27.43
B Max	32.16	35.34	38.51	41.69	46.43	49.64	52.78	56
C	25.55	30.3	33.45	36.65	39.8	43	46.15	50.95

Square flange receptacle (type 23)



Shells	09	11	13	15	17	19	21	23	25
A Min	23.7	26.05	28.5	30.85	33.2	36.4	39.55	42.75	46
A Max	24.3	26.7	29.05	31.45	33.8	37	40.15	43.35	46.5
B	18.26	20.62	23.01	24.61	26.97	29.36	31.75	34.93	38.1
ØC Min	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.73	3.73
ØC Max	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.83	3.83

Rack plug (type 26)

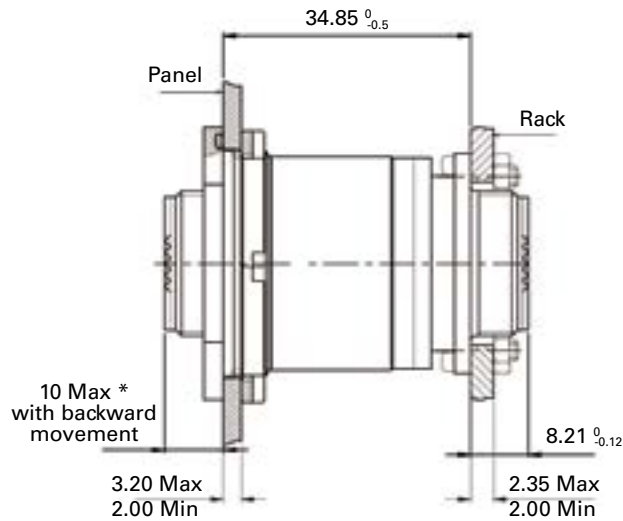


Shells	11	13	15	17	19	21	23	25
A Max	32.1	35.25	38.4	41.6	46.3	49.6	52.7	55.9
B Max	16.92	18.51	20.1	22.67	24.26	25.84	27.43	29.03
C Max	32.16	35.34	38.51	41.69	46.43	49.64	52.78	55.96

Note: All dimensions are in millimeters (mm)

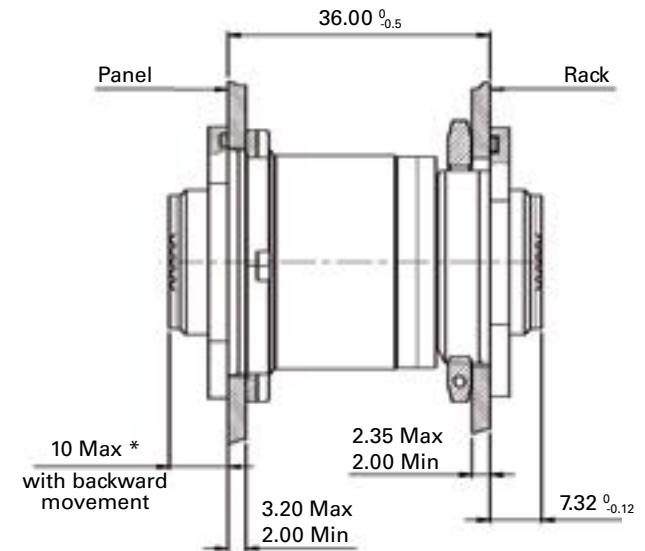
Mated connectors

Plug type 26 & Receptacle type 23

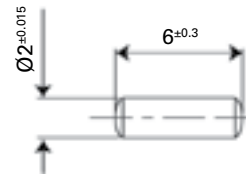
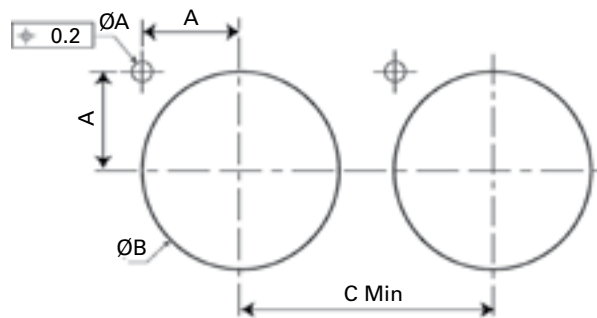


*Included longitudinal alignment

Plug type 26 & Receptacle type 27



Panel cut out



Plug				
Shell size	A	ØB ^{+0.1} ₀	C Min	ØA
11	12.81	25.58	32.57	2 ⁰ _{-0.05}
13	13.94	28.80	36	2 ⁰ _{-0.05}
15	15.06	31.98	39.60	2 ⁰ _{-0.05}
17	16.88	35.15	43.30	2 ⁰ _{-0.05}
19	18	38.28	47	2 ⁰ _{-0.05}
21	19.12	41.50	50.60	2 ⁰ _{-0.05}
23	20.24	44.68	54.20	2 ⁰ _{-0.05}
25	21.38	47.85	57.45	2 ⁰ _{-0.05}

Receptacle				
Shell size	A	ØB ^{+0.1} ₀	C Min	ØA
09	10	17.70	27.80	2 ⁰ _{-0.05}
11	11.69	20.86	32.57	2 ⁰ _{-0.05}
13	12.81	25.58	36	2 ⁰ _{-0.05}
15	13.94	28.80	39.60	2 ⁰ _{-0.05}
17	15.06	31.98	43.30	2 ⁰ _{-0.05}
19	16.88	35.15	47	2 ⁰ _{-0.05}
21	18	38.28	50.60	2 ⁰ _{-0.05}
23	19.12	41.50	54.20	2 ⁰ _{-0.05}
25	20.24	44.68	59.70	2 ⁰ _{-0.05}

Note: All dimensions are in millimeters (mm)

Souriau 8LT series

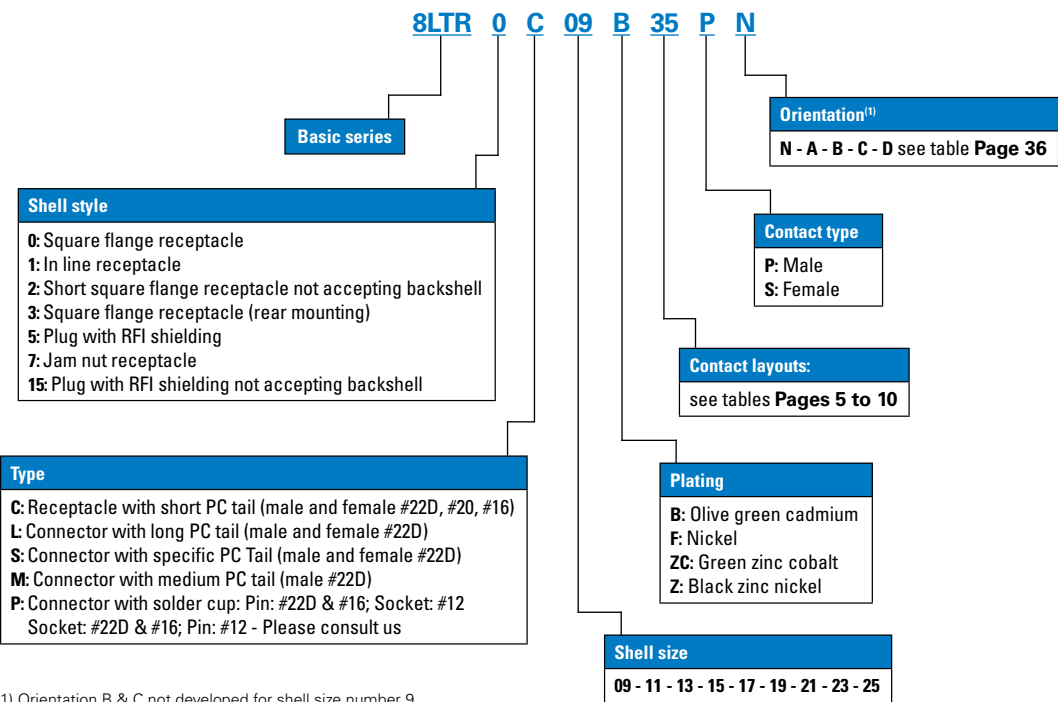
Technical specifications



Resin sealed - cost effective and light hermetics

- Potted receptacle with male or female straight PC tail contacts
- 100% Scoop-proof
- Weighs less than hermetic version
- Reinforced sealing for harsh environments (10E-7 atm.cm3/s)
- Improved shock resistance when compared to hermetic glass seal
- Female contacts available for the receptacle
- PC tail from #22D to #16

Ordering information



Crimp contacts

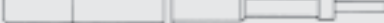
Contact size	Contact type	Souriau part number (without color code)	MIL-DTL-38999 contacts		
			Part number	Profile and color code	
#26	Pin	8599-0297	-		
	Socket	8599-0298	-		
#22D	Pin	8599-0702 JJ	M39029/58 360		Black / Blue / Orange
	Socket	8599-0706 900	M39029/56 348		Gray / Yellow / Orange
#20	Pin	8599-0703 SA	M39029/58 363		Orange / Blue / Orange
	Socket	8599-0707 900	M39029/56 351		Brown / Green / Orange
#16	Pin	8599-0704 MJ	M39029/58 364		Yellow / Blue / Orange
	Socket	8599-0708 900	M39029/56 352		Red / Green / Orange
#16 Coaxial	Pin	-	M39029/76 424		Yellow / Red / Yellow
	Socket	-	M39029/77 428		Gray / Red / Yellow
#12	Pin	8599-0705 MJ	M39029/58 365		Green / Blue / Orange
	Socket	8599-0709 900	M39029/56 353		Orange / Green / Orange
#12 Coaxial	Pin	-	M39029/102 558		
	Socket	-	M39029/103 559		
	Pin	-	M39029/28 211		
	Socket	-	M39029/75 416		
#10 Power	Pin	-	M39029/58 528		
	Socket	-	M39029/56 527		
#8 Power	Pin	8599-7544 *	-		
	Socket	8599-7541 *	-		
	Pin	8599-7580	-		
	Socket	8599-7581	-		
	Boot	8599-4542	-	For wire #8	
		8599-4547	-	For wire #10	
	Reductor	8599-7645	-	For wire #10	
#8 Coaxial	Pin	-	M39029/60 367		
	Socket	-	M39029/59 366		
	Boot	8590-4571	-		
#8 Twinax	Pin	-	M39029/90 529		
	Socket	-	M39029/91 530		
	Boot	8590-4571	-		
#4 Power	Pin	8599-7598 900 **	-	For wire 25 mm ²	
	Socket	8599-7599 900 **	-	For wire 25 mm ²	
	Pin	8599-7534	-	For wire 21.15 mm ²	
	Socket	8599-7535	-	For wire 21.15 mm ²	
	Boot	for cable 16 mm ² 8599-4594	-		
		for cable 10 mm ² 8599-4593	-		
	Reductor cable 10 mm ²	8400-2351A	-		
#4 Power with reduced barrel	Pin	8599-7528 900	-	Mating part #4 / Barrel #6	
	Socket	8599-7529 900	-	Mating part #4 / Barrel #6	
	Boot	8599-4593	-		

* JVS only ** Not included in connector part number, must be ordered separately.

Crimp contacts

Contact size	Contact type	Contact Ø	Conductor section AWG		Conductor section mm²		External Ø over insulator	
			Min	Max	Min	Max	Min	Max
#26	Pin	0.50	30	24	0.055	0.215	0.60	0.83
	Socket	0.50	30	24	0.055	0.215	0.60	0.83
#22D	Pin	0.76	26	22	0.012	0.34	0.76	1.37
	Socket	0.76	26	22	0.012	0.34	0.76	1.37
#20	Pin	1.00	24	20	0.21	0.60	1.02	2.11
	Socket	1.00	24	20	0.21	0.60	1.02	2.11
#16	Pin	1.60	20	16	0.60	1.34	1.65	2.77
	Socket	1.60	20	16	0.60	1.34	1.65	2.77
#16 Coaxial	Pin	1.60	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	1.65	2.60
	Socket	1.60	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	1.65	2.60
#12	Pin	2.40	14	12	1.91	3.18	2.46	3.61
	Socket	2.40	14	12	1.91	3.18	2.46	3.61
#12 Coaxial	Pin	2.40	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	2.40	2.60
	Socket	2.40	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	2.40	2.60
	Pin	2.40	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	2.40	2.60
	Socket	2.40	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	2.40	2.60
	Pin	2.40	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	2.40	2.60
	Socket	2.40	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	2.40	2.60
	Pin	2.40	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	2.40	2.60
	Socket	2.40	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	RG 174 RG 179 RG 316	2.40	2.60
#10 Power	Pin	3.20	Please consult us				-	2.95
	Socket	3.20	Please consult us				-	2.95
#8 Power	Pin	3.64	-	8	-	8.98	-	-
	Socket	3.64	-	8	-	8.98	-	-
	Boot	3.64	-	-	-	-	4.50	6.50
		3.64	-	-	-	-	2.50	4
	Reductor	3.64	-	-	-	-	-	-
#8 Coaxial	Pin	3.64	RG 180 A/U	RG 180 A/U	RG 180 A/U	RG 180 A/U	-	2.80
	Socket	3.64	RG 180 A/U	RG 180 A/U	RG 180 A/U	RG 180 A/U	-	2.80
	Boot	3.64	RG 180 A/U	RG 180 A/U	RG 180 A/U	RG 180 A/U	-	2.80
#8 Twinax	Pin	5.50	0,76MIL-C17/176 00002 FILECA F.2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002		0,76MIL-C17/176 00002 FILECA F.2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002		3.15	3.40
	Socket	5.50	0,76MIL-C17/176 00002 FILECA F.2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002		0,76MIL-C17/176 00002 FILECA F.2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002		3.15	3.40
	Boot	5.50	0,76MIL-C17/176 00002 FILECA F.2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002		0,76MIL-C17/176 00002 FILECA F.2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002		3.15	3.40
#4 Power	Pin	5.74	-	3	-	25	-	-
	Socket	5.74	-	3	-	25	-	-
	Pin	5.74	5	4	16	21.15	-	-
	Socket	5.74	5	4	16	21.15	-	-
	Boot	Available for 8599-7534 and 7535 contacts	5.74	-	-	-	6.35	7.50
			5.74	-	-	-	4	5.80
	Reductor cable 10 mm²	5.74	-	-	-	-	-	-
#4 Power with reduced barrel	Pin	5.74	6		13.3		-	-
	Socket	5.74	6		13.3		-	-
	Boot	5.74	-	-	-	-	4	5.80

Straight PC tail contacts

Contact size	Contact type	PC tail type	Part number	Profile
#22D	Pin	L	8599-0720 900	
	Pin	M	8599-8028 900	-
	Pin	C	8599-0730 900	
	Pin	S	8599-0796 900	
	Socket	L	8599-0721 900	
	Socket	C	8599-0731 900	
	Socket	S	8599-0797 900	
#20	Pin	M	8599-0658 JJ	-
	Socket	M	8599-0759 900	-
	Pin	C	8599-0724 900	
	Socket	C	8599-0725 900	
	Pin	L	8599-0771 900	-
	Socket	L	8599-0772 900	-
#16	Pin	C	8599-0726 900	
	Socket	C	8599-0727 900	
Coaxial #16	Pin	C	8599-1000A 900	
#12	Pin	C	8599-7929 900	-
	Socket	C	8599-7932 900	-

S: Specific PC tail
L: Long PC tail
M: Medium PC tail
C: Short PC tail

Souriau 8LT series

Technical specifications

Coaxial contacts #12

Designation	Part number
Coax socket solder contact #12	THA1-0151A
Coax pin solder contact #12	THA1-0152A
Coax pin crimp contact #12	THA1-0155A
Coax socket crimp contact #12	THA1-0156A

Solder cup

Contact size	Contact type	Part number
#22D	Pin	8599-0750 900
#20	Pin	8599-0077A 900
#16	Pin	8599-7482A 900
#12	Socket	8599-7485A 900

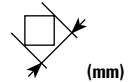
For other contact types, please contact us.

Crimp contacts: 1500 mating

MIL-DTL-38999 contacts			
Contact size	Contact type	Part number	Color code
#22D	Pin (H)	M39029/107 620	Blue / Red / Black
	Socket (J)	M39029/106 614	Blue / Brown / Yellow
#20	Pin (H)	M39029/107 621	Blue / Red / Brown
	Socket (J)	M39029/106 615	Blue / Brown / Green
#16	Pin (H)	M39029/107 622	Blue / Red / Red
	Socket (J)	M39029/106 616	Blue / Brown / Blue
#12	Pin (H)	M39029/107 623	Blue / Red / Orange
	Socket (J)	M39029/106 617	Blue / Brown / Gray

Wire wrap contacts

Contact size	Contact type	Part number	Contact Ø (mm)	Profile	(mm)
#22D	Pin	8599-0790 JJ	0.76		0.86
#20	Pin	8599-0791 900	1		0.86



Quadrax #8 contacts

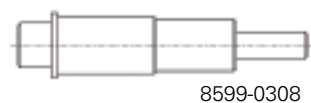
Contact type	Version	Part number	Cross norm	T°	Impedance	Sealing	Release
Pin	PCB mount	ETH1-1237A	-	125°C	100Ω	Sealed	Rear
		ETH1-1501A	-	125°C	150Ω	Sealed	Rear
	Crimp	ETH1-1345A	EN3155-074	200°C	100Ω	Sealed	Rear
		ETH1-1503A	-	200°C	150Ω	Sealed	Rear
Socket	PCB mount	ETH1-1238A	-	125°C	100Ω	Sealed	Rear
		ETH1-1502A	-	125°C	150Ω	Sealed	Rear
	Crimp	ETH1-1346A	EN3155-075	200°C	100Ω	Sealed	Rear
		ETH1-1504A	-	200°C	150Ω	Sealed	Rear

Thermocouple contacts

MIL-DTL-38999 contacts							Wire section				Ø Over insulation (mm)	
Contact size	Contact type	Part number (without color code)	Part number	Profile and color code	Ø Contact (mm)	Wire section						
						Awg min	max	mm² min	max	min	max	
#22D Chromel	Pin	-	M39029/87-472	 Red / Violet / Yellow	0.75	28	22	0.095	0.34	0.76	1.37	
	Socket	-	M39029/88-484	 Yellow / Grey / Yellow	0.75	28	22	0.095	0.34	0.76	1.37	
#22D Alumel	Pin	-	M39029/87-471	 Brown / Violet / Yellow	0.75	28	22	0.095	0.34	0.76	1.37	
	Socket	-	M39029/88-483	 Orange / Grey / Yellow	0.75	28	22	0.095	0.34	0.76	1.37	
#20 Chromel	Pin	8599-0749 900	8599-0949 900	 Blue / Violet / Yellow	1	24	20	0.21	0.6	1.02	2.11	
	Socket	8599-0753 900	8599-0953 900	 Grey / Grey / Yellow	1	24	20	0.21	0.6	1.02	2.11	
#20 Alumel	Pin	8599-0761 900	8599-0961 900	 Green / Violet / Yellow	1	24	20	0.21	0.6	1.02	2.11	
	Socket	8599-0765 900	8599-0965 900	 Violet / Grey / Yellow	1	24	20	0.21	0.6	1.02	2.11	

Dummy contacts

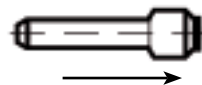
Size	Part number
#16	8599-6A016001A
#8	8599-0308
#4	8599-0310



8599-0308

Filler plugs

Contact size	MS (Rev. N)		Souriau	
	Part number	Color	Part number	Color
#22D	MS27488-22-2	Black	8660-212	Black
#20	MS27488-20-2	Red	8522-389A	Red
#16	MS27488-16-2	Green	8522-390A	Blue
#12	MS27488-12-2	Orange	8522-391A	Yellow



Direction of introduction
in grommet

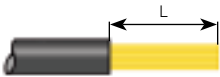
These filler plugs are installed
at the rear of unwired contact
to maintain connector sealing.

Souriau 8LT series

Wiring instructions

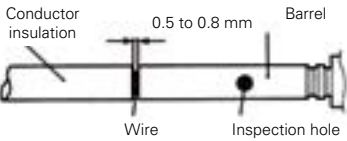
Cable preparation and wire stripping

Contact size	#26	#22D	#20	#16	#12	#8	#4
L	4	4	6	6	6	12	12



L = length of wire stripping

Insertion of wire in contact barrel



When inserting the stripped wire into the contact barrel check that no strands are left outside and that the wire is visible through the wire inspection hole in the barrel.

Important:

- Slide any accessories over wire strands before carrying out the following operations.
- Contacts are inserted and extracted from the rear of the connector.

①

②

③

Insertion of the contacts

Extraction of the contacts

①

②

③

Crimping tools

Contact size	Contact type	Plier M22520/1-01	Plier M22520/2-01 (Souriau 8476-01)	Plier M300BT	Plier * M22520/23-01	Locator Part number
		Turret part number	Locator Part number	Locator Part number	Turret Part number	
#26	Pin	-	8599-0397	-	-	-
	Socket	-	8599-0398	-	-	-
#22D	Pin	-	M22520/2-09	-	-	-
	Socket	-	M22520/2-07	-	-	-
#20	Pin	M22520/1-04	M22520/2-10	-	-	-
	Socket	M22520/1-04	M22520/2-10	-	-	-
#16	Pin	M22520/1-04	-	-	-	-
	Socket	M22520/1-04	-	-	-	-
#12	Pin	M22520/1-04	-	-	-	-
	Socket	M22520/1-04	-	-	-	-
#8 Power	Pin	-	-	SP 593	M22520/23-02	8599-9601
	Socket	-	-	SP 593	M22520/23-02	8599-9601
#4 Power	Pin	-	-	-	M22520/23-04	M22520/23-11
	Socket	-	-	-	M22520/23-04	M22520/23-11

Contact size	Contact type	Plier M22520/2-01 (Souriau 8476-01)	Plier M22520/31-01	Plier M22520/4-01	Plier M22520/5-01
		Locator Part number	Locator Part number	Locator Part number	Die set Part number
#12 Coaxial M39029/102-558 M39029/103-559	Inner	-	-	-	M22520/5-03
	Outer	-	-	-	M22520/5-03
#12 Coaxial M39029/28-211 M39029/75-416	Inner	M22520/2-34	-	-	-
	Outer	-	M22520/31-02	-	-
#16 Coaxial	Inner	M22520/2-35	-	-	-
	Outer	-	-	M22520/4-02	-
#8 Coaxial	Inner	M22520/2-31	-	-	-
	Outer	-	-	-	M22520/5-05 closure B
#8 Triaxial	Inner	M22520237	-	-	-
	Middle	-	-	-	Y631 closure B
	Ferrule	-	-	-	Y631 closure A

*Pneumatic plier

Note: Please contact us for the #10 contact's plier and locator.

Souriau 8LT series

Wiring instructions

Insertion & extraction tools

Contact size	Material	Part number		Color	
		MIL standard	Souriau	Insertion	Extraction
#26	Plastic	-	8599-0394 900	Black	White
#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	White
#10	Plastic	M81969/14-05	-	Grey	-
#8	Plastic	M81969/14-12	-	-	Green
	Metalic	-	8660-197	-	-
#4	Plastic	M81969/14-07	-	-	Blue
	Metalic	-	8533-8175	-	-

Backshell tightening tools

8522-9267A



Backshell tightening pliers, part number: 8522-9267A

Tightening support

8599-0801



Part number: 8599-0801
This tool is made up of dummy receptacle housings of all 9 sizes for all key polarization, and secures free connectors during wiring and fitting of rear accessories.

Tightening of rear accessories:

Shell size	9	11	13	15	17	19	21	23	25
Max torque in m/daN	0.62	0.62	0.62	0.62	0.62	0.62	1.24	1.24	1.24

Slackening tools

8498-04



Strap clamp, part number: 8498-04
Spare strap, part number: 8498-103

Tightening of fixing nuts, receptacle type 7

Shell size	09	11	13	15	17	19	21	23	25
Nut dimension across flats	22.35	25.55	30.30	33.45	36.65	39.80	43.00	46.10	50.95
Max tightening torque on nut (mN)	6	8	10	13	20	23	25	26	28

Protective caps

Plastic protective caps

Shell size	Part numbers for standard cap		Part numbers for antistatic cap	
	Caps for receptacle	Caps for plug	Caps for receptacle	Caps for plug
09	8500-5594	70609	MS90376-10RF	MS90376-14RF
11	MS90376-12R	MS90376-16Y	MS90376-12RF	MS90376-16RF
13	8500-5588A	8500-5600	8500-5588N	8500-5600N
15	8500-5589A	8500-5601	MS90376-18YF	8500-5601N
17	MS90376-20YF	8500-5602	MS90376-20YF	8500-5602N
19	8500-5601	8500-5592A	8500-5601N	8500-5592N
21	8500-5602	8500-5593A	8500-5602N	8500-5593N
23	MS90376-24R	MS90376-24R	MS90376-24RF	-
25	8500-5593A	J599ABC6009A00	8500-5593N	-

Reducers

Reducer Size	Part number	For cable	For pin contacts	For socket contacts
#8 Power	8599-7645	#10	8599-7580	8599-7581
#4 Power	8400-2352A	10 mm ²	8599-7534A	8599-7535A

Boots

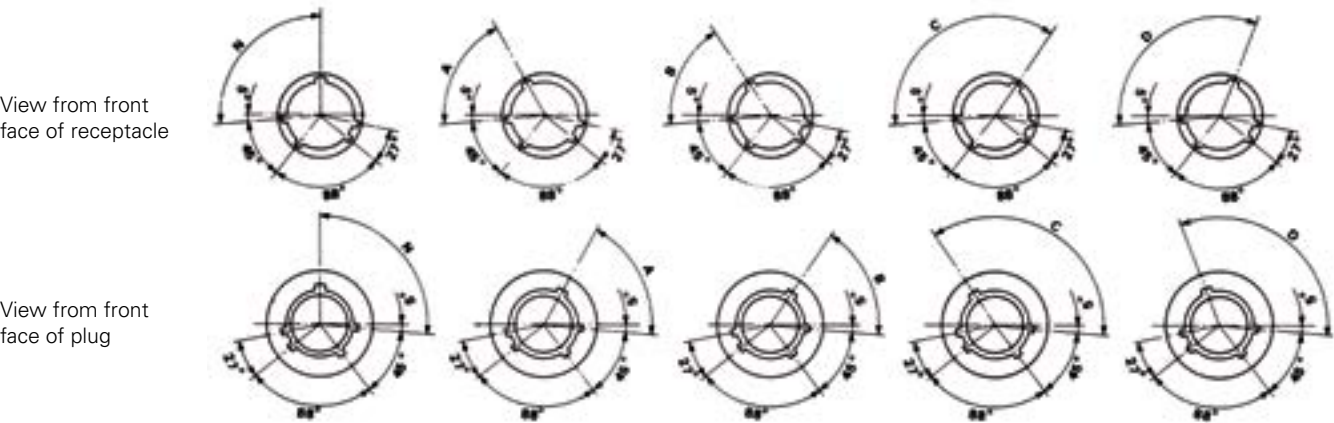
Boot size	Part number	External cable diameter mm ²		For cable
#8 Power	8599-4542	5	6.5	8.48 à 10 mm ²
	8599-4547	2.5	4	#10
#4 Power	8599-4594	6.35	7.5	#4 - #5
	8599-4593	4	5.8	#6 - #8

Souriau 8LT series

Orientations

Orientations

Polarization is determined by the master keyway position.
The secondary keyway positions remain fixed.

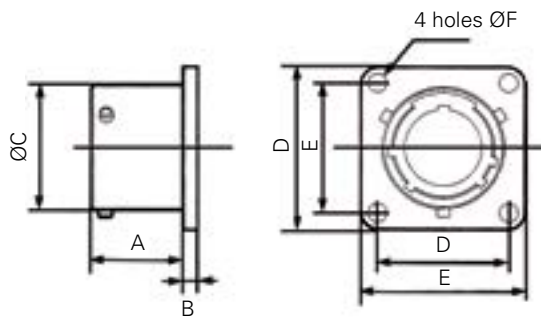


Shell size	Angles (degrees)				
	N	A	B	C	D
09	95	77	-	-	113
11	95	81	67	123	109
13	95	75	63	127	115
15	95	74	61	129	116
17	95	77	65	125	113
19	95	77	65	125	113
21	95	77	65	125	113
23	95	80	69	121	110
25	95	80	69	121	110

Panel gasket

Shell size	Part numbers	
	Gasket for receptacle type 0, 2, 3 (to be ordered separately)	O-ring for receptacle type 7 (shipped with connector)
09	8599-5541	AS3582-019
11	8599-5542	AS3582-022
13	8599-5543	AS3582-024
15	8599-5544	AS3582-026
17	8599-5545	AS3582-028
19	8599-5546	AS3582-128
21	8599-5547	AS3582-130
23	8599-5548	AS3582-132
25	8599-5549	AS3582-134

Dummy receptacles



Shell size	Part numbers*	A Max	B Max	ØC Max	D Max	E	ØF
09	8LTO-09GUR	16.05	2.54	14.53	24.25	18.26	3.25
	8LTO-09FUR	16.05	2.54	14.53	24.25	18.26	3.25
11	8LTO-11GUR	16.05	2.54	17.78	26.60	20.62	3.25
	8LTO-11FUR	16.05	2.54	17.78	26.60	20.62	3.25
13	8LTO-13GUR	16.05	2.54	21.59	29.00	23.01	3.25
	8LTO-13FUR	16.05	2.54	21.59	29.00	23.01	3.25
15	8LTO-15GUR	16.05	2.54	24.77	31.35	24.61	3.25
	8LTO-15FUR	16.05	2.54	24.77	31.35	24.61	3.25
17	8LTO-17GUR	16.05	2.54	27.94	33.75	26.97	3.25
	8LTO-17FUR	16.05	2.54	27.94	33.75	26.97	3.25
19	8LTO-19GUR	16.05	2.54	30.66	36.90	29.36	3.25
	8LTO-19FUR	16.05	2.54	30.66	36.90	29.36	3.25
21	8LTO-21GUR	15.29	3.30	33.83	40.10	31.75	3.25
	8LTO-21FUR	15.29	3.30	33.83	40.10	31.75	3.25
23	8LTO-23GUR	15.29	3.30	37.00	43.25	34.93	3.73
	8LTO-23FUR	15.29	3.30	37.00	43.25	34.93	3.73
25	8LTO-25GUR	15.29	3.30	40.18	46.50	38.10	3.73
	8LTO-25FUR	15.29	3.30	40.18	46.50	38.10	3.73

* F or G = plating, (F) Nickel, (G) Olive green cadmium

Note: All dimensions are in millimeters (mm)

Souriau 8LT series

Cross reference

Cross reference list:

Part numbers Souriau and specifications: NFC 93422 / MIL DTL 38999

Connectors

Souriau	NFC 93422 HE 308	MIL DTL 38999 Serie I	Designation
8LT0••B••P/SN	HE30800T••••P/SN7 M	MS27466T••B••P/S•*	Square flange receptacle
8LT0••F••P/SN	HE30800T••••P/SN6 M	MS27466T••F••P/S•*	
8LT1••B••P/SN	-	-	Cable connecting receptacle
8LT1••F••P/SN	-	-	
8LT2••B••P/SN	-	MS27505E••B••P/S•*	Square flange receptacle not accepting backshell
8LT2••F••P/SN	-	MS27505E••F••P/S•*	
8LT3••B••P/SN	-	MS27656T••B••P/S•*	Square flange receptacle (rear mounting)
8LT3••F••P/SN	-	MS27656T••F••P/S•*	
8LT5••B••P/SN	HE30806T••••P/SN7 M	MS27467T••B••P/S•*	Plug with RFI shielding
8LT5••F••P/SN	HE30806T••••P/SN6 M	MS27467T••F••P/S•*	
8LT15••B••P/SN	-	MS27467E••B••P/S•*	Plug with RFI shielding not accepting backshell
8LT15••F••P/SN	-	MS27467E••F••P/S•*	
8LT7••B••P/SN	HE30807T••••P/SN7 M	MS27468T••B••P/S•*	Jam nut receptacle
8LT7••F••P/SN	HE30807T••••P/SN6 M	MS27468T••F••P/S•*	
8LT7S••B••P/SN (#22D)	HE30811T••••P/SN7 M	-	Jam nut receptacle with PC Tail contacts
8LT7S••F••P/SN (#22D)	HE30811T••••P/SN6 M	-	
8LT7C••B••P/SN (#20, #16, #12)	HE30811T••••P/SN7 M	-	Jam nut receptacle with PC Tail contacts
8LT7C••F••P/SN (#20, #16, #12)	HE30811T••••P/SN6 M	-	
8LT26••B••P/SN	HE30826T••••P/SN7 M	-	Floating plug for rack HE308
8LT26••F••P/SN	-	-	
8LT27••B••P/SN	HE30827T••••P/SN7 M	-	Receptacle for rack HE308 with possibility to mount rear accessories
8LT27••F••P/SN	-	-	
8LT27S••B••P/SN (#22D)	HE30821T••••P/SN7 M	-	Receptacle for rack HE308 with PC Tail contacts
8LT27C••B••P/SN (#20, #16, #12)	HE30821T••••P/SN7 M	-	
8LT23••B••P/SN	-	-	Square flange receptacle

* Standard P/S : • None = N position,
• Use A,B,C,D for other orientations

Backshells

Souriau	NFC 93422 HE 308	MIL DTL 38999 Serie I	Designation
8TAB01A••W•	-	M8504927••W	Backnut
8TAB01A••F•	-	M8504927••N	
8TAB02A••W•	-	-	Straight cable clamp
8TAB02A••F•	HE308-11••26	-	
8TAB02B••W•	-	-	Elbow cable clamp
8TAB02B••F•	HE308-12••26	-	
8TAB06••W•	HE308-13••17	-	Backshell for screen termination and heatshrink sleeving
8TAB06••F•	HE308-13••16	-	

Contacts

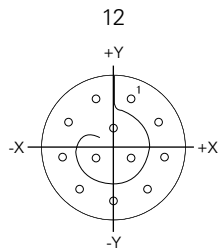
See Page 28

Coordinates for straight PC tail terminations

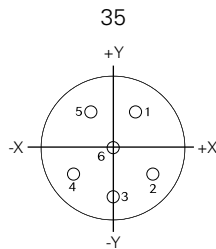
Viewed from front face of male insulator

Hole sizes: 1mm min. (#22 and #20 contacts) and 1.3mm min. (#16 contact) coordinates in mm.

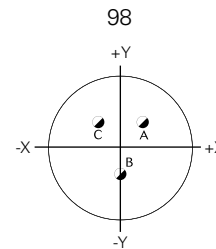
09/A



Ctc	X	Y
1	+0.92	+2.54
2	+2.34	+1.35
3	+2.66	-0.47
4	+1.74	-2.07
5	0.00	-2.70
6	-1.74	-2.07
7	-2.66	-0.47
8	-2.34	+1.35
9	-0.92	+2.54
10	0.00	+1.03
11	+0.89	-0.51
12	-0.89	-0.51

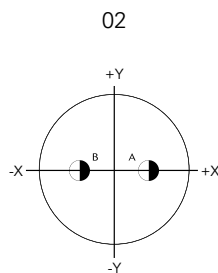


Ctc	X	Y
1	+1.14	+1.98
2	+1.98	-1.14
3	0.00	-2.29
4	-1.98	-1.14
5	-1.14	+1.98
6	0.00	0.00

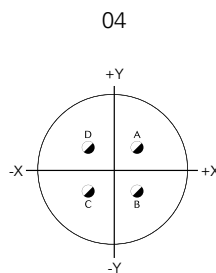


Ctc	X	Y
A	+1.65	+0.97
B	0.00	-1.90
C	-1.65	+0.97

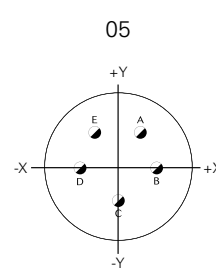
11/B



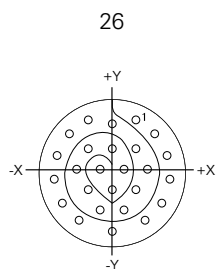
Ctc	X	Y
A	0.00	+2.41
B	0.00	-2.41



Ctc	X	Y
A	+1.65	+1.65
B	+1.65	-1.65
C	-1.65	-1.65
D	-1.65	+1.65

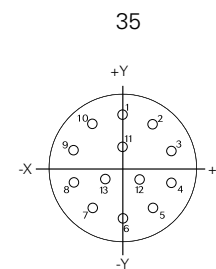


Ctc	X	Y
A	+1.65	+1.42
B	+2.86	-1.65
C	0.00	-3.30
D	-2.86	-1.65
E	-1.65	+1.42



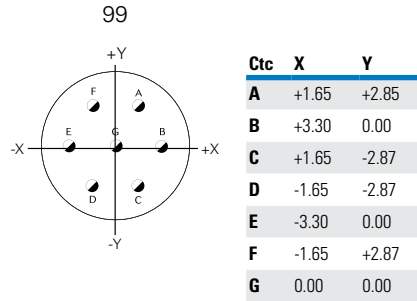
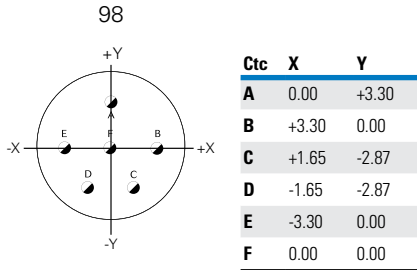
Ctc	X	Y
1	+1.69	+3.79
2	+3.09	+2.77
3	+3.95	+1.28
4	+4.13	-0.44
5	+3.58	-2.10
6	+2.40	-3.37
7	0.00	-4.13
8	-2.40	-3.37
9	-3.58	-2.10
10	-4.13	-0.44
11	-3.95	+1.28
12	-3.09	+2.77
13	-1.69	+3.79

Ctc	X	Y
14	0.00	+3.50
15	+1.70	+1.76
16	+2.55	+0.29
17	+1.70	-1.18
18	+0.85	-2.65
19	-0.85	-2.65
20	-1.70	-1.18
21	-2.55	+0.29
22	-1.70	+1.76
23	0.00	+1.76
24	+0.85	+0.29
25	0.00	-1.18
26	-0.85	+0.29

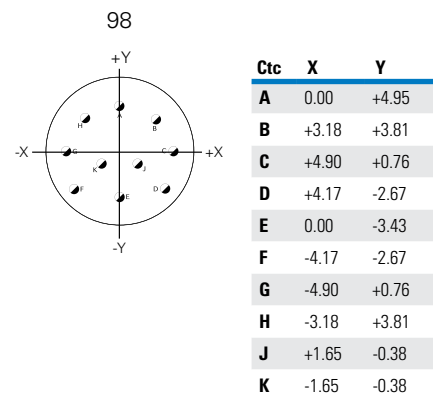
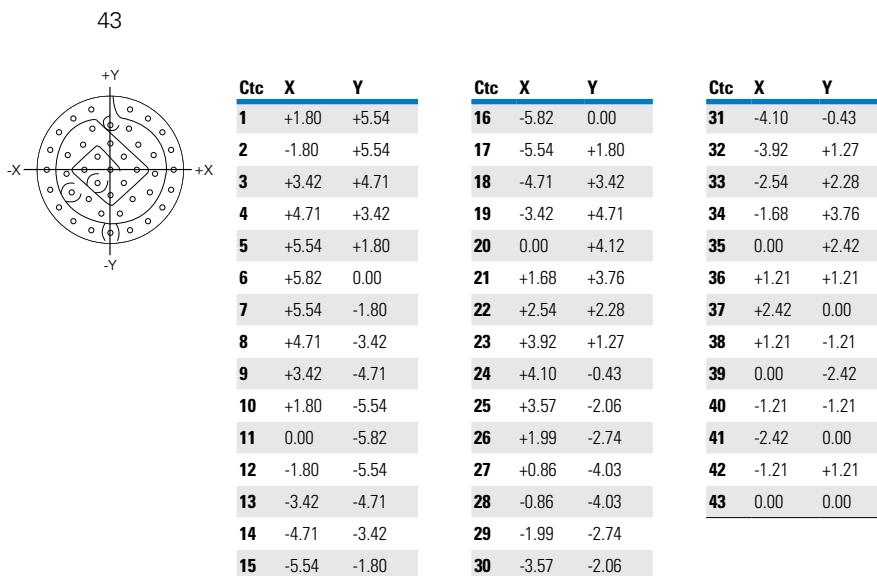
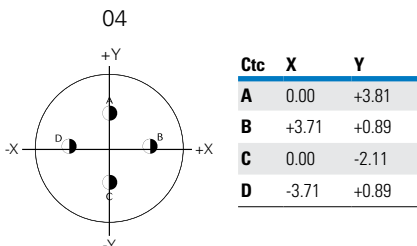
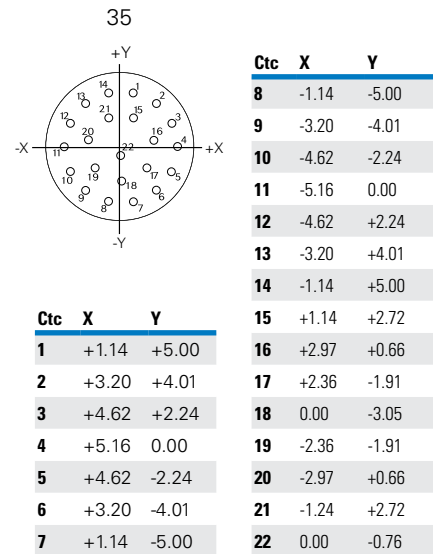
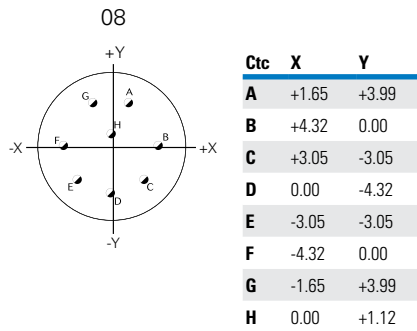
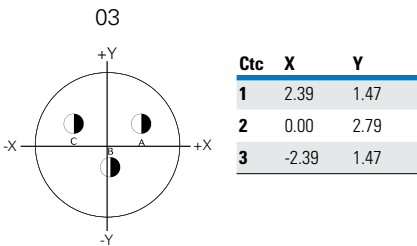


Ctc	X	Y
1	0.00	+3.71
2	+2.16	+3.00
3	+3.51	+1.14
4	+3.51	-1.14
5	+2.16	-3.00
6	0.00	-3.71
7	-2.16	-3.00
8	-3.51	-1.14
9	-3.51	+1.14
10	-2.16	+3.00
11	0	+1.42
12	+1.24	-0.89
13	-1.24	-0.89

11 / B

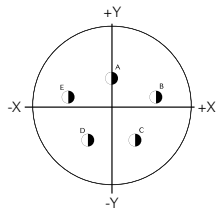


13 / C



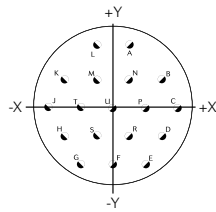
15/D

05



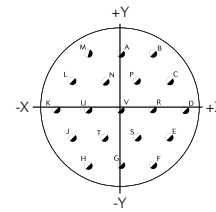
Ctc	X	Y
A	0	+2.54
B	+4.42	+0.61
C	+2.39	+3.76
D	-2.39	-3.76
E	-4.42	+0.61

18



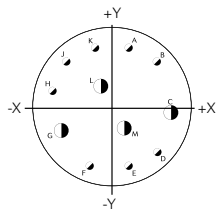
Ctc	X	Y
A	+1.65	+6.40
B	+4.95	+2.87
C	+6.60	0.00
D	+4.95	-2.87
E	+3.30	-5.72
F	0.00	-5.72
G	-3.30	-5.72
H	-4.95	-2.87
J	-6.60	0.00
K	-4.95	+2.87
L	-1.65	+6.40
M	-1.65	+2.87
N	+1.65	+2.87
P	+3.30	0.00
R	+1.65	-2.87
S	-1.65	-2.87
T	-3.30	0.00
U	0.00	0.00

19



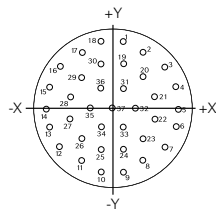
Ctc	X	Y
A	0.00	+5.72
B	+3.30	+5.72
C	+4.95	+2.87
D	+6.60	0.00
E	+4.95	-2.87
F	+3.30	-5.72
G	0.00	-5.72
H	-3.30	-5.72
J	-4.95	-2.87
K	-6.60	0.00
L	-4.95	+2.87
M	-3.30	+5.72
N	-1.65	+2.87
P	+1.65	+2.87
R	+3.30	0.00
S	+1.65	-2.87
T	-1.65	-2.87
U	-3.30	0.00
V	0.00	0.00

97



Ctc	X	Y
A	+1.65	+5.94
B	+4.52	+4.52
C	+5.84	-0.58
D	+4.52	-4.52
E	+1.65	-5.94
F	-2.26	-5.97
G	-5.26	-2.41
H	-5.94	+1.65
J	-4.52	+4.52
K	-1.65	+5.94
L	-1.19	+2.06
M	+1.19	-2.06

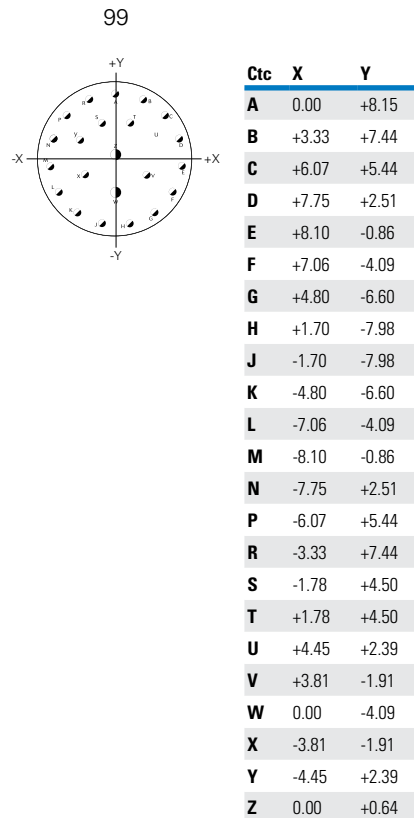
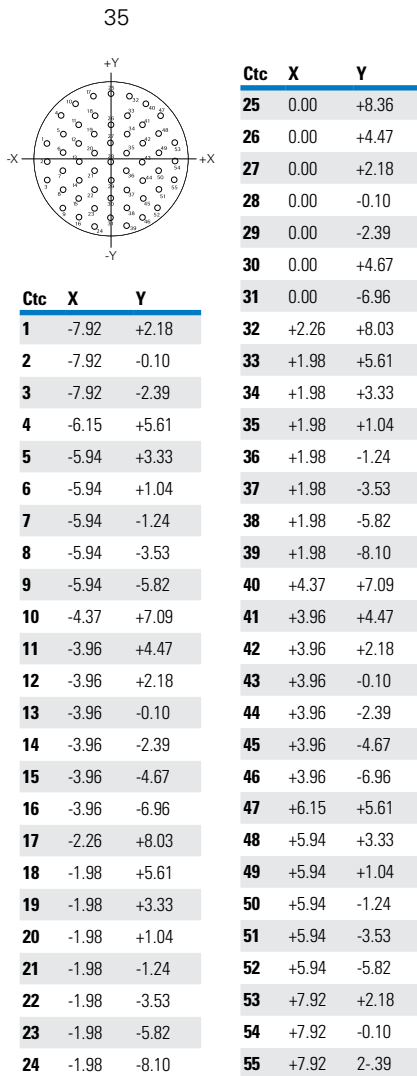
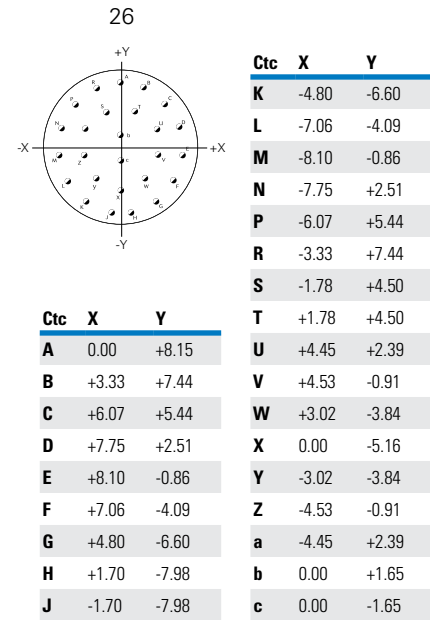
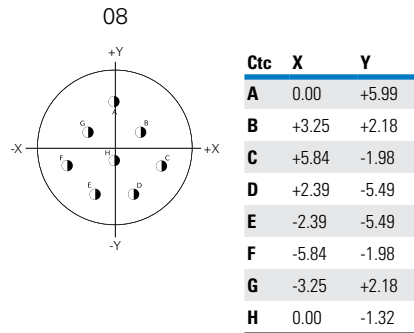
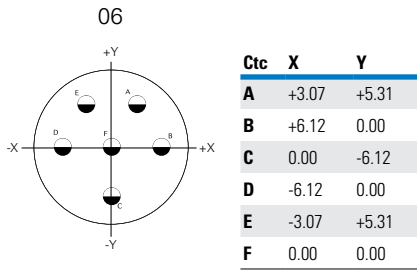
35



Ctc	X	Y
1	+1.14	+6.65
2	+3.12	+5.51
3	+5.36	+4.06
4	+6.45	+2.03
5	+6.76	-0.25
6	+6.27	-2.49
7	+5.08	-4.45
8	+3.30	-5.89
9	+1.14	-6.65
10	-1.14	-6.65
11	-3.30	-5.89
12	-5.08	-4.45
13	-6.27	-2.49
14	-6.76	-0.25
15	-6.45	+2.03
16	-5.36	+4.06
17	-3.12	+5.51
18	-1.14	+6.65
19	+1.14	+4.37

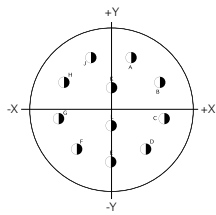
Ctc	X	Y
20	+3.12	+3.02
21	+4.32	+1.02
22	+4.32	-1.27
23	+3.12	-3.23
24	+1.14	-4.37
25	-1.14	-4.37
26	-3.12	-3.23
27	-4.32	-1.27
28	-4.32	+1.02
29	-3.12	+3.02
30	-1.14	+4.37
31	+1.14	+1.88
32	+2.29	-0.10
33	+1.14	-2.08
34	-1.14	-2.08
35	-2.29	-0.10
36	-1.14	+1.88
37	0.00	-0.10

17 / E



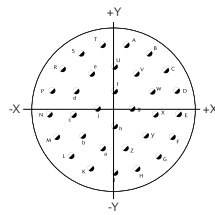
19/F

11



Ctc	X	Y
A	+2.67	+6.60
B	+6.35	+3.35
C	+6.99	-1.35
D	+4.55	-5.46
E	0.00	-7.14
F	-4.55	-5.46
G	-6.99	-1.35
H	-6.35	+3.35
J	-2.67	+6.60
K	0.00	+2.67
L	0.00	-2.34

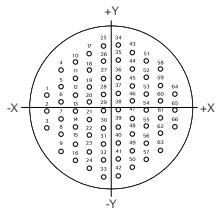
32



Ctc	X	Y
A	+1.68	+8.97
B	+4.80	+7.75
C	+7.26	+5.51
D	+8.76	+2.49
E	+9.07	-0.84
F	+8.15	-4.06
G	+6.15	-6.73
H	+3.30	-8.51
J	0.00	-9.12
K	-3.30	-8.51
L	-6.15	-6.73
M	-8.15	-4.06
N	-9.07	-0.84
P	-8.76	+2.49
R	-7.26	+5.51
S	-4.80	+7.75

Ctc	X	Y
T	-1.68	+8.97
U	0.00	+5.84
V	+3.15	+4.90
W	+5.31	+2.41
X	+5.79	-0.84
Y	+4.42	-3.84
Z	+1.65	-5.61
a	-1.65	-5.61
b	-4.42	-3.84
c	-5.79	-0.84
d	-5.31	+2.41
e	-3.15	+4.90
f	0.00	+2.44
g	+2.44	0.00
h	0.00	-2.44
j	-2.44	0.00

35



Ctc	X	Y
1	-9.07	+2.29
2	-9.07	0.00
3	-9.07	-2.29
4	-7.09	+5.71
5	-7.09	+3.43
6	-7.09	+1.14
7	-7.09	-1.14
8	-7.09	-3.43
9	-7.09	-5.71
10	-5.11	+6.86
11	-5.11	+4.57
12	-5.11	+2.29
13	-5.11	0.00
14	-5.11	-2.29

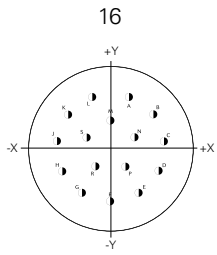
Ctc	X	Y
15	-5.11	-4.57
16	-5.11	-6.86
17	-3.12	+8.00
18	-3.12	+5.71
19	-3.12	+3.43
20	-3.12	+1.14
21	-3.12	-1.14
22	-3.12	-3.43
23	-3.12	-5.71
24	-3.12	-8.00
25	-1.14	+9.14
26	-1.14	+6.86
27	-1.14	+4.57

Ctc	X	Y
28	-1.14	+2.29
29	-1.14	0.00
30	-1.14	-2.29
31	-1.14	-4.57
32	-1.14	-6.86
33	-1.14	-9.14
34	+1.14	+9.14
35	+1.14	+6.86
36	+1.14	+4.57
37	+1.14	+2.29
38	+1.14	0.00
39	+1.14	-2.29
40	+1.14	-4.57

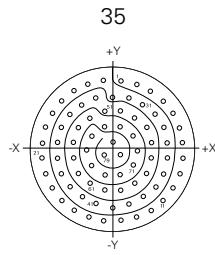
Ctc	X	Y
41	+1.14	-6.86
42	+1.14	-9.14
43	+3.12	+8.00
44	+3.12	+5.71
45	+3.12	+3.43
46	+3.12	+1.14
47	+3.12	-1.14
48	+3.12	-3.43
49	+3.12	-5.71
50	+3.12	-8.00
51	+5.11	+6.86
52	+5.11	+4.57
53	+5.11	+2.29

Ctc	X	Y
54	+5.11	0.00
55	+5.11	-2.29
56	+5.11	-4.57
57	+5.11	-6.86
58	+7.09	+5.71
59	+7.09	+3.43
60	+7.09	+1.14
61	+7.09	-1.14
62	+7.09	-3.43
63	+7.09	-5.71
64	+9.07	+2.29
65	+9.07	0.00
66	+9.07	-2.29

21 / G



Ctc	X	Y
A	+3.00	+8.18
B	+6.88	+5.36
C	+8.66	+0.91
D	+7.82	-3.81
E	+4.62	-7.37
F	0.00	-8.71
G	-4.62	-7.37
H	-7.82	-3.81
J	-8.66	+0.91
K	-6.88	+5.36
L	-3.00	+8.18
M	0.00	+4.45
N	+3.91	+1.57
P	+2.39	-3.10
R	-2.39	-3.10
S	-3.91	+1.57

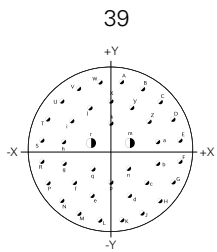


Ctc	X	Y
1	+1.35	+10.82
2	+3.71	+10.26
3	+5.89	+9.19
4	+7.77	+7.67
5	+9.27	+5.77
6	+10.31	+3.58
7	+10.85	+1.22
8	+10.85	-1.22
9	+10.31	-3.58
10	+9.27	-5.77
11	+7.77	-7.67
12	+5.89	-9.19
13	+3.71	-10.26

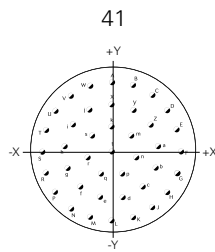
Ctc	X	Y
14	+1.35	-10.82
15	-1.35	-10.82
16	-3.71	-10.26
17	-5.89	-9.19
18	-7.77	-7.67
19	-9.27	-5.77
20	-10.31	-3.58
21	-10.85	-1.22
22	-10.85	+1.22
23	-10.31	+3.58
24	-9.27	+5.77
25	-7.77	+7.67
26	-5.89	+9.19
27	-3.71	+10.26
28	-1.35	+10.82
29	0.00	+8.20
30	+2.49	+8.18
31	+4.67	+7.11
32	+6.55	+5.59
33	+7.90	+3.58
34	+8.43	+1.22
35	+8.43	-1.22

Ctc	X	Y
36	+7.90	-3.58
37	+6.55	-5.59
38	+4.67	-7.11
39	+2.49	-8.18
40	0.00	-8.81
41	-2.49	-8.18
42	-4.67	-7.11
43	-6.55	-5.59
44	-7.90	-3.58
45	-8.43	-1.22
46	-8.43	+1.22
47	-7.90	+3.58
48	-6.55	+5.59
49	-4.67	+7.11
50	-2.49	+8.18
51	-1.22	+6.12
52	+1.22	+6.12
53	+3.40	+5.05
54	+5.28	+3.53
55	+6.02	+1.22
56	+6.02	-1.22
57	+5.28	-3.53

Ctc	X	Y
58	+3.40	-5.05
59	+1.22	-6.12
60	-1.22	-6.12
61	-3.40	-5.05
62	-5.28	-3.53
63	-6.02	-1.22
64	-6.02	+1.22
65	-5.28	+3.53
66	-3.40	+5.05
67	-1.22	+3.71
68	+1.22	+3.71
69	+3.18	+2.29
70	+3.94	0.00
71	+3.18	-2.29
72	+1.22	-3.71
73	-1.22	-3.71
74	-3.18	-2.29
75	-3.94	0.00
76	-3.18	+2.29
77	0.00	+1.35
78	+1.22	-0.74
79	-1.22	-0.74



Ctc	X	Y
S	-10.44	+1.65
T	-9.42	+4.80
U	-7.47	+7.47
V	-4.80	+9.42
W	-1.65	+10.44
X	0.00	+7.49
Y	+3.20	+6.50
Z	+5.89	+4.55
a	+7.11	+1.45
b	+7.11	-1.88
c	+5.51	-4.80
d	+2.84	-6.73
e	-2.84	-6.73
f	-5.51	-4.80
g	-7.11	-1.88
h	-7.11	+1.45
i	-5.89	+4.55
j	-3.20	+6.50
k	0.00	+4.17
m	+2.90	+1.22
n	+2.69	-2.72
p	0.00	-4.80
q	-2.69	-2.72
r	-2.90	+1.22



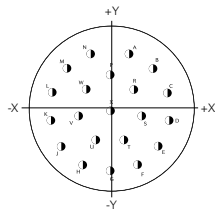
Ctc	X	Y
A	0.00	+10.60
B	+3.28	+10.09
C	+6.23	+8.58
D	+8.58	+6.23
E	+10.09	+3.28
F	+10.60	0.00
G	+10.09	-3.28
H	+8.58	-6.23
J	+6.23	-8.58
K	+3.28	-10.09
L	0.00	-10.60
M	-3.26	-10.09
N	-6.23	-8.58
P	-8.58	-6.23
R	-10.09	-3.28
S	-10.60	0.00
T	-10.09	+3.28
U	-8.58	+6.23
V	-6.23	+8.58
W	-3.28	+10.09
X	0.00	+7.20

Ctc	X	Y
Y	+3.35	+6.38
Z	+5.92	+4.09
a	+7.15	+0.87
b	+6.73	-2.55
c	+4.78	-5.39
d	+1.73	-6.99
e	-1.73	-6.99
f	-4.78	-5.39
g	-6.73	-2.55
h	-7.15	+0.87
i	-5.92	+4.09
j	-3.35	+6.38
k	0.00	+3.81
m	+2.98	+2.38
n	+3.71	-0.85
p	+1.66	-3.43
q	-1.66	-3.43
r	-3.71	-0.85
s	-2.98	+2.38
t	0.00	0.00

Ctc	X	Y
A	+1.65	+10.44
B	+4.80	+9.42
C	+7.47	+7.47
D	+9.42	+4.80
E	+10.44	+1.65
F	+10.44	-1.65
G	+9.42	-4.80
H	+7.47	-7.47
J	+4.80	-9.42
K	+1.65	-10.44
L	-1.65	-10.44
M	-4.80	-9.42
N	-7.47	-7.47
P	-9.42	-4.80
R	-10.44	-1.65

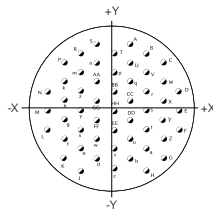
23 / H

21



Ctc	X	Y
A	+3.25	+9.78
B	+7.34	+7.24
C	+9.80	+3.12
D	+10.16	-1.65
E	+8.33	-6.07
F	+4.65	-9.19
G	0.00	-10.31
H	-4.65	-9.19
J	-8.33	-6.07
K	-10.16	-1.65
L	-9.80	+3.12
M	-7.34	+7.24
N	-3.25	+9.78
P	0.00	+6.22
R	+4.06	+3.71
S	+5.44	-0.89
T	+2.39	-4.93
U	-2.39	-4.93
V	-5.44	-0.89
W	-4.06	+3.71
X	0.00	0.00

53



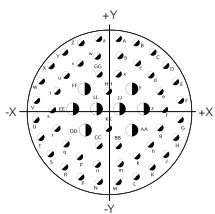
Ctc	X	Y
A	+2.84	+11.56
B	+5.72	+9.91
C	+8.53	+8.26
D	+11.43	+3.30
E	+11.43	0.00
F	+11.43	-3.30
G	+8.53	-8.26
H	+5.72	-10.41
J	-5.72	-10.41
K	-8.53	-8.26
L	-11.43	-3.30
M	-11.43	0.00
N	-11.43	+3.30
P	-8.53	+8.26
R	-5.72	+9.91
S	-2.84	+11.56
T	0.00	+9.91
U	+2.84	+8.26
V	+5.72	+6.60
W	+8.53	+4.95

Ctc	X	Y
X	+8.53	+1.65
Y	+8.53	-1.65
Z	+8.53	-4.95
a	+5.72	-6.60
b	+2.84	-8.26
c	0.00	-9.91
d	-2.84	-8.26
e	-5.72	-6.60
f	-8.53	-4.95
g	-8.53	-1.65
h	-8.53	+1.65
k	-8.53	+4.95
m	-5.72	+6.60
n	-2.84	+8.26
p	0.00	+6.60
q	+2.84	+4.95
r	+5.72	+3.30
s	+5.72	0.00
t	+5.72	-3.30
u	+2.84	-4.95

Ctc	X	Y
v	0.00	-6.60
w	-2.84	-4.95
x	-5.72	-3.30
y	-5.72	0.00
z	-5.72	+3.30
AA	-2.84	+4.95
BB	0.00	+3.30
CC	+2.84	+1.65
DD	+2.84	-1.65
EE	0.00	-3.30
FF	-2.84	-1.65
GG	-2.84	+1.65
HH	0.00	0.00

25 / J

04

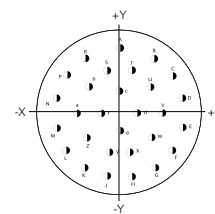


Ctc	X	Y
A	+1.75	+13.49
B	+5.16	+12.57
C	+8.23	+10.80
D	+10.77	+8.28
E	+12.52	+5.21
F	+13.49	+1.75
G	+13.49	-1.75
H	+12.52	-5.21
J	+10.77	-8.28
K	+8.23	-10.80
L	+5.16	-12.57
M	+1.75	-13.49
N	-1.75	-13.49
P	-5.16	-12.57

Ctc	X	Y
R	-8.23	-10.80
S	-10.77	-8.28
T	-12.52	-5.21
U	-13.49	-1.75
V	-13.49	+1.75
W	-12.52	+5.21
X	-10.77	+8.28
Y	-8.23	+10.80
Z	-5.16	+12.57
a	-1.75	+13.49
b	+2.18	+10.08
c	+5.38	+8.78
d	+7.90	+6.38
e	+9.58	+3.35
f	+10.46	0.00
g	+9.58	-3.35
h	+7.90	-6.38
k	+5.38	-8.78
m	+2.18	-10.08
n	-2.18	-10.08
p	-5.38	-8.78

Ctc	X	Y
q	-7.90	-6.38
r	-9.58	-3.35
s	-10.46	0.00
t	-9.58	+3.35
u	-7.90	+6.38
v	-5.38	+8.78
w	-2.18	+10.08
x	+1.75	+6.66
y	+4.37	+3.78
z	+6.55	0.00
AA	+4.37	-3.78
BB	+1.75	-6.66
CC	-1.75	-6.66
DD	-4.37	-3.78
EE	-6.55	0.00
FF	-4.37	-3.78
GG	-1.75	+6.66
HH	0.00	+3.35
JJ	+2.18	0.00
KK	0.00	-3.35
LL	-2.18	0.00

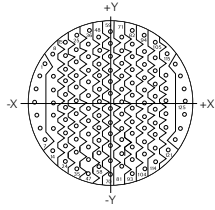
29



Ctc	X	Y
J	-2.31	-11.99
K	-6.68	-10.31
L	-10.03	-7.04
M	-11.91	-2.77
N	-11.91	+2.77
P	-10.03	+7.04
R	-6.55	+10.31
S	-2.31	+8.15
T	+2.31	+8.15
U	+5.79	+4.93
V	+8.10	0.00
W	+6.10	-4.60
X	+2.31	-7.37
Y	-2.31	-7.37
Z	-6.10	-4.60
a	-8.10	0.00
b	-5.79	+4.93
c	0.00	+4.09
d	+3.40	0.00
e	0.00	-3.30
f	-3.40	0.00

25 / J

35



Ctc	X	Y
1	-12.17	+7.09
2	-13.21	+4.83
3	-13.87	+2.41
4	-14.10	0.00
5	-13.87	-2.41
6	-13.21	-4.83
7	-12.17	-7.09
8	-10.77	+9.07
9	-10.54	+4.83
10	-10.54	+2.41
11	-10.54	0.00
12	-10.54	-2.41
13	-10.54	-4.83
14	-10.77	-9.07
15	-8.43	+11.28

Ctc	X	Y
16	-8.43	+8.43
17	-8.43	+6.02
18	-8.43	+3.61
19	-8.43	+1.19
20	-8.43	-1.19
21	-8.43	-3.61
22	-8.43	-6.02
23	-8.43	-8.43
24	-8.43	-10.85
25	-6.32	+12.60
26	-6.32	+9.65
27	-6.32	+7.24
28	-6.32	+4.83
29	-6.32	+2.41
30	-6.32	0.00
31	-6.32	-2.41
32	-6.32	-4.83
33	-6.32	-7.24
34	-6.32	-9.65
35	-6.32	-12.07
36	-4.06	+13.49
37	-4.22	+10.85

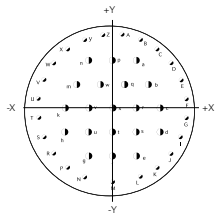
Ctc	X	Y
38	-4.22	+8.43
39	-4.22	+6.02
40	-4.22	+3.61
41	-4.22	+1.19
42	-4.22	-1.19
43	-4.22	-3.61
44	-4.22	-6.02
45	-4.22	-8.43
46	-4.22	-10.85
47	-4.22	-13.26
48	-2.11	+12.07
49	-2.11	+9.65
50	-2.11	+7.24
51	-2.11	+4.83
52	-2.11	+2.41
53	-2.11	0.00
54	-2.11	-2.41
55	-2.11	-4.83
56	-2.11	-7.24
57	-2.11	-9.65
58	-2.11	-12.07
59	0.00	+13.26

Ctc	X	Y
60	0.00	+10.85
61	0.00	+8.43
62	0.00	+6.02
63	0.00	+3.61
64	0.00	+1.19
65	0.00	-1.19
66	0.00	-3.61
67	0.00	-6.02
68	0.00	-8.43
69	0.00	-10.85
70	0.00	-14.10
71	+2.11	+12.07
72	+2.11	+9.65
73	+2.11	+7.24
74	+2.11	+4.83
75	+2.11	+2.41
76	+2.11	0.00
77	+2.11	-2.41
78	+2.11	-4.83
79	+2.11	-7.24
80	+2.11	-9.65
81	+2.11	-12.07

Ctc	X	Y
82	+4.06	+13.49
83	+4.22	+10.85
84	+4.22	+8.43
85	+4.22	+6.02
86	+4.22	+3.61
87	+4.22	+1.19
88	+4.22	-1.19
89	+4.22	-3.61
90	+4.22	-6.02
91	+4.22	-8.43
92	+4.22	-10.85
93	+4.22	-13.26
94	+6.32	+12.60
95	+6.32	+9.65
96	+6.32	+7.24
97	+6.32	+4.83
98	+6.32	+2.41
99	+6.32	0.00
100	+6.32	-2.41
101	+6.32	-4.83
102	+6.32	-7.24
103	+6.32	-9.65

Ctc	X	Y
104	+6.32	-12.07
105	+8.43	+11.28
106	+8.43	+8.43
107	+8.43	+6.02
108	+8.43	+3.61
109	+8.43	+1.19
110	+8.43	-1.19
111	+8.43	-3.61
112	+8.43	-6.02
113	+8.43	-8.43
114	+8.43	-10.85
115	+10.77	+9.07
116	+10.54	+4.83
117	+10.54	+2.41
118	+10.54	0.00
119	+10.54	-2.41
120	+10.54	-4.83
121	+10.77	-9.07
122	+12.17	+7.09
123	+13.21	+4.83
124	+13.87	+2.41
125	+14.10	0.00
126	+13.87	-2.41
127	+13.21	-4.83
128	+12.17	-7.09

43

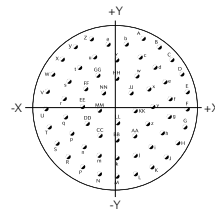


Ctc	X	Y
A	+1.75	+13.49
B	+5.16	+12.57
C	+8.23	+10.80
D	+10.77	+8.28
E	+12.52	+5.21
F	+13.49	+1.75
G	+13.49	-1.75
H	+12.52	-5.21
J	+10.77	-8.28
K	+8.23	-10.80
L	+5.16	-12.57
M	0.00	-13.49

Ctc	X	Y
M	0.00	-13.49
N	-5.16	-12.57
P	-8.23	-10.80
R	-10.77	-8.28
S	-12.52	-5.21
T	-13.49	-1.75
U	-13.49	+1.75
V	-12.52	+5.21
W	-10.77	+8.28
X	-8.23	+10.80
Y	-5.16	+12.57
Z	-1.75	+13.4
a	+4.37	+8.74
b	+6.55	+4.37
c	+8.74	0.00
d	+8.74	-4.37
e	+4.37	-8.74
f	0.00	-8.74
g	-4.37	-8.74

Ctc	X	Y
h	-8.74	-4.37
k	-8.74	0.00
m	-6.55	+4.37
n	-4.37	+8.74
p	0.00	+8.74
q	+2.18	+4.37
r	+4.37	0.00
s	+4.37	-4.37
t	0.00	-4.37
u	-4.37	-4.37
v	-4.37	0.00
w	-2.18	+4.37
x	0.00	0.00

61



Ctc	X	Y
A	+4.98	+12.70
B	+7.98	+11.05
C	+10.49	+8.71
D	+12.32	+5.84
E	+13.39	+2.57
F	+13.61	-0.76
G	+12.98	-4.17
H	+11.53	-7.29
J	+9.35	-9.93
K	+6.58	-11.94
L	+3.40	-13.18
M	0.00	-13.64
N	-3.40	-13.18
P	-6.58	-11.94
R	-9.35	-9.93
S	-11.53	-7.29

Ctc	X	Y
T	-12.98	-4.17
U	-13.61	-0.76
V	-13.39	+2.57
W	-12.32	+5.84
X	-10.49	+8.71
Y	-7.98	-11.05
Z	-4.98	+12.10
a	-1.73	+11.53
b	+1.73	+11.53
c	+4.39	+9.22
d	+7.24	+7.19
e	+9.19	+4.45
f	+10.13	+1.17
g	+9.96	-2.24
h	+8.66	-5.41
i	+6.38	-7.98
j	+3.38	-9.63
k	0.00	-10.21
m	-3.38	-9.63
n	-6.38	-7.98
p	-8.66	-5.41
q	-9.96	-2.24
r	-10.13	+1.17

Ctc	X	Y
s	-9.19	+4.45
t	-7.24	+7.19
u	-4.39	+9.22
v	0.00	+8.59
w	+3.73	+5.66
x	+6.02	+3.10
y	+6.78	-0.25
z	+5.79	-3.53
AA	+3.33	-5.92
BB	0.00	-6.78
CC	-3.33	-5.92
DD	-5.79	-3.53
EE	-6.78	-0.25
FF	-6.02	+3.10
GG	-3.73	+5.66
HH	0.00	+5.08
JJ	+2.67	+2.39
KK	+3.43	-1.04
LL	0.00	-3.35
MM	-3.43	-1.04
NN	-2.67	+2.39
PP	0.00	0.00

