

Amphenol SOCAPEX



RNJ Series

Blind mate 38999 connectors



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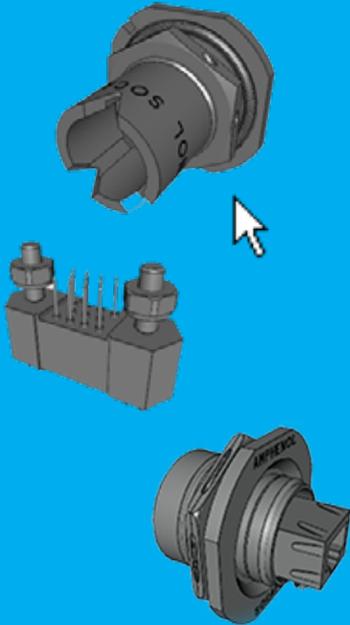
OUR RESOURCES

Access everything you need to simplify your projects. More than just a technical guide, our catalog opens the door to a multitude of services and practical tools.

All the information below is available on our [website](#) or by clicking on the digital PDF.

CAD Files & Product Selector

Streamline your design process with our 3D connector models. Downloadable in many formats.



Find product availability at our distributors

With your part number, find product availability in just a few clicks!



Technical Support

We'll answer all your questions.



Online quotation

Simply fill out our online form to receive your pricing



Export Control Classification

Product FAQ ? ?

Answers to your most important questions.

Technical Catalogs

Our certifications



My Amphenol

Follow our orders and delivery dates

Product assembly video

OUR OFFER

38999 Series



Rugged Ethernet, USB & Display connectors



2M Micro Miniature



Accessories



PT/451 - 26482 Series



SL61 & SOCA



RFM Series



PCB Connectors



Fiber Optic Solutions



Contacts



Ethernet Switch & Media Converter



USB Keys & Extenders



PS Series :
Power Devices Solutions



Cordsets & Jumpers



Cable Assembly



Harness in the box



CUSTOMIZED PRODUCTS AND SOLUTIONS

From cable assembly to customized solutions, we're here to add value to your projects. We look forward to hearing from you.

[Consult us](#)

OUR COMPANY



Since 1947, Amphenol Socapex has prescribed, designed and manufactured reliable and innovative interconnection solutions for harsh environments, specializing in standard and customized electrical and fiber optic connectors, contacts, accessories and cabling solutions.

Amphenol Socapex, based in the Mont Blanc region of France and with operations in India and Tunisia, has a global presence in over 100 countries.

Amphenol Socapex is part of Amphenol Corporation.

[Discover our history](#)

OUR MARKETS

Battlefield Communication



Ground Vehicles



Military aircraft / Structure



Commercial Aviation



Space

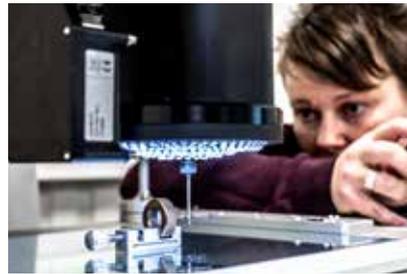
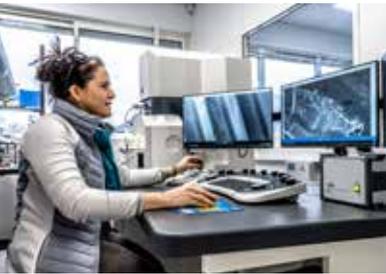


Industry



TECHNOLOGIES & INNOVATION

RESEARCH & DEVELOPMENT



Engineering Laboratory: 320m² state-of-the-art facilities in France and India with advanced testing and analysis equipment.

Expertise: 30+ specialists handling 300+ product tests and 1,400+ metrology requests annually.

Technology: Plating engineering, material development, high voltage analysis, 3D EM simulation, fiber optics, and assembly.

Metrology: Internal verification of the conformity of measuring instruments and ensuring that our measurement management system complies with the recommendations of ISO 10012.

OUR WORKSHOPS



Our workshops located in France & India provide consistent quality adapted to your volume requirements.

Molding : Solid expertise in thermoplastic elastomer and thermoset molding

Machining : Manufacturing of cylindrical shells and rectangular shells

Screw Machining : Manufacturing of electrical contacts

Plating : Plating with cadmium, nickel, electroless nickel, silver, black zinc nickel, gold

Assembly : Connector and harness assembly (electrical & optical)

Automation & Tooling : Tools for our different activities : molding, machining, assembly

[Join us ! We're hiring](#)

COMMON SECTION - PRODUCT OVERVIEW

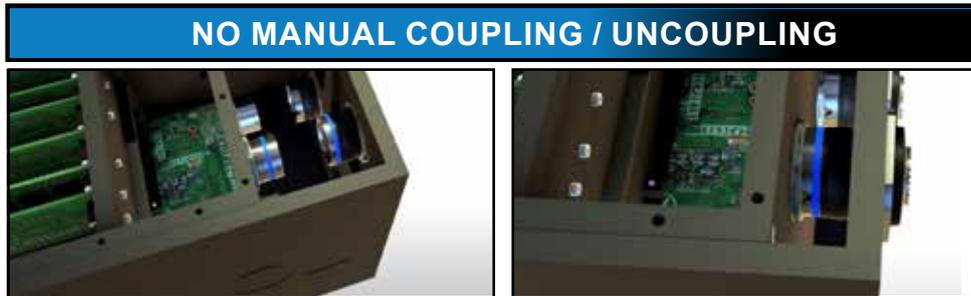
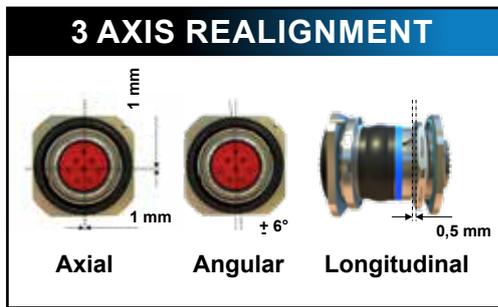
RNJ Series: MIL-DTL-38999 derivative for blind mate applications

Description

RNJ series are a MIL-DTL-38999 derivative, dedicated to rack & panel applications. They were designed and qualified according to **HE308 standard** (MIL-DTL-38999 series I related), which defines the performances of blind mate connectors for harsh environments.

The **realignment and floatability capabilities** allow the connection between a rack (moving unit) and a panel (fixed structure), without manual coupling / uncoupling.

Ideal for **Line Replaceable Units (LRU)**, or restricted areas, RNJ series ensure a safe and reliable connection of devices in Military and Aerospace applications.



Markets



Commercial Aerospace



Ground Vehicles



Military Aerospace



Space



C5ISR

COMMON SECTION - PRODUCT OVERVIEW

RNJ Series: MIL-DTL-38999 derivative for blind mate applications

Main features

EASY TO USE:

- Push to mate easy and fast connection.
- Locking to be ensured by mechanical device on the system.

AXIAL, ANGULAR AND LONGITUDINAL FLOATABILITY

EMI/EMP SHIELDING:

- Grounding fingers ensuring shielding before contact mating.

CONTACTS PROTECTION:

- Scoop-proof design.

HIGH DURABILITY:

- 500 mating cycles.

ENVIRONMENTAL PERFORMANCES:

- Temperature range : -65 to +175°C.
- Sealing : IPx7 when mated.
- Fluid resistant : according to HE308.
- Vibrations & shocks : according to HE308.
- Corrosion: from 48 to 500 hrs salt spray resistance.

MIL-DTL-38999 SERIES QUALIFIED COMPONENTS

- Delivered with MIL-DTL-38999 series I and III inserts, including high density ones.
- AS329029 contacts and tooling.
- 8 shells sizes from 11 to 25.
- High speed contacts (twinax, coax, quadax...).
- Power versions available, from 60 to 500A (23P1 & 25P1, for RNJ only).
- Optical termini upon request, please consult us.

STANDARD REAR ACCESSORIES:

- MIL-DTL-38999 series I accessories for RNJ & RNJ Reduced flange.
- MIL-DTL-38999 series III accessories for RNJLP.

OPTIONS:

- Crimp, PCB tails or solder cups contacts.
- Jam nut or square flange shells.
- Top deviations available (reduced flange, stand-off, enhanced sealing...).

RNJ Range

RNJ



HE308 qualified

RNJ Reduced Flange



Space saving on panels

RNJ Low Profile



Shorter distance between panels

RNJ Power



250 to 500A

RNJ OP



Fiber optics

COMMON SECTION - TECHNICAL CHARACTERISTICS

Materials characteristics

Shell material	Shell finish	Salt spray exposure per EIA 364.26 (hours)	HE308 class	Amphenol designation	Operating temperature (°C)	
					Min	Max
Aluminum	Olive drab cadmium	500	7M	RNJ** 014	- 65	+ 175
	Nickel	48	6M	RNJ** 023	- 65	+ 175
	Black zinc nickel	96	-	RNJ** 033K	- 65	+ 175
	Black zinc nickel CrVI free (REACH)	96	-	RNJ** 078	- 65	+ 175
	Tin zinc	500	-	RNJ** 076	- 65	+ 175
	Durmalon	500	-	RNJ**DT**	- 65	+ 175
Stainless steel	Passivated	500	-	RNJ**KE**	- 65	+ 175

Mechanical characteristics

Characteristics	According to HE308 standard							
Durability	500 cycles							
Shock	150g, 3ms, 1/2 sinus							
Vibration	Sine vibrations : -30g from 10 to 2000 Hz at ambient air Random vibrations : -28grms from 50 to 2000 Hz at ambient air							
Contact retention force	Size	22D	20	16	12	8	4	00
	Max load (N)	45	67	110	110	150	150	150
Mating and unmating forces	Size	Maximum mating forces (daN)				Maximum unmating force (daN)		
	11	20				12		
	13	30				13		
	15	35				15		
	17	50				16		
	19	55				18		
	21	65				22		
	23	80				27		
25	102				34			

Environmental characteristics

Characteristics	According to HE308 standard
Humidity	§3.28 part VI - 93% Relative Humidity
Sealing	IPX7 when mated and fully cabled - 1 meter, 30 mins
Air leakage	§3.10. - Receptacle RNJ27: limited to 16 cm ³ /h @ 2 bar Plug RNJ26/RNJ46: limited to 16 cm ³ /h @ 2 bar, front face - limited to 4cm ³ /h @0.5 bar, rear face Extra sealing option upon request
Corrosion resistance Salt spray (hours)	Aluminum : - Olive drab cadmium 500h - Electroless nickel 48h - Black zinc nickel, 96h - Tin Zinc, 500h Stainless steel : - Passivated or Nickel plated, 500h
Fluid immersion	Per HE308 - C5935X0005 - Turbine Fuels, grade JP-8, per MIL-DTL-83133 (NATO F-34) - Lubricating oil, per MIL-PRF-23699 - Hydraulic Fluid, per MIL-PRF-5606 - Defrosting fluid, per MIL-A-8243 - One part isoprpyl alcohol... Comme écrit dans le tableau actuel - Coolant, dielectric fluid, per MIL-DTL-87252C (Coolanol 25) or equivalent

COMMON SECTION - TECHNICAL CHARACTERISTICS

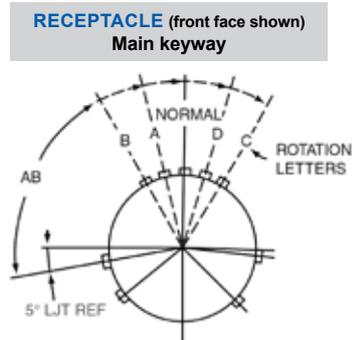
Service rating

Service rating	Dielectric withstanding voltage (Vrms)								Working voltage	
	At sea level		15 000 meters		21 000 meters		34 000 meters		Vms	Vdc
	Mated	Unmated	Mated	Unmated	Mated	Unmated	Mated	Unmated		
M	1300	1300	800	550	800	350	800	200	400	550
I	1800	1800	1000	600	1000	400	1000	200	600	850
II	2300	2300	1000	800	1000	500	1000	200	900	1250

Keyway position - RNJ & RNJ reduced flange

A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The angles for a given connector are the same whether it contains pins or sockets. Master key rotates, minor keys stay fixed. Inserts are not rotated in conjunction with the master key/keyway.

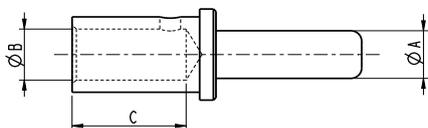
Shell Size	Normal	References			
		A	B	C	D
11	95°	81°	67°	123°	109°
13	95°	75°	63°	127°	115°
15	95°	74°	61°	129°	116°
17	95°	77°	65°	125°	113°
19	95°	77°	65°	125°	113°
21	95°	77°	65°	125°	113°
23	95°	80°	69°	121°	110°
25	95°	80°	69°	121°	110°



Please consult us for coding possibilities on RNJLP.

Contacts & cables characteristics

Contact characteristics		Contact size								
Contact rating (nominal current per contact, A) at ambient temperature	Contact termination	23 ^{HD}	22D	20	16	12	8 ^{**}	4 ^{**}	00 ^{**}	
	Crimp barrel	5	5	7.5	13	23	60	100	250 [*]	
	PC tail	3	3	4.5	10	17	40			
	Hermetic	3	3	5	10	17				
Contact resistance (without wire, mΩ)		15	8	4.7	2	1.1	0.6	0.26	0.102	
Insulation resistance (MΩ)		> 5.10 ³ at ambient temperature > 1.10 ³ at maximum temperature								
ØA Pin contact diameter (mm) (mating area)		0.68	0.76	1	1.57	2.36	3.60	5.70	12.0	
Crimp barrel	ØB Diameter (mm)	0.88 ± 0.03	0.88 ± 0.03	1.19 ± 0.03	1.70 ± 0.03	2.54 ± 0.06	4.6 ± 0.05	7.4 ± 0.05	12.1	
	C Depth (mm)	3.81	3.58	5.30	5.30	10	10	12	21	
Acceptable cables Cable dimensions (Section in mm ²)	American wire gauge AWG									
	28	0.095								
	26	0.15								
	24	0.22								
	22	0.38								
	20			0.60						
	18			0.93						
	16			1.34						
	14					1.94				
	12					3.30				
	8 ^{**}							8.98-10 _{MAX}		
	4 ^{**}									21.10 [▲]
00 ^{**}									75	
0000 ^{**}										
Outside diameter (mm)	MIN	0.76	0.76	1.02	1.68	2.46	4.50	7.73		
	Average		1.20	1.83	2.41	3.20				
	MAX	1.27	1.37	2.11	2.77	3.61	5.20	8.40		



* 185A according to AS39029 standard. 230A only for 23-P1 arrangement with Radsok technology
 ** Consult us for other cable dimensions
 ▲ Concentric wire only (contacts 900007 & 900047). For others cables types consult us.
 HD High density inserts using size 23 contacts
 Consult us for 25-P1 arrangement (Radsok contact)

All dimensions are given for information only and are in mm, except as otherwise specified | *in mm: 1mm=0.03937 inch

COMMON SECTION - CONTACTS ARRANGEMENTS

●	◐	⊖	⊕	◑	⦿	○	⊗	⓪	⓪	HD	G	Q	Coax or Twinax	Differential Twinax or Quadrax	Power contacts
23	22D	20	16	12	8	4	00	0000	High density	Ground plane version available	Quadrax available	16, 12, 8	●	⦿	⦿

Front face of pin insert shown, master keyway illustrated.

11

G Q



11-01

RNJ
HE308
Total contacts
Contact size
Service rating

1

8 Twinax □

I

G



11-02

RNJ
HE308
Total contacts
Contact size
Service rating

2

16

I

Q



11-04

RNJ
HE308
Total contacts
Contact size
Service rating

4

20

I



11-05

RNJ
HE308
Total contacts
Contact size
Service rating

5

20

I

G



11-12

RNJ
HE308
Total contacts
Contact size
Service rating

1

12

II

HD



11-19

RNJ
HE308
Total contacts
Contact size
Service rating

19

23

N

Q



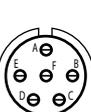
11-35

RNJ
HE308
Total contacts
Contact size
Service rating

13

22D

M



11-98

RNJ
HE308
Total contacts
Contact size
Service rating

6

20

I

G



11-99

RNJ
HE308
Total contacts
Contact size
Service rating

7

20

I

13

G



13-04

RNJ
HE308
Total contacts
Contact size
Service rating

4

16

I

G



13-08

RNJ
HE308
Total contacts
Contact size
Service rating

8

20

I

Q



13-26

RNJ
HE308
Total contacts
Contact size
Service rating

6

22D

M

HD



13-32

RNJ
HE308
Total contacts
Contact size
Service rating

32

23

N

G



13-35

RNJ
HE308
Total contacts
Contact size
Service rating

22

22D

M

G



13-98

RNJ
HE308
Total contacts
Contact size
Service rating

10

20

I

- △ Delivered with Twinax contacts for simple braid cable (M17/1760002. AECMA Pr EN3375-003. Raychem 10612. EPD44690. EPD44691)
- Delivered with Twinax contacts for double braid cable (PAN 6421. AECMA Pr EN 3375 - 004. Raychem 10613. EPD44692. EPD44693)
- / Not applicable

COMMON SECTION - CONTACTS ARRANGEMENTS

●	◐	⊖	⊕	◑	●	○	⊗	⊙	HD	G	Q	Coax or Twinax	Differential Twinax or Quadrax	Power contacts
23	22D	20	16	12	8	4	00	0000	High density	Ground plane version available	Quadrax available	16, 12, 8	●	● ◐ ⊖ ⊕ ◑ ⊗ ⊙

Front face of pin insert shown, master keyway illustrated.

RNJ	15-04	15-05	15-15	15-18	15-19
HE308	/	15-05	/	/	15-19
Total contacts	4	5	14 / 1	18	19
Contact size	12	16	20 / 16	20	20
Service rating	I	II	I	I	I

RNJ	15-BA (15-25)	15-35	15-55	15-97
HE308	/	15-35	/	15-97
Total contacts	22 / 3	37	55 / 23	8 / 4
Contact size	22D / 16	22D	N	20 / 16
Service rating	M	M	N	I

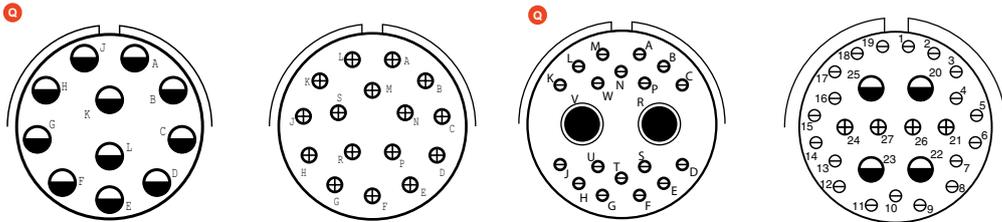
RNJ	17-EL	17-02 / 17-03^{SB}	17-06	17-08
HE308	/	/	17-06	17-08
Total contacts	16 / 2 / 1	38 / 1	6	8
Contact size	22D / 12 / 8 TwinaxΔ	22D / 8 TwinaxΔ	12	16
Service rating	M	M	I	II

- △ Delivered with Twinax contacts for simple braid cable (M17/1760002. AECMA Pr EN3375-003. Raychem 10612. EPD44690. EPD44691)
- Delivered with Twinax contacts for double braid cable (PAN 6421. AECMA Pr EN 3375 - 004. Raychem 10613. EPD44692. EPD44693)
- / Not applicable

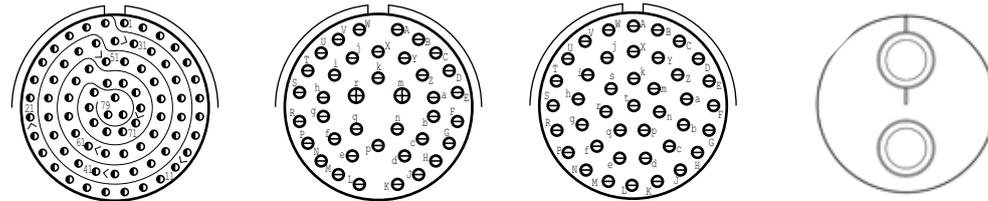
COMMON SECTION - CONTACTS ARRANGEMENTS

●	◐	⊖	⊕	◑	○	⊗	⊙	HD	G	Q	Coax or Twinax	Differential Twinax or Quadax	Power contacts	
23	22D	20	16	12	8	4	00	0000	High density	Ground plane version available	Quadrax available	16, 12, 8	●	● ● ⊖ ⊕ ⊗ ⊙

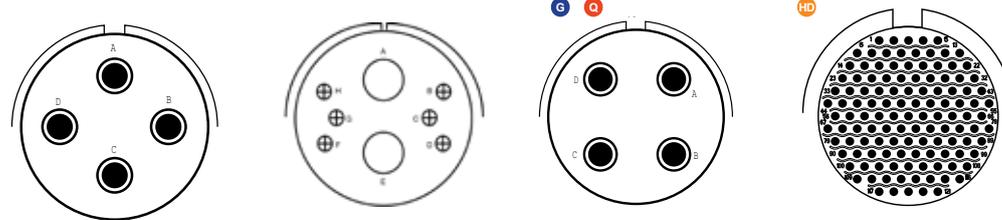
Front face of pin insert shown, master keyway illustrated.



RNJ	21-11	21-16	21-AJ (21-20)	21-29
HE308	/	21-16	/	/
Total contacts	11	16	18 / 2	19 / 4 / 4
Contact size	12	16	20 / 8 TwinaxΔ	20 / 16 / 12
Service raiting	I	II	M	I



RNJ	21-35	21-39	21-41	21-42
HE308	21-35	/	/	/
Total contacts	79	37 / 2	41	2
Contact size	22D	20 / 16	20	4
Service raiting	M	I	I	I



RNJ	21-48	21-72	21-75 / 21-76	21-121
HE308	21-48	/	21-75	/
Total contacts	4	6 / 2	4	121
Contact size	8 Power only P	16 / 4	8 Coax ●	23
Service raiting	N	I	M	N

P Male version to be used with 900198 power contacts only

Δ Delivered with Twinax contacts for simple braid cable (M17/1760002. AECMA Pr EN3375-003. Raychem 10612. EPD44690. EPD44691)

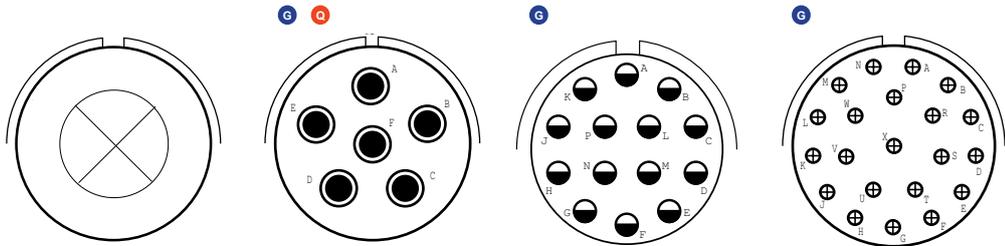
● Delivered with 4 Coaxial contacts for RG180 and RG195 wire under Amphenol designation

/ Not applicable

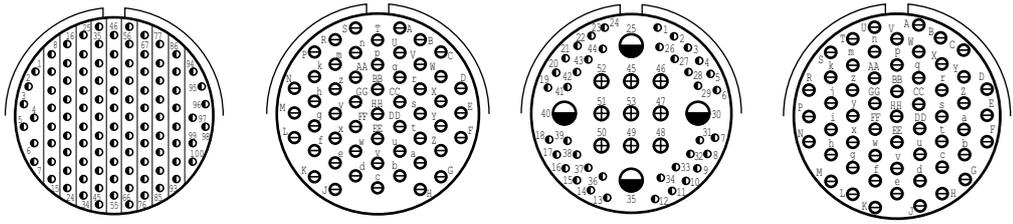
COMMON SECTION - CONTACTS ARRANGEMENTS

●	◐	⊖	⊕	◑	○	⊗	⊙	HD	G	Q	Coax or Twinax	Differential Twinax or Quadax	Power contacts	
23	22D	20	16	12	8	4	00	0000	High density	Ground plane version available	Quadrax available	16, 12, 8	●	● ◐ ⊖ ⊕ ◑ ⊗ ⊙

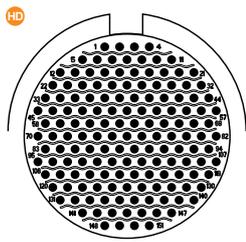
Front face of pin insert shown, master keyway illustrated.



RNJ	HE308	23-P1	23-06	23-14	23-21
Total contacts		1	6	14	21
Contact size		00 (2/0) Power	8 Twinax Δ	12	16
Service rating		/	M	I	II



Series III/TV-CTV	HE308	23-35	23-53	23-54	23-55
Total contacts		100	53	40	55
Contact size		22D	20	9	20
Service rating		M	I	M	I



Series III/TV-CTV	HE308	23-151
Total contacts		151
Contact size		23
Service rating		N

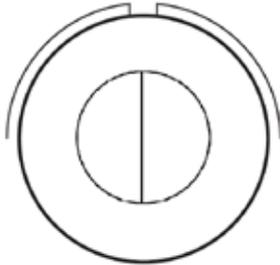
23

- Δ Delivered with Twinax contacts for simple braid cable (M17/1760002. AECMA Pr EN3375-003. Raychem 10612. EPD44690. EPD44691)
- \square Delivered with Twinax contacts for double braid cable (PAN 6421. AECMA Pr EN 3375 - 004. Raychem 10613. EPD44692. EPD44693)
- / Not applicable

COMMON SECTION - CONTACTS ARRANGEMENTS

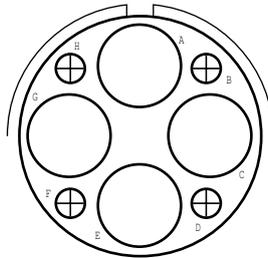


Front face of pin insert shown, master keyway illustrated.

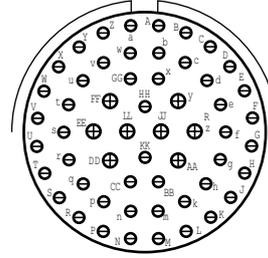


RNJ
HE308
Total contacts
Contact size
Service rating

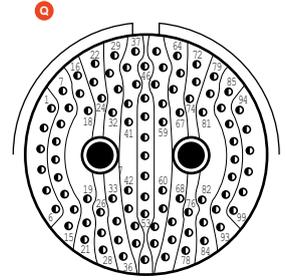
25-P1
25-01
1
0000 (4/0) Power
/



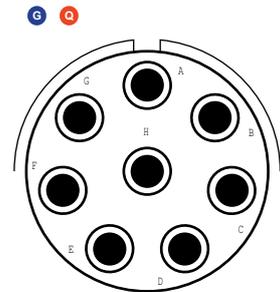
25-1A
25-44
4
16
4
4 Power
M



25-04
48
20
8
16
I

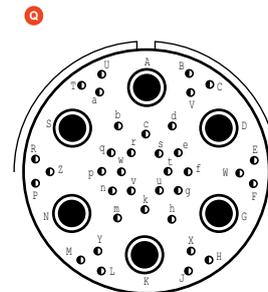


25-07 / 25-09
97
22D
2
8 TwinaxΔ
M

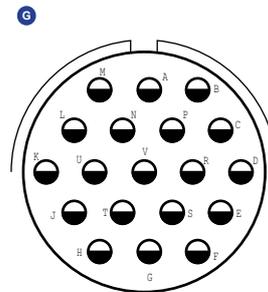


RNJ
HE308
Total contacts
Contact size
Service rating

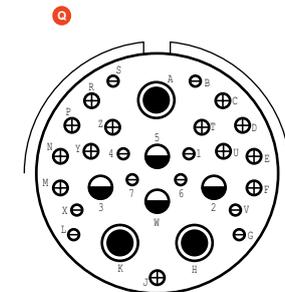
25-08 / 25-10 SB
8
8 Twinax□
M



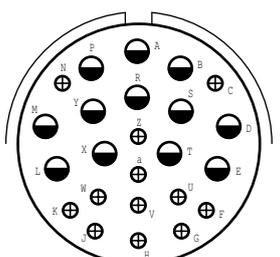
25-17
36
22D
6
8 TwinaxΔ
M



25-19
19
12
I

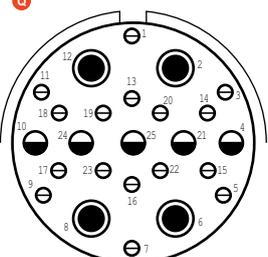


25-20 / 25-21
10
13
20
4
12 Coax
8 TwinaxΔ
N

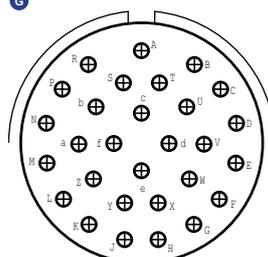


RNJ
HE308
Total contacts
Contact size
Service rating

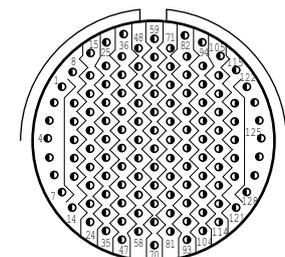
25-24
12
16
12
I



25-26
16
20
5
12
4
8 Coax
I



25-29
29
16
I



25-35
128
22D
M

- △ Delivered with Twinax contacts for simple braid cable (M17/1760002. AECMA Pr EN3375-003. Raychem 10612. EPD44690. EPD44691)
- Delivered with Twinax contacts for double braid cable (PAN 6421. AECMA Pr EN 3375 - 004. Raychem 10613. EPD44692. EPD44693)
- ▲ Size 12 Coax : 2 contacts M39029/28-211 or M39029/75-416 for cavities 2 & 3 and 2 contacts M39029/102-558 or M39029/103-559 for cavities 5 & W
- / Not applicable

COMMON SECTION - CONTACTS ARRANGEMENTS

●	◐	⊖	⊕	◑	●	○	⊗	⊙	HD	G	Q	Coax or Twinax	Differential Twinax or Quadrax	Power contacts
23	22D	20	16	12	8	4	00	0000	High density	Ground plane version available	Quadrax available	16, 12, 8	●	● ◐ ⊖ ⊕ ◑ ⊗ ⊙

Front face of pin insert shown, master keyway illustrated.

RNJ HE308 Total contacts Contact size Service rating	G	25-37 J37	25-41 /	25-43 J43	25-46 / 25-47 J46 / J47
		37	22 3 11 / 2 3	23 20	40 4 2
		16	22D 20 16 12 Coax: 8 TwinaxΔ	20 16	20 16 8 coax
		I	I	I	I

RNJ HE308 Total contacts Contact size Service rating	25-61	25-90 / 25-91	25-92 Not available in composite	25-187
	61	40 4 / 2	92 9	187
	20	20 16 8 TwinaxΔ	22D 16	23
	I	I	M	N

RNJ HE308 Total contacts Contact size Service rating	25-F4
	49 13 4
	22D 16 12
	M

Δ Delivered with Twinax contacts for simple braid cable (M17/1760002. AECMA Pr EN3375-003. Raychem 10612. EPD44690. EPD44691)
 / Not applicable

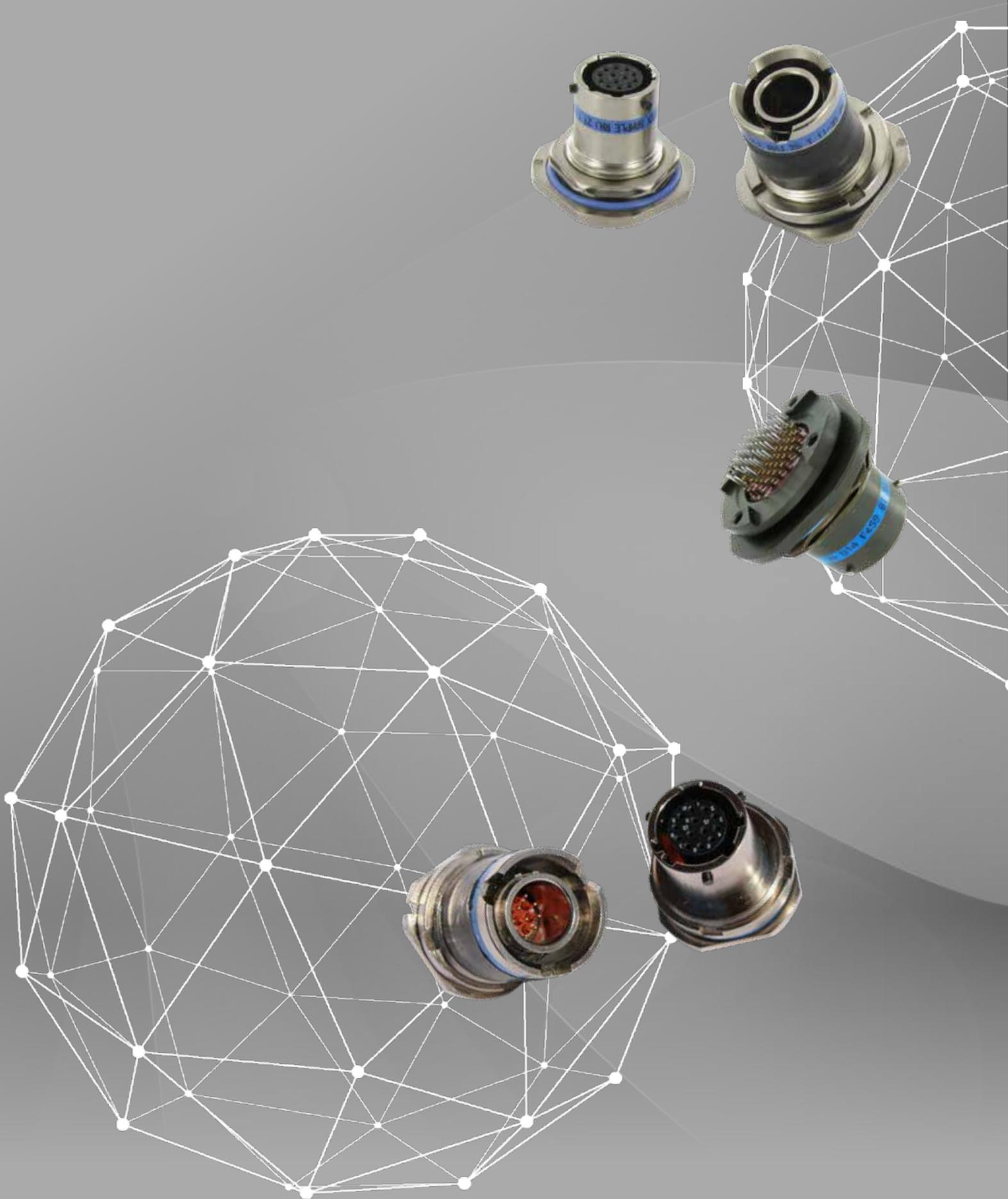
COMMON SECTION - CONTACTS ARRANGEMENTS

Series		Service rating	Nb of contacts	Contacts size										Ground plane option	Quadrax Option	Firewall available
Amphenol RNJ / RNJLP	HE308			23 HD	22D	20	16	12	12 Coax	8 Power	8 Coax	8 Twinax	4 Power			
11-01		I	1									1 □	G	Q	F	
11-02		I	2				2						G	Q	F	
11-04		I	4			4									F	
11-05		I	5			5									F	
11-12	✓ (11-01)	II	1					1					G			
11-19 HD		N	19	19												
11-35	✓	M	13		13										F	
11-98	✓	I	6			6									F	
11-99		I	7			7									F	
13-04		I	4				4						G		F	
13-08		I	8			8									F	
13-26		M	8		6			2								
13-32 HD		N	32	32												
13-35	✓	M	22		22										F	
13-98	✓	I	10			10									F	
15-04		I	4					4					G		F	
15-05	✓	II	5				5						G		F	
15-15		I	15			14	1								F	
15-18		I	18			18									F	
15-19	✓	I	19			19									F	
15-BA		M	25		22		3									
15-35	✓	M	37		37										F	
15-55 HD		N	55	55												
15-97	✓	I	12			8	4								F	
17-EL		M	19		16			2				1 △				
17-02 / 17-03		M	39		38							1 △		Q		
17-06	✓	I	6					6					G		F	
17-08	✓	II	8				8						G		F	
17-20		M	20		16			4								
17-22		M	4						2			2 □	G	Q		
17-25		M	24		22					2				Q		
17-26	✓	I	26			26									F	
17-35	✓	M	55		55										F	
17-73 HD		N	73	73												
17-75	✓	M	2									2 △	G	Q		
17-99	✓	I	23			21	2								F	
19-A4		M	4									4 △	G	Q		
19-11	✓	II	11				11						G		F	
19-17		M	17		10	1	4					2 □		Q		
19-18 / 19-19		M	18		14							4 △		Q	F	
19-28		I	28			26	2								F	
19-30		I	30			29	1									
19-31		M	15		12			1			2			Q		
19-32	✓	I	32			32									F	
19-35	✓	M	66		66										F	
19-88 HD		N	88	88												
21-11		I	11					11					G		F	
21-16	✓	II	16				16						G		F	
21-AJ / 21-20		M	20			18						2 △		Q		
21-29		I	27			19	4	4							F	
21-35	✓	M	79		79										F	
21-39		I	39			37	2								F	
21-41		I	41			41									F	

COMMON SECTION - CONTACTS ARRANGEMENTS

Amphenol RNJ / RNJLP	HE308	Service rating	Nb of contacts	Contacts size								Ground plane option G	Quadrax Option Q	Firewall available F			
				23 HD	22D	20	16	12	12 Coax	8 Power	8 Coax				8 Twinax	4 power	
21-42		I	8														
21-48 P	✓	N	4								4						
21-72		I	8				6										
21-75 / 21-76	✓	M	4								4 ●			G	Q		F
21-121 HD		N	121	121													
23-P1	✓	-	1								1 contact size 00 (2/0)						
23-06		M	6									6 Δ		G	Q		F
23-14		I	14						14					G			F
23-21	✓	II	21				21							G			F
23-35	✓	M	100		100												F
23-53	✓	I	53			53											F
23-54		M	53		40		9	4									F
23-55		I	55			55											F
23-151 HD		N	151	151													
25-P1		-	1								1 contact size 0000 (4/0)						
25-1A	✓	M	8				4						4				
25-04		I	56			48	8										F
25-07 / 25-09		M	99		97							2 Δ				Q	F
25-08 / 25-10		M	8									8 □		G	Q		F
25-17		M	42		36							6 Δ			Q		F
25-19		I	19					19						G			F
25-20 / 25-21		N	30			10	13		4			3 Δ			Q		F
25-24		I	24				12	12						G			F
25-26		I	25			16		5			4				Q		F
25-29		I	29				29							G			F
25-35		M	128		128												F
25-37		I	37				37							G			F
25-41		I	41		22	3	11		2			3 Δ					F
25-43		I	43			23	20										F
25-46 / 25-47		I	46			40	4				2				Q		F
25-61	✓	I	61			61											F
25-90 / 25-91		I	46			40	4					2 Δ			Q		F
25-92		M	101		92		9										
25-187 HD		N	187	187													
25-F4		M	66		49		13	4									F

- HD : High Density inserts using size 23 contacts
- G : Ground plane proprietary option available (metal insert for use with Coaxial, Twinax or Quadrax contacts). Please consult us for socket version
- Q : Quadrax version - Inserts designed with a key to avoid contacts rotation in the cavities when using a Quadrax or Octomax contact.
- F : Available in firewall version for Stainless Steel (Classe KE) connectors only. Consult us for availability
- Δ : Delivered with Twinax contacts for simple braid cable (M17/1760002. AECMA Pr EN3375-003. Raychem 10612. EPD44690. EPD44691)
- : 11-01, 17-22, 19-17 and 25-08 contacts arrangements are delivered with Twinax contacts for double braid cable (PAN6421. AECMA Pr EN3375 -004 Raychem 10613. EPD44692.
- : Delivered with 4 Coaxial contacts for RG 180 and RG 195 wire under Amphenol designation
- * : Equivalent to 15-25 Layout - Formerly Pyle insert
- P : 21-48 : Power version only. Male version to be used with 900198 contact.



RNJ RANGE



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RNJ - Rack & Panel - Reduced Flange	34

RNJ - RACK & PANEL



Rack and Panel connector for blind mate connections.

The RNJ series rack and panel connectors are qualified for the requirements of the standard DAT C 5935 x 0005 HE308 21, 25, 26 & 27T models. They are used to connect electrical and optical devices (see RNJ OP catalog) between a moving unit (rack) and a fixed unit (panel) without any coupling / uncoupling device. This function is ensured by a system of moving and the fixed units.

The connectors are built to allow for design tolerances (up to the limits shown below) during the mating of the connectors and the final locking of the moving and fixed units. These connectors are derived from the LJT series and meet or exceed the MIL-DTL-38999 Series I requirements.

Main features

AXIAL, ANGULAR AND LONGITUDINAL FLOATABILITY

HE308 QUALIFIED - MIL-DTL-38999 COMPONENTS

- Delivered with MIL-DTL-38999 series I and III inserts
- AS39029 contacts and tooling
- RNJ27 and RNJ67 receptacles compatible with LJT06, HE308-06 and MS27467 plugs
- Compatible with many M85049 backshells for 38999 series I connectors

RUGGED DESIGN

- 8 shell sizes from 11 to 25
- Lightweight space saving design
- Contacts protection: 100% scoop-proof design

EMI/EMP SHIELDING

- Shells are grounded before contact mating

SEALING

- IPX7 when mated and fully cabled
- In addition to interfacial seal, main joint souffler and rear gasket on the plug are set up for moisture sealing between connector halves.

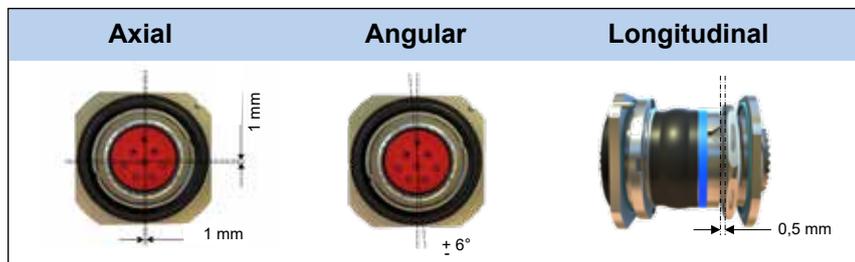
MATERIALS AND PLATINGS

- Aluminium with Olive drab cadmium / Black zinc nickel / Nickel / Tin Zinc plating
- Passivated Stainless steel

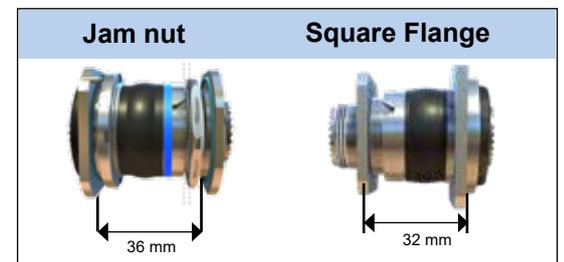
OPTIONS

- Crimp or PC tail contact terminations
- Power versions from 60 to 500A (23-P1 and 25-P1)
- Jam nut or Square flange plugs & receptacles
- Stand-off option on receptacles [RNJ27***F459](#) & [RNJ67***F459](#).

Realignment axis



Distance between panels



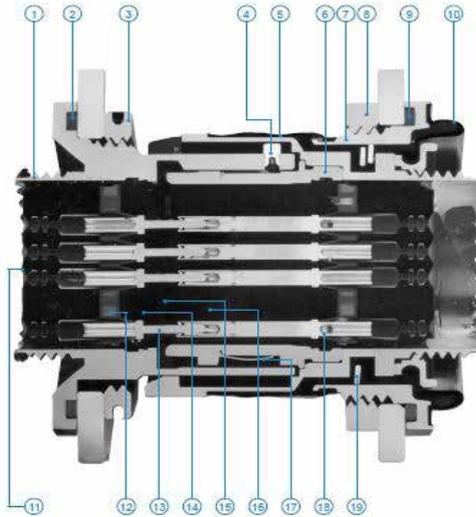
Options

	JAM NUT		SQUARE FLANGE	
Plug RNJ*6**	RNJ26** HE308 26** with rear accessory option	RNJ46** without rear accessory option	RNJ66** with rear accessory option	RNJ86** without rear accessory option
	RNJ27** HE308 27**	RNJ27***F459 Stand-off	RNJ67**	RNJ67***F459 Stand-off
Receptacle RNJ*7**				

RNJ - RACK & PANEL

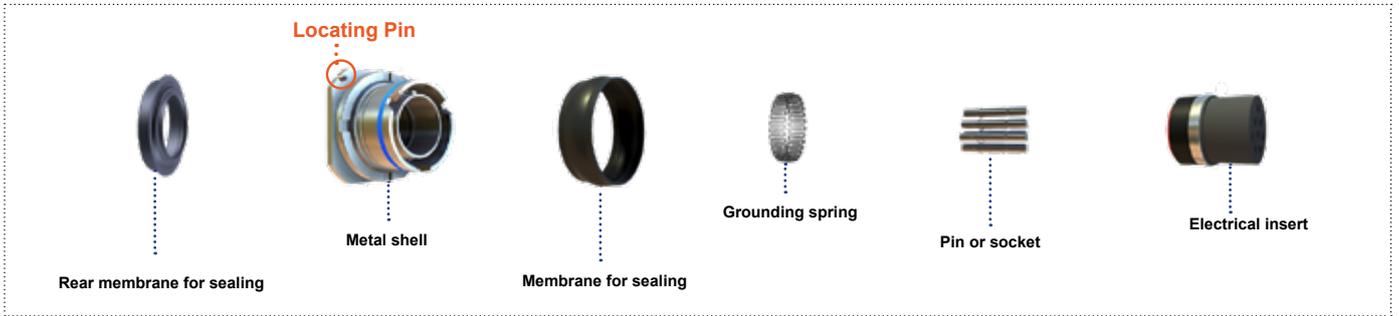
Presentation

- 1 - Receptacle shell
- 2 - O ring
- 3 - Hexagonal nut
- 4 - Rivet
- 5 - Sealed membrane
- 6 - Free plug shell
- 7 - Fixed plug shell
- 8 - Panel nut (plug)
- 9 - O ring
- 10 - Sealed membrane



- 11 - Grommet
- 12 - Dielectric retention disc
- 13 - Pin contact
- 14 - Male insert
- 15 - Interfacial seal
- 16 - Female insert
- 17 - Grounding fingers
- 18 - Socket contact
- 19 - Spring washers

Plug concept

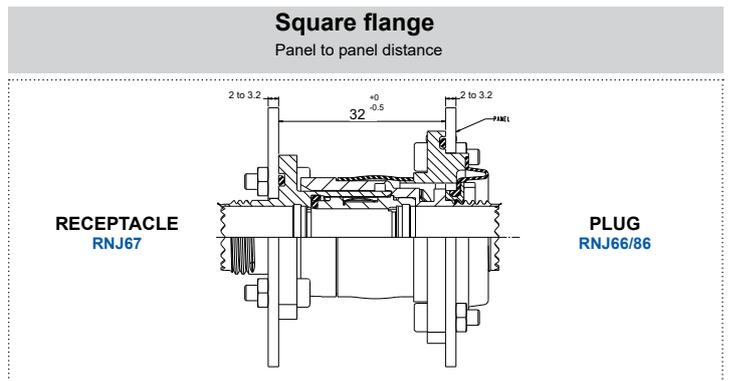
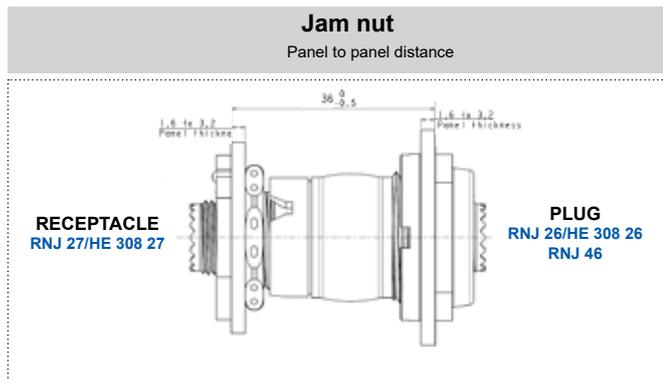


Online configurator & 3D model download



Panel integration

Mandatory distance to guarantee the product performances.
 Guiding system: the system must ensure the right positioning of the rack independently of the connectors.
 No mechanical stress must be applied to the rear of the plug (wires).



HOW TO ORDER - RNJ - RACK & PANEL

Military Designations - HE308 - UTE 93422 Connectors

	1.	2.	3.	4.	5.	6.	7.
Series	Shell type	Crimp contacts	Contact arrangement	Contact gender	Keying	Material and platings	With or without contacts
HE308	26	T	15-05	S	N	6M	L

1. Shell type

27	Receptacle	Jam-nut
26		Jam-nut
25	Plug	Jam-nut without rear accessory possibility

2. Crimp contact

T	Crimp contacts
---	----------------

3. Contact arrangements

Refer to page 18 for contact arrangements - HE308.
First number represents the shell size and second number is the contact arrangement.

4. Contact gender

P	Pin (500 cycles)
S	Socket (500 cycles)

5. Keying

N	N keying only
(for normal)	

6. Material and platings

	Shell material	Shell finish
7M	Aluminum	Olive drab cadmium
6M		Nickel ✓

7. With or without contacts

Blank	Connector delivered with contacts
L	Connector delivered without contact

Amphenol Designations - RNJ Crimp connectors

	1.	2.	3.	4.	5.	6.	7.	8.	9.
Series	Shell type	Material	Quadrax contacts	Contact arrangement	Contact gender	Keying	Plating	With or without contacts	Deviation
RNJ	27	T	-	15-35	P	N	023	-	-

1. Shell type

27	Receptacle	Jam-nut
67		Square flange
26	Plug	Jam-nut
66		Square flange

2. Material

T	Aluminium
KE	Stainless steel

3. Quadrax contacts

Blank	Without quadrax contacts
Q	With quadrax contacts

For Stainless steel 316L, please consult us.

4. Contact arrangements

Refer to page 18 for contact arrangements.
First number represents the shell size and second number is the contact arrangement.

5. Contact gender

P	Pin (500 cycles)
S	Socket (500 cycles)

6. Keying

N	For other coding possibilities, please consult us
(normal coding)	

7. Plating

	Shell material	Shell finish
014	Aluminum	Olive drab cadmium
023		Nickel ✓
033K		Black Zinc Nickel ✓
078		Black Zinc Nickel CrVI free ✓
076		Tin Zinc (consult us) ✓
Blank	Stainless steel	Passivated ✓

For other materials/platings, please consult us.

8. With or without contacts

Blank	Connector delivered with contacts
LC	Connector delivered without contact

9. Deviation

	Description	Shell type
F312	Reduced flange receptacle	26/27

For other deviations, please consult us.



HOW TO ORDER - RNJ - RACK & PANEL

Amphenol Designations - RNJ PCB connectors

	1.	2.	3.	4.	5.	6.	7.	8.	9.
Series	Shell type	Material	Quadrax contacts	PC tails	Contact arrangement	Contact gender	Keying	Plating	Deviation
RNJ	27	KE	Q	CI	15-35	P	N	023	F459

1. Shell type

Shell type	Material
27	Jam-nut
67	Square flange
46	Jam-nut
86	Square flange

2. Material

Blank	Aluminium
KE	Stainless steel

3. Quadrax contacts

Blank	Without quadrax contacts
Q	With quadrax contacts

4. PC tails

CI	PC Tail contacts - Standard length
LI	PC Tail contacts - Long length

5. Contact arrangement

Refer to page 18 for contact arrangements
First number represents the shell size and second number is the contact arrangement.

6. Contact gender

P	Pin (500 cycles)
S	Socket (500 cycles)

Connectors with PC Tail contacts are always delivered with contacts.

7. Keying

N
(normal coding) For other coding options, please consult us

8. Plating

Shell material	Shell finish
014	Olive drab cadmium
023	Nickel ✓
033K	Aluminium
078	Black Zinc Nickel ✓
076	Black Zinc Nickel CrVI free ✓
Blank	Tin Zinc (consult us) ✓
Blank	Stainless steel
Blank	Passivated ✓

For other materials/platings, please consult us.

9. Deviation

Shell style	PC Tail finish / Tinning				Shell type compatibility
	Tin lead	Silver tin	Silver tin copper	Gold	
Standard	F404	F404LF ✓	F404LFC ✓	Blank	All
Stand-off *	F459	F459LF ✓	F459LFC ✓	F459H	27/67
Reduced flange	F312	F312LF ✓	F312LFC ✓	F312H	26/27/46
Stand-off reduced flange	F059	F059LF ✓	F059LFC ✓	F059H	26/27/46

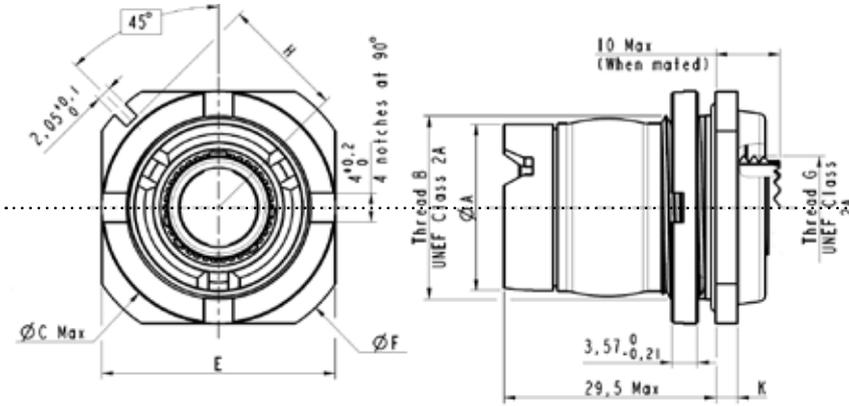
* For receptacles only (consult us for plugs). For other deviations, please consult us.

RNJ - RACK & PANEL

Overall dimensions - PLUG

Jam nut plug

Part number type: **RNJ26 XXX / HE308 26 XXX** compatible with M85049 accessories for 38999 Series I connectors.
RNJ46 XXX without rear accessory possibility.

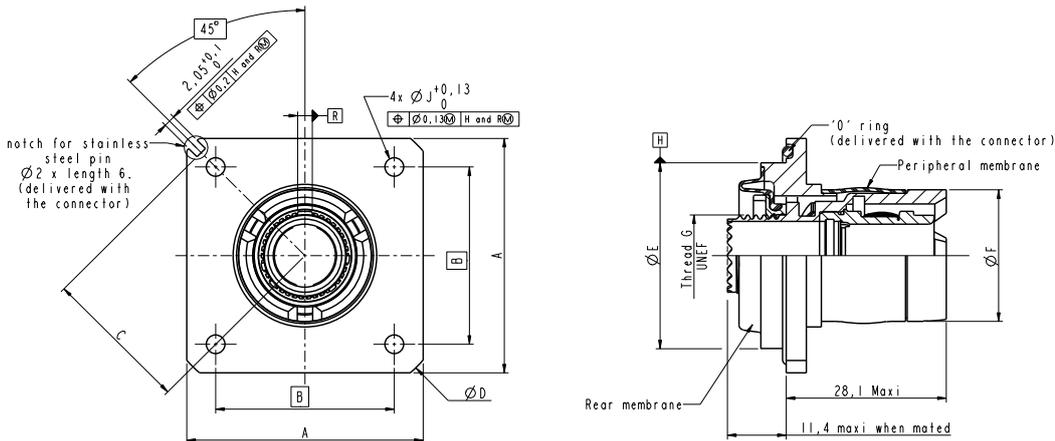


X: see the How to order to complete your part number

Size	ØA ^{+0.03} / _{-0.1}	Thread B UNEF Class 2A	C MAX	E ⁰ / _{-0.25}	ØF ^{±0.41}	Thread G UNEF Class 2A	H ⁰ / _{-0.25}	K ^{+0.28} / _{-0.25}
11	23.0	1.000-20	32.23	32.16	38.10	5625-24	16.92	2.77
13	26.8	1.125-18	35.25	35.34	41.28	6875-24	18.51	2.77
15	30.0	1.250-18	38.40	38.51	44.45	8125-20	20.10	2.77
17	33.22	1.375-18	41.60	41.69	49.23	9375-20	22.67	2.77
19	36.2	1.500-18	46.30	46.43	52.37	1.0625-18	24.26	3.56
21	39.4	1.625-18	49.60	49.64	55.58	1.1875-18	25.84	3.56
23	42.6	1.750-18	52.70	52.78	58.72	1.3125-18	27.43	3.56
25	45.68	1.875-16	53.93	54.03	59.10	1.4375-18	27.58	3.56

Square flange plug

Part number type: **RNJ66 XX** compatible with M85049 accessories for 38999 Series I connectors
RNJ86 XX without rear accessory possibility



X: see the How to order to complete your part number

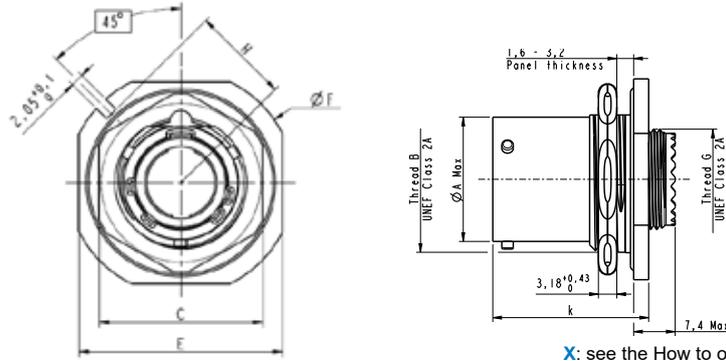
Size	S	R	F	ØD ⁰ / _{-0.05}	ØA	V thread UNEF class 2A	ØT ^{+0.13} / ₀
11	41	31	25.5	32.5	23.03	5625-24	3.22
13	44	33	27	36	26.83	6875-24	3.22
15	47	35	28.5	38.5	30.03	8125-20	3.22
17	50	38	30.5	42	33.25	9375-20	3.22
19	54	40	32	46.5	36.23	1.0625-18	3.22
21	57	43	34	49.5	39.43	1.1875-18	3.22
23	60	45	35.5	53	42.63	1.3125-18	3.7
25	63	46	36.5	54	45.71	1.4375-18	3.7

RNJ - RACK & PANEL

Overall dimensions - RECEPTACLE

Jam nut receptacle

Part number type: **RNJ27 XXX / HE308 27 XXX**

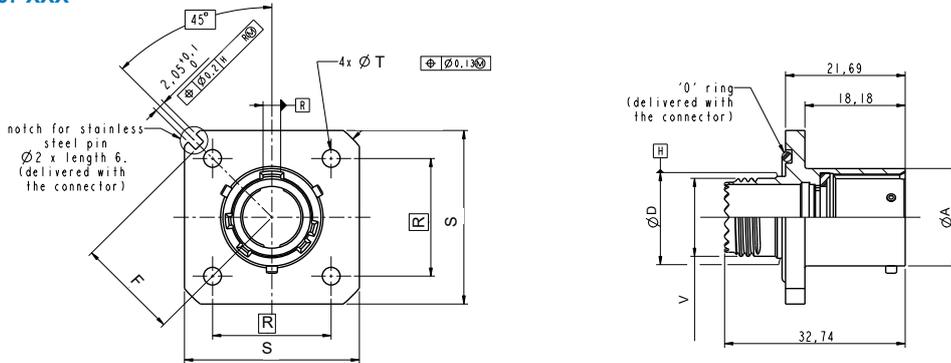


X: see the How to order to complete your part number

Size	ØA _{MAX}	B thread UNEF Class 2A	C _{MAX}	^{+0.48} ₀ E	⁺⁰ _{-0.3} ØF	V Thread UNEF Class 2A	⁰ _{-0.2} H	^{+0.13} ₀ K
11	17.81	.8125-20	25.80	31.49	35.20	.5625-24	15.33	26.92
13	21.62	1.000-20	30.00	34.69	38.37	.6875-24	16.92	26.92
15	24.80	1.125-18	33.00	37.79	41.55	.8125-20	18.51	26.92
17	27.97	1.250-18	37.00	40.99	44.72	.9375-20	20.10	26.92
19	30.69	1.375-18	40.00	45.79	49.50	1.0625-18	22.67	27.71
21	33.86	1.500-18	43.00	48.99	52.64	1.1875-18	24.26	27.71
23	37.04	1.625-18	46.00	52.09	55.85	1.3125-18	25.84	27.71
25	40.22	1.750-18	51.20	55.29	58.99	1.4375-18	27.43	27.71

Square flange receptacle

Part number type: **RNJ67 XXX**



X: see the How to order to complete your part number

Size	S	R	F	⁰ _{-0.05} ØD	ØA	V thread UNEF class 2A	^{+0.13} ₀ ØT
11	31.7	21.5	18.5	15	17.81	.5625-24	3.22
13	34.9	24.6	20.5	18	21.62	.6875-24	3.22
15	38	26.6	22	21	24.80	.8125-20	3.22
17	41.2	29	24	24	27.97	.9375-20	3.22
19	45	32	26	28	30.69	1.0625-18	3.22
21	48	34	27.5	31	33.86	1.1875-18	3.22
23	51	36	29	34	37.04	1.3125-18	3.7
25	54	38	30.5	37	40.21	1.4375-18	3.7

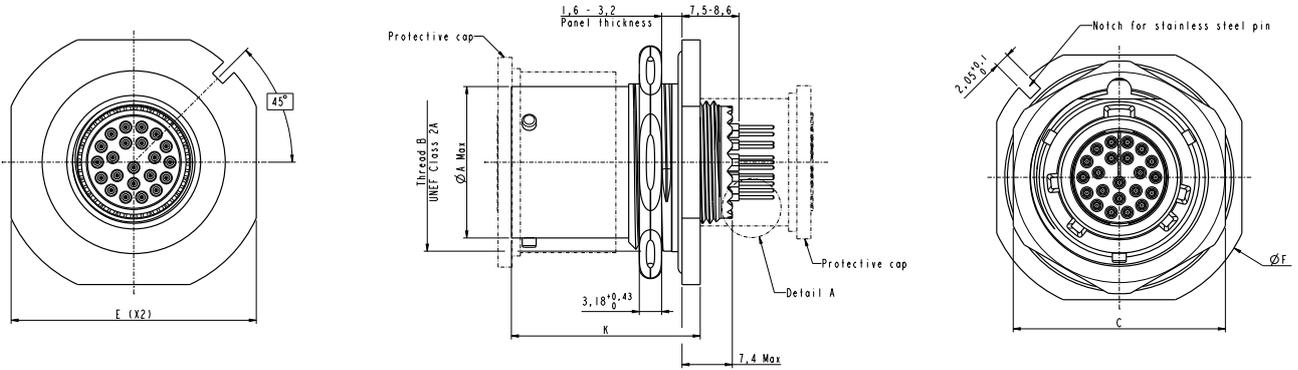
RNJ - RACK & PANEL

Overall dimensions - RECEPTACLE

Dimensions not listed are identical to crimp connectors.

Jam-nut receptacle - PCB

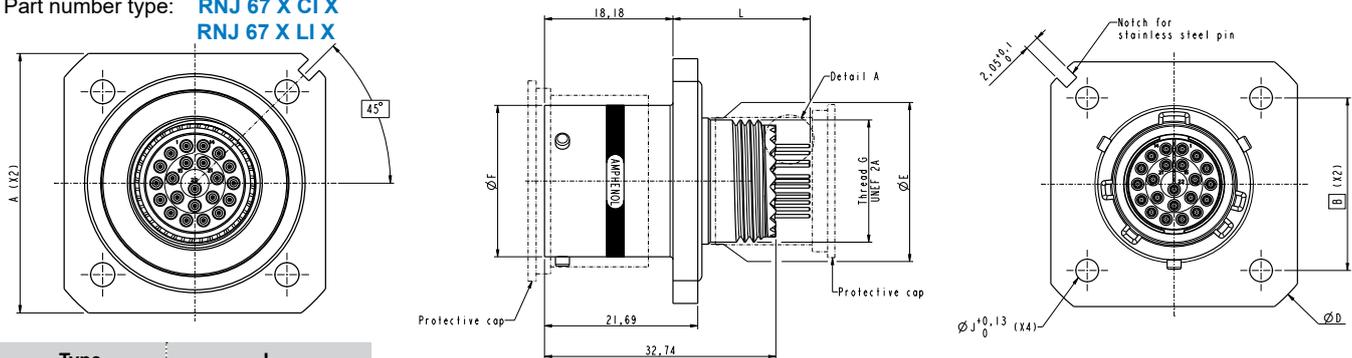
Part number type: **RNJ 27 X CI X**
RNJ 27 X LI X



X: see the How to order to complete your part number

Square flange receptacle - PCB

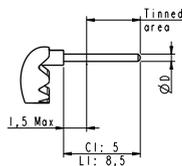
Part number type: **RNJ 67 X CI X**
RNJ 67 X LI X



Type	L
CI pin contact	18.82 - 20.14
CI socket contact	18.33 - 19.82
LI pin contact	22.22 - 23.54
LI socket contact	21.73 - 23.22

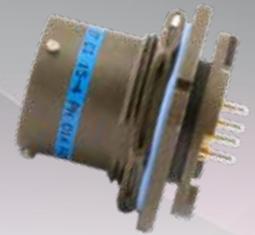
X: see the How to order to complete your part number

Detail A :



Contact size	Ø D Max			
	CI (5mm contact length)		LI (8.5 mm contact length)	
	Gold plated contacts	Tin lead, Silver tin or Silver tin copper plated contacts	Gold plated contacts	Tin lead, Silver tin or Silver tin copper plated contacts
22	0.5	0.6	0.7	0.8
20	0.7	0.8	0.7	0.8
16	1.15	1.25	1.15	1.25
12	1.7	1.8	1.7	1.8

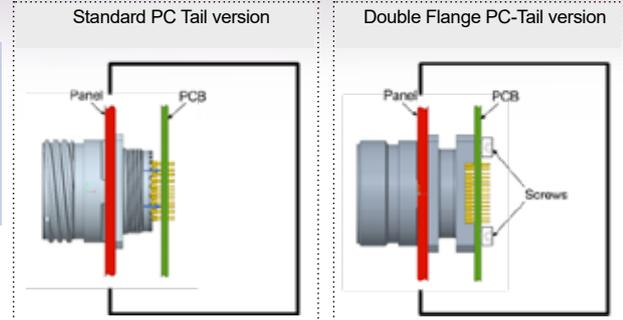
RNJ - RACK & PANEL - STAND-OFF RECEPTACLE



Double flange receptacle for PCB tails application

Main features

- Receptacle with Stand-off flange shell, for attachment to printed circuit boards.
- Prevent mechanical stress on the contact terminations.
- Provide grounding continuity between PCB and box.
- Increase reliability and resistance to shocks and vibrations.



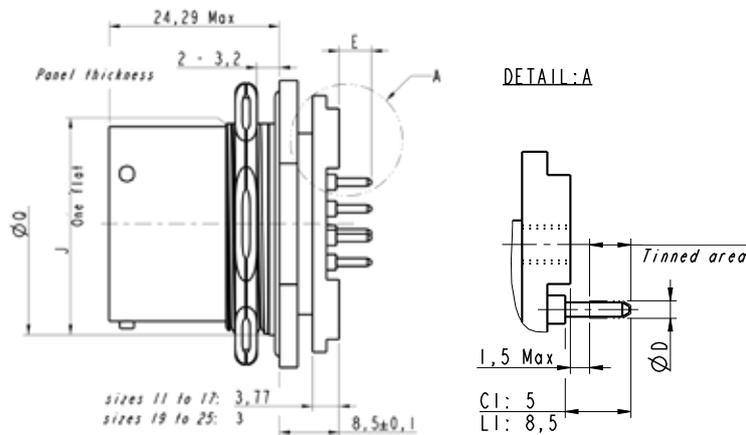
Overall dimensions - RECEPTACLE

Jam-nut Stand-off receptacle

Part number type: **RNJ27CI XX F459 XX**
RNJ27LI XX F459 XX

	E	
	CI	LI
Socket contacts	3.99 - 5.07	7.49 - 8.57
Pin contacts	4.19 - 5.27	7.69 - 8.77

Contact size	ØD _{MAX}	
	CI	LI
22D	0.6	0.8
20	0.8	0.8
16	1.25	1.25
12	1.8	1.8

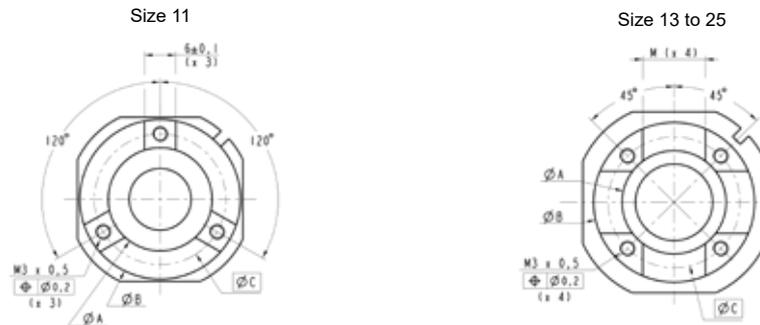


Consult us for stand-off receptacles with high speed contacts

X: see the How to order to complete your part number

Size	ØQ ^{+0 -0.05}	J ^{+0 -0.05}	ØQ ^{+0 -0.05}
11	20.83	19.23	20.83
13	25.53	23.96	25.53
15	28.75	27.23	28.75
17	31.93	30.38	31.93
19	35.10	33.56	35.10
21	38.23	36.76	38.23
23	41.45	39.84	41.45
25	44.63	43.11	44.63

PCB mounting



Size	ØA ± 0.15	ØB ± 0.15	ØC	M ^{+0.2 -0}
11	19.9	30.8	25.2	-
13	19.9	30.8	25.25	12
15	23	33.9	28.42	14
17	26	36.8	31.42	16
19	29.5	40.4	35.03	18
21	32.2	43.2	37.82	20
23	35.5	46.5	41.12	23
25	38.6	49.6	44.3	25

RNJ - RACK & PANEL - ENHANCED SEALING



Helium leakage limited to 1.10^{-6} cm^3 per second

Description

RNJ27ETC*** / ETCI*** / ETLI*** receptacles with transversal sealing are derived from the standard MIL-DTL-38999 Series I Jam nut receptacles. The inserts have been modified to ensure an air leakage of $< 1.10^{-6} \text{ cm}^3/\text{s}$ under 1 bar of differential pressure.

Main features

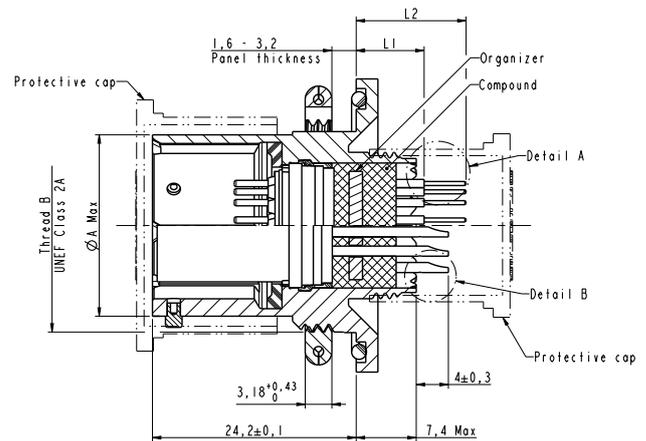
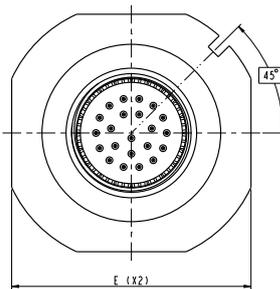
- Receptacles with enhanced sealing – interchangeable with MIL-DTL-38999 Series I plugs.
- Available with solder cup or PC tails contacts.
- High speed contacts available (consult us).
- Operating Temperature range: $-55 / +125^\circ\text{C}$.
- Initial sealing performance: Helium leakage $< 1.10^{-6} \text{ cm}^3/\text{s}$ under 1 bar of differential pressure.
- Designed for unpressurized area.
- Avoid any stress on contacts before, during and after wave or iron soldering process.
- With Stand-off shells, shells must be threaded onto the PC Board before any soldering.
- We advise to use HFE cleaning product and strongly not recommend any Vigon based one.

CONTACTS TERMINATIONS	DEVIATION
Solder Cup contacts	ETC
PC Tail - Standard Length	ETCI
PC Tail - Long Length	ETLI

Jam-nut receptacle - Enhanced sealing

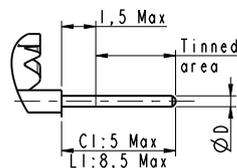
Dimensions not listed are identical to crimp connectors.

Part number type:
RNJ 27 X ETC X
RNJ 27 X ETCI X
RNJ 27 X ETLI X

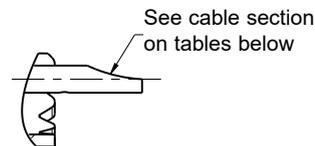


X: see the How to order to complete your part number

Detail A :



Detail B :



Contact size	Signal contacts			
	ØD Max			
	CI Contacts		LI Contacts	
	Gold tail	Tinned tail	Gold tail	Tinned tail
22D	0.5	0.6	0.7	0.8
20	0.7	0.8	0.7	0.8
16	1.15	1.25	1.15	1.25
12	1.7	1.8	1.7	1.8

ETC contacts	
Contact size	Solder cup section
22D	0.34mm ²
20	0.6mm ²
16	1.34mm ²

	CI Contacts		LI Contacts	
	Pin contact	L1	L2	
Pin contact	L1	7.9 to 8.6	L2	11.4 to 12.1
Socket contact	L1	12.8 to 13.7	L2	16.3 to 17.2
Pin contact	L1	7.7 to 8.4	L2	11.2 to 11.9
Socket contact	L1	12.6 to 13.5	L2	16.1 to 17

HOW TO ORDER - RNJ - RACK & PANEL - ENHANCED SEALING

Amphenol Designations - RNJ Receptacles with enhanced sealing

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Series	Shell type	Material	Quadrax contacts	Enhanced sealing	Contact type	Contact arrangement	Contact gender	Keying	Plating	Deviation
RNJ	27	KE	-	ET	C	15-35	P	N	023	-

1. Shell type

27	Receptacle	Jam nut
67		Square flange

2. Material

Blank	Aluminium
KE	Stainless steel

3. Quadrax contacts

Blank	Without quadrax contacts
Q	With quadrax contacts

4. Enhanced sealing

ET	Enhanced sealing
EH	High performance enhanced sealing

5. Contact type - Non-removable contacts only

CI	PC Tail contacts - Standard length
LI	PC Tail contacts - Long length
C	Solder cup contacts

6. Contact arrangements

Refer to page 18 for contact arrangements
First number represents the shell size and second number is the contact arrangement.

7. Contact gender

P	Pin (500 cycles)
S	Socket (500 cycles)

Enhanced sealing receptacles are always delivered with contacts.

8. Keying

N
(for normal) For other coding possibilities, please consult us

9. Plating

	Shell material	Shell finish
014	Aluminium	Olive drab cadmium
023		Nickel ✓
033K		Black Zinc Nickel ✓
078		Black Zinc Nickel CrVI free ✓
076		Tin Zinc (consult us) ✓
Blank	Stainless steel	Passivated ✓

For other materials/platings, please consult us.

10. Deviation

Shell style	PC Tail finish / Tinning				Shell type compatibility
	Tin lead	Silver tin	Silver tin copper	Gold	
Standard	F404	F404LF	F404LFC	Blank	27/67
Stand-off*	F459	F459LF	F459LFC	F459H	27/67
Reduced flange	F312	F312LF	F312LFC	F312H	27
Stand-off reduced flange	F059	F059LF	F059LFC	F059H	27

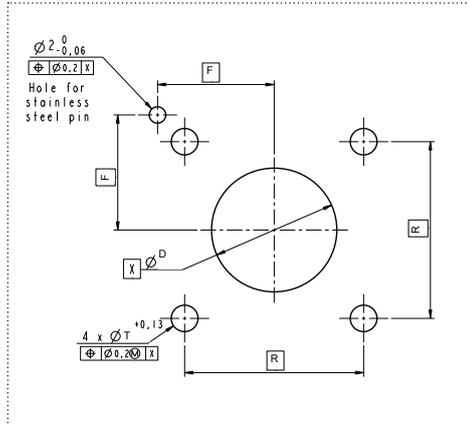
* For receptacles only (consult us for plugs)
For other deviations, please consult us.

✓ : RoHS compliant

RNJ - RACK & PANEL

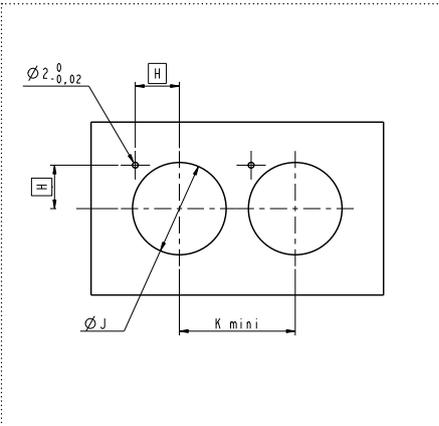
Panel holes dimensions

Square flange receptacle - RNJ67



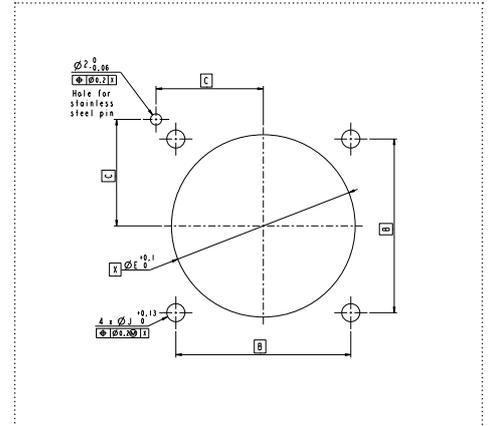
Size	R	F	ØT ^{+0.13/0}	ØD ^{+0.1/0}
11	21.5	14	3.22	15.05
13	24.6	15.5	3.22	18.05
15	26.6	16.5	3.22	21.05
17	29	18	3.22	24.05
19	32	19.5	3.22	28.05
21	34	20.5	3.22	31.05
23	36	21.5	3.7	34.05
25	38	22.5	3.7	37.05

Jam nut receptacle - RNJ27



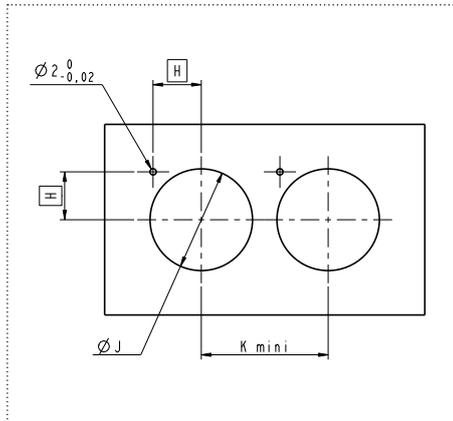
Size	H	ØJ ^{+0.1/0}	K _{MIN}
11	11.69	20.88	32.6
13	12.81	25.58	36.0
15	13.94	28.80	39.6
17	15.05	31.98	43.3
19	16.88	35.15	47.0
21	18.00	38.28	50.6
23	19.12	41.50	54.2
25	20.24	44.68	59.7

Square flange plug - RNJ66



Size	B	C	ØJ ^{+0.13/0}	ØE ^{+0.1/0}
11	31	19	3.22	32.55
13	33	20	3.22	36.05
15	36	21	3.22	38.55
17	38	22.5	3.22	42.05
19	40	23.5	3.22	46.55
21	43	25	3.22	49.55
23	45	26	3.7	53.05
25	46	27	3.7	54.05

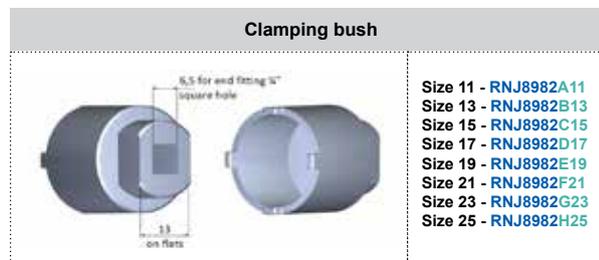
Jam nut plug - RNJ26



Size	V _{MIN}	W	ØJ ^{+0.1/0}
11	32.6	12.81	25.58
13	36.0	13.94	28.80
15	39.6	15.06	31.98
17	43.3	16.88	35.15
19	47.0	18.00	38.28
21	50.6	19.12	41.50
23	54.2	20.24	44.68
25	59.7	20.30	48.08

Plug rear accessory assembly & Clamping bush

RNJ26*** & RNJ66*** plugs are compatible with M85049 accessories for 38999 Series I connectors. Locking glue has to be put on the rear thread of the connector before rear accessory assembly. The use of a holding support to mount the accessory on the plug is mandatory to prevent strain on the internal set of the plug.



Size	A11	B13	C15	D17	E19	F21	G23	H25
Recommended coupling torque (Nm)	8 ± 0.4	11 ± 0.5	11 ± 0.5	14 ± 0.7	14 ± 0.7	17 ± 0.8	17 ± 0.8	20 ± 1

Weight

In grams, average (includes contacts) ± 15%

Size	Jam nut plug RNJ26** / HE308 26**		Jam nut receptacle RNJ27** / HE30827**	
	Pin	Socket	Pin	Socket
11	24	28	16	19.5
13	28	34	22.5	28
15	32	41	28	37
17	38	51	33	46.5
19	48	65	41.5	58.5
21	67	87	50.5	71
23	83	111	55.5	82.5
25	104	125	63	98

Plug installation tool - Spanner for castle nut



Size	Amphenol
11	RNJ8982 A11
13	RNJ8982 B13
15	RNJ8982 C15
17	RNJ8982 D17
19	RNJ8982 E19
21	RNJ8982 F21
23	RNJ8982 G23
25	RNJ8982 H25

RNJ - RACK & PANEL - REDUCED FLANGE



When small dimensions & lower weight are critical

Description

Rack and Panel connectors offering realignment and floatability for blind mate applications in harsh environments, with a smaller flange and weight.

Main features

- Derived from RNJ, same performances, floatability and realignment
- Higher density on panel and lower weight than Standard RNJ
- Available for Jam nut plug and receptacle only
- Compatible with RNJ Standard range (including Square Flange)
- Delivered with 38999 series I and III inserts
- Contacts: Crimp, PC tails, with or without stand off.

MATERIALS AND PLATINGS

- Aluminum with Olive drab cadmium, Tin Zinc, Nickel, Black zinc nickel plating
- Stainless steel passivated

with standard castle nut
F312 or F059



with safety castle nut
F311 or F058

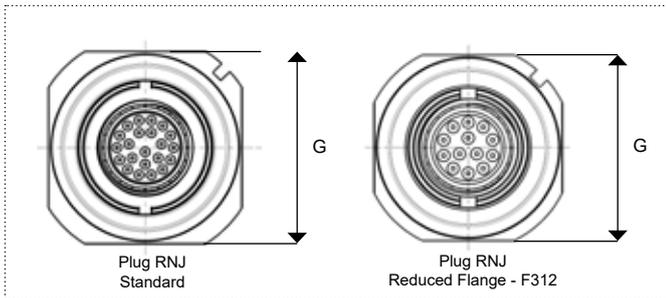


See part how to order page 197

AMPHENOL	DEVIATIONS
Crimp and standard PC tail with standard castle nut	RNJ**F312
Crimp and standard PC tail with safety castle nut	RNJ**F311
Stand-off PC tail with standard castle nut	RNJ**F059
Stand-off PC tail with safety castle nut	RNJ**F058

Footprint saving

Average 30% Footprint reduction



Shell Size	Standard RNJ G max (mm)	RNJ F312/F059 G max (mm)	Footprint Reduction
11	32,16	27,03	-39,07%
13	35,34	31,03	-33,24%
15	38,51	34,53	-29,88%
17	41,69	38,53	-29,89%
19	46,43	41,53	-28,74%
21	49,64	44,53	-27,86%
23	52,78	47,53	-24,36%
25	54,03	50,53	-19,06%

Footprint dimensions are the same in Standard & Stand-off versions

Options

**F312 / F311
Reduced Flange**
For Crimp & PC Tails
contacts *

Plug **RNJ26 F312**
For crimp applications



Plug **RNJ46 F312**
For PC Tails applications *



Receptacle **RNJ27 F312**



Plug **RNJ46 F059**



Receptacle **RNJ27 F059**



Online configurator & 3D
model download



* Please note that we strongly recommend not using PC Tails on plug unless soldering on flex

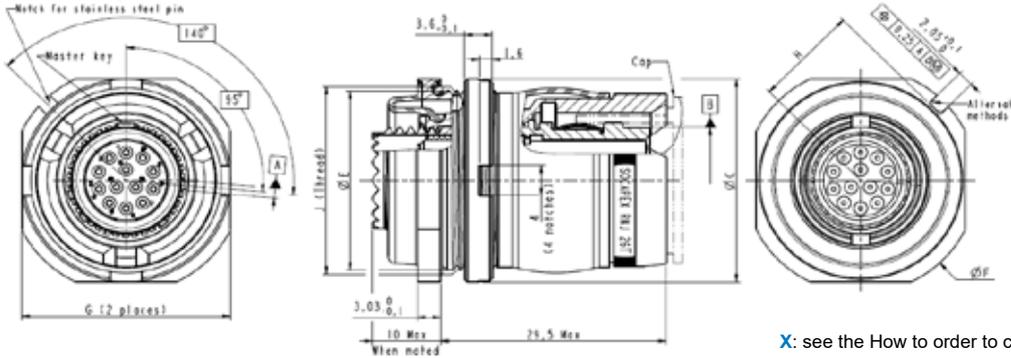
RNJ - RACK & PANEL - REDUCED FLANGE



Overall dimensions - PLUG

Jam nut plug reduced flange

Part number type: [RNJ26 XXX F312 / RNJ46 XXX F312](#)
[RNJ26 XXX F311 / RNJ46 XXX F311](#)



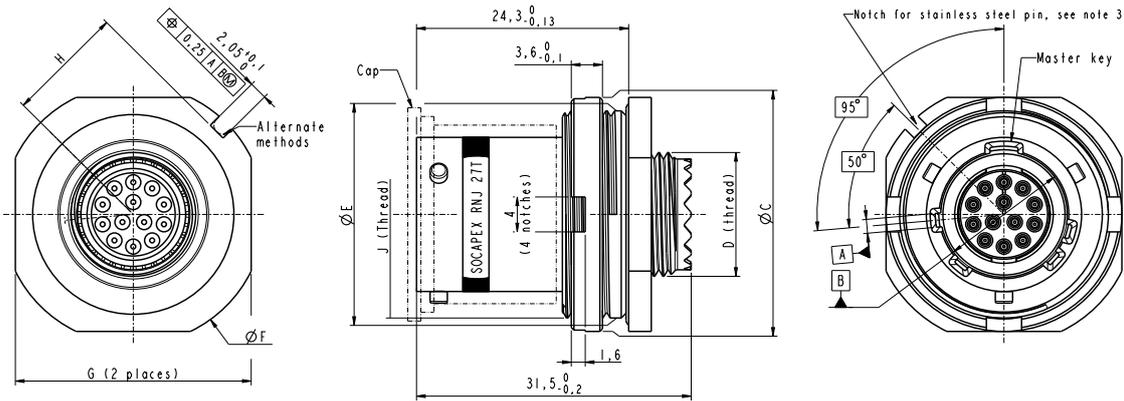
X: see the How to order to complete your part number

Size	ØC +0 -0.1	ØE +0 -0.1	ØF +0 -0.2	G +0 -0.1	H +0 -0.1	J Thread - 6 g
11	27.03	23.93	30.03	27.03	13.5	M24 x 1
13	31.03	27.93	34.03	31.03	15.5	M28 x 1
15	34.43	30.93	37.53	34.53	17.1	M31 x 1
17	38.43	34.93	41.53	38.53	19.1	M35 x 1
19	41.43	37.93	44.53	41.53	20.6	M38 x 1
21	44.43	40.93	47.53	44.53	22.1	M41 x 1
23	47.43	43.93	50.53	47.53	23.6	M44 x 1
25	50.43	46.93	53.53	50.53	25.1	M47 x 1

Overall dimensions - RECEPTACLE

Jam nut receptacle reduced flange

Part number type: [RNJ27 XXX F312](#)
[RNJ27 XXX F311](#)



X: see the How to order to complete your part number

Size	ØC +0 -0.1	D Thread Class 2A	ØE +0 -0.1	ØF +0 -0.2	G +0 -0.1	H +0 -0.1	J Thread - 6 g
11	27.03	0.5625-24	23.93	30.03	27.03	13.5	M24 x 1
13	31.03	0.6875-24	27.93	34.03	31.03	15.5	M28 x 1
15	34.43	0.8125-20	30.93	37.53	34.53	17.1	M31 x 1
17	38.43	0.9375-20	34.93	41.53	38.53	19.1	M35 x 1
19	41.43	1.0625-18	37.93	44.53	41.53	20.6	M38 x 1
21	44.43	1.1875-18	40.93	47.53	44.53	22.1	M41 x 1
23	47.43	1.3125-18	43.93	50.53	47.53	23.6	M44 x 1
25	50.43	1.4375-18	46.93	53.53	50.53	25.1	M47 x 1

RNJ - RACK & PANEL - REDUCED FLANGE

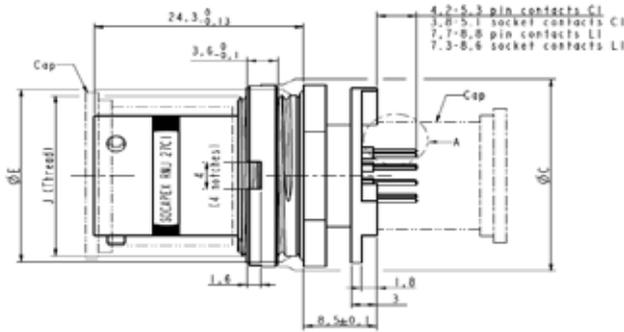


Overall dimensions - RECEPTACLE

Jam-nut receptacle reduced flange Stand-off

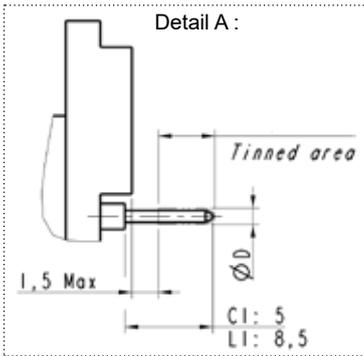
For others dimensions please refer to RNJ Jam nut receptacle Reduced flange

Part number type: **RNJ27 XXX F059**
RNJ27 XXX F058



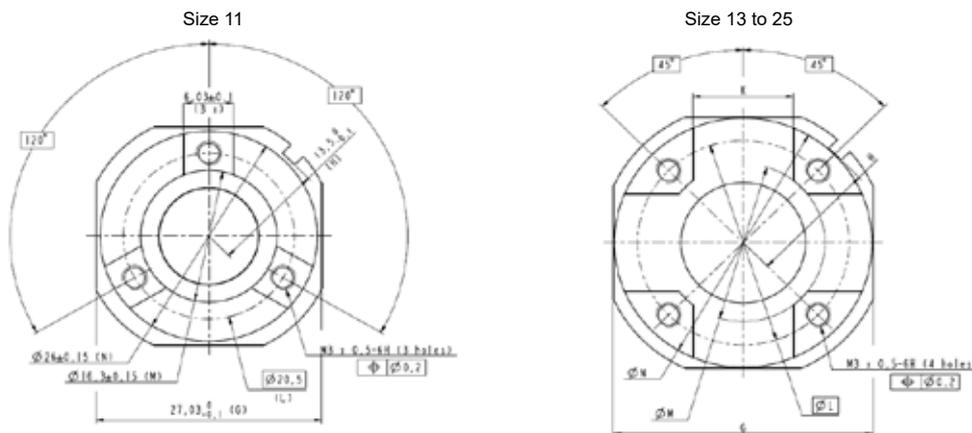
Consult us for stand-off receptacles with high speed contacts

X: see the How to order to complete your part number



Contact size	Ø D Max			
	CI (5mm contact length)		LI (8.5 mm contact length)	
	Gold plated contacts	Tin lead, Silver tin or Silver tin copper plated contacts	Gold plated contacts	Tin lead, Silver tin or Silver tin copper plated contacts
22	0.5	0.6	0.7	0.8
20	0.7	0.8	0.7	0.8
16	1.15	1.25	1.15	1.25
12	1.7	1.8	1.7	1.8

PCB mounting for reduced flange stand-off receptacles



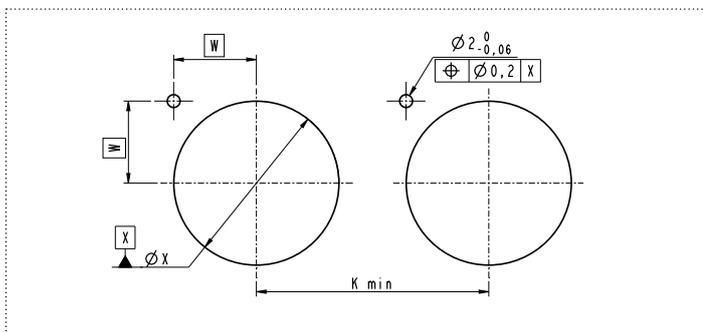
Size	^{+0.2} K ₋₀	ØL	ØM ±0.15	ØN ±0.15
11	-	20.50	16.3	26
13	11.97	25.25	19.5	30.8
15	13.97	28.42	22.8	33.9
17	15.97	31.42	25.9	36.8
19	17.97	35.03	29.1	40.4
21	19.97	37.82	32.2	43.2
23	22.97	41.12	35.4	46.5
25	24.97	44.30	38.6	49.6

RNJ - RACK & PANEL - REDUCED FLANGE



Panel holes - PLUG & RECEPTACLE

Reduced flange plug & receptacle



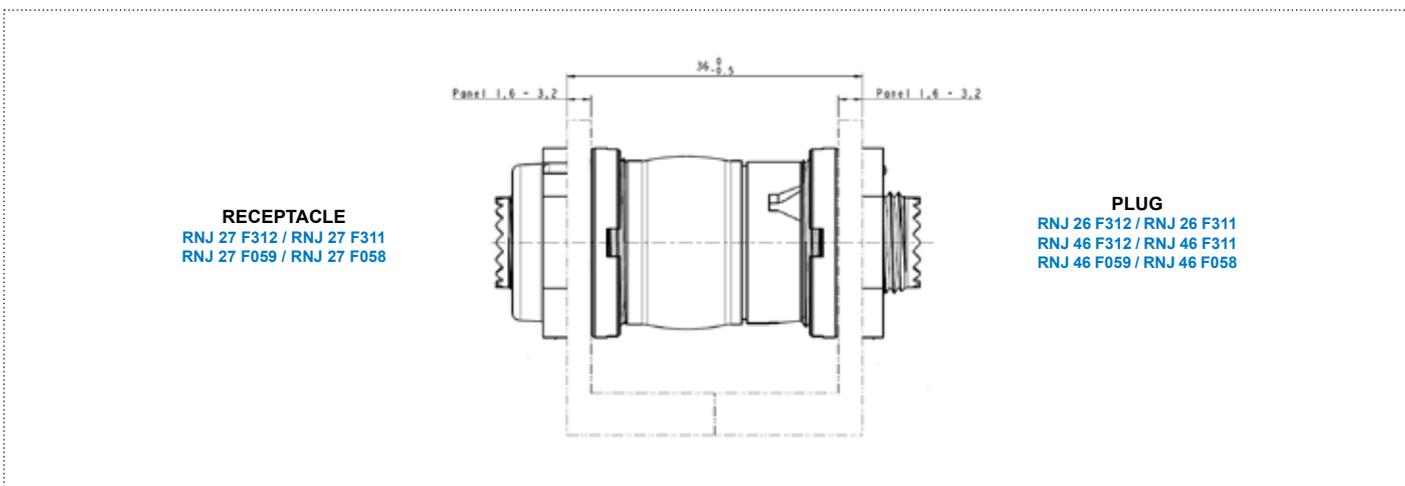
Size	K _{MIN}	W	ØX ^{+0,1}
11	27,6	10,3	24
13	31,6	11,7	28
15	35,1	12,9	31
17	39,1	14,3	35
19	42,1	15,4	38
21	45,1	16,4	41
23	48,1	17,5	44
25	51,1	18,6	47

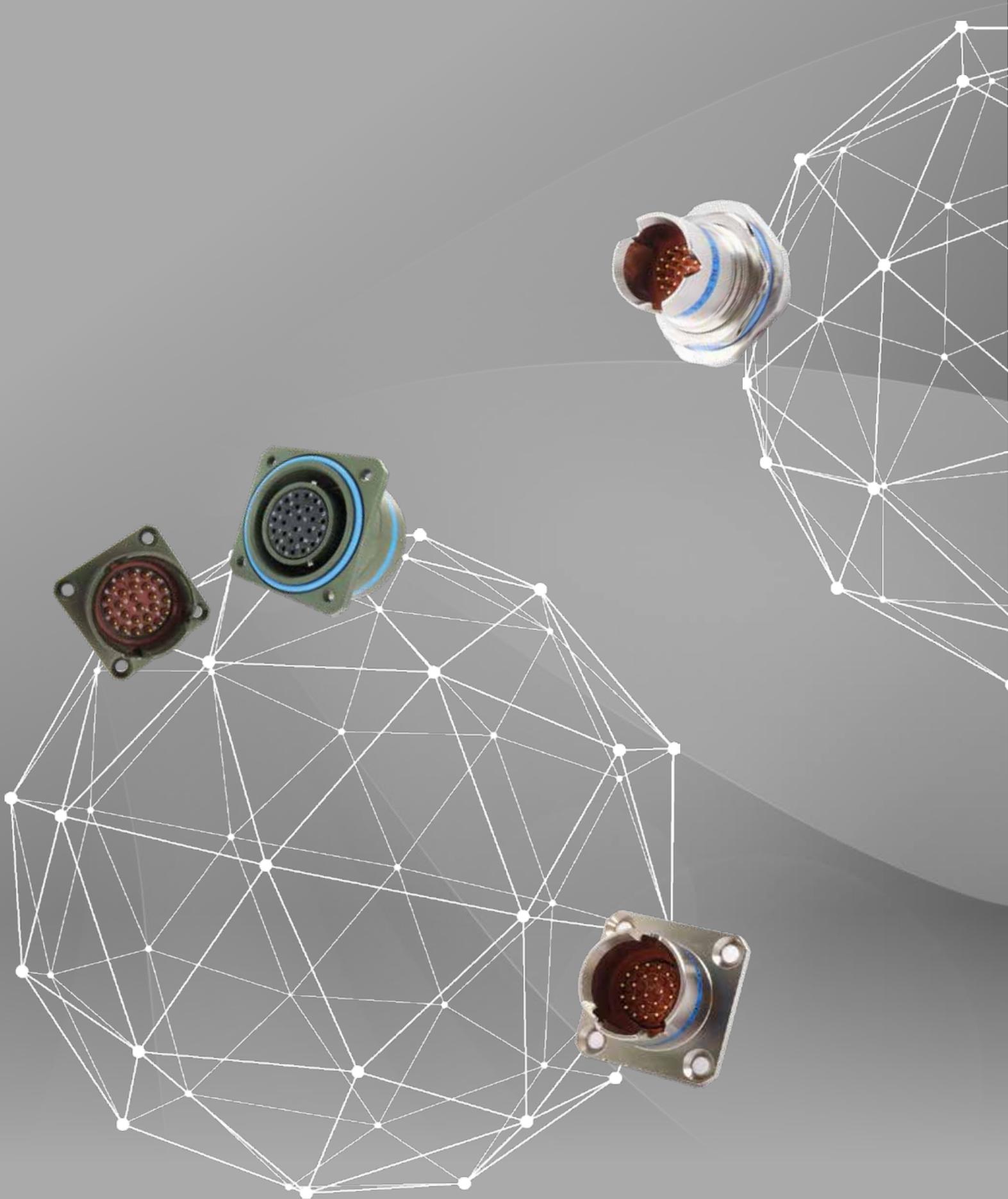
Panel integration

Mandatory distance to guarantee the product performances.

Guiding system: the system must ensure the right positioning of the rack independently of the connectors.

No mechanical stress must be applied to the rear of the plug (wires).





RNJ LOW PROFILE - RACK & PANEL



Table of contents

RNJ LP RANGE	39
RNJ Low Profile - Rack & Panel	40
RNJ LP - Stand-off	46
RNJ LP - Enhanced sealing	48

RNJ LOW PROFILE - RACK & PANEL



Description

Rack and panel range using MIL-DTL-38999 Series III inserts. Realignment capabilities & floatability on 3 axis. Connection between a rack (moving unit) and a panel (fixed structure) without manually coupling/uncoupling the connectors. Low profile version for reduced distance between the racks: 7.3mm panel to panel distance (Square flange) or 16mm (Jam nut) instead of 36mm with RNJ and RNJ reduced flange.

Main features

AXIAL, ANGULAR AND LONGITUDINAL FLOATABILITY

MIL-DTL-38999 COMPONENTS

- Delivered with MIL-DTL-38999 series III inserts
- AS39029 contacts and tooling
- Compatible with M85049 backshells for 38999 series III connectors

RUGGED & OPTIMIZED DESIGN

- Low profile: shorter distance between panels (same than ARINC404).
- Light weight: 20% weight savings versus standard RNJ (plug) for square flange.
- Contacts protection: 100% scoop proof design

EMI/EMP SHIELDING

- Grounding fingers ensuring shielding before contact mating.

SEALING

- IPX7 when fully mated and cabled
- Plug rear membrane protected by a metal cap on plug
- O-rings provided on both jam nut and square flange connectors

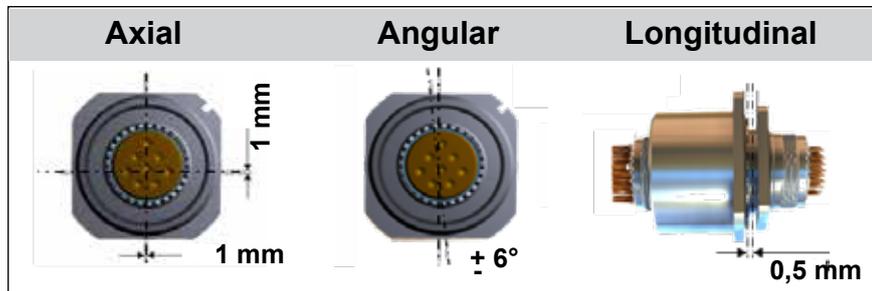
MATERIALS & PLATINGS

- Aluminum with Olive drab cadmium / Black zinc nickel / Nickel / Tin Zinc plating
- Passivated Stainless steel

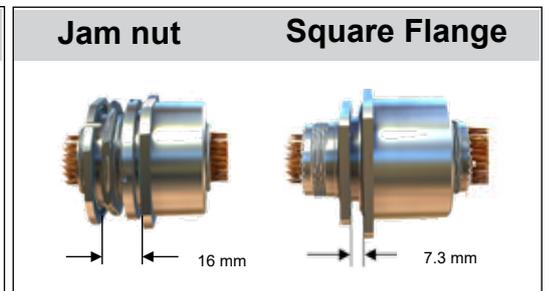
OPTIONS

- Crimp or PC tail contact terminations
- Power versions from 60 to 100A (consult us for higher power)
- Jam nut or Square flange plugs & receptacles
- Stand-off option on receptacles [RNJLP27***F459](#) & [RNJLP67***F459](#).

Realignment axis



Distance between panels



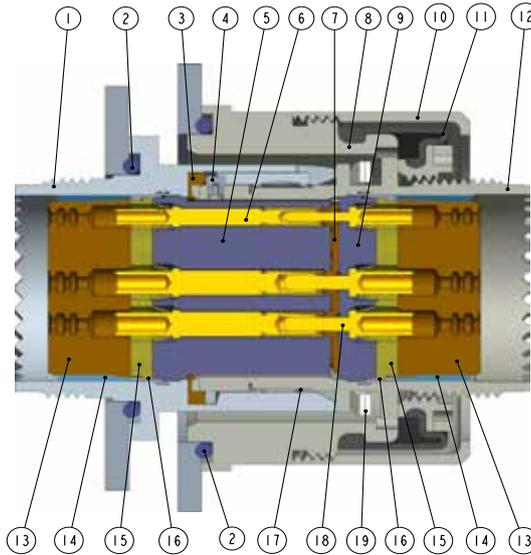
Options

		JAM NUT	SQUARE FLANGE
Plug RNJLP*6	Crimp	RNJLP26** 	RNJLP66**
	PCB (flex applications)	RNJLP46*1* without rear thread - dedicated to PCB contacts	RNJLP86*1* without rear thread - dedicated to PCB contacts
Receptacle RNJLP*7	Crimp	RNJLP27** 	RNJLP67**
	PCB	RNJLP27*1* without rear thread - dedicated to PCB contacts	RNJLP67*1* without rear thread - dedicated to PCB contacts
		RNJLP27*1*F459 Stand-off 	

RNJ LOW PROFILE - RACK & PANEL

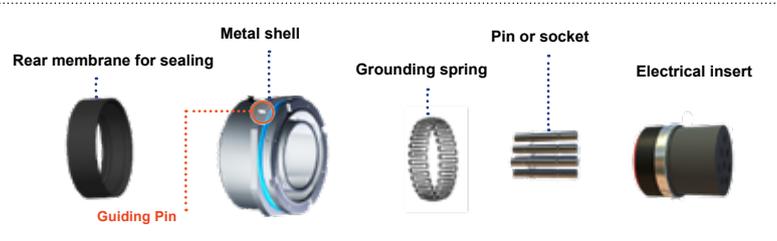
Presentation

- 1 - Receptacle shell
- 2 - Panel seal
- 3 - Gasket
- 4 - Rivet
- 5 - Socket insert
- 6 - Socket crimp contact
- 7 - Interfacial seal
- 8 - Plug socket
- 9 - Pin insert
- 10 - Protection cover



- 11 - Membrane
- 12 - Plug shell
- 13 - Grommet
- 14 - Compound
- 15 - Retention disc
- 16 - TPRS bond
- 17 - Grounding spring
- 18 - Pin crimp contact
- 19 - Wave spring

Plug concept

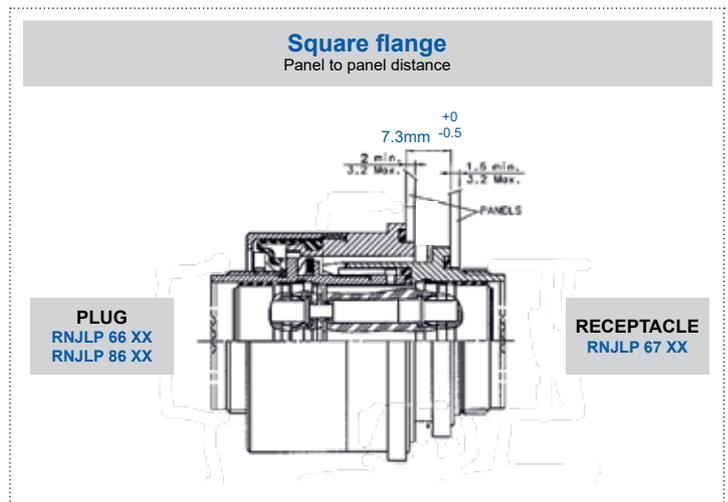
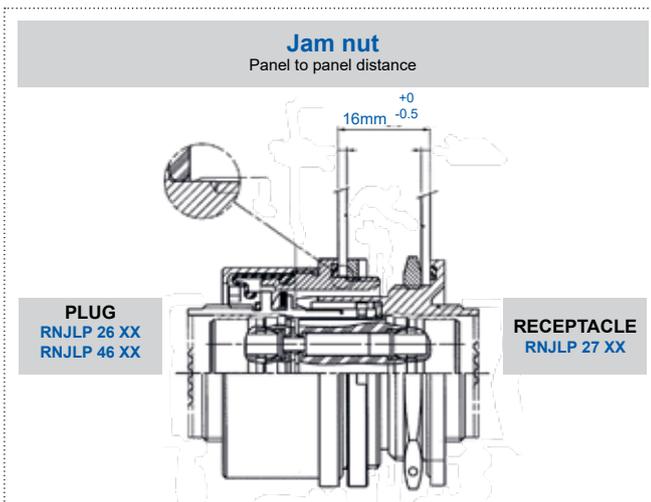


Online configurator & 3D model download



Panel integration

- Mandatory distance to guarantee the product performances.
- Guiding system: the system must ensure the right positioning of the rack independently of the connectors.
- No mechanical stress must be applied to the rear of the plug (wires or flex).



Panel mounting direction

	Plug		Receptacle		
	Jam nut RNJLP26/46	Square flange RNJLP66/86	Jam nut RNJLP27	Jam nut stand-off RNJLP27***F459	Square flange RNJLP67
Back panel mounting		✓			
Front panel mounting		-			✓

For other panel mouting directions, please consult us.

HOW TO ORDER - RNJ LOW PROFILE - RACK & PANEL

Amphenol Designations - RNJLP Crimp connectors

1.	2.	3.	4.	5.	6.	7.	8.	
Series	Shell type	Material	Quadrax contacts	Contacts arrangement	Contact gender	Keying	Plating	With or without contacts
RNJLP	26	Blank	-	15-35	S	N	014	LC

1. Shell type

27	Receptacle	Jam-nut
67		Square flange
26	Plug	Jam-nut
66		Square flange

2. Material

T	Aluminum
KE	Stainless steel

3. Quadrax contacts

Blank	Without quadrax contacts
Q	With quadrax contacts

4. Contacts arrangements

Refer to page 18 for contact arrangements
First number represents the shell size and second number is the contact arrangement

5. Contact gender

P	Pin (500 cycles)
S	Socket (500 cycles)

6. Keying

N (for normal) For other coding options, please consult us

7. Plating

	Shell material	Shell finish
014	Aluminum	Olive drab cadmium
023		Nickel ✓
033K		Black zinc nickel ✓
078		Black Zinc Nickel without CrVI ✓
076		Tin Zinc (consult us) ✓
Blank	Stainless steel	Passivated ✓

For other materials/platings, please consult us.

8. With or without contacts

Blank	Connector delivered with contacts
LC	Connector delivered without contacts

Amphenol Designations - RNJLP PCB connectors

1.	2.	3.	4.	5.	6.	7.	8.	9.	
Series	Shell type	Material	Quadrax contacts	PC tails	Contacts arrangement	Contact gender	Keying	Plating	Deviation
RNJLP	46	KE	Q	CI	15-35	P	N	033K	-

1. Shell type

27	Receptacle	Jam-nut
67		Square flange
46	Plug	Jam-nut without rear accessory possibility
86		Square flange without rear accessory possibility

2. Material

Blank	Aluminum
KE	Stainless steel

3. Quadrax contacts

Blank	Without quadrax contacts
Q	With quadrax contacts

4. PC tails

CI	PC Tail contacts - Standard length
LI	PC Tail contacts - Long length

5. Contacts arrangements

Refer to page 18 for contact arrangements
First number represents the shell size and second number is the contact arrangement

6. Contact gender

P	Pin (500 cycles)
S	Socket (500 cycles)

Connectors with PC Tail contacts are always delivered with contacts.

7. Keying

N (for normal) For other coding possibilities, please consult us

8. Plating

	Shell material	Shell finish
014	Aluminum	Olive drab cadmium
023		Nickel ✓
033K		Black zinc nickel ✓
076		Tin Zinc (consult us) ✓
078		Black Zinc Nickel without CrVI ✓
Blank	Stainless steel	Passivated ✓

For other materials/platings, please consult us.

9. Deviation

Shell style	PC Tail finish / Tinning				Shell type compatibility
	Tin lead	Silver tin	Silver tin copper	Gold	
Standard	F404	F404LF ✓	F404LFC ✓	Blank ✓	All
Stand-off *	F459	F459LF ✓	F459LFC ✓	F459H ✓	27 / 67

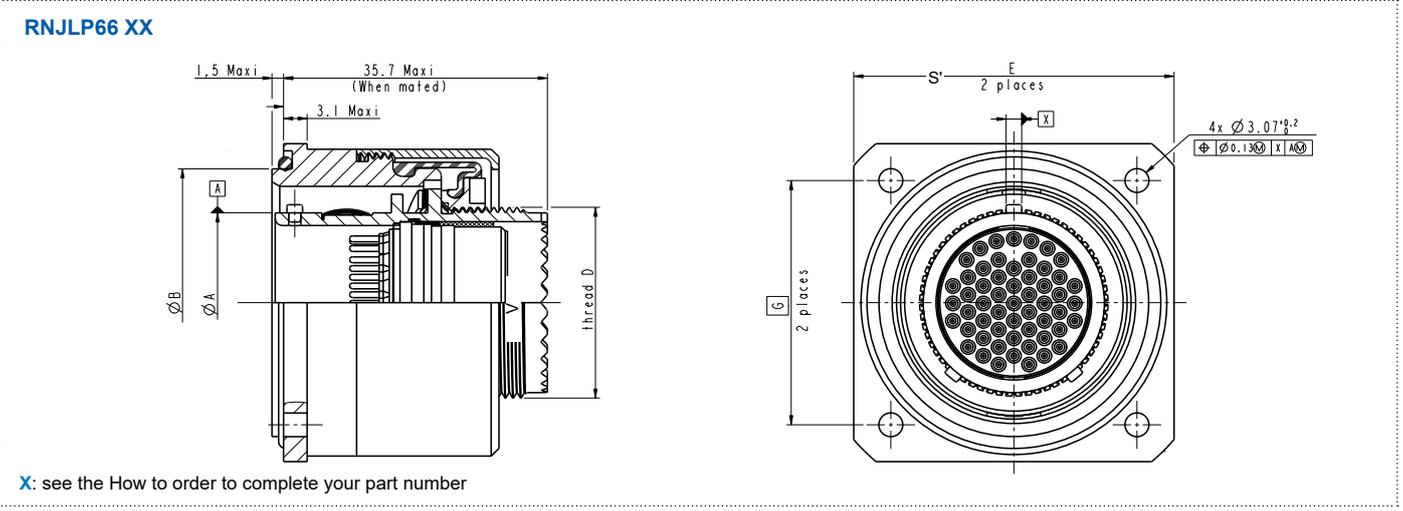
* For receptacles only, for plugs consult us.
For other deviations, please consult us.

RNJ LOW PROFILE - RACK & PANEL

Overall dimensions - PLUG

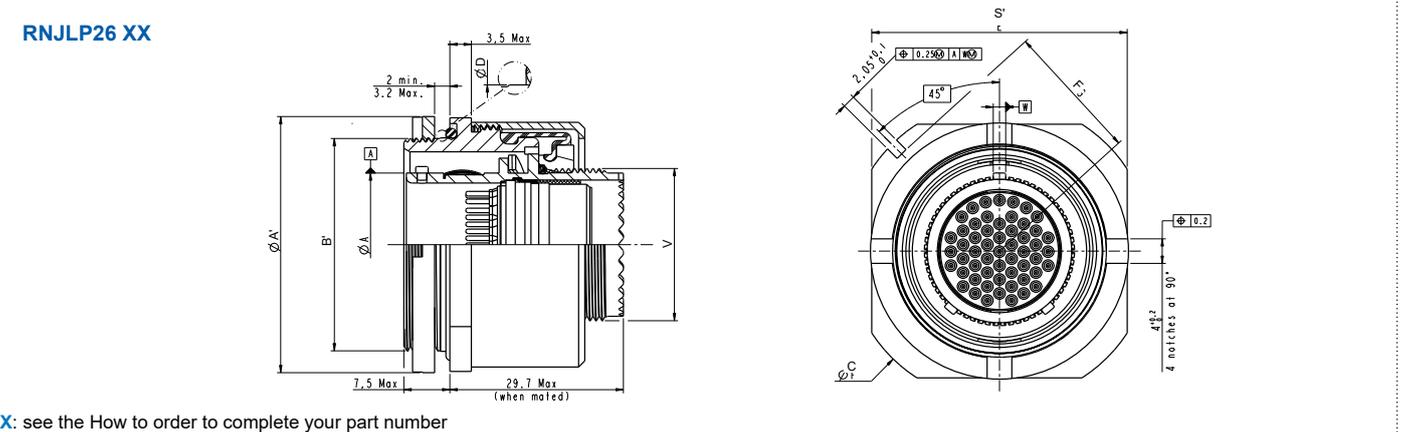
Accessory interface conform to MIL-DTL-38999 Series III. A locating pin is provided to ensure proper positioning of the connector. Available without rear thread for PC Tails applications (on flex) contacts (CI or LI) : RNJLP66 or RNJLP86.

Square flange plug



Size	ØA +0 -0.13	ØB +0 -0.05	V thread-metric	S' +0 -0.25	R'
11	14.38	25.53	M15x1-6g	33.60	25.5
13	17.23	28.75	M18x1-6g	36.30	28
15	20.40	31.93	M22x1-6g	39.50	30
17	23.58	35.10	M25x1-6g	41.69	32
19	26.24	38.23	M28x1-6g	46.43	35
21	29.42	41.45	M31x1-6g	49.64	37
23	32.59	44.63	M34x1-6g	53.00	39.5
25	35.77	48.03	M37x1-6g	54.50	41.5

Jam nut plug



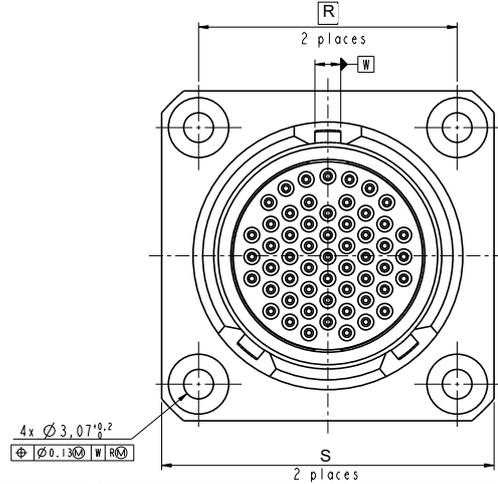
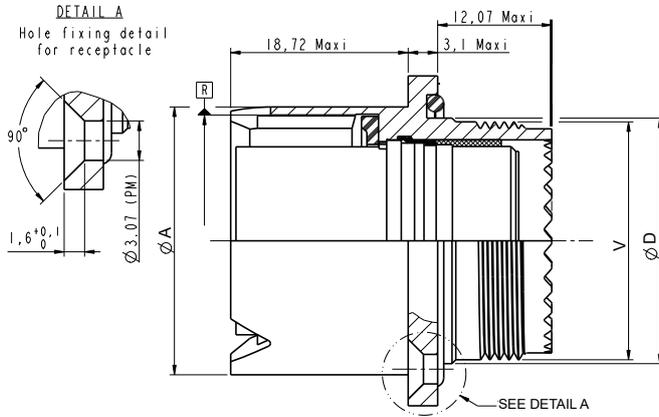
Size	ØA +0 -0.13	B' thread-metric	ØD +0 -0.05	V thread-metric	ØS' +0 -0.25	ØC +0 -0.4	F +0 -0.25	ØA' Max
11	14.38	M25x1-6g	25.53	M15x1-6g	32.16	38.50	16.92	32.10
13	17.23	M28x1-6g	28.75	M18x1-6g	35.34	41.68	18.51	35.10
15	20.40	M32x1-6g	31.93	M22x1-6g	38.51	44.85	20.10	39.10
17	23.58	M35x1-6g	35.10	M25x1-6g	41.69	49.63	22.67	42.10
19	26.24	M38x1-6g	38.23	M28x1-6g	46.43	52.78	24.26	45.70
21	29.42	M41x1-6g	41.45	M31x1-6g	49.64	55.99	25.84	48.70
23	32.59	M44x1-6g	44.63	M34x1-6g	52.78	59.13	27.43	51.70
25	35.77	M48x1-6g	48.03	M37x1-6g	55.93	59.53	27.58	55.70

RNJ LOW PROFILE - RACK & PANEL

Overall dimensions - RECEPTACLE

Square flange receptacle

Part number type: **RNJLP67 XX**

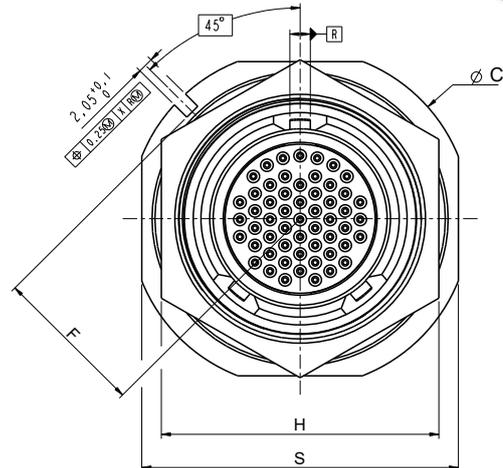
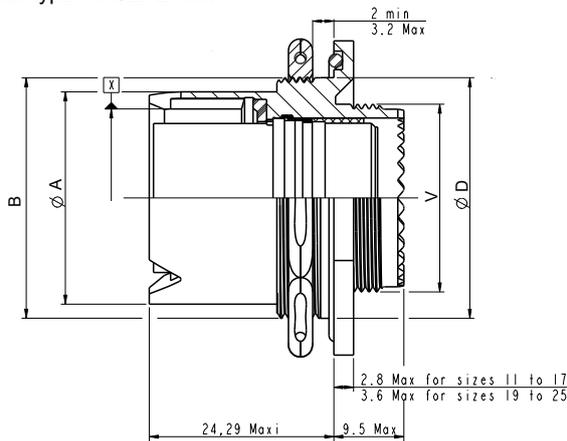


X: see the How to order to complete your part number

Size	$\begin{matrix} +0 \\ \text{ØD} \\ -0.05 \end{matrix}$	V thread-metric	ØA_{Max}	$\begin{matrix} +0 \\ \text{S} \\ -0.3 \end{matrix}$	R
11	16.73	M15x1-6g	18.68	28.3	20.62
13	19.93	M18x1-6g	21.88	30.7	23.01
15	22.83	M22x1-6g	25.08	32.3	24.61
17	25.83	M25x1-6g	28.18	34.7	26.97
19	29.03	M28x1-6g	31.18	37.1	29.36
21	32.23	M31x1-6g	34.38	39.7	31.75
23	34.03	M34x1-6g	37.58	42.9	34.93
25	37.23	M37x1-6g	40.78	46	38.10

Jam nut receptacle

Part number type: **RNJLP27 XX**



X: see the How to order to complete your part number

Size	V thread-metric	ØA_{Max}	B thread-metric	$\begin{matrix} +0 \\ \text{S} \\ -0.4 \end{matrix}$	H_{Max}	$\begin{matrix} +0 \\ \text{F} \\ -0.2 \end{matrix}$	$\begin{matrix} +0 \\ \text{ØC} \\ -0.4 \end{matrix}$	$\begin{matrix} +0 \\ \text{ØD} \\ -0.05 \end{matrix}$
11	M15x1-6g	18.68	M20x1-6g	32.16	25.84	15.33	35.34	20.83
13	M18x1-6g	21.88	M25x1-6g	35.34	30.62	16.92	38.51	25.53
15	M22x1-6g	25.08	M28x1-6g	38.51	33.76	18.51	41.69	28.75
17	M25x1-6g	28.18	M32x1-6g	41.69	36.97	20.10	44.86	31.93
19	M28x1-6g	31.18	M35x1-6g	46.43	40.11	22.67	49.64	35.10
21	M31x1-6g	34.38	M38x1-6g	49.64	43.32	24.26	52.78	38.23
23	M34x1-6g	37.58	M41x1-6g	52.78	46.46	25.84	55.99	41.45
25	M37x1-6g	40.78	M44x1-6g	55.99	51.24	27.43	59.13	44.63

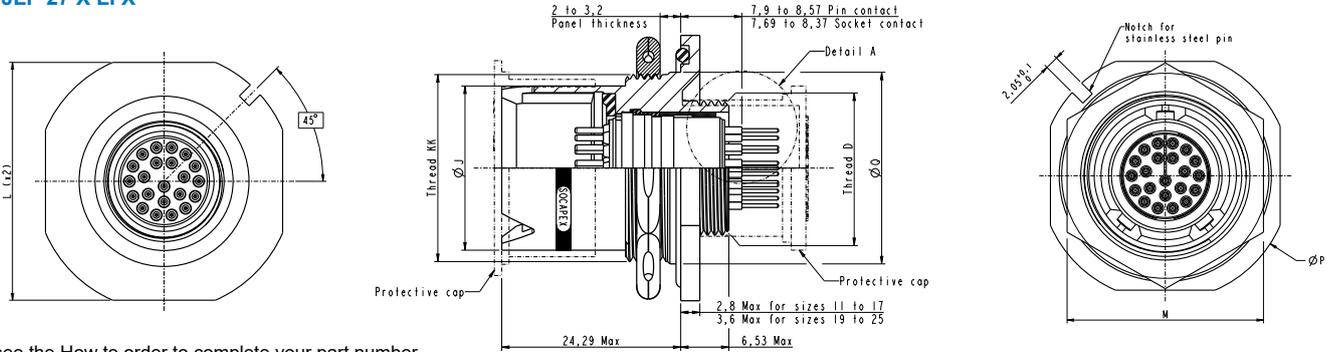
RNJ LOW PROFILE - RACK & PANEL

Overall dimensions - RECEPTACLE

Dimensions not listed are identical to crimp connectors.

Jam nut receptacle - PCB

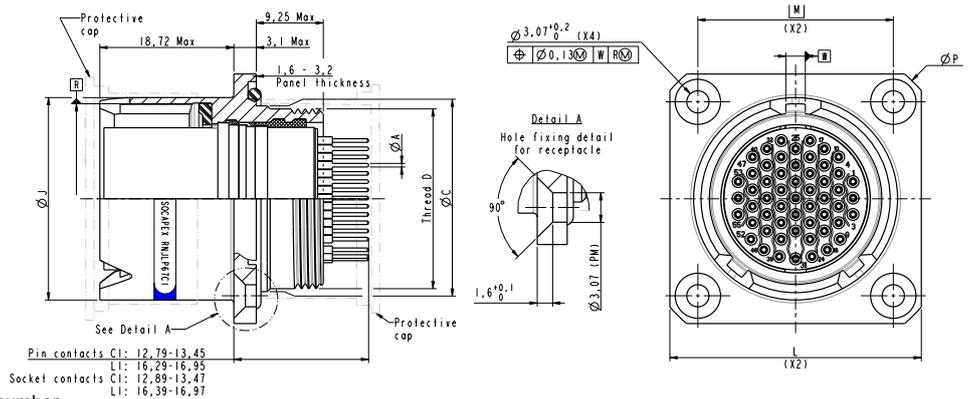
Part number type:
RNJLP 27 X CI X
RNJLP 27 X LI X



X: see the How to order to complete your part number

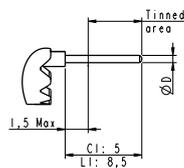
Square flange receptacle - PCB

Part number type:
RNJLP 67 X CI X
RNJLP 67 X LI X



X: see the How to order to complete your part number

Detail A:



Contact size	Ø D Max			
	CI (5mm contact length)		LI (8.5 mm contact length)	
	Gold plated contacts	Tin lead. Silver tin or Silver tin copper plated contacts	Gold plated contacts	Tin lead. Silver tin or Silver tin copper plated contacts
22	0.5	0.6	0.7	0.8
20	0.7	0.8	0.7	0.8
16	1.15	1.25	1.15	1.25
12	1.7	1.8	1.7	1.8

RNJ LOW PROFILE - RACK & PANEL - STAND-OFF RECEPTACLE



Double flange receptacle for PCB tails application

Description

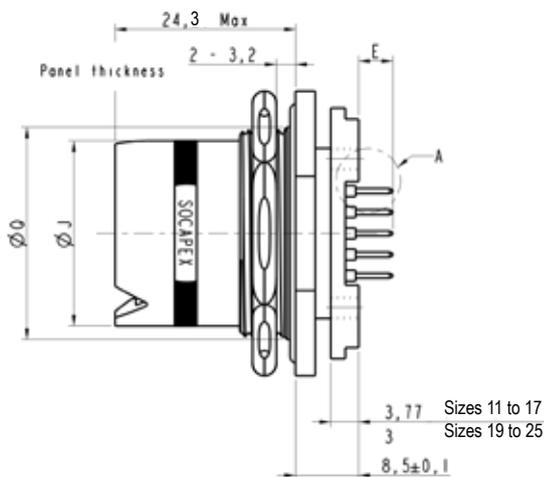
- Receptacle with Stand-off flange shell, for attachment to printed circuit boards.
- Prevent mechanical stress on the contact terminations.
- Provide grounding continuity between PCB and box.
- Increase reliability and resistance to shocks and vibrations.

Overall dimensions - RECEPTACLE

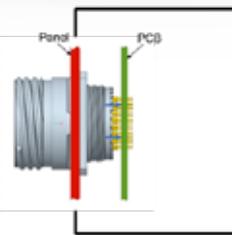
Stand-off jam nut receptacle

RNJLP27 XX F459 X

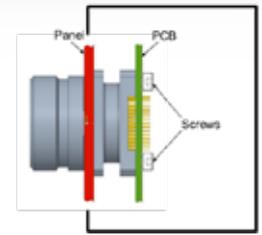
X: see the How to order to complete your part number



Standard PC Tail version



Double Flange PC-Tail version



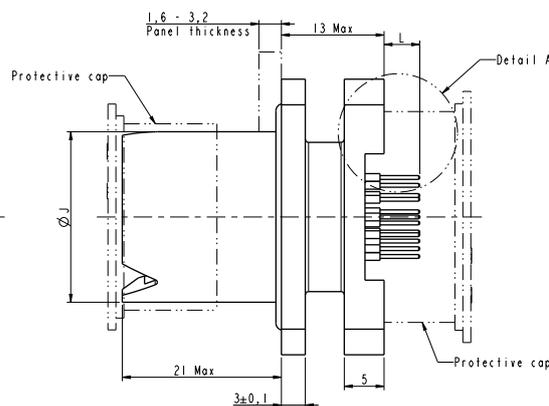
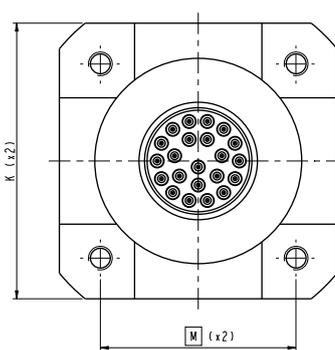
Size	ØJ _{Max}	ØQ ⁺⁰ _{-0.05}
11	18.68	20.83
13	21.88	25.53
15	25.08	28.75
17	28.18	31.93
19	31.18	35.10
21	34.38	38.23
23	37.58	41.45
25	40.78	44.63

E	Contact size			
	22D	20	16	12
CI	Socket: 3.99 – 5.07 Pin: 4.19 – 5.27			
LI	Socket: 7.49 – 8.57 Pin: 7.69 – 8.77			

Consult us for stand-off receptacles with high speed contacts

Stand-off Square flange receptacle

RNJLP67 XX F459 X



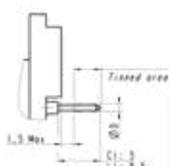
X: see the How to order to complete your part number

Size	ØAA ±0.15	ØJ _{Max}	K Max	M
11	23	16.68	31.7	21.5
13	26	21.88	34.9	24.6
15	29	25.08	38	26.6
17	32	28.18	41.2	29
19	35	31.18	45	32
21	38	34.38	48	34
23	41	37.58	51	36
25	44	40.78	54	38

L	Contact size			
	22D	20	16	12
CI	Pin: 3.93 – 5.30 Socket: 3.73 - 5.10			
LI	Pin: 37.23 - 8.60 Socket: 7.43 - 8.80			

Consult us for stand-off receptacles with high speed contacts.

Detail A :

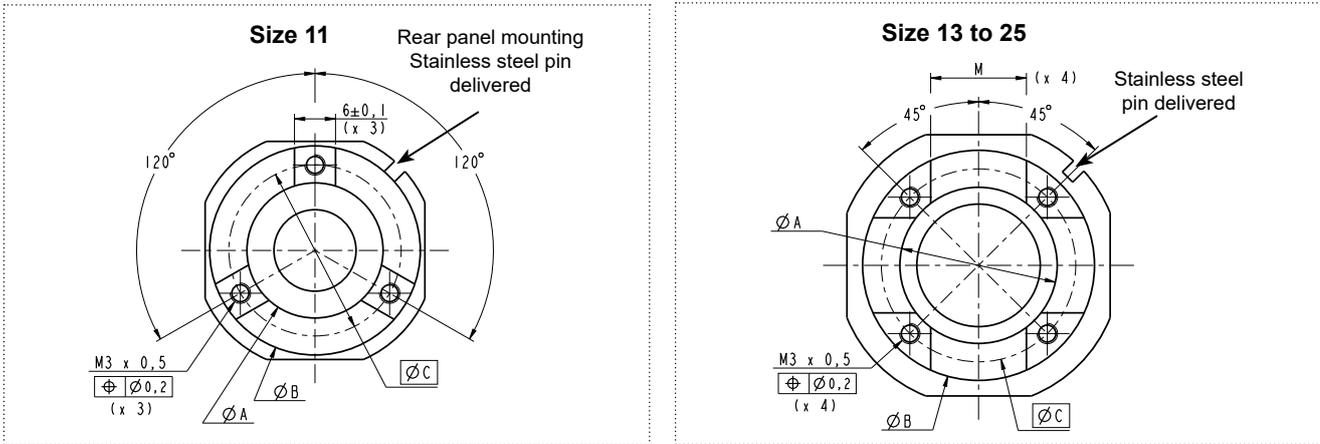


Contact size	Ø D Max			
	CI (5mm contact length)		LI (8.5 mm contact length)	
	Gold plated contacts	Tin lead. Silver tin or Silver tin copper plated contacts	Gold plated contacts	Tin lead. Silver tin or Silver tin copper plated contacts
22	0.5	0.6	0.7	0.8
20	0.7	0.8	0.7	0.8
16	1.15	1.25	1.15	1.25
12	1.7	1.8	1.7	1.8

RNJ LOW PROFILE - RACK & PANEL - STAND-OFF RECEPTACLE

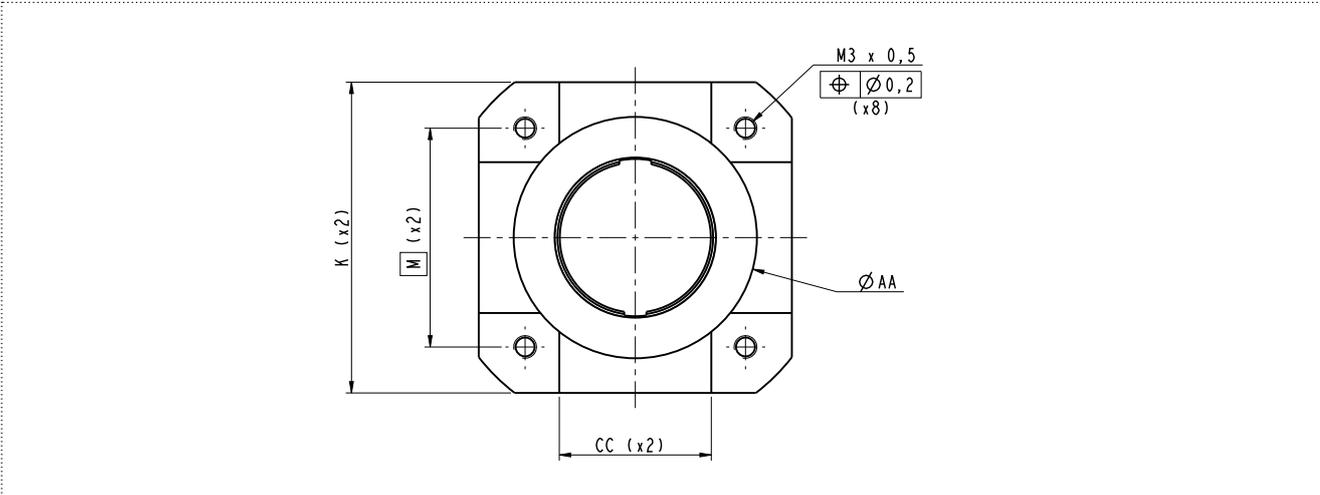
Overall dimensions - RECEPTACLE

PCB mounting jam nut receptacle



Size	ØA ± 0.15	ØB ± 0.15	ØC	M ^{+0.2} / ₀
11	19.9	30.8	25.20	-
13	19.9	30.8	25.25	12
15	23	33.9	28.42	14
17	26	36.8	31.42	16
19	29.5	40.4	35.03	18
21	32.2	43.2	37.82	20
23	35.5	46.5	41.12	23
25	38.6	49.6	44.3	25

PCB mounting square flange receptacle



Size	ØAA ± 0.15	ØCC ± 0.15	M
11	23	14	21.5
13	26	16	24.6
15	29	18	26.6
17	32	20	29.0
19	35	22	32.0
21	38	24	34.0
23	41	26	36.0
25	44	28	38.0



NOTES

A series of horizontal dotted lines for taking notes, spanning the width of the page.

RNJ LOW PROFILE - RACK & PANEL - ENHANCED SEALING



Helium leakage limited to 1.10^{-6} cm^3 per second

Description

RNJLP 27 ETC*** / ETCI*** / ETLI*** receptacles with transversal sealing's equipments inserts that have been modified to ensure an air leakage of $< 1.10^{-6} \text{ cm}^3/\text{s}$ under 1 bar of differential pressure.

Main features

- Available with solder cup or PC tails contacts.
- High speed contacts available (consult us).
- Operating Temperature range: $-55 / +125^\circ\text{C}$.
- Initial sealing performance: Helium leakage $< 1.10^{-6} \text{ cm}^3/\text{s}$ under 1 bar of differential pressure.
- Designed for unpressurized area.
- Avoid any stress on contacts before, during and after wave or iron soldering process.
- We advise to use HFE cleaning product and strongly not recommend any Vigon based one.

CONTACTS TERMINATIONS	DEVIATION
Solder Cup contacts	ETC
PC Tail - Standard Length	ETCI
PC Tail - Long Length	ETLI

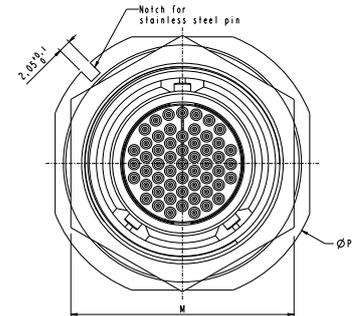
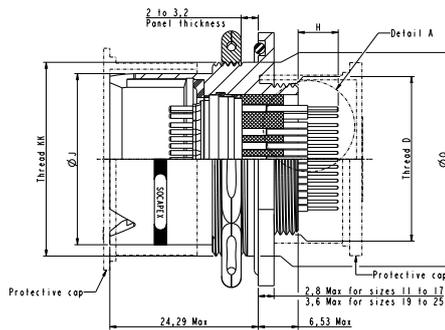
Overall dimensions - RECEPTACLE

Dimensions not listed are identical to crimp connectors.

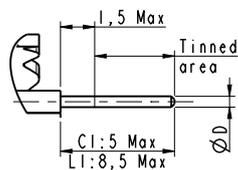
Jam nut receptacle - Enhanced sealing

Part number type:

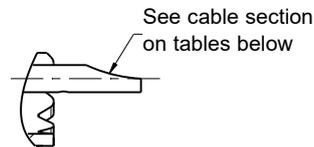
- RNJLP27 ETC XX
- RNJLP27 ETCI XX
- RNJLP27 ETLI XX



Detail A :



Detail B :



Contact size	Signal contacts			
	ØD Max			
	CI Contacts		LI Contacts	
	Gold tail	Tinned tail	Gold tail	Tinned tail
22D	0.5	0.6	.7	0.8
20	0.7	0.8	0.7	0.8
16	1.15	1.25	1.15	1.25
12	1.7	1.8	1.7	1.8

Contact size	ETC contacts	
	Solder cup section	
22D	0.34mm ²	
20	0.6mm ²	
16	1.34mm ²	

Contact type		22D	20	16	12
CI	Pin		6.21 - 7.34		
	Socket		5.79 - 7.22		
LI	Pin		9.71 - 10.84		
	Socket		9.29 - 10.72		
ETC	Pin		4.21 - 5.14		
	Socket	3.79 - 5.02	/	/	/

HOW TO ORDER - RNJLP - RACK & PANEL - ENHANCED SEALING

Amphenol Designations - RNJLP Receptacles with enhanced sealing

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Series	Shell type	Material	Quadrax contacts	Enhanced sealing	Contact type	Contact arrangement	Contact gender	Keying	Plating	Deviation
RNJLP	27	KE	-	ET	C	15-35	P	N	023	-

1. Shell type

27	Receptacle	Jam nut
67		Square flange

2. Material

Blank	Aluminium
KE	Stainless steel

3. Quadrax contacts

Blank	Without quadrax contacts
Q	With quadrax contacts

4. Enhanced sealing

ET	Enhanced sealing
EH	High performance enhanced sealing

5. Contact type - Non-removable contacts only

CI	PC Tail contacts - Standard length
LI	PC Tail contacts - Long length
C	Solder cup contacts

6. Contact arrangements

Refer to page 18 for contact arrangements
First number represents the shell size and second number is the contact arrangement.

7. Contact gender

P	Pin (500 cycles)
S	Socket (500 cycles)

Enhanced sealing receptacles are always delivered with contacts.

8. Keying

N	For other coding possibilities, please consult us
(for normal)	

9. Plating

	Shell material	Shell finish
014	Aluminium	Olive drab cadmium
023		Nickel ✓
033K		Black Zinc Nickel ✓
078		Black Zinc Nickel CrVI free ✓
076		Tin Zinc (consult us) ✓
Blank	Stainless steel	Passivated ✓

For other materials/platings, please consult us.

10. Deviation

Shell style	PC Tail finish / Tinning				Shell type compatibility
	Tin lead	Silver tin	Silver tin copper	Gold	
Standard	F404	F404LF	F404LFC	Blank	27/67
Stand-off*	F459	F459LF	F459LFC	F459H	27/67
Reduced flange	F312	F312LF	F312LFC	F312H	27
Stand-off reduced flange	F059	F059LF	F059LFC	F059H	27
Others deviations					
Shell with serration teth to adapt to backshell (ETC/EHC)	F045				27
Connector equipped with castle nut, gold tails	F492B ✓				27
Firewall insert (stainless steel only)	F304				27/67

* For receptacles only (consult us for plugs)
For other deviations, please consult us.

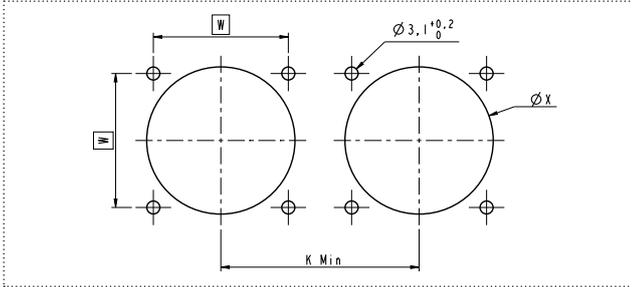
✓ : RoHS compliant

RNJ LOW PROFILE - RACK & PANEL

Panel holes dimensions

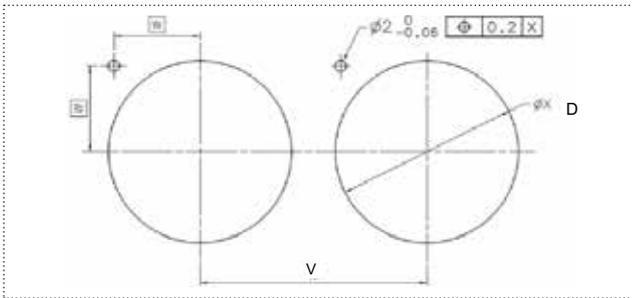
A stainless steel pin is always provided with jam nut receptacles to ensure a perfect positioning of the connector on the panel.

Square Flange receptacle - RNJLP67**



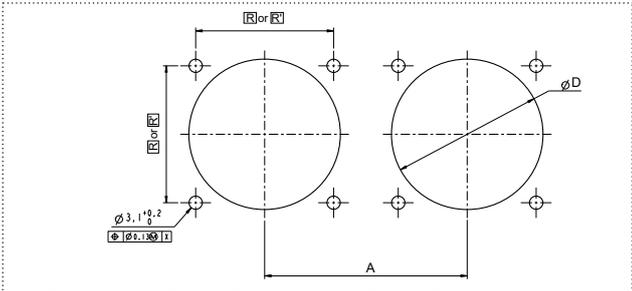
Size	K _{MIN}	W	ØX ^{+0.1} ₀
11	36.0	20.62	16.78
13	39.6	23.01	19.98
15	43.3	24.61	22.88
17	47.0	26.97	25.88
19	50.6	29.39	29.08
21	54.2	31.75	32.28
23	59.7	34.93	34.08
25	59.7	38.10	37.28

Jam nut receptacle - RNJLP27**



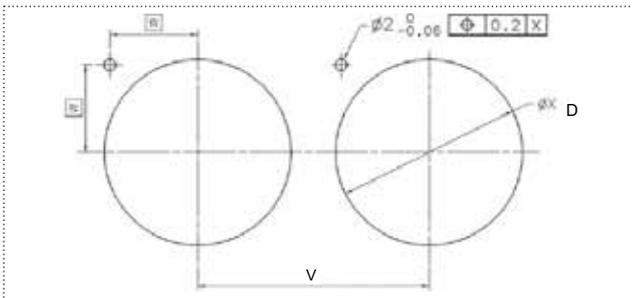
Size	Receptacle		
	V _{MIN}	W	ØD ^{+0.1} ₀
11	32.57	11.69	20.86
13	36	12.81	25.58
15	39.6	13.94	28.80
17	43.3	15.06	31.98
19	47	16.88	35.15
21	50.6	18	38.28
23	54.2	19.12	41.50
25	59.7	20.24	44.68

Square Flange plug - RNJLP66**



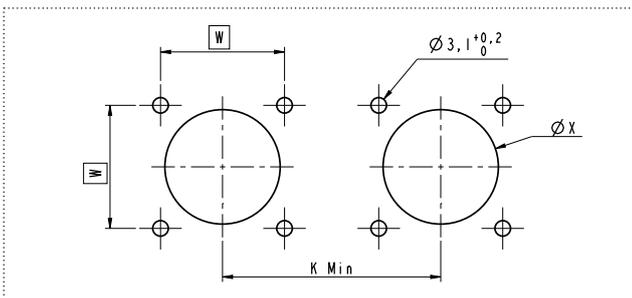
Size	Plug		
	V _{MIN}	W	ØD ^{+0.1} ₀
11	36	25.5	25.58
13	39.6	28	28.80
15	43.3	30	31.98
17	47	32	35.15
19	50.6	35	38.28
21	54.2	37	41.50
23	59.7	39.5	44.68
25	59.7	41.5	48.08

Jam nut plug - RNJLP26**



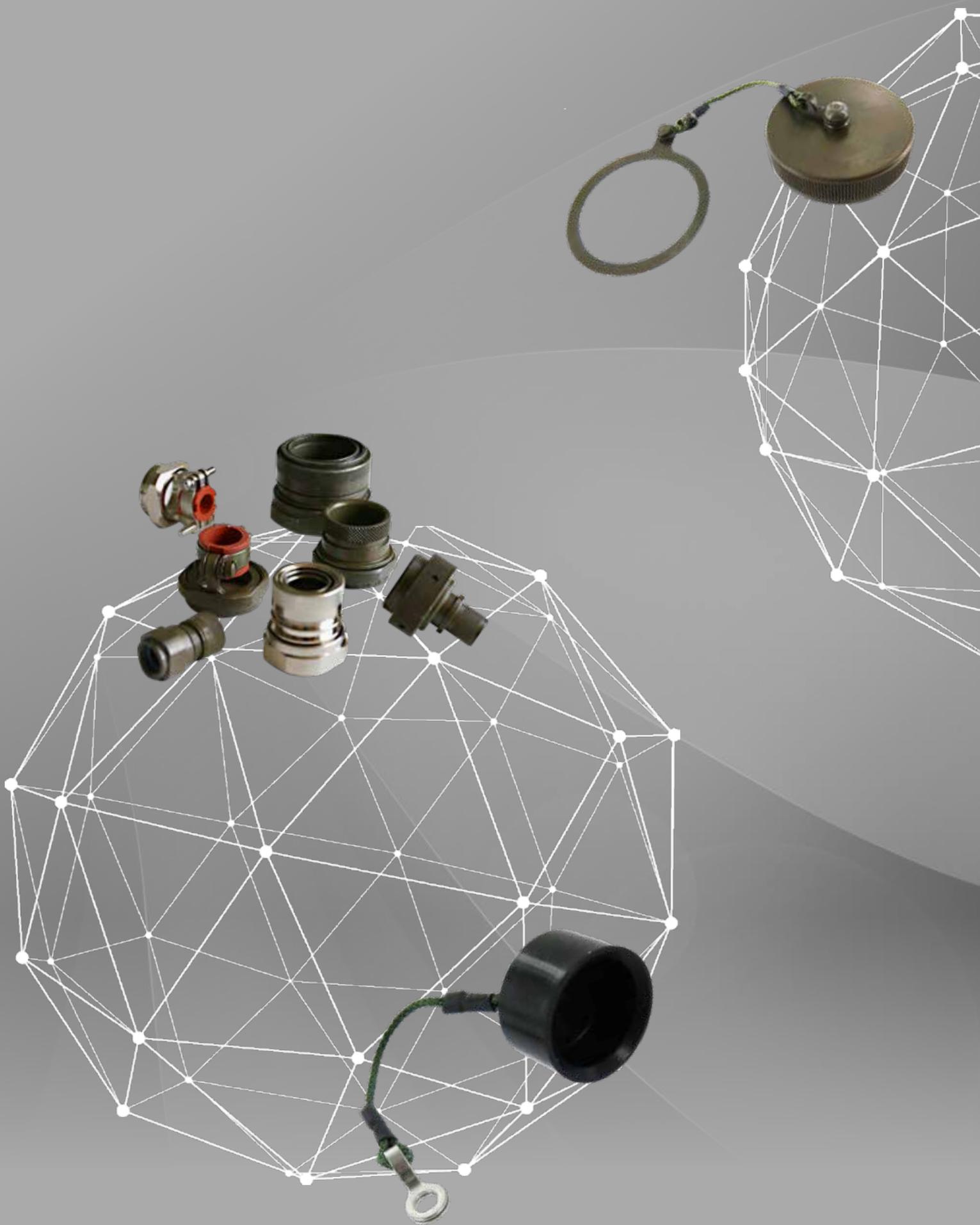
Size	Plug		
	V _{MIN}	W	ØD ^{+0.1} ₀
11	32.57	12.81	25.58
13	36	13.94	28.80
15	39.6	15.06	31.98
17	43.3	16.88	35.15
19	47	18	38.28
21	50.6	19.12	41.50
23	54.2	20.24	44.68
25	59.7	20.30	48.08

Stand-off square flange receptacle - RNJLP27**F459



Size	Plug		
	K _{MIN}	W	ØX ^{+0.1} ₀
11	41.6	21.5	20.86
13	44.6	24.6	25.58
15	47.6	26.6	28.80
17	50.6	29.0	31.98
19	54.6	32.0	35.15
21	57.6	34.0	38.28
23	60.6	36.0	41.50
25	63.6	38.0	44.68

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex



ACCESSORIES



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ACCESSORIES - METAL BACKSHELL QUICK SELECTION GUIDE

Description

Amphenol offers a full range of backshell for any need and application. These rear accessories enhance the performance capabilities of the connectors in severe environment applications. Several materials & finishes are available as well as numerous versions. For more details, please consult the backshells catalog (DOC-00022-ANG).



	Type	Series availability and designation		Description
		RNJ & RNJ REDUCED FLANGE	RNJ LOW PROFILE	
	STRAIGHT			
EMI SHIELDING		HE308-35	TV 35	<ul style="list-style-type: none"> - Full 360° shield termination. - Available with different cabling chambers. - Easy maintenance or repairability. - Sealing ensured by straight or right-angled heat-shrink molded piece.
	RIGHT ANGLE			
		LJT SBC	TV SBC	<ul style="list-style-type: none"> - Full 360° shield termination. - Available with different cabling chambers. - Easy maintenance and repairability. - Sealing ensured by straight or right angled heat-shrink molded piece.
	HIGH LEVEL OF EMI/RFI PROTECTIVE			
		LJT NSA HE308-13	TV NSA	<ul style="list-style-type: none"> - Electrical continuity between cable and connector by clamping the braid with a screwing system. - Free inner ring to avoid twisting the braid when screwing. - Sealing ensured by straight or right angle heat-shrink molded piece.
	BAND LOCK ADAPTOR			
		M85049/85 (straight) M85049/87 (90°)	M85049/88 (straight) M85049/90 (90°)	<ul style="list-style-type: none"> - MIL standardized band backshell. - Full 360° termination. - Sealing ensured by straight or right angle heat-shrink molded piece. - Right angle and 45° versions available.
	ADAPTER FOR HEAT-SHRINK MOLDED PIECE			
SEALING		LJT NSD HE308-14	TV NSD	<ul style="list-style-type: none"> - Ensure the sealing and mechanical retention on the cable.
	ADAPTER FOR SEALING GLAND			
			TV 35M (straight) TV 105 M (90°)	<ul style="list-style-type: none"> - Ensure adaptation on metric sealing gland. - Available in different cabling chamber lengths and rear side.
	STRAIN RELIEF CLAMP			
MECHANICAL RETENTION		M85049/49-2 (straight) M85049/47 (90°)	M85049/38 (straight) M85049/39 (90°)	<ul style="list-style-type: none"> - MIL standardized strain relief clamp. - Mechanical retention of the cable. - Easy maintenance or repairability. - Self locking option available.

RNJ & RNJ reduced flange plugs are not compatible with all M85049 backshells. Please consult us.

Torques values for rear accessories :

Shell size	Accessory thread torque value (N.m)
	Heavy duty (All metal connectors)
11	8 ± 0.4
13	11 ± 0.5
15	11 ± 0.5
17	14 ± 0.7
19	14 ± 0.7
21	17 ± 0.8
23	17 ± 0.8
25	20 ± 1

Tightening procedure:

The procedure for fitting rear fittings may vary from one equipment manufacturer to another in terms of the torque to be applied.

The use of Loctite is excluded.

For aluminium alloy rear accessories, if the use of Loctite is excluded, the best performance over time of the "connector + rear fitting" system is to apply the torque value once, then unscrew, apply the torque value a second time, then unscrew and finally apply the torque value a third time.

To mount an accessory on the RNJ's plugs, it is necessary to use a holding support to avoid strain on the internal set of the plug.

ACCESSORIES - PROTECTIVE CAP - METAL CAPS



Description

Amphenol offers a large selection of IP68 protective caps for plugs & receptacles to protect your connector against dust, water & moisture EMI function.

Main features

- Compatible with RNJ & RNJ reduced flange receptacles
- IP68 (permanent sealing).
- Protective against dust, water and moisture.
- EMI function.
- Nylon cord, stainless steel rope or metal chain.
- Rivet and attachment are not plated.



Amphenol Designations - Metal Caps for MIL-DTL-38999 Series I, HE308, LJT

1.	2.	3.	4.
Cap type	Cap style	Wire type	Cap size
B	EC	N	13
			Material and platings
			014

1. Cap style

EC	For Square flange receptacle
ER	For Jam nut receptacle

2. Wire type

-	Metal chain
N	Nylon cord
R	Stainless Steel rope

3. Cap size (same as connector size)

11	13	15	17	19	21	23	25
----	----	----	----	----	----	----	----

4. Material and platings

	Shell material	Shell finish
014	Aluminum	Olive drab cadmium
023		Nickel ✓
033K		Black zinc nickel ✓

Consult us for reduced flange receptacles caps

✓ : RoHS compliant

Military Designations - Metal Caps for HE308 UTE 93422

1.	2.	3.	4.
Cap type	Cap style	Cap size	Material & plating
HE308 B	00	13	7
			Mandatory suffix
			M

1. Cap style

00	For Square flange receptacle
07	For Jam nut receptacle

2. Cap size (same as connector size)

11	13	15	17	19	21	23	25
----	----	----	----	----	----	----	----

3. Material and platings

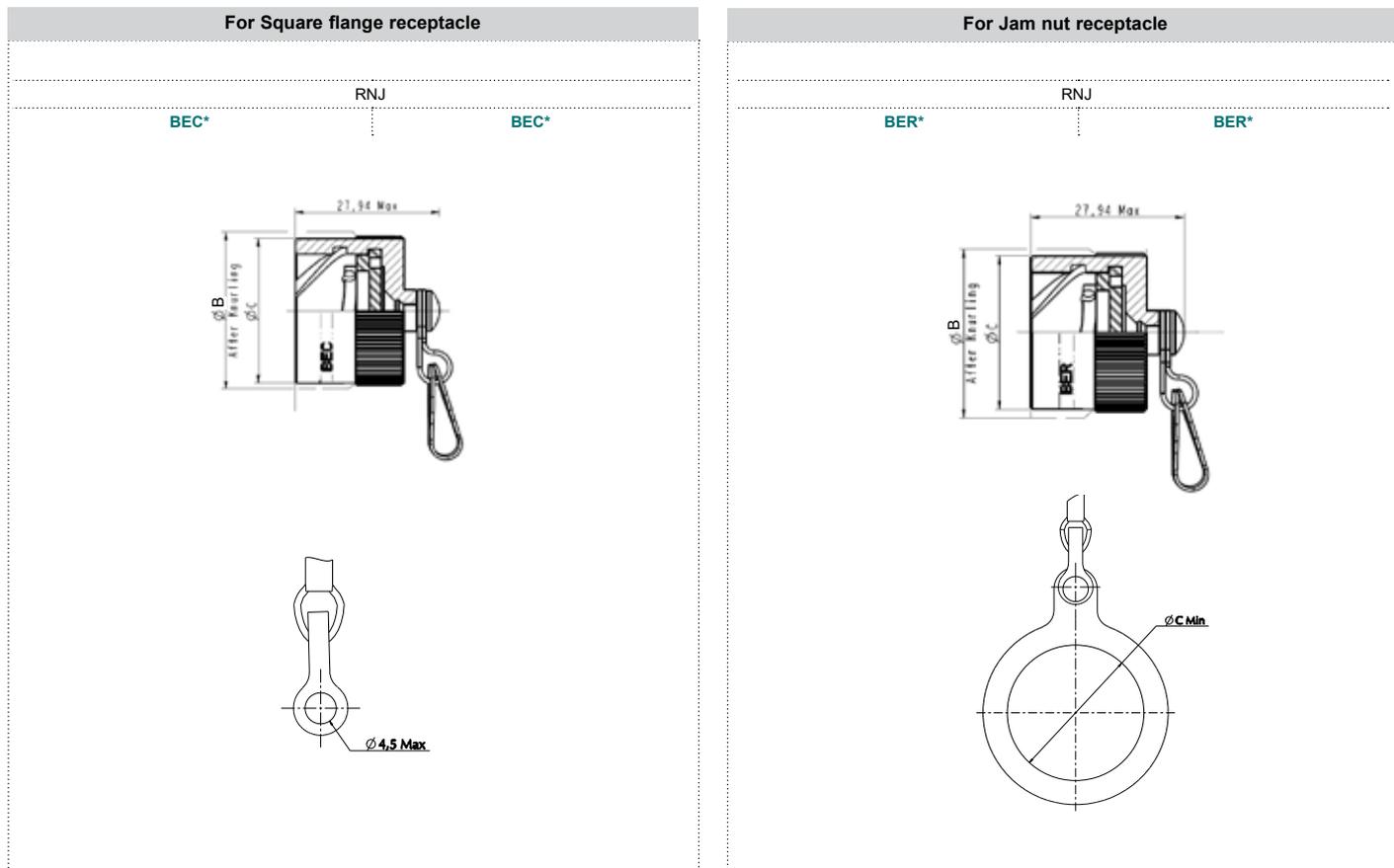
	Shell material	Shell finish
7	Aluminum	Olive drab cadmium
6		Nickel ✓

4. Mandatory suffix

M	Mandatory for all types
---	-------------------------

ACCESSORIES - PROTECTIVE CAP - METAL CAPS

RNJ & RNJ reduced flange receptacles



Shell size	Laynard length <small>+0.1 0</small>	ØB MAX	ØC MAX	ØN MAX	A MAX <small>+0.3 -0.13</small>
11	76.20	24.89	23.88	23.88	17.78
13		29.46	27.94	27.18	21.59
15		32.51	30.99	30.23	24.77
17	88.90	35.81	34.04	33.53	27.94
19		38.61	37.08	36.58	30.66
21		41.91	40.13	39.88	33.83
23	101.6	44.96	43.18	42.93	37.01
25		48.01	46.88	46.23	40.18

ACCESSORIES - PROTECTIVE CAP - RUBBER CAPS



Description

Silicon protective cap against dust and water for RNJ receptacles (consult us for compatibility with plugs).

Main features

- Compatible with all shell types (plugs and receptacles).
- IP67 (1meter, 30 min sealing).
- Protection against dust and water.
- Silicone 200°C.
- Nylon cord.
- Light weight and noiseless.



Amphenol Designations - Rubber caps for MIL-DTL-38999 Series I, II, III, LJT, JT, TV

1.	2.	3.	4.
Cap type	Cap style	Wire type	Series
RC	00	N	LJT
Cap type	Cap style	Wire type	Series
RC	00	N	LJT

1. Cap style	
00	For Square flange receptacle
07	For Jam nut receptacle

Note: for RNJ plugs, please consult us

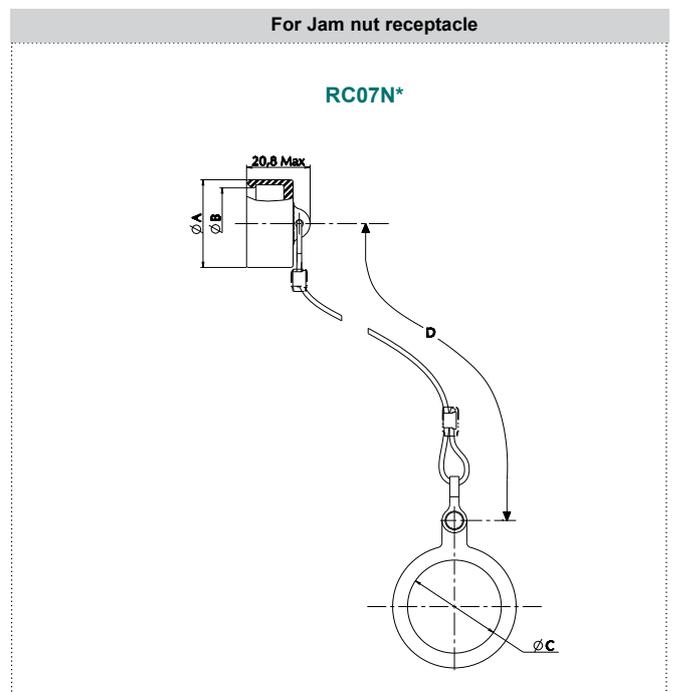
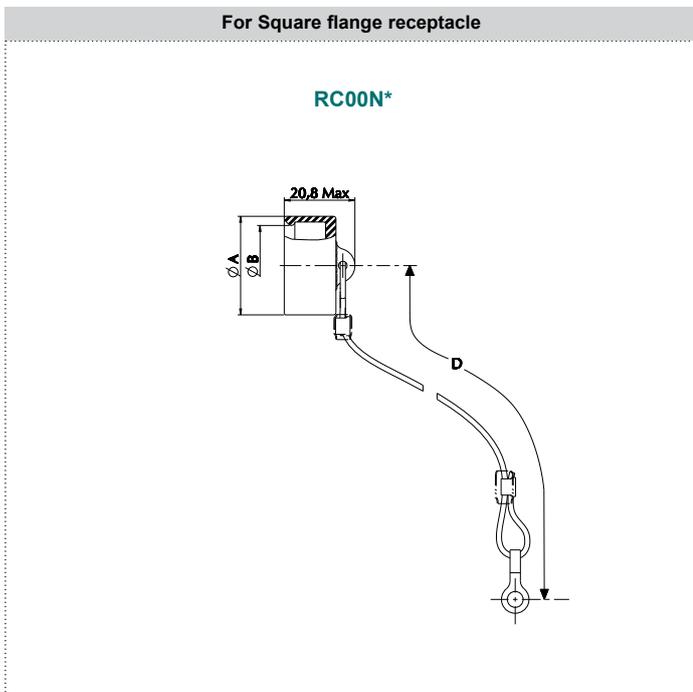
2. Wire type	
N	Nylon cord

3. Series	
LJT	MIL-DTL-38999 Series I, HE308, LJT & RNJ - Receptacles only

4. Cap size (same as connector size)								
11	13	15	17	19	21	23	25	

Consult us for reduced flange receptacles caps

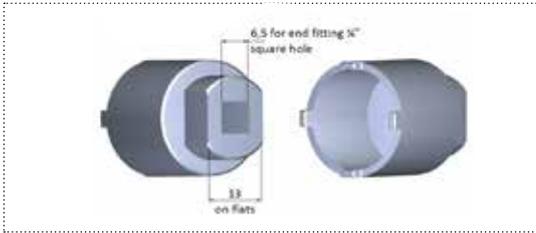
Overall dimensions



ACCESSORIES - TIGHTENING TOOLS, POSITIONNING PIN

Tightening tools for castle nut

Specific tool for the castle nut clamping:

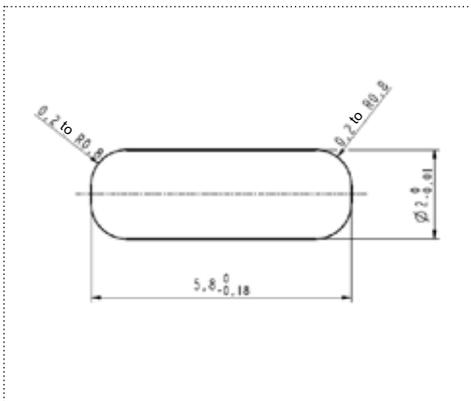


Shell Size	Tools Part Number	
	RNJ & RNJ Low Profile	RNJ Reduced Flange
11	RNJ8982 A11	809642
13	RNJ8982 B13	809643
15	RNJ8982 C15	809644
17	RNJ8982 D17	809645
19	RNJ8982 E19	809646
21	RNJ8982 F21	809647
23	RNJ8982 G23	809648
25	RNJ8982 H25	809649

*Same tool for plugs and receptacles for RNJ Reduced Flange

Stainless steel pin

Pin for ensuring a perfect positioning of RNJ, RNJ reduced Flange and RNJ Low Profile jam nut receptacles on the panel (delivered with jam nut connectors).



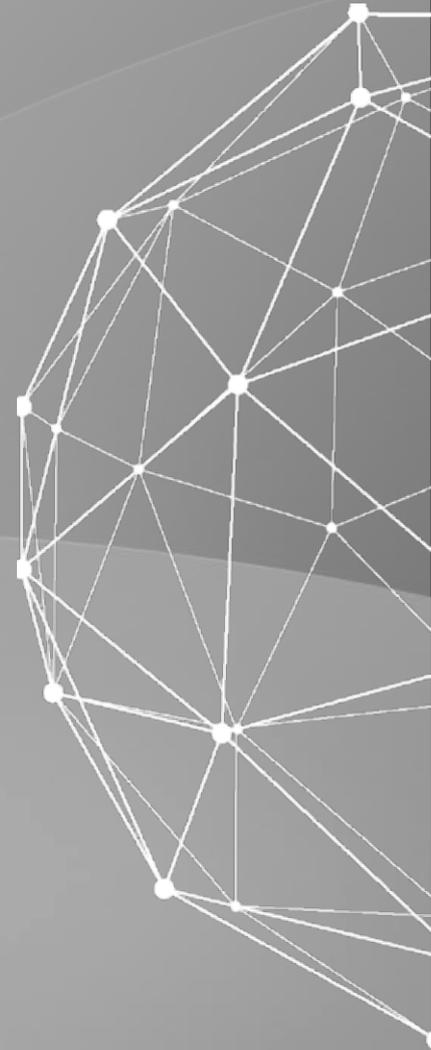
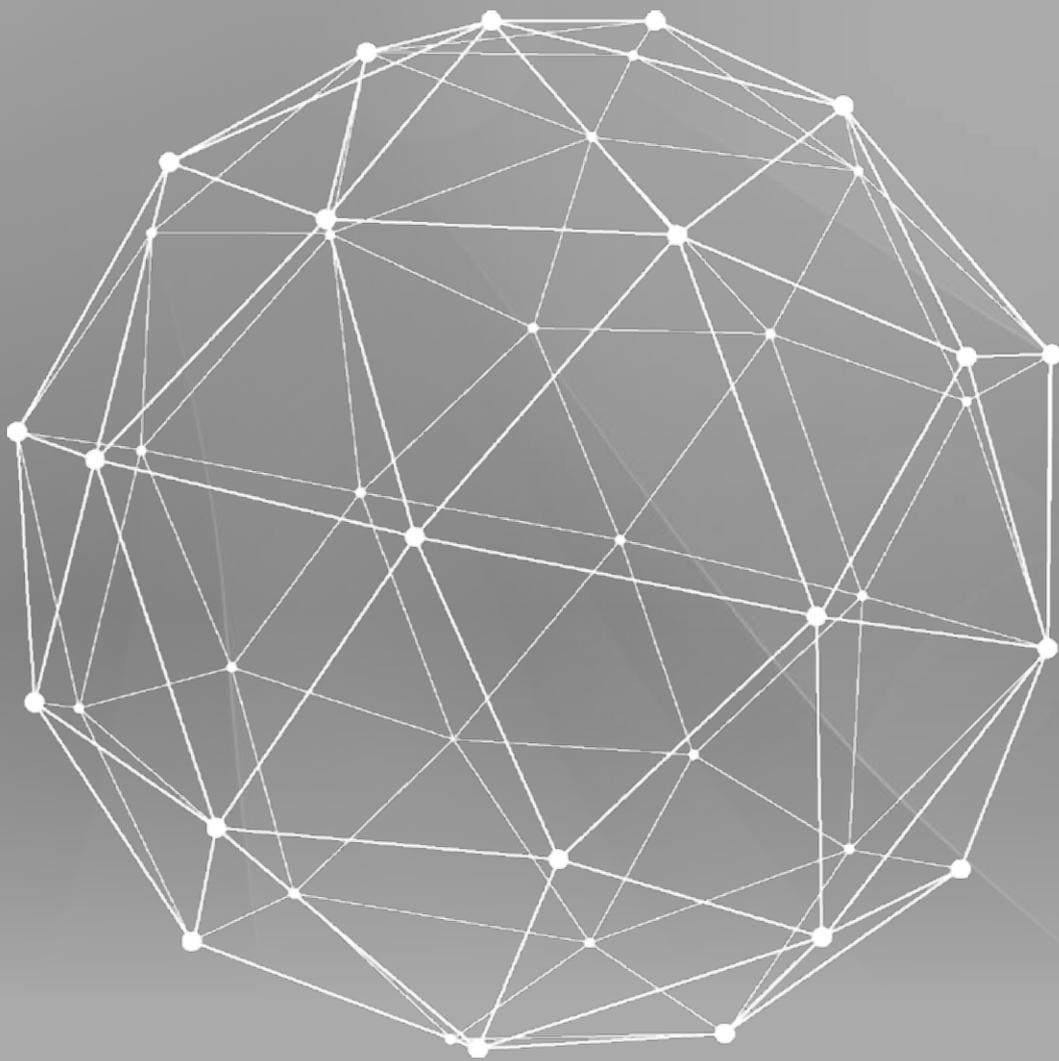
Part number : **922133**





NOTES

A series of horizontal dotted lines for taking notes, spanning the width of the page.



CONTACT ASSEMBLY



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Contact crimping, contact insertion & removal	62
Part numbering - Contacts, tooling & accessories	64

CONTACT ASSEMBLY - CONTACT CRIMPING

Video available to help you on our website







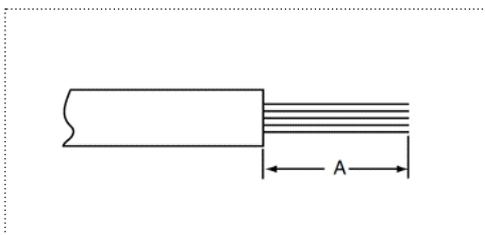
Scan me

Wire stripping

- 1 Strip wire to required length. (See stripping dimensions table below). When using hot wire stripping, do not wipe melted insulation material on wire strands; with mechanical strippers do not cut or nick strands.
 - 2 See table 1 for proper finished outside wire dimensions.
 - 3 Twist strands together to form a firm bundle.
 - 4 Insert stripped wire into contact applying slight pressure until wire insulation butts against wire well. Check inspection hole to see that wire strands are visible. If there are strayed wire strands, entire wire end should be re-twisted.
- When wire is stripped and properly installed into contact, the next step is to crimp the wire inside the contact by using the proper crimping tool.



Stripping dimension



Contact size	Stripping length (mm)
23 ^{HD}	4
22D	4
20	6
16	6
12	6

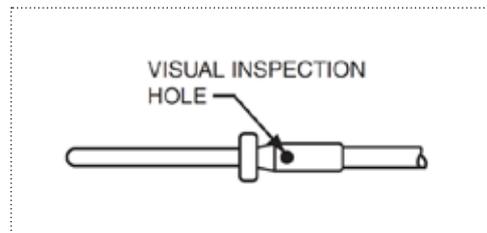
Contact size	Wire Dimension (mm)	
	Min.	Max.
10	3.43	4.11
12	2.46	3.61
16	1.65	2.77
20	1.02	1.96
22M, 22D	0.76	1.27

For other contacts sizes, please consult us

Contact crimping

Select the recommended crimping tool, turret head or positioner selection settings according to contact size, part number and wire gauge size.

- 1 Insert stripped wire into contact crimp pot. Wire must be visible through inspection hole.
- 2 Using correct crimp tool and locator, cycle the tool once to be sure the indentors are open. insert contact and wire into locator. Squeeze tool handles firmly and completely to insure a proper crimp. The tool will not release unless the crimp indentors in the tool head have been fully actuated.
- 3 Release crimped contact and wire from tool. Be certain the wire is visible through inspection hole in contact.



^{HD} High density 38999.

CONTACT ASSEMBLY - CONTACT INSERTION & REMOVAL



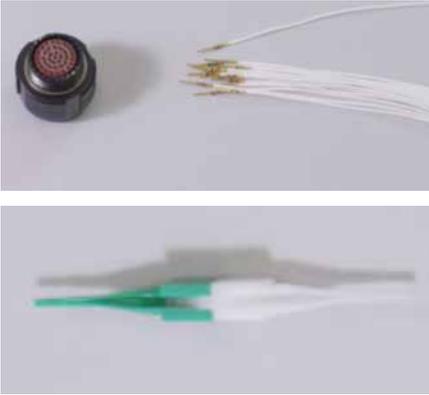
Videos available to help you on our [youtube channel](#).

- Contact Insertion Instructions
- Contact Crimping Instructions
- Quadrax, Twinax and Coax contacts

Contact insertion

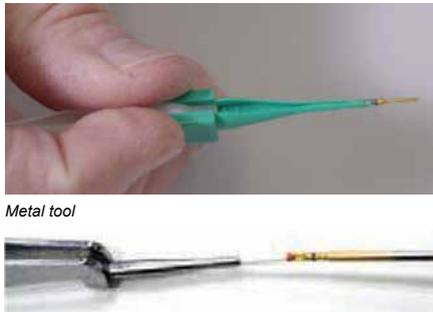
Note: All plastic tools are double-ended. The colored side is the insertion tool and the white side is the removal tool.

1 First remove hardware from the plug and receptacle and slide the hardware over wires in proper sequence.



2 Use proper plastic or metal insertion tool for corresponding contact. (Consult insertion tool table "Crimping tool"). Slide correct tool (with plastic tool use colored end) over wire insulation and slide forward until tool bottoms against rear contact shoulder.

Plastic tool with contact in proper position



3 Next align the tool and contact up to the properly identified cavity at rear of connector plug. Use firm, even pressure; do not use excessive pressure. It is recommended to start at the center cavity. Contact must be aligned with grommet hole and not inserted at an angle. Push forward until contact is felt to snap into position within insert.



CAUTION. when inserting or removing contacts. do not spread or rotate tool tips

4 Remove tool and pull back lightly on wire, making sure contact stays properly seated and isn't dragged back with the tool. Repeat operation with remainder of contacts to be inserted, beginning with the center cavity and working outward in alternating rows.



5 After all contacts are inserted, fill any empty cavities with wire sealing plugs.



6 Reassemble plug or receptacle hardware - slide forward and tighten using connector pliers. Connector holding tools are recommended while tightening back accessories. When using strain relief, center wires at bar clamp. Slide clamp grommet into position and tighten clamp bar screws. When tightening screws, pressure should be applied in the same direction that clamp is threaded to rear threads of connector. When not using clamp grommet, build up wire bundle with vinyl tape so clamp bar will maintain pressure on wires.

Contact removal

Note: All plastic tools are double-ended. The colored side is the insertion tool and the white side is the removal tool.

1 Remove hardware from plug or receptacle and slide hardware back along wire bundle.



2 Use proper plastic or metal removal tool for corresponding contact. Slide correct size tool over wire insulation.



3 Insert plastic or metal removal tool into contact cavity until tool tips enter rear grommet and come to a positive stop. Hold tool tip firmly against positive stop on contact shoulder. Grip wire and simultaneously remove tool and contact. (On occasion, it may be necessary to remove tool, rotate 90° and reinsert.)



CONTACT ASSEMBLY - CONTACTS, TOOLING & ACCESSORIES



Amphenol offers a wide range of contacts and dedicated tools & accessories. For more information please consult the Contacts Catalog (DOC-000081-ANG)

Standard Crimp contacts & Crimping tools

PIN or SOCKET	MILITARY Nb	CONTACT		AMPHENOL P/N	BIN Color Code			CONNECTOR MIL-DTL-38999		Crimping Tool	
		Mating end size	Wire barrel size		1st	2nd	3rd	S I	S III	Crimping tool	Positionner
P	M39029/18-177	23	22	900049	Orange	Purple	Purple		X	M22520/2-01	M22520/2-13
	M39029/58-360	22	22D	900004	Orange	Black	Black	X	X	M22520/2-01	M22520/2-09
	M39029/58-363	20	20	900001	Orange	Blue	Black	X	X	M22520/2-01	M22520/2-10
	M39029/58-364	16	16	900000	Orange	Blue	Yellow	X	X	M22520/1-01	M22520/1-04
	M39029/58-365	12	12	900005	Orange	Blue	Green	X	X	M22520/1-01	M22520/1-04
S	M39029/17-172	23	22	900048	Orange	Purple	Red		X	M22520/2-01	M22520/2-16
	M39029/56-348	22	22D	900044	Orange	Yellow	Grey	X	X	M22520/2-01	M22520/2-07
	M39029/56-351	20	20	900041	Orange	Green	Brown	X	X	M22520/2-01	M22520/2-10
	M39029/56-352	16	16	900040	Orange	Green	Red	X	X	M22520/1-01	M22520/1-04
	M39029/56-353	12	12	900045	Orange	Green	Orange	X	X	M22520/1-01	M22520/1-04

Power contacts

PIN or SOCKET	Contact		Amphenol P/N	Crimping Tool	Piggy Back Grommet
	Mating end size	Wire barrel size			
P	8	8	900197	M300-BT with SP593 (supplied by DMC Tools)	900471
	4	4	900198*		
S	8	8	900007*	809947 with 809948	N/A
	4	4	900217		
S	8	8	900217	M300-BT with SP593 (supplied by DMC Tools)	900471
	4	4	900047		

*Compatible with 21-48 contact arrangement only Size 4 contacts are compatible with concentric build cables. Consult us for twisted conduction cables.

Dummy Contacts



Contact size	Dummy contact material	Proprietary No
4	White plastic	900329
8	Green plastic	900488
8	Brass + gold finish	900183
8	White plastic (recommended)	900029
12	Brass + gold finish	900025
12	White plastic	900486
16	Brass + gold finish	900028
16	Blue plastic	900026
20	Brass + gold finish	900332

Metal dummy contacts are recommended for applications requesting EMI protection.

Sealing plugs



Contact size	Proprietary No	Military No
8 power	900024	-
12	900023	MS27488-12-2
16	900020	MS27488-16-2
20	900021	MS27488-20-2
22D	900022	MS27488-22-2
23	900022	MS27488-22-2

CONTACT ASSEMBLY - CONTACTS, TOOLING & ACCESSORIES

Insertion and removal tools

Plastic tools



Contact size	Insertion tool		Removal tool		Colour	
	Proprietary No	Military No	Proprietary No	Military No	Insertion	Removal
8 Power/coax	*	*	-	M81969/14-12	-	green
12	809 859	M81969/14-04	809 859	M81969/14-04	yellow	white
16	809 855	M81969/14-03	809 855	M81969/14-03	blue	white
20	809 854	M81969/14-10	809 854	M81969/14-10	red	orange
22D	809 856	M81969/14-01	809 856	M81969/14-01	green	white

* Manual insertion

Metallic tools



Contact size	Straight type		Angle type			
	Insertion tools Proprietary No	Removal tools Proprietary No	Insertion tools		Removal tools	
			Proprietary No	Military No	Proprietary No	Military No
4	*	809943	-	-	-	-
8 Power/coax	-	809961	*	*	809 845	M81969/8-14
12	-	-	809 838	M81969/8-09	809 839	M81969/8-10
16	809 816	809 846	809 812	M81969/8-07	809 820	M81969/8-08
20	809 817	809 847	809 813	M81969/8-05	809 821	M81969/8-06
22D	809 819	809 849	809 815	M81969/8-01	809 823	M81969/8-02
23	810 010	810 010	-	-	-	-

* Manual insertion



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