

# RNJ Low Profile

Harsh Environment Rack & Panel Cylindrical Connectors



# ABOUT AMPHENOL SOCAPEX



## Proven excellence in interconnect solutions

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. Located in the **Mont Blanc** region of France and Pune in India, Amphenol Socapex has a presence in over 100 countries around the world. Amphenol Socapex is part of the international **Amphenol Corporation**.



**1000+** employees



Net Sales 2020: **81,9 M€**  
72% Export - 28% France



Two facilities :  
**Thyez** (France), **Pune** (India)

# OUR HISTORY

**1947**



- Socapex creation in Suresnes, France
- 1<sup>st</sup> radio connector

**1956-57**



- Manufacturing unit in Cluses (74), France
- Thomson-CSF becomes primary shareholder

**Early 1960's**



- 1st board level connectors: HE8
- 1st "licence Bendix" manufactured connectors
- SL Series launch

**1973**



- New factory 13 000 m<sup>2</sup> in Thyez (74) France with 250 people

**1975**



- Production of 38999 connectors

**2014-2017**



- New Cable Assembly workshop
- New Contact Manufacturing workshop

**Today and tomorrow | New technologies**



Miniaturization  
High-speed signals  
Rugged Ethernet  
Fiber optics  
Power  
ROHS solutions  
Advanced Materials (composite)  
Power  
Miniaturization  
ROHS solutions  
Fiber optics  
Rugged Ethernet  
Power  
ROHS solutions

# INTERNATIONAL EXPERTISE



## Our expertise has no boundaries

### Integrated Production in France & India

- **24 000 m<sup>2</sup>** manufacturing capacity on 2 sites
- Design centers in **France** and **India**
- State-of-the-art manufacturing technology



## Our markets



### Military

Communication Systems - Radios - C4ISR /  
Ground vehicles - Vetronics / Marine / Missiles



### Aviation

Commercial & military / Avionics /  
Engines / Landing gear / Actuators

1986

**Amphenol**  
Socapex

- Amphenol becomes primary shareholder

1995-96



- Expanded Beam connector CTOS launch
- Headquarters transferred to Thyez

2004



- RJ Field launch, "Award Electronica"

2005



- Opening of manufacturing site in Pune, India

2010's



- LuxBeam™ and HDAS launch

## Today and tomorrow | Sustainable development






### Respect for nature and the environment

Optimization of natural resources  
Recycling  
Waste Management  
Goodwill  
Optimization of natural resources  
Respect for nature and the environment  
Recycling

# PRODUCING FASTER, SMALLER, STRONGER CONNECTORS...



## Technologies & innovation

| Technological Center  | High-Speed Expertise  | Materials Expertise   | Eco-responsibility   |
|---|---|---|--|
|    |    |   |   |
| <p><b>Engineering Laboratory for product testing and qualification, product expertise and metrology</b></p> <ul style="list-style-type: none"> <li>- Mechanical and electrical skills</li> <li>- RF and fiber optics expertise</li> </ul> | <p><b>Strong expertise in high-speed signals</b></p> <ul style="list-style-type: none"> <li>- 3D EM simulation software &amp; EM models</li> <li>- Time Domain and frequency domain (VNA 20GHz, TDR and eye diagram)</li> </ul> | <p><b>Focus on materials expertise and manufacturing techniques to produce faster, smaller and stronger products</b></p> <ul style="list-style-type: none"> <li>- 3D CAD mechanical software, simulation &amp; analysis</li> <li>- Disruptive metal alloys, additive manufacturing</li> </ul> | <p><b>Sustainable environment approach, with pro-active management of regulations (REACH / RoHS / Conflict minerals...)</b></p> <ul style="list-style-type: none"> <li>- New materials development, plating, and suitable processes</li> <li>- Recycling and rational resources consumption</li> </ul> |

## Our workshops

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

- Tooling** : Tools for our different activities : molding, machining, assembly
- Molding** : Solid expertise in thermoplastic elastomer and thermoset molding
- Machining** : Manufacturing of cylindrical shells from 10 to 90 mm in diameter and rectangular shells
- Screw Machining** : Cylindrical production parts up to 10 mm in diameter
- Plating** : Plating with cadmium, nickel, electroless nickel, silver, black zinc nickel, gold
- Assembly** : Connector and harness assembly (electrical & optical)

## Our certifications

|  |  |  |  |
|--|--|--|--|
|  <p>CERTIFIED MANAGEMENT SYSTEM</p> |  <p>CERTIFIED MANAGEMENT SYSTEM</p> |  <p>CERTIFIED MANAGEMENT SYSTEM</p> |  <p>CERTIFIED MANAGEMENT SYSTEM</p> |
| <p>Product certifications : MIL-DTL38999, EN3645, EN3155, VG</p>   |  |  |  |

## Our memberships

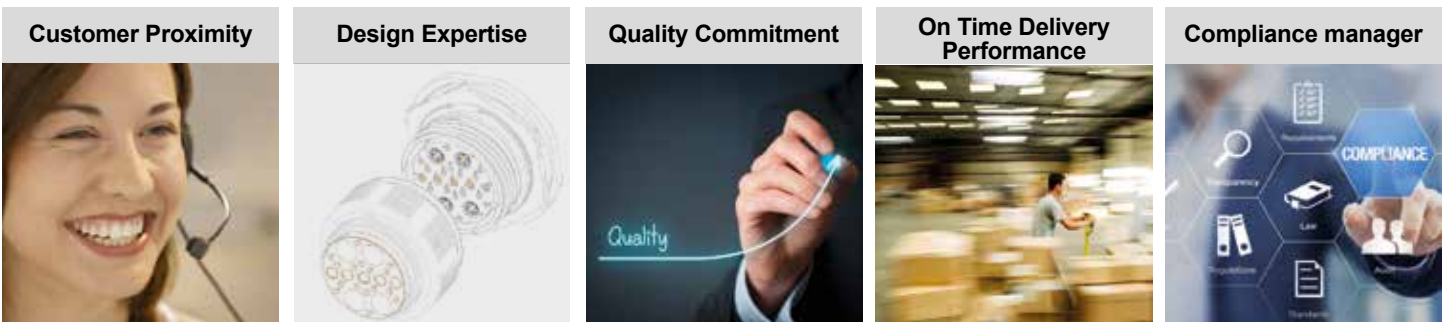
|   |   |   |
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|   |  |  |
|  |   |  |
| <p>Member of CMG (Connecting Manufacturing Group) Consortium</p>                      |   |   |

# DELIVERING GREAT CUSTOMER EXPERIENCE



► We have a strong reputation for helping customers solve their toughest challenges. This approach of serving your needs is ingrained in our company – from our sales team to our product development engineers.





## A partner you can trust



## Buy our solutions

You can access our solutions through our global network of sales offices or through our distributors.

### Field Sales Team :

-  12 in France
-  15 in Europe
-  100+ in North America and rest of the world.
-  5 Business Development Managers supporting local sales force Europe, North America and the rest of the world

### Technical Support & Multilingual Customer Service :

15 people

### Worldwide Distribution Network :

Including qualified distributors (QPL approved) for assembling : MIL-DTL-38999, PT/451/VG95328 & Fiber Optics connectors



# RNJ LOW PROFILE

## Realignment capability

Mechanical device ensures axial ( $\pm 1\text{mm}$ ), angular ( $\pm 6^\circ$ ) and longitudinal (0.5 mm) realignments (See figure 1)

## Many insert patterns

All available Amphenol Mil-DTL-38999 III inserts

## Large contacts range

M39029 contacts compatible with Mil-DTL-38999 III  
22D, 20, 16, 12, 8, 4 (contact cavities for signal, coaxial, twinax, power contacts)

## EMI shielding

Grounding fingers ensure shielding before contact mating

## Low profile and high density

Til 128 size 22D contacts in a 25 shell size

## Shell sizes range

8 shell sizes from 11 to 25

## Temperature range

$-65^\circ\text{C}$  to  $175^\circ\text{C}$  for olive drab cadmium &  $200^\circ\text{C}$  for electroless nickel

## High durability

500 cycles minimum

## High corrosion resistance

Olive drab cadmium (500 hours salt spray), electroless nickel (48 hours salt spray) or stainless steel (500 hours salt spray)

## Low tooling investment

Numerous tools common with Mil-DTL-38999 series III connector ones

## Light weight

Aluminium alloy shells. For the plug : 20% weight saving versus standard RNJ version

## Environmental

Rear membrane protected by a cap on the plug, interfacial seal on male insert

## Sealing

Reinforced membrane on the floating plug ensures high pressure resistance (plug withstands 1000mBars on the rear face, 2000mBars on the front face)

## Rear accessory possibility

Fully compatible with all M-85049 backshells for Mil-DTL-38999 series III

## Contacts protection

100% scoop proof design



RNJ Low Profile rack and panel connectors are designed to connect electrical devices between a moving unit (rack) and a fixed unit (panel).

The locking of the mating pair is ensured by the mechanical device of the rack.

The RNJLP design allows a short distance between the two panels. This is a big benefit for the systems where space is an issue.

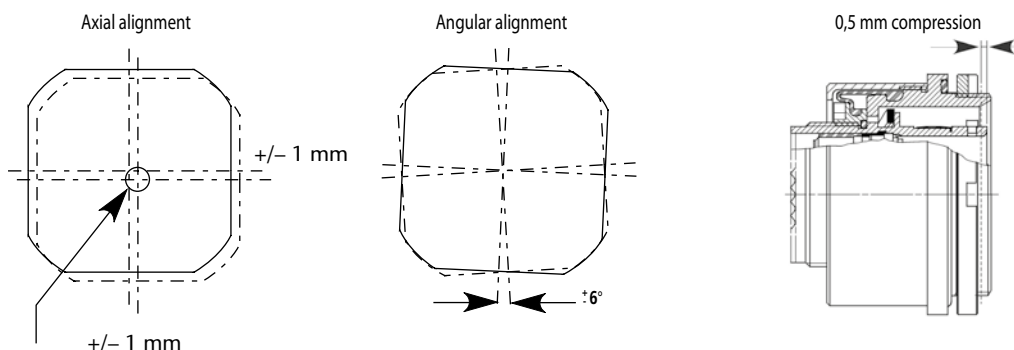
The RNJLP realignment capability (as shown in figure 1) allows to make up the tolerances of the system.

RNJLP are primarily designed for avionic/military and advanced industrial application.

## Applications :

- Commercial & military avionic packaging
- Ground / marine / defence applications
- Advanced industrial applications

Figure 1 - Floating features



# RNJ LOW PROFILE

## ENVIRONMENTAL CHARACTERISTICS

### Temperature range:

- - 65°C to +175°C (olive drab cadmium) / +200°C (Electroless Nickel)
- - 65°C to +200°C (stainless steel) with hfirewall capability option (F304 deviation) for available arrangements

### Air leakage:

- Receptacles RNJLP27/67: less than 16 cm<sup>3</sup> / h max @ 2 bars pressure
- Floating plugs RNJLP26 - 66:
  - Front Face: less than 16 cm<sup>3</sup> / h max @ 2 bars pressure
  - Rear Face: less than 16 cm<sup>3</sup> / h max @ 1 bar pressure

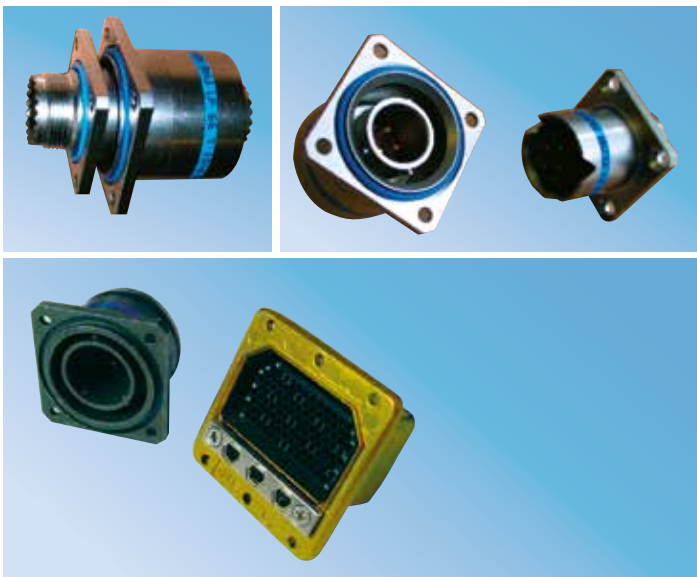
### Corrosion resistance:

- Olive drab cadmium 500 h salt spray
- Electroless nickel 48 h salt spray
- Stainless steel 500h salt spray

### Two versions available

#### RNJ Low Profile Square Flange version: RNJLP 66 / 67

- The distance between panels is the same as for the ARINC 404 connector (7,3mm). This allows the user the possibility of replacing an ARINC 404 connectors by an RNJ Low Profile (please consult us regarding dimension tolerances needed for the system).
- More possibilities in shell sizes (8) than with the ARINC 404 (1, 2, 3 or 4 bays only).
- This is front panel mounting for the receptacle and back panel mounting for the floating plug.
- Sealing is provided on the square flange (receptacle and floating plug) by an O-ring gasket (delivered with the connector) located in a groove.



### Fluid resistance:

- MIL-L-7808 (lubricating oil)
- MIL-L-23699 (lubricating oil)
- MIL-H-5606 (hydraulic fluid)
- Hydraulic fluid (Chevron M2V)
- MIL A-8243 (defrosting fluid)
- MIL- C- 87936 type I
- MIL-T-5624 (JP5)
- MIL-C-47220 or Coolanol 25 or equivalent
- MIL-G-3056 type I (gasoline)
- Isopropyl alcohol per TT-I-735 grade A or B mixed with mineral spirit TT-T-291 type I or P-D-680 type I

#### RNJ Low Profile Jam Nut version: RNJLP 26 / 27

- The distance between panels is 16mm versus 36mm for the standard RNJ
- Both receptacle and floating plug are back panel mounting
- Sealing is provided by the O-ring gaskets located in the groove of the front face of the flange (receptacle and floating plug)
- The castle nut of the floating plug is available with 4 holes for lock-wiring capability (optional)
- Each RNJLP26/27 connector is supplied with a stainless steel pin for insertion by force into the chassis



# RNJ LOW PROFILE

## MECHANICAL CHARACTERISTICS

|                         |     |    |     |     |     |     |
|-------------------------|-----|----|-----|-----|-----|-----|
| <b>Contact size</b>     | 22D | 20 | 16  | 12  | 8   | 4   |
| <b>Maximum load (N)</b> | 45  | 67 | 110 | 110 | 150 | 150 |

### Mating and unmating forces:

| Shell size | Maximum mated force |       | Maximum unmated force |      |
|------------|---------------------|-------|-----------------------|------|
|            | daN                 | Lbs   | daN                   | Lbs  |
| 11         | 20                  | 45    | 12                    | 27   |
| 13         | 30                  | 67.4  | 13                    | 29.2 |
| 15         | 35                  | 78.7  | 15                    | 33.7 |
| 17         | 50                  | 112.4 | 16                    | 36   |
| 19         | 55                  | 123.6 | 18                    | 40.5 |
| 21         | 65                  | 146.1 | 22                    | 49.5 |
| 23         | 80                  | 179.8 | 27                    | 60.7 |
| 25         | 102                 | 229.3 | 34                    | 76.4 |

Durability: 500 cycles

## ELECTRICAL CHARACTERISTICS

### Contact rating - nominal current per contact:

|                     |     |     |    |    |    |     |
|---------------------|-----|-----|----|----|----|-----|
| <b>Contact size</b> | 22D | 20  | 16 | 12 | 8* | 4*  |
| <b>Current (A)</b>  | 5   | 7.5 | 13 | 23 | 60 | 100 |

\* Please consult us for additional informations regarding power inserts

### Contact resistance:

|                        |     |     |    |     |     |      |
|------------------------|-----|-----|----|-----|-----|------|
| <b>Contact size</b>    | 22D | 20  | 16 | 12  | 8   | 4    |
| <b>Resistance (mΩ)</b> | 8   | 4.7 | 2  | 1.1 | 0.6 | 0.26 |

Insulation resistance: - at ambient > 10<sup>5</sup> Mohms  
- at maximum temperature > 10<sup>3</sup> Mohms

### Service rating:

| Service (p. 4/5) | Dielectric withstanding voltage (Vrms) |         |              |         |              |         |              |         | Working voltage |      |
|------------------|--|---------|--------------|---------|--------------|---------|--------------|---------|-----------------|------|
|                  | At sea level                           |         | 15000 meters |         | 21000 meters |         | 34000 meters |         |                 |      |
|                  | mated                                  | unmated | mated        | unmated | mated        | unmated | mated        | unmated | Vrms            | Vdc  |
| 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 |

### Dimensions of acceptable contacts and cables:

| Contact size | Contact Diameter mm (in) | Crimp barrel                 |                 | Acceptable cables                                |                 |                 |                  |                          |                 |                 |
|--------------|--------------------------|------------------------------|-----------------|--|-----------------|-----------------|------------------|--------------------------|-----------------|-----------------|
|              |                          | Diameter mm (in)             | Depth mm (in)   | Gauge AWG Section mm <sup>2</sup> (sq in)        |                 |                 |                  | Outside diameter mm (in) |                 |                 |
|              |                          |                              |                 | 22   | 24              | 26              | 28               | min                      | average         | Max             |
| 22D          | 0.76<br>(0.030)          | 0.88±0.03<br>(0.035±0.001)   | 3.58<br>(0.141) | 22   | 24              | 26              | 28               | 0.76<br>(0.03)           | 1.20<br>(0.047) | 1.37<br>(0.054) |
|              |                          |                              |                 | 0.38<br>(0.015)                                  | 0.22<br>(0.009) | 0.15<br>(0.006) | 0.095<br>(0.004) |                          |                 |                 |
| 20           | 1<br>(0.039)             | 1.19±0.03<br>(0.039±0.001)   | 5.30<br>(0.209) | 20   | 22              | 24              |                  | 1.02<br>(0.04)           | 1.83<br>(0.072) | 2.11<br>(0.083) |
|              |                          |                              |                 | 0.60<br>(0.024)                                  | 0.38<br>(0.015) | 0.22<br>(0.009) |                  |                          |                 |                 |
| 16           | 1.57<br>(0.062)          | 1.70±0.03<br>(0.067±0.001)   | 5.30<br>(0.209) | 16   | 18              | 20              |                  | 1.68<br>(0.066)          | 2.41<br>(0.095) | 2.77<br>(0.109) |
|              |                          |                              |                 | 1.34<br>(0.053)                                  | 0.93<br>(0.037) | 0.60<br>(0.024) |                  |                          |                 |                 |
| 12           | 2.36<br>(0.093)          | 2.54±0.06<br>(0.100±0.002)   | 10<br>(0.394)   | 12   | 14              |                 |                  | 2.46<br>(0.097)          | 3.20<br>(0.126) | 3.61<br>(0.142) |
|              |                          |                              |                 | 3.30<br>(0.013)                                  | 1.94<br>(0.076) |                 |                  |                          |                 |                 |
| 8            | 3.60<br>(0.039)          | 4.6 +0.05<br>(0.181+0.002)-0 | 10<br>(0.394)   | 8  |                 |                 |                  | 4.50<br>(0.177)          | —               | 5.8<br>(0.228)  |
|              |                          |                              |                 | Min: 8.98 - Max: 10<br>(Min: 0.354 - Max: 0.394) |                 |                 |                  |                          |                 |                 |
| 4            | 5.75<br>(0.226)          | 7.4±0.05<br>(0.291±0.002)    | 12<br>(0.4724)  | 21.10<br>(0.831)                                 |                 |                 |                  | 7.73<br>(0.304)          | 8.08<br>(0.318) | 8.43<br>(0.332) |



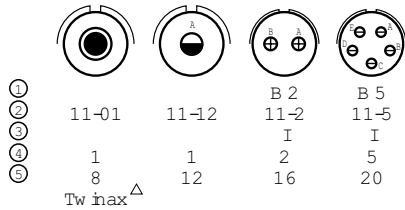
# RNJ LOW PROFILE

## INSERT ARRANGEMENTS

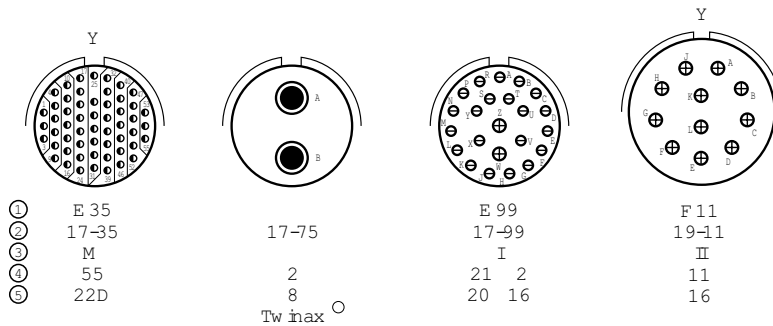
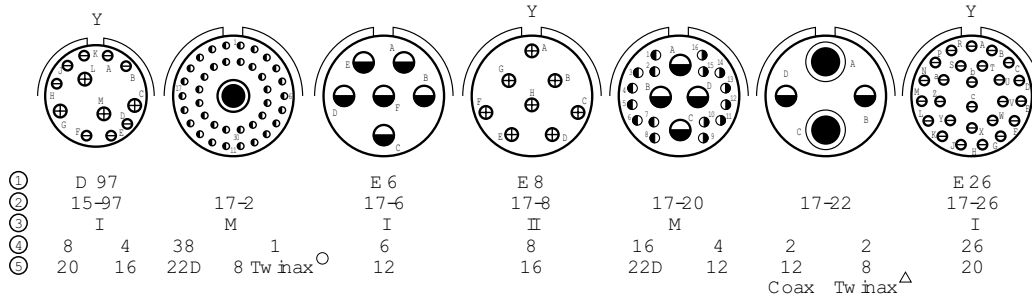
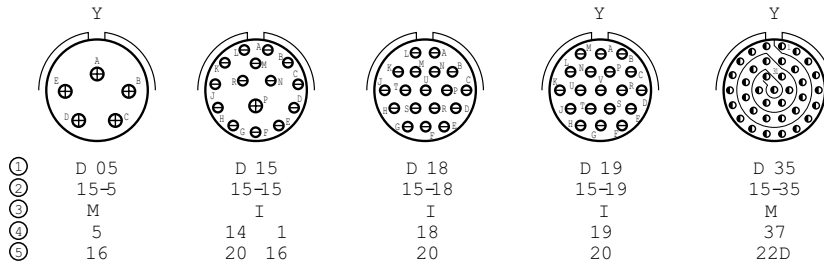
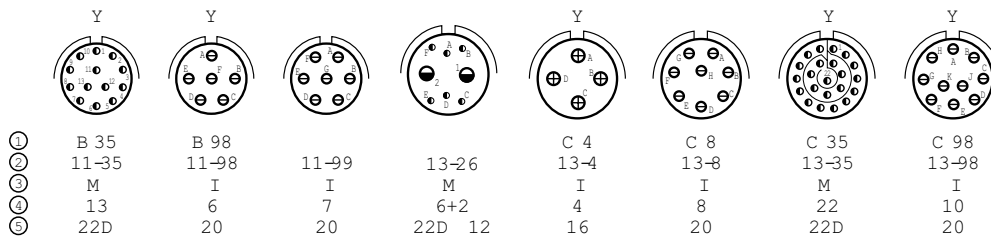
| Contact size | 22D | 20 | 16 | 12 | 8 | 4 |
|--------------|-----|----|----|----|---|---|
| Caption      |     |    |    |    |   |   |

Front view of male insert

Only the major keyway is illustrated.



1. MIL-DTL-38999 Series III insert arrangement reference
2. RNJLP insert arrangement
3. Service class
4. Number of contacts
5. Contact sizes



# RNJ LOW PROFILE

## INSERT ARRANGEMENTS

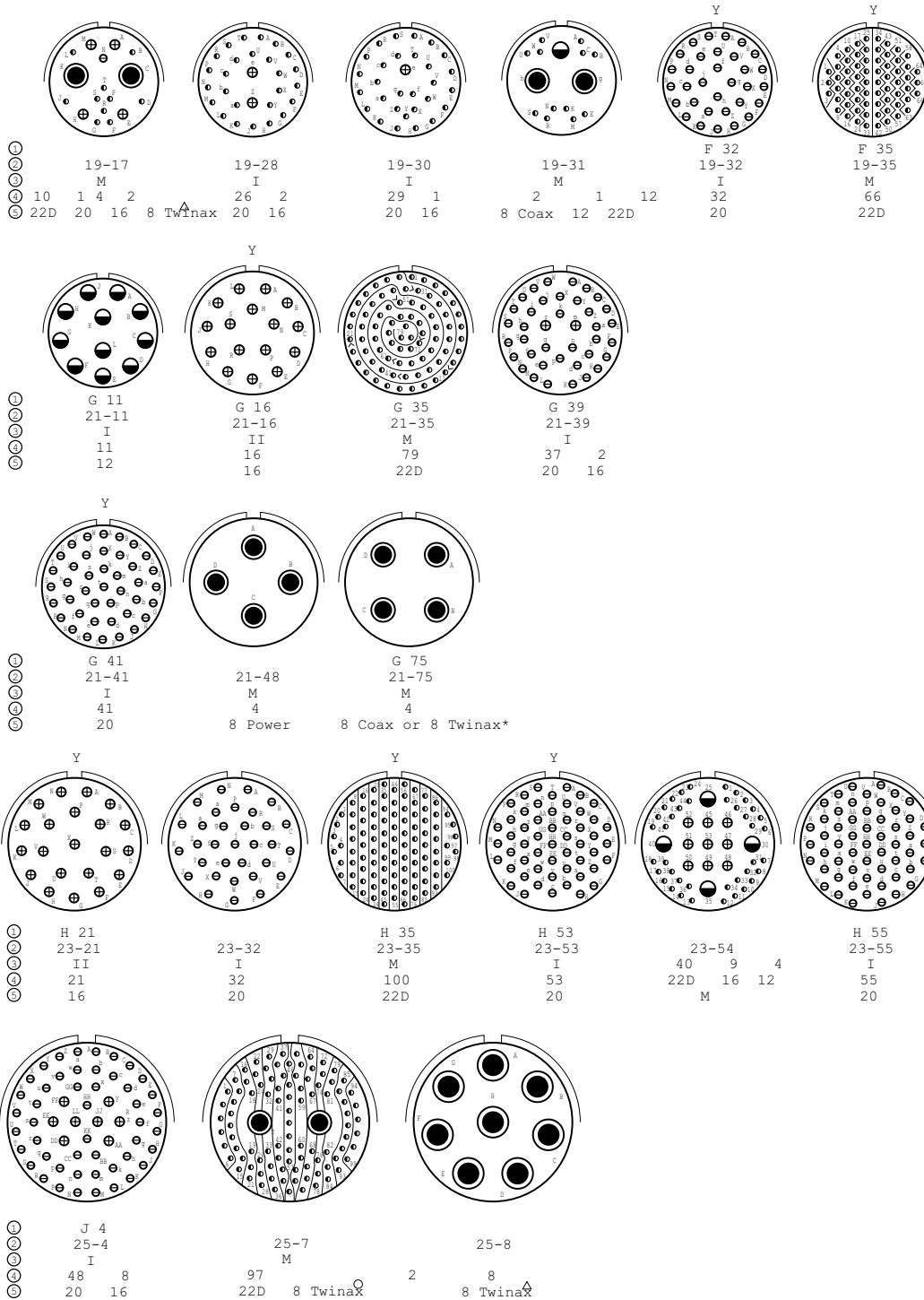
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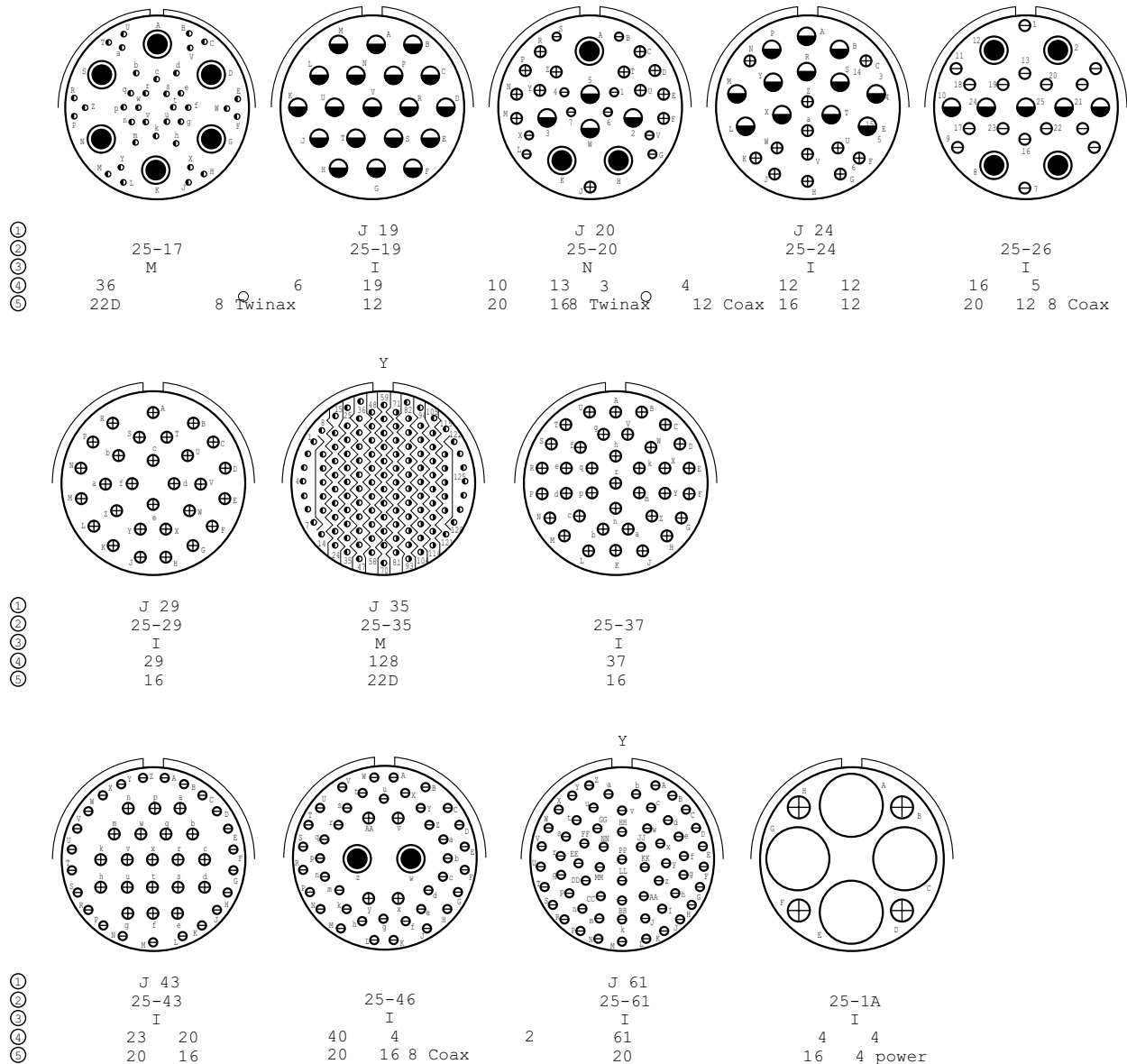
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| Caption      |     |    |    |    |   |   |

Front view of male insert

Only the major keyway is illustrated.

1. MIL-DTL-38999 Series III insert arrangement reference
2. RNJLP insert arrangement

3. Service class
4. Number of contacts
5. Contact sizes



- \* P/N delivered with size 8 coaxial contacts for RG 180 and RG 195 wire
- Y Available in hermetic version
- Δ Delivered with twinax contacts for double braid cable (PAN 6421, AECMA Pr EN 3375 - 004, Raychem 10613, EPD44692, EPD44693).
- ⊕ Delivered with twinax contacts for simple braid cable (M17/1760002, AECMA Pr EN 3375 - 003, Raychem 10612, EPD44690, EPD44691).

Only most commonly used inserts arrangements are listed here. All other Amphenol inserts are available, please call us for details.

# RNJ LOW PROFILE

| Arrangements | Service Class | Total number of contacts | Number and size of contacts |    |    |    |         |         |        |                   |   | Grounded Insert availability** |   |
|--------------|---------------|--------------------------|-----------------------------|----|----|----|---------|---------|--------|-------------------|---|--------------------------------|---|
|              |               |                          | 22D                         | 20 | 16 | 12 | 12 coax | 8 power | 8 coax | 8 triax or twinax | 4 | P                              | S |
| 11-1         |               | 1                        |                             |    |    |    |         |         |        |                   | 1 |                                |   |
| 11-2**       |               | 2                        |                             |    |    |    |         |         |        |                   |   | X                              |   |
| 11-2         | I             | 2                        |                             |    | 2  |    |         |         |        |                   |   |                                |   |
| 11-5         | I             | 5                        |                             | 5  |    |    |         |         |        |                   |   |                                |   |
| 11-12        | II            | 1                        |                             |    |    | 1  |         |         |        |                   |   |                                |   |
| 11-35        | M             | 13                       | 13                          |    |    |    |         |         |        |                   |   |                                |   |
| 11-98        | I             | 6                        |                             | 6  |    |    |         |         |        |                   |   |                                |   |
| 11-99        | I             | 7                        |                             | 7  |    |    |         |         |        |                   |   |                                |   |
| 13-4**       |               | 4                        |                             |    |    |    |         |         |        |                   |   | X                              |   |
| 13-4         | I             | 4                        |                             |    | 4  |    |         |         |        |                   |   |                                |   |
| 13-8         | I             | 8                        |                             | 8  |    |    |         |         |        |                   |   |                                |   |
| 13-26        | M             | 8                        | 6                           |    |    |    | 2       |         |        |                   |   |                                |   |
| 13-35        | M             | 22                       | 22                          |    |    |    |         |         |        |                   |   |                                |   |
| 13-98        | I             | 10                       |                             | 10 |    |    |         |         |        |                   |   |                                |   |
| 15-5**       |               | 5                        |                             |    |    |    |         |         |        |                   |   | X                              |   |
| 15-5         | II            | 5                        |                             |    | 5  |    |         |         |        |                   |   |                                |   |
| 15-15        | I             | 15                       |                             | 14 | 1  |    |         |         |        |                   |   |                                |   |
| 15-18        | I             | 18                       |                             | 18 |    |    |         |         |        |                   |   |                                |   |
| 15-19        | I             | 19                       |                             | 19 |    |    |         |         |        |                   |   |                                |   |
| 15-35        | M             | 37                       | 37                          |    |    |    |         |         |        |                   |   |                                |   |
| 15-97        | I             | 12                       |                             | 8  | 4  |    |         |         |        |                   |   |                                |   |
| 17-2         | M             | 39                       | 38                          |    |    |    |         |         |        | 1                 |   |                                |   |
| 17-6**       |               | 6                        |                             |    |    |    |         |         |        |                   |   | X                              |   |
| 17-6         | I             | 6                        |                             |    |    | 6  |         |         |        |                   |   |                                |   |
| 17-8**       |               | 8                        |                             |    |    |    |         |         |        |                   |   | X                              | X |
| 17-8         | II            | 8                        |                             |    | 8  |    |         |         |        |                   |   |                                |   |
| 17-22**      |               | 4                        |                             |    |    |    |         |         |        |                   |   | X                              |   |
| 17-26        | I             | 26                       |                             | 26 |    |    |         |         |        |                   |   |                                |   |
| 17-35        | M             | 55                       | 55                          |    |    |    |         |         |        |                   |   |                                |   |
| 17-75        | I             | 2                        |                             |    |    |    |         |         |        | 2                 |   |                                |   |
| 17-99        | I             | 23                       |                             | 21 | 2  |    |         |         |        |                   |   |                                |   |
| 19-11        | II            | 11                       |                             |    | 11 |    |         |         |        |                   |   |                                |   |
| 19-17        | M             | 17                       | 10                          | 1  | 4  |    |         |         |        | 2                 |   |                                |   |
| 19-28        | I             | 28                       |                             | 26 | 2  |    |         |         |        |                   |   |                                |   |
| 19-30        | I             | 30                       |                             | 29 | 1  |    |         |         |        |                   |   |                                |   |
| 19-31        | M             | 15                       | 12                          |    |    | 1  |         |         |        |                   |   |                                |   |
| 19-32        | I             | 32                       |                             | 32 |    |    |         |         |        |                   |   |                                |   |
| 19-35        | M             | 66                       | 66                          |    |    |    |         |         |        |                   |   |                                |   |
| 21-11        | I             | 11                       |                             |    |    | 11 |         |         |        |                   |   |                                |   |
| 21-16**      |               | 16                       |                             |    |    |    |         |         |        |                   |   | X                              |   |
| 21-16        | II            | 16                       |                             |    | 16 |    |         |         |        |                   |   |                                |   |
| 21-35        | M             | 79                       | 79                          |    |    |    |         |         |        |                   |   |                                |   |
| 21-39        | I             | 39                       |                             | 37 | 2  |    |         |         |        |                   |   |                                |   |
| 21-41        | I             | 41                       |                             | 41 |    |    |         |         |        |                   |   |                                |   |
| 21-48        | M             | 4                        |                             |    |    |    |         | 4       |        |                   |   |                                |   |
| 21-75        | M             | 4                        |                             |    |    |    |         |         | 4      |                   |   |                                |   |
| 21-75**      |               | 4                        |                             |    |    |    |         |         |        |                   |   | X                              |   |

Legend: \*\* Grounded version (metallic insert for use with coaxial or twinax contacts, for receptacle only), supplied without contact.

# RNJ LOW PROFILE

| Arrangements | Service Class | Total number of contacts | Number and size of contacts |    |    |    |         |         |        |                   |   | Grounded Insert availability** |   |
|--------------|---------------|--------------------------|-----------------------------|----|----|----|---------|---------|--------|-------------------|---|--------------------------------|---|
|              |               |                          | 22D                         | 20 | 16 | 12 | 12 coax | 8 power | 8 coax | 8 triax or twinax | 4 | P                              | S |
| 23-21        | II            | 21                       |                             |    | 21 |    |         |         |        |                   |   |                                |   |
| 23-21**      | II            | 21                       |                             |    |    |    |         |         |        |                   |   |                                | X |
| 23-32        | I             | 32                       |                             | 32 |    |    |         |         |        |                   |   |                                |   |
| 23-35        | M             | 100                      | 100                         |    |    |    |         |         |        |                   |   |                                |   |
| 23-53        | I             | 53                       |                             | 53 |    |    |         |         |        |                   |   |                                |   |
| 23-54        | M             | 53                       | 40                          |    | 9  | 4  |         |         |        |                   |   |                                |   |
| 23-55        | I             | 55                       |                             | 55 |    |    |         |         |        |                   |   |                                |   |
| 25-4         | I             | 56                       |                             | 48 | 8  |    |         |         |        |                   |   |                                |   |
| 25-7         | M             | 99                       | 97                          |    |    |    |         |         |        | 2                 |   |                                |   |
| 25-8         | M             | 8                        |                             |    |    |    |         |         |        | 8                 |   |                                |   |
| 25-8**       | M             | 8                        |                             |    |    |    |         |         |        |                   |   |                                | X |
| 25-17        | M             | 42                       | 36                          |    |    |    |         |         |        | 6                 |   |                                |   |
| 25-19        | I             | 19                       |                             |    |    | 19 |         |         |        |                   |   |                                |   |
| 25-19**      | I             | 19                       |                             |    |    |    |         |         |        |                   |   | X                              |   |
| 25-20        | N             | 30                       |                             | 10 | 13 |    | 4*      |         |        | 3                 |   |                                |   |
| 25-24        | I             | 24                       |                             |    | 12 | 12 |         |         |        |                   |   |                                |   |
| 25-26        | I             | 25                       |                             | 16 |    | 5  |         |         | 4      |                   |   |                                |   |
| 25-29**      | I             | 29                       |                             |    |    |    |         |         |        |                   |   | X                              |   |
| 25-29        | I             | 29                       |                             |    | 29 |    |         |         |        |                   |   |                                |   |
| 25-35        | M             | 128                      | 128                         |    |    |    |         |         |        |                   |   |                                |   |
| 25-37        | I             | 37                       |                             |    | 37 |    |         |         |        |                   |   |                                |   |
| 25-41        | I             | 41                       | 22                          | 3  | 11 |    | 2*      |         |        | 3                 |   |                                |   |
| 25-43        | I             | 43                       |                             | 23 | 20 |    |         |         |        |                   |   |                                |   |
| 25-46        | I             | 46                       |                             | 40 | 4  |    |         |         | 2      |                   |   |                                |   |
| 25-61        | I             | 61                       |                             | 61 |    |    |         |         |        |                   |   |                                |   |
| 25-1A        | I             | 8                        |                             |    | 4  |    |         |         |        |                   | 4 |                                |   |

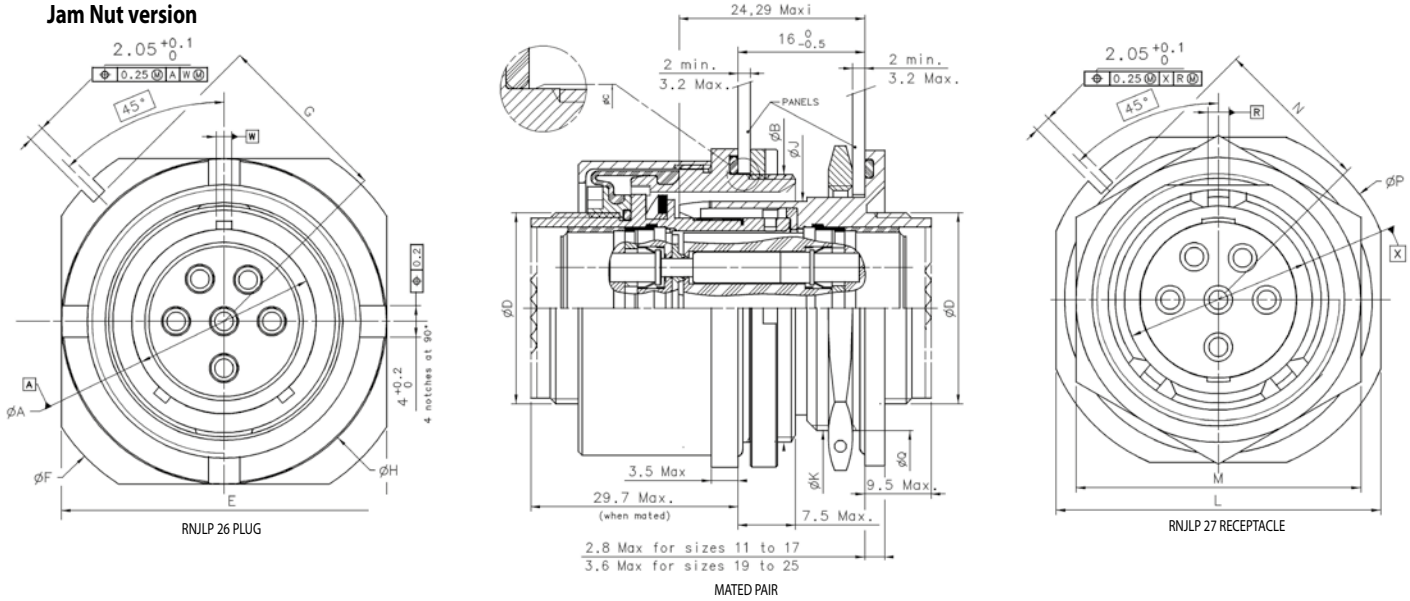
**Legend:** \*\* Grounded version (metallic insert for use with coaxial or twinax contacts, for receptacle only), supplied without contact.

**Only most commonly used inserts arrangements are listed here. All other Amphenol inserts are available, please call us for details.**

# RNJ LOW PROFILE

## ■ ■ ■ RNJ LOW PROFILE PLUG & RECEPTACLE

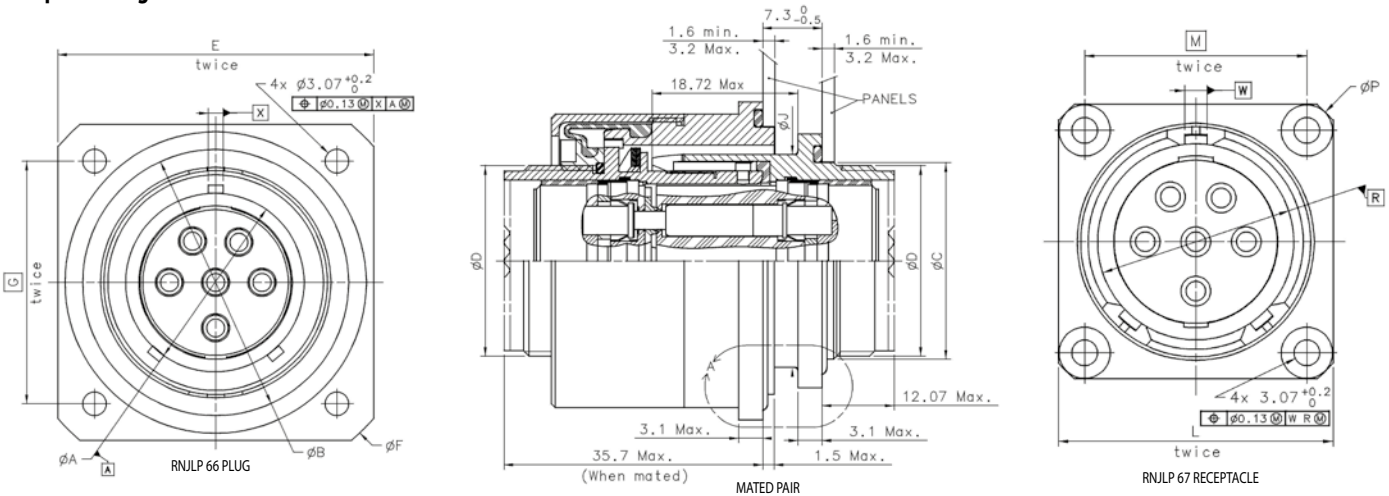
### Jam Nut version



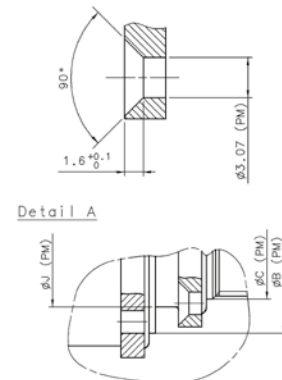
| Size | $\phi A_{-0.13}^0$ | Thread $\phi B$ | $\phi C_{-0.05}^0$ | Thread $\phi D$ | $E_{-0.25}^0$ | $\phi F_{-0.4}^0$ | $G_{-0.25}^0$ | $\phi H_{Max.}$ | $\phi J_{Max.}$ | Thread $\phi K$ | $L_{-0.4}^0$ | $M_{Max.}$ | $N_{-0.2}^0$ | $\phi P_{-0.4}^0$ | $\phi Q_{-0.05}^0$ |
|------|--------------------|-----------------|--------------------|-----------------|---------------|-------------------|---------------|-----------------|-----------------|-----------------|--------------|------------|--------------|-------------------|--------------------|
| 11   | 14.38              | M25x1-6g R0.100 | 25.53              | M15x1-6g R0.100 | 32.16         | 38.50             | 16.92         | 32.10           | 18.68           | M20x1-6g R0.100 | 32.16        | 25.84      | 15.33        | 35.34             | 20.83              |
| 13   | 17.23              | M28x1-6g R0.100 | 28.75              | M18x1-6g R0.100 | 35.34         | 41.68             | 18.51         | 35.10           | 21.88           | M25x1-6g R0.100 | 35.34        | 30.62      | 16.92        | 38.51             | 25.53              |
| 15   | 20.40              | M32x1-6g R0.100 | 31.93              | M22x1-6g R0.100 | 38.51         | 44.85             | 20.10         | 39.10           | 25.08           | M28x1-6g R0.100 | 38.51        | 33.76      | 18.51        | 41.69             | 28.75              |
| 17   | 23.58              | M35x1-6g R0.100 | 35.10              | M25x1-6g R0.100 | 41.69         | 49.63             | 22.67         | 42.10           | 28.18           | M32x1-6g R0.100 | 41.69        | 36.97      | 20.10        | 44.86             | 31.93              |
| 19   | 26.24              | M38x1-6g R0.100 | 38.23              | M28x1-6g R0.100 | 46.43         | 52.78             | 24.26         | 45.70           | 31.18           | M35x1-6g R0.100 | 46.43        | 40.11      | 22.67        | 49.64             | 35.10              |
| 21   | 29.42              | M41x1-6g R0.100 | 41.45              | M31x1-6g R0.100 | 49.64         | 55.99             | 25.84         | 48.70           | 34.38           | M38x1-6g R0.100 | 49.64        | 43.32      | 24.26        | 52.78             | 38.23              |
| 23   | 32.59              | M44x1-6g R0.100 | 44.63              | M34x1-6g R0.100 | 52.78         | 59.13             | 27.43         | 51.70           | 37.58           | M41x1-6g R0.100 | 52.78        | 46.46      | 25.84        | 55.99             | 41.45              |
| 25   | 35.77              | M48x1-6g R0.100 | 48.03              | M37x1-6g R0.100 | 55.93         | 59.53             | 27.58         | 55.70           | 40.78           | M44x1-6g R0.100 | 55.99        | 51.24      | 27.43        | 59.13             | 44.63              |

Fixing nuts with 4 slots for Jam Nut plug are available with 4 holes for lockwiring capability (optional).

### Square Flange version



| Size | $\phi A_{-0.13}^0$ | $\phi B_{-0.05}^0$ | $\phi C_{-0.05}^0$ | Thread $\phi D$ | $E_{-0.25}^0$ | $\phi F_{-0.4}^0$ | $G$  | $\phi J_{Max.}$ | $L_{-0.3}^0$ | $M$   | $\phi P_{-0.4}^0$ |
|------|--------------------|--------------------|--------------------|-----------------|---------------|-------------------|------|-----------------|--------------|-------|-------------------|
| 11   | 14.38              | 25.53              | 16.73              | M15x1-6g R0.100 | 33.60         | 45                | 25.5 | 18.68           | 28.3         | 20.62 | 37.03             |
| 13   | 17.23              | 28.75              | 19.93              | M18x1-6g R0.100 | 36.30         | 48                | 28   | 21.88           | 30.7         | 23.01 | 40.33             |
| 15   | 20.40              | 31.93              | 22.83              | M22x1-6g R0.100 | 39.50         | 52                | 30   | 25.08           | 32.3         | 24.61 | 42.63             |
| 17   | 23.58              | 35.10              | 25.83              | M25x1-6g R0.100 | 41.69         | 55                | 32   | 28.18           | 34.7         | 26.97 | 45.93             |
| 19   | 26.24              | 38.23              | 29.03              | M28x1-6g R0.100 | 46.43         | 58                | 35   | 31.18           | 37.1         | 29.36 | 49.33             |
| 21   | 29.42              | 41.45              | 32.23              | M31x1-6g R0.100 | 49.64         | 60                | 37   | 34.38           | 39.7         | 31.75 | 52.73             |
| 23   | 32.59              | 44.63              | 34.03              | M34x1-6g R0.100 | 53.00         | 63                | 39.5 | 37.58           | 42.9         | 34.93 | 57.23             |
| 25   | 35.77              | 48.03              | 37.23              | M37x1-6g R0.100 | 54.50         | 65                | 41.5 | 40.78           | 46           | 38.10 | 60.03             |



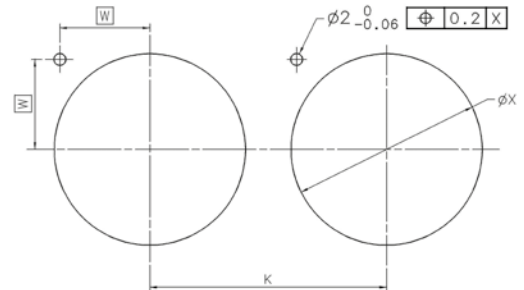
# RNJ LOW PROFILE

## ■ ■ ■ PANEL DRILLING & RECOMMENDED TORQUE VALUES

### Jam Nut version (RNJ LP 26 and 27)

| PLUG SIZE | K (min) | W     | $\phi X \text{ } ^{+0.1}$ |
|-----------|---------|-------|---------------------------|
| 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                     |

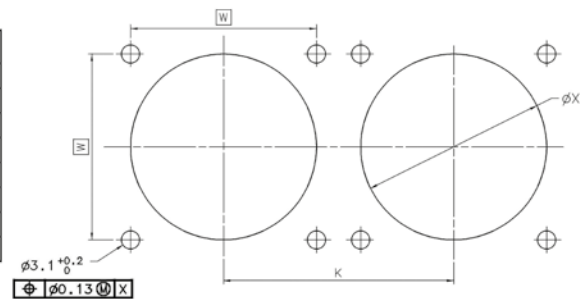
| RECEPTACLE SIZE | K (min) | W     | $\phi X \text{ } ^{+0.1}$ |
|-----------------|---------|-------|---------------------------|
| 11              | 32.57   | 11.69 | 20.86                     |
| 13              | 36      | 12.81 | 25.58                     |
| 15              | 39.6    | 13.94 | 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 version (RNJ LP 66 and 67)

| PLUG SIZE | K (min) | W    | $\phi X \text{ } ^{+0.1}$ |
|-----------|---------|------|---------------------------|
| 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                     |

| RECEPTACLE SIZE | K (min) | W     | $\phi X \text{ } ^{+0.1}$ |
|-----------------|---------|-------|---------------------------|
| 11              | 36      | 20.62 | 16.78                     |
| 13              | 39.6    | 23.01 | 19.98                     |
| 15              | 43.3    | 24.61 | 22.88                     |
| 17              | 47      | 26.97 | 25.88                     |
| 19              | 50.6    | 29.36 | 29.08                     |
| 21              | 54.2    | 31.75 | 32.28                     |
| 23              | 59.7    | 34.93 | 34.08                     |
| 25              | 59.7    | 38.1  | 37.28                     |

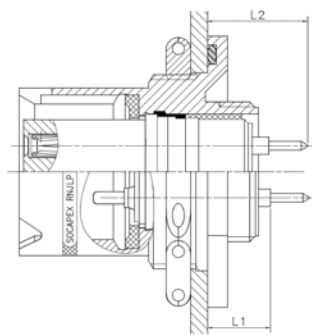


### Rear accessories torque values

The following values must be observed. Before applying this coupling torque, locking glue has to be applied on the rear thread of the connector.

| Shell size           | 11             | 13              | 15              | 17              | 19              | 21              | 23              | 25              |
|----------------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Coupling torque (Nm) | $8 \pm 0.4$    | $11 \pm 0.5$    | $11 \pm 0.5$    | $14 \pm 0.7$    | $14 \pm 0.7$    | $17 \pm 0.8$    | $17 \pm 0.8$    | $20 \pm 1$      |
| (lb.inch)            | $0.9 \pm 0.05$ | $1.24 \pm 0.06$ | $1.24 \pm 0.06$ | $1.58 \pm 0.08$ | $1.58 \pm 0.08$ | $1.92 \pm 0.09$ | $1.92 \pm 0.09$ | $2.28 \pm 0.11$ |

### Power contacts with PCB tails



| P | L1 | RNJ LP 27 CI<br>mm (in) |              | RNJ LP 27 LI<br>mm (in) |              |
|---|----|-------------------------|--------------|-------------------------|--------------|
|   |    | min                     | max          | min                     | max          |
| S | L1 | min                     | 7.89 (.311)  | 7.89 (.311)             | 7.89 (.311)  |
|   |    | max                     | 8.57 (.337)  | 8.57 (.337)             | 8.57 (.337)  |
|   | L2 | min                     | 12.79 (.504) | 12.79 (.504)            | 16.29 (.641) |
|   |    | max                     | 13.67 (.538) | 13.67 (.538)            | 17.17 (.676) |

### Remark:

the design of the RNJLP27 shell is modified when delivered with PCB contacts (shorter design without serrations)

Other dimensions available upon request: coax, twinax...

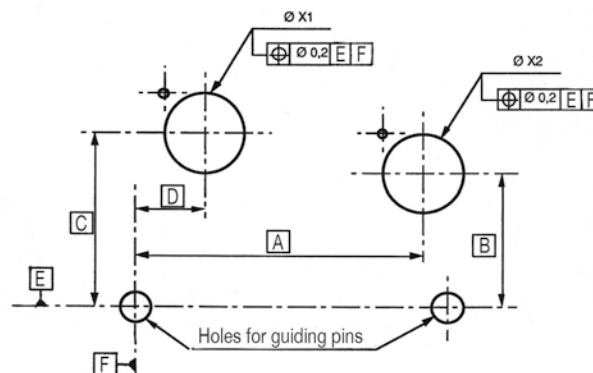
For other shell configurations (RNJ LP 67/26/66) equipped with PCB contacts (specific applications), please consult us.

### Stand-Off for PCB



**New:** RNJ LP 27 receptacles for PCB applications are available with stand-off with holes for M3 screws for fixation on the board.

### Example of panel drilling



### Note:

All the dimensions are referenced from the guiding pin (E, F). The reference axis E goes through the 2 guiding pins centers.

## HOW TO ORDER

|  |               |           |          |           |           |          |          |            |           |          |
|--|---------------|-----------|----------|-----------|-----------|----------|----------|------------|-----------|----------|
| <b>Series</b>  | <b>RNJ LP</b> | <b>26</b> | <b>T</b> | <b>11</b> | <b>35</b> | <b>P</b> | <b>N</b> | <b>014</b> | <b>LC</b> | <b>-</b> |
| <b>Shell type</b>  |               |           |          |           |           |          |          |            |           |          |
| 26 - Jam nut plug  |               |           |          |           |           |          |          |            |           |          |
| 27 - Jam nut receptacle  |               |           |          |           |           |          |          |            |           |          |
| 66 - Square flange plug  |               |           |          |           |           |          |          |            |           |          |
| 67 - Square flange receptacle  |               |           |          |           |           |          |          |            |           |          |
| <b>Service class and contact type</b>                                      |               |           |          |           |           |          |          |            |           |          |
| T - Environmental, crimp contacts #22D/20/16/12/4                          |               |           |          |           |           |          |          |            |           |          |
| CI - Environmental, PCB contacts, standard tails (RNJLP27 only)            |               |           |          |           |           |          |          |            |           |          |
| LI - Environmental, PCB contacts, long tails (RNJLP27 only)                |               |           |          |           |           |          |          |            |           |          |
| K - Stainless steel version (316 L), crimp contacts                        |               |           |          |           |           |          |          |            |           |          |
| KE - Stainless steel version (303), crimp contacts                         |               |           |          |           |           |          |          |            |           |          |
| KCI - Stainless steel version (316 L), PCB contacts, standard tails        |               |           |          |           |           |          |          |            |           |          |
| KLI - Stainless steel version (316 L), PCB contacts, long tails            |               |           |          |           |           |          |          |            |           |          |
| <b>Shell size</b>  |               |           |          |           |           |          |          |            |           |          |
| 11/13/15/17/19/21/23/25  |               |           |          |           |           |          |          |            |           |          |
| <b>Inserts arrangements</b>  |               |           |          |           |           |          |          |            |           |          |
| See pages 5 to 9   |               |           |          |           |           |          |          |            |           |          |
| <b>Contact type</b>  |               |           |          |           |           |          |          |            |           |          |
| P - Pin contact  |               |           |          |           |           |          |          |            |           |          |
| S - Socket contact   |               |           |          |           |           |          |          |            |           |          |
| <b>Polarization</b>  |               |           |          |           |           |          |          |            |           |          |
| N - Normal position only   |               |           |          |           |           |          |          |            |           |          |
| <b>Shell finish</b>  |               |           |          |           |           |          |          |            |           |          |
| 014 - Olive drab cadmium   |               |           |          |           |           |          |          |            |           |          |
| 023 - Electroless nickel   |               |           |          |           |           |          |          |            |           |          |
| Blank for stainless steel version «K»                                      |               |           |          |           |           |          |          |            |           |          |
| <b>Contact</b>   |               |           |          |           |           |          |          |            |           |          |
| Blank - Connector supplied with contacts                                   |               |           |          |           |           |          |          |            |           |          |
| LC - Connector supplied without contact («LC» not marked on the connector) |               |           |          |           |           |          |          |            |           |          |
| <b>Deviation</b>   |               |           |          |           |           |          |          |            |           |          |
| F404 - Contacts with tin plated PC tails (CI or LI version only)           |               |           |          |           |           |          |          |            |           |          |
| F304 - Firewall insert (stainless steel only)                              |               |           |          |           |           |          |          |            |           |          |
| For other deviations (FXXX), please consult us.                            |               |           |          |           |           |          |          |            |           |          |

### Specific requirements:

- 1) For grounded insert part-numbering, please consult us.
- 2) For grounded insert or non-grounded insert compatible with quadrx or differential twinax contacts (polarized size 8 cavities), please consult us.
- 3) For inserts to be fitted with RJ45 connectors (RJ Stop Patented), please consult us.
- 4) For jam nut versions (RNJ LP 26 and 27) to be mated with square flange

- 5) Differential pressure application: in addition to hermetic receptacle (Pin only) versions with inserts (Pin or socket) compounded with either epoxy resin or RTV160/RTV142 are available upon request. Please call for details.
- 6) A complete RNJ LP Installation User Guide Line is available upon request. (Location of the guiding pin of the system compared to the connectors...)

### Box for spanner (for RNJ LP 26 plug installation)



For # 11: RNJ8982A11  
 For # 13: RNJ8982B13  
 For # 15: RNJ8982C15  
 For # 17: RNJ8982D17  
 For # 19: RNJ8982E19

For # 21: RNJ8982F21  
 For # 23: RNJ8982G23  
 For # 25: RNJ8982H25







# RNJ LOW PROFILE

## ABOUT AMPHENOL

Founded in 1932, **Amphenol** is one of the largest manufacturers of interconnect products in the world. The company designs, manufactures, and markets electrical, electronic, and fiber optic connectors, interconnect systems, and coaxial and specialty cables.

**Amphenol** has a diversified presence as a leader in high growth areas of the interconnect industry and provides solutions for customers in the automotive, broadband, industrial, information technology and data communications, military and aerospace, mobile devices, and mobile networks markets.

More info on [www.amphenol.com](http://www.amphenol.com)



**Amphenol Military & Aerospace Operations (AMAO)** has the largest and broadest selection of interconnect products in the military and aerospace markets.

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### Europe

|                |                                    |  |                   |
|----------------|------------------------------------|--|-------------------|
| FRANCE         | Amphenol AIR LB                    | 2 rue Clément Ader, ZAC de Wé - 08110 Carignan                         | +33 3 24 22 78 49 |
| FRANCE         | Amphenol SEFEE                     | Z.I. des Cazes – BP243 - 12402 Saint-Affrique Cedex                    | +33 5 65 98 11 00 |
| GERMANY        | Amphenol AIR LB GMBH               | Am Kleinbahnhof 4 - 66740 Saarlouis                                    | +49 6831 981 00   |
| ITALY          | Amphenol EUROPEAN SALES OPERATIONS | Via Barbaiana n.5 - 20020 Lainate - Milano                             | +39 293 254 214   |
| UNITED KINGDOM | Amphenol INVOTEC                   | Unit 1-3, Hedging Lane Industrial Estate, Dosthill - Tamworth, B77 5HH | +44 1827 263 000  |
| UNITED KINGDOM | Amphenol IONIX SYSTEMS             | Prospect House, Taylor Business Park, Risley, Warrington, WA3 6HP      | +44 1 942 685 200 |
| UNITED KINGDOM | Amphenol LTD                       | Thanet Way, Whitstable - KENT, CT53JF                                  | +44 1227 773 200  |
| UNITED KINGDOM | Amphenol MARTEC                    | St Augustines Business Park, Swalecliffe Whitstable - Kent CT5 2QJ     | +44 1227 793 733  |

### North America

|        |                               |  |                 |
|--------|-------------------------------|--|-----------------|
| CANADA | Amphenol CANADA               | 605 Milner avenue - Toronto, Ontario                           | +1 416 291 0647 |
| USA    | Amphenol AEROSPACE OPERATIONS | 40-60 Delaware street - Sidney, NY 13838                       | +1 800 678 0141 |
| USA    | Amphenol BORISH TECHNOLOGIES  | 4511 East Paris AVE - Grand Rapids, MI 49512                   | +1 616 554 9820 |
| USA    | Amphenol FSI                  | 1300 Central Expwy N, Suite 100 - Allen, TX 75013              | +1 214 547 2400 |
| USA    | Amphenol GRIFFITH ENTERPRISES | 6000 East Coury Drive - Cottonwood, AZ 86326                   | +1 928 634 3685 |
| USA    | Amphenol NEXUS TECHNOLOGIES   | 50 Sunnyside Avenue - Stamford, CT 06902                       | +1 203 327 7300 |
| USA    | Amphenol PCD                  | 72 Cherry Hill Drive - Beverly, MA. 01915                      | +1 978 624 3400 |
| USA    | Amphenol PRINTED CIRCUIT      | Board Technology, 91 Northeastern Boulevard - Nashua, NH 03062 | +1 603 324 4500 |
| USA    | Amphenol SV MICROWAVE         | 2400 Centrepark West Drive - West Palm Beach, FL               | +1 561 840 1800 |
| USA    | Amphenol TIMES MICROWAVE      | 358 Hall Avenue - Wallingford, CT 06492                        | +1 800 867 2629 |

### Asia

|           |                             |  |                        |
|-----------|-----------------------------|--|------------------------|
| CHINA     | Amphenol PCD CO.            | Building 21, 1 <sup>st</sup> Liao Keng Industrial Zone, Shi Yan Street - Bao An District - Shenzhen 518108 | +86 755 8173 8000/8286 |
| INDIA     | Amphenol INTERCONNECT INDIA | 105 Bhosari Industrial Area - Pune 411 026   | +91 20 27120363        |
| JAPAN     | Amphenol JAPAN              | 471-1, Deba, Ritto-City - Shiga 520 3041   | +81 77 553 8501        |
| KOREA     | Amphenol DAESHIN            | 558 SongNae-Dong SoSa-Gu, Bucheon-city, Kyunggi-Do - 420-130   | +81 32 610 3830/3845   |
| SINGAPORE | Amphenol EAST ASIA          | 26/F, Railway Plaza, 39 Chatham Road South, Tsim Sha Tsui, Kowloon, Hong Kong                              | +65 6294 2128          |

### Other Areas

|             |                        |   |                   |
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