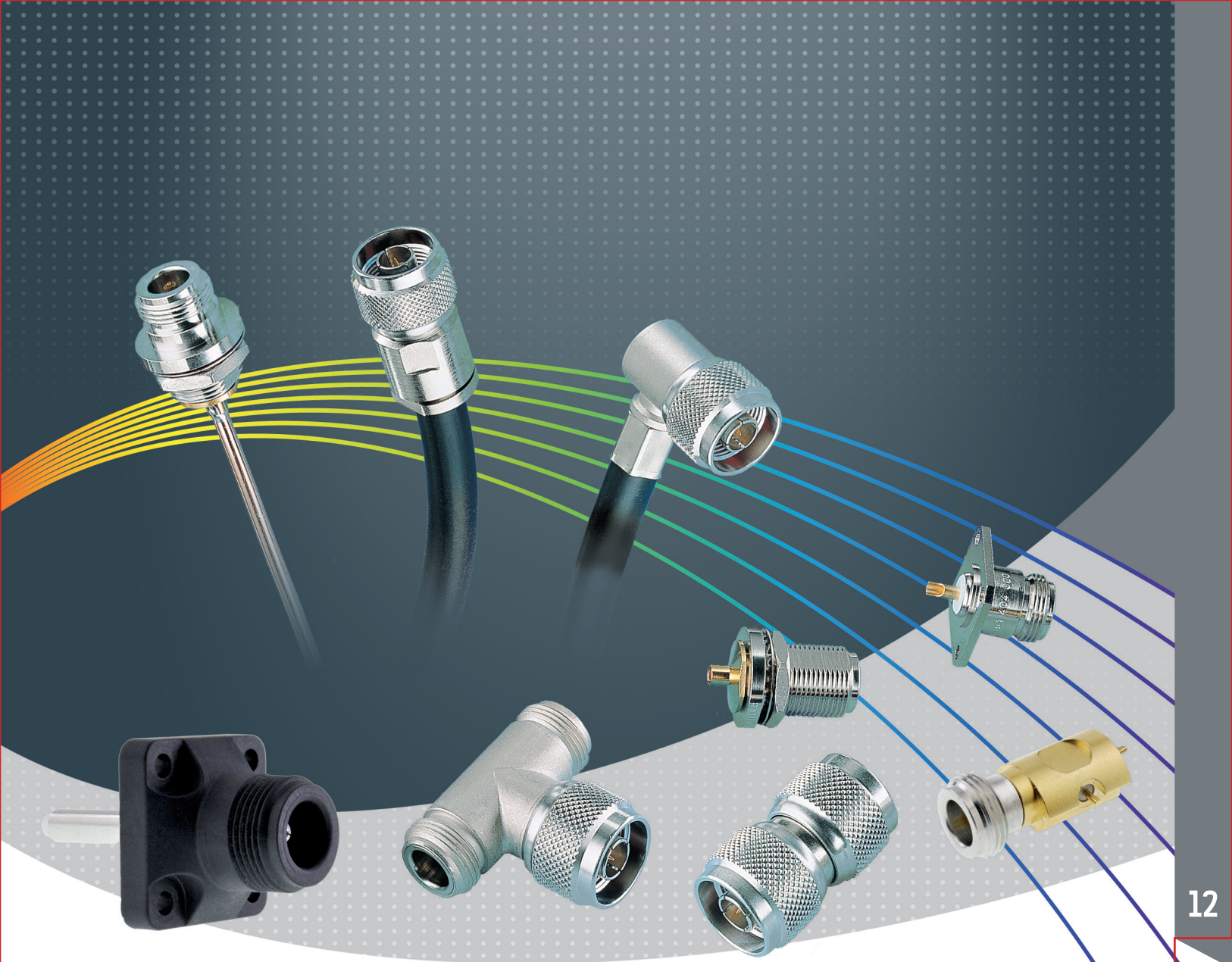




## N / Composite N / N 18 GHz series

R161 / R162 / R163



## Pages

|                    |              |
|--------------------|--------------|
| Introduction ..... | 12-4 to 12-5 |
|--------------------|--------------|

**N 50 $\Omega$  and Composite N**

|                              |                 |
|------------------------------|-----------------|
| Interface .....              | 12-6            |
| Characteristics .....        | 12-8 to 12-9    |
| Plugs .....                  | 12-12 to 12-14  |
| Jacks .....                  | 12-14 to 12-17  |
| Receptacles .....            | 12-18 and 12-20 |
| Composite N receptacle ..... | 12-19           |
| Adapters .....               | 12-21           |
| Caps .....                   | 12-22           |
| Accessories .....            | 12-22           |

**N 18 GHz**

|                       |              |
|-----------------------|--------------|
| Interface .....       | 12-6 to 12-7 |
| Characteristics ..... | 12-10        |
| Plugs .....           | 12-23        |
| Jacks .....           | 12-23        |
| Adapters .....        | 12-23        |

**N 75 $\Omega$** 

|                       |       |
|-----------------------|-------|
| Interface .....       | 12-7  |
| Characteristics ..... | 12-11 |
| Plugs .....           | 12-24 |
| Jacks .....           | 12-24 |
| Receptacles .....     | 12-25 |
| Adapters .....        | 12-25 |
| Panel drilling .....  | 12-26 |

## INTRODUCTION



|     |                                                    |
|-----|----------------------------------------------------|
| 50Ω | DC - 11 GHz (standard N)<br>DC - 18 GHz (N 18 GHz) |
| 75Ω | DC - 1.5 GHz                                       |

### GENERAL

- Standard coaxial connectors
- Screw-on coupling
- High durability and proven strength
- High power rating
- Excellent RF performance

### APPLICATIONS

- Wireless communications
- Civil and military radio-telecommunication equipment
- Countermeasure
- Navy equipment
- Industrial applications

### APPLICABLE STANDARDS

- MIL-C-39012 / MIL STD 348-304
- CEI 169-16
- CECC 22210
- NF-C-93566
- DS 8811

### NEW

#### COMPOSITE RECEPTACLES

Radiall introduces its new composite N receptacles. Composite N connectors offer outstanding electrical performance and are the best compromise in terms of weight, cost and mechanical characteristics to replace existing brass technology.

### Features and benefits

Intermateable with standard N connectors for backward compatibility

Evenly distributed contact pressure for a better intermodulation

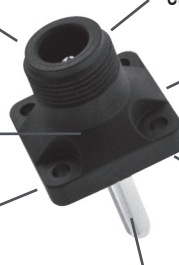
Composite material to remove any potential corrosion in outdoor applications

Color coding, optional

Light material for weight saving for cost sensitive equipments

Best material selection for outstanding torque resistance

Many center contact options available for an easy adaptation to customers application

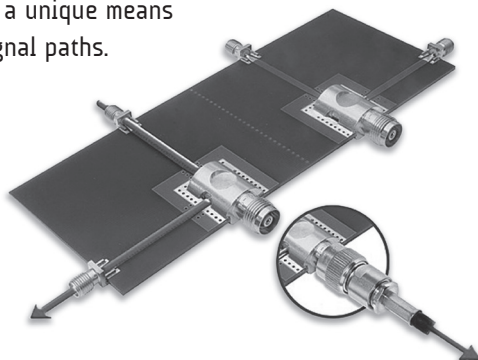


### NEW

#### POWER SWITCHING CONNECTORS

It's a "two in one" solution replacing the existing standard RF switches by integrating the switch function into a receptacle connector. This solution provides a unique means of switching between two RF signal paths.

As user friendly as a standard connector, the switch is mechanically activated by mating and unmating the connector.



### Main advantages

- Reliable
- Increases the density
- Excellent electrical and mechanical performances
- Reduction of the cost of ownership
- Betty RF adaptation
- Good isolation
- Available in right or left versions

### Main applications

- Telecom applications
- RF power amplifiers



Radiall offers a wide range with a standard plating finish:  
BBR (Bright Bronze Radiall) = high performance non magnetic alloy.

## • FULL CRIMP MODELS

A fast and reliable attachment system that can be easily achieved in a field environment, with minimum easy-to-use tooling (including models for 2 and 2.6 mm dia cables). All our full crimp connectors are single piece body.

## • LOW INTERMODULATION CONNECTORS

Radiall maintains extensive knowledge in this field and has developed N series connectors that are specially designed for base stations of applications where the elimination of intermodulation products is of the utmost importance:

- optimized for 900 - 1800 MHz bands (and able to work up to 11 GHz like the standard models),
- $IMP_3$  performance = -110 dBm (-153 dBc),
- new models for corrugated and low loss flexible cables,
- high performance non magnetic materials and platings (silver and BBR),
- new 6 flats coupling nut (18 mm), allowing high coupling torque (170 Ncm) thanks to torque wrench,
- non slotted outer contact.

## • 18 GHz PRECISION CONNECTORS

Suitable for medium to high power applications and precision microwave test equipment. Long life duration and enhanced electrical performance in severe environmental conditions. N18 series mate with all 50 ohms N connectors.

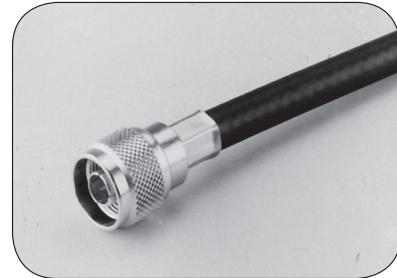
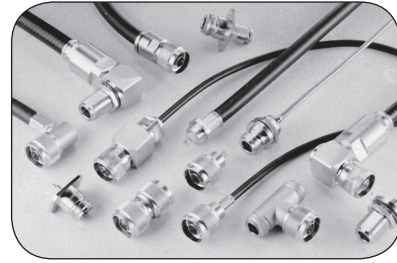
## • VERY LOW INTERMODULATION CABLE ASSEMBLIES

For severe intermodulation conditions, we propose a range of low intermodulation cable assemblies  $IMP_3 \leq 125$  dBm.

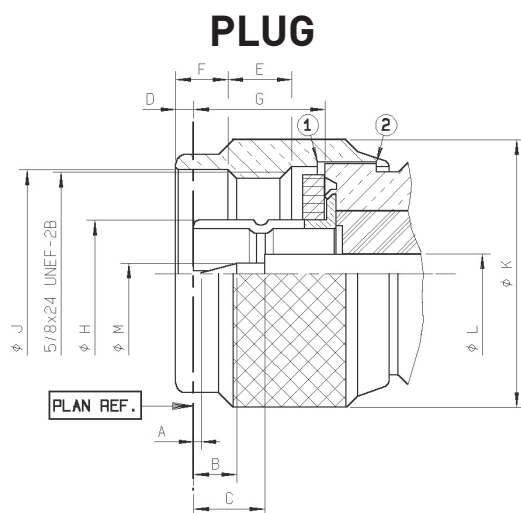
For further details, please read our:

- Intermodulation application guide (D1 032 DE)
- BBR plating application guide (D1 030 DE)

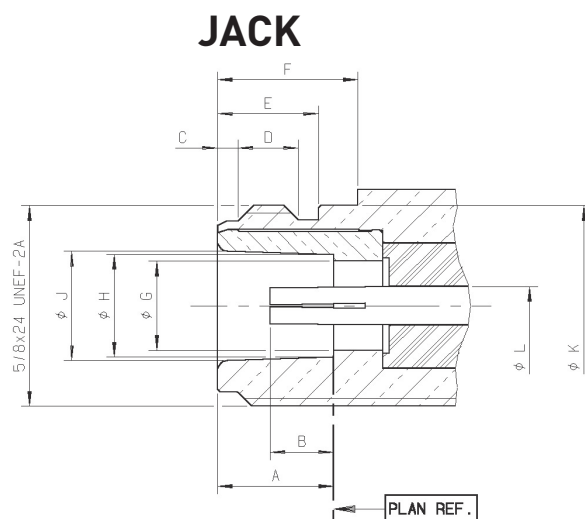
**IMPORTANT:** the 50 $\Omega$  and the 75 $\Omega$  connectors are NOT INTERMATEABLE, resulting in the interface destruction.



## INTERFACE N 50Ω

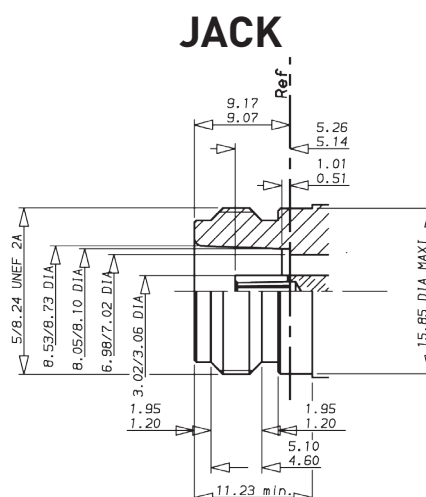
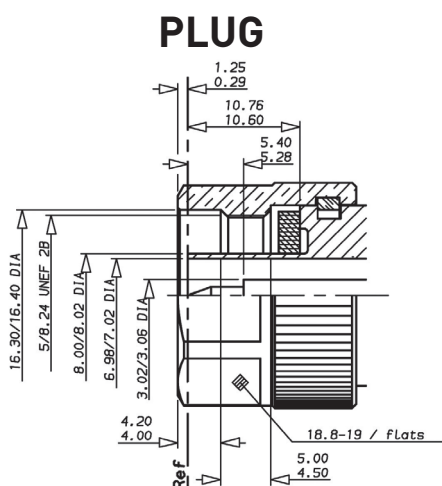


| LETTER | mm    |       | inch |      |
|--------|-------|-------|------|------|
|        | min.  | max.  | min. | max. |
| A      | 0.13  | 1.03  | .005 | .13  |
| B      | 2.80  | 3.56  | .110 | .140 |
| C      | 5.33  | 5.83  | .210 | .229 |
| D      | 1     | 2     | .016 | .066 |
| E      | 4.54  | 5.39  | .179 | .212 |
| F      | 4.05  | 4.20  | .159 | .165 |
| G      | 10.23 | 10.43 | .403 | .411 |
| H DIA  | 8.27  | 8.37  | .326 | .329 |
| J DIA  | 16.1  | 16.2  | .634 | .638 |
| K DIA  | 20.9  | 21    | .823 | .827 |
| L DIA  | 3.01  | 3.05  | .118 | .120 |
| M DIA  | 1.63  | 1.67  | .064 | .066 |



| LETTER | mm    |       | inch |      |
|--------|-------|-------|------|------|
|        | min.  | max.  | min. | max. |
| A      | 9.05  | 9.19  | .356 | .362 |
| B      | 4.75  | 5.25  | .187 | .207 |
| C      | 1.20  | 1.95  | .047 | .077 |
| D      | 4.4   | 5.1   | .173 | .201 |
| E      | 6.8   | 9     | .268 | .354 |
| F      | 10.9  | 11.2  | .429 | .441 |
| G DIA  | 6.98  | 7.02  | .275 | .276 |
| H DIA  | 8.03  | 8.13  | .316 | .320 |
| J DIA  | 8.53  | 8.73  | .336 | .344 |
| K DIA  | 15.65 | 15.85 | .616 | .624 |
| L DIA  | 3.01  | 3.05  | .118 | .120 |

## INTERFACE N 18 GHz



**IMPORTANT:** the 50Ω and the 75Ω connectors are NOT INTERMATEABLE, resulting in the interface destruction.

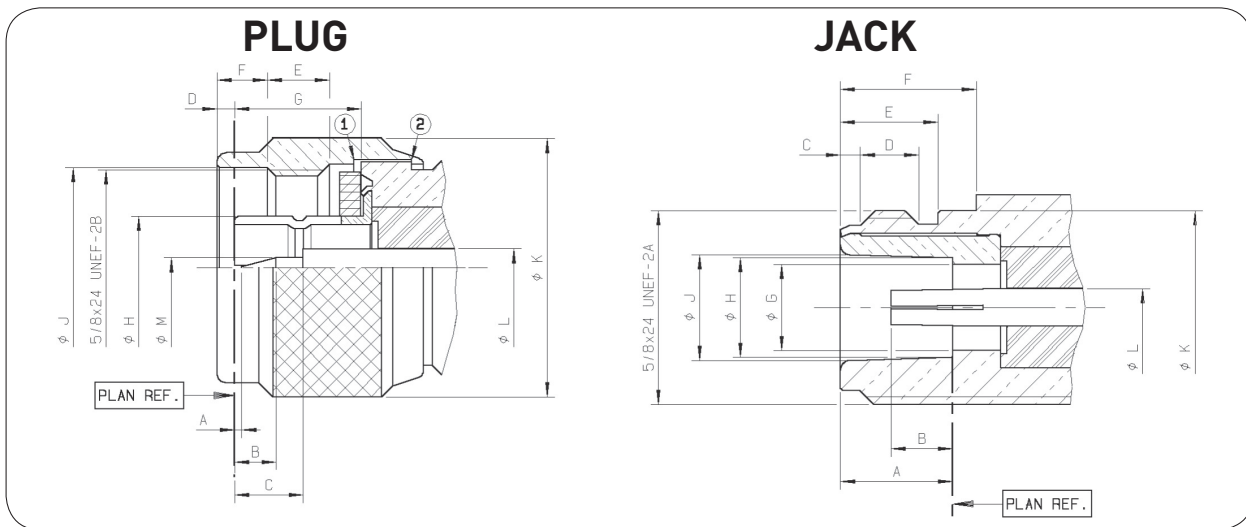
## INTERFACE N 18 GHz

| LETTER | mm    | inch  |
|--------|-------|-------|
|        | 0.29  | .0114 |
|        | 1.25  | .049  |
|        | 3.02  | .1189 |
|        | 3.06  | .1204 |
|        | 4.00  | .157  |
|        | 4.20  | .165  |
|        | 4.50  | .177  |
|        | 5.00  | .197  |
|        | 5.28  | .208  |
|        | 5.40  | .2126 |
|        | 6.98  | .2748 |
|        | 7.02  | .2764 |
|        | 8.00  | .315  |
|        | 8.02  | .316  |
|        | 10.60 | .417  |
|        | 10.76 | .423  |
|        | 16.30 | .642  |
|        | 16.40 | .646  |
|        | 18.80 | .740  |
|        | 19.00 | .748  |

| LETTER | mm    | inch  |
|--------|-------|-------|
|        | 0.51  | .020  |
|        | 1.01  | .0397 |
|        | 1.20  | .0472 |
|        | 1.95  | .0767 |
|        | 3.02  | .1189 |
|        | 3.06  | .1204 |
|        | 4.60  | .1811 |
|        | 5.10  | .201  |
|        | 5.14  | .202  |
|        | 5.26  | .207  |
|        | 6.98  | .2748 |
|        | 7.02  | .2764 |
|        | 8.05  | .317  |
|        | 8.10  | .319  |
|        | 8.53  | .336  |
|        | 8.73  | .3437 |
|        | 9.07  | .357  |
|        | 9.17  | .361  |
|        | 11.23 | .442  |
|        | 15.85 | .624  |

Mating dimensions are MIL-C-39012 nominal with tighter tolerances and solid outer contact.

## INTERFACE N 75Ω



| LETTER | min.  | max.  | min. | max. |
|--------|-------|-------|------|------|
| A      | 0.13  | 1.03  | .005 | .13  |
| B      | 2.80  | 3.56  | .110 | .140 |
| C      | 5.33  | 5.83  | .210 | .230 |
| D      | 1     | 2     | .016 | .066 |
| E      | 4.54  | 5.39  | .179 | .212 |
| F      | 4.05  | 4.20  | .159 | .165 |
| G      | 10.23 | 10.43 | .403 | .411 |
| H DIA  | 8.27  | 8.37  | .326 | .329 |
| J DIA  | 16.1  | 16.2  | .634 | .638 |
| K DIA  | 20.9  | 21    | .823 | .827 |
| L DIA  | 1.96  | 2     | .077 | .079 |
| M DIA  | 0.87  | 0.91  | .034 | .036 |

| LETTER | min.  | max.  | min. | max. |
|--------|-------|-------|------|------|
| A      | 9.05  | 9.19  | .356 | .362 |
| B      | 4.75  | 5.25  | .187 | .207 |
| C      | 1.20  | 1.95  | .047 | .077 |
| D      | 4.4   | 5.1   | .173 | .201 |
| E      | 6.8   | 9     | .268 | .354 |
| F      | 10.9  | 11.2  | .429 | .441 |
| G DIA  | 6.98  | 7.02  | .275 | .276 |
| H DIA  | 8.03  | 8.13  | .316 | .320 |
| J DIA  | 8.53  | 8.73  | .336 | .344 |
| K DIA  | 15.65 | 15.85 | .616 | .624 |
| L DIA  | 1.96  | 2     | .077 | .079 |

**IMPORTANT:** the 50Ω and the 75Ω connectors are NOT INTERMATEABLE, resulting in the interface destruction.

\*statistics dimensions: .0539 .0055 (.0594 max)/(1.37 0.14)(1.51 max)

- 1) Coupling nut against on datum 1
- 2) Coupling nut against on datum 2

# CHARACTERISTICS

| Test/characteristics | Standard reference | Values/remarks |
|----------------------|--------------------|----------------|
|----------------------|--------------------|----------------|

## ELECTRICAL CHARACTERISTICS

|                                              |                                             |                                       |                                                                                            |                                                                    |        |
|----------------------------------------------|---------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------|
| Impedance                                    |                                             | 50Ω                                   |                                                                                            |                                                                    |        |
| Frequency range                              |                                             | DC - 11 GHz                           |                                                                                            |                                                                    |        |
| Typical V.S.W.R.                             | Frequency                                   | 1 GHz                                 | 2.5 GHz                                                                                    | 5 GHz                                                              | 11 GHz |
| straight models cable group: .085"           |                                             | 1.03                                  | 1.03                                                                                       | 1.05                                                               | 1.08   |
| .141"                                        |                                             | 1.03                                  | 1.05                                                                                       | 1.05                                                               | 1.08   |
| .250"                                        |                                             | 1.03                                  | 1.03                                                                                       | 1.05                                                               | 1.07   |
| 5/S+5/D                                      |                                             | 1.05                                  | 1.06                                                                                       | 1.1                                                                | 1.16   |
| 10/S+11/D                                    |                                             | 1.04                                  | 1.05                                                                                       | 1.09                                                               | 1.2    |
| right angle models: 5/S+D                    |                                             | 1.04                                  | 1.05                                                                                       | 1.18                                                               |        |
| 10/S+11/D                                    |                                             | 1.04                                  | 1.1                                                                                        | 1.20                                                               |        |
| Intermodulation product (IMP <sub>3</sub> )  |                                             |                                       |                                                                                            |                                                                    |        |
| • Standard connectors                        |                                             | - 90 dBm typ. (- 133 dBc typ. / 20W)  |                                                                                            |                                                                    |        |
| • Intermodulation connectors                 |                                             | - 110 dBm typ. (- 153 dBc typ. / 20W) |                                                                                            |                                                                    |        |
| • Home made intermodulation cable assemblies |                                             | - 125 dBm typ. (- 165 dBc typ. / 20W) |                                                                                            |                                                                    |        |
| Insertion loss                               | straight connector<br>right-angle connector | MIL                                   | < 0.15 dB max at 10 GHz ~ < 0.05 V/F (GHz)<br>< 0.15 dB max at 10 GHz ~ < 0.1 V/F (GHz)    |                                                                    |        |
| RF Leakage                                   |                                             | MIL                                   | -90 dB min from 2 to 3 GHz (interface)                                                     |                                                                    |        |
| Insulation resistance                        |                                             | MIL                                   | 5000 MΩ min                                                                                |                                                                    |        |
| Contact resistance                           | center contact<br>outer contact             | MIL                                   | Initial<br>1 mΩ<br>0.2 mΩ                                                                  | After tests<br>15 mΩ<br>-                                          |        |
| Working voltage in VRMS                      | at sea level<br>(at 70, 000 feet)           | CECC                                  | Cable 5/50:<br>Cable .085"/.141":<br>Cable 10+11/50:<br>Cable LMR 400/600:<br>Cable .250": | 850 (250)<br>350 (250)<br>1400 (400)<br>1400 (400)<br>1400 (400)   |        |
| Dielectric withstanding voltage in VRMS      | at sea level<br>(at 70, 000 feet)           | CECC                                  | Cable 5/50:<br>Cable .085"/.141":<br>Cable 10/50:<br>Cable LMR 400/600:<br>Cable .250":    | 1500 (350)<br>1000 (350)<br>2500 (600)<br>2500 (600)<br>2500 (600) |        |
| RF testing voltage                           | sea level                                   | CECC                                  | 1500 VRMS (5 MHz sine wave)                                                                |                                                                    |        |

## MECHANICAL CHARACTERISTICS

|                                  |       |      |                                                                                                                                                    |                                                                                                |  |
|----------------------------------|-------|------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--|
| Durability                       |       | CECC | 500 matings                                                                                                                                        |                                                                                                |  |
| Engagement and separation torque |       | CECC | 6.6 Ncm max (.58 Inch-pounds)                                                                                                                      |                                                                                                |  |
| Recommended coupling nut torque  |       |      | 40 to 60 Ncm (manual)<br>130 Ncm (11.45 inch pounds) (with pliers R 282 202 000)<br>170 Ncm (14.96 inch pounds) (with torque wrench R 282 303 020) |                                                                                                |  |
| Proof torque                     |       | CECC | 170 Ncm (14.96 inch pounds)                                                                                                                        |                                                                                                |  |
| Coupling nut retention force     |       | CECC | 450 N (101.25 Lbs)                                                                                                                                 |                                                                                                |  |
| Cable retention force            |       | CECC | Cable 5/50/S<br>Cable 5/50/D<br>Cable 10/50<br>Cable 11/50<br>Cable .141"                                                                          | 150 N (33.75 Lbs)<br>200 N (48 Lbs)<br>300 N (67.5 Lbs)<br>400 N (90 Lbs)<br>270 N (60.75 Lbs) |  |
| Center contact retention force   | axial | MIL  | 27 N (6.08 Lbs) cables < Ø 8 mm<br>68 N (15.30 Lbs) cables > Ø 8 mm                                                                                |                                                                                                |  |

Standard packaging = 50 pieces.

| Test/characteristics | Standard reference | Values/remarks |
|----------------------|--------------------|----------------|
|----------------------|--------------------|----------------|

## ENVIRONMENTAL CHARACTERISTICS

|                                              |                                      |         |                                                                 |
|----------------------------------------------|--------------------------------------|---------|-----------------------------------------------------------------|
| Temperature range                            | standard models<br>semi-rigid cables | CECC    | - 55°C + 155°C<br>- 55°C + 105°C                                |
| Thermo cycling test                          |                                      | CECC    | - 55°C/+ 155°C/21 j                                             |
| Thermal shock                                |                                      | CECC    | - 40°C/+ 155°C or - 40°C/+ 85°C - 5 cycles                      |
| High temperature test                        |                                      | CECC    | 125°C/1000 H                                                    |
| Corrosion salt spray                         |                                      | CECC    | 48 H                                                            |
| Vibration                                    |                                      | CECC    | Sinus 10g/10 - 500 Hz                                           |
| Shock                                        |                                      | CECC    | 1/2 Sinus 50g/11 ms                                             |
| Moisture resistance clamp type<br>crimp type |                                      | IEC 529 | IP 67<br>IP 65 (with heatshrink sleeve)                         |
| Hermetic test                                |                                      | CECC    | 10 <sup>-5</sup> bar. cm <sup>3</sup> /s                        |
| Leakage                                      |                                      | CECC    | Differential pressure 100 to 110 KPa: 1 bar cm <sup>3</sup> / H |

## MATERIALS

|                                                  |                          |
|--------------------------------------------------|--------------------------|
| Body / nut / center male contact / outer contact | Brass                    |
| Center female contact                            | Treated beryllium copper |
| Ferrule                                          | Brass                    |
| Insulator                                        | PTFE                     |
| Gasket                                           | Silicon elastomer        |

## PLATING

|                                        | Standard          | Intermodulation models + COAXI-KIT |
|----------------------------------------|-------------------|------------------------------------|
| Body crimp + clamp type<br>solder type | BBR<br>Gold       | Silver + BBR<br>Silver             |
| Coupling nut/Design                    | BBR/cross knurled | BBR/hex.                           |
| Center contacts                        | Gold              | Silver                             |
| Outer contacts/Design                  | BBR/slotted       | Silver + BBR/non slotted           |

## CHARACTERISTICS ECO N

## ELECTRICAL AND MECHANICAL CHARACTERISTICS

|                                |                   |
|--------------------------------|-------------------|
| Impedance                      | 50Ω               |
| Frequency range                | DC - 6 GHz        |
| Typical VSWR (straight models) | 1.2 at 6 GHz      |
| Temperature range              | - 40°C/+ 85°C     |
| Durability                     | 100 mating cycles |

## MATERIALS AND PLATING

| Component             | Materials            | Platings                             |
|-----------------------|----------------------|--------------------------------------|
| Connector body        | Brass                | BBR                                  |
| Insulator             | PTFE / Polypropylene |                                      |
| Female center contact | Bronze               | Center contact Gold 0.1 μm (typical) |
| Outer contact         | Brass                | BBR                                  |

## PACKAGING

|                                |                                                                     |
|--------------------------------|---------------------------------------------------------------------|
| Packaging / MOQ <sup>(1)</sup> | 50 pieces bulk / MOQ 1000 pieces<br>Unit packaging / MOQ 100 pieces |
|--------------------------------|---------------------------------------------------------------------|

<sup>(1)</sup> MOQ = Minimum Order Quantity

Some connectors may feature different performances depending on the application they have been designed for, or according to the applicable cable.



# CHARACTERISTICS

| Test/characteristics | Values/remarks |
|----------------------|----------------|
|----------------------|----------------|

## ELECTRICAL CHARACTERISTICS

|                                                                   |                                                        |                                   |
|-------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------|
| Impedance                                                         | 50Ω                                                    |                                   |
| Frequency range                                                   | DC - 18 GHz                                            |                                   |
| Typical V.S.W.R.<br>straight connector<br>right angle connector   | With SHF cables<br>1.10 at 18 GHz<br>1.15 at 18 GHz    |                                   |
| Insertion loss                                                    | < 0.1 √F (GHz) dB                                      |                                   |
| RF Leakage                                                        | - 90 dB (2 to 3 GHz)                                   |                                   |
| Insulation resistance                                             | 5000 MΩ min                                            |                                   |
| Contact resistance<br>outer contact<br>inner contact              | After environment test<br>2 mΩ max<br>N.A.             | Initial<br>1.5 mΩ max<br>2 mΩ max |
| Peak power (at sea level)                                         | 5000 W                                                 |                                   |
| Average power (at sea level, 25°C)                                | 2000 W at 0.1 GHz<br>600 W at 1 GHz<br>150 W at 10 GHz |                                   |
|                                                                   | .085" semi-rigid cable                                 | .141" semi-rigid cable            |
| Dielectric withstanding voltage<br>at sea level<br>at 70 000 feet | 1000 Vrms<br>250 Vrms                                  | 1500 Vrms<br>375 Vrms             |
| Voltage rating<br>at sea level<br>at 70 000 feet                  | 335 Vrms<br>85 Vrms                                    | 500 Vrms<br>125 Vrms              |
| RF high potential withstanding voltage                            | 670 Vrms                                               | 1000 Vrms                         |
| Corona level                                                      | 250 Vrms                                               | 375 Vrms                          |

## MECHANICAL CHARACTERISTICS

|                             |                     |                |
|-----------------------------|---------------------|----------------|
| Durability                  | 500 matings         |                |
| Cable retention force       | 136 N (31 lbf)      | 272 N (61 lbf) |
| Recommended coupling torque | 160 Ncm (14 lbf.in) |                |
| Contact captivation         | 27 Ncm (6 lbf) min  |                |

## ENVIRONMENTAL CHARACTERISTICS

|                                    |                                       |                                                   |
|------------------------------------|---------------------------------------|---------------------------------------------------|
| Temperature range                  | Standard connectors<br>- 65°C + 165°C | Connectors for semi-rigid cable<br>- 40°C + 125°C |
| Vibration                          | MIL-STD-1344 Method 2005 Condition 4  |                                                   |
| Shock                              | MIL-STD-1344 Method 2004 Condition G  |                                                   |
| Thermal shock                      | MIL-STD-1344 Method 1003 Condition A  |                                                   |
| Corrosion (salt mist)              | MIL-STD-1344 Method 1001 Condition B  |                                                   |
| High temperature test              | CECC 22000/4.7.2                      |                                                   |
| Damp heat                          | CECC 22000/4.6.6                      |                                                   |
| Low pressure immersion             | EN2591 AECMA TestC14                  |                                                   |
| Resistance to fluids contamination | EN2591 AECMA TestC15                  |                                                   |

## MATERIALS

|                |                               |
|----------------|-------------------------------|
| Body           | Stainless steel               |
| Center contact | Beryllium copper and brass    |
| Coupling nut   | Brass                         |
| Insulator      | PTFE or polyetherimid resin   |
| Gasket         | Fluorosilicon or fluorocarbon |

## PLATING

|                |            |
|----------------|------------|
| Body           | Passivated |
| Center contact | Gold       |
| Coupling nut   | Nickel     |

| Test/characteristics | Standard reference | Values/remarks |
|----------------------|--------------------|----------------|
|----------------------|--------------------|----------------|

## ELECTRICAL CHARACTERISTICS

|                                                                       |                                             |                                                                |
|-----------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------|
| Impedance                                                             |                                             | 75Ω                                                            |
| Frequency range                                                       |                                             | DC - 1.5 GHz                                                   |
| Typical V.S.W.R.                                                      | Cable 6/75<br>Cable 10+11/75                | 1.06<br>1.10                                                   |
| Insertion loss                                                        | straight connector<br>right-angle connector | MIL<br>< 0.15 dB                                               |
| RF Leakage                                                            | MIL                                         | - 90 dB min at 1 GHz                                           |
| Insulation resistance                                                 | MIL                                         | 5000 MΩ min                                                    |
| Contact resistance                                                    | center contact<br>outer contact             | MIL<br>Initial<br>1 mΩ<br>0.2 mΩ<br>After tests<br>1.5 mΩ<br>- |
| Working voltage in VRMS at sea level (at 70 000 feet)                 | CECC                                        | Cable 10+11/75: 1400 (400)<br>Cable 6/75: 850 (250)            |
| Dielectric withstanding voltage in VRMS at sea level (at 70 000 feet) | CECC                                        | Cable 10+11/75: 2500 (600)<br>Cable 6/75: 1500 (350)           |
| RF testing voltage                                                    | sea level                                   | CECC<br>1500 VRMS (5 MHz sine wave)                            |

## MECHANICAL CHARACTERISTICS

|                                  |                              |                                                                                 |
|----------------------------------|------------------------------|---------------------------------------------------------------------------------|
| Durability                       | CECC                         | 500 matings                                                                     |
| Engagement and separation torque | CECC                         | 6.6 Ncm max (.58 Inch-pounds)                                                   |
| Recommended coupling nut torque  | CECC                         | 40 to 60 Ncm (manual)<br>130 Ncm (11.45 inch pounds) (with pliers R282 202 000) |
| Proof torque                     | CECC                         | 170 Ncm (14.96 inch pounds)                                                     |
| Coupling nut retention force     | CECC                         | 450 N (101.25 Lbs)                                                              |
| Cable retention force            | cable 6/75<br>cable 10+11/75 | CECC<br>200 N<br>300 N                                                          |
| Center contact retention force   | axial                        | MIL<br>27 N (6.08 Lbs)                                                          |

## ENVIRONMENTAL CHARACTERISTICS

|                                              |         |                                                     |
|----------------------------------------------|---------|-----------------------------------------------------|
| Temperature range                            | CECC    | - 55°C + 155°C                                      |
| Thermo cycling test                          | CECC    | - 55°C / + 155°C / 21 j                             |
| Thermal shock                                | CECC    | - 40°C / + 155°C or - 40°C / + 85°C - 5 cycles      |
| Hight temperature test                       | CECC    | 125°C / 1000 H                                      |
| Corrosion salt spray                         | CECC    | 48 H                                                |
| Vibration                                    | CECC    | Sinus 10 g / 10 - 500 Hz                            |
| Shock                                        | CECC    | 1/2 Sinus 50g / 11 ms                               |
| Moisture resistance clamp type<br>crimp type | IEC 529 | IP 67<br>IP 65 (with heatshrink sleeve)             |
| Hermetic test                                | CECC    | 10-5 bar. cm³/s                                     |
| Leakage                                      | CECC    | Differential pressure 100 to 110 KPa: 1 bar cm³ / H |

## MATERIALS

|                                               |                          |
|-----------------------------------------------|--------------------------|
| Body (nut)/center male contact/outer contact) | Brass                    |
| Center female contact                         | Treated beryllium copper |
| Ferrule                                       | Brass                    |
| Insulator                                     | PTFE                     |
| Gasket                                        | Silicon elastomer        |

## PLATING

|                      |                   |
|----------------------|-------------------|
| Body                 | BBR               |
| Coupling nut/design  | BBR/cross knurled |
| Center contact       | Gold              |
| Outer contact/design | BBR/slotted       |

Standard packaging = 50 pieces.

# PLUGS

## STRAIGHT PLUGS, FULL CRIMP TYPE, FOR FLEXIBLE CABLES

(single piece body)

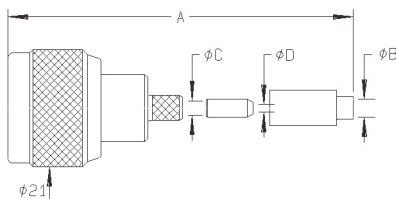


Fig. 1

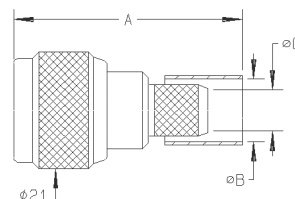


Fig. 2

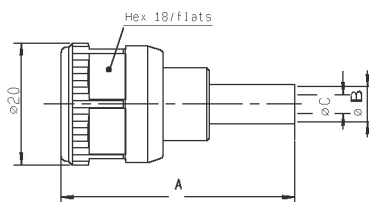


Fig. 3

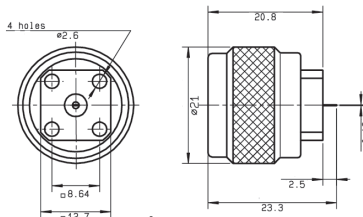


Fig. 4

| Cable group       | Cable group dia. | Part number   | Fig. | Dimensions (mm) |        |        |        | Captive center contact | Note                                 |
|-------------------|------------------|---------------|------|-----------------|--------|--------|--------|------------------------|--------------------------------------|
|                   |                  |               |      | A               | B dia. | C dia. | D dia. |                        |                                      |
| RG174/RG316/RD316 | 2.6/50/S+D       | R161 072 000  | 1    | 39.7            | 3.25   | 3.38   | 1.63   | yes                    |                                      |
| RG58/R141         | 5/50/S           | R161 082 000  | 2    | 38.5            | 5.41   | 3.11   |        | yes                    | ECO version                          |
|                   |                  | R161A 082 000 |      |                 |        |        |        | yes                    |                                      |
| RG142/RG223/RG400 | 5/50/D           | R161 083 000  | 2    | 30.5            | 5.8    | 3.11   |        | yes                    | ECO version                          |
|                   |                  | R161A 083 000 |      |                 |        |        |        | yes                    |                                      |
|                   | 8.07/50          | R161 083 137  | 3    | 38.5            |        |        |        | yes                    | For intermodulation application tool |
|                   | 8.07/50          | R161 092 190  | 4    |                 |        |        |        |                        |                                      |
| RG213             | 10/50/S          | R161 075 000  | 2    | 40.2            | 11.05  | 7.46   |        | yes                    | ECO version                          |
|                   |                  | R161A 075 000 |      | 37.2            | 11.05  |        |        | yes                    |                                      |
|                   | 10.3/50/S        | R161 075 060  | 2    | 40.2            | 11.05  | 7.46   |        | yes                    | LMR 400 cable                        |
| RG214             | 11/50/D          | R161 088 000  | 2    | 40.2            | 11.4   |        |        | yes                    | ECO version                          |
|                   |                  | R161A 088 000 |      | 37              | 11.4   |        |        | yes                    |                                      |

## STRAIGHT PLUGS, CLAMP TYPE, FOR FLEXIBLE CABLES

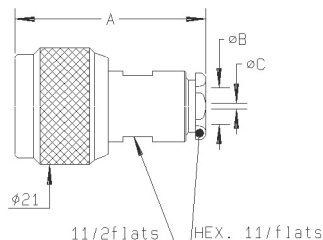


Fig. 1

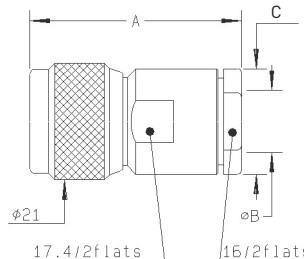
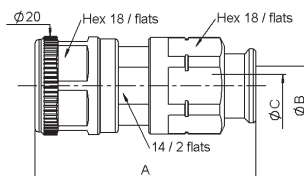


Fig. 2

| Cable group                             | Cable group dia. | Part number   | Fig. | Dimensions (mm) |        |        | Captive center contact |
|-----------------------------------------|------------------|---------------|------|-----------------|--------|--------|------------------------|
|                                         |                  |               |      | A               | B dia. | C dia. |                        |
| RG174/RG316/RD316                       | 2.6/50/S+D       | R161 004 000  | 1    | 33.9            | 3.1    | 1.7    | yes                    |
| RG58/RG141/RG142/RG223/RG400            | 5/50/S+D         | R161 006 000  |      | 34.4            | 5.6    |        | no                     |
|                                         |                  | R161 008 000  |      |                 |        |        | yes                    |
|                                         |                  | R161 010 000  |      |                 |        |        | yes                    |
| RG59/RG62/RG71                          | 6/75+93          | R161 012 000  | 2    | 34.4            | 6.6    |        |                        |
| RG213/RG393/RG11/RG12/RG144/RG214/RG216 | 10+11/50+75      | R161 018 000  |      | 44              | 11.2   | 17.5   |                        |
|                                         |                  | R161 020 000  |      | 38.1            | 11.2   | 17.5   | no                     |
|                                         |                  | R161 022 000  |      | 38.9            | 11.2   | 19     | yes                    |
| RG217                                   | 14/50/D          | R161 027 000  | 2    | 40.9            | 14.4   | 22.2   |                        |
| RG218                                   | 22/50/S          | R161 030 000W |      | 56.6            | 22.9   | 33.6   |                        |

## STRAIGHT PLUGS, EZ FIT TYPE, FOR CORRUGATED CABLES



| Cable group dia.              | Part number  | Dimensions (mm) |        |        | Captive center contact |
|-------------------------------|--------------|-----------------|--------|--------|------------------------|
|                               |              | A               | B dia. | C dia. |                        |
| 1/2" superflexible corrugated | R161 037 020 | 45.1            | 14     | 8.8    | yes                    |

## STRAIGHT PLUGS, FOR SEMI-RIGID CABLES

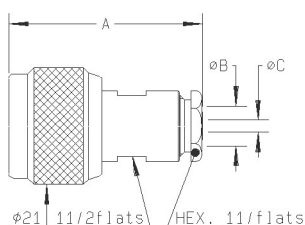
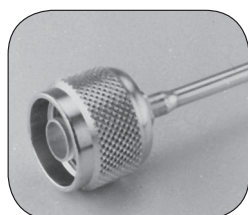


Fig. 1

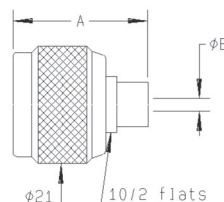


Fig. 2

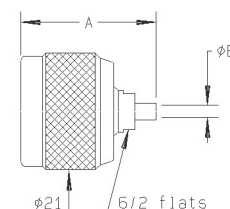


Fig. 3

| Cable group | Cable group dia. | Part number         | Fig. | Dimensions (mm) |        |        | Captive center contact | Note        |
|-------------|------------------|---------------------|------|-----------------|--------|--------|------------------------|-------------|
|             |                  |                     |      | A               | B dia. | C dia. |                        |             |
| RG405       | .085"            | R161 050 300        | 3    | 24.4            | 2.25   |        | no                     | Solder type |
| RG402       | .141"            | <b>R161 051 000</b> |      |                 | 3.65   |        |                        | Solder type |
|             |                  | R161 052 000        | 1    | 35              | 5.6    | 3.65   |                        | Clamp type  |
| RG401       | .250"            | <b>R161 053 000</b> |      |                 | 6.6    |        |                        | Clamp type  |
|             |                  | R161 054 000        | 2    | 24.4            | 6.45   |        |                        | Solder type |

## RIGHT ANGLE PLUGS, CRIMP TYPE, FOR FLEXIBLE CABLES

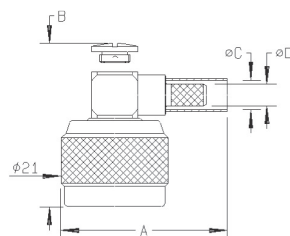


Fig. 1

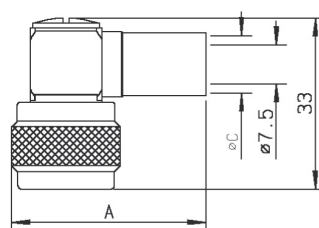


Fig. 2

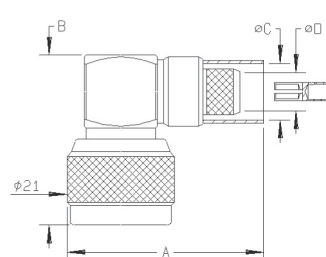


Fig. 3

| Cable group       | Cable group dia. | Part number         | Fig. | Dimensions (mm) |      |        |        | Captive center contact | Note          |
|-------------------|------------------|---------------------|------|-----------------|------|--------|--------|------------------------|---------------|
|                   |                  |                     |      | A               | B    | C dia. | D dia. |                        |               |
| RG174/RG316       | 2.6/50/S         | R161 181 000        | 1    | 29.5            | 26.3 |        |        |                        |               |
| RG58/RG141        | 5/50/S           | <b>R161 182 000</b> |      | 34.5            | 28   | 5.41   |        | yes                    |               |
|                   |                  | R161A 182 000       |      |                 | 28.5 |        |        |                        | ECO version   |
|                   |                  | <b>R161 183 000</b> |      |                 | 28   | 5.8    | 3.1    | yes                    |               |
| RG142/RG223/RG400 | 5/50/D           | R161A 183 000       |      |                 |      |        |        | yes                    | ECO version   |
|                   |                  | R161 194 190        | 3    | 61              | 34   | 8.4    | 6.3    |                        |               |
| RG223             | 10/50/S          | R161A 184 000       | 1    | 32.8            | 35.2 |        | 7.4    |                        | ECO version   |
|                   |                  | R161 185 000        | 3    | 42.4            | 33.2 | 11.05  | 7.46   | yes                    | Full crimp    |
|                   |                  | R161 184 036        |      | 46.25           |      | 11.05  |        | yes                    | LMR 400 cable |
| RG214             | 11/50/D          | R161 186 000        | 2    | 37.6            |      | 11.4   |        | yes                    |               |
|                   |                  | R161A 186 000       |      | 33              |      |        |        |                        | ECO version   |
|                   |                  | R161 187 000        | 3    | 42.4            | 33.2 | 11.4   | 7.46   | yes                    | Full crimp    |

To download data sheets and assembly instructions, visit [www.radiall.com](http://www.radiall.com) & enter the part number in the Search box.  
**Bold** part numbers represent products typically in stock & available for immediate shipment.  
 See page 8 and 9 for packaging information.

# PLUGS AND JACKS

## RIGHT ANGLE PLUGS, CLAMP TYPE, FOR FLEXIBLE CABLES

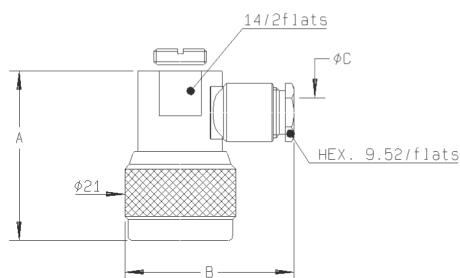
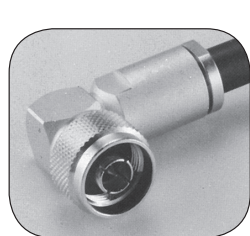


Fig. 1

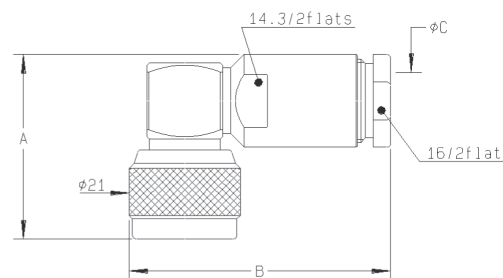
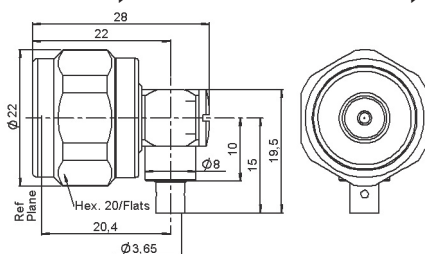


Fig. 2

| Cable group             | Cable group dia. | Part number  | Fig. | Dimensions (mm) |      |        | Captive center contact |
|-------------------------|------------------|--------------|------|-----------------|------|--------|------------------------|
|                         |                  |              |      | A               | B    | C dia. |                        |
| RG223/RG142/RG223/RG400 | 5/50/S+D         | R161 156 000 | 2    | 34.85           | 49.4 | 11.2   |                        |
|                         |                  | R161 157 000 | 1    | 32              | 32   | 5.6    | yes                    |
| RG213/RG393/RG214       | 10+11/50/S+D     | R161 168 000 | 2    | 34.85           | 49.4 | 11.2   | yes                    |

## RIGHT ANGLE PLUG, SOLDER TYPE, FOR SEMI-RIGID CABLES



| Cable group | Cable group dia. | Part number  | Captive center contact |
|-------------|------------------|--------------|------------------------|
| RG402       | .141"            | R161 152 107 | yes                    |

## STRAIGHT JACKS, FULL CRIMP TYPE, FOR FLEXIBLE CABLES

(single piece body)

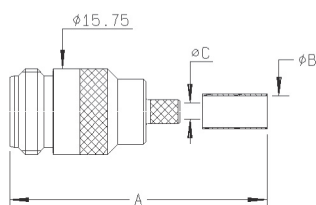
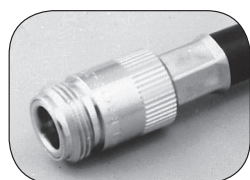


Fig. 1

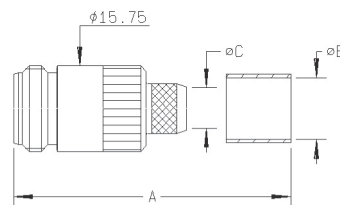
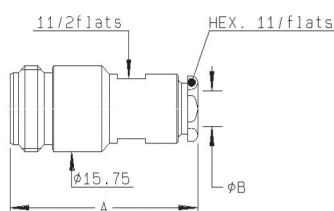
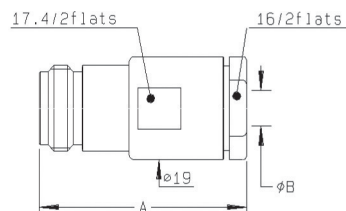


Fig. 2

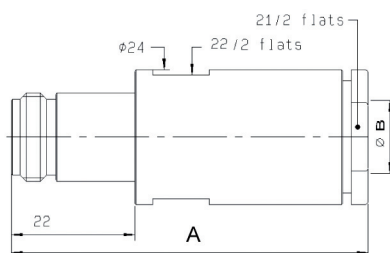
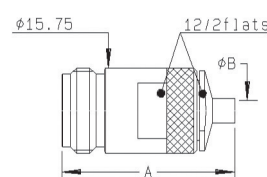
| Cable group       | Cable group dia. | Part number  | Fig. | Dimensions (mm) |        |        | Captive center contact |
|-------------------|------------------|--------------|------|-----------------|--------|--------|------------------------|
|                   |                  |              |      | A               | B dia. | C dia. |                        |
| RG58/RG141        | 5/50/S           | R161 237 000 | 1    | 39.3            | 5.41   | 3.11   | yes                    |
| RG142/RG223/RG400 | 5/50/D           | R161 238 000 |      |                 | 5.8    |        |                        |
| RG223             | 10/50/S          | R161 241 000 | 2    | 40.6            | 11.05  | 7.46   |                        |
| RG214             | 11/50/D          | R161 243 000 |      |                 | 11.4   |        |                        |

## STRAIGHT JACKS, CLAMP TYPE, FOR FLEXIBLE CABLES


**Fig. 1**

**Fig. 2**

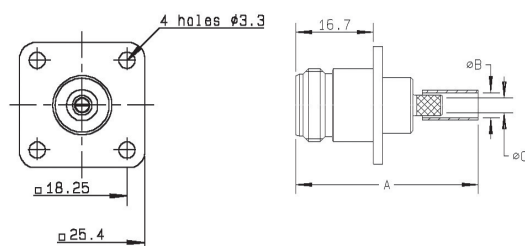
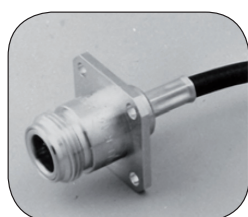
| Cable group             | Cable group dia. | Part number         | Fig. | Dimensions (mm) |        | Captive center contact |
|-------------------------|------------------|---------------------|------|-----------------|--------|------------------------|
|                         |                  |                     |      | A               | B dia. |                        |
| RG223/RG142/RG223/RG400 | 5/50/S+D         | <b>R161 206 000</b> | 1    | 35.3            | 5.6    | yes                    |
| RG213/RG393/RG214       | 10+11/50/S+D     | R161 220 000        | 2    | 39.3            | 11.2   | yes                    |

## STRAIGHT JACKS


**Fig. 1**

**Fig. 2**

| Cable group | Cable group dia.              | Part number  | Fig. | Dimensions (mm) |        | Captive center contact | Note        |
|-------------|-------------------------------|--------------|------|-----------------|--------|------------------------|-------------|
|             |                               |              |      | A               | B dia. |                        |             |
|             | 1/2" superflexible corrugated | R161 232 407 | 1    | 66              | 14     | yes                    | EZ fit type |
| RG402       | .141"                         | R161 226 020 | 2    | 32              | 3.65   | no                     | Solder type |

## SQUARE FLANGE, STRAIGHT JACKS, FULL CRIMP TYPE, FOR FLEXIBLE CABLES (single piece body)



| Cable group             | Cable group dia. | Part number  | Dimensions (mm) |        |        | Captive center contact | Panel drilling |
|-------------------------|------------------|--------------|-----------------|--------|--------|------------------------|----------------|
|                         |                  |              | A               | B dia. | C dia. |                        |                |
| RG174/RG316/RD176       | 2.6/50/S+D       | R161 281 300 | 40.3            | 3.25   | 1.63   |                        | P01            |
| RG58/RG141              | 5/50/S           | R161 282 000 | 39.3            | 5.41   |        |                        |                |
| RG142/RG223/RG400/RG213 | 5/50/D           | R161 283 000 | 39.3            | 5.8    | 3.11   | yes                    |                |
|                         | 8.07/50          | R161 292 190 | 50.4            | 8.4    | 6.3    |                        |                |
| RG213                   | 10/50/S          | R161 286 000 | 40.6            | 11.05  | 7.46   | yes                    |                |

To download data sheets and assembly instructions, visit [www.radiall.com](http://www.radiall.com) & enter the part number in the Search box.  
**Bold** part numbers represent products typically in stock & available for immediate shipment.  
 See page 8 and 9 for packaging information.



# JACKS

## SQUARE FLANGE, STRAIGHT JACKS

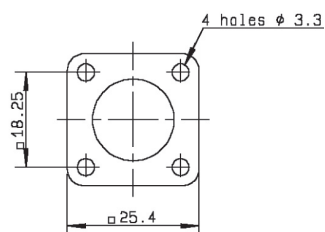
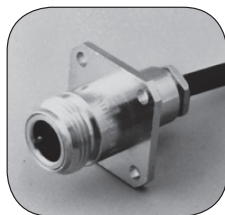


Fig. 1 and 2

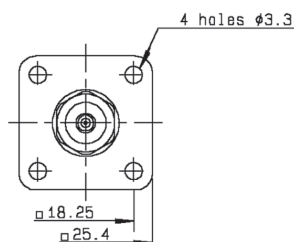


Fig. 3 and 4

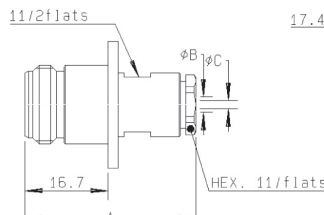


Fig. 1

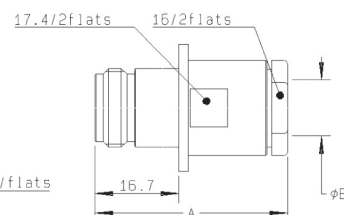


Fig. 2

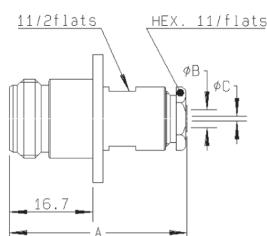


Fig. 3

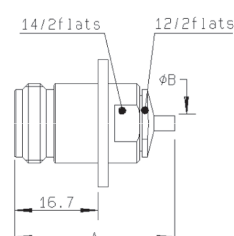


Fig. 4

| Cable group                  | Cable group dia. | Part number         | Fig. | Dimensions (mm) |        |        | Captive center contact | Panel drilling | Note        |
|------------------------------|------------------|---------------------|------|-----------------|--------|--------|------------------------|----------------|-------------|
|                              |                  |                     |      | A               | B dia. | C dia. |                        |                |             |
| RG174/RG316/RD316            | 2.6/50/S + D     | <b>R161 252 000</b> | 1    | 34.3            | 3.1    | 1.7    | yes                    | P01            | Clamp type  |
| RG58/RG141/RG142/RG223/RG400 | 5/50/S + D       | <b>R161 256 000</b> |      | 35.4            | 5.6    |        |                        |                |             |
| RG213/RG393/RG214            | 10 + 11/50/S + D | <b>R161 270 000</b> | 2    | 39.3            | 11.2   |        | no                     | P01            | Clamp type  |
| RG402                        | .141"            | <b>R161 277 000</b> | 3    | 35.5            | 5.6    | 3.65   |                        |                | Solder type |
|                              |                  | <b>R161 277 300</b> | 4    | 32              | 3.65   |        |                        |                | Clamp type  |
| RG401                        | .250"            | R161 278 000        | 3    | 35.9            | 6.6    |        |                        |                |             |

## BULKHEAD STRAIGHT JACKS, FULL CRIMP TYPE, FOR FLEXIBLE CABLES (panel sealed) (single piece body)

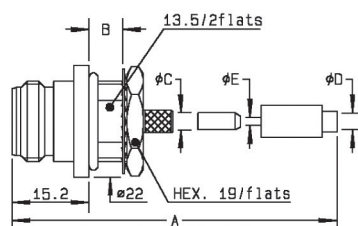


Fig. 1

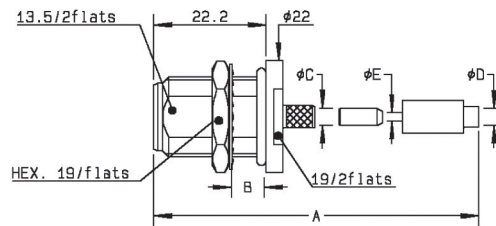


Fig. 2

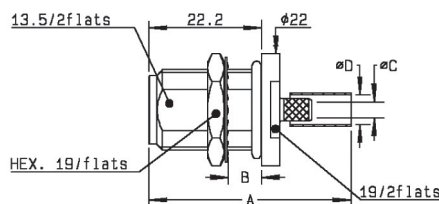


Fig. 3

| Cable group       | Cable group dia. | Part number         | Fig. | Dimensions (mm) |     |        |        |        | Captive center contact | Panel drilling | Note        |
|-------------------|------------------|---------------------|------|-----------------|-----|--------|--------|--------|------------------------|----------------|-------------|
|                   |                  |                     |      | A               | B   | C dia. | D dia. | E dia. |                        |                |             |
| RG174/RG316/RD316 | 2.6/50/S+D       | <b>R161 311 200</b> | 1    | 40.4            | 6.5 | 3.38   | 3.25   | 1.63   | yes                    | P14            | Front mount |
|                   |                  | <b>R161 311 300</b> | 2    |                 |     |        | 5.41   |        |                        |                | Rear mount  |
| RG58/RG141        | 5/50/S           | <b>R161 329 000</b> | 3    | 39.8            | 6.5 | 3.11   | 5.8    |        |                        |                |             |
| RG142/RG223/RG400 | 5/50/D           | R161 329 200        |      |                 |     |        |        |        |                        |                |             |

## BULKHEAD STRAIGHT JACKS, CLAMP TYPE, FOR FLEXIBLE CABLES (panel sealed)

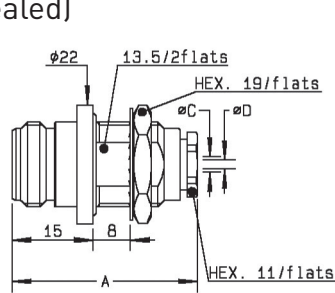


Fig. 1

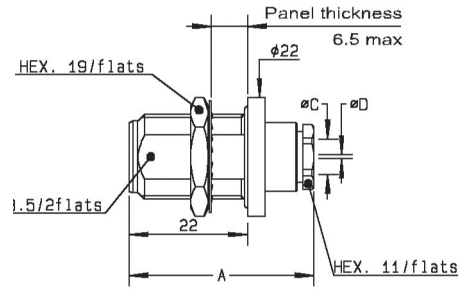


Fig. 2

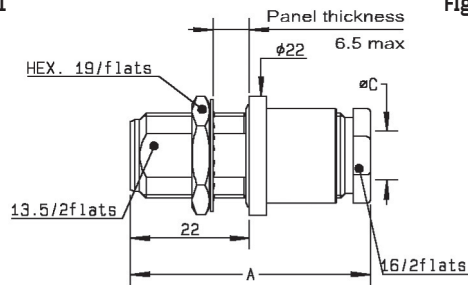


Fig. 3

| Cable group                  | Cable group dia. | Part number         | Fig. | Dimensions (mm) |       |       | Captive center contact | Panel drilling | Note        |
|------------------------------|------------------|---------------------|------|-----------------|-------|-------|------------------------|----------------|-------------|
|                              |                  |                     |      | A               | C dia | D dia |                        |                |             |
| RG174/RG316/RD316            | 2.6/50/S+D       | <b>R161 321 000</b> | 1    | 34.3            | 3.1   | 1.7   | yes                    | P14            | Front mount |
|                              |                  | <b>R161 322 000</b> | 2    |                 |       |       |                        |                | Rear mount  |
| RG58/RG141/RG142/RG223/RG400 | 5/50/S+D         | <b>R161 325 000</b> | 2    | 35.4            | 5.6   |       |                        |                | Rear mount  |
| RG213/RG393/RG214            | 10+11/50/S+D     | <b>R161 332 000</b> | 3    | 43              | 11.2  |       | no                     |                |             |

## BULKHEAD STRAIGHT JACKS, FOR SEMI-RIGID CABLES (panel sealed)

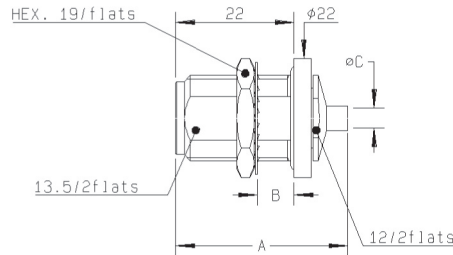
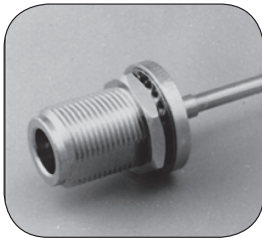


Fig. 1

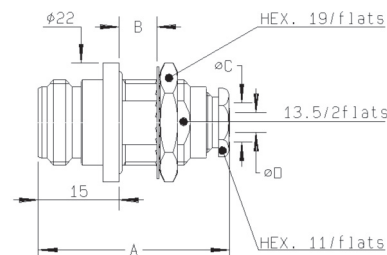


Fig. 2

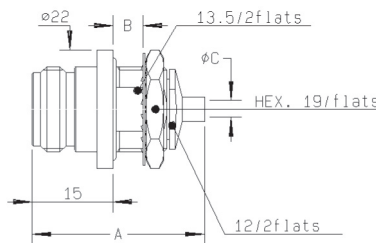


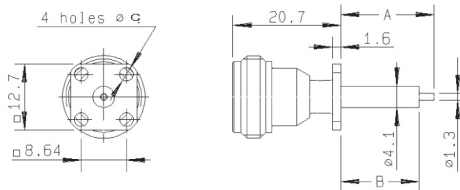
Fig. 3

| Cable group | Cable group dia. | Part number         | Fig. | Dimensions (mm) |     |       |       | Captive center contact | Panel drilling | Note                   |
|-------------|------------------|---------------------|------|-----------------|-----|-------|-------|------------------------|----------------|------------------------|
|             |                  |                     |      | A               | B   | C dia | D dia |                        |                |                        |
| RG405       | .085"            | <b>R161 335 200</b> | 1    | 32              | 6.5 | 2.25  |       | no                     | P14            | Solder type/Rear mount |
|             |                  | <b>R161 323 000</b> | 2    | 35.5            | 8   | 5.6   | 3.65  |                        |                | Clamp type/Font mount  |
| RG402       | .141"            | <b>R161 336 000</b> | 1    | 32              | 6.5 | 3.65  |       |                        |                | Solder type/Rear mount |
|             |                  | <b>R161 336 200</b> | 3    |                 |     |       |       |                        |                | Solder type/Font mount |
| RG401       | .250"            | <b>R161 337 200</b> | 1    |                 |     | 6.6   |       |                        |                | Solder type/Rear mount |

To download data sheets and assembly instructions, visit [www.radiall.com](http://www.radiall.com) & enter the part number in the Search box.  
**Bold** part numbers represent products typically in stock & available for immediate shipment.  
 See page 8 and 9 for packaging information.

## RECEPTACLES

## LOW PROFILE SQUARE FLANGE, STRAIGHT FEMALE RECEPTACLES



| Part number  | Dimensions (mm) |    |       | Captive center contact | Panel drilling | Note                |
|--------------|-----------------|----|-------|------------------------|----------------|---------------------|
|              | A               | B  | C dia |                        |                |                     |
| R161 410 520 | 17.9            | 15 | 2.9   | yes                    | P11            | Extended dielectric |

## FLANGE, STRAIGHT FEMALE RECEPTACLES

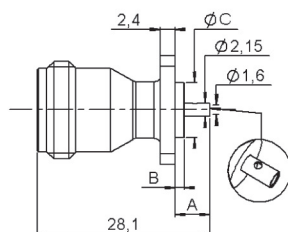


Fig. 1

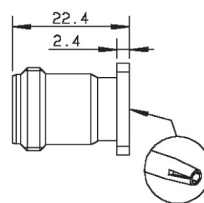


Fig. 2

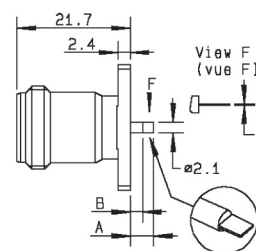


Fig. 3

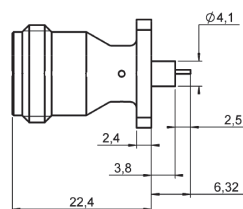


Fig. 4

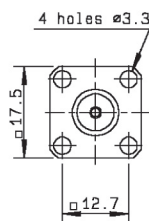


Fig. A

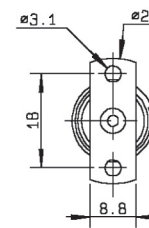


Fig. B

| Part number   | Fig.  | Dimensions (mm) |     |      | Captive center contact | Panel drilling | Note                              |
|---------------|-------|-----------------|-----|------|------------------------|----------------|-----------------------------------|
|               |       | A               | B   | C    |                        |                |                                   |
| R161 410 000  | 1 + A | 5.7             | 1.5 | 8.9  | yes                    | P03            |                                   |
| R161A 410 000 |       |                 |     |      |                        |                | ECO version                       |
| R161 410 130  | 4 + A | 6.32            | 3.8 | 0.64 |                        | P16            | Solder pot contact                |
| R161 418 000  | 2 + A |                 |     |      | yes                    | P03            | Universal/see contacts page 12-22 |
| R161 461 000  | 3 + B | 6.2             | 3.9 | 0.6  | yes                    | P12            | 2 hole flange/flat tab contact    |

## STRAIGHT MALE AND FEMALE RECEPTACLES

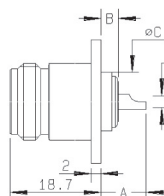


Fig. 1

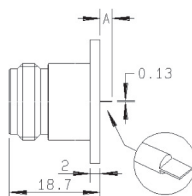


Fig. 2

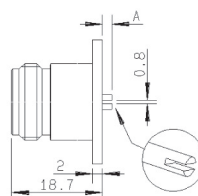


Fig. 3

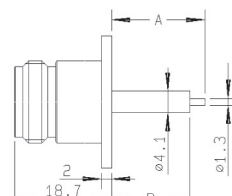


Fig. 4

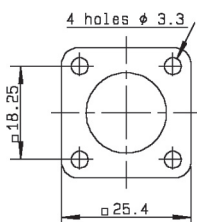


Fig. A

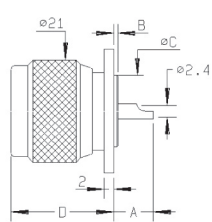


Fig. 5

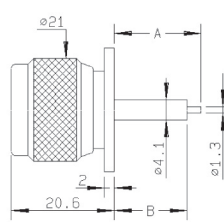


Fig. 6

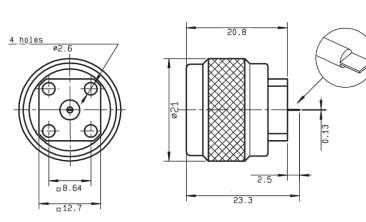
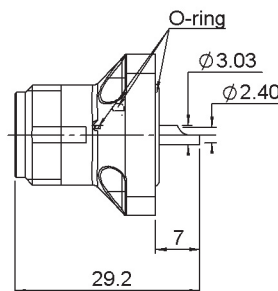
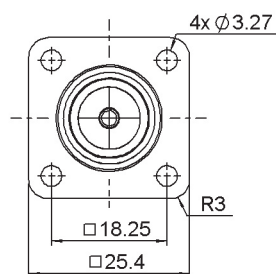


Fig. 7

| Part number          | Fig.  | Dimensions (mm) |     |       |      |     | Captive center contact | Panel drilling | Note                                                     |
|----------------------|-------|-----------------|-----|-------|------|-----|------------------------|----------------|----------------------------------------------------------|
|                      |       | A               | B   | C dia | D    |     |                        |                |                                                          |
| <b>R161 404 000</b>  | 1 + A | 9.3             | 0.8 | 14.6  |      | yes | P07                    |                | Solder pot                                               |
| <b>R161A 404 000</b> |       |                 |     |       |      |     |                        |                | Solder pot/ECO version                                   |
| R161 404 137         |       |                 |     |       |      |     |                        |                | For intermodulation application/<br>Center contact brass |
| R161 416 130         | 4 + A | 17.9            | 15  |       |      |     | P09                    |                | Extended dielectric                                      |
| R161 419 020         | 2 + A | 2.5             |     |       |      |     | P10                    |                | Flat tab contact                                         |
| R161 419 300         | 3 + A | 2               |     |       |      |     | P01                    |                | Slotted contact                                          |
| R161 430 020         | 1 + A | 6.5             |     |       |      |     | P10                    |                | Short back length                                        |
| <b>R161 441 000</b>  | 5 + A | 8.7             | 0.8 | 14.6  | 20.6 |     | P02                    |                | Male/solder pot                                          |
| R161 441 400         | 6 + A | 17.9            | 15  |       |      |     | P06                    |                | Male/extended dielectric                                 |
| R161 438 200         | 7     |                 |     |       |      |     | P11                    |                |                                                          |

## COMPOSITE FEMALE RECEPTACLES



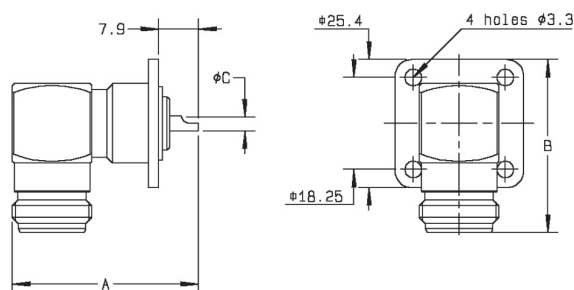
| Part number         | Captive center contact | Description      | Color | Packaging |
|---------------------|------------------------|------------------|-------|-----------|
| <b>R161 404 C01</b> | yes                    | -                | Black | 50 pieces |
| <b>R161 404 C02</b> |                        | Combination seal |       |           |
| <b>R161 404 C03</b> |                        | Panel seal       |       |           |

Standard color is black however, other colors are proposed upon request.  
Other specific demands can be proceeded according to customer needs.

To download data sheets and assembly instructions, visit [www.radiall.com](http://www.radiall.com) & enter the part number in the Search box.  
**Bold** part numbers represent products typically in stock & available for immediate shipment.  
See page 8 and 9 for packaging information.

# RECEPTACLES

## RIGHT ANGLE FEMALE RECEPTACLES



| Part number  | Dimensions (mm) |      |       | Captive center contact | Panel drilling | Note       |
|--------------|-----------------|------|-------|------------------------|----------------|------------|
|              | A               | B    | C dia |                        |                |            |
| R161 653 000 | 36.9            | 34.4 | 2.5   | yes                    | P02            | Solder pot |

## BULKHEAD STRAIGHT RECEPTACLES (fully sealed or panel hermetic)

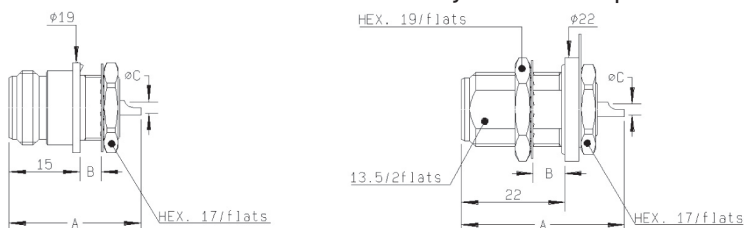


Fig. 1

Fig. 2

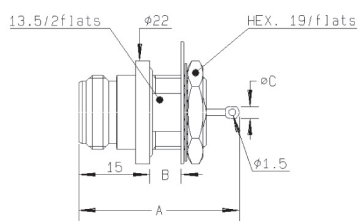


Fig. 3

| Part number         | Fig. | Dimensions (mm) |     |     | Captive center contact | Panel drilling | Note                                |
|---------------------|------|-----------------|-----|-----|------------------------|----------------|-------------------------------------|
|                     |      | A               | B   | C   |                        |                |                                     |
| R161 570 000        | 1    | 28              | 4.5 | 2.4 | yes                    | P13            | Front mount                         |
| <b>R161 606 000</b> | 2    | 34.6            | 6.5 | 2.4 |                        | P14            | Rear mount/fully sealed             |
| R161A 606 010       |      |                 |     |     |                        |                | Rear mount/fully sealed/ECO version |
| R161 625 000        | 3    | 34              | 6.5 | 2.5 |                        | P14            | Front mount/Panel hermetic          |

## N SMT SWITCH AND RECEPTACLE

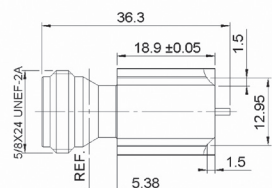


Fig. 1

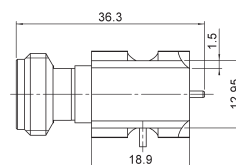


Fig. 2

| Part number  | Fig. | Note                            |
|--------------|------|---------------------------------|
| R161 427 223 | 1    | Edge card female receptacle     |
| R161 428 223 | 2    | Edge card SMT left type switch  |
| R161 428 233 |      | Edge card SMT right type switch |

## IN SERIES ADAPTERS

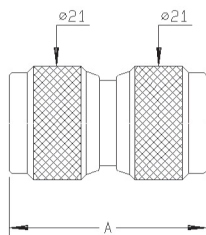


Fig. 1

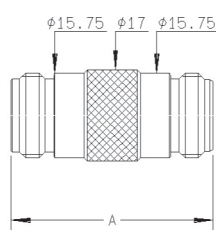


Fig. 2

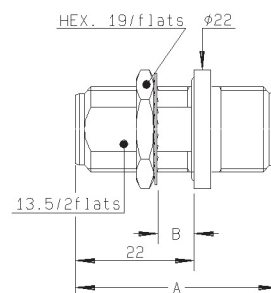


Fig. 4

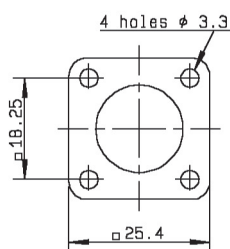


Fig. 3

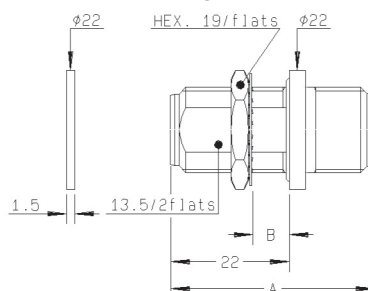
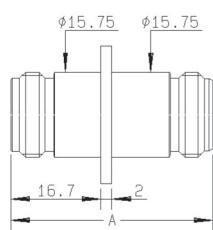


Fig. 5

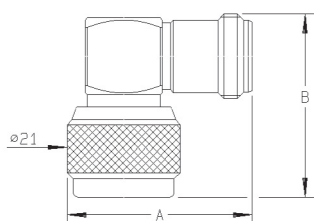


Fig. 6

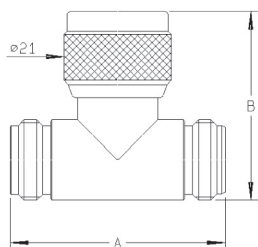


Fig. 7

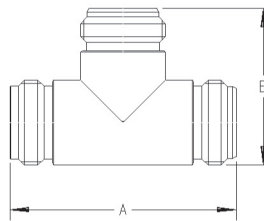


Fig. 8

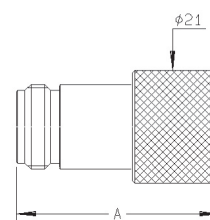


Fig. 9

| Part number  | Fig. | Dimensions (mm) |      | Panel drilling | Note                                |
|--------------|------|-----------------|------|----------------|-------------------------------------|
|              |      | A               | B    |                |                                     |
| R161 703 000 | 1    | 36.7            |      |                | Male-Male                           |
| R161 705 000 | 2    |                 |      |                | Female-Female                       |
| R161 715 000 | 3    | 37.5            |      | P01            | Female-Female/Flange                |
| R161 730 000 | 4    |                 | 6.5  | P14            | Female-Female/Bulkhead panel sealed |
| R161 753 000 | 5    | 38              | 6.5  | P14            | Female-Female/Hermetic/bulkhead     |
| R161 771 000 | 6    | 34.4            | 34   |                | Male-Female/Right-angle             |
| R161 780 000 | 7    |                 | 36.9 |                | TEE Female-Female/Male              |
| R161 782 000 | 8    |                 | 29.1 |                | TEE Female-Female/Female            |
| R161 791 500 | 9    | 37.37           |      |                | Push-on Male/Female screwing        |

To download data sheets and assembly instructions, visit [www.radiall.com](http://www.radiall.com) & enter the part number in the Search box.  
**Bold** part numbers represent products typically in stock & available for immediate shipment.  
 See page 8 and 9 for packaging information.



## CAPS AND ACCESSORIES

## PROTECTIVE CAPS

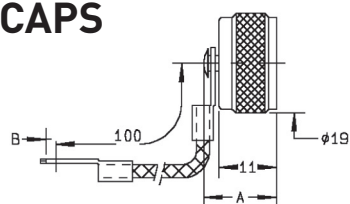


Fig. 1

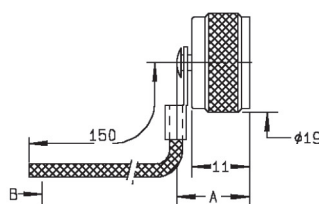


Fig. 2

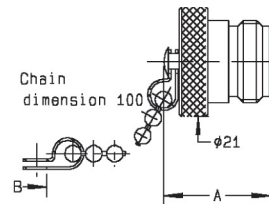


Fig. 3

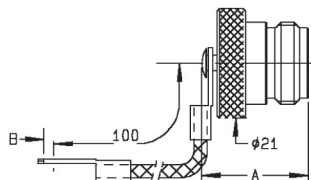


Fig. 4

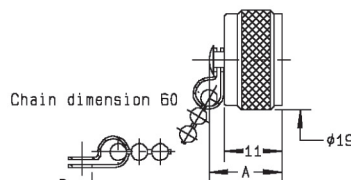


Fig. 5

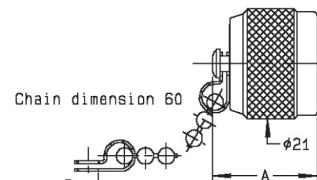


Fig. 6

| Part number  | Fig. | Dimensions (mm) |     | Note                          |
|--------------|------|-----------------|-----|-------------------------------|
|              |      | A               | B   |                               |
| R161 804 000 | 1    | 13.9            | 3.8 | Male with cord                |
| R161 805 410 | 2    | 13.9            | 2   | Male with cord                |
| R161 841 000 | 3    | 20.4            | 3.9 | Female with chain             |
| R161 844 000 | 4    | 20.4            | 3.8 | Female with cord              |
| R161 853 000 | 5    | 13.9            | 3.9 | Male with chain               |
| R161 862 000 | 6    | 20.1            | 3.9 | Male short circuit with chain |

## FIELD-REPLACEABLE CONTACTS (for universal receptacle)

These accessories have been specifically designed for the adjustment at the rear of hermetically sealed universal receptacles. The choice of their dimensions depends on the PCB or on the thickness of the MIC box. Moreover these contacts and insulators are also compatible with SMA UNIVERSAL RECEPTACLES.

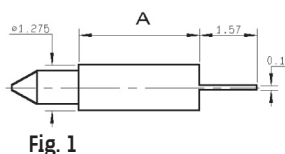
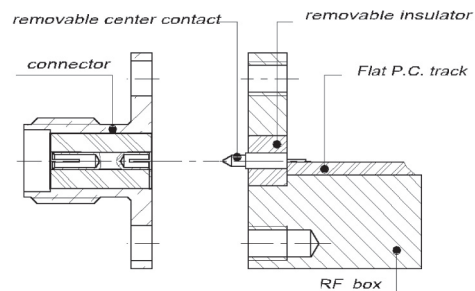
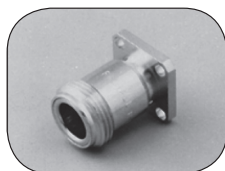


Fig. 1

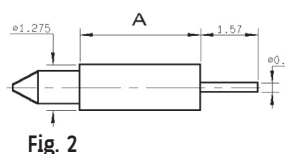
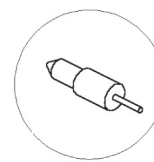
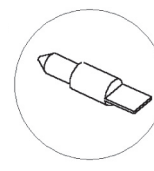
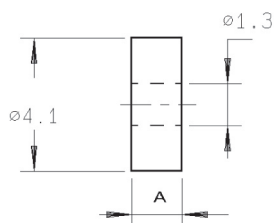


Fig. 2



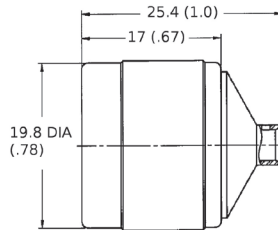
| Part number  | Fig. | A    | Note            | Associated insulator P/N |
|--------------|------|------|-----------------|--------------------------|
| R280 461 000 | 1    | 3.37 | Flat tab        | R280 468 000             |
| R280 463 000 | 2    |      | Cylindrical tab |                          |

## FIELD-REPLACEABLE INSULATORS



| Part number  | A    | Packaging |
|--------------|------|-----------|
| R280 468 000 | 3.17 | 10        |

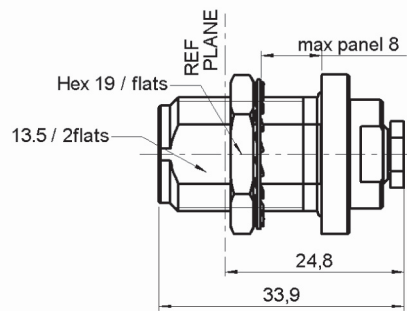
## STRAIGHT PLUGS FOR SEMI-RIGID CABLES



| Cable group | Cable group dia. | Part number   | Captive center contact | Material        | Note          |
|-------------|------------------|---------------|------------------------|-----------------|---------------|
| RG405       | .085"            | 4000-1563-009 | yes                    | Stainless steel | Direct solder |
| RG402       | .141"            | 4000-1563-010 |                        |                 |               |

Note: N18 GHz plugs for SHF high frequency flexible cable are available as cable assemblies only.  
Consult us for standard N18 GHz cable assembly part numbers.

## BULKHEAD STRAIGHT JACKS, FOR SEMI-RIGID CABLES (panel sealed)



| Cable group | Cable group dia. | Part number   | Captive center contact | Panel drilling | Material        | Note                        |
|-------------|------------------|---------------|------------------------|----------------|-----------------|-----------------------------|
| RG405       | .085"            | 4501-9543-009 | yes                    | P14            | Stainless steel | Solder clamp/<br>rear mount |
| RG402       | .141"            | 4501-9543-010 |                        |                |                 |                             |
|             |                  | R163 337 001  |                        |                |                 |                             |

## IN SERIES ADAPTERS

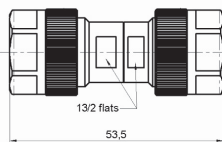


Fig. 1

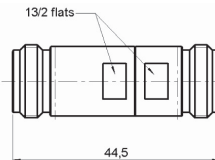


Fig. 2

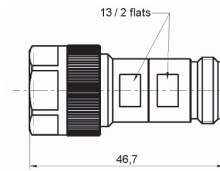


Fig. 3

| Part number  | Fig. | Dimension (mm) | Note          |
|--------------|------|----------------|---------------|
| R163 703 001 | 1    | 53.5 (2.106)   | Male-Male     |
| R163 705 001 | 2    | 44.5 (1.752)   | Female-Female |
| R163 708 001 | 3    | 46.7 (1.838)   | Male-Female   |

Note: 7mm air line adapters also available upon request.

To download data sheets and assembly instructions, visit [www.radiall.com](http://www.radiall.com) & enter the part number in the Search box.  
Bold part numbers represent products typically in stock & available for immediate shipment.  
See page 8 and 9 for packaging information.

## PLUGS AND JACKS

## STRAIGHT PLUGS, FOR FLEXIBLE CABLES

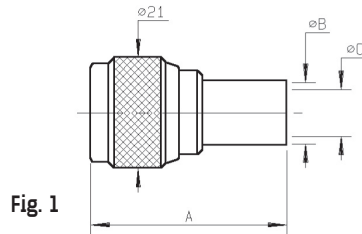


Fig. 1

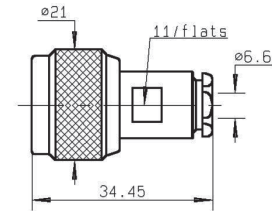


Fig. 2

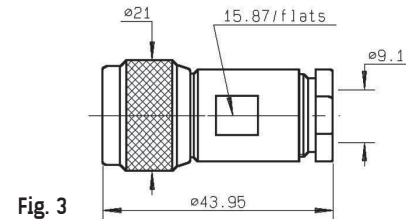


Fig. 3

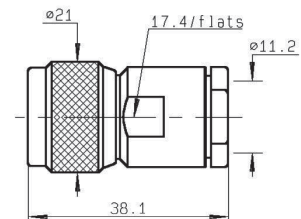


Fig. 4

| Cable group           | Cable group dia. | Part number         | Fig. | Dimensions (mm) |       |       | Captive center contact | Note       |
|-----------------------|------------------|---------------------|------|-----------------|-------|-------|------------------------|------------|
|                       |                  |                     |      | A               | B dia | C dia |                        |            |
| RG59/RG62             | 6/75/S           | R162 084 000        | 1    | 33.9            | 6.6   | 4     | yes                    | Crimp type |
|                       | 6/75+93          | <b>R162 012 000</b> | 2    |                 |       |       | no                     | Clamp type |
| RG6                   | 8/75/D           | R162 013 000        | 3    |                 |       |       |                        |            |
| RG11/RG12/RG144/RG216 | 10+11/75         | R162 017 000        | 4    |                 |       |       |                        |            |

## STRAIGHT JACKS, CLAMP TYPE, FOR FLEXIBLE CABLES

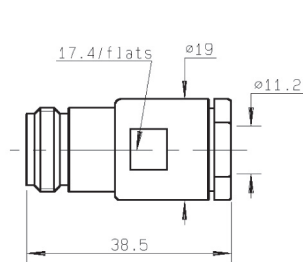
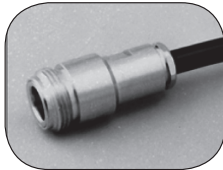


Fig. 1

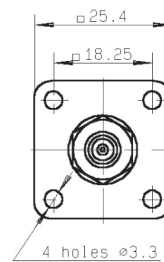
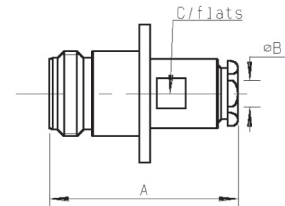
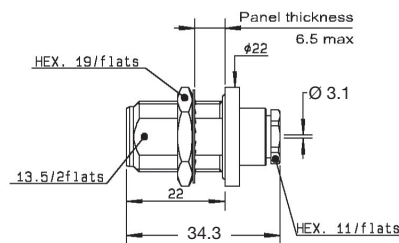


Fig. 2



| Cable group           | Cable group dia. | Part number  | Fig. | Dimensions (mm) |     |    | Captive center contact | Panel drilling | Note          |
|-----------------------|------------------|--------------|------|-----------------|-----|----|------------------------|----------------|---------------|
|                       |                  |              |      | A               | B   | C  |                        |                |               |
| RG11/RG12/RG144/RG216 | 10+11/75         | R162 217 000 | 1    |                 |     |    | no                     | P01            | Square flange |
| RG59/RG62             | 6/75+93/S        | R162 262 000 | 2    | 34.9            | 6.6 | 11 |                        |                |               |

## STRAIGHT BULKHEAD JACKS, CLAMP TYPE, FOR FLEXIBLE CABLE (panel seal)



| Cable group | Cable group dia. | Part number  | Captive center contact | Panel drilling |
|-------------|------------------|--------------|------------------------|----------------|
| RG179       | 2.6/75/S         | R162 322 000 | no                     | P14            |

## FEMALE RECEPTACLES

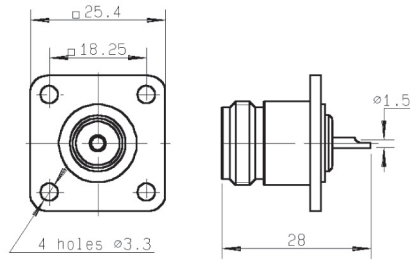


Fig. 1

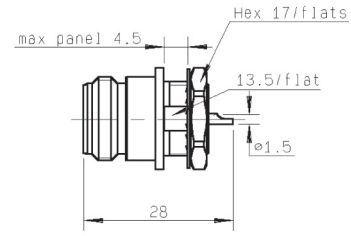


Fig. 2

| Part number  | Fig. | Captive center contact | Panel drilling |
|--------------|------|------------------------|----------------|
| R162 403 000 | 1    | yes                    | P07            |
| R162 570 000 | 2    |                        | P15            |

## IN SERIES ADAPTERS

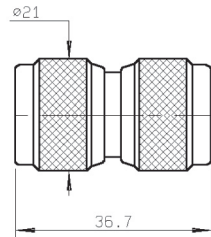


Fig. 1

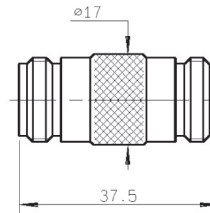
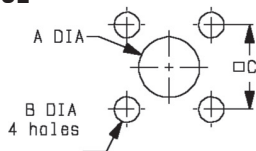


Fig. 2

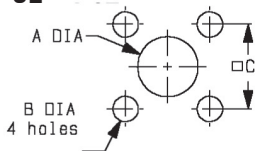
| Part number  | Fig. | Captive center contact |
|--------------|------|------------------------|
| R162 703 000 | 1    | yes                    |
| R162 705 000 | 2    |                        |

P01



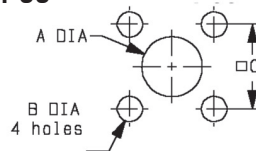
|   | MM    |       | INCH  |       |
|---|-------|-------|-------|-------|
|   | maxi  | mini  | maxi  | mini  |
| A | 16.3  | 16.1  | 0.642 | 0.634 |
| B | 3.30  | 3.20  | 0.13  | 0.126 |
| C | 18.35 | 18.15 | 0.722 | 0.715 |

P02



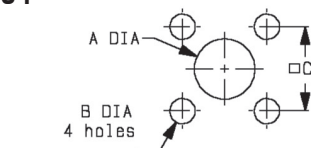
|   | MM    |       | INCH  |       |
|---|-------|-------|-------|-------|
|   | maxi  | mini  | maxi  | mini  |
| A | 15.1  | 14.9  | 0.594 | 0.587 |
| B | 3.30  | 3.20  | 0.13  | 0.126 |
| C | 18.35 | 18.15 | 0.722 | 0.715 |

P03



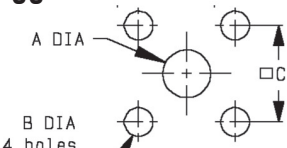
|   | MM   |      | INCH  |       |
|---|------|------|-------|-------|
|   | maxi | mini | maxi  | mini  |
| A | 9.40 | 9.20 | 0.37  | 0.362 |
| B | 3.30 | 3.20 | 0.13  | 0.126 |
| C | 12.8 | 12.6 | 0.504 | 0.496 |

P04



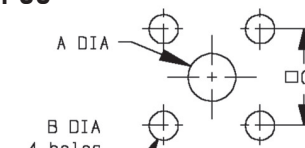
|         | MM    |       | INCH  |       |
|---------|-------|-------|-------|-------|
|         | maxi  | mini  | maxi  | mini  |
| A Front | 21.7  | 21.5  | 0.854 | 0.846 |
| A Rear  | 19.7  | 19.5  | 0.776 | 0.768 |
| B       | 3.30  | 3.20  | 0.13  | 0.126 |
| C       | 18.35 | 18.15 | 0.722 | 0.715 |

P05



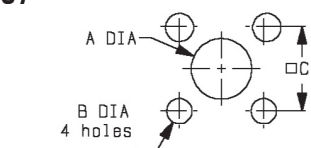
|   | MM    |       | INCH  |       |
|---|-------|-------|-------|-------|
|   | maxi  | mini  | maxi  | mini  |
| A | 7.1   | 7     | 0.279 | 0.275 |
| B | 3.4   | 3.3   | 0.134 | 0.13  |
| C | 18.35 | 18.15 | 0.722 | 0.715 |

P06



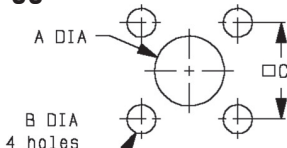
|   | MM    |       | INCH  |       |
|---|-------|-------|-------|-------|
|   | maxi  | mini  | maxi  | mini  |
| A | 4.2   | 4.1   | 0.165 | 0.161 |
| B | 3.3   | 3.2   | 0.13  | 0.126 |
| C | 18.35 | 18.15 | 0.722 | 0.715 |

P07



|         | MM    |       | INCH  |       |
|---------|-------|-------|-------|-------|
|         | maxi  | mini  | maxi  | mini  |
| A Front | 16.3  | 16.1  | 0.642 | 0.634 |
| A Rear  | 15.1  | 14.9  | 0.594 | 0.587 |
| B       | 3.30  | 3.20  | 0.13  | 0.126 |
| C       | 18.35 | 18.15 | 0.722 | 0.715 |

P08



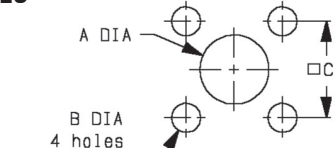
|   | MM    |       | INCH  |       |
|---|-------|-------|-------|-------|
|   | maxi  | mini  | maxi  | mini  |
| A | 12.5  | 12.3  | 0.492 | 0.484 |
| B | 3.3   | 3.2   | 0.13  | 0.126 |
| C | 18.35 | 18.15 | 0.722 | 0.715 |

P09



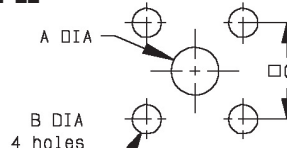
|         | MM    |       | INCH  |       |
|---------|-------|-------|-------|-------|
|         | maxi  | mini  | maxi  | mini  |
| A Front | 16.3  | 16.1  | 0.642 | 0.634 |
| A Rear  | 4.2   | 4.1   | .165  | 0.161 |
| B       | 3.3   | 3.2   | 0.13  | 0.126 |
| C       | 18.35 | 18.15 | 0.722 | 0.715 |

P10



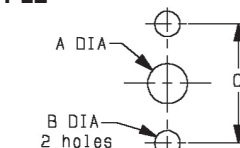
|         | MM    |       | INCH  |       |
|---------|-------|-------|-------|-------|
|         | maxi  | mini  | maxi  | mini  |
| A Front | 16.3  | 16.1  | 0.642 | 0.634 |
| A Rear  | 12.5  | 12.3  | 0.492 | 0.484 |
| B       | 3.3   | 3.2   | 0.13  | 0.126 |
| C       | 18.35 | 18.15 | 0.722 | 0.715 |

P11



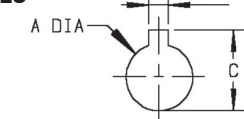
|   | MM   |      | INCH  |       |
|---|------|------|-------|-------|
|   | maxi | mini | maxi  | mini  |
| A | 4.2  | 4.1  | 0.165 | 0.161 |
| B | 2.7  | 2.6  | 0.106 | 0.102 |
| C | 8.69 | 8.59 | 0.342 | 0.338 |

P12



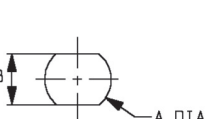
|   | MM   |      | INCH  |       |
|---|------|------|-------|-------|
|   | maxi | mini | maxi  | mini  |
| A | 5    | 4.80 | 0.197 | 0.189 |
| B | 3.30 | 3.20 | 0.13  | 0.126 |
| C | 18.1 | 17.9 | 0.713 | 0.705 |

P13



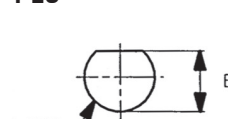
|   | MM   |      | INCH  |       |
|---|------|------|-------|-------|
|   | maxi | mini | maxi  | mini  |
| A | 14.3 | 14.1 | 0.563 | 0.555 |
| B | 2.30 | 2.20 | 0.091 | 0.087 |
| C | 17   | 16.8 | 0.669 | 0.661 |

P14



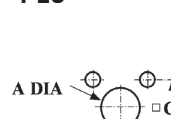
|   | MM   |      | INCH  |       |
|---|------|------|-------|-------|
|   | maxi | mini | maxi  | mini  |
| A | 16.1 | 16   | 0.634 | 0.63  |
| B | 13.7 | 13.6 | 0.539 | 0.535 |

P15



|   | MM   |      | INCH  |       |
|---|------|------|-------|-------|
|   | maxi | mini | maxi  | mini  |
| A | 14.3 | 14.1 | 0.563 | 0.56  |
| B | 13.8 | 13.6 | 0.543 | 0.535 |

P16



|   | mm   |      |
|---|------|------|
|   | Maxi | mini |
| A | 4.25 | 4.15 |
| B | 3.4  | 3.2  |
| C | 12.8 | 12.6 |



AEROSPACE



AUTOMOTIVE



DEFENSE



INDUSTRIAL



INSTRUMENTATION



MEDICAL



SPACE



TELECOM

## EUROPE

### France - RADIALL S.A.

101, Rue Ph. Hoffmann  
93116 ROSNY sous BOIS (Paris)  
Tel.: +33 1 49 35 35 35 - Fax: +33 1 48 54 63 63  
E-Mail: info@radiall.com

### Finland - RADIALL SF

P.O. Box 202 - 90101 OULU  
Tel.: +358 407 522 412  
E-Mail: infofi@radiall.com

### Germany - RADIALL GmbH

Carl-Zeiss Str. 10 Postfach 200143  
D63307 - RÖDERMARK (Frankfurt)  
Tel.: +49 60 74 91 07 0 - Fax: +49 60 74 91 07 70  
E-Mail: infode@radiall.com

### Italy - RADIALL Elettronica S.R.L.

Via Concordia, 5 - 20090 ASSAGO MILANO  
Tel.: +39 02 48 85 121 - Fax: +39 02 48 84 30 18  
E-Mail: infoit@radiall.com  
Regional office: Roma

### Netherlands - RADIALL B.V.

Hogebrinkerweg 15b - 3871 KM HOEVELAKEN  
Tel.: +31 33 253 40 09 - Fax: +31 33 253 45 12  
E-Mail: infofl@radiall.com

### Sweden - RADIALL A.B.

Sjöängsvägen 2 - SE-192 72 SOLLENTUNA (Stockholm)  
Tel.: +46 844 434 10 - Fax: +46 875 449 16  
E-Mail: infose@radiall.com

### U.K. - RADIALL Ltd.

Ground Floor, 6 The Grand Union Office Park,  
Packet Boat Lane  
UXBRIDGE Middlesex UB8 2GH (London)  
Tel.: +44 1895 425 000 - Fax: +44 1895 425 010  
E-Mail: infouk@radiall.com

## NORTH AMERICA

### USA - RADIALL USA, Inc.

6825 West Galveston Street  
CHANDLER, Arizona 85226  
Tel.: +1 480 682 9400 - Fax: +1 480 682 9403  
E-Mail: infousa@radiall.com

## ALSO REPRESENTED IN

|                |             |              |
|----------------|-------------|--------------|
| Australia      | Hungary     | Poland       |
| Austria        | Indonesia   | Russia       |
| Belgium        | Israel      | Singapore    |
| Brazil         | Korea       | Spain        |
| Czech Republic | Latvia      | Switzerland  |
| Denmark        | Lithuania   | Taiwan       |
| Estonia        | Malaysia    | Thailand     |
| Greece         | Norway      | Vietnam      |
|                | Philippines | South Africa |

For the above countries, please contact the local agent or RADIALL at info@radiall.com

## ASIA

### China - SHANGHAI RADIALL Electronic Co., Ltd.

N° 390 Yong He Road 200072 - SHANGHAI  
Tel.: +86 21 66 52 37 88 - Fax: +86 21 66 52 11 77  
E-Mail: infozh@radiall.com

### Japan - NIHON RADIALL

Shibuya-ku Ebisu 1-5-2, Kougetsu Bldg 405  
TOKYO 150-0013  
Tel.: +81 3 3440 6241 - Fax: +81 3 3440 6242  
E-Mail: infojp@radiall.com

### Hong Kong - RADIALL Electronics Ltd.

Flat D, 6/F, Ford Glory Plaza,  
37-39 Wing Hong Street  
Cheung Sha Wan  
KOWLOON HONG KONG  
Tel: +852-2959-3833 - Fax: +852-2959-2636  
E-Mail: infohk@radiall.com

### India - RADIALL India Pvt. Ltd.

25 D, II Phase, Peenya Industrial Area  
BANGALORE 560058  
Tel.: +91 80 83 95 271 - Fax: +91 80 83 97 228  
E-Mail: infoin@radiall.com

