

Multi-pin Connector Series

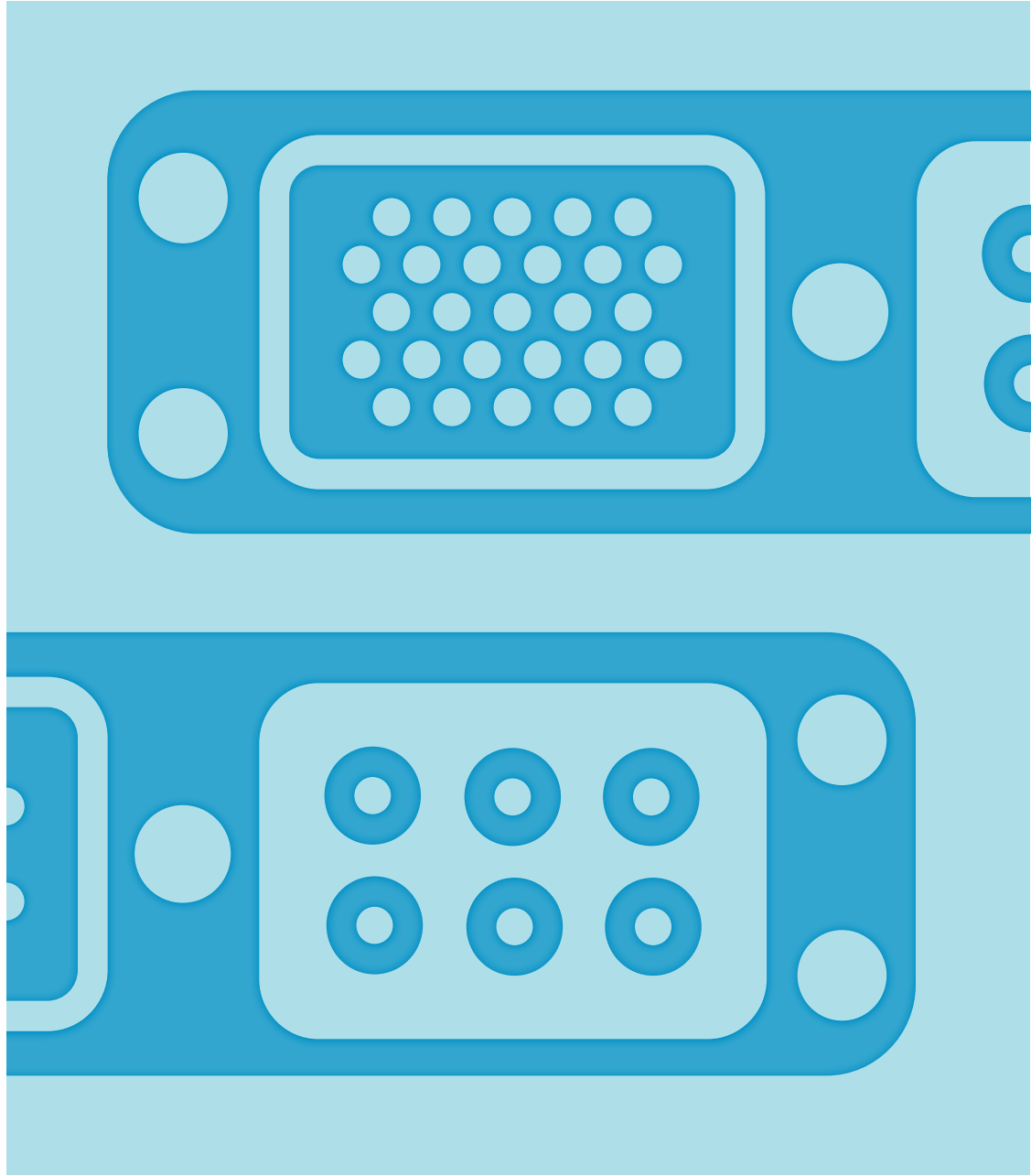
Radiall Full Line Catalog

Radiall





MULTIPIN



Multipin Connector Series

Radiall Full Line Catalog



Connectivity has a profound and dramatic impact on the lives of people throughout the world. Because of advancements in technology, **our** lives are more convenient, more secure, more enjoyable and richer than ever. The speed of data enables communication in the **most** remote areas so people can reach all corners of the globe, allows for **important** defense and security, and facilitates space exploration. But technology doesn't just happen. It starts in the mind with ideas, making **connections** never considered in ways that nobody dreamed possible. Seeing the future in ways previously unimagined **is** the act of innovation and it begins with people—the inventors, the dreamers, the pioneers and the engineers—enriching the lives of billions. At Radiall, we have one single, solitary mission; Empower the people that enrich our lives. Enable their innovation by providing reliability and durability. Give them useful information and provide them with valuable guidance when determining the best course for success. We don't invent the future, we enable it. We inspire innovation, we embrace challenges, we challenge the conventional and we collaborate **with** you to succeed. At Radiall, we're proud to say – Our most important connection is with **you**.

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Company Profile

Our Most Important Connection is with You™

Radiall is a global leader in the design, development and manufacturing of leading edge interconnect solutions. Dedicated to understanding its customers' needs since 1952, Radiall has earned the reputation of being "the best of the best" in engineering ingenuity by providing a constant flow of creative system solutions serving the defense, telecommunications, aerospace, instrumentation, automotive, industrial, medical and broadcast markets.

Best Value-added Services

Collaboration: We work closely with your engineers to understand your business, your technical needs, and your budgetary issues.

Wide Product Range: We manage our product lines thru the entire lifecycle in order to offer you a wide selection of standard products at an affordable cost.

Custom Products: We can tailor products to specific equipment and application needs.

Global Presence: We're everywhere you need us, with worldwide sales, engineering support, R&D in North America, Europe, and Asia, and manufacturing facilities strategically located in the United States, Mexico, France, India, and China.

Responsive Support and Service: From the design stage, planning to post-installation support, we're with you at every step, whether you need sales support or engineering expertise.

On-time Delivery: We support your logistical needs so you get the products when and where you need them.

Warranty: We proudly stand behind our products.

Certifications and Environmental

Radiall is ISO 9001: 2008 certified and dedicated to continuous improvement programs that have resulted in also being AS9100, TS16949 and ISO 14001 certified. In addition, Radiall is committed to investing in its people, future technologies and the environment, such as being RoHS (Restriction of Hazardous Substances) and REACH (Registration, Evaluation, Authorization and Restriction of Chemical substances) compliant.



The Best End-to-End Interconnect Solutions

We offer an extensive range of solutions that supports the most demanding signal transmission applications. 4G wireless infrastructure, active array radars, IED's detection, electrical wiring in aircrafts, soldier tactical radios, in-vehicle communications networks, and magnetic resonance imaging systems are just a few of the complex applications that we support.

- RF coaxial connectors
- Fiber optic connectors and transceivers
- Coaxial and fiber optic cable assemblies and harnesses
- High frequency microwave components
- Coaxial switches, including the smallest and most reliable SPDT relay
- Multipin rectangular connectors
- Rack and panel connectors
- Antennas for tactical networks, aerospace and instrumentation



Technical information and sales contacts are available at: www.radiall.com

Radiall at a Glance

Worldwide Presence

Radiall has a global manufacturing presence. Our International sales network and qualified distributors cover every region around the world. The result is quick and insightful answers to all your requests.

- International Sales Network
- Low cost facilities
- Local manufacturing, logistics and technical support



North America



Asia



Europe



Market Focus

Aerospace



Defense



Industrial



Space



Telecom



Instrumentation



Medical



Radiall Technologies

- Milling
- Plating & plastic metallization
- Molding
- Characterization
- Polishing
- Laser, ultrasonic, vapor, soldering
- Stamping
- Thin & thick film processes
- Etching on Si
- Thick film on AlN
- Test & measurement
- Simulation
- Cable & PTFE wrapping
- Automatic assembly
- Micro-machining



A Global Range to Meet Your Needs



RF Coaxial Connectors

Radiall proudly offers the widest range of RF Coaxial Connectors in the Industry with over 12,000 part numbers and 72 product series including AEP® Mil QPL connectors. These precision-made components are a significant part of our heritage and essential to who we are.



Microwave Components

Radiall has a wide range of coaxial devices, including terminations, attenuators, and couplers using standard interfaces from low to high power. Our state of the art techniques enable us to produce microwave components for use in commercial, military, and space applications.



Multipin Connectors

Radiall has an unmatched range of rack and panel connectors and the most innovative modular and tool-less connectors used in harnesses and equipment connections. Our modern designs combine light weight, high performance levels and user friendly features to simplify even the most complex connections.



Space Qualified

Industry leaders across the globe recognize the Radiall brand for quality, reliability, and performance. Our Space Qualified passive product offering includes a wide range of coaxial connectors, cable assemblies, microwave components, and switches with a frequency range up to Ka band.



Harnesses

The combination of design and manufacturing of RF and microwave cables as well as multipin connectors (EPX, ARINC 404 and 600) allows Radiall to be a specialist of harnesses for onboard or land equipment or communications systems. All types of contacts can be used and mixed such as signal, power, RF, quadrx, fiber optic...



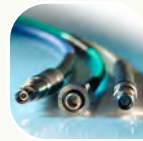
RF & Microwave Switches

All Radiall switches provide exceptional reliability and performance. A unique modular and patented design of the actuator and transmission link enables Radiall to guarantee operation up to 10 million cycles with excellent repeatability, while reducing delivery times.



Antennas

Radiall provides highly reliable antenna solutions for industrial and military applications. Our solutions include Line-Of-Sight tactical communications, vehicular mount, GPS, telemetry, and mesh networks. For optimum performance requirements, Radiall offers custom antenna solutions and support.



RF Cable Assemblies

Radiall has an extensive range of cable assemblies with outstanding electrical performance, low loss, and high frequency. Our range includes flexible, semi rigid and handformable cable assemblies. Our TestPro™ range meets the stringent requirements needed for test and lab applications.



D-Lightsys®

Active Optical Solutions Optimized by D-Lightsys® for harsh environments. From optical transceivers to the world's smallest parallel optics, D-Lightsys® technologies support the most challenging applications, including harsh environments and avionics applications.



Fiber Optics

Radiall designs and supports high performance end-to-end Optical Interconnect solutions. Our offer includes standard interfaces, termini, connectors, harnesses and custom design optical links and subsystems. The flexibility and high quality of our product range supports harsh environments and demanding applications.

Packaging

Shipping information

Unless otherwise stated, shipping lead times may vary depending on the location and time zone in which products are stocked or manufactured. The packaging defines the container of first level of a product. Radiall offers five types of standard packaging.



Labeling

Labeling has an important role in packaging. It has to supply all the necessary information in a clear and concise way. All of our packages are identified with the Radiall name, part number, lot number and quantity.

Blister tray

DEDICATED TO LARGER CONNECTORS • ABILITY TO STACK SEVERAL TRAYS WITHOUT DAMAGING THE CONNECTORS



- This specific packaging is suitable for large or fragile connectors. Products are vertically arranged in custom trays, providing protection against shock and making it easy to quickly count quantity.
- They are covered by an anti-dust lid or wrapped with a plastic film.
- This packaging is available for specific types of connectors when standard packaging might cause damage during shipping.

Tape and reel



- Products are arranged in an anti-static polyester blister tape covered with a ribbon defender. The set is then rolled up on a polyester reel which can receive 100, 500, 1800 or 3000 parts depending on the model.
- This packaging, dedicated to surface mount components is compatible with all pick and place automatic machines. It is CEI 286-3 compliant.

Bulk bag

BULK BAG OR BOX OF 100 PIECES BODY + CRIMP FERRULE + CENTER CONTACT



- The multiple bag or box contains 20, 50, or 100 of each component part in separate bags.

Unit packaging

- All connectors can be ordered in unit bags. It is an individual tear-proof polyethylene bag, which holds the connector and all of the component parts for that connector.
- Unit packaging must be specified when ordering: add « W » at the end of the part number (except for adapters and specific products).

Pre-cut unit bag (no cutting tool required to open)



Blister bulk pack

FOR MULTI-PART PRODUCTS • EASY TO OPEN • IDEAL FOR IN THE FIELD ASSEMBLY

- This bulk packaging is suitable for small connectors Radiall offers four types of blister bulk pack depending on the configuration of the product and the number of pieces (10, 20, 50, or 100).

Three compartments blister bulk pack of 20 pieces



Shipping box

Radiall has designed multiple boxes for optimum packaging and protection. These boxes are available in various optimized sizes.

- Eco friendly design
Labeled tape makes it easy to identify Radiall goods. Printing is minimized in order to limit the use of toxic substances. All boxes can be recycled (except for the adhesive).
- Each product part number has a dedicated carton box adapted to the size of its packaging
- All individual boxes are typically placed in size 20L shipping boxes (40x30x20 cm).

Applications

Radiall's vast experience and expertise are reflected in a wide range of rectangular multipin connectors for on-board as well as on-ground applications.

On-board applications



Civil Aerospace

EPX® - EN4644

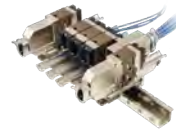
- Airframe production break
- Avionics
- Aerospace general purpose
- IFE
- Power & flight management
- Radar

QM

- Airframe production break
- Aerospace general purpose
- IFE

NSX - ARINC 600

- Avionics
- Aerospace general purpose
- IFE
- Flight management



Military Aerospace

EPX® - EN4644

- Power management
- Avionics
- Flight management
- Radar
- Weapons systems

On-ground applications



Radars

EPX® - EN4644

- Avionics
- Flight management
- Radar
- Weapons systems

HDQX

- Avionics
- Flight management
- Radar
- Weapons systems

B

- Avionics
- Flight management
- Radar
- Weapons systems



Industrial

B

- Avionics
- Flight management
- Radar
- Weapons systems

Applications

HDQX

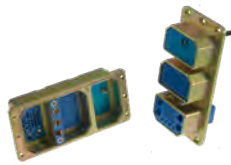
- Avionics
- Aerospace general purpose
- IFE
- Flight management
- Radar



DSX - MIL-C-81659

ARINC 404

- Avionics
- Displays
- Aerospace general purpose
- IFE
- Flight management



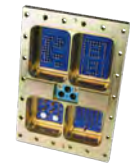
MM MB

- Avionics
- Flight management
- Radar
- Weapons systems



RTX - MIL-STD-1553

- Radar
- Aerospace general purpose



DSX - MIL-C-81659

ARINC 404

- Avionics
- Displays
- Flight management

MM MB

- Avionics
- Flight management
- Radar
- Weapons systems

RTX - MIL-STD-1553

- Radar
- Weapons systems

MPX - MIL-C-83527

- Avionics
- Flight management

MCSR

- Avionics
- Flight management
- Radar
- Weapons systems



Test Equipment

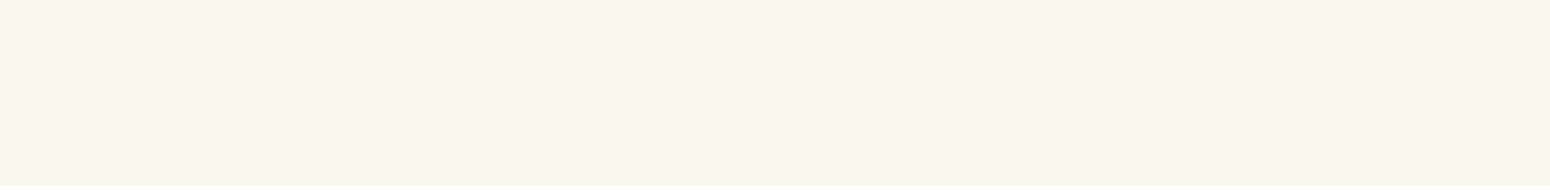
MMC

- Avionics
- Flight management
- Radar
- Weapons systems



MCSR

- Avionics
- Flight management
- Radar
- Weapons systems





EPX[®] Series
EN4644



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Introduction

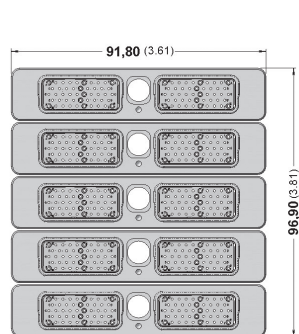
Radiall is recognized in the Aerospace and Defense industries for offering one of the broadest innovative product portfolios for connector interconnect solutions. The benefit of our experience with ARINC connectors permits Radiall to provide customers with a strong and global solution.

The EPX® series offers a wide range of solutions based on two insert sizes with a large variety of shells and contacts. This product range provides an excellent trade-off between the number of available contacts and the space used. The EPX® series is completely modular and expandable.

The EPX® series connectors are standardized by the EN4644 European standard.

A **high density solution** compared to circular connectors:

- Slim shell design with high contact density
- Stackable shells do not require additional space for locking and unlocking the connectors



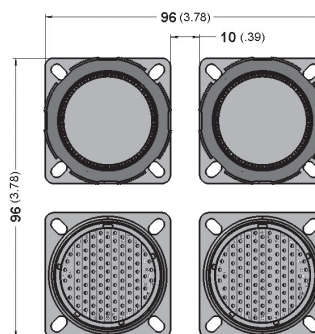
EPXB:

5 shells #2 with 2*48 Cts

--> Total Cts: 480

--> Total surface: $96.90 * 91.80 = 8895.42 \text{ mm}^2$

Gives $18.53 \text{ mm}^2/\text{contact}$



38999 :

4 shells #23 with 100 Cts

--> Total Cts: 400

--> Total surface: $96.00 * 96.00 = 9216 \text{ mm}^2$

Gives $23.04 \text{ mm}^2/\text{contact}$

A **cost saving** and **user-friendly** solution:

- Inserts can be wired in the workshop and later installed in the shells
- A common panel cut-out simplifies the connector installation
- Inserts can be easily installed and removed from the shell
- Inserts and shells are keyed to prevent mis-mating
- Standard Mil spec tools for contact crimping and contact insertion/extraction
- Field replaceable sub-assemblies
- Vibration resistant self-locking threads

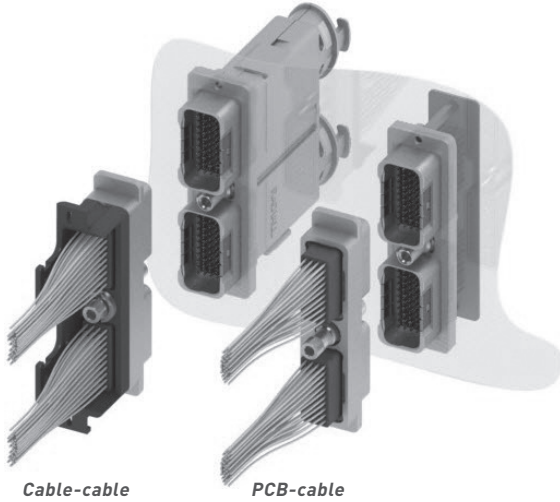
A **modular concept** with a large variety of options:

- Shell can accommodate a wide variety of inserts for signal, power, coax, data bus, fiber optic and high frequency BMA contacts
- Optional ground blocks (to meet the FAA HIRF requirements)
- Pin and socket inserts can be installed in either plug or receptacle shells (pin contacts are always fitted in the pin insert)

EPX® a **versatile solution** available in two different versions:

- Aluminium
- Composite

Disconnect Application



EPX® connectors (EPXA, EPXB1 and EPXB2) are specially designed to be used in cable-cable disconnect applications and PCB-cable disconnect applications.

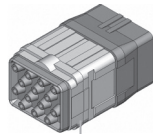
The principle of EPX® disconnect connectors is that the locking system is located on the connector itself.

EPX® connectors for disconnect applications address three main needs:

- Compactness: the design of the locking system allows an access from the back of the shell so that connectors can be stacked. Space can be easily saved
- Modularity: connectors use similar tools and accessories so that spare parts are reduced
- Ease of assembly: when on a panel, the connector is easy to mate with the use of a standard Allen wrench tool (available at Radiall or anywhere)

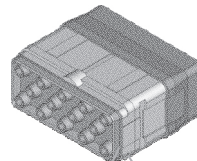
The modularity of this series allows you to configure a connector with higher performances (environmental, grounding blocks, shell mountings, etc). Several accessories offer you the possibility to create harnesses, like the 38999 series.

EPXA insert



EPXA connector

EPXB insert



EPXB1 connector

EPXB inserts fit in any EPXB disconnect connector



EPXB2 connector

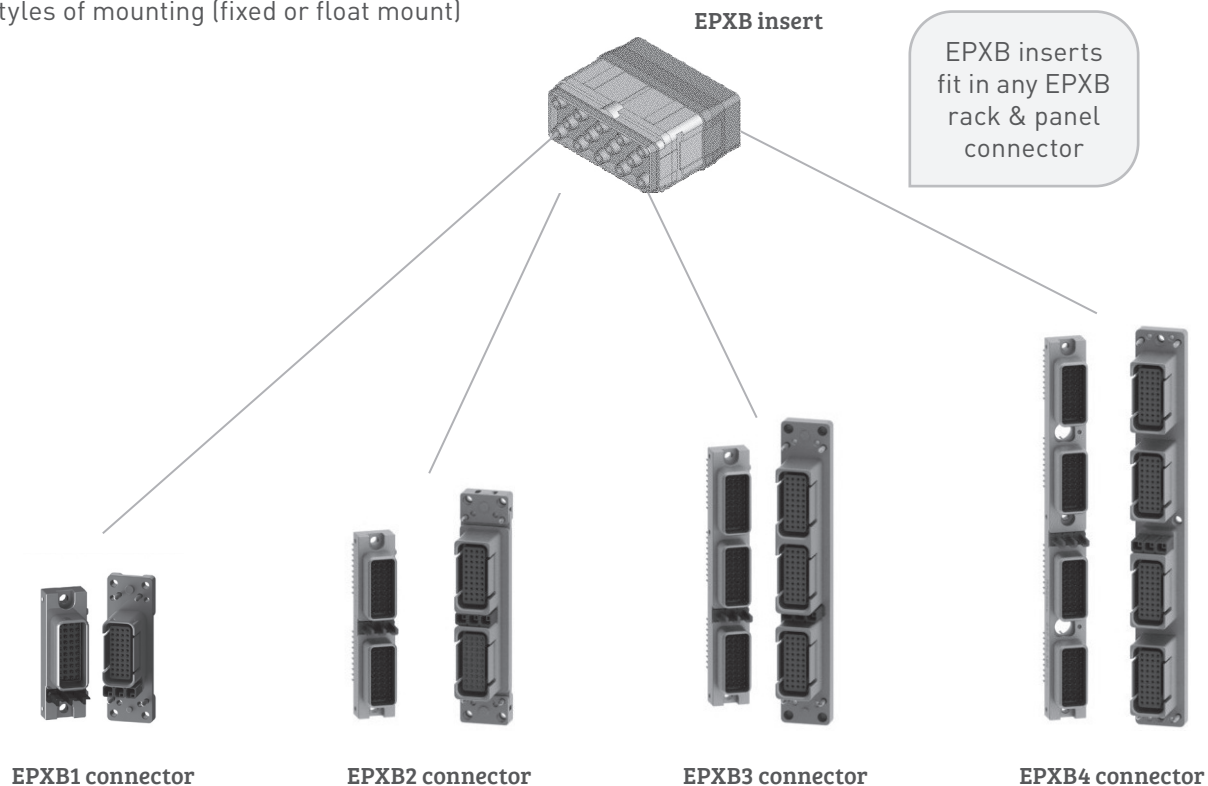
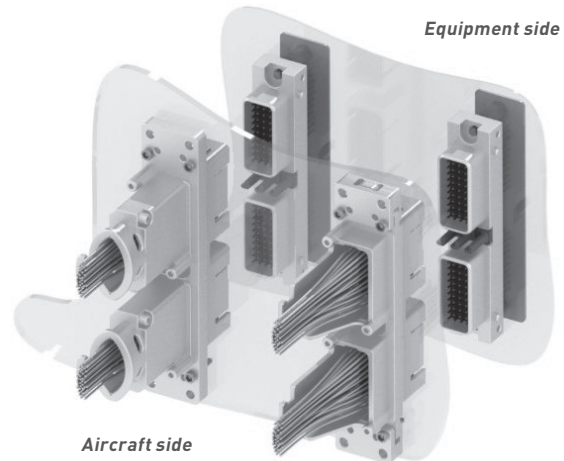
Rack and Panel Application

In response to the need of system miniaturization and new equipment design, Radiall introduces its new rack and panel connectors dedicated to Line Replaceable Module (LRM) applications.

The EPX® rack and panel connectors are intended for blind mate applications. The plug connector is designed to be used in a Line Replaceable Module (LRM) while the receptacle is installed on the aircraft rack. There is no locking mechanism on these blind mate connectors, that feature is part of the equipment interface to the aircraft.

Radiall rack and panel modules offer:

- A wide range of connectors from size 1 to 4 based on the same design. They all use the same accessories, polarization and mounting style in order to standardize the EPX® series
- Reliable system: the polarization device prevents any mounting mistakes between the panel and the receptacle shell, and also between the plug and the receptacle shells
- Modularity in mounting EPX® connectors: EPX® rack and panel receptacles feature Arinc 600 functionality combined with a space saving design which provides several styles of mounting (fixed or float mount)



Technical Characteristics for Disconnect Connectors

ELECTRICAL CHARACTERISTICS

EMI shielding effectiveness EN2591-213

| Frequency (MHz) | Leakage attenuation (dB) |
|-----------------|--------------------------|
| 100 | 65 |
| 200 & 300 | 63 |
| 400 | 62 |
| 500 & 600 | 60 |

OTHER CHARACTERISTICS

- **Shell to shell conductivity** < 2.5 mΩ, operating voltage: 400 Vrms or 500 Vdc at sea level, according to EN2591-205
- **Voltage stability (ground block):** Maximum variation 4mV according to SAE AS 81714 (MIL-T-81714)
- **Lightning stike:** - 5kA - 1600V for EPX® connectors in aluminium version
- 3kA - 1600V for EPX® connectors in composite version

MECHANICAL CHARACTERISTICS

Mating/unmating

| Shell type | Material | Mating/Unmating |
|------------|-----------|---------------------------|
| EPXA | Aluminium | 100 cycles |
| EPXB1 | Aluminium | 100 cycles |
| EPXB1 | Composite | 100 cycles |
| EPXB2 | Composite | 100 cycles ⁽¹⁾ |
| EPXB2 | Aluminium | 100 cycles ⁽¹⁾ |

VIBRATION & SHOCK

| Shell type | Material | Vibration | Shock |
|---------------------------------------|-----------|--|---|
| | | For 8 hrs on each of the 3 axis/ interruption <1µs EN2591-403 EIA 364-28 | 3 shocks on each axis EN2591-402 EIA 364-27 |
| EPXA | Aluminium | Acceleration 27.8g (test condition 6 letter G) | Shock amplitude 50g /duration 11ms |
| EPXB1 | Aluminium | | |
| EPXB1 | Composite | | |
| EPXB2 | Composite | | |
| EPXB2 | Aluminium | | Shock amplitude 300g /duration 3ms |
| Disconnect EPX® with Quadrax contacts | / | Acceleration 16.9g (test condition 5 letter E) | Shock amplitude 50g /duration 11ms |

NOTE:

(1) 500 mating cycles possible when using lubricant (as per the standard Mil-spec DOD G 24508) on locking device

Technical Characteristics for Rack & Panel Connectors

ELECTRICAL CHARACTERISTICS

EMI shielding effectiveness en2591-213

| Frequency (MHz) | Leakage attenuation (dB) |
|-----------------|--------------------------|
| 100 | 65 |
| 200 & 300 | 63 |
| 400 | 62 |
| 500 & 600 | 60 |

OTHER CHARACTERISTICS

- **Shell to shell conductivity** < 2.5 m Ω, operating voltage: 400 Vrms or 500 Vdc at sea level, according to EN2591-205
- **Voltage stability (ground block):** Maximum variation 4mV according to SAE AS 81714 (MIL-T-81714)
- **Lightning stike:** - 5kA - 1600V for EPX® connectors in aluminium version
- 3kA - 1600V for EPX® connectors in composite version

MECHANICAL CHARACTERISTICS

Mating/unmating

| Shell type | Material | Mating/Unmating |
|------------|-----------|-----------------|
| EPXB1 | Aluminium | 500 cycles |
| EPXB2 | | 500 cycles |
| EPXB3 | | 500 cycles |
| EPXB4 | | 500 cycles |

The minimum mating forces are described in the EN4644 standard and depends on the connector size and insert arrangement. Consult Radiall for more information.

VIBRATION & SHOCK

| Shell type | Material | Vibration | Shock |
|------------|-----------|--|---|
| | | For 8 hrs on each of the 3 axis/ interruption <1µs EN2591-403 EIA 364-28 | 3 shocks on each axis EN2591-402 EIA 364-27 |
| EPXB1 | Aluminium | Acceleration 16.9g (test condition 5 letter E) | Shock amplitude 50g /duration 11ms |
| EPXB2 | | | |
| EPXB3 | | | |
| EPXB4 | | | |

Technical Characteristics for Inserts & Contacts

ELECTRICAL CHARACTERISTICS

Electrical characteristics conform to SAE AS 39029 (MIL-C-39029 type A)
 Contacts conform to EN3155-076 and EN3155-077

CONTACTS

| Contact size | Wire size | Max current Amps |
|--------------|-----------|------------------|
| 22 | AWG22 | 5 |
| | AWG24 | 3 |
| | AWG26 | 2 |
| 20 | AWG20 | 7.5 |
| | AWG22 | 5 |
| | AWG24 | 3 |
| 16 | AWG16 | 13 |
| | AWG18 | 10 |
| | AWG20 | 7.5 |
| 12 | AWG12 | 23 |
| | AWG14 | 17 |
| | AWG16 | 13 |
| 8 | AWG8 | 46 |
| | AWG10 | 33 |
| 5 | AWG8 | 80 ^m |
| | AWG10 | 33 |

NOTE:

(1) Size 5 contacts are not part of SAE AS 39029 (MIL-C-39029 type A). They are qualified by Radiall to 80 Amps

GROUND BLOCK CONTACT

| | Contact with wire size | Max current Amps |
|-----------------------------|------------------------|------------------|
| Contact to contact | Contact + AWG20 | 7.5 |
| Contact to mounting surface | Contact + AWG20 | 7.5 |

DIELECTRIC WITHSTANDING VOLTAGE EN2591-207 EIA 364-20 with leakage current < 1mΩ

| Level | Environmental inserts voltage (VRMS) | Non-environmental voltage (VRMS) |
|-------------|--------------------------------------|----------------------------------|
| Sea level | 1500 | 1500 |
| 50,000 feet | 800 | 600 |
| 70,000 feet | 800 | 300 |

INSULATION RESISTANCE EN2591-206 EIA 364-21

| Temperature | Insulation resistance |
|---------------------|-----------------------|
| Ambient temperature | > 5000 MΩ |
| 175°C (+347°F) | > 200 MΩ |

Mechanical Characteristics

RETENTION CHARACTERISTICS

Contact retention EN2591-409 EIA 364-29 in terminated connectors.

| Contact size | Retention force | Max displacement |
|--------------|------------------|-------------------|
| Ground block | 88N (20 lbs) | 0.30mm (.012 in.) |
| 22 | 53.4N (12 lbs) | 0.38mm (.015 in.) |
| 20 | 89N (20 lbs) | 0.38mm (.015 in.) |
| 16 | 111.2N (25 lbs) | 0.38mm (.015 in.) |
| 12 | 133.45N (30 lbs) | 0.38mm (.015 in.) |
| 8 | 133.45N (30 lbs) | 0.38mm (.015 in.) |
| 5 | 133.45N (30 lbs) | 0.38mm (.015 in.) |

- **Insert retention:** 400N (90 lbs) EN2591-410 EIA 364-35
- **Maximum insert displacement in the shell cavity:** 0.30mm (.012 in.)

ENVIRONMENTAL CHARACTERISTICS

Temperature

- **Temperature range:** -65°C/+175°C (-85°F/+347°F) according to EIA364-32 and EN2591-305
- **Temperature range:** -65°C/+125°C (-85°F/+257°F) for EPXB2 composite shell and for Rack & Panel EPXB
- **Temperature life:** 1000 hours at maximum temperature

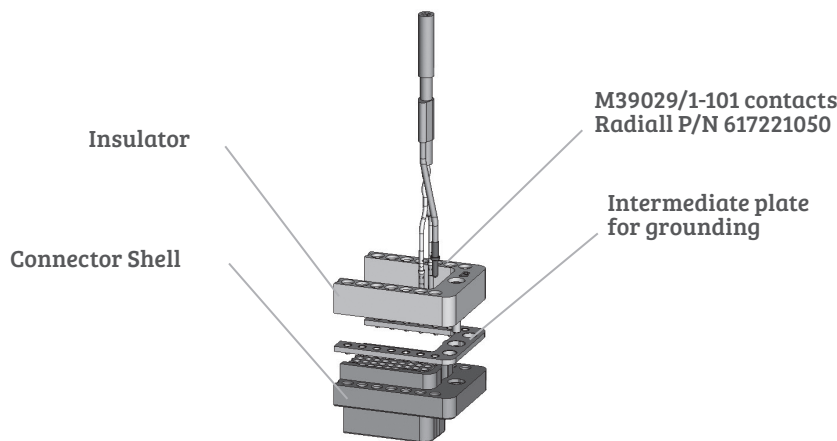
OTHER CHARACTERISTICS

- **Salt spray:** 96 hours (nickel-plated aluminium and composite) EN2591-307 EIA 364-26 test condition A
- **Humidity:** 10 days with temperature variation from -10°C to +65°C EIA 364-31 Method 4, test condition B
- **Altitude immersion:** 3 cycles at 50,000 feet EN2591-314 EIA 364-03

GROUND BLOCK

Radiall provides a unique patented feature by integrating a ground block directly on the shell

This option permits very short ground terminations



Insert Selection Table

Insert name should be used when ordering EPX® insert
 Insert code should be used when ordering kit assembly

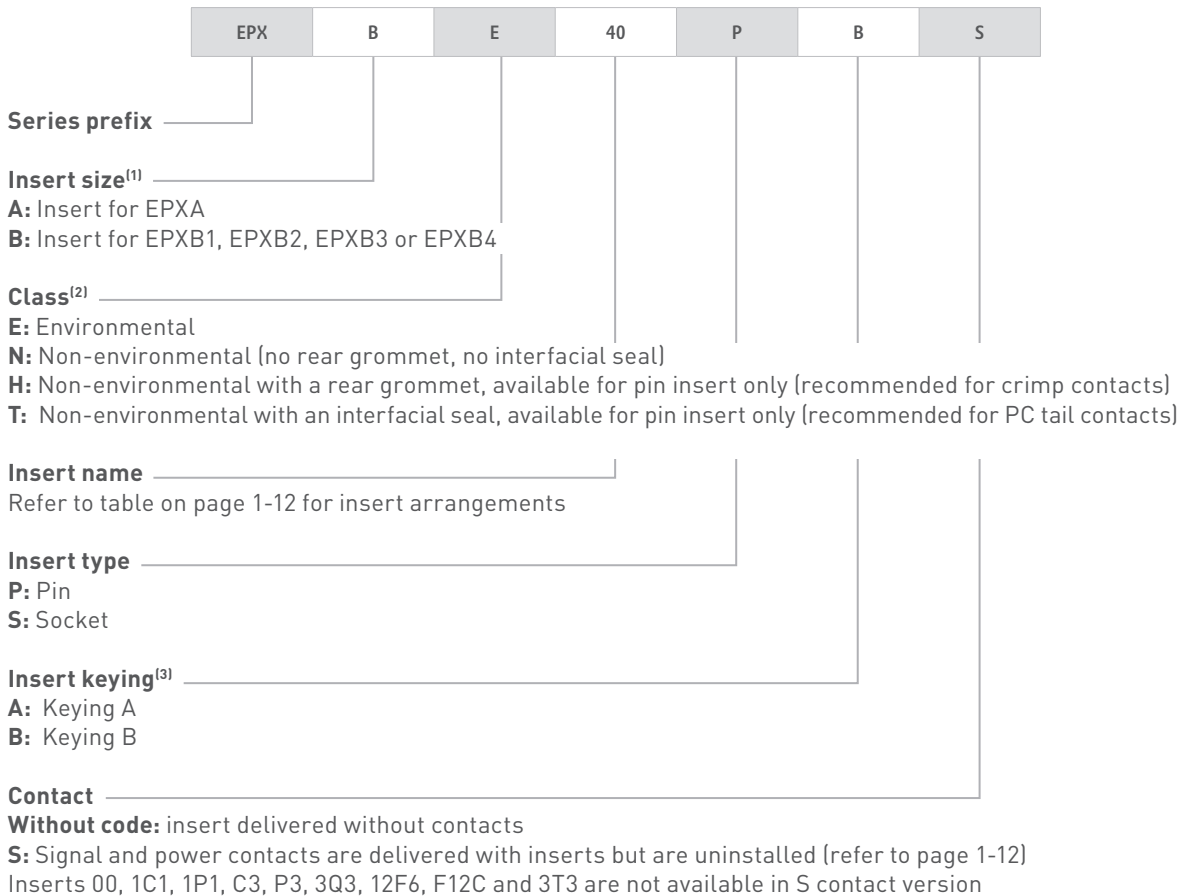
| Series | Insert name | Insert code | Contact Size & Type ⁽¹⁾ | | | | | | | | | | | Total contacts | |
|--------|-------------|-------------|------------------------------------|-------|---------------|---------------------|-----------------------------|---------------|-------|-------------------|-----|---------------|-------|----------------|----|
| | | | 22* | 20* | 15 or 16* | 16 | 16 | 12* | 8 | 8 | 8 | 5 | 5 | | |
| | | | Signal | Power | Power or coax | LuxCis® fiber optic | Power in fiber optic cavity | Power or coax | Power | Quadrax or twinax | BMA | Coax or triax | Power | | |
| EPXA | 00 | 0 | | | | | | | | | | | | | 0 |
| | 1C1 | A | | | | | | | | | | | 1 | | 1 |
| | 1P1 | B | | | | | | | | | | | | 1 | 1 |
| | 04 | C | | | 2 | | | | 2 | | | | | | 4 |
| | 09 | D | | 3 | 6 | | | | | | | | | | 9 |
| | 14 | E | | 14 | | | | | | | | | | | 14 |
| | 14M | F | 8 | 3 | 3 | | | | | | | | | | 14 |
| | 17 | G | 12 | 5 | | | | | | | | | | | 17 |
| 20 | H | 20 | | | | | | | | | | | | 20 | |
| EPXB | 00 | 0 | | | | | | | | | | | | | 0 |
| | C3 | A | | | | | | | | | | | 3 | | 3 |
| | P3 | B | | | | | | | | | | | | 3 | 3 |
| | 3Q3 | C | | | | | | | | | 3 | | | | 3 |
| | 06 | D | | | | | | | 6 | | | | | | 6 |
| | 10Q2 | E | | 8 | | | | | | | 2 | | | | 10 |
| | 12F6 | F | | | | 6 | 6 | | | | | | | | 12 |
| | F12C | G | | | | 12 | | | | | | | | | 12 |
| | 13C1 | H | | 6 | 4 | | | | 2 | | | | 1 | | 13 |
| | 13P1 | J | | 6 | 4 | | | | 2 | | | | | 1 | 13 |
| | 14 | K | | | 14 | | | | | | | | | | 14 |
| | 17 | L | | 14 | | | | | 3 | | | | | | 17 |
| | 20C1 | M | | 19 | | | | | | | | | 1 | | 20 |
| | 20P1 | N | | 19 | | | | | | | | | | 1 | 20 |
| | 22 | P | | 16 | 6 | | | | | | | | | | 22 |
| | 22V | Q | | 16 | 6 | | | | | | | | | | 22 |
| | 25P1 | R | 24 | | | | | | | 1 | | | | | 25 |
| | 25Q1 | S | 24 | | | | | | | | 1 | | | | 25 |
| | 28 | T | 22 | | 6 | | | | | | | | | | 28 |
| | 30 | U | | 30 | | | | | | | | | | | 30 |
| 34 | W | 18 | 16 | | | | | | | | | | | 34 | |
| 40 | X | 40 | | | | | | | | | | | | 40 | |
| 48 | Y | 48 | | | | | | | | | | | | 48 | |
| 3T3 | Z | | | | | | | | | | | 3 | | 3 | |

NOTE:

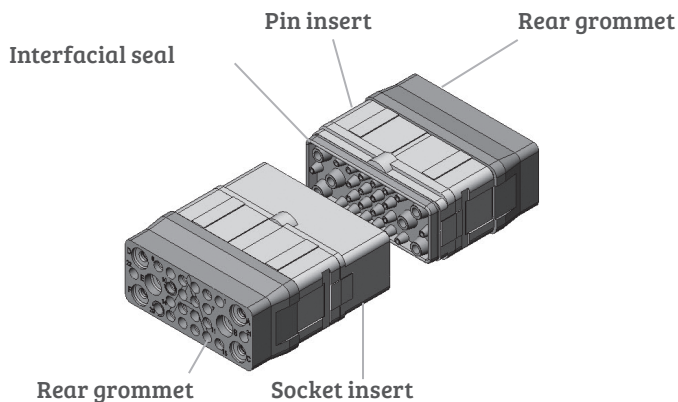
(1) Only contacts marked with an asterisk (*) are included with EPX® inserts
 All other contacts must be ordered separately (coax, twinax, quadrax and fiber optic contacts)

How to order EPX® inserts

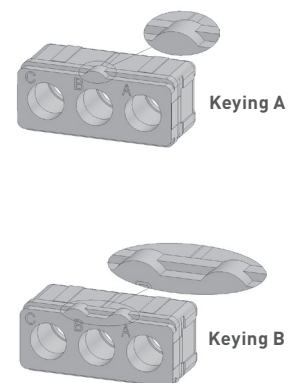
Only crimp contacts can be delivered with insert



ENVIRONMENTAL INSERT



Insert Keying Detail



NOTES:

- (1) Inserts are designed for rear release & rear removable contacts
- (2) Pin and socket inserts can be installed in either plug or receptacle shell
F6, F12C and 12F6 are only available in E class. "Insert 00 is only available in N class
- (3) For EPXA, EPXB1, EPXB3 and EPXB4 shells, use only insert keyed A
For EPXB2 shells, use one insert keyed A and one insert keyed B

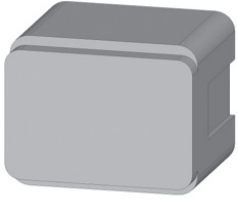
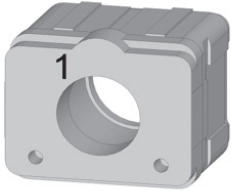
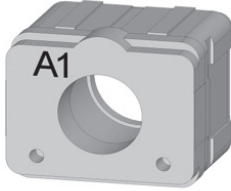
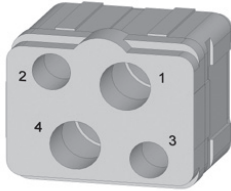
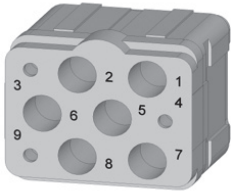
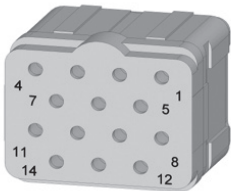
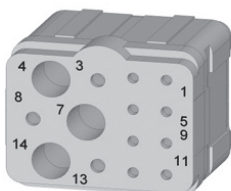
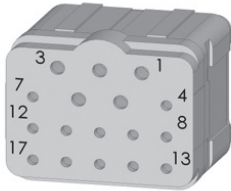
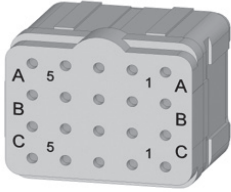
EPXA Insert Arrangements

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION


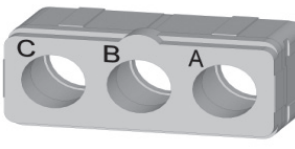
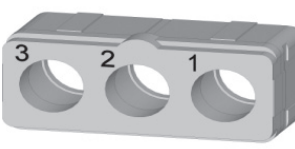
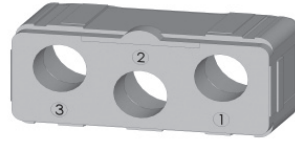
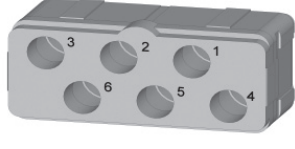
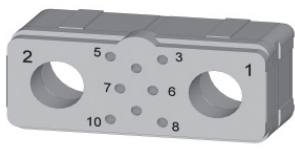
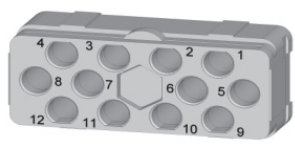
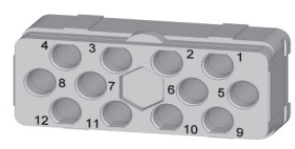
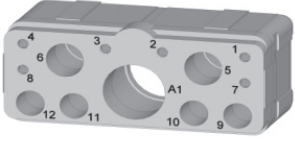
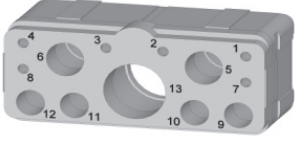
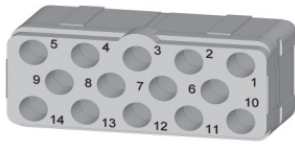
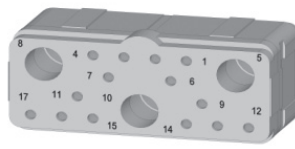
| | | | |
|---|---|---|---|
|  |  |  |  |
| <p>Insert name 00 Insert code 0 Blank insert ⁽¹⁾</p> | <p>Insert name 1C1 Insert code A 1 x size 5 coax contacts</p> | <p>Insert name 1P1 Insert code B 1 x size 5 power contacts</p> | <p>Insert name 04 Insert code C 2 x size 15 or 16 contacts 2 x size 12 contacts</p> |
|  |  |  |  |
| <p>Insert name 09 Insert code D 3 x size 20 contacts 6 x size 15 or 16 contacts</p> | <p>Insert name 14 Insert code E 14 x size 20 contacts</p> | <p>Insert name 14M Insert code F 8 x size 22 contacts 3 x size 20 contacts 3 x size 15 or 16 contacts</p> | <p>Insert name 17 Insert code G 12 x size 22 contacts 5 x size 20 contacts</p> |
|  | | | |
| <p>Insert name 20 Insert code H 20 x size 22 contacts</p> | | | |

NOTE:

(1) P/N for blank insert is EPXAN00

EPXB Insert Arrangements

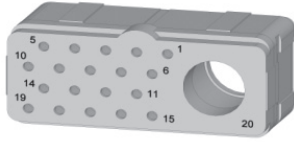
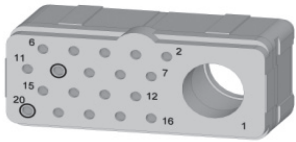
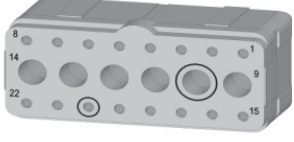
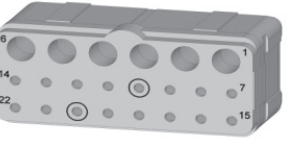
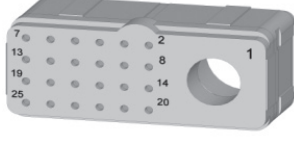
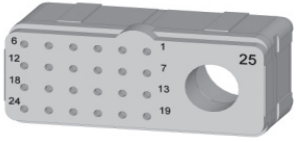
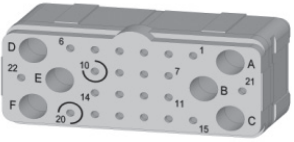
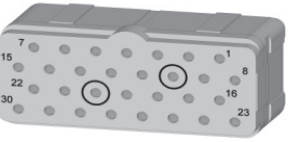
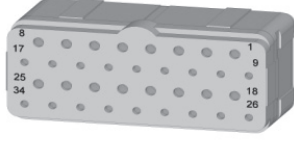
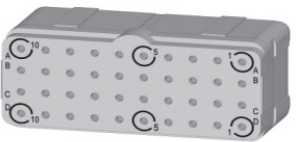
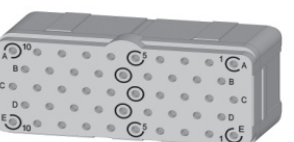
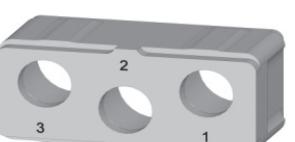
Full size inserts arrangements are compliant with EN4644

| | | | |
|--|---|---|--|
|  |  |  |  |
| Insert name 00 Insert code 0 Blank insert ⁽¹⁾ | Insert name C3 Insert code A 3 x size 5 coax contacts | Insert name P3 Insert code B 3 x size 5 power contacts | Insert name 3Q3 Insert code C 3 x size 8 quadrax contacts |
|  |  |  |  |
| Insert name 06 Insert code D 6 x size 12 medium power contacts | Insert name 10Q2 Insert code E 8 x size 20 contacts 2 x size 8 quadrax contacts | Insert name 12F6 Insert code F 6 x size 16 Optical LuxCis® termini 6 x size 16 special electrical contacts | Insert name F12C Insert code G 12 x size 16 Optical LuxCis® termini |
|  |  |  |  |
| Insert name 13C1 Insert code H 6 x size 20 contacts 4 x size 15 or 16 contacts 2 x size 12 contacts 1 x size 5 coax contact 1 x size 5 power contact | Insert name 13P1 Insert code J 6 x size 20 contacts 4 x size 15 or 16 contacts 2 x size 12 contacts 1 x size 5 power contact | Insert name 14 Insert code K 14 x size 15 or 16 contacts | Insert name 17 Insert code L 14 x size 20 contacts 3 x size 12 contacts |

NOTE:
(1) P/N for blank insert is EPXBN00

EPXB Insert Arrangements

Full size inserts arrangements are compliant with EN 4644.

| | | | |
|---|---|---|--|
|  |  |  |  |
| <p>Insert name 20C1 Insert code M 19 x size 20 contacts 1 x size 5 coax contact</p> | <p>Insert name 20P1 Insert code N 19 x size 20 contacts 1 x size 5 power contact</p> | <p>Insert name 22 Insert code P 16 x size 20 contacts 6 x size 15 or 16 contacts</p> | <p>Insert name 22V Insert code Q 16 x size 20 contacts 6 x size 16 contacts</p> |
|  |  |  |  |
| <p>Insert name 25P1 Insert code R 24 x size 22 contacts 1 x size 8 power contact</p> | <p>Insert name 25Q1 Insert code S 24 x size 22 contacts 1 x size 8 quadrax contact</p> | <p>Insert name 28 Insert code T 22 x size 22 contacts 6 x size 15 or 16 contacts</p> | <p>Insert name 30 Insert code U 30 x size 20 contacts</p> |
|  |  |  |  |
| <p>Insert name 34 Insert code W 18 x size 22 contacts 16 x size 20 contacts</p> | <p>Insert name 40 Insert code X 40 x size 22 contacts</p> | <p>Insert name 48 Insert code Y 48 x size 22 contacts</p> | <p>Insert name 3T3⁽¹⁾ Insert code Z 3 x size 8 BMA pin contacts</p> |

NOTE:

(1) 3T3 pin insert only is available. It is mateable with 3Q3 socket insert

Signal & Power Crimp Contacts

EPX series offers a wide range of contacts compliant with EN3155 and SAE AS 39029. The available contacts cover aerospace applications for terminating to both cables and printed circuit boards.

- Signal and power contacts
- High frequency with coax, twinax and triax contacts
- Ethernet links with Quadrax contacts
- Optical links with LuxCis® contacts

Discover our brand new range of signal & power contacts with selective gold plating

Features and benefits :

- Significant reduction of cost of ownership
- Reduced dependence on gold rate fluctuation
- No change in the contact crimping or soldering process

Specifications:

- Same contact design as full plated version
- Contact interface gold plated with 1.27µm
- For crimp version, no changes are required for the crimping process
- For PC tail version, use of selective plated contacts has no impact on PCB design
- Product qualification is available upon request

| Contact size | Wire size | Type | Part number full plated | Part number selectively plated | Crimping tool | Positioner | Selector | Ins / ext tool | Type of tool | |
|--------------|--------------------------------------|--------|--------------------------------|--------------------------------|--|------------------------|--------------------------|-----------------------------|--------------------------|-----------|
| 22 | 22 | Pin | 617200 | 617200100 | 282281 M22520/2-01 | 282970 M22520/2-23 | 4 | 282522 {M81969/14-01} | Plastic | |
| | 24 | | | | | | 3 | | | |
| | 26 | Socket | 617300 | 617300100 | | | 3 | | | |
| 20 | 20 | Pin | 617221 | 617221100 | 282281 M22520/2-01 | 282971 M22520/2-08 | 7 | 282522001 {M81969/39-01} | Plastic | |
| | 22 | | | | | | 6 | | | |
| | 24 | Socket | 617320 | 617320100 | | | 5 | | | |
| 16 | | Pin | 617240 | 617240100 | 282291 M22520/1-01 | 282972 M22520/1-02 | 6 | 282515 {M81969/14-03} | Plastic | |
| | | | 18 | | | | | | | 5 |
| | | 20 | Socket | 617340 | | | 617340100 | | | 4 |
| | Ground block | 20 | Pin | 617221050 | N/A | 282281 M225520/2-01 | 282581015 M22520/2-11 | 7 | 282886 | Metal |
| | | | Socket | N/A | N/A | | | | | |
| | for optical/ electrical insert | 16 | Pin | 617235003 ⁽¹⁾ | N/A | 282291 M22520/1-01 | 282581013 | 6 | 282515 {M81969/14-03} | Plastic |
| 18 | | 5 | | | | | | | | |
| 20 | | 4 | | | | | | | | |
| 12 | 12 | Pin | 617250 | 617250100 | 282291 M22520/1-01 | 282972 M22520/1-02 | 8 | 282549004 {M81969/14-04} | Plastic | |
| | 14 | | | | | | 7 | | | |
| | 16 | Socket | 617350 | 617350100 | | | 6 | | | |
| 8 | 8 | Pin | 617291002 ^(2&3) | N/A | R282600000 M22520/23-01 + Die set R282650000 M22520/23-02 | 282588 | N/A | 282549001 | Metal | |
| | 10 | Socket | 617391002 ^(2&3) | N/A | | | | | | |
| 5 | 8 | Pin | 617280 ^(2&4) | N/A | R282600000 M22520/23-01 + Die set R282650000 M22520/23-02 | 282557020 | N/A | 282946 {M81969/28-01} | Metal | |
| | | Socket | 617390 ^(2&4) | N/A | | | | | | 282557021 |
| | 12 | Pin | 617260001 ^(2&4) | N/A | 282613 | 282586003 | 6 | | | |
| | | Socket | 617370001 ^(2&4) | N/A | | 282586005 | | | | |

NOTES:

- (1) Electrical contacts for optical inserts are always pin contacts (hermaphrodite)
- (2) In order to make these contacts environmental, it is necessary to add a sealing boot. Please contact us for additional information
- (3) These power contacts can be used in power inserts only [25P1]
- (4) These power contacts can be used in power inserts only [P3, 13P1 and 20P1]

Oversized & Reduced Crimp Barrel Contacts

| Contact size | | Wire size | Type | Part number fully plated | Crimping tool | Positioner | Selector | Ins / ext tool | Type of tool |
|--------------|--|-----------|--------|--------------------------------|-----------------------|-----------------------|----------|-----------------------------|--------------|
| 22 | reduced crimp barrel | 28 | Pin | 617201 ⁽¹⁾ | 282281 M22520/2-01 | 282970 M22520/2-23 | 5 | 282522 (M81969/14-01) | Plastic |
| | | 30 | Socket | 617301 ⁽¹⁾ | | | 4 | | |
| | oversize crimp barrel | 20 | Pin | 617200200 | 282281 M22520/2-01 | 282970 M22520/2-23 | 5 | | |
| | | 22 | Socket | 617300200 | | | 4 | | |
| | | 24 | | | | | 3 | | |
| | | 24 | | | | | 4 | | |
| 20 | reduced crimp barrel | 22 | Pin | 617224001 ⁽¹⁾ | 282281 M22520/2-01 | 282971 M22520/2-08 | 4 | 282522001 (M81969/39-01) | Plastic |
| | | 24 | Socket | 617324001 ⁽¹⁾ | | | 3 | | |
| | | 26 | | | | | 3 | | |
| | oversize crimp barrel | 18 | Pin | 617221200 | 282281 M22520/2-01 | 282971 M22520/2-08 | 5 | | |
| | | 20 | Socket | 617320200 | | | 5 | | |
| | | 22 | | | | | 4 | | |
| | | 22 | | | | | 4 | | |
| | | 22 | | | | | 4 | | |
| 16 | reduced crimp barrel | 20 | Pin | 617241 ⁽¹⁾ | 282291 M22520/1-01 | 282972 M22520/1-02 | 5 | 282515 (M81969/14-03) | Plastic |
| | | 22 | Socket | 617341 ⁽¹⁾ | | | 5 | | |
| | | 24 | | | | | 4 | | |
| | reduced crimp barrel for optical electrical insert | 20 | Pin | 617235002 ^(1&2) | 282291 M22520/1-01 | 282581013 | 5 | | |
| | | 22 | | | | | 5 | | |
| | | 24 | | | | | 4 | | |
| | oversize crimp barrel | 14 | Pin | 617240200 | 282291 M22520/1-01 | 282972 M22520/1-02 | 6 | | |
| | | 16 | Socket | 617340200 | | | 5 | | |
| | | 18 | | | | | 5 | | |

NOTES:

- (1) When smaller wire sizes are used on contacts with reduced crimp barrel, the wire will not provide sealing to the grommet. If sealing is required, please contact Radiall
- (2) Electrical contacts for optical insertss are always pin contacts (hermaphrodite)

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

Coaxial Crimp Contacts

| Contact size | Cable type | Type | Environmental part number | Non-environmental part number | Ins/ext tool | Type of tool |
|--------------|---|--------|---------------------------|-------------------------------|-----------------------------|--------------|
| 15-16 | RG174-RG179 RG316 | Pin | 617130 | | 282512 | Metal |
| | | Socket | 617030 | | | |
| | RG178 | Pin | 617131 | | | |
| | | Socket | 617031 | | | |
| | GORE/AXON P812817 FILECA F1703-134 FILOTEX SP132868 | Pin | 617132 | | | |
| | | Socket | 617032 | | | |
| | RG178 DT | Pin | 617133 | | | |
| | | Socket | 617033 | | | |
| UT .047 | Pin | 617135 | | | | |
| | Socket | 617035 | | | | |
| 12 | UT.085-RG405 | Pin | 617160 | | 282549004 (M81969/14-04) | Plastic |
| | | Socket | 617060 | | | |
| 5 | RG58-RG141 | Pin | 617101001 | 617101 | 282946 (M81969/28-01) | Metal |
| | | Socket | 617001001 | 617001 | | |
| | RG142 - RG400 | Pin | 617102001 | 617102 | | |
| | | Socket | 617002001 | 617002 | | |
| | RG174-RG316 RG188 | Pin | 617103001 | 617103 | | |
| | | Socket | 617003001 | 617003 | | |
| | RG178-RG196 | Pin | 617104001 | 617104 | | |
| | | Socket | 617004001 | 617004 | | |
| | RG180 | Pin | 617105001 | 617105 | | |
| | | Socket | 617005001 | 617005 | | |

EPX® SERIES

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

Twinax & Triax Crimp Contacts

| Contact size | Cable type | Type | Environmental part number | Non-environmental part number | Ins/ext tool | Type of tool | |
|--------------|-------------------------------------|--------|---------------------------|-------------------------------|-----------------------------|--------------|-----------|
| 12 Triax | ECS0700 | Pin | 617190010 | | 282549004 (M81969/14-04) | Plastic | |
| | | Socket | 617090010 | | | | |
| | M17/176-00002 | Pin | 617190012 | | | | |
| | | Socket | 617090012 | | | | |
| 8 Triax | TENSOLITE | Pin | 617165021 | 617165020 | 282549001 | Metal | |
| | 24473/03159X-2 | Socket | 617065021 | | | | |
| | | Pin | 617165 | | | | |
| | WHITMOR W26751575 | Socket | 617065 | | | | |
| 8 Twinax | ABS0386WF24 & TYCO 1726A1424A | Pin | 617165011 | | 620165010 | | |
| | | Socket | 617065011 | | | | 620065010 |
| 5 Triax | M17/176-00002 | Pin | 617150001 | | 282946 (M81969/28-01) | Metal | |
| | | Socket | 617050001 | | | | 617050 |
| | PAN6421 | Pin | 617152001 | | | | 617152 |
| | | Socket | 617052001 | | | | 617052 |

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

Quadrax & BMA Crimp Contacts

QUADRAX CONTACTS



| Contact size | Cable type | Type | Environmental part number | Non-environmental part number | Extraction tool in metal |
|--------------|-------------------------------------|--------|---------------------------|-------------------------------|--------------------------|
| 8 | Ethernet cable ABS0972 & ABS1503 | Pin | 617175011 | 617175012 | 282549001 |
| | | Socket | 617075011 | 620075010 | |
| | TENSOLITE NF24Q100 | Pin | 617175051 | 617175052 | |
| | | Socket | 617075051 | 620075050 | |
| | Tensolite NF26Q100 JSF Y18 | Pin | 617175053 | 617175054 | |
| | | Socket | 617075053 | 620075021 | |

BMA CONTACTS



| Contact size | Cable type | Connector Type | Environmental part number | Non-environmental part number | Frequency range | Max VSWR | Insertion loss |
|--------------|---|--------------------|---------------------------|-------------------------------|-----------------|----------|-------------------------------------|
| 8 | SHF5 - SHF5M ⁽¹⁾ | Pin ⁽²⁾ | 617171011 | 617171010 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |
| | RG142 | Pin ⁽²⁾ | 617171021 | 617171020 | DC-12.4 GHz | 1.35 | 0.11 dB at max frequency (12.4 GHz) |
| | SHF2.4M ⁽¹⁾ /UT.085 Harbour SS405 Times Tflex405 | Pin ⁽²⁾ | 617171031 | 617171030 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |
| | SHF5 - SHF5M ⁽¹⁾ | Socket | 617071011 | 617071010 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |
| | RG142 | Socket | 617071021 | 617071020 | DC-12.4 GHz | 1.35 | 0.11 dB at max frequency (12.4 GHz) |
| | SHF3 ⁽¹⁾ | Socket | 617071041 | 617071040 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |

Extraction tool **282549001** is used for size 8 BMA contacts
 Environmental BMA contacts are all provided with sealing boots

NOTES:

- (1) The BMA contacts which can accommodate SHF cables requires a termination by Radiall
- (2) BMA can only be installed in modified EPXB Quadrax insert such as 3T3P. Ex: EPXBE3T3PA

LuxCis® Fiber Optic Contacts

The LuxCis® product range is a proven, flexible and always expanding fiber optic interconnect solution offering high speed communication in aerospace and other harsh environments.

OPTICAL PERFORMANCES

| | MultiMode (PC) 850 / 1300 nm | SingleMode (UPC) 1310 / 1550 nm |
|--|---------------------------------|------------------------------------|
| Insertion Loss (IL) Mean (IEC 61300-3-4 Method B) | 0.1 dB | 0.15 dB |
| Return Loss (RL) (IEC 61300-3-6) | > 20 dB | > 50 dB |

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

| | Standard | Performances |
|---|----------------------------|---|
| Thermal cycling | SAE AS 13441 method 1003.1 | -55°C/+125°C (cable dependant) |
| Temperature endurance | TIA/EIA 455-4 | 1000 h @ 125°C (cable dependant) |
| Vibration | TIA/EIA 455-11 | 27 Grms |
| Shock | TIA/EIA 455-14 | 50 G, 11 ms |
| Durability | TIA / EIA 364-09 | 500 cycles ⁽¹⁾ |
| Maintenance | SAE AS 13441 method 2002.1 | 10 cycles |
| Cable retention 1.8 mm diameter 900 µm diameter | SAE AS 13441 method 2009.1 | 68 N 7 N |
| Humidity | TIA EIA 455-5 | 10 cycles / 24 h 90% RH -25°C / +65°C |

LUXCIS® CONTACT PART NUMBERING SYSTEM



F725: LuxCis® series

Ferrule type

- 00:** PC ferrule for SingleMode fiber
- 03:** PC ferrule for 50/125 or 62,5/125 µm MultiMode fiber
- 04:** PC ferrule for 100/40 µm MultiMode fiber
- 05:** PC ferrule for 200/230 µm MultiMode fiber
- 50:** APC ferrule for SingleMode fiber

Cable type and diameter

- 118:** 900 µm cable
- 318:** 1.2 mm cable with strengthening members, tight structure
- 419:** 1.6 to 2.2 mm cable, loose structure
- 519:** 1.6 to 2.2 mm cable, tight structure

NOTES:

(1) Mating cycles are dependant on connector series
Radiall can support you with your cable and harness assemblies
Please contact your sales representative

Signal PC tail Contacts

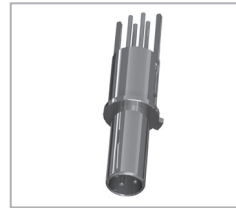
Selection table for straight PC tail contacts

| Contact termination | Contact type | Size 22 | Size 20 | Size 16 | Size 12 | Size 8 | Size 5 |
|----------------------|--------------|------------------------|---------------------------|------------------------|---------------------------|---------------------------|------------------------|
| RA | Pin | 617205510 | 617222514 | 617242510 | 617259505 | 617291501 | 617289506 |
| | Socket | 617305500 | 617322505 | 617342510 | 617359505 | 617391501 | 617389506 |
| YA | Pin | 617205010 | 617222014 | 617242010 | 617259005 | 617291001 | 617289006 |
| | Socket | 617305 | 617322005 | 617342010 | 617359005 | 617391001 | 617389006 |
| ZA | Pin | 617205710 | 617222714 | 617242710 | 617259705 | 617291701 | 617289706 |
| | Socket | 617305700 | 617322705 | 617342710 | 617359705 | 617391701 | 617389706 |
| RB | Pin | 617205501 | 617222512 | 617242508 | 617259506 | 617291503 | 617289504 |
| | Socket | 617305501 | 617322506 | 617342511 | 617359506 | 617391503 | 617389504 |
| YB | Pin | 617205001 | 617222012 | 617242008 | 617259006 | 617291003 | 617289004 |
| | Socket | 617305001 | 617322006 | 617342011 | 617359006 | 617391003 | 617389004 |
| ZB | Pin | 617205701 | 617222712 | 617242708 | 617259706 | 617291703 | 617289704 |
| | Socket | 617305701 | 617322706 | 617342711 | 617359706 | 617391703 | 617389704 |
| RC | Pin | 617205515 | 617222513 | 617242517 | 617259503 | 617291504 | 617289503 |
| | Socket | 617305508 | 617322507 | 617342513 | 617359503 | 617391504 | 617389503 |
| YC | Pin | 617205015 | 617222013 | 617242017 | 617259003 | 617291004 | 617289003 |
| | Socket | 617305008 | 617322007 | 617342013 | 617359003 | 617391004 | 617389003 |
| ZC | Pin | 617205715 | 617222713 | 617242717 | 617259703 | 617291704 | 617289703 |
| | Socket | 617305708 | 617322707 | 617342713 | 617359703 | 617391704 | 617389703 |
| RD | Pin | 617205509 | 617222510 | 617242509 | 617259507 | 617291505 | 617289507 |
| | Socket | 617305502 | 617322509 | 617342515 | 617359507 | 617391505 | 617389507 |
| YD | Pin | 617205009 | 617222010 | 617242009 | 617259007 | 617291005 | 617289007 |
| | Socket | 617305002 | 617322009 | 617342015 | 617359007 | 617391005 | 617389007 |
| ZD | Pin | 617205709 | 617222710 | 617242709 | 617259707 | 617291705 | 617289707 |
| | Socket | 617305702 | 617322709 | 617342715 | 617359707 | 617391705 | 617389707 |
| Ins/ext. tool | | 282522 M81969/14-01 | 282522001 M81969/39-01 | 282515 M81969/14-03 | 282549004 M81969/14-04 | 282549001 M81969/28-03 | 282946 M81969/28-01 |

QUADRAX SIZE 8 PC tail CONTACTS

Selection table for straight PC tail contacts

| Contact termination | Contact type | Part number size 8 |
|---------------------|--------------|--------------------|
| RA | Pin | 617177512 |
| | Socket | 617077512 |
| YA | Pin | 617177012 |
| | Socket | 617077012 |
| ZA | Pin | 617177712 |
| | Socket | 617077712 |
| RB | Pin | 617177501 |
| | Socket | 617077502 |
| YB | Pin | 617177001 |
| | Socket | 617077002 |
| ZB | Pin | 617177701 |
| | Socket | 617077702 |
| RC | Pin | 617177508 |
| | Socket | 617077508 |
| YC | Pin | 617177008 |
| | Socket | 617077008 |
| ZC | Pin | 617177708 |
| | Socket | 617077708 |
| RD | Pin | 617177513 |
| | Socket | 617077513 |
| YD | Pin | 617177013 |
| | Socket | 617077013 |
| ZD | Pin | 617177713 |
| | Socket | 617077713 |
| Ext. tool | | 282549001 |



Filler Plugs & Sealing Plugs

Sealing plugs are dedicated to environmental inserts and filler plugs are dedicated to non-environmental inserts

| Contact size | Filler plug | | Sealing plug |
|--------------|-------------|--------|--------------|
| Size 22 | 620920 | | 616910 |
| Size 20 | 610941 | | 616911 |
| Size 16 | 620922 | | 616912 |
| Size 12 | 620923 | | 616913 |
| Size 8 | Socket | 619950 | 618915 |
| | Pin | 619953 | |
| Size 5 | Socket | 617931 | 616914013 |
| | Pin | 617930 | |

Contacts for GBE Links

Radiall offers gigabit ethernet solutions based on standard components
These 2 solutions are perfectly suited for high speed transfers for digital audio and video signals

QUADRAX SOLUTION:

- Available with any EPXB connector
- 2 Quadrax contacts are required for 1 Gigabit link
- Quadrax inserts: 3Q3 or 10Q2
- Up to 2 Gbit/sec

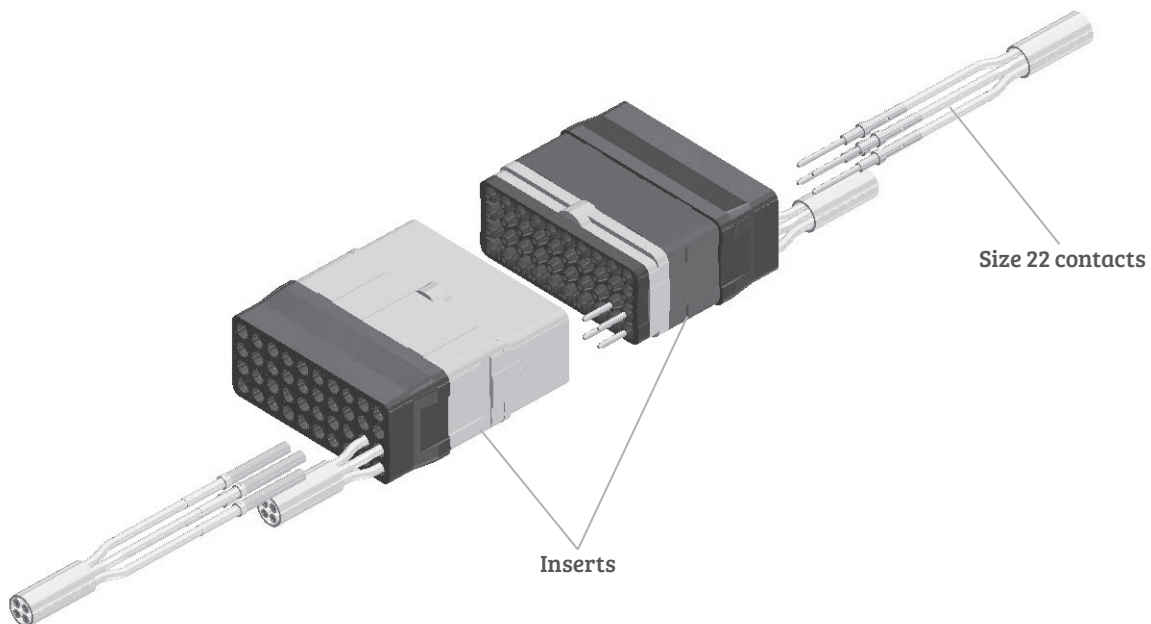
HIGH DENSITY SOLUTION:

- Available with any EPXB connector
- 4 twisted pairs requires 8 #22 contacts for 1 Gbit link
- Inserts: 40 or 25Q1
- Additional size 22 contacts can be used for ground continuity
- EMI backshell (recommended by Radiall)
- Up to 1 Gbit/sec
- Short strip dimensions are required to get minimum impedance disturbance.
Radiall solution combines short strip and easy maintenance availability.

For further information, please contact Radiall

High density solution

Detailed view of inserts including contacts for gigabit ethernet link



INSERTS

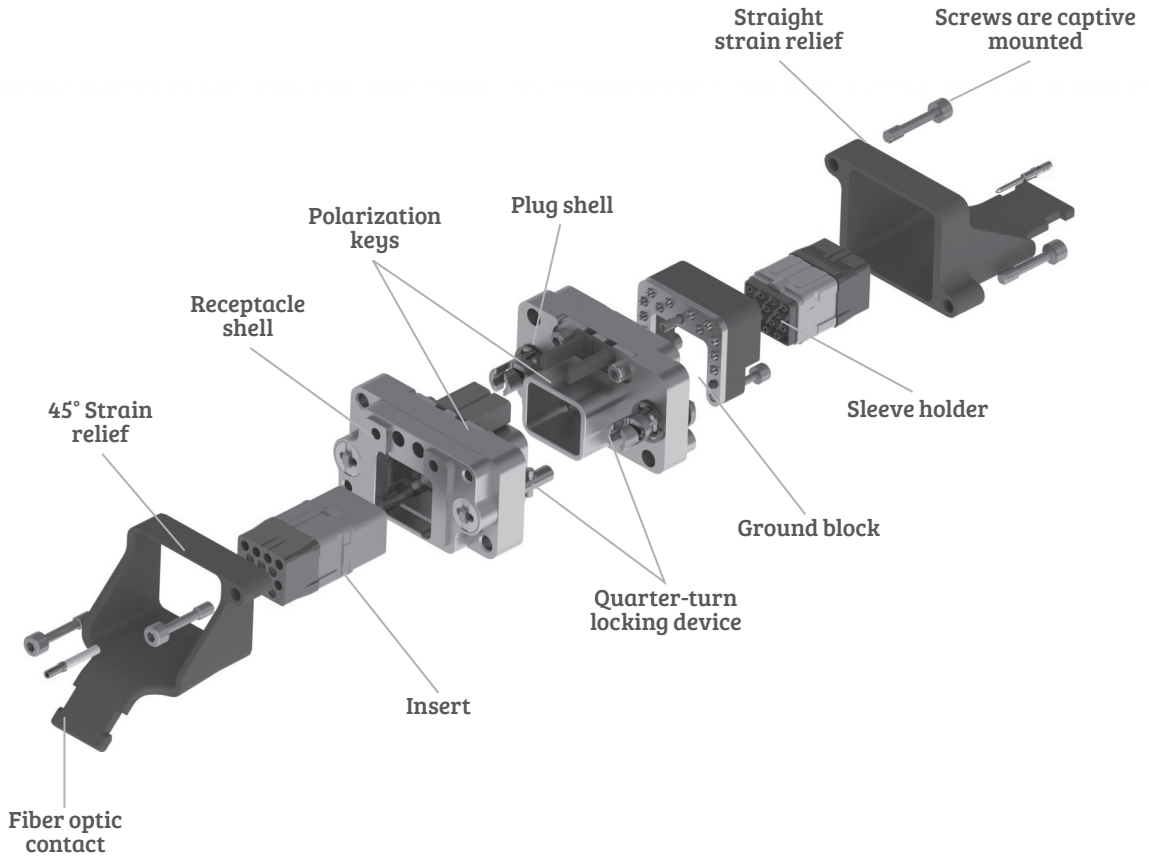
CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

EPXA Product Overview

Detailed view of receptacle and plug with accessories for the EPXA1 connector



INSERTS

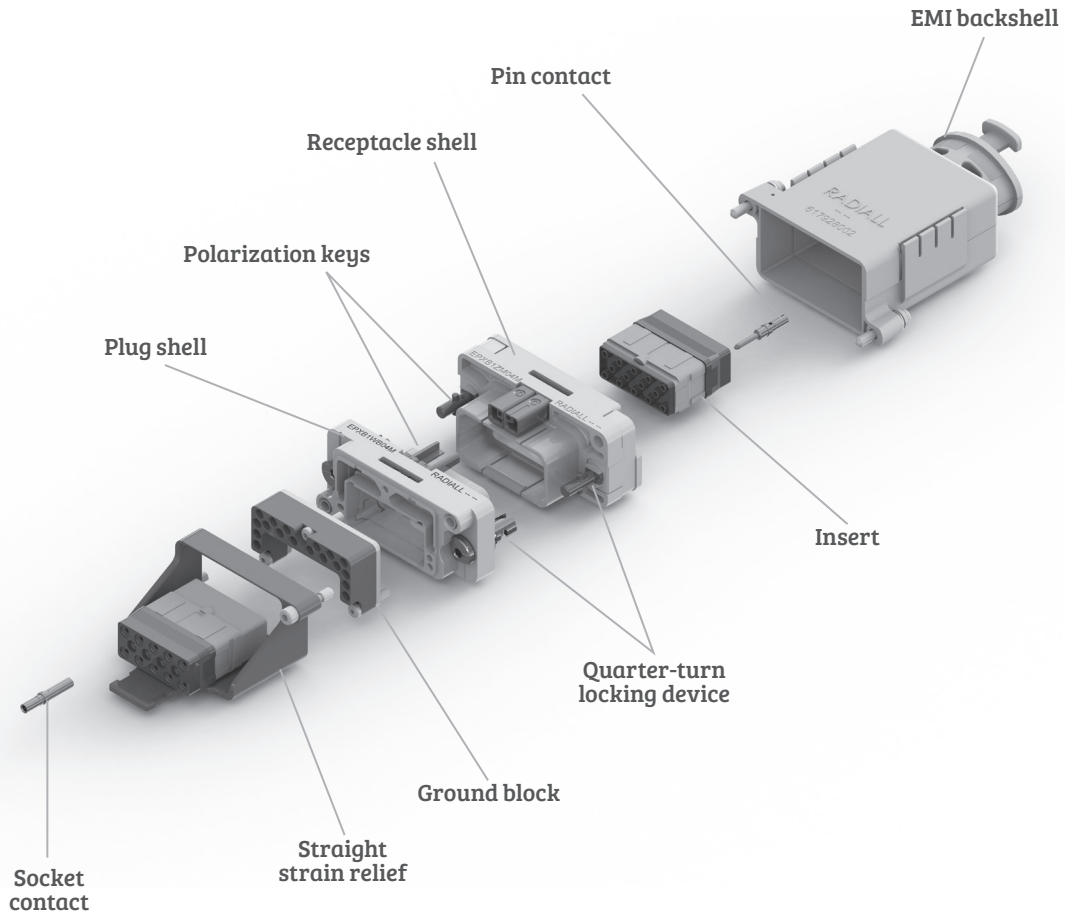
CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

EPXB1 Product Overview

Detailed view of receptacle and plug with accessories for the EPXB1 connector



EPX® SERIES

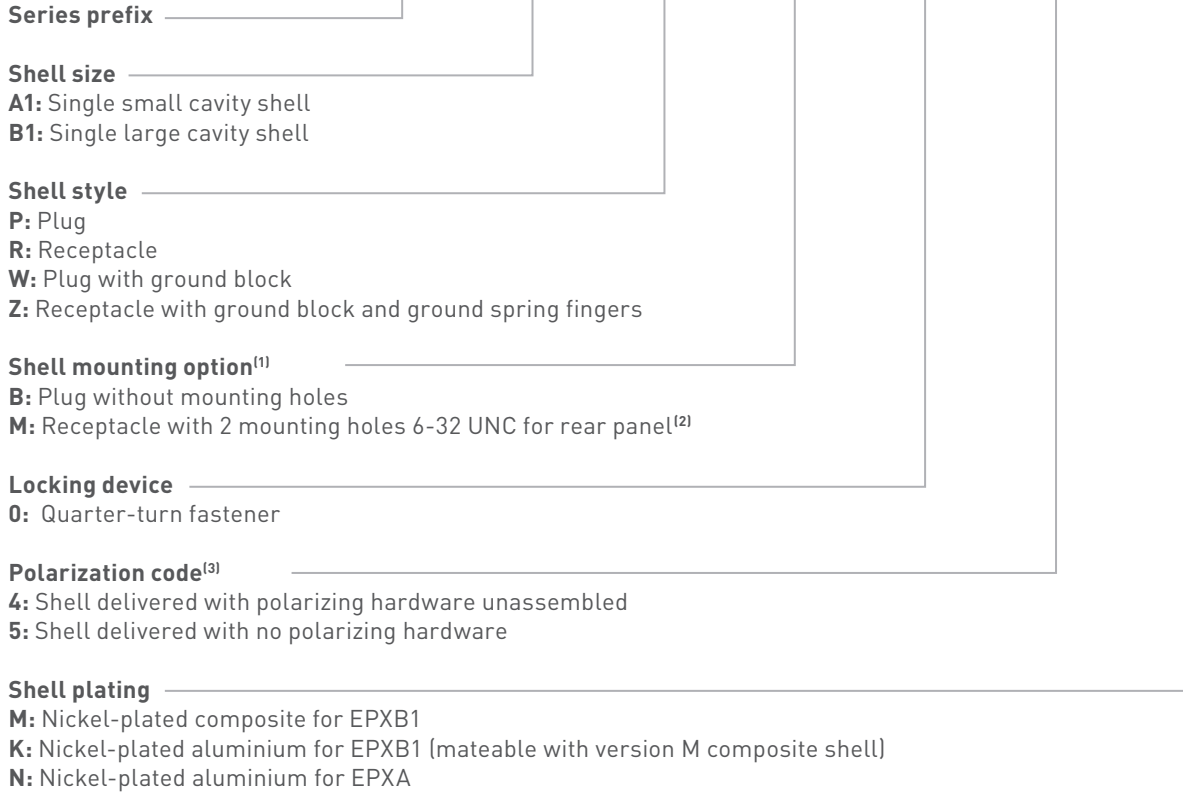
INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

How to Order EPXA & EPXB1 Shell



NOTES:
 (1) Recommended locking torque: 1.6Nm (14.16 in-lbs) for metallic shell and 1.1Nm (9.73 in-lbs) max for composite shell
 (2) Self-locking mounting holes are designed for rear panel mounting
 (3) Please see page 1-33 on how to use the polarization device

How to Order EPXA & EPXB1 Assembly Kit

Assembly kit is delivered fully assembled including shell with insert mounted, with or without contacts according to the selection.

Tips to help you in your selection:

- You are free to use either pin or socket inserts in EPXA & EPXB1 plug or receptacles.
- Crimp contacts can be delivered with a kit, check which contacts would be included on page 1-12.
- If PC tail are selected then all cavities including signal, power and quadrax are populated. Size 5 coax cavities are not populated.
- If PC tail contacts are needed, remember that they are available as pin straight PC tail contacts in receptacles only.

| | | | | | | | | |
|--|-----|----|---|---|---|---|---|----|
| | EPX | B1 | R | 4 | M | E | M | YA |
|--|-----|----|---|---|---|---|---|----|

SHELL SELECTION PART

Series prefix _____

Shell size _____
A1: Single small cavity shell
B1: Single large cavity shell

Shell style _____
P: Plug
R: Receptacle
W: Plug with ground block
Z: Receptacle with ground block and ground fingers

Polarization code _____
4: Shell delivered with polarizing hardware unassembled
5: Shell delivered with no polarizing hardware

Shell plating _____
M: Nickel-plated composite for EPXB1
K: Nickel-plated aluminium for EPXB1 (mateable with version M composite shell)
N: Nickel-plated aluminium for EPXA

INSERT SELECTION PART

Insert class _____
E: Environmental
N: Non-environmental (no rear grommet, no interfacial seal)
H: Non-environmental insert with a rear grommet, available for pin insert only (recommended for crimp contact)
T: Non-environmental insert with an interfacial seal, available for pin insert only (recommended for PC tail contact)

Insert code _____
Refer to page 1-12 to select insert code

Contacts termination _____
XS: Socket insert without contacts
XP: Pin insert without contacts
SS: Socket insert with crimp contacts
SP: Pin insert with crimp contacts] These contacts are delivered uninstalled

YA: Gold PC tail contacts length A
ZA: Tin-lead PC tail contacts length A
RA: Pure tin (RoHS) PC tail contacts length A] Refer to page 1-30 to select PC tail contacts for receptacle

INSERTS

CONTACTS

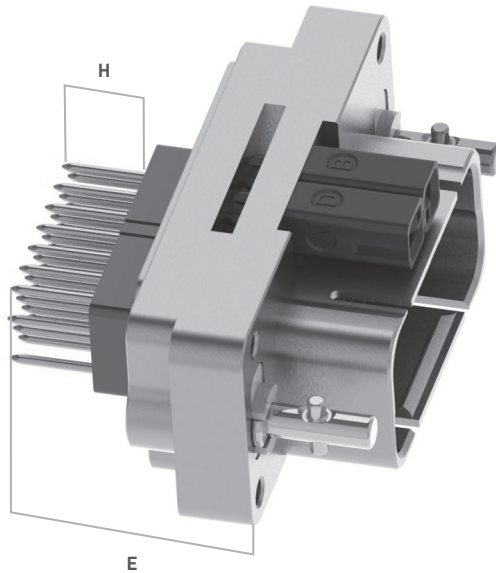
DISCONNECT APPLICATION

RACK & PANEL APPLICATION

Contacts Termination for EPXB1

EPXB1 RECEPTACLES (aluminium and composite shell version)

| Straight PC Tail contact termination | | | | |
|--------------------------------------|---------------------------|------|----------|-----------------|
| Min Length E mm (inch) | Min Length H mm (inch) | Gold | Tin-lead | Pure tin (RoHS) |
| 16.20 [0.637] ⁽¹⁾ | / | YA | ZA | RA |
| 19.40 [0.763] ⁽¹⁾ | / | YB | ZB | RB |
| 21.25 [0.836] ⁽¹⁾ | / | YC | ZC | RC |
| 25.20 [0.992] | 5.40 [0.212] | YD | ZD | RD |



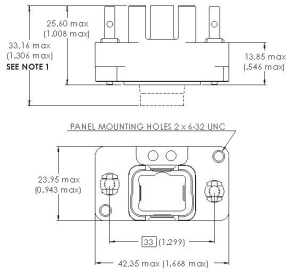
NOTE:

(1) These PC tail lengths are not compatible with EPXBE and EPXBH inserts

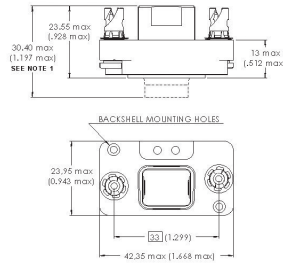
EPXA Shell Dimensions

WITHOUT GROUND BLOCK

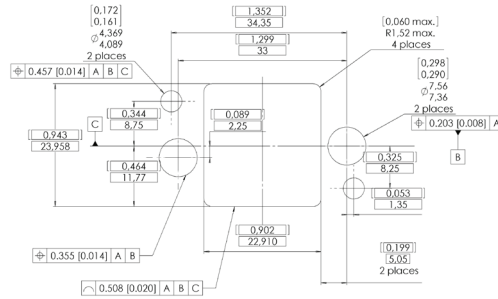
Receptacle



Plug

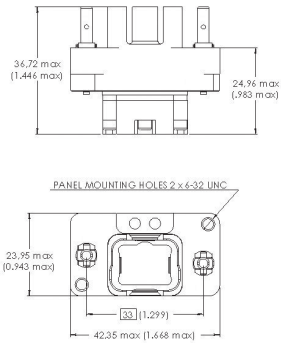


SINGLE PANEL CUT OUT (2)

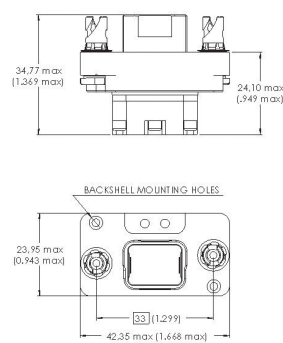


WITH GROUND BLOCK

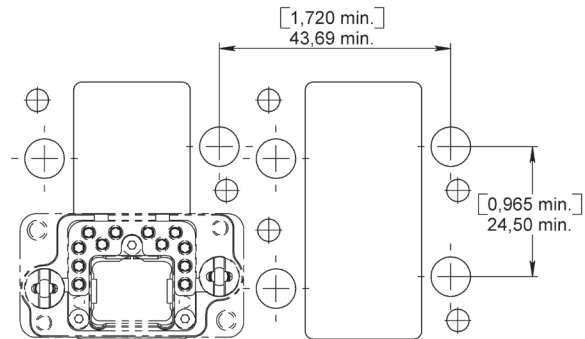
Receptacle



Plug



MULTIPLE PANEL CUT OUT (2)



NOTES:

- (1) Maximum dimension for insert with grommets
For inserts without grommets maximum dimensions will be for receptacle 25.55mm (1.006in) and for the plug 23.52mm (0.926in)
- (2) Rear mounting side view with key post oriented to the upper side

EPX® SERIES

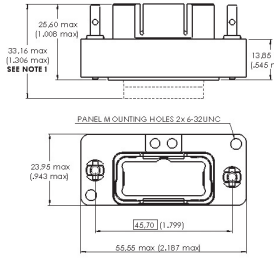
INSERTS
CONTACTS

DISCONNECT APPLICATION
RACK & PANEL APPLICATION

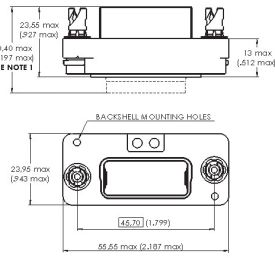
EPXB1 Shell Dimensions

WITHOUT GROUND BLOCK

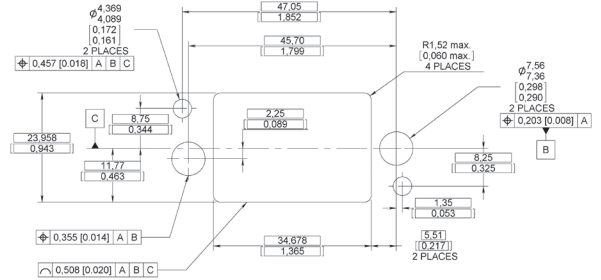
Receptacle



Plug

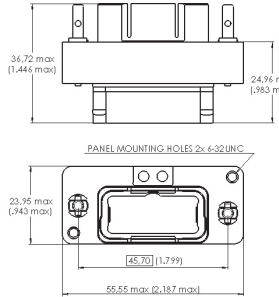


SINGLE PANEL CUT OUT (2)

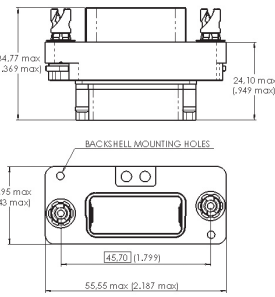


WITH GROUND BLOCK

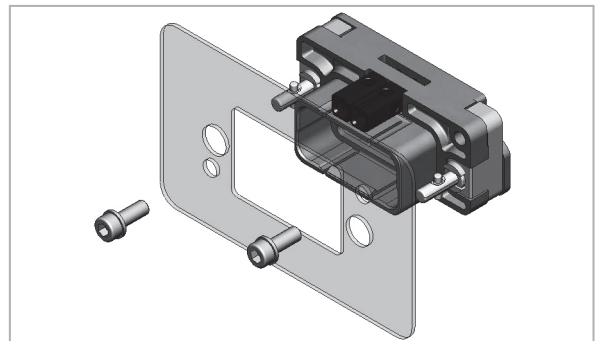
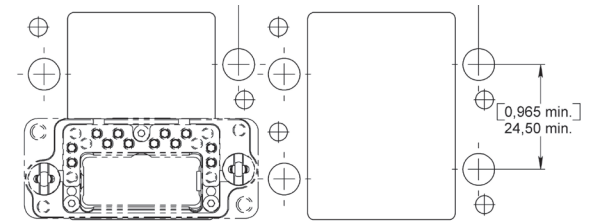
Receptacle



Plug



MULTIPLE PANEL CUT OUT (2)



NOTES:

- (1) Maximum dimension for insert with grommets. For inserts without grommets: Insert is flush to the shell. Maximum dimension for the receptacle is 25.55 mm(1.006 in) and for the plug is 23.52 mm(0.926 in). For inserts with optical contacts : the maximum dimension for the receptacle is 38.70 mm(1.524 in) and the plug is 36.00 mm (1.418 in)
- (2) Rear mounting side view with key post oriented to the upper side

Polarization Code

EASY READING OF POLARIZATION CODE

Caution: Read the polarization code from left to right, the same way the part number marking can be read on the connector

| | Plug | Receptacle |
|---------------|---|---|
| EPXA | | |
| EPXB1 | | |
| Coding device | <p>View A & B View C & D</p> | <p>View A & D View C & B</p> |

There are 16 possible codings:

| | | | | | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Key position 1 | A | A | A | A | B | B | B | B | C | C | C | C | D | D | D | D |
| Key position 2 | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D |

EPX® SERIES

INSERTS

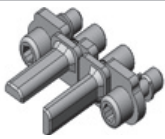
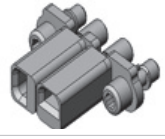
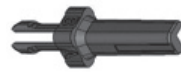



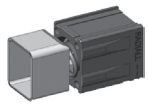



CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION




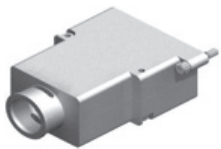

EPXA & EPXB1 Accessories

SPARE PARTS & DUST CAPS

| | Part number | | Description | Assembly tool | Assembly torque |
|---|-------------|-----------|--|---------------|----------------------|
| | EPXA | EPXB1 | | | |
|  | 617980032 | - | Polarization kit for plug connector | 282666002 | 0.8 Nm (7 In-lbs) |
|  | 617980033 | - | Polarization kit for receptacle connector | | |
|  | - | 617980030 | Polarization post | N/A | |
|  | - | 617980031 | Polarization key | | |
|  | 617954006 | 617954008 | Dust cap for plug shell (pink color) | | |
| | 617954007 | 617954009 | Dust cap for receptacle shell (pink color) | | |
|  | 617954044 | 617954034 | ESD dust cap for plug shell (black color) | | |
| | 617954045 | 617954028 | ESD dust cap for receptacle shell (black color) | N/A | |
|  | 617929033 | | Sealing inserts for fly away applications: mateable with pin insert | | |
|  | | 617929023 | | | |
|  | 617929032 | | Sealing inserts for fly away applications: mateable with socket insert | | |
|  | | 617929022 | | | |

EPXA & EPXB1 Accessories

STRAIN RELIEF AND EMI BACKSHELLS

| | Part number | | Description | Assembly tool | Assembly torque |
|---|-------------|-----------|--|---------------|----------------------|
| | EPXA | EPXB1 | | | |
|  | 617921030 | 617921029 | Straight strain relief (composite) | 282666002 | 0.8 Nm (7 In-lbs) |
|  | 617921032 | 617921031 | 45° strain relief (composite) | | |
|  | - | 617921035 | Strain relief for fiber optic (anodized aluminium) | | |
|  | - | 617924016 | Straight EMI backshell (Nickel-plated aluminium) | | |
|  | - | 617928002 | Straight EMI backshell (Nickel-plated composite) | | |

NOTE:
For mounting instructions, please contact Radiall

EPX® SERIES

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

EPXB2 Disconnect Connectors

When less is more.

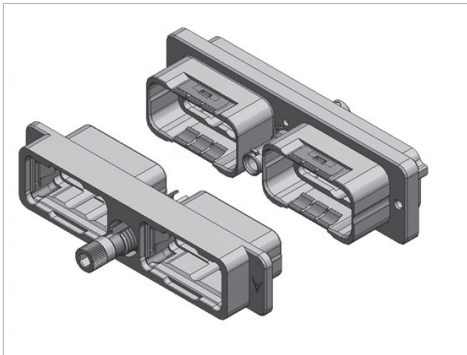
Radiall EPXB2 disconnect connectors have been widely used in aerospace industry for more than 10 years. As a worldwide leader in cable to cable and PCB to cable connections, Radiall is committed to constantly innovating to meet the demands of the industry with the most effective and reliable solutions.

Demand for weight saving connection solution is now growing more and more.

Radiall is proud to introduce:

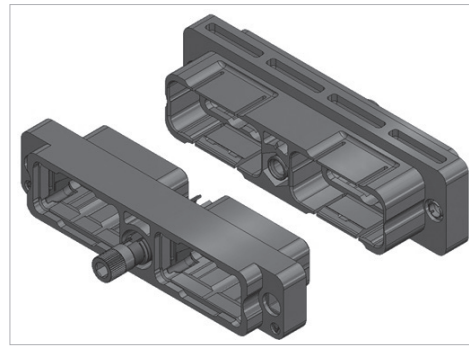
- EPXB2 class M (Nickel plated composite)
- EPXB2 class J (Weight optimized aluminium)

Two proven and available alternatives when you are facing weight issues in cable to cable and PCB to cable connections.



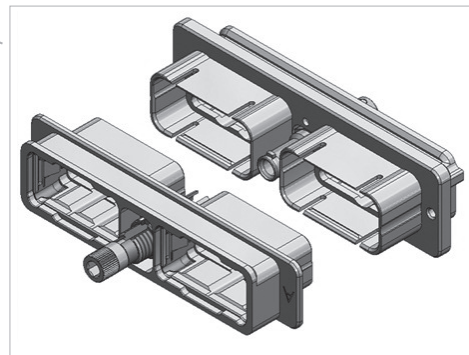
EPXB2 class N

- Performances :
- T° range -65°C / +175°C



EPXB2 class M

- Performances:
- Weight saving compared to class N EPXB2 : -15%
 - T° range: -65°C / +125°C

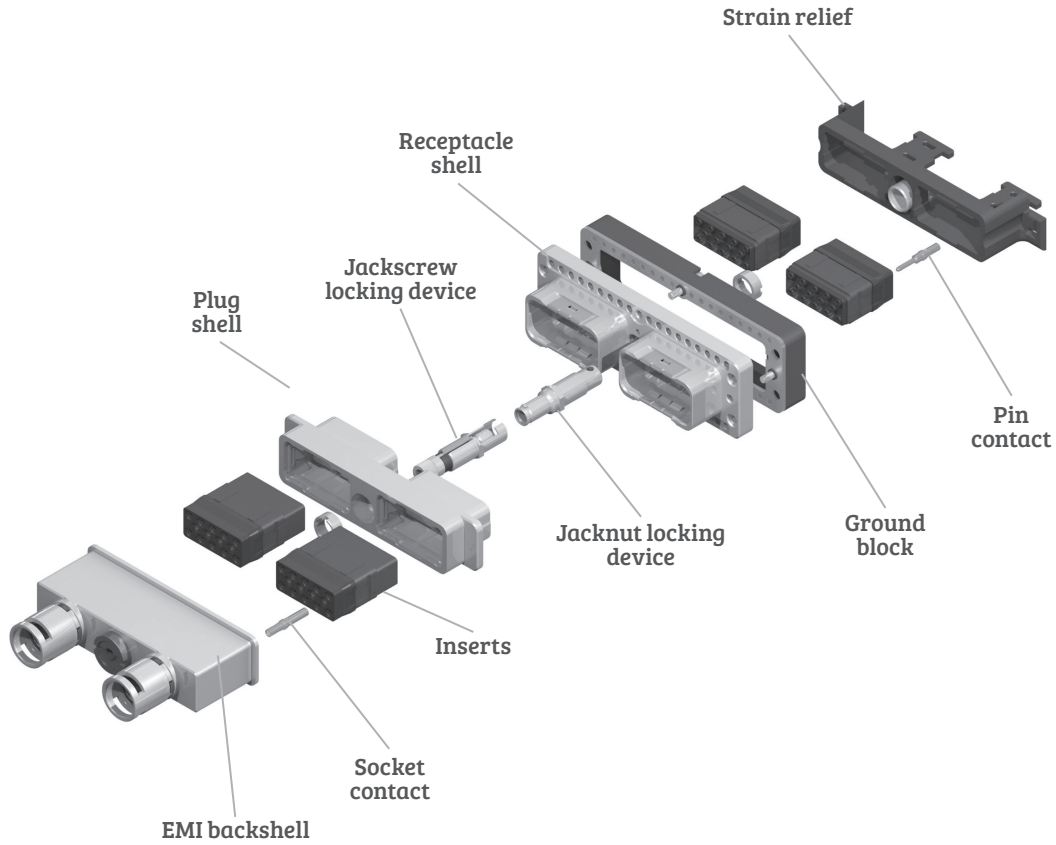


EPXB2 class J

- Performances:
- Weight saving compared to class N EPXB2: -15%
 - Cost effective solution
 - T° range: -65°C / +175°C

EPXB2 Product Overview

Detailed view of receptacle and plug with accessories for the EPXB2 disconnect connector.



EPX® SERIES

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

How to Order EPXB2 Shell

| | | | | | | | |
|--|-----|----|---|---|---|---|---|
| | EPX | B2 | H | L | 2 | 2 | N |
|--|-----|----|---|---|---|---|---|

Series prefix _____

Shell size _____
B2: Two cavity shell

Shell style _____
 For option compatibility, see the table below
L: Receptacle with flange and ground fingers
H: Receptacle with ground fingers
Z: Receptacle with ground block and ground fingers
R: Receptacle without ground fingers
P: Plug
W: Plug with ground block

Shell mounting _____
A: Panel rear mounted connector with 4 x 6-32 mounting holes
B: No mounting holes
D: Connector with 2 x Ø3.10 mm thru holes
F: Panel rear mounted connector with 2 x 6-32 mounting holes
L: Panel rear mounted connector with 2 x 4-40 mounting holes

Locking & polarization device ⁽¹⁾ _____
1: Jackscrew
2: Jacknut
3: Without locking device
4: Pin centering guide for plug shell for LRU (*Line Replaceable Unit*) application only ⁽²⁾
5: Socket centering guide for receptacle shell for LRU (*Line Replaceable Unit*) application only ⁽²⁾

Polarization code ⁽³⁾ _____
2: Polarizing device A to F delivered unassembled
3: Polarizing device N to Z delivered unassembled

Shell plating _____
N: Nickel-plated aluminium
M: Nickel-plated composite
J: Nickel-plated weight optimized aluminium

AVAILABLE SHELL MOUNTING

| | Shell style | A (4 x 6.32 UNC) | B (no holes) | D (2 x Ø3.10mm) | F (2 x 6.32 UNC) | L (2 x 4.40 UNC) |
|--------------------------------------|-------------|------------------|--------------|-----------------|------------------|------------------|
| Class N (aluminium) | L | | | √ | √ | √ |
| | H | | √ | √ | √ | √ |
| | Z | √ | √ | | | |
| | R | √ | | | | |
| | P | | √ | √ | | √ |
| | W | √ | √ | | | |
| Class J (weight optimized aluminium) | H | | | | | √ |
| | P | | √ | | | |
| Class M (composite) | L | | | √ | | √ |
| | P | | √ | √ | | √ |

NOTES:

- (1) Jackscrew/Jacknut can be mounted on either plug or receptacle shell. However, the standard options are:
 - Jackscrew for plug shells
 - Jacknut for receptacle shells
- (2) Pin/Socket centering guides can be mounted on either plug or receptacle shells. However, the standard options are:
 - Pin centering guide for plug shells
 - Socket centering guide for receptacle shells
- (3) Please see page 1-44 for how to use the the polarization coding

How to Order EPXB2 Assembly Kit

Assembly kits are delivered fully assembled including shell with inserts mounted, with or without contacts according to the selection. When selecting your insert codes, do not forget to place them in the order you want them assembled. Locking and polarizing devices are delivered uninstalled.

Tips to help you in your selection:

- You are free to use either pin or socket inserts in EPXB plug or receptacle.
- Crimp contacts can be delivered with a kit, check which contacts will be included on page 1-12.
- PC tail contacts can also delivered with a kit. Remember that only straight pin PC tail contacts are available, and in receptacle only.
- If PC tail contacts are selected then all cavities including signal, power and quadax are populated. Size 5 coax cavities are not populated.

All connector inserts will use the same insert class and the same contact termination.

| | EPX | B2 | H | B | 2 | N | N | BC | ZB |
|---|-------|----|---|---|---|---|---|----|----|
| SHELL SELECTION PART | | | | | | | | | |
| Series prefix | _____ | | | | | | | | |
| Shell size | _____ | | | | | | | | |
| B2: Two cavity shell | | | | | | | | | |
| Shell style | _____ | | | | | | | | |
| For option compatibly, see table on page 1-36 | | | | | | | | | |
| L: Receptacle with flange and ground fingers | | | | | | | | | |
| H: Receptacle with ground fingers | | | | | | | | | |
| Z: Receptacle with ground block and ground fingers | | | | | | | | | |
| R: Receptacle without ground fingers | | | | | | | | | |
| P: Plug | | | | | | | | | |
| W: Plug with ground block | | | | | | | | | |
| Shell mounting | _____ | | | | | | | | |
| A: Rear panel mounted connector with 4x 6-32 mounting holes | | | | | | | | | |
| B: No mounting holes | | | | | | | | | |
| D: Connector with 2 x Ø3.10 mm thru holes | | | | | | | | | |
| F: Rear panel mounted connector with 2 x 6-32 mounting holes | | | | | | | | | |
| L: Rear panel mounted connector with 2 x 4-40 mounting holes | | | | | | | | | |
| Polarization | _____ | | | | | | | | |
| 1: Jackscrew polarizing device A to F | | | | | | | | | |
| 2: Jacknut polarizing device A to F | | | | | | | | | |
| 3: Without locking device | | | | | | | | | |
| 4: Pin centering guide for plug shell for LRU application only, polarizing device A to F | | | | | | | | | |
| 5: Socket centering guide for receptacle shell for LRU application only, polarizing device A to F | | | | | | | | | |
| 6: Jackscrew polarizing device N to Z | | | | | | | | | |
| 7: Jacknut polarizing device N to Z | | | | | | | | | |
| 8: Pin centering guide for plug shell for LRU application only, polarizing device N to Z | | | | | | | | | |
| 9: Socket centering guide for receptacle shell for LRU application only, polarizing device N to Z | | | | | | | | | |
| Shell plating | _____ | | | | | | | | |
| N: Nickel-plated aluminium | | | | | | | | | |
| M: Nickel-plated composite | | | | | | | | | |
| J: Nickel-plated weight optimized aluminium | | | | | | | | | |
| INSERTS SELECTION PART | | | | | | | | | |
| Insert class | _____ | | | | | | | | |
| E: Environmental | | | | | | | | | |
| N: Non-environmental | | | | | | | | | |
| H: Non-environmental insert with a rear grommet, available for pin insert only (recommended for crimp contact) | | | | | | | | | |
| T: Non-environmental insert with interfacial seal, available for pin insert only (recommended for PC tail contact) | | | | | | | | | |
| Insert code | _____ | | | | | | | | |
| Refer to page 1-12 to select code insert | | | | | | | | | |
| Contacts termination | _____ | | | | | | | | |
| XS: Socket insert without contacts | | | | | | | | | |
| XP: Pin insert without contacts | | | | | | | | | |
| SS: Socket insert with crimp contacts | | | | | | | | | |
| SP: Pin insert with crimp contacts | | | | | | | | | |
|] These contacts are delivered uninstalled | | | | | | | | | |
| YA: Gold PC tail contacts length A | | | | | | | | | |
| ZA: Tin-lead PC tail contacts length A | | | | | | | | | |
| RA: Pure tin (RoHS) PC tail contacts length A | | | | | | | | | |
|] Refer to pages 1- 40 to select PC tail contacts for receptacle | | | | | | | | | |

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

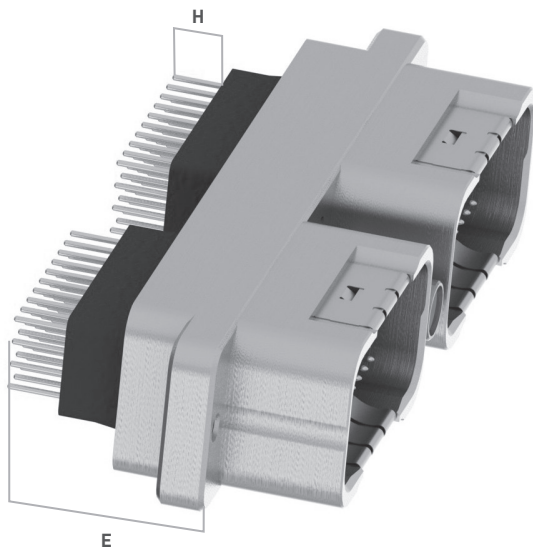
Contacts Termination for Receptacles

EPXB2 COMPOSITE SHELL

| Straight PC Tail contact termination | | | | |
|--------------------------------------|---------------------------|------|----------|-----------------|
| Min Length E mm (inch) | Min Length H mm (inch) | Gold | Tin-lead | Pure tin (RoHS) |
| 14.20 (0.559) ⁽¹⁾ | / | YA | ZA | RA |
| 17.35 (0.683) ⁽¹⁾ | / | YB | ZB | RB |
| 19.20 (0.755) ⁽¹⁾ | / | YC | ZC | RC |
| 23.10 (0.909) | 5.40 (0.212) | YD | ZD | RD |

EPXB2 WEIGHT OPTIMIZED ALUMINIUM AND ALUMINIUM SHELL

| Straight PC Tail contact termination | | | | |
|--------------------------------------|---------------------------|------|----------|-----------------|
| Min Length E mm (inch) | Min Length H mm (inch) | Gold | Tin-lead | Pure tin (RoHS) |
| 14.55 (0.572) ⁽¹⁾ | / | YA | ZA | RA |
| 17.75 (0.698) ⁽¹⁾ | / | YB | ZB | RB |
| 19.55 (0.769) ⁽¹⁾ | / | YC | ZC | RC |
| 23.50 (0.925) | 5.40 (0.212) | YD | ZD | RD |



NOTE:

(1) These PC tail lengths are not compatible with EPXBE and EPXBH inserts

INSERTS

CONTACTS

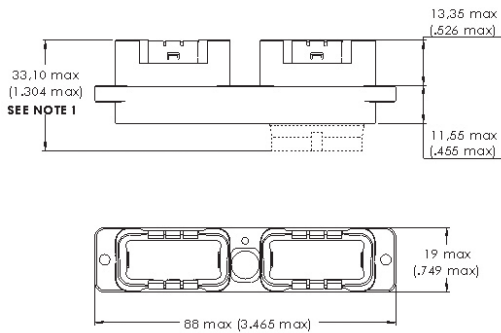
DISCONNECT APPLICATION

RACK & PANEL APPLICATION

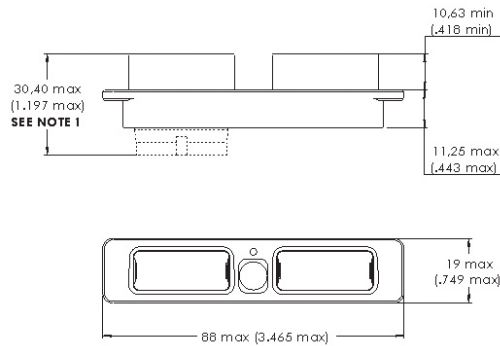
EPXB2 Metallic Shell Dimensions

WITHOUT GROUND BLOCK Class N & J

Receptacle

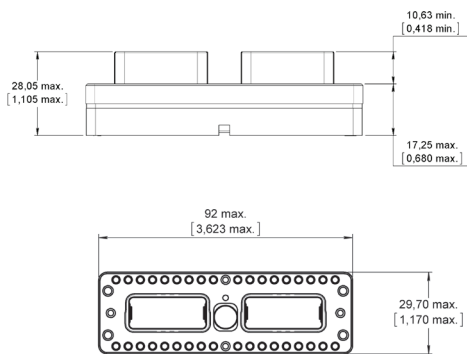


Plug

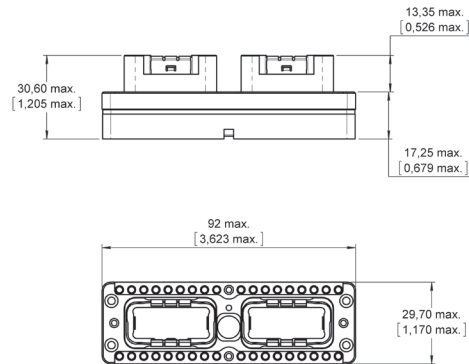


WITH GROUND BLOCK Class N

Receptacle

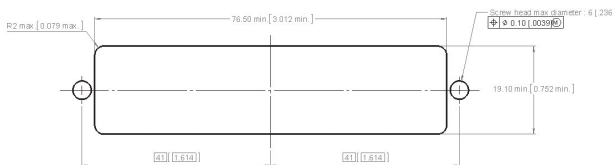


Plug

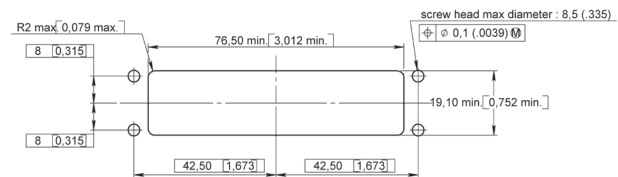


PANEL CUT OUT Class N & J

Shell mounting code D, F and L



Shell mounting code A



NOTES:

For inserts with grommets : maximum dimension is shown in the diagram

(1) For inserts without grommets: Insert is flush to the shell. Maximum dimension for the receptacle is 25.55 mm(1.006 in) and for the plug is 23.52 mm(0.926 in)

For inserts with optical contacts : the maximum dimension for the receptacle is 38.70 mm(1.524 in) and for the plug is 36.00 mm (1.418 in)

INSERTS

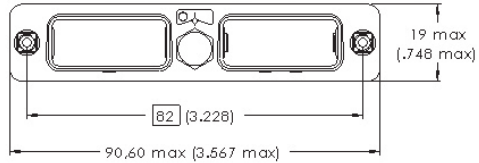
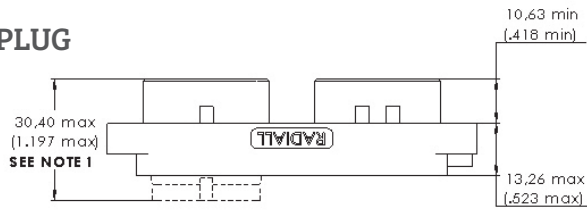
CONTACTS

DISCONNECT APPLICATION

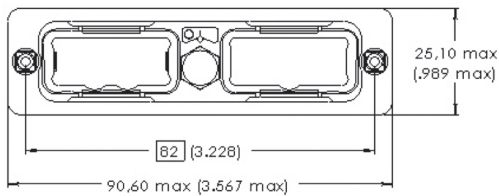
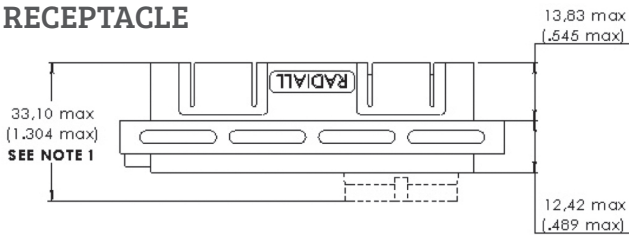
RACK & PANEL APPLICATION

EPXB2 Composite Shell Dimensions

PLUG

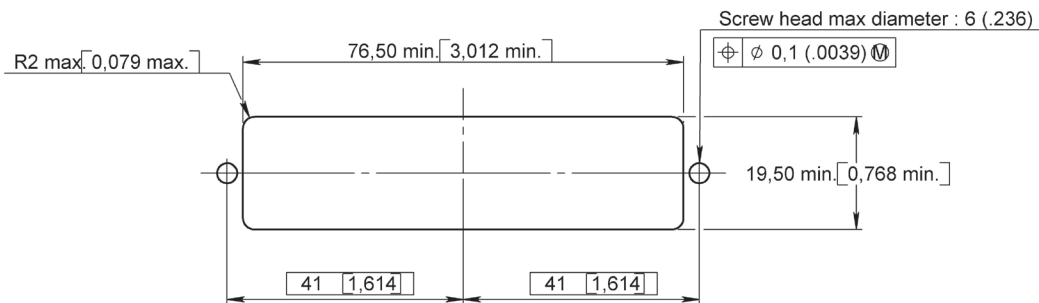


RECEPTACLE



PANEL CUT OUT

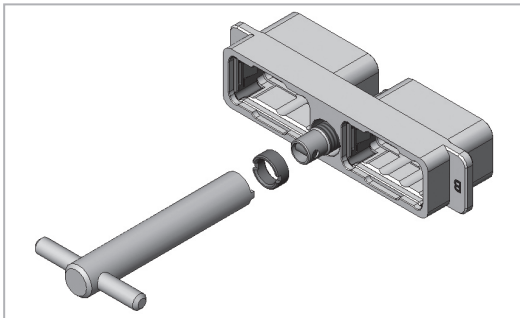
Shell mounting code D and L



NOTE:

- (1) For inserts with grommets (EPXBE and EPXBH) : maximum dimension is shown in the diagram
- For inserts without grommets (EPXBN) : Insert is flush to the shell. Maximum dimension for the receptacle is 25.55 mm(1.006 in) and for the plug is 23.52 mm(0.926 in)
- For inserts with optical contacts : the maximum dimension for the receptacle is 38.70 mm(1.524 in) and the plug is 36.00 mm (1.418 in)

EPXB2 Polarization Code



As a standard, jackscrews shall be installed in plugs and jacknuts in receptacle shells.

The polarizing device must be locked by the operator at 1.2 Nm (10.62 Lb-In.) for the metallic shell and 0.8Nm (7.08 Lb-In.) for composite shell. LOCTITE™ 272 resin shall be used to assemble them.

The nut can be fixed with your automatic screwdriver and the tool bit we provide (PN 282 664)

| Designation | Polarization code | Coding device key | Part number | |
|-------------|--|-------------------|-------------|--|
| Jackscrew | From A to F | | 617980012 | |
| | From N to Z 30° offset compared to the key of jackscrew P/N 617980012 | | 617980013 | |
| | Universal | | 617980023 | |
| Jacknut | From A to F | | 617980029 | |
| | From N to Z 30° offset compared to the key of jacknut 617980029 | | 617980028 | |
| | Universal | | 617980022 | |

EPX® SERIES

INSERTS

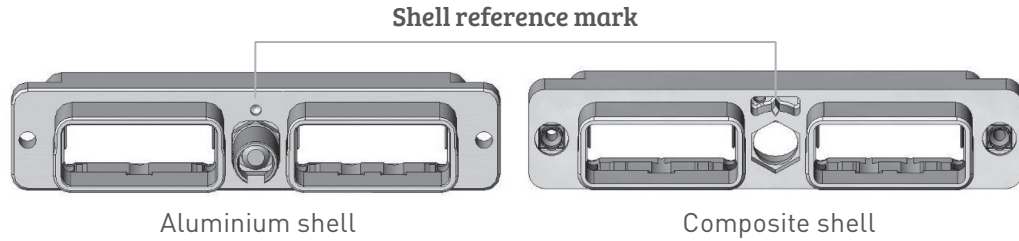
CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

EPXB2 Polarization Code

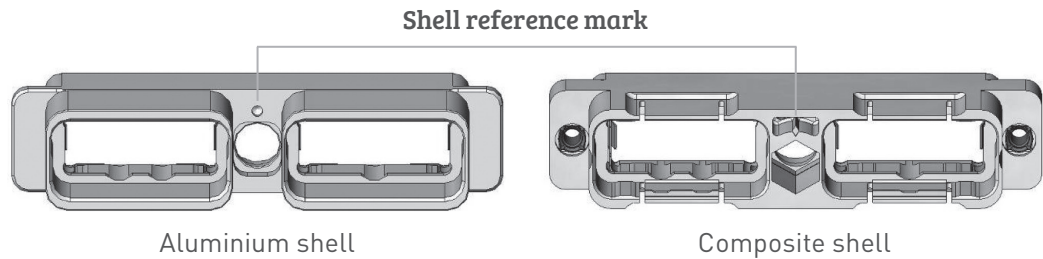
PLUG SHELL



Shell reference mark Coding device key

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| | | | | | |
| N | R | W | X | V | Z |
| | | | | | |

RECEPTACLE SHELL

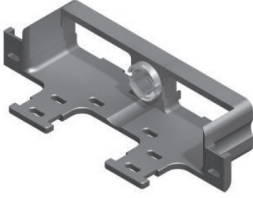


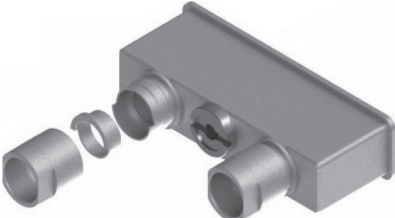
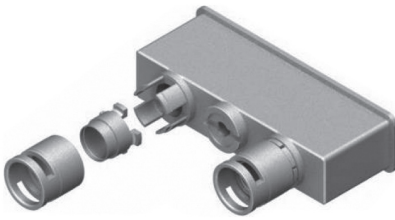



Shell reference mark Coding device key

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| | | | | | |
| N | R | W | X | V | Z |
| | | | | | |

EPXB2 Accessories

EPX® SERIES

| | Part number | Description | Assembly tool ⁽²⁾ | Assembly torque |
|---|-------------|---|--|--------------------------|
|  | 617922007 | Straight strain relief (composite) | 282664 or 282665 | 0.8 Nm (7.08 in-lbs) |
|  | 617922014 | Straight strain relief for fiber optic cable (anodized aluminium) | | |
|  | 617928100 | Straight EMI backshell (nickel-plated composite) | Allen wrench 1/4 inch | |
|  | 617925052 | EMI backshell for braid shield termination (nickel-plated aluminium) | 282664 or 282665 | 1.2 Nm (10.62 in-lbs) |
|  | 617925054 | EMI backshell for screened twisted pair cables (nickel-plated aluminium) | | |
|  | 617925056 | Backshell for large sized wire harnesses (nickel-plated aluminium) ⁽¹⁾ | 282664 or 282665 and Allen wrench | |

NOTE:

- (1) Not compatible with jackscrew
- (2) For more details, refer to page 1-47

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

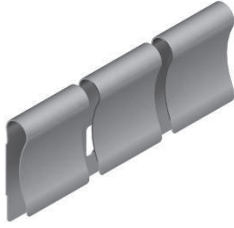



EPXB2 Spare Parts

INSERTS

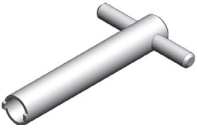


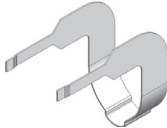
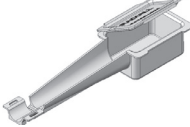

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

| | Part number | Description |
|---|-------------|--|
|  | 617954101 | Grounding spring (for EPXB2 aluminium only) |
|  | 617980029 | Jacknut – A/B/C/D/E/F |
| | 617980028 | Jacknut – N/R/W/X/Y/Z |
| | 617980022 | Universal jacknut |
|  | 617980012 | Jackscrew – A/B/C/D/E/F |
| | 617980013 | Jackscrew – N/R/W/X/Y/Z |
| | 617980023 | Universal jackscrew |
|  | 617954002 | Dust cap for plug shell (pink color) |
| | 617954003 | Dust cap for receptacle shell (pink color) |
| | 617954004 | ESD dust cap plug shell (black color) |
| | 617954005 | ESD dust cap receptacle shell (black color) |

Tools

| | Part number | Description | To be used with | | |
|---|-------------|---|-----------------|-------|-------|
| | | | EPXA | EPXB1 | EPXB2 |
|  | 282664 | 1/4 inch hex. screwdriver bit to affix the nut of the jackscrew or the jacknut to the EPXB2 accessories | | | X |
|  | 282665 | Spigot wrench to affix the nut of the jackscrew or the jacknut to the EPXB2 accessories | | | X |
|  | 282666 | Allen wrench for 1/4 turn fastener (3/32 inch) | X | X | |
|  | 282666002 | Allen wrench for rear accessories (5/64 inch) | | X | |
|  | 282666001 | Allen wrench for jackscrew (9/64 inch) | | | X |
|  | 282521002 | Insert extraction tool | | X | X |
|  | 282521004 | Right angle insert extraction tool | | X | X |
|  | 282521005 | Insert extraction tool | X | | |
|  | 617954020 | Plastic box to protect wired inserts during handling | X | X | X |
|  | F780855000 | Hexagonal key 2mm (5/64inch) Flats for sleeve holder removal | | X | X |
|  | 282668001 | Tweezers to change polarizing posts and keys | | X | |

EPX® SERIES

INSERTS

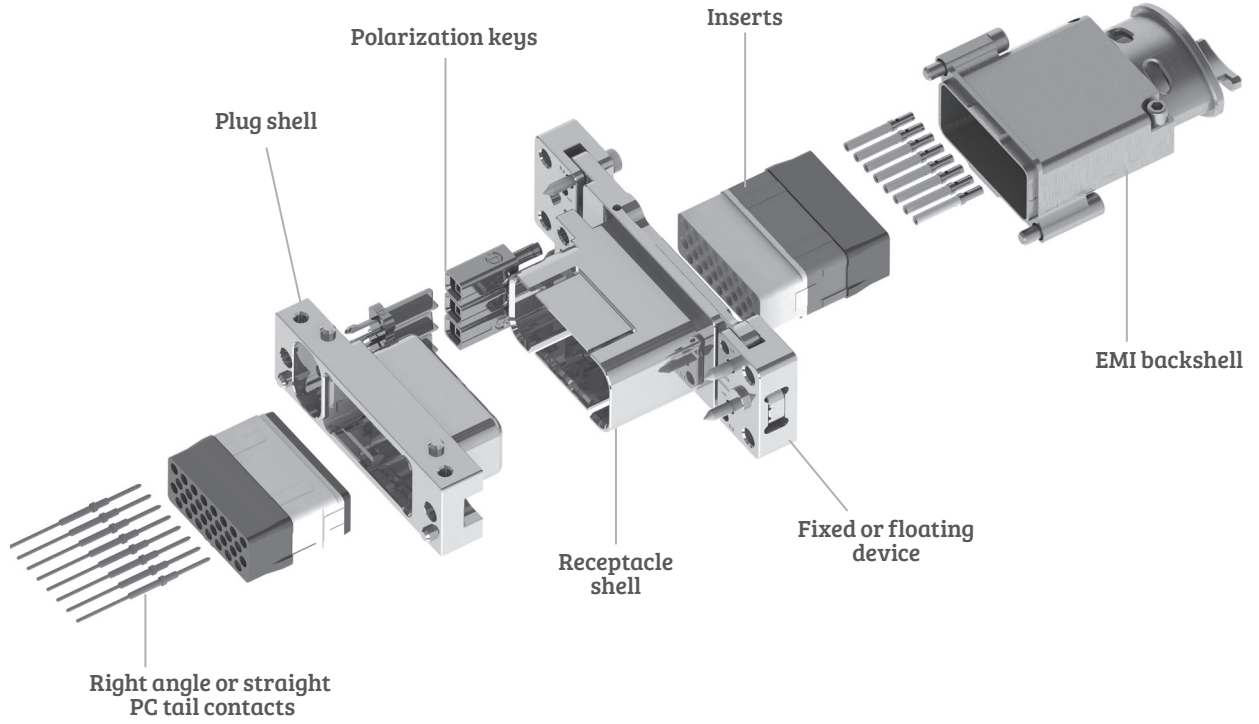
CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

EPXB1 Product Overview

Detailed view of receptacle and plug with accessories for the EPXB1 rack and panel connector.



INSERTS

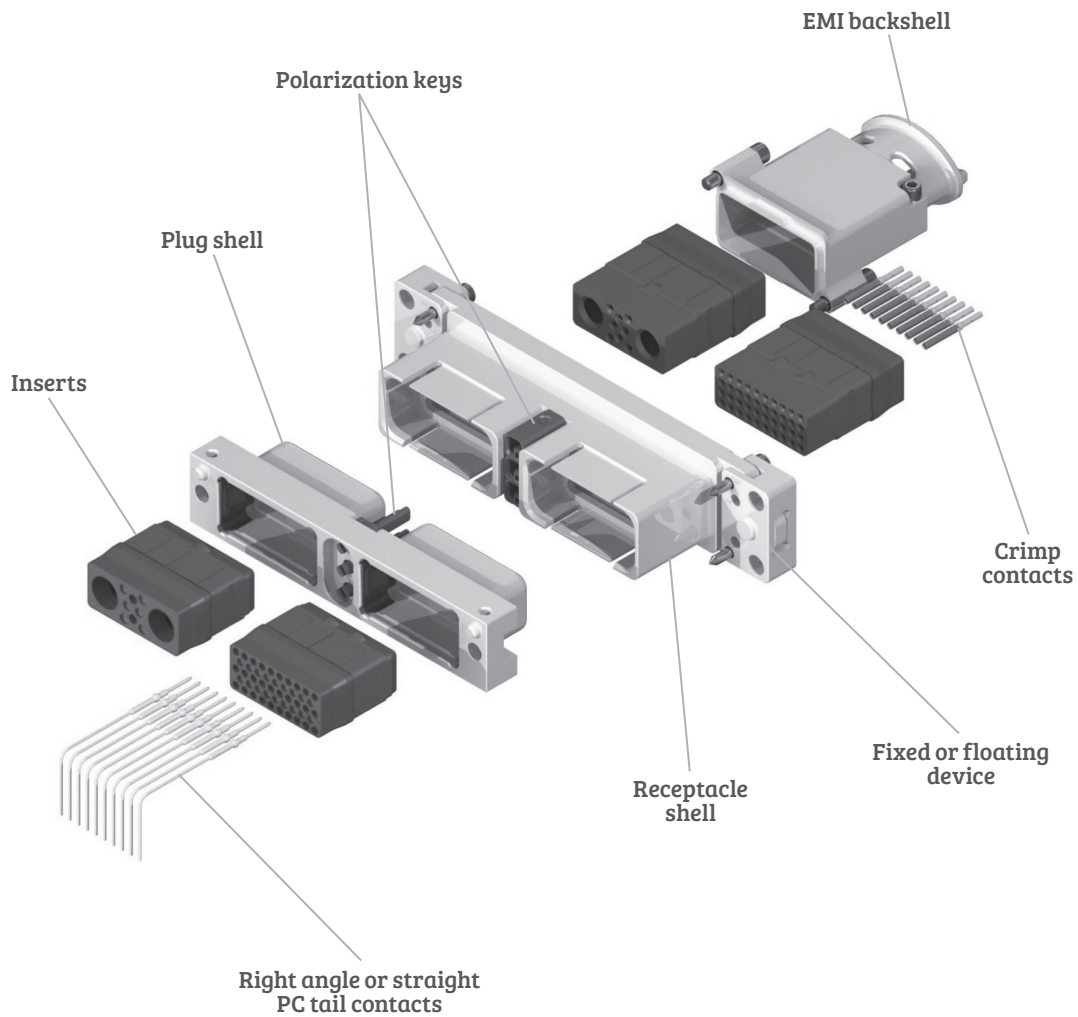
CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

EPXB2 Product Overview

Detailed view of receptacle and plug with accessories for the EPXB2 rack and panel connector.



EPX® SERIES

INSERTS

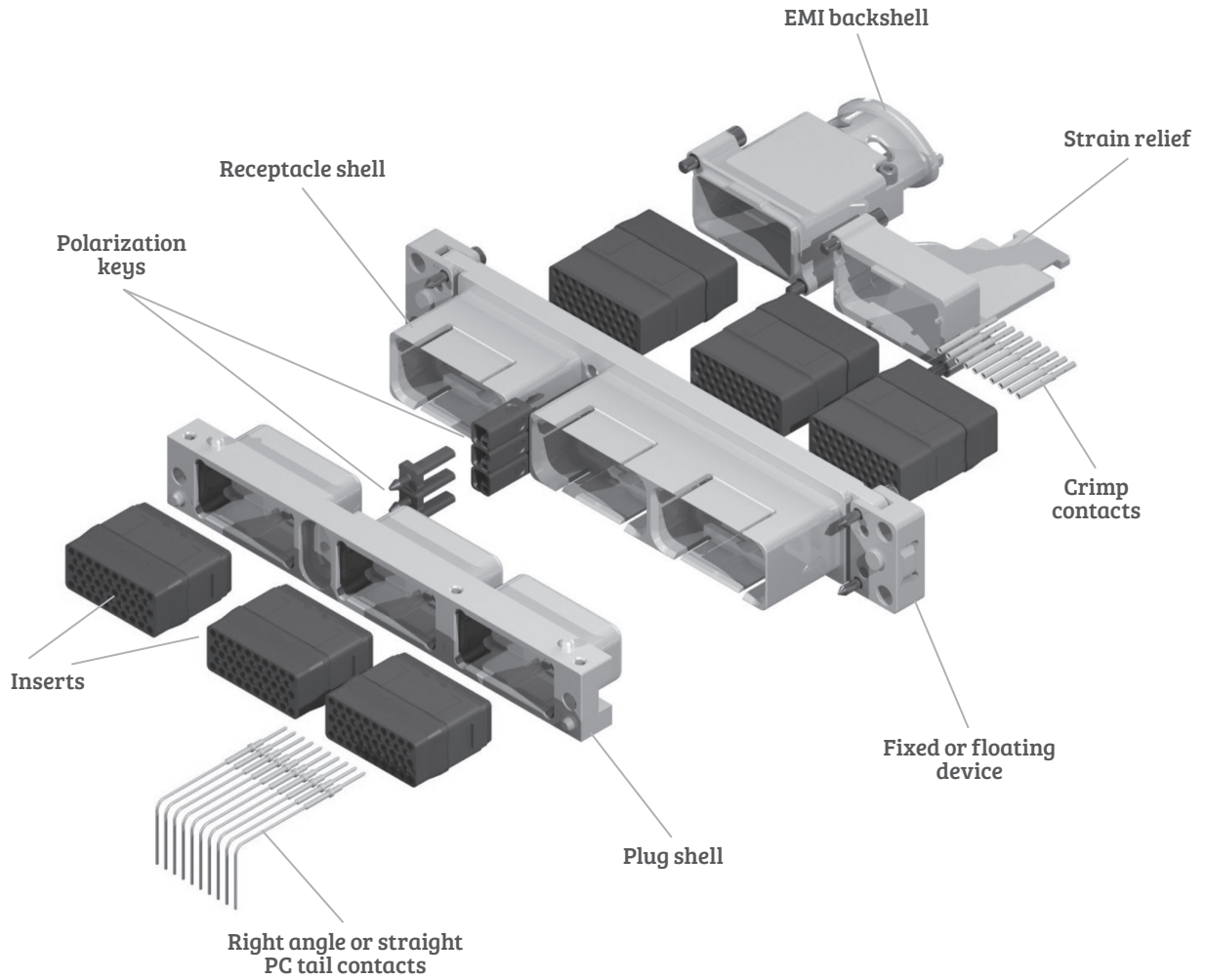
CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

EPXB3 Product Overview

Detailed view of receptacle and plug with accessories for the EPXB3 rack and panel connector



INSERTS

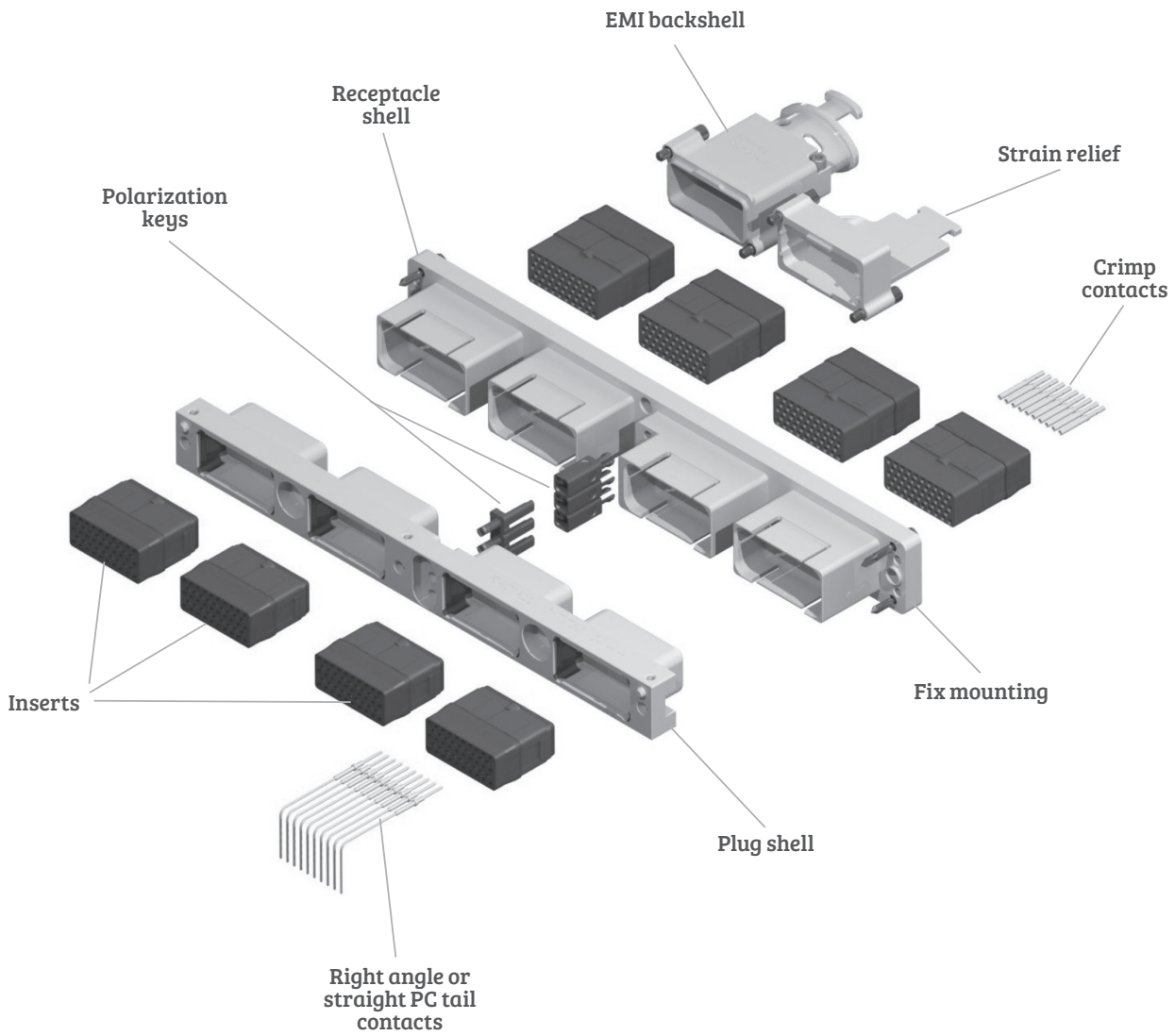
CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

EPXB4 Product Overview

Detailed view of receptacle and plug with accessories for the EPXB4 rack and panel connector



EPX® SERIES

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

How to Order EPXB1, B2, B3 & B4 Shell



Series prefix

Shell size

- B1:** One cavity shell
- B2:** Two cavity shell
- B3:** Three cavity shell
- B4:** Four cavity shell

Shell style

- P:** Plug, nickel-plated
- R:** Receptacle, nickel-plated

Shell mounting (refer to page 1-54 for coding)

- M:** Plug, fixed connector with Ø3.96mm holes & 4-40UNC on side
- N:** Plug, fixed connector with 8-32 UNC & 4-40UNC on side
- S:** Receptacle, fixed with 4 x 8-32UNC
- T:** Receptacle, floating with 4 x 8-32 UNC (two axes)⁽¹⁾

Polarization code

- 1:** Shell delivered with polarizing keys unassembled
- 2:** Shell delivered with no polarizing keys

Panel cut-out coding

- A to Z:** Receptacle, refer to page 1-59 for the code selection
- 0 (zero):** Plug, no panel cut out coding

NOTE:

(1) This floating option is not available in EPXB4 version

How to Order EPXB1, EPXB2, B3 & B4 Assembly Kit

Assembly kit is delivered fully assembled including shell with inserts mounted, with or without contacts according to the selection. When selecting your insert codes, do not forget to place them in the order you want them assembled. Polarization keys are always provided unassembled with assembly kits.

Tips to help you in your selection:

- You are free to use either pin or socket inserts in EPXB plug or receptacle.
- Crimp contacts can be delivered with a kit, check which contacts will be included on page 1-12.
- If PC tail contacts are selected then all cavities including signal, power and quadrax are populated. Size 5 coax cavities are not populated.
- If PC tail contacts are needed, remember that only straight pin PC tail contacts are available, and in plug only. All connector inserts will use the same insert class and the same contact termination.

| | EPX | B4 | P | N | 0 | E | ABDC | YA |
|--|-----|----|---|---|---|---|------|----|
| SHELL SELECTION PART | | | | | | | | |
| Series prefix _____ | | | | | | | | |
| Shell size _____ | | | | | | | | |
| B1: One cavity shell | | | | | | | | |
| B2: Two cavity shell | | | | | | | | |
| B3: Three cavity shell | | | | | | | | |
| B4: Four cavity shell | | | | | | | | |
| Shell style _____ | | | | | | | | |
| P: Plug, nickel-plated | | | | | | | | |
| R: Receptacle, nickel-plated | | | | | | | | |
| Shell mounting (refer to page 1-54 for codes) _____ | | | | | | | | |
| M: Plug, fixed connector with Ø3.96mm holes & 4-40UNC on side | | | | | | | | |
| N: Plug, fixed connector with 8-32 UNC & 4-40 UNC on side | | | | | | | | |
| S: Receptacle, fixed with 4 x 8-32 UNC | | | | | | | | |
| T: Receptacle, floating with 4 x 8-32 UNC (two axes) ⁽¹⁾ | | | | | | | | |
| Panel cut-out coding _____ | | | | | | | | |
| A to Z: For receptacle, refer to page 1-59 for the code selection | | | | | | | | |
| 0 (zero): For plug, no panel cut out coding | | | | | | | | |
| INSERT SELECTION PART | | | | | | | | |
| Insert class _____ | | | | | | | | |
| E: Environmental | | | | | | | | |
| N: Non-environmental (no rear grommet, no interfacial seal) | | | | | | | | |
| H: Non-environmental insert with a rear grommet (recommended for crimp contact) | | | | | | | | |
| T: Non-environmental insert with interfacial seal (recommended for PC tail contact) | | | | | | | | |
| Insert code _____ | | | | | | | | |
| Refer to page 1-12 to select insert code | | | | | | | | |
| Contacts termination _____ | | | | | | | | |
| XS: Female insert without contacts | | | | | | | | |
| XP: Male insert without contacts | | | | | | | | |
| SS: Female insert with crimp contacts | | | | | | | | |
| SP: Male insert with crimp contacts | | | | | | | | |
|] These contacts are delivered uninstalled. | | | | | | | | |
| YA: Gold PC tail contacts length A | | | | | | | | |
| ZA: Tin-lead PC tail contacts length A | | | | | | | | |
| RA: pure tin (RoHS) PC tail contacts length A | | | | | | | | |
|] Refer to page 1- 54 to select PC tail contacts for plug | | | | | | | | |

NOTE:

(1) This floating option is not available in EPXB4 version

INSERTS

CONTACTS

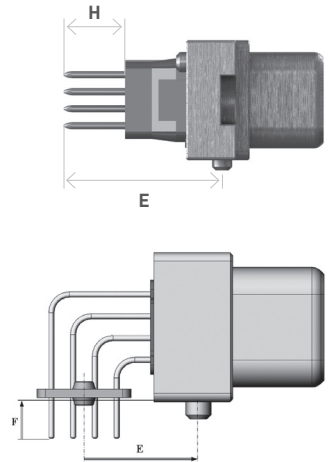
DISCONNECT APPLICATION

RACK & PANEL APPLICATION

Contacts Termination for EPXB1, EPXB2, EPXB3 and EPXB4 Plugs

| Straight PC Tail contact termination | | | | |
|--------------------------------------|----------------------------|------|----------|--------------------|
| Mini Length E mm (inch) | Mini Length H mm (inch) | Gold | Tin-lead | Pure tin (RoHS) |
| 10.60 (0.417) ⁽¹⁾ | / | YA | ZA | RA |
| 13.80 (0.543) ⁽¹⁾ | / | YB | ZB | RB |
| 15.60 (0.614) ⁽¹⁾ | / | YC | ZC | RC |
| 19.55 (0.769) | 5.40 (0.212) | YD | ZD | RD |

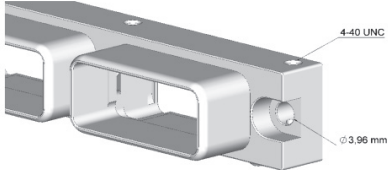
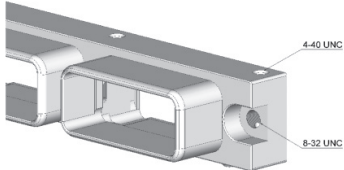
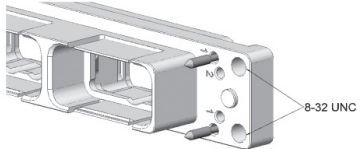
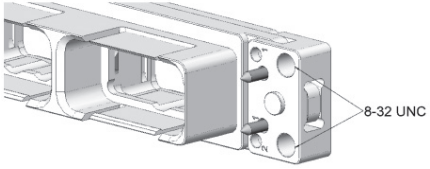
| Right Angle PC Tail contact termination ⁽²⁾ | | | | |
|--|------------------------------|------|----------|-----------------|
| Mini length F mm (inch) | Mini length E mm (inch) | Gold | Tin-lead | Pure tin (RoHS) |
| 2.20 (0.086) | 12.85 (0.505) ⁽¹⁾ | GA | LA | TA |
| 3.60 (0.141) | 20.10 (0.791) | GB | LB | TB |
| 3.60 (0.141) | 12.85 (0.505) ⁽¹⁾ | GC | LC | TC |
| 2.20 (0.141) | 20.10 (0.791) | GD | LD | TD |



NOTES:

- (1) These PC tail lengths are not compatible with EPXBE and EPXBH inserts
- (2) Right angle PC tail lengths GA, LA, TA and GD, LD, TD are not available for #5 and #8 power contacts

EPXB Shell Mounting

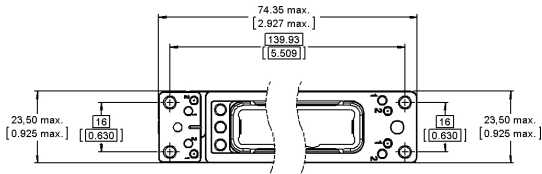
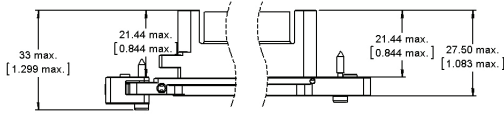
| Receptacle side | Code | Plug sides |
|--|------|---|
| N/A | M | Fixed connector with Ø 3.96 mm holes & 4-40 UNC front or side mount  |
| N/A | N | Connector with 8-32 UNC & 4-40 UNC front or side mount  |
| Fixed with 4 x 8-32 UNC panel rear mount  | S | N/A |
| Floating with 4 x 8-32 UNC panel rear mount  | T | N/A |

EPXB1 Shell Dimensions & Panel Cut-outs

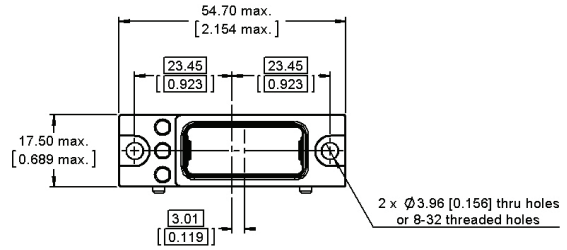
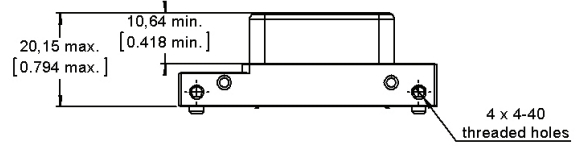
RECEPTACLE

Floating Mount

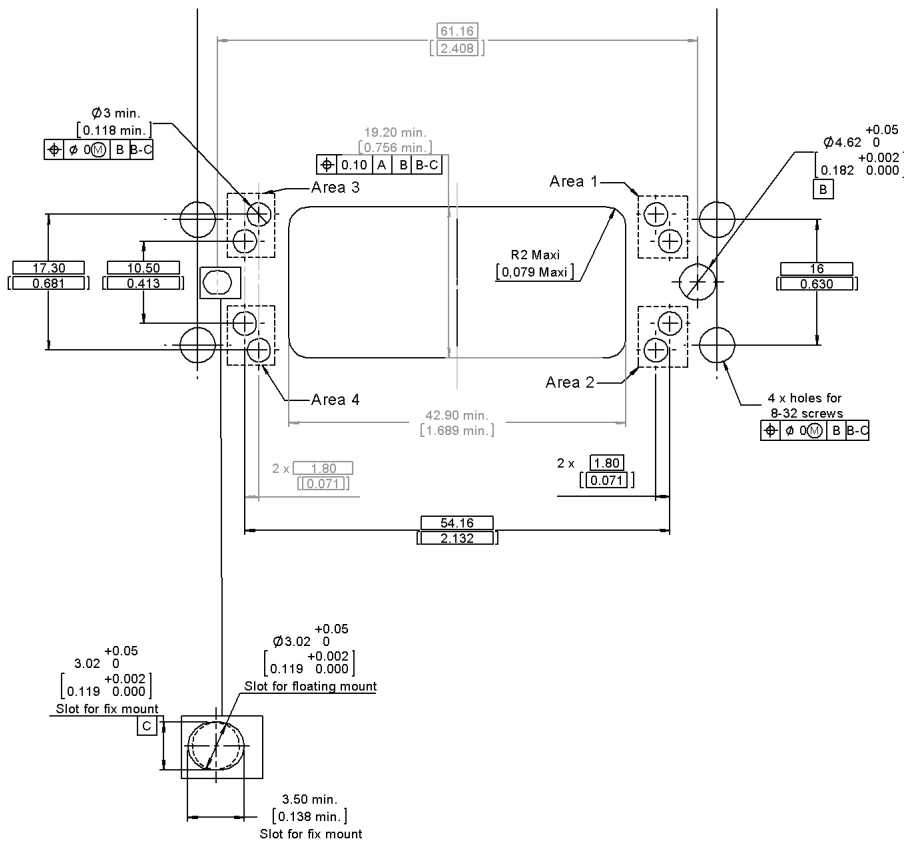
Fixed Mount



PLUG



PANEL CUT OUT (1)



NOTE:

(1) The panel cut-out is shown from the rear of the panel

EPX® SERIES

INSERTS

CONTACTS

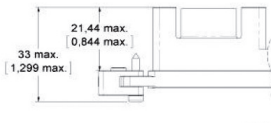
DISCONNECT APPLICATION

RACK & PANEL APPLICATION

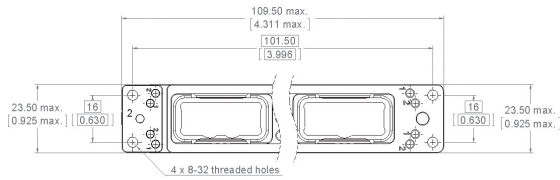
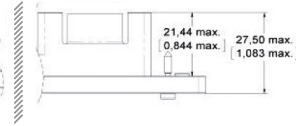
EPXB2 Shell Dimensions & Panel Cut-outs

RECEPTACLE

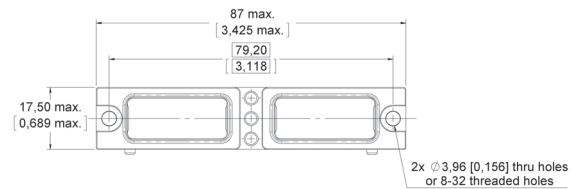
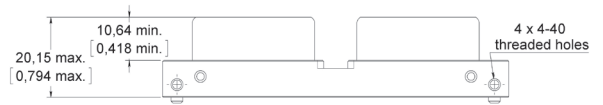
Floating Mount



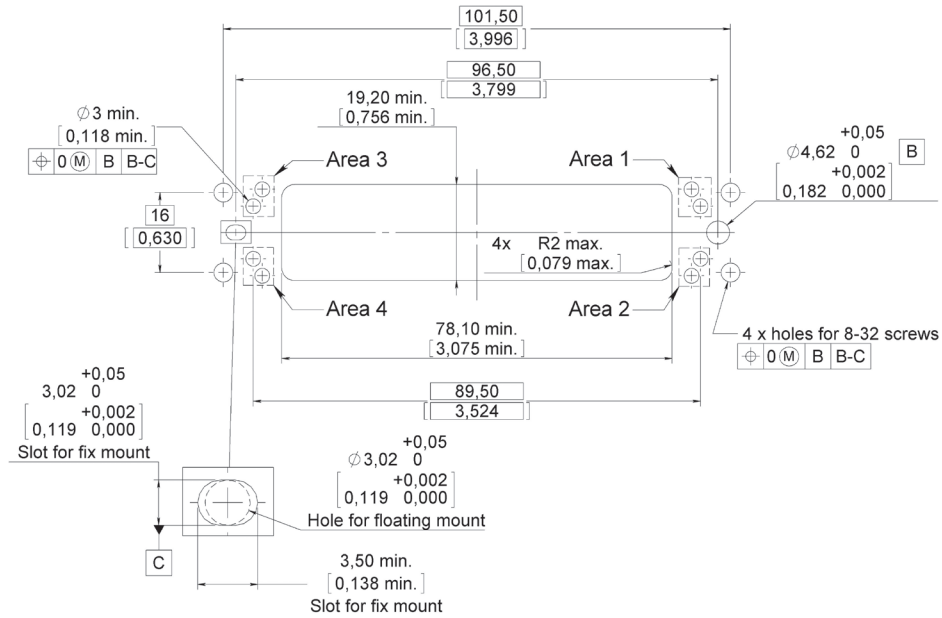
Fixed Mount



PLUG



PANEL CUT OUT (1)



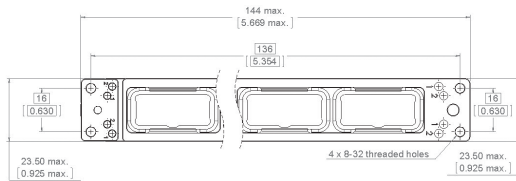
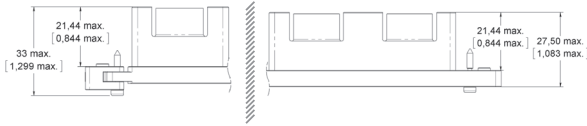
NOTE:
(1) The panel cut-out is shown from the rear of the panel

EPXB3 Shell Dimensions & Panel Cut-outs

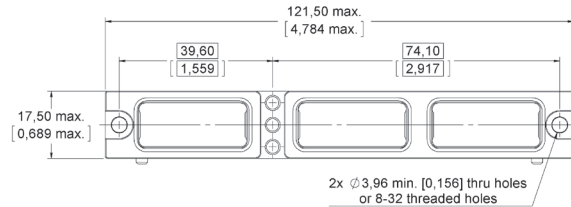
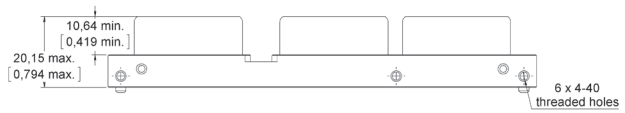
RECEPTACLE

x, y Floating Mount

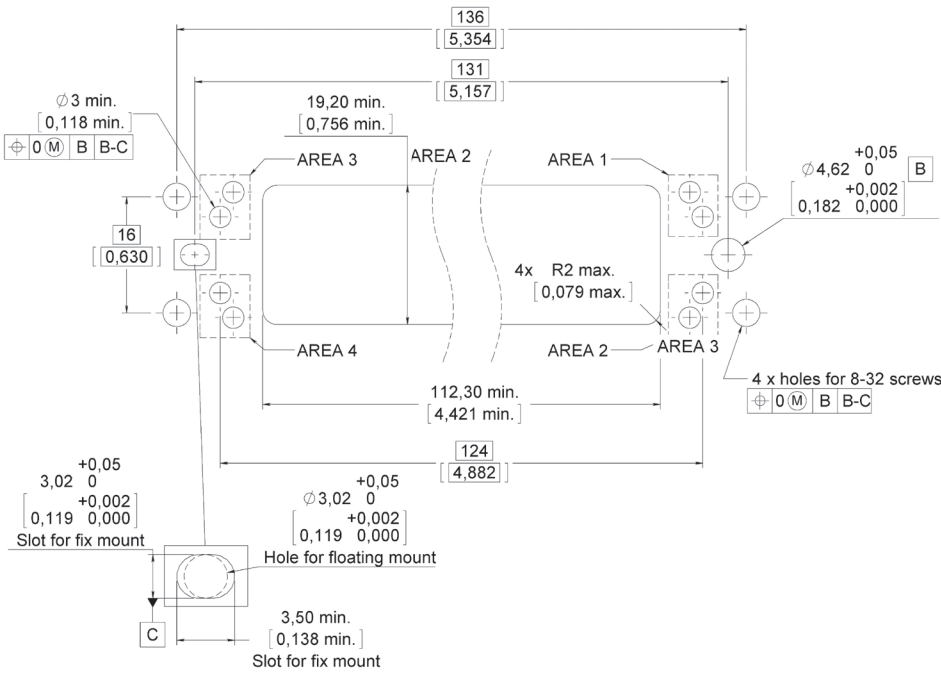
Fixed Mount



PLUG



PANEL CUT OUT (1)

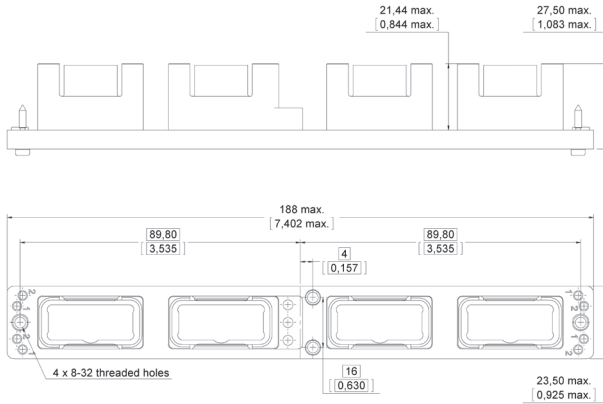


NOTE:

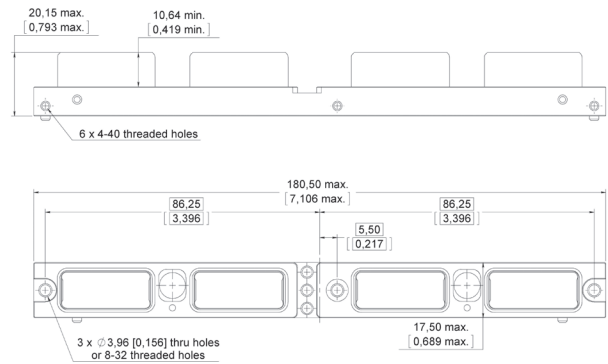
(1) The panel cut-out is shown from the rear to the panel

EPXB4 Shell Dimensions & Panel Cut-outs

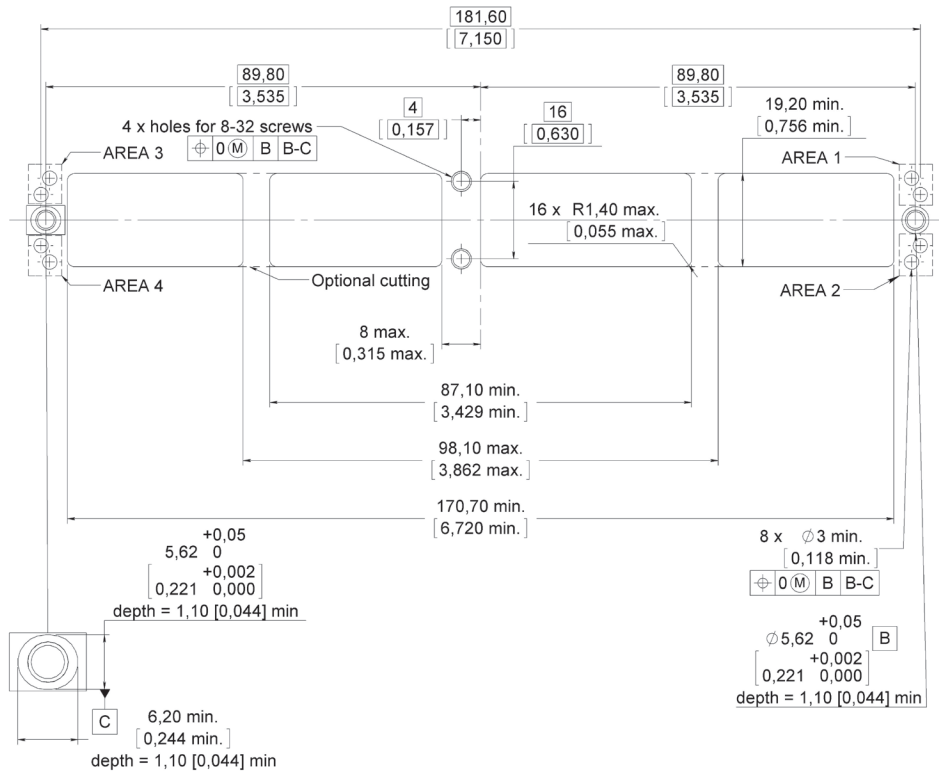
RECEPTACLE



PLUG



PANEL CUT OUT (1)



NOTE:

(1) The panel cut-out is shown from the rear of the panel

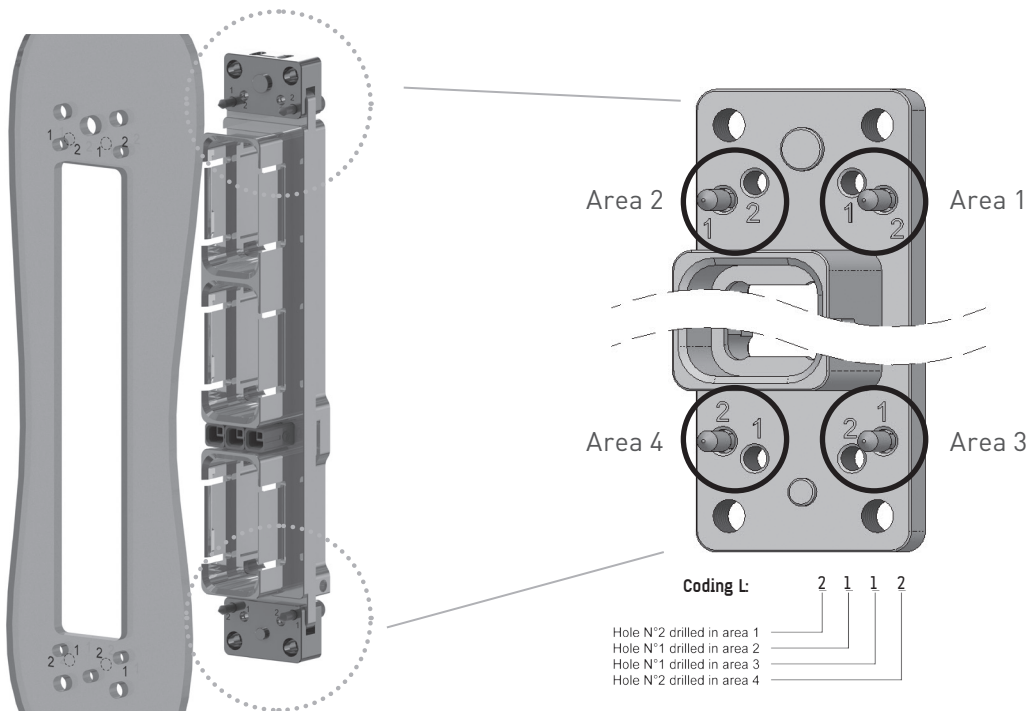
EPXB Panel Cut-out Coding

When several EPXB connectors are used with the same equipment, a coding is available on the shell to correlate the correct shell with the correct panel cut-out.

On the panel cut-out, four areas are coded, area 1, 2, 3 and 4 (see figure below). For each area, one of the two holes should be drilled (hole n°1 or hole n°2). Each hole on the panel cut-out corresponds to the use of a coding pin on the shell.

| Panel cut-out coding | Panel hole number to drill in Area 1 | Panel hole number to drill in Area 2 | Panel hole number to drill in Area 3 | Panel hole number to drill in Area 4 |
|----------------------|---|--------------------------------------|--------------------------------------|--------------------------------------|
| A | Connector delivered with coding device uninstalled | | | |
| B | 1 | 1 | 1 | 1 |
| C | 1 | 1 | 1 | 2 |
| D | 1 | 1 | 2 | 1 |
| E | 1 | 1 | 2 | 2 |
| F | 1 | 2 | 1 | 1 |
| G | 1 | 2 | 1 | 2 |
| H | 1 | 2 | 2 | 1 |
| J | 1 | 2 | 2 | 2 |
| K | 2 | 1 | 1 | 1 |
| L | 2 | 1 | 1 | 2 |
| M | 2 | 1 | 2 | 1 |
| N | 2 | 1 | 2 | 2 |
| P | 2 | 2 | 1 | 1 |
| R | 2 | 2 | 1 | 2 |
| S | 2 | 2 | 2 | 1 |
| T | 2 | 2 | 2 | 2 |
| Z | Connector delivered without coding pin ⁽¹⁾ | | | |

CODING PINS ARE FOR RECEPTACLE ONLY



NOTE:
 (1) Z panel cut out coding is only available with fix mounting

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

EPXB Polarization Code

EASY READING OF POLARIZATION CODE

Polarization device is included in the part number and could be installed as shown below

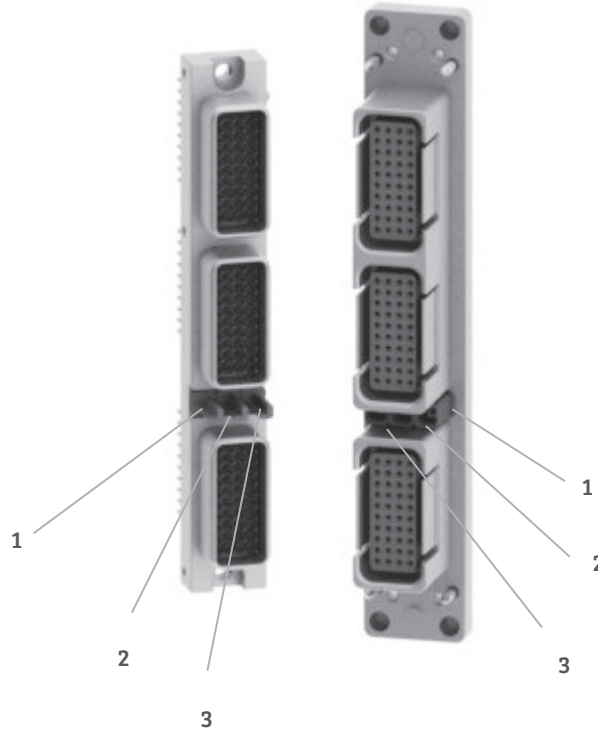
Each shell has 3 keys which can be in four different position

The three polarization keys can have their own position which allow a large range of codification

Plug size 3
Polarization post



Receptacle size 3
Polarization key


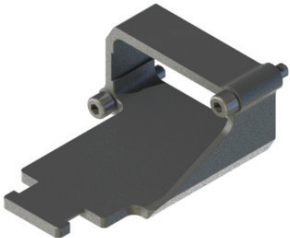


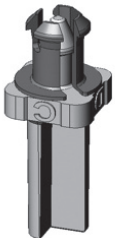



Connectors are shown front side with cavity A upwards

This is how you should read your code for either EPXB2 or EPXB3 or EPXB4

Rack & Panel Accessories

EPX® SERIES

| | Part number | Description | Assembly torque |
|---|-------------|---|---------------------------------|
|  | 617925073 | EMI backshell for receptacle only (aluminium nickel-plated) | 0.55±0.05 Nm (4.87±0.44 in-lbs) |
|  | 617922022 | Straight strain relief for receptacle only (composite) | 0.55±0.05 Nm (4.87±0.44 in-lbs) |
|  | 617954002 | Dust cap for plug shell (pink color) | N/A |
| | 617954003 | Dust cap for receptacle shell (pink color) | N/A |
| | 617954004 | ESD dust cap plug shell (black color) | N/A |
| | 617954005 | ESD dust cap receptacle shell (black color) | N/A |
|  | 617980052 | Coding Pin | 0.8 Nm (7 in-lbs) |
|  | 617980054 | Polarization post | N/A |
|  | 617980055 | Polarization key | N/A |

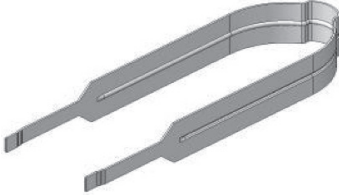
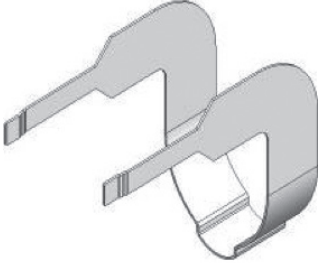
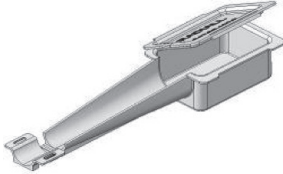


INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

Rack & Panel Tools

| | Part number | Description | EPXB |
|---|-------------|--|------|
|  | 282521002 | Insert extraction tool | X |
|  | 282521004 | Right angle insert extraction tool | X |
|  | 617954020 | Plastic box to protect wired inserts during handling | X |
|  | F780855000 | Hexagonal key 2mm (5/64inch) Flats for sleeve holder removal | X |
|  | 282549041 | Removal tool for metal coding keys (M81969/30-06) | X |

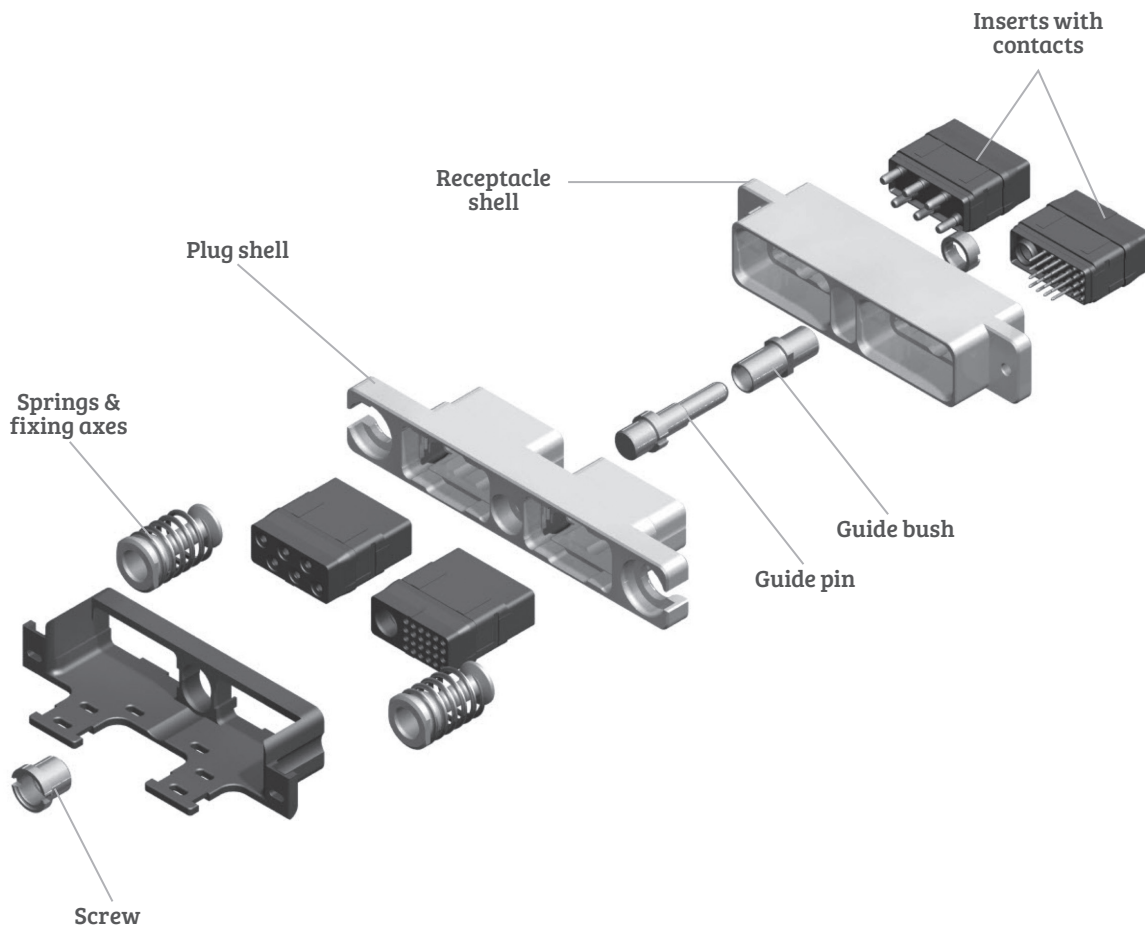
EPX Galley Product Overview

The new EPXB2 Galley connector was specially designed for the severe conditions required by galley equipment. A floating mechanism was developed to avoid any risk of jamming and to guarantee a fully sealed connection.

The EPXB2 is used on ovens, beverage makers, refrigerators, microwave ovens and other equipment which fit within the new standardized galley layouts.

The EPXB2 connector is modular and provides extra contact density to add new contacts such as the #8 Twinax CAN data bus contact. Backshell accessories are also available.

Detailed view of receptacle and plug with accessories for the EPXB2 galley connector



EPX® SERIES

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

How to Order EPX® Galley Equipment Connector

RECEPTACLE AND PLUG ASSEMBLY KIT

| Part number | Description |
|------------------------|------------------------------|
| 617610188 or 617610558 | Receptacle assembled kit (*) |
| 617610189 | Plug assembled kit (*) |

(*)Part numbers for assembly kits include: plug or receptacle shell, inserts, contacts, sealing plugs and dust caps.

Each item included in the kit is indicated in the table below and can also be ordered separately

RECEPTACLE KITS

617610188

Shell with 2 self-locking threaded holes

| Part number | Description | Quantity per kit |
|-------------|----------------------------|------------------|
| 617610212 | Receptacle shell | 1 |
| EPXBE25Q1PA | Insert for cavity A | 1 |
| EPXBE06PB | Insert for cavity B | 1 |
| 617200 | Pin crimp contacts/Size 22 | 15 |
| 617250 | Pin crimp contacts/Size 12 | 6 |
| 616910 | Filler plug | 9 |
| 617954003 | Dust cap | 2 |

617610558

Shell with 2 thru holes

| Part number | Description | Quantity per kit |
|-------------|----------------------------|------------------|
| 617610419 | Receptacle shell | 1 |
| EPXBE25Q1PA | Insert for cavity A | 1 |
| EPXBE06PB | Insert for cavity B | 1 |
| 617200 | Pin crimp contacts/Size 22 | 15 |
| 617250 | Pin crimp contacts/Size 12 | 6 |
| 616910 | Filler plug | 9 |
| 617954003 | Dust cap | 2 |

PLUG KIT

617610189 contents

| Part number | Description | Quantity per kit |
|-------------|-------------------------------|------------------|
| 617610213 | Plug shell | 1 |
| EPXBE25Q1SA | Insert for cavity A | 1 |
| EPXBE06SB | Insert for cavity B | 1 |
| 617300 | Socket crimp contacts/Size 22 | 15 |
| 617350 | Socket crimp contacts/Size 12 | 6 |
| 616910 | Filler plug | 9 |
| 617922007 | Strain relief | 1 |
| 617954002 | Dust cap | 2 |

CAN DATA BUS CONTACTS

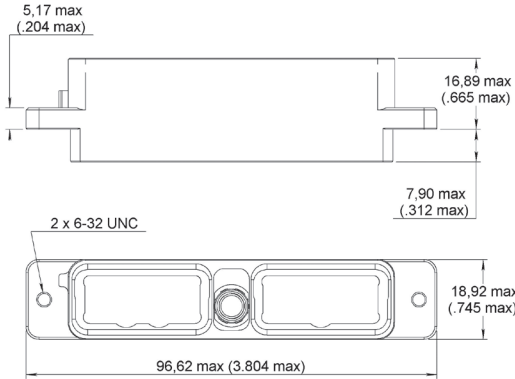
| Part number | Description |
|-------------|---------------------------|
| 617165011 | Size 8 Twinax pin contact |
| 617065011 | Size 8 Twinax pin contact |

Dimensions and Panel Cut Out

EPX® GALLEY EQUIPMENT CONNECTOR PER ARINC 800

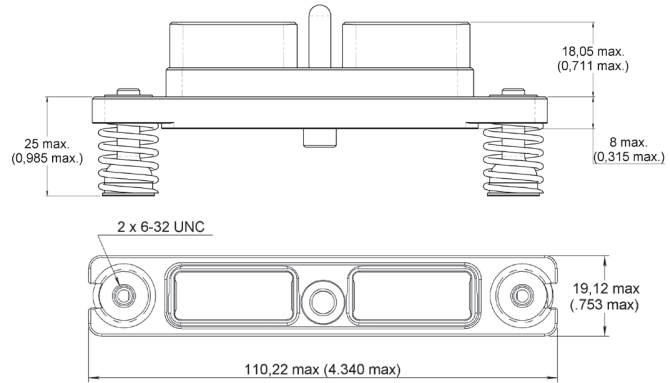
RECEPTACLE

Front mount

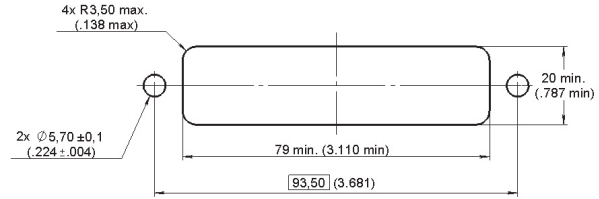
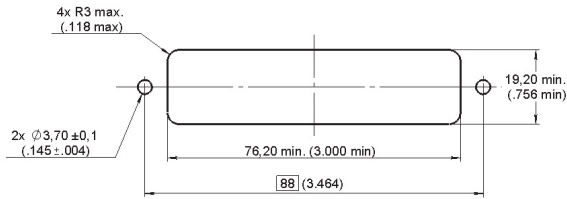


PLUG

Rear mount



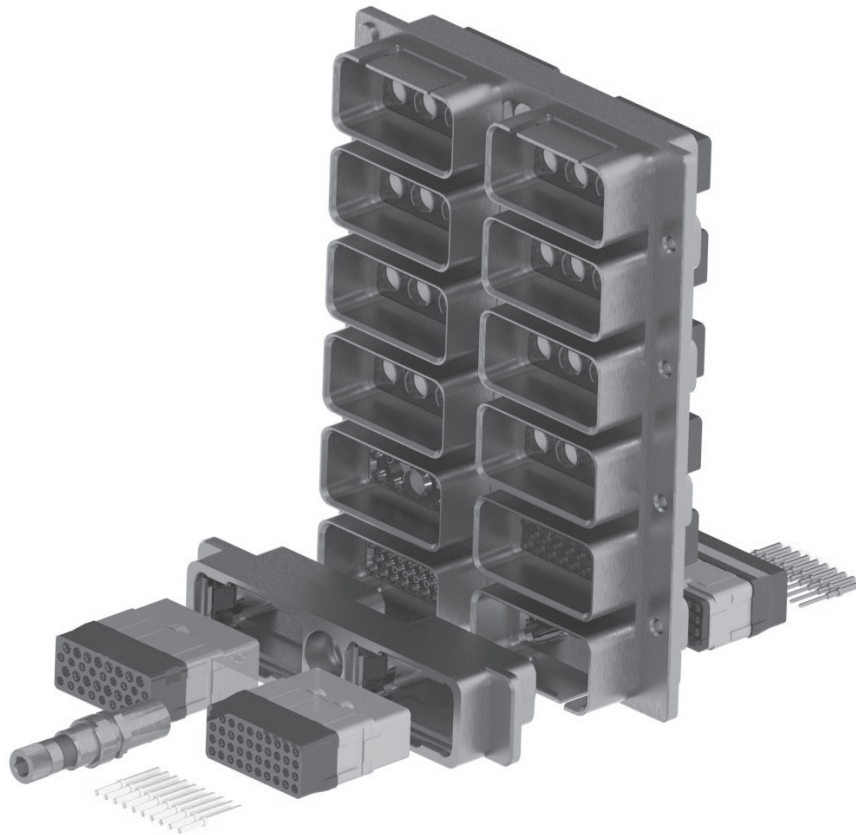
PANEL CUT OUT



Multi-gang EPX® Connectors

A whole range of multigang connectors is available for disconnect and rack and panel applications. Multigang connectors features and benefits:

- Weight saving design
- Make installation easier and quicker
- Utilize EPX modularity and its whole range of inserts
- Take advantage of EPX connectors functionalities and use EPXB2 standard plug shells with a multigang shell



Specifications

- Several cavities for EPXB inserts : from 4 to 20 cavities
- Standard EPX strain reliefs and backshells available
- In accordance with EN4644 performances

Several options are available:

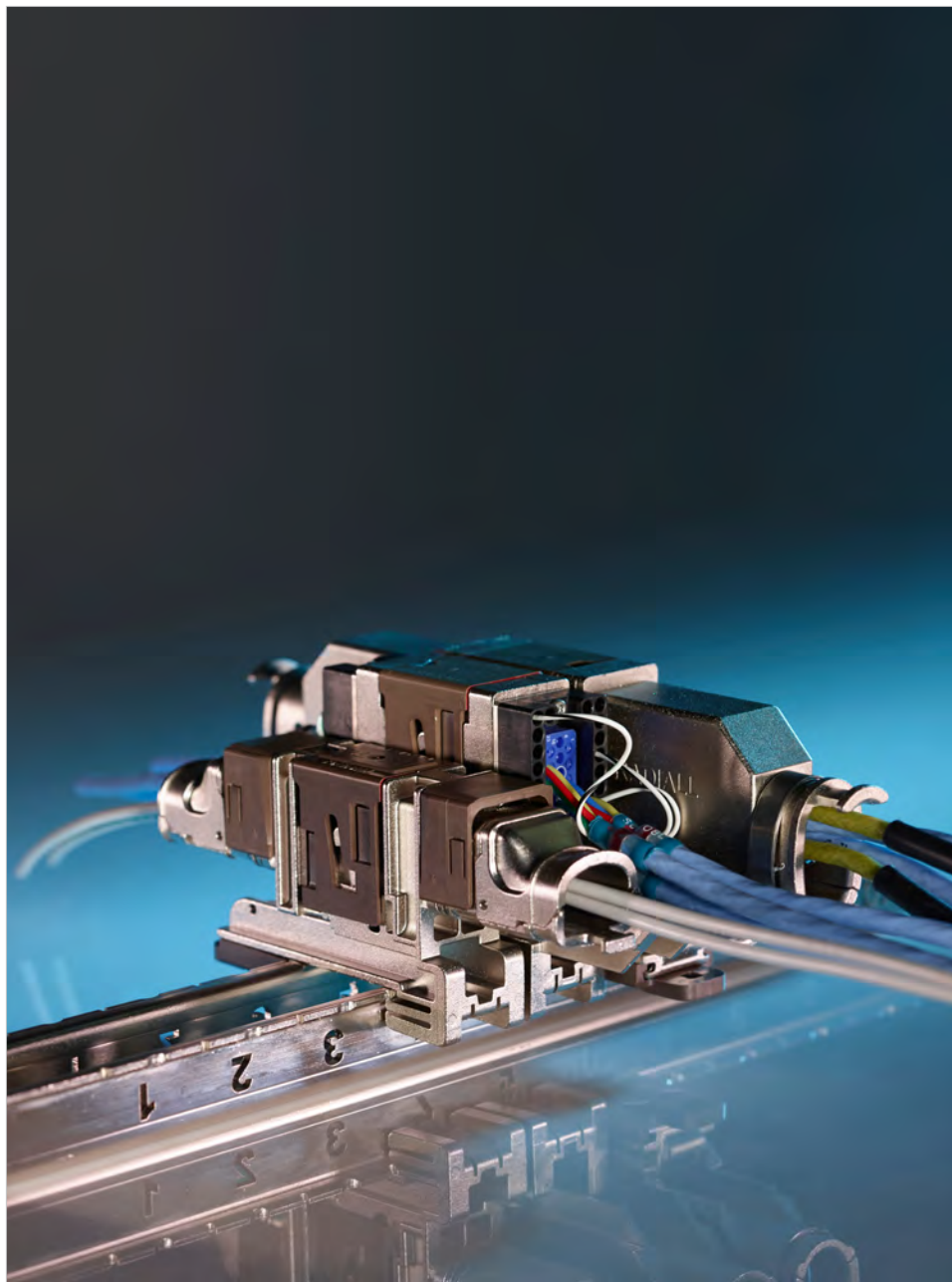
- Grounding block
- Grounding spring fingers
- Float mounting
- Spring loaded mounting

INSERTS

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION



Quick Multipin Series



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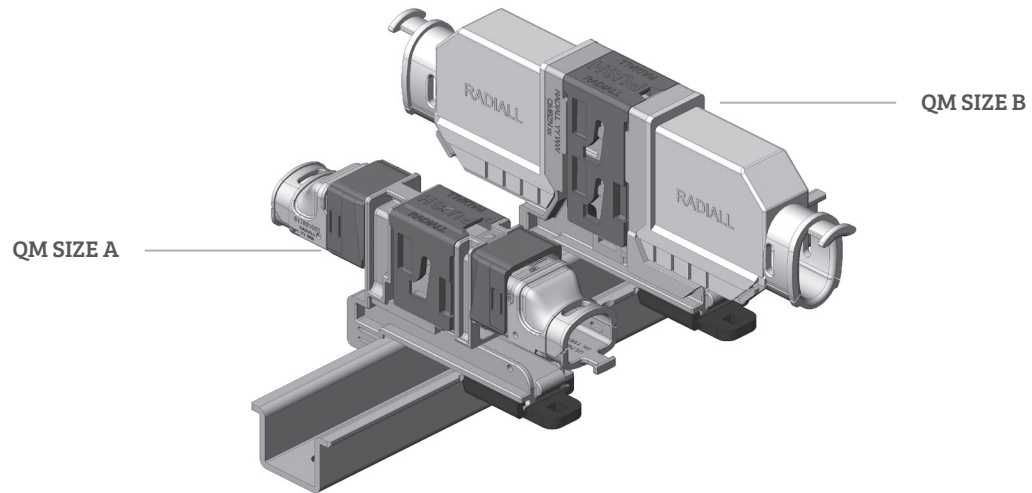
Introduction

A MODULAR AND TOOL LESS CONNECTOR

Radiall QM series connectors are designed for use with in-line disconnect applications on commercial airplanes. QM series offer outstanding electrical performances and are designed with environmental and mechanical characteristics that provide long lasting durability needed for the most severe aerospace applications.

Two connector sizes are available in QM series to optimize disconnect connection in terms of weight and density in an aircraft wiring system:

- QM size A
- QM size B



QM series is developed to provide the following benefits:

- Save time during wiring with a tool less connector
- Save weight with a composite connector
- simplify the wiring design as no panel cut outs are needed

QM size A and size B are mounted on the same range of rails. QM size A will save weight and space when a smaller insert with less contacts can be utilized in the wiring design compared to the QM size B. QM series offer a wide range of inserts that cover all contact technology. It is manufactured under US patent App, No 11/614.642. QM series is available worldwide.

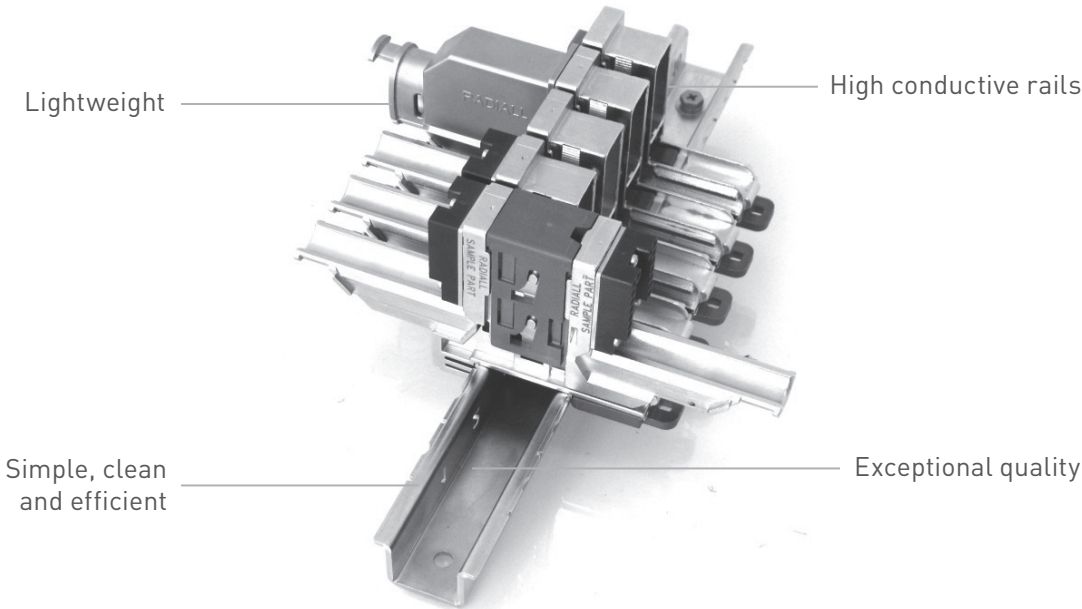
Applications

Interconnect solution for aerospace and harsh environment applications

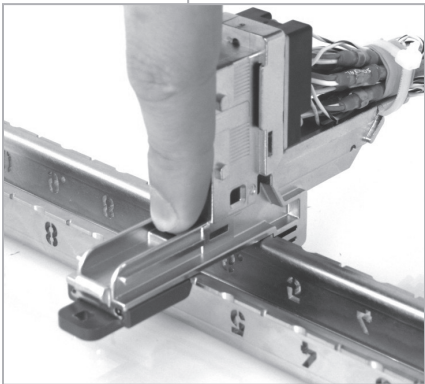


Features & Benefits

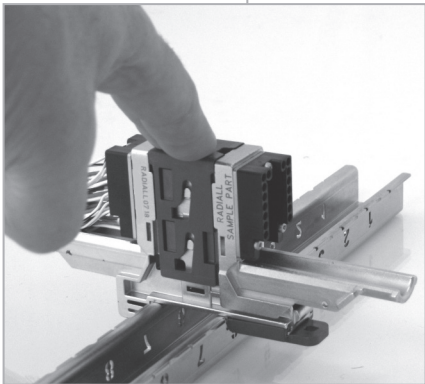
QM SERIES



User friendly - no tools needed



Click to install



Push to lock

Electrical Characteristics

Contacts are per EN3155-76 and EN3155-77. Electrical characteristics conform to SAE AS 39029 (MIL-C-39029 type A).

GROUND BLOCK CONTACT

| | Contact with wire size | Max Current Amps |
|-----------------------------|------------------------|------------------|
| Contact to contact | Contact + AWG20 | 7.5 |
| Contact to mounting surface | Contact + AWG20 | 7.5 |

CONTACTS

| Contact size | Wire size | Max Current Amps |
|--------------|-----------|------------------|
| 22 | AWG22 | 5 |
| | AWG24 | 3 |
| | AWG26 | 2 |
| 20 | AWG20 | 7.5 |
| | AWG22 | 5 |
| | AWG24 | 3 |
| 16 | AWG16 | 13 |
| | AWG18 | 10 |
| | AWG20 | 7.5 |
| 12 | AWG12 | 23 |
| | AWG14 | 17 |
| | AWG16 | 13 |
| 8 | AWG8 | 46 |
| | AWG10 | 33 |
| 5 | AWG8 | 46 — See note 1 |
| | AWG10 | 33 |

Note 1: Size 5 contacts are not part of SAE AS 39029 (MIL-C-39029 type A). They are qualified by Radiall to 46 Amps

EMI SHIELDING EFFECTIVENESS

| Frequency (MHz) | Leakage attenuation (dB) |
|-----------------|--------------------------|
| 100 | 65 |
| 200 | 63 |
| 300 | 61 |
| 400 | 59 |
| 500 | 58 |

DIELECTRIC WITHSTANDING VOLTAGE

EIA 364-20 (MIL-STD-1344 / Method 3001.1) with leakage current < 1m Ω

| Level | Environmental inserts Voltage (VRMS) | Non-environmental voltage (VRMS) |
|-------------|--------------------------------------|----------------------------------|
| Sea level | 1500 | 1500 |
| 50 000 feet | 800 | 600 |
| 70 000 feet | 800 | 300 |

INSULATION RESISTANCE

EIA 364-21 (MIL-STD-1344 / Method 3003.1)

| Temperature | Insulation resistance |
|---------------------|-----------------------|
| Ambient temperature | > 5000 M Ω |
| 155°C (+347°F) | >200 M Ω |

OTHER CHARACTERISTICS

- Shell to shell conductivity < 2.5 m Ω, operating voltage: 400 Vrms or 500 Vdc at sea level
- Voltage stability (ground block): Maximum variation 4mV SAE AS 81714 (MIL-T-81714)
- Magnetic permeability < 2 μ and comparative tracking index = 250 V
- Lightning strike: 3.6kA according to EIA-364, Test procedure 75, Type B Test level 1

Mechanical and Environmental Characteristics

MECHANICAL CHARACTERISTICS

Vibration and Shock

| Shell type | Material | Vibration | Shock |
|------------|-----------|--|--|
| | | for 5 hours in each of the 3 axis/interruption < 1µs EIA 364-28 (MIL-STD-1344 /Method 2005.1) | three shocks in each axis EIA 364-27 (MIL-STD-1344 /Method 2004.1) condition A |
| QM Series | Composite | 4 positions rail = Acceleration 13,8 Grms 0,2G ² /Hz from 10 to 400HZ and 0,03G ² /hz from 400 to 2000Hz | 4 positions rail = Shock amplitude 50G / duration 11ms |
| | | 22 positions rails = Acceleration 6,2 Grms 0.04 g ² /Hz from 10 to 400 Hz 0.006 g ² /Hz at 2000 Hz | 22 positions rail = Shock amplitude 15G / duration 11ms |

Interruption shall not exceed 1µs, they are measured on electrical contacts, between shells and between shell and rail.

Mating/unmating

| Shell type | Material | Mating/unmating | Mating force |
|------------|-------------------------|-----------------|--------------|
| QM size B | Nickel plated composite | 50 cycles | 250N max |
| QM size A | | | 125N max |

RETENTION CHARACTERISTICS

Contact retention EIA 364-29 (MIL-STD-1344 / Method 2007.1) on terminated connectors

| Contact size | Retention force | Max displacement |
|--------------|-----------------|-------------------|
| Ground block | 88N (20lbs) | 0.30mm (.012 in.) |
| 22 | 53.4N (12lbs) | 0.38mm (.015 in.) |
| 20 | 89N (20 lbs) | 0.38mm (.015 in.) |
| 16 | 111.2N (25lbs) | 0.38mm (.015 in.) |
| 12 | 133.45N (30lbs) | 0.38mm (.015 in.) |
| 8 | 133.45N (30lbs) | 0.38mm (.015 in.) |
| 5 | 133.45N (30lbs) | 0.38mm (.015 in.) |

- Insert retention: 400N (90lbs) (EIA 364-35 = MIL-STD-1344 /Method 2010.1)
- Max displacement: 0.30mm (.012 in.)

ENVIRONMENTAL CHARACTERISTICS

Temperature

- Temperature range: -65°C / +155°C
- Temperature life: 1000H at 155°C

OTHER CHARACTERISTICS

- Salt spray: 96 hours (Nickel plating) EIA 364-26 (MIL-STD-1344 / Method 1001.1) test condition A
- Humidity: 10 days with temperature variation from -10°C to +65°C EIA 364-31 Method 4, test condition B (MIL-STD-1344 /Method 1002.2, type II test condition)
- Altitude immersion: 3 cycles at 50 000 feet EIA 364-03 (MIL-STD-1344 /Method 1004.1)
- For more detail please refer to QM product specification

Inserts Selection Table

QM size B connectors will use EPXB inserts range when QM size A connectors will use EPXA inserts.

Only signal and power contacts with an asterisk (*) can be delivered with inserts. All other contacts must be ordered separately (coax, twinax, quadrax and fiber optic contacts).

| Series | Insert name | Insert code | Contact Size & Type | | | | | | | | | | | Total contacts | |
|--------|-------------|-------------|---------------------|-------|---------------|---------------------|-----------------------------|---------------|-------|-------------------|-----|---------------|-------|----------------|----|
| | | | 22* | 20* | 15 or 16* | 16 | 16 | 12* | 8 | 8 | 8 | 5 | 5 | | |
| | | | Signal | Power | Power or coax | LuxCis® fiber optic | Power in fiber optic cavity | Power or coax | Power | Quadrax or twinax | BMA | Coax or triax | Power | | |
| EPXA | 00 | 0 | | | | | | | | | | | | | 0 |
| | 1C1 | A | | | | | | | | | | | 1 | | 1 |
| | 1P1 | B | | | | | | | | | | | | 1 | 1 |
| | 04 | C | | | 2 | | | | 2 | | | | | | 4 |
| | 09 | D | | 3 | 6 | | | | | | | | | | 9 |
| | 14 | E | | 14 | | | | | | | | | | | 14 |
| | 14M | F | 8 | 3 | 3 | | | | | | | | | | 14 |
| | 17 | G | 12 | 5 | | | | | | | | | | | 17 |
| | 20 | H | 20 | | | | | | | | | | | | 20 |
| | F6 | J | | | | 6 | | | | | | | | | 6 |
| EPXB | 00 | 0 | | | | | | | | | | | | | 0 |
| | C3 | A | | | | | | | | | | | 3 | | 3 |
| | P3 | B | | | | | | | | | | | | 3 | 3 |
| | 3Q3 | C | | | | | | | | | 3 | | | | 3 |
| | 06 | D | | | | | | | 6 | | | | | | 6 |
| | 10Q2 | E | | 8 | | | | | | | 2 | | | | 10 |
| | 12F6 | F | | | | 6 | 6 | | | | | | | | 12 |
| | F12C | G | | | | 12 | | | | | | | | | 12 |
| | 13C1 | H | | 6 | 4 | | | | 2 | | | | 1 | | 13 |
| | 13P1 | J | | 6 | 4 | | | | 2 | | | | | 1 | 13 |
| | 14 | K | | | 14 | | | | | | | | | | 14 |
| | 17 | L | | 14 | | | | | 3 | | | | | | 17 |
| | 20C1 | M | | 19 | | | | | | | | | 1 | | 20 |
| | 20P1 | N | | 19 | | | | | | | | | | 1 | 20 |
| | 22 | P | | 16 | 6 | | | | | | | | | | 22 |
| | 22V | Q | | 16 | 6 | | | | | | | | | | 22 |
| | 25P1 | R | 24 | | | | | | | 1 | | | | | 25 |
| | 25Q1 | S | 24 | | | | | | | | 1 | | | | 25 |
| | 28 | T | 22 | | 6 | | | | | | | | | | 28 |
| | 30 | U | | 30 | | | | | | | | | | | 30 |
| 34 | W | 18 | 16 | | | | | | | | | | | 34 | |
| 40 | X | 40 | | | | | | | | | | | | 40 | |
| 48 | Y | 48 | | | | | | | | | | | | 48 | |
| 3T3 | Z | | | | | | | | | | | 3 | | 3 | |

How to Order EPX Insert

| | | | | | | |
|-----|---|---|----|---|---|---|
| EPX | B | E | 40 | P | A | S |
|-----|---|---|----|---|---|---|

Series _____

Insert size _____

A: insert for QM size A

B: insert for QM size B

Class _____

E: Environmental

Insert name _____

Refer to table on page 2-10 for inserts arrangement

Insert type _____

P: Pin

S: Socket

Insert keying _____

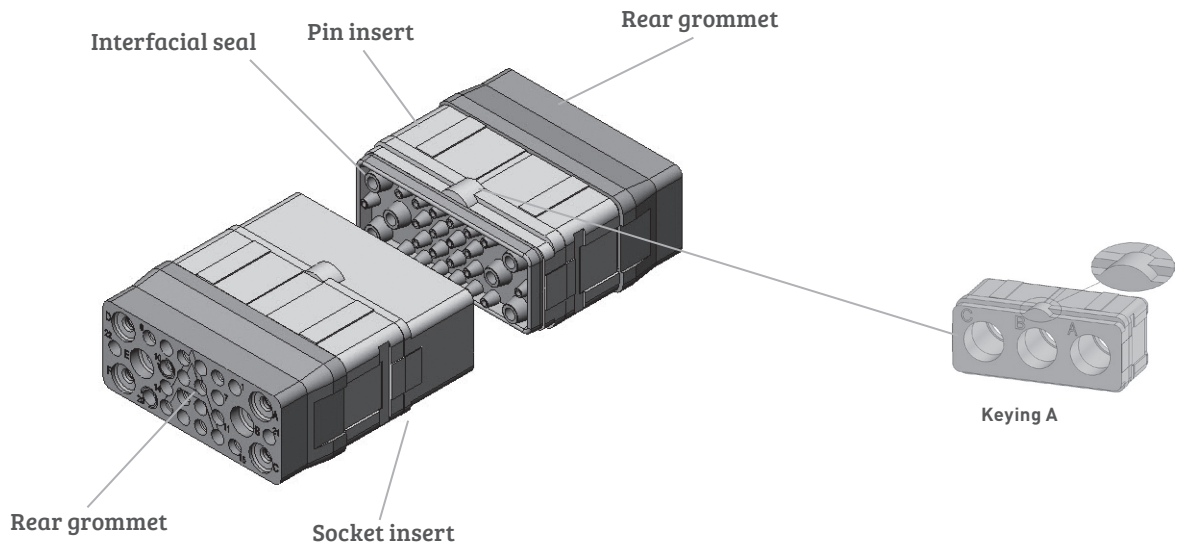
A: insert with keying A

Contact _____

Without code: insert delivered without contact

S: Signal and power crimp contacts are delivered with insert but uninstalled (refer to page 2-8)

Inserts 00, 1C1, 1P1, F6, C3, P3, 3Q3, 12F6, F12C and 3T3 are not available in S contact version



INSERTS

CONTACTS


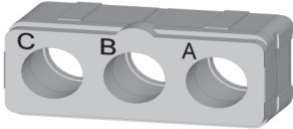
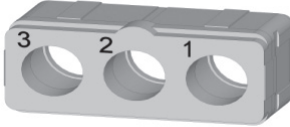
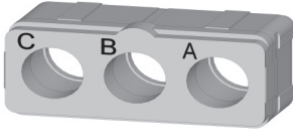
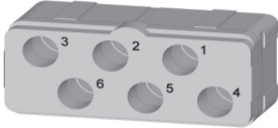
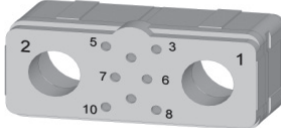

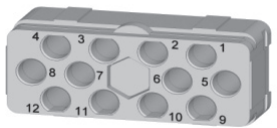
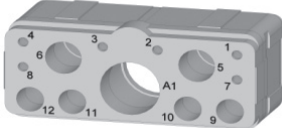
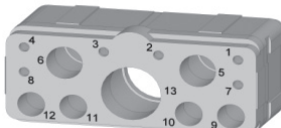
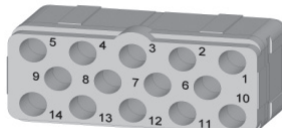
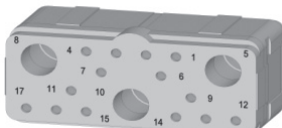
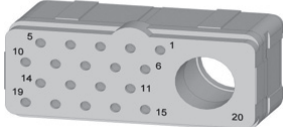
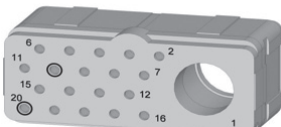
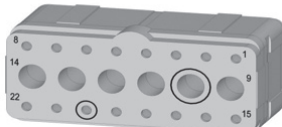
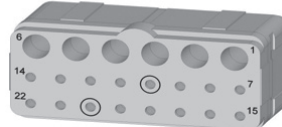
CONNECTORS & ACCESSORIES

EPXA Inserts Arrangements

| | | | |
|--|--|--|--|
| | | | |
| <p>Insert name 00 Blank insert (1)</p> | <p>Insert name 1C1 1 x size 5 coax contact</p> | <p>Insert name 1P1 1 x size 5 power contact</p> | <p>Insert name 04 2 x size 15 or 16 contacts 2 x size 12 contacts</p> |
| | | | |
| <p>Insert name 09 3 x size 20 contacts 6 x size 15 or 16 contacts</p> | <p>Insert name 14 14 x size 20 contacts</p> | <p>Insert name 14M 8 x size 22 contacts 3 x size 20 contacts 3 x size 15 or 16 contacts</p> | <p>Insert name 17 12 x size 22 contacts 5 x size 20 contacts</p> |
| | | | |
| <p>Insert name 20 20 x size 22 contacts</p> | <p>Insert name F6 6 x size 16 optical LuxCis® termini</p> | | |

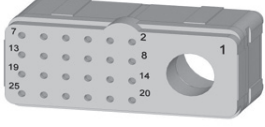
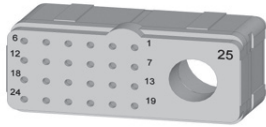
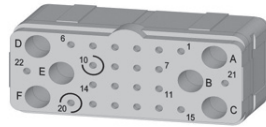
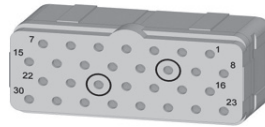
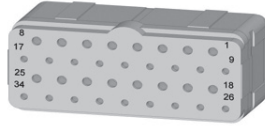
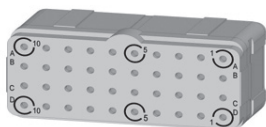
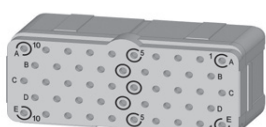
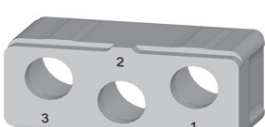
EPXB Inserts Arrangements

Full size inserts arrangements are compliant with EN4644.

| | | | |
|---|---|---|---|
|  |  |  |  |
| Insert name 00 Dummy insert | Insert name C3 3 x size 5 contacts | Insert name P3 3 x size 5 power contacts | Insert name 3Q3 3 x size 8 quadax contacts |
|  |  |  |  |
| Insert name 06 6 x size 12 contacts | Insert name 10Q2 8 x size 20 contacts 2 x size 8 quadax contacts | Insert name 12F6 6 x size 16 Optical LuxCis® termini 6 x size 16 special electrical contacts | Insert name F12C 12 x size 16 Optical LuxCis® termini |
|  |  |  |  |
| Insert name 13C1 6 x size 20 contacts 4 x size 15 or 16 contacts 2 x size 12 contacts 1 x size 5 contact | Insert name 13P1 6 x size 20 contacts 4 x size 15 or 16 contacts 2 x size 12 contacts 1 x size 5 power contact | Insert name 14 14 x size 15 or 16 contacts | Insert name 17 14 x size 20 contacts 3 x size 12 contacts |
|  |  |  |  |
| Insert name 20C1 19 x size 20 contacts 1 x size 5 contact | Insert name 20P1 19 x size 20 contacts 1 x size 5 power contact | Insert name 22 16 x size 20 contacts 6 x size 15 or 16 contacts | Insert name 22V 16 x size 20 contacts 6 x size 16 contacts |

EPXB Inserts Arrangements

Full size inserts arrangements are compliant with EN4644.

| | | | |
|---|---|---|---|
|  |  |  |  |
| <p>Insert name 25P1 24 x size 22 contacts 1 x size 8 power contact</p> | <p>Insert name 25Q1 24 x size 22 contacts 1 x size 8 quadrax contact</p> | <p>Insert name 28 22 x size 22 contacts 6 x size 15 or 16 contacts</p> | <p>Insert name 30 30 x size 20 contacts</p> |
|  |  |  |  |
| <p>Insert name 34 18 x size 22 contacts 16 x size 20 contacts</p> | <p>Insert name 40 40 x size 22 contacts</p> | <p>Insert name 48 48 x size 22 contacts</p> | <p>Insert name 3T3 3 x size 8 BMA contact⁽¹⁾</p> |

NOTE:

(1) 3T3 pin insert only is available. It is mateable with 3Q3 socket insert

Signal & Power Crimp Contacts

QM series offers a wide range of contacts compliant with EN3155 and SAE AS 39029. This range covers any technology in aerospace application using either cable or printed circuit boards' solutions:

- Signal and power contacts
- High frequency with coax, twinax and triax contacts
- Ethernet links with Quadrax contacts
- Optical links with LuxCis® contacts

Discover our brand new range of signal & power contacts with gold selective plating

Features and benefits :

- Significant reduction of cost of ownership
- Reduced dependence to gold rate fluctuation
- No change in the contact integration process

Specifications:

- Same contact design as full plated version
- Contact interface gold plated with 1.27µm
- For crimp version, no consequence on crimping process
- For PC tail version, use of selective plated contacts has no impact on PCB design
- Product qualification is available upon request

| Contact size | Wire size | Type | Part number full plated | Part number selectively plated | Crimping tool | Positioner | Selector | Ins / ext tool | Type of tool | |
|--------------|-------------------------------|--------|--------------------------------|--------------------------------|---|------------------------|--------------------------|-----------------------------|--------------------------------|-----------|
| 22 | 22 | Pin | 617200 | 617200100 | 282281 M22520/2-01 | 282970 M22520/2-23 | 4 | 282522 (M81969/14-01) | Plastic | |
| | 24 | | | | | | 3 | | | |
| | 26 | Socket | 617300 | 617300100 | | | 3 | | | |
| 20 | 20 | Pin | 617221 | 617221100 | 282281 M22520/2-01 | 282971 M22520/2-08 | 7 | 282522001 (M81969/39-01) | Plastic | |
| | 22 | | | | | | 6 | | | |
| | 24 | Socket | 617320 | 617320100 | | | 5 | | | |
| 16 | 16 | Pin | 617240 | 617240100 | 282291 M22520/1-01 | 282972 M22520/1-02 | 6 | 282515 (M81969/14-03) | Plastic | |
| | | | | | | | 18 | | | 5 |
| | | 20 | Socket | 617340 | | | 617340100 | | | 4 |
| | Ground block | 20 | Pin | 617221050 | n/a | 282281 M225520/2-01 | 282581015 M22520/2-11 | 7 | 282886 | Metal |
| | | | Socket | N/A | n/a | | | | | |
| | for optical electrical insert | 16 | Pin | 617235003 ⁽¹⁾ | n/a | 282291 M22520/1-01 | 282581013 | 6 | 282515 (M81969/14-03) | Plastic |
| 18 | | 5 | | | | | | | | |
| 20 | | 4 | | | | | | | | |
| 12 | 12 | Pin | 617250 | 617250100 | 282291 M22520/1-01 | 282972 M22520/1-02 | 8 | 282549004 (M81969/14-04) | Plastic | |
| | 14 | Socket | 617350 | 617350100 | | | 7 | | | |
| | 16 | | | | | | 6 | | | |
| 8 | 8 | Pin | 617291002 ^(2&3) | n/a | R282600000 M22520/23-01 + Die set R282650000 M22520/23-02 | 282588 | n/a | 282549001 | Metal | |
| | 10 | Socket | 617391002 ^(2&3) | n/a | | | | | | |
| 5 | 8 | Pin | 617280 ^(2&4) | n/a | R282600000 M22520/23-01 + Die set R282650000 M22520/23-02 | 282557020 | n/a | 282946 (M81969/28-01) | Metal | |
| | | 10 | Socket | 617390 ^(2&4) | | n/a | | | | 282557021 |
| | 12 | Pin | 617260001 ^(2&4) | n/a | 282613 | 282586003 | 6 | | | |
| | | | | | | 16 | | Socket | 617370001 ^(2&4) | n/a |

Notes

(1) Electrical contacts for optical inserts are always pin contacts (hermaphrodite)

(2) In order to make these contacts environmental, it is necessary to add a sealing boot. Please, contact us for additional information

(3) These power contacts can be used in power inserts only (25P1 EPXB insert)

(4) These power contacts can be used in power inserts only (P3, 13P1 and 20P1 EPXB inserts)

Signal & Power Crimp Contacts

| Contact size | | Wire size | Type | Part number fully plated | Crimping tool | Positioner | Selector | Ins / ext tool | Type of tool |
|--------------|--|-----------|--------|--------------------------|-----------------------|-----------------------|----------|-----------------------------|--------------|
| 22 | reduced crimp barrel | 28 | Pin | 617201(1) | 282281 M22520/2-01 | 282970 M22520/2-23 | 5 | 282522 (M81969/14-01) | Plastic |
| | | 30 | Socket | 617301(1) | | | 4 | | |
| | oversize crimp barrel | 20 | Pin | 617200200 | 282281 M22520/2-01 | 282970 M22520/2-23 | 5 | | |
| | | 22 | Socket | 617300200 | | | 4 | | |
| | | 24 | | | | | 3 | | |
| | | | | | | | | | |
| 20 | reduced crimp barrel | 22 | Pin | 617224001(1) | 282281 M22520/2-01 | 282971 M22520/2-08 | 4 | 282522001 (M81969/39-01) | Plastic |
| | | 24 | Socket | 617324001(1) | | | 3 | | |
| | | 26 | | | | | 3 | | |
| | oversize crimp barrel | 18 | Pin | 617221200 | 282281 M22520/2-01 | 282971 M22520/2-08 | 5 | | |
| | | 20 | Socket | 617320200 | | | 5 | | |
| | | 22 | | | | | 4 | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 16 | reduced crimp barrel | 20 | Pin | 617241(1) | 282291 M22520/1-01 | 282972 M22520/1-02 | 5 | 282515 (M81969/14-03) | Plastic |
| | | 22 | Socket | 617341(1) | | | 5 | | |
| | | 24 | | | | | 4 | | |
| | reduced crimp barrel for optical electrical insert | 20 | Pin | 617235002(1&2) | 282291 M22520/1-01 | 282581013 | 5 | | |
| | | 22 | | | | | 5 | | |
| | | 24 | | | | | 4 | | |
| | oversize crimp barrel | 14 | Pin | 617240200 | 282291 M22520/1-01 | 282972 M22520/1-02 | 6 | | |
| | | 16 | Socket | 617340200 | | | 5 | | |
| | | 18 | | | | | 5 | | |

NOTES:

- (1) When smaller wire sizes are used on contacts with reduced crimp barrel, the wire will not provide sealing to the grommet. If sealing is required, please contact Radiall
- (2) Electrical contacts for optical insertss are always pin contacts (hermaphrodite)

Coaxial Crimp Contacts

| Contact size | Cable type | Type | Environmental part number | Non-environmental part number | Ins/ext tool | Type of tool |
|--------------|---|--------|---------------------------|-------------------------------|--------------------------|--------------|
| 15-16 | RG174-RG179 RG316 | Pin | 617130 | | 282512 | Metal |
| | | Socket | 617030 | | | |
| | RG178 | Pin | 617131 | | | |
| | | Socket | 617031 | | | |
| | GORE/AXON P812817 FILECA F1703-134 FILOTEX SP132868 | Pin | 617132 | | | |
| | | Socket | 617032 | | | |
| | RG178 DT | Pin | 617133 | | | |
| | | Socket | 617033 | | | |
| | UT .047 | Pin | 617135 | | | |
| | | Socket | 617035 | | | |
| 12 | UT.085-RG405 | Pin | 617160 | | 282549004 (M81969/14-04) | Plastic |
| | | Socket | 617060 | | | |
| 5 | RG58-RG141 | Pin | 617101001 | 617101 | 282946 (M81969/28-01) | Metal |
| | | Socket | 617001001 | 617001 | | |
| | RG142 - RG400 | Pin | 617102001 | 617102 | | |
| | | Socket | 617002001 | 617002 | | |
| | RG174-RG316 RG188 | Pin | 617103001 | 617103 | | |
| | | Socket | 617003001 | 617003 | | |
| | RG178-RG196 | Pin | 617104001 | 617104 | | |
| | | Socket | 617004001 | 617004 | | |
| | RG180 | Pin | 617105001 | 617105 | | |
| | | Socket | 617005001 | 617005 | | |

Twinax and Triax Crimp Contacts

| Contact size | Cable type | Type | Environmental part number | Non-environmental part number | Ins/ext tool | Type of tool |
|--------------|-------------------------------------|--------|---------------------------|-------------------------------|-----------------------------|--------------|
| 12 Triax | ECS0700 | Pin | 617190010 | | 282549004 (M81969/14-04) | Plastic |
| | | Socket | 617090010 | | | |
| | M17/176-00002 | Pin | 617190012 | | | |
| | | Socket | 617090012 | | | |
| 8 Triax | TENSOLITE | Pin | 617165021 | 617165020 | 282549001 (M81969/28-03) | Metal |
| | 24473/03159X-2 | Socket | 617065021 | 617065020 | | |
| | | Pin | 617165 | 617165001 | | |
| | WHITMOR W26751575 | Socket | 617065 | 617065001 | | |
| 8 Twinax | ABS0386WF24 & TYCO 1726A1424A | Pin | 617165011 | 620165010 | | |
| | | Socket | 617065011 | 620065010 | | |
| 5 Triax | M17/176-0002 | Pin | 617150001 | 617150 | 282946 (M81969/28-01) | Metal |
| | | Socket | 617050001 | 617050 | | |
| | PAN6421 | Pin | 617152001 | 617152 | | |
| | | Socket | 617052001 | 617052 | | |

Quadrax & BMA Crimp Contacts



QUADRAX CONTACTS

| Contact size | Cable type | Type | Environmental part number | Non-environmental part number | Extraction tool in metal |
|--------------|----------------------------|--------|---------------------------|-------------------------------|--------------------------|
| 8 | Ethernet cable | Pin | 617175011 | 617175012 | 282549001 |
| | ABS0972 & ABS1503 | Socket | 617075011 | 620075010 | |
| | TENSOLITE | Pin | 617175051 | 617175052 | |
| | NF24Q100 | Socket | 617075051 | 620075050 | |
| | Tensolite NF26Q100 JSF Y18 | Pin | 617175053 | 617175054 | |
| | | Socket | 617075053 | 620075021 | |



BMA CONTACTS

| Contact size | Cable type | Connector Type | Environmental part number | Non-environmental part number | Frequency range | Max VSWR | Insertion loss |
|--------------|---|--------------------|---------------------------|-------------------------------|-----------------|----------|-------------------------------------|
| 8 | SHF5 - SHF5M ⁽¹⁾ | Pin ⁽²⁾ | 617171011 | 617171010 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |
| | RG142 | Pin ⁽²⁾ | 617171021 | 617171020 | DC-12.4 GHz | 1.35 | 0.11 dB at max frequency (12.4 GHz) |
| | SHF2.4M (1) / UT.085 Harbour SS405 Times Tflex405 | Pin ⁽²⁾ | 617171031 | 617171030 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |
| | SHF5 - SHF5M ⁽¹⁾ | Socket | 617071011 | 617071010 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |
| | RG142 | Socket | 617071021 | 617071020 | DC-12.4 GHz | 1.35 | 0.11 dB at max frequency (12.4 GHz) |
| | SHF3 ⁽¹⁾ | Socket | 617071041 | 617071040 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |

Extraction tool 282549001 is used for size 8 BMA contacts.
 Environmental BMA contacts are all provided with sealing boots.

NOTES:

- (1) The BMA contacts which can accommodate SHF cables requires a wiring done by Radiall .Please contact Radiall for information
- (2) Pin BMA can only be installed in modified EPXB Quadrax insert such as 3T3P. Ex: EPXBE3T3PA

LuxCis® Fiber Optic Contacts

LUXCIS® CONTACTS

The LuxCis® product range is a proven, flexible and always expanding fiber optic interconnect solution offering high speed communication in aerospace and other harsh environments.

OPTICAL PERFORMANCES

| | MultiMode (PC) 850 / 1300 nm | SingleMode (UPC) 1310 / 1550 nm |
|--|---------------------------------|------------------------------------|
| Insertion Loss (IL) Mean (IEC 61300-3-4 Method B) | 0.1 dB | 0.15 dB |
| Return Loss (RL) (IEC 61300-3-6) | > 20 dB | > 50 dB |

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

| | Standard | Performances |
|--|----------------------------|---|
| Thermal cycling | SAE AS 13441 method 1003.1 | -55°C/+125°C (cable dependant) |
| Temperature Endurance | TIA/EIA 455-4 | 1000 h @ 125°C (cable dependant) |
| Vibration | TIA/EIA 455-11 | 27 Grms |
| Shocks | TIA/EIA 455-14 | 50 G, 11 ms |
| Durability | TIA / EIA 364-09 | 500 cycles |
| Maintenance ageing | SAE AS 13441 method 2002.1 | 10 cycles |
| Cable retention Cable retention 1.8 mm diameter 900 µm diameter | SAE AS 13441 method 2009.1 | 68 N 7 N |
| Humidity | TIA EIA 455-5 | 10 cycles / 24 h 90% RH -25°C / +65°C |

LUXCIS® CONTACT PART NUMBERING SYSTEM



F725 : LuxCis® series

Ferrule type

- 00**: PC ferrule for SingleMode fiber
- 03**: PC ferrule for 50/125 or 62,5/125 um MultiMode fiber
- 04**: PC ferrule for 100/40 um MultiMode fiber
- 05**: PC ferrule for 200/230 um MultiMode fiber
- 50**: APC ferrule for SingleMode fiber

Cable type and diameter

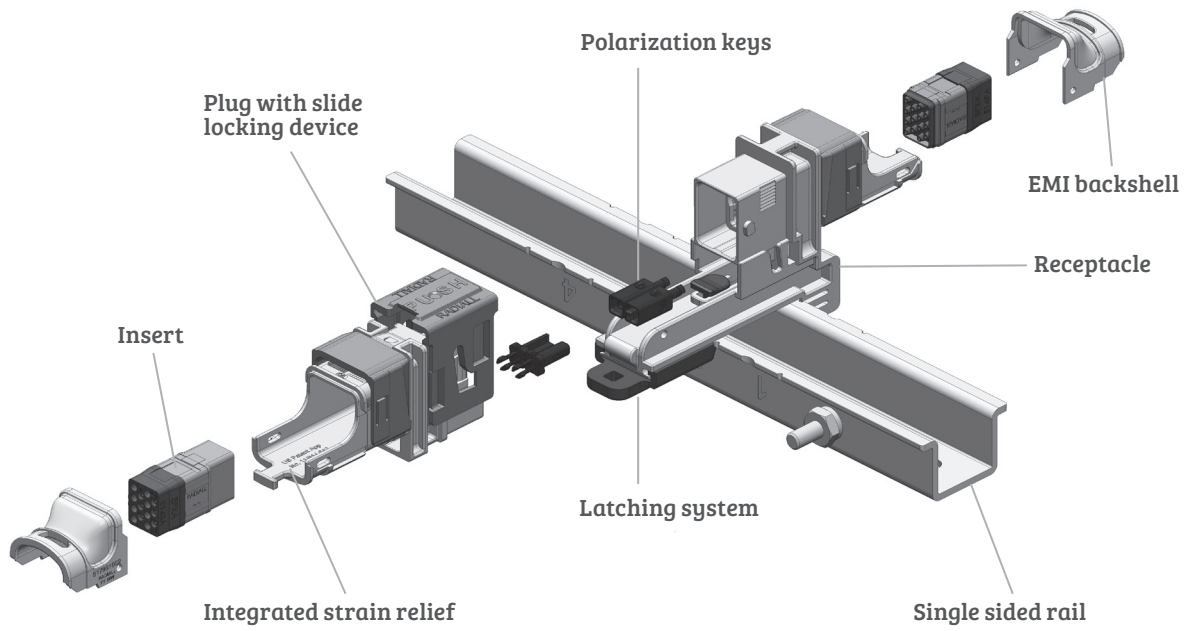
- 118**: 900 µm cable
- 318**: 1.2 mm cable with strengthening members, tight structure
- 419**: 1.6 to 2.2 mm cable, loose structure
- 519**: 1.6 to 2.2 mm cable, tight structure

NOTE:

Radiall can support you with your cable and harness assemblies
Please contact your sales representative

QM SERIES

QM Size A Product Overview

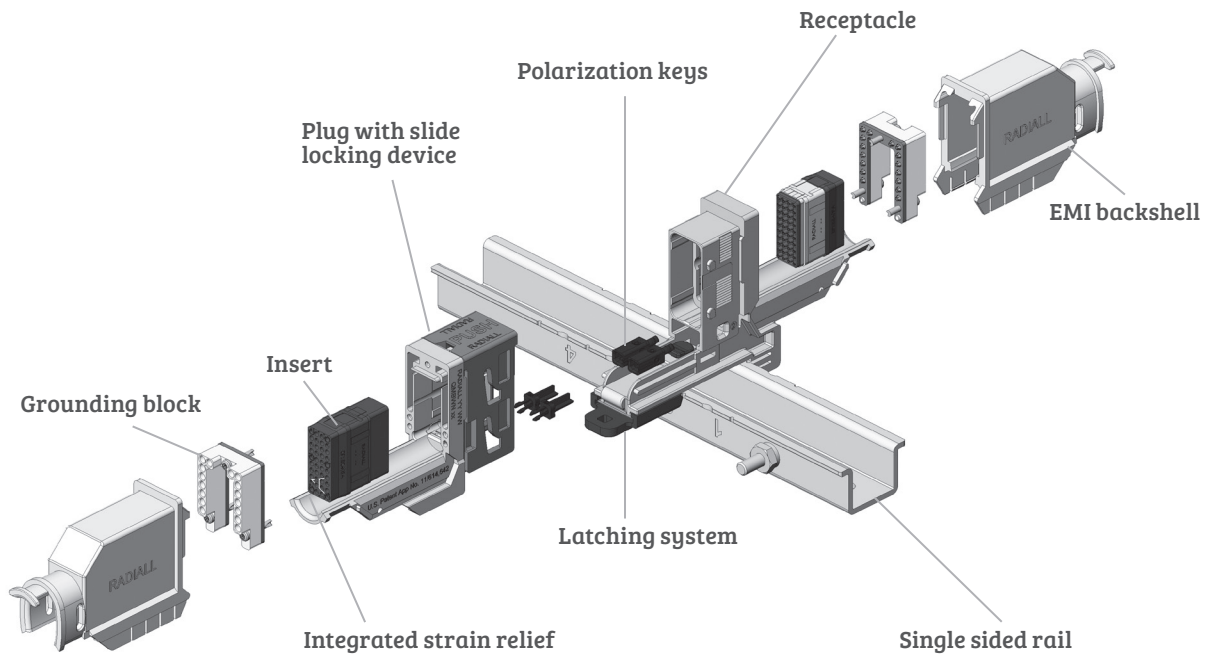


INSERTS

CONTACTS

CONNECTORS & ACCESSORIES

QM Size B Product Overview



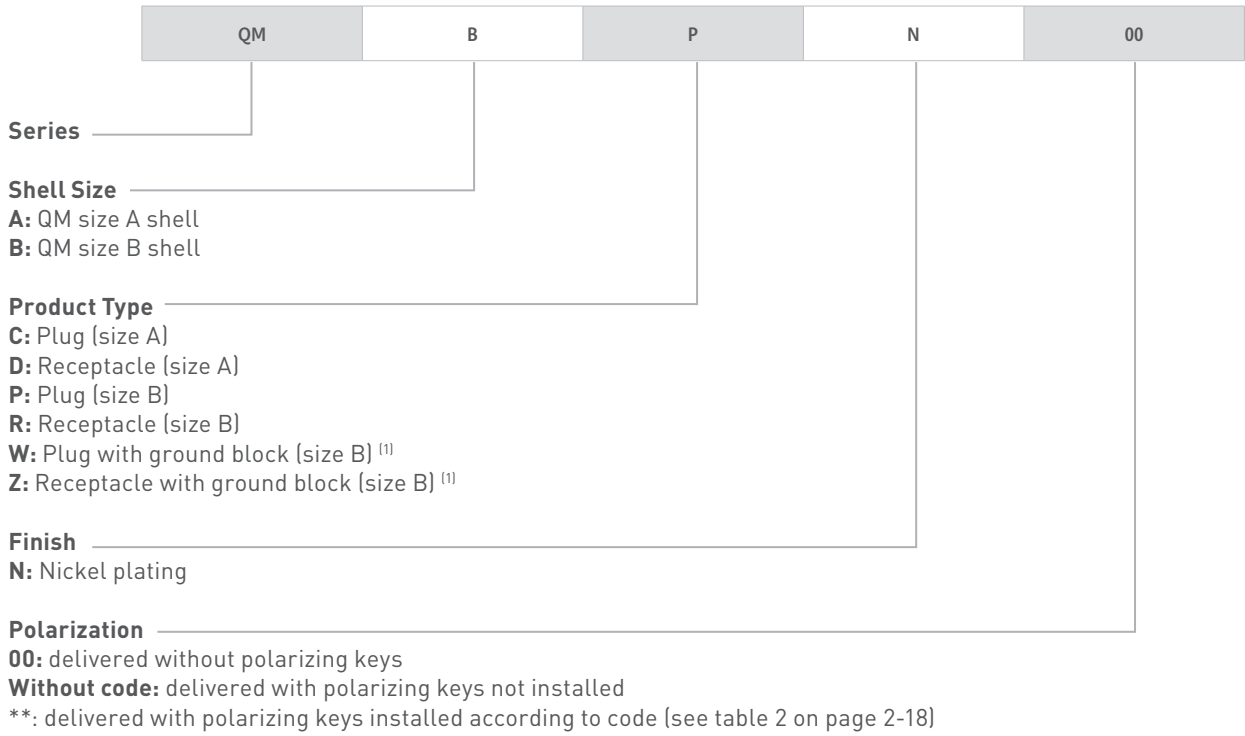
QM SERIES

INSERTS

CONTACTS

CONNECTORS & ACCESSORIES



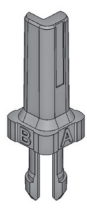
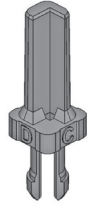
How to Order QM Shell



NOTE:
(1) Shells with ground block are not compatible with EMI backshell

Polarization Code

QM receptacle shell will be delivered with 2 polarization keys and QM plug with 2 polarization posts.

| Polarization keys | | Polarization posts | |
|---|---|---|---|
|  |  |  |  |
| View shows A & D | View shows C & B | View shows A & B | View shows C & D |

16 possible codings are available

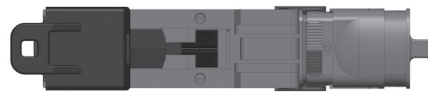
| | | | | | | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Key position | A | A | A | A | B | B | B | B | C | C | C | C | D | D | D | D |
| Key position | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D |

QM SIZE A CONNECTOR

Tips to read polarization code: polarization code can be read when connector is unmated, underneath the plug and receptacle.



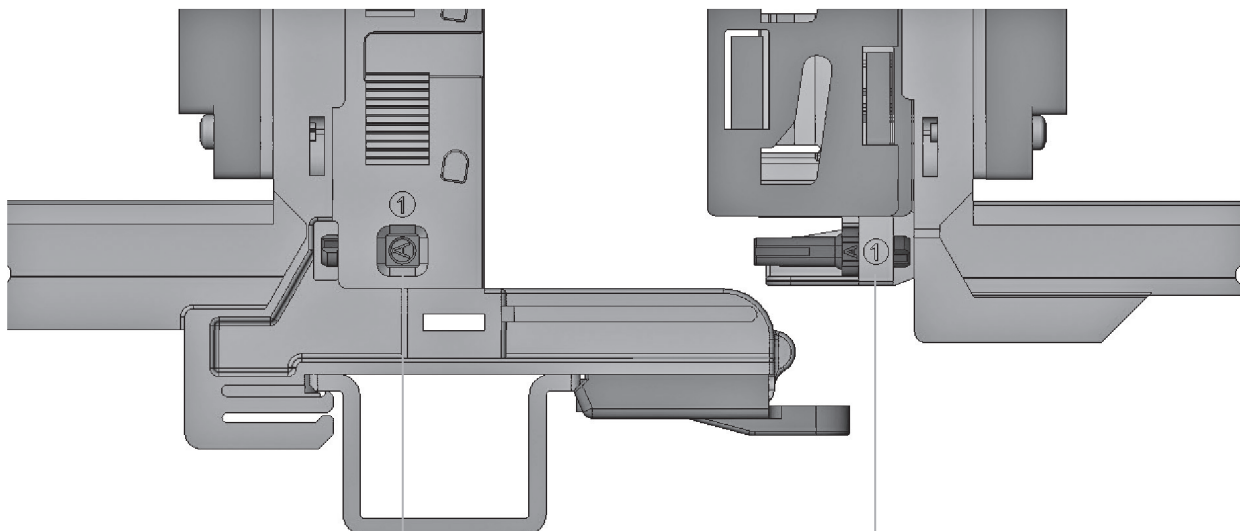
Polarization posts under QM size A plug



Polarization keys under QM size A receptacle

QM SIZE B CONNECTOR

Tips to read polarization code: to be able to read properly the polarization code, you shall be able to read at the same time the part number marked on the connector.

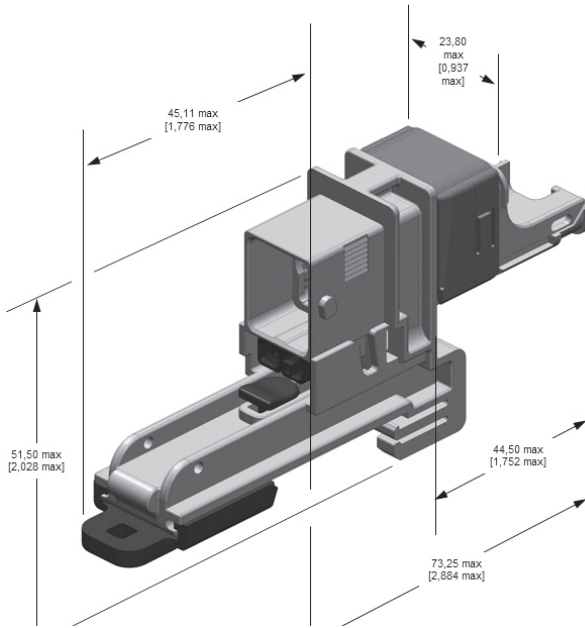


Code on polarization keys

Code on polarization posts

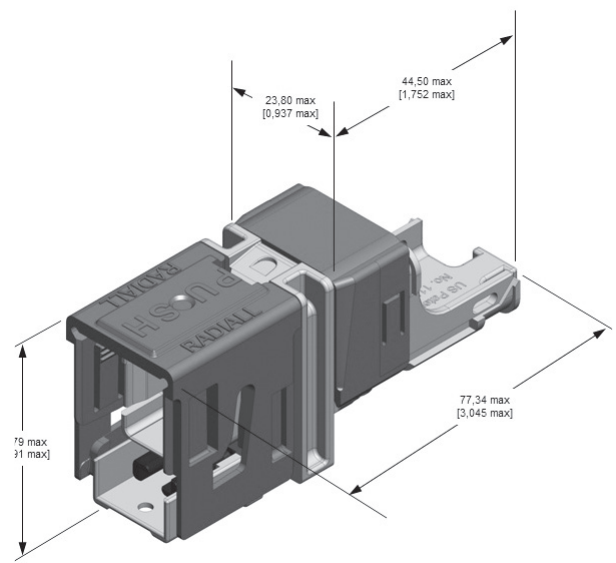
QM Size A Shell Dimensions

Receptacle



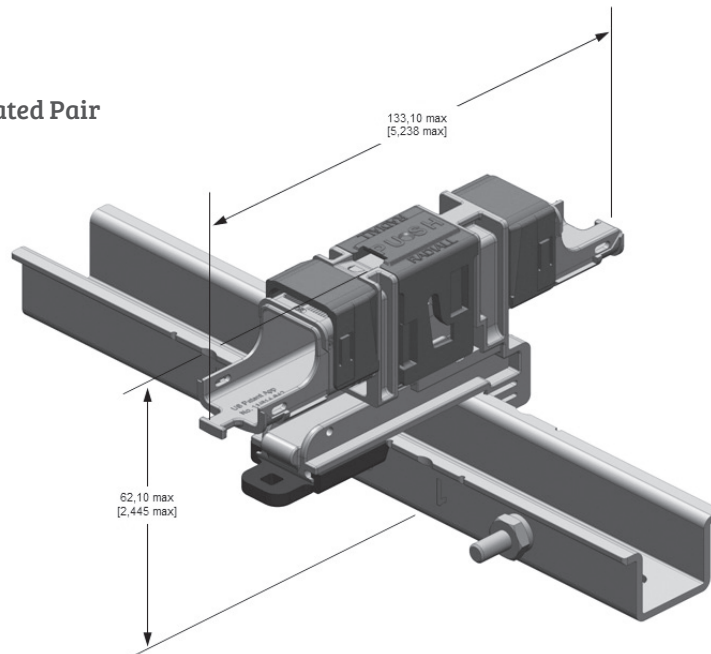
QMADN : 39g

Plug



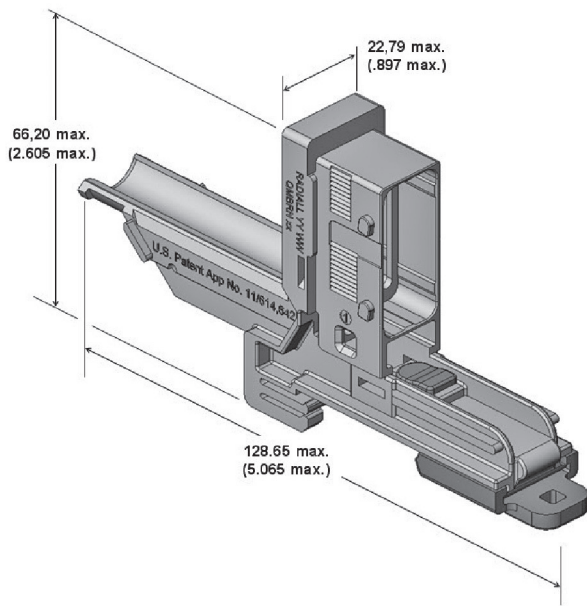
QMACN : 24g

Mated Pair



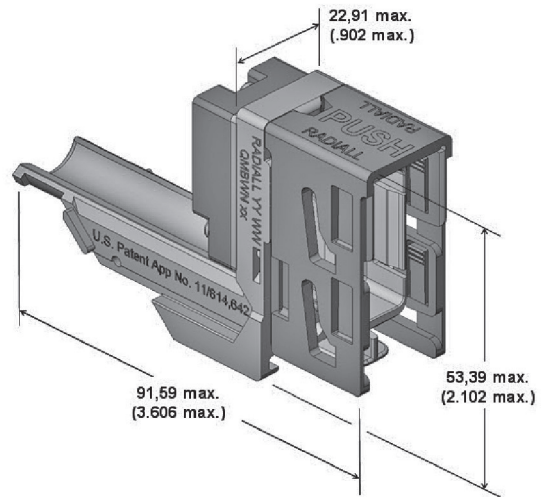
QM size B shell dimensions

Receptacle



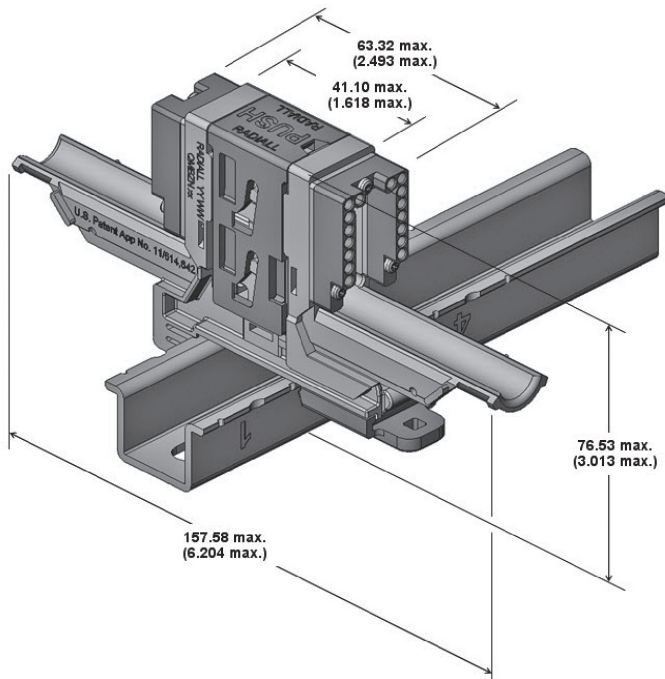
QMBRN: 41g
QMBZN: 48g

Plug



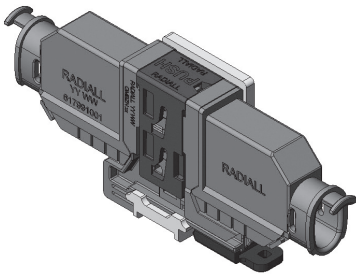
QMBPN: 31g
QMBWN: 38g

Mated Pair

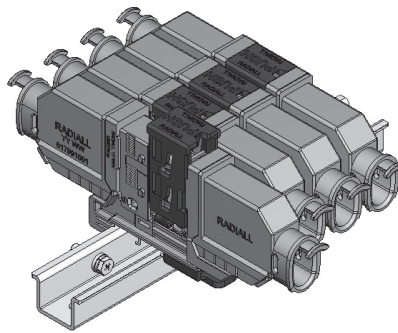


How to Order QM Mounting Device

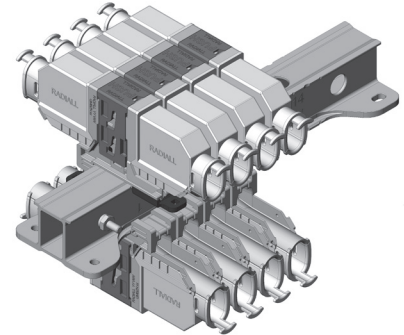
| | | | | | |
|--|----|---|-----|---|---|
| | QM | U | 04S | A | N |
| Series | | | | | |
| Mounting Device | | | | | |
| L: L-Bracket | | | | | |
| U: Single sided rail | | | | | |
| H: Double sided rail | | | | | |
| Number of connector position | | | | | |
| Refer to tables on pages 2-26 to 2-30 for number of connector position | | | | | |
| Mounting device material | | | | | |
| A: Aluminium | | | | | |
| Finish | | | | | |
| N: Nickel | | | | | |



L-Bracket



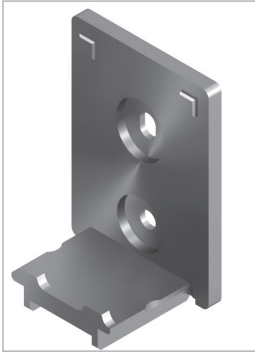
Single sided rail



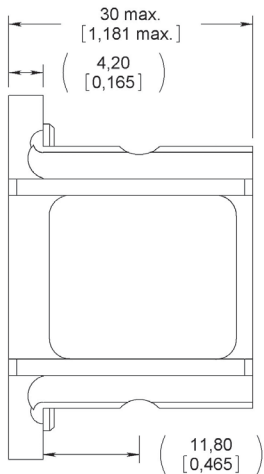
Double sided rail

L-Bracket Dimensions

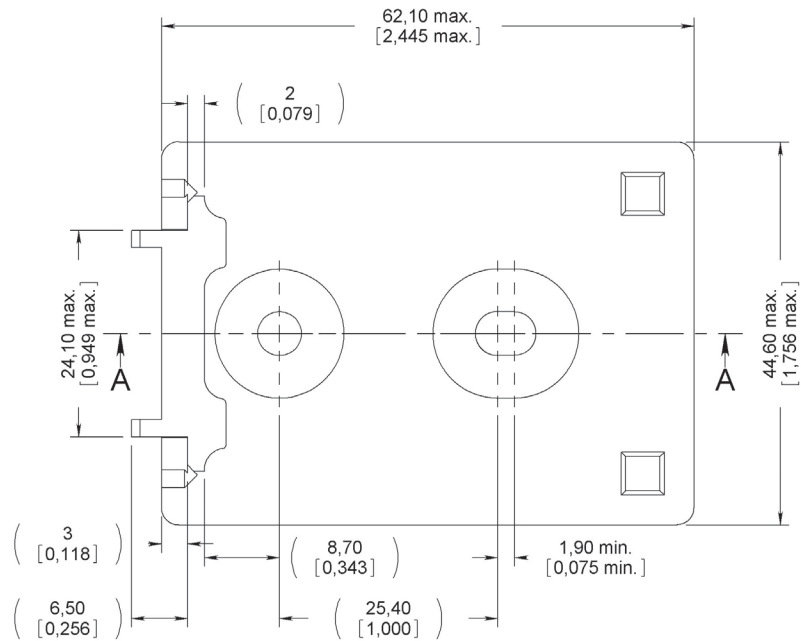
| Number of connector position | Length mm (inch) | Weight g (oz) |
|------------------------------|------------------|---------------|
| 01 | 65.60 (2.45) | 30 (1.05) |



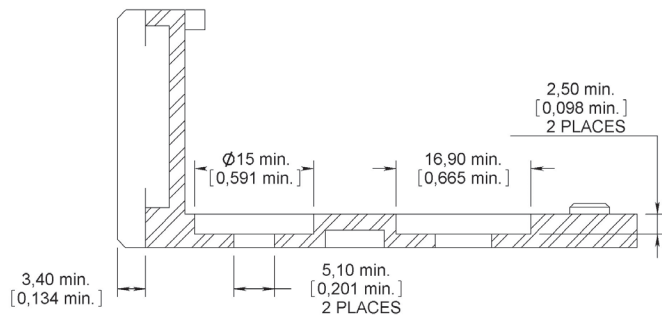
Side view



Top view



Cross section



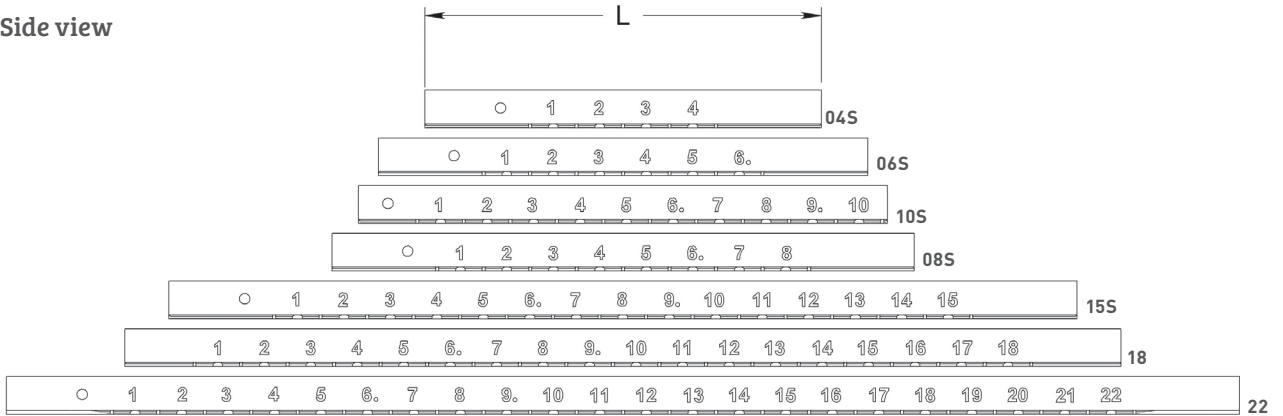
INSERTS

CONTACTS

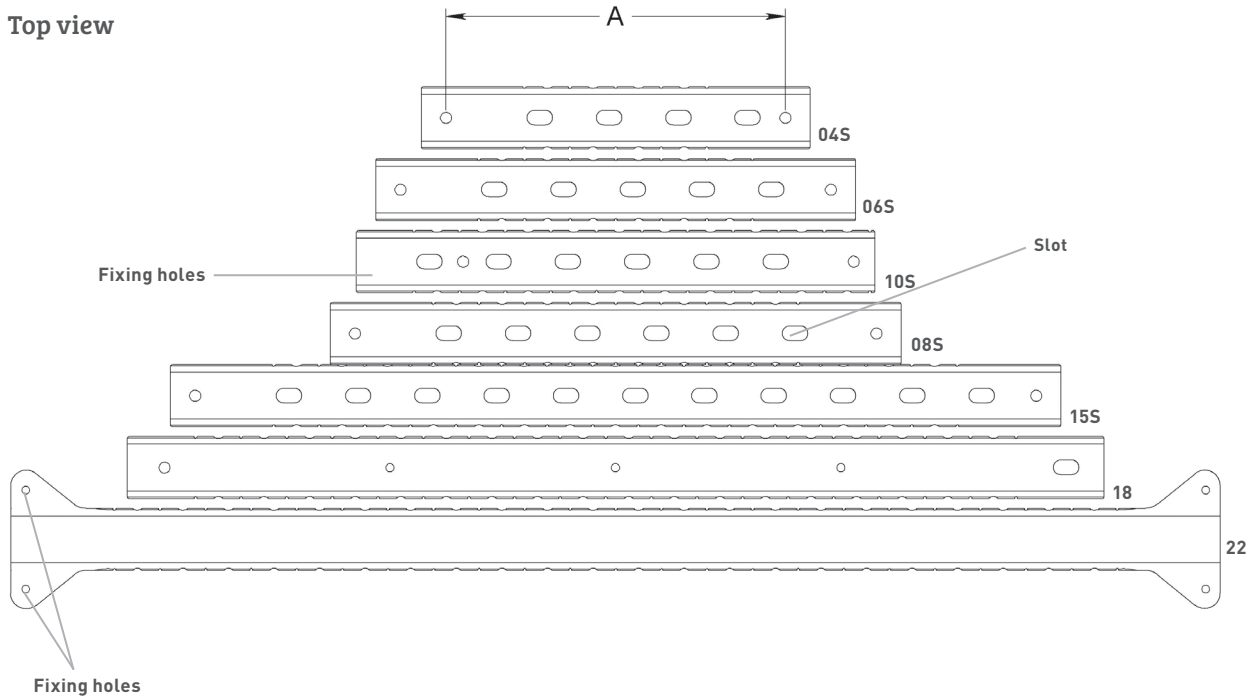
CONNECTORS & ACCESSORIES

Single Sided Rails Range

Side view



Top view



Single Sided Rails Dimensions

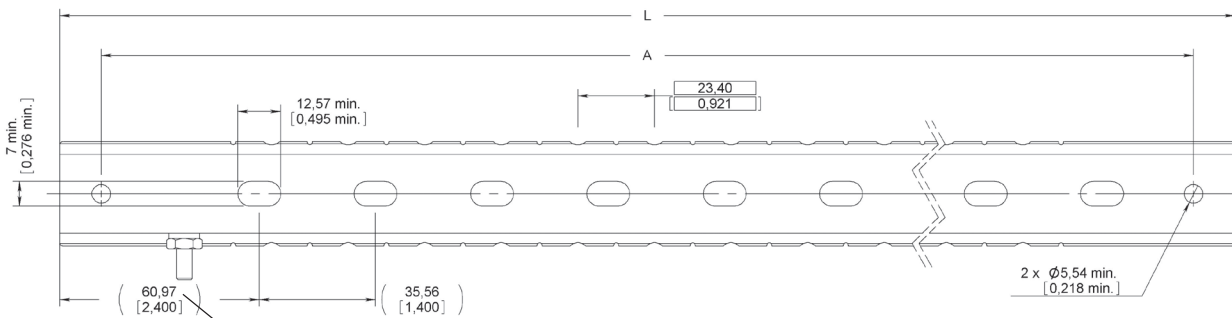
04S, 06S, 08S, 10S & 15S SINGLE SIDED RAIL

These single sided rails are always delivered with slot and ground stud.

SINGLE SIDED RAIL

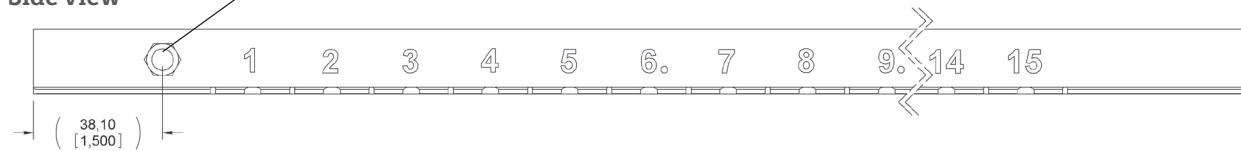
| Number of connector position | Length mm (inch) | A distance between fixing holes mm (inch) | Number of slots | Number of ground studs | Weight g (oz) |
|------------------------------|------------------|---|-----------------|------------------------|---------------|
| 04S | 199.60 [7.86] | 175 [6.86] | 4 | 1 | 85 [3] |
| 06S | 246.40 [9.70] | 221 [8.70] | 5 | 1 | 90 [3.20] |
| 08S | 293.10 [11.54] | 268 [10.54] | 6 | 1 | 100 [3.53] |
| 10S | 266.19 [10.48] | 200 [7.895] | 6 | 1 | 100 [3.53] |
| 15S | 457.20 [18] | 432 [17] | 11 | 1 | 220 [7.76] |

Top view

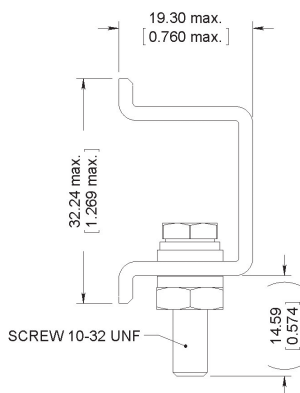


Ground stud

Side view



Cross section

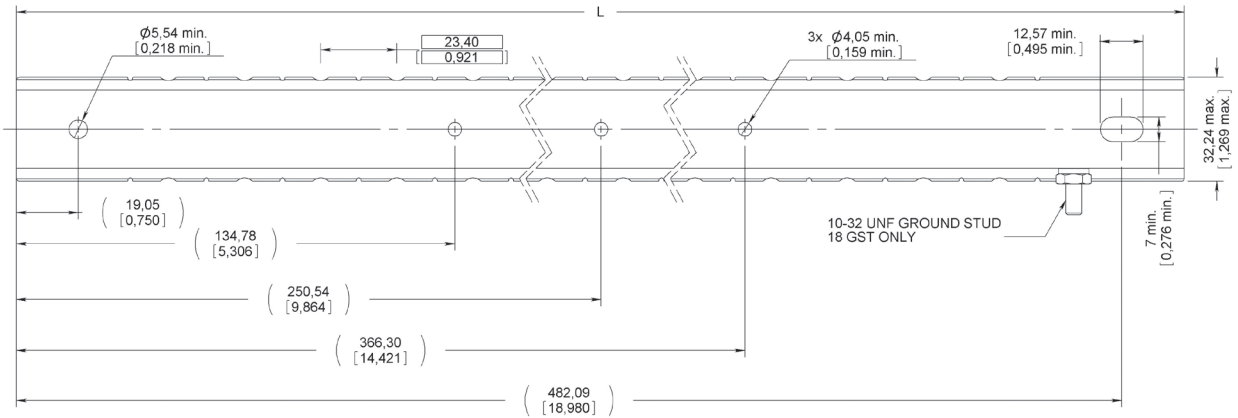


Single Sided Rails Dimensions

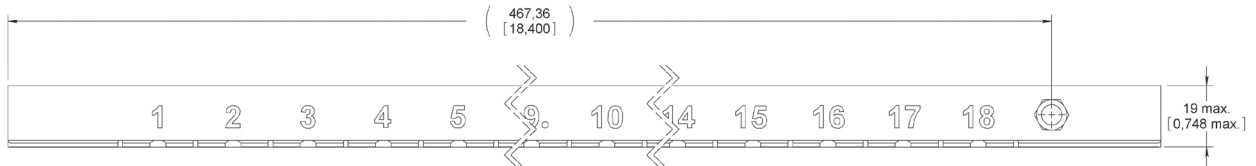
18 SINGLE SIDED RAIL

| Number of connector position | Length mm (inch) | Number of slots | Number of ground studs | Weight g (oz) |
|------------------------------|------------------|-----------------|------------------------|---------------|
| 18 | 501.40 (19.74) | None | 1 | 170 (6) |

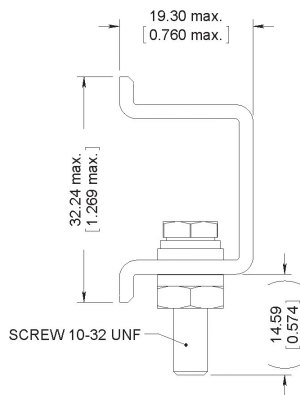
Top view 18



Side view 18



Cross section

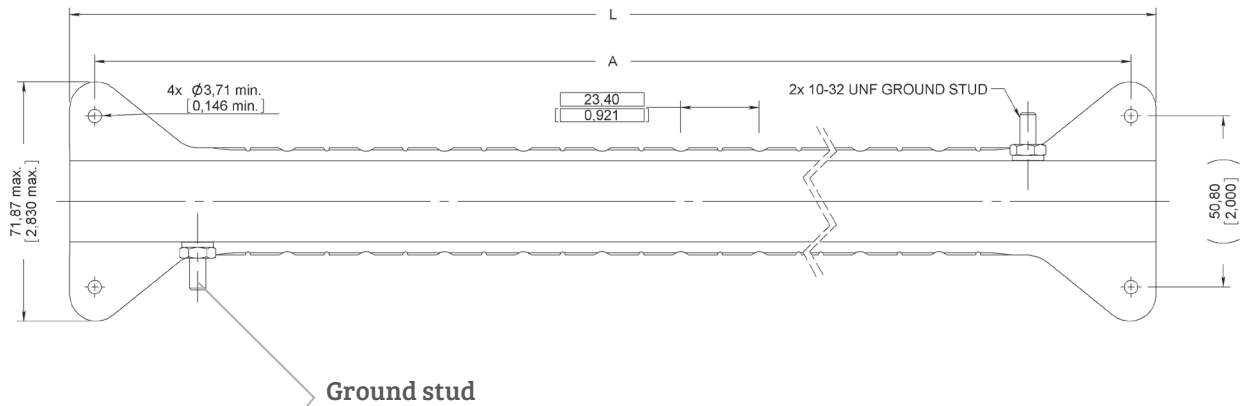


Single Sided Rails Dimensions

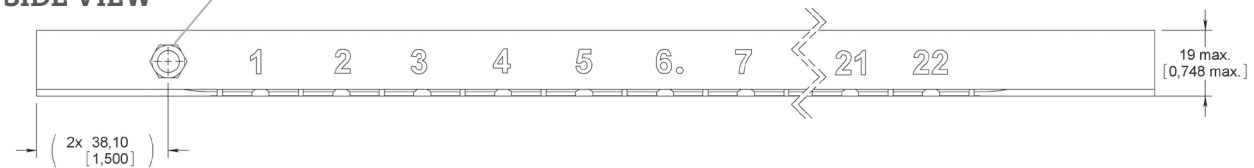
22 SINGLE SIDED RAIL

| Number of connector position | Length mm (inch) | A distance between fixing holes mm (inch) | Number of slots | Number of ground studs | Weight g (oz) |
|------------------------------|------------------|---|-----------------|------------------------|---------------|
| 22 | 620.80 [24.44] | 606 [23.85] | none | 2 | 230 [8.11] |

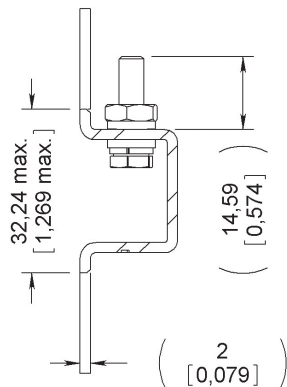
TOP VIEW



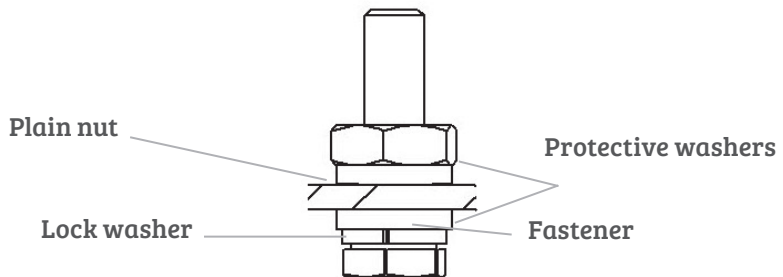
SIDE VIEW



CROSS SECTION



GROUND STUD STACK-UP DETAIL



QM SERIES

INSERTS

CONTACTS

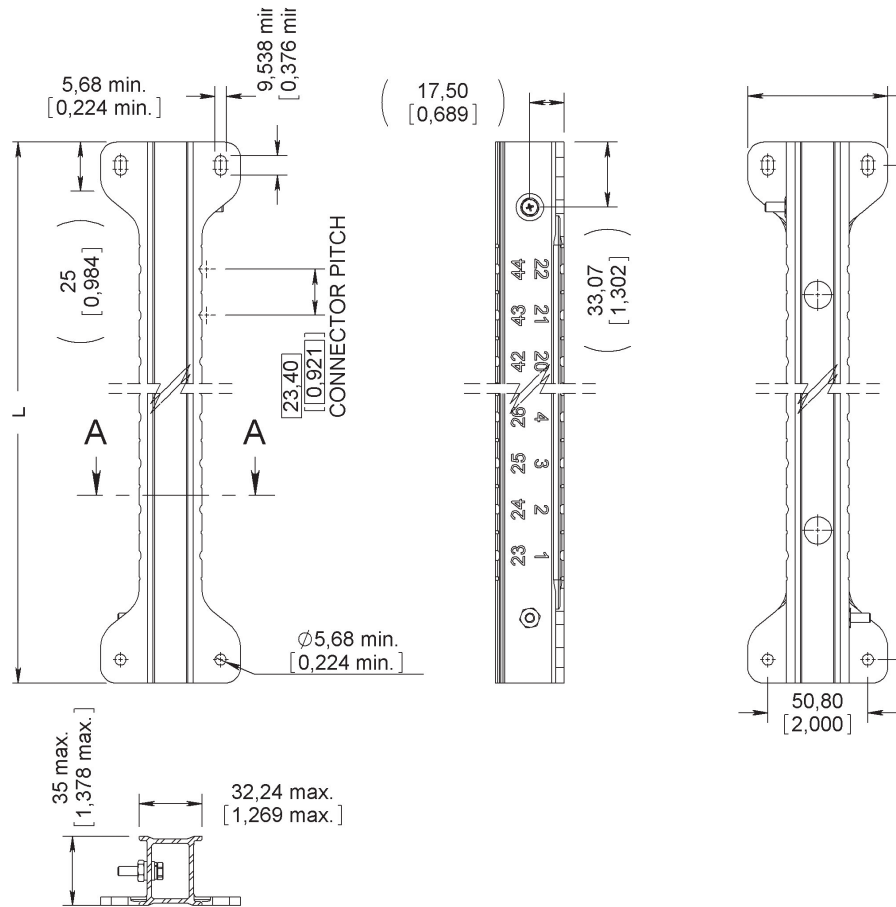
CONNECTORS & ACCESSORIES

Double Sided Rails Dimensions

DOUBLE SIDED RAILS

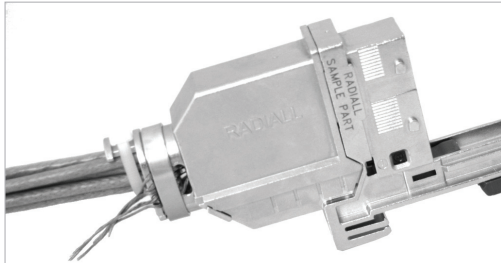
Connector pitch is 23.40 mm on every double sided rail models.

| Number of connector position | Length mm (inch) | A distance between fixing holes mm (inch) | Number of ground studs | Weight g (oz) |
|------------------------------|------------------|---|------------------------|---------------|
| 14 | 270 (10.63) | 246 (9.69) | 2 | 263 (9.27) |
| 16 | 293 (11.55) | 269 (10.61) | 2 | 279 (9.84) |
| 18 | 317 (12.47) | 292 (11.53) | 2 | 298 (10.51) |
| 20 | 340 (13.39) | 316 (12.45) | 2 | 313 (11.04) |
| 22 | 363 (14.31) | 340 (13.37) | 2 | 332 (11.71) |
| 24 | 387 (15.23) | 363 (14.29) | 2 | 351 (12.38) |
| 26 | 410 (16.15) | 386 (15.21) | 2 | 370 (13.05) |
| 28 | 434 (17.07) | 410 (16.13) | 2 | 388 (13.68) |
| 30 | 457 (18) | 433 (17.06) | 2 | 405 (14.28) |
| 32 | 480 (18.92) | 457 (17.98) | 2 | 424 (14.95) |
| 34 | 504 (19.84) | 480 (18.90) | 2 | 443 (15.62) |
| 36 | 527 (20.76) | 503 (19.82) | 2 | 462 (16.29) |
| 38 | 551 (21.68) | 527 (20.74) | 2 | 481 (16.96) |
| 40 | 574 (22.60) | 550 (21.66) | 2 | 499 (17.60) |
| 42 | 597 (23.52) | 574 (22.58) | 2 | 519 (18.30) |
| 44 | 620 (24.44) | 597 (23.21) | 2 | 540 (19.04) |



Accessories

QM connectors can be equipped with backshells to provide complete shielding. Backshells are compatible with plug and receptacle side. They provide EMI-RFI shielding specially needed in aircrafts with a composite architecture. Made of composite and easy to install as they require no specific tools, they help in combining cost saving and high performances.



| Backshell | Part number | Description |
|-----------|-------------|-------------------------|
| | 617 991 001 | QM size B EMI backshell |
| | 617 924 015 | QM size A EMI backshell |

INSERTS

CONTACTS

CONNECTORS & ACCESSORIES



QM SERIES

INSERTS

CONTACTS

CONNECTORS & ACCESSORIES

Spare Parts and Tools

| | Part number | Description |
|---|--------------|--|
|  | 617 954 041 | Dust cap for QM size B plug |
| | 617 954 042 | Dust cap for QM size B receptacle |
|  | 617 954 055 | Dust cap for QM size A plug and receptacle |
|  | 617 980 024 | Polarization key pin |
|  | 617 980 025 | Polarization key socket |
|  | 282 668 001 | Pliers for polarizing post and key |
|  | 282 521 004 | Right angle insert extraction tool |
|  | F780 855 000 | Hexagonal key 5/64 inch(2mm)/flats for sleeve holder removal |
|  | 282 521 005 | Insert extraction tool for EPXA insert |
|  | 282 521 002 | Insert extraction tool for EPXB insert |
|  | 617 954 020 | Plastic box to protect wired inserts during handling |
|  | 282 515 | Plastic insert extraction tool for LuxCis® termini (MIL M81 969/14-03) |



HDQX Series



Contents

| | |
|---|------|
| Introduction | 3-4 |
| Applications | 3-4 |
| Features | 3-5 |
| Technical characteristics of shells | 3-6 |
| Crimp contacts | 3-7 |
| PC tail contacts | 3-7 |
| Product overview | 3-8 |
| How to order HDQX connectors | 3-9 |
| Contacts termination..... | 3-10 |
| Shell mounting | 3-10 |
| Dimensions | 3-11 |
| Panel cut out..... | 3-12 |
| Polarization code | 3-14 |
| Accessories and tools | 3-15 |

SECTION 3 TABLE OF CONTENTS

HDQX SERIES

Introduction

Radiall introduces the new HDQX connector series, specially designed for the transmission of Ethernet and RF high speed signals required in harsh environment applications.

HDQX connectors combine both the compact and rugged qualities necessary for high reliability and signal integrity in aerospace and military environments.

The HDQX range offers Cable-to-Cable and Cable-to-PCB solutions. Offering twelve size 8 cavities in a high-density rectangular shell, the space saving HDQX accepts Quadrax and BMA RF contacts, as well as twinax and triaxial contacts.



Applications

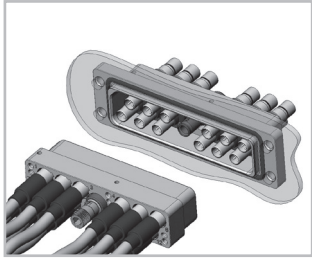
Typical applications for the HDQX connectors include data networks, in-flight entertainment systems, video control centers, and naval and military vehicle communications.



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Features

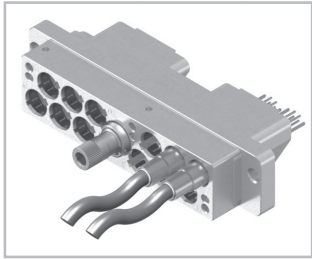
HDQX SERIES



Class P connector pair

HDQX CONNECTOR BENEFITS:

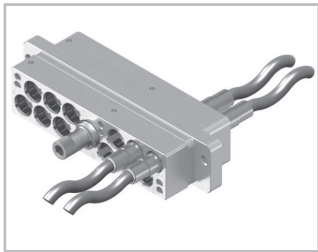
- High-density solution for size 8 cavities using standard ARINC 600 Quadrax contacts and size 8 BMA RF coax, triax, and twinax contacts
- Space-saving connector for limited space applications
- Rectangular connector is stackable
- Lightweight composite strain relief
- Simple and secure connection with a central locking device
- Contacts grounded to the shell with extremely high electrical continuity



Cable to PCB application

AVAILABLE HDQX RANGE CONNECTORS:

- Class N – Non-environmental plug and receptacle
- Class E – Environmental plug and receptacle (connector sealed on the electrical line)
- Class P – Panel sealed receptacle (feed-through sealed connector)



Cable to cable application

MAIN FEATURES ARE:

- 12 contacts cavities
- Grounded size 8 standard cavities (ARINC 600 type)
- Cable-to-cable and cable-to-PCB application
- RoHS compliant
- 12 keying formatting possibilities positions
- 1 central position jacknut / Jackscrew
- Uses standard insertion/extraction tool
- User Manual # MIIN1700002 is available

Technical Characteristics of Shells

ELECTRICAL CHARACTERISTICS

- Shell to shell conductivity: 2.5 mΩ (level reached during initial and after testing as per EN2591-205).
- Contact-to-shell conductivity: maximum of 10 mΩ (level reached during initial and after environmental testing)
- Lightning strike:
 - Pin injection: 1600V 320A as per RTCA DO160 (§22.5.1)
 - Current pulse: 3kA as per EN2591-214
- DWV at sea level:
 - 1000Vrms between outer body and signal contacts as per EN2591-207, Method C
 - 1000Vrms between signal contacts
- DWV altitude (70,000 feet): 125Vrms for the quadrax contacts as per ARINC 600

MECHANICAL CHARACTERISTICS

- Mating/Unmating: 100 cycles
- Impact test: 8 drops at 1.20m as per EN2591-613
- Bending moment (applied to accessories): 100N as per EN2591-404
- Mechanical axial strength (applied to accessories): 100N as per EN2591-420

VIBRATION & SHOCKS

| Series | Material | Vibration | Shock |
|--------|-----------|---|--|
| | | For 8 hrs on each of the 3 axis/ interruption <1 μs EN2591-403 EIA 364-28 | 3 shocks on each axis EN2591-402 EIA 364-27 |
| HDQX | Aluminium | Acceleration 16.9g (Method B figure 2 table 1 Level E) | Shock amplitude 50g /duration 11ms |

OTHER CHARACTERISTICS

- Temperature range: -65°C / +150°C (-85°F / +302°F), 5 cycles as per EN2591-305
- Temperature life: 1000 hours at 150°C (+302°F) as per EN2591-301 Method B
- Salt spray: 96 hours as per EN2591-307
- Sealing: altitude immersion 50,000 feet as per EN2591-314
- Sand & dust: wind velocity 3.5 ±0.5 ms as per EN2591-308
- Mould growth: during 28 days, growth 0 as per EN2591-306 Method A
- Fluid immersion: kerosene, phosphate base, mineral base, polyolester, solvent, detergent, aircraft deicers, heptafluoropropane, pentafluoroethane, radar coolant as per EN3909
- Magnetic permeability: 2μ as per EN2591-513

Crimp Contacts

QUADRAX CONTACTS

Standardized ARINC 600 Quadrax contacts are available with HDQX series.

| Contact size | Cable type | Type | Environmental Part number | Non-environmental Part number | Ins / ext tool in metal |
|--------------|-------------------------------------|--------|---------------------------|-------------------------------|-------------------------|
| 8 | Ethernet cable ABS0972 & ABS1503 | Pin | Consult Radiall | 620175010 | 282549001 |
| | | Socket | | 620075010 | |
| | Tensolite NF24Q100 | Pin | | 620175050 | |
| | | Socket | | 620075050 | |
| | Tensolite NF26Q100 - JSF Y18 | Pin | | 620175021 | |
| | | Socket | | 620075021 | |

BMA CONTACTS

| Contact size | Cable type | Connector Type | Non-environmental Part number | Frequency range | Max VSWR | Insertion loss |
|--------------|---|----------------|-------------------------------|-----------------|----------|--|
| 8 | SHF5 - SHF5M ^[See note 1] | Pin | 617171010 | DC-18 GHz | 1.35 | 0.13 dB at max frequency {18 GHz} |
| 8 | RG142 | Pin | 617171020 | DC-12,4 GHz | 1.35 | 0.11 dB at max frequency {12.4 GHz} |
| 8 | SHF2.4M ^[See note 1] / UT.085 Harbour SS405 Times Tflex405 | Pin | 617171030 | DC-18 GHz | 1.35 | 0.13 dB at max frequency {18 GHz} |
| 8 | SHF5 - SHF5M ^[See note 1] | Socket | 617071010 | DC-18 GHz | 1.35 | 0.13 dB at max frequency {18 GHz} |
| 8 | RG142 | Socket | 617071020 | DC-12,4 GHz | 1.35 | 0.11 dB at max frequency {12.4 GHz} |
| 8 | SHF3 ^[See note 1] | Socket | 617071040 | DC-18 GHz | 1.35 | 0.13 dB at max frequency {18 GHz} |

Extraction tool 282549001 is used for size 8 BMA contacts.

PC Tail Contacts

SIZE 8 QUADRAX PIN CONTACTS

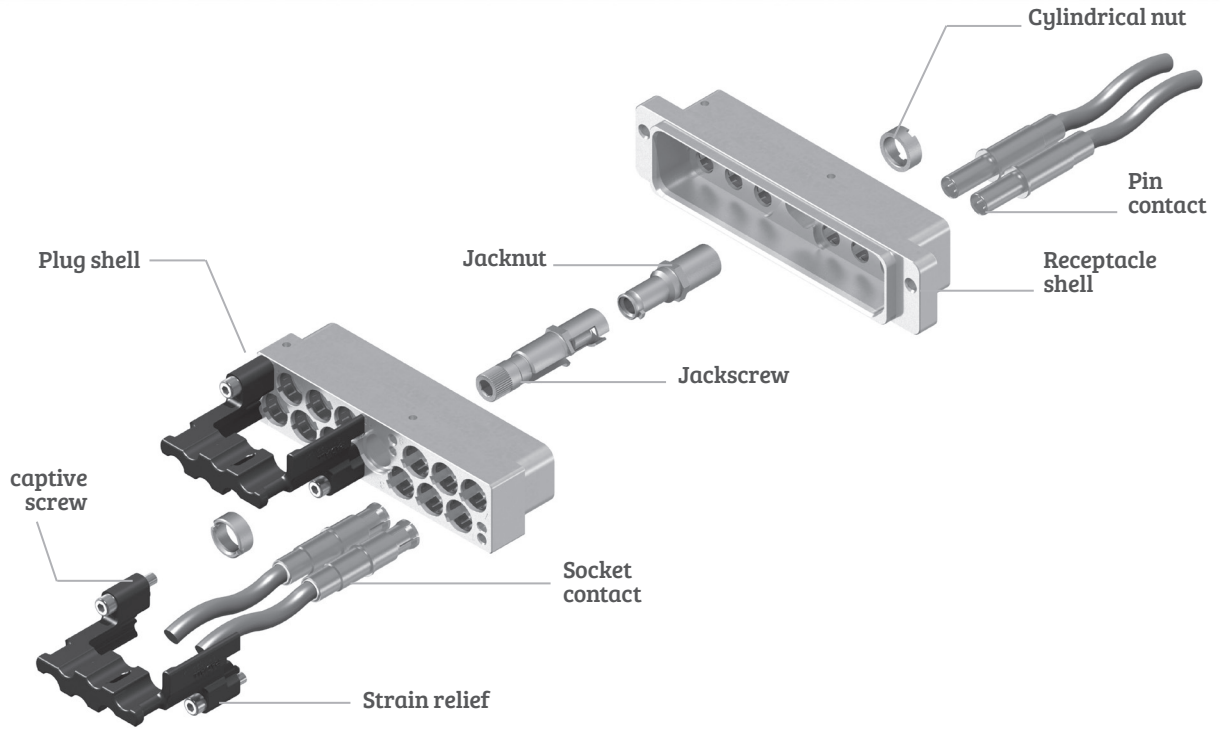
| Part Number | Contact termination | Minimum length in mm (inch) ^[See note 2] |
|-------------|---------------------|---|
| 620176009 | YA | 2.80 (.110) |
| 620176016 | ZA | |
| 620176509 | RA | |
| 620176008 | Y | 5.65 (.222) |
| 620176010 | Z | |
| 620176508 | R | |
| 620176011 | YB | 8.50 (.334) |
| 620176012 | ZB | |
| 620176511 | RB | |
| 620176013 | YC | 11.90 (.469) |
| 620176014 | ZC | |
| 620176513 | RC | |

NOTES:

- (1) BMA which have to accommodate SHF cable requires a wiring done by Radiall, please, contact Radiall for information
- (2) Minimum length corresponds to straight PC tail length protruding from HDQX cavity

Product Overview

Detailed view of the various parts of HDQX connector:



How to Order HDQX Connectors

| | | | | | | | |
|------|----|---|---|---|----|----|----|
| HDQX | 12 | F | N | N | YA | 00 | 12 |
|------|----|---|---|---|----|----|----|

Series

Connector size

12: 12 size 8 cavities

Shell style

P: Plug for RR/RR (rear release / rear removable) contacts

R: Receptacle for RR/RR (rear release / rear removable) contacts

F: Receptacle for FR/FR (front release / front removable) contacts

Class

E: Environmental (upon request only)

N: Non-environmental

P: Panel sealing, receptacle only (upon request only)

Shell plating

N: Nickel

Contact termination

X: No contacts

Qx: Crimp Quadrax contacts] see table 1 page 3-10

Cx: Crimp BMA contacts⁽¹⁾

Yx: Gold PC tail Quadrax contacts

Zx: Tin lead PC tail Quadrax contacts] see table 2 page 3-10

Rx: Pure tin PC tail Quadrax contacts

Shell mounting

00: Flangeless plug

00: 2 self-locking threads for 6-32 UNC 2A screws for receptacle

01: 4 self-locking threads for 6-32 UNC 2A screws for receptacle

Polarization

Without: No polarization system provided

Polarization: See page 3-13 for codes

HDQX SERIES

CONTACTS

CONNECTORS & ACCESSORIES

NOTE:

(1) BMA contacts are not available with class E and P

Contacts Termination

TABLE 1:
Crimped contact termination
for RR/RR receptacle and plug




| Cable | Quadrx | BMA |
|-------------|--------|-----|
| ABS1503KD24 | Q1 | - |
| NF24Q100 | Q2 | - |
| JSFY18 | Q3 | - |
| RG142 | - | C1 |
| UT 0.085 | - | C2 |

TABLE 2:
PC-tail contact termination
for FR/FR receptacle

| Minimum length mm (inch) | Gold | Tin-lead | Pure tin |
|--------------------------|------|----------|----------|
| 2.80 (.110) | YA | ZA | RA |
| 5.65 (.222) | Y | Z | R |
| 8.50 (.334) | YB | ZB | RB |
| 11.90 (.469) | YC | ZC | RC |

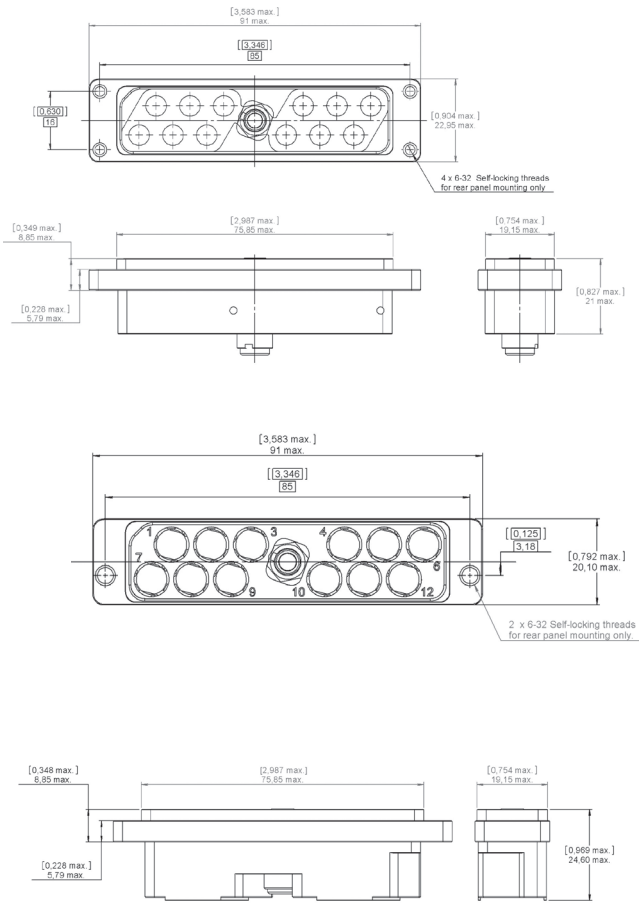
Shell Mounting

Both shell mounting 00 and 01 are available with RR/RR and FR/FR receptacle.

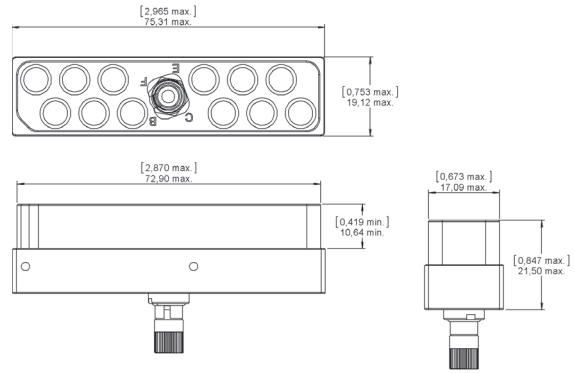
| Code | Detail | |
|------|--|---|
| 00 | Flangeless plug (no fixing system) |  |
| 00 | Rear panel mounting receptacle: 2 self-locking threads for 6-32 UNC 2A screws |  |
| 01 | Rear panel mounting receptacle: 4 self-locking threads for 6-32 UNC 2A screws |  |

Dimensions

RECEPTACLE



PLUG



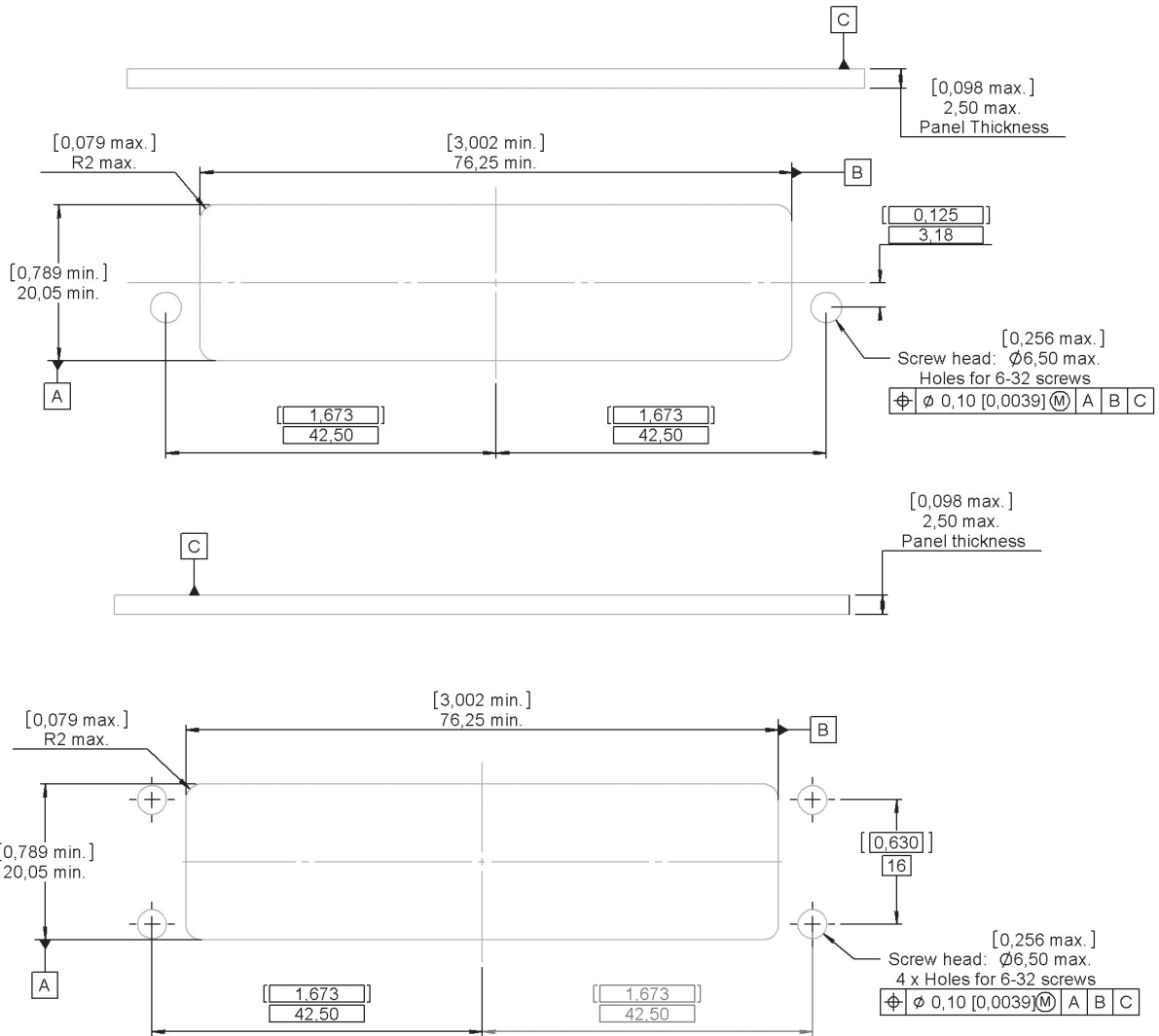
not applicable

HDQX SERIES

CONTACTS

CONNECTORS & ACCESSORIES

Panel Cut Out
RECEPTACLE



Polarization Code

| Code | Device | Device delivered |
|------|----------------------------|------------------|
| 12 | Jackscrew, A to F | Unassembled |
| 13 | Jackscrew, N to Z | Unassembled |
| 22 | Jacknut, A to F | Unassembled |
| 23 | Jacknut, N to Z | Unassembled |
| 1A | Jackscrew, position A to Z | Assembled |
| 2A | Jacknut, position A to Z | Assembled |

HDQX JACKSCREW & JACKNUT

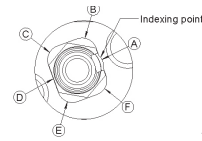
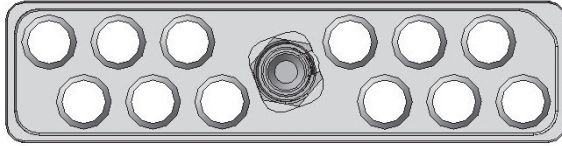
In the standard version, the jackscrew is mounted on the plug shell and the jack nut is mounted on the receptacle shell.

There are 2 sets of jackscrews and jacknuts. Each set provides 6 polarizing positions A, B, C, D, E, and F and the second set provides polarizing positions N, R, W, X, Y and Z. The difference between the 2 sets is accomplished using an indexing point shown below in the drawings:

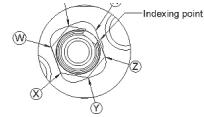
| Designation | Polarizing positions | Coding device | Part number | |
|--------------------------------------|----------------------|---|-------------|---|
| Jackscrew | A to F |  | 617612801 |  |
| | N to Z |  | 617612803 | |
| | Universal |  | 617612806 | |
| Jacknut for front release receptacle | A to F |  | 617612805 |  |
| | N to Z |  | 617612804 | |
| Jacknut for rear release receptacle | A to F |  | 617612800 |  |
| | N to Z |  | 617612802 | |
| Jacknut | Universal |  | 617612807 |  |

Polarization Code

PLUG SHELL



A to F

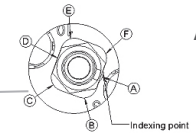
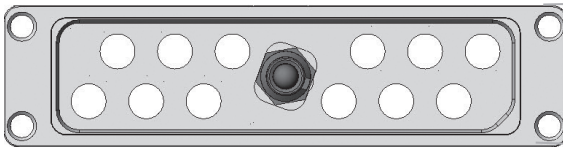


N to Z

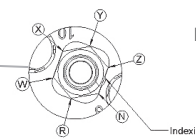
MATING FACE SHOWN

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| | | | | | |
| N | R | W | X | V | Z |
| | | | | | |

RECEPTACLE SHELL



A to F

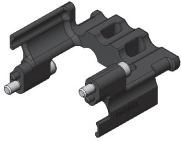
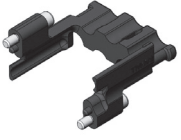

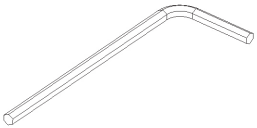


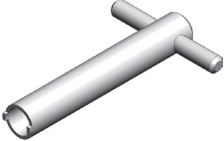


N to Z

MATING FACE SHOWN

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| | | | | | |
| N | R | W | X | V | Z |
| | | | | | |

Accessories and Tools

| | Part number | Description |
|---|-------------|--|
|  | 617922024 | Strain relief for plug assembly torque 0.55 ±0.05 Nm |
|  | 617922026 | Strain relief for receptacle assembly torque 0.55 ±0.05 Nm |
|  | 282666001 | Connector locking: Allen wrench (9/64 inch) |
|  | 282666002 | Strain relief locking: Allen wrench (5/64 inch) |
|  | 282549001 | Extraction tool (for Quadrax and BMA contacts) |
|  | 282664 | 1/4 inch hex. screwdriver bit to affix the nut of the jackscrew or the jacknut |
|  | 282665 | Spigot wrench to affix the nut of the jackscrew or the jacknut |

HDQX SERIES

CONTACTS

CONNECTORS & ACCESSORIES

HDQX SERIES

Notes



NSX - BPX Series

Arinc 600



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SECTION 4 TABLE OF CONTENTS

Introduction

NSX AND BPX MULTICONTACT CONNECTORS

NSX series (defined by ARINC 600 specification) and **BPX** series (defined by Boeing S280W551 specification) are multipin rack and panel connectors used to connect high performance aeronautical equipment. Items in this catalog are covered by French and foreign Patents and/or Patents pending.

These two series manufactured by Radiall show the following characteristics:

- High contact density
- Wide range of contact types and arrangement
- Numerous shell polarization possibilities which give maximum security when mating the equipment in the rack
- Low mating forces
- Separation of power and signal contacts
- EMI/RFI shielding option provided by shell to shell conductivity

Major aircraft manufacturers and equipment manufacturers have been entrusting Radiall for many years using NSX and BPX series.

NSX SERIE (ARINC 600 STANDARD)

RADIALL NSX series offers the following versions included a new cost effective solution:

Connectors for **rear removable** contacts:

- **NSX N:** Plug and receptacle connectors.
Non environmental version, inserts without grommet and compound, plugs without groove and O-ring.
- **NSX C:** Plug and receptacle connectors.
Non environmental version, inserts with grommet but without compound, plugs without groove and O-ring.
- **NSX E:** Plug and receptacle connectors.
Environmental version, inserts with grommet and compound, plugs with groove and O-ring.
- **NSX H:** Plug connector only.
Environmental version, inserts with grommet and compound, plugs without groove and O-ring.

Connectors for **front removable** contacts:

- **NSX F:** Receptacle connectors only.
Only signal contacts are Front release/Front Removable (FR/FR), others will be Rear Release/Rear Removable (RR/RR). Non environmental version, inserts without grommet and compound.
- **NSX G:** Receptacle connectors only.
Signal, power, coax, triax and quadrax contacts are FR/FR.
Non environmental version, inserts without grommet and compound.
- **NSX K:** **New cost effective solution. 100% RoHS compliant for shell plating selection F and S.**
Receptacle connectors only.
Inserts fully completed with harpooned size 22 contacts
Non environmental version

As an option, EMI/RFI features are available to get shell to shell conductivity.

Introduction

SHELL

RADIALL NSX series offers three metallic shell sizes fitted with polarization hardware offering 216 polarizing possibilities.

NSX shells answer all requirements with three different platings, all compliant with ARINC 600 standard: alodine, nickel, RoHS.

The plug shell is fitted with inserts for signal (size 22) pin contacts, coax, triax and quadrax socket contacts. The receptacle shell is fitted with inserts for signal socket contacts, coax, triax and quadrax pin contacts.



INSERTS

Environmental inserts have a wire sealing grommet on the rear face and compound between insert and shell. The different kinds of inserts available are:

- Insert for rear release rear removable contacts (blue colored on the terminating face).
- Insert for front release front removable contacts (red colored on the mating face).
- Insert for front release rear removable contacts (yellow colored on the mating face).

CONTACTS

A whole range of crimp or PC tail contacts are available with NSX connectors: signal, coax, triax, quadrax or fiber optic contacts. Signal and power contacts were designed to be low insertion force contacts so that they are perfectly orientated into the cavities and contacts are not damaged when insertion is made. Front release and rear release inserts use contact retention system (clips) which meets the ARINC 600 contact retention requirements. This system allows contacts to be removed from the insert using an extraction tool

NEW COST EFFECTIVE SOLUTION

Radiall is constantly looking for cost saving solutions to answer our customers' expectations. Based on this concept, Radiall proudly introduces:

Inserts with harpooned contacts

Discover the new class K available for front removable contacts. They show the following features and benefits:

- Improved pricing stability and reduced dependence on fluctuating gold prices
- Lightweight solution as insert is one piece
- 100% intermateable with any ARINC 600 plug
- 100% backwards compatibility with existing PCB and PGA connectors
- RoHS compliant
- Fully qualified under Arinc 600 specification requirements

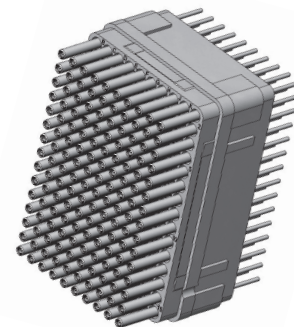
Selective plating contacts

A brand new range of PC tail contacts with gold selective plating is now available. They offer the following features and benefits:

- Significant reduction of cost of ownership
- N- more dependence t- gold rate fluctuation
- N- change in the contact integration process

Specifications:

- Same contact design as full plated version
- Contact interface gold plated with 1.27µm
- No impact on PCB design
- Product qualification is available upon request

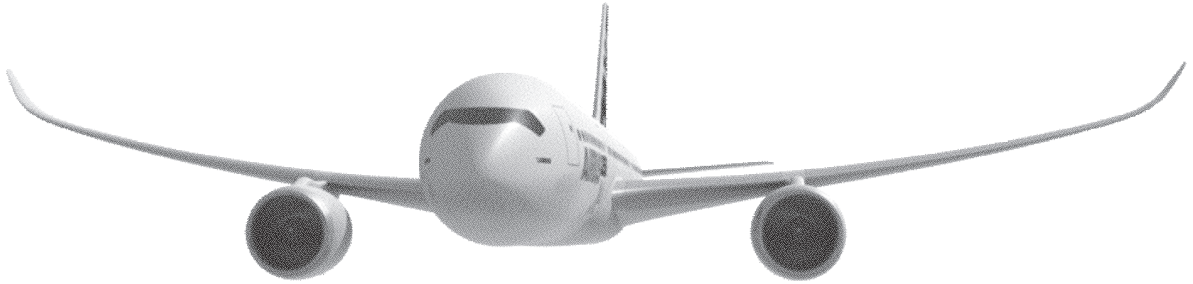


NSX - BPX SERIES

NSX SERIES

Application

These connectors are mostly used to connect high performance aeronautical equipment. Most of the NSX connectors are used in the main avionics bay on commercial airplanes. Electronic functions are found in an LRU (Line Replaceable Unit). Refer to Arinc 600 document for more information.



Characteristics

TECHNICAL CHARACTERISTICS

| Description | Material | Plating |
|---|--------------------------------|-------------------------|
| Shell | Aluminum alloy | Chromatation or nickel |
| Inserts | Thermosetting or thermoplastic | / |
| Metallic inserts | Aluminum alloy | Nickel |
| O-ring & grommet | Fluorosilicone | / |
| Contacts | Copper alloy | Gold over nickel |
| Retention clip | Copper alloy | / |
| Insert retention plate | Aluinium alloy | Blue anodized or nickel |
| Polarization posts and keys retention plate | Aluminum alloy | Chromatation or nickel |
| Screws washers and clinch-nuts | Stainless steel | / |
| | Steel | Cadmium yellow chromate |
| Polarization posts and keys | Zinc alloy | Nickel |

ELECTRICAL CHARACTERISTICS

| Contact size | Wire | | | | Max current (A) |
|--------------|------|----------------------------------|--------------------------|-------------|-----------------|
| | AWG | Cross section (mm ²) | Outside Dia. mm (inches) | | |
| | | | min. | max. | |
| 22 | 22 | 0.38 | 0.66 (.026) | 1.4 (.055) | 5 |
| | 24 | 0.21 | | | 3 |
| | 26 | 0.14 | | | 2 |
| 20 | 20 | 0.60 | 1 (.040) | 1.8 (.071) | 7.5 |
| | 22 | 0.38 | | | 5 |
| | 24 | 0.21 | | | 3 |
| 16 | 16 | 1.34 | 1.7 (0.066) | 2.6 (.102) | 13 |
| | 18 | 0.93 | | | 10 |
| | 20 | 0.60 | | | 7.5 |
| 12 | 12 | 3.18 | 2.4 (.094) | 3.4 (.134) | 23 |
| | 14 | 1.91 | | | 17 |
| | 16 | 1.34 | | | 13 |
| 8 | 8 | 9 | 4.65 (.183) | 6.48 (.255) | 46 |
| | 10 | 5 | | | 33 |

MECHANICAL & ENVIRONMENTAL

- Temperature range: - 65°C/+125°C
- Temperature life: 1000 hours at 125 °C.
- Salt spray: MIL-STD-1344 method 1001.1 test condition B (48 hours).
- Moisture resistance: MIL-STD-1344 method 1002.1 test condition II (10 times 24 hours).
- Sealing: environment resistant to running water (environmental version only).
- Fluid resistance: resistance to MIL-STD-1344 method 1016 (fluids a, e, i).
- Durability: 500 mating and unmating cycles.
- Random vibration: conforming to MIL-STD-1344 method 2005.1 test condition 5 letter E. (16,4g from 50 to 2000 Hz, 8 hours per direction).
- Shock: 50g 11 ms half sine.MIL-STD-1344 method 2004.1 3 impacts per direction.
- Mating force: connector size 1 : 27 pounds (120 N) max,
connector size 2 : 60 pounds (267 N) max,
connector size 3 : 105 pounds (467 N) max.

CONTACT RETENTION FORCE

| Contact size | 22 | 20 | 16 | 12 | 8 | Coax triax quadrax |
|------------------------------|----|----|----|----|----|--------------------|
| Retention force min (ounces) | 12 | 20 | 25 | 30 | 25 | 25 |

Characteristics

COAX CONTACTS ELECTRICAL CHARACTERISTICS

- Nominal impedance: 50Ω.
- DWV: 1500 VAC – IR at 25 °C = 5000 MΩ.
- V.S.W.R.: Size 5 → 1.3 from DC to 1500 MHz and insertion loss = 0.3 dB, Size 1 → 1.3 from DC to 5000 MHz

MASS G (OZ)

Shells

Includes screws, washers, insert retention plate and polarization hardware.

| Plug | | | Receptacle | | |
|------------|------------|------------|------------|------------|------------|
| Size 1 | Size 2 | Size 3 | Size 1 | Size 2 | Size 3 |
| 110 (3.88) | 130 (4.59) | 220 (7.76) | 130 (4.59) | 140 (4.94) | 245 (8.64) |

INSERTS

| Contact arrangement designation | For plug shell | | For receptacle shell | |
|---------------------------------|--------------------|------------------------|----------------------|------------------------|
| | Environmental type | Non-environmental type | Environmental type | Non-environmental type |
| 5C2 | 15.25 (0.54) | 12.39 (0.44) | 9.92 (0.35) | 7,25 (0,26) |
| 40 | 13.52 (0.48) | 11.15 (0.39) | 9.22 (0.33) | 8,22 (0,29) |
| 60 | 18.78 (0.66) | 15.53 (0.55) | 12.78 (0.45) | 11,43 (0,40) |
| 30T2 | 17.86 (0.63) | 14.75 (0.52) | 11.38 (0.40) | 9,36 (0,33) |
| 150 | 41.80 (1.47) | 20.87 (0.74) | 28.01 (0.99) | 24,32 (0,86) |
| 121 | 45.93 (1.62) | 37.79 (1.33) | 29.77 (1.05) | 24,53 (0,87) |
| 120T2 | 41.21 (1.45) | 34.12 (1.20) | 26.89 (0.95) | 23,83 (0,84) |
| 71C1/1C71 | 31.4 (1.11) | 27.7 (0.98) | 19.73 (0.70) | 18,68 (0,66) |
| 60 | 58.87 (2.08) | 48.97 (1.73) | 35.69 (1.26) | 25,79 (0,91) |
| 10T10 | 51.80 (1.83) | 45.45 (1.60) | 32.76 (1.16) | 26,41 (0,93) |
| C4 | / | 31.56 (1.11) | / | 20,96 (0,74) |
| C2 | / | 25.94 (0.91) | / | 12,48 (0,44) |
| 100 | 30.63 (1.08) | 25.31 (0.89) | 20.56 (0.73) | 17,8 (0,63) |
| 85 | 33.01 (1.16) | 27.15 (0.96) | 21.67 (0.76) | 18,67 (0,66) |
| 34 | 41.56 (1.47) | 34.57 (1.22) | 25.06 (0.88) | 18,06 (0,64) |
| 13C2 | 39.96 (1.41) | 33.36 (1.18) | 24.48 (0.86) | 17,89 (0,63) |
| 6T6 | 41.48 (1.46) | 36.52 (1.29) | 25.53 (0.90) | 31,24 (1,10) |
| Q11 | 36.86 (1.30) | 31.26 (1.10) | 25.07 (0.88) | 19,47 (0,69) |
| 62Q2 | 31.85 (1.12) | 26.24 (0.93) | / | 13,2 (0,47) |
| 68Q2 | 31.14 (1.10) | 25.64 (0.90) | 19.12 (0.67) | 16,32 (0,58) |
| 11Q2 | 37.39 (1.32) | 30.88 (1.09) | 24.38 (0.86) | 17,87 (0,63) |

CONTACTS

| Contact size | Pin | Socket |
|--------------|--|-------------------------------|
| 22 | 0.12 (4 10 ⁻³) | 0.15 (5.3 10 ⁻³) |
| 20 | 0.22 (7.8 10 ⁻³) | 0.40 (14.1 10 ⁻³) |
| 16 | 0.72 (25.4 10 ⁻³) | 0.75 (26.5 10 ⁻³) |
| 12 | 1.50 (53.0 10 ⁻³) | 1.50 (53.0 10 ⁻³) |
| 8 | 619270: 5 (0.18) 619271: 6.5 (0.23) | |

EMI/RFI Performances

EMI/RFI acts directly on electronics systems whether by conduction through the input or input cables or by induction (coupling).

Electronics equipment are particularly vulnerable to interferences and can be disturbed or damaged by them. The serious consequences which may result, make it essential to protect such installations.

The first stage in protection is to install the equipment in a metal surrounding (FARADAY cage) which protects it from some of the interferences; particularly those occurring by induction.

As to meet these requirements **RADIALL** offers plug connectors for racks which are fitted with ground spring fingers.

Sizes 1, 2 and 3 plugs connectors fitted with ground spring fingers are available. These connectors can be mated with ARINC 600 receptacle connectors. Their technical characteristics are the same than those shown on page 4-8 except the following.

MATERIALS

| Description | Material | Plating |
|-----------------------|----------------|--------------------|
| Shell | Aluminum alloy | Electroless nickel |
| Ground spring fingers | Copper alloy | Electroless nickel |

ELECTRICAL CHARACTERISTICS

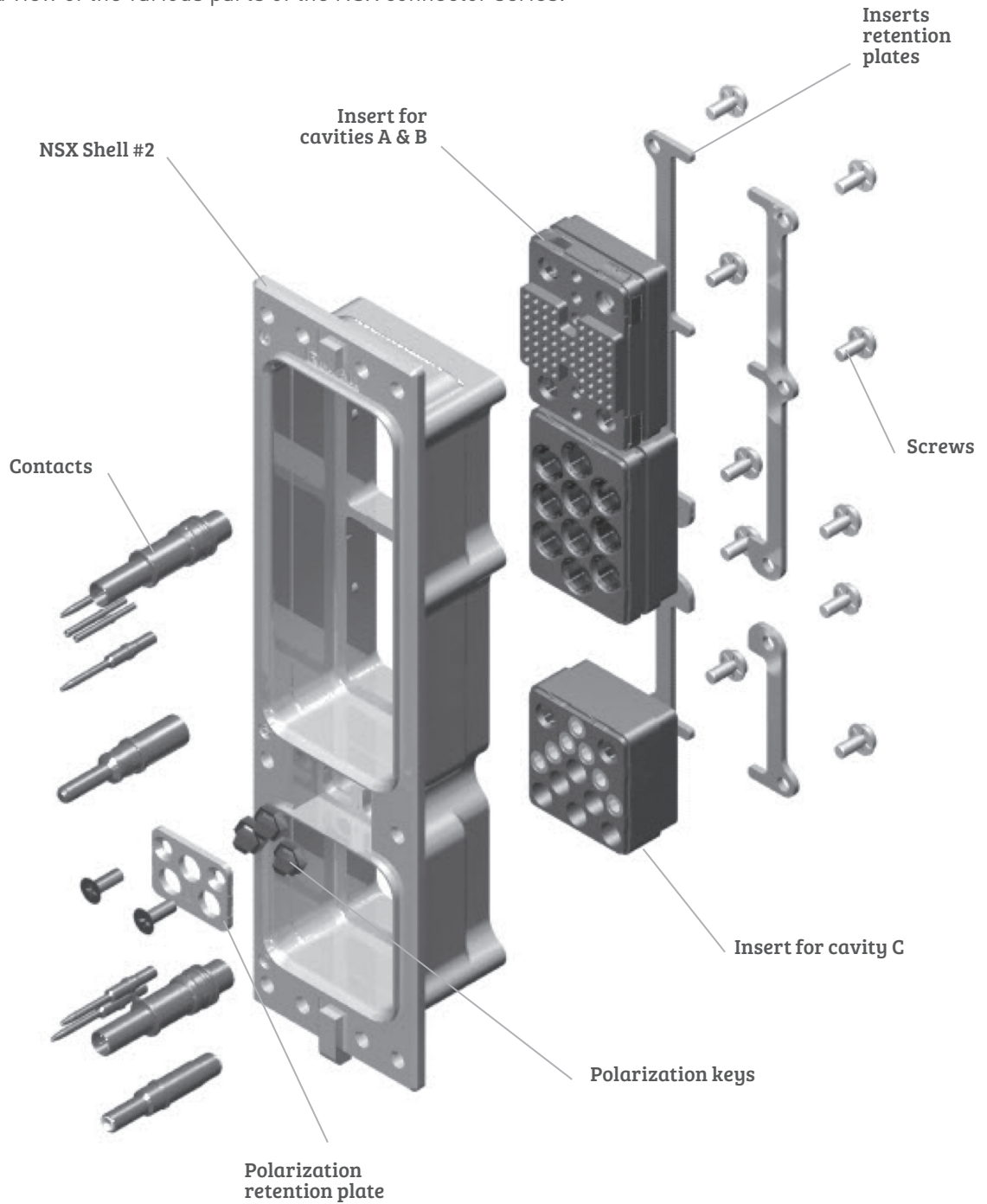
- **Shell to shell conductivity:**
(measured according to method 3007 of MIL-STD-1344A),
max warranty: 2,5 mΩ.
- **Size 8 cavity grounding:**
(measured according to method 3007 of MIL-STD-1344A),
max warranty: 10,0 mΩ.
- **EMI shielding effectiveness:**
(measured according to S280W552).
The minimum values warranty are as follows: Typical values

| Frequency (mhz) | Leakage attenuation (db) |
|-----------------|--------------------------|
| 100 | 65 |
| 200 | 63 |
| 300 | 63 |
| 400 | 62 |
| 800 | 60 |
| 1000 | 60 |

NSX SERIES

Product Overview

Detailed view of the various parts of the NSX connector series.

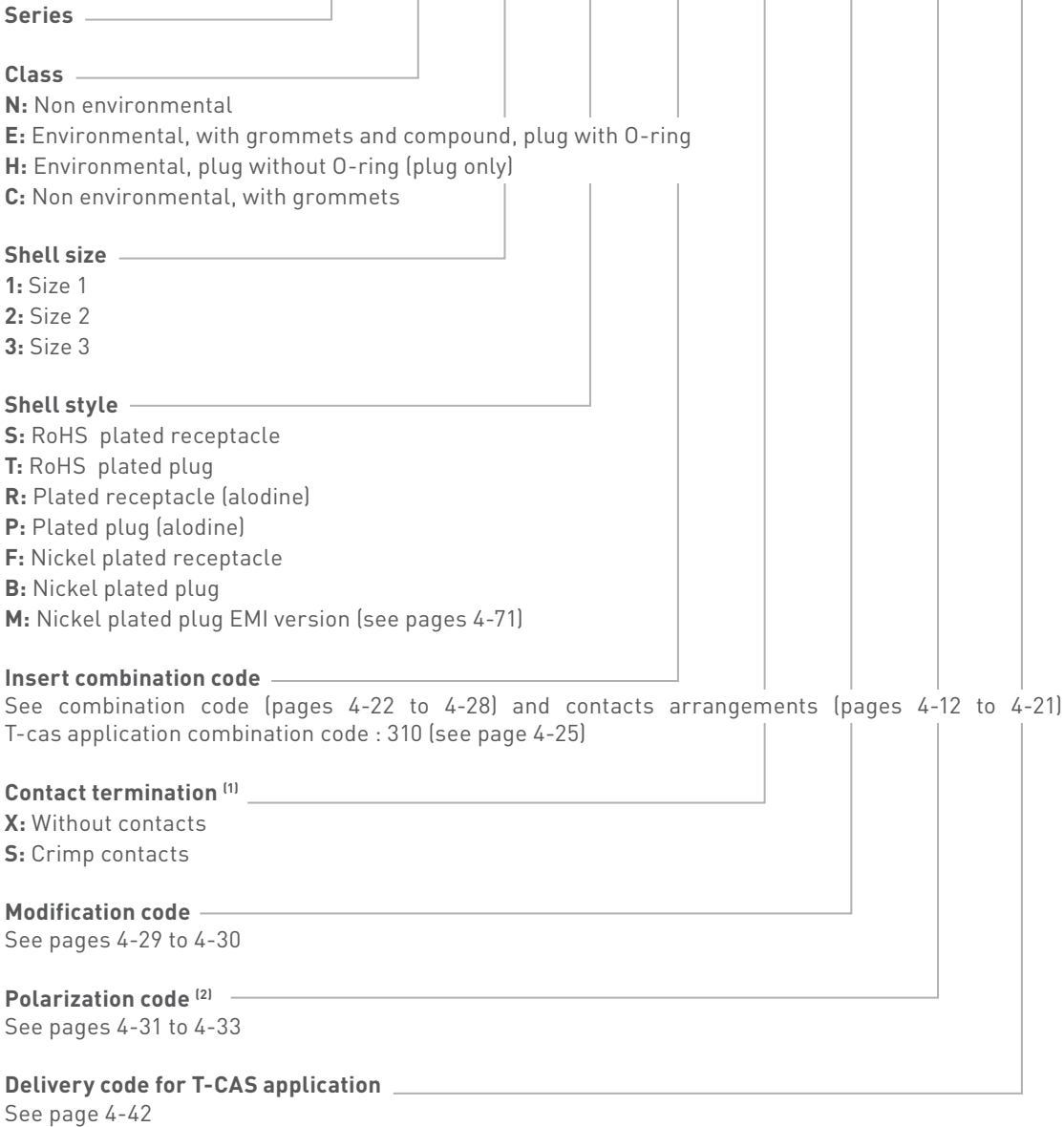


How to Order

NSX E/N/H/C – CONNECTORS FOR REAR REMOVABLE CONTACTS

NSX SERIES

| | | | | | | | | |
|-----|---|---|---|-----|---|----|----|---|
| NSX | N | 3 | P | 301 | X | 00 | 01 | - |
|-----|---|---|---|-----|---|----|----|---|

















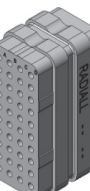
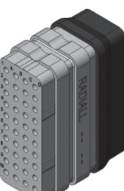
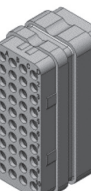
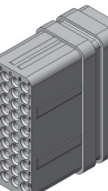
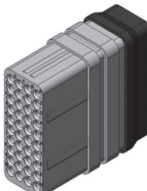
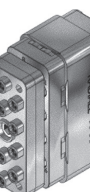



NOTES:

- (1) If you need to use reduced crimp barrel contacts, use code X and order signal and power contacts separately. Coax, twinax or power size 5 or 8, coax size 1 must always be ordered separately
- (2) Without polarization code, the connector is delivered with polarization hardware unassembled. Polarization code 00, the connector is delivered without polarizing hardware. Polarization code from 01 to 216, the connector is delivered with the polarization hardware assembled as defined by code

REMARK: dust caps conductive on receptacle and non conductive on plug are included in the delivery

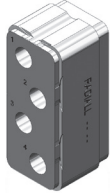













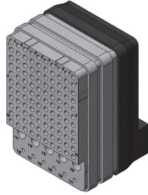
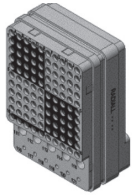
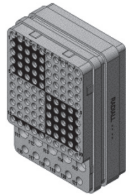


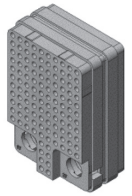

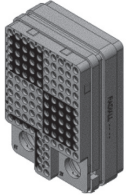

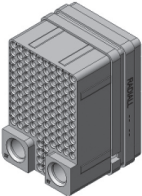

NSX Shell Contact Arrangement

All insert names including letter Q can be equipped with quadrax contacts for each insert arrangement the quantity and type of contacts is shown with insert view. RR/RR means contacts are rear release and rear removable. FR/FR means contacts are front release and front removable. The letter G means that the contact will be used in grounded cavity. LuxCis® contacts are always rear release and rear removable. N/A means not available, please contact Radiall for further details.

| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|--|--|--|---|--|--|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| 60 | 1-A/B |  60x#22 RR/RR |  60x#22 RR/RR |  60x#22 FR/FR | N/A |  60x#22 RR/RR |  60x#22 RR/RR |
| 30T2 | 1-A/B |  28x#22 RR/RR 2x#8G RR/RR |  28x#22 RR/RR 2x#8G RR/RR |  28x#22 FR/FR 2x#8G RR/RR |  28x#22 FR/FR 2x#8G FR/FR |  28x#22 RR/RR 2x#8G RR/RR |  28x#22 RR/RR 2x#8G RR/RR |
| 4C | 1-A/B |  4x#5G RR/RR | N/A | N/A |  4x#5G FR/FR |  4x#5G RR/RR | N/A |
| 40 | 1-C |  40x#22 RR/RR |  40x#22 RR/RR |  40x#22 FR/FR | N/A |  40x#22 RR/RR |  40x#22 RR/RR |
| 12F12 | 1-C |  h12x#16 RR/RR LuxCis® |  12x#16 RR/RR LuxCis® | N/A | N/A |  12x#16 RR/RR LuxCis® |  12x#16 RR/RR LuxCis® |

NSX Shell Contact Arrangement

NSX SERIES

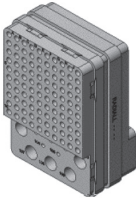
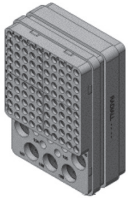
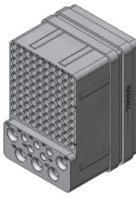

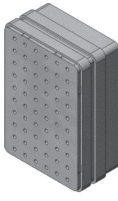




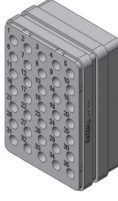


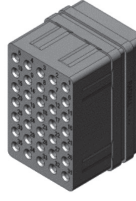






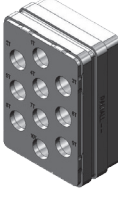

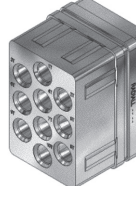

| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|--|--|--|---|--|--|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| 4 | 1-C |  4x#12 RR/RR ⁽¹⁾ | Available ⁽¹⁾ | N/A | N/A |  4x#12 RR/RR |  4x#12 RR/RR |
| 5C2 | 1-C |  2x#5 RR/RR 1x#12 RR/RR 2x#16 RR/RR |  2x#5 RR/RR 1x#12 RR/RR 2x#16 RR/RR | N/A |  2x#5 FR/FR 1x#12 FR/FR 2x#16 FR/FR |  2x#5 RR/RR 1x#12 RR/RR 2x#16 RR/RR |  2x#5 RR/RR 1x#12 RR/RR 2x#16 RR/RR |
| 150 | 2/3-A/B |  150x#22 RR/RR |  150x#22 RR/RR |  150x#22 FR/FR | N/A |  150x#22 RR/RR |  150x#22 RR/RR |
| 121 | 2/3-A/B |  110x#22 RR/RR 6x#20 RR/RR 5x#16 RR/RR |  110x#22 RR/RR 6x#20 RR/RR 5x#16 RR/RR |  110x#22 FR/FR 6x#20 RR/RR 5x#16 RR/RR |  110x#22 FR/FR 6x#20 FR/FR 5x#16 FR/FR |  110x#22 RR/RR 6x#20 RR/RR 5x#16 RR/RR |  110x#22 RR/RR 6x#20 RR/RR 5x#16 RR/RR |
| 120T2 | 2/3-A/B |  118x#22 RR/RR 2x#8G RR/RR |  118x#22 RR/RR 2x#8G RR/RR |  118x#22 FR/FR 2x#8G RR/RR |  118x#22 FR/FR 2x#8G FR/FR |  118x#22 RR/RR 2x#8G RR/RR |  118x#22 RR/RR 2x#8G RR/RR |

NOTE:

(1) For BPX serie, 4 insert will be supplied with FR/RR contacts.

NSX SERIES

NSX Shell Contact Arrangement


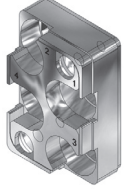
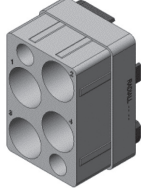


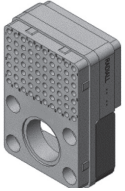

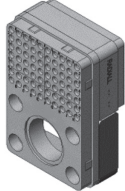
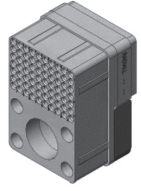


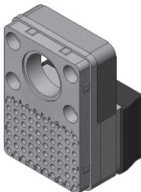

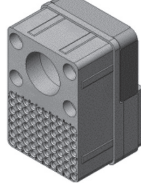
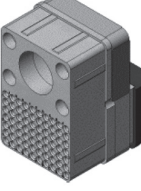
| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|--|---|------------|---|--|--|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| 110 | 2/3-A/B |  100x#22 RR/RR 5x#20 RR/RR 5x#12 RR/RR | N/A | N/A |  100x#22 FR/FR 5x#20 FR/FR 5x#12 FR/FR |  100x#22 RR/RR 5x#20 RR/RR 5x#12 RR/RR |  100x#22 RR/RR 5x#20 RR/RR 5x#12 RR/RR |
| 60A | 2/3-A/B |  60x#20 RR/RR |  60x#20 RR/RR | N/A |  60x#20 FR/FR |  60x#20 RR/RR |  60x#20 RR/RR |
| 35 | 2/3-A/B |  35x#16 RR/RR |  35x#16 RR/RR | N/A |  35x#16 FR/FR |  35x#16 RR/RR |  35x#16 RR/RR |
| 24 | 2/3-A/B |  24x#12 RR/RR |  24x#12 RR/RR | N/A |  24x#12 FR/FR |  24x#12 RR/RR |  24x#12 RR/RR |
| 10T10 | 2/3-A/B |  10x#8G RR/RR (1) | Available | N/A (1) |  10x#8G FR/FR |  10x#8G RR/RR |  10x#8G RR/RR |

NOTE:

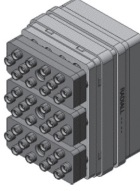
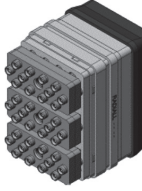
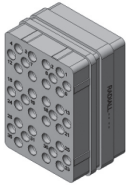






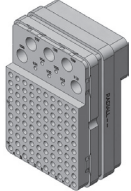

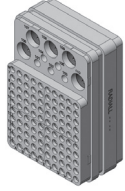
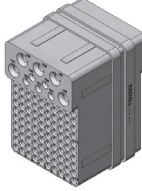






(1) For BPX serie, 10T10 insert will be supplied with FR/RR contacts.

NSX Shell Contact Arrangement

NSX SERIES

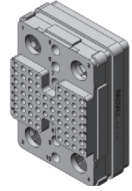

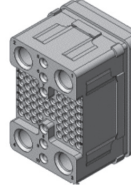
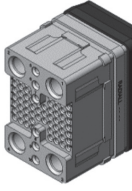





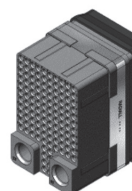
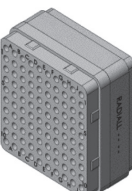

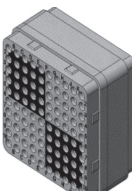
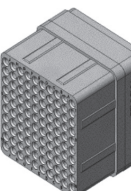

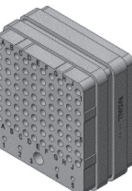
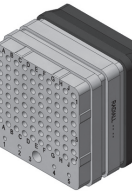
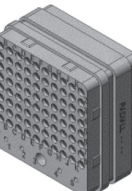
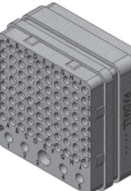
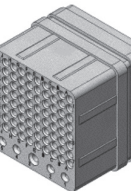
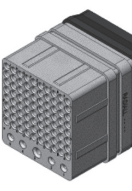
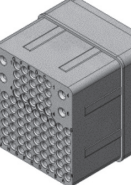
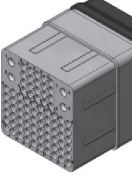
| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|---|---|---|---|---|---|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| C4 | 2/3-A/B |  4x#1G FR/RR | N/A | N/A |  4x#1G FR/FR |  4x#1G FR/RR | N/A |
| C2 | 2/3-A/B |  2x#1G FR/RR | N/A | N/A | N/A |  2x#1G FR/RR | N/A |
| 71C1 | 2/3-A/B |  70x#22 RR/RR 1x#1 FR/RR |  70x#22 RR/RR 1x#1 FR/RR |  70x#22 RR/RR 1x#1 FR/RR | N/A |  70x#22 RR/RR 1x#1 FR/RR |  70x#22 RR/RR 1x#1 FR/RR |
| 1C71 | 2/3-A/B |  70x#22 RR/RR 1x#1 FR/RR |  70x#22 RR/RR 1x#1 FR/RR |  70x#22 FR/FR 1x#1 FR/RR | N/A |  70x#22 RR/RR 1x#1 FR/RR |  70x#22 RR/RR 1x#1 FR/RR |

NSX Shell Contact Arrangement

| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|---|---|-----------|--|---|---|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| 36F36 | 2/3-A/B |  36x#16 RR/RR LuxCis® |  36x#16 RR/RR LuxCis® | N/A | N/A |  36x#16 RR/RR LuxCis® |  36x#16 RR/RR LuxCis® |
| 20F12Q8 | 2/3-A/B |  12x#16 RR/RR LuxCis® 8x#8G RR/RR |  12x#16 RR/RR LuxCis® 8x#8G RR/RR | N/A |  12x#16 RR/RR LuxCis® 8x#8G FR/FR |  12x#16 RR/RR LuxCis® 8x#8G RR/RR |  12x#16 RR/RR LuxCis® 8x#8G RR/RR |
| 110R | 2/3-A/B |  100x#22 RR/RR 5#20 RR/RR 5#12 RR/RR |  100x#22 RR/RR 5#20 RR/RR 5#12 RR/RR | N/A |  100x#22 FR/FR 5#20 FR/FR 5#12 FR/FR |  100x#22 RR/RR 5#20 RR/RR 5#12 RR/RR |  100x#22 RR/RR 5#20 RR/RR 5#12 RR/RR |
| Q11 | 2/3-A/B |  11x#8G RR/RR |  11x#8G RR/RR | N/A |  11x#8G FR/FR |  11x#8G RR/RR |  11x#8G RR/RR |

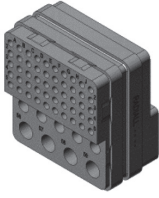

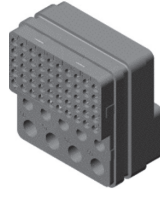
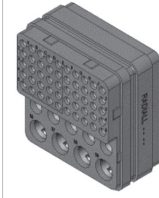
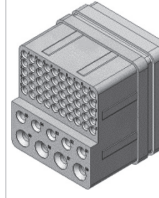
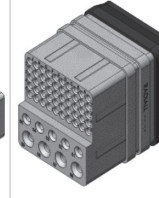

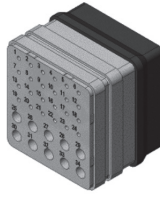
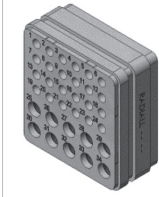
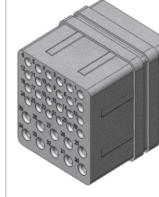
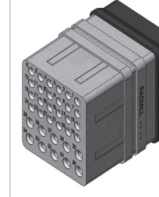
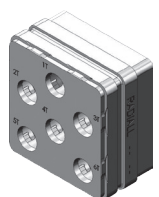

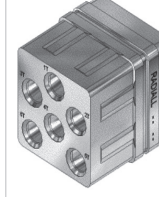


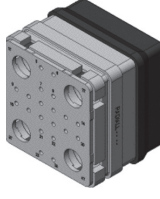
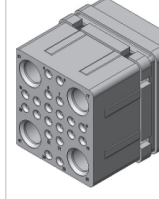
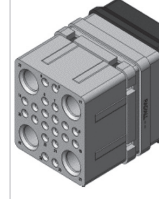
NSX Shell Contact Arrangement

NSX SERIES

| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|---|---|---|--|---|---|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| 68Q4 | 2/3-A/B |  62x#22 RR/RR 6x#16 RR/RR 4x#8G RR/RR |  62x#22 RR/RR 6x#16 RR/RR 4x#8G RR/RR | N/A | N/A |  62x#22 RR/RR 6x#16 RR/RR 4x#8G RR/RR |  62x#22 RR/RR 6x#16 RR/RR 4x#8G RR/RR |
| 118Q2 | 2/3-A/B |  118x#22 RR/RR 2x#8G RR/RR |  118x#22 RR/RR 2x#8G RR/RR |  118x#22 FR/FR 2x#8G RR/RR |  118x#22 FR/FR 2x#8G FR/FR |  118x#22 RR/RR 2x#8G RR/RR |  118x#22 RR/RR 2x#8G RR/RR |
| 100 | 2/3-C |  100x#22 RR/RR |  100x#22 RR/RR |  100x#22 FR/FR | N/A |  100x#22 RR/RR |  100x#22 RR/RR |
| 85 | 2/3-C |  80x#22 RR/RR 4x#20 RR/RR 1x#16 RR/RR |  80x#22 RR/RR 4x#20 RR/RR 1x#16 RR/RR |  80x#22 FR/FR 4x#20 RR/RR 1x#16 RR/RR |  80x#22 FR/FR 4x#20 FR/FR 1x#16 FR/FR |  80x#22 RR/RR 4x#20 RR/RR 1x#16 RR/RR |  80x#22 RR/RR 4x#20 RR/RR 1x#16 RR/RR |
| 84 | 2/3-C | N/A | N/A | N/A | N/A |  80x#22 RR/RR 4x#20 RR/RR |  80x#22 RR/RR 4x#20 RR/RR |

NSX SERIES

NSX Shell Contact Arrangement


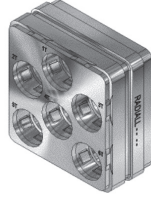

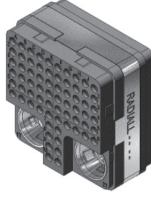
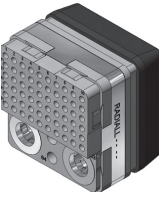

| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|---|---|---|--|---|---|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| 59 | 2/3-C |  50x#22 RR/RR 5x#16 RR/RR 4x#12 RR/RR |  50x#22 RR/RR 5x#16 RR/RR 4x#12 RR/RR |  50x#22 FR/FR 5x#16 RR/RR 4x#12 RR/RR |  50x#22 FR/FR 5x#16 FR/FR 4x#12 FR/FR |  50x#22 RR/RR 5x#16 RR/RR 4x#12 RR/RR |  50x#22 RR/RR 5x#16 RR/RR 4x#12 RR/RR |
| 34 | 2/3-C |  24x#20 RR/RR 10x#16 RR/RR |  24x#20 RR/RR 10x#16 RR/RR | N/A |  24x#20 FR/FR 10x#16 FR/FR |  24x#20 RR/RR 10x#16 RR/RR |  24x#20 RR/RR 10x#16 RR/RR |
| 6T6 | 2/3-C |  6x#8G RR/RR ⁽¹⁾ | Available ⁽¹⁾ | N/A |  6x#8G FR/FR |  6x#8G RR/RR |  6x#8G RR/RR |
| 24T4 | 2/3-C |  20x#20 RR/RR 4x#8G RR/RR |  20x#20 RR/RR 4x#8G RR/RR | N/A | N/A |  20x#20 RR/RR 4x#8G RR/RR |  20x#20 RR/RR 4x#8G RR/RR |

NOTE:

(1) For BPX serie, 6T6 insert will be supplied with FR/RR contacts








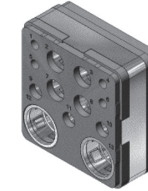









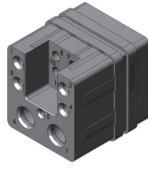
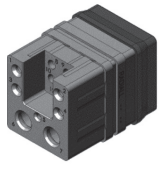
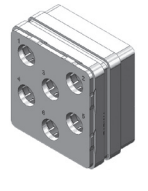


NSX Shell Contact Arrangement

NSX SERIES

| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|--|--|-----------|---|--|--|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| Q6 | 2/3-C |  6x#8G RR/RR |  6x#8G RR/RR | N/A |  6x#8G FR/FR |  6x#8G RR/RR |  6x#8G RR/RR |
| 20Q4 | 2/3-C |  20x#20 RR/RR 4x#8G RR/RR |  20x#20 RR/RR 4x#8G RR/RR | N/A |  20x#20 FR/FR 4x#8G FR/FR |  20x#20 RR/RR 4x#8G RR/RR |  20x#20 RR/RR 4x#8G RR/RR |
| 68Q2 | 2/3-C |  68x#22 RR/RR 2x#8G RR/RR |  68x#22 RR/RR 2x#8G RR/RR | N/A |  68x#22 FR/FR 2x#8G FR/FR |  68x#22 RR/RR 2x#8G RR/RR |  68x#22 RR/RR 2x#8G RR/RR |
| 62Q2 | 2/3-C |  60x#22 RR/RR 2x#16 RR/RR 2x#8G RR/RR |  60x#22 RR/RR 2x#16 RR/RR 2x#8G RR/RR | N/A |  60x#22 FR/FR 2x#16 FR/FR 2x#8G FR/FR |  60x#22 RR/RR 2x#16 RR/RR 2x#8G RR/RR |  60x#22 RR/RR 2x#16 RR/RR 2x#8G RR/RR |
| 17F12Q2 | 2/3-C |  12x#16 RR/RR LuxCis® 3x#16 RR/RR 2x#8G RR/RR |  12x#16 RR/RR LuxCis® 3x#16 RR/RR 2x#8G RR/RR | N/A |  12x#16 RR/RR LuxCis® 3x#16 FR/FR 2x#8G FR/FR |  12x#16 RR/RR LuxCis® 3x#16 RR/RR 2x#8G RR/RR |  12x#16 RR/RR LuxCis® 3x#16 RR/RR 2x#8G RR/RR |

NSX SERIES

NSX Shell Contact Arrangement






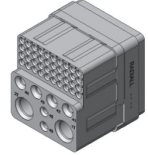
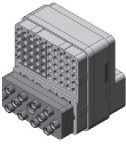
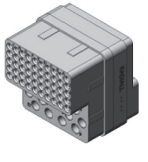


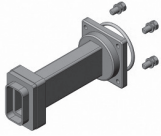
| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|---|---|-----------|--|---|---|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| 11Q2 | 2/3-C |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR | N/A |  4x#20 FR/FR 3x#16 FR/FR 4x#12 FR/FR 2x#8G FR/FR |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR |
| 11WQ2 | 2/3-C |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR | N/A |  4x#20 FR/FR 3x#16 FR/FR 4x#12 FR/FR 2x#8G FR/FR |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR |
| 13C2 | 2/3-C |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#5 RR/RR |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#5 RR/RR | N/A |  4x#20 FR/FR 3x#16 FR/FR 4x#12 FR/FR 2x#5 FR/FR |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#5 RR/RR |  4x#20 RR/RR 3x#16 RR/RR 4x#12 RR/RR 2x#5 RR/RR |
| 12F5C2 | 2/3-C |  1x#16 RR/RR 5x#16 RR/RR LuxCis® 4x#12 RR/RR 2x#5 RR/RR |  1x#16 RR/RR 5x#16 RR/RR LuxCis® 4x#12 RR/RR 2x#5 RR/RR | N/A | N/A |  1x#16 RR/RR 5x#16 RR/RR LuxCis® 4x#12 RR/RR 2x#5 RR/RR |  1x#16 RR/RR 5x#16 RR/RR LuxCis® 4x#12 RR/RR 2x#5 RR/RR |
| 6P6 | 2/3-C |  6x#8 RR/RR ⁽¹⁾ | Available ⁽¹⁾ | N/A | N/A |  6x#8 RR/RR |  6x#8 RR/RR |

NOTE:

(1) For BPX series, 6P6 insert will be supplied with FR/RR contacts

NSX Shell Contact Arrangement

NSX SERIES

| Insert name | Shell size cavity | Equipment side receptacle shell | | | | Avionic side plug shell | |
|-------------|-------------------|--|-----------|---|---|--|---|
| | | Version N | Version E | Version F | Version G | Version N | Version E |
| 15T6Q2 | 2/3-C |  7x#16 RR/RR 6x#10 RR/RR 2x#8G RR/RR | N/A | N/A |  7x#16 FR/FR 6x#10 FR/FR 2x#8G FR/FR |  7x#16 RR/RR 6x#10 RR/RR 2x#8G RR/RR | N/A |
| 46Q2 | 2/3-C |  40x#22 RR/RR 2x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR | N/A | N/A |  40x#22 FR/FR 2x#16 FR/FR 4x#12 FR/FR 2x#8G FR/FR |  40x#22 RR/RR 2x#16 RR/RR 4x#12 RR/RR 2x#8G RR/RR | N/A |
| 62F12 | 2/3-C | N/A | N/A |  50x#22 FR/FR 12x#16 RR/RR LuxCis® | N/A |  50x#22 RR/RR 12x#16 RR/RR LuxCis® |  50x#22 RR/RR 12x#16 RR/RR LuxCis® |
| WAVE GUIDE | 2 - A&B |  Wave guide equipment side | | | |  Wave guide avionic side | |

Insert Combination Code

FOR SHELL SIZE 1

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 101 | 60 | 60 | 5C2 |
| 102 | 60 | 60 | BLANK |
| 103 | BLANK | 60 | 5C2 |
| 104 | 60 | BLANK | 5C2 |
| 105 | BLANK | BLANK | 5C2 |
| 106 | 60 | BLANK | BLANK |
| 107 | 30T2 | 30T2 | 40 |
| 108 | 60 | 60 | 40 |
| 109 | BLANK | 60 | BLANK |

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 111 | BLANK | 30T2 | 40 |
| 112 | 60 | 4C | 5C2 |
| 113 | 60 | 4C | 40 |
| 114 | 60 | BLANK | 40 |
| 115 | BLANK | BLANK | BLANK |
| 116 | 4C | 60 | 40 |
| 117 | BLANK | BLANK | 40 |
| 118 | 60 | 30T2 | 5C2 |
| 119 | 30T2 | BLANK | 5C2 |

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 120 | 60 | 30T2 | 40 |
| 121 | 4C | 4C | 40 |
| 122 | 30T2 | 60 | 5C2 |
| 123 | 60 | 60 | 12F12 |
| 124 | 4C | BLANK | 12F12 |
| 125 | BLANK | BLANK | 12F12 |

FOR SHELL SIZE 2

| Code | Insert combination on shell | | |
|------|-----------------------------|------------|----------|
| | Cavity A | Cavity B | Cavity C |
| 201 | 150 | 150 | 13C2 |
| 202 | 71C1 | 150 | 13C2 |
| 203 | 71C1 | 71C1 | 13C2 |
| 204 | wave guide | 150 | 13C2 |
| 205 | 150 | 71C1 | 13C2 |
| 206 | 150 | 150 | 100 |
| 207 | 71C1 | 150 | 100 |
| 208 | 150 | 71C1 | 100 |
| 209 | 71C1 | 71C1 | 100 |
| 210 | wave guide | 71C1 | 100 |
| 211 | 150 | 150 | BLANK |
| 212 | 71C1 | 71C1 | BLANK |
| 213 | 71C1 | wave guide | 13C2 |
| 214 | wave guide | 71C1 | 13C2 |
| 215 | 150 | 73C3 | 13C2 |
| 216 | C2 | 1C71 | 85 |
| 217 | 150 | C5 | 13C2 |
| 218 | 150 | wave guide | 13C2 |
| 219 | 150 | 2C | 13C2 |
| 220 | 71C1 | C2 | 85 |
| 221 | 1C71 | 71C1 | 13C2 |
| 222 | BLANK | 150 | 13C2 |
| 223 | BLANK | BLANK | 13C2 |
| 224 | 150 | BLANK | 13C2 |
| 225 | 150 | 71C1 | BLANK |
| 226 | 150 | 150 | 85 |
| 227 | 150 | 150 | 34 |
| 228 | C4 | 150 | 13C2 |
| 229 | 120T2 | 120T2 | 100 |

| Code | Insert combination on shell | | |
|------|-----------------------------|------------|----------|
| | Cavity A | Cavity B | Cavity C |
| 230 | 121 | 121 | 6T6 |
| 233 | 120T2 | 150 | 100 |
| 234 | 60A | 60A | 13C2 |
| 235 | 150 | C4 | 34 |
| 236 | C4 | C4 | 34 |
| 237 | 150 | 120T2 | 100 |
| 243 | 150 | BLANK | 100 |
| 244 | 150 | BLANK | BLANK |
| 245 | 71C1 | 71C1 | 85 |
| 246 | 71C1 | BLANK | BLANK |
| 247 | BLANK | 150 | 85 |
| 248 | BLANK | 150 | 100 |
| 249 | BLANK | 150 | BLANK |
| 250 | BLANK | 71C1 | BLANK |
| 251 | BLANK | BLANK | 100 |
| 252 | BLANK | wave guide | 100 |
| 253 | C2 | 150 | 13C2 |
| 254 | C2 | 1C71 | 100 |
| 255 | C2 | 1C71 | 13C2 |
| 256 | C2 | 71C1 | 13C2 |
| 257 | C2 | C2 | 13C2 |
| 258 | - | - | - |
| 259 | C4 | C4 | 85 |
| 260 | wave guide | 150 | 85 |
| 261 | wave guide | 150 | 100 |
| 262 | 150 | 60A | 34 |
| 264 | BLANK | 24 | 100 |
| 265 | 24 | 150 | 13C2 |
| 266 | 121 | 121 | 85 |

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 268 | 60A | 121 | 59 |
| 270 | 150 | 150 | 59 |
| 271 | C4 | 120T2 | 13C2 |
| 272 | 150 | 150 | 24T4 |
| 273 | 150 | C2 | 13C2 |
| 274 | C2 | 71C1 | 85 |
| 275 | 121 | 60A | 34 |
| 276 | 121 | BLANK | 100 |
| 277 | 1C71 | 150 | 13C2 |
| 278 | 71C1 | 1C71 | 13C2 |
| 279 | 150 | 121 | 13C2 |
| 280 | 120T2 | 121 | 34 |
| 281 | 150 | 121 | 34 |
| 282 | C4 | BLANK | 13C2 |
| 283 | 150 | 60A | 13C2 |
| 284 | 120T2 | 120T2 | 13C2 |
| 285 | 24 | 60A | 100 |
| 286 | 60A | 60A | 34 |
| 287 | BLANK | 60A | 100 |

Insert Combination Code

FOR SHELL SIZE 2

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 288 | BLANK | 121 | BLANK |
| 289 | BLANK | BLANK | 85 |
| 290 | 150 | 121 | 100 |
| 291 | 121 | 150 | 100 |
| 292 | 121 | 121 | BLANK |
| 294 | 121 | 121 | 13C2 |
| 295 | Q11 | Q11 | 85 |
| 297 | 120T2 | 60A | BLANK |
| 298 | 121 | 60A | BLANK |
| 299 | BLANK | BLANK | 59 |
| 501 | 24 | 60A | 59 |
| 502 | 121 | Q11 | Q6 |
| 503 | 150 | BLANK | 11Q2 |
| 504 | 150 | BLANK | 34 |
| 505 | Q11 | BLANK | 34 |
| 506 | 150 | 150 | 11Q2 |
| 507 | 150 | 150 | 68Q2 |
| 508 | 24 | 24 | 100 |
| 509 | 150 | Q11 | 13C2 |
| 510 | 121 | 121 | 100 |
| 511 | 24 | 150 | 100 |
| 512 | Q11 | Q11 | 62Q2 |
| 513 | Q11 | Q11 | 34 |
| 514 | BLANK | 60A | 34 |
| 515 | BLANK | BLANK | BLANK |
| 516 | 121 | 121 | 34 |
| 517 | BLANK | 120T2 | 13C2 |
| 518 | Q11 | BLANK | 62Q2 |
| 519 | Q11 | Q11 | 68Q2 |
| 520 | 150 | 121 | 24T4 |
| 521 | Q11 | 150 | 62Q2 |
| 522 | 20F12T8 | 120T2 | 13C2 |
| 524 | 120T2 | 120T2 | 11Q2 |
| 527 | 120T2 | 120T2 | 85 |
| 528 | 150 | 150 | 11WQ2 |

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 529 | 35 | 35 | 62Q2 |
| 530 | 24 | BLANK | 85 |
| 532 | 20F12T8 | 121 | 34 |
| 533 | 120T2 | C4 | 24T4 |
| 534 | BLANK | Q11 | 85 |
| 535 | 150 | 35 | 24T4 |
| 536 | BLANK | 150 | 24T4 |
| 537 | 118Q2 | 118Q2 | 24T4 |
| 538 | 150 | 120T2 | 13C2 |
| 539 | Q11 | Q11 | BLANK |
| 540 | 120T2 | C4 | 13C2 |
| 541 | 1C71 | Q11 | 13C2 |
| 542 | 121 | C4 | Q6 |
| 543 | 120T2 | Q11 | 13C2 |
| 544 | 120T2 | 120T2 | 24T4 |
| 545 | C4 | Q11 | 85 |
| 546 | 121 | 60A | 100 |
| 547 | BLANK | 150 | 20Q4 |
| 548 | 150 | 35 | 20Q4 |
| 551 | 121 | 118Q2 | 24T4 |
| 552 | 150 | Q11 | 11Q2 |
| 554 | BLANK | 118Q2 | 13C2 |
| 555 | BLANK | 71C1 | 13C2 |
| 556 | BLANK | BLANK | 62Q2 |
| 557 | BLANK | Q11 | 62Q2 |
| 558 | BLANK | Q11 | BLANK |
| 559 | 150 | 150 | 20Q4 |
| 560 | 150 | Q11 | 85 |
| 561 | 150 | 120T2 | 85 |
| 562 | 121 | BLANK | BLANK |
| 563 | 24 | 24 | 34 |
| 564 | BLANK | BLANK | 34 |
| 565 | 150 | 24 | 34 |
| 566 | 150 | 121 | BLANK |
| 567 | 150 | 118Q2 | BLANK |

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 569 | 118Q2 | 118Q2 | BLANK |
| 570 | Q11 | 150 | 11Q2 |
| 571 | 150 | 118Q2 | 13C2 |
| 572 | 150 | C4 | 13C2 |
| 573 | 150 | 24 | 13C2 |
| 574 | 150 | 121 | 59 |
| 575 | 60A | 150 | 34 |
| 576 | 150 | 150 | Q6 |
| 577 | 1C71 | 118Q2 | 12F5C2 |
| 578 | 150 | 121 | 20Q4 |
| 579 | C4 | 118Q2 | 85 |
| 580 | 150 | BLANK | 59 |
| 581 | 118Q2 | 118Q2 | 20Q4 |
| 582 | BLANK | 71C1 | 11Q2 |
| 584 | 121 | 121 | 59 |
| 585 | 20F12Q8 | BLANK | 11Q2 |
| 586 | 150 | Q11 | 34 |
| 587 | 150 | 118Q2 | 85 |
| 588 | Q11 | Q11 | 11Q2 |
| 590 | BLANK | Q11 | Q6 |
| 591 | 20F12T8 | 150 | 100 |
| 592 | BLANK | BLANK | 11Q2 |
| 593 | 20F12Q8 | 121 | BLANK |
| 594 | C | 118Q2 | 85 |
| 596 | BLANK | 118Q2 | 11WQ2 |
| 597 | 150 | 121 | Q6 |
| 598 | 20F12Q8 | 118Q2 | 13C2 |
| 599 | C4 | 24 | 100 |
| 801 | C4 | Q11 | 59 |
| 802 | BLANK | 120T2 | 24T4 |
| 803 | Q11 | 20F12Q8 | 11Q2 |
| 804 | Q11 | 20F12Q8 | 17F12Q2 |
| 806 | C4 | 60A | 59 |
| 807 | Q11 | 150 | 85 |
| 809 | C4 | C4 | 59 |

NSX SERIES

Insert Combination Code

FOR SHELL SIZE 2

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 810 | Q11 | Q11 | 13C2 |
| 811 | 150 | 150 | 12F5C2 |
| 812 | 60A | C2 | 13C2 |
| 813 | BLANK | Q11 | 13C2 |
| 814 | 120T2 | 150 | 13C2 |
| 815 | 60A | 35 | 24T4 |
| 817 | 20F12Q8 | Q11 | 62Q2 |
| 818 | 60A | C2 | 24T4 |
| 819 | 60A | 24 | 34 |
| 820 | Q11 | 121 | BLANK |
| 822 | Q11 | 35 | 100 |
| 823 | 20F12T8 | 118Q2 | 13C2 |
| 824 | 20F12Q8 | BLANK | BLANK |
| 825 | 20F12T8 | BLANK | BLANK |
| 826 | 150 | 20F12Q8 | 34 |
| 827 | Q11 | 150 | 59 |
| 828 | 150 | BLANK | 85 |
| 829 | 120T2 | BLANK | 85 |
| 830 | 118Q2 | 120T2 | BLANK |

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 831 | 120T2 | 120T2 | BLANK |
| 832 | Q11 | 121 | 100 |
| 833 | 150 | 150 | 17F12Q2 |
| 834 | 110R | 150 | 17F12Q2 |
| 835 | 121 | 121 | 11Q2 |
| 838 | Q11 | BLANK | 68Q2 |
| 839 | 60A | BLANK | 34 |
| 840 | 150 | 110 | 11Q2 |
| 841 | 150 | 110 | 34 |
| 842 | 71C1 | 118Q2 | 12F5C2 |
| 843 | 110 | 110 | BLANK |
| 844 | 150 | 121 | 62F12 |
| 845 | 150 | 20F12Q8 | 13C2 |
| 846 | C4 | 150 | 62F12 |
| 847 | C4 | 150 | 11Q2 |
| 848 | 24 | 150 | 6Q6 |
| 849 | 150 | 150 | 10 |
| 850 | 150 | 110 | 13C2 |
| 851 | 36F36 | 150 | 85 |

| Code | Insert combination on shell | | |
|------|-----------------------------|----------|----------|
| | Cavity A | Cavity B | Cavity C |
| 852 | 150 | 121 | 11Q2 |
| 853 | 118Q2 | 150 | 11Q2 |
| 854 | 20F12Q8 | 118Q2 | 59 |
| 855 | 20F12Q8 | Q11 | 100 |
| 856 | BLANK | 110 | 13C2 |
| 857 | BLANK | 36F36 | BLANK |
| 858 | 118Q2 | 118Q2 | 11Q2 |
| 859 | 150 | 36F36 | 13C2 |
| 860 | 150 | 118Q2 | 11Q2 |
| 861 | 118Q2 | 118Q2 | 59 |
| 862 | 150 | 118Q2 | 62Q2 |
| 863 | Q11 | Q11 | 17F12Q2 |
| 864 | 150 | Q11 | 46Q2 |
| 865 | 118Q2 | 150 | 13C2 |
| 866 | 121 | 110 | 13C2 |
| 867 | C4 | C2 | BLANK |
| 868 | 150 | 118Q2 | 24T4 |

Insert Combination Code
FOR SHELL SIZE 3

NSX SERIES

| Code | Insert combination on shell | | | | | |
|------|-----------------------------|----------|----------|----------|----------|----------|
| | Cavity A | Cavity B | Cavity C | Cavity D | Cavity E | Cavity F |
| 301 | 150 | 150 | 13C2 | 150 | 150 | 13C2 |
| 302 | 150 | 150 | 100 | 150 | 150 | 13C2 |
| 303 | 150 | 150 | 13C2 | 150 | 150 | 100 |
| 304 | 150 | 150 | 100 | 150 | 150 | 100 |
| 305 | 150 | 150 | BLANK | 150 | 150 | BLANK |
| 306 | 150 | 71C1 | 13C2 | 150 | 71C1 | 13C2 |
| 307 | 71C1 | 71C1 | 13C2 | 71C1 | 71C1 | 13C2 |
| 308 | C2 | C2 | 13C2 | C2 | 150 | 100 |
| 309 | 150 | 150 | 13C2 | 150 | 71C1 | 100 |
| 310 | C4 | C4 | 13C2 | BLANK | 150 | 100 |
| 311 | 150 | 150 | 85 | 150 | 150 | 85 |
| 312 | BLANK | BLANK | 13C2 | BLANK | BLANK | 13C2 |
| 313 | BLANK | BLANK | 13C2 | BLANK | BLANK | 100 |
| 314 | BLANK | BLANK | 13C2 | BLANK | 150 | 100 |
| 315 | 150 | 150 | 13C2 | 150 | 150 | BLANK |
| 316 | 24 | BLANK | 13C2 | 150 | 150 | BLANK |
| 317 | 120T2 | 150 | 34 | 120T2 | 150 | 34 |
| 320 | 150 | 60A | 100 | 150 | 60A | 100 |
| 321 | 150 | 150 | 100 | 150 | BLANK | BLANK |
| 322 | 150 | 150 | 100 | 150 | 150 | 34 |
| 323 | 150 | 150 | 100 | 71C1 | 71C1 | 100 |
| 324 | 150 | 150 | 100 | C2 | BLANK | BLANK |
| 325 | 150 | 150 | 13C2 | C2 | C2 | 13C2 |
| 326 | 150 | 71C1 | 100 | 150 | 150 | 100 |
| 327 | 150 | 71C1 | 100 | 150 | 150 | 13C2 |
| 328 | C2 | C2 | 13C2 | 150 | 150 | 13C2 |
| 329 | C2 | C2 | 13C2 | C4 | 150 | 100 |
| 330 | C4 | C4 | 13C2 | BLANK | BLANK | BLANK |
| 331 | 71C1 | 150 | 100 | 150 | 150 | 100 |
| 332 | C4 | C4 | 13C2 | C4 | C4 | 85 |
| 333 | 71C1 | 71C1 | 100 | 71C1 | 71C1 | 100 |
| 334 | 71C1 | 71C1 | BLANK | 71C1 | 71C1 | BLANK |
| 335 | 71C1 | C4 | 100 | 71C1 | C4 | 100 |
| 336 | BLANK | 150 | 13C2 | BLANK | 150 | 13C2 |
| 337 | BLANK | BLANK | 100 | BLANK | BLANK | 13C2 |
| 338 | C2 | 150 | 100 | 150 | 150 | 100 |
| 339 | C2 | C2 | 100 | C2 | C2 | 100 |
| 340 | C2 | C2 | 13C2 | C2 | C2 | 13C2 |
| 341 | C4 | C4 | 100 | C4 | C4 | 100 |
| 342 | C4 | C4 | 13C2 | C4 | C4 | 13C2 |

NSX T CAS connectors (insert code combination 310) are installed on equipment for use on T CAS (Traffic Collision Avoidance Systems)
C4 insert uses size 1 RF coaxial contacts (see pages 4-42 to 4-43)

Insert Combination Code
FOR SHELL SIZE 3

| Code | Insert combination on shell | | | | | |
|------|-----------------------------|----------|----------|----------|----------|----------|
| | Cavity A | Cavity B | Cavity C | Cavity D | Cavity E | Cavity F |
| 343 | BLANK | 150 | 100 | 150 | 150 | 13C2 |
| 344 | 24 | 150 | 13C2 | 24 | 150 | 13C2 |
| 345 | 60A | 24 | BLANK | 60A | 24 | BLANK |
| 346 | 150 | 24 | 100 | 150 | 150 | 34 |
| 348 | C4 | 120T2 | 100 | 150 | 150 | 13C2 |
| 350 | 150 | 120T2 | 100 | 150 | 120T2 | 59 |
| 351 | 150 | 150 | 34 | 150 | 150 | 34 |
| 352 | 24 | 24 | 100 | 24 | 24 | 34 |
| 353 | 150 | 150 | 59 | 150 | 150 | 59 |
| 354 | 150 | 150 | 34 | 150 | 24 | 100 |
| 355 | C4 | 150 | 13C2 | BLANK | 150 | 13C2 |
| 356 | 150 | 150 | 100 | 60A | 60A | 100 |
| 357 | C4 | C4 | 13C2 | 150 | 150 | 100 |
| 358 | C4 | C4 | 13C2 | 121 | 150 | 100 |
| 359 | 121 | 121 | 13C2 | 121 | 121 | 13C2 |
| 360 | 150 | 150 | 6T6 | 24 | 24 | 13C2 |
| 361 | 150 | BLANK | 13C2 | 150 | 150 | BLANK |
| 362 | 24 | 24 | 34 | 150 | 121 | 34 |
| 363 | 150 | 150 | 59 | 24 | 60A | 59 |
| 364 | 60A | 24 | 59 | 150 | 150 | 59 |
| 365 | 24 | 60A | 100 | 24 | 60A | 100 |
| 366 | 150 | 150 | 84 | 150 | 150 | 100 |
| 367 | 150 | 150 | 59 | 120T2 | 120T2 | 100 |
| 368 | 150 | 150 | 59 | 150 | 150 | 34 |
| 369 | 150 | 150 | 59 | 150 | 150 | 100 |
| 370 | 60A | 60A | 100 | 60A | 60A | 100 |
| 371 | C4 | C4 | 13C2 | C2 | 150 | 100 |
| 372 | 150 | 150 | BLANK | 121 | BLANK | 13C2 |
| 373 | 150 | 150 | 13C2 | 120T2 | 120T2 | 100 |
| 374 | 150 | 150 | 68Q2 | 150 | 150 | 68Q2 |
| 375 | 150 | 150 | 100 | 150 | 150 | 68Q2 |
| 376 | 150 | 150 | 68Q2 | 150 | 150 | BLANK |
| 377 | 120T2 | 150 | 13C2 | 120T2 | 150 | 100 |
| 378 | Q11 | 150 | 13C2 | 150 | 150 | 13C2 |
| 379 | 60A | 150 | 34 | 150 | 150 | 34 |
| 380 | C4 | 120T2 | 11Q2 | C4 | 120T2 | 13C2 |
| 381 | C4 | 120T2 | 11Q2 | C4 | 120T2 | 11Q2 |
| 382 | 150 | 150 | 11Q2 | 150 | 150 | 11Q2 |
| 383 | 150 | 150 | BLANK | Q11 | 150 | 85 |
| 384 | Q11 | 150 | 85 | 150 | 150 | BLANK |

Insert Combination Code

FOR SHELL SIZE 3

| Code | Insert combination on shell | | | | | |
|------|-----------------------------|----------|----------|----------|----------|----------|
| | Cavity A | Cavity B | Cavity C | Cavity D | Cavity E | Cavity F |
| 387 | Q11 | Q11 | 62Q2 | Q11 | Q11 | 62Q2 |
| 388 | Q11 | Q11 | Q6 | Q11 | Q11 | 62Q2 |
| 389 | Q11 | 150 | 11Q2 | 150 | 150 | 68Q2 |
| 390 | 150 | 150 | 11Q2 | BLANK | BLANK | BLANK |
| 393 | BLANK | BLANK | 13C2 | 150 | BLANK | BLANK |
| 394 | BLANK | BLANK | 13C2 | 150 | BLANK | 13C2 |
| 395 | Q11 | Q11 | 100 | Q11 | Q11 | 100 |
| 396 | BLANK | BLANK | BLANK | BLANK | BLANK | BLANK |
| 397 | Q11 | Q11 | 11Q2 | Q11 | 150 | 11Q2 |
| 398 | 150 | 120T2 | 85 | 150 | 120T2 | 85 |
| 399 | 121 | BLANK | 6T6 | 60A | BLANK | 13C2 |
| 601 | 60A | 60A | 13C2 | 60A | 60A | 13C2 |
| 602 | Q11 | 150 | 11Q2 | 150 | 150 | 11Q2 |
| 603 | 24 | BLANK | 13C2 | BLANK | BLANK | 13C2 |
| 604 | 150 | 150 | BLANK | 150 | 150 | 100 |
| 605 | 150 | Q11 | 11Q2 | 150 | Q11 | 68Q2 |
| 607 | 24 | 24 | 13C2 | 24 | 24 | 100 |
| 608 | 24 | 24 | 13C2 | 24 | 24 | 68Q2 |
| 609 | 150 | 150 | 34 | 150 | 120T2 | 13C2 |
| 610 | 150 | 150 | 34 | 150 | Q11 | 13C2 |
| 611 | BLANK | 150 | 13C2 | BLANK | 150 | 100 |
| 613 | Q11 | 150 | 68Q2 | 150 | 150 | 13C2 |
| 614 | 150 | 150 | 100 | BLANK | BLANK | BLANK |
| 615 | 150 | 150 | 100 | 150 | 150 | 59 |
| 616 | 150 | 150 | 13C2 | 60A | 120T2 | 34 |
| 617 | 60A | 120T2 | 13C2 | 60A | 120T2 | 13C2 |
| 618 | 150 | 150 | Q6 | 150 | 150 | Q6 |
| 619 | Q11 | Q11 | 11Q2 | 150 | 150 | 100 |
| 620 | 24 | 24 | 34 | 24 | BLANK | 34 |
| 621 | 150 | 150 | 34 | 150 | 60A | 34 |
| 622 | 120T2 | 150 | 100 | 120T2 | 150 | 100 |
| 623 | C4 | C4 | 34 | C4 | C4 | BLANK |
| 624 | 150 | 150 | 13C2 | 60A | 60A | 34 |
| 626 | C4 | C4 | 13C2 | 120T2 | 150 | 100 |
| 627 | C4 | 120T2 | BLANK | C4 | 120T2 | 11Q2 |

NSX SERIES

Insert Combination Code

FOR SHELL SIZE 3

| Code | Insert combination on shell | | | | | |
|------|-----------------------------|----------|----------|----------|----------|----------|
| | Cavity A | Cavity B | Cavity C | Cavity D | Cavity E | Cavity F |
| 629 | C4 | 120T2 | 17F12Q2 | C4 | 120T2 | 11Q2 |
| 630 | C4 | C4 | BLANK | C4 | C4 | 34 |
| 631 | BLANK | 150 | 13C2 | BLANK | Q11 | BLANK |
| 632 | BLANK | 150 | 13C2 | 150 | 150 | 68Q2 |
| 633 | 150 | 150 | 100 | Q11 | Q11 | 11Q2 |
| 634 | 150 | 120T2 | 34 | 150 | 120T2 | 34 |
| 635 | Q11 | 121 | 11Q2 | Q11 | 121 | 11Q2 |
| 636 | 150 | 150 | 11Q2 | 150 | 150 | 100 |
| 637 | BLANK | 150 | 11Q2 | 150 | 150 | 68Q2 |
| 638 | Q11 | 150 | 62Q2 | Q11 | 150 | 62Q2 |
| 639 | Q11 | 121 | 13C2 | Q11 | 121 | 13C2 |
| 641 | 150 | 150 | BLANK | 150 | 150 | 13C2 |
| 642 | 121 | 60A | 59 | 121 | 60A | 13C2 |
| 643 | Q11 | Q11 | Q6 | Q11 | Q11 | Q6 |
| 644 | 150 | Q11 | 34 | Q11 | Q11 | 34 |
| 645 | 150 | 150 | 11Q2 | 150 | 150 | BLANK |
| 646 | 150 | BLANK | 13C2 | 150 | BLANK | BLANK |
| 647 | C4 | 120T2 | 17F12Q2 | C4 | 120T2 | 13C2 |
| 648 | BLANK | BLANK | 17F12Q2 | BLANK | BLANK | BLANK |
| 649 | 150 | 150 | 15T6Q2 | 150 | 150 | 15T6Q2 |
| 651 | Q11 | 118Q2 | 59 | Q11 | 118Q2 | 59 |
| 652 | 121 | 121 | 34 | 121 | 121 | 34 |
| 653 | C4 | C4 | 13C2 | C4 | 150 | 100 |
| 654 | C4 | 150 | 62F12 | C4 | 150 | 11Q2 |
| 655 | 36F36 | 150 | 11Q2 | 150 | 150 | 68Q2 |
| 656 | 71C1 | 71C1 | 85 | 71C1 | 71C1 | 85 |
| 657 | Q11 | Q11 | 34 | 120T2 | 150 | 13C2 |
| 660 | C4 | BLANK | BLANK | 150 | BLANK | 13C2 |
| 661 | Q11 | Q11 | 85 | Q11 | Q11 | 85 |
| 662 | BLANK | BLANK | 13C2 | 150 | 150 | 100 |
| 664 | Q11 | Q11 | 100 | 118Q2 | Q11 | 34 |

Modification Code

NSX SERIES

| Code | Receptacle shell | Plug shell |
|------|---|---|
| 00 | <p>Ø 3.76 Ø (.148) All holes</p> | <p>Ø 3.76 Ø (.148) All holes</p> |
| 01 | <p>Shell size 1: Q^y = 4 6-32 UNC & Q^y = 6 4-40 UNC</p> <p>Shell size 2: Q^y = 6 6-32 UNC</p> <p>Shell size 3: Q^y = 10 6-32 UNC</p> | <p>6-32 UNC</p> <p>Shell size 1: Q^y = 4 Shell size 2: Q^y = 4 Shell size 3: Q^y = 8</p> <p>Size 1 plug is without threaded inserts</p> |
| 03 | <p>Shell size 1: Q^y = 6 4-40 UNC 2B & Q^y = 3 holes Ø 3.05 (.120)</p> <p>Shell size 2: Q^y = 6 & Q^y = 4 holes Ø 3.76 (.148)</p> <p>Shell size 3: Q^y = 10 & Q^y = 4 holes Ø 3.76 (.148)</p> | <p>Shell size 1 plug is without threaded inserts</p> <p>Shell size 1: Q^y = 4 4-40 UNC</p> <p>Shell size 2: Q^y = 4 4-40 UNC & Q^y = 6 holes Ø 3.76 (.148)</p> <p>Shell size 3: Q^y = 8 & Q^y = 6 holes Ø 3.76 (.148)</p> |
| 08 | <p>4-40 UNC All holes</p> <p>Shell sizes 2 and 3 only</p> | <p>4-40 UNC All holes</p> <p>Shell sizes 2 and 3 only</p> |
| 09 | <p>6-32 UNC All holes</p> <p>Shell sizes 2 and 3 only</p> | <p>6-32 UNC All holes</p> <p>Shell sizes 2 and 3 only</p> |
| 10 | <p>M3 x 0.50 All holes</p> <p>Shell size 1 receptacle is without threaded inserts</p> | <p>M3 x 0.50 All holes</p> <p>Shell size 1 plug is without threaded inserts</p> |

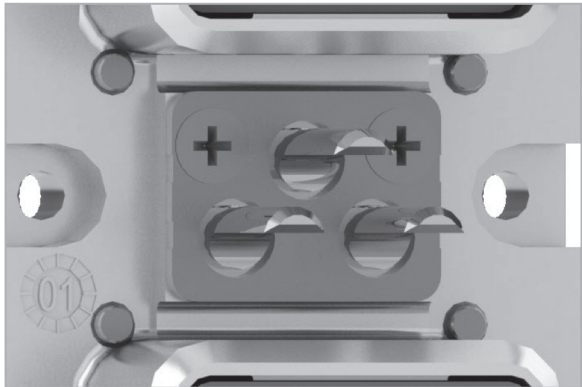
Modification Code

| Code | Receptacle shell | Plug shell |
|------|---|--|
| 11 | <p>M3 x 0.50</p> <p>Shell size 1: Q^y = 4 Shell size 2: Q^y = 6 Shell size 3: Q^y = 10</p> <p>Size 1 receptacle is without threaded inserts</p> | <p>M3 x 0.50</p> <p>Shell size 1: Q^y = 4 Shell size 2: Q^y = 4 Shell size 3: Q^y = 8</p> <p>Shell size 1 plug is without threaded inserts</p> |
| 12 | <p>4-40 UNC 6 holes (4 close to the bosses and 2 at the polarization system level)</p> <p>Available for shell size 2 only</p> | <p>4-40 UNC 6 holes (4 in to the corner and 2 at the polarization system level)</p> <p>Available for shell size 2 only</p> |
| 23 | <p>Shell size 1: Q^y = 4 floating eyelets Ø 3.1 (.122) Shell size 2: Q^y = 6 Ø 3.76 (.148) + 4 floating eyelets Shell size 3: Q^y = 10 Ø 3.76 (.148) + 4 floating eyelets</p> | <p>Shell size 1: Ø 3.1 (.122) Shell size 2 and 3: Ø 3.6 (.141)</p> <p>4 floating eyelets</p> |

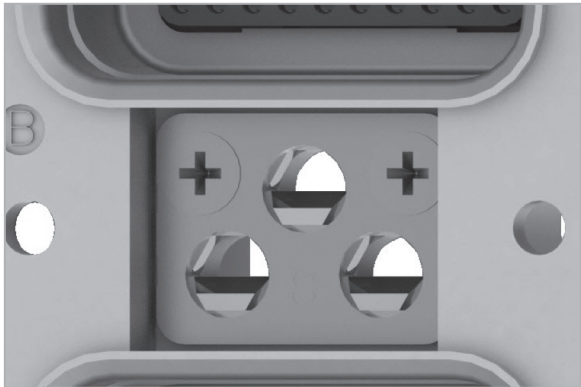
Polarization Code

POSITION OF POLARIZATION KEYS AND POSTS

Connectors are shown front side, with "RADIALL" upward



POSTS



KEYS

POSITION CODING

Dark area represents the polarizing post
Clear portion represents the key hole



1



2



3



4



5



6

NSX SERIES

NSX SERIES

Polarization Code Table

| Code number | Receptacle shell | | | Plug shell | | |
|-------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 00 | - | - | - | - | - | - |
| 01 | 4 | 4 | 4 | 1 | 1 | 1 |
| 02 | 4 | 4 | 3 | 2 | 1 | 1 |
| 03 | 4 | 4 | 2 | 3 | 1 | 1 |
| 04 | 4 | 4 | 1 | 4 | 1 | 1 |
| 05 | 4 | 4 | 6 | 5 | 1 | 1 |
| 06 | 4 | 4 | 5 | 6 | 1 | 1 |
| 07 | 5 | 4 | 4 | 1 | 1 | 6 |
| 08 | 5 | 4 | 3 | 2 | 1 | 6 |
| 09 | 5 | 4 | 2 | 3 | 1 | 6 |
| 10 | 5 | 4 | 1 | 4 | 1 | 6 |
| 11 | 5 | 4 | 6 | 5 | 1 | 6 |
| 12 | 5 | 4 | 5 | 6 | 1 | 6 |
| 13 | 6 | 4 | 4 | 1 | 1 | 5 |
| 14 | 6 | 4 | 3 | 2 | 1 | 5 |
| 15 | 6 | 4 | 2 | 3 | 1 | 5 |
| 16 | 6 | 4 | 1 | 4 | 1 | 5 |
| 17 | 6 | 4 | 6 | 6 | 1 | 5 |
| 18 | 6 | 4 | 5 | 5 | 1 | 5 |
| 19 | 1 | 4 | 4 | 1 | 1 | 4 |
| 20 | 1 | 4 | 3 | 2 | 1 | 4 |
| 21 | 1 | 4 | 2 | 3 | 1 | 4 |
| 22 | 1 | 4 | 1 | 4 | 1 | 4 |
| 23 | 1 | 4 | 6 | 5 | 1 | 4 |
| 24 | 1 | 4 | 5 | 6 | 1 | 4 |
| 25 | 2 | 4 | 4 | 1 | 1 | 3 |
| 26 | 2 | 4 | 3 | 2 | 1 | 3 |
| 27 | 2 | 4 | 2 | 3 | 1 | 3 |
| 28 | 2 | 4 | 1 | 4 | 1 | 3 |
| 29 | 2 | 4 | 6 | 5 | 1 | 3 |
| 30 | 2 | 4 | 5 | 6 | 1 | 3 |
| 31 | 3 | 4 | 4 | 1 | 1 | 2 |
| 32 | 3 | 4 | 3 | 2 | 1 | 2 |
| 33 | 3 | 4 | 2 | 3 | 1 | 2 |
| 34 | 3 | 4 | 1 | 4 | 1 | 2 |
| 35 | 3 | 4 | 6 | 6 | 1 | 2 |
| 36 | 3 | 4 | 5 | 5 | 1 | 2 |
| 37 | 4 | 3 | 4 | 1 | 2 | 1 |
| 38 | 4 | 3 | 3 | 2 | 2 | 1 |
| 39 | 4 | 3 | 2 | 3 | 2 | 1 |
| 40 | 4 | 3 | 1 | 4 | 2 | 1 |
| 41 | 4 | 3 | 6 | 5 | 2 | 1 |
| 42 | 4 | 3 | 5 | 6 | 2 | 1 |
| 43 | 5 | 3 | 4 | 1 | 2 | 6 |
| 44 | 5 | 3 | 3 | 2 | 2 | 6 |
| 45 | 5 | 3 | 2 | 3 | 2 | 6 |
| 46 | 5 | 3 | 1 | 4 | 2 | 6 |
| 47 | 5 | 3 | 6 | 5 | 2 | 6 |
| 48 | 5 | 3 | 5 | 6 | 2 | 6 |
| 49 | 6 | 3 | 4 | 1 | 2 | 5 |

| Code number | Receptacle shell | | | Plug shell | | |
|-------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 50 | 6 | 3 | 3 | 2 | 2 | 5 |
| 51 | 6 | 3 | 2 | 3 | 2 | 5 |
| 52 | 6 | 3 | 1 | 4 | 2 | 5 |
| 53 | 6 | 3 | 6 | 5 | 2 | 5 |
| 54 | 6 | 3 | 5 | 6 | 2 | 5 |
| 55 | 1 | 3 | 4 | 1 | 2 | 4 |
| 56 | 1 | 3 | 3 | 2 | 2 | 4 |
| 57 | 1 | 3 | 2 | 3 | 2 | 4 |
| 58 | 1 | 3 | 1 | 4 | 2 | 4 |
| 59 | 1 | 3 | 6 | 5 | 2 | 4 |
| 60 | 1 | 3 | 5 | 6 | 2 | 4 |
| 61 | 2 | 3 | 4 | 1 | 2 | 3 |
| 62 | 2 | 3 | 3 | 2 | 2 | 3 |
| 63 | 2 | 3 | 2 | 3 | 2 | 3 |
| 64 | 2 | 3 | 1 | 4 | 2 | 3 |
| 65 | 2 | 3 | 6 | 5 | 2 | 3 |
| 66 | 2 | 3 | 5 | 6 | 2 | 3 |
| 67 | 3 | 3 | 4 | 1 | 2 | 2 |
| 68 | 3 | 3 | 3 | 2 | 2 | 2 |
| 69 | 3 | 3 | 2 | 3 | 2 | 2 |
| 70 | 3 | 3 | 1 | 4 | 2 | 2 |
| 71 | 3 | 3 | 6 | 5 | 2 | 2 |
| 72 | 3 | 3 | 5 | 6 | 2 | 2 |
| 73 | 4 | 2 | 4 | 1 | 3 | 1 |
| 74 | 4 | 2 | 3 | 2 | 3 | 1 |
| 75 | 4 | 2 | 2 | 3 | 3 | 1 |
| 76 | 4 | 2 | 1 | 4 | 3 | 1 |
| 77 | 4 | 2 | 6 | 5 | 3 | 1 |
| 78 | 4 | 2 | 5 | 6 | 3 | 1 |
| 79 | 5 | 2 | 4 | 1 | 3 | 6 |
| 80 | 5 | 2 | 3 | 2 | 3 | 6 |
| 81 | 5 | 2 | 2 | 3 | 3 | 6 |
| 82 | 5 | 2 | 1 | 4 | 3 | 6 |
| 83 | 5 | 2 | 6 | 5 | 3 | 6 |
| 84 | 5 | 2 | 5 | 6 | 3 | 6 |
| 85 | 6 | 2 | 4 | 1 | 3 | 5 |
| 86 | 6 | 2 | 3 | 2 | 3 | 5 |
| 87 | 6 | 2 | 2 | 3 | 3 | 5 |
| 88 | 6 | 2 | 1 | 4 | 3 | 5 |
| 89 | 6 | 2 | 6 | 5 | 3 | 5 |
| 90 | 6 | 2 | 5 | 6 | 3 | 5 |
| 91 | 1 | 2 | 4 | 1 | 3 | 4 |
| 92 | 1 | 2 | 3 | 2 | 3 | 4 |
| 93 | 1 | 2 | 2 | 3 | 3 | 4 |
| 94 | 1 | 2 | 1 | 4 | 3 | 4 |
| 95 | 1 | 2 | 6 | 5 | 3 | 4 |
| 96 | 1 | 2 | 5 | 6 | 3 | 4 |
| 97 | 2 | 2 | 4 | 1 | 3 | 3 |
| 98 | 2 | 2 | 3 | 2 | 3 | 3 |
| 99 | 2 | 2 | 2 | 3 | 3 | 3 |

Polarization Code Table






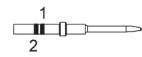


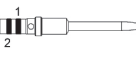

| Code number | Receptacle shell | | | Plug shell | | |
|-------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 100 | 2 | 2 | 1 | 4 | 3 | 3 |
| 101 | 2 | 2 | 6 | 5 | 3 | 3 |
| 102 | 2 | 2 | 5 | 6 | 3 | 3 |
| 103 | 3 | 2 | 4 | 1 | 3 | 2 |
| 104 | 3 | 2 | 3 | 2 | 3 | 2 |
| 105 | 3 | 2 | 2 | 3 | 3 | 2 |
| 106 | 3 | 2 | 1 | 4 | 3 | 2 |
| 107 | 3 | 2 | 6 | 5 | 3 | 2 |
| 108 | 3 | 2 | 5 | 6 | 3 | 2 |
| 109 | 4 | 1 | 4 | 1 | 4 | 1 |
| 110 | 4 | 1 | 3 | 2 | 4 | 1 |
| 111 | 4 | 1 | 2 | 3 | 4 | 1 |
| 112 | 4 | 1 | 1 | 4 | 4 | 1 |
| 113 | 4 | 1 | 6 | 5 | 4 | 1 |
| 114 | 4 | 1 | 5 | 6 | 4 | 1 |
| 115 | 5 | 1 | 4 | 1 | 4 | 6 |
| 116 | 5 | 1 | 3 | 2 | 4 | 6 |
| 117 | 5 | 1 | 2 | 3 | 4 | 6 |
| 118 | 5 | 1 | 1 | 4 | 4 | 6 |
| 119 | 5 | 1 | 6 | 5 | 4 | 6 |
| 120 | 5 | 1 | 5 | 6 | 4 | 6 |
| 121 | 6 | 1 | 4 | 1 | 4 | 5 |
| 122 | 6 | 1 | 3 | 2 | 4 | 5 |
| 123 | 6 | 1 | 2 | 3 | 4 | 5 |
| 124 | 6 | 1 | 1 | 4 | 4 | 5 |
| 125 | 6 | 1 | 6 | 5 | 4 | 5 |
| 126 | 6 | 1 | 5 | 6 | 4 | 5 |
| 127 | 1 | 1 | 4 | 1 | 4 | 4 |
| 128 | 1 | 1 | 3 | 2 | 4 | 4 |
| 129 | 1 | 1 | 2 | 3 | 4 | 4 |
| 130 | 1 | 1 | 1 | 4 | 4 | 4 |
| 131 | 1 | 1 | 6 | 5 | 4 | 4 |
| 132 | 1 | 1 | 5 | 6 | 4 | 4 |
| 133 | 2 | 1 | 4 | 1 | 4 | 3 |
| 134 | 2 | 1 | 3 | 2 | 4 | 3 |
| 135 | 2 | 1 | 2 | 3 | 4 | 3 |
| 136 | 2 | 1 | 1 | 4 | 4 | 3 |
| 137 | 2 | 1 | 6 | 5 | 4 | 3 |
| 138 | 2 | 1 | 5 | 6 | 4 | 3 |
| 139 | 3 | 1 | 4 | 1 | 4 | 2 |
| 140 | 3 | 1 | 3 | 2 | 4 | 2 |
| 141 | 3 | 1 | 2 | 3 | 4 | 2 |
| 142 | 3 | 1 | 1 | 4 | 4 | 2 |
| 143 | 3 | 1 | 6 | 5 | 4 | 2 |
| 144 | 3 | 1 | 5 | 6 | 4 | 2 |
| 145 | 4 | 6 | 4 | 1 | 5 | 1 |
| 146 | 4 | 6 | 3 | 2 | 5 | 1 |
| 147 | 4 | 6 | 2 | 3 | 5 | 1 |
| 148 | 4 | 6 | 1 | 4 | 5 | 1 |
| 149 | 4 | 6 | 6 | 5 | 5 | 1 |
| 150 | 4 | 6 | 5 | 6 | 5 | 1 |
| 151 | 5 | 6 | 4 | 1 | 5 | 6 |
| 152 | 5 | 6 | 3 | 2 | 5 | 6 |
| 153 | 5 | 6 | 2 | 3 | 5 | 6 |
| 154 | 5 | 6 | 1 | 4 | 5 | 6 |
| 155 | 5 | 6 | 6 | 5 | 5 | 6 |
| 156 | 5 | 6 | 5 | 6 | 5 | 6 |
| 157 | 6 | 6 | 4 | 1 | 5 | 5 |
| 158 | 6 | 6 | 3 | 2 | 5 | 5 |

| Code number | Receptacle shell | | | Plug shell | | |
|-------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 159 | 6 | 6 | 2 | 3 | 5 | 5 |
| 160 | 6 | 6 | 1 | 4 | 5 | 5 |
| 161 | 6 | 6 | 6 | 5 | 5 | 5 |
| 162 | 6 | 6 | 5 | 6 | 5 | 5 |
| 163 | 1 | 6 | 4 | 1 | 5 | 4 |
| 164 | 1 | 6 | 3 | 2 | 5 | 4 |
| 165 | 1 | 6 | 2 | 3 | 5 | 4 |
| 166 | 1 | 6 | 1 | 4 | 5 | 4 |
| 167 | 1 | 6 | 6 | 5 | 5 | 4 |
| 168 | 1 | 6 | 5 | 6 | 5 | 4 |
| 169 | 2 | 6 | 4 | 1 | 5 | 3 |
| 170 | 2 | 6 | 3 | 2 | 5 | 3 |
| 171 | 2 | 6 | 2 | 3 | 5 | 3 |
| 172 | 2 | 6 | 1 | 4 | 5 | 3 |
| 173 | 2 | 6 | 6 | 5 | 5 | 3 |
| 174 | 2 | 6 | 5 | 6 | 5 | 3 |
| 175 | 3 | 6 | 4 | 1 | 5 | 2 |
| 176 | 3 | 6 | 3 | 2 | 5 | 2 |
| 177 | 3 | 6 | 2 | 3 | 5 | 2 |
| 178 | 3 | 6 | 1 | 4 | 5 | 2 |
| 179 | 3 | 6 | 6 | 5 | 5 | 2 |
| 180 | 3 | 6 | 5 | 6 | 5 | 2 |
| 181 | 4 | 5 | 4 | 1 | 6 | 1 |
| 182 | 4 | 5 | 3 | 2 | 6 | 1 |
| 183 | 4 | 5 | 2 | 3 | 6 | 1 |
| 184 | 4 | 5 | 1 | 4 | 6 | 1 |
| 185 | 4 | 5 | 6 | 5 | 6 | 1 |
| 186 | 4 | 5 | 5 | 6 | 6 | 1 |
| 187 | 5 | 5 | 4 | 1 | 6 | 6 |
| 188 | 5 | 5 | 3 | 2 | 6 | 6 |
| 189 | 5 | 5 | 2 | 3 | 6 | 6 |
| 190 | 5 | 5 | 1 | 4 | 6 | 6 |
| 191 | 5 | 5 | 6 | 5 | 6 | 6 |
| 192 | 5 | 5 | 5 | 6 | 6 | 6 |
| 193 | 6 | 5 | 4 | 1 | 6 | 5 |
| 194 | 6 | 5 | 3 | 2 | 6 | 5 |
| 195 | 6 | 5 | 2 | 3 | 6 | 5 |
| 196 | 6 | 5 | 1 | 4 | 6 | 5 |
| 197 | 6 | 5 | 6 | 5 | 6 | 5 |
| 198 | 6 | 5 | 5 | 6 | 6 | 5 |
| 199 | 1 | 5 | 4 | 1 | 6 | 4 |
| 200 | 1 | 5 | 3 | 2 | 6 | 4 |
| 201 | 1 | 5 | 2 | 3 | 6 | 4 |
| 202 | 1 | 5 | 1 | 4 | 6 | 4 |
| 203 | 1 | 5 | 6 | 5 | 6 | 4 |
| 204 | 1 | 5 | 5 | 6 | 6 | 4 |
| 205 | 2 | 5 | 4 | 1 | 6 | 3 |
| 206 | 2 | 5 | 3 | 2 | 6 | 3 |
| 207 | 2 | 5 | 2 | 3 | 6 | 3 |
| 208 | 2 | 5 | 1 | 4 | 6 | 3 |
| 209 | 2 | 5 | 6 | 5 | 6 | 3 |
| 210 | 2 | 5 | 5 | 6 | 6 | 3 |
| 211 | 3 | 5 | 4 | 1 | 6 | 2 |
| 212 | 3 | 5 | 3 | 2 | 6 | 2 |
| 213 | 3 | 5 | 2 | 3 | 6 | 2 |
| 214 | 3 | 5 | 1 | 4 | 6 | 2 |
| 215 | 3 | 5 | 6 | 5 | 6 | 2 |
| 216 | 3 | 5 | 5 | 6 | 6 | 2 |

NSX SERIES

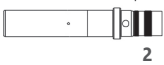

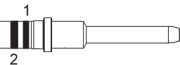
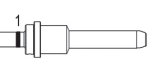
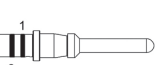
Contacts

SIGNAL, POWER AND GROUND CONTACTS CRIMP TERMINATION

| Contact size | | 22 | 22 reduced crimp barrel | 20 | 16 | 16 reduced crimp barrel | |
|-------------------------|----------------------------------|--|---|---|---|---|--|
| Ins.Ext Tool (metallic) | Radial P/N | 282885 | | 282886 | 282546 | | |
| | Mil Spec P/N | M81969/1.01 | | M81969/1.02 | M81969/1.03 | | |
| Ins.Ext Tool (plastic) | Radial P/N | 282522 | | 282549029 | 282515 | - | |
| | Mil spec P/N | M81969/14.01 | | M81969/14.02 | M81969/14.03 | - | |
| Positioner | Radial P/N | 282970 | | 282971 | 282972 | | |
| | Mil spec P/N | M22520/2.23 | | M22520/2.08 | M22520/1.02 | | |
| Crimping Tool | Radial P/N | 282281 | | 282281 | 282291 | | |
| | Mil spec P/N | M22520/2.01 | | M22520/2.01 | M22520/1.01 | | |
| Contact | Socket | 620300  (1) Orange (2) Yellow | 620301  | 620310  (1) Orange (2) Red | 620330  (1) Orange (2) Blue | 620331  | |
| | Pin | 620200  (1) Orange (2) Green | 620201  | 620210  (1) Orange (2) Red | 620230  (1) Orange (2) Blue | 620231  | |
| Wire | Selector | 4-3-3 | 5-4 | 5-6-7 | 6-5-4 | 5-4-3-2 | |
| | Striping length ± .020 mm (inch) | 3.5 (.138) | | 4 (.157) | 6 (.236) | | |
| | Wire outside diameter mm (inch) | 1.4 (.055) | 1.2 (.047) | 1.8 (.071) | 2.6 (.102) | 1.97 (.077) | |
| | Cross section (mm ²) | 0.38-0.21-0.14 | 0.093-0.055 | 0.21-0.38-0.60 | 1.34-0.93-0.60 | 0.93-0.60-0.38-0.21 | |
| | Wire size (AWG) | 22-24-26 | 28-30 | 20-22-24 | 16-18-20 | 18-20-22-24 | |
| Contact arrangement | | See contact arrangement page 4-12 to 4-22 | | | | | |

Contacts

SIGNAL, POWER AND GROUND CONTACTS CRIMP TERMINATION

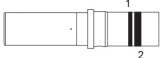
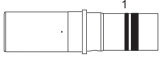
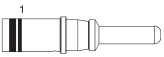

| Contact size | | 12 | 12 reduced crimp barrel | 12 |
|-------------------------|----------------------------------|--|---|--|
| Ins.Ext Tool (metallic) | Radiall P/N | 282549004 | | - |
| | Mil spec P/N | M81969/28.02 | | M81969/19.02 |
| Ins.Ext Tool (plastic) | Radiall P/N | 282549004 | | - |
| | Mil spec P/N | M81969/14.04 | | - |
| Positioner | Radiall P/N | 282972 | | 282579 |
| | Mil spec P/N | M22520/1.02 | | M22520/1.11 |
| Crimping Tool | Radiall P/N | 282291 | | |
| | Mil spec P/N | M22520/1.01 | | |
| Contact | Socket | <p>620340</p>  <p>(1) Orange (2) Yellow</p> | <p>620341</p>  <p>(1) Orange</p> | - |
| | Pin | <p>620240</p>  <p>(1) Orange (2) Yellow</p> | <p>620241</p>  <p>(1) Orange</p> | <p>619240</p>  <p>(front release rear removable contact)</p> <p>(1) Orange (2) Yellow</p> |
| Wire | Selector | 8-7-6 | 2-3-4-5 | 8-7-6 |
| | Striping length ± .020 mm (inch) | 6 (.236) | | |
| | Wire outside diameter mm (inch) | 3.4 (.134) | 2.4 (.094) | 3.4 (.134) |
| | Cross section (mm ²) | 3.18-1.91-1.34 | 0.93-0.60-0.38-0.21 | 3.18-1.91-1.34 |
| | Wire size (AWG) | 12-14-16 | 18-20-22-24 | 12-14-16 |
| Contact arrangement | | See contact arrangement page 4-12 to 4-22 | | |

NOTE:

Radiall recommends plastic extraction tools for environmental cavities 22-20-16 and 12 (the metallic extraction tool leads to damage risk of triple silicon web)

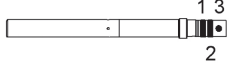
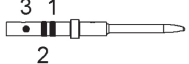
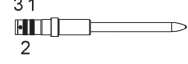
Contacts

SIGNAL, POWER AND GROUND CONTACTS CRIMP TERMINATION

| Contact size | | 8 | 8 grounded | | 5 | |
|---------------------|----------------------------------|--|--|--|--------------|------------|
| Ext Tool (metallic) | Radiall P/N | socket: 282549001 pin: 282549012 | 282549012 | 282540001 | 282548 | |
| | Mil spec P/N | socket: M81969/28.03 pin: M81969/19.03 | M81969/19.03 | M81969/28.03 | M81969/28.01 | |
| Positioner | Radiall P/N | - | - | 282588 | 282557 | |
| | Mil spec P/N | M22520/23.09 | M22520/23.09 | - | - | |
| Die | Radiall P/N | - | - | - | - | |
| | Mil spec P/N | M22520/23.02 | M22520/23.02 | M22520/23.02 | - | |
| Crimping Tool | Radiall P/N | - | - | - | 282296 | |
| | Mil spec P/N | M22520/23.01 | M22520/23.01 | M22520/23.01 | - | |
| Contact | Socket | 619370  (1) Orange (2) Brown | - | 619371  (1) Orange (2) Black | 616361 | 616366 |
| | Pin | 619270 (front release rear)  (1) Orange (2) Brown | 619271  (front release rear removable contact) (1) Orange (2) Black | - | 616261 | 616266 |
| Wire | Selector | - | - | - | 1-1 | 8-5 |
| | Striping length ± .020 mm (inch) | 11.5 (.453) | 11.5 (.453) | - | 8.0 (.315) | |
| | Wire outside diameter mm (inch) | 5.7 (.224) | 5.7 (.224) | - | 3.4 (.134) | 5.7 (.234) |
| | Cross section (mm²) | 9-5 | 9-5 | - | 3.18-1.91 | 9-5 |
| | Wire size (AWG) | 8-10 | 8-10 | - | 12-14 | 8-10 |
| Contact arrangement | | 6P6 | See contact arrangement page 4-12 to 4-22 | | | |

Contacts

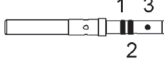

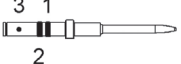
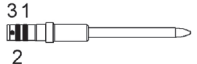
CHROMEL CONTACTS – CRIMP TERMINATION

| Contact size | | 22 | 20 |
|---------------------|-------------------------------------|---|---|
| Ins.Ext Tool | Radiall P/N | 282885 | 282886 |
| | Mil spec P/N | M81969/1.01 | M81969/1.02 |
| Positioner | Radiall P/N | 282970 | 282971 |
| | Mil spec P/N | M22520/2.23 | M22520/2.08 |
| Crimping Tool | Radiall P/N | 282281 | |
| | Mil spec P/N | M22520/2.01 | |
| Contact | Socket | 620380 (1) Orange (2) Green (3) Yellow |  620390 (1) Orange (2) Red (3) Yellow |
| | Pin |  620280 (1) Orange (2) Green (3) Yellow |  620290 (1) Orange (2) Red (3) Yellow |
| Wire | Selector | 4-3-3 | 7-6-5 |
| | Striping length ± .020 mm (inch) | 3.5 (.138) | 4 (.157) |
| | Wire outside diameter mm (inch) | 1.4 (.055) | 1.8 (.071) |
| | Cross section (mm ²) | 0.38-0.21-0.14 | 0.60-0.38-0.21 |
| | Wire size (AWG) | 22-24-26 | 20-22-24 |
| Contact arrangement | | See contact arrangement page 4-12 to 4-22 | |

NSX SERIES

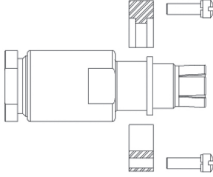
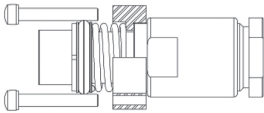
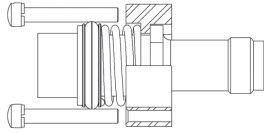
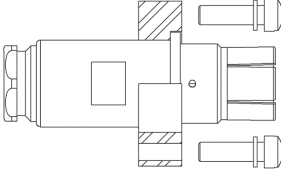
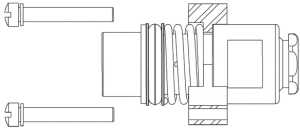
Contacts

ALUMEL CONTACTS – CRIMP TERMINATION

| Contact size | | 22 | 20 |
|---------------------|-------------------------------------|---|---|
| Ins.Ext Tool | Radiall P/N | 282885 | 282886 |
| | Mil spec P/N | M81969/1.01 | M81969/1.02 |
| Positioner | Radiall P/N | 282970 | 282971 |
| | Mil spec P/N | M22520/2.23 | M22520/2.08 |
| Crimping Tool | Radiall P/N | 282281 | |
| | Mil spec P/N | M22520/2.01 | |
| Contact | Socket | <p>620381</p>  <p>(1) Orange (2) Green (3) Black</p> | <p>620391</p>  <p>(1) Orange (2) Red (3) Black</p> |
| | Pin | <p>620281</p>  <p>(1) Orange (2) Green (3) Black</p> | <p>620291</p>  <p>(1) Orange (2) Red (3) Black</p> |
| Wire | Selector | 4-3-3 | 7-6-5 |
| | Striping length ± .020 mm (inch) | 3.5 (.138) | 4 (.157) |
| | Wire outside diameter mm (inch) | 1.4 (.055) | 1.8 (.071) |
| | Cross section (mm ²) | 0.38-0.21-0.14 | 0.60-0.38-0.21 |
| | Wire size (AWG) | 22-24-26 | 20-22-24 |
| Contact arrangement | | See contact arrangement page 4-12 to 4-22 | |

Contacts

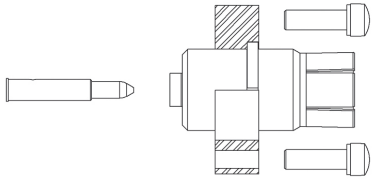
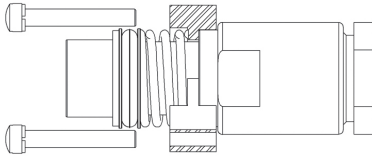
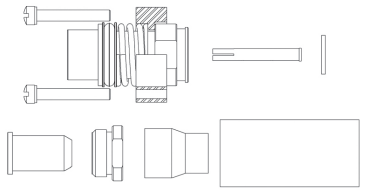
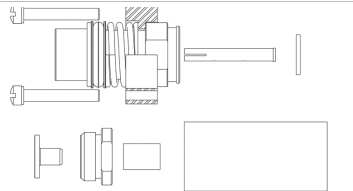
SIZE 1 COAXIAL CONTACTS

| Wire | Type | Part number | Contact | Contact arrangements |
|-----------------------------------|--------|-------------|--|----------------------|
| RG 214 RG 393 | Pin | 620001 |  | 71C1-1C71-C2 |
| | Socket | 620101 |  | |
| | | 620101001 | Identical to 620101 without O-ring | |
| Not applicable TNC termination | Socket | 620101003 |  | 71C1-1C71-C2 |
| | | 620101004 | Identical to 620101003 without O-ring | |
| RG 223 RG 142 | Pin | 620003 |  | 71C1-1C71-C2 |
| | Socket | 620103 |  | |

NSX SERIES

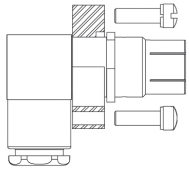
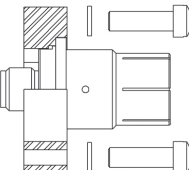
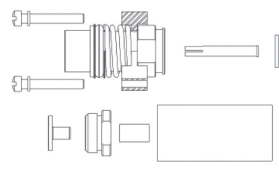
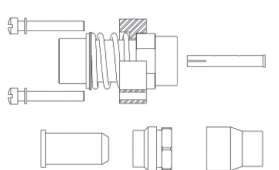
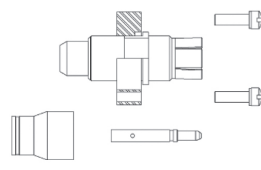
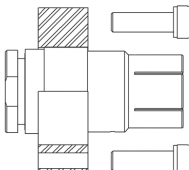
Contacts

SIZE 1 COAXIAL CONTACTS

| Wire | Type | Part number | Contact | Contact arrangements |
|---|--------|-------------|--|----------------------|
| RG 402 UT .141 | Pin | 620005 |  | 71C1-1C71-C2 |
| NSA 935 358 | Socket | 620107 |  | 71C1-1C71-C2 |
| | | 620107001 | Identical to 620107 without O-ring | |
| ASNE 0406 WD and FILECA 1 703/94 | Socket | 620108 |  | 71C1-1C71-C2 |
| | | 620108002 | Identical to 620108 without O-ring | |
| RG 400 RG 142 | Socket | 620109 |  | 71C1-1C71-C2 |
| | | 620109001 | Identical to 620109 without O-ring | |

Contacts

SIZE 1 COAXIAL CONTACTS

| Wire | Type | Part number | Contact | Contact arrangements |
|-----------------------------------|--------|-------------|--|----------------------|
| RG 142 | Pin | 620011 |  | 71C1-1C71-C2 |
| Not applicable SMA termination | Pin | 620044 |  | 71C1-1C71-C2 |
| ASNE0691WM | Socket | 620101011 |  | 71C1-1C71-C2 |
| ASNE0692WN | Socket | 620101012 |  | 71C1-1C71-C2 |
| ASNE0692WN | Pin | 620001012 |  | 71C1-1C71-C2 |
| RD316 | Pin | 620043001 |  | 71C1-1C71-C2 |




NSX SERIES

Contacts

DELIVERY CODE FOR T-GAS APPLICATION

| Code | Connector details | Socket contacts for plug | Pin contacts for receptacle |
|---------|--|--------------------------|-----------------------------|
| No code | <p>Contacts: Size 1 RF coaxial contacts to be ordered separately.</p> <p>Inserts: For plug: - Mating side insert: thermoplastic. - Size 1 RF coax retention plate: stainless steel.</p> <p>For receptacle: - Aluminum alloy nickel plated.</p> | 620117 620146 | 620049 |
| N | Connector delivered with coaxial contacts | 620116 | 620049 |

SIZE 1 RF COAXIAL CONTACTS FOR NSX T-GAS CONNECTOR

| Cable | Contact type | Part number | Contact |
|---|--------------|-------------|--|
| TNC TERMINATION | Socket | 620116 |  |
| TNC TERMINATION | Pin | 620017 |  |
| ASNE 0406WD ECS 311 201 | Socket | 620117 |  |
| RG 225 RG 393 | Socket | 620119100 |  |
| ECS 310801 | Socket | 620119102 |  |
| RG 142 RG 400 TIMES AA6343 ECS 3C142B ASNE 0293XF | Socket | 620146 |  |

Contacts


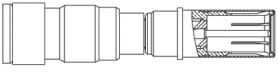
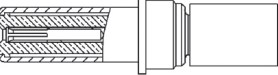
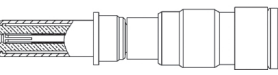
SIZE 1 RF COAXIAL CONTACTS FOR NSX T-CAS CONNECTOR

| Cable | Contact type | Part number | Contact |
|---------------------------|--------------|-------------|---------|
| RG 142 | Pin | 620046 | |
| UT 141 | Pin | 620047 | |
| UT .085 | Pin | 620047010 | |
| SMA TERMINATION | Pin | 620049 | |
| ASNE0692WN- ASNE0406WD | Pin | 620019105 | |
| ASNE0692WN | Socket | 620119105 | |

NSX SERIES

Contacts


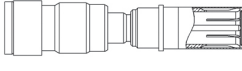
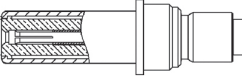
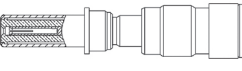
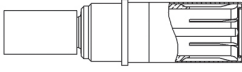
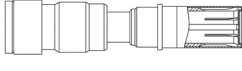
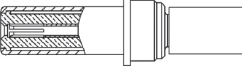





SIZE 8 COAXIAL CONTACTS

| Wire | Type | Part number | Contact | For insert | Ins/Ext Tool |
|---|--------|----------------------------|---|-------------------------|-----------------------------|
| RG142 RG400 RG412 RG223 RG55U ASNE0293XF | Socket | 619051 |  | For all size 8 cavities | 282549001 (M81969/28.03) |
| | Socket | 619051001 environmental |  | | |
| | Pin | 619151 |  | | |
| | Pin | 619151001 environmental |  | | |



Contacts

SIZE 8 COAXIAL CONTACTS

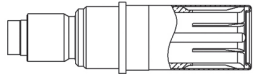
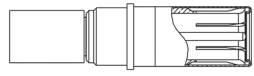
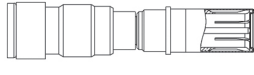
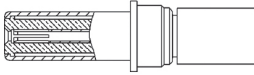
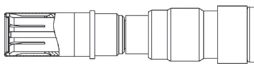




| Wire | Type | Part number | Contact | For insert ⁽¹⁾ | Ins/Ext Tool | |
|------------------------------------|--------|----------------------------|---|---------------------------|-----------------------------|-----------------------------|
| RG316-KX22 -RG179 ASNE0639XY | Socket | 619054 |  | for all size 8 cavities | 282549001 (M81969/28.03) | |
| | | 619054001 environmental |  | | | |
| | Pin | 619154 |  | | - | |
| | | 619154001 environmental |  | | | |
| Gore GSC-03-8174 8-00 | Socket | 619053 |  | | for all size 8 cavities | 282549001 (M81969/28.03) |
| | | 619053001 environmental |  | | | |
| | Pin | 619153 |  | | | - |
| | | 619153001 environmental |  | | | |
| RG180 RG195 | Socket | 619052 |  | for all size 8 cavities | 282549001 (M81969/28.03) | |
| | | 619052001 environmental |  | | | |
| | Pin | 619152 |  | | - | |
| | | 619152001 environmental |  | | | |

NSX SERIES

NOTE:
(1) Except for inserts 6T6 and 10T10

Contacts

SIZE 8 COAXIAL CONTACTS

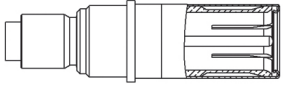
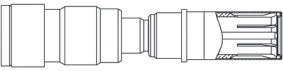
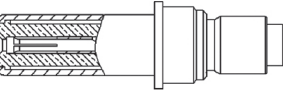
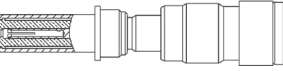
| Wire | Type | Part number | Contact | For insert ⁽¹⁾ | Ins/Ext Tool |
|-----------------------------|--------|----------------------------|---|---------------------------|-----------------------------|
| ASNE0690WL | Socket | 619054002 |  | for all size 8 cavities | 282549001 (M81969/28.03) |
| | Socket | 619050 |  | | - |
| | | 619050001 environmental |  | | - |
| RG58 RG141 | Pin | 619150 |  | | - |
| | | 619150001 environmental |  | | - |
| | Socket | 619055 |  | | - |
| | | 619055001 environmental |  | | - |
| RG178 KX21 ASNE0633WG | Pin | 619155 |  | | - |
| | | 619155001 environmental |  | | |

NOTE:

(1) Except for inserts 6T6 and 10T10.

Contacts

SIZE 8 COAXIAL CONTACTS

| Wire | Type | Part number | Contact | For insert ⁽¹⁾ | Ins/Ext Tool |
|-------|--------|-------------------------|---|---------------------------|--------------|
| RG316 | Socket | 619056 |  | For all size 8 cavities | - |
| | | 619056001 environmental |  | | |
| | Pin | 619156 |  | | - |
| | | 619156001 environmental |  | | - |



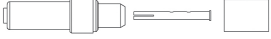
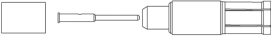




NSX SERIES

NOTE:

(1) Except for inserts 6T6 and 10T10

Contacts

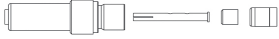
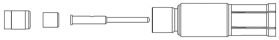

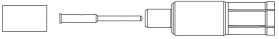


SIZE 5 COAXIAL CONTACTS

| Wire | Type | Part number | Contact | For insert | Ins/Ext Tool |
|---|--------|-------------|---|-------------------------|--------------------------|
| RG 58 RG 141 | Pin | 620120* |  | for all size 5 cavities | 282946 (M81969/28.01) |
| | Socket | 620020* |  | | |
| RG 142 RG 223 RG 400 | Pin | 620121* |  | | |
| | Socket | 620021* |  | | |
| ASNE0639XY RG 179 RG 316 KX 22 | Pin | 620122* |  | | |
| | Socket | 620022* |  | | 282946 (M81969/28.01) |

*Add 001 to these P/N to order for environmental contacts.

Contacts

SIZE 5 COAXIAL CONTACTS






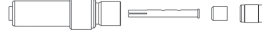

| Wire | Type | Part number | Contact | For insert | Ins/Ext Tool |
|--------------------------------|--------|-------------|---|-------------------------|--------------------------|
| ASNE 0633WG RG 178 KX 21 | Pin | 620123* |  | for all size 5 cavities | 282946 (M81969/28.01) |
| | Socket | 620023* |  | | |
| RG 180 RG 195 | Pin | 620124* |  | | |
| | Socket | 620024* |  | | |
| RD 316 | Pin | 620129* |  | | 282946 (M81969/28.01) |
| | Socket | 620029* |  | | |

*Add 001 to these P/N to order for environmental contacts

NSX SERIES

Contacts





SIZE 5 COAXIAL CONTACTS

| Wire | Type | Part number | Contact | For insert | Ins/Ext Tool |
|--|--------|-------------|---|--------------------------|--------------------------|
| ADAMS-RUSSEL FC 11Z (per S280W503-1) | Pin | 620182001 |  | for all size 5 cavities | 282946 (M81969/28.01) |
| | Socket | 620082001 |  | | |
| ADAMS-RUSSEL FC 14Z (per S280W503-2) | Pin | 620183001 |  | | |
| | Socket | 620083001 |  | | |
| SMA Termination | Pin | 620134 |  | | |
| ASNE0690WL | Pin | 620184 |  | | 282946 (M81969/28.01) |
| ASNE0690WL | Socket | 620084 |  | 282946 (M81969/28.01) | |

Contacts

NSX SERIES

SIZE 16 COAXIAL CONTACTS

| Wire | Type | Part number | Contact | For insert | Ins/Ext Tool |
|--|--------|-------------|---|--------------------------|--------------|
| KX22 RG 316 RG 179 ASNE0639XY ASNE0632WK ASNE0752WS | Pin | 618150 |  | for all size 16 cavities | 282892 |
| | Socket | 618050 |  | | |
| RG 178 KX 21 ASNE0633WG | Pin | 618154 |  | | 282892 |
| | Socket | 618054 |  | | |

SIZE 5 CONCENTRIC TWINAX CONTACTS

| Wire | Type | Part number | For insert | Ins/Ext Tool |
|----------------------|--------|--------------------------|-------------------------|--------------------------|
| MIL C 17/17600002 | Pin | 616195001 ⁽¹⁾ | for all size 5 cavities | 282946 (M81969/28.01) |
| | Socket | 616095001 ⁽²⁾ | | |

(1) 616195001 contact environmental version is 616195009


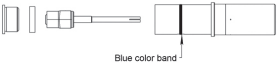

(2) 616095001 contact environmental version is 616095009

SIZE 10 CONCENTRIC TWINAX CONTACTS

| Wire | Type | Part number | For insert | Ins/Ext Tool |
|----------------------------|--------|-------------|------------|----------------|
| EN 3375-006 ASNE 0290XM | Pin | 620167001 | 15T6Q2 | (M81969/14-05) |
| | Socket | 620067001 | | |

Contacts

SIZE 8 CONCENTRIC TWINAX CONTACTS

| Wire | Type | Part number | Contact | For insert | Ins/Ext Tool |
|---------------------------|--------|--------------------------------|--|-------------------------|--|
| Tensolite (S280W502-1) | Pin | 619165 |  | for all size 8 cavities | 282549001 (M81969/28.03) |
| | Socket | 619065 |  | | |
| | Pin | 619166 ⁽¹⁾ FR/RR |  | | 282549001 (M81969/28.03) for ins. 282549012 (M81969/28.03) for ext. |
| MIL C 17/17600002 | Pin | 619169001 |  | | 282549001 (M81969/28.03) |
| | Socket | 619069001 |  | | |
| | | 619069002 environmental |  | | |

NOTE:

(1) FR/RR contacts are compatible with 6T6 and 10T10 inserts.

Contacts

SIZE 8 QUADRAX CONTACTS

| Wire | Type | Part number (non environmental) | Part number (environmental) | Ins/Ext Tool |
|--|--------|------------------------------------|--------------------------------|--|
| ABS1503KD24 (110 Ω) | Pin | 620175010 | 620175011 | 282549001 (M81969/28.03 or M81969/14.06) |
| | Socket | 620075010 | 620075011 | |
| THERMAX 956S-4T200 GORE RCN8422 (110 Ω) | Pin | 620179002 | 620179001 | |
| | Socket | 620079002 | 620079001 | |
| TENSOLITE NF24Q100 (100 Ω) | Pin | 620175050 | 620175051 | |
| | Socket | 620075050 | 620075051 | |
| TENSOLITE NF26Q100 JSFY 18 | Pin | 620175021 | 620175020 | |
| | Socket | 620075021 | 620075020 | |

NSX SERIES

Fiber Optic Contacts and Accessories

LUXCIS® CONTACTS

The LuxCis® product range is a proven, flexible and always expanding fiber optic interconnect solution offering high speed communication in aerospace and other harsh environments.

OPTICAL PERFORMANCES

| | MultiMode (PC) 850 / 1300 nm | SingleMode (UPC) 1310 / 1550 nm |
|--|---------------------------------|------------------------------------|
| Insertion Loss (IL) Mean (IEC 61300-3-4 Method B) | 0.1 dB | 0.15 dB |
| Return Loss (RL) (IEC 61300-3-6) | > 20 dB | > 50 dB |

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

| | Standard | Performances |
|--|----------------------------|---|
| Thermal cycling | SAE AS 13441 method 1003.1 | -55°C/+125°C (cable dependant) |
| Temperature endurance | TIA/EIA 455-4 | 1000 h @ 125°C (cable dependant) |
| Vibration | TIA/EIA 455-11 | 16.4 Grms |
| Shocks | TIA/EIA 455-14 | 50 G, 11 ms |
| Durability | TIA / EIA 364-09 | 500 cycles |
| Maintenance ageing | SAE AS 13441 method 2002.1 | 10 cycles |
| Cable retention Cable retention 1.8 mm diameter 900 µm diameter | SAE AS 13441 method 2009.1 | 68 N 7 N |
| Humidity | TIA EIA 455-5 | 10 cycles / 24 h 90% RH -25°C / +65°C |

LUXCIS® CONTACTS PART NUMBERING SYSTEM



F725 : LuxCis® series

Ferrule type

- 00**: PC ferrule for SingleMode fiber
- 03**: PC ferrule for 50/125 or 62,5/125 um MultiMode fiber
- 04**: PC ferrule for 100/40 um MultiMode fiber
- 05**: PC ferrule for 200/230 um MultiMode fiber
- 50**: APC ferrule for SingleMode fiber

Cable type and diameter

- 118**: 900 µm cable
- 318**: 1.2 mm cable with strengthening members, tight structure
- 419**: 1.6 to 2.2 mm cable, loose structure
- 519**: 1.6 to 2.2 mm cable, tight structure

NOTE:

Radiall can support you with your cable and harness assemblies.
Please contact your sales representative.

MIL-PRF-29504 Contacts

MIL-PRF-29504 fiber optic termini were developed several decades ago and are described several MIL standard documents. They fit into standard electrical cavities and do not require specific inserts. However, standard electrical connectors are not optimized for optical connections with small core fibers and MIL-PRF-29504 fiber optic termini show lower optical performances than more recent designs, such as the LuxCis®. MIL-PRF-29504 fiber optic termini can replace MIL-PRF-29504/6 pin and MIL-PRF-29504/7 socket termini.

PERFORMANCES

| | |
|---------------------|----------------------------------|
| Insertion Loss (IL) | 0.8 dB typical |
| Durability | Up to 500 mating cycles |
| Thermal cycling | -65°C / +125°C (cable dependent) |

MIL-PRF-29504 TYPE CONTACTS PART NUMBERING SYSTEM

| Contact size | Pin contact part number | Socket contact part number | Fiber diameter (µm) | Cable diameter (mm) | Ferule material | Insertion / Extraction tool |
|--------------|-------------------------|----------------------------|---------------------|---------------------|-----------------|-----------------------------|
| 16 | F724 004 000 | F724 104 000 | 125 | 1.5 | Ceramic | 282515 |
| 16 | F724 012 000 | F724 111 000 | 125 | 1.8 | Ceramic | |
| 16 | F724 010 000 | F724 109 000 | 125 | 2 | Ceramic | |
| 16 | F724 001 000 | F724 101 000 | 140 | 1.5 | Ceramic | |
| 16 | F724 040 000 | F724 140 000 | 230 | 2 | Metallic | |
| 12 | F724 204 000 | F724 304 000 | 125 | 1.5 | Ceramic | 282549004 |
| 12 | F724 242 000 | F724 342 000 | 125 | 1.8 | Ceramic | |
| 12 | F724 203 000 | F724 303 000 | 140 | 1.5 | Ceramic | |



NOTE:

Radiall can support you with your cable and harness assemblies. Please contact your sales representative



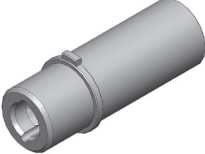

Accessories

QUADRAX - LUXCIS® ADAPTER

Adapters for NSX connectors' cavities allow evolution of your existing connectors. Now, you can get high speed connection with a connector that used to be equipped with Quadrax contacts. Quadrax-LuxCis® adapters will turn a size 8 Quadrax cavity into a LuxCis® cavity.

This solution offers the following characteristics:

- Compliant with any ARINC 600 Quadrax cavity
- Compatible with ML and MT LuxCis® designs
- Available for multimode application
- Compatible with Quadrax insertion and extraction tool

| | Part number | Description |
|---|-------------|---|
|  | 620946001 | Pin quadrax adapter for LuxCis® contact in quadrax FR type cavity with sleeveholder |
|  | 620946002 | Pin quadrax adapter for LuxCis® contact in quadrax RR type cavity with sleeveholder |
|  | 620946003 | Socket quadrax adapter for LuxCis® contact in quadrax RR type cavity |
|  | 620946004 | Sleeve holder for pin quadrax adapter |

EN 4531-101 (ABS 1379) ADAPTER FOR QUADRAX SIZE 8 CAVITY

Quadrax-EN4531 adapter will help you turning a size 8 Quadrax cavity into a EN4531 fiber optic link with the following characteristics:

- Arinc 600 compliant
- EN4626 compliant
- Compatible with all EN4531 contacts

| | Part number | Description |
|---|-------------|---|
|  | 620946005 | Pin quadrax adapter for EN4531 contact |
|  | 620946006 | Socket quadrax adapter for EN4531 contact |

Contacts

NSX E/N/H/C – REAR REMOVABLE CONTACTS
REAR REMOVABLE PC TAIL CONTACTS

SIZE 22 SOCKET CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | C dia. mm (inch) | Ins/Ext Tool | Figure |
|-------------|---------------------|----------------------------|---------------------|--------------|--------|
| 620 305 | YA | 5.20 (.205) 4.20 (.165) | 0.635 (.025) | 282890 | |
| 620305005 | ZA | | | | |

SIZE 22 PIN CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | C dia. mm (inch) | Ins/Ext Tool | Figure |
|-------------|---------------------|----------------------------|---------------------|--------------|--------|
| 620 202 | Y | 7.30 (.288) 6.30 (.250) | 0.635 (.025) | 282890 | |
| 620202005 | Z | | | | |

REAR REMOVABLE WIRE WRAP CONTACTS

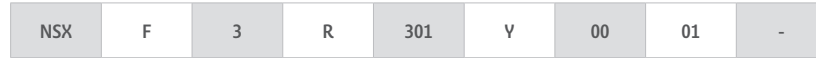
SIZE 22 SOCKET CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool | Figure |
|-------------|---------------------|------------------------------|--------------|--------|
| 620302 | K | 7.70 (.303) 6.30 (.248) | 282890 | |
| 620303 | V | 10.70 (.421) 9.30 (.366) | | |
| 620308 | W | 12.30 (.484) 13.70 (.540) | | |

How to Order

NSX F/G/K – CONNECTORS FOR FRONT REMOVABLE CONTACTS

Signal PC Tail contacts defined by termination code are delivered installed.
Coaxial twinax and quadrax contacts are ordered separately.



Series

Class

F: Receptacle connectors, non-environmental

Only size 22 insert cavities can be delivered in FR/FR PC tails or wire wrap contacts.
Other insert cavities, if equipped with signal and power contacts in sizes 20, 16 and 12, will be delivered in RR/RR crimp version.
Coaxial, twinax and quadrax contacts shall be ordered separately as RR/RR crimp contacts

G: Receptacle connectors, non-environmental

Every insert cavities will be delivered in FR/FR PC tail contacts only.
Size 1 contact will be delivered in RR/RR crimp version.
Coaxial, twinax and quadrax contacts shall be ordered separately as FR/FR PC tail contacts.

K: Receptacle connectors, non-environmental

Only combinations including inserts 100 and 150 are available in class K. Inserts 100 and 150 will be fully populated with size 22 harpooned contacts.
With class K, use PC tail contacts termination Y.
Other inserts will be populated as per class G.

Shell size

- 1: 3 small cavities
- 2: 3 large cavities
- 3: 6 large cavities

Shell style

- R: Alodine 1200 plated receptacle
- F: Nickel plated receptacle
- S: RoHS chromatisation plated receptacle

Insert combination code

See combination code pages 4-22 to 4-28 and contacts arrangement pages 4-12 to 4-21
T-cas application combination code : 310 (see page 4-25)

Contact termination

Without contacts

X: Without contacts

Wire wrap

- K:** Wire wrap contact, 1 level (1 = .272)
- V:** Wire wrap contact, 2 levels (1 = .390)
- W:** Wire wrap contact, 3 levels (1 = .524)
- L:** Wire wrap contact, 4 levels (1 = .660)

PC tail contacts

| RoHs | Gold | Pre-tinned | Length (inch) |
|------|------|------------|---------------|
| RA | YA | ZA | .150 |
| R | Y | Z | .250 |
| RB | YB | ZB | .375 |
| RC | YC | ZC | .500 |

Modification code ⁽¹⁾

See pages 4-29 to 4-30

Polarization code

See pages 4-31 to 4-33
Without code: polarization hardware is delivered unassembled

Delivery code for T-CAS application

See page 4-42

NOTES:

- (1) Polarization code 00, the connector is delivered without polarizing hardware.
- Polarization code from 01 to 216, the connector is delivered with the polarization hardware assembled as defined by the code see page 4-31

Contacts

NSX F/G/K – FRONT REMOVABLE PC TAIL

SIZE 22 SOCKET CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool | Color band 1 | Color band 2 | Figure |
|-------------|---------------------|----------------------------|--------------|--------------|--------------|--------|
| 620360 | YA | 4.60/3.80 [.181/.150] | 282500 | orange | green | |
| 620360005 | ZA | | | | | |
| 620360500 | RA | | | | | |
| 620361 | Y | 7.20/6.40 [.283/.252] | | | | |
| 620361005 | Z | | | | | |
| 620361500 | R | | | | | |
| 620362 | YB | 10.30/9.50 [.406/.374] | | | | |
| 620362005 | ZB | | | | | |
| 620362500 | RB | | | | | |
| 620363 | YC | 13.60/12.80 [.535/.504] | | | | |
| 620363005 | ZC | | | | | |
| 620363500 | RC | | | | | |

SIZE 20 PIN CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool | Color band 1 | Color band 2 | E dia mm (inch) | Figure |
|-------------|---------------------|----------------------------|--------------|--------------|--------------|--------------------------|--------|
| 620214018 | YA | 4.60/3.80 [.181/.150] | 282503 | orange | red | 0.85/0.80 [.033/.031] | |
| 620214019 | ZA | | | | | | |
| 620214518 | RA | | | | | | |
| 620214010 | Y | 7.20/6.40 [.283/.252] | | | | | |
| 620214013 | Z | | | | | | |
| 620214510 | R | | | | | | |
| 620214003 | YB | 10.30/9.50 [.406/.374] | | | | | |
| 620214008 | ZB | | | | | | |
| 620214503 | RB | | | | | | |
| 620214021 | YC | 13.60/12.80 [.535/.504] | | | | | |
| 620214022 | ZC | | | | | | |
| 620214521 | RC | | | | | | |

SIZE 16 PIN CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool | Color band 1 | Color band 2 | E dia mm (inch) | Figure |
|-------------|---------------------|----------------------------|--------------|--------------|--------------|--------------------------|--------|
| 620234018 | YA | 4.60/3.80 [.181/.150] | 282504 | orange | blue | 1.32/1.22 [.052/.048] | |
| 620234019 | ZA | | | | | | |
| 620234518 | RA | | | | | | |
| 620234004 | Y | 7.20/6.40 [.283/.252] | | | | | |
| 620234017 | Z | | | | | | |
| 620234504 | R | | | | | | |
| 620234003 | YB | 10.30/9.50 [.406/.374] | | | | | |
| 620234008 | ZB | | | | | | |
| 620234503 | RB | | | | | | |
| 620234021 | YC | 13.60/12.80 [.535/.504] | | | | | |
| 620234022 | ZC | | | | | | |
| 620234521 | RC | | | | | | |

Contacts

NSX F/G/K – FRONT REMOVABLE PC TAIL

SIZE 12 PIN CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool | Color band 1 | Color band 2 | Figure |
|-------------|---------------------|----------------------------|--------------|--------------|--------------|--------|
| 620244018 | YA | 4.60/3.80 (.181/.150) | 282549005 | orange | yellow | |
| 620244019 | ZA | | | | | |
| 620244518 | RA | | | | | |
| 620244005 | Y | 7.20/6.40 (.283/.252) | 282549005 | orange | Yellow | |
| 620244016 | Z | | | | | |
| 620244505 | R | | | | | |
| 620244003 | YB | 10.30/9.50 (.406/.374) | 282549005 | orange | yellow | |
| 620244008 | ZB | | | | | |
| 620244503 | RB | | | | | |
| 620244021 | YC | 13.60/12.80 (.535/.504) | 282549005 | orange | yellow | |
| 620244022 | ZC | | | | | |
| 620244521 | RC | | | | | |

SIZE 22 SOCKET FRONT REMOVABLE WIRE WRAP CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool | Color band 1 | Color band 2 | Figure |
|-------------|---------------------|-------------------------|--------------|--------------|--------------|--------|
| 620350 | K | 6.9/0.4 (.256/.287) | 282500 | orange | green | |
| 620351 | V | 9.9/0.4 (.374/.405) | | | | |
| 620352 | W | 13.3/0.4 (.508/.540) | | | | |
| 620353 | L | 16.8/0.4 (.645/.677) | | | | |

SIZE 16 PIN COAX CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool |
|-------------|---------------------|-----------------------|--------------|
| 618155001 | YA | 3.8/4.6 (.150/.181) | 282504 |
| 618155002 | Y | 6.4/7.2 (.252/.283) | |
| 618155011 | YB | 9.5/10.3 (.374/.405) | |

Contacts

NSX F/G/K – FRONT REMOVABLE PC TAIL

SIZE 12 PIN COAX CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool |
|-------------|---------------------|--------------------------|--------------|
| 618149017 | YA | 3.8/4.6 (.150/.181) | 282549005 |
| 618149016 | Y | 6.4/7.2 (.252/.283) | |
| 618149018 | YB | 9.5/10.3 (.374/.405) | |
| 618149012 | YC | 12.8/13.6 (.503/.535) | |
| 618149013 | ZC | 12.8/14.1 (.503/.558) | |
| | | | |

SIZE 8 PIN COAX CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool |
|-------------|---------------------|----------------------------|--------------|
| 619140009 | YA | 12.40/12.20 (.488/.480) | 282549009 |
| 619140014 | ZA | | |
| 619140509 | RA | | |
| 619140010 | Y | 15.05/14.85 (.592/.584) | |
| 619140013 | Z | | |
| 619140510 | R | | |
| 619140007 | YB | 18.15/17.95 (.715/.706) | |
| 619140008 | ZB | | |
| 619140507 | RB | | |
| 619140011 | YC | 21.45/21.25 (.844/.836) | |
| 619140012 | ZC | | |
| 619140511 | RC | | |
| | | | |

SIZE 5 PIN COAX CONTACTS

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool |
|-------------|---------------------|----------------------------|--------------|
| 620133009 | YA | 4.60/3.80 (.181/.150) | 282549006 |
| 620133509 | RA | | |
| 620133006 | Y | 7.20/6.40 (.283/.252) | |
| 620133007 | Z | | |
| 620133506 | R | | |
| 620133003 | YB | 10.30/9.50 (.406/.374) | |
| 620133001 | ZB | | |
| 620133503 | RB | | |
| 620133010 | YC | 13.60/12.80 (.535/.504) | |
| 620133510 | RC | | |

NSX SERIES

Contacts

NSX F/G/K – FRONT REMOVABLE PC TAIL

SIZE 8 PIN TRIAX PC TAIL FRONT RELEASE VERSION

| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool |
|-------------|---------------------|----------------------------|--------------|
| 619162014 | YA | 4.60/3.80 (.181/.150) | 282549009 |
| 619162015 | ZA | | |
| 619162514 | RA | | |
| 619162011 | Y | 7.20/6.40 (.283/.252) | |
| 619162012 | Z | | |
| 619162511 | R | | |
| 619162016 | YB | 10.30/9.50 (.406/.374) | |
| 619162017 | ZB | | |
| 619162516 | RB | | |
| 619162009 | YC | 13.60/12.80 (.535/.504) | |
| 619162010 | ZC | | |
| 619162509 | RC | | |

SIZE 8 PIN QUADRAX CONTACTS

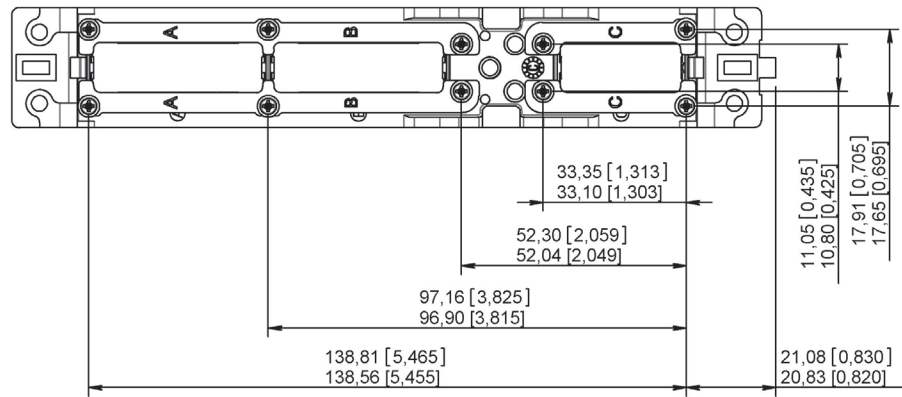
| Part number | Contact termination | Dimension X mm (inch) | Ins/Ext Tool |
|-------------|---------------------|----------------------------|--------------|
| 620176009 | YA | 4.60/3.80 (.181/.150) | 282549009 |
| 620176016 | ZA | | |
| 620176509 | RA | | |
| 620176008 | Y | 7.20/6.40 (.283/.252) | |
| 620176010 | Z | | |
| 620176508 | R | | |
| 620176011 | YB | 10.30/9.50 (.406/.374) | |
| 620176012 | ZB | | |
| 620176511 | RB | | |
| 620176013 | YC | 13.60/12.80 (.535/.504) | |
| 620176014 | ZC | | |
| 620176513 | RC | | |

Dimensions

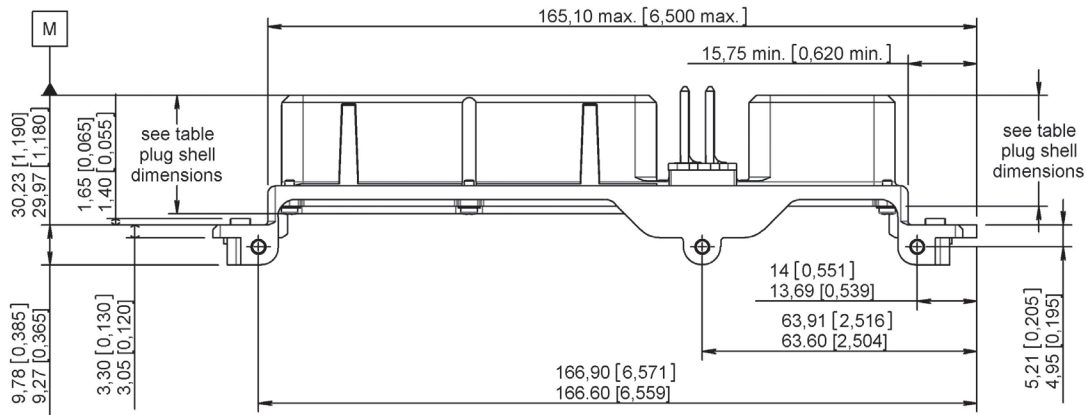
NON ENVIRONMENTAL SIZE 1 PLUG SHELL DIMENSIONS

NSX SERIES

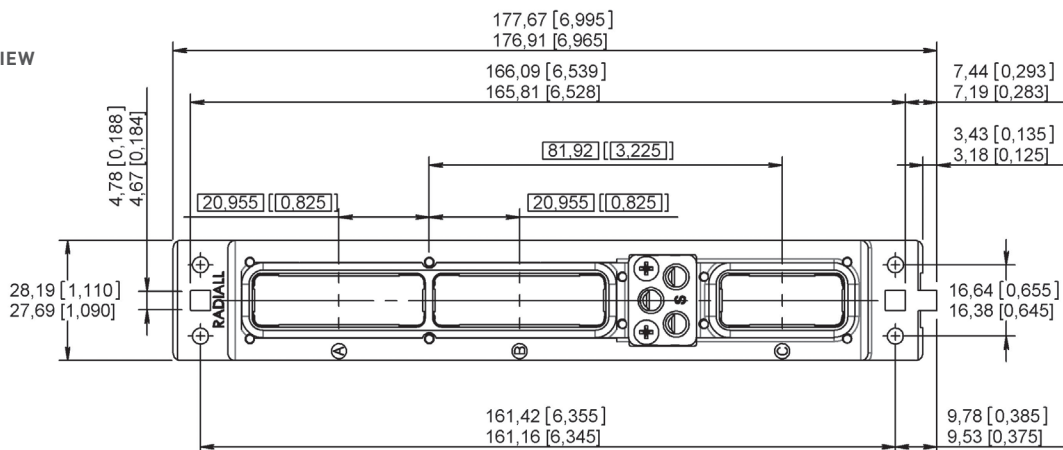
FRONT VIEW



SIDE VIEW

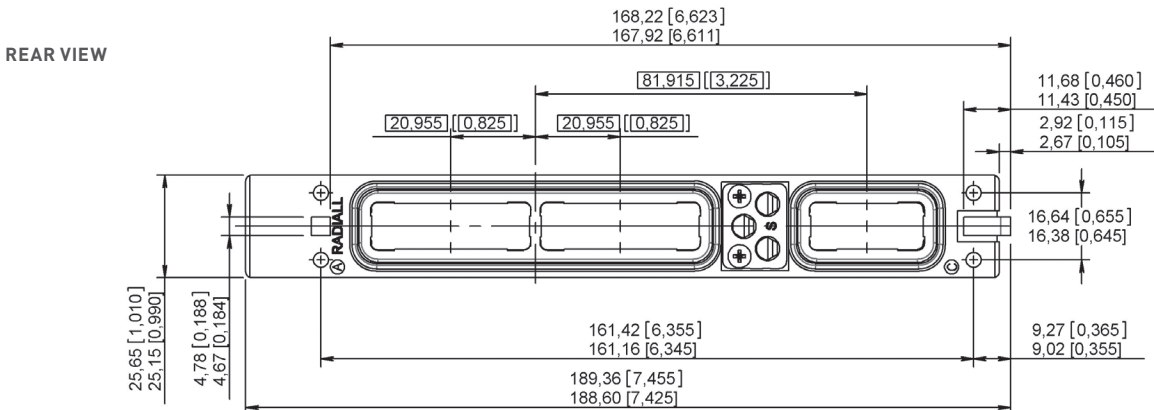
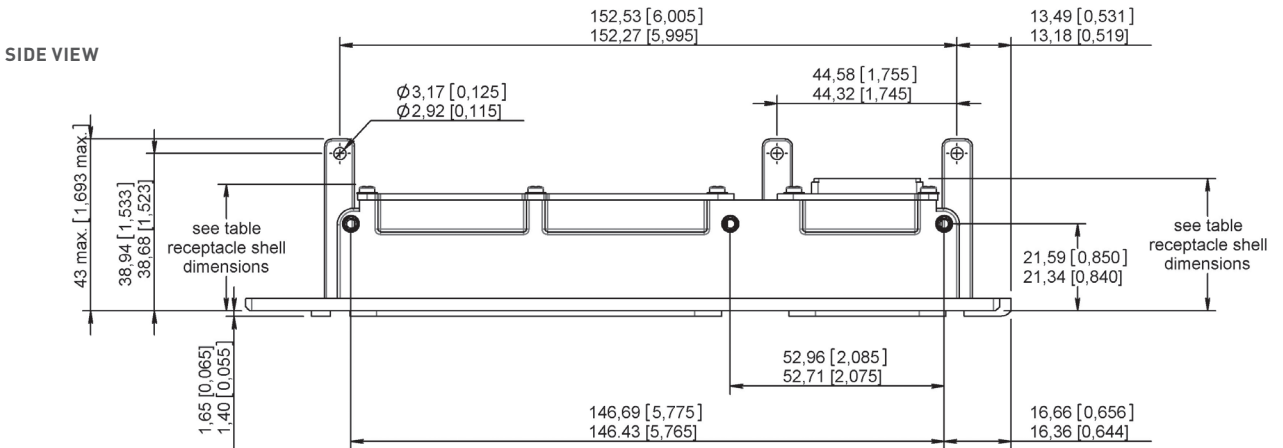
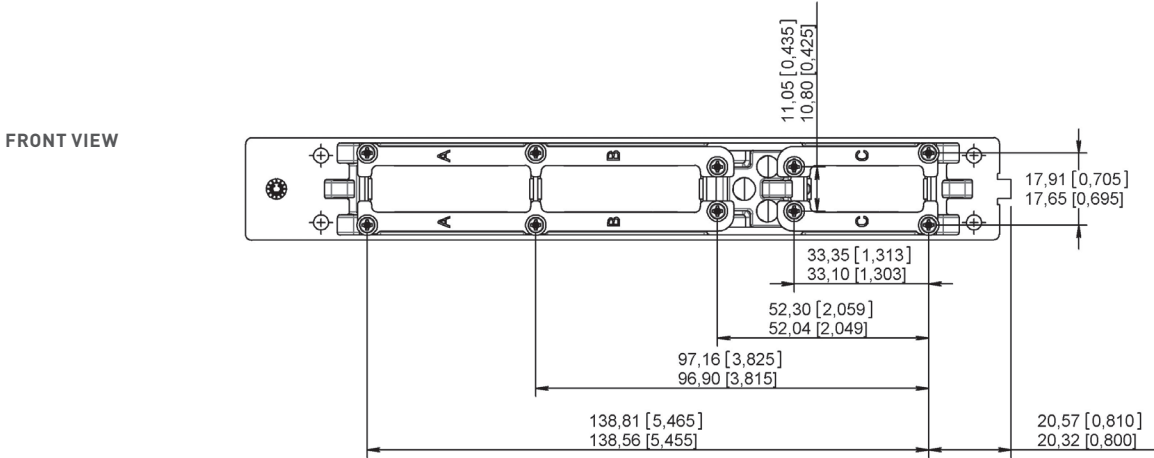


REAR VIEW



Dimensions

NON ENVIRONMENTAL SIZE 1 RECEPTACLE SHELL DIMENSIONS

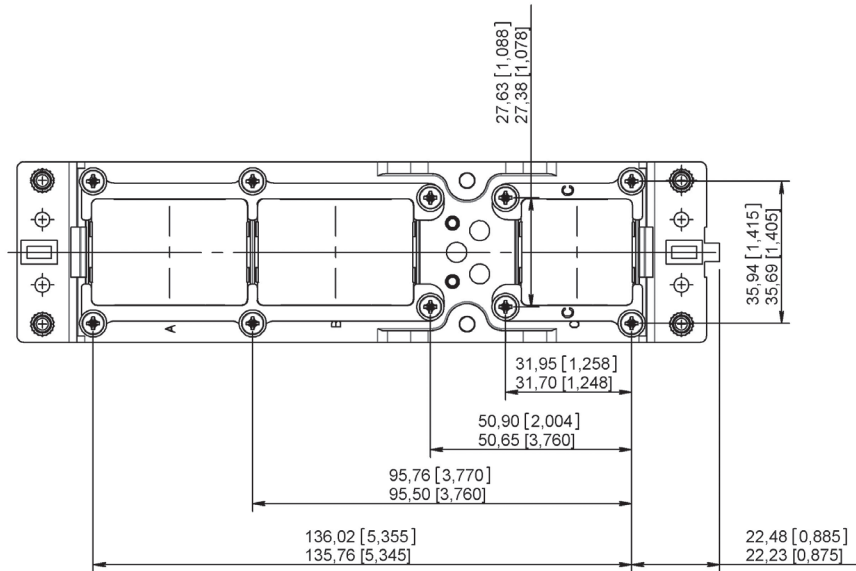


Dimensions

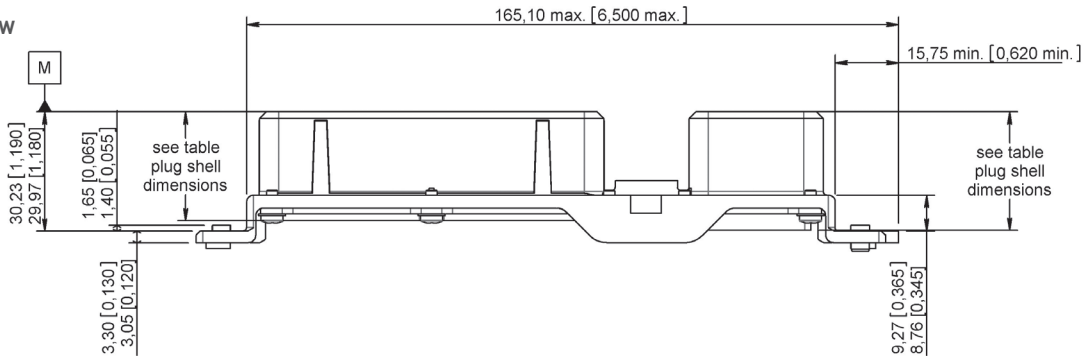
NON ENVIRONMENTAL SIZE 2 PLUG SHELL DIMENSIONS

NSX SERIES

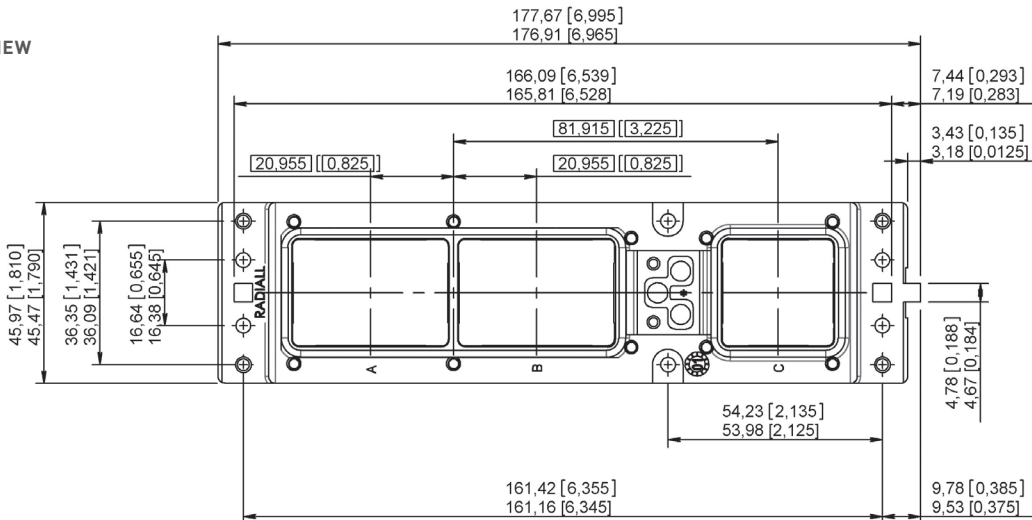
FRONT VIEW



SIDE VIEW



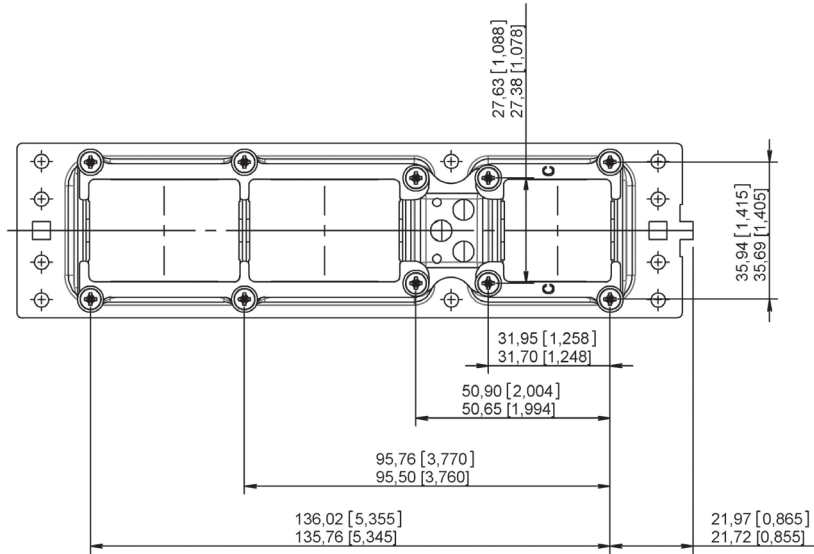
REAR VIEW



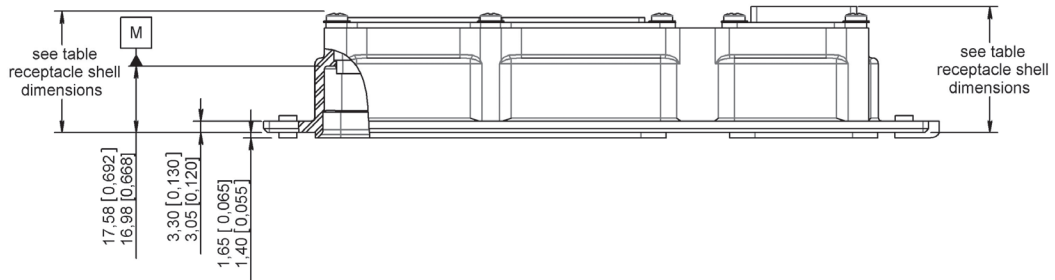
Dimensions

NON ENVIRONMENTAL SIZE 2 RECEPTACLE SHELL DIMENSIONS

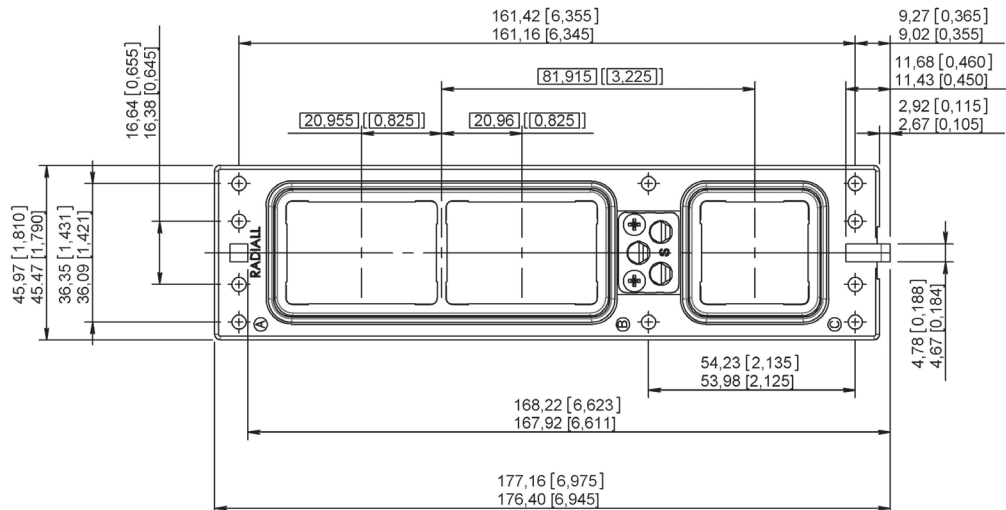
FRONT VIEW



SIDE VIEW



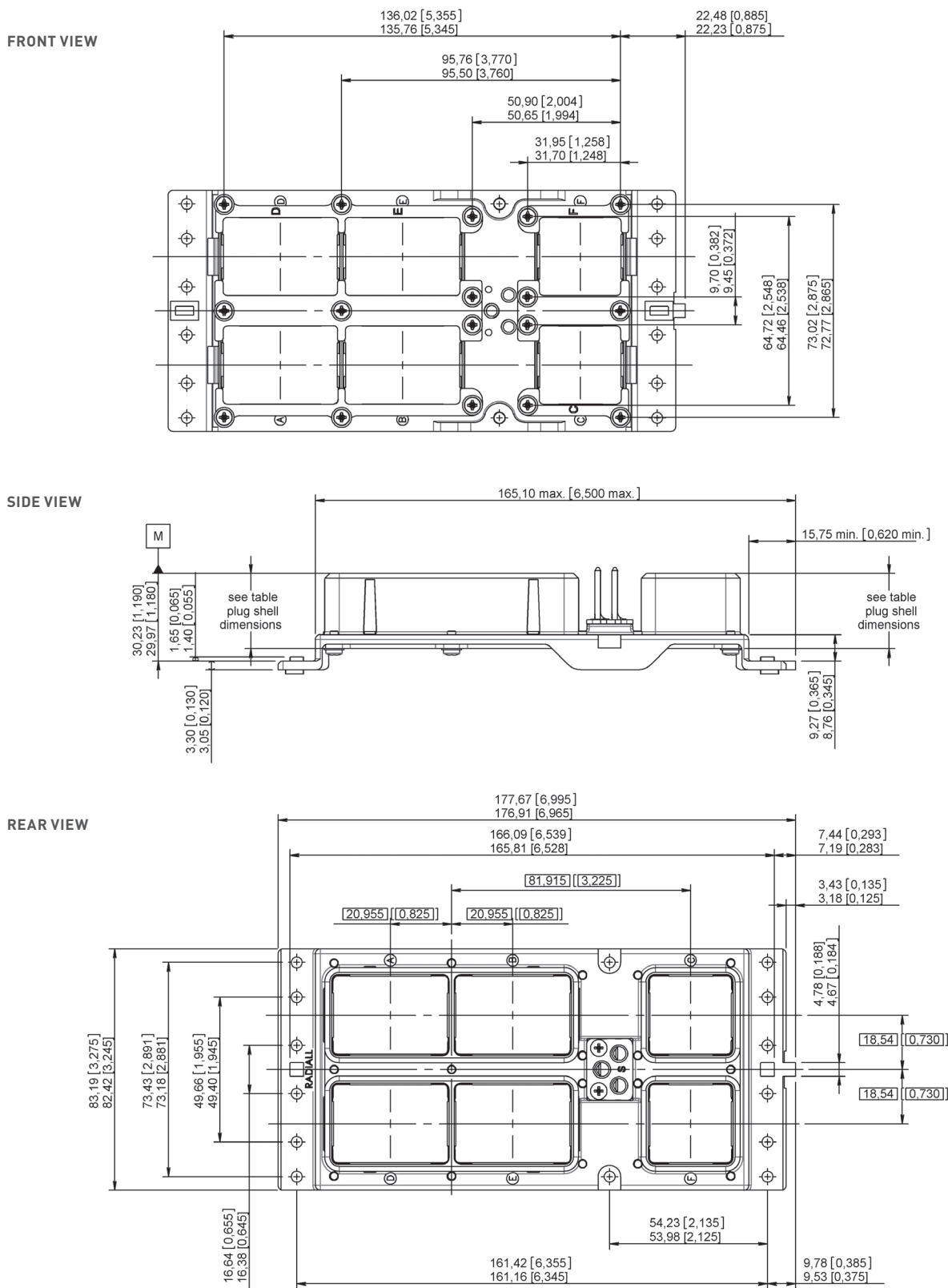
REAR VIEW



Dimensions

NON ENVIRONMENTAL SIZE 3 PLUG SHELL DIMENSIONS

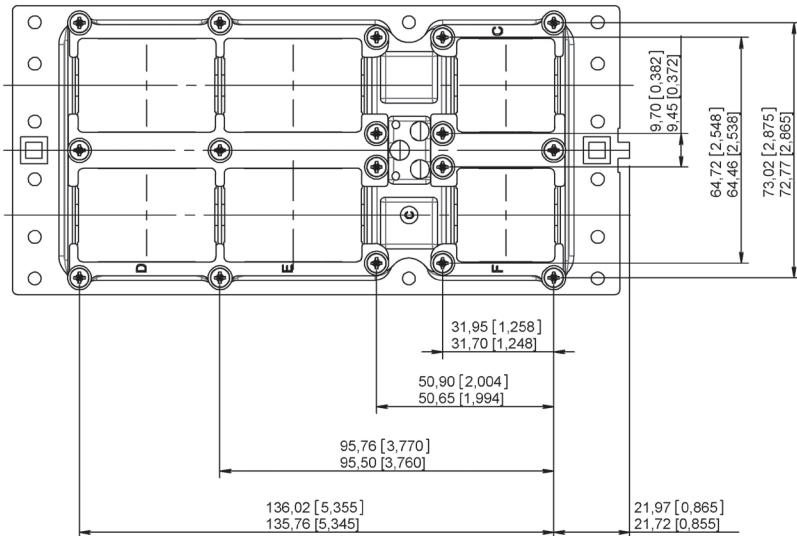
NSX SERIES



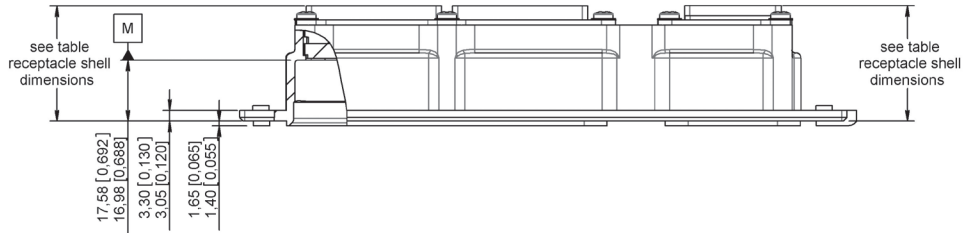
Dimensions

NON ENVIRONMENTAL SIZE 3 RECEPTACLE SHELL DIMENSIONS

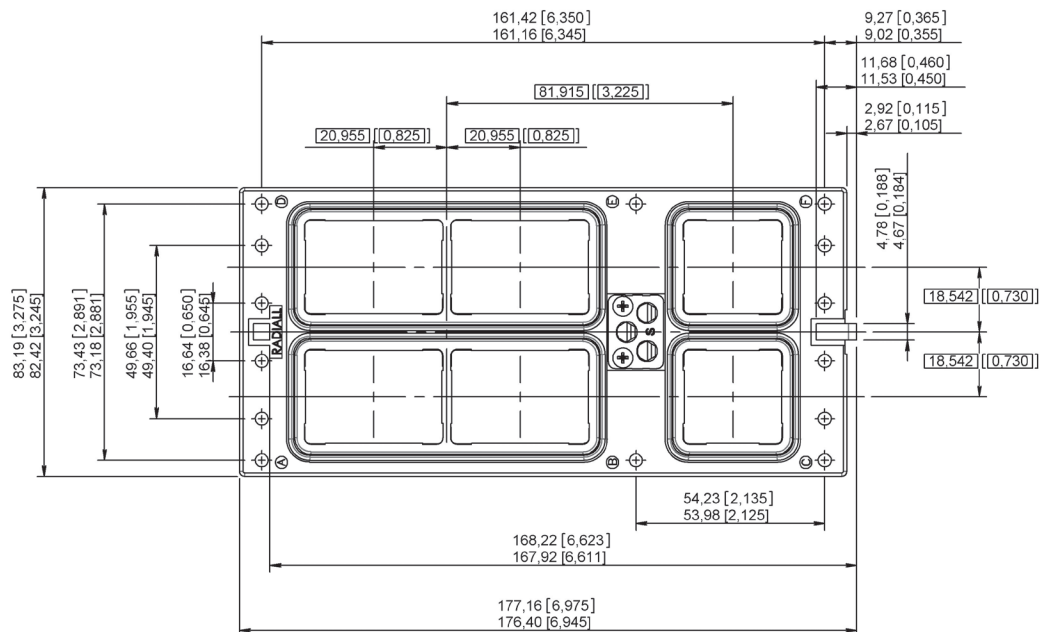
FRONT VIEW



SIDE VIEW



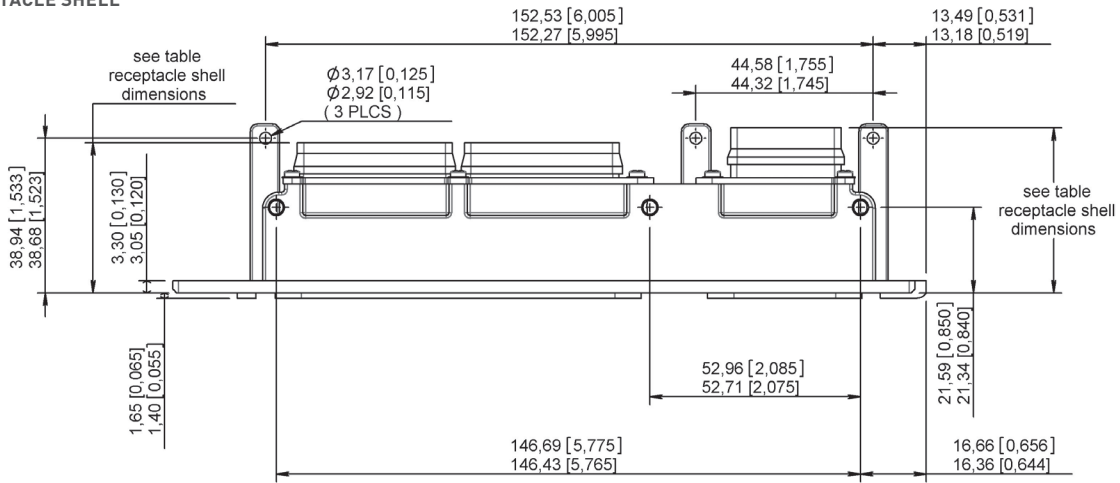
REAR VIEW



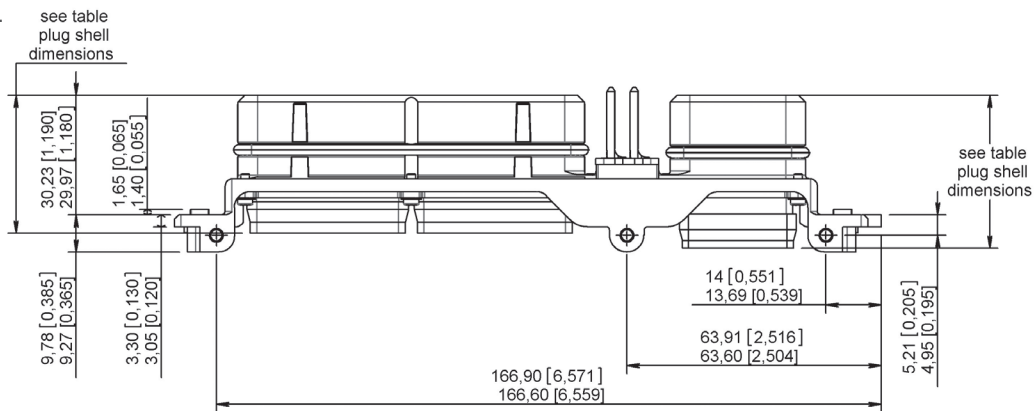
Dimensions

ENVIRONMENTAL SIZE 1 PLUG AND RECEPTACLE DIMENSIONS

RECEPTACLE SHELL



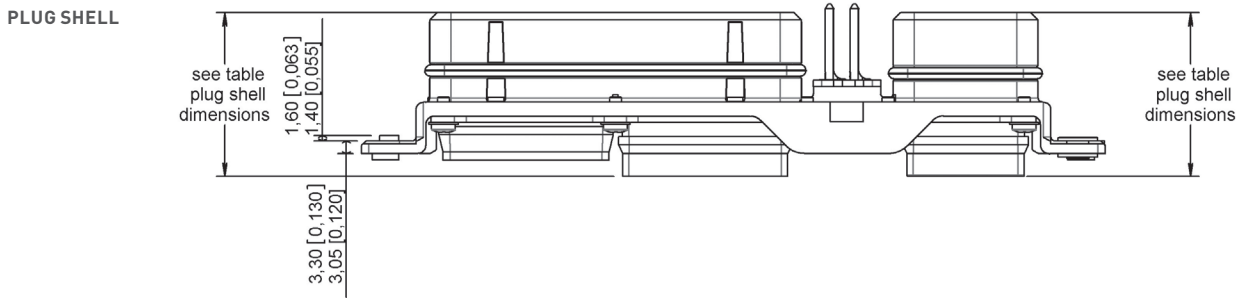
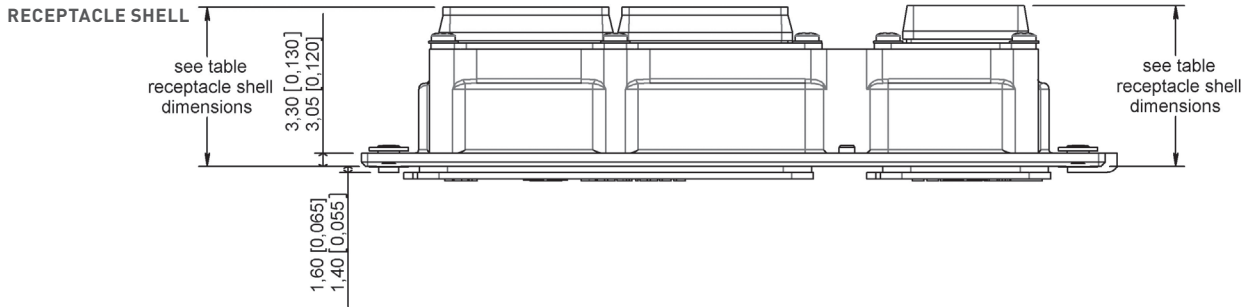
PLUG SHELL



NSX SERIES

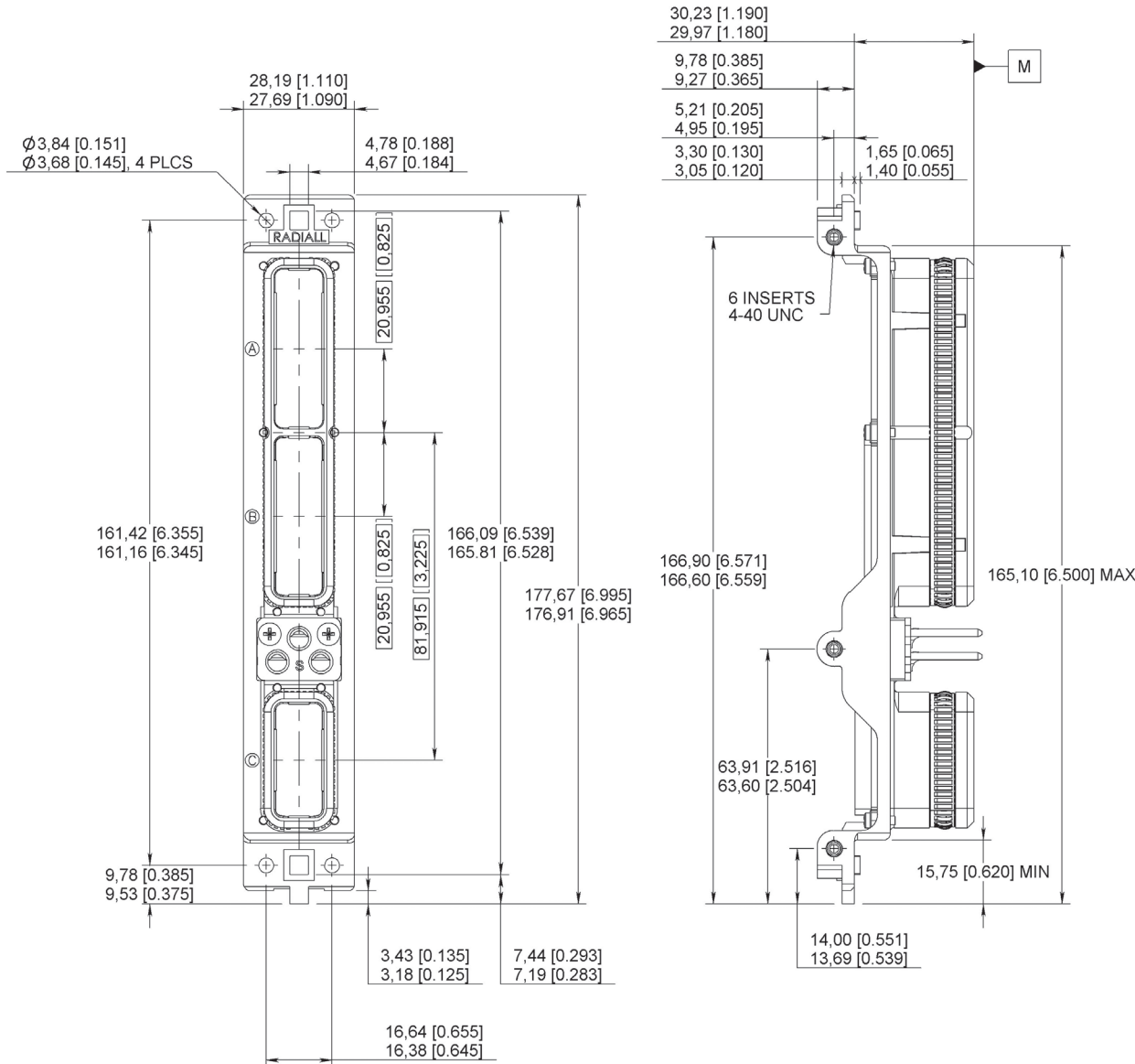
Dimensions

ENVIRONMENTAL SIZE 2 & 3 PLUG AND RECEPTACLE DIMENSIONS



EMI/RFI NSX Size 1 Plug Dimensions

HOW TO ORDER
See page 4-11

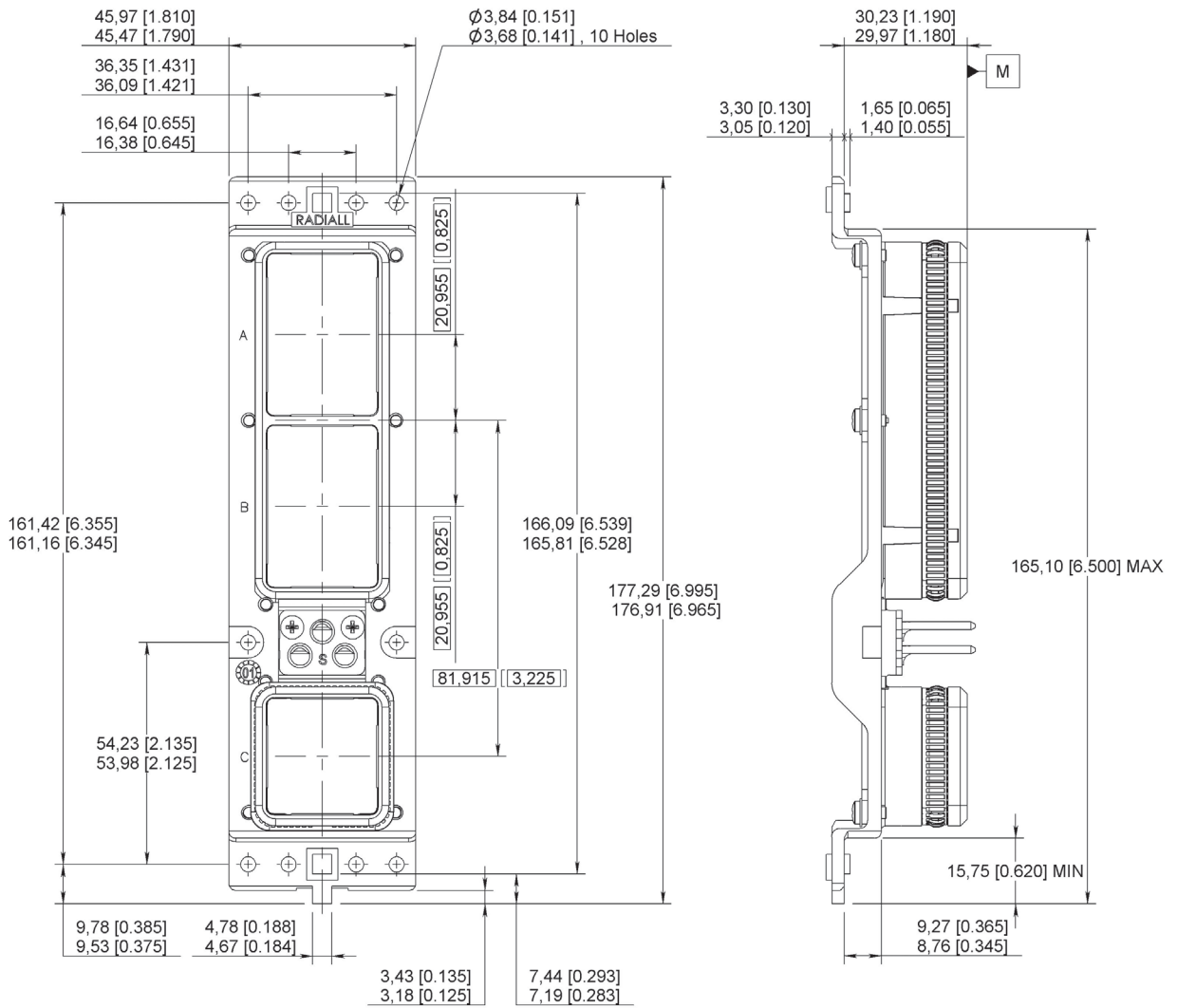


NSX SERIES

EMI/RFI NSX Size 2 Plug Dimensions

HOW TO ORDER

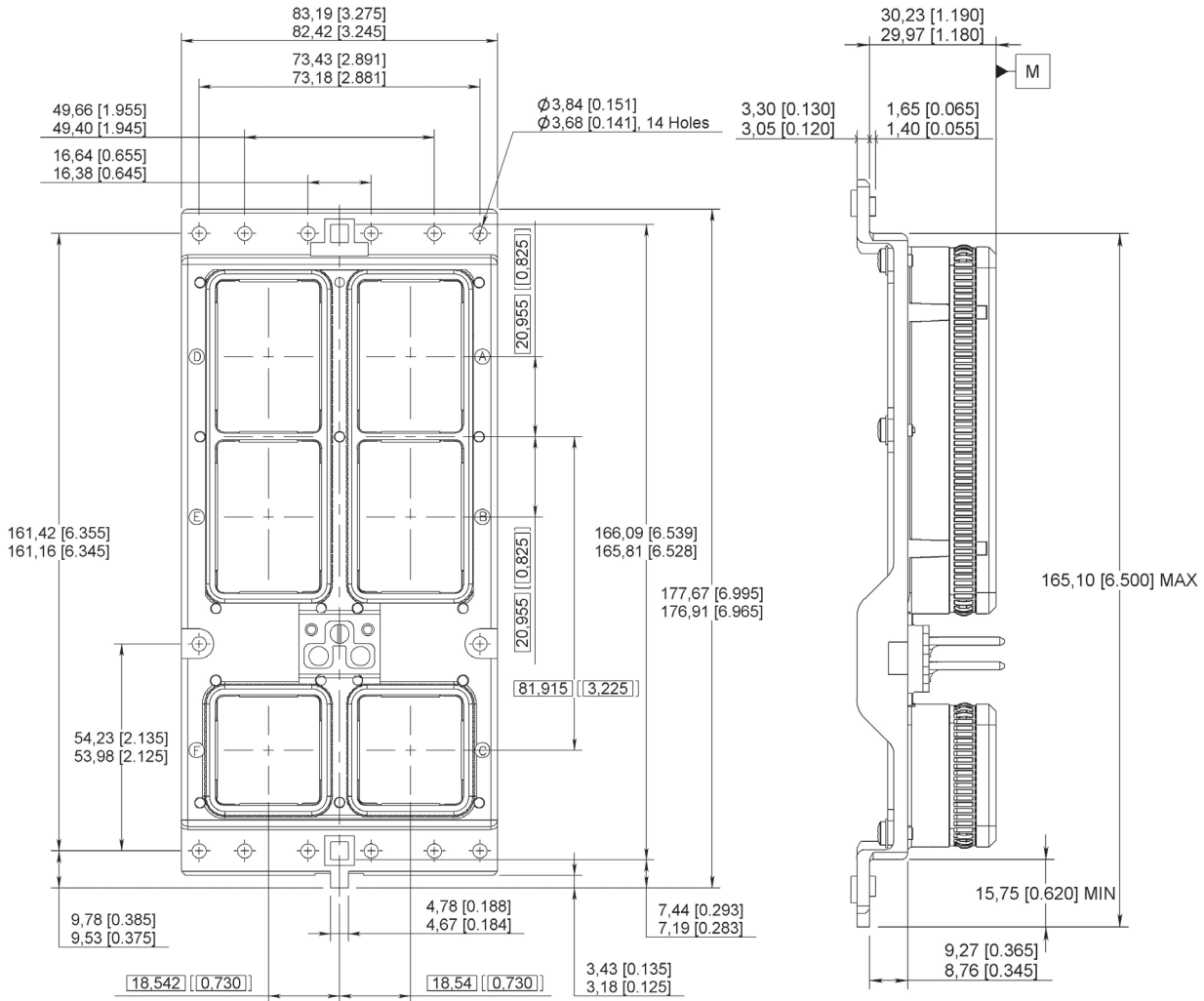
See page 4-11



EMI/RFI NSX Size 3 Plug Dimensions

HOW TO ORDER

See page 4-11



NSX SERIES

Dimensions

PLUG SHELL DIMENSIONS

| Shell size | Cavity | Contact arrangement | Contact size | Class N mm (inch) max | Classe E,H,C mm (inch) max |
|------------|--------------|---------------------|--------------|--------------------------|-------------------------------|
| 1 | A, B | 60 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | 30T2 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | | 8 | | 36.8 (1.449) |
| | 4C | 5 | 30.5 (1.200) | - | |
| | C | 5C2 | 16 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 12 | | |
| | | | 5 | | |
| 40 | 22 | 28 (1.102) | 35.5 (1.398) | | |
| 2, 3 | A, B, D, E | 150 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | 121 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | | 20 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 16 | | |
| | | 120T2 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | | 8 | | 36.8 (1.449) |
| | | 118Q2 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | | 8 | 28 (1.102) | 36.8 (1.449) |
| | | 71C1 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | | 1 | | - |
| | | 1C71 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | | 1 | | - |
| | | 60 | 20 | 30.5 (1.200) | 39.3 (1.547) |
| | | 24 | 12 | 30.5 (1.200) | 39.3 (1.547) |
| | | 10T10 | 8 | 30.5 (1.200) | 39.3 (1.547) |
| | | Q11 | 8 | 30.5 (1.200) | 39.3 (1.547) |
| | | C2 | 1 | 28 (1.102) | - |
| | | C4 | 1 | 28 (1.102) | - |
| | | 35 | 16 | 30.5 (1.200) | 39.3 (1.547) |
| | | 110 | 22 | 28 (1.102) | - |
| 20 | 30.5 (1.200) | | | | |
| 12 | | | | | |
| 36F36 | 16 LuxCis® | 30.5 (1.200) | 39 (1.535) | | |
| 20F12Q8 | 8 | 30.5 (1.200) | 39 (1.535) | | |
| | 16 LuxCis® | | | | |

Dimensions

PLUG SHELL DIMENSIONS

| Shell size | Cavity | Contact arrangement | Contact size | Class N mm (inch) max | Classe E,H,C mm (inch) max |
|------------|--------------|---------------------|--------------|--------------------------|-------------------------------|
| 2, 3 | C, F | 100 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | 85 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | | 20 | | 39.3 (1.547) |
| | | 34 | 16 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 20 | | 39.3 (1.547) |
| | | 20T4 | 16 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 20 | | 39.3 (1.547) |
| | | 20Q4 | 8 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 20 | | 39.3 (1.547) |
| | | 13C2 | 8 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 20 | | 39.3 (1.547) |
| | | | 16 | | 39.3 (1.547) |
| | | | 12 | | 39.3 (1.547) |
| | | 6T6 | 5 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 8 | | 39.3 (1.547) |
| | | Q6 | 8 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 8 | | 39.3 (1.547) |
| | | 62Q2 | 22 | 28 (1.102) | 36.8 (1.449) |
| | | | 16 | | 36.8 (1.449) |
| | | | 8 | | 36.8 (1.449) |
| | | 68Q2 | 22 | 28 (1.102) | 35.5 (1.398) |
| | | | 8 | | 36.8 (1.449) |
| | | | 20 | | 36.8 (1.449) |
| | | 11Q2 | 16 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 12 | | 39.3 (1.547) |
| | | | 8 | | 39.3 (1.547) |
| | | | 20 | | 39.3 (1.547) |
| | | 11WQ2 | 16 | 30.5 (1.200) | 39.3 (1.547) |
| | | | 12 | | 39.3 (1.547) |
| | | | 8 | | 39.3 (1.547) |
| 20 | 39.3 (1.547) | | | | |
| 59 | 22 | 28 (1.102) | 35.5 (1.398) | | |
| | 16 | 30.5 (1.200) | 39.3 (1.547) | | |
| | 12 | | 39.3 (1.547) | | |
| 12F5C2 | 16 LuxCis® | 30.5 (1.200) | 39 (1.535) | | |
| | 16 | | 39 (1.535) | | |
| | 5 | | 39 (1.535) | | |
| 17F12Q2 | 16 LuxCis® | 30.5 (1.200) | 39 (1.535) | | |
| | 16 | | 39 (1.535) | | |
| | 12 | | 39 (1.535) | | |
| | 5 | | 39 (1.535) | | |

NSX SERIES

Dimensions

RECEPTACLE SHELL DIMENSIONS

| Shell size | Cavity | Contact arrangement | Contact size | Class N mm (inch) max | Class E, C mm (inch) max | Class F mm (inch) max | Class G mm (inch) max |
|------------|--------|---------------------|---------------|--------------------------|-----------------------------|------------------------------|------------------------------|
| 1 | A, B | 60 | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | - |
| | | 30T2 | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | 30.93/29.84 (1.218/1.175) |
| | | | 8 | | 40.5 (1.594) | | |
| | 4C | 5 | 33.45 (1.317) | - | - | 30.93/29.84 (1.218/1.175) | |
| | C | 5C2 | 16 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) |
| | | | 12 | | | | |
| | | | 5 | | | | |
| | | 40 | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | - |
| | 4 | 12 | 33.45 (1.317) | 43 (1.693) | - | - | |
| | 2, 3 | A, B, D, E | 150 | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) |
| 121 | | | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | 30.93/29.84 (1.218/1.175) |
| | | | 20 | 33.45 (1.317) | 43 (1.693) | 33.45 (1.317) | |
| | | | 16 | | | | |
| 120T2 | | | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | - |
| | | | 8 | 31 (1.220) | 40.5 (1.594) | 30.93/29.84 (1.218/1.175) | - |
| 118Q2 | | | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | - |
| | | | 8 | 31 (1.220) | 40.5 (1.594) | 30.93/29.84 (1.218/1.175) | - |
| 71C1 | | | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | - |
| | | | 1 | | - | | |
| 1C71 | | | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | - |
| | | | 1 | | - | | |
| 60 | | | 20 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) |
| 24 | | | 12 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) |
| 10T10 | | | 8 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) |
| Q11 | | | 8 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) |
| C2 | | | 1 | 31 (1.220) | - | - | - |
| C4 | | | 1 | 31 (1.220) | - | - | - |
| 35 | | | 16 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) |
| 110 | | | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | 30.93/29.84 (1.218/1.175) |
| | 20 | 33.45 (1.317) | 43 (1.693) | 33.45 (1.317) | | | |
| | 12 | | | | | | |

Dimensions

RECEPTACLE SHELL DIMENSIONS

| Shell size | Cavity | Contact arrangement | Contact size | Class N mm (inch) max | Class E, C mm (inch) max | Class F mm (inch) max | Class G mm (inch) max | | |
|------------|------------|---------------------|---------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 2, 3 | A, B, D, E | 36F36 | 16 LuxCis® | 35.5 (1.398) | 44 (1.732) | - | - | | |
| | | 20F12Q8 | 16 LuxCis® | 35.5 (1.398) | 44 (1.732) | - | 30.93/29.84 (1.218/1.175) | | |
| | | | 8 | | | | | | |
| | C, F | | 100 | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | - | |
| | | | 85 | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | 30.93/29.84 (1.218/1.175) | |
| | | | | 20 | | 40.5 (1.595) | | | |
| | | | | 16 | | | | | |
| | | | 34 | 20 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) | |
| | | | | 16 | | | | | |
| | | | 20T4 | 20 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) | |
| | | | | 8 | | | | | |
| | | | 20Q4 | 20 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) | |
| | | | | 8 | | | | | |
| | | | 13C2 | 20 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) | |
| | | | | 16 | | | | | |
| | | | | 12 | | | | | |
| | | | | 5 | | | | | |
| | | | 6T6 | 8 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) | |
| | | | Q6 | 8 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) | |
| | | | 62Q2 | 22 | 31 (1.220) | 43 (1.693) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | 30.93/29.84 (1.218/1.175) |
| | | | | 16 | | | 40.5 (1.595) | | |
| | | | | 8 | | | | | |
| | | | 68Q2 | 22 | 31 (1.220) | 43 (1.693) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | 30.93/29.84 (1.218/1.175) |
| | | | | 8 | | | 40.5 (1.595) | | |
| | 11Q2 | 20 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) | | | |
| | | 16 | | | | | | | |
| | | 12 | | | | | | | |
| | | 8 | | | | | | | |
| | 11WQ2 | 20 | 33.45 (1.317) | 43 (1.693) | - | 30.93/29.84 (1.218/1.175) | | | |
| | | 16 | | | | | | | |
| | | 12 | | | | | | | |
| | | 8 | | | | | | | |
| 59 | 22 | 31 (1.220) | 38.9 (1.531) | 30.93/29.84 (1.218/1.175) | 30.93/29.84 (1.218/1.175) | | | | |
| | 16 | 33.45 (1.317) | 43 (1.693) | 33.45 (1.317) | | | | | |
| | | | | | | 12 | | | |
| 12F5C2 | 16 LuxCis® | 35.5 (1.398) | 44 (1.732) | - | - | | | | |
| | 16 | | | | | | | | |
| | 5 | | | | | | | | |
| 17F12Q2 | 16 LuxCis® | 35.5 (1.398) | 44 (1.732) | - | 30.93/29.84 (1.218/1.175) | | | | |
| | 16 | | | | | | | | |
| | 12 | | | | | | | | |
| | 5 | | | | | | | | |

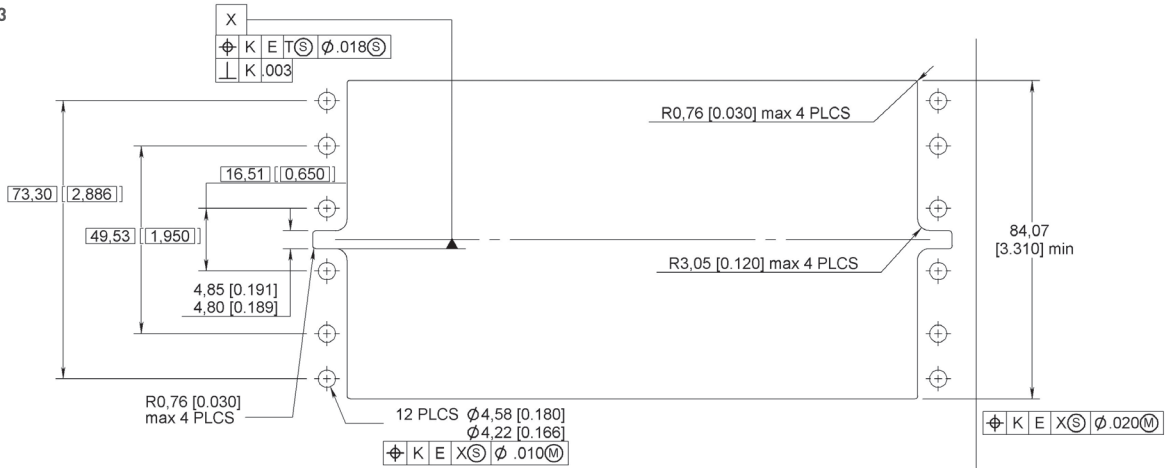
CLASS F: size 22 contacts are front release, front removable. Other sizes are rear release, rear removable
 CLASS G: all contacts are front release, front removable

NSX SERIES

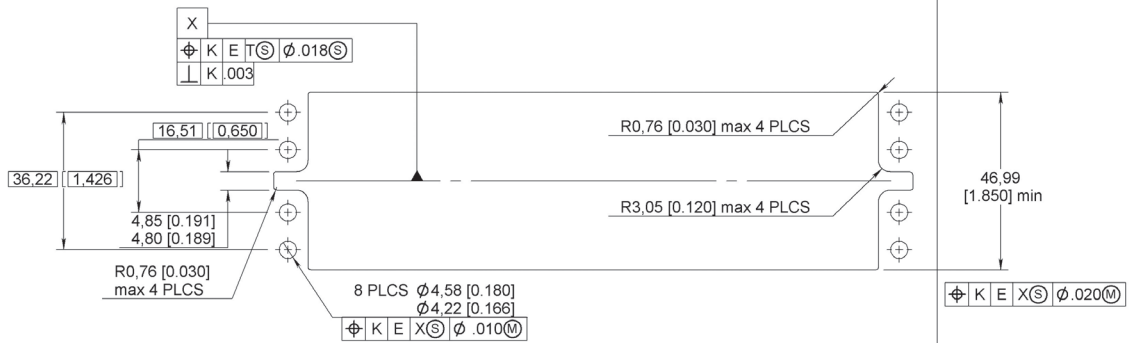
Panel Cut Out

PANEL CUT OUT FOR PLUG SIZE 1, 2 AND 3

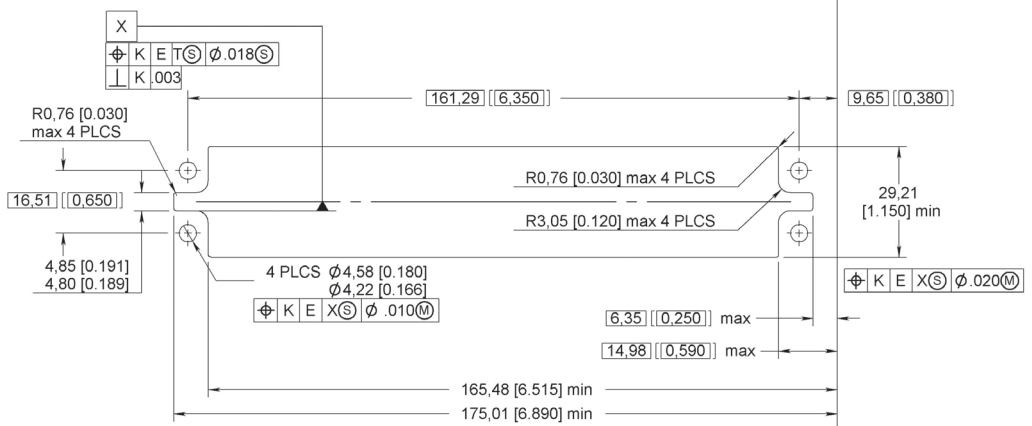
SIZE 3



SIZE 2



SIZE 1

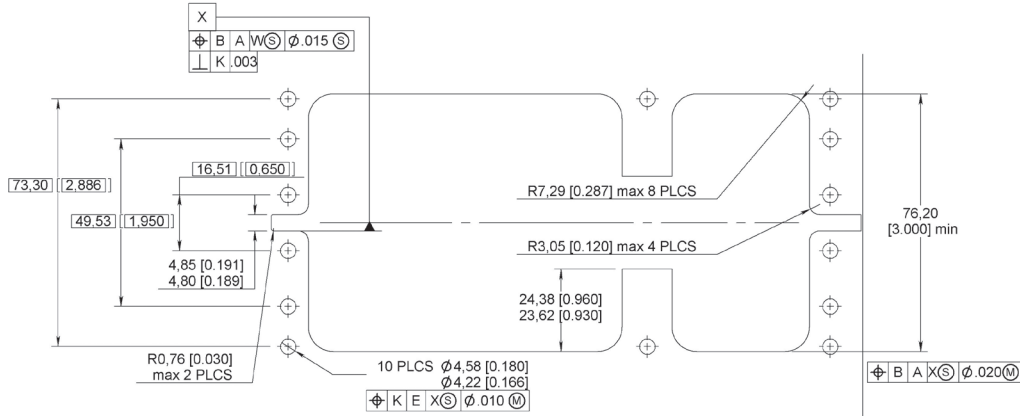


Panel Cut Out

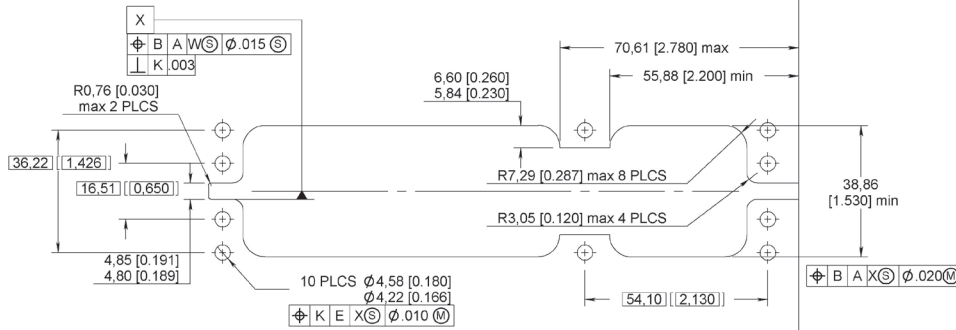
PANEL CUT OUT FOR RECEPTACLE SIZE 1, 2 AND 3

NSX SERIES

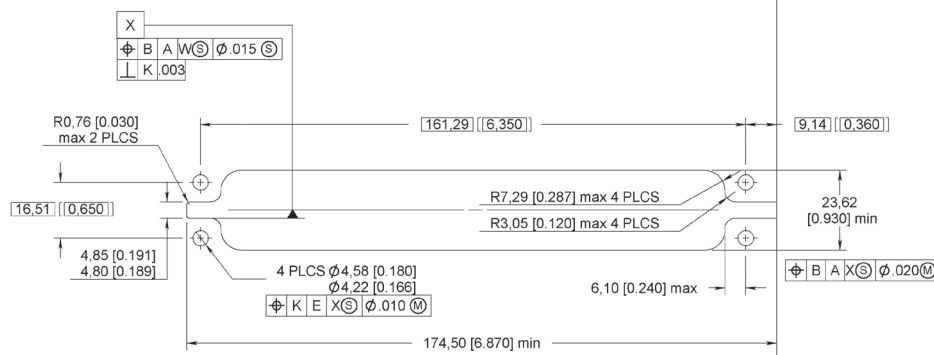
SIZE 3



SIZE 2



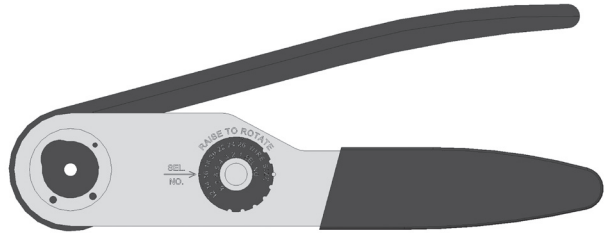
SIZE 1



Tools

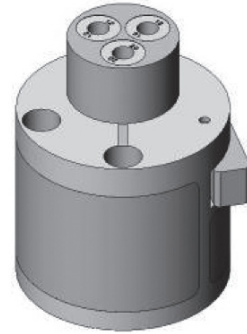
CRIMPING TOOLS

| Part number | Crimping tools |
|-------------|----------------|
| 282291 | M22520/1.01 |
| 282281 | M22520/2.01 |
| 282292 | M22520/4.01 |
| 282293 | M22520/5.01 |
| / | M22520/23.01 |
| / | M22520/31.01 |



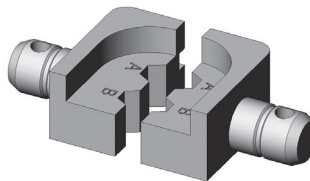
POSITIONERS

| Part number | Mil spec P/N |
|-----------------------|--------------|
| 282972 | M22520/1.02 |
| 282579 | M22520/1.11 |
| 282997 | M22520/1.13 |
| 282971 | M22520/2.08 |
| 282970 | M22520/2.23 |
| / | M22520/23.09 |
| 282550 (DANIELS K345) | / |
| 282555 (DANIELS K370) | / |
| 282556 | / |
| 282587 | / |
| 282588 | / |



DIES

| Part number | Mil spec P/N |
|-------------|--------------|
| 282246 | M22520/5.05 |
| / | M22520/5.13 |
| / | M22520/5.29 |
| 282236 | M22520/5.45 |
| 282247 | M22520/5.61 |
| / | M22520/23.02 |
| / | M22520/5.104 |



Tools

INSERTION/EXTRACTION TOOLS

| Part number | Mil spec P/N | Description |
|-------------|--------------|--|
| 282885 | M81969/1.01 | ins/ext tool for rear release rear removable size 22 contacts (crimp version) |
| 282886 | M81969/1.02 | ins/ext tool for rear release rear removable size 20 contacts (crimp version) |
| 282546 | M81969/1.03 | ins/ext tool for rear release rear removable size 16 contacts (crimp version) |
| 282946 | M81969/28.01 | ins/ext tool for rear release rear removable size 5 coaxial contacts (metallic) |
| 282500 | / | ins/ext tool for front release front removable size 22 contacts |
| 282503 | / | ins/ext tool for front release front removable size 20 contacts |
| 282504 | / | ins/ext tool for front release front removable size 16 contacts |
| 282549005 | / | ins/ext tool for front release front removable size 12 contacts |
| 282890 | / | ins/ext tool for rear release size 22 contacts solder tail and wire wrap terminations |
| 282549011 | / | insertion tool for front release front removable size 8 triaxial contacts, solder tail version |
| 282549004 | M81969/14.04 | extraction tool for rear release rear removable size 12 contacts |
| / | M81969/19.02 | extraction tool for front release rear removable size 12 power contacts |
| / | M81969/19.03 | extraction tool for front release rear removable size 8 contacts |
| 282549001 | M81969/28.03 | extraction tool for rear release rear removable size 8 contacts |
| 282549004 | / | extraction tool for rear release rear removable size 12 contacts (crimp version) |
| 282548 | / | extraction tool for rear release rear removable size 5 coaxial contacts |
| 282549009 | / | extraction tool for front release front removable size 8 triaxial contacts |
| 282549012 | / | extraction tool for front release rear removable size 8 triaxial contacts |
| 282892 | / | extraction tool for rear release rear removable size 16 coaxial contacts |
| 282945 | / | extraction tool for rear release rear removable size 12 coaxial contacts |
| 282548 | / | extraction tool for rear release rear removable size 5 coaxial contacts (plastic) |

NSX SERIES

Accessories

EMI BACKSHELLS

Radiall is proud to introduce two ways to integrate EMI backshells on Arinc 600 connectors:

- Backshell adapters plates
- Radiall backshell solution

Backshell adapters plates:

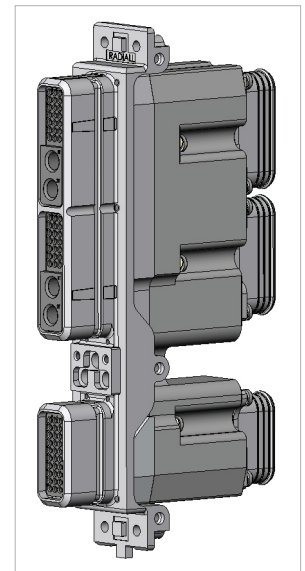
Backshell adapters plates can be delivered with NSX connectors when choosing modification code 60 and 61.

| Combination Code | Receptacle shell | | Plug shell | |
|------------------|------------------|----|------------|---|
| 60 (1) | -- | -- | | Shell size 1: Q ^y = 4 holes Ø3.76 (.148) & Q ^y = 6 4-40 UNC 2B Shell size 2: Q ^y = 10 holes Ø3.76 (.148) Shell size 3: Q ^y = 14 holes Ø3.76 (.148) delivered with backshell adapters plates |
| 61 (1) | -- | -- | | Shell size 1: Q ^y = 4 6-32 UNC Shell size 2: Q ^y = 6 holes Ø3.76 (.148) & Q ^y = 4 6-32 UNC Shell size 3: Q ^y = 6 holes Ø3.76 (.148) & Q ^y = 8 6-32 UNC delivered with backshell adapters plates |

Radiall backshell solution

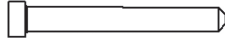
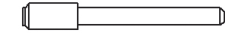
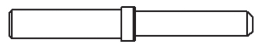


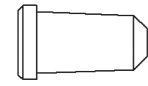

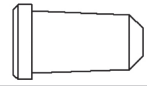
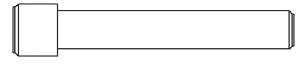
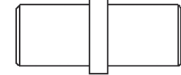



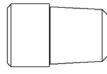

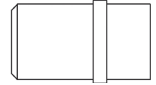
- High EMI performances
- Easy installation and maintenance with:
 - Modular backshells (1 or 2 pieces backshells)
 - Captive screws
- Available on size 1, 2 and 3 Arinc 600 connectors
- Round or oblong chimneys

Please, contact Radiall for more information about NSX backshells



Accessories

FILLER PLUGS (Non environmental)

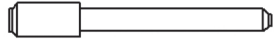
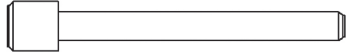


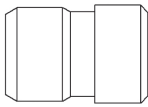
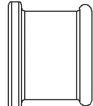
| Size | Contact cavity version | Ins | Ext | Color/Type | Part Number | Drawing |
|------|------------------------|-------|-------|------------|-------------|---|
| 22 | for pin & socket | rear | rear | black | 620920 | ←  |
| | for socket | front | front | aluminium | 620919 |  → |
| | for socket | front | front | white | 620926 |  → |
| 20 | for pin & socket | rear | rear | red | 620921 | ←  |
| | for pin & socket | front | front | white | 620934001 |  → |
| 16 | for pin & socket | rear | rear | blue | 620922 | ←  |
| | for pin & socket | front | front | white | 620935001 |  → |
| 12 | for pin & socket | rear | rear | yellow | 620923 | ←  |
| | for pin | front | front | white | 620936001 |  → |
| | for pin | front | front | nickel | 620936002 |  → |
| 8 | for pin | rear | rear | nickel | 619953 | ←  |
| | for pin | front | front | nickel | 619552 |  → |
| | for socket | rear | rear | nickel | 619950 | ←  |
| 5 | for pin | rear | rear | white | 620924 | ←  |
| | for socket | rear | rear | white | 620925 | ←  |
| | for pin & socket | front | front | white | 620937001 | -  → |

NSX SERIES

Accessories

SEALING PLUGS (Environmental)

Sealing plugs are dedicated to environmental inserts.



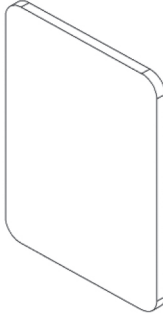
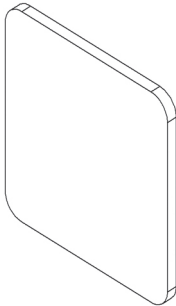
| Size | Contact cavity version | Ins | Ext | Color/Type | Part Number | Drawing |
|------|------------------------|------|------|------------|-------------|---|
| 22 | for pin & socket | rear | rear | black | 616910 | ←  |
| 20 | for pin & socket | rear | rear | red | 616911 | ←  |
| 16 | for pin & socket | rear | rear | green | 616912 | ←  |
| 12 | for pin & socket | rear | rear | orange | 616913 | ←  |
| 8 | for pin & socket | rear | rear | red | 618915 | ←  |
| 5 | for pin & socket | rear | rear | red | 616914014 | ←  |

The arrow shows the direction which you have to insert the plug

Accessories

DUMMY INSERTS

When a cavity shell is not fitted with one of the inserts shown on pages 4-12 to 4-21, the cavity shell is fitted with a dummy insert. Dummy inserts are made of aluminium alloy and are available for each cavity shell in ALODINE 1200, nickel or RoHS plating.

| Shell size | Cavity | Dummy insert P/N | Figure |
|------------|------------------|---|---|
| 1 | A or B | 620910 (Alodine 1200) 620913001 (nickel) 620913005 (RoHS) |  |
| | C | 620911 (Alodine 1200) 620913002 (nickel) 620913006 (RoHS) |  |
| 2 & 3 | A or B or D or E | 620912 (Alodine 1200) 620913003 (nickel) 620913007 (RoHS) |  |
| | C or F | 620913 (Alodine 1200) 620913004 (nickel) 620913008 (RoHS) |  |

NSX SERIES

Accessories

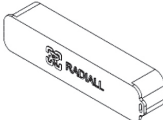
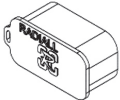






DUST CAPS

Dust caps are made of thermoplastic. They are available either conductive (black color) or not (red color).

| Electrical characteristics | Shell type | Shell size | Shell cavity | Part number | Figure |
|----------------------------|------------|----------------------------|--------------|-------------|---|
| Conductive | Plug | 1 | A/B | 620995003 |  |
| | | | C | 620995004 |  |
| | | 2 & 3 | A/B & D/E | 620995007 |  |
| | | | C & F | 620995008 |  |
| | Receptacle | 1 | A/B | 620995011 |  |
| | | | C | 620995012 |  |
| | | For single shell connector | - | 620995018 |  |
| | | 2 & 3 | A/B & D/E | 620995015 |  |
| | | | C & F | 620995016 |  |

Accessories

DUST CAPS

| Electrical characteristics | Shell type | Shell size | Shell cavity | Part number | Figure |
|----------------------------|------------|----------------------------|--------------|-------------|---|
| Non conductive | Plug | 1 | A/B | 620995001 |  |
| | | | C | 620995002 |  |
| | | For single shell connector | - | 620995017 |  |
| | | 2 & 3 | A/B & D/E | 620995005 |  |
| | | | C & F | 620995006 |  |
| | | Receptacle | 1 | A/B | 620995009 |
| | C | | | 620995010 |  |
| | 2 & 3 | | A/B & D/E | 620995013 |  |
| | | | C & F | 620995014 |  |

NSX SERIES

Accessories

CAVITY REDUCERS

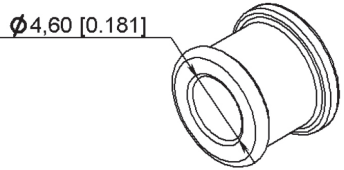
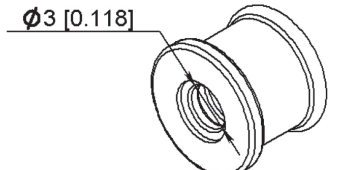
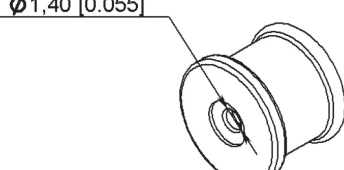
The following parts are cavity reducers which allows the use of a size 12 contact in a size 5 cavity. These parts are made of copper alloy and are plated with gold over nickel. Once installed, they cannot be removed.

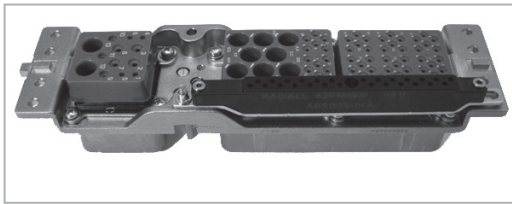
| Electrical characteristics | Part number | Figure |
|--|-------------|--------|
| For pin contact | 620940 | |
| For socket contact | 620941 | |
| For pin contact front release / front removable (FR/FR) connector in version G | 620942 | |

Accessories

SEALING BOOTS

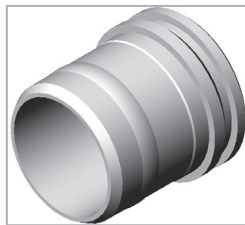
The sealing boots are designed to slide down over the back of the crimped contacts after they have been installed in the connector. The assembly provides bend support and moisture sealing to the contact / cable assembly. Sealing boots are made of fluorosilicon rubber.

| Electrical characteristics | Cable outside dia. mm (inch) | Cable | Part number | Figure |
|----------------------------|--------------------------------|---|-------------|--|
| 5 | 5 [0.197] | RG 58 RG 141 RG 142 RG 223 RG 400 | 620939201 |  |
| | 3.81 [0.150] | RG 180 RG 195 | 620939200 |  |
| | 2.59 [0.102] & 2.01 [0.079] | RG 179 RG 316 KX 21 | 620914001 |  |



GROUNDING BLOCK (part number 620981002)

Radiall provides a unique feature by integrating a ground block directly on the plug shell for sizes #2 & #3. This option allows very short ground terminations. Pin crimp ground contacts are available with grounding block, part number is 620260 (up to 26 contacts per grounding block).



ALIGNMENT BOOTS (part number 619960)

Alignment boots are designed to reduce the play at the top of the size 8 pin contacts. They are used with non environmental rear release/ rear removable size 8 pin contacts.

Introduction

NSX – SINGLE SHELL CONNECTOR

NSX single shell connectors are designed to accommodate all large cavity inserts. Their characteristics are shown on page 4-8 except for the following.



Materials

| Description | Material | Plating |
|---|-----------------|-----------------------------------|
| Shell | Aluminum alloy | Cadmium clear chromate or nickel |
| Insert retention plate | Aluminum alloy | Cadmium clear chromate or nickel |
| Polarization posts and keys retention plate | Aluminum alloy | Cadmium clear chromate or nickel |
| Screws washers and clinch-nuts | Stainless steel | / |
| | Steel | Cadmium clear chromate |
| Polarization posts and keys | Zinc alloy | Cadmium yellow chromate or nickel |

How to Order Connector

NSX – SINGLE SHELL CONNECTOR



Series _____

Class _____

- N:** Non environmental (rear removable version only)
- E:** Environmental, with grommets and compound. plug with O-ring (rear removable version only).
- H:** Environmental plug without O-ring } front removable
- C:** Non environmental with grommets } front removable
- F:** Non environmental receptacle shell } rear removable
- G:** Non environmental receptacle shell } rear removable

Shell style _____

- R:** Cadmium clear chromate plated receptacle
- P:** Cadmium clear chromate plated plug
- F:** Nickel plated receptacle
- B:** Nickel plated plug
- M:** Nickel plated plug EMI/RF1 solution (see page 4-96)

Contact arrangement _____

See contact arrangements on pages 4-12 to 4-21
Only use insert for A & B cavities

Contacts termination ⁽¹⁾ _____

Without contacts

- X:** Without contacts
- S:** Crimp contacts

Wire wrap

- K:** Wire wrap contact, 1 level (1 = .272)
- V:** Wire wrap contact, 2 levels (1 = .390)
- W:** Wire wrap contact, 3 levels (1 = .524)

PC tail contacts

| RoHs | Gold | Pre-tinned | Length (inch) |
|------|------|------------|---------------|
| RA | YA | ZA | .150 |
| R | Y | Z | .250 |
| RB | YB | ZB | .375 |
| RC | YC | ZC | .500 |

Modification code _____

- 00:** 4 mounting holes .146/.156 dia
- 01:** 4 clinch nuts 4.40 UNC
- 03:** 4 each .122 dia mounting holes c'sunk .230 dia x 100°
- 04:** 4 each .122 dia mounting holes c'sunk .230 dia x 82°
- 05:** 4 each .137 dia mounting holes c'sunk .230 dia x 82°
- 23:** 4 floating eyelets .122 - .126 dia

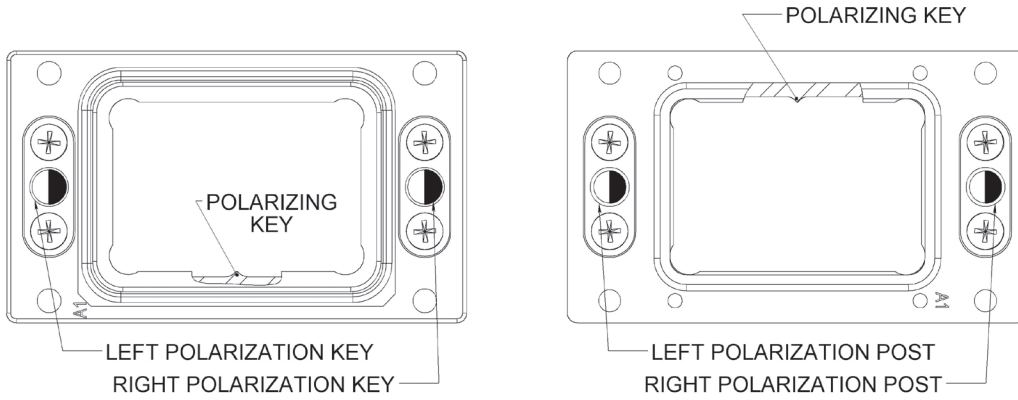
Polarization code ⁽²⁾ _____

See pages 4-92 to 4-93
Without code: polarization hardware is delivered unassembled

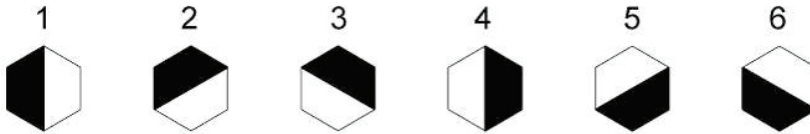
NOTES:

- (1) For F class receptacle, only size 22 contacts can be delivered in PC Tail version, others contacts (size 20, 16, 12) will be delivered in crimp version. Coaxial, twinax and quadrax contacts are ordered separately
For G class receptacle, every contacts can be delivered in PC Tail or crimp version except size 1 that will be delivered in crimp version only.
Coax twinax and power contacts size are ordered separately
- (2) Without polarization code, the connector is delivered polarization hardware unassembled
Polarization code 00, the connector is delivered without polarization hardware.
Polarization code 01 to 36, the connector is delivered with the polarization hardware assembled as defined by the code

Horizontal Installation



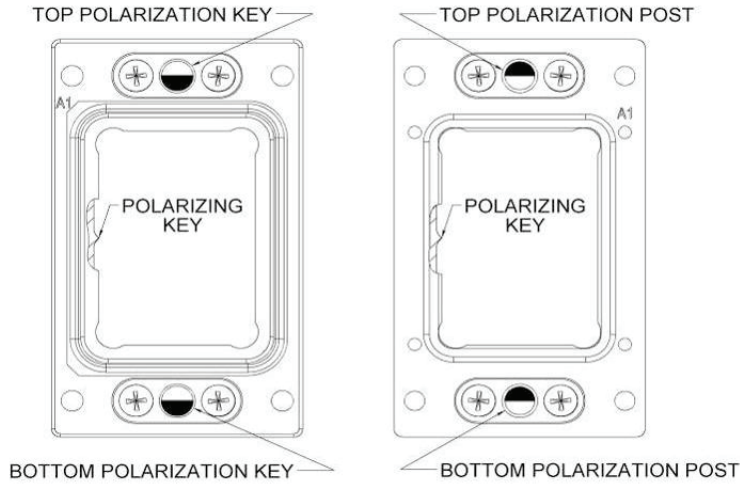
MATING FACE



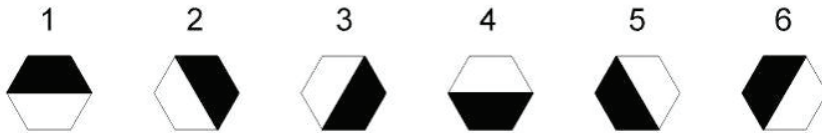
POSITION OF POST (DARK) AND KEYHOLE (LIGHT)

| Position | Equipment receptacle | | Rack plug | |
|----------|----------------------|------------|------------|-------------|
| | Left. key | Right. key | Left. post | Right. post |
| 01 | 1 | 1 | 1 | 1 |
| 02 | 3 | 4 | 4 | 5 |
| 03 | 2 | 4 | 4 | 6 |
| 04 | 1 | 4 | 4 | 1 |
| 05 | 6 | 4 | 4 | 2 |
| 06 | 5 | 4 | 4 | 3 |
| 07 | 4 | 5 | 3 | 4 |
| 08 | 3 | 5 | 3 | 5 |
| 09 | 2 | 5 | 3 | 6 |
| 10 | 1 | 5 | 3 | 1 |
| 11 | 6 | 5 | 3 | 2 |
| 12 | 5 | 5 | 3 | 3 |
| 13 | 4 | 6 | 2 | 4 |
| 14 | 3 | 6 | 2 | 5 |
| 15 | 2 | 6 | 2 | 6 |
| 16 | 1 | 6 | 2 | 1 |
| 17 | 6 | 6 | 2 | 2 |
| 18 | 5 | 6 | 2 | 3 |
| 19 | 4 | 1 | 1 | 4 |
| 20 | 3 | 1 | 1 | 5 |
| 21 | 2 | 1 | 1 | 6 |
| 22 | 4 | 4 | 4 | 4 |
| 23 | 6 | 1 | 1 | 2 |
| 24 | 5 | 1 | 1 | 3 |
| 25 | 4 | 2 | 6 | 4 |
| 26 | 3 | 2 | 6 | 5 |
| 27 | 2 | 2 | 6 | 6 |
| 28 | 1 | 2 | 6 | 1 |
| 29 | 6 | 2 | 6 | 2 |
| 30 | 5 | 2 | 6 | 3 |
| 31 | 4 | 3 | 5 | 4 |
| 32 | 3 | 3 | 5 | 5 |
| 33 | 2 | 3 | 5 | 6 |
| 34 | 1 | 3 | 5 | 1 |
| 35 | 6 | 3 | 5 | 2 |
| 36 | 5 | 3 | 5 | 3 |

Vertical Installation



MATING FACE

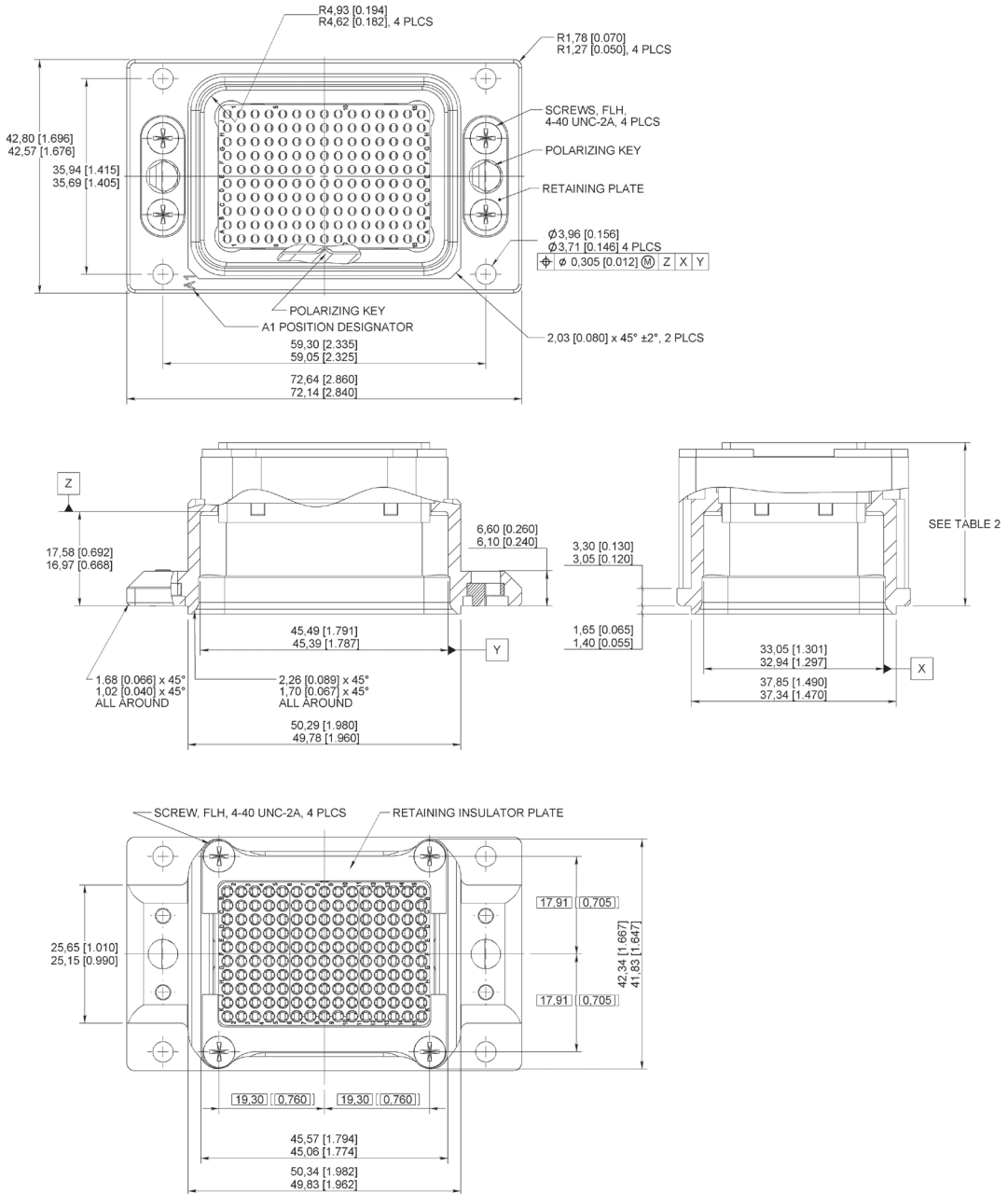


POSITION OF POST (DARK) AND KEYHOLE (LIGHT)

| Position | Equipment receptacle | | Rack plug | |
|----------|----------------------|------------|------------|-------------|
| | Left. key | Right. key | Left. post | Right. post |
| 01 | 1 | 1 | 4 | 4 |
| 02 | 3 | 4 | 2 | 1 |
| 03 | 2 | 4 | 3 | 1 |
| 04 | 1 | 4 | 4 | 1 |
| 05 | 6 | 4 | 5 | 1 |
| 06 | 5 | 4 | 6 | 1 |
| 07 | 4 | 5 | 1 | 6 |
| 08 | 3 | 5 | 2 | 6 |
| 09 | 2 | 5 | 3 | 6 |
| 10 | 1 | 5 | 4 | 6 |
| 11 | 6 | 5 | 5 | 6 |
| 12 | 5 | 5 | 6 | 6 |
| 13 | 4 | 6 | 1 | 5 |
| 14 | 3 | 6 | 2 | 5 |
| 15 | 2 | 6 | 3 | 5 |
| 16 | 1 | 6 | 4 | 5 |
| 17 | 6 | 6 | 5 | 5 |
| 18 | 5 | 6 | 6 | 5 |
| 19 | 4 | 1 | 1 | 4 |
| 20 | 3 | 1 | 2 | 4 |
| 21 | 2 | 1 | 3 | 4 |
| 22 | 4 | 4 | 1 | 1 |
| 23 | 6 | 1 | 5 | 4 |
| 24 | 5 | 1 | 6 | 4 |
| 25 | 4 | 2 | 1 | 3 |
| 26 | 3 | 2 | 2 | 3 |
| 27 | 2 | 2 | 3 | 3 |
| 28 | 1 | 2 | 4 | 3 |
| 29 | 6 | 2 | 5 | 3 |
| 30 | 5 | 2 | 6 | 3 |
| 31 | 4 | 3 | 1 | 2 |
| 32 | 3 | 3 | 2 | 2 |
| 33 | 2 | 3 | 3 | 2 |
| 34 | 1 | 3 | 4 | 2 |
| 35 | 6 | 3 | 5 | 2 |
| 36 | 5 | 3 | 6 | 2 |

Dimensions

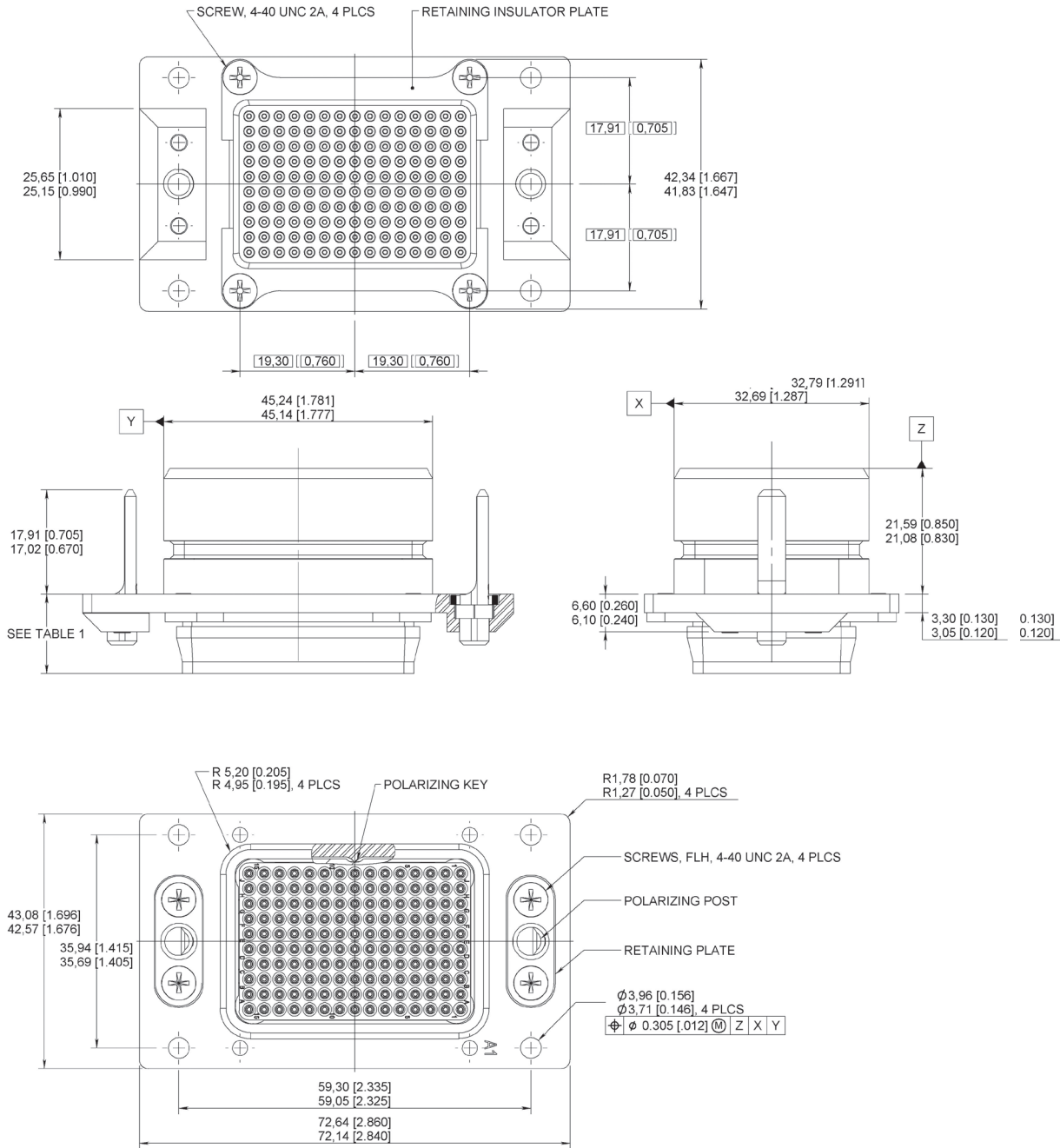
NSX SINGLE SHELL RECEPTACLE DIMENSIONS



Dimensions

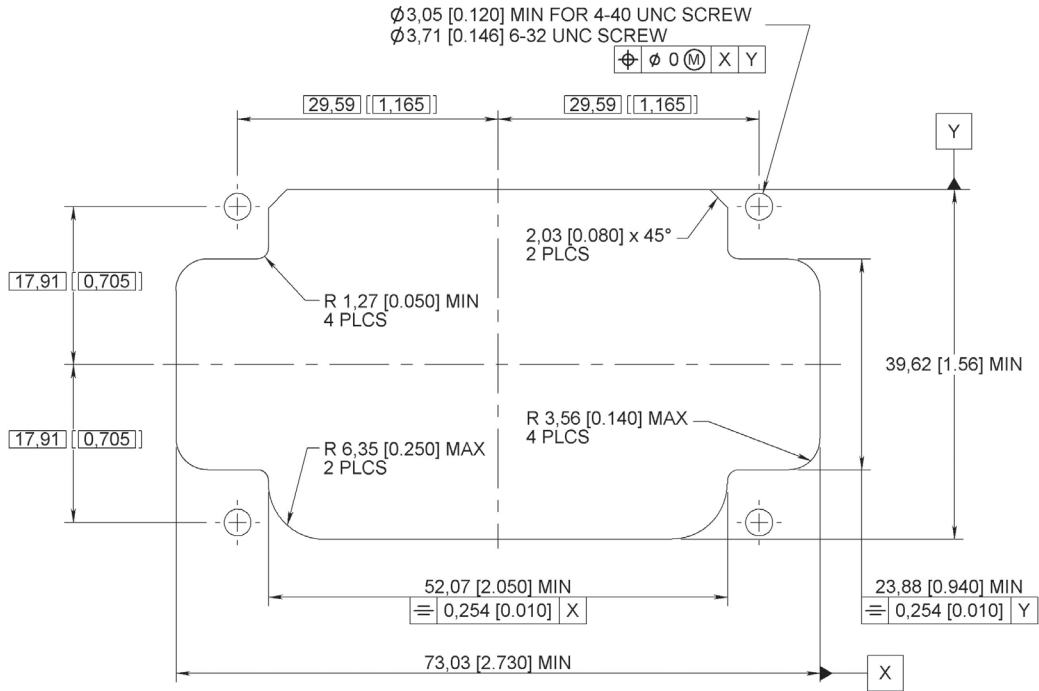
NSX SINGLE SHELL PLUG DIMENSIONS

NSX SERIES

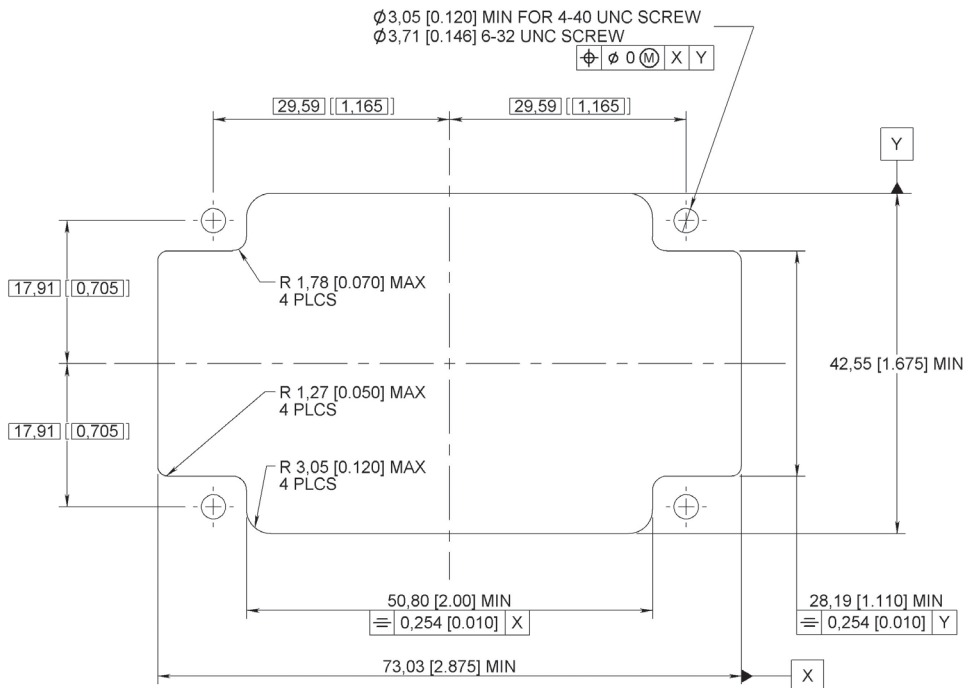


NSX Single Shell Panel Cut Out

RECEPTACLE PANEL CUT OUT



PLUG PANEL CUT OUT

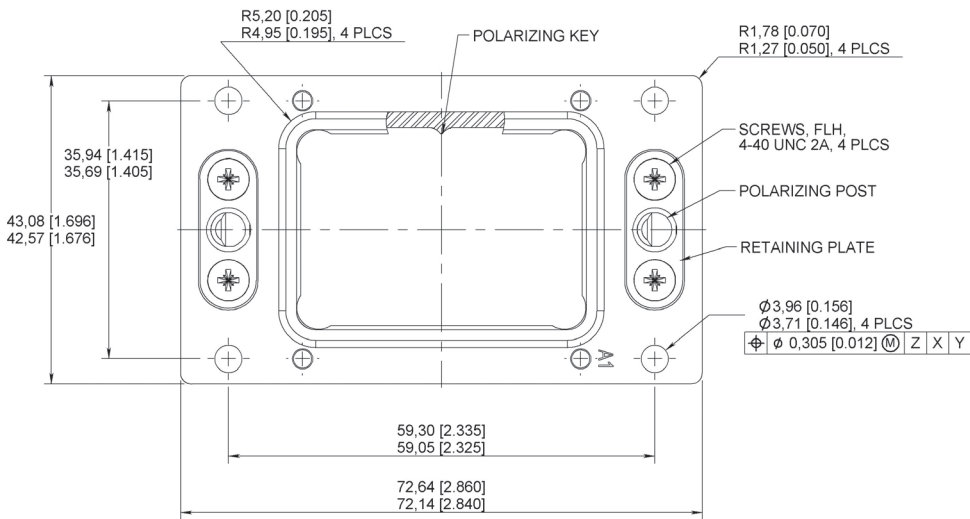
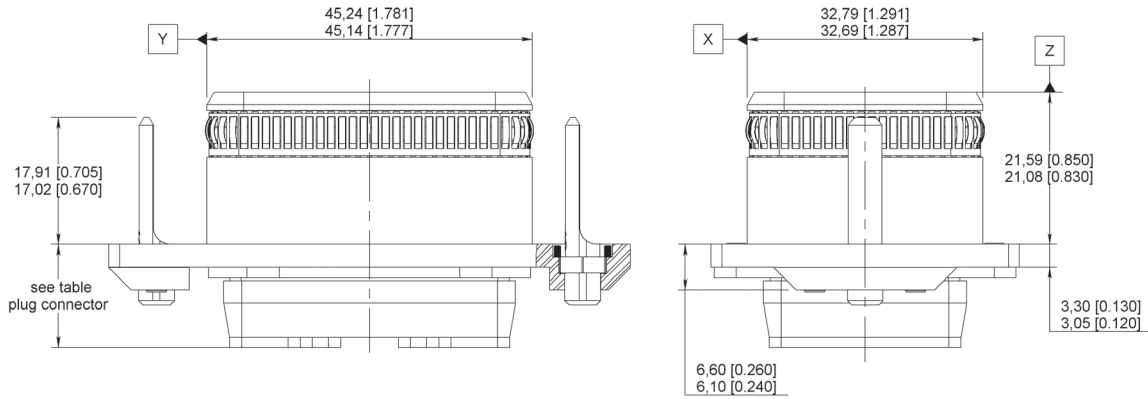


EMI/RFI NSX Single Shell Plug Dimension

HOW TO ORDER

See page 4-91

NSX SERIES

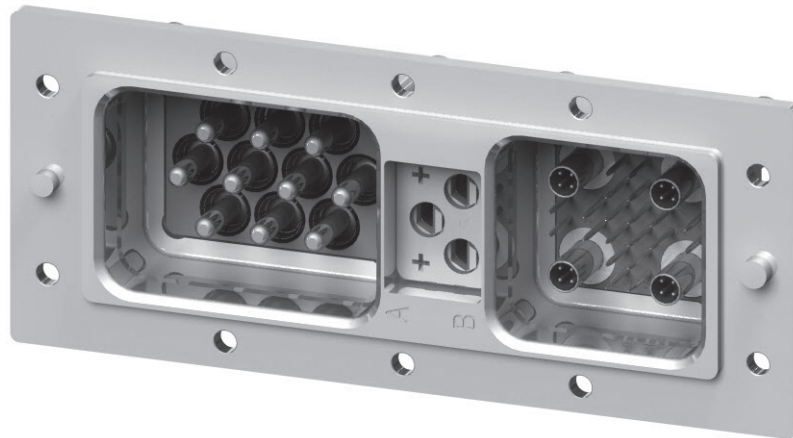


BPX Introduction

BPX series connectors are EMI shielded and modular insert concept rectangular multipin connectors fitted with NSX inserts and contacts.

BPX connectors are differentiated from NSX connectors by their shell sizes available: 1, 2 and 3.

The **BPX** characteristics are compliant to BOEING S280W551 specification. Their specific characteristics (those which are different from NSX connectors) are as follows:



Electrical Characteristics

BPX electrical characteristics are the same as NSX connectors (see pages 4-8 to 4-9) except the following:

- Magnetic permeability: 2.0 Ohms max.

Mechanical and Environmental Characteristics

Identical to NSX connectors except the following:

Mating and unmating forces:

- Shell size 1: 70 pounds (311 N) max
- Shell size 2: 140 pounds (623 N) max
- Shell size 3: 130 pounds (578 N) max

Humidity: type II

(measured according to method 1002 of MIL-STD-1344A)

Fluid resistance: resistance to MIL-STD-1344A method 1016 (fluids a, e, i, j).

Contact stability: conforming to S280W551 requirements.

Materials

| Description | Material | Plating |
|---|-----------------|--|
| Shell | Aluminum alloy | Electrically conductive finish over nickel |
| Grounding spring fingers | Copper alloy | Nickel |
| Insert retention plate | Aluminum alloy | Nickel |
| Polarization posts and keys retention plate | Aluminum alloy | Nickel |
| Screws, washers and clinch nuts | Stainless steel | |
| Polarization posts and keys | Zinc alloy | Nickel |

How to Order Connector

BPX N/E/F/G CONNECTORS FOR REAR REMOVABLE CONTACTS

| | | | | | | | |
|-----|---|---|---|-----|---|----|----|
| BPX | E | 2 | P | 201 | S | 00 | 01 |
|-----|---|---|---|-----|---|----|----|

Series _____

Class _____

N: Non environmental
E: Environmental
F: Non environmental receptacle connectors only for F class receptacle, only size 22 contacts can be delivered in PC Tail version, others contacts (size 20, 16, 12) will be delivered in crimp version. Coaxial, twinax and quadrax contacts shall to be ordered separately.
G: Non environmental receptacle connectors only for G class receptacle, every contacts can be delivered in PC Tail or crimp version except size 1 that will be delivered in crimp version only. Coax, twinax and power contacts size shall be ordered separately.

Shell size _____

1: 2 cavities
2: 4 cavities
3: 5 cavities

Shell style _____

R: Receptacle
P: Plug

Insert combination code _____
 See insert combination codes on page 4-100

Contacts termination ⁽¹⁾ _____

Without contacts
X: Without contacts
S: Crimp contacts

Wire wrap
K: Wire wrap contact, 1 level (1 = .272)
V: Wire wrap contact, 2 levels (1 = .390)

PC tail contacts

| RoHs | Gold | Pre-tinned | Length (inch) |
|------|------|------------|---------------|
| RA | YA | ZA | .150 |
| R | Y | Z | .250 |

Modification code _____

00: Only modification code 00 is available, see page 4-29

Polarization code ⁽¹⁾ _____
 See pages 4-31 to 4-33
 Without code: polarization hardware is delivered unassembled

NOTE:
 (1) Polarization code 00, the connector is delivered without polarization hardware. Polarization code 01 to 216, the connector is delivered with the polarization hardware as defined by the code

Insert Combination Code in the Shell

| Code | Insert combination on shell | | | | |
|------|-----------------------------|------|-------|-----|------|
| | A | B | C | D | E |
| 101 | 10T10 | 34 | / | / | / |
| 102 | 10T10 | 59 | / | / | / |
| 103 | 150 | 13C2 | / | / | / |
| 201 | 150 | 100 | 150 | 6T6 | / |
| 202 | 121 | 6T6 | 150 | 6T6 | / |
| 203 | 10T10 | 100 | 10T10 | 100 | / |
| 204 | 121 | 6T6 | 121 | 6T6 | / |
| 205 | 110 | 6T6 | 150 | 6T6 | / |
| 301 | 10T10 | 4 | 6P6 | 60A | 4 |
| 302 | 10T10 | 30T2 | 6P6 | 60A | 30T2 |
| 303 | 120T2 | 4 | 6P6 | 60A | 4 |

Contact

BPX connectors use NSX signal, power coaxial and concentric twinax contacts (see pages 4-34 to 4-57).

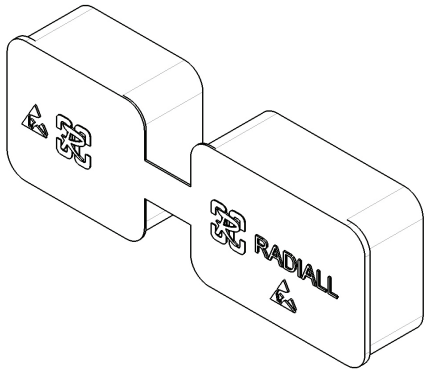
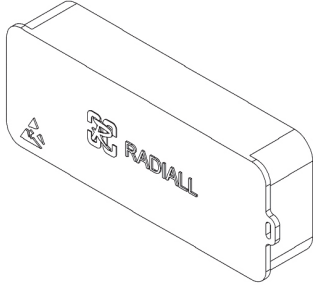
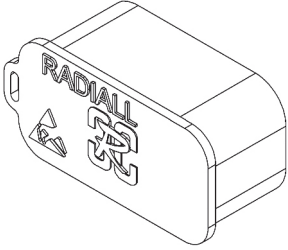
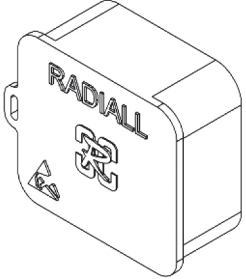
Accessories - Sealing Boot

The sealing boots are designed to slide down over the back of crimped contacts after they have been installed in the connector. The assembly provides bend support and moisture sealing to the contact/cable assembly. For BPX connectors size, 8 coaxial and concentric twinax contacts must be fitted with the sealing boot required by S280W552 specification.

| | Wire dia mm (inch) | Wire type | Part number | Figure |
|---|-----------------------|---------------------------|-------------|--|
| Sealing boot for cavity insert size 8 | 3.68 [0.145] | Tensolite [S280W502-1] | 619960005 | <p>Technical drawing of a sealing boot. A horizontal dimension line above the boot indicates a diameter of $\text{Ø } 2,80 [0.110]$. The drawing shows a cylindrical boot with a flange on one end and a narrower section on the other.</p> |

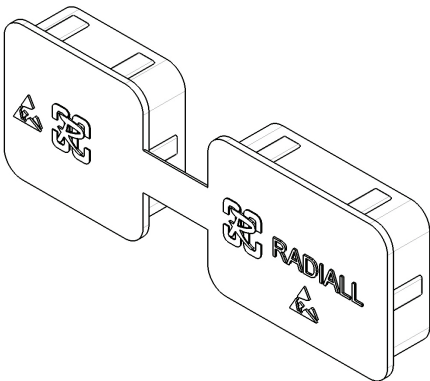
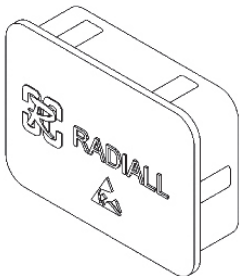
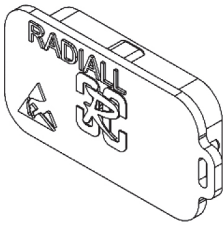
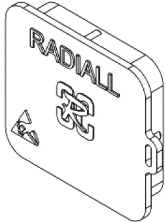
Accessories - Dust Caps

Dust caps are made of thermoplastic material, they are either conductive (black color) or non-conductive (red color).

| Type | Shell type | Shell size | Cavity | Part number | Figure |
|------------|------------|------------|--------------------|---|---|
| Conductive | Plug | 1 | A and B | 618953002 |  |
| | | 2 | A and B C and D | | |
| | | 3 | A, D | 620995007 |  |
| | | | B, E | 620995004 |  |
| | | C | 620995008 |  | |

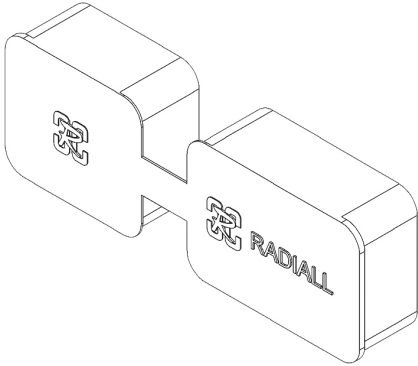
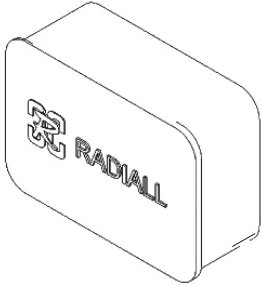
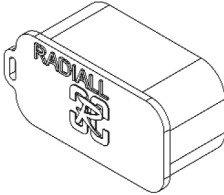
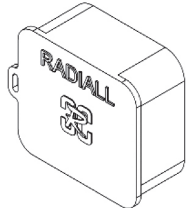
Accessories - Dust Caps

BPX SERIES

| Type | Shell type | Shell size | Cavity | Part number | Figure |
|------------|------------|------------|--------------------|-------------|---|
| Conductive | Receptacle | 1 | A and B | 618953001 |  |
| | | 2 | A and B C and D | | |
| | | 3 | A, D | 620995018 |  |
| | | | B, E | 620995012 |  |
| | | | C | 620995016 |  |

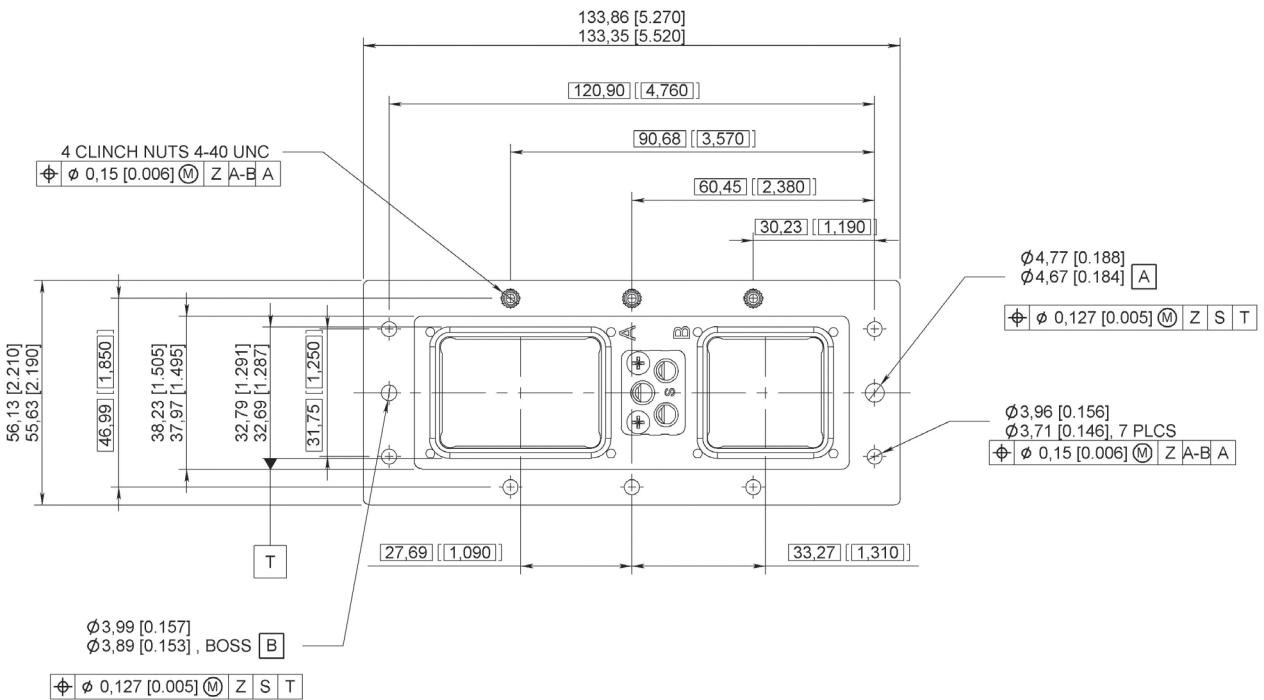
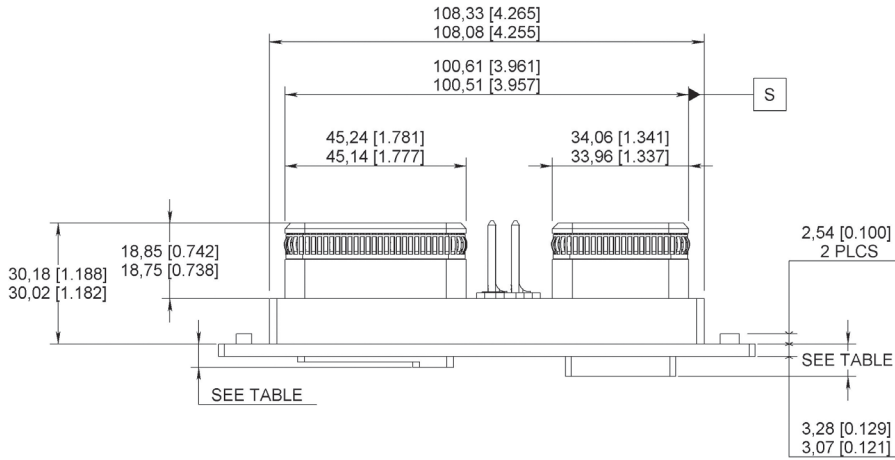
BPX SERIES

Accessories - Dust Caps

| Type | Shell type | Shell size | Cavity | Part number | Figure |
|----------------|------------|------------|--------------------|-------------|---|
| Non conductive | Plug | 1 | A and B | 618953 |  |
| | | 2 | A and B C and D | | |
| | | | A, D | 620995017 |  |
| | | | B, E | 620995002 |  |
| | | | C | 620995006 |  |
| | | | | | |

Dimensions

SIZE 1 PLUG DIMENSIONS

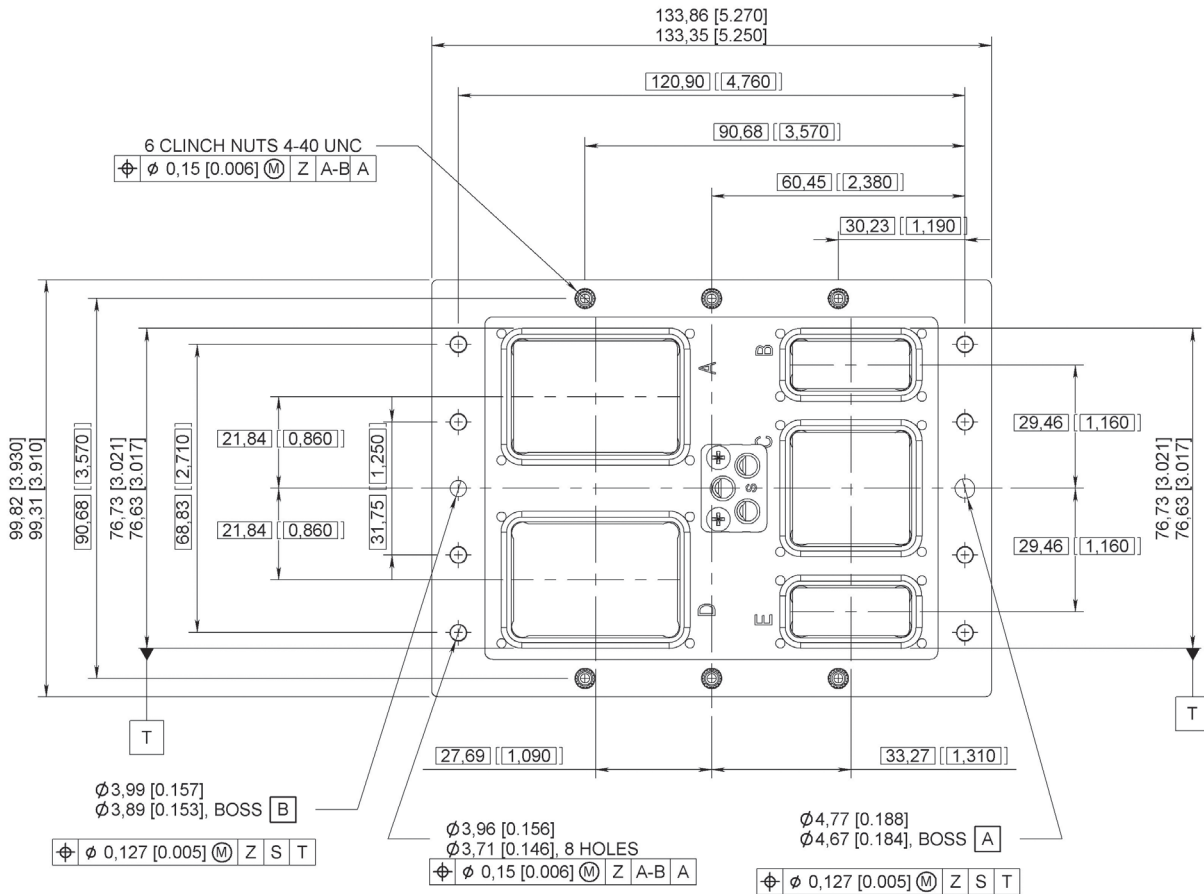
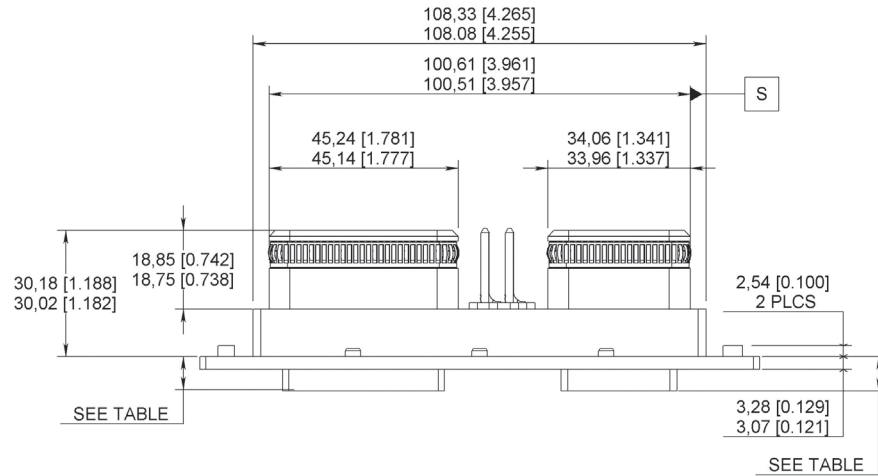


BPX SERIES

Dimensions

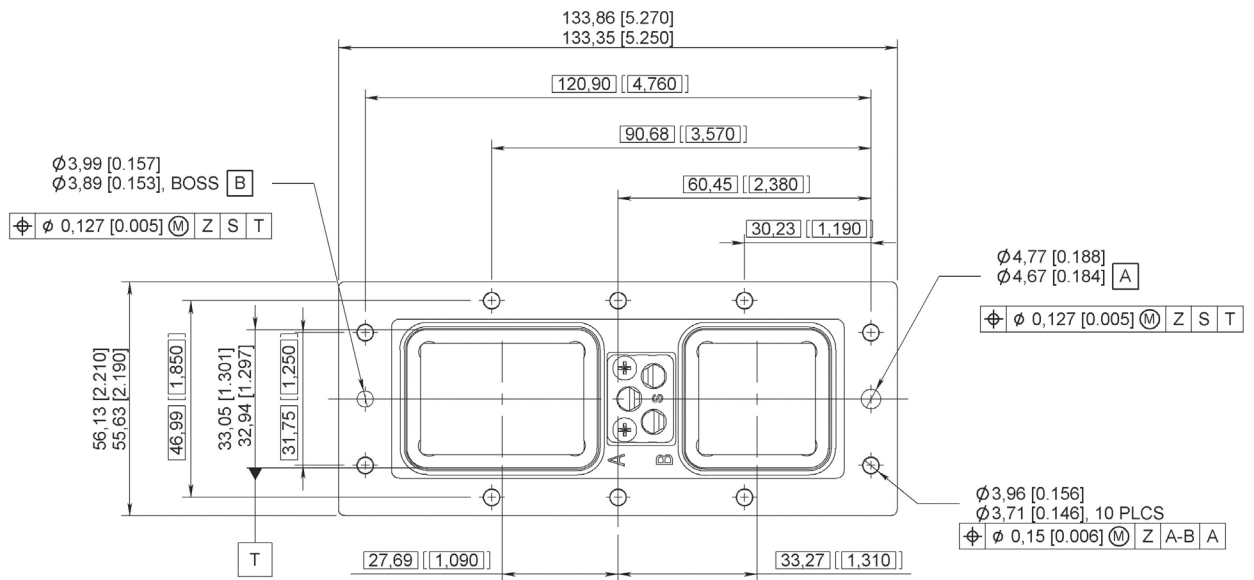
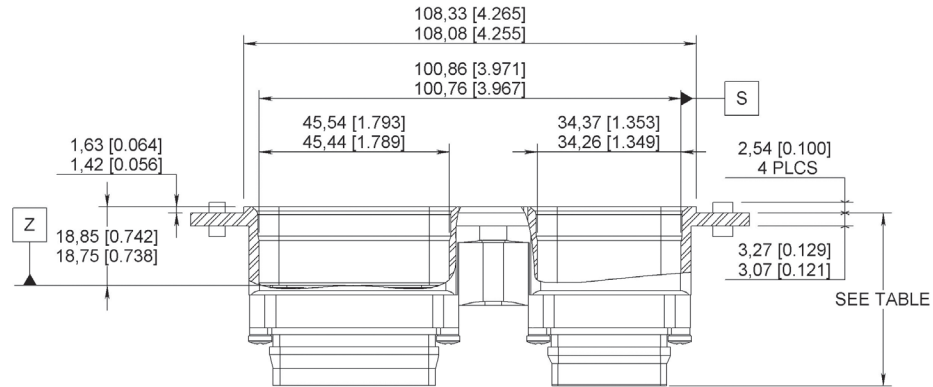
SIZE 3 PLUG DIMENSIONS

BPX SERIES



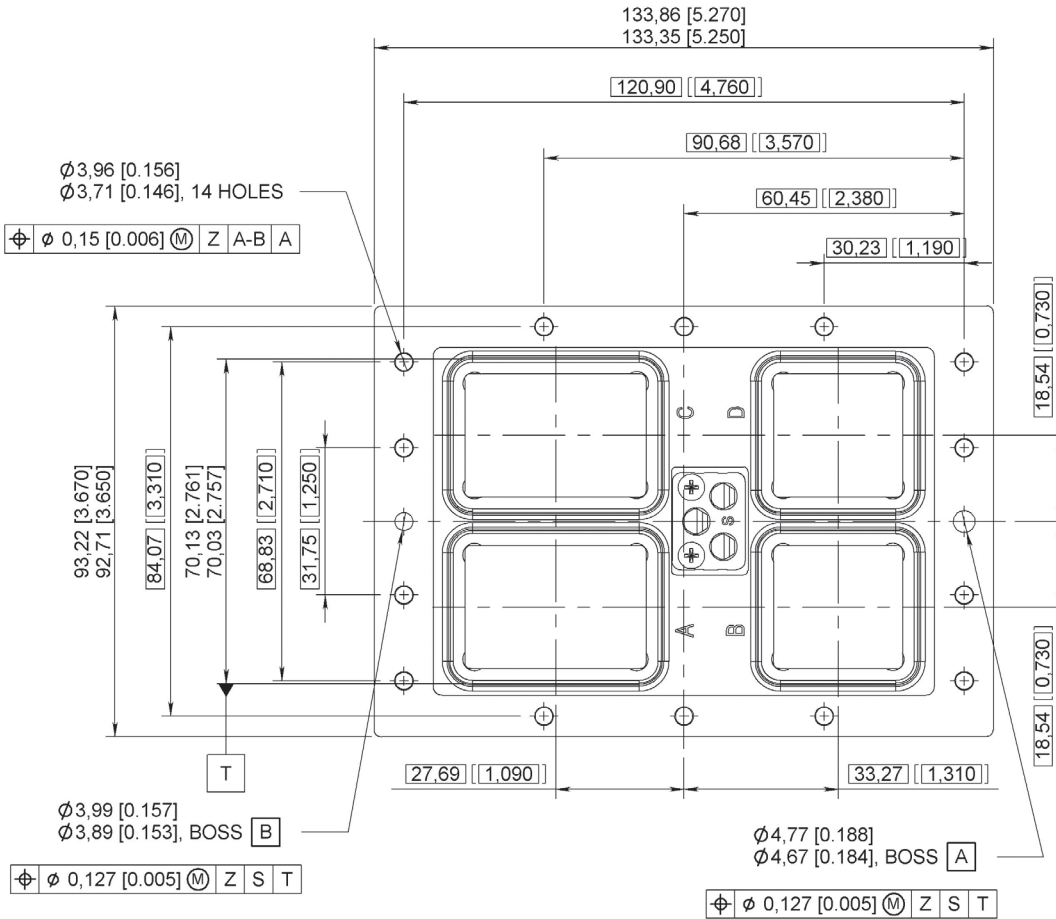
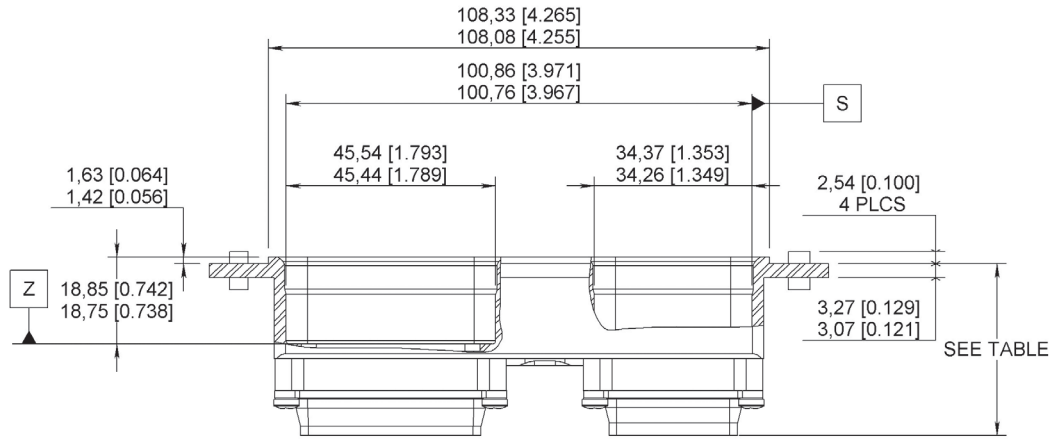
Dimensions

SIZE 1 RECEPTACLE DIMENSIONS



Dimensions

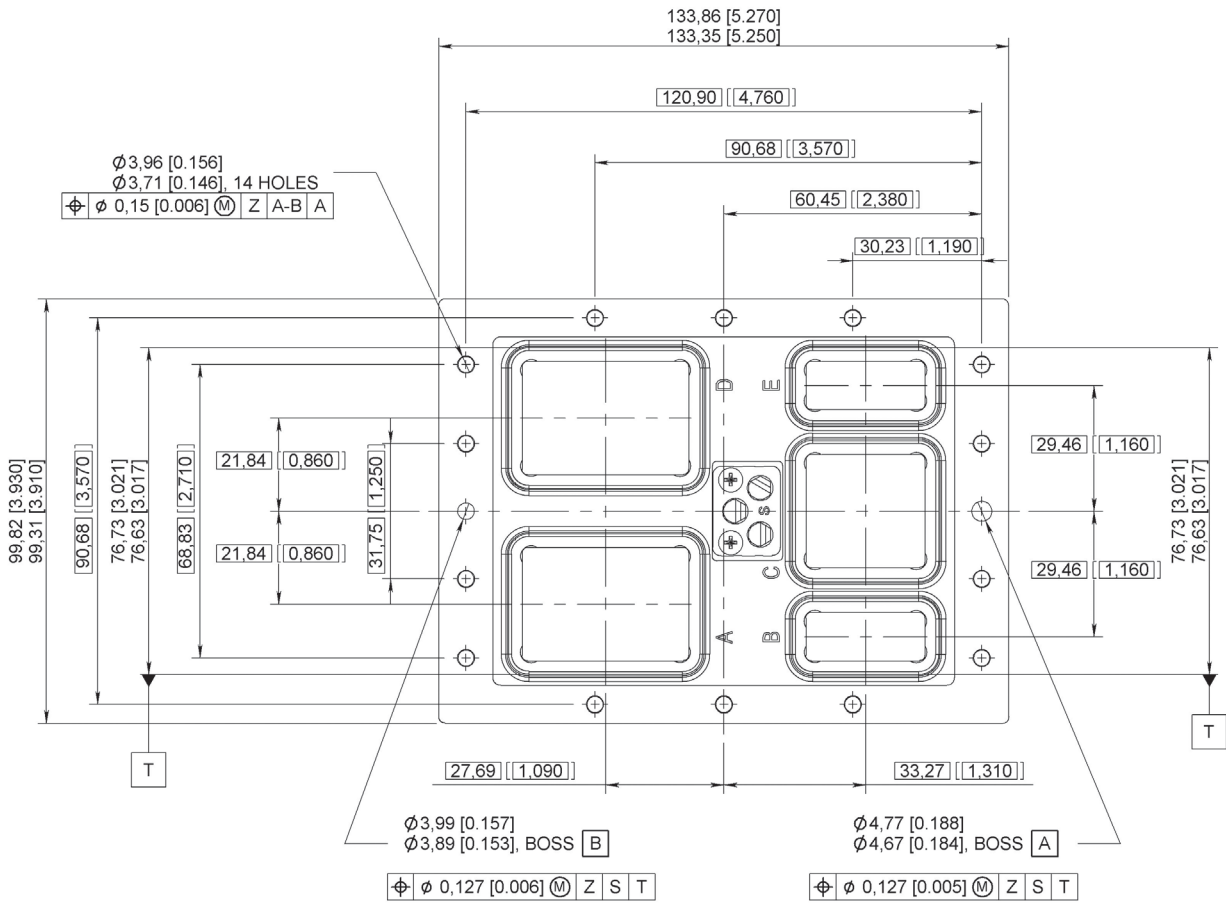
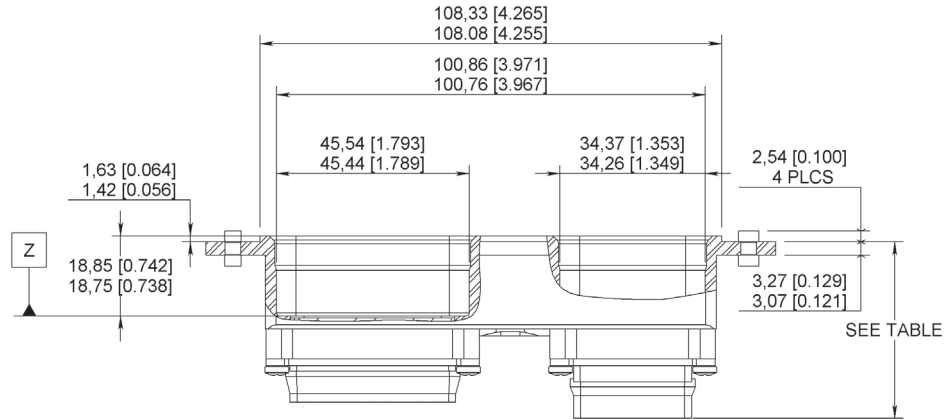
SIZE 2 RECEPTACLE DIMENSIONS



BPX SERIES

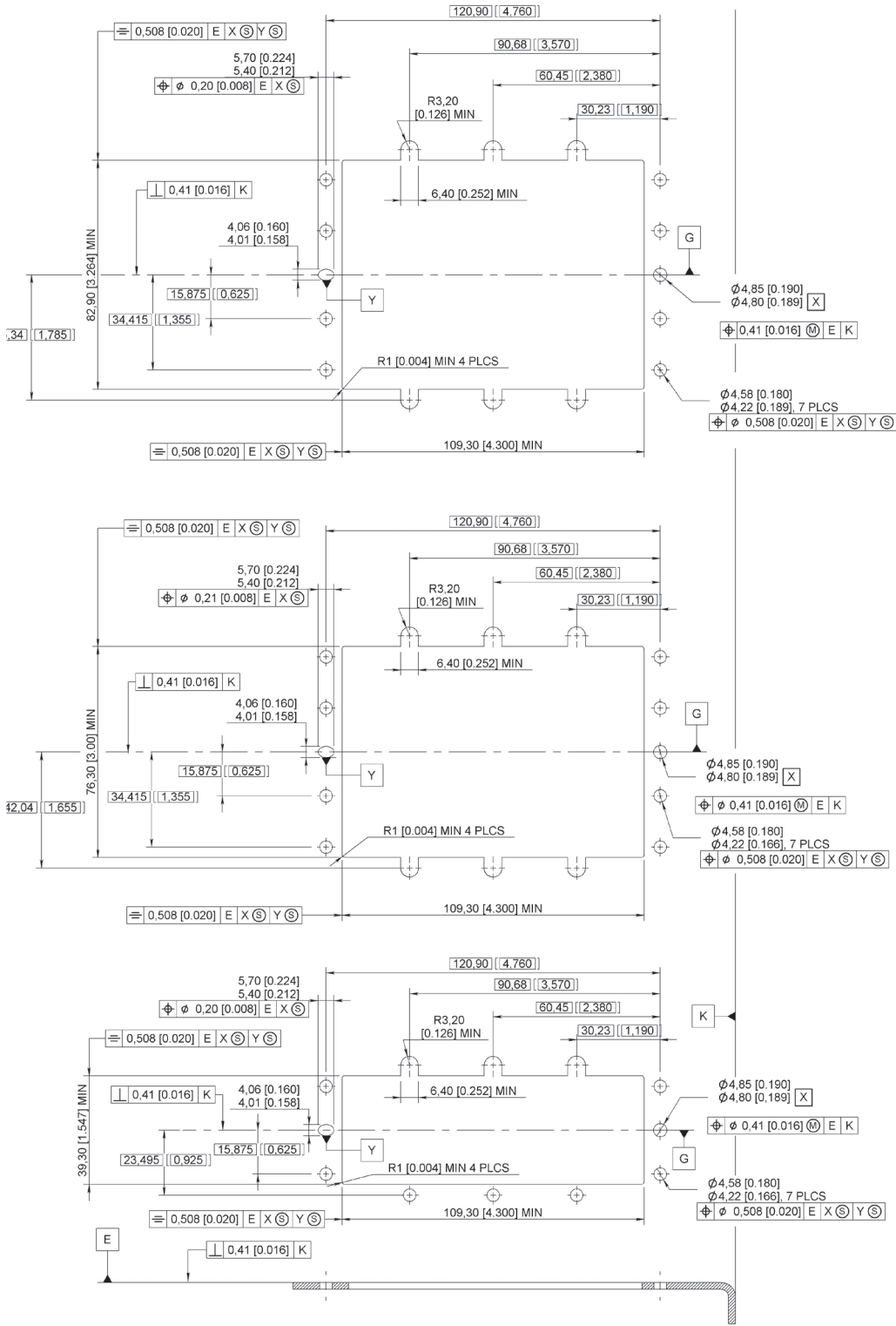
Dimensions

SIZE 3 RECEPTACLE DIMENSIONS



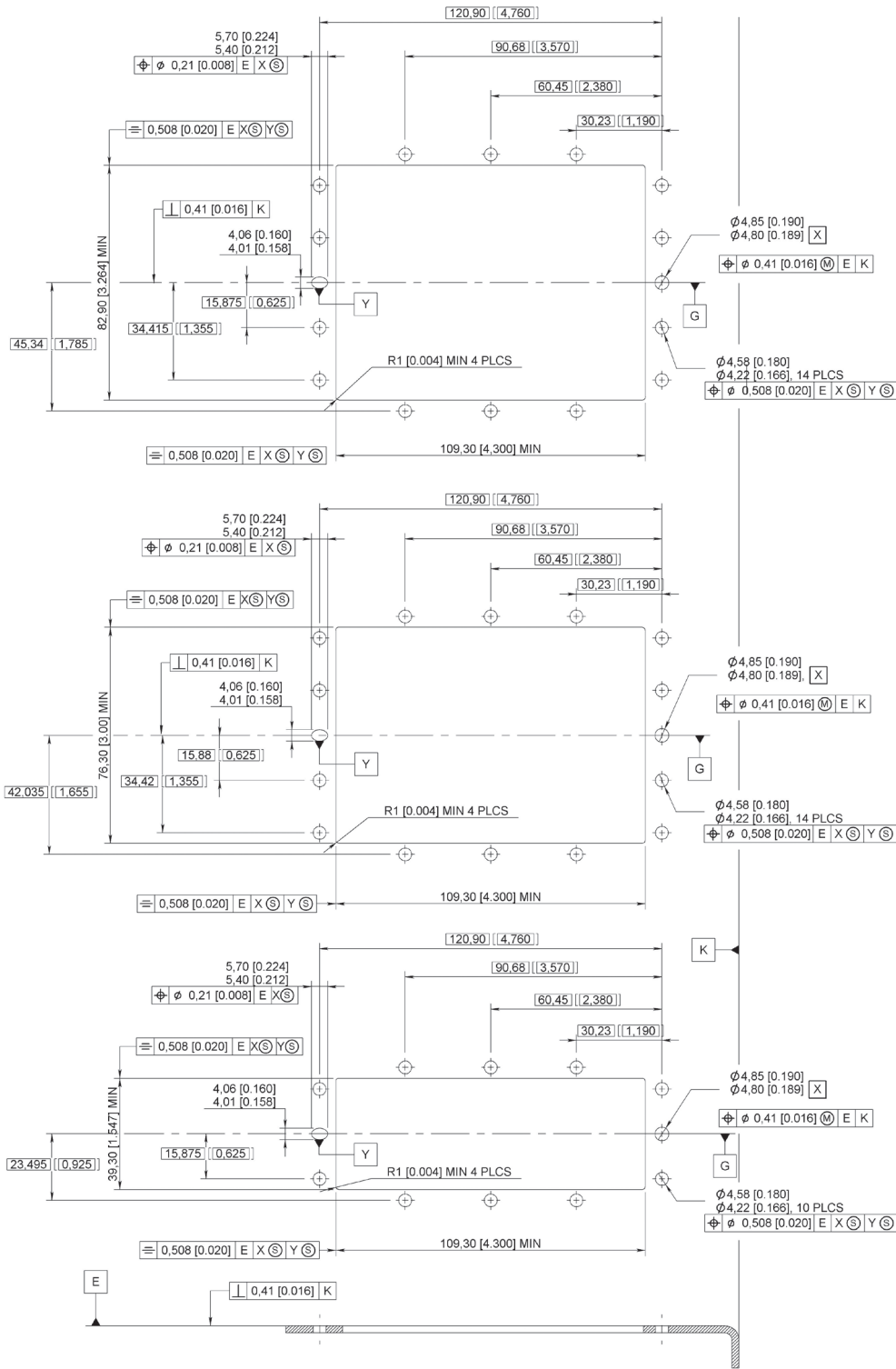
Panel Cut Out for Plug

BPX SERIES



BPX SERIES

Panel Cut Out for Receptacle





MPX Series
MIL-DTL-83527B
AECMA EN3682



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SECTION 5 TABLE OF CONTENTS

Introduction

The Radiall MPX series is a robust rectangular connector designed to meet all the requirements of the MIL-DTL-83527B specification. The design conforms to the EN 3682 European Standard as well. This series is well suited for military and commercial aircraft applications where harsh environmental issues are a concern. Connectors, shells, inserts termination modules and contacts are sold separately or fully assembled.

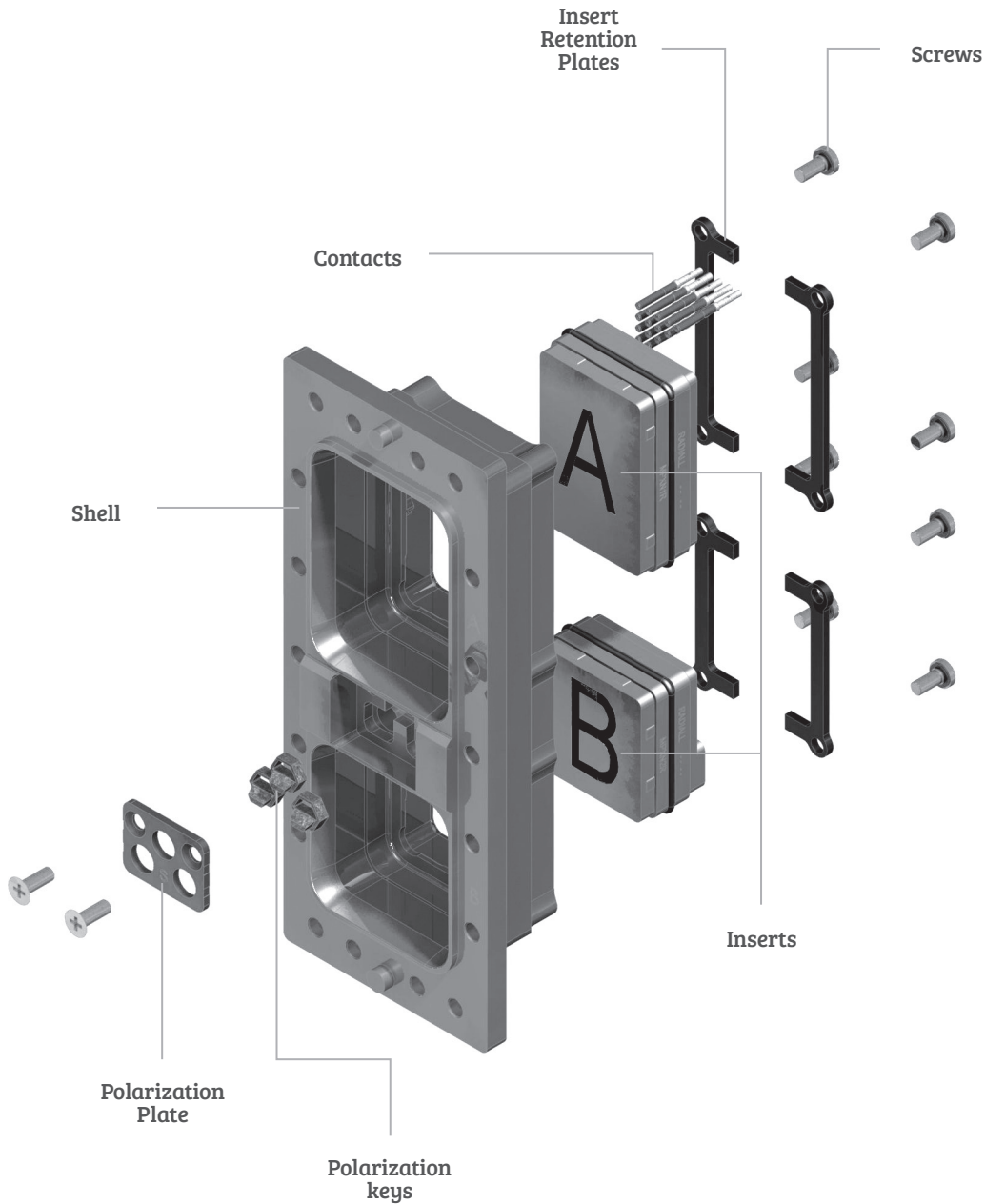
Applications

These connectors are used to form the mechanical and electrical interface between the avionics equipment box and the rack.



Product Overview

Detailed view of the various parts of an MPX connector.



MPX SERIES

Technical Characteristics

ELECTRICAL

- Insulation resistance (Test procedure 21 of EIA364) : $\geq 1000M\Omega - 500Vdc$
- Shell to shell conductivity (Test procedure 83 of EIA364): $\leq 2.5m\Omega$
- Size 8 grounding (Test procedure 83 of EIA364): $\leq 10m\Omega$

DIELECTRIC WITHSTANDING VOLTAGE

(Test procedure 20 of EIA364): (Vrms)

| Contact sizes | At sea level | Altitude (1.1 k Pa) |
|----------------|--------------|---------------------|
| # 22 | 1 300 | 800 |
| Other contacts | 1 500 | 800 |

EMI SHIELDING EFFECTIVENESS
(MIL-DTL-83527B)

| Frequency (Mhz) | Attenuation (dB) |
|-----------------|------------------|
| 100 | 65 |
| 200 | 65 |
| 300 | 63 |
| 400 | 62 |
| 800 | 60 |
| 1000 | 60 |

CONTACTS RESISTANCE (Test procedure 23 and 06 of EIA364)

| Contact size | Wire | | | Max current (A) | Contact resistance (mΩ) | |
|--------------|------|----------------------------------|------------------------|-----------------|-------------------------|------|
| | AWG | Cross section (mm ²) | Min diameter inch (mm) | | | |
| 22 | 22 | 0.38 | .030 (0.76) | .052 (1.32) | 5 | 17 |
| | 24 | 0.21 | | | 3 | 23 |
| | 26 | 0.14 | | | 2 | 38 |
| 20 | 20 | 0.60 | .035 (0.89) | .060 (1.52) | 7.5 | 11 |
| | 22 | 0.38 | | | 5 | 17 |
| | 24 | 0.21 | | | 3 | 23 |
| 16 | 16 | 1.34 | .048 (1.21) | .080 (2.03) | 13 | 6 |
| | 18 | 0.91 | | | 10 | 8 |
| | 20 | 0.60 | | | 7.5 | 10 |
| 12 | 12 | 3.18 | .091 (4.85) | .216 (5.49) | 23 | 3.35 |
| | 14 | 1.91 | | | 17 | 4.24 |

MECHANICAL & ENVIRONMENTAL

- Temperature range: 65°C (-85°F) to +150°C (+302°F)
- Temperature life : (see MIL-DTL-83527B): 1000 hours at 150°C (+302°F)
- Salt spray (Test procedure 26 of EIA364): 500 hours
- Humidity (Test procedure 31 of EIA364): 10 days
- Shock (Test procedure 27 of EIA364): 30g / 11ms / half sine
- Vibration: see MIL-DTL-83527B
- Mating & unmating: (Test procedure 9 of EIA364): 500 cycles
- Mating & unmating forces: Shell size 2 1446 N / 325 lbf max
Shell size 3 1780 N / 400 lbf max
Shell size 4 2113 N / 475 lbf max

MATERIALS

| Description | Material | Finish |
|------------------------|---|---|
| shell and backshell | aluminium alloy | cadmium yellow chromate over electroless nickel |
| contacts | copper alloy | gold over electroless nickel |
| inserts | thermosetting resin | / |
| | high grade thermoplastic | / |
| | aluminium | cadmium yellow chromate over electroless nickel |
| retention clip | copper alloy | / |
| seals and o-ring | fluorinated silicon rubber | / |
| insert retention plate | aluminium alloy | blue anodized |
| polarization key | zinc alloy | cadmium olive drab |
| polarization post | aluminium alloy | cadmium yellow chromate |
| screws | brass | cadmium yellow chromate |
| washers | copper alloy | cadmium yellow chromate |
| EMI spring | copper alloy & fluorinated silicon rubber | tin-lead alloy over electroless nickel |

Technical Characteristics

MASSES

RECEPTACLE SHELLS

| Receptacle g (oz) | | |
|-------------------|--------------|--------------|
| Shell size 2 | Shell size 3 | Shell size 4 |
| 160 [5.64] | 240 [8.47] | 335 [11.82] |

PLUG SHELLS

| Plug g (oz) | | |
|--------------|--------------|--------------|
| Shell size 2 | Shell size 3 | Shell size 4 |
| 165 [5.82] | 245 [8.64] | 342 [12.06] |

INSERTS

| Description | Insert for plug shell g (oz) | Insert for receptacle shell g (oz) |
|-------------|------------------------------|------------------------------------|
| MPXE2*T6 | 44 [1.55] | 26 [0.92] |
| MPXE2*11T2 | 41 [1.45] | 25 [0.88] |
| MPXE2*11C2 | 41 [1.45] | 25 [0.88] |
| MPXE2*20T4 | 37 [1.31] | 22 [0.78] |
| MPXE2*34 | 44 [1.55] | 27 [0.95] |
| MPXE2*62T2 | 34 [1.20] | 22 [0.78] |
| MPXE2*100 | 25 [0.88] | 21 [0.74] |
| MPXE1*24 | 51 [1.80] | 31 [1.10] |
| MPXE1*C12T6 | 55 [1.94] | 33 [1.17] |
| MPXE1*47T2 | 57 [2.01] | 35 [1.24] |
| MPXE1*60 | 63 [2.23] | 39 [1.38] |
| MPXE1*126 | 47 [1.66] | 31 [1.10] |
| MPXE1*150 | 41 [1.45] | 27 [0.95] |

CONTACTS

| Contact size | Pin g (oz) | Socket g (oz) |
|--------------|---------------|---------------|
| 22 | 0.12 [0.0043] | 0.15 [0.0053] |
| 20 | 0.22 [0.0078] | 0.37 [0.0130] |
| 16 | 0.73 [0.0258] | 0.75 [0.0265] |
| 12 | 1.50 [0.0530] | 1.45 [0.0512] |
| 8 | 1.10 [0.036] | 3.80 [0.124] |

Shell Information

The MPX shells are machined from solid aluminium alloy and have a good conductive and high resistance to corrosion thanks to cadmium yellow chromate plating.

There are 3 shell sizes which can respectively receive 2,4 and 6 inserts.

The plug shell is designed to be fitted with inserts for size 22 pin contacts and inserts for socket contacts for all other contact sizes. The plug shell has a field replaceable EMI spring and a coupling seal on each shell cavity and 3 polarization posts.

The receptacle shell is designed to be fitted with inserts for size 22 socket contacts and inserts for pin contacts for the other contact sizes. The receptacle shell has 3 polarization keys.

Plug and receptacle can be either front or rear mounted.



HOW TO ORDER SHELLS

| | | | | | |
|--|-----|---|---|----|----|
| | MPX | 3 | R | 00 | 01 |
|--|-----|---|---|----|----|

Series _____
MPX connector

Shell size _____
 2 - 2 Cavities
 3 - 4 Cavities
 4 - 6 Cavities

Shell type _____
 R - Receptacle shell
 A - Plug shell

Modification code _____
 Refer to page 5-21

Polarization code _____
Blank - Polarization device delivered unassembled
00 - Polarizing keys or posts are not delivered
Other - please refer to page 5-22

How to Order Inserts

Inserts are made of the thermosetting resin, high grade thermoplastic or of aluminium alloy. They have metallic retention clips to retain the contacts. Each insert has one polarization slot which has its corresponding pin in each shell cavity.

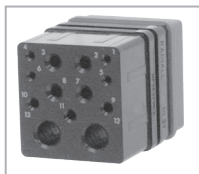
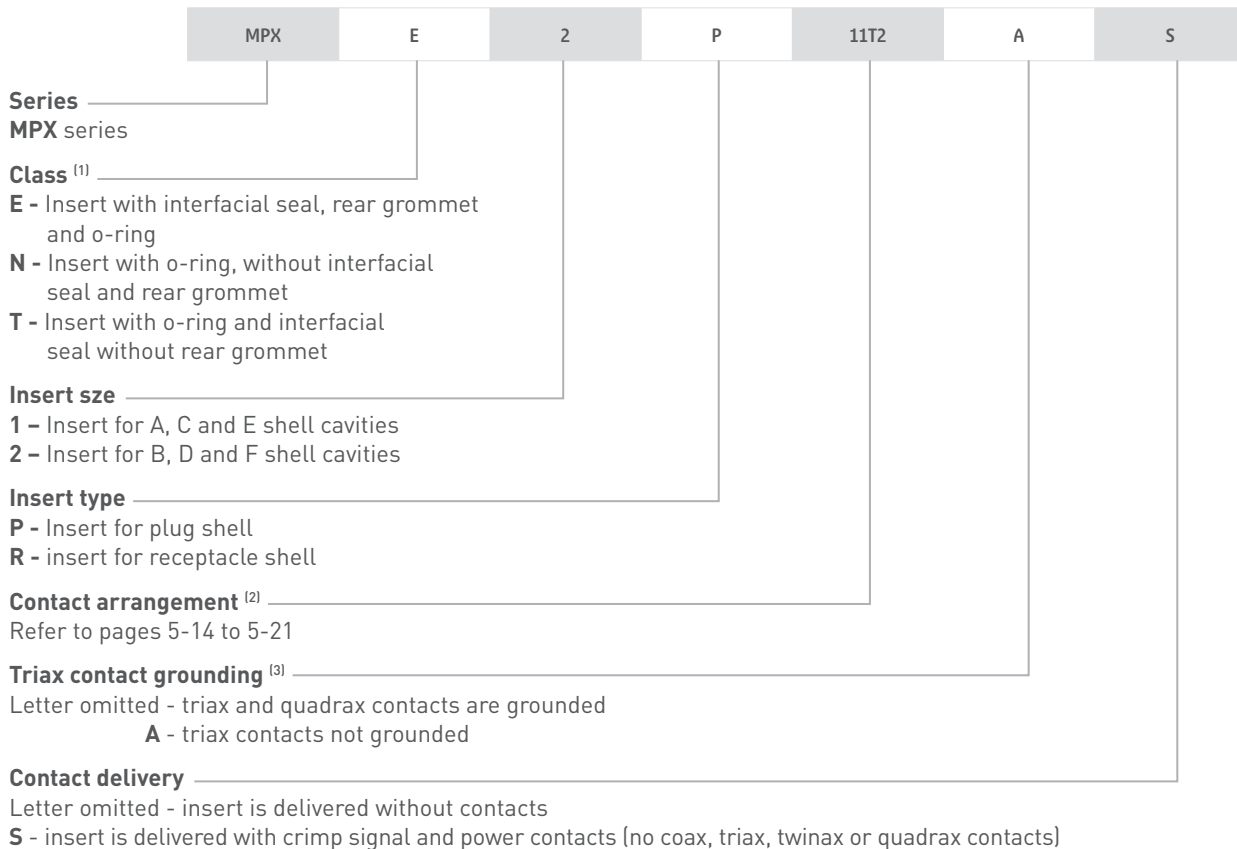
Environmental inserts have:

- A) a silicon rubber ring that ensures sealing between the insert and the shell.
- B) a rear grommet which ensures sealing around each wire crimped on a contact.
- C) an interfacial seal which ensures sealing around each protruding contact once the connector is mated.

Non environmental inserts do not include options "b" or "c."

All standardized inserts are for rear release, rear removable contacts, please refer to page 5-13 for front release, front removable version.

HOW TO ORDER INSERTS



NOTES:

- (1) E, N and T classes apply to inserts for rear release rear removable contacts
- (2) Inserts 100 and 150 for front release front removable contacts are available, see page 5-13 for part numbers
- (3) When A is omitted triax and quadrax contacts cavities are grounded to the shell

How to Order MPX Assembly Kit

HOW TO ORDER ASSEMBLED CONNECTORS

| | | | | | | | | | |
|--|-----|---|---|---|-----|---|---|----|----|
| | MPX | E | 2 | R | 202 | A | S | 00 | 01 |
|--|-----|---|---|---|-----|---|---|----|----|

Series _____
MPX series

Class ⁽¹⁾ _____
E - Insert with interfacial seal, rear grommet and o-ring
N - Insert with o-ring, without interfacial seal and rear grommet
T - Insert with o-ring and interfacial seal without rear grommet

Shell Size _____
2 - 2 Cavities
3 - 4 Cavities
4 - 6 Cavities

Shell type _____
R - Receptacle shell
A - Plug shell

Insert combination code _____
Refer to pages 5-11 to 5-13

Triax contact grounding _____
Letter omitted - triax contacts are grounded
A - triax contacts not grounded

contact type ⁽²⁾ _____
X - Without contacts
S - Crimp contacts
Rear release PC-Tail : see page 5-23 to 5-32 and consult us for the PCB foot print

Modificaiton code _____
Refer to page 5-21

Polarization code _____
Blank - Polarization device delivered unassembled
00 - Polarizing keys or posts are not delivered
Other - please refer to page 5-22



NOTES:

- (1) E, N and T classes apply to inserts for rear release rear removable contacts
- (2) Coaxial, triaxial, twinax and quadrax contacts must be ordered separately

Insert Combination code

DOD-STD-1842 CODES (USA)

| CODE | SHELL SIZE | Insert combination on shell | | | | | |
|------|------------|-----------------------------|----------|----------|----------|----------|----------|
| | | CAVITY A | CAVITY B | CAVITY C | CAVITY D | CAVITY E | CAVITY F |
| 001 | 2 | 47T2 | 100 | / | / | / | / |
| 002 | 2 | 47T2 | 20T4 | / | / | / | / |
| 003 | 2 | 47T2 | 34 | / | / | / | / |
| 004 | 3 | 150 | 34 | 150 | 20T4 | / | / |
| 005 | 3 | 150 | 100 | 47T2 | 100 | / | / |
| 006 | 3 | 60 | 100 | 60 | 100 | / | / |
| 007 | 3 | 150 | 100 | 150 | 100 | / | / |
| 008 | 3 | 60 | 34 | 60 | 34 | / | / |
| 009 | 4 | 150 | 34 | 150 | 20T4 | 150 | 20T4 |
| 010 | 4 | 24 | 34 | 150 | 100 | 150 | 20T4 |
| 011 | 4 | 150 | 34 | 150 | 20T4 | 150 | T6 |
| 012 | 4 | 24 | 34 | 150 | BLANK | 150 | 20T4 |

STTEA CODES (EUROPE)

| CODE | SHELL SIZE | Insert combination on shell | | | | | |
|------|------------|-----------------------------|----------|----------|----------|----------|----------|
| | | CAVITY A | CAVITY B | CAVITY C | CAVITY D | CAVITY E | CAVITY F |
| 201 | 2 | 150 | 34 | / | / | / | / |
| 202 | 3 | 150 | 20T4 | BLANK | 100 | / | / |
| 203 | 2 | 126 | 100 | / | / | / | / |
| 204 | 2 | 150 | 11C2 | / | / | / | / |
| 205 | 3 | 150 | T6 | 150 | T6 | / | / |
| 206 | 3 | 150 | 34 | 150 | 20T4 | / | / |
| 207 | 2 | 150 | 20T4 | / | / | / | / |
| 208 | 3 | 150 | 20T4 | 150 | BLANK | / | / |
| 209 | 2 | 47T2 | 11C2 | / | / | / | / |
| 210 | 3 | 150 | 11C2 | 24 | 100 | / | / |
| 211 | 2 | 150 | 11T2 | / | / | / | / |
| 212 | 2 | 60 | 11T2 | / | / | / | / |
| 213 | 3 | 24 | 34 | 24 | 20T4 | / | / |
| 214 | 3 | 24 | 34 | BLANK | 20T4 | / | / |
| 215 | 3 | 150 | 100 | C12T6 | 11C2 | / | / |
| 216 | 2 | 150 | 100 | / | / | / | / |
| 217 | 2 | 24 | 11C2 | / | / | / | / |
| 218 | 3 | 24 | 11C2 | 24 | T6 | / | / |
| 219 | 4 | 24 | 11C2 | 47T2 | 34 | 24 | 20T4 |
| 220 | 4 | 150 | 100 | 150 | 100 | 150 | 100 |
| 221 | 4 | 24 | 34 | 150 | 20T4 | 150 | T6 |
| 222 | 3 | 150 | 11T2 | 24 | 100 | / | / |
| 223 | 3 | 150 | 11C2 | 150 | 11C2 | / | / |
| 224 | 2 | 150 | 62T2 | / | / | / | / |
| 225 | 2 | 60 | 20T4 | / | / | / | / |
| 226 | 3 | 150 | 34 | 150 | 100 | / | / |

Insert Combination code

STTEA CODES (EUROPE)

| CODE | SHELL SIZE | Insert combination on shell | | | | | |
|------|------------|-----------------------------|----------|----------|----------|----------|----------|
| | | CAVITY A | CAVITY B | CAVITY C | CAVITY D | CAVITY E | CAVITY F |
| 227 | 3 | 150 | 20T4 | 24 | BLANK | / | / |
| 228 | 3 | 150 | 100 | 150 | 20T4 | / | / |
| 229 | 3 | 150 | 20T4 | 24 | 11C2 | / | / |
| 230 | 2 | 47T2 | BLANK | / | / | / | / |
| 231 | 2 | 24 | BLANK | / | / | / | / |
| 232 | 2 | 24 | 34 | / | / | / | / |
| 233 | 3 | 150 | 34 | 150 | 34 | / | / |
| 234 | 3 | 24 | 11C2 | 150 | 100 | / | / |
| 235 | 3 | 150 | BLANK | 150 | 20T4 | / | / |
| 236 | 4 | 24 | 34 | 24 | BLANK | 150 | 20T4 |
| 237 | 2 | 24 | 100 | / | / | / | / |
| 238 | 3 | BLANK | 11C2 | BLANK | 20T4 | / | / |
| 239 | 3 | 24 | 34 | 24 | 34 | / | / |
| 240 | 3 | 47T2 | 34 | 24 | 34 | / | / |
| 241 | 4 | 24 | 34 | 24 | 34 | 24 | 34 |
| 242 | 3 | BLANK | 11C2 | BLANK | 34 | / | / |
| 243 | 3 | 60 | 34 | 24 | 34 | / | / |
| 244 | 4 | 60 | 34 | 60 | 34 | 24 | 34 |
| 245 | 3 | 150 | 11C2 | 24 | 11C2 | / | / |
| 246 | 4 | 24 | 34 | 60 | 100 | 150 | 20T4 |
| 247 | 4 | 24 | 34 | 24 | 100 | 150 | 20T4 |
| 248 | 4 | 60 | T6 | 60 | T6 | 24 | T6 |
| 249 | 4 | 60 | T6 | BLANK | T6 | 150 | T6 |
| 250 | 3 | 24 | BLANK | 150 | 20T4 | / | / |
| 251 | 3 | 126 | 34 | 126 | 20T4 | / | / |
| 252 | 3 | 150 | 34 | BLANK | 11C2 | / | / |
| 253 | 3 | 24 | 100 | 150 | 20T4 | / | / |
| 254 | 3 | 150 | 62T2 | 150 | 62T2 | / | / |
| 255 | 3 | 150 | 11C2 | BLANK | 34 | / | / |
| 256 | 2 | 60 | 11C2 | / | / | / | / |
| 257 | 3 | 150 | 100 | C12T6 | 34 | / | / |
| 258 | 3 | 150 | 11C2 | 150 | 34 | / | / |
| 259 | 4 | 150 | 20T4 | 24 | T6 | 150 | 11T2 |
| 260 | 3 | 150 | T6 | 150 | 34 | / | / |
| 261 | 3 | 150 | 11C2 | 126 | 34 | / | / |
| 262 | 3 | 150 | 100 | 150 | 62T2 | / | / |
| 263 | 2 | 60 | 34 | / | / | / | / |
| 264 | 3 | 150 | T6 | 150 | 100 | / | / |
| 265 | 3 | C12T6 | 11C2 | 150 | 100 | / | / |
| 266 | 2 | 47T2 | 11T2 | / | / | / | / |
| 267 | 4 | 150 | 34 | 150 | 100 | 150 | 34 |
| 269 | 2 | 126 | 11T2 | / | / | / | / |
| 270 | 3 | 150 | 11T2 | 150 | 20T4 | / | / |
| 271 | 3 | 150 | 11T2 | 150 | 11T2 | / | / |
| 272 | 4 | 150 | 34 | 150 | 100 | 150 | 20T4 |

Insert Combination code

STTEA CODES (EUROPE)

| CODE | SHELL SIZE | Insert combination on shell | | | | | |
|------|------------|-----------------------------|----------|----------|----------|----------|----------|
| | | CAVITY A | CAVITY B | CAVITY C | CAVITY D | CAVITY E | CAVITY F |
| 273 | 4 | 126 | 100 | 150 | 100 | 126 | 100 |
| 274 | 3 | C12T6 | 11C2 | BLANK | 100 | / | / |
| 275 | 3 | 150 | T6 | 150 | BLANK | / | / |
| 276 | 2 | 150 | T6 | / | / | / | / |
| 277 | 3 | C12T6 | 34 | 60 | 34 | / | / |
| 278 | 3 | 150 | 20T4 | 150 | 20T4 | / | / |
| 279 | 3 | 60 | 20T4 | 60 | 20T4 | / | / |
| 280 | 4 | 150 | 100 | 150 | 100 | 150 | 62T2 |
| 281 | 3 | 150 | 11C2 | 150 | 100 | / | / |
| 282 | 3 | 150 | 11T2 | 150 | 100 | / | / |
| 283 | 3 | BLANK | 20T4 | 150 | 20T4 | / | / |
| 284 | 3 | 150 | 20T4 | 150 | 100 | / | / |
| 285 | 3 | 150 | 20T4 | 150 | 11C2 | / | / |
| 286 | 3 | 126 | T6 | 150 | 20T4 | / | / |
| 287 | 3 | 150 | 11C2 | 150 | 20T4 | / | / |

Inserts Layouts Front Release Front Removable

CONTACT ARRANGEMENTS FOR FRONT RELEASE FRONT REMOVABLE CONTACTS

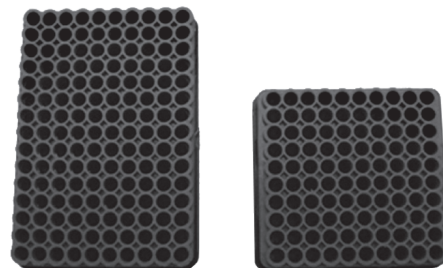
These inserts are available for receptacle shell only and are designed to be fitted with front release front removable size 22 pc tail contacts and thus do not have rear grommets. Socket insert mating side shown. These inserts are not normalized.

618500061

| Number of contacts | Contact size | Location |
|--------------------|--------------|----------|
| 150 | 22 | 1 to 150 |





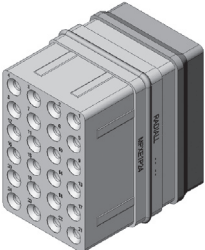


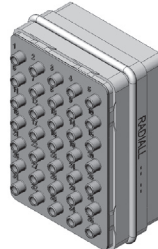

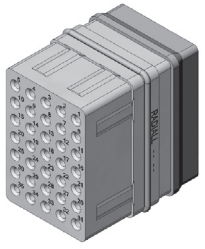



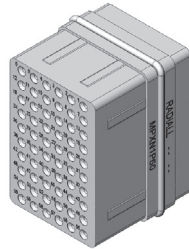
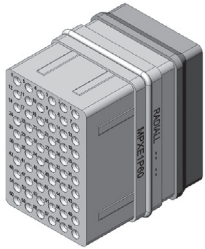


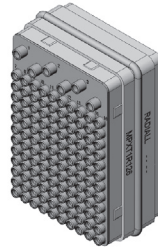

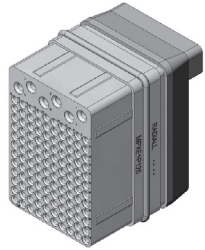
618500081

| Number of contacts | Contact size | Location |
|--------------------|--------------|----------|
| 100 | 22 | 1 to 100 |






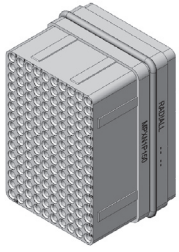
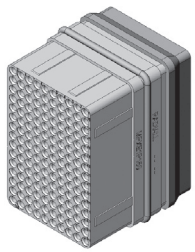
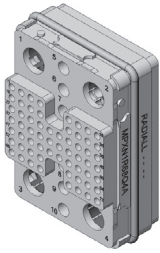

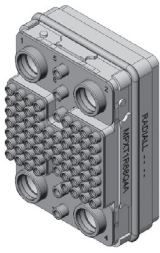
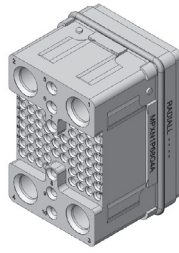
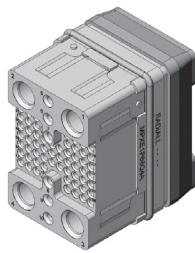
Insert Layout for Cavities A, C, or E

The symbol A represents that the insert is available in a non-grounded version (see page 5-9 for triax contact grounding)

| Insert name | EQUIPMENT SIDE RECEPTACLE SHELL | | | AVIONIC SIDE PLUG SHELL | |
|--------------------|---|---|---|---|---|
| | Version N | Version E | Version T | Version N | Version E |
| 24 ^(A) |  |  |  |  |  |
| | 24x #12 RR/RR | 24x #12 RR/RR | 24x #12 RR/RR | 24x #12 RR/RR | 24x #12 RR/RR |
| 35 ^(A) |  |  |  |  |  |
| | 35x #16 RR/RR | 35x #16 RR/RR | 35x #16 RR/RR | 35x #16 RR/RR | 35x #16 RR/RR |
| 60 ^(A) |  |  |  |  |  |
| | 60x #20 RR/RR | 60x #20 RR/RR | 60x #20 RR/RR | 60x #20 RR/RR | 60x #20 RR/RR |
| 126 ^(A) |  |  |  |  |  |
| | 120x #22 RR/RR 6x #16 RR/RR | 120x #22 RR/RR 6x #16 RR/RR | 120x #22 RR/RR 6x #16 RR/RR | 120x #22 RR/RR 6x #16 RR/RR | 120x #22 RR/RR 6x #16 RR/RR |

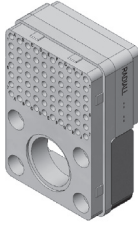
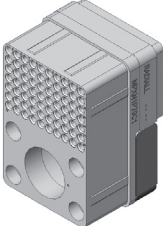
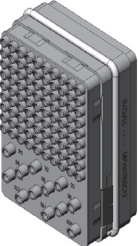


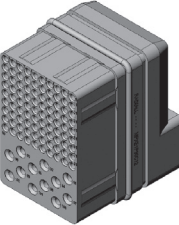




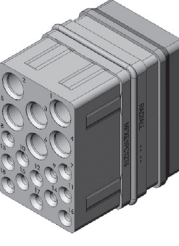
Insert Layout for Cavities A, C, or E

The symbol A represents that the insert is available in a non-grounded version (see page 5-9 for triax contact grounding)

| Insert name | EQUIPMENT SIDE RECEPTACLE SHELL | | | AVIONIC SIDE PLUG SHELL | |
|---------------------|--|--|--|---|--|
| | Version N | Version E | Version T | Version N | Version E |
| 150 ^(A) |  |  |  |  |  |
| | 150x #22 RR/RR | 150x #22 RR/RR | 150x #22 RR/RR | 150x #22 RR/RR | 150x #22 RR/RR |
| 68Q4 ^(A) |  |  |  |  |  |
| | 62x #22 RR/RR 6x #16 RR/RR 4x #8 RR/RR | 62x #22 RR/RR 6x #16 RR/RR 4x #8 RR/RR | 62x #22 RR/RR 6x #16 RR/RR 4x #8 RR/RR | 62x #22 RR/RR 6x #16 RR/RR 4x #8 RR/RR | 62x #22 RR/RR 6x #16 RR/RR 4x #8 RR/RR |











Insert Layout for Cavities A, C, or E

The symbol A represents that the insert is available in a non-grounded version (see page 5-9 for triax contact grounding)

| Insert name | EQUIPMENT SIDE RECEPTACLE SHELL | | | AVIONIC SIDE PLUG SHELL | |
|----------------------------|---|---|---|---|---|
| | Version N | Version E | Version T | Version N | Version E |
| 70C1 ^(A) |  | Not available | Not available |  | Not available |
| | 70x #22 RR/RR 1x #1 FR/RR | | | 70x #22 RR/RR 1x #1 FR/RR | |
| 90C12 ^(A) |  | Not available |  |  |  |
| | 90x #22 RR/RR12x #16 RR/RR | | 90x #22 RR/RR12x #16 RR/RR | 90x #22 RR/RR12x #16 RR/RR | 90x #22 RR/RR12x #16 RR/RR |
| C12T6 (metallic insert) |  |  |  |  |  |
| | 12x #12 RR/RR 6x #8 RR/RR | 12x #12 RR/RR 6x #8 RR/RR | 12x #12 RR/RR 6x #8 RR/RR | 12x #12 RR/RR 6x #8 RR/RR | 12x #12 RR/RR 6x #8 RR/RR |

Insert Layout for Cavities A, C, or E


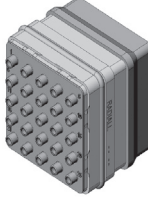
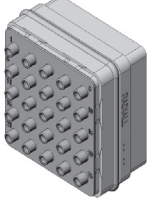
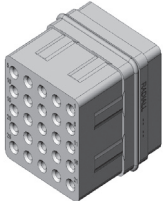
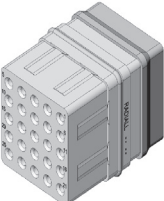



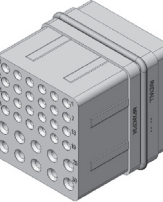


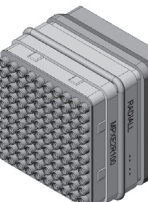

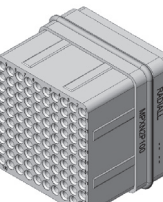
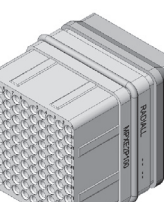
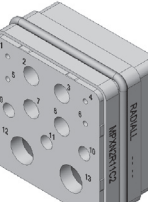




The symbol A represents that the insert is available in a non-grounded version (see page 5-9 for triax contact grounding)

| Insert name | EQUIPMENT SIDE RECEPTACLE SHELL | | | AVIONIC SIDE PLUG SHELL | |
|--------------------------|--|--|--|---|--|
| | Version N | Version E | Version T | Version N | Version E |
| Q11 (metallic insert) |  |  |  |  |  |
| | 11x #8 RR/RR | 11x #8 RR/RR | 11x #8 RR/RR | 11x #8 RR/RR | 11x #8 RR/RR |
| T10 (metallic insert) |  |  |  |  |  |
| | 10x #8 RR/RR | 10x #8 RR/RR | 10x #8 RR/RR | 10x #8 RR/RR | 10x #8 RR/RR |

MPX SERIES




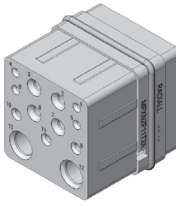

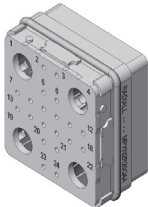
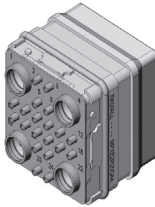
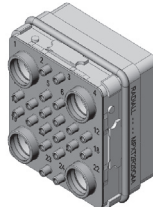
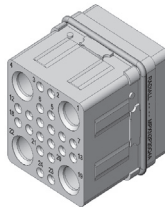
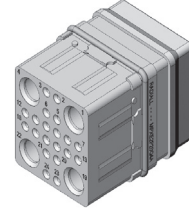
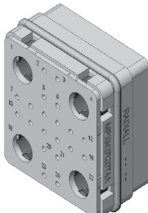
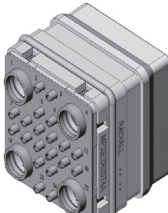
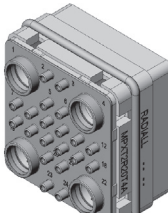

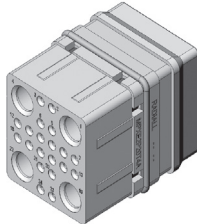
Insert Layout for Cavities B, D, or F

The symbol A represents that the insert is available in a non-grounded version (see page 5-9 for triax contact grounding)

| Insert name | EQUIPMENT SIDE RECEPTACLE SHELL | | | AVIONIC SIDE PLUG SHELL | |
|---------------------|---|---|---|---|---|
| | Version N | Version E | Version T | Version N | Version E |
| 25 ^(A) |  |  |  |  |  |
| | 25x #16 RR/RR | 25x #16 RR/RR | 25x #16 RR/RR | 25x #16 RR/RR | 25x #16 RR/RR |
| 34 ^(A) |  |  |  |  |  |
| | 24x #20 RR/RR 10x #16 RR/RR | 24x #20 RR/RR 10x #16 RR/RR | 24x #20 RR/RR 10x #16 RR/RR | 24x #20 RR/RR 10x #16 RR/RR | 24x #20 RR/RR 10x #16 RR/RR |
| 100 ^(A) |  |  |  |  |  |
| | 100x #22 RR/RR | 100x #22 RR/RR | 100x #22 RR/RR | 100x #22 RR/RR | 100x #22 RR/RR |
| 11C2 ^(A) |  |  |  |  |  |
| | 4x #20 RR/RR 3x #16 RR/RR 4x #12 RR/RR 2x #5 RR/RR | 4x #20 RR/RR 3x #16 RR/RR 4x #12 RR/RR 2x #5 RR/RR | 4x #20 RR/RR 3x #16 RR/RR 4x #12 RR/RR 2x #5 RR/RR | 4x #20 RR/RR 3x #16 RR/RR 4x #12 RR/RR 2x #5 RR/RR | 4x #20 RR/RR 3x #16 RR/RR 4x #12 RR/RR 2x #5 RR/RR |




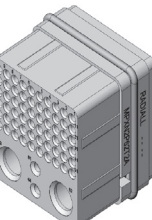
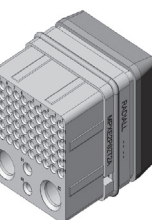



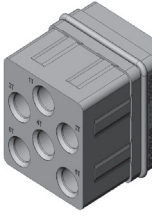




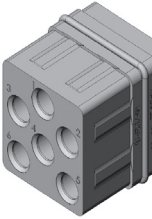

Insert Layout for Cavities B, D, or F

The symbol A represents that the insert is available in a non-grounded version (see page 5-9 for triax contact grounding)

| Insert name | EQUIPMENT SIDE RECEPTACLE SHELL | | | AVIONIC SIDE PLUG SHELL | |
|---------------------|---|---|---|--|---|
| | Version N | Version E | Version T | Version N | Version E |
| 11T2 ^(A) |  |  |  |  |  |
| | 4x #20 RR/RR 3x #16 RR/RR 2x #8 RR/RR 4x #12 RR/RR | 4x #20 RR/RR 3x #16 RR/RR 2x #8 RR/RR 4x #12 RR/RR | 4x #20 RR/RR 3x #16 RR/RR 2x #8 RR/RR 4x #12 RR/RR | 4x #20 RR/RR 3x #16 RR/RR 2x #8 RR/RR 4x #12 RR/RR | 4x #20 RR/RR 3x #16 RR/RR 2x #8 RR/RR 4x #12 RR/RR |
| 20Q4 ^(A) |  |  |  |  |  |
| | 20x #20 RR/RR4x #8 Quadrax RR/RR | 20x #20 RR/RR4x #8 Quadrax RR/RR | 20x #20 RR/RR4x #8 Quadrax RR/RR | 20x #20 RR/RR4x #8 Quadrax RR/RR | 20x #20 RR/RR4x #8 Quadrax RR/RR |
| 20T4 ^(A) |  |  |  |  |  |
| | 20x #20 RR/RR 4x #8 RR/RR | 20x #20 RR/RR 4x #8 RR/RR | 20x #20 RR/RR 4x #8 RR/RR | 20x #20 RR/RR 4x #8 RR/RR | 20x #20 RR/RR 4x #8 RR/RR |

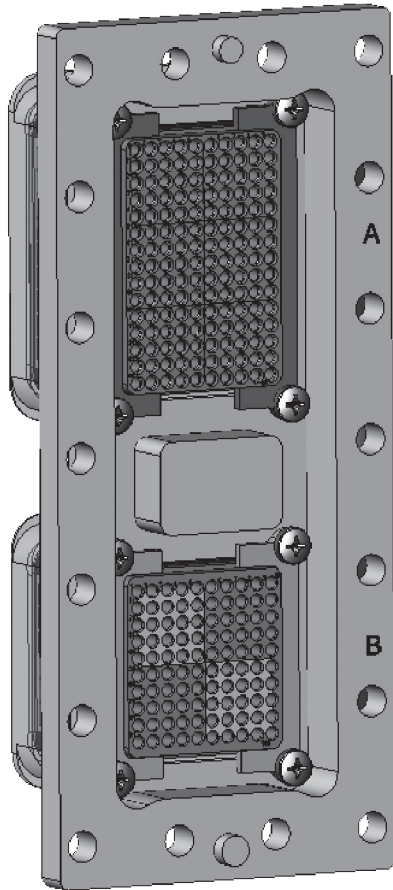
Insert Layout for Cavities B, D, or F

The symbol A represents that the insert is available in a non-grounded version (see page 5-9 for triax contact grounding)

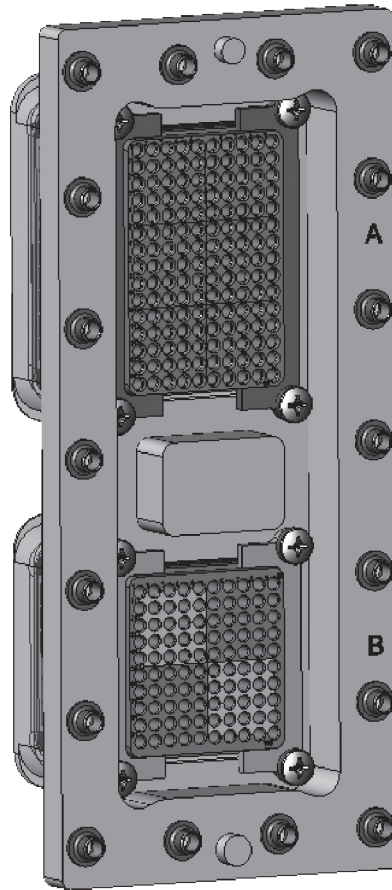
| Insert name | EQUIPMENT SIDE RECEPTACLE SHELL | | | AVIONIC SIDE PLUG SHELL | |
|-------------------------|---|---|---|---|---|
| | Version N | Version E | Version T | Version N | Version E |
| 62T2 ^{IA} |  |  |  |  |  |
| | 60x #22 RR/RR 2x #16 RR/RR 2x #8 RR/RR | 60x #22 RR/RR 2x #16 RR/RR 2x #8 RR/RR | 60x #22 RR/RR 2x #16 RR/RR 2x #8 RR/RR | 60x #22 RR/RR 2x #16 RR/RR 2x #8 RR/RR | 60x #22 RR/RR 2x #16 RR/RR 2x #8 RR/RR |
| Q6 (metallic insert) |  |  |  |  |  |
| | 6x #8 RR/RR | 6x #8 RR/RR | 6x #8 RR/RR | 6x #8 RR/RR | 6x #8 RR/RR |
| T6 (metallic insert) |  |  |  |  |  |
| | 6x #8 RR/RR | 6x #8 RR/RR | 6x #8 RR/RR | 6x #8 RR/RR | 6x #8 RR/RR |

Modification Code

| Code | Receptacle Shell | Plug Shell |
|------|--|--|
| 00 | Sizes 2,3 & 4 : All holes Ø .150 inch (3.80 mm) | Sizes 2,3 & 4 : All holes Ø .150 inch (3.80 mm) |
| 10 | Sizes 2,3 & 4: All holes fitted with M3 x 0.02 inch (0.50 mm) clinch-nuts | Sizes 2,3 & 4: All holes fitted with M3 x 0.02 inch (0.50 mm) clinch-nuts |



CODE 00



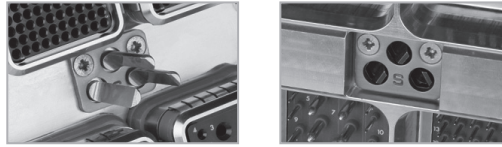
CODE 10

Polarization Code

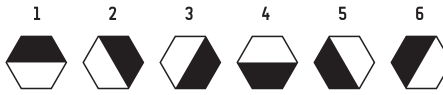
POSITION OF POLARIZATION KEYS AND POSTS

Connectors are shown front side and with cavity A upwards.

POSITION CODINGS



Dark area represents the polarizing post



Clear portion represents the key hole

| Code number | Receptacle shell | | | Plug shell | | |
|-------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 00 | / | / | / | / | / | / |
| 01 | 4 | 4 | 4 | 1 | 1 | 1 |
| 02 | 4 | 4 | 3 | 2 | 1 | 1 |
| 03 | 4 | 4 | 2 | 3 | 1 | 1 |
| 04 | 4 | 4 | 1 | 4 | 1 | 1 |
| 05 | 4 | 4 | 6 | 5 | 1 | 1 |
| 06 | 4 | 4 | 5 | 6 | 1 | 1 |
| 07 | 5 | 4 | 4 | 1 | 1 | 6 |
| 08 | 5 | 4 | 3 | 2 | 1 | 6 |
| 09 | 5 | 4 | 2 | 3 | 1 | 6 |
| 10 | 5 | 4 | 1 | 4 | 1 | 6 |
| 11 | 5 | 4 | 6 | 5 | 1 | 6 |
| 12 | 5 | 4 | 5 | 6 | 1 | 6 |
| 13 | 6 | 4 | 4 | 1 | 1 | 5 |
| 14 | 6 | 4 | 3 | 2 | 1 | 5 |
| 15 | 6 | 4 | 2 | 3 | 1 | 5 |
| 16 | 6 | 4 | 1 | 4 | 1 | 5 |
| 17 | 6 | 4 | 6 | 5 | 1 | 5 |
| 18 | 6 | 4 | 5 | 6 | 1 | 5 |
| 19 | 1 | 4 | 4 | 1 | 1 | 4 |
| 20 | 1 | 4 | 2 | 2 | 1 | 4 |
| 21 | 1 | 4 | 2 | 3 | 1 | 4 |
| 22 | 1 | 4 | 1 | 4 | 1 | 4 |
| 23 | 1 | 4 | 6 | 5 | 1 | 4 |
| 24 | 1 | 4 | 5 | 6 | 1 | 4 |
| 25 | 2 | 4 | 4 | 1 | 1 | 3 |
| 26 | 2 | 4 | 3 | 2 | 1 | 3 |
| 27 | 2 | 4 | 2 | 3 | 1 | 3 |
| 28 | 2 | 4 | 1 | 4 | 1 | 3 |
| 29 | 2 | 4 | 6 | 5 | 1 | 3 |
| 30 | 2 | 4 | 5 | 6 | 1 | 3 |
| 31 | 3 | 4 | 4 | 1 | 1 | 2 |
| 32 | 3 | 4 | 3 | 2 | 1 | 2 |
| 33 | 3 | 4 | 2 | 3 | 1 | 2 |
| 34 | 3 | 4 | 1 | 4 | 1 | 2 |
| 35 | 3 | 4 | 6 | 5 | 1 | 2 |
| 36 | 3 | 4 | 5 | 6 | 1 | 2 |
| 37 | 4 | 3 | 4 | 1 | 2 | 1 |
| 38 | 4 | 3 | 3 | 2 | 2 | 1 |
| 39 | 4 | 3 | 2 | 3 | 2 | 1 |
| 40 | 4 | 3 | 1 | 4 | 2 | 1 |
| 41 | 4 | 3 | 6 | 5 | 2 | 1 |
| 42 | 4 | 3 | 5 | 6 | 2 | 1 |
| 43 | 5 | 3 | 4 | 1 | 2 | 6 |
| 44 | 5 | 3 | 3 | 2 | 2 | 6 |
| 45 | 5 | 3 | 2 | 3 | 2 | 6 |
| 46 | 5 | 3 | 1 | 4 | 2 | 6 |
| 47 | 5 | 3 | 6 | 5 | 2 | 6 |
| 48 | 5 | 3 | 5 | 6 | 2 | 6 |
| 49 | 6 | 3 | 4 | 1 | 2 | 5 |

| Code number | Receptacle shell | | | Plug shell | | |
|-------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 50 | 6 | 3 | 3 | 2 | 2 | 5 |
| 51 | 6 | 3 | 2 | 3 | 2 | 5 |
| 52 | 6 | 3 | 1 | 4 | 2 | 5 |
| 53 | 6 | 3 | 6 | 5 | 2 | 5 |
| 54 | 6 | 3 | 5 | 6 | 2 | 5 |
| 55 | 1 | 3 | 4 | 1 | 2 | 4 |
| 56 | 1 | 3 | 3 | 2 | 2 | 4 |
| 57 | 1 | 3 | 2 | 3 | 2 | 4 |
| 58 | 1 | 3 | 1 | 4 | 2 | 4 |
| 59 | 1 | 3 | 6 | 5 | 2 | 4 |
| 60 | 1 | 3 | 5 | 6 | 2 | 4 |
| 61 | 2 | 3 | 4 | 1 | 2 | 3 |
| 62 | 2 | 3 | 3 | 2 | 2 | 3 |
| 63 | 2 | 3 | 2 | 3 | 2 | 3 |
| 64 | 2 | 3 | 1 | 4 | 2 | 3 |
| 65 | 2 | 3 | 6 | 5 | 2 | 3 |
| 66 | 2 | 3 | 5 | 6 | 2 | 3 |
| 67 | 3 | 3 | 4 | 1 | 2 | 2 |
| 68 | 3 | 3 | 3 | 2 | 2 | 2 |
| 69 | 3 | 3 | 2 | 3 | 2 | 2 |
| 70 | 3 | 3 | 1 | 4 | 2 | 2 |
| 71 | 3 | 3 | 6 | 5 | 2 | 2 |
| 72 | 3 | 3 | 5 | 6 | 2 | 2 |
| 73 | 4 | 2 | 4 | 1 | 3 | 1 |
| 74 | 4 | 2 | 3 | 2 | 3 | 1 |
| 75 | 4 | 2 | 2 | 3 | 3 | 1 |
| 76 | 4 | 2 | 1 | 4 | 3 | 1 |
| 77 | 4 | 2 | 6 | 5 | 3 | 1 |
| 78 | 4 | 2 | 5 | 6 | 3 | 1 |
| 79 | 5 | 2 | 4 | 1 | 3 | 6 |
| 80 | 5 | 2 | 3 | 2 | 3 | 6 |
| 81 | 5 | 2 | 2 | 3 | 3 | 6 |
| 82 | 5 | 2 | 1 | 4 | 3 | 6 |
| 83 | 5 | 2 | 6 | 5 | 3 | 6 |
| 84 | 5 | 2 | 5 | 6 | 3 | 6 |
| 85 | 6 | 2 | 4 | 1 | 3 | 5 |
| 86 | 6 | 2 | 3 | 2 | 3 | 5 |
| 87 | 6 | 2 | 2 | 3 | 3 | 5 |
| 88 | 6 | 2 | 1 | 4 | 3 | 5 |
| 89 | 6 | 2 | 6 | 5 | 3 | 5 |
| 90 | 6 | 2 | 5 | 6 | 3 | 5 |
| 91 | 1 | 2 | 4 | 1 | 3 | 4 |
| 92 | 1 | 2 | 3 | 2 | 3 | 4 |
| 93 | 1 | 2 | 2 | 3 | 3 | 4 |
| 94 | 1 | 2 | 1 | 4 | 3 | 4 |
| 95 | 1 | 2 | 6 | 5 | 3 | 4 |
| 96 | 1 | 2 | 5 | 6 | 3 | 4 |
| 97 | 2 | 2 | 4 | 1 | 3 | 3 |
| 98 | 2 | 2 | 3 | 2 | 3 | 3 |
| 99 | 2 | 2 | 2 | 3 | 3 | 3 |

Contacts

The MPX series contacts are offered in crimp and pc tail termination. Pin contacts are installed in the receptacle shell and socket contacts in the plug shell except size 22 contacts for which pin contacts are installed in the plug shell and socket contacts in the receptacle shell.

Size 22 contacts in pc tail termination are offered in both rear release rear removable and front release front removable style. All the other sizes of contacts are offered in the rear release rear removable style only. The contacts are installed and removed using normalized MIL81969 tooling. They also have low insertion and extraction force.

Following is the contacts range available in types and sizes.

- Size 22 signal contacts
- Sizes 20, 16 and 12 power contacts
- Sizes 12, 16, 5 and 8 coaxial contacts
- Size 8 twinax contacts for shielded twisted pairs
- Size 8 quadrax contacts



SIGNAL AND POWER CRIMP CONTACTS Release Rear Removable

| Contact size (2) | Wire | | | | Pin p/n | Socket p/n | Crimping tool Radiall p/n (MIL p/n) | Positioner p/n | Selector p/n | Ins/ext tool p/n |
|--------------------------------|------|--|-----------------------------------|----------------------------------|-----------|-------------------------|---|----------------|-----------------------------|-----------------------------|
| | AWG | Cross section (mm ²) | Wire Outside dia. Inch (mm) | Stripping length inch (mm) | | | | | | |
| | 26 | 0.14 | .030 [0.76] | .137 (3.5) | 618200 | 618300 | 282970 (M22520/2-23) | 3 | 282885 (M81969/1-01) | |
| | 24 | 0.21 | to .052 (1.32) | | | | | 3 | | |
| | 22 | 0.38 | | | | | | 4 | | |
| 20 reduced crimp barrel | 26 | 0.14 | .030 [0.76] | .157 (4.0) | / | 618311 | 282281 (M22520/2-01) | 3 | 282549029 (M81969/14-10) | |
| | 24 | 0.21 | to .052 [1.32] | | | | | 3 | | |
| | 22 | 0.38 | | | | | | 4 | | |
| 20 | 24 | 0.21 | .035 [0.89] | 618210 | 618310 | 282971 (M22520/2-08) | 282971 (M22520/2-08) | 5 | 282549029 (M81969/14-10) | |
| | 22 | 0.38 | to .060 [1.52] | | | | | 6 | | |
| | 20 | 0.60 | | | | | | 7 | | |
| 16 | 20 | 0.60 | .048 [1.21] | .236 [6.0] | 618230 | 618330 | 282972 (M22520/1-02) | 4 | 282515 (M81969/14-03) | |
| | 18 | 0.93 | to .080 [2.03] | | | | | 5 | | |
| | 16 | 1.34 | | | | | | 6 | | |
| 12 | 14 | 3.18 | .091 [2.31] | .236 [6.0] | 618240 | 618340 | 282291 (M22520/1-01) | 7 | 282549004 (M81969/14-04) | |
| | 12 | 1.91 | to .114 [2.90] | | | | | 8 | | |
| 12 reduced crimp barrel | 20 | 0.60 | .048 [1.21] | / | 618341 | 282579 (M22520/1-11) | 282579 (M22520/1-11) | 4 | 282549004 (M81969/14-04) | |
| | 18 | 0.93 | to 080 [2.03] | | | | | 5 | | |
| | 16 | 1.34 | | | | | | 6 | | |
| 12 enlarged crimp barrel | 10 | 5.0 | .234 [5.70] | .354 [9.0] | / | 618342 | 282296 (M22520/1-01) | 1 | | |
| 8 non environmental | 10 | 5.0 | .234 [5.70] | .354 [9.0] | 618270 | 618370 | 282296 (DANIELS M300 BT) (1) | 282586 | 6 | 282549001 (M81969/28-03) |
| 8 environmental | | | | | 618270001 | 618370001 | | | | |

Notes

(1) DANIELS WA27-309-EP air pressure tool with crimp setting 5 can also be used

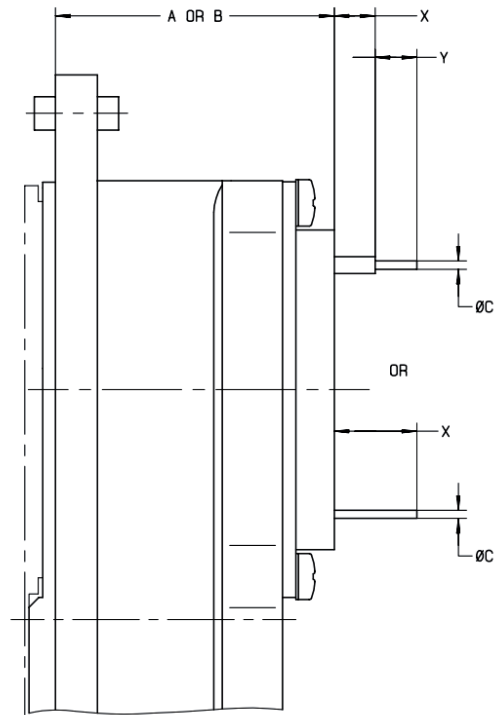
Crimp setting 5 is not adjustable and must be set by the factory

(2) Contacts size 22,20,16 and 12 are M39029/94 & M39029/93 or EN3155/026 & EN3155/027 design

Contacts

SIGNAL AND POWER PC TAIL CONTACTS Release Rear Removable

For details on A & B dimensions refer to page 5-35



GOLD PC TAIL CONTACTS

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X | | Y | C |
|--------------|-----------------------|-----|-----------|-----------|--------------------------|--------------------------|--------------------------|---|
| | | | | | inch (mm) | inch (mm) | inch (mm) | |
| 22 | 618500061 & 618500081 | / | 618304001 | 282500 | .163/.191 (4.15/4.85) | .173/.181 (4.40/4.60) | .024/.027 (0.60/0.70) | |
| | | / | 618304002 | | .085/.112 (2.15/2.85) | .232/.240 (5.90/6.10) | | |
| | | / | 618360 | | .150/.180 (3.80/4.60) | N/A | | |
| | | / | 618361 | | .252/.283 (6.40/7.20) | N/A | | |
| | | / | 618362 | | .374/.405 (9.50/10.3) | N/A | | |

PRE-TINNED PC TAIL CONTACTS

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X | | Y | C |
|--------------|-----------------------|-----|-----------|-----------|---------------------------|--------------------------|--------------------|---|
| | | | | | inch (mm) | inch (mm) | inch (mm) | |
| 22 | 618500061 & 618500081 | / | 618304003 | 282500 | .163/.191 (4.15/4.85) | .173/.201 (4.40/5.10) | .031 (0.80) max | |
| | | / | 618304004 | | .085/.112 (2.15/2.85) | .232/.260 (5.90/6.60) | | |
| | | / | 618360001 | | .150/.201 (3.80/5.10) | N/A | | |
| | | / | 618361001 | | .252/.303 (6.40/7.70) | N/A | | |
| | | / | 618362001 | | .374/.425 (9.50/10.80) | N/A | | |

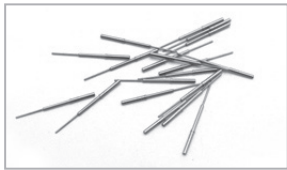
Contacts

**SIGNAL AND POWER PC TAIL CONTACTS Rear Release Rear Removable
GOLD PC TAIL CONTACTS**

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X | | C |
|--------------|------------------------------------|-----|-----------|------------------------------------|---------------------------|--------------------------|------------------------------|
| | | | | | inch (mm) | inch (mm) | |
| 22 | 150 126 70C12 100 62T2 | / | 618302 | 282885 (M81969/1-01) | .059/.087 (1.50/2.20) | .145/.154 (3.70/3.90) | .024/.027 (0.60/0.70) |
| | | / | 618303001 | | .209/.248 (5.30/6.30) | N/A | |
| | | / | 618303002 | | .391/.431 (9.95/10.95) | N/A | |
| | | / | 618303003 | or 282522 (M81969/14-01) | .138/.177 (3.50/4.50) | N/A | |
| | | / | 618303004 | | .150/.169 (3.80/4.30) | .145/.154 (3.70/3.90) | |
| | | / | 618303005 | | .303/.343 (7.70/8.70) | N/A | |
| | | / | 618303005 | | | | |

PRE-TINNED PC TAIL CONTACTS

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X | | C |
|--------------|------------------------------------|-----|-----------|------------------------------------|---------------------------|--------------------------|------------------------|
| | | | | | inch (mm) | inch (mm) | |
| 22 | 150 126 70C12 100 62T2 | / | 618302001 | 2282885 (M81969/1-01) | .059/.107 (1.50/2.70) | .145/.174 (3.70/4.40) | .031 (0.80) max |
| | | / | 618303007 | | .209/.268 (5.30/6.80) | N/A | |
| | | / | 618303008 | | .391/.451 (9.95/14.45) | N/A | |
| | | / | 618303009 | or 282522 (M81969/14-01) | .138/.197 (3.50/5.00) | N/A | |
| | | / | 618303010 | | .150/.189 (3.80/4.80) | .145/.174 (3.70/4.40) | |
| | | / | 618303011 | | .303/.363 (7.70/9.20) | N/A | |
| | | / | 618303011 | | | | |



GOLD PC TAIL CONTACTS

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X | | C |
|--------------|---------------------|-----------|-----------|-----------------------------------|----------------------------|-----------|--------------------------|
| | | | | | inch (mm) | inch (mm) | |
| 20 | 11T2 | 618213001 | / | 282886 (M81969/1-02) | .281/.321 (7.15/8.15) | N/A | .037/.040 (0.95/1.01) |
| | 11C2 | 618213002 | / | | .137/.177 (3.50/4.50) | N/A | |
| | 34, 60 | 618231005 | / | or 282549029 (M81969/14-02) | .517/.557 (13.15/14.15) | N/A | |
| | 47T2 | | / | | .391/.431 (9.95/10.95) | N/A | |
| | 20T4 | / | 618316001 | | | | |

PRE-TINNED PC TAIL CONTACTS

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X | | C |
|--------------|---------------------|-----------|--------|-----------------------------------|----------------------------|-----------|--------------------|
| | | | | | inch (mm) | inch (mm) | |
| 20 | 11T2 | 618213006 | / | 282886 (M81969/1-02) | .281/.341 (7.15/8.65) | N/A | .045 (1.15) max |
| | 11C2 | 618213007 | / | | .137/.197 (3.50/5.00) | N/A | |
| | 34, 60 | | / | or 282549029 (M81969/14-02) | .517/.577 (13.15/14.65) | N/A | |
| | 47T2 | 618231008 | / | | | | |
| | 20T4 | | | | | | |

Contacts

**SIGNAL AND POWER PC TAIL CONTACTS Rear Release Rear Removable
GOLD PC TAIL CONTACTS**

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X inch (mm) | Y inch (mm) | C inch (mm) |
|-------------------|---------------------|-----------|--------|--------------------------------|---------------------------|----------------|--------------------------|
| 16 | 62T2 | 618233001 | / | 282546 (M81969/1-03) | .281/.321 (7.15/8.15) | N/A | .057/.061 (1.45/1.55) |
| | 11C2 | | | | | | |
| | 11T2 | 618233002 | / | or 282515 (M81969/14-03) | .370/.409 (9.40/10.40) | N/A | |
| 25, 34 35, 126 | 618233003 | | | | | | / |



PRE-TINNED PC TAIL CONTACTS

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X inch (mm) | Y inch (mm) | C inch (mm) |
|-------------------|---------------------|-----------|--------|--------------------------------|---------------------------|----------------|--------------------------|
| 16 | 62T2 | 618233001 | / | 282546 (M81969/1-03) | .281/.321 (7.15/8.15) | N/A | .057/.061 (1.45/1.55) |
| | 11C2 | | | | | | |
| | 11T2 | 618233002 | / | or 282515 (M81969/14-03) | .370/.409 (9.40/10.40) | N/A | |
| 25, 34 35, 126 | 618233003 | | | | | | / |

GOLD PC TAIL CONTACTS

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X inch (mm) | Y inch (mm) | C inch (mm) |
|--------------|---------------------|-----------|--------|-----------------------------|--------------------------|----------------|--------------------------|
| 12 | 11C2 | 618243001 | / | 282547 (M81969/28-02) | .281/.321 (7.15/8.15) | N/A | .076/.080 (1.95/2.05) |
| | 11T2, 6T4 | 618243002 | / | | | | |
| | 24, C12T6 70C12 | 618243003 | / | 282549004 (M81969/14-04) | .137/.177 (3.50/4.50) | N/A | |
| | | | | | .076/.120 (1.95/3.05) | N/A | |



PRE-TINNED PC TAIL CONTACTS

| Contact size | Contact arrangement | Pin | Socket | Ext. tool | X inch (mm) | Y inch (mm) | C inch (mm) |
|--------------|---------------------|-----------|--------|-----------------------------|--------------------------|----------------|--------------------------|
| 12 | 11C2 | 618243001 | / | 282547 (M81969/28-02) | .281/.321 (7.15/8.15) | N/A | .076/.080 (1.95/2.05) |
| | 11T2, 6T4 | 618243002 | / | | | | |
| | 24, C12T6 70C12 | 618243003 | / | 282549004 (M81969/14-04) | .137/.177 (3.50/4.50) | N/A | |
| | | | | | .076/.120 (1.95/3.05) | N/A | |

Contacts

**COAXIAL CRIMP CONTACTS Rear Release Rear Removable
DESIGN AS PER EN3155-028 & 029**

| Contact size | Contact arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | | | | |
|--------------|---------------------|--|--------|--------|-------------------------|-----------------|--------|-------------------------|-----------------|-----|--------|--------|--------|
| | | | | | Crimping tool | Positioner tool | Sel | Crimping tool | Positioner tool | Sel | | | |
| 16 | 126 | RG179 RG316 KX22DS | 618150 | 618050 | 282281 (M22520/2-01) | 282555 | 282555 | 282292 (M22520/4-01) | 282556 | / | | | |
| | 62T2 | ASNE0752WS ASNE0632WK ASNE0639XY | | | | | | | | | 618151 | 618051 | 2 |
| | 11C2 | F1703-134 AXON P813859 & P822817 ASNE0690WL | 618151 | 618051 | | | | | | | | | |
| | 11T2 | | | | | | | | | | / | 618053 | |
| | 34 | | | | | | | | | | | | 618154 |
| | 25 | KX21DS | / | 618053 | | | | | | | | | |
| | 35 | RG178 KX21 | | | | | | | | | 618154 | 618054 | |
| | ASNE0633WG | | | 1 | | | | | | | | | |

Ins/ext tool: 282546 (M81696/1-03)

DESIGN AS PER EN3155-030 & 031 / M39029/73 & 74

| Contact size [2] | Contact arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | | |
|------------------|---------------------|-----------------------------|-----------|-----------|-------------------------|-----------------|--------|--------------------------|-----------------|-----|---|
| | | | | | Crimping tool | Positioner tool | Sel | Crimping tool | Positioner tool | Sel | |
| 12 | 11C2 | RG179 RG316 | 618140 | 618040 | 282281 (M22520/2-01) | 282580 | 282580 | 282297 (M22520/31-01) | 282581 | / | |
| | 11T2 | ASNE0639XY | 618140003 | 618040003 | | | | | | | 3 |
| | 24 | BUS 3910 | | | | | | | | | |
| | 6T4 | AXON P503031 | 618142 | 618042 | | | | | | | 4 |
| | C12T6 70C12 | ASNE0633WG RG178 KX21 | | | | | | | | | |

Ins/ext tool: 282547 (M81696/28-02)

DESIGN AS PER EN3155-032 & 033 M39029/99 & 100

| Contact size | Contact arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | | |
|--------------|---------------------|--------------------------|-----------------------|-----------------------|-------------------------|-----------------|--------|-------------------------|----------------------------------|-----------------------|---|
| | | | | | Crimping tool | Positioner tool | Sel | Crimping tool | Positioner tool | | |
| 5 | 11C2 | RG58 KX15 | 618120 ⁽¹⁾ | 618020 ⁽¹⁾ | 282281 (M22520/2-01) | 282550 | 282550 | 282293 (M22520/5-01) | 282246 (M22520/5-05 hex A) | | |
| | | RG141 | | | | | | | / | 618021001 | 8 |
| | | ASNE0293XF RG142 | 618124001 | 618024001 | | | | | | | 8 |
| | | RG223 | | | | | | | 618123 ⁽¹⁾ | 618023 ⁽¹⁾ | 6 |
| | | RG400 | | | | | | | | | 8 |
| | | ASNE0691WM ASNE0639XY | | | | | | | 7 | | |
| | | RG179 RG187 | | | | | | | | | |

Ins/Ext tool: 282946 (M81969/28-01)

A RADIALL DESIGN

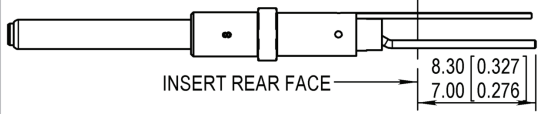
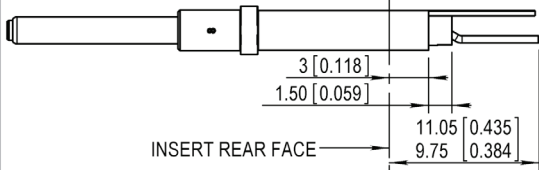
Non environmental size 8 pin contacts are delivered with an alignment boot (p/n: 618920) to reduce the play at the contact extremity.

| Contact size | Contact arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | | | | |
|--------------|---------------------|---------------|-----|-----------------------|-------------------------|-----------------|--------|-------------------------|----------------------------------|--------|-----------------------|---|---|
| | | | | | Crimping tool | Positioner tool | Sel | Crimping tool | Positioner tool | | | | |
| 8 | 62T220T4 | RG58 KX15 | / | 618030 ⁽¹⁾ | 282281 (M22520/2-01) | 282572 | 282572 | 282293 (M22520/5-01) | 282236 (M22520/5-45 hex A) | | | | |
| | 11T2 | RG316 | | | | | | | | / | 618032 ⁽¹⁾ | 7 | |
| | T6 | RG141 KX22 | / | 618033 ⁽¹⁾ | | | | | | | | | 8 |
| | 47T2 | RG316 | | | | | | | | / | 618033 ⁽¹⁾ | 8 | |
| | C12T6 | RG174 | | | | | | | | | | | |
| | 6T4 | RG400 | | | | | | | | solder | | | |
| | | ASNE0691WM | | | | | | | | | | | |

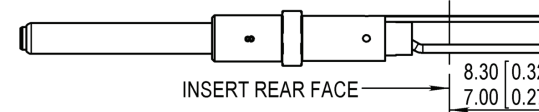
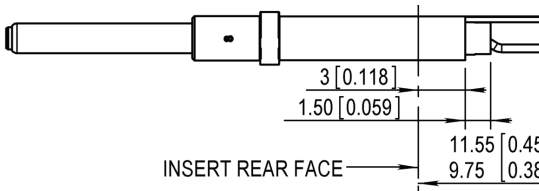
Ins/Ext tool: 282549001 (M81969/28-03)

Contacts

PC TAIL COAX CONTACTS Rear Release Rear Removable
SIZE 16 PC TAIL mating interface as per EN3155-028 & 029

| Contact type | Part number ⁽¹⁾ | Contact drawing ⁽²⁾ | Rear extension from all insert inch (mm) | Rear extension from 126 & 62T2 inserts only inch (mm) |
|--------------|----------------------------|--|--|---|
| Pin | 618153 |  | .275 / .327 (7.00 / 8.30) | .297 / .349 (7.55 / 8.85) |
| Pin | 618153001 |  | .383 / .435 (9.75 / 11.05) | .405 / .457 (10.30 / 11.60) |

SIZE 16 PRE-TINNED PC TAIL

| Contact type | Part number ⁽¹⁾ | Contact drawing ⁽²⁾ | Rear extension from all insert inch (mm) | Rear extension from 126 & 62T2 inserts only inch (mm) |
|--------------|----------------------------|--|--|---|
| Pin | 618153002 |  | .275 / .346 (7.00 / 8.80) | .297 / .368 (7.55 / 9.35) |
| Pin | 618153003 |  | .383 / .455 (9.75 / 11.55) | .405 / .476 (10.30 / 12.10) |

NOTES:

(1) Contacts Ins/ext tool: 282546 (M81969/1-03)

(2) For PC drill pattern please contact Radiall

Contacts

PC TAIL COAX CONTACTS Rear Release Rear Removable
SIZE 12 PC TAIL mating interface design as per EN3155-030 & 031

| Contact type | Part number ⁽¹⁾ | Contact drawing ⁽²⁾ | Rear extension from all insert inch (mm) | Rear extension from 70C12 insert only inch (mm) |
|--------------|----------------------------|--------------------------------|--|---|
| Pin | 618149002 | | .275 / .327 (7.00 / 8.30) | .307 / .358 (7.80 / 9.10). |
| Pin | 618149003 | | .358 / .409 (9.10 / 10.40) | .390 / .441 (9.90 / 11.20). |

SIZE 12 PRE-TINNED PC TAIL

| Contact type | Part number ⁽¹⁾ | Contact drawing ⁽²⁾ | Rear extension from all insert inch (mm) | Rear extension from 70C12 inserts only inch (mm) |
|--------------|----------------------------|--------------------------------|--|--|
| Pin | 618149006 | | .275 / .347 (7.00 / 8.80) | .307 / .379 (7.80 / 9.60). |
| Pin | 618149007 | | .358 / .429 (9.10 / 10.90) | .390 / .461 (9.90 / 11.70). |

NOTES:

(1) Contacts Ins/ext tool: 282547 (M81969/28-02)

(2) For PC drill pattern please contact Radiall

Contacts

QUADRAX CONTACTS Rear Release Rear Removable
SIZE 8 QUADRAX CONTACTS design as per EN3155-072 & 073

| Cable | Contact Type | Part number ⁽¹⁾ Non Environmental | Part number ⁽¹⁾ Environmental | INS/Ext Tool |
|--------------------------|--------------|---|---|---------------------------|
| ABS972 | Pin | 620175010 | 620175011 | 282549001 M81969/14.06 |
| ABS1503KD24 | Socket | 620075010 | 620075011 | |
| TENSOLITE | Pin | 620175050 | 620175051 | |
| NF24Q100 (100Ω) | Socket | 620075050 | 620075051 | |
| GORE RCN8487-1 (110Ω) | Pin | 620175021 | 620175020 | |
| | Socket | 620075021 | 620075020 | |
| THERMAX 956S-4T200 | Pin | 620179002 | 620179001 | |
| GORE RCN8422 (110Ω) | Socket | 620079002 | 620079001 | |



CONCENTRIC TWINAX CONTACTS Rear Release Rear Removable

SIZE 8 CRIMP CONTACTS
design as per EN3155-034 & 035 interchangeable with 042 & 043 interface in accordance with M39029/95

| Contact size ^(1 & 3) | Contact arrangement | Cable | Pin contact ⁽²⁾ | Socket contact ⁽²⁾ |
|-------------------------------------|---------------------|---------------|----------------------------|-------------------------------|
| 8 | 6T4 | EN 3375-004 | 618160 | 618060 |
| | | EN 3375-005 | | |
| | | EN 3375-003 | | |
| | 62T2 | M17/176-00002 | 618161 | 618061 |
| | | M17/176-00002 | | |
| | 20T4 | EN 3375-003 | 618162 | 618062 |
| | | EN 3375-004 | | |
| | 11T2 | EN 3375-005 | 618166 | 618066 |
| | | EN 3375-004 | | |
| | T6 | M17/176-00002 | 618180 | / |
| M17/176-00002 | | | | |
| 47T2 | ECS 700 | | | |
| | C12T6 | | | |

NOTES:

(1) Ins/Ext tool: 282549001 (M81969/28-03)

(2) Add 001 at the end of the contact part number to be provided with a sealing boot with the contact

(3) Non environmental size 8 pin contacts are delivered with an alignment boot (p/n: 618920) to reduce the play at the contact extremity

Contacts

CONCENTRIC TWINAX CONTACTS Rear Release Rear Removable
SIZE 8 PC TAIL CONTACTS mating interface design as per EN3155-034 & 035

| Contact type | Part number ⁽⁴⁾ | Contact drawing | Rear extension from all insert inch (mm) | Pc tail length inch (mm) | Rear extension from 62T2 insert only inch (mm) |
|--------------|----------------------------|-----------------|--|------------------------------|--|
| Pin | 618 163 | | .275 / .327 (7.00 / 8.30) | .275 / .327 (7.00 / 8.30) | .199 / .250 (5.05 / 6.35) |
| Pin | 618 164 | | .480 / .520 (12.20 / 13.20) | .098 / .138 (2.50 / 3.50) | .403 / .443 (10.25 / 11.25) |
| Pin | 618164001 | | .518 / .557 (13.15 / 14.15) | .234 / .238 (5.95 / 6.05) | .441 / .480 (11.20 / 12.20) |

NOTES:

(1) Non environmental size 8 pin contacts are delivered with an alignment boot (p/n: 618920) to reduce the play at the contact extremity
 This alignment boot protrudes 2.5mm max from the rear face of the insert; these 2.5mm are taken into account in the dimensions listed above

Contacts

**CONCENTRIC TWINAX CONTACTS Rear Release Rear Removable
SIZE 8 PRE-TINNED PC TAIL CONTACTS**

| Contact type | Part number ⁽¹⁾ | Contact drawing | Rear extension from all insert inch (mm) | Pc tail length inch (mm) | Rear extension from 62T2 insert only inch (mm) |
|--------------|----------------------------|-----------------|---|------------------------------|---|
| Pin | 618163005 | | .275 / .347 (7.00 / 8.80) | .297 / .347 (7.55 / 8.80) | .199 / .270 (5.05 / 6.85) |
| Pin | 618164002 | | .480 / .540 (12.20 / 13.70) | .098 / .157 (2.50 / 4.00) | .403 / .463 (10.25 / 11.75) |
| Pin | 618164003 | | .518 / .577 (13.15 / 14.65) | .234 / .258 (5.95 / 6.55) | .441 / .500 (11.20 / 12.70) |

NOTES:

(1) Non environmental size 8 pin contacts are delivered with an alignment boot (p/n: 618920) to reduce the play at the contact extremity
This alignment boot protrudes 2.5mm max from the rear face of the insert; these 2.5mm are taken into account in the dimensions listed above

Accessories



SEALING PLUGS

| Cavity size | Sealing plug P/N | Color |
|-------------|-------------------------------------|--------|
| 22 | 620920 | black |
| 20 | 620921 | red |
| 16 | 620922 | blue |
| 12 | 620923 | yellow |
| 5 | 618910 for pin 618912 for socket | white |
| 8 | 618911 for pin 618913 for socket | red |

FILLER PLUGS

| Cavity size | Filler plug P/N | Color |
|-------------|-----------------|--------|
| 22 | 616910 | black |
| 20 | 616911 | red |
| 16 | 616912 | blue |
| 12 | 616913 | yellow |
| 5 | 618910 + 618915 | white |
| 8 | 618911 + 618915 | red |

CAVITY REDUCERS

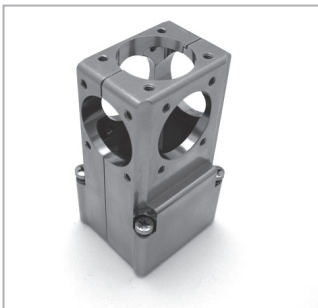
The cavity reducers are not removable from the insert once installed. They are made of copper alloy and are nickel plated to allow contact cavity grounding.

| Cavity reducer type | Part number |
|-------------------------------|---|
| From pin size 8 to size 12 | Environmental: 618940001 Non environmental: 618940 |
| From socket size 8 to size 12 | Environmental: 618941001 Non environmental: 618941 |

BACKSHELLS

Backshells are made of aluminium alloy and are cadmium yellow chromate plated. To order one complete backshell you must order separately an EMI backshell plus a combination of backshell terminations (i.e. one complete backshell for cavity A = 4x 618802011 + 1x 618802010 + 1x 618801002)

| Description | Part number |
|-------------------------------------|-------------|
| EMI backshell for cavities A, C & E | 618801002 |
| EMI backshell for cavities B, D & F | 618800002 |
| Backshell termination | 618802010 |
| Backshell blank termination | 618802011 |



Accessories

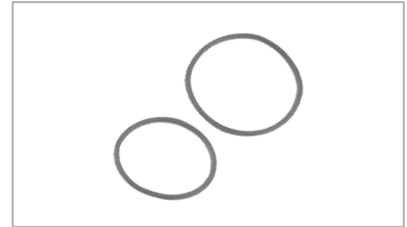
DUST CAPS

| Description | Part number |
|--|-------------|
| Conductive dust cap for receptacle shell | 618953001 |
| Conductive dust cap for plug shell | 618953002 |
| Non conductive dust cap for plug shell | 618953 |



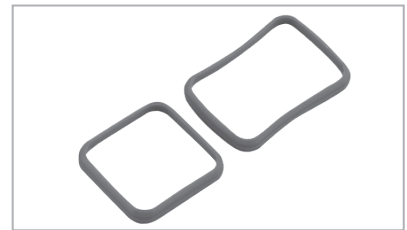
O-RING FOR INSERTS

| Description | Part number |
|---|-------------|
| O-ring for inserts for A,C & E cavities | 618953020 |
| O-ring for inserts for B,D & F cavities | 618953021 |



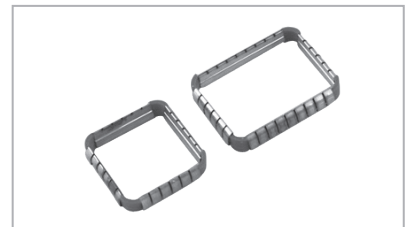
COUPLING SEALS

| Description | Part number |
|---|-------------|
| Coupling seals for A,C & E shell cavities | 618953010 |
| Coupling seals for B,D & F shell cavities | 618953011 |



EMI SPRING

| Description | Part number |
|--|-------------|
| Kit made of one EMI spring for A,C & E shell cavities and of one EMI spring for B, D & F | 618810 |
| EMI spring for A,C & E shell cavities | 618810001 |
| EMI spring for B,D & F shell cavities | 618810002 |



DUMMY INSERTS:

MPXE10: dummy insert for A, C and E shell cavities
 MPXE20: dummy insert for B, D and F shell cavities

POLARIZATION KIT & SCREWS

A kit of 2 screws that are used to fix the polarization posts or keys retention plate is available under P/N: 618985

A polarization kit for plug is P/N 618811002 and for receptacle it is P/N 618811001. Torque is 0.7 N.m

Dimensions

The table below gives A and B dimension values (A and B = distance between the front flange of the connector and the rear face of the insert).

See drawings pages 5-36 to 5-41 for A and B description.

PLUG

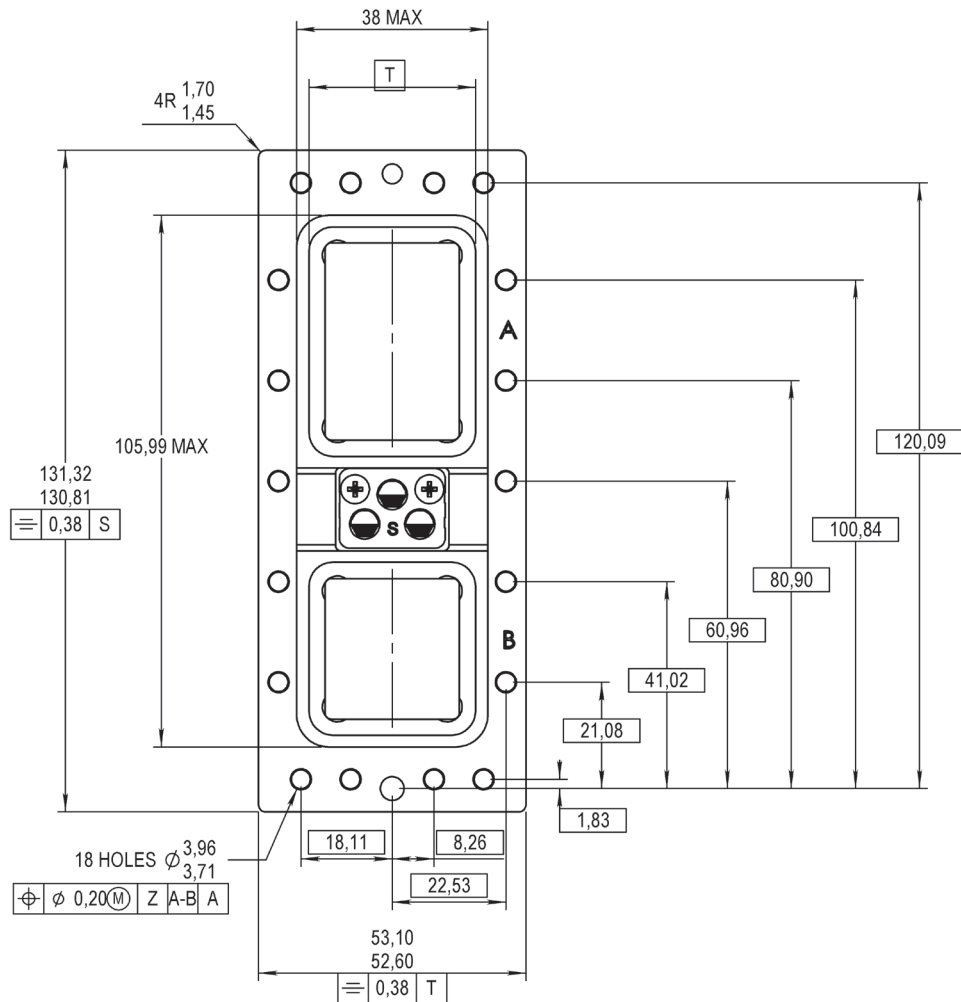
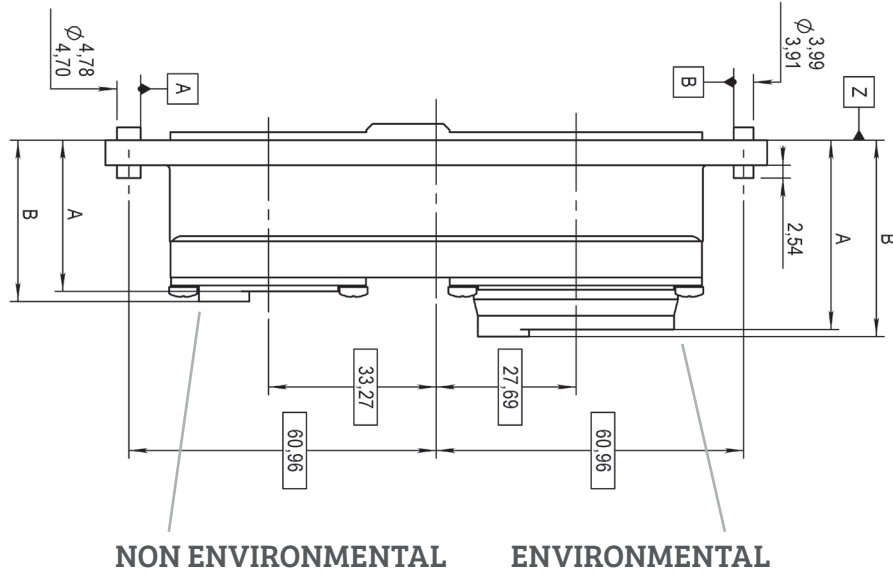
| Insert description | A and/or B dimension for environmental plug inch (mm) | A and/or B dimension for non environmental plug inch (mm) |
|---|---|---|
| 60, T6, 11C2, 34 C12T6, 24, 35, 47T2, 13T4 6T4, 11T2, 25, 20T4, 20Q4, Q6, Q11 | .386 / .449 (9.80 / 11.40) | No rear extension of inserts from shell |
| 150, 100 | .228 / .295 (5.80 / 7.50) | |
| 62T2, 68Q4 | A : Signal contacts .228 / .295 (5.80 / 7.50) B : Power contacts .468 / .512 (11.90 / 13.00) | |
| 70C12, 126, 118Q2 | A : Signal contacts .228 / .295 (5.80 / 7.50) B : Power contacts .386 / .449 (9.80 / 11.40) | |

RECEPTACLE

| Insert description | A and/or B dimension for environmental receptacle inch (mm) | A and/or B dimension for non environmental receptacle inch (mm) |
|---|---|---|
| 60, T6, 11C2, 34 C12T6, 24, 35, 47T2, 13T4 6T4, 11T2, 25, 20T4, 20Q4, Q6, Q11 | 1.610 / 1.657 (40.90 / 42.10) | 1.275 / 1.313 (32.40 / 33.35) |
| 150, 100, 126 | 1.441 / 1.492 (36.60 / 37.90) | 1.171 / 1.215 (29.75 / 30.85) |
| 62T2, 68Q4, 118Q2 | A : Signal contacts 1.441 / 1.492 (36.60 / 37.90) B : Power contacts 1.512 / 1.557 (38.40 / 39.55) | 1.171 / 1.215 (29.75 / 30.85) |
| 70C12 | 1.457 / 1.518 (37 / 38.55) | |

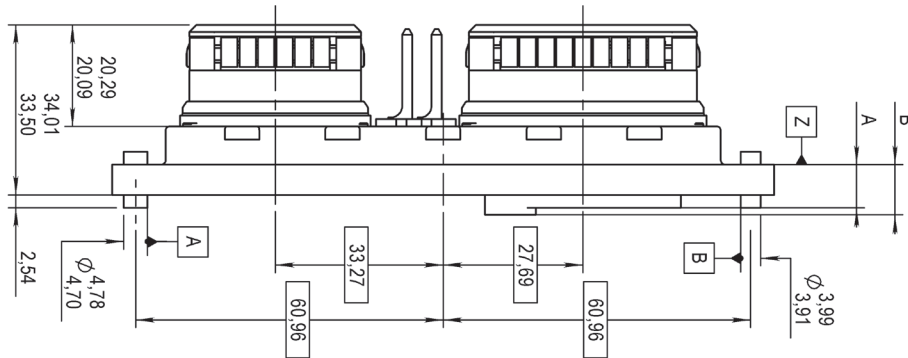
MPX SERIES

Receptacle Size 2 Dimensions



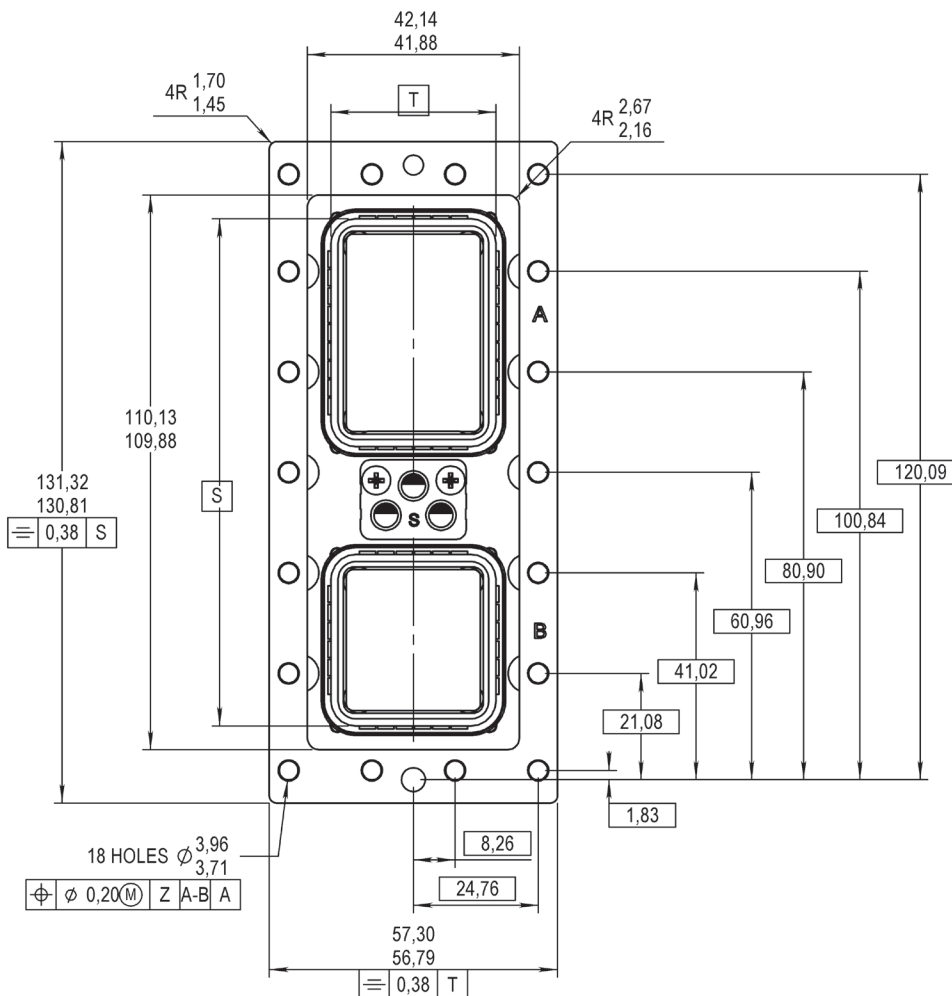
Plug Size 2 Dimensions

MPX SERIES



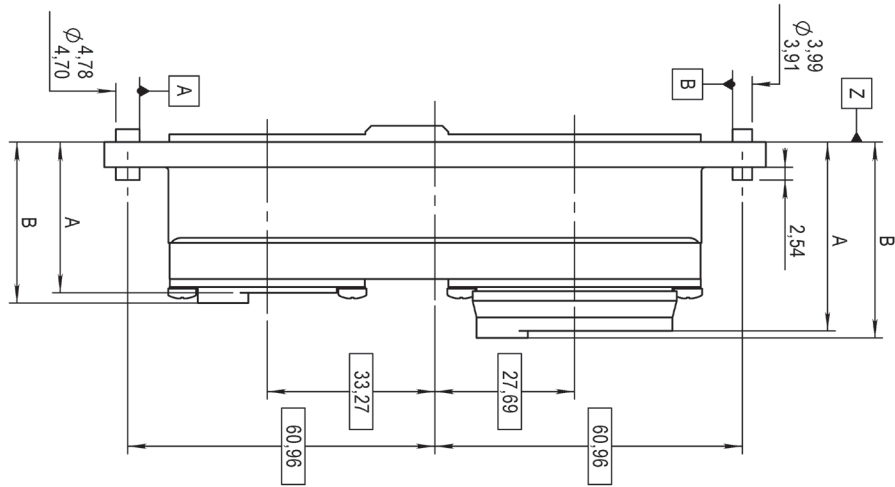
NON ENVIRONMENTAL

ENVIRONMENTAL

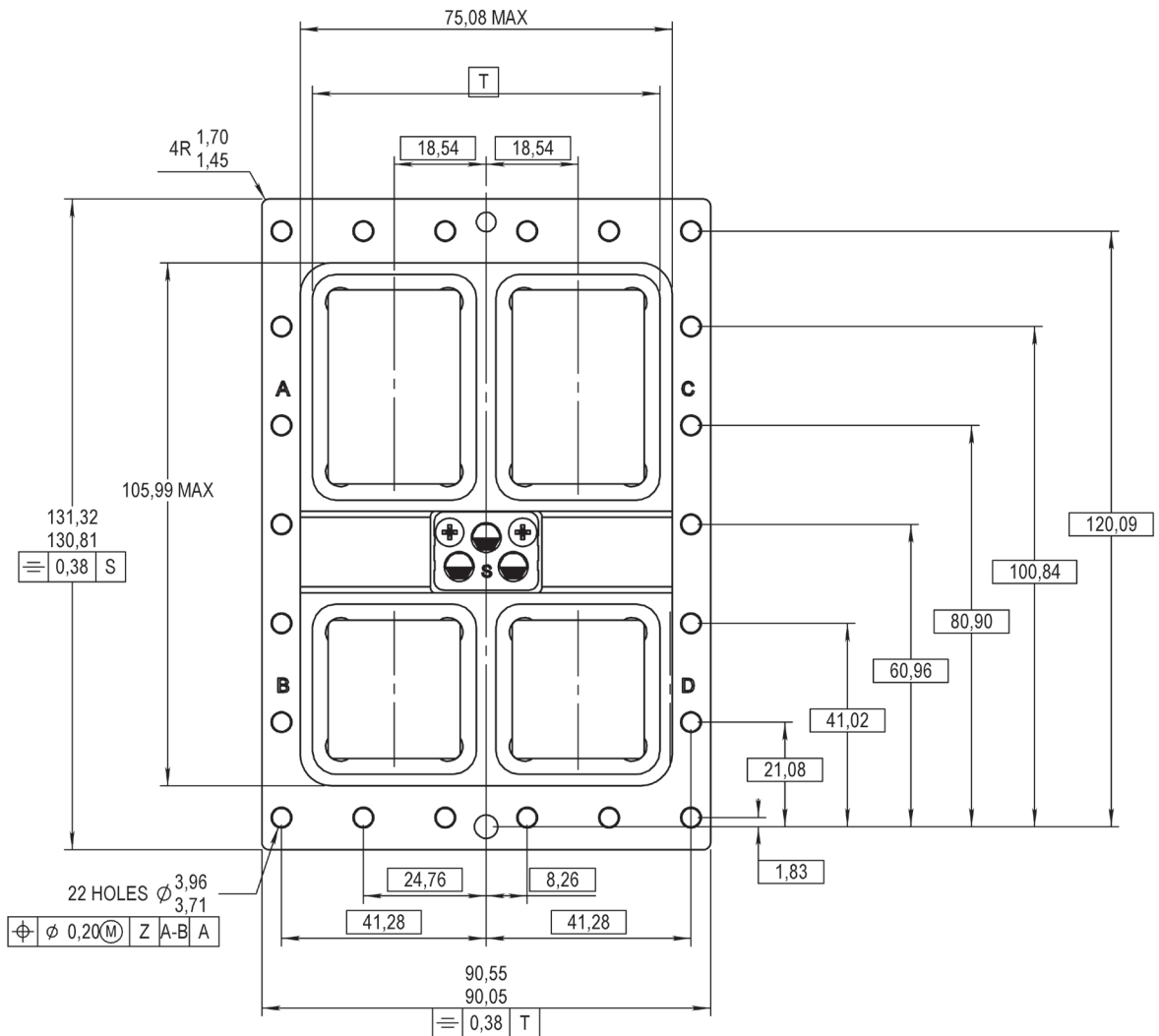


MPX SERIES

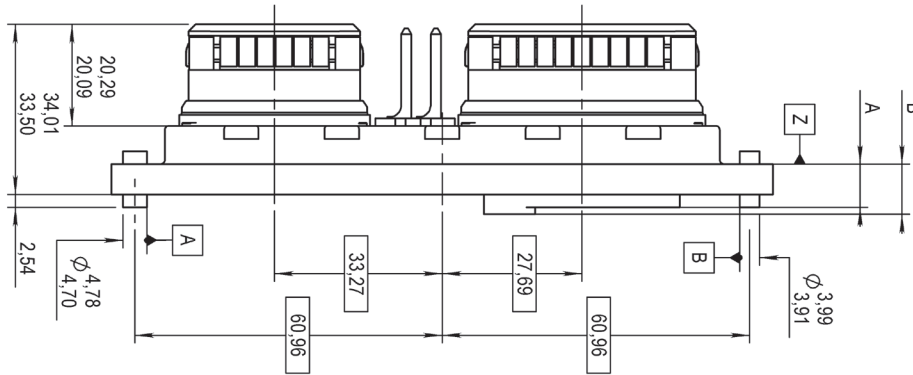
Receptacle Size 3 Dimensions



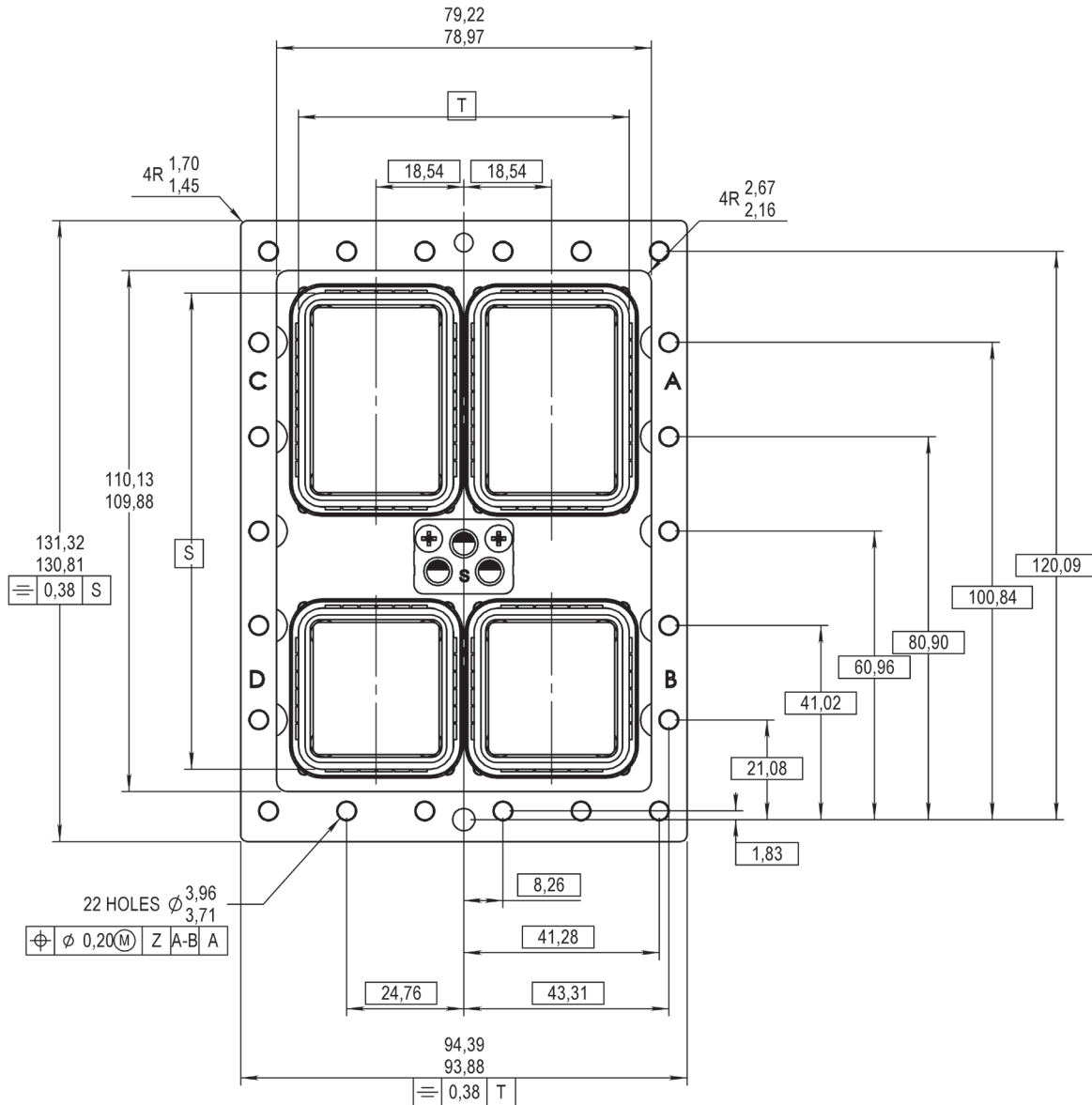
NON ENVIRONMENTAL ENVIRONMENTAL



Plug Size 3 Dimensions

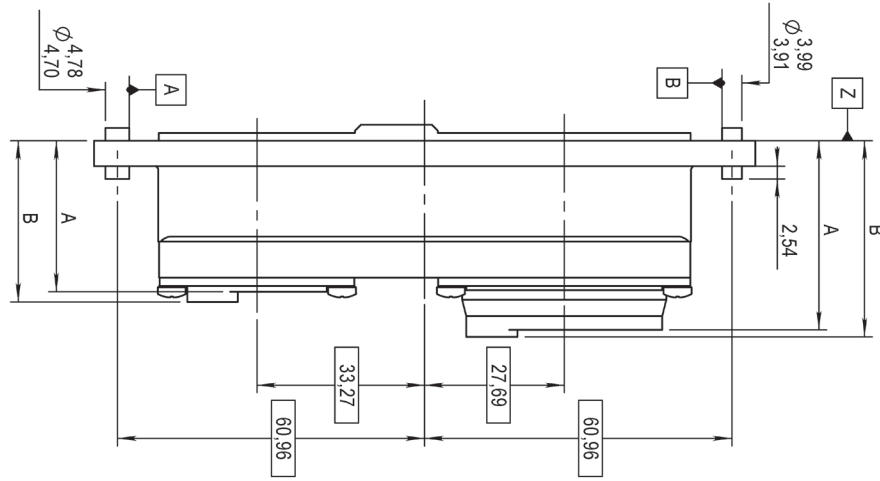


NON ENVIRONMENTAL ENVIRONMENTAL

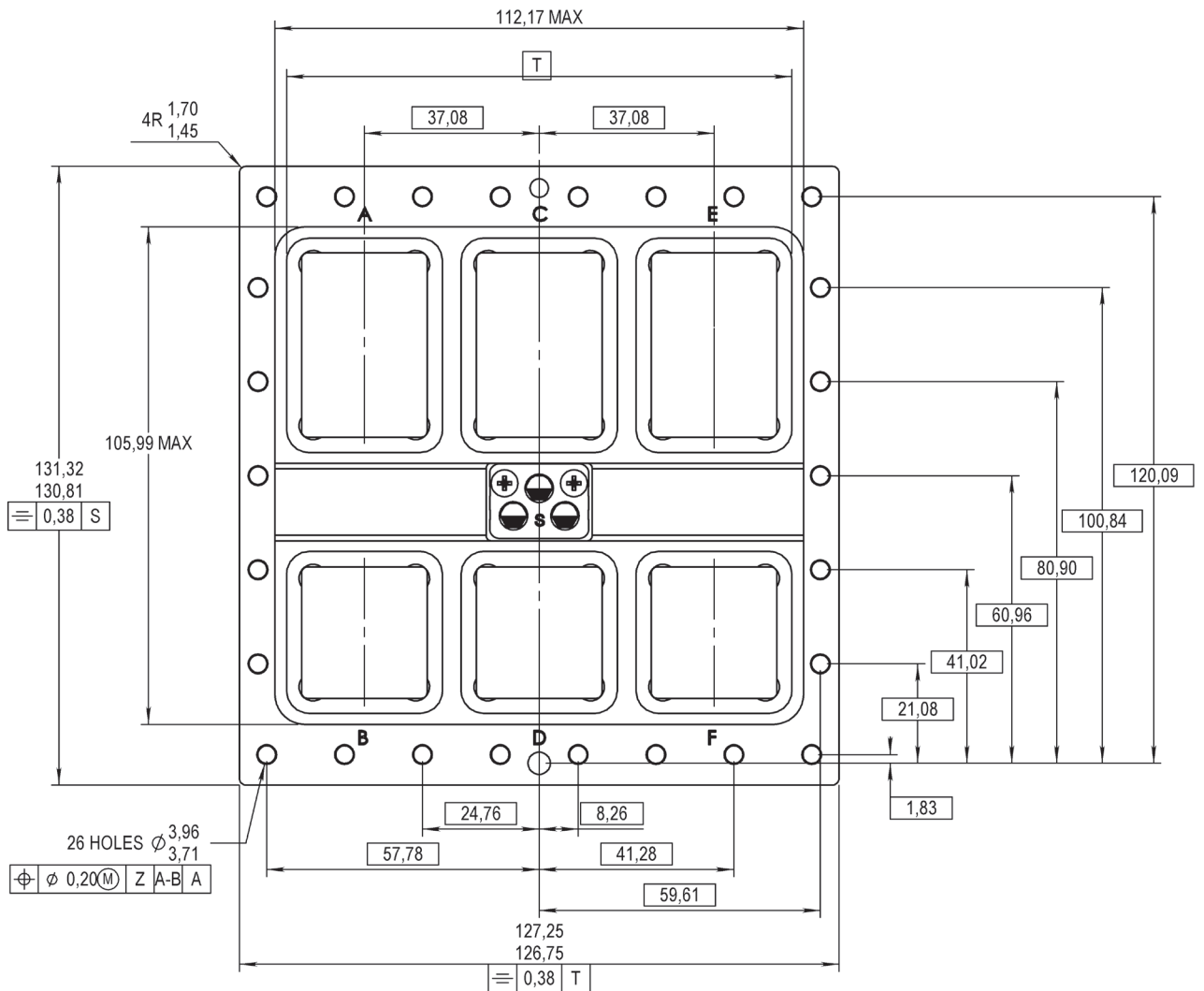


MPX SERIES

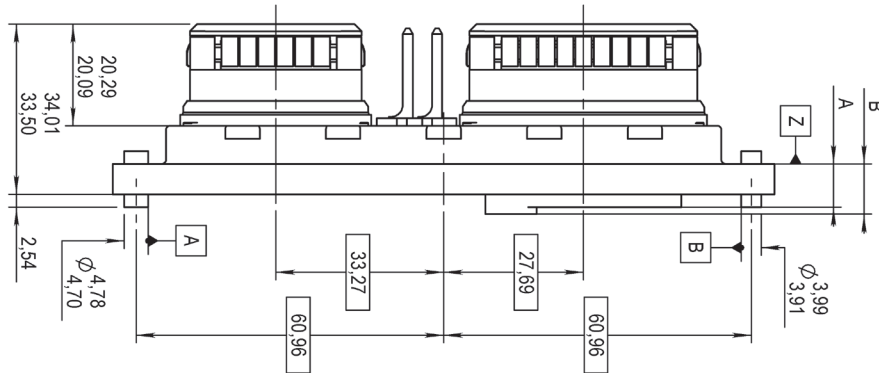
Receptacle Size 4 Dimensions



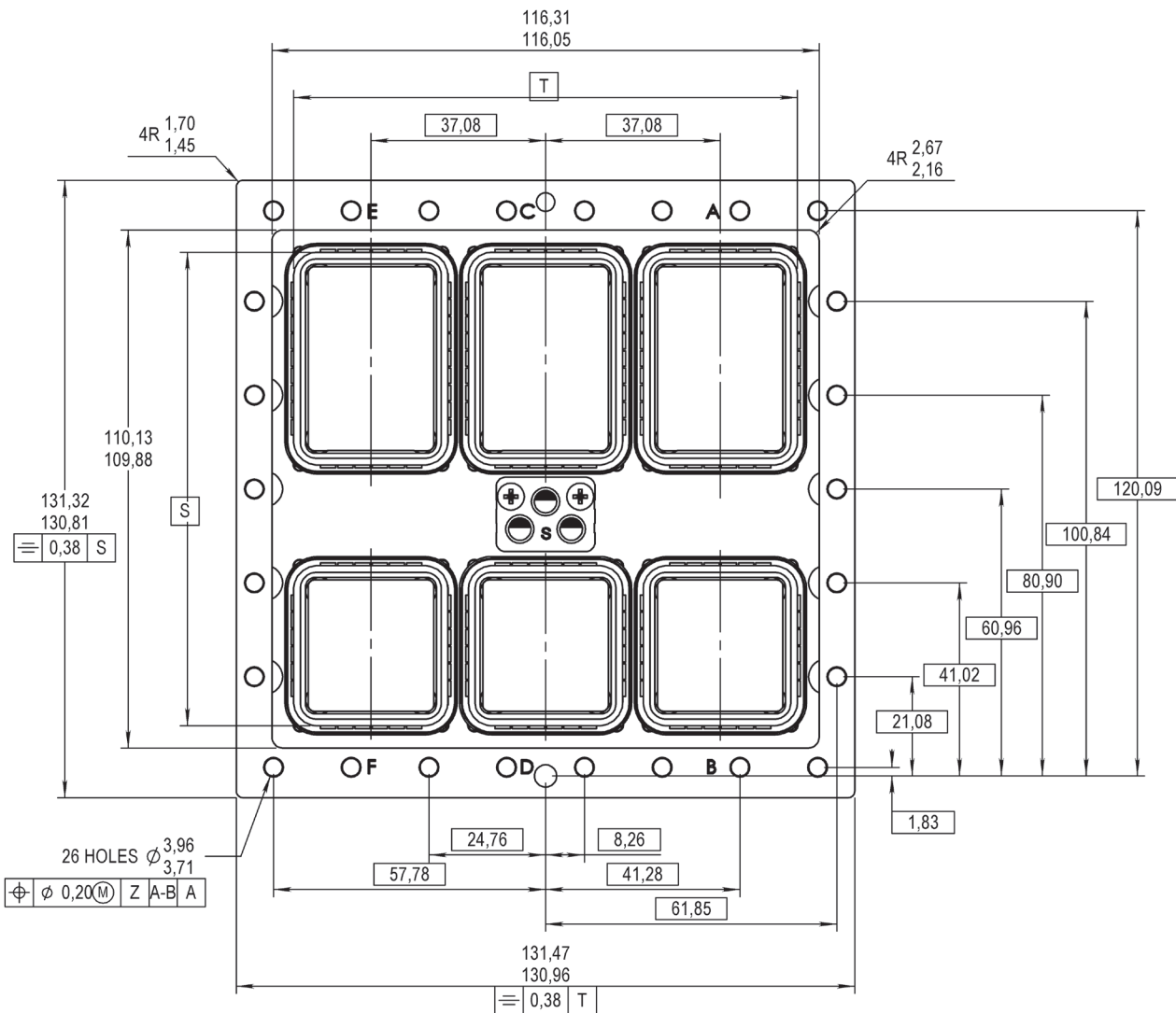
NON ENVIRONMENTAL ENVIRONMENTAL



Plug Size 4 Dimensions

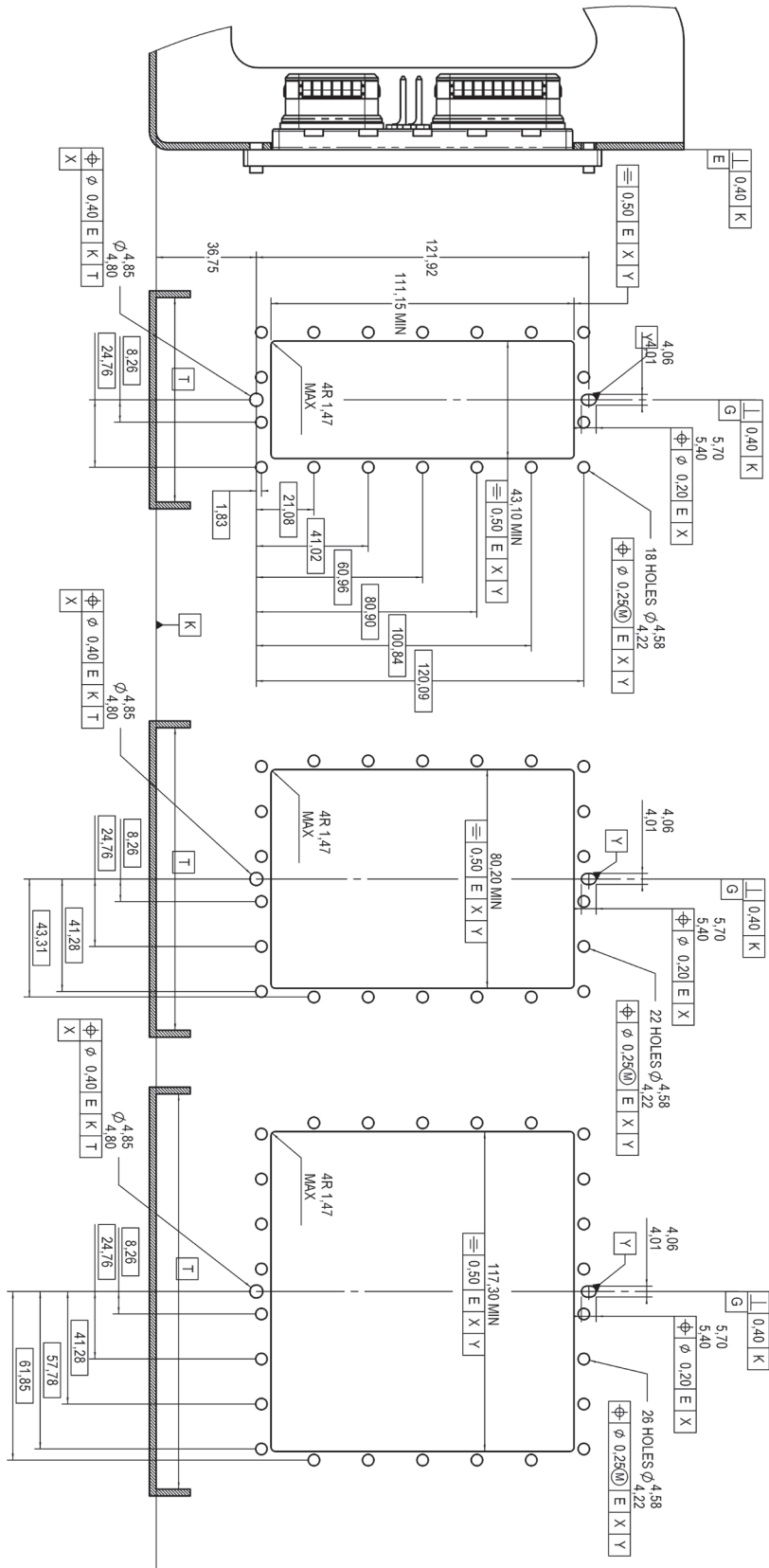


NON ENVIRONMENTAL ENVIRONMENTAL



MPX SERIES

Rack Plug Panel Cut-Out



MPX SERIES

Notes



DSX Series

SAE AS81659

Arinc 404



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Introduction

The Radiall **DSX** rack and panel series are multipin rectangular connectors used to electrically interface avionics equipment to equipment rack. Usually the plug is installed on the avionics rack and the receptacle on the equipment box. The mated locking mechanism is provided for the equipment and cabinet and is not a part of the connector pair.

These connectors are widely used in applications such as:

- Commercial / military aircraft and helicopters
- Radar systems
- Power circuits
- In-flight electronic instrumentation
- Flight simulators, etc...

The following versions are offered:

DSX – SAE AS81659: connectors conforming to SAE AS81659 including connectors listed on the QPL81659

DSX - ARINC 404 shell type B: connectors conforming to ARINC 404 shell type B - polarized shells

DSX - ARINC 404 shell type A: connectors conforming to ARINC 404 shell type A - single shell (without polarization)

DSX - F: connectors for front release front removable contacts (receptacle only)

DSX - DATA BUS: connectors for interconnection of multiplexed digital links

DSX - EMI/RFI: shielded connectors

DSX – SAE AS81659

These connectors fully conform to SAE AS81659 specifications and are listed on the associated Qualified Product List. They are available in four shell sizes (1, 2, 3 and 4) which can respectively accept 1, 2, 3 and 4 inserts. Inserts are offered in various contact arrangements accommodating rear release rear removable signal (size 22), power (sizes 5, 12, 16 and 20HD), coaxial (sizes 1, 3, 5, 7, 9 and 15), concentric twinax (sizes 5 and 9), triax (sizes 5 and 9) contacts in crimp, wire wrap or PC tail termination. Radiall's 29504 fiber optic termini are also available. Both environmental and non environmental connectors are offered.

Mismating is prevented by a polarizing system which provides 216 polarizing positions. For military part numbers, applicable polarizing positions range goes from 00 through 99 only.

DSX - ARINC 404 SHELL TYPE B

Arinc 404 shell type B are the commercial version. Here are the commercial features compared to the military version:

- They use both size 20HD and size 20 contacts.
- They are non environmental. Inserts are fitted with a rubber separator on the back of their wiring which does not provide sealing but provides wire protection.
- Removable size 5 and 9 coaxial contacts are not interchangeable with those of the military type.
- Insert retention plate is yellow anodized instead of blue anodized on the military version.

DSX - ARINC 404 SHELL TYPE A

DSX - ARINC 404 shell type A connectors are only available in shell size 1. They use ARINC 404 shell type B inserts; only one insert can be installed in the connector shell. Shell type A has no polarization system, mismating is prevented by keystone shaped shells. DSX ARINC 404 shell type A connectors cannot be fitted with any backshell.

Introduction

DSX - F

DSX - F receptacle connectors are available in four shell sizes (1, 2, 3 and 4) and are designed to be fitted with front release front removable contacts offered in pc tail and wire wrap termination. Inserts are offered with or without an interfacial seal (in both cases they are not and are fitted with a separator) and are available in the following contact arrangements: 106, 67, 57, 45, 40, 33C4, 26.

DSX - F connectors are fully intermateable with connectors of the ARINC 404 shell type B and SAE AS81659 versions.

DSX - DATA BUS

These connectors have been designed to ensure the interconnection of multiplexed digital links used in military equipment.

DSX - EMI / RFI

In response to the continuing development of electronic systems used in ever harsher environments, these connectors have been designed to improve the shielding effectiveness against electromagnetic and radio frequency interferences (EMI/RFI) as well as electromagnetic pulses (EMP).

Applications

These connectors are used to form the electrical interface between avionics equipment to rack equipment.



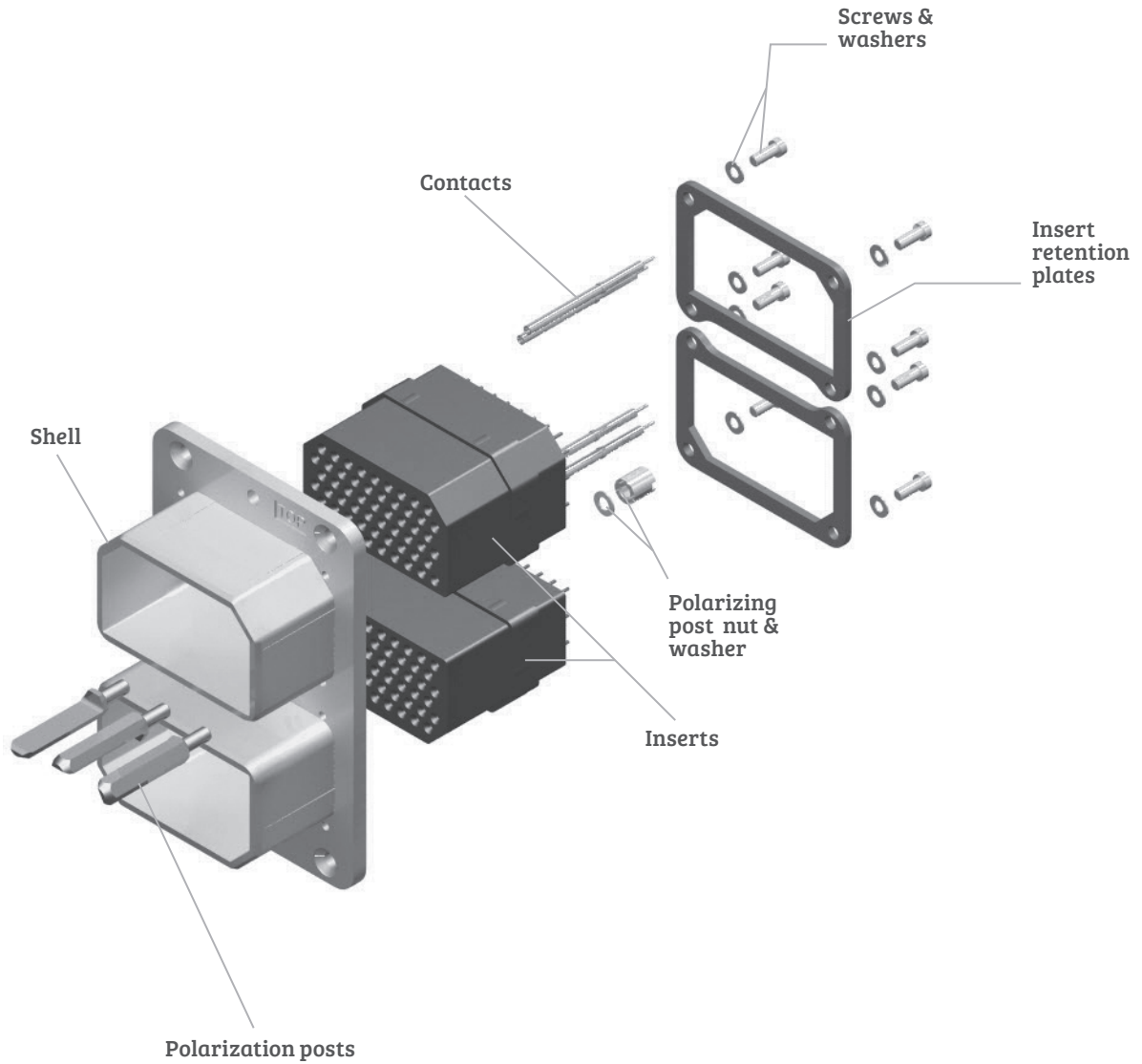
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DSX SERIES

Product Overview

Detailed view of the various parts of this series connector.



Technical Characteristics

ELECTRICAL

Magnetic permeability: <2 μ

Insulation resistance: >5000 MΩ

Dielectric withstanding voltage: see contact arrangement on pages 6-10 to 6-12

Contact resistance: according to requirements of SAE AS39029

Coax contacts electrical characteristics

Nominal impedance: 50 Ω

VSWR

- Sizes 5, 7 and 9: 1.3 from DC to 1500MHz
- Sizes 1 and 3: 1.3 from DC to 5000 MHz

| Contact size | AWG | Cross section mm ² (sq.in) | Min. Outside dia. mm (inch) | Max. outside dia. mm (inch) | Max current (A) |
|--------------|-----|---------------------------------------|-----------------------------|-----------------------------|-----------------|
| 22 | 22 | 0.38 (0.015) | 0.76 (0.030) | 1.4 (0.055) | 5 |
| | 24 | 0.21 (0.008) | | | 3 |
| | 26 | 0.14 (0.006) | | | 2 |
| 20HD | 20 | 0.60 (0.024) | 1 (0.039) | 1.8 (0.071) | 7.5 |
| | 22 | 0.38 (0.015) | | | 5 |
| | 24 | 0.21 (0.008) | | | 3 |
| 16 | 16 | 1.34 (0.053) | 1.70 (0.067) | 2.6 (0.102) | 13 |
| | 18 | 0.93 (0.037) | | | 10 |
| | 20 | 0.60 (0.024) | | | 7.5 |
| 12 | 12 | 3.18 (0.125) | 2.4 (0.094) | 3.4 (0.134) | 23 |
| | 14 | 1.91 (0.075) | | | 17 |
| | 16 | 1.34 (0.052) | | | 13 |
| For cavity 5 | 8 | 9.00 (0.354) | 3.4 (0.134) | 6.48 (0.255) | 46 |
| | 10 | 5.00 (0.197) | | | 33 |
| | 12 | 3.18 (0.125) | | | 23 |
| | 14 | 1.91 (0.075) | | | 17 |

MECHANICAL & ENVIRONMENTAL

Temperature range: -65°C (-85°F) / +125°C (+257°F)

Temperature life: 1000 hours at +125°C (+257°F)

Salt spray: EIA 364-26 (MIL-STD-1344A method 1001.1 test condition B (48 hours))

Altitude moisture injection: Insulation resistance > 100 M Ω altitude 50000 feet

Fluid resistance: resistance to 20 hours immersion in fluids MIL PRF 5606 & MIL PRF 23699

Durability: 500 matings & unmating cycles

Vibration: EIA 364-28 (MIL-STD-1344A method 2005 test condition IV (20g – 10-2000Hz))

Shock: EIA 364-27 (MIL-STD-1344A method 2004 test condition A (50g -11ms – half sine))

Mating force: < 200N (45 lbs) per insert

Insert retention force: > 534N (120 lbs) in each direction

Contact retention force: max axial displacement = 0.3mm (0.012 inches)

| Contact size | 22 | 20HD | 16 | 12 |
|--------------------|----------|----------|-----------|-------------|
| Axial load N (lbs) | 66N (15) | 89N (20) | 111N (25) | 133.5N (30) |

Technical Characteristics

MATERIALS

| Description | Material | Plating |
|---------------------------------|----------------------------|----------------------------------|
| Shell | Aluminium alloy | Cadmium yellow chromate* |
| Insert | Thermosetting resin | / |
| Metallic insert | Aluminium alloy | Cadmium clear chromate* |
| Interfacial seal & grommet | Silicone rubber | / |
| Retention clip | Copper alloy | / |
| Contact | Copper alloy | Gold over nickel under plate |
| Insert retention plate | Aluminium alloy | Blue anodised* |
| Polarizing posts | Stainless steel | / |
| Polarizing keys | Zinc alloy | Cadmium yellow chromate |
| Polarizing keys retention plate | Aluminium alloy | Cadmium yellow chromate* |
| Screws, washers, clinch-nuts | Corrosion resistant steel | / |
| Sealing plugs and filler plugs | PTFE | / |
| Sealing boots and sleeves | Fluorinated silicon rubber | / |
| Sealing bushing | PEI | / |
| Junction shells | Aluminium alloy | Yellow anodized or nickel plated |

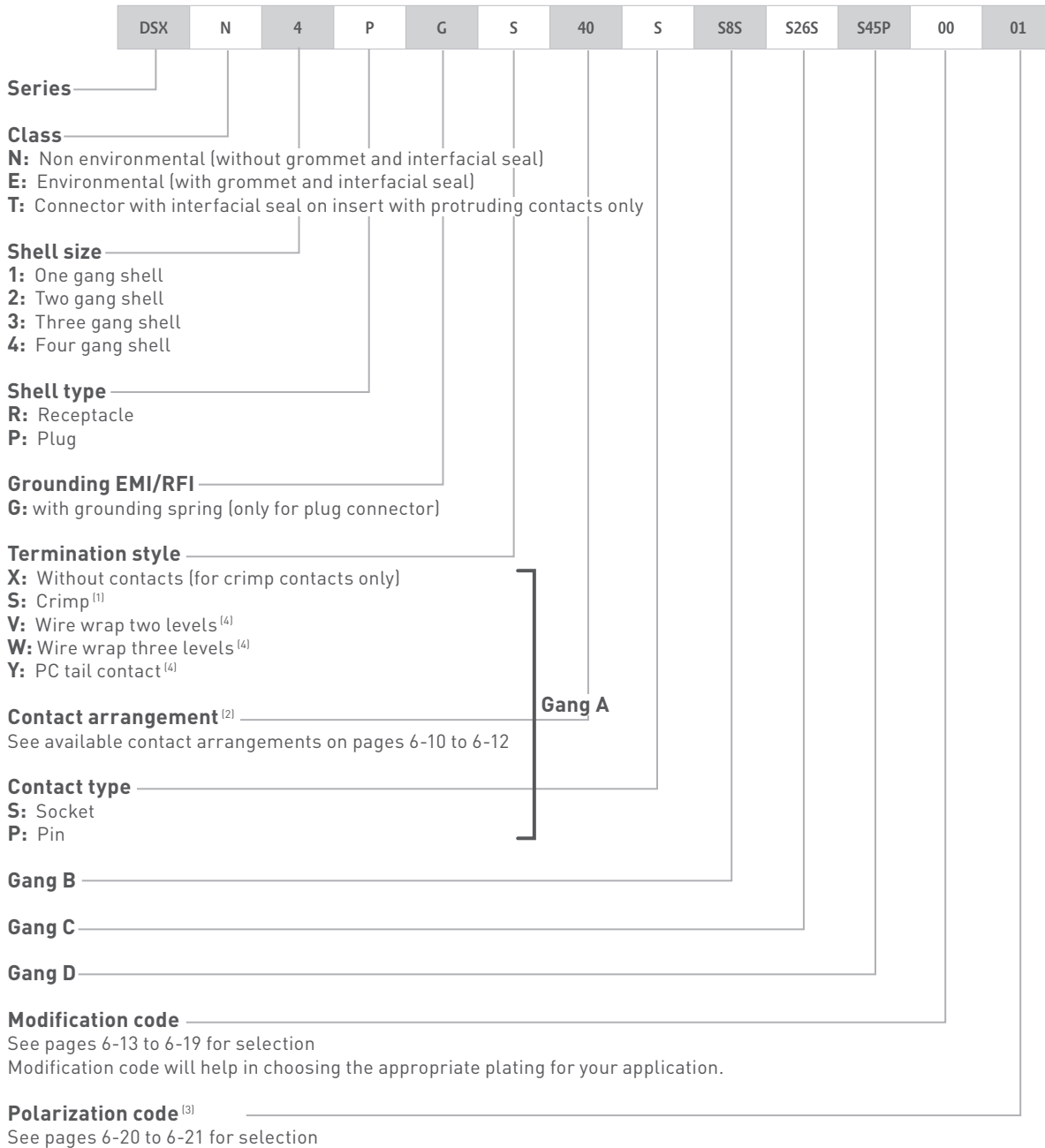
* More platings are available, see descriptions in modification codes

MASSES (estimates)

| Description | Weight g (oz) |
|--------------------|---------------|
| Plug shell size 1 | 30 (1.05) |
| Plug shell size 2 | 45 (1.60) |
| Plug shell size 3 | 60 (2.15) |
| Plug shell size 4 | 85 (3) |
| Receptacle shell 1 | 30 (1.05) |
| Receptacle shell 2 | 50 (1.75) |
| Receptacle shell 3 | 85 (3) |
| Receptacle shell 4 | 115 (4.05) |
| Plastic insert | 20 (0.70) |
| Metallic insert | 35 (1.25) |
| Junction shells | 25 (0.88) |

How to Order Connectors

DSX SERIES



Important note: If you want to get connectors marked with the military part number (i.e. M81659/66A2-0083) you must order by using the military part number. Radiall part numbers qualified to SAE AS81659 versus military part numbers are listed from pages 6-36 to 6-39.

NOTES:

- (1) For reduced crimp barrel, thermocouple or fiber optic contacts, use code X and order contact separately.
- (2) For contact arrangements which include coax or quadrax contacts, use termination code X. Quadrax and coax contacts must be ordered separately.
- (3) Without polarization code the connector is delivered with the polarizing system unassembled. With polarization code 00: the connector is delivered without polarizing system. With polarization code from 01 to 216: the connector is delivered with polarization hardware assembled as defined by code. Polarization codes for connector qualified to SAE AS81659 are ranging from 00 to 99 only.
- (4) PC tail and wire wrap contacts must be used only with non environmental version. PC tail and wire wrap contacts are delivered installed. For 67, 32C4 and 33C4 contact arrangements, size 16 contacts are delivered not installed and in crimp termination.

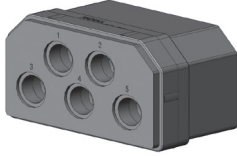
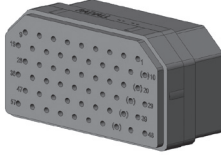
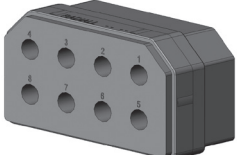
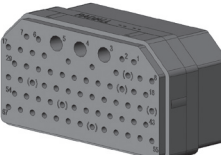
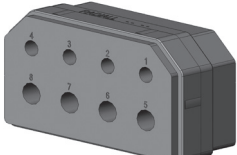
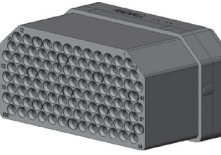
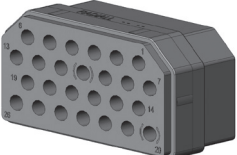

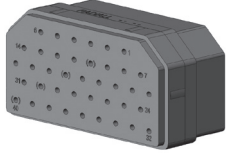
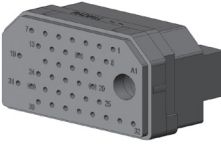
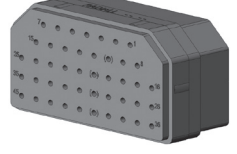
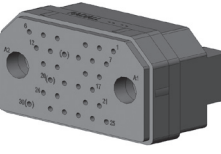
Contact Arrangements

Pin insert mating side shown

Class N for non environmental insert

Class E for environmental insert

Class T for insert with interfacial seal only

| Insert name | Number of contacts | Dielectric Withstanding Voltage (DWV) | Class | | | Insert name | Number of contacts | DWV | Class | | |
|-------------------|--|---|-------|---|---|---------------------|---|--|-------|---|----------|
| | | | N | E | T | | | | N | E | T |
| C5 ⁽¹⁾ |  5 x #5 (power) | 2500V – 60Hz This insert is available in class N only. | ✓ | | | 57 ⁽¹⁾ |  57 x #20HD | 1500v – 60Hz | ✓ | ✓ | ✓ |
| 8 |  8 x #12 | 1500V – 60Hz | ✓ | ✓ | ✓ | 67 |  64 x #20HD 3 x #16 | 1000V – 60Hz | ✓ | ✓ | ✓ |
| D8 |  4 x #16 4 x #12 | 1500V – 60Hz | ✓ | ✓ | ✓ | 106 |  106 x #22 | 1000V – 60Hz | ✓ | ✓ | ✓ (2) |
| 26 |  26 x #16 | 1500V – 60Hz | ✓ | ✓ | ✓ | 40C1 |  1 x #5 (coax) 39 x #20HD | 1500V – 60Hz | ✓ | ✓ | |
| 40 |  40 x #20HD | 1500V – 60Hz | ✓ | ✓ | ✓ | 40T1 ⁽¹⁾ |  1 x #5 (coax) 39 x #20HD | 1500V – 60Hz Size 5 contact cavity grounded to the shell | ✓ | ✓ | |
| 45 |  45 x #20HD | 1500V – 60Hz | ✓ | ✓ | ✓ | 32C2 |  2 x #5 (coax) 30 x #20HD | 1000V – 60Hz | ✓ | ✓ | |

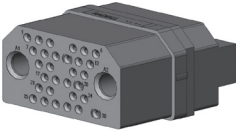
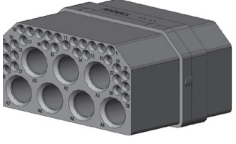
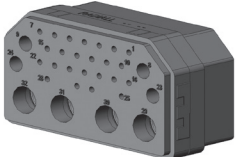
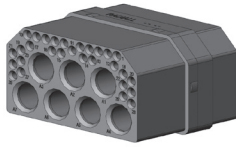
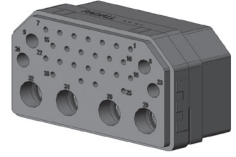
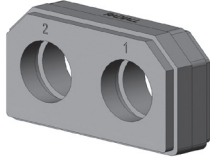
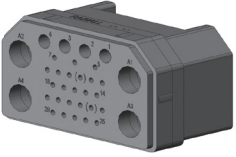
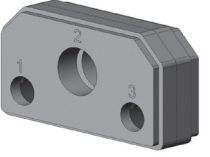
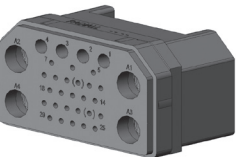
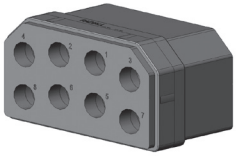
NOTES:

(1) Contact arrangements are not referenced in the MS3157 and SAE AS81659 standards

(2) class T insert are for pin contacts only except insert arrangement 106; 36C7 and 36T7 which are for socket contacts only

Contact Arrangements

Pin insert mating side shown

| Insert name | Number of contacts | DWV | Class | | | Insert name | Number of contacts | DWV | Class | | |
|---------------------|---|--|-------|---|---|---------------------|--|--|-------|---|----------|
| | | | N | E | T | | | | N | E | T |
| 32T2 ⁽¹⁾ |  2 x #5 (coax) 30 x #20HD | 1000V – 60Hz Size 5 contact cavities grounded to the shell | ✓ | ✓ | | 36C7 ⁽¹⁾ |  7 x #5 (coax) 29 x #22 | 1000V – 60Hz | ✓ | ✓ | ✓ (2) |
| 32C4 |  4 x #9 (coax) 4 x #16 24 x #20HD | 1500V – 60Hz | ✓ | ✓ | ✓ | 36T7 ⁽¹⁾ |  7 x #5 (coax) 29 x #22 | 1000V – 60Hz Size 5 contact cavities grounded to the shell | ✓ | ✓ | ✓ (2) |
| 32T4 ⁽¹⁾ |  4 x #9 (coax) 4 x #16 24 x #20HD | 1500V – 60Hz Size 9 contact cavities grounded to the shell | ✓ | ✓ | | MC2 |  2 x #1 (coax) | This insert is metallic | ✓ | | |
| 33C4 |  4 x #5 (coax) 4 x #1625 x #20HD | 1000V – 60Hz | ✓ | ✓ | ✓ | MC3 |  2 x #7 (coax) 1 x #3 (coax) | This insert is metallic | ✓ | | |
| 33T4 ⁽¹⁾ |  4 x #5 (coax) 4 x #16 25 x #20HD | 1000V – 60Hz Size 5 contact cavities grounded to the shell | ✓ | ✓ | ✓ | C8 |  8 x #9 (coax) | 1000V – 60Hz | ✓ | ✓ | ✓ |

NOTE:

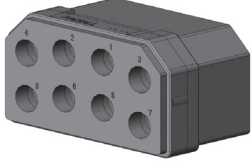
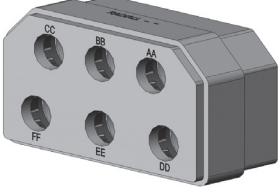
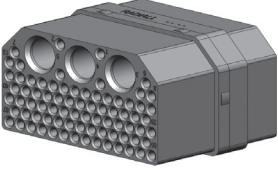
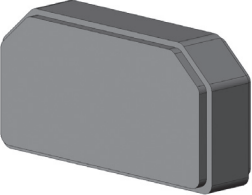
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DSX SERIES

Contact Arrangements

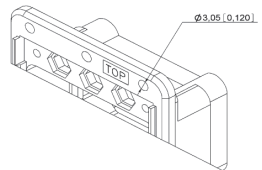
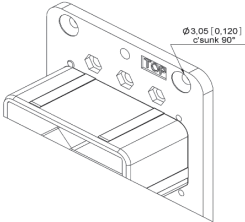
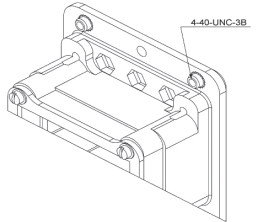
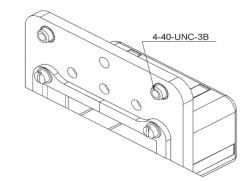
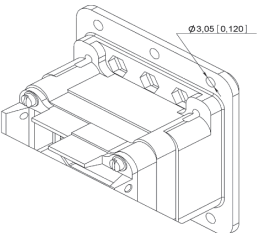
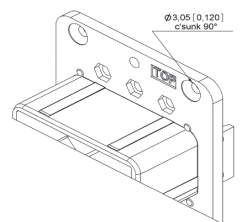
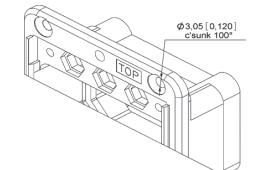
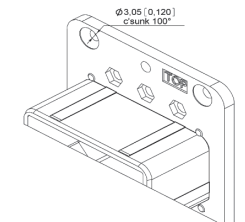
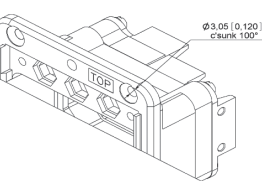
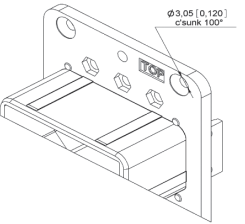
Pin insert mating side shown

| Insert name | Number of contacts | DWV | Class | | |
|-------------|--|---|---------------------------|---|---|
| | | | N | E | T |
| T8* |  8 x #9 (coax) | Size 9 contact cavities grounded to the shell. Pin contact available only | ✓ | ✓ | ✓ |
| 6CU |  6 x #8 Quadrax | Size 8 contact cavities grounded to the shell. Non environmental only | ✓ | ✓ | |
| 81C3 |  78 x # 22 3 x #5 (coax) | 1000V - 60Hz | ✓ for pin contact only | | |
| 00* |  | Dummy insert | | | |

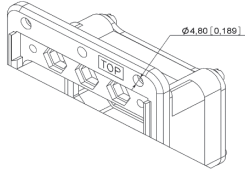
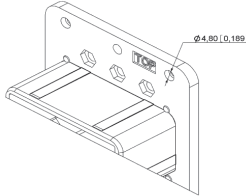
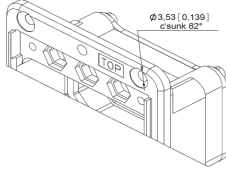
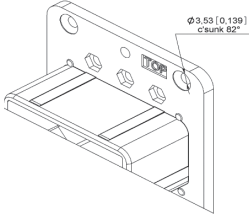
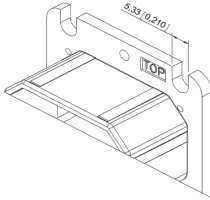
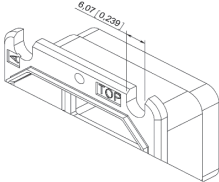
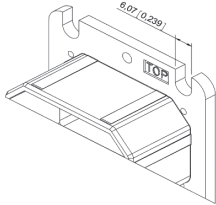
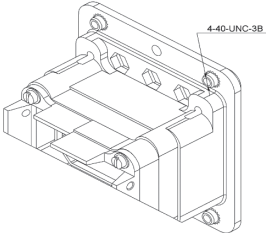
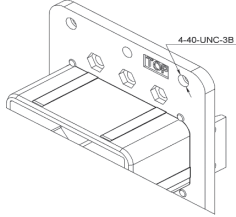
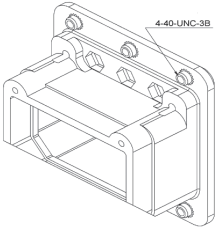
Modification Code

Connectors can be front or rear mount. It should be noted that:

- There is only 4mm between the connector flange when fully mated. Please note that the modification code and screw type should be selected accordingly.
- The modification code with floating eyelets can be mated with the fixed modification.

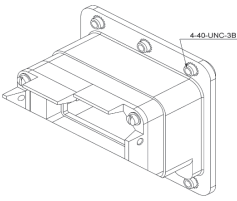
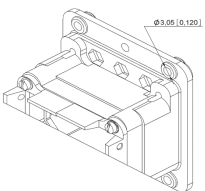
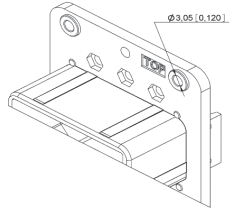
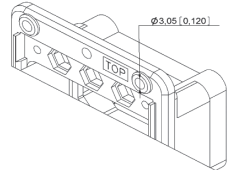
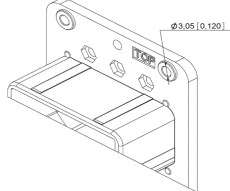
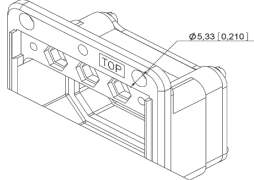
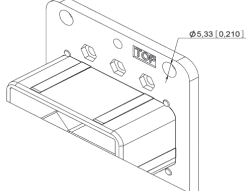
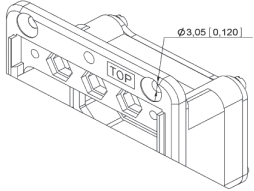
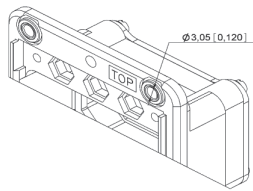
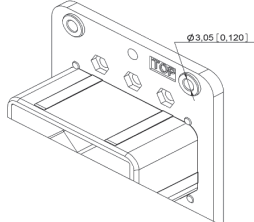
| CODE | Receptacle shell | Plug shell |
|------|--|---|
| 00 |  <p>Sizes 1,2 & 3: 6 holes Ø3,05 (0.120) Size 4: 10 holes Ø3,05 (0.120)</p> |  <p>Sizes 1 & 2: 4 holes Ø3,05 (0.120) c'sunk 90° Size 3: 6 holes Ø3,05 (0.120) c'sunk 90° Size 4: 10 holes Ø3,05 (0.120) c'sunk 90°</p> |
| 01 |  <p>Sizes 1 & 2: 4 clinch nuts 4.40 UNC 3B Size 3: 6 clinch nuts 4.40 UNC 3B Size 4: 10 clinch nuts 4.40 UNC 3B</p> |  <p>Sizes 1 & 2: 4 clinch nuts 4.40 UNC 3B Size 3: 6 clinch nuts 4.40 UNC 3B Size 4: 10 clinch nuts 4.40 UNC 3B</p> |
| 02 |  <p>Sizes 1, 2 & 3: 6 holes Ø3,05 (0.120) with attaching tabs for RADIALL backshell Not Available in Size 4</p> |  <p>Sizes 1 & 2: 4 holes Ø3,05 (0.120) c'sunk 90° with attaching tabs for RADIALL backshell Size 3: 6 holes Ø3,05 (0.120) c'sunk 90° with attaching tabs for RADIALL backshell Not Available in Size 4</p> |
| 03 |  <p>Sizes 1 & 2: 4 holes Ø3,05(0.120) c'sunk 100° Size 3: 6 holes Ø3,05(0.120) c'sunk 100° Size 4: 10 holes Ø3,05(0.120) c'sunk 100°</p> |  <p>Sizes 1 & 2: 4 holes Ø3,05(0.120) c'sunk 100° Size 3: 6 holes Ø3,05(0.120) c'sunk 100° Size 4: 10 holes Ø3,05(0.120) c'sunk 100°</p> |
| 04 |  <p>Sizes 1 & 2: 4 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell Size 3: 6 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell Not Available in Size 4</p> |  <p>Sizes 1 & 2: 4 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell Size 3: 6 holes Ø3,05(0.120) c'sunk 100° with attaching tabs for RADIALL backshell Not Available in Size 4</p> |

Modification Code

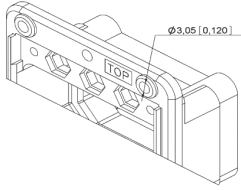
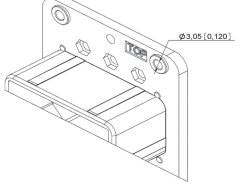
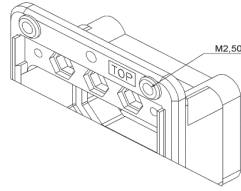
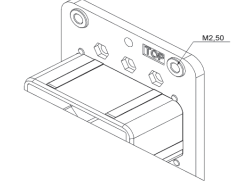
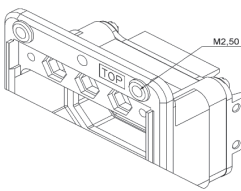
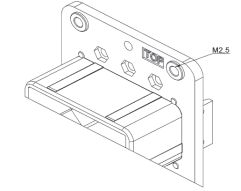
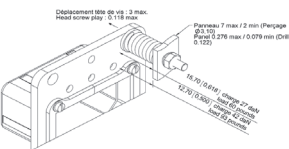
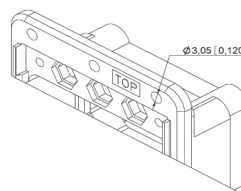
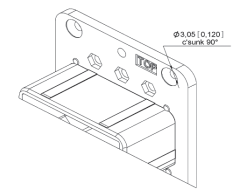
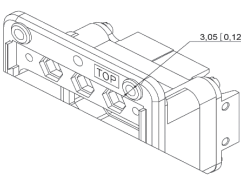
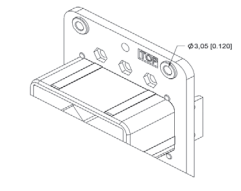
| Code | Receptacle shell | Plug shell |
|------|--|---|
| 05 |  <p> Sizes 1, 2 & 3: 4 holes Ø4,80 (0.189) Size 4: 10 holes Ø4,80 (0.189) </p> |  <p> Sizes 1, 2 & 3: 4 holes Ø4,80 (0.189) Size 4: 10 holes Ø 4,80 (0.189) </p> |
| 08 |  <p> Sizes 1 & 2: 4 holes Ø3,53 (0.139) c'sunk 82° Size 3: 6 holes Ø3,53 (0.139) c'sunk 82° </p> |  <p> Sizes 1 & 2: 4 holes Ø3,53 (0.139) c'sunk 82° Size 3: 6 holes Ø3,53 (0.139) c'sunk 82° </p> |
| 12 | -- |  <p> Sizes 1, 2 & 3: 4 mounting slots 5,33 (0.210) wide </p> |
| 13 |  <p> Sizes 1, 2 & 3: 4 mounting slots 6,07 (0.239) wide </p> |  <p> Sizes 1, 2 & 3: 4 mounting slots 6,07 (0.239) wide </p> |
| 17 |  <p> Sizes 1 & 2: 4 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell Size 3: 6 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell Not Available in Size 4 </p> |  <p> Sizes 1 & 2: 4 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell Size 3: 6 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell Not available in size 4 </p> |
| 18 |  <p> Sizes 1, 2 & 3: 6 clinch nuts 4.40 UNC 3B Not Available in Size 4 </p> | -- |

Modification Code

DSX SERIES

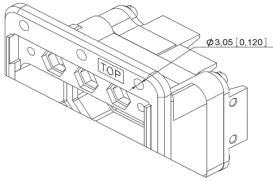
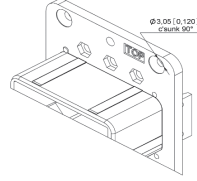
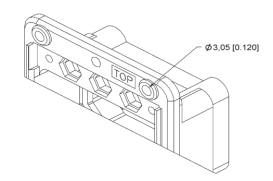
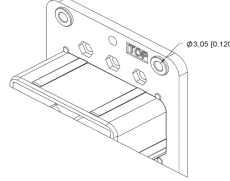
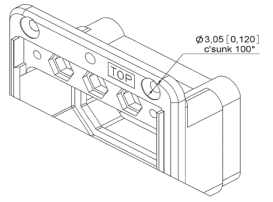
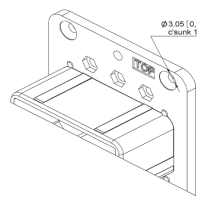
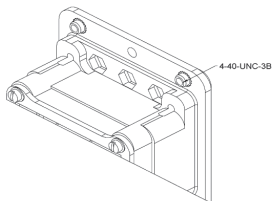
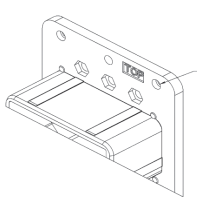
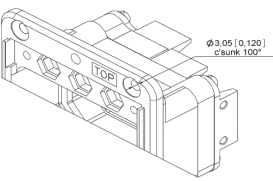
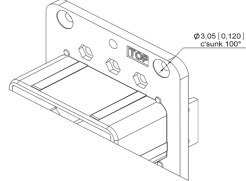
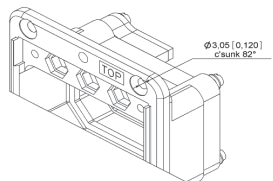
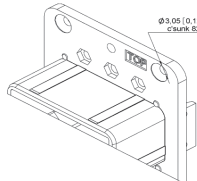
| Code | Receptacle shell | Plug shell |
|------|---|---|
| 19 |  <p>Sizes 1, 2 & 3: 6 clinch nuts 4.40 UNC 3B with attaching tabs for RADIALL backshell</p> <p>Not Available in Size 4</p> | -- |
| 22 |  <p>Sizes 1 & 2: 4 floating eyelets Ø3,05 (0.120) with attaching tabs for RADIALL backshell</p> <p>Size 3: 6 floating eyelets Ø3,05 (0.120) with attaching tabs for RADIALL backshell</p> <p>Not Available in Size 4</p> |  <p>Sizes 1 & 2: 4 floating eyelets Ø3,05 (0.120) with attaching tabs for RADIALL backshell</p> <p>Size 3: 6 floating eyelets Ø3,05 (0.120) with attaching tabs for RADIALL backshell</p> <p>Not Available in Size 4</p> |
| 23 |  <p>Sizes 1 & 2: 4 floating eyelets Ø3,05 (0.120)</p> <p>Size 3: 6 floating eyelets Ø3,05 (0.120)</p> <p>Size 4: 10 floating eyelets Ø3,05 (0.120)</p> |  <p>Sizes 1 & 2: 4 floating eyelets Ø3,05 (0.120)</p> <p>Size 3: 6 floating eyelets Ø3,05 (0.120)</p> <p>Size 4: 10 floating eyelets Ø3,05 (0.120)</p> |
| 24 |  <p>Sizes 1, 2 & 3: 6 holes Ø5,33 (0.210)</p> |  <p>Sizes 1, 2 & 3: 6 holes Ø5,33 (0.210)</p> |
| 26 |  <p>Sizes 1 & 2: 4 holes Ø3,05(0.120) c'sunk 90°</p> <p>Size 3: 6 holes Ø3,05(0.120) c'sunk 90°</p> <p>Size 4: 10 holes Ø 3,05(0.120) c'sunk 90°</p> | -- |
| 33 |  <p>Sizes 1 & 2: 4 flush front embedded floating eyelets Ø3,05 (0.120)</p> <p>Size 3: 6 flush front embedded floating eyelets Ø3,05 (0.120)</p> <p>Size 4: 10 flush front embedded floating eyelets Ø3,05 (0.120)</p> |  <p>Sizes 1 & 2: 4 flush rear embedded floating eyelets Ø3,05 (0.120)</p> <p>Size 3: 6 flush rear embedded floating eyelets Ø3,05 (0.120)</p> <p>Size 4: 10 flush rear embedded floating eyelets Ø3,05 (0.120)</p> |

Modification Code

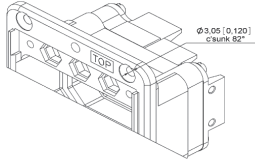
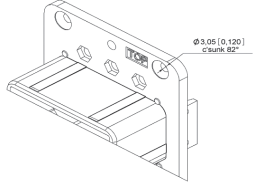
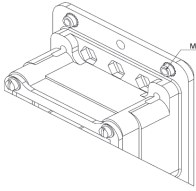
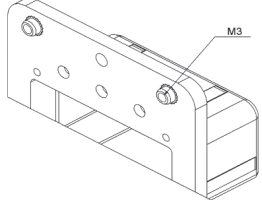
| Code | Receptacle shell | Plug shell |
|------|---|---|
| 34 |  <p>$\phi 3,05$ [0.120]</p> <p>Sizes 1 & 2: 4 flush rear embedded floating eyelets $\phi 3,05$ [0.120] Size 3: 6 flush rear embedded floating eyelets $\phi 3,05$ [0.120] Size 4: 10 flush rear embedded floating eyelets $\phi 3,05$ [0.120]</p> |  <p>$\phi 3,05$ [0.120]</p> <p>Sizes 1 & 2: 4 flush front embedded floating eyelets $\phi 3,05$ [0.120] Size 3: 6 flush front embedded floating eyelets $\phi 3,05$ [0.120] Size 4: 10 flush front embedded floating eyelets $\phi 3,05$ [0.120]</p> |
| 35 |  <p>M2,50</p> <p>Sizes 1 & 2: 4 flush front embedded floating eyelets M2.5 threaded Size 3: 6 flush rear embedded floating eyelets M2.5 threaded</p> |  <p>M2,50</p> <p>Sizes 1 & 2: 4 flush rear embedded floating eyelets M2.5 threaded Size 3: 6 flush rear embedded floating eyelets M2.5 threaded</p> |
| 36 |  <p>M2,50</p> <p>Sizes 1 & 2: 4 flush front embedded floating eyelets M2.5 threaded with attaching tabs for RADIALL backshell Size 3: 6 flush front embedded floating eyelets M2.5 threaded with attaching tabs for RADIALL backshell Not Available in size 4</p> |  <p>M2,5</p> <p>Sizes 1 & 2: 4 flush front embedded floating eyelets M2.5 threaded with attaching tabs for RADIALL backshell Size 3: 6 flush front embedded floating eyelets M2.5 threaded with attaching tabs for RADIALL backshell Not Available in size 4</p> |
| 55 | -- |  <p>Displacement into $\phi 3,05$ 12 max. Hole bottom flat 0,18 max</p> <p>Flange 1 max 2 mm (Flange) $\phi 3,35$ 278 max (0,009 mm DIA) 12,07 (0,475) max (0,009 mm DIA) 14,70 (0,579) max (0,009 mm DIA) 12,07 (0,475) max (0,009 mm DIA) 14,70 (0,579) max (0,009 mm DIA)</p> |
| 60 |  <p>$\phi 3,05$ [0.120]</p> <p>Similar to modification code 00 except that the shell, keys and keys retention plate are nickel plated.</p> |  <p>$\phi 3,05$ [0.120] Chamf. 90°</p> <p>Similar to modification code 00 except that the shell, keys and keys retention plate are nickel plated.</p> |
| 61 |  <p>3,05 [0.120]</p> <p>Similar to modification code 22 except that the shell, keys and keys retention plate are nickel plated. Not available in size 4</p> |  <p>$\phi 3,05$ [0.120]</p> <p>Similar to modification code 22 except that the shell, keys and keys retention plate are nickel plated. Not available in size 4</p> |

Modification Code

DSX SERIES

| Code | Receptacle shell | Plug shell |
|------|--|--|
| 62 |  <p>Similar to modification code 02 except that the shell, keys and keys retention plate are nickel plated.</p> <p>Not available in size 4</p> |  <p>Similar to modification code 02 except that the shell, keys and keys retention plate are nickel plated.</p> <p>Not available in size 4</p> |
| 63 |  <p>Similar to modification code 23 except that the shell, keys and keys retention plate are nickel plated.</p> |  <p>Similar to modification code 23 except that the shell, keys and keys retention plate are nickel plated.</p> |
| 64 |  <p>Similar to modification code 03 except that the shell, keys and keys retention plate are nickel plated.</p> |  <p>Similar to modification code 03 except that the shell, keys and keys retention plate are nickel plated.</p> |
| 66 |  <p>Similar to modification code 01 except that the shell, keys and keys retention plate are nickel plated.</p> |  <p>Similar to modification code 01 except that the shell, keys and keys retention plate are nickel plated.</p> |
| 67 |  <p>Sizes 1 & 2: 4 holes Ø3,05 (0.120) c'sunk 100° with attaching tabs for RADIALL backshell</p> <p>Size 3: 6 holes Ø3,05 (0.120) c'sunk 100° with attaching tabs for RADIALL backshell</p> <p>Shells are nickel plated.</p> <p>Not Available in size 4</p> |  <p>Sizes 1 & 2: 4 holes Ø3,05 (0.120) c'sunk 100° with attaching tabs for RADIALL backshell</p> <p>Size 3: 6 holes Ø3,05 (0.120) c'sunk 100° with attaching tabs for RADIALL backshell.</p> <p>Shells are nickel plated</p> <p>Not Available for Size 4</p> |
| 73 |  <p>Sizes 1 & 2: 4 holes Ø3,05 (0.120) c'sunk 82°</p> <p>Size 3: 6 holes Ø3,05 (0.120) c'sunk 82°</p> <p>Size 4: 10 holes Ø3,05 (0.120) c'sunk 82°</p> |  <p>Sizes 1 & 2: 4 holes Ø3,05 (0.120) c'sunk 82°</p> <p>Size 3: 6 holes Ø3,05 (0.120) c'sunk 82°</p> <p>Size 4: 10 holes Ø3,05 (0.120) c'sunk 82°</p> |

Modification Code

| Code | Receptacle shell | Plug shell |
|------|---|--|
| 77 |  <p>Ø3,05 [0,120] c'sunk 82°</p> |  <p>Ø3,05 [0,120] c'sunk 82°</p> |
| | <p>Sizes 1 & 2: 4 holes Ø3,05 (0.120) c'sunk 82° with attaching tabs for RADIALL backshell</p> <p>Size 3: 6 holes Ø3,05 (0.120) c'sunk 82° with attaching tabs for RADIALL backshell Not Available for Size 4</p> | <p>Sizes 1 & 2: 4 holes Ø3,05 (0.120) c'sunk 82° with attaching tabs for RADIALL backshell</p> <p>Size 3: 6 holes Ø3,05 (0.120) c'sunk 82° with attaching tabs for RADIALL backshell Not Available for Size 4</p> |
| 79 |  <p>M3</p> |  <p>M3</p> |
| | <p>Sizes 1 & 2: 4 M3 clinch nuts</p> <p>Size 3: 6 M3 clinch nuts</p> <p>Size 4: 10 M3 clinch nuts</p> | <p>Sizes 1 & 2: 4 M3 clinch nuts</p> <p>Size 3: 6 M3 clinch nuts</p> <p>Size 4: 10 M3 clinch nuts</p> |

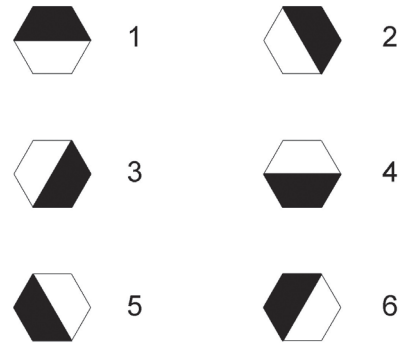
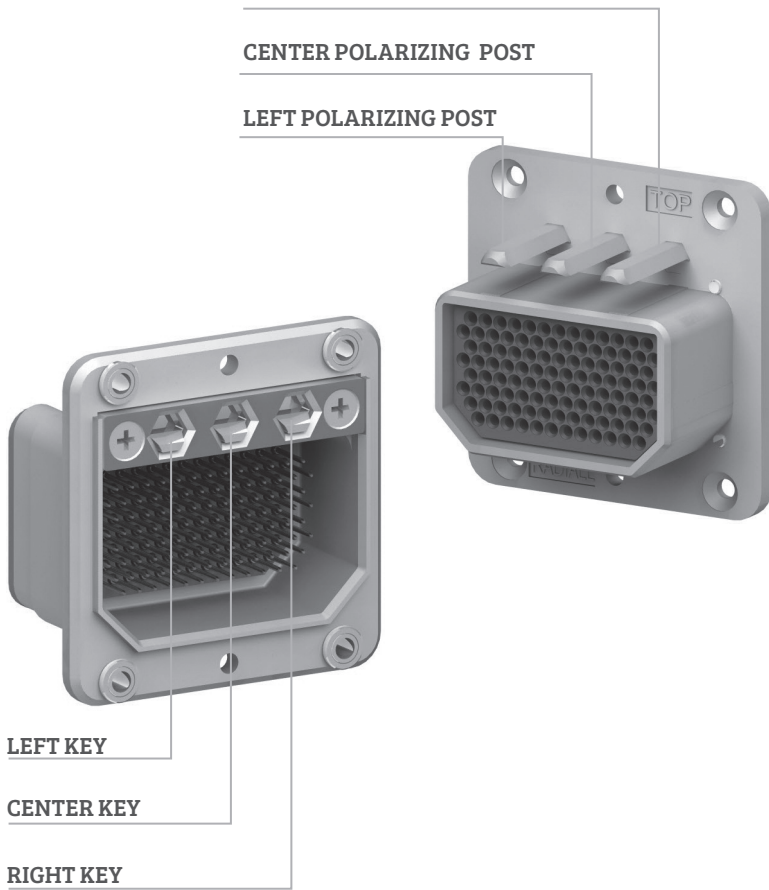
Modification Code

RIGHT POLARIZING POST

CENTER POLARIZING POST

LEFT POLARIZING POST

Position of polarization keys and posts. Connectors are shown front side, with "TOP" upwards.



Position coding

Dark area represents the polarizing post. Clear position represents the key hole.

POLARIZATION CODE TABLE

| Polarization code | Receptacle shell | | | Plug shell | | |
|-------------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 00 | / | / | / | / | / | / |
| 01 | 4 | 4 | 4 | 1 | 1 | 1 |
| 02 | 4 | 4 | 3 | 2 | 1 | 1 |
| 03 | 4 | 4 | 2 | 3 | 1 | 1 |
| 04 | 4 | 4 | 1 | 4 | 1 | 1 |
| 05 | 4 | 4 | 6 | 5 | 1 | 1 |
| 06 | 4 | 4 | 5 | 6 | 1 | 1 |
| 07 | 5 | 4 | 4 | 1 | 1 | 6 |
| 08 | 5 | 4 | 3 | 2 | 1 | 6 |
| 09 | 5 | 4 | 2 | 3 | 1 | 6 |
| 10 | 5 | 4 | 1 | 4 | 1 | 6 |
| 11 | 5 | 4 | 6 | 5 | 1 | 6 |
| 12 | 5 | 4 | 5 | 6 | 1 | 6 |
| 13 | 6 | 4 | 4 | 1 | 1 | 5 |
| 14 | 6 | 4 | 3 | 2 | 1 | 5 |
| 15 | 6 | 4 | 2 | 3 | 1 | 5 |
| 16 | 6 | 4 | 1 | 4 | 1 | 5 |
| 17 | 6 | 4 | 6 | 5 | 1 | 5 |
| 18 | 6 | 4 | 5 | 6 | 1 | 5 |
| 19 | 1 | 4 | 4 | 1 | 1 | 4 |
| 20 | 1 | 4 | 3 | 2 | 1 | 4 |
| 21 | 1 | 4 | 2 | 3 | 1 | 4 |
| 22 | 1 | 4 | 1 | 4 | 1 | 4 |
| 23 | 1 | 4 | 6 | 5 | 1 | 4 |
| 24 | 1 | 4 | 5 | 6 | 1 | 4 |
| 25 | 2 | 4 | 4 | 1 | 1 | 3 |
| 26 | 2 | 4 | 3 | 2 | 1 | 3 |
| 27 | 2 | 4 | 2 | 3 | 1 | 3 |
| 28 | 2 | 4 | 1 | 4 | 1 | 3 |

| Polarization code | Receptacle shell | | | Plug shell | | |
|-------------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 29 | 2 | 4 | 6 | 5 | 1 | 3 |
| 30 | 2 | 4 | 5 | 6 | 1 | 3 |
| 31 | 3 | 4 | 4 | 1 | 1 | 2 |
| 32 | 3 | 4 | 3 | 2 | 1 | 2 |
| 33 | 3 | 4 | 2 | 3 | 1 | 2 |
| 34 | 3 | 4 | 1 | 4 | 1 | 2 |
| 35 | 3 | 4 | 6 | 5 | 1 | 2 |
| 36 | 3 | 4 | 5 | 6 | 1 | 2 |
| 37 | 4 | 3 | 4 | 1 | 2 | 1 |
| 38 | 4 | 3 | 3 | 2 | 2 | 1 |
| 39 | 4 | 3 | 2 | 3 | 2 | 1 |
| 40 | 4 | 3 | 1 | 4 | 2 | 1 |
| 41 | 4 | 3 | 6 | 5 | 2 | 1 |
| 42 | 4 | 3 | 5 | 6 | 2 | 1 |
| 43 | 5 | 3 | 4 | 1 | 2 | 6 |
| 44 | 5 | 3 | 3 | 2 | 2 | 6 |
| 45 | 5 | 3 | 2 | 3 | 2 | 6 |
| 46 | 5 | 3 | 1 | 4 | 2 | 6 |
| 47 | 5 | 3 | 6 | 5 | 2 | 6 |
| 48 | 5 | 3 | 5 | 6 | 2 | 6 |
| 49 | 6 | 3 | 4 | 1 | 2 | 5 |
| 50 | 6 | 3 | 3 | 2 | 2 | 5 |
| 51 | 6 | 3 | 2 | 3 | 2 | 5 |
| 52 | 6 | 3 | 1 | 4 | 2 | 5 |
| 53 | 6 | 3 | 6 | 5 | 2 | 5 |
| 54 | 6 | 3 | 5 | 6 | 2 | 5 |
| 55 | 1 | 3 | 4 | 1 | 2 | 4 |
| 56 | 1 | 3 | 3 | 2 | 2 | 4 |
| 57 | 1 | 3 | 2 | 3 | 2 | 4 |

DSX SERIES

Modification Code

| Polarization code | Receptacle shell | | | Plug shell | | |
|-------------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 58 | 1 | 3 | 1 | 4 | 2 | 4 |
| 59 | 1 | 3 | 6 | 5 | 2 | 4 |
| 60 | 1 | 3 | 5 | 6 | 2 | 4 |
| 61 | 2 | 3 | 4 | 1 | 2 | 3 |
| 62 | 2 | 3 | 3 | 2 | 2 | 3 |
| 63 | 2 | 3 | 2 | 3 | 2 | 3 |
| 64 | 2 | 3 | 1 | 4 | 2 | 3 |
| 65 | 2 | 3 | 6 | 5 | 2 | 3 |
| 66 | 2 | 3 | 5 | 6 | 2 | 3 |
| 67 | 3 | 3 | 4 | 1 | 2 | 2 |
| 68 | 3 | 3 | 3 | 2 | 2 | 2 |
| 69 | 3 | 3 | 2 | 3 | 2 | 2 |
| 70 | 3 | 3 | 1 | 4 | 2 | 2 |
| 71 | 3 | 3 | 6 | 5 | 2 | 2 |
| 72 | 3 | 3 | 5 | 6 | 2 | 2 |
| 73 | 4 | 2 | 4 | 1 | 3 | 1 |
| 74 | 4 | 2 | 3 | 2 | 3 | 1 |
| 75 | 4 | 2 | 2 | 3 | 3 | 1 |
| 76 | 4 | 2 | 1 | 4 | 3 | 1 |
| 77 | 4 | 2 | 6 | 5 | 3 | 1 |
| 78 | 4 | 2 | 5 | 6 | 3 | 1 |
| 79 | 5 | 2 | 4 | 1 | 3 | 6 |
| 80 | 5 | 2 | 3 | 2 | 3 | 6 |
| 81 | 5 | 2 | 2 | 3 | 3 | 6 |
| 82 | 5 | 2 | 1 | 4 | 3 | 6 |
| 83 | 5 | 2 | 6 | 5 | 3 | 6 |
| 84 | 5 | 2 | 5 | 6 | 3 | 6 |
| 85 | 6 | 2 | 4 | 1 | 3 | 5 |
| 86 | 6 | 2 | 3 | 2 | 3 | 5 |
| 87 | 6 | 2 | 2 | 3 | 3 | 5 |
| 88 | 6 | 2 | 1 | 4 | 3 | 5 |
| 89 | 6 | 2 | 6 | 5 | 3 | 5 |
| 90 | 6 | 2 | 5 | 6 | 3 | 5 |
| 91 | 1 | 2 | 4 | 1 | 3 | 4 |
| 92 | 1 | 2 | 3 | 2 | 3 | 4 |
| 93 | 1 | 2 | 2 | 3 | 3 | 4 |
| 94 | 1 | 2 | 1 | 4 | 3 | 4 |
| 95 | 1 | 2 | 6 | 5 | 3 | 4 |
| 96 | 1 | 2 | 5 | 6 | 3 | 4 |
| 97 | 2 | 2 | 4 | 1 | 3 | 3 |
| 98 | 2 | 2 | 3 | 2 | 3 | 3 |
| 99 | 2 | 2 | 2 | 3 | 3 | 3 |
| 100 | 2 | 2 | 1 | 4 | 3 | 3 |
| 101 | 2 | 2 | 6 | 5 | 3 | 3 |
| 102 | 2 | 2 | 5 | 6 | 3 | 3 |
| 103 | 3 | 2 | 4 | 1 | 3 | 2 |
| 104 | 3 | 2 | 3 | 2 | 3 | 2 |
| 105 | 3 | 2 | 2 | 3 | 3 | 2 |
| 106 | 3 | 2 | 1 | 4 | 3 | 2 |
| 107 | 3 | 2 | 6 | 5 | 3 | 2 |
| 108 | 3 | 2 | 5 | 6 | 3 | 2 |
| 109 | 4 | 1 | 4 | 1 | 4 | 1 |
| 110 | 4 | 1 | 3 | 2 | 4 | 1 |
| 111 | 4 | 1 | 2 | 3 | 4 | 1 |
| 112 | 4 | 1 | 1 | 4 | 4 | 1 |
| 113 | 4 | 1 | 6 | 5 | 4 | 1 |
| 114 | 4 | 1 | 5 | 6 | 4 | 1 |
| 115 | 5 | 1 | 4 | 1 | 4 | 6 |
| 116 | 5 | 1 | 3 | 2 | 4 | 6 |
| 117 | 5 | 1 | 2 | 3 | 4 | 6 |
| 118 | 5 | 1 | 1 | 4 | 4 | 6 |
| 119 | 5 | 1 | 6 | 5 | 4 | 6 |
| 120 | 5 | 1 | 5 | 6 | 4 | 6 |
| 121 | 6 | 1 | 4 | 1 | 4 | 5 |
| 122 | 6 | 1 | 3 | 2 | 4 | 5 |
| 123 | 6 | 1 | 2 | 3 | 4 | 5 |
| 124 | 6 | 1 | 1 | 4 | 4 | 5 |
| 125 | 6 | 1 | 6 | 5 | 4 | 5 |
| 126 | 6 | 1 | 5 | 6 | 4 | 5 |
| 127 | 1 | 1 | 4 | 1 | 4 | 4 |
| 128 | 1 | 1 | 3 | 2 | 4 | 4 |
| 129 | 1 | 1 | 2 | 3 | 4 | 4 |
| 130 | 1 | 1 | 1 | 4 | 4 | 4 |
| 131 | 1 | 1 | 6 | 5 | 4 | 4 |
| 132 | 1 | 1 | 5 | 6 | 4 | 4 |
| 133 | 2 | 1 | 4 | 1 | 4 | 3 |
| 134 | 2 | 1 | 3 | 2 | 4 | 3 |
| 135 | 2 | 1 | 2 | 3 | 4 | 3 |
| 136 | 2 | 1 | 1 | 4 | 4 | 3 |
| 137 | 2 | 1 | 6 | 5 | 4 | 3 |

| Polarization code | Receptacle shell | | | Plug shell | | |
|-------------------|------------------|------------|-----------|------------|-------------|------------|
| | Left key | Center key | Right key | Left post | Center post | Right post |
| 138 | 2 | 1 | 5 | 6 | 4 | 3 |
| 139 | 3 | 1 | 4 | 1 | 4 | 2 |
| 140 | 3 | 1 | 3 | 2 | 4 | 2 |
| 141 | 3 | 1 | 2 | 3 | 4 | 2 |
| 142 | 3 | 1 | 1 | 4 | 4 | 2 |
| 143 | 3 | 1 | 6 | 5 | 4 | 2 |
| 144 | 3 | 1 | 5 | 5 | 4 | 2 |
| 145 | 4 | 6 | 4 | 1 | 5 | 1 |
| 146 | 4 | 6 | 3 | 2 | 5 | 1 |
| 147 | 4 | 6 | 2 | 3 | 5 | 1 |
| 148 | 4 | 6 | 1 | 4 | 5 | 1 |
| 149 | 4 | 6 | 6 | 5 | 5 | 1 |
| 150 | 4 | 6 | 5 | 6 | 5 | 1 |
| 151 | 5 | 6 | 4 | 1 | 5 | 6 |
| 152 | 5 | 6 | 3 | 2 | 5 | 6 |
| 153 | 5 | 6 | 2 | 3 | 5 | 6 |
| 154 | 5 | 6 | 1 | 4 | 5 | 6 |
| 155 | 5 | 6 | 6 | 5 | 5 | 6 |
| 156 | 5 | 6 | 5 | 6 | 5 | 6 |
| 157 | 6 | 6 | 4 | 1 | 5 | 5 |
| 158 | 6 | 6 | 3 | 2 | 5 | 5 |
| 159 | 6 | 6 | 2 | 3 | 5 | 5 |
| 160 | 6 | 6 | 1 | 4 | 5 | 5 |
| 161 | 6 | 6 | 6 | 5 | 5 | 5 |
| 162 | 6 | 6 | 5 | 6 | 5 | 5 |
| 163 | 1 | 6 | 4 | 1 | 5 | 4 |
| 164 | 1 | 6 | 3 | 2 | 5 | 4 |
| 165 | 1 | 6 | 2 | 3 | 5 | 4 |
| 166 | 1 | 6 | 1 | 4 | 5 | 4 |
| 167 | 1 | 6 | 6 | 5 | 5 | 4 |
| 168 | 1 | 6 | 5 | 6 | 5 | 4 |
| 169 | 2 | 6 | 4 | 1 | 5 | 3 |
| 170 | 2 | 6 | 3 | 2 | 5 | 3 |
| 171 | 2 | 6 | 2 | 3 | 5 | 3 |
| 172 | 2 | 6 | 1 | 4 | 5 | 3 |
| 173 | 2 | 6 | 6 | 5 | 5 | 3 |
| 174 | 2 | 6 | 5 | 6 | 5 | 3 |
| 175 | 3 | 6 | 4 | 1 | 5 | 2 |
| 176 | 3 | 6 | 3 | 2 | 5 | 2 |
| 177 | 3 | 6 | 2 | 3 | 5 | 2 |
| 178 | 3 | 6 | 1 | 4 | 5 | 2 |
| 179 | 3 | 6 | 6 | 5 | 5 | 2 |
| 180 | 3 | 6 | 5 | 6 | 5 | 2 |
| 181 | 4 | 5 | 4 | 1 | 6 | 1 |
| 182 | 4 | 5 | 3 | 2 | 6 | 1 |
| 183 | 4 | 5 | 2 | 3 | 6 | 1 |
| 184 | 4 | 5 | 1 | 4 | 6 | 1 |
| 185 | 4 | 5 | 6 | 5 | 6 | 1 |
| 186 | 4 | 5 | 5 | 6 | 6 | 1 |
| 187 | 5 | 5 | 4 | 1 | 6 | 6 |
| 188 | 5 | 5 | 3 | 2 | 6 | 6 |
| 189 | 5 | 5 | 2 | 3 | 6 | 6 |
| 190 | 5 | 5 | 1 | 4 | 6 | 6 |
| 191 | 5 | 5 | 6 | 5 | 6 | 6 |
| 192 | 5 | 5 | 5 | 6 | 6 | 6 |
| 193 | 6 | 5 | 4 | 1 | 6 | 5 |
| 194 | 6 | 5 | 3 | 2 | 6 | 5 |
| 195 | 6 | 5 | 2 | 3 | 6 | 5 |
| 196 | 6 | 5 | 1 | 4 | 6 | 5 |
| 197 | 6 | 5 | 6 | 5 | 6 | 5 |
| 198 | 6 | 5 | 5 | 6 | 6 | 5 |
| 199 | 1 | 5 | 4 | 1 | 6 | 4 |
| 200 | 1 | 5 | 3 | 2 | 6 | 4 |
| 201 | 1 | 5 | 2 | 3 | 6 | 4 |
| 202 | 1 | 5 | 1 | 4 | 6 | 4 |
| 203 | 1 | 5 | 6 | 5 | 6 | 4 |
| 204 | 1 | 5 | 5 | 6 | 6 | 4 |
| 205 | 2 | 5 | 4 | 1 | 6 | 3 |
| 206 | 2 | 5 | 3 | 2 | 6 | 3 |
| 207 | 2 | 5 | 2 | 3 | 6 | 3 |
| 208 | 2 | 5 | 1 | 4 | 6 | 3 |
| 209 | 2 | 5 | 6 | 5 | 6 | 3 |
| 210 | 2 | 5 | 5 | 6 | 6 | 3 |
| 211 | 3 | 5 | 4 | 1 | 6 | 2 |
| 212 | 3 | 5 | 3 | 2 | 6 | 2 |
| 213 | 3 | 5 | 2 | 3 | 6 | 2 |
| 214 | 3 | 5 | 1 | 4 | 6 | 2 |
| 215 | 3 | 5 | 6 | 5 | 6 | 2 |
| 216 | 3 | 5 | 5 | 6 | 6 | 2 |

Contacts

DSX SERIES

SIGNAL AND POWER CRIMP CONTACTS SIZES 22, 20HD, 16, 12 & 5

| Contact size | AWG | Cross section (mm ²) | Wire outside dia mm (inch) | Striping length mm (inch) | PIN | SOCKET | Crimping tool | Positionner | SEL. | Ins/Ext tool | | | |
|---------------------------|-----|----------------------------------|----------------------------|---------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------------|-----------------------------|-----------------------------|------------------------------|
| 22 | 22 | 0.38 | 1.4 (0.055) | 3.5 (0.138) | 616200 (M39029/ 11-144) | 616300 (M39029/ 12-148) | 282281 (M22520/ 2-01) | 282970 (M22520/ 2-23) | 4 | 282885 (M81969/ 1-01) | | | |
| | 24 | 0.21 | | | | | | | 3 | | | | |
| | 26 | 0.14 | | | | | | | 3 | | | | |
| 22 reduced crimp barrel | 28 | 0.093 | 1.2 (0.047) | 3.5 | 616201 | 616301 | | 282281 (M22520/ 2-01) | 282971 (M22520/ 2-08) | 5 | 282886 (M81969/ 1-02) | | |
| | 30 | 0.055 | | | | | | | | 4 | | | |
| 20HD | 20 | 0.60 | 1.8 (0.071) | 4.0 (0.157) | 616210 (M39029/ 11-145) | 616310 (M39029/ 12-149) | | | 282281 (M22520/ 2-01) | 282971 (M22520/ 2-08) | 7 | 282886 (M81969/ 1-02) | |
| | 22 | 0.38 | | | | | | | | | 6 | | |
| | 24 | 0.21 | | | | | | | | | 5 | | |
| 20HD reduced crimp barrel | 26 | 0.14 | 1.25 (0.049) | 4.0 (0.157) | 616211 | 616311 | | | | 282281 (M22520/ 2-01) | 282971 (M22520/ 2-08) | 6 | 282886 (M81969/ 1-02) |
| | 28 | 0.093 | | | | | | | | | | 5 | |
| | 30 | 0.055 | | | | | 4 | | | | | | |
| 16 | 16 | 1.34 | 2.6 (0.236) | 6.0 (0.236) | 616230 (M39029/ 11-146) | 616330 (M39029/ 12-150) | 282291 (M22520/1- 01) | | | | 282972 (M22520/ 1-02) | 6 | 282546 (M81969/ 1-03) |
| | 18 | 0.93 | | | | | | | | | | 5 | |
| | 20 | 0.60 | | | | | | 4 | | | | | |
| 16 reduced crimp barrel | 20 | 0.60 | 1.80 (0.071) | 6.0 (0.236) | 616231 | 616331 | | 282291 (M22520/1- 01) | | | 282972 (M22520/ 1-02) | 5 | 282546 (M81969/ 1-03) |
| | 22 | 0.38 | | | | | | | 4 | | | | |
| | 24 | 0.21 | | | | | | | 4 | | | | |
| 12 | 12 | 3.18 | 3.4 (0.134) | 6.0 (0.236) | 616240 (M39029/ 11-147) | 616340 (M39029/ 11-151) | | | 282291 (M22520/1- 01) | | 282579 (M22520/ 1-11) | 8 | 282547 (M81969/ 28-02) |
| | 14 | 1.91 | | | | | | | | 7 | | | |
| | 16 | 1.34 | | | | | | | | 6 | | | |
| For cavity 5 | 12 | 3.18 | 3.4 (0.134) | 8.0 (0.315) | 616261 | 616361 | | | | 282296 (DANIELS M300BT) (1) | 282579 (M22520/ 1-11) | 1 | 282946 (M81969/ 28-01) |
| | 14 | 1.91 | | | | | 1 | | | | | | |
| | 10 | 5.0 | 5.7 (0.234) | | 616266 | 616366 | 282557 | | | | 5 | | |
| | 8 | 9.0 | | | | | | | | | 8 | | |

THERMOCOUPLE CONTACTS SIZES 22 & 20HD MADE OF CHROMEL

| Contact size | AWG | Cross section (mm ²) | Wire outside dia mm (inch) | Striping length mm (inch) | PIN | SOCKET | Crimping tool | Positionner | SEL. | Ins/Ext tool | |
|--------------|-----|----------------------------------|----------------------------|---------------------------|--------|--------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 22 | 22 | 0.38 | 1.4 (0.055) | 3.5 (0.138) | 620280 | 620380 | 282281 (M22520/ 2-01) | 282970 (M22520/ 2-23) | 4 | 282885 (M81969/ 1-01) | |
| | 24 | 0.21 | | | | | | | 3 | | |
| | 26 | 0.14 | | | | | | | 3 | | |
| 20HD | 20 | 0.60 | 1.8 (0.071) | 4.0 (0.157) | 620290 | 620390 | | 282281 (M22520/ 2-01) | 282971 (M22520/ 2-08) | 7 | 282886 (M81969/ 1-02) |
| | 22 | 0.38 | | | | | | | | 6 | |
| | 24 | 0.21 | | | | | | | | 5 | |

THERMOCOUPLE CONTACTS SIZES 22 & 20HD MADE OF ALUMEL

| Contact size | AWG | Cross section (mm ²) | Wire outside dia mm (inch) | Striping length mm (inch) | PIN | SOCKET | Crimping tool | Positionner | SEL. | Ins/Ext tool | |
|--------------|-----|----------------------------------|----------------------------|---------------------------|--------|--------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 22 | 22 | 0.38 | 1.4 (0.055) | 3.5 (0.138) | 620281 | 620381 | 282281 (M22520/ 2-01) | 282970 (M22520/ 2-23) | 4 | 282885 (M81969/ 1-01) | |
| | 24 | 0.21 | | | | | | | 3 | | |
| | 26 | 0.14 | | | | | | | 3 | | |
| 20HD | 20 | 0.60 | 1.8 (0.071) | 4.0 (0.157) | 620291 | 620391 | | 282281 (M22520/ 2-01) | 282971 (M22520/ 2-08) | 7 | 282886 (M81969/ 1-02) |
| | 22 | 0.38 | | | | | | | | 6 | |
| | 24 | 0.21 | | | | | | | | 5 | |

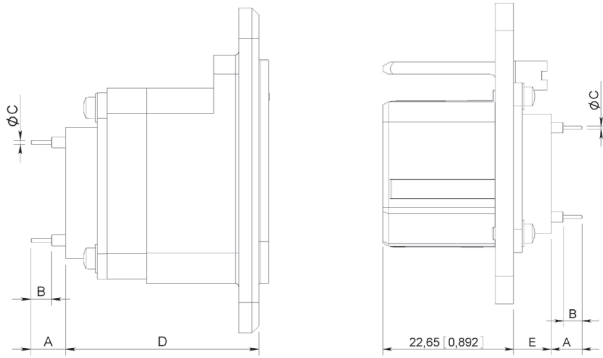
NOTE:

(1) Daniels WA27-309-EP air pressure tool with crimp setting 5 can also be used. Crimp setting 5 is not adjustable and must be set by the factory.

Contacts

SIZES 22 & 20HD PC TAIL CONTACTS

| Contact size | Contact arrangement | Pin | Socket | Ext. Tool | Dimensions mm (inch) | | | | |
|--------------|--------------------------|-------------------------|------------------------|-----------|-------------------------|---------------------------|-------------|---------------------------|-------------------------|
| | | | | | A | B | C | D | E |
| 22 | 106 | / | 616379 | 282890 | 6.1/5.3 (0.240/0.209) | 6.5 (0.256) | 0.6 (0.023) | 25.25/25.75 (0.994/1.013) | 1.55/1.75 (0.061/0.069) |
| | | | 616303 | | 14.4/13.6 (0.567/0.535) | 9.4 (0.370) | | | 7.85/7.44 (0.293/0.309) |
| | 616206* | 5.9/6.7 (0.232/0.263) | 3.8 (0.149) | | / | 28.50/28.15 (1.122/1.108) | | | |
| | 36C7 for pin contacts | 0.82/0.10 (0.032/0.004) | | | 7.85/7.44 (0.293/0.309) | | | | |
| | 36C7 for socket contacts | / | 616306 | | 4/3.3 (0.157/0.130) | 9.4 (0.370) | / | | |
| | / | 616303 | 11.72/11 (0.461/0.433) | | | | | | |
| 20HD | 40-45-57-32C2-32C4-40C1 | 616216* | / | 282891 | 6.6/7.6 (0.259/0.299) | / | 0.8 (0.031) | 31.25/31.75 (1.23/1.25) | 7.45/7.75 (0.293/0.305) |
| | 67-33C4 | | | | 6.3/7.3 (0.248/0.287) | | | | |
| | 40-45-57-32C2-32C4-40C1 | 616223 | 616323* | | 3.5/4.3 (0.138/0.169) | 3.2 (0.126) | 0.6 (0.023) | | |
| | 67-33C4 | | | | 3.2/4 (0.126/0.157) | | | | |



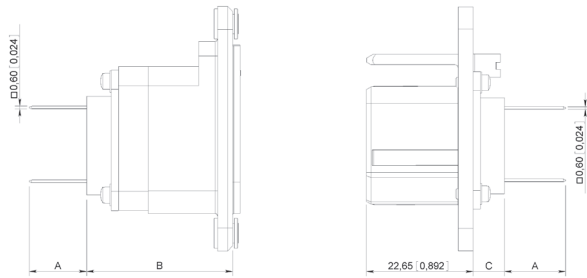
NOTE:

* Connectors delivered in the "Y" termination style will be fitted with contacts marked by "*" (see above table). If another style of pc tail contact is desired, use termination style "x" when ordering the connector and order contacts separately.

Contacts

SIZES 22 & 20HD WIRE WRAP CONTACTS

| Contact size | AWG | Contact arrangement | Pin | Socket | Ins. tool | Dimensions | | |
|--------------|----------------|-------------------------------------|---------------------------|---------------------------|-----------|-----------------------------|------------------------------|----------------------------|
| | | | | | | A | B | C |
| 22 | 26 28 30 | 106 | 610203 [2 wrap levels] | 610303 [2 wrap levels] | 282527 | 10/11 (0.393/0.433) | 25.25/25.75 (0.994/1.013) | 1.55/1.75 (0.061/0.069) |
| | | | 610204 [3 wrap levels] | 610304 [3 wrap levels] | | 12.5/13.5 (0.492/0.531) | | |
| 20 | 26 28 30 | 40-45-57-32C2- 32C4-40C1-67-33C4 | 610214 [2 wrap levels] | 610314 [2 wrap levels] | | 10.3/11.3 (0.405/0.445) | 31.25/31.75 (1.203/1.250) | 7.45/7.75 (0.293/0.305) |
| | | | | | | 9.85/10.95 (0.387/0.431) | | |



COAXIAL CRIMP CONTACTS SIZE 1 (design as per MS3168-3169 specifications)

| Contact size | Contact arrangement | Cable (1) | Pin | Socket | Center contact | | | Outer body | | |
|--------------|---------------------|--------------------------|-----------------------|-----------|-------------------------|-------------------------|------|-------------------------|-----|-------------------------|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 1 | MC2 | UT 141 RG 402 | 616005 | / | Solder contact | | | | | |
| | | RG 58 RG 141 KX 15 | 616006 right angle | / | Solder contact | | | 282246 (M22520/5-05) | A | |
| | | RG 213 KX 4 | / | 616102001 | 282291 (M22520/1-01) | 282997 (M22520/1-13) | 8 | | | 282247 (M22520/5-61) |
| | | RG 214 RG 225 | / | 616103001 | Solder contact | | | 282293 (M22520/5-01) | A | |
| | | RG 142 | 616007 right angle | / | Solder contact | | | | | |
| | | RG 142 RG 223 | / | 616107001 | 282291 (22520/1-01) | 282997 (M22520/1-13) | 7 | 282246 (M22520/5-05) | A | |
| | | RG 174 KX 22 | / | 616100 | Solder contact | | | | | |
| | | RD 316 | 616004 right angle | / | Solder contact | | | B | | |
| | | / | 616009 | / | SMA Termination | | | | | |

| Part number | 616004 – 616006 – 616007 | 616009 – 616100 – 616103001 616106 – 616102001 | 616003 – 616005 616107001 |
|--|--------------------------|---|------------------------------|
| Dielectric withstanding voltage at sea level (V rms) | 1000 | 1500 | 2500 |

NOTE:

(1) For other cable, please contact Radiall.

Contacts

COAXIAL CRIMP CONTACTS SIZE 3

| Contact size | Contact arrangement | Cable (1) | Pin | Socket | Center contact | | | Outer body | | |
|--------------|---------------------|------------------|------------------------------|--------|-------------------------|-------------------------|------|-------------------------|-------------------------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 3 | MC3 | RG 142 | 616013 | / | Solder | | | 282293 (M22520/5-01) | 282246 (M22520/5-05) | A |
| | | RG 223 | / | 616113 | 282291 (M22520/1-01) | 282997 (M22520/5-05) | 7 | | | B |
| | | RG 316 | 616015 Right angle (1) | / | solder | | | | | |
| | | UT 141 RG 402 | 616014 | / | solder | | | | | |
| | | RG 214 RG 225 | / | 616111 | 282291 (M22520/1-01) | 282997 (M22520/5-05) | 8 | 282293 (M22520/5-01) | 282247 (M22520/5-61) | A |
| | | RG 213 KX 4 | / | 616112 | | | | | | |

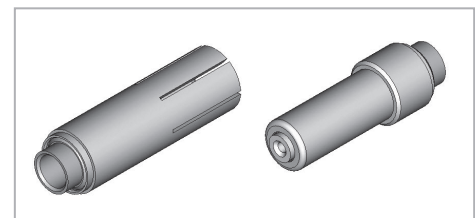
COAXIAL CRIMP CONTACTS SIZE 5 (design as per MS3172 specifications)

The following contacts have to be fitted with a sealing boot when used in DSX E connectors (see page 6-29). Coaxial cavities without any contact can be fitted with sealing plugs when used in DSX E connectors.

| Contact size | Contact arrangement | Cable (1) | Pin (See notes 3&4) | Socket (See notes 3&4) | Center contact | | | Outer body | | | | | | |
|--------------|--|--|------------------------|---------------------------|-------------------------|------------|--------|-------------------------|-------------------------|---------------------------|---|---|---|--|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex | | | | |
| 5 | 32C2 32T2 33C4 33T4 36C7 36T7 40C1 40T1 | RG 58 KX 15 | 616120 | 616020 | 282281 (M22520/2-01) | 282974 | 6 | 282293 (M22520/5-01) | 282246 (M22520/5-05) | A | | | | |
| | | RG 141 | 616120 | 616020 | | | 8 | | | | | | | |
| | | RG 142 RG 223 KX 23 | 616121 | 616021 | | | 8 | | | | | | | |
| | | RG 179 RG 188 RG 174 RG316 KX 22 | 616122 | 616022 | | | 7 | | | 282550 DANIELS K345 | 6 | 7 | B | |
| | | RG 179 RG 187 | / | 616022002 | | | | | | | | | | |
| | | RG 196 RG 178 KX 21 | 616123 | 616023 | | | | | | | | | | |
| | | RG 195 RG 180 | 616124 | 616024 | | | | | | 282974 | 6 | 7 | | |
| | | RG 316 DS | 616163 | 616026 | | | | | | | | | | |
| | | UT .085 | 616125 | / | | | solder | | | | | | | |
| | | UT .141 | 616128 | 616028 | | | | | | | | | | |

NOTES:

- (1) For other cable, please contact Radiall
- (2) Dielectric withstanding voltage at sea level: 1500 V rms. Except 1000 V rms for 616015
- (3) Dielectric withstanding voltage at sea level: 750 V rms
- (4) Extraction tool: 282946 (M81969/28-01)



Contacts

COAXIAL CRIMP CONTACTS SIZE 7

| Contact size | Contact arrangement | Cable (1) | Pin (See notes 2&3) | Socket (See notes 2&3) | Center contact | | | Outer body | | |
|---------------------------|---------------------|-------------------------------------|---------------------|------------------------|-------------------------|-----------------------------|------------------|-------------------------|-------------------------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 7 | MC3 | RG 58 RG 141 KX 15 | 610120 | / | 282281 (M22520/2-01) | 282550 (DANIELS K345) | 6 8 8 7 | 282293 (M22520/5-01) | 282246 (M22520/5-05) | A |
| | | RG 174 RG 316 KX 22 RG 188 | 610126 | / | | | | | | B |
| | | RG 58 KX 15 | / | 616030 | | | | | | A |
| | | RG 141 | / | 616030 | | | | | | A |
| | | RG 142 RG 223 KX 23 | / | 616031 | | | | | | A |
| RG 174 RG 316 KX 22 | / | 616032 | B | | | | | | | |

COAXIAL CRIMP CONTACTS SIZE 9

Add 001 at the end of each part number pin or socket to order environmental size 9 coax contacts. Coaxial cavities without any contact can be fitted with sealing plugs when used in DSX E connectors.

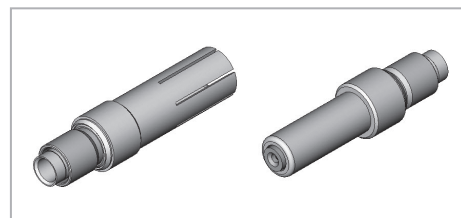
| Contact size | Contact arrangement | Cable (1) | Pin (See notes 2&3) | Socket (See notes 2&3) | Center contact | | | Outer body | | |
|--------------|--------------------------|---|---------------------|------------------------|-------------------------|------------|----------------------------|-------------------------|-------------------------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 9 | C8 T8 32C4 32T4 | RG 58 KX 15 | 616140 | 616040 | 282281 (M22520/2-01) | 282974 | 6 8 8 7 6 6 | 282293 (M22520/5-01) | 282246 (M22520/5-05) | A |
| | | RG 141 | | | | | | | | B |
| | | RG 142 RG 223 KX 23 | 616141 | 616041 | | | | | | |
| | | RG 174 RG 179 RG 188 RG 316 KX 22 | 616142 | 616042 | | | | | | |
| | | RG 178 RG196 KX 21 | 616143 | 616043 | | | | | | |
| | | RG 180 RG 195 | 616144 | 616044 | | | | | | |

COAXIAL CRIMP CONTACTS SIZE 15

| Contact size | Contact arrangement | Cable (1) | Pin (See notes 2&3) | Socket (See notes 2&3) | Center contact | | | Outer body | | |
|--------------|--|------------------|---------------------|------------------------|-------------------------|------------|------|-------------------------|--------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 15 | D8 26 67 32C4 32T4 33C4 33T4 | RG 316 RG 179 | 616154 | 618050 | 282281 (M22520/2-01) | 282555 | 2 | 282292 (M22520/4-01) | 282556 | / |
| | | KX 22 DS | 616150 | | | | | | | |
| | | KX 21 DS | 616151 | 618053 | | | | | | |
| | | RG 178 KX 21 | 616153 | 618054 | | | | | | |

NOTES:

- (1) For other cable, please contact Radiall
- (2) Dielectric withstanding voltage at sea level: 750 V rms
- (3) Extraction tool: 282946 (M81969/28-01)
- (4) Dielectric withstanding voltage at sea level: 350 V rms



Contacts

CONCENTRIC TWINAX CRIMP CONTACTS SIZE 5 (design as per 17B9E4005 specifications)

| Contact size | Contact arrangement | Cable | Pin | Socket |
|--|--|--------------------|-----------|-----------|
| The following contacts have to be installed in the non environmental inserts | | | | |
| 5 | 32C3 32T2 40C1 40T1 36C7 36T7 33C4 33T4 | MIL-C-17/176-00002 | 616195001 | 616095001 |
| | | PAN 6421 | 616195005 | 616095005 |
| The following contacts have to be installed in the environmental inserts | | | | |
| 5 | 32C3 32T2 40C1 40T1 33C4 33T4 | MIL-C-17/176-00002 | 616195009 | 616095009 |
| | 36C7 36T7 | | 616195012 | / |



CONCENTRIC TWINAX CRIMP CONTACTS SIZE 9 (design as per 17B9E4005 specifications)

| Contact size | Contact arrangement | Cable | Pin | Socket |
|--|--------------------------|--------------------|-----------|-----------|
| The following contacts have to be installed in the non environmental inserts | | | | |
| 9 | C8 T8 32C4 32T4 | MIL-C-17/176-00002 | 616196003 | 616096003 |
| The following contacts have to be installed in the environmental inserts | | | | |
| 9 | C8 T8 | MIL-C-17/176-00002 | / | 616096006 |
| | 32C4 32T4 | | 616196004 | 616096004 |

TRIAx CRIMP CONTACTS SIZE 5

| Contact size | Contact arrangement | Cable | Pin | Socket |
|--|------------------------------|----------------------|-----------|-----------|
| The following contacts have to be installed in the non environmental inserts | | | | |
| 5 | 33C4 33T4 | RGX 179 | 616195004 | 616095004 |
| | 32C2 32T2 40C1 40T1 | ST5M 1323-1 | 616195007 | 616095007 |
| | 36C7 36T7 | HS4863-1 HS4863-2 | 616195000 | 616095000 |
| The following contacts have to be installed in the environmental inserts | | | | |
| 5 | 36C7 36T7 | RGX 179 | / | 616095010 |


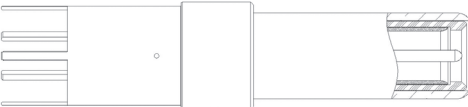
TRIAx CRIMP CONTACTS SIZE 9


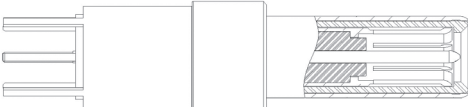
| Contact size | Contact arrangement | Cable | Pin | Socket |
|--|--------------------------|---------|-----------|-----------|
| The following contacts have to be installed in the non environmental inserts | | | | |
| 9 | C8 T8 32C4 32T4 | RGX 179 | 616196001 | 616096001 |
| The following contacts have to be installed in the environmental inserts | | | | |
| 9 | 32C4 32T4 | RGX 179 | / | 616096002 |

Contacts

TRIAx CONTACTS WITH PC TAIL SIZE 5

The contacts shown in the table below are rear release rear removable contacts

| Contact type | Part number | Contact drawing | Rear extension from the insert mm (inch) |
|--------------|-------------|--|---|
| Pin | 616195003 |  | 32C2, 32T2, 33C4, 33T4 40C1, & 40T1 = 3.2/4.0 (0.125/0.158) |
| | 616195008 |  | 36C7 & 36T7 = 5.40/6.10 (0.212/0.240) |

| Contact type | Part number | Contact drawing | Rear extension from the insert mm (inch) |
|--------------|-------------|--|--|
| Pin | 616196005 |  | C8 & T8 = 1.30/2.15 (0.051/0.085) 32C4 & 32T4 = 6.45/7.30 (0.253/0.288) |
| | 616196007 |  | C8 & T8 = 0 32C4 & 32T4 = 3.70/4.35 (0.145/0.172) |

SIZE 8 QUADRAX CONTACTS

| Wire | Type | Part number (non environmental) | Part number (environmental) | Ins/Ext Tool |
|--|--------|---------------------------------|-----------------------------|--|
| ABS1503KD24 (110 Ω) | Pin | 620175010 | 620175011 | 282549001 (M81969/28.03 or M81969/14.06) |
| | Socket | 620075010 | 620075011 | |
| THERMAX 956S-4T200 GORE RCN8422 (110 Ω) | Pin | 620179002 | 620179001 | |
| | Socket | 620079002 | 620079001 | |
| TENSOLITE NF24Q100 (100 Ω) | Pin | 620175050 | 620175051 | |
| | Socket | 620075050 | 620075051 | |
| TENSOLITE NF26Q100 JSFY 18 | Pin | 620175021 | 620175020 | |
| | Socket | 620075021 | 620075020 | |

Fiber Optic Contacts and Accessories

MIL-PRF-29504 fiber optic termini were developed several decades ago and are described into several MIL standard documents. They fit into standard electrical cavities and do not require specific inserts. They can replace MIL-PRF-29504/10 pin and MIL-PRF-29504/11 socket termini.

MIL-PRF-29504 CONTACTS

| Pin contact part number | Socket contact part number | Contact size | Fiber diameter (µm) | Cable diameter (mm) | Ferrule material |
|-------------------------|----------------------------|--------------|---------------------|---------------------|------------------|
| F724 005 000 | F724 104 000 | 16 | 125 | 1.5 | Ceramic |
| F724 011 000 | F724 111 000 | 16 | 125 | 1.8 | Ceramic |
| F724 009 000 | F724 109 000 | 16 | 125 | 2 | Ceramic |
| F724 002 000 | F724 101 000 | 16 | 140 | 1.5 | Ceramic |
| F724 041 000 | F724 140 000 | 16 | 230 | 2 | Metallic |
| F724 007 000 | F724 107 000 | 16 | 280 | 1.6 | Ceramic |



Size 12 MIL-T-29504 contacts can be available upon request, please contact your Radiall sales representative. Note that Radiall can support you with your cable and harness assemblies. Please contact your sales representative.

ACCESSORIES

Radiall offers you a unique solution to equip your DSX connectors with EN4531 fiber optic contacts. This solution offers the following characteristics and advantages:



- It turns a ARINC 404 size 5 or size 8 cavity into a fiber optic link
- It accepts any EN4531-101 fiber optic contacts

EN4531-101 (ABS 1379) ADAPTER FOR QUADRAX SIZE 8 CAVITY

| | Part number | Description |
|---|-------------|---|
|  | 620946005 | Pin quadrax adapter for EN4531 contact |
|  | 620946006 | Socket quadrax adapter for EN4531 contact |

EN4531-101 (ABS 1379) ADAPTER FOR SIZE 5 CAVITY

EN4531-101 adapter for size 5 cavity is available for DSX F connectors with inserts 33C4 and 81C3 only, see DSX F connectors page 6-41.

| | Part number | Description |
|---|-------------|------------------------------|
|  | 616925001 | Pin adapter for #5 cavity |
|  | 616925002 | Socket adapter for #5 cavity |

Accessories

SEALING PLUGS AND FILLER PLUGS

Filler plugs are used in non environmental connectors and sealing plugs are used in environmental connectors and conform to MS27488

| Contact size | Sealing plugs | Filler plugs |
|--------------|---------------|---|
| Size 22 | 616910 | 620920 |
| Size 20HD | 616911 | 610941 |
| Size 16 | 616912 | 620922 |
| Size 12 | 616913 | 616923 |
| Size 5 | See notes | 620924, 616923 ⁽¹⁾ or 616917 ⁽²⁾ for pin contact cavity 620925 for socket contact cavity |
| Size 9 | See notes | 616915 ⁽²⁾ |

SEALING BOOTS

The sealing boots in table 1 are to be used in all inserts with size 5 contact cavities except 36C7 and 36T7 inserts which use the sealing bushing plus one in the sealing sleeves in table 2.

Table 1

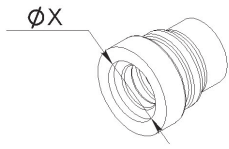
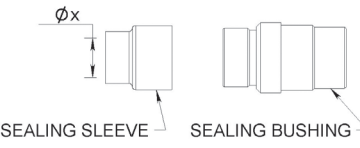
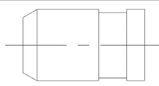
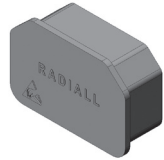

| Cable | X dia. mm (inch) | Part number | Drawing |
|-------------|------------------|-------------|---|
| RG58, RG142 | 4.3 (0.169) | 92505490 |  |
| RG 174 | 2 (0.079) | 92505470 | |
| RG 178 | 1.4 (0.055) | 92505460 | |
| RG180 | 3.1 (0.122) | 92505480 | |
| / | 0 | 92505450 | |

Table 2

| Cable | X dia. mm (inch) | Sealing bushing | Sealing sleeve | Part number |
|---|------------------|--------------------------|----------------|---|
| RG58, RG141, RG142, RG223, KX15, KX23 | 4.7 (0.185) | 92505590 | 92505591 |  |
| RG174, RG179, RG187, RG188, RG316, KX22, UT.085 | 2.15 (0.085) | | 92505593 | |
| RG178, RG196 | 1.5 (0.059) | | 92505594 | |
| RG180, RG195, UT.141 | 3.05 (0.120) | | 92505592 | |
| / | 0 | 616914010 ⁽³⁾ | |  |

DUST CAPS

Conductive dust caps are made of thermoplastic and non conductive dust caps are made of polyethylene.

| | Conductive (black) | Non Conductive (red) | Drawing |
|------------|--------------------|----------------------|---|
| Plug | 610804 | 610803 |  |
| Receptacle | 610806 | 610805 |  |

NOTES:

- {1} 616923 is made of aluminium and is nickel plated
- {2} 616917 and 616915 provide interfacial sealing on class T connectors
- {3} 616914010 is made of PTFE

Accessories

BACKSHELLS

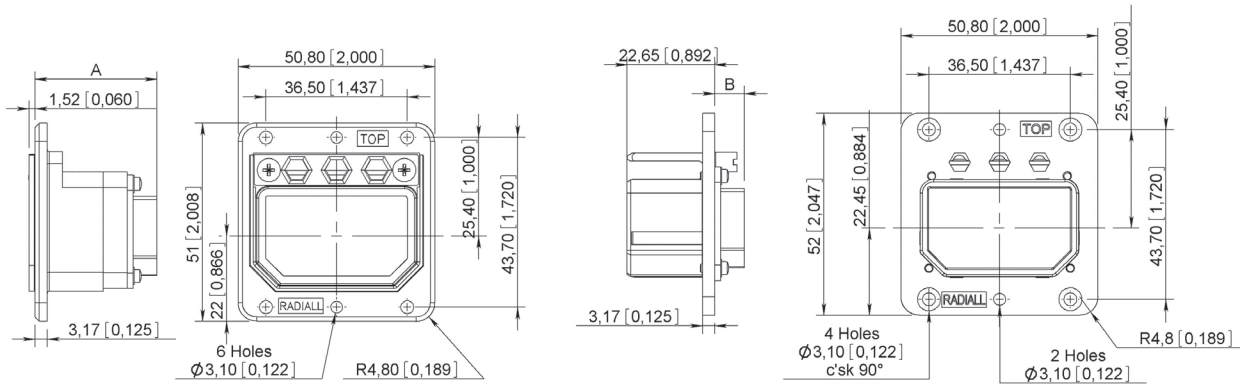
The following backshells are only for use with SAE AS81659 and ARINC 404 shell type B connectors for the following modification codes 02 - 04 - 17 - 19 - 22 - 36 - 61 - 67 and 77.

Backshells do not ensure EMI functions and cannot be installed on size 4 connectors as there is limited access to screws.

| Entry type | Plating | Part number | Drawing |
|-------------|-----------------|-------------|---------|
| Top entry | Yellow anodized | 610902 | |
| | Nickel | 610906 | |
| Right entry | Yellow anodized | 610900 | |
| | Nickel | 610910 | |
| Left entry | Yellow anodized | 610901 | |
| | Nickel | 610911 | |

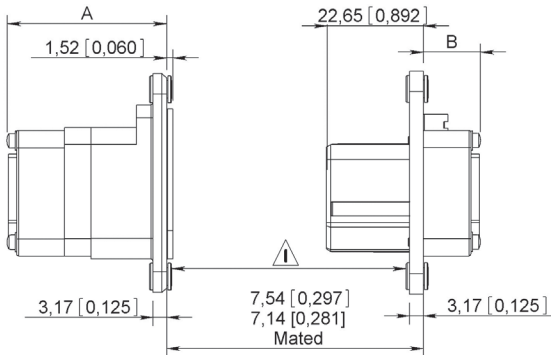
Dimensions

SHELL SIZE 1 NON ENVIRONMENTAL (without grommet seal)



| Max dimension mm (inch) | All crimp contact arrangements except 106 | Contact arrangement 106 | Arrangements with coax contacts size 1 & 3 | Contact arrangement 36C7 & 36T7 | Arrangements with coax contacts size 5 & 9 except 36C7 |
|-------------------------|---|-------------------------|--|---------------------------------|--|
| A | 32 (1.260) | 25.8 (1.016) | 26.85 (1.057) | 28.5 (1.122) | 37.42 (1.473) |
| B | 7.9 (0.311) | 1.9 (0.075) | 3 (0.118) | 7.85 (0.309) | 13.5 (0.531) |

SHELL SIZE 1 ENVIRONMENTAL (with grommet seal)

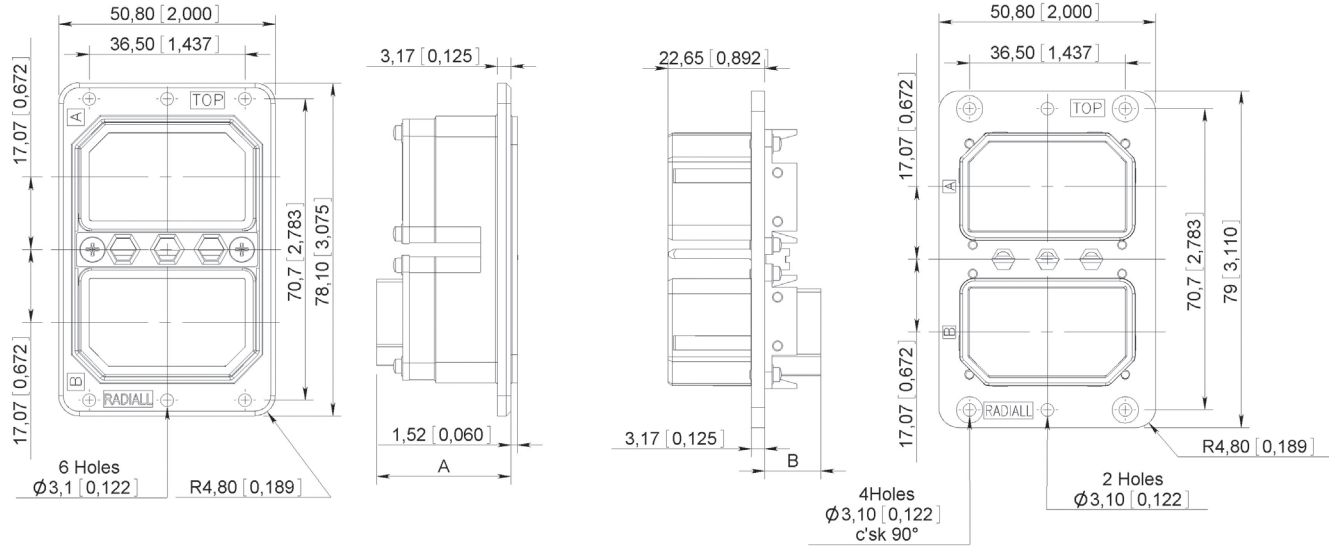


| Max dimension mm (inch) | All crimp contact arrangements except MC2 – MC3 - 106 | Contact arrangement 106 | Contact arrangement 36C7 & 36T7 |
|-------------------------|---|-------------------------|---------------------------------|
| A | 38.5 (1.516) | 33.5 (1.319) | 39.05 (1.537) |
| B | 14.2 (0.559) | 9.5 (0.374) | 18.55 (.730) |

⚠ Important Note: Only 4mm of space is available on the modification code selection

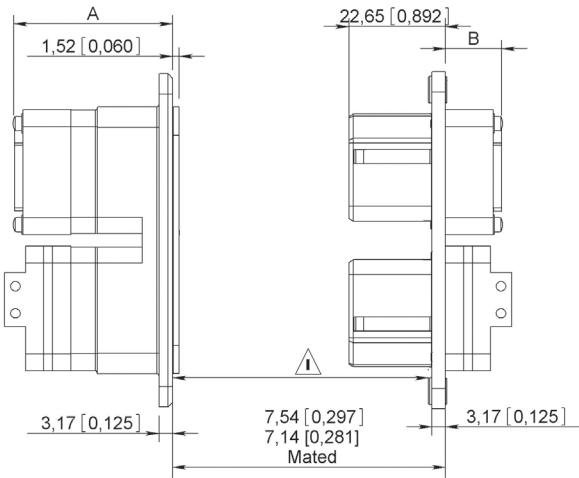
Dimensions

SHELL SIZE 2 NON ENVIRONMENTAL (without grommet seal)



| Max dimension mm (inch) | All crimp contact arrangements except 106 | Contact arrangement 106 | Arrangements with coax contacts size 1 & 3 | Contact arrangement 36C7 & 36T7 | Arrangements with coax contacts size 5 & 9 except 36C7 |
|-------------------------|---|-------------------------|--|---------------------------------|--|
| A | 32 [1.260] | 25.8 [1.016] | 26.85 [1.057] | 28.5 [1.122] | 37.42 [1.473] |
| B | 7.9 [0.311] | 1.9 [0.075] | 3 [0.118] | 7.85 [0.309] | 13.5 [0.531] |

SHELL SIZE 2 ENVIRONMENTAL (with grommet seal)

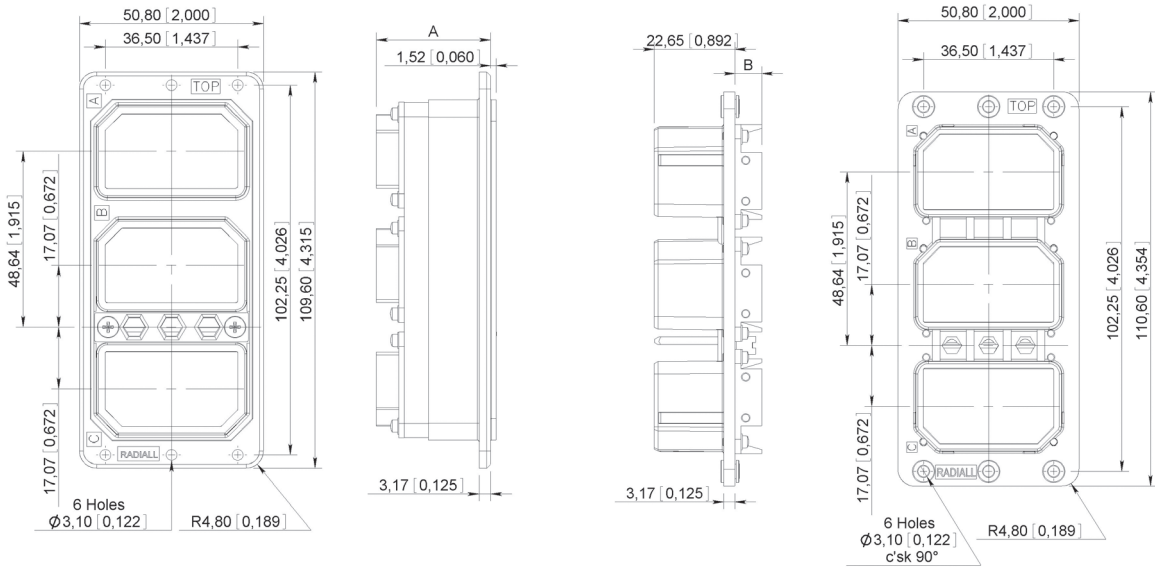


| Max dimension mm (inch) | All crimp contact arrangements except MC2 - MC3 - 106 | Contact arrangement 106 | Contact arrangement 36C7 & 36T7 |
|-------------------------|---|-------------------------|---------------------------------|
| A | 38.5 [1.516] | 33.5 [1.319] | 39.05 [1.537] |
| B | 14.2 [0.559] | 9.5 [0.374] | 18.55 [0.730] |

⚠ Important Note: Only 4mm of space is available on the modification code selection

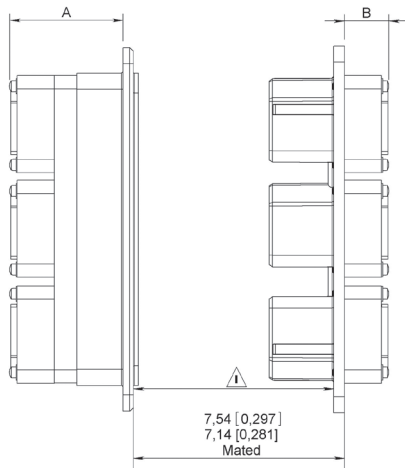
Dimensions

SHELL SIZE 3 NON ENVIRONMENTAL (without grommet seal)



| Max dimension mm (inch) | All crimp contact arrangements except 106 | Contact arrangement 106 | Arrangements with coax contacts size 1 & 3 | Contact arrangement 36C7 & 36T7 | Arrangements with coax contacts size 5 & 9 except 36C7 |
|-------------------------|---|-------------------------|--|---------------------------------|--|
| A | 32 (1.260) | 25.8 (1.016) | 26.85 (1.057) | 28.5 (1.122) | 37.42 (1.473) |
| B | 7.9 (0.311) | 1.9 (0.075) | 3 (0.118) | 7.85 (0.309) | 13.5 (0.531) |

SHELL SIZE 3 ENVIRONMENTAL (with grommet seal)



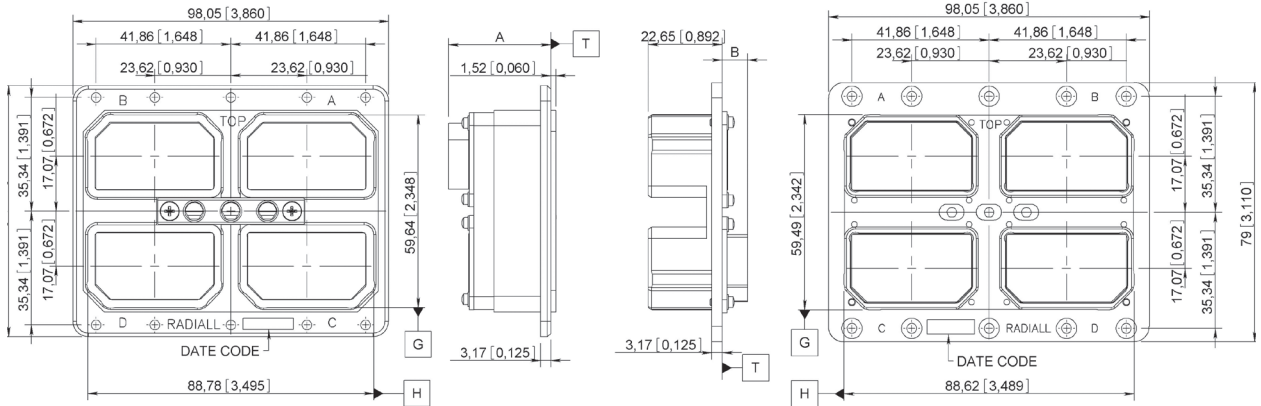
| Max dimension mm (inch) | All crimp contact arrangements except MC2 - MC3 - 106 | Contact arrangement 106 | Contact arrangement 36C7 & 36T7 |
|-------------------------|---|-------------------------|---------------------------------|
| A | 38.5 (1.516) | 33.5 (1.319) | 39.05 (1.537) |
| B | 14.2 (0.559) | 9.5 (0.374) | 18.55 (.730) |

⚠ Important Note: Only 4mm of space is available on the modification code selection

DSX SERIES

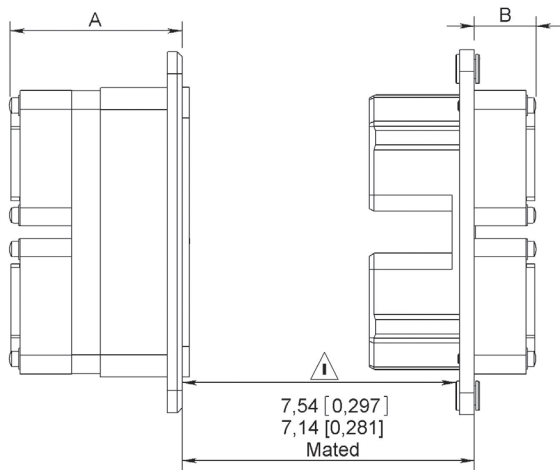
Dimensions

SHELL SIZE 4 NON ENVIRONMENTAL (without grommet seal)



| Max dimension mm (inch) | All crimp contact arrangements except 106 | Contact arrangement 106 | Arrangements with coax contacts size 1 & 3 | Contact arrangement 36C7 & 36T7 | Arrangements with coax contacts size 5 & 9 except 36C7 |
|-------------------------|---|-------------------------|--|---------------------------------|--|
| A | 32 (1.260) | 25.8 (1.016) | 26.85 (1.057) | 28.5 (1.122) | 37.42 (1.473) |
| B | 7.9 (0.311) | 1.9 (0.075) | 3 (0.118) | 7.85 (0.309) | 13.5 (0.531) |

SHELL SIZE 4 ENVIRONMENTAL (with grommet seal)

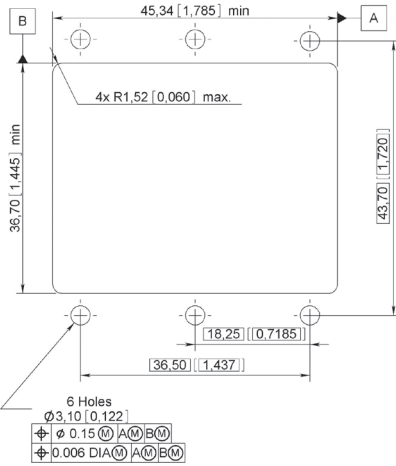


| Max dimension mm (inch) | All crimp contact arrangements except MC2 – MC3 - 106 | Contact arrangement 106 | Contact arrangement 36C7 & 36T7 |
|-------------------------|---|-------------------------|---------------------------------|
| A | 38.5 (1.516) | 33.5 (1.319) | 39.05 (1.537) |
| B | 14.2 (0.559) | 9.5 (0.374) | 18.55 (.730) |

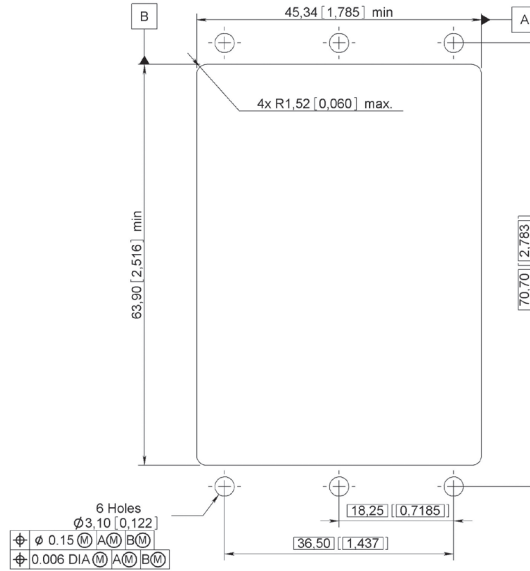
⚠ Important Note: Only 4mm of space is available on the modification code selection

Panel Cut Outs

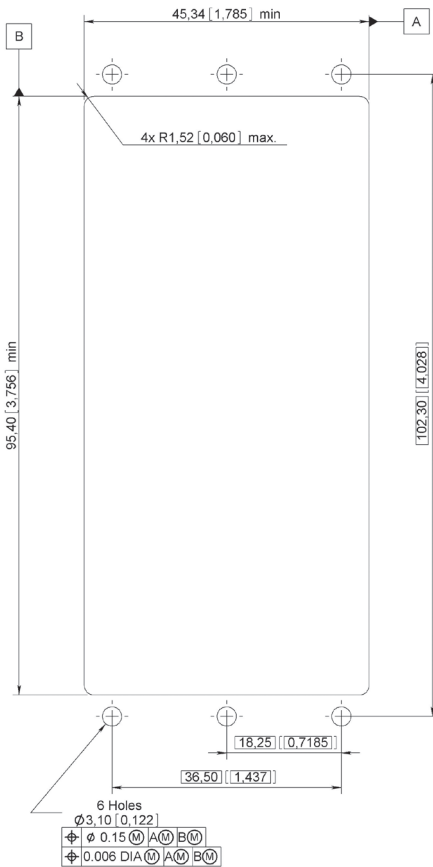
SHELL SIZE 1



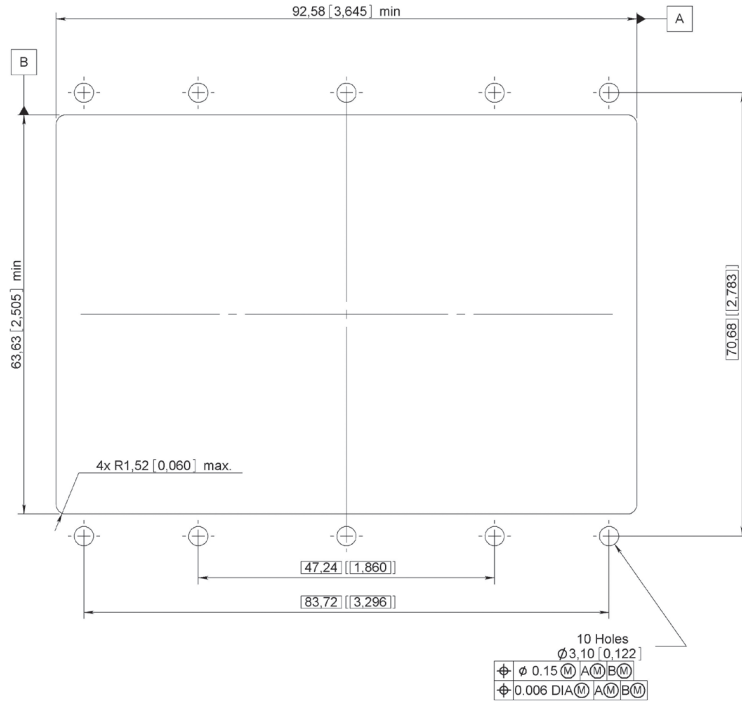
SHELL SIZE 2



SHELL SIZE 3



SHELL SIZE 4



DSX SERIES

Cross Reference

FROM RADIAL TO MILITARY P/N

| Radiall part number | Mil part number |
|----------------------|-----------------|
| 616200 | M3902911144 |
| 616210 | M3902911145 |
| 616230 | M3902911146 |
| 616240 | M3902911147 |
| 616300 | M3902912148 |
| 616310 | M3902912149 |
| 616330 | M3902912150 |
| 616340 | M3902912151 |
| 616910 | MS2748822 |
| 616911 | MS2748820 |
| 616912 | MS2748816 |
| 616913 | MS2748812 |
| DSXE1PS106P73 | M8165929A20041 |
| DSXE1PS26S73 | M8165929A20002 |
| DSXE1PS32C2S73 | M8165929A20140 |
| DSXE1PS32C4S73 | M8165929A20150 |
| DSXE1PS33C4S73 | M8165929A20104 |
| DSXE1PS40C1S73 | M8165929A20142 |
| DSXE1PS40S73 | M8165929A20010 |
| DSXE1PS45S73 | M8165929A20018 |
| DSXE1PS57P73 | M8165929A20025 |
| DSXE1PS57S73 | M8165929A20026 |
| DSXE1PS67S73 | M8165929A20034 |
| DSXE1PSD8S73 | M8165929A20084 |
| DSXE1PXC8S73 | M8165929A20136 |
| DSXE1R32C4P00 | M8165931A20149 |
| DSXE1R33C4P00 | M8165931A20103 |
| DSXE1RS106S00 | M8165931A20042 |
| DSXE1RS26P00 | M8165931A20001 |
| DSXE1RS32C2P00 | M8165931A20139 |
| DSXE1RS40C1P00 | M8165931A20141 |
| DSXE1RS40P00 | M8165931A20009 |
| DSXE1RS45P00 | M8165931A20017 |
| DSXE1RS57P00 | M8165931A20025 |
| DSXE1RS57S00 | M8165931A20026 |
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Cross Reference

DSX SERIES

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Cross Reference

DSX SERIES

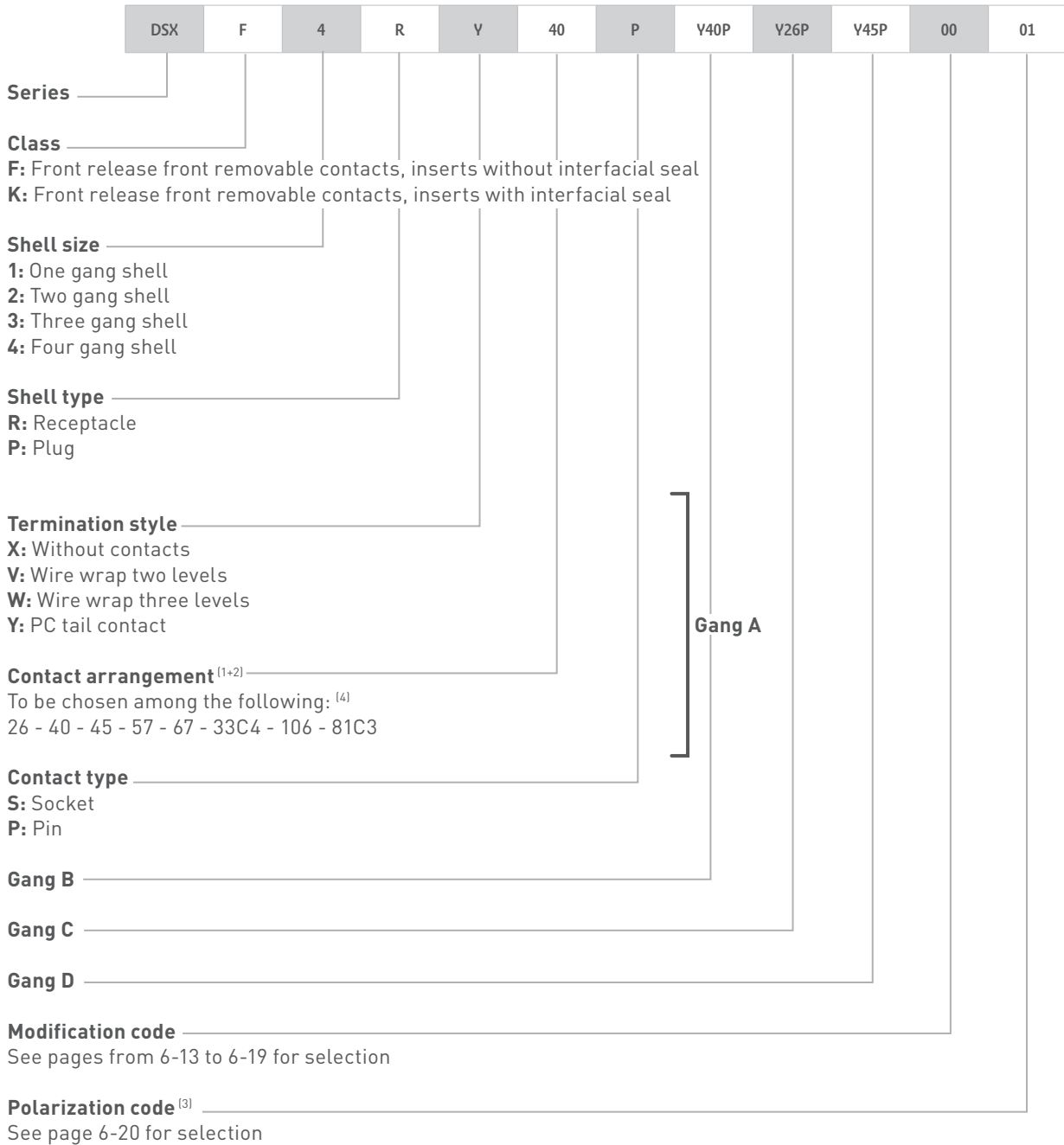
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| DSXT4RS106SS106SS67PS67P00 | M8165964A20101 |
| DSXT4RS106SS67PS106SSC8P00 | M8165964A20097 |
| DSXT4RS106SS67PSC8PSC8P00 | M8165964A20099 |
| DSXT4RS106SSC8PS106SS106S00 | M8165964A20095 |
| DSXT4RS26PS26PS26PS26P00 | M8165964A20007 |
| DSXT4RS40PS40PS40PS40P00 | M8165964A20015 |
| DSXT4RS45PS45PS45PS45P00 | M8165964A20023 |
| DSXT4RS57PS57PS57PS57P00 | M8165964A20031 |
| DSXT4RS67PS67PS33C4PS33C4P00 | M8165964A20081 |
| DSXT4RSC8PSC8PS67PS67P00 | M8165964A20085 |



DSX SERIES

How to Order DSX-F Connectors



For Technical Characteristics please see page 6-7.

NOTES:

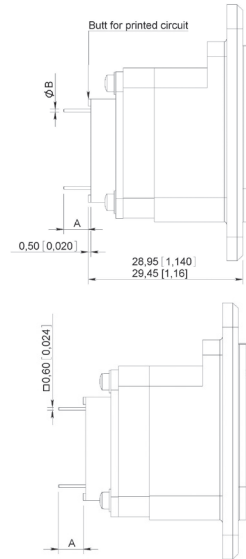
- (1) For mixed contact arrangements, order coax contacts separately see contacts available on pages 6-24 to 6-26. Coax contacts are rear release rear removable
- (2) For 33C4 and 67 contact arrangements, size 16 contacts cavities are for front release front removable contacts. Size 16 contacts are to be ordered separately
- (3) Without polarization code the connector is delivered with the polarizing system unassembled
 Polarization code 00: the connector is delivered without polarizing system
 Polarization code from 01 to 216: the connector is delivered with polarization hardware assembled as defined by code
- (4) Contact arrangement 26 and 40 available only in class F connector version

Contacts

CONTACTS WITH PC TAIL SIZES 22, 20HD & 16

Contacts are delivered installed in the connector

| Contact size | Contact arrangement | Pin | Socket | Ins / Ext tool | Dimensions mm (inch) | |
|-------------------|---------------------|-----------|--------|----------------|----------------------------|------------------------|
| | | | | | A | B |
| 22 | 81C3 -106 | / | 620361 | 282500 | 5.95/6.75 (0.234/0.265) | 0.6 +/-0.03 (0.023) |
| 20HD | 40-45-67-33C4-57 | 616220 | / | 282503 | 4.3/5.1 (0.169/0.200) | |
| 16 ⁽¹⁾ | 26-67-33C4 | 616235 | / | 282504 | 3.55/4.32 (0.140/0.170) | Max. 1 (0.039) |
| | | 616235010 | / | | 10.20/11 (0.400/0.433) | |
| | | 616234 | / | | | |



SIZE 8 PIN QUADRAx CONTACTS

| Part number | contact termination | Dimension X (mm inch) | Ins/Ext tool |
|-------------|---------------------|--------------------------|--------------|
| 620176008 | Y | 7.20/6.40 [.283/.252] | 282549009 |

CONTACTS WITH WIRE WRAP POST SIZES 22 & 20HD

Contacts are delivered installed in the connector. For 67 and 33C4 contact arrangements, front release front removable size 12 and 16 contacts are not delivered with the connector. They must be ordered separately and chosen among size 16 PC tail contacts and 616326 size 16 solder cup contact (rear extension from insert: 4.4/5.2 [0.173/0.204]).

| Contact size | AWG | Contact arrangement | Pin | Socket | Ins / Ext tool | Dimensions A mm (inch) |
|--------------|----------------|---------------------|----------------------------|----------------------------|----------------|------------------------------|
| 22 | 26 28 30 | 106 | / | 620351 (2 wraps levels) | 282500 | 9.45/10.45 (0.372/0.412) |
| | | | | 620352 (3 wrap levels) | | 12.75/13.75 (0.502/0.541) |
| 20HD | 26 28 30 | 40-45-67-33C4-57 | 616222 (2 wraps levels) | / | 282503 | 10/11 (0.394/0.433) |
| | | | 616224 (3 wrap levels) | | | 13.3/14.3 (0.523/0.563) |

COAXIAL CRIMP CONTACTS FOR 33C4 CONTACT ARRANGEMENTS SIZE 5

These coaxial contacts are rear release rear removable and designed to be installed in 33C4 and 81C3 contact arrangement class F or K. They must be ordered separately.

| Contact size | Contact arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | |
|--------------|---------------------|-----------------------|--------|--------|-------------------------|------------|------|-------------------------|-------------------------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 5 | 33C4 81C3 | Microdot 250.39.37 | 616126 | / | 282281 (M22550/2-01) | 282974 | 6 | 282293 (M22520/5-01) | 282246 (M22520/5-05) | B |
| | | RG 178 KX 21 | 616127 | / | | | | | | |

EN4531-101 (ABS 1379) ADAPTER FOR SIZE 5 CAVITY

Radiall offers a unique solution to equip your DSX connectors with EN4531 fiber optic contacts. The adapter will turn a ARINC 404 size 5 cavity into a fiber optic link, using EN4531-101 fiber optic contacts.

EN4531-101 adapter for size 5 cavity is available for DSX F connectors with inserts 33C4 and 81C3 only, see page 6-28

NOTE:

(1) Front release front removable size 16 contacts PC tail termination are installed only for 26 contact arrangement (which is fitted with 616235 contacts). For 67 and 33C4, contact arrangements front release front removable size 16 contacts must be ordered separately

DSX SERIES

How to Order DSX-Data Bus Connectors

| | | | | | | | |
|-----|---|---|---|------|------|----|----|
| DSX | E | 2 | P | B4TP | S67S | 00 | 01 |
|-----|---|---|---|------|------|----|----|

Series _____

Class _____

- N:** Non environmental (without grommet and interfacial seal)
- E:** Environmental (with grommet and interfacial seal)
- T:** Connector with interfacial seal on insert with protruding contacts only

Shell size _____

- 1:** One gang shell
- 2:** Two gang shell
- 3:** Three gang shell
- 4:** Four gang shell

Shell type _____

- R:** Receptacle
- P:** Plug

Gang A BUS contact arrangement ⁽¹⁾ _____

Refer to page 6-43

Gang B contact arrangement _____

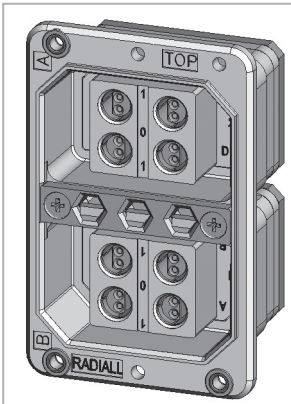
Refer to page 6-43

Modification code _____

See from page 6-13 to 6-19

Polarization code _____

See page 6-20 for selection

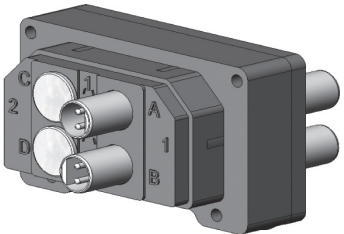
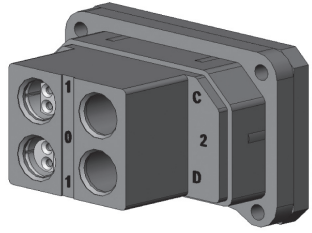
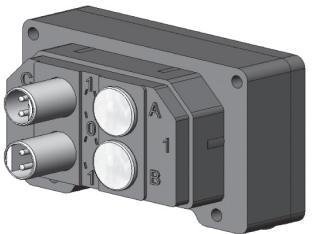
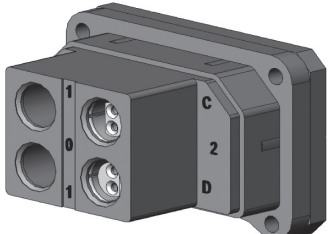
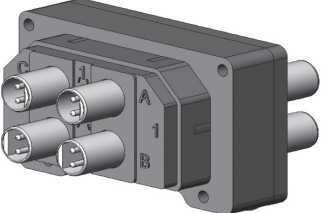
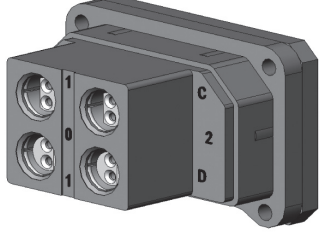
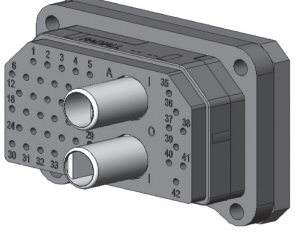
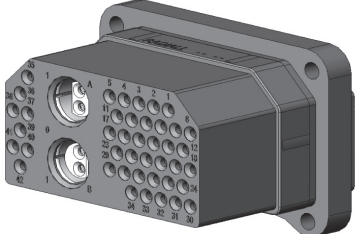


For Technical Characteristics please see pages 6-7
 For any additional information ask for the RP2667 DSX Data Bus from Radiall

NOTES:
 (1) Data bus contact arrangements have no interfacial seal and no rear grommet

Contact Arrangements

PIN INSERT MATING SIDE SHOWN – ALL INSERTS DWV 1000 V AC

| Insert name | Number of contacts | Insert name | Number of contacts |
|---------------|--|-------------|---|
| B2TP1 – H2TP1 |  <p>2 x Twinax Location A, B</p> | B2S1 |  <p>2 x Twinax Location A, B</p> |
| B2TP2 – H2TP2 |  <p>2 x Twinax Location C, D</p> | B2S2 |  <p>2 x Twinax Location C, D</p> |
| B4TP – H4TP |  <p>4 x Twinax Location A, B, C, D</p> | B4S |  <p>4 x Twinax Location A, B, C, D</p> |
| S42B2P |  <p>2 x Twinax 42 x #20HD Location A, B</p> | S42B2S |  <p>2 x Twinax 42 x #20HD Location A, B</p> |

DSX SERIES

Dimensions

B2TP, H2TP, B4TP & H4TP AIRCRAFT CONNECTOR

The aircraft connector is comprised of two sub assemblies

- 1- A plug shell fitted with an insert incorporating 2 (B2TP or H2TP) or 4 (B4TP or H4TP) twinax pin contacts.
- 2- One or two connection plugs depending on the number of BUS lines (B2 or B4). If there are two BUS lines (B2TP or H2TP) the two twinax contacts and the connection plug can be installed either in position 1 (B2TP1 or H2TP1) or in position 2 (B2TP2 or H2TP2).

The difference between B2TP1 and H2TP1, B2TP2 and H2TP2, B4TP and H4TP depends on the shielded twisted pairs cable that is used.

For Fileca F2709/12 cable the designation used are B2TP1, B2TP2, B4TP.

Description: differential impedance = $75 \pm 5\Omega$

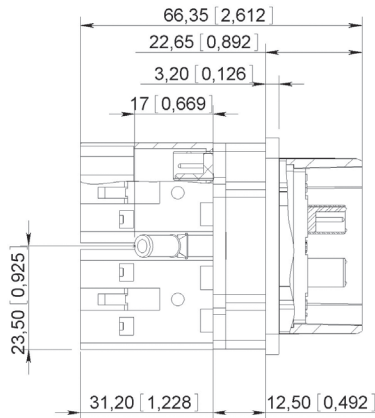
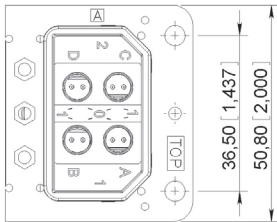
Shielded twisted pair (each conductor = AWG 20) Outer diameter = 5.35mm (0.206 inch max)

For Fileca F2709/9 cable the designation used are H2TP1, H2TP2, H4TP.

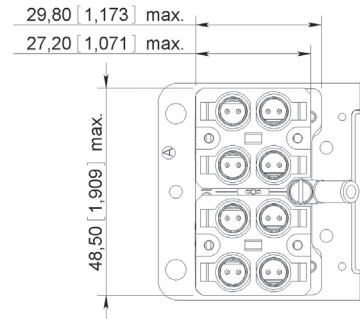
Description: differential impedance = $75 \pm 5\Omega$

Shielded twisted pair (each conductor = AWG 22) Outer diameter = 4.80mm (0.189 inch max)

MATING FACE

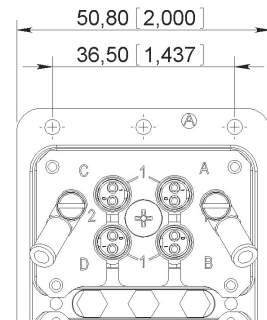
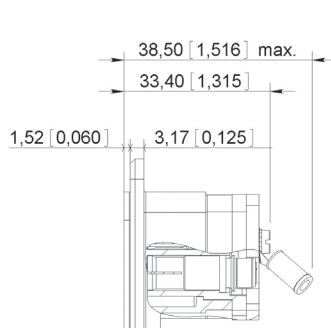
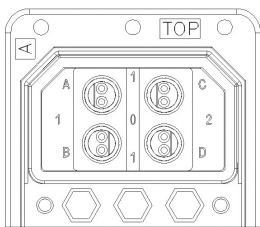


WIRING REAR FACE



B2TP, H2TP, B4TP & H4TP EQUIPMENT CONNECTOR

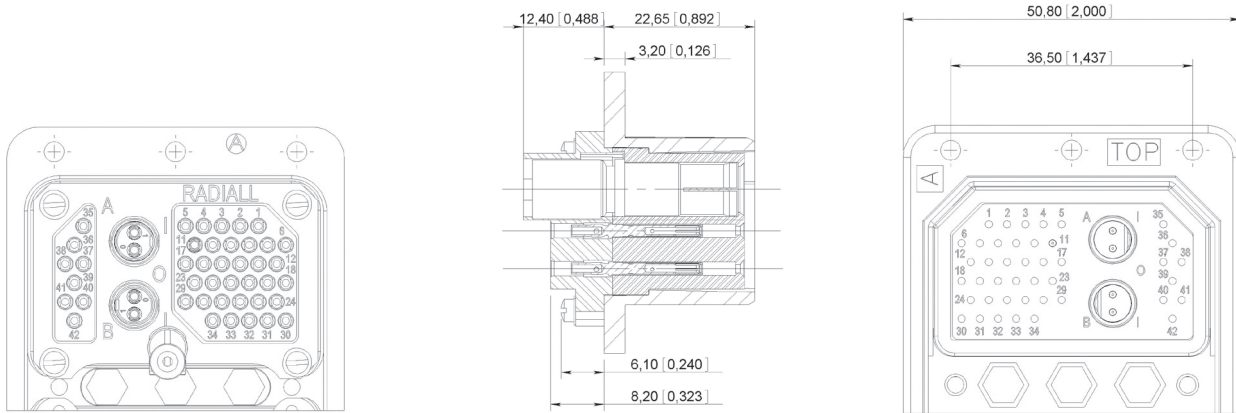
The equipment connector is comprised of one receptacle shell fitted with an insert incorporating 2 (B2S) or 4 (B4S) twinax socket contacts.



Dimensions

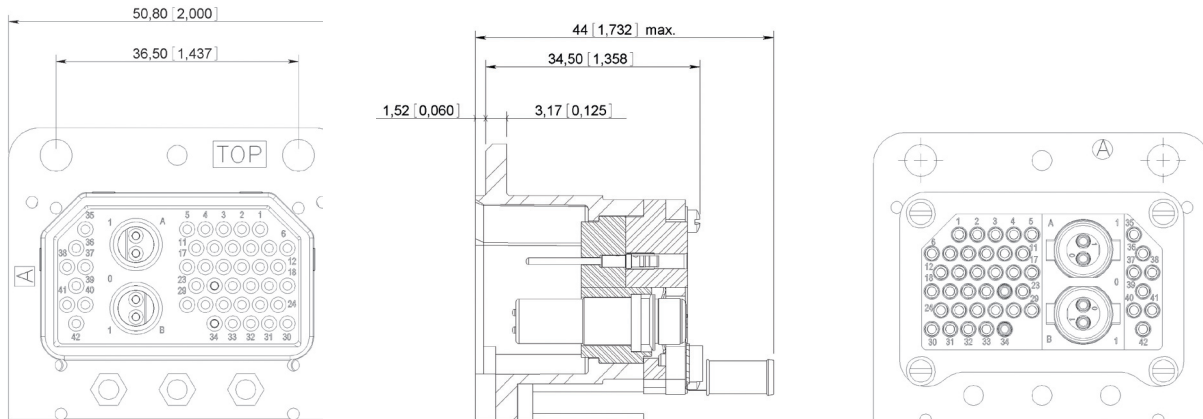
S42B2P AIRCRAFT CONNECTOR

The aircraft connector is comprised of a plug shell fitted with a S42B2P insert



S42B2P EQUIPMENT CONNECTOR

The equipment connector is comprised of a receptacle shell fitted with a S42B2P insert



Contacts

TWINAX

| Contact size | Cable | Pin | Socket | Center contact | | | Outer body | |
|-----------------------|----------------------------|--------|--------|-------------------------|------------|-------------|-------------------------|--------------------------|
| | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die |
| B2TP B4TP | F2709/12 | / | 616090 | 282281 (M22520/2-01) | 282959 | 7 | 282293 (M22520/5-01) | 282248 OCETA M1001 |
| H4TP H2TP 42B2S | F2709/9 | / | 616091 | | | 8 | | |
| B4S B2S | AWG 20 AWG 22 AWG 24 | / | 616092 | | | 7 6 5 | Not applicable | |
| 42B2P | AWG 20 AWG 22 AWG 24 | 616192 | / | | | 7 6 5 | | |

How to Order Arinc 404 Shell type B Connectors

| | | | | | | | | | |
|-----|---|---|----|---|-----|-----|-----|----|----|
| DSX | 4 | G | 13 | S | 14S | 16S | 25S | 00 | 01 |
|-----|---|---|----|---|-----|-----|-----|----|----|

Series _____

Shell size _____
 1: One gang shell
 2: Two gang shell
 3: Three gang shell
 4: Four gang shell

Shell type _____
 G: Receptacle
 H: Plug

Gang A _____

Contact arrangement
 See available contact arrangements on pages 6-48 and 6-49

Termination style ⁽²⁺³⁾ _____
 X: Without contacts
 S: Crimp ⁽¹⁾
 Z: Fixed solder cup
 K: Wire wrap one levels
 V: Wire wrap two levels
 W: Wire wrap three levels
 Y: PC tail contact

} **Note 5**

Gang B _____

Gang C _____

Gang D _____

Modification code _____
 See from page 6-13 to 6-19 for selection

Polarization code ⁽⁴⁾ _____
 See page 6-20 for selection

CONTACT ARRANGEMENT CODE TABLE

| | 00 | 8 | 13 | 26 | 40 | 45 | 57 | 67 | 106 | 32C2 | 32C4 | 40C1 | C2 | C3 | C8 | D8 |
|----------------------------|----|----|----|----|----|----|----|----|-----|------|------|------|----|----|----|----|
| Insert for pin contacts | 10 | 12 | 44 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 40 | 28 | 34 | 36 | 30 | 38 |
| Insert for socket contacts | 11 | 13 | 45 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 41 | 29 | 35 | 37 | 31 | 39 |

NOTES:

- (1) If you need to use reduced crimp barrel contacts, use code X and order contacts separately
- (2) For C2, C3 and C8 contact arrangements which include coax contacts, use termination code X and order coax contacts separately.
- (3) For mixed layout 32C2, 32C4 and 40C1, the connector is delivered with signal and power contacts but without coax contacts. Order coaxial contacts separately
- (4) Without polarization code: the connector is delivered with polarizing system unassembled
 Polarization code 00: the connector is delivered without polarizing system
 Polarization code from 01 to 216: the connector is delivered with the polarization hardware assembled as defined by code
- (5) For contact arrangement 67 and 32C4 with K, V, W or Y termination styles, size 16 contacts are crimp contacts shipped loose with the connector

Technical Characteristics

MATERIALS

| Description | Material | Plating |
|--|---------------------------|------------------------------|
| Shell | Aluminium alloy | Cadmium yellow chromate* |
| Insert | Thermosetting resin | / |
| Metallic insert | Aluminium alloy | Cadmium clear chromate |
| Rear spacer | Silicone rubber | / |
| Retention clip | Copper alloy | / |
| Contact | Copper alloy | Gold over nickel under plate |
| Insert retention plate | Aluminium alloy | Yellow anodized |
| Insert retention plate with attaching tabs | Aluminium alloy | Cadmium yellow chromate* |
| Polarizing posts | Stainless steel | / |
| Polarizing keys | Zinc alloy | Cadmium yellow chromate* |
| Polarizing keys retention plate | Aluminium alloy | Yellow anodised* |
| Screws, washers, clinch-nuts | Corrosion resistant steel | / |

* More platings are available, see descriptions in modification codes

Electrical Characteristics

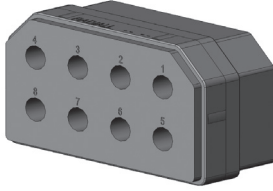
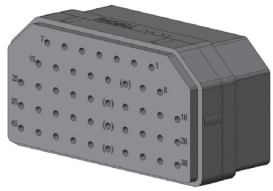

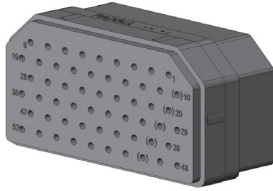
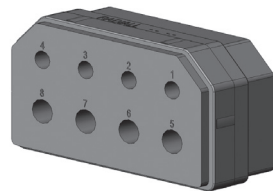
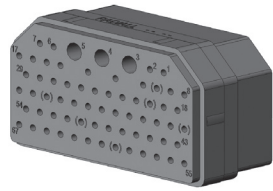
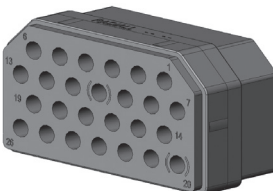
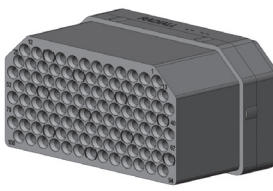
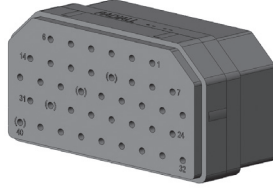
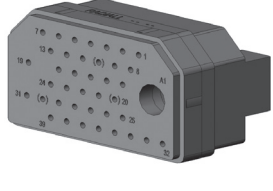
They are the same as those described for SAE AS81659 connectors on page 6-7.

Mechanical and Environmental Characteristics

These characteristics are the same as described in SAE AS81659, with the exception that the altitude moisture test is not performed. This test is replaced by a moisture resistance test performed according to method 1002.2 type II of MIL-STD-1344A.

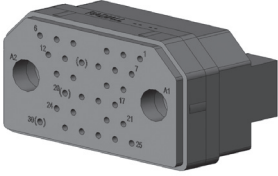
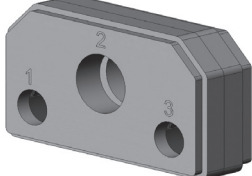
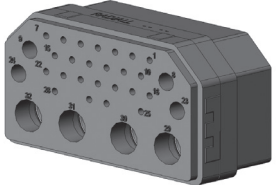
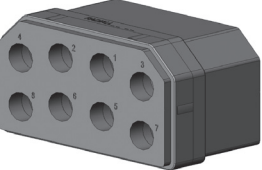
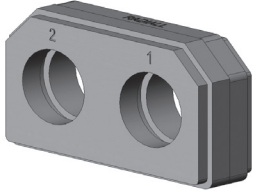
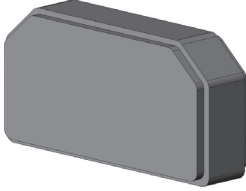
Contact Arrangements

Pin insert mating side is shown below in the table

| Insert name | Number of contacts | DWV | Termination availability | Insert name | Number of contacts | DWV (1) | Termination availability |
|-------------|--|--------------|---|-------------|---|--------------|---|
| 8 |  8 x #12 | 1500V – 60Hz | S- Z | 45 |  45 x #20 | 1500V – 60Hz | For pin S-Z-Y-K-V-W For socket S-Z-W |
| 13 |  13 x #16 | 1800V – 60Hz | S- Z For pin | 57 |  57 x #20 | 1500V – 60Hz | For pin S-Z-Y-K-V-W For socket S-Z-W |
| D8 |  4 x #16 4 x #12 | 1500V – 60Hz | S – Z | 67 |  64 x #20HD 3 x #16 | 1000V – 60Hz | For pin S-Z-Y-K-V-W For socket S-Z-W |
| 26 |  26 x #16 | 1500V – 60Hz | For pin S-Z-K For Socket S-Z | 106 |  106 x #22 | 1000V – 60Hz | S-Y-V-W |
| 40 |  40 x #20 | 1500V – 60Hz | For pin S-Z-Y-K-V-W For socket S-Z-W | 40C1 |  1 x #5 (coax) 39 x #20 | 1500V – 60Hz | For pin S-Z-Y-K-V-W For socket S-Z-W |

NOTE:
(1) Dielectric withstanding voltage

Contact Arrangements

| Insert name | Number of contacts | DWV | Termination availability | Insert name | Number of contacts | DWV | Termination availability |
|-------------|---|---|---|-------------|---|--------------|--------------------------|
| 32C2 |  2 x #5 (coax) 30 x #20 | 1500V – 60Hz 1000V for coax cavity | For pin S-Z-Y-K-V-W For socket S-Z-W | C3 |  2 x #7 (coax) 1 x #3 | Metallic | S |
| 32C4 |  4 x #9 (coax) 4 x #16 24 x #20 | 1500V – 60Hz 1000V for coax cavity | For pin S-Z-Y-K-V-W For socket S-Z-W | C8 |  8 x #9 (coax) | 1000V – 60Hz | S |
| C2 |  2 x #1 (coax) | Metallic | S | 00 |  | | Dummy insert |

DSX SERIES

Contacts

SIGNAL AND POWER CRIMP CONTACTS SIZES 22, 20HD, 16 & 12

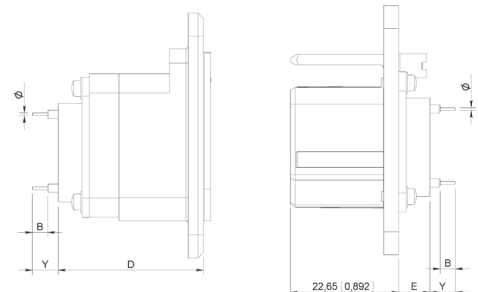
| Contact size | Wire | | | | Pin Radial P/N MIL P/N | Socket Radial P/N MIL P/N | Crimping tool | Positioner | SEL. | Ins/Ext Tool | | |
|---------------------------|------|--------------------|--------------------------|----------------------------|------------------------------|------------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------|
| | AWG | Cross section (mm) | Wire outside dia. (inch) | Stripping length mm (inch) | | | | | | | | |
| 22 | 22 | 0.38 | 1.4 | 3.05 | 616200 (MIL 39029/11-144) | 616300 (MIL 39029/12-148) | 282281 (M22520/2-23) | 282970 (M22520/2-23) | 4 | 282885 (M81969/1-01) | | |
| | 24 | 0.21 | [0.055] | [0.138] | | | | | 3 | | | |
| 22 reduced crimp barrel | 28 | 0.093 | 1.4 | 3.05 | 616201 | 616301 | | 282971 (M22520/2-08) | 5 | | 282886 (M81969/1-02) | |
| | 30 | 0.055 | [0.055] | [0.138] | | | | | 4 | | | |
| 20HD | 20 | 0.60 | 1.8 | 4.0 | 616210 (MIL 39029/11-145) | 616310 (MIL 39029/12-149) | | 282971 (M22520/2-08) | 7 | | 282886 (M81969/1-02) | |
| | 22 | 0.38 | [0.071] | [0.157] | | | | | 6 | | | |
| 20HD reduced crimp barrel | 26 | 0.14 | 1.8 | 4.0 | 616211 | 616311 | | 282971 (M22520/2-08) | 5 | | 282886 (M81969/1-02) | |
| | 28 | 0.093 | [0.071] | [0.157] | | | | | 4 | | | |
| 20 | 20 | 0.60 | 1.8 | 4.0 | 610220 | 610325 | | 282971 (M22520/1-01) | 282972 (M22520/1-02) | | 4 | 282943 |
| | 22 | 0.38 | [0.071] | [0.157] | | | | | | | 3 | |
| 20 reduced crimp barrel | 26 | 0.14 | 1.8 | 4.0 | 610221 | 610321 | 282972 (M22520/1-02) | | 3 | 282943 | | |
| | 28 | 0.093 | [0.071] | [0.157] | | | | | 2 | | | |
| 16 | 16 | 1.34 | 2.6 | 6.0 | 616230 (MIL 39029/11-146) | 616330 (MIL 39029/12-150) | 282971 (M22520/1-01) | | 282972 (M22520/1-02) | 6 | 282546 (M81969/1-03) | |
| | 18 | 0.93 | [0.102] | [0.236] | | | | | | 5 | | |
| 16 reduced crimp barrel | 20 | 0.60 | 2.6 | 6.0 | 616231 | 616331 | 282971 (M22520/1-01) | | 282972 (M22520/1-02) | 4 | 282546 (M81969/1-03) | |
| | 22 | 0.38 | [0.102] | [0.236] | | | | | | 5 | | |
| 12 | 12 | 3.18 | 3.4 | 6.0 | 616240 (MIL 39029/11-174) | 616340 (MIL 39029/12-151) | 282971 (M22520/1-01) | | 282579 (M22520/1-11) | 8 | 282547 (M81969/28-02) | |
| | 14 | 1.91 | [0.134] | [0.236] | | | | | | 7 | | |
| 12 | 16 | 1.34 | 3.4 | 6.0 | 616240 (MIL 39029/11-174) | 616340 (MIL 39029/12-151) | 282971 (M22520/1-01) | 282579 (M22520/1-11) | 6 | 282547 (M81969/28-02) | | |
| | 14 | 1.91 | [0.134] | [0.236] | | | | | 7 | | | |

PC TAIL CONTACTS SIZES 22, 20HD & 20 PC TAIL CONTACTS

PC tail contacts are delivered installed in the connector. Connectors with PC tail contacts have no wire separator. For 32C4 and 67 contact arrangements, size 16 contacts are delivered in crimp termination and are shipped loose with the connector.

| Contact size | Contact arrangement | Pin | Socket | Extraction tool | Dimensions mm (inch) | | | | |
|--------------|-----------------------|---------|----------------------------|-----------------|------------------------------|-------------|----------------|-------------------------------|----------------------------|
| | | | | | Y | B | Dia | D | E |
| 22 | 106 | 616206* | 616379 | 282890 | 6.1/5.3 [0.240/0.209] | 6.5 (0.256) | 0.6 (0.023) | 25.25/25.75 (0.0994/1.013) | 1.55/1.75 (0.061/0.069) |
| | | | 616303 | | 14.4/13.6 [0.567/0.535] | 9.4 (0.370) | | | |
| | | | 616306* | | 5.9/6.7 [0.232/0.263] | 3.8 (0.149) | | | |
| 20HD | 67 | 610216* | / | 282891 | 5.75/6.65 [0.226/0.262] | / | 0.8 (0.031) | 29.20/29.80 (1.149/1.173) | 5.40/5.80 (0.212/0.228) |
| | 32C4 | / | 6.35/7.55 [0.250/0.297] | | 29.70/30.30 (1.169/1.192) | | | | |
| | 67 | 610219 | / | | 3.35/4.25 [0.131/0.168] | | | 29.20/29.80 (1.149/1.173) | |
| | 32C4 | / | 3.95/5.15 [0.155/0.203] | | 29.70/30.30 (1.169/1.192) | | | | |
| 20 | 40-45-57 32C2-40C1 | 610226* | / | 282943 | 6.10/7.40 [0.240/0.291] | / | 0.8 (0.031) | 28.55/29.15 (1.124/1.147) | 5.40/5.80 (0.212/0.228) |

Connectors delivered in the "Y" termination style will be fitted with contacts marked by "*". If you want to use another kind of PC tail contact use termination "x" when ordering the connector and order contacts separately

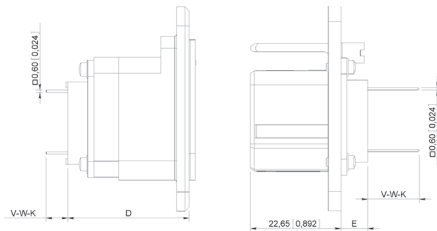


Contacts

CONTACTS WITH WIRE WRAP POST SIZES 22, 20HD & 20

Wire wrap contacts are delivered installed in the connector. Connectors with wire wrap contacts have no wire separator. For 32C4 and 67 contact arrangements, size 16 contacts are delivered in crimp termination and are shipped loose with the connector.

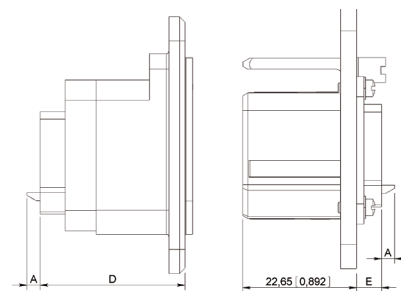
| Contact size | AWG | Contact arrangement | Pin | Socket | Extraction tool | Dimensions mm (inch) | | | | |
|--------------|----------------|-----------------------|--|---------------------------|-----------------|-------------------------------|----------------------------|----------------------------|-----------------------------|------------------------------|
| | | | | | | D | E | K (1 wrap) | V (2 wrap) | W (3 wrap) |
| 22 | 26 28 30 | 106 | 610203 (2 wrap levels) | 610303 (2 wrap levels) | 282948 | 25.25/25.75 (0.0994/1.013) | 1.55/1.75 (0.061/0.069) | | 10/11 (0.394/0.433) | 12.50/13.50 (0.492/0.531) |
| | | | 610204 (3 wrap levels) | 610304 (3 wrap levels) | | | | | | |
| 20HD | 26 28 30 | 67 | 610217 (1 wrap level) | / | 282948 | 28.8/29.2 (1.133/1.150) | 5.40/5.80 (0.212/0.228) | 6.35/7.35 (0.250/0.289) | 9.35/10.35 (0.368/0.407) | 11.85/12.85 (0.466/0.506) |
| | | 32C4 | 610215 (2 wrap levels) 610214 (3 wrap levels) | | | | | | | |
| 20 | 26 28 30 | 40-45-57 32C2-40C1 | 610228 (1 wrap level) 610225 (2 wrap levels) 610224 (3 wrap levels) | / | 282949 | 28.55/29.15 (1.147/1.124) | 5.40/5.80 (0.212/0.228) | 6.95/8.25 (0.273/0.325) | 9.95/11.25 (0.391/0.443) | 12.60/13.8 (0.496/0.543) |



SOLDER CUP CONTACT SIZES 20HD, 20, 16 & 12

Solder cup contacts are fixed contacts delivered installed in the connector. Connectors with solder cup contacts have no wire separator.

| Contact size | Contact arrangement | Stripping length | Dimensions mm (inch) | | |
|--------------|------------------------|------------------|----------------------|------------------------------|----------------------------|
| | | | A | D | E |
| 20HD | 67 | 2.5 (0.098) | 3 (0.118) | 29.20/29.80 (1.149/1.173) | 5.40/5.80 (0.212/0.228) |
| | 32C4 | | | 29.70/30.30 (1.169/1.192) | |
| 20 | 40-45-57- 32C2-40C1 | 5 (0.197) | 4.5 (0.177) | 28.55/29.15 (1.124/1.147) | |
| 16 | 26-67 | | | 29.20/29.80 (1.149/1.173) | |
| 12 | 8-D8 | | | 29.70/30.30 (1.169/1.192) | |
| | | | | 28.55/29.15 (1.124/1.147) | |



THERMOCOUPLE CONTACT SIZES 22 & 20HD refer to page 6-22

FIBER OPTIC TERMINI SIZES 16 & 12 refer to page 6-23

Contacts

COAXIAL CRIMP CONTACT SIZE 1

| Contact size | Contact Arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | |
|--------------|---------------------|--------------------------|-----------------------|--------|----------------|------------|------|-------------------------|-------------------------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 1 | C2 | UT 141 RG 402 | 616005 | / | Solder contact | | | | | |
| | | RG 58 RG 141 KX 15 | 616005 Right angle | / | Solder contact | | | 282293 (M22520/5-01) | 282246 (M22520/5-05) | A |
| | | RG 214 RG 225 | / | 610108 | | | | SMA termination | | |
| | | SMA | 616009 | / | | | | | | |

For other cables, please consult Radiall.

COAXIAL CRIMP CONTACT SIZE 3

| Contact size | Contact Arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | |
|--------------|---------------------|------------------|--------|--------|----------------|------------|------|-------------------------|-------------------------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 3 | C3 | RG 214 RG 225 | / | 610118 | Solder | | | 282293 (M22520/5-01) | 282247 (M22520/5-61) | A |
| | | UT 141 RG 402 | 616014 | / | Solder contact | | | | | |

For other cables, please consult Radiall.
Dielectric withstanding voltage at sea level: 1500 V rms

COAXIAL CRIMP CONTACT SIZE 5

| Contact size | Contact Arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | |
|--------------|---------------------|---------------------------|--------|-----------|----------------|------------|------|-------------------------|-------------------------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 5 | 32C2 40C1 | RG 58 RG 141 KX 15 | 610120 | 610020001 | Solder | | | 282293 (M22520/5-01) | 282246 (M22520/5-05) | A |
| | | RG 142 RG 223 KX 23 | 610122 | 610022001 | | | | | | B |
| | | RG 316 KX 22 | 610126 | 610026 | | | | | | |
| | | KX 21 DT | 610127 | / | | | | | | |
| | | RG 178 | 610119 | / | | | | | | |
| | | UT 085 | 610123 | / | | | | | | |
| | | UT 141 | 616009 | / | Solder | | | | | |

For other cables, please consult Radiall.
Extraction tool: 282946 (M81969/28-01)

Contacts

COAXIAL CRIMP CONTACT SIZE 7

| Contact size | Contact Arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | |
|--------------|---------------------|----------------------------|--------|-----------|----------------|------------|------|-------------------------|-------------------------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 7 | C3 | RG 58 RG 141 KX 15 | 610120 | 610020001 | Solder | | | 282293 (M22520/5-01) | 282246 (M22520/5-05) | A |
| | | RG 174 RG 316 RG 188 | 610126 | 610026 | | | | | | |

For other cables, please consult Radiall.
 Extraction tool: 282946 (M81969/28-01)
 Dielectric withstanding voltage at sea level: 750 V rms

COAXIAL CRIMP CONTACT SIZE 9

| Contact size | Contact Arrangement | Cable | Pin | Socket | Center contact | | | Outer body | | |
|--------------|---------------------|--------------------------|--------|--------|-------------------------|-----------------|------|-------------------------|-------------------------|-----|
| | | | | | Crimping tool | Positioner | SEL. | Crimping tool | Die | Hex |
| 9 | C8 32C4 | RG 316 KX 22 | 610146 | 610046 | Solder | | | 282293 (M22520/5-01) | 282246 (M22520/5-05) | B |
| | | RG 178 KX 21 | 610147 | 610047 | | | | | | A |
| | | RG 58 RG 141 KX 15 | 610140 | 610040 | | | | | | |
| | | RG 142 | 610149 | 610049 | | | | | | |
| | | S280W 503-2 | / | 610044 | 282281 (M22520/2-01) | DANIELS K345 | 6 | 282236 (M22520/5-45) | B | |
| | | UT 085 | 610148 | / | Solder | | | | | |

For other cables, please consult Radiall.
 Extraction tool: 282946 (M81969/28-01)

Accessories

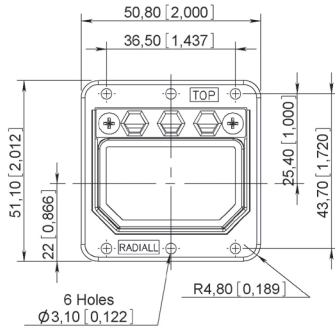
FILLER PLUGS

| Designation | Filler Plugs Part Number |
|------------------|--------------------------|
| Size 22 (black) | 620920 |
| Size 20 (white) | 610940 |
| Size 20HD (red) | 610941 |
| Size 16 (blue) | 620922 |
| Size 12 (yellow) | 616923 |
| Size 5 (white) | 616802 |
| Size 9 (white) | 616802 |

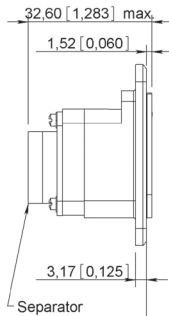
For Dust caps & backshells please refer to page 6-29 and 6-30

Dimensions

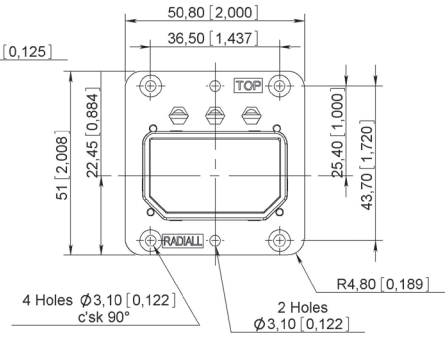
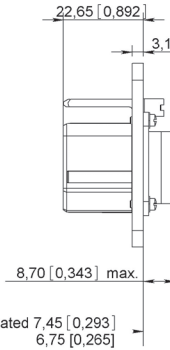
SHELL SIZE 1



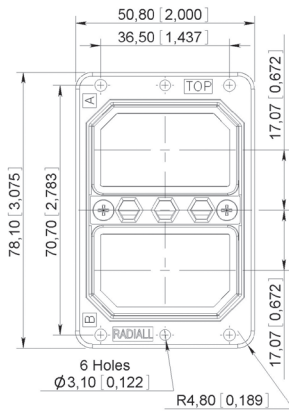
RECEPTACLE



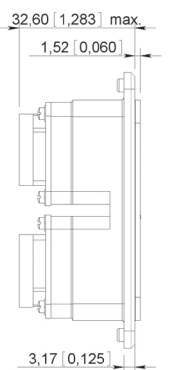
PLUG



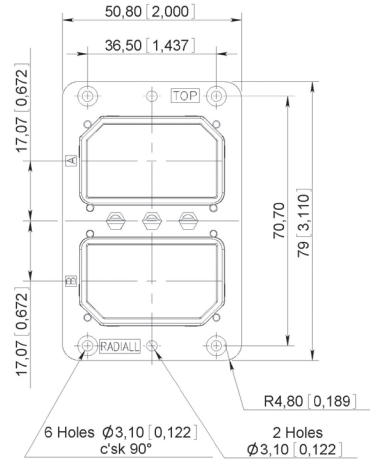
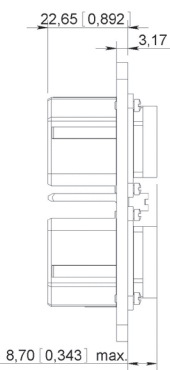
SHELL SIZE 2



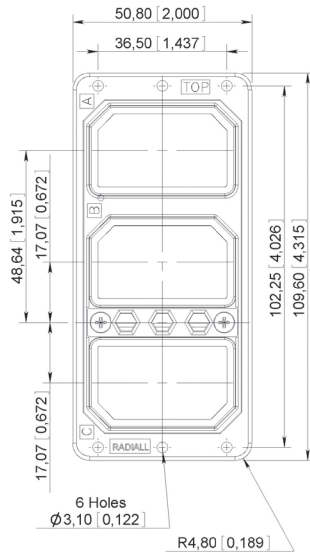
RECEPTACLE



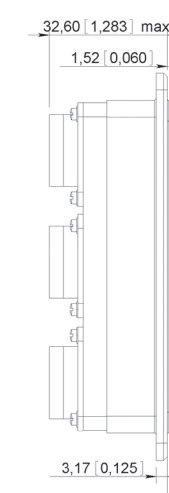
PLUG



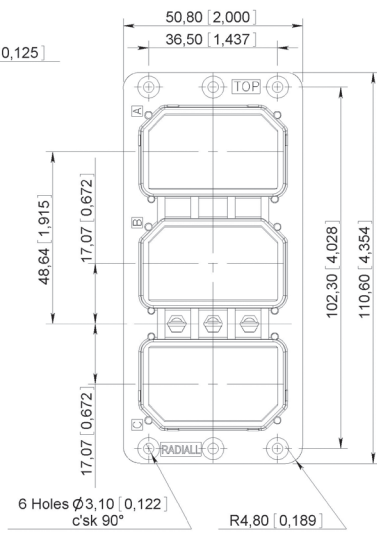
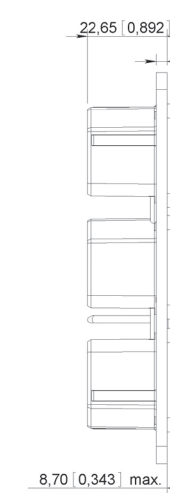
SHELL SIZE 3



RECEPTACLE

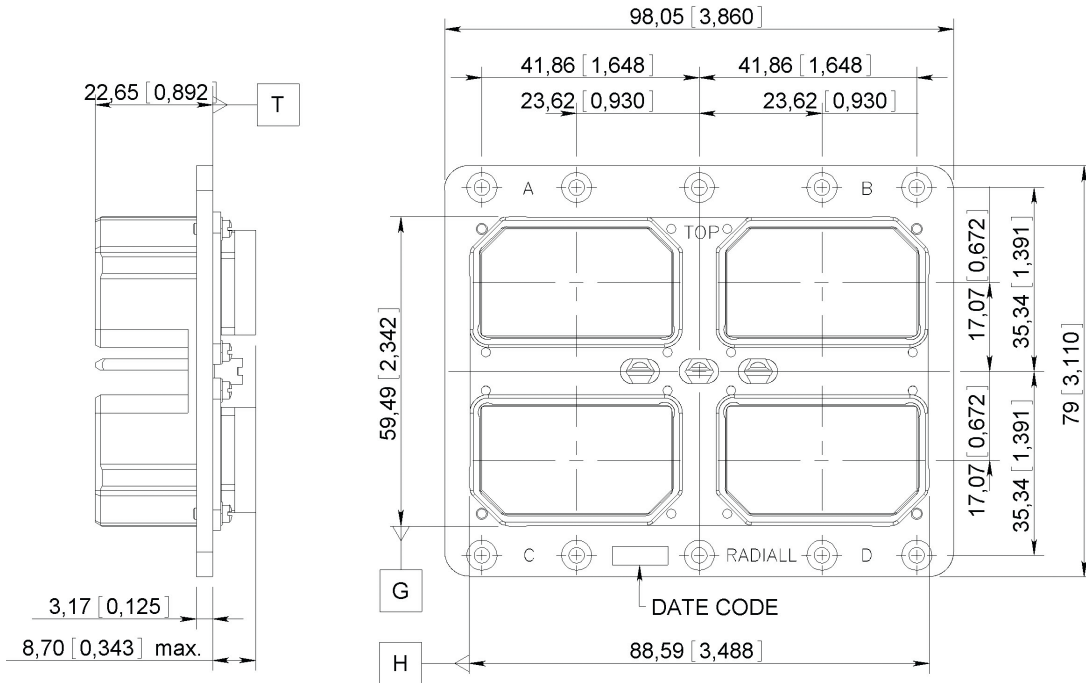


PLUG

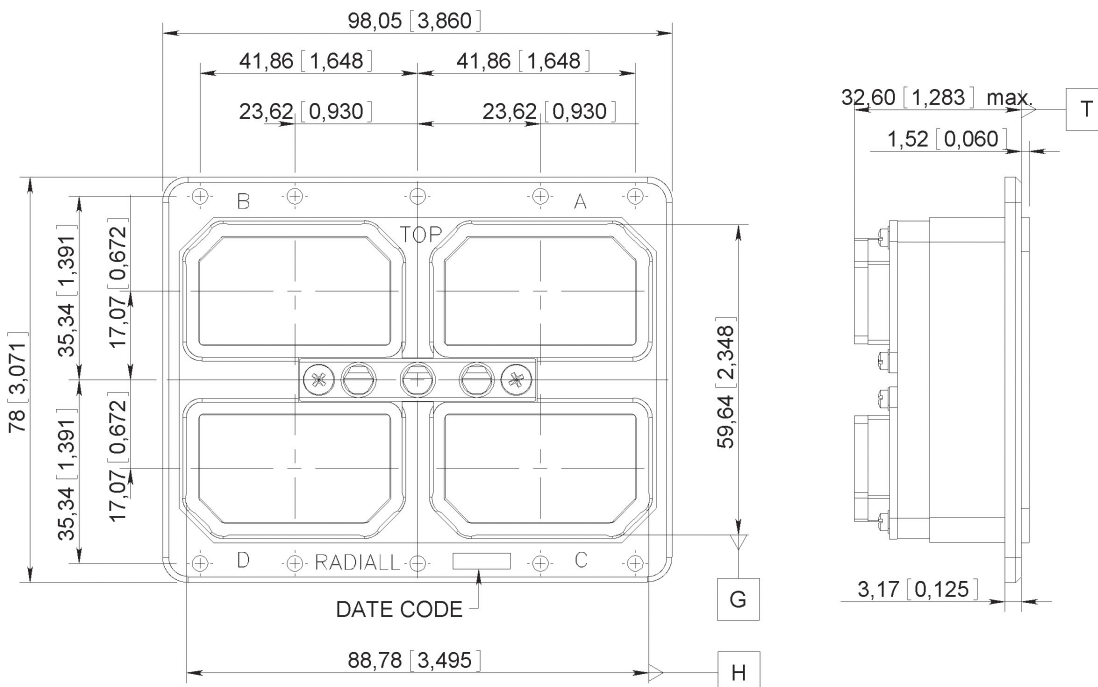


Dimensions

**SHELL SIZE 4
PLUG**

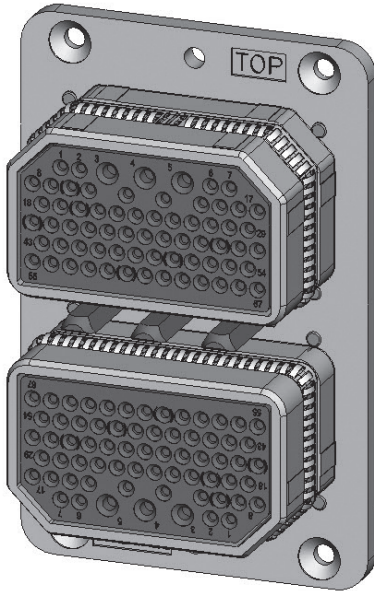


RECEPTACLE



DSX SERIES

DSX EMI/RFI Introduction



EMI/RFI acts directly on electronics systems whether by conduction mode through the input or output cables or by radiation (coupling).

Electronics equipment is particularly vulnerable to interference and can be disturbed or damaged by it. The serious consequences which may result, make it essential to protect such installations.

The first stage in protection is to install the equipment in a shielded cabinet which protects it from some interference; particularly those occurring by radiation. At the connector level that means to use metallic shells to have a good mass conduction between the equipment box and the rack.

To meet these requirements RADIALL offers plug connectors for rack which are fitted with grounding spring fingers.

DSX SAE AS81659 and DSX Arinc 404 shell type B in sizes 1,2,3, and 4 fitted with grounding fingers are available. These connectors are interchangeable and intermatable with the standard ones.

PART NUMBERING

The part numbering system applies to plug shells only.

To establish the part number of a DSX EMI/RFI connector, simply add the letter "G" after the letter which defines the shell type in the DSX SAE AS81659 or Arinc 404 shell type B standard part number. Examples of part numbers:

DSXN2PGS404SS45S0001
DSX2HG41S19S0001

TECHNICAL CHARACTERISTICS

The technical characteristics are the same as those of SAE AS81659 and Arinc 404 shell type B connectors except for the following.

Shell to shell conductivity: 2.5mΩ max. Measured according to method 3007 of MIL-STD-1344A.
Shielding effectiveness: >70 dB @ 4GHz. Measured according to method 3008 of MIL-STD-1344A.

MATERIALS

| Description | Material | Plating |
|--------------------------|--------------|---------|
| Grounding spring fingers | Copper alloy | Nickel |

ARINC 404 Shell Type A Technical Characteristics

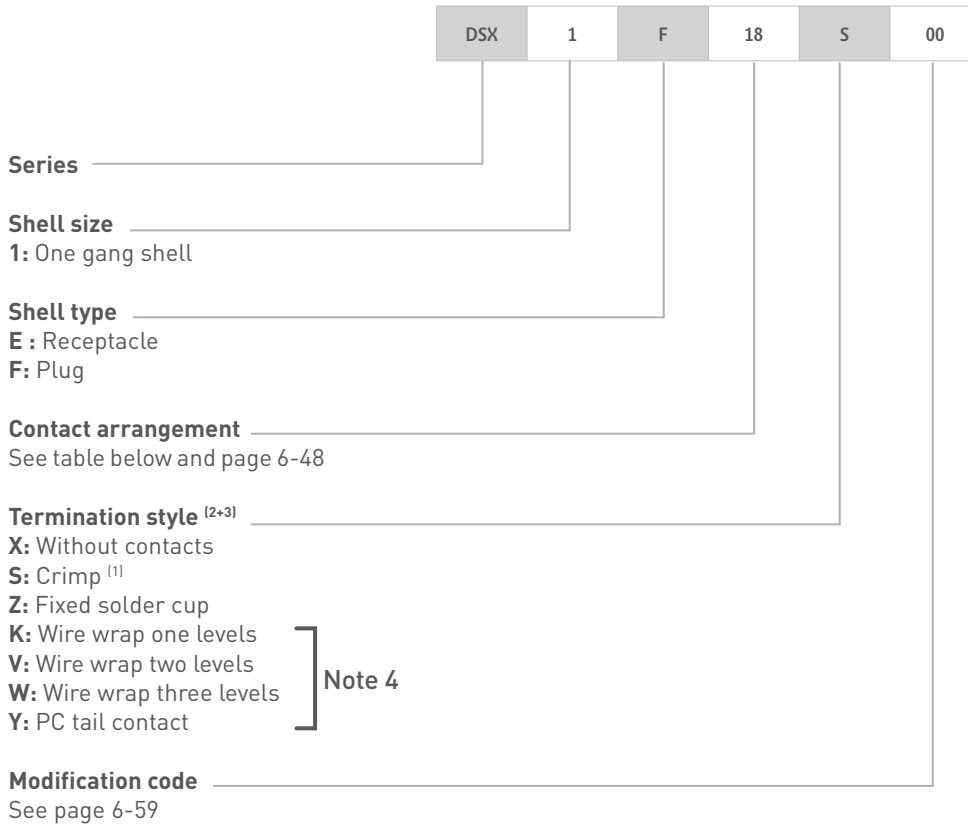
ELECTRICAL, MECHANICAL & ENVIRONMENTAL CHARACTERISTICS

Refer to SAE AS81659 standards page 6-7

MATERIALS

| Description | Material | Plating |
|------------------------------|---------------------------|-----------------------------|
| Shell | Aluminium alloy | Cadmium yellow chromate |
| Insert | Thermosetting resin | / |
| Metallic insert | Aluminium alloy | Cadmium clear chromate |
| Rear spacer | Silicone rubber | / |
| Retention clip | Copper alloy | / |
| Contact | Copper alloy | Gold over nickel underplate |
| Insert retention plate | Aluminium alloy | Gold anodized |
| Screws, washers, clinch-nuts | Corrosion resistant steel | / |

How to Order ARINC 404 Shell Type A Connectors



CONTACT ARRANGEMENT CODE TABLE

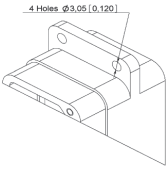
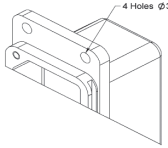
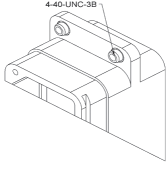
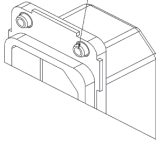
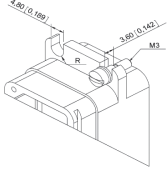
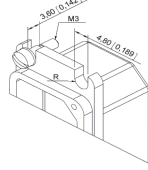
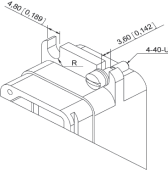
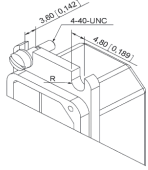
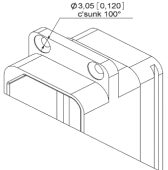
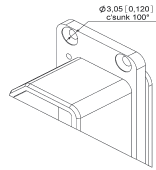
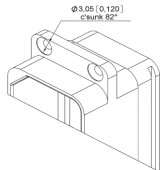
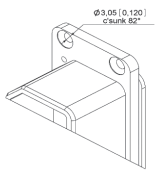
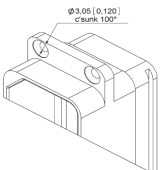
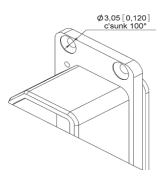
| | 00 | 8 | 13 | 26 | 40 | 45 | 57 | 67 | 106 | 32C2 | 32C4 | 40C1 | C2 | C3 | C8 | D8 |
|----------------------------|----|----|----|----|----|----|----|----|-----|------|------|------|----|----|----|----|
| Insert for pin contacts | 10 | 12 | 44 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 40 | 28 | 34 | 36 | 30 | 38 |
| Insert for socket contacts | 11 | 13 | 45 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 41 | 29 | 35 | 37 | 31 | 39 |

NOTES:

- (1) If you need to use reduced crimp barrel contacts, use code X and order contacts separately
- (2) For C2, C3 and C8 contact arrangements which include coax contacts, use termination code X and order coax contacts separately
- (3) For mixed layout 32C2, 32C4 and 40C1, the connector is delivered with signal and power contacts but without coax contacts. Order coaxial contacts separately
- (4) For contact arrangement 67 and 32C4 with K, V, W or Y termination styles, size 16 contacts are crimp contacts shipped loose with the connector

Modification Code

Dimensions mm (inch)

| CODE | Receptacle shell | | Plug shell | |
|------|---|--|--|---|
| 00 |  | 4 holes Ø3.05 (0.120) |  | 4 holes Ø3.05 (0.120) |
| 01 |  | Four 4.40 UNC 3B clinch nuts |  | Four 4.40 UNC 3B clinch nuts |
| 03 |  | 4 mounting slots 4.80 (0.189) wide + four M3 shouldered screws + 4 washers |  | 4 mounting slots 4.80 (0.189) wide + four M3 shouldered screws + 4 washers |
| 04 |  | 4 mounting slots 4.80 (0.189) wide + four 4.40 UNC shouldered screws + 4 washers |  | 4 mounting slots 4.80 (0.189) wide + four .40 UNC shouldered screws + 4 washers |
| 05 |  | 4 holes 3.05 (0.120) dia c'sunk 100° |  | 4 holes 3.05 (0.120) dia c'sunk 100° |
| 06 |  | 4 holes 3.05 (0.120) dia c'sunk 82° |  | 4 holes 3.05 (0.120) dia c'sunk 82° |
| 07 |  | 4 holes 3.05 (0.120) dia c'sunk 100° + a dust cap |  | 4 holes 3.05 (0.120) dia c'sunk 100° + a dust cap |

Contact Arrangements

They are the same inserts as those used in Arinc 404 shell type B connectors (see page 6-48)

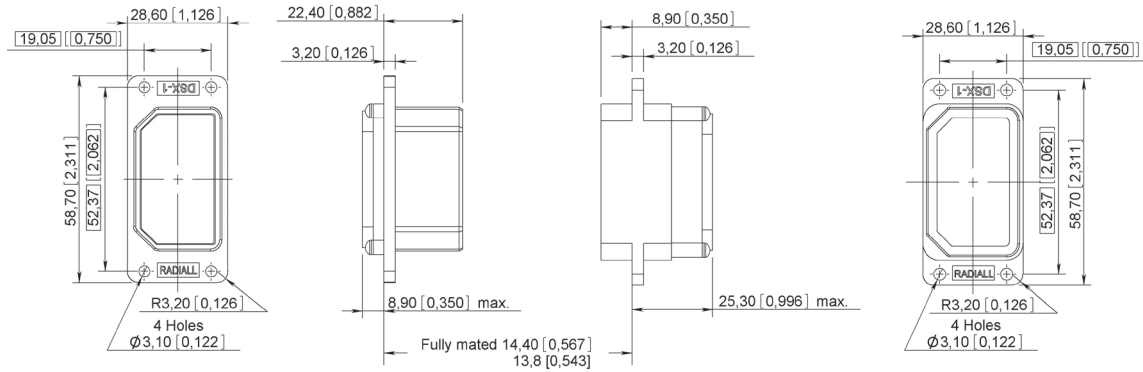
Contacts

The contacts used are those shown on page 6-50 to 6-53

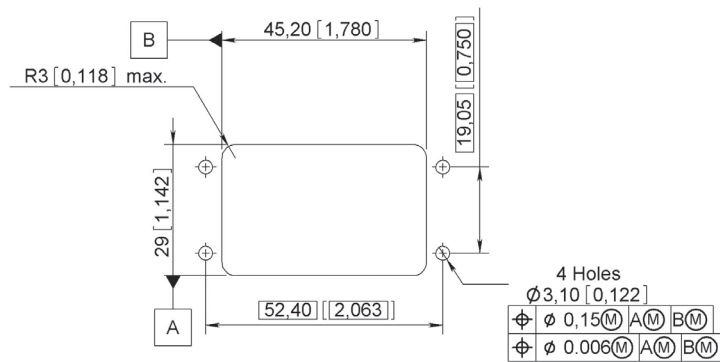
Accessories

Refer to page 6-53

Dimensions



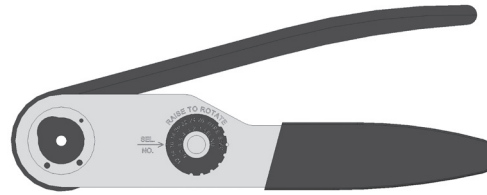
Panel Cut-out



Tools

CRIMPING TOOLS

| Part number | Mil spec P/N |
|-------------|----------------|
| 282281 | M22520/2-01 |
| 282291 | M22520/1-01 |
| 282296 | DANIELS M300BT |
| 282293 | M22520/5-01 |



POSITIONERS

| Part number | Mil spec P/N |
|-------------|--------------|
| 282970 | M22520/2-23 |
| 282971 | M22520/2-08 |
| 282974 | / |
| 282550 | Daniels K345 |
| 282972 | M22520/1-02 |
| 282579 | M22520/1-11 |
| 282557 | / |



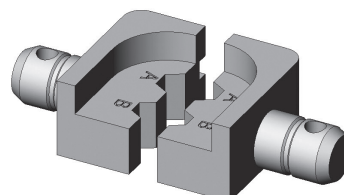
INSERTION / EXTRACTION TOOLS

| Part number | Mil spec P/N |
|-------------|--------------|
| 282885 | M81969/1-01 |
| 282886 | M81969/1-02 |
| 282546 | M81969/1-03 |
| 282547 | M81969/28-02 |
| 282943 | / |
| 282946 | M81969/28-01 |
| 282890 | / |
| 282892 | / |
| 282891 | / |
| 282929 | / |
| 282945 | / |
| 282500 | / |
| 282503 | / |
| 282504 | / |
| 282948 | / |
| 282949 | / |



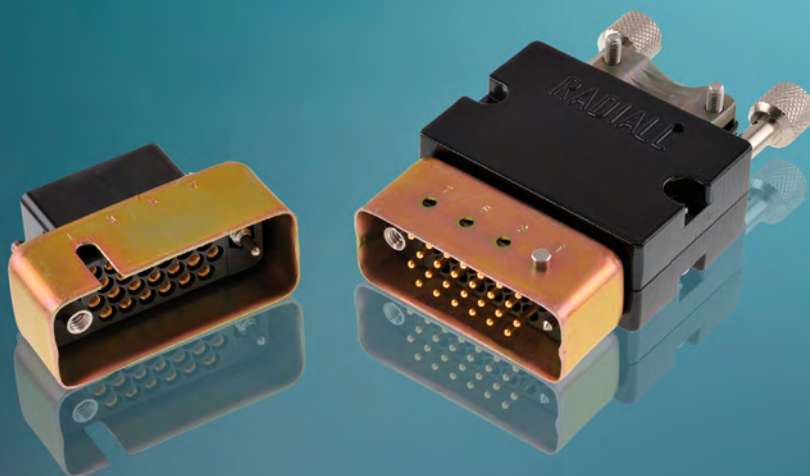
DIE

| Part number | Mil spec P/N |
|-------------|--------------|
| 282246 | M22520/5-05 |
| 282247 | M22520/5-61 |
| 282248 | OCETA M1001 |
| 282236 | M22520/5-45 |



DSX SERIES

Notes



MMC Series



Contents

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SECTION 7 TABLE OF CONTENTS

Introduction

The Radiall MMC series was designed in response to the majority of connection problems of cabling installation, internal and external on electrical and electronic equipment. The series conforms to the French specification NF-C-93 426 HE 621-622.

They are made up of a rectangular insulation block which accepts equally male or female contacts fitted with different types of wires and coaxial cables. A large number of accessories are available for the MMC series, including: backshell with cable clamp, contact protection shrouds, and locking. This makes it possible for the connector to be manufactured exactly to the corresponding needs of the user.

Applications

A simple, yet highly reliable construction makes the MMC offering enormously adaptable through use of the broad range of accessories. This has allowed the Radiall MMC series to be widely approved for the use in all civil and military fields such as computers, telecommunications, medical, aeronautical, naval and nuclear.



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Features

All of the contacts are removable in order to facilitate replacement, repairs or modification to circuits.

A range of robust manual and automatic tooling with easy to follow instructions provides straight-forward connector/cable assembly. Fully conforms to the French specification NF-C-93 426 HE 621-622.

Product Overview

Detailed view of the various parts of this series connector.

JACKSCREWS

RACK GUIDES

Rotating fixing rod used with backshell

Washer & nut used without backshell

Rotating fixing rod used without backshell

Rotating fixing rod used with backshell

Shroud (optional)

Backshell

Plug connector

Rotating female jackscrew

Male rack guides

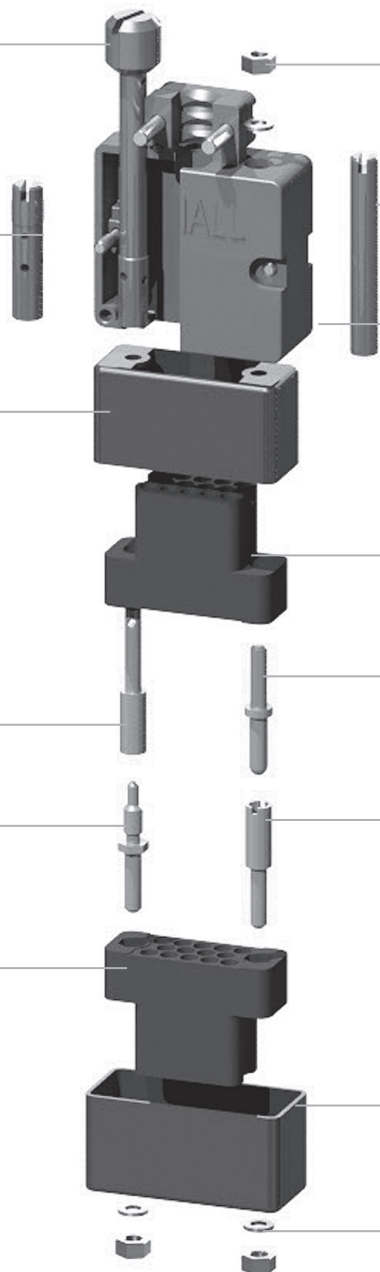
Fixing male jackscrew

Female rack guides

Receptacle connector

Shroud (optional)

Washer & nut



MMC SERIES

Electrical Characteristics

EQUIPMENT WIRE CONTACTS

| Wire section | AWG mm ² | 16 | 18 | 20 | 22 | 24 | 26 | 28 |
|-------------------------|------------------------|--------|------|------|------|------|------|-------|
| | | 1.34 | 0.93 | 0.60 | 0.38 | 0.22 | 0.14 | 0.093 |
| Current rating (Amp.) | | 13 | 10 | 7.5 | 5 | 3 | 2 | 1 |
| Maximum Ø on insulation | | 3.10 | | | | | | |
| Contact resistance | | ≤ 5 mΩ | | | | | | |

COAXIAL CONTACTS

- Nominal impedance: 50Ω
- Operating frequency: 0 to 1000MHz
- Dielectric withstanding voltage: 600 V.r.m.s. @ 50Hz (at sea level)
- Insulation resistance: ≥ 5000 MΩ
- Contact resistance: ≤ 12 mΩ

| Frequency | 0 – 200MHz | 200 – 500 MHz | 500 – 1000 MHz |
|------------------------------------|------------|---------------|----------------|
| Voltage standing wave ratio (VSWR) | 1.10 | 1.15 | 1.40 |
| Insertion loss by pair (dB) | < 0.015 | < 0.025 | < 0.025 |

CONNECTORS

- Insulation resistance: > 5000 MΩ
- Dielectric withstanding voltage: 1500 V.r.m.s. @ 50Hz (at sea level)

MECHANICAL & ENVIRONMENTAL CHARACTERISTICS

- Retention of the contact in moulding: > 50 N (11.24 lbs)
- Mating force per contact pair: < 3.4 N (0.76 lbs)
- Durability: 500 matings
- Vibration: 20 g (0.71 oz) from 80 to 2000 Hz
- Shock: 50 g (1.76 oz)
- Temperature range: -55°C @ +125°C (-131°F to 257°F)
- Humidity: 21 days
- Salt spray: 48H

Product Materials

| Description | | Material | Plating |
|---------------------------|--|--------------------------------------|--|
| Connector | | Glass filled phenolic | -- |
| Equipment Wire Contacts | Body Spring Retention clip | Copper alloy | Gold over nickel Gold over nickel Nickel |
| Coaxial Contacts | Body & center Contacts Ferrule Insulator | Copper alloy Copper alloy PTFE | Gold over nickel Nickel |
| Rack guide | | Brass | Nickel plated |
| Jackscrews | | Stainless steel | -- |
| Shroud | | Steel | Yellow chromate cadmium plated |
| Backshell | | Zinc or aluminium alloy | Painted black |
| Strain relief cable clamp | | Stainless steel | -- |

Product Masses

| Size | Masses g (oz) | Type | References | Masses g (oz) | Type |
|--------|----------------|----------------------|------------|----------------|----------------------|
| 14 | 7 [0.246] | Plug connector | 690940 | 15 [0.529] | Shroud male |
| 20 | 8 [0.282] | | 690941 | 16 [0.564] | |
| 26 | 11 [0.388] | | 690942 | 18 [0.634] | |
| 34 | 19 [0.670] | | 690943 | 22 [0.776] | |
| 42 | 22 [0.776] | | 690930 | 14 [0.493] | |
| 690501 | 7 [0.246] | Receptacle connector | 690931 | 15 [0.529] | Shroud female |
| 690511 | 8 [0.282] | | 690932 | 17 [0.599] | |
| 690521 | 11 [0.388] | | 690933 | 25 [0.881] | |
| 690531 | 19 [0.670] | | 690905 | 57 [2.010] | |
| 690541 | 22 [0.776] | | 690908 | 65 [2.292] | |
| 690962 | 2 [0.070] | Rack guide | 690911 | 77 [2.716] | Backshell top entry |
| 690952 | | | 690914 | 101 [3.562] | |
| 690963 | | | 690917 | 125 [4.409] | |
| 690953 | 8 [0.282] | Short jackscrew | 20521500 | 39 [1.375] | Backshell side entry |
| 690965 | | | 6 [0.211] | [14] 690848001 | 14 [0.493] |
| 690955 | [20] 690848002 | 16 [0.564] | | | |
| 690966 | 15 [0.529] | [26] 690848003 | | 18 [0.634] | |
| 690949 | 18 [0.634] | [50] 690848006 | | 28 [0.987] | |
| 690956 | 16 [0.564] | [75] 690848007 | | 40 [1.410] | |
| 690939 | 18 [0.634] | Long jackscrew | | | |

How to Order Connectors

A pair of MMC connectors is made up of the following:

- A block "P" (plug)
- A block "R" (receptacle)

Of identical dimensions but distinguished by:

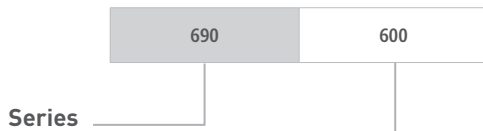
- The engraved letters "P" and "R" on the mating faces
- The contact identification and position of the cavities is a mirror image of the mating half.

Each block "P" and "R" must be fitted with male and female guides or jackscrews.

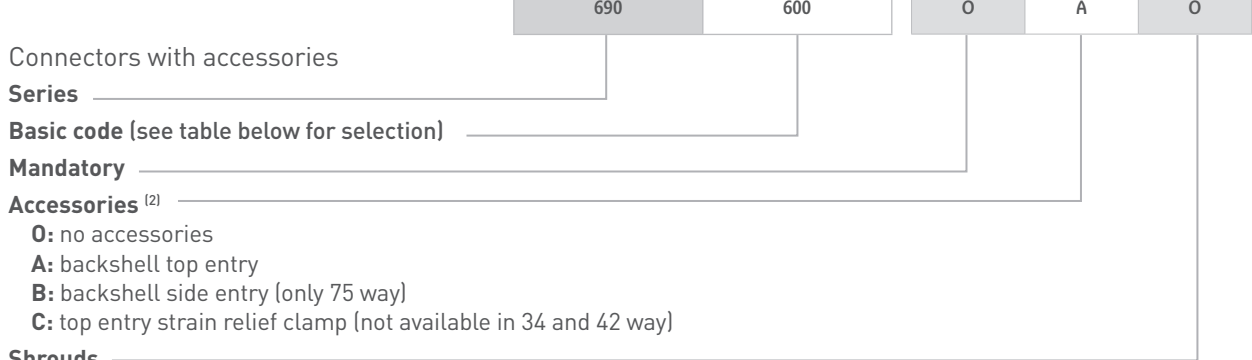
- On the block P female guide beside hole 1 or A
- On the block R male guide beside hole 1 or A (in order to prevent mismatching and misalignment).

PART NUMBERING

Connectors with guides (without other accessories)



Connectors with accessories



- Shrouds**
- O:** no shroud
 - A:** male shroud without polarizing⁽¹⁾
male shroud with polarizing⁽²⁾
 - F:** female shroud without polarizing⁽¹⁾
female shroud with polarizing⁽²⁾

| | | | | |
|-------------|---|---|---|---|
| In | 1 | 3 | 5 | 7 |
| code | B | C | D | E |
| In | 1 | 3 | 5 | 7 |
| code | G | H | J | K |



| Number of contacts | Rack guides | | Fixed jackscrews | | Rotating jackscrews | |
|--------------------|-------------|------------|------------------|------------|---------------------|------------|
| | Plug | Receptacle | Plug | Receptacle | Plug | Receptacle |
| 14 | 400 | 500 | 701 | 700 | 600 | 602 |
| 20 | 410 | 510 | 711 | 710 | 610 | 612 |
| 26 | 420 | 520 | 721 | 720 | 620 | 622 |
| 34 | 430 | 530 | 731 | 730 | 630 | 632 |
| 42 | 440 | 540 | 741 | 740 | 640 | 642 |
| 50 | 450 | 550 | 751 | 750 | 650 | 652 |
| 75 | 460 | 560 | 761 | 760 | 660 | 662 |

Example: 701 goes with 602

NOTES:

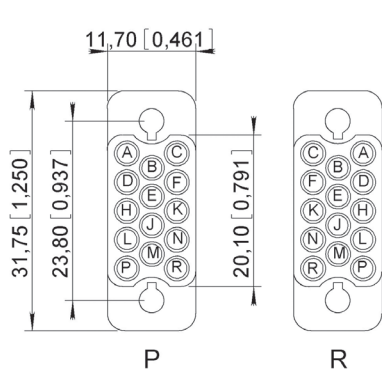
(1) Not available in 42 way

(2) Not available in 14 way

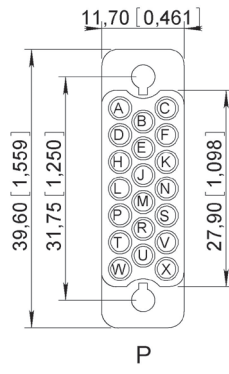
When connector has a shroud with polarizing, polarization starts from the cavity A or 1 side of the connector (refer to page 7-30)

Contact Arrangements

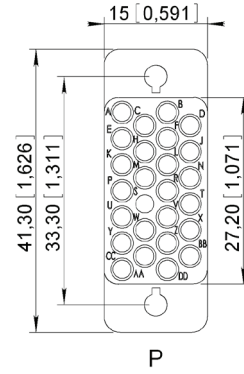
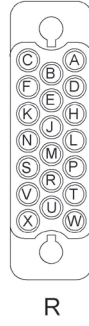
VIEW WIRING SIDE mm (inch)



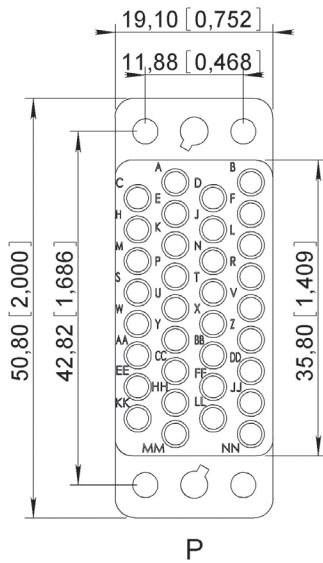
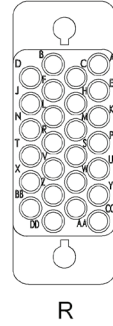
14 contacts



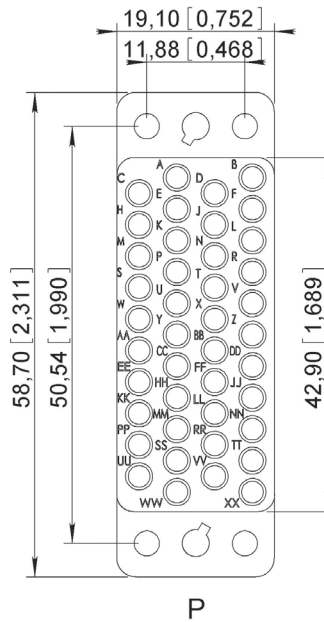
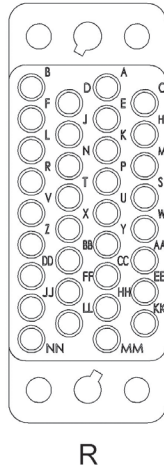
20 contacts



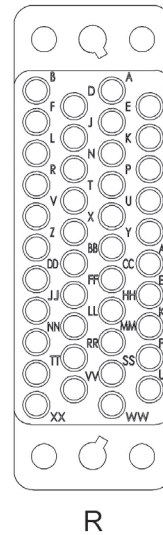
26 contacts



34 contacts



42 contacts

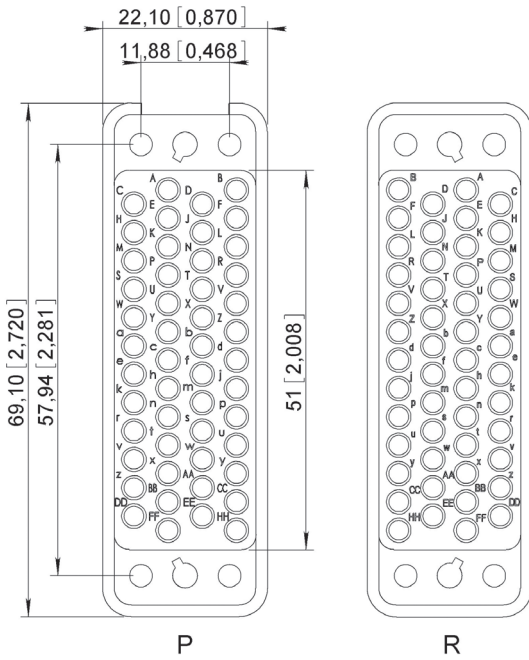


MMC SERIES

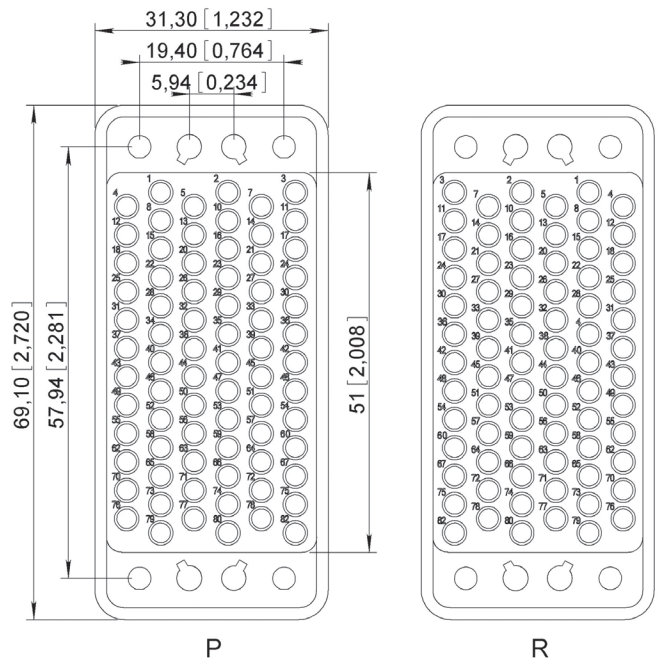
MMC SERIES

Contact Arrangements

VIEW WIRING BLOCK mm (inch)

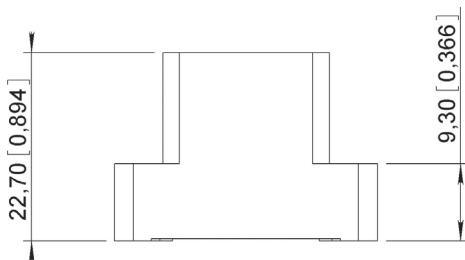


50 contacts

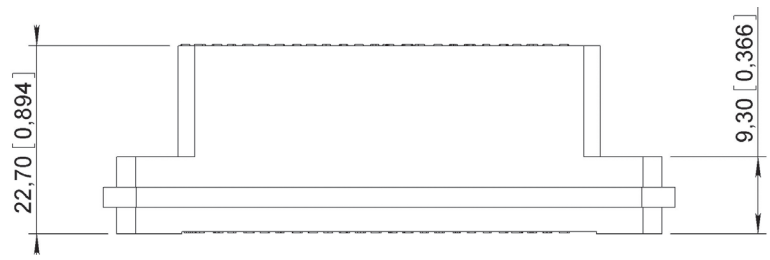


75 contacts

HEIGHT DIMENSIONS mm (inch)



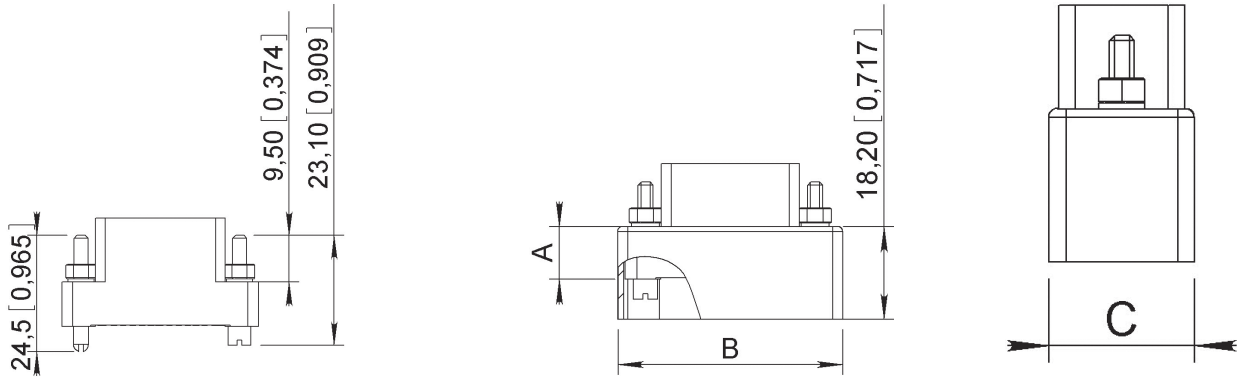
14, 20, 26, 34, 42 contacts



50, 75 contacts

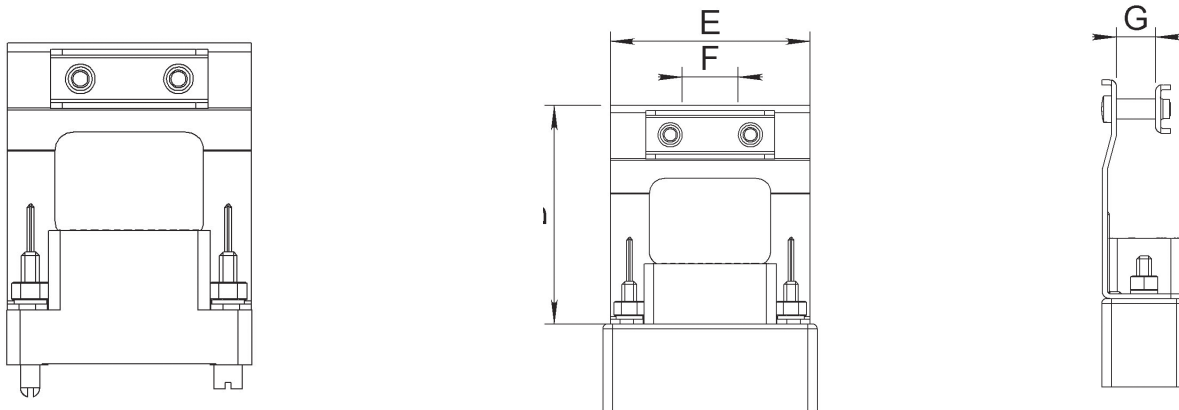
Rack Guides Dimensions

CONNECTOR BLOCK mm (inch)



| Number of contacts | A | B | | C | |
|--------------------|----------------------|--------------|--------------|--------------|--------------|
| | | Male | Female | Male | Female |
| 14 | 10.1 (.397) | 34.8 (1.370) | 37.2 (1.464) | 14.2 (.559) | 16.6 (.653) |
| 20 | | 42.2 (1.661) | 45.1 (1.775) | | |
| 26 | | 44.2 (1.740) | 46.1 (1.826) | | |
| 34 | 10.3 (.405) | 54 (2.126) | 56.4 (2.220) | 22.2 (.874) | 24.6 (.968) |
| 42 | Shroud not available | | | | |
| 50 | 10.3 (.405) | 72 (2.834) | 74.6 (2.937) | 25.3 (.996) | 27.8 (1.094) |
| 75 | | 72.4 (2.850) | 74.7 (2.940) | 34.4 (1.354) | 37 (1.456) |

STRAIN RELIEF CABLE CLAMP (top entry) mm (inch)

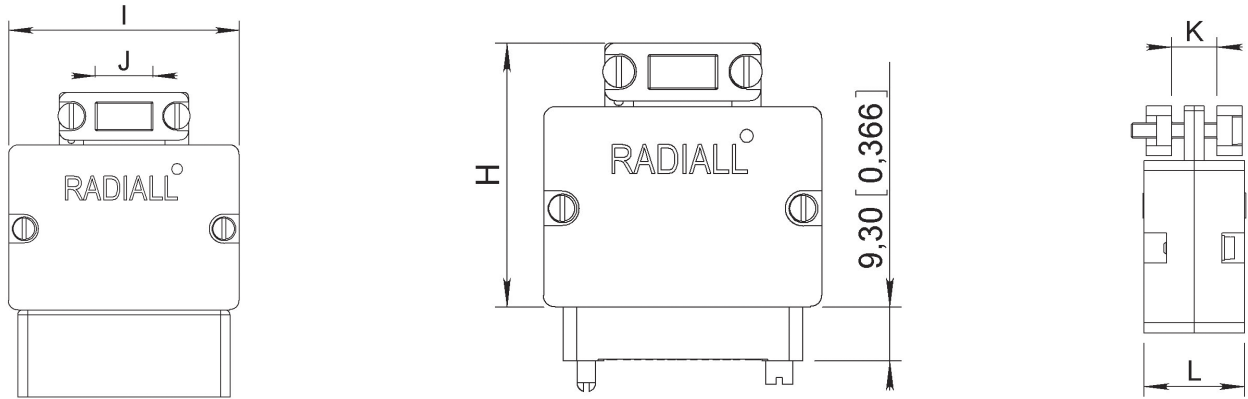


| Number of contacts | D | E | Cable entry dimensions | |
|--------------------|---------------------------|--------------|------------------------|-----------|
| | | | F | G max |
| 14 | 44 (1.732) | 31.5 (1.240) | 5 (.197) | 8 (.315) |
| 20 | | 39.5 (1.555) | 12 (.472) | |
| 26 | | 41.1 (1.618) | | 10 (.394) |
| 34 | Cable clamp not available | | | |
| 42 | Cable clamp not available | | | |
| 50 | 53 (2.086) | 65.6 (2.582) | 26 (1.023) | 14 (.551) |
| 75 | | | | 18 (.708) |

MMC SERIES

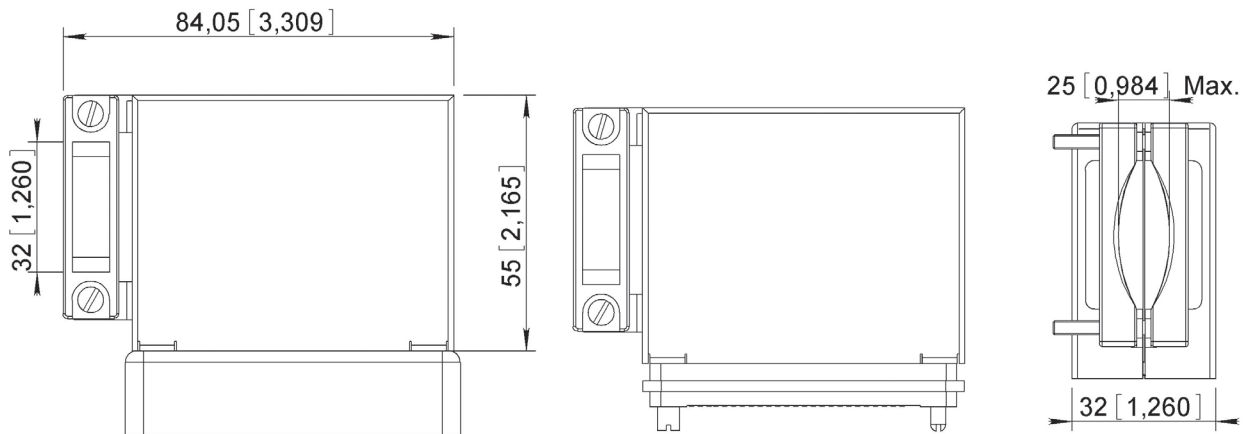
Rack Guides Dimensions

BACKSHELL TOP ENTRY - mm (inch)



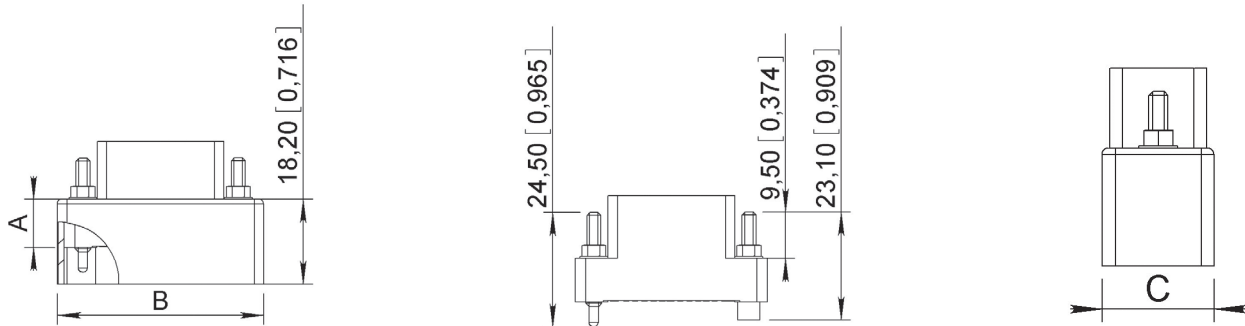
| Number of contacts | H | I | Cable entry dimensions | | L |
|--------------------|--------------|--------------|------------------------|-----------|--------------|
| | | | J | K max | |
| 14 | 46 [1.811] | 39 [1.535] | 7.6 [.299] | 13 [.512] | 17 [.670] |
| 20 | | 47 [1.850] | 15 [.590] | | |
| 26 | | 48.5 [1.909] | 17 [.670] | | |
| 34 | 52.5 [2.067] | 53.5 [2.106] | 22 [.866] | 20 [.787] | 24 [.945] |
| 42 | 47 [1.850] | 61 [2.401] | 32 [1.260] | 12 [.472] | 21.5 [.846] |
| 50 | 66.5 [2.618] | 68.5 [2.697] | 26 [1.023] | 21 [.827] | 25 [.984] |
| 75 | 47 [1.850] | 68 [2.677] | 40 [1.575] | | 30.5 [1.200] |

BACKSHELL SIDE ENTRY - available only for 75 way mm (inch)



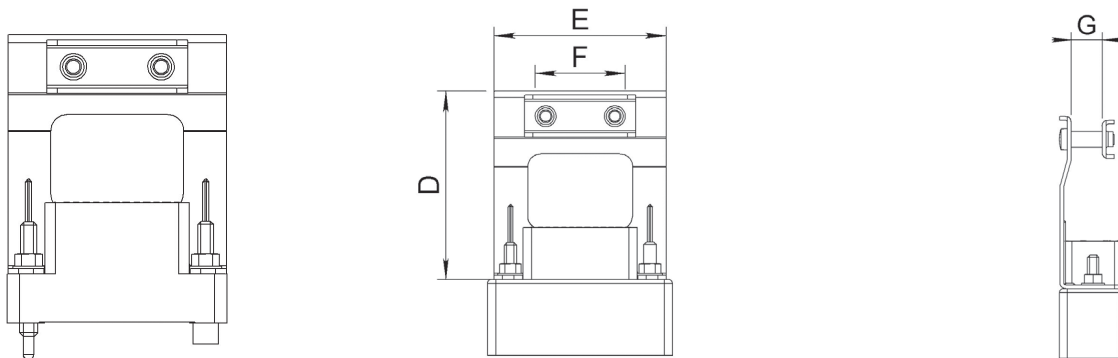
Fixed Jackscrews Dimensions

CONNECTOR BLOCK mm (inch)



| Number of contacts | A | B | | C | |
|--------------------|----------------------|--------------|--------------|--------------|--------------|
| | | Male | Female | Male | Female |
| 14 | 10.1 (.397) | 34.8 (1.370) | 37.2 (1.464) | 14.2 (.559) | 16.6 (.653) |
| 20 | | 42.2 (1.661) | 45.1 (1.775) | | |
| 26 | | 44.2 (1.740) | 46.4 (1.827) | | |
| 34 | 10.3 (.405) | 54 (2.126) | 56.4 (2.220) | 22.2 (.874) | 24.6 (.968) |
| 42 | Shroud not available | | | | |
| 50 | 10.3 (.405) | 72 (2.834) | 74.6 (2.937) | 25.3 (.996) | 27.8 (1.094) |
| 75 | | 72.4 (2.850) | 74.7 (2.940) | 34.4 (1.354) | 37 (1.456) |

STRAIN RELIEF CABLE CLAMP (top entry) mm (inch)

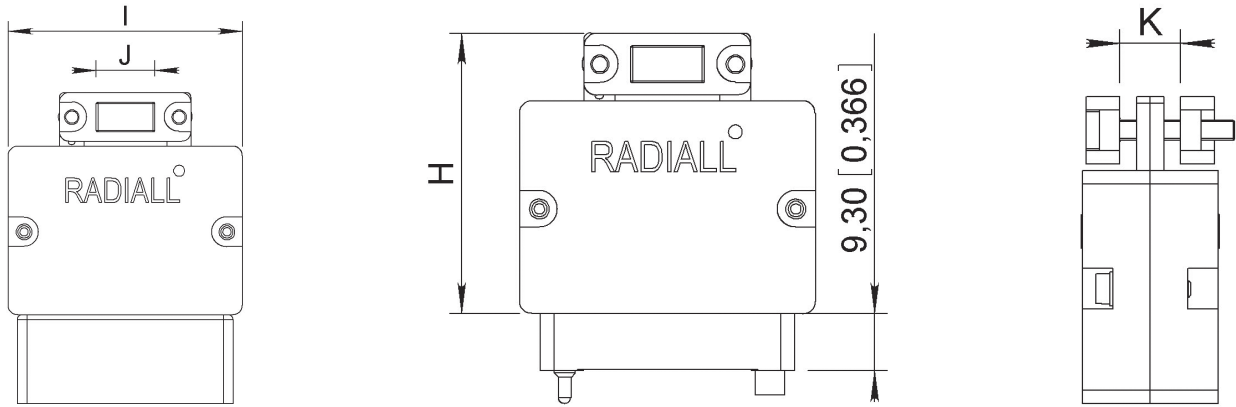


| Number of contacts | D | E | Cable entry dimensions | |
|--------------------|---------------------------|--------------|------------------------|-----------|
| | | | F | G max |
| 14 | 44 (1.732) | 31.5 (1.240) | 5 (.197) | 8 (.315) |
| 20 | | 39.5 (1.555) | | |
| 26 | | 41.1 (1.618) | 12 (.472) | |
| 34 | Cable clamp not available | | | |
| 42 | Cable clamp not available | | | |
| 50 | 53 (2.086) | 65.6 (2.582) | 26 (1.023) | 14 (.551) |
| 75 | | | | 18 (.708) |

MMC SERIES

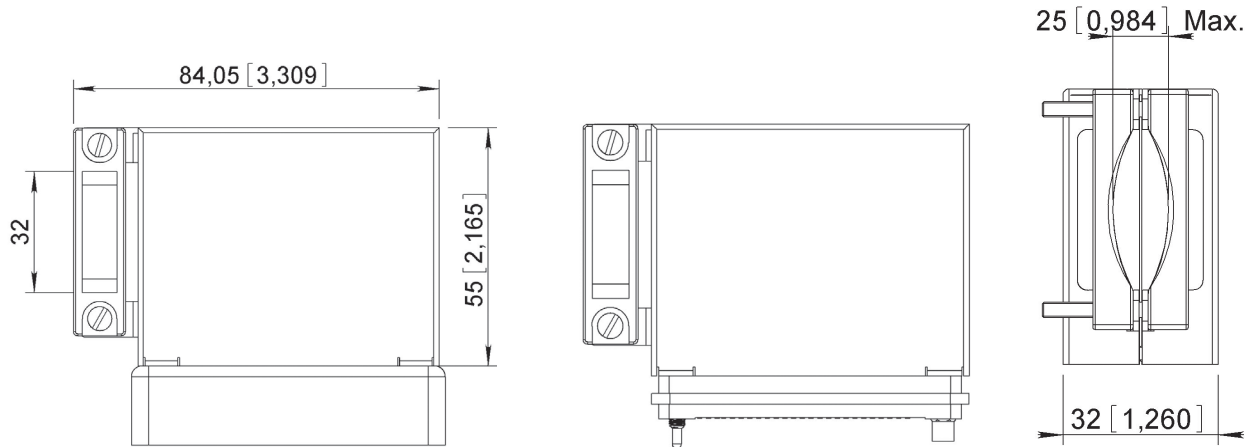
Fixed Jackscrews Dimensions

BACKSHELL TOP ENTRY - mm (inch)

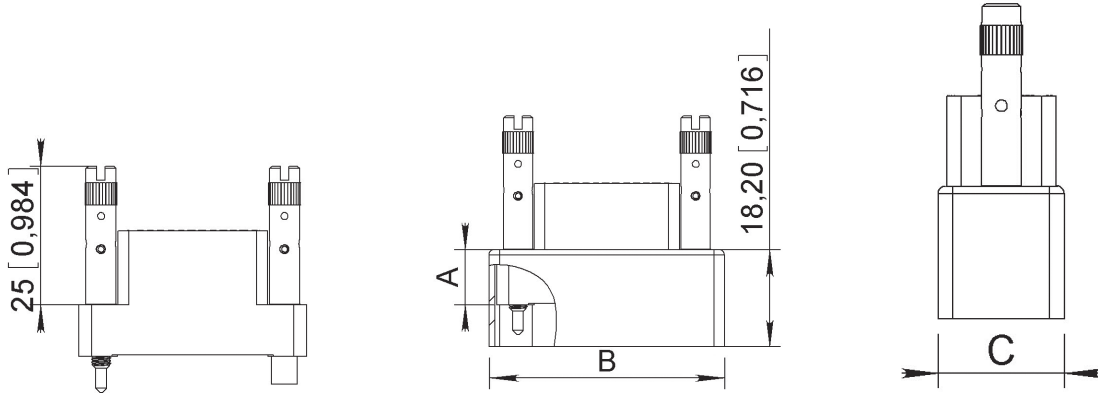


| Number of contacts | H | I | Cable entry dimensions | | L |
|--------------------|--------------|--------------|------------------------|-----------|--------------|
| | | | J | K max | |
| 14 | 46 [1.811] | 39 [1.535] | 7.6 [.299] | 13 [.512] | 17 [.670] |
| 20 | | 47 [1.850] | 15 [.590] | | |
| 26 | | 48.5 [1.909] | 17 [.670] | | |
| 34 | 52.5 [2.067] | 53.5 [2.106] | 22 [.866] | 20 [.787] | 24 [.945] |
| 42 | 47 [1.850] | 61 [2.401] | 32 [1.260] | 12 [.472] | 21.5 [.846] |
| 50 | 66.5 [2.618] | 68.5 [2.697] | 26 [1.023] | 21 [.827] | 25 [.984] |
| 75 | 47 [1.850] | 68 [2.677] | 40 [1.575] | | 30.5 [1.200] |

BACKSHELL SIDE ENTRY - available only for 75 way mm (inch)

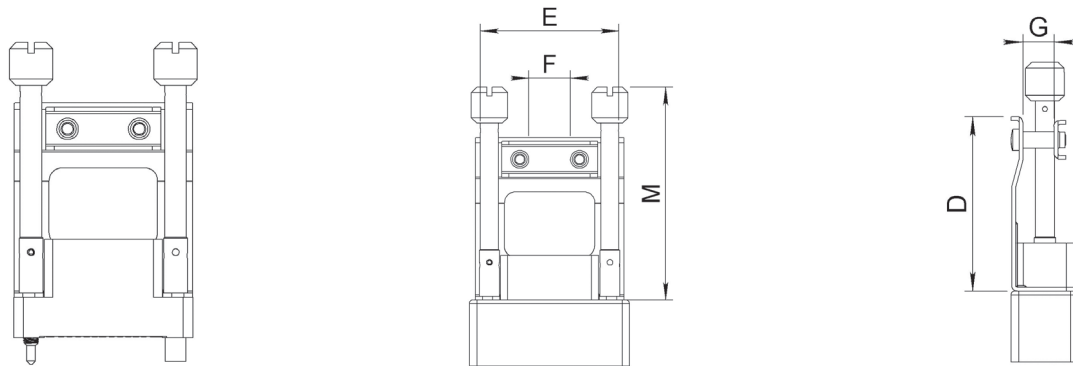


Rotating Jackscrews Dimensions
CONNECTOR BLOCK mm (inch)



| Number of contacts | A | B | | C | |
|--------------------|----------------------|--------------|--------------|--------------|--------------|
| | | Male | Female | Male | Female |
| 14 | 10.1 [.397] | 34.8 [1.370] | 37.2 [1.464] | 14.2 [.559] | 16.6 [.653] |
| 20 | | 42.2 [1.661] | 45.1 [1.775] | | |
| 26 | | 44.2 [1.740] | 46.4 [1.827] | | |
| 34 | 10.3 [.405] | 54 [2.126] | 56.4 [2.220] | 22.2 [.874] | 24.6 [.968] |
| 42 | Shroud not available | | | | |
| 50 | 10.3 [.405] | 72 [2.834] | 74.6 [2.937] | 25.3 [.996] | 27.8 [1.094] |
| 75 | | 72.4 [2.850] | 74.7 [2.940] | 34.4 [1.354] | 37 [1.456] |

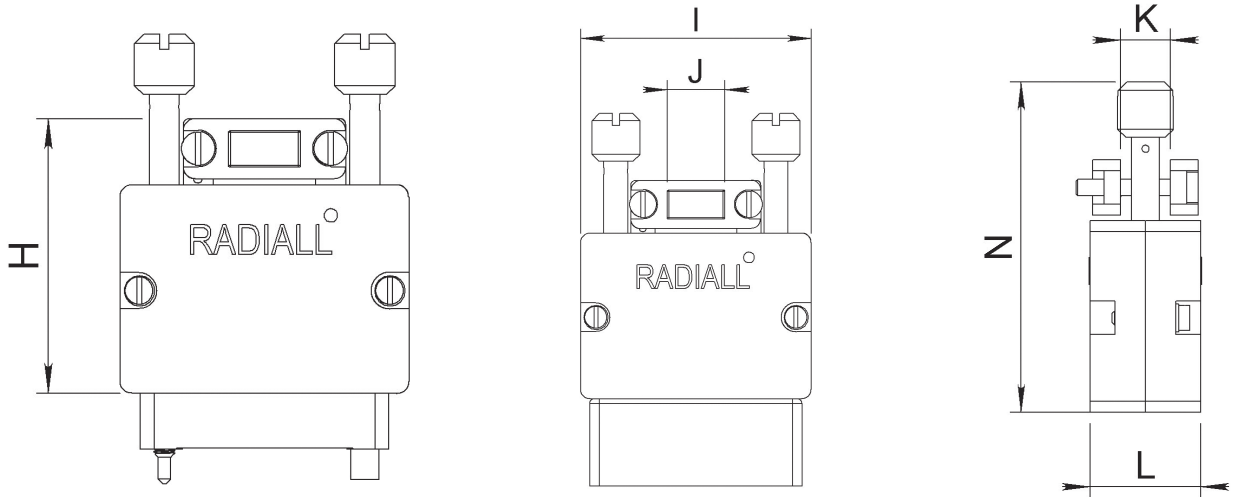
STRAIN RELIEF CABLE CLAMP (top entry) mm (inch)



| Number of contacts | D | E | M | Cable entry dimensions | |
|--------------------|---------------------------|--------------|------------|------------------------|-----------|
| | | | | F | G max |
| 14 | 44 [1.732] | 31.5 [1.240] | 60 [2.362] | 5 [.197] | 8 [.315] |
| 20 | | 39.5 [1.555] | | 12 [.472] | |
| 26 | | 41.1 [1.618] | | 10 [.394] | |
| 34 | Cable clamp not available | | | | |
| 42 | Cable clamp not available | | | | |
| 50 | 53 [2.086] | 65.6 [2.582] | 64 [2.519] | 26 [1.023] | 14 [.551] |
| 75 | | | | | 18 [.708] |

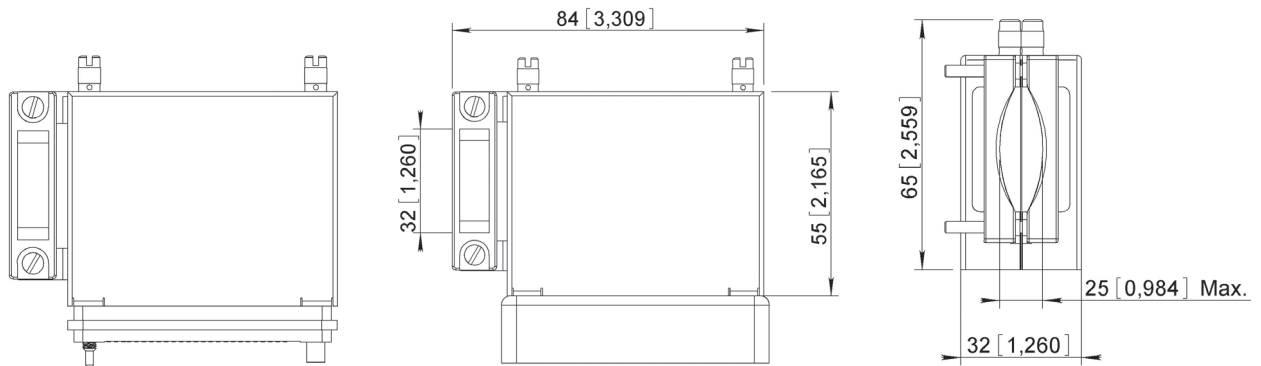
Rotating Jackscrews Dimensions

BACKSHELL TOP ENTRY mm (inch)



| Number of contacts | H | I | Cable entry dimensions | | L | N |
|--------------------|--------------|--------------|------------------------|-----------|--------------|------------|
| | | | J | K max | | |
| 14 | 46 [1.811] | 39 [1.535] | 7.6 [.299] | 13 [.512] | 17 [.670] | 60 [2.362] |
| 20 | | 47 [1.850] | 15 [.590] | | | |
| 26 | | 48.5 [1.909] | 17 [.670] | | | |
| 34 | 52.5 [2.067] | 53.5 [2.106] | 22 [.866] | 20 [.787] | 24 [.945] | 64 [2.519] |
| 42 | 47 [1.850] | 61 [2.401] | 32 [1.260] | 12 [.472] | 21.5 [.846] | |
| 50 | 66.5 [2.618] | 68.5 [2.697] | 26 [1.023] | 21 [.827] | 25 [.984] | 78 [3.071] |
| 75 | 47 [1.850] | 68 [2.677] | 40 [1.575] | | 30.5 [1.200] | |

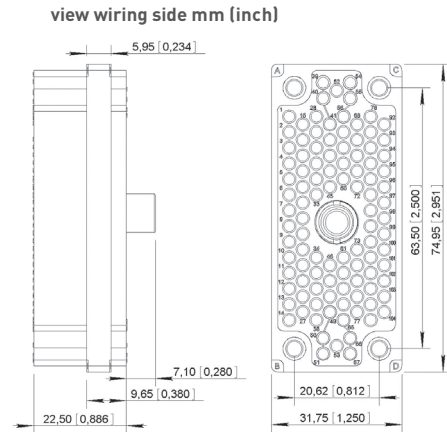
BACKSHELL SIDE ENTRY - available only for 75 way mm (inch)



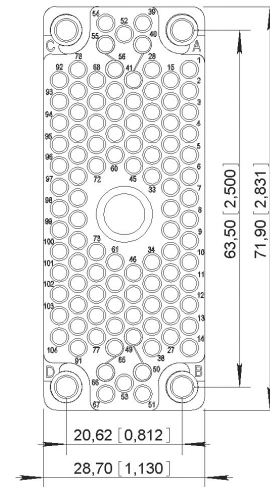
Block 104 Contacts

MMC SERIES

| Central guide | R Type - Rack guides | | | | Part number |
|-----------------------------|----------------------|--------|--------|--------|-------------|
| | A | B | C | D | |
| Mates with all the blocks P | No guides | | | | 690571 |
| | Female | Male | Male | Female | 690570 |
| | Female | -- | -- | Female | 690572 |
| | Female | Female | Female | Female | 690573 |



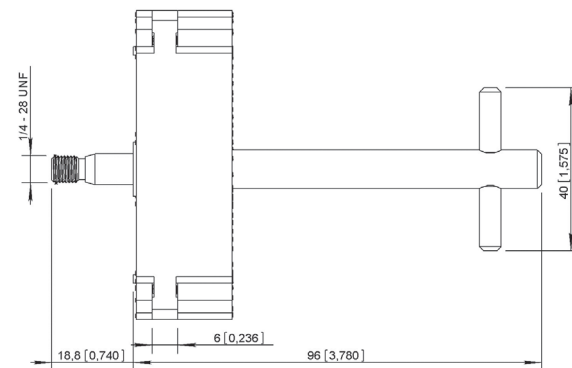
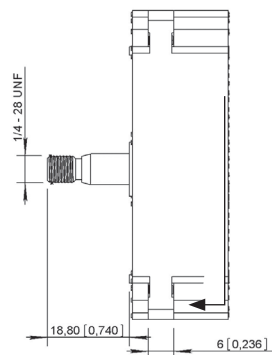
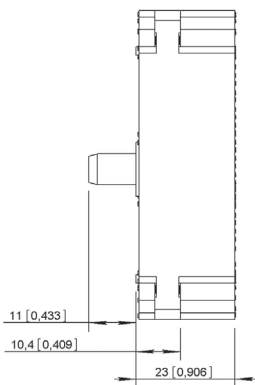
| Central guide | P Type - Rack guides | | | | Part number |
|-----------------------|----------------------|--------|--------|------|-------------|
| | A | B | C | D | |
| Central rack guide | No guides | | | | 690481 |
| | Male | Female | Female | Male | 690480 |
| | Male | -- | -- | Male | 690482 |
| | Male | Male | Male | Male | 690483 |
| Sunken Hex. Nut 4 A/F | No guides | | | | 690471 |
| | Male | Female | Female | Male | 690470 |
| | Male | -- | -- | Male | 690472 |
| | Male | Male | Male | Male | 690473 |
| Central jackscrew | No guides | | | | 690476 |
| | Male | Female | Female | Male | 690475 |
| | Male | -- | -- | Male | 690477 |
| | Male | Male | Male | Male | 690478 |



Rack guide

Sunken Hex. nut

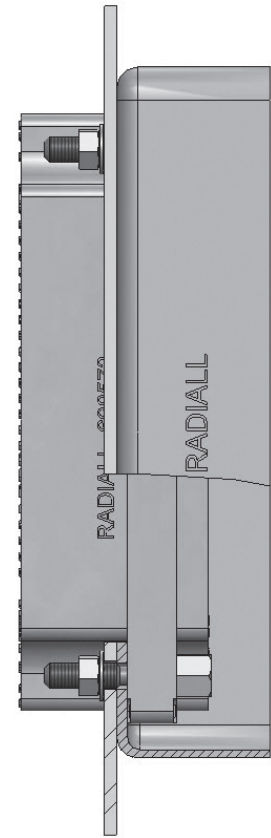
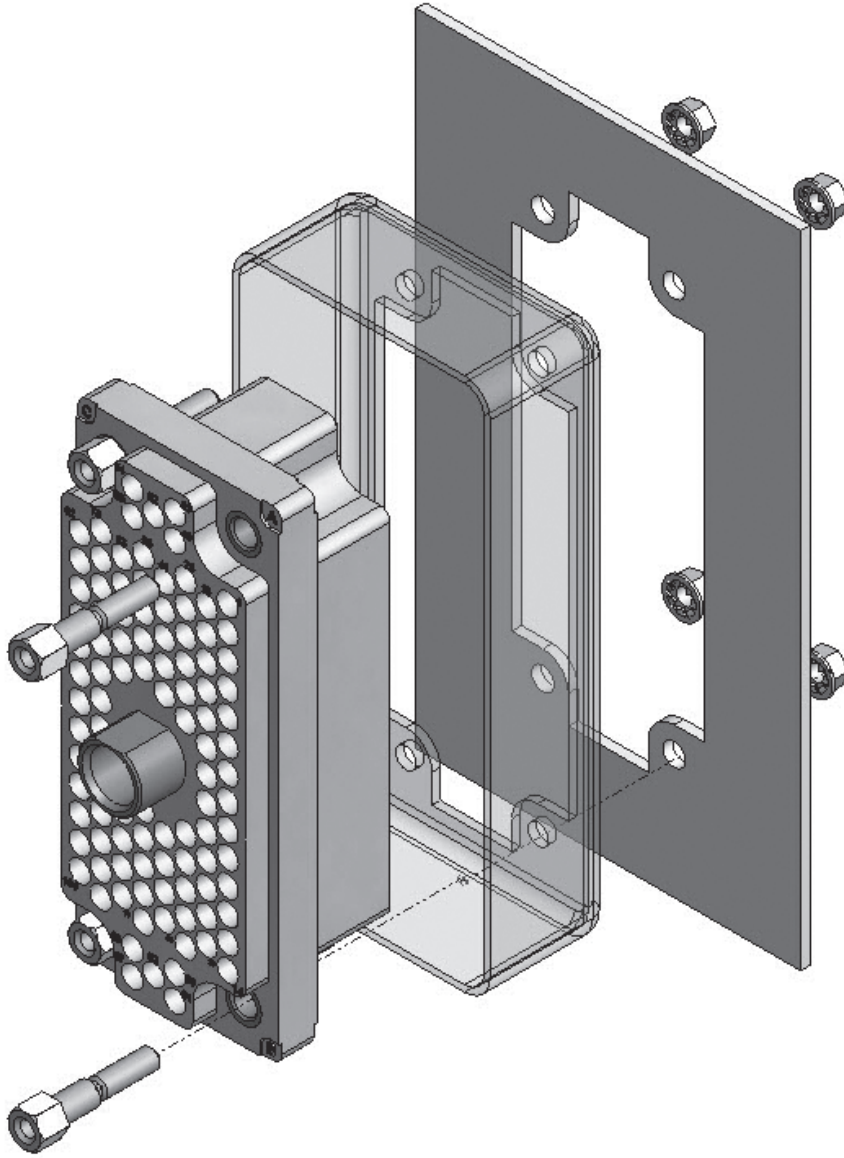
Central jackscrew



MMC SERIES

Block 104 Contacts

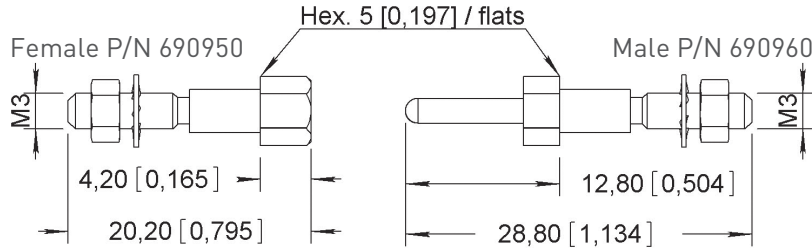
Detailed view of the connector with shroud mounted on a panel



View once all assembled.

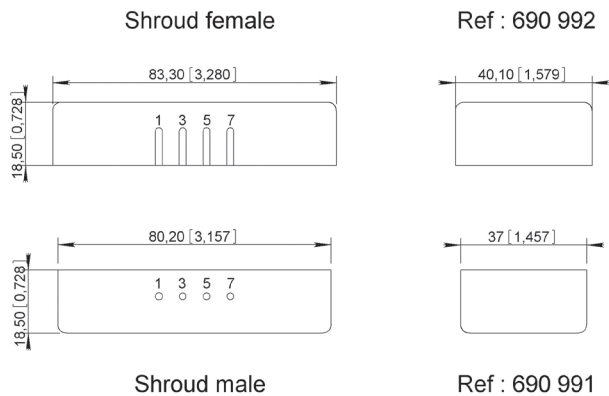
Block 104 Contacts

GUIDES to mount in positions A, B, C, D



SHROUDS

Female shroud - use only this reference to order without polarizing code.



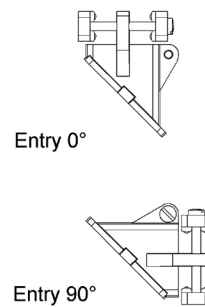
| Polarization Code | Position |
|-------------------|----------|
| 110 | 1 |
| 120 | 3 |
| 130 | 5 |
| 140 | 7 |
| 210 | 1 + 3 |
| 220 | 3 + 5 |
| 230 | 5 + 7 |
| 240 | 1 + 5 |
| 250 | 3 + 7 |
| 260 | 1 + 7 |

Male shroud - use only this reference to order without polarizing code.

To order with polarizing: add the polarization code at the end of the shroud part number
see Example: 690991110

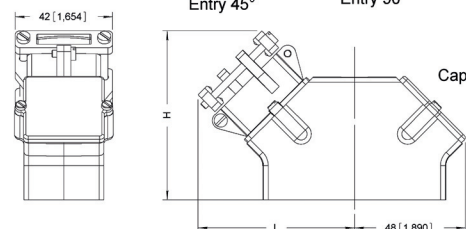
BACKSHELL - cast aluminium painted black
Assembly Kit

| Entry | Cable clamp max. cm_ (inch) | L | H | Part number |
|---------------|-----------------------------|-----------|-----------|-------------|
| 1 entry 45° | 7.8 (3.1) | 70 (27.6) | 71 (28) | 690971 |
| 2 entries 45° | 15.6 (6.1) | | | 690972 |
| 1 entry 0° | 5.3 (2.1) | 55 (21.7) | 66 (26) | 690973 |
| 2 entries 0° | 10.6 (4.2) | | | 690974 |
| 1 entry 90° | 5.3 (2.1) | 65 (25.6) | 57 (22.4) | 690973 |
| 2 entries 90° | 10.6 (4.2) | | | 690974 |



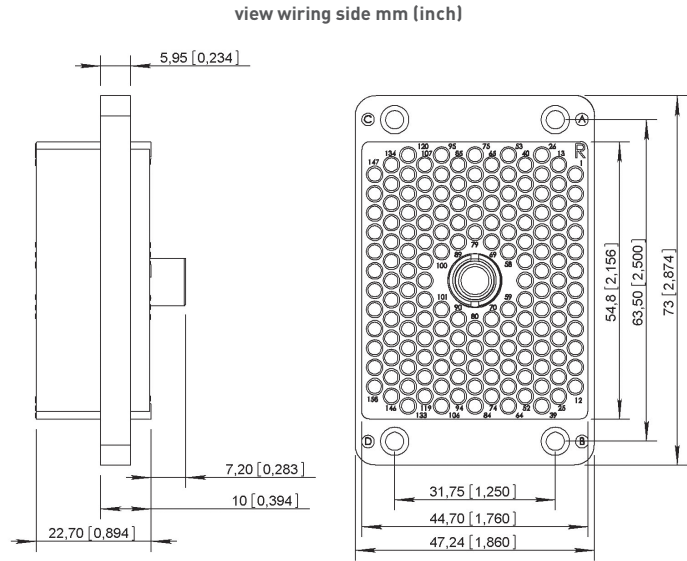
SPARE PARTS (1 or 2 entry rotation)

| Description | Part number |
|-------------------|-------------|
| Body (in 2 parts) | 690977 |
| Entry 0 - 90° | 690980 |
| Entry 45° | 690979 |
| Cap | 690978 |

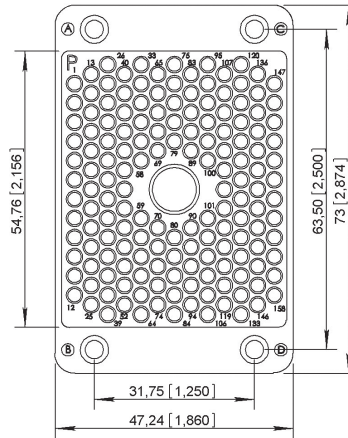


Block 158 Contacts

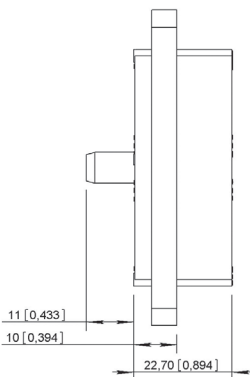
| R TYPE | | Guides supplied unmounted | |
|-------------------------|----------------|---------------------------|-------------------|
| Central guide | Without guides | 4 female | 2 male / 2 female |
| Mates with all blocks P | 690686 | 690670 | 690680 |



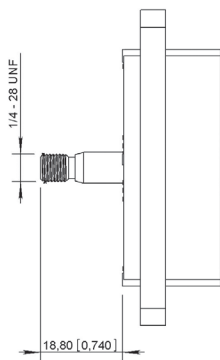
| P TYPE | | Guides supplied unmounted | |
|--------------------|----------------|---------------------------|-------------------|
| Central guide | Without guides | 4 female | 2 male / 2 female |
| Central rack guide | 690681 | 690678 | 690683 |
| Sunken Hex. 4 A/F | 690671 | 690679 | 690684 |
| Central jackscrew | 690676 | 690677 | 690682 |



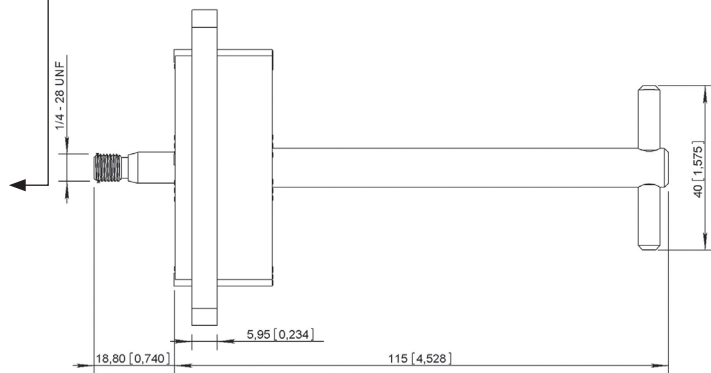
Rack guide



Sunken hex. nut



Central jackscrew

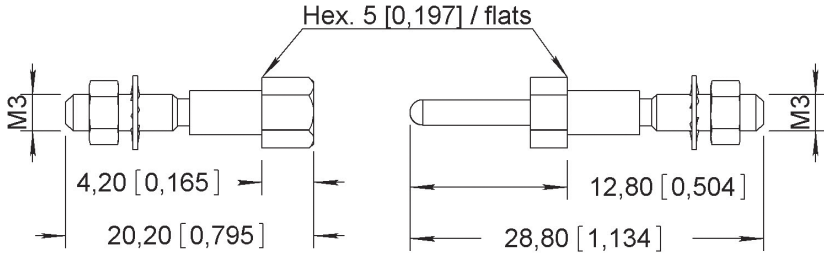


Block 158 Contacts

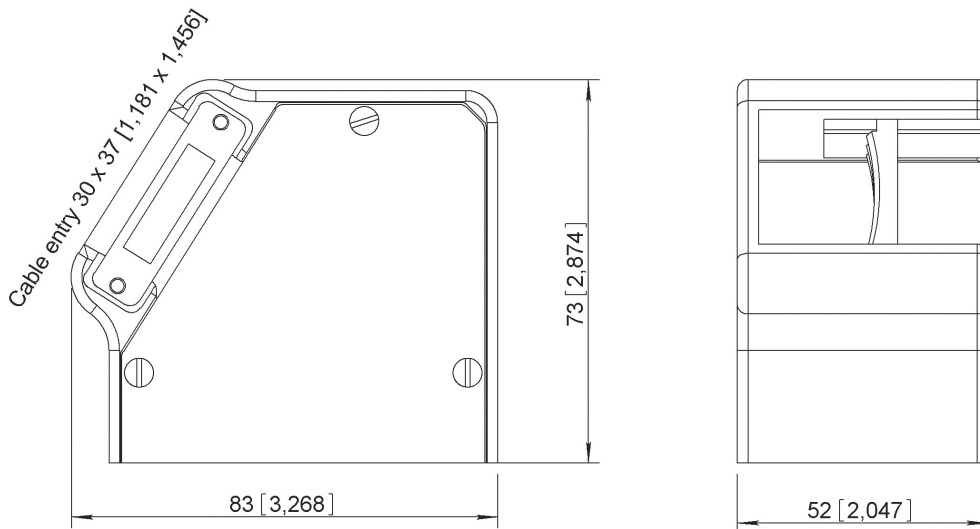
GUIDES TO MOUNT IN POSITIONS A, B, C, D - mm (inch)

Female P/N 690950

Male P/N 690960



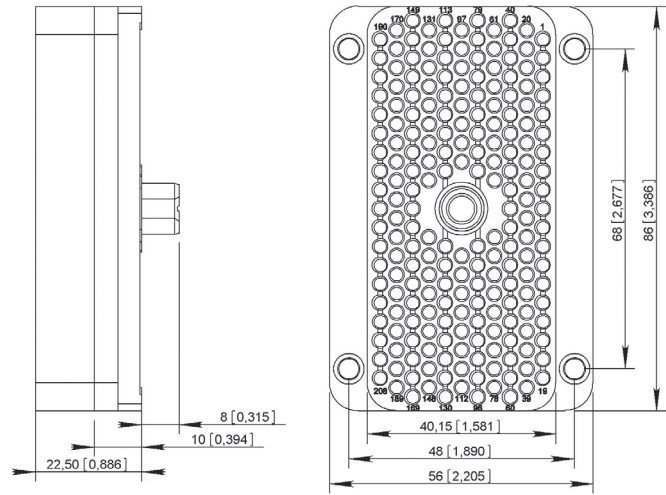
BACKSHELL P/N 690985 - mm (inch)



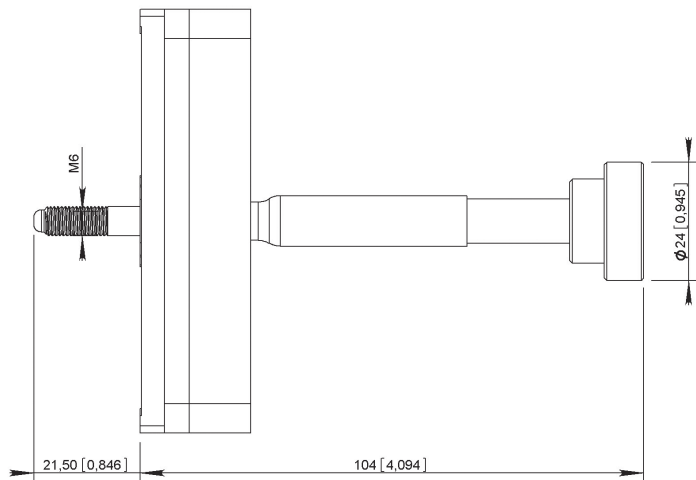
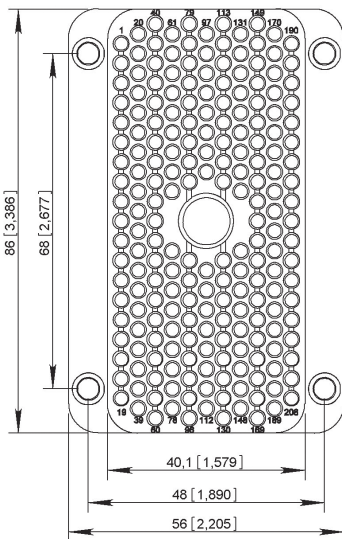
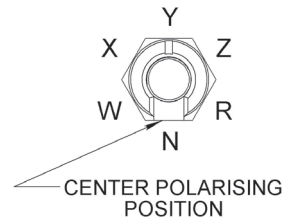
Block 208 Contacts

| Polarizing positions | Guides supplied unmounted | |
|----------------------|---------------------------|-------------------|
| | 4 female | 2 male / 2 female |
| N | 690768001 | 690778004 |
| R | 690768002 | 690778007 |
| Z | 690768003 | 690778002 |
| Y | 690768004 | 690778003 |
| X | 690768005 | 690778001 |
| W | 690768006 | 690778005 |

view wiring side mm (inch)



| Polarizing positions | Guides supplied unmounted | |
|----------------------|---------------------------|-------------------|
| | 4 female | 2 male / 2 female |
| N | 690769001 | 690767001 |
| R | 690769002 | 690767002 |
| Z | 690769003 | 690767003 |
| Y | 690769004 | 690767004 |
| X | 690769005 | 690767005 |
| W | 690769006 | 690767006 |

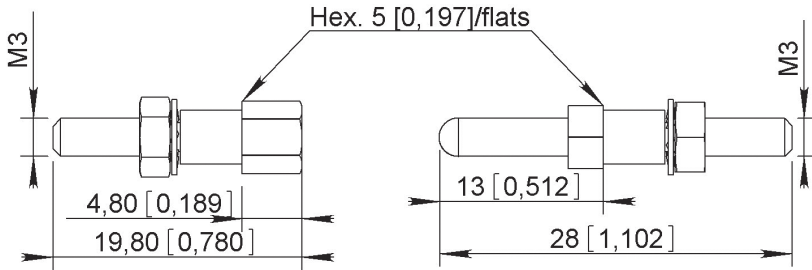


Block 208 Contacts

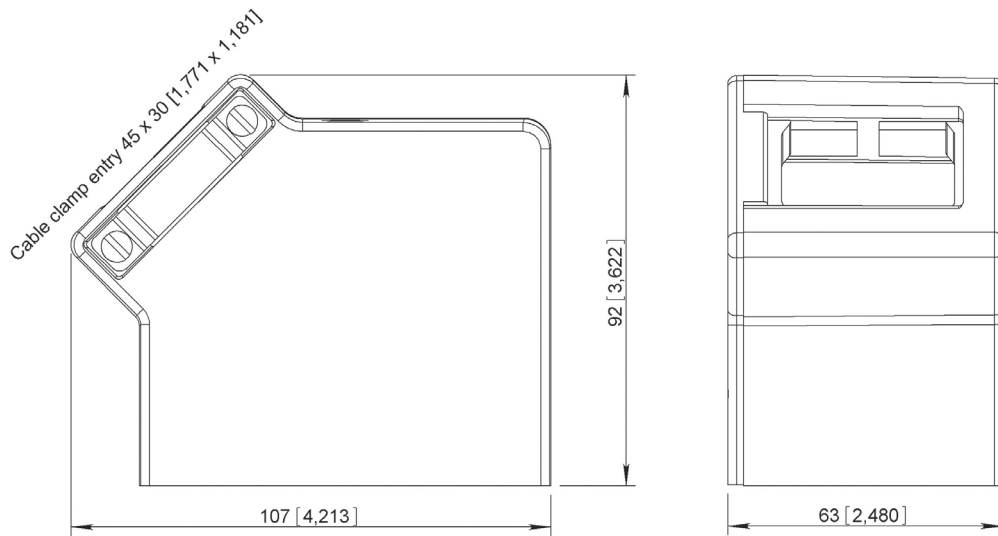
GUIDES TO MOUNT IN POSITIONS A, B, C, D - mm (inch)

Female P/N 690958

Male P/N 690968



BACKSHELL P/N 690982 - mm (inch)



MMC SERIES

Contacts

Pins and/or sockets for equipment wire, twisted pairs and coaxial cable can be housed in either plug or receptacle giving a multitude of connection possibilities.

Many contact arrangements available: 14 - 20 - 26 - 34 - 42 - 50 - 75 - 104 - 158 and 208 ways.

The signal contacts size 16 (pin Ø 1.58mm) are for crimping to AWG 16 to 28.

Contacts for wire wrapping are available with tails 0.6 x 0.6 mm (0.024x0.024 inch) or 1.2 x 1.2mm (0.047 x 0.047 inch) square. The coaxial contacts are for crimping to 2 mm and 2.6 mm coaxial cables and AWG 24 to 30 twisted pairs.

For all other contact terminations: consult us

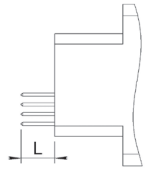
No tool is necessary for the insertion, the extraction is from the rear using an extraction tool introduced by the mating face of the connector.

Front Release and Front Removable Contacts

In order to facilitate the junction of MMC series connectors with a flexible or steady printed circuits, Radiall created a range of solder tail and wire wrap front release contacts.

This eases the replacement of a damaged contact without rewiring the set.

These size 16 contacts fit with all standard MMC connectors cavities from 14 to 208 which allow to mix them on a same connector with micro-coaxial contacts and crimping contacts.

| Type | Contacts Arrangements | | Contact ⁽¹⁾ | | Replacement contact ⁽²⁾ | |
|--|--|------------------|------------------------|--------|------------------------------------|-----------|
| | | | Pin | Socket | Pin | Socket |
| Mini-wrapping Ø0.6 (.024) flats 2 wraps |  | L=10.6 [.417] | 690220 | 690320 | 690220001 | 690320001 |
| Mini-wrapping Ø0.6 (.024) flats 3 wraps | | L=16 [.630] | 690221 | 690321 | 690221001 | 690321001 |
| PC tail Ø 0.65mm (.026) | | L=6.2 [.244] | 690222 | 690322 | 690222001 | 690322001 |

NOTES:

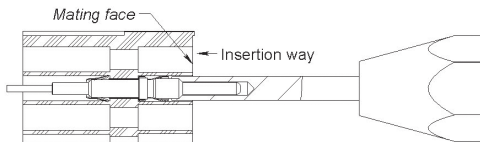
(1) Contact with retention clip and anti-rotation sleeve, must be used for the original or initial equipment of the connectors.

(2) Contact without retention clip and anti-rotation sleeve for the replacement of damaged contacts.

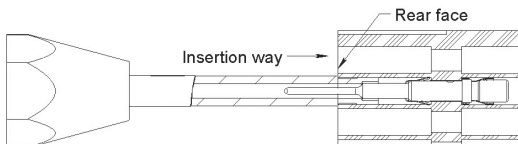
INSTALLATION AND EXTRACTION OF FR/FR CONTACTS.

Contact Installation

1) Insert the contact fitted with the retention clip through the mating face and push insertion tool 282501.

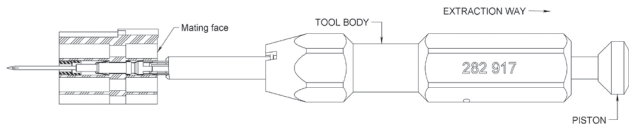


2) Introduce the sleeve by the rear face with tool 282502 and push it until it flushes with the insulator.



Contact Replacement

Extraction: insert the extraction tool 282917 by the mating face into the cavity of the contact to be replaced. Push it until it butts against the contact shoulder. Maintain the pressure on piston and pull on body tool to extract the contact. To free the contact release pressure on piston.



Installation of a new contact without retention clip: insert the contact through the mating face, push it with tool 282501 until contact snaps in place.

Equipment Signal Contacts

FRONT RELEASE / REAR RELEASE CRIMP CONTACTS

| CABLES | | | Contacts | | Positioner | Crimping tool | Position on crimp tool | Extraction tool |
|----------------|--|----------------------------|----------|--------|------------|-----------------------|------------------------|-----------------|
| AWG size | Section in mm ² (sq.in) | Ø max. on sleeve mm (inch) | Pin | Socket | | | | |
| 16 18 20 | 1.34 (.053) 0.93 (.037) 0.60 (.024) | 3.10 (.122) | 690200 | 690300 | 282975 | 282291 M22520/1.01 | 6 5 4 | 282920 |
| 16 18 20 | 1.34 (.053) 0.93 (.037) 0.60 (.024) | 3.10 (.122) | 690201 | 690301 | | | 6 5 4 | |
| 20 22 24 | 0.60(.024) 0.38 (.015) 0.22 (.009) | 2.20 (.086) | 690215 | 690315 | 282976 | | 4 3 2 | 282920 |
| 24 26 28 | 0.22 (.009) 0.14 (.006) 0.093 (.004) | 1.60 (.063) | 690235 | 690335 | | | 4 2 2 | |

WIRE WRAP CONTACTS

| Type | Contacts Arrangements | Contacts | | Tools | |
|---|-----------------------|----------|--------|-----------|------------|
| | | Pin | Socket | Insertion | Extraction |
| Mini-wrapping Ø 0.6 (.024) flats 2 wraps | | 690241 | 690341 | 282921 | 282920 |
| Wrapping standard Ø 1.2 (.047) flats 3 wraps | | 690240 | 690340 | | |

MMC SERIES

Twisted Pair Crimp Contacts

| CABLES | | | | TOOLS ⁽³⁾ | | | | CONTACTS & Wiring Instructions ⁽⁴⁾ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|---------------------|------------------------------------|---------------------|--|----------------------|----------------------|----------------------|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------|----------|----------------------|
| AWG size | | Section in mm ² (sq.in) | Ø max. on insulator | Center contact | | Outer contact | | Socket ⁽¹⁾ | Pin ⁽²⁾ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Position on crimping tool ⁽⁵⁾ | Positioner | Crimping tool | Positioner | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Stranded wire cable | 0.22 (.009) | 0.96 (.038) | 2 | 282981 / M22520/2.04 | 282292 / M22520/4.01 | 282973 / M22520/4.02 | 690070 B | 690170 B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Stranded wire cable | 0.14 (.006) | 0.84 (.033) | 2 | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | 282973 / M22520/4.02 | 690060 A | 690160 A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | 0.093 (.004) | 0.73 (.029) | 1 | | | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | 282973 / M22520/4.02 | 690060 A | 690160 A | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | 0.055 (.002) | 0.66 (.026) | 1 | | | | | | | | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | 282973 / M22520/4.02 | 690060 A | 690160 A | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Single wire cable | 0.12 (.005) | 0.85 (.033) | 3 | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | | | | | | | | | | | 282973 / M22520/4.02 | 690061 A | 690161 A | | | | | | | | | | | | | | | | | | | | |
| 28 | | 0.08 (.003) | 0.67 (.026) | 2 | | | | | | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | | | | | | | | | 282973 / M22520/4.02 | 690061 A | 690161 A | | | | | | | | | | | | | | | | | |
| 30 | | 0.05 (.002) | 0.58 (.023) | 1 | | | | | | | | | | | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | | | | | | | 282973 / M22520/4.02 | 690061 A | 690161 A | | | | | | | | | | | | | | |
| 26 | Stranded wire cable | 0.14 (.006) | 0.84 (.033) | 2 | | | | | | | | | | | | | | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | | | | | | | 282973 / M22520/4.02 | 690061 A | 690161 A | | | | | | | | | | | |
| 28 | | 0.093 (.004) | 0.73 (.029) | 1 | | | | | | | | | | | | | | | | | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | | | | | | | 282973 / M22520/4.02 | 690061 A | 690161 A | | | | | | | | |
| 26 | Single wire cable | 0.12 (.005) | 0.85 (.033) | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | | 282973 / M22520/4.02 | 690062 A | | | | 690162 A | | | | | | | |
| 28 | | 0.08 (.003) | 0.67 (.026) | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | | 282973 / M22520/4.02 | 690062 A | 690162 A | | | | |
| 30 | Stranded wire cable | 0.055 (.002) | 0.66 (.026) | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 282981 / M22520/2.04 | | | | 282292 / M22520/4.01 | | | | 282973 / M22520/4.02 | 690062 A | 690162 A | |
| 30 | Single wire cable | 0.05 (.002) | 0.58 (.023) | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 282981 / M22520/2.04 | 282292 / M22520/4.01 | | | | 282973 / M22520/4.02 |

NOTES:

- (1) Body female contact / center male contact
- (2) Body male contact / center female contact
- (3) Extraction tool for all twisted pair contacts P/N 282920
- (4) Wiring instructions on pages 7-31 to 7-34
- (5) Crimping tool for all 282281 / M22520/2.01

Coaxial Crimp Contacts

MMC SERIES

| CABLES | | | TOOLS ⁽³⁾ | | | | CONTACTS & Wiring Instructions ⁽⁴⁾ | |
|----------------------------|--------------------|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|--------------------|
| Cable reference | Impedance Ω | Outer diameter | Center contact | | Outer contact | | Socket ⁽¹⁾ | Pin ⁽²⁾ |
| | | | Crimp tool | Positioner | Crimp tool | Positioner | | |
| RG178/U RG196/U KX21 | 50 | 2 (.079) | 282281 M22520/2.01 | 282981 M22520/2.04 | 282292 M22520/4.01 | 282973 M22520/4.02 | 690020 C | 690120 C |
| KX3A RG316/U KX22 | 50 | 2.54 (.100) $\pm 0.13 (.005)$ | | | | | 690040 D | 690140 D |
| RG179/U | 75 | | | | | | | |

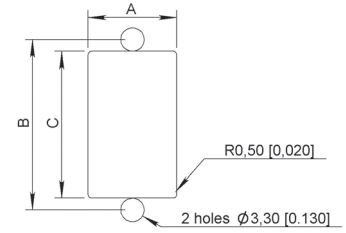


NOTES:

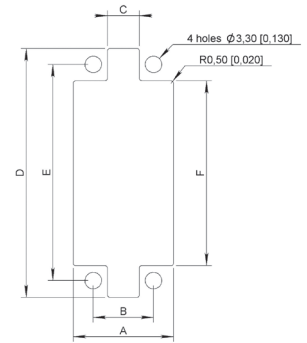
- (1) Body female contact / center male contact
- (2) Body male contact / center female contact
- (3) Extraction tool for all twisted pair contacts P/N 282920
- (4) Wiring instructions on pages 7-31 to 7-34

Panel Cut Out

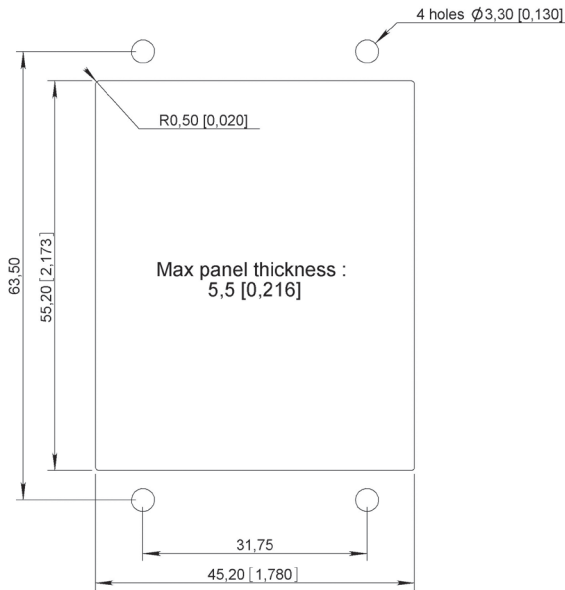
| Number of contacts | A | B | C | Max. panel thickness |
|--------------------|----------------|-----------------|-----------------|----------------------|
| 14 | 12.4 [.488] | 23.8 [.937] | 20.8 [.819] | 6 [.236] |
| 20 | 12.4 [.488] | 31.7 [1.248] | 28.7 [1.130] | |
| 26 | 15.7 [.618] | 33.3 [1.311] | 29.2 [1.150] | |



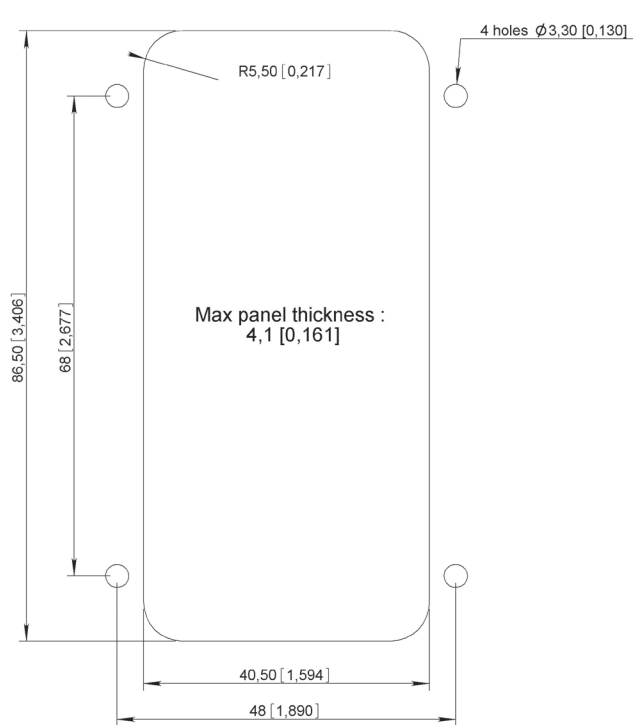
| Number of contacts | A | B | C | D | E | F | Max. panel thickness |
|--------------------|-----------------|----------------|----------------|-----------------|-----------------|-----------------|----------------------|
| 34 | 19.8 [.779] | 11.9 [.468] | 6.3 [.248] | 49.3 [1.940] | 42.8 [1.685] | 36.6 [1.441] | 6 [.236] |
| 42 | | | | 56.9 [2.240] | 50.5 [1.988] | 43.7 [1.720] | |
| 50 | | | | 64.3 [2.531] | 57.9 [2.279] | 51.6 [2.031] | |
| 75 | 29 [1.141] | 19.4 [.764] | 14.2 [.559] | 72.5 [2.854] | 63.5 [2.500] | 55.6 [2.189] | 5.5 [.216] |
| 104 | 29.3 [1.153] | 20.6 [.811] | 12.7 [.500] | | | | |



158 CONTACTS


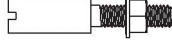

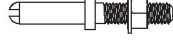
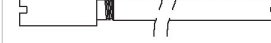

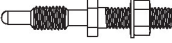
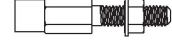

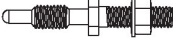
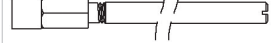
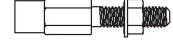








208 CONTACTS



Spare Parts

Jackscrew and rack guide selection table

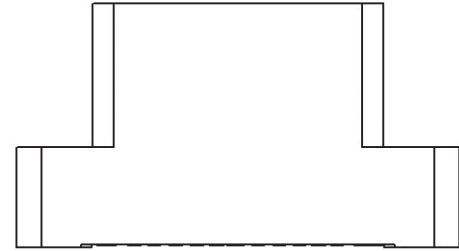
| Cables | | | Number of contacts | | | | | | |
|---------------------|---------------------------|--|--|---|--------|---|---|----|----|
| | | | 14 | 20 | 26 | 34 | 42 | 50 | 75 |
| Rack guides | Without backshell | Male |  | | | | 690962 | | |
| | | Female |  | | | | 690952 | | |
| | With backshell | Male |  | 690963 | |  | 690963 | | |
| | | Female |  | 690963 | |  | 690963 | | |
| Fixed guides | Without backshell | Male |  | | | | 690961 | | |
| | | Female |  | | | | 690951 | | |
| | With backshell | Male |  | 690964 | |  | 690961 | | |
| | | Female |  | 690954 | |  | 690951 | | |
| Rotating jackscrews | Without backshell | Male |  | | | | 690965 | | |
| | | Female |  | | | | 690955 | | |
| | With or without backshell | Male | 690966 | | 690949 | | 690967 | | |
| | | |  | | | |  | | |
| | | 690956 | | 690939 | | 690957 | | | |
| | |  | | | |  | | | |
| | | | | For 75 contacts 690967001 Side entry | | | | | |
| | | | | For 75 contacts 690957001 Side entry | | | | | |

MMC SERIES

Spare Parts

INSULATOR BLOCKS ONLY

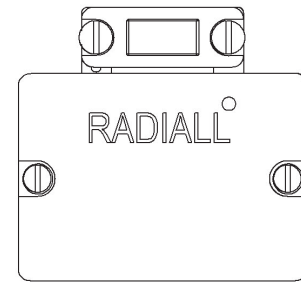
| Number of contacts | Block | |
|--------------------|--------|--------|
| | Type P | Type R |
| 14 | 690401 | 690501 |
| 20 | 690411 | 690511 |
| 26 | 690421 | 690521 |
| 34 | 690431 | 690531 |
| 42 | 690441 | 690541 |
| 50 | 690451 | 690551 |
| 75 | 690461 | 690561 |



BACKSHELLS

When ordering backshells separately, do not forget to order the appropriate guides or jackscrews (refer to previous page for part numbers.)

| Number of contacts | Backshell reference |
|--------------------|---------------------|
| 14 | 690905 |
| 20 | 690908 |
| 26 | 690911 |
| 34 | 690914 |
| 42 | 690917 |
| 50 | 690920 |
| 75 | Type P 690923 |
| | Type R 690924 |



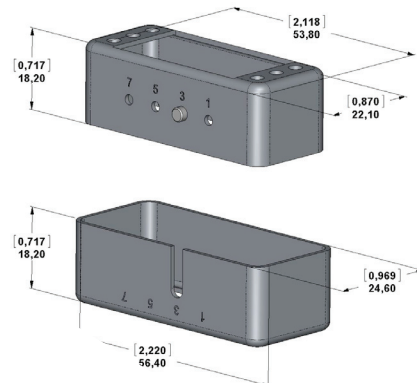
| Polarization code | Position |
|-------------------|----------|
| 110 | 1 |
| 120 | 3 |
| 130 | 5 |
| 140 | 7 |
| 210 | 1 + 3 |
| 220 | 3 + 5 |
| 230 | 5 + 7 |
| 240 | 1 + 5 |
| 250 | 3 + 7 |
| 260 | 1 + 7 |

SHROUDS

Male shroud is to be mounted on insulator block P and female shroud on insulator block R. Polarizing is to be positioned next to cavity 1 or A of the insulator block.

To order without polarization just use the six digits in the following table. To include polarization add the 3 digits suffix following the 6 digits part number. E.G: 690943120 (position 3).

| Number of contacts | Shrouds | |
|--------------------|---------------|--------|
| | Male | Female |
| 14 | 690940 | 690930 |
| 20 | 690941 | 690931 |
| 26 | 690942 | 690932 |
| 34 | 690943 | 690933 |
| 42 | Not available | |
| 50 | 690945 | 690935 |
| 75 | 690946 | 690936 |



Wiring Instructions

TWISTED PAIR CONTACT

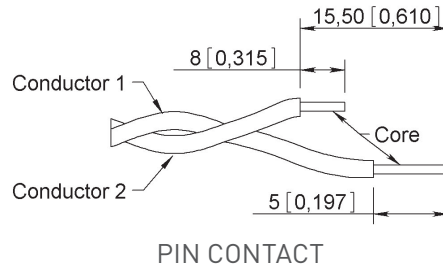
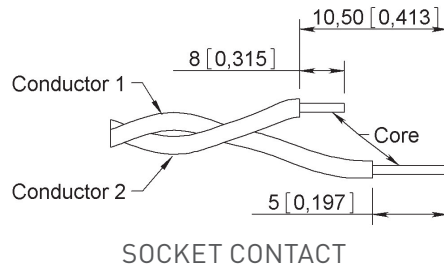
Wiring Instructions A

CONTACT REF: 690060 WIRE SIZES

| | |
|--------|--------|
| 690160 | AWG 26 |
| 690061 | AWG 28 |
| 690161 | AWG 30 |
| 690062 | |
| 690162 | |

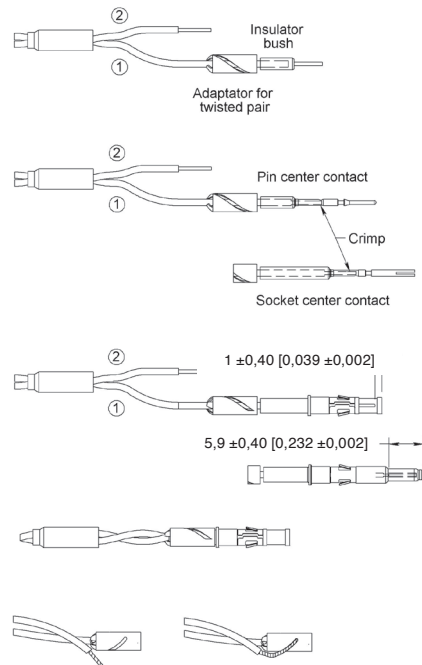


1 - Wire Stripping



2 - Wiring Instructions

- Slide the ferrule over the twisted pair cable
- Following the type of contact, strip the 2 conductors to the shown dimensions here above
- Slide adaptor over conductor ①
- Slide insulator bush over conductor ①
- Put the core of the cable ① into the center contact (pin or socket) until it butts against the insulator bush.
- Engage the assembly (cable + center contact) into the positioner of the crimping tool, and crimp center contact according to setting instructions page 7-26.
- Engage the center contact into the body, with reasonable force push home. Check the dimensional position, following type of centre contact (pin/socket).
- Slide the adaptor on to the body up to the shoulder.
- Place the core of conductor ② under the adaptor tab, and slide core into the helical slot.
- Slide the ferrule over the adapter up to the shoulder of the body.
- Engage the assembly into the positioner of the crimping tool, then crimp according to setting instructions, page 7-26.

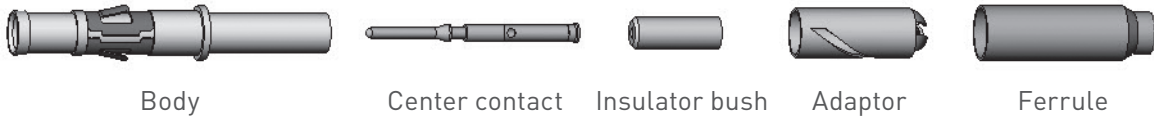


Wiring Instructions

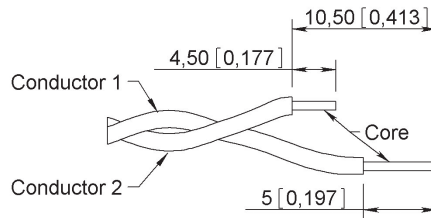
TWISTED PAIR CONTACT

Cabling Instructions B

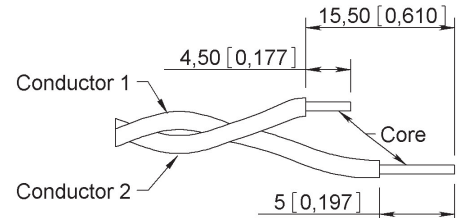
CONTACT REF: 690070 WIRE SIZE AWG 24
 690170



1 - Wire Stripping



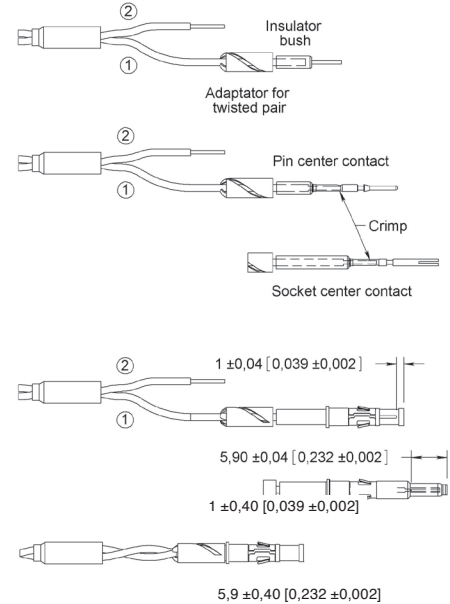
SOCKET CONTACT



PIN CONTACT

2 – Wiring Instructions

- Slide the ferrule over the twisted pair cable
- Following the type of contact, strip the 2 conductors to the shown dimensions here above
- Slide adaptor over conductor ①
- Slide insulator bush over conductor ①
- Put the core of the cable ① into the center contact (pin or socket) until it butts against the insulator bush.
- Engage the assembly (cable + center contact) into the positioner of the crimping tool, and crimp center contact according to setting instructions page 7-26.
- Engage the center contact into the body, with reasonable force push home. Check the dimensional position, following type of centre contact (pin/socket).
- Slide the adaptor on to the body up to the shoulder.
- Place the core of the conductor ② into the straight slot, on the outer face of the adaptor.
- Slide the ferrule over the adaptor up to the shoulder of the body.
- Engage the assembly into the positioner of the crimping tool, then crimp according to setting instructions, page 7-26.

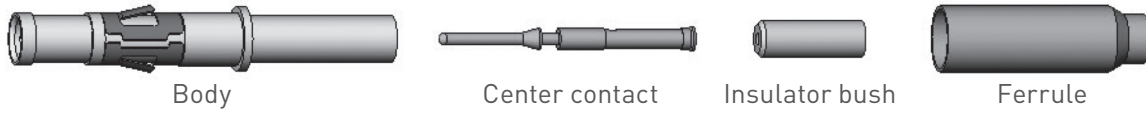


Wiring Instructions

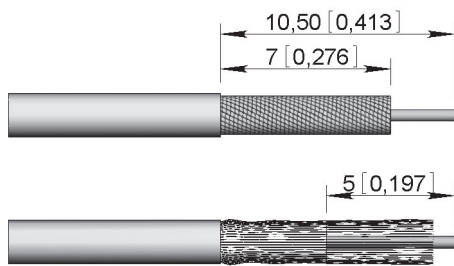
COAXIAL CONTACTS

Cabling Instructions C

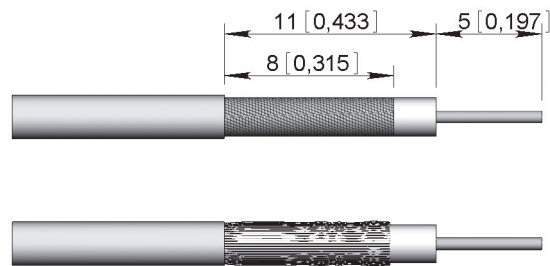
CONTACT REF: 690020
690120



1 - Wire Stripping



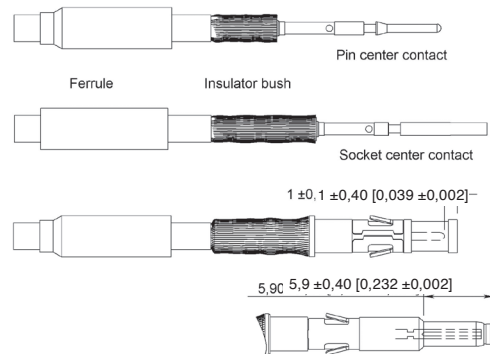
SOCKET CONTACT



PIN CONTACT

2 – Wiring Instructions

- Slide the ferrule over the coaxial cable.
- Following the type of contact, strip the 2 conductors to dimensions shown above.
- Comb the braid and slide on the insulator bush until it butts against the dielectric of the cable.
- Place the core of the cable into the center contact so as to butt against the dielectric.
- Engage the assembly into the positioner of the crimping tool and crimp according to instructions indicated on page 7-27.
- Engage the centre contact into the body and with reasonable force push home, check the dimensional position of the centre contact (pin or socket).
- Pull down the braid over the body and slide the ferrule on to the body up to the shoulder.
- Engage the assembly into the positioner of the crimping tool, then crimp according to instructions indicated on page 7-27.

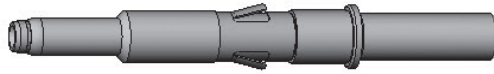


Wiring Instructions

COAXIAL CONTACTS

Cabling Instructions D

CONTACT REF: 690040
690140



Body

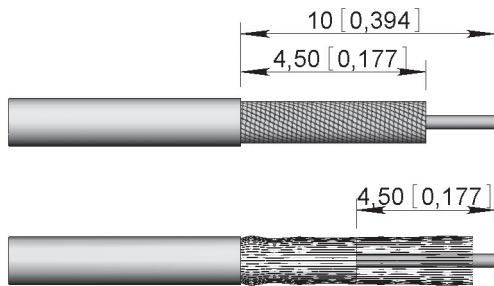


Center contact

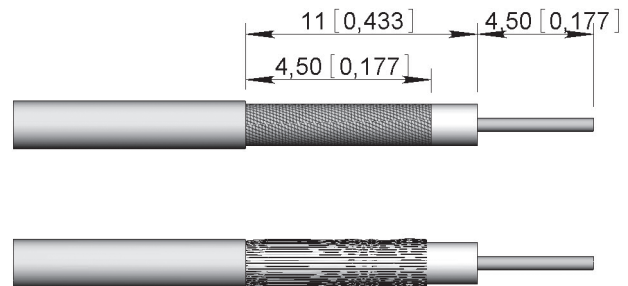


Ferrule

1 - Wire Stripping



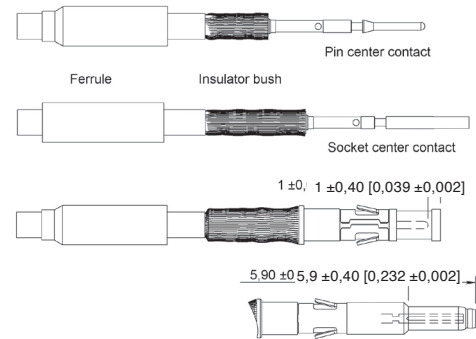
SOCKET CONTACT



PIN CONTACT

2 - Wiring Instructions

- Slide the ferrule over the coaxial cable.
- Following the type of contact, strip the 2 conductors to dimensions shown above.
- Place the core of the cable into the center contact so as to butt against the dielectric.
- Engage the assembly into the positioner of the crimping tool, then crimp according to instructions indicated on page 7-27.
- Engage the center contact into the body and with reasonable force push home, check the dimensional position of the center contact (pin or socket).
- Pull down the braid over the body and slide ferrule over braid up to the body shoulder.
- Engage the assembly into the positioner of the crimping tool, then crimp according to instructions given on page 7-27.



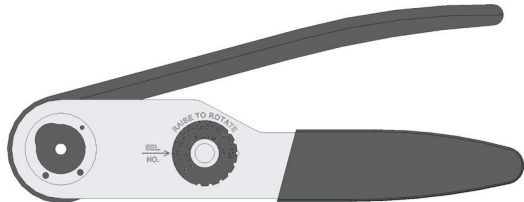
Tools

CRIMP TOOLS

282281 – M22520/2-01

282291 – M22520/1-01

282292 – M22520/4-01



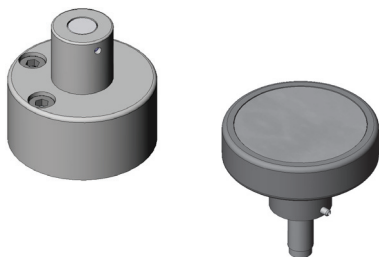
POSITIONERS

282973 – M22520/4-02

282976 – Daniels TP616

282975 – Daniles TP617

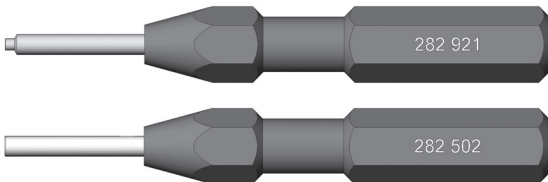
282981 – M22520/2-04



INSERTION TOOL

282502

282921 – wire wrap

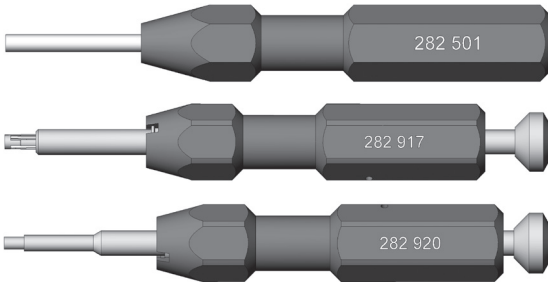


EXTRACTION TOOL

282501

282917

282920



MMC SERIES

MMC SERIES

Notes



B & MCS-R Series



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B Series

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SECTION 8 TABLE OF CONTENTS

B SERIES

Introduction

The B series connectors are of robust design with fixed solder pot contacts of 15 A current rating. They are available in four different contact arrangements. By their ruggedness, they are particularly suitable for rack and panel and cable to panel applications.

Applications

The series B connectors ensures complete safety for the following applications: Industries, transports, communications, power equipment and all specific civil and military electronic systems.

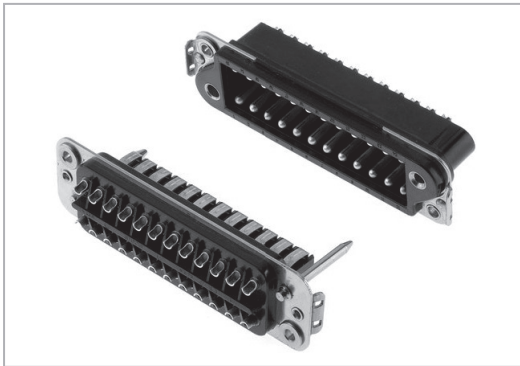
Features

Plug and receptacle connectors are made of a thermoset insulator moulded onto a stainless steel fixing plate. Four contact arrangements are available, 8, 14, 24 and 32 contacts.

The receptacle box type connectors are fitted with round pin contacts. The plug connectors are fitted with spring blade contacts and two stainless steel guide pins of different diameter providing polarization and mating before the contacts to ensure correct alignment.

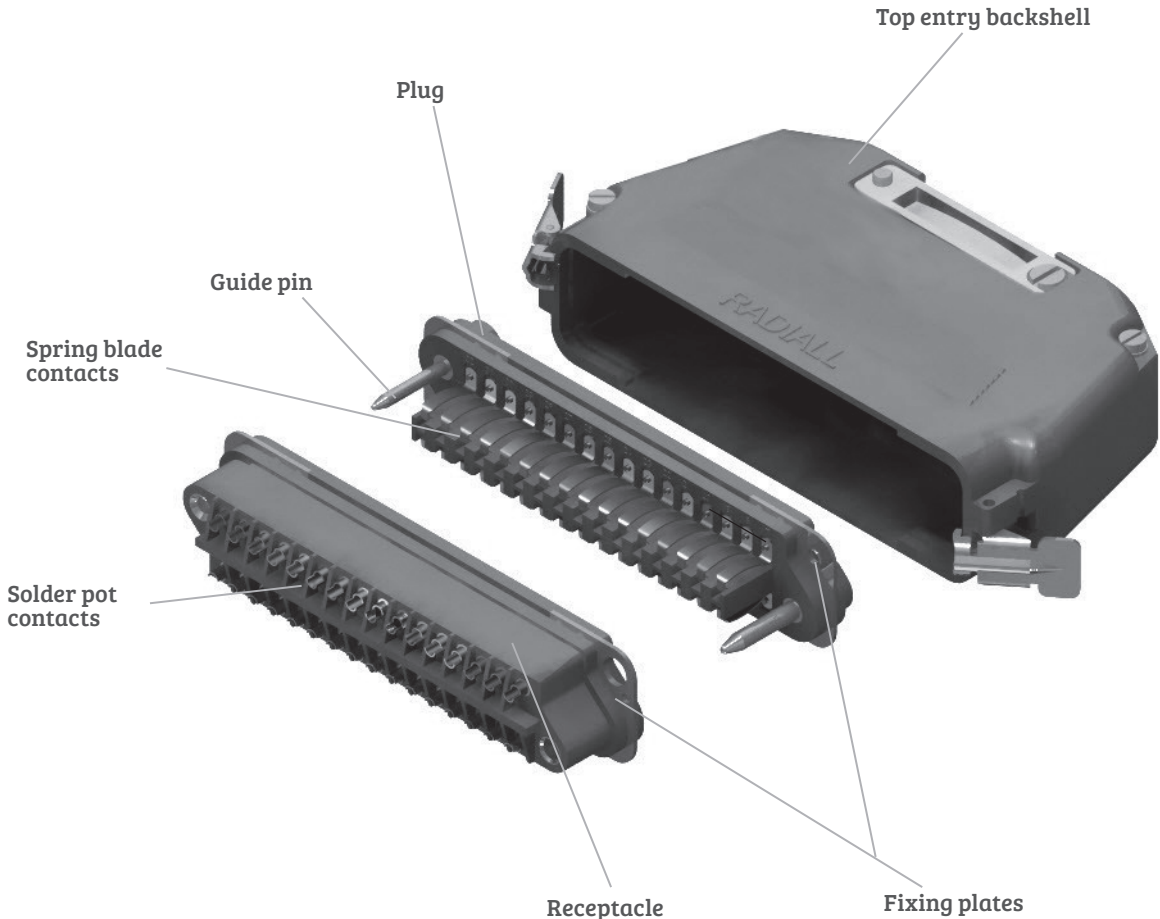
The pin contacts are in silver plated brass, the spring blade contacts are in silver plated bronze. The cambered configuration and elasticity procures a self wiping condition at each mating, ensuring high reliability.

The B series connector is only available with solder pot termination for gauge 16 wires. Standard receptacle connectors are fitted with floating eyelets, which allows 0.75 mm radial float.



Product Overview

Detailed view of the various parts of this series connector



B SERIES

Technical Characteristics

ELECTRICAL

Current rating by contact: 15 A

Test voltage:

- Between contacts: > 1500 V.r.m.s.
- Between contacts and earth: > 2000 V.r.m.s

Insulation resistance: > 5000 MΩ

Contact resistance: < 10 mΩ

MECHANICAL & ENVIRONMENTAL

Temperature range: -55°C (-131°F) to +125°C (+257°F)

Humidity: 21 days

Mating & unmating: 500 cycles

Contact retention: > 50 N

MATERIALS

| Description | Material / Finish |
|--------------------------------|------------------------|
| Insulator block | Glass filled phenolic |
| Pin contacts (male) | Brass - silver plated |
| Spring blade contacts (female) | Bronze - silver plated |
| Guide pins | Stainless steel |
| Fixing plate | Stainless steel |

MASSES g (oz)

| Plug | | | | |
|---------------------|------------|------------|------------|-------------|
| Contact Arrangement | 08 | 14 | 24 | 32 |
| Weight | 35 (1.25) | 50 (1.80) | 70 (2.50) | 85 (3) |
| Receptacle | | | | |
| Contact Arrangement | 08 | 14 | 24 | 32 |
| Weight | 35 (1.25) | 50 (1.80) | 70 (2.50) | 85 (3) |
| Backshells | | | | |
| Side entry | 170 (6) | 190 (6.70) | 265 (9.35) | 300 (10.60) |
| Top entry | 180 (6.35) | 200 (7.05) | 280 (9.90) | 320 (11.30) |

How to Order Connectors

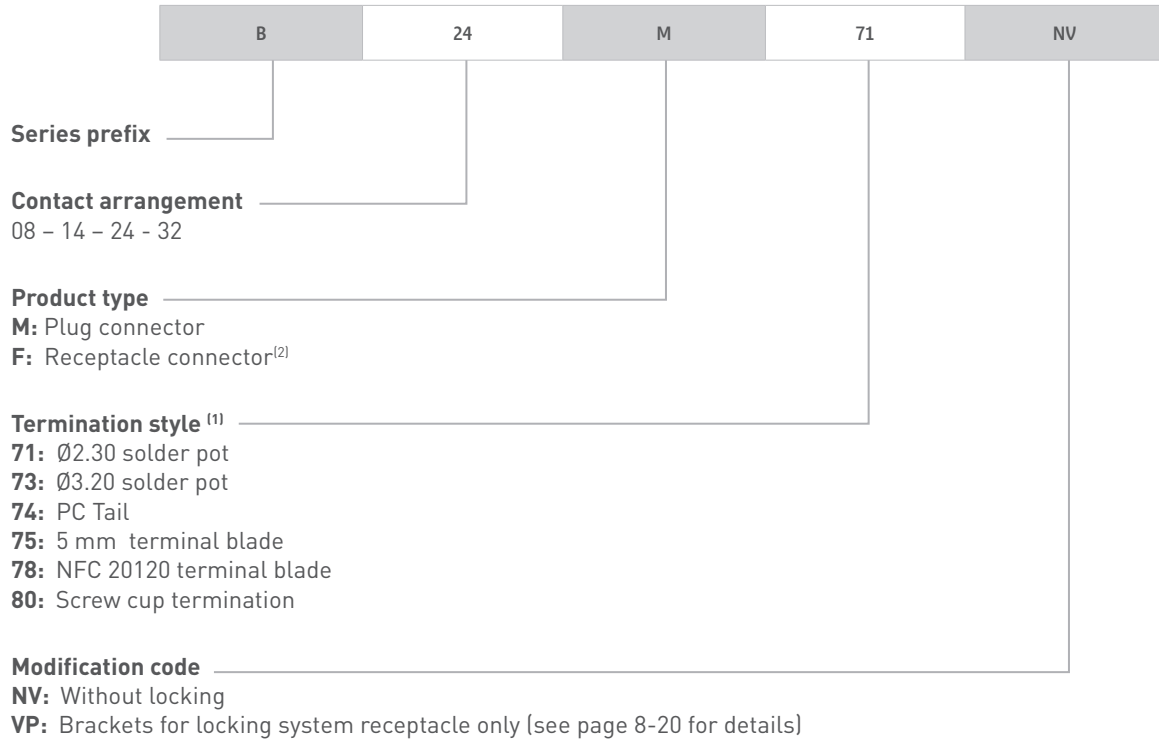
The following indications are to help you out when ordering B connectors.

When a receptacle connector is ordered with the locking system, in place of the floating eyelets, brackets are fitted whilst the locking clips are always fitted on the backshell.

For backshell and accessories please refer to pages 8-21 to 8-22 for ordering.

The plug connector is fitted with spring leaf contacts and the receptacle box type connector with pin contacts.

CONNECTOR PART NUMBER



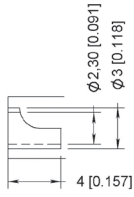
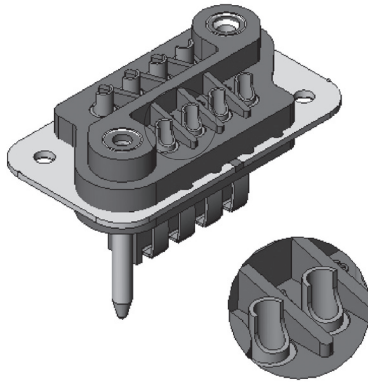
NOTES:

(1) Please refer to page 8-8 for views of termination styles.

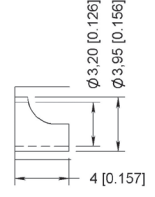
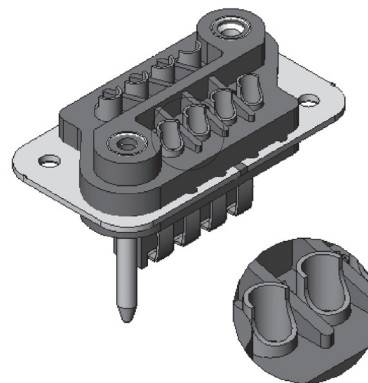
(2) Receptacle connector: only the 71 termination style is available

Termination Styles

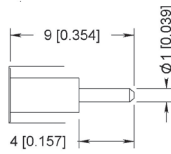
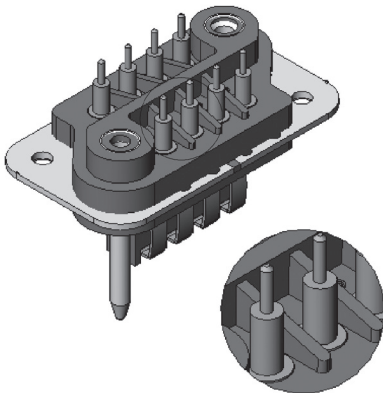
Following are the different termination styles available in details



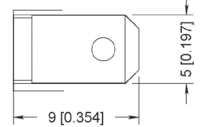
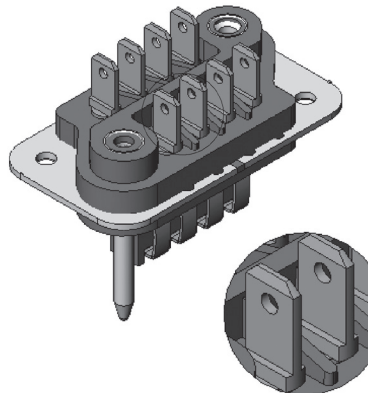
Style 71



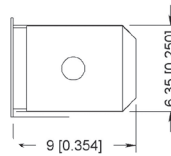
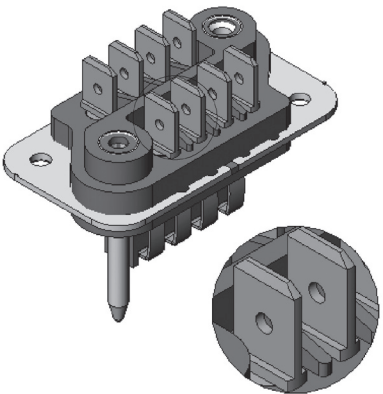
Style 73



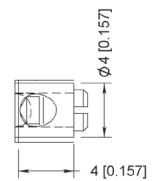
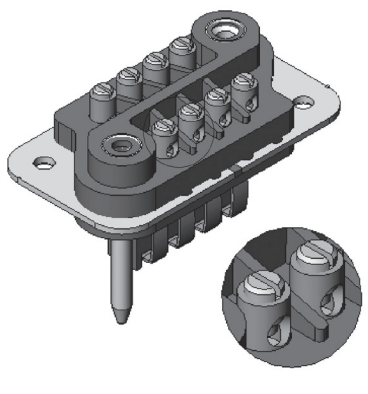
Style 74



Style 75

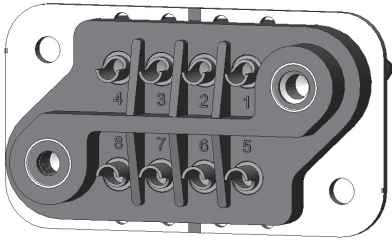


Style 78

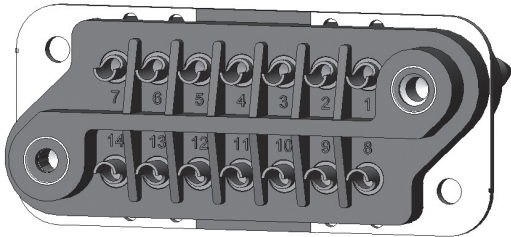


Style 80

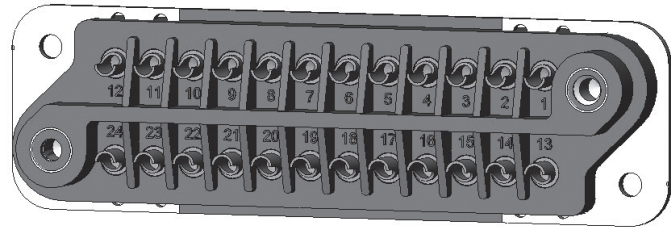
Contact Arrangements



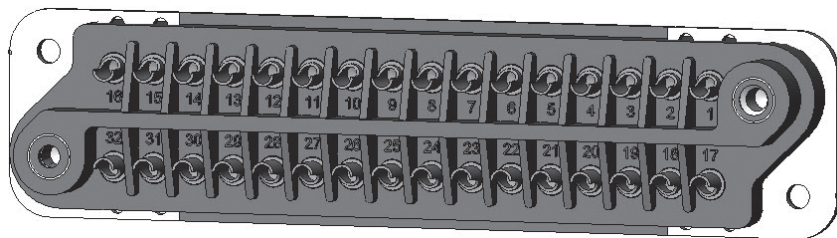
8 CONTACTS



14 CONTACTS



24 CONTACTS

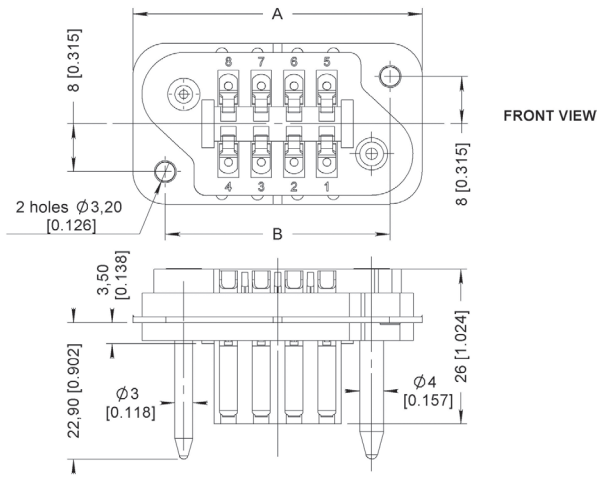


32 CONTACTS

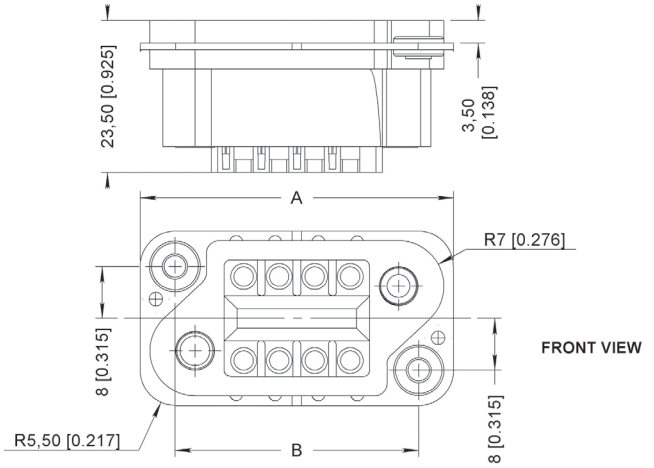
Dimensions

SINGLE SHELL DIMENSIONS mm(inch)

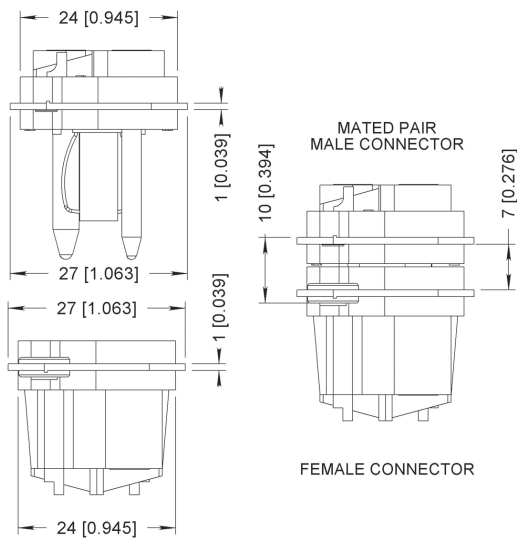
Male



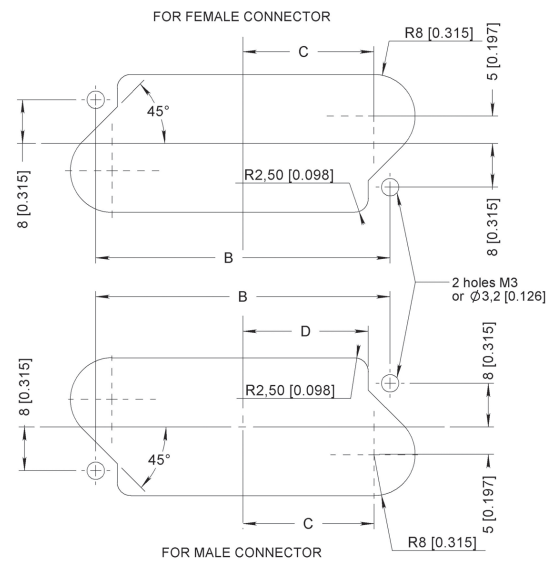
Female



MATED SHELL DIMENSIONS



PANEL CUT OUTS



| Contact Arrangement | Plug & receptacle connector dimensions mm(inch) | | | |
|---------------------|---|---------------|---------------|--------------|
| | A | B | C | D |
| 08 | 48.5 [1.909] | 37.5 [1.476] | 15.75 [0.620] | 15.5 [0.610] |
| 14 | 65 [2.559] | 54 [2.125] | 24 [0.944] | 23.5 [0.925] |
| 24 | 92.5 [3.641] | 81.5 [3.208] | 37.75 [1.486] | 37.5 [1.476] |
| 32 | 114.5 [4.507] | 103.5 [4.074] | 48.75 [1.919] | 48.5 [1.909] |

Notes

B SERIES

Introduction

The MCSR series connectors are of robust design and available in four contacts arrangements, respectively 28, 48, 83 and 113 wire contacts, size gauge 16. The same number of micro coaxial contacts can be installed instead of the wired contacts. A unique feature of the MCSR connector is that it's interchangeable with the B series, however, it is not fully intermateable. The connectors may be adapted with die cast aluminium hoods, with two types of cable entries, either from the top or from the side.

Applications

MCSR connectors are suitable for various applications in the following industrial fields: Communications and automation systems, electronic equipment, naval, aerospace, and defense applications.

Features

The MCS-R series, plug and receptacle connectors are made of a thermostat insulator moulded onto a stainless steel fixing plate. Four contact arrangements are available, 28, 48, 83 and 113 contacts.

The plug connector is fitted with two guide pins of different diameter, which provides polarization and mate before the contacts ensuring a perfect alignment and reliability. The plug connector accepts socket wire contacts or pin micro coaxial contacts.

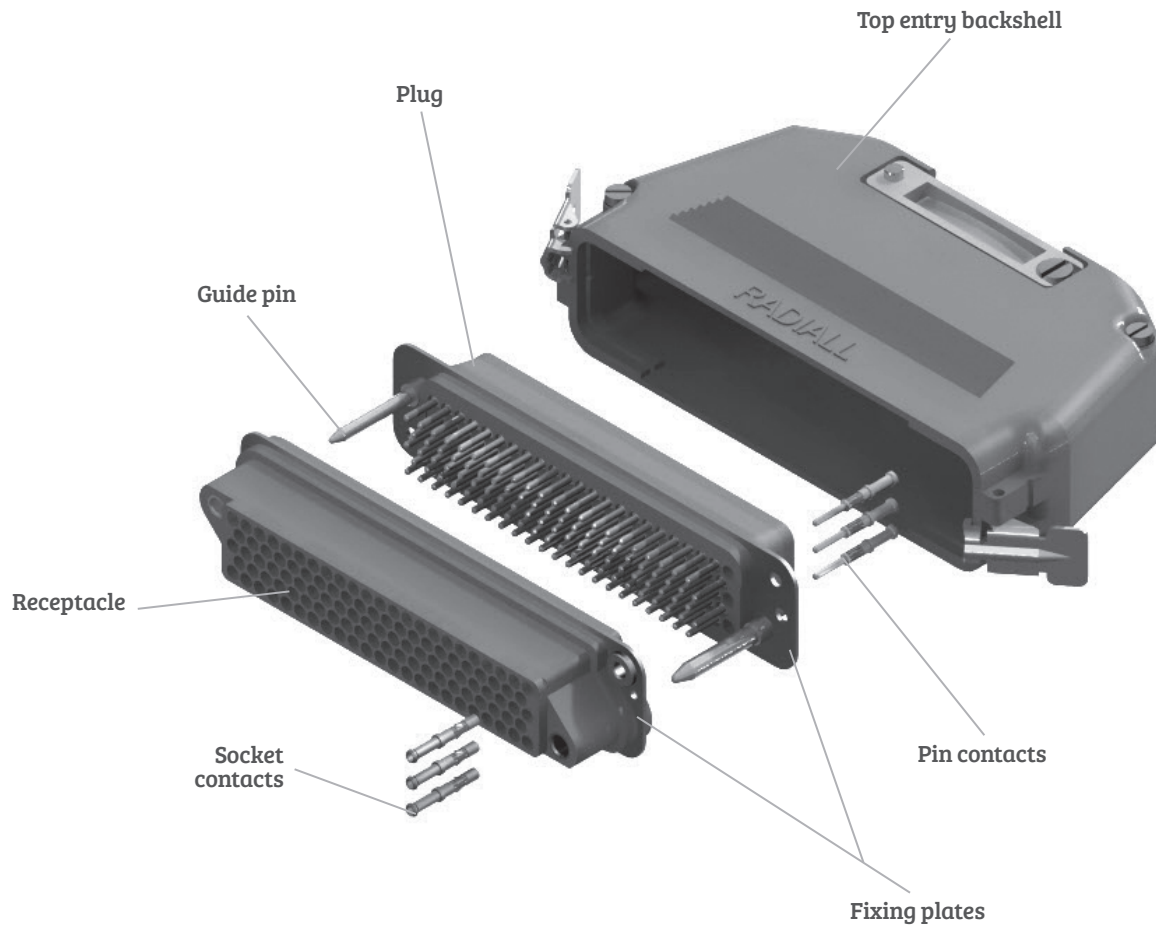
The receptacle connector accepts pin wire contacts or socket micro coaxial contacts and is fitted with floating eyelets which allows 0.75 mm radial float.

Three termination styles on the contacts are available, wire contacts with solder pot or crimp for wire size gauge 16 and micro coaxial contacts, crimp style.



Product Overview

Detailed view of the various parts of this series connector



MCS-R SERIES

Technical Characteristics

ELECTRICAL

Current rating by contact: 13 A

Operating voltage: 350 V.r.m.s @ 50 Hz

Test voltage: 1500 V.r.m.s @ 50 Hz

Insulation resistance: > 5000 MΩ

Contact resistance: < 12 mΩ

ELECTRICAL WITH MICRO COAXIAL CONTACTS

Impedance: 50 Ω

Operating frequency range: 0 to 1000 MHz

VSWR of pair of contacts: < 1.4 from 0 to 1000 MHz

Insertion loss of a pair of contacts @ 1000 MHz: < 0.20dB

Test voltage at sea level (mated pair): 600 V.r.m.s @ 50Hz

Insulation resistance: > 5000 MΩ

Contact resistance: < 12 mΩ

MECHANICAL & ENVIRONMENTAL

Temperature range: -55°C (-131°F) to +125°C (+257°F)

Humidity: 21 days

Mating & unmating: 500 cycles

Contact retention: > 50 N

Technical Characteristics

MATERIALS

| Description | Material / Finish |
|-----------------|--|
| Insulator block | Glass filled phenolic |
| Guide pins | Stainless steel |
| Fixing plate | Stainless steel |
| Contacts | Copper alloy – gold over nickel plated |

MASSES g (oz)

| Plug | | | | |
|---------------------|------------|------------|------------|-------------|
| Contact Arrangement | 28 | 48 | 83 | 113 |
| Weight | 40 (1.45) | 60 (2.15) | 90 (3.20) | 115 (4.05) |
| Receptacle | | | | |
| Contact Arrangement | 28 | 48 | 83 | 113 |
| Weight | 40 (1.45) | 55 (1.95) | 85 (3) | 110 (3.90) |
| Backshells | | | | |
| Side entry | 170 (6) | 190 (6.70) | 265 (9.35) | 300 (10.60) |
| Top entry | 180 (6.35) | 200 (7.05) | 280 (9.90) | 320 (11.30) |

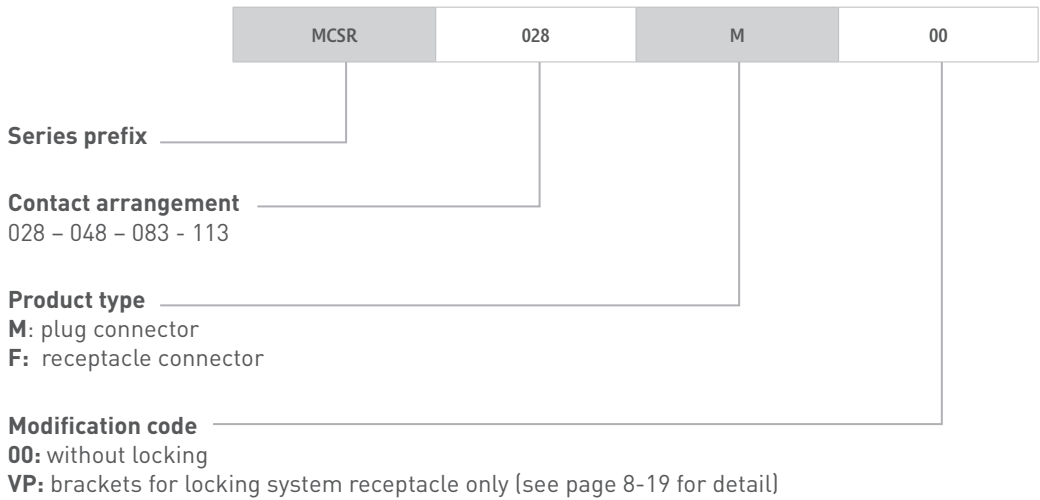


MCS-R SERIES

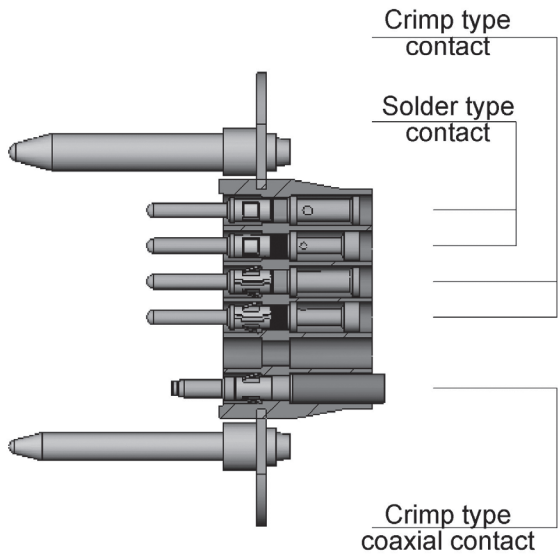
How to Order Connectors

The following indications are useful when ordering MCS-R connectors. When ordering a connector with its locking system VP, brackets fitted on the female connector replace the eyelets, whilst the locking clips are always fitted on the backshell. Series MCS-R contacts are removable. Contacts shall be ordered separately following the termination style and quantities desired.

For backshells and accessories please refer to page 8-21 to 8-22 for ordering
For contact references please refer to page 8-18

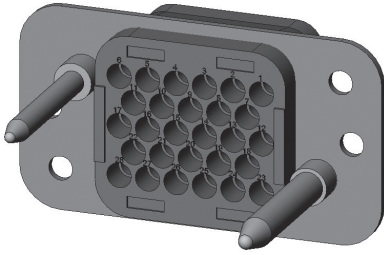


TERMINATION STYLES

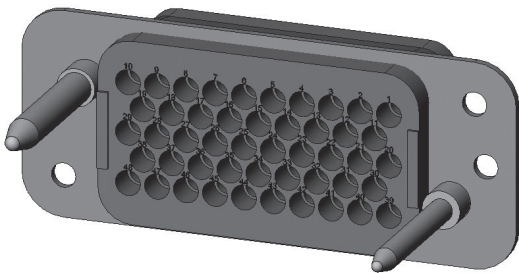


Contact Arrangements

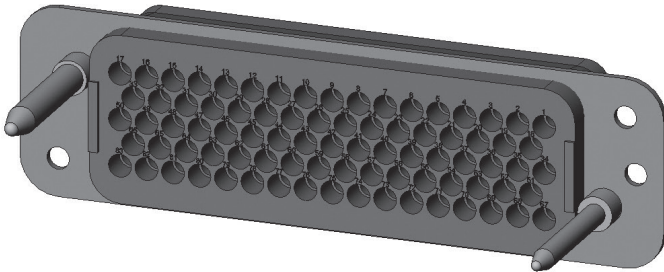
PLUG VIEW SHOWN



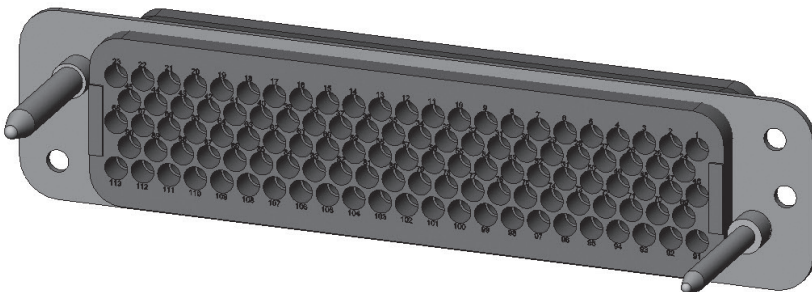
28 contacts



48 contacts



83 contacts



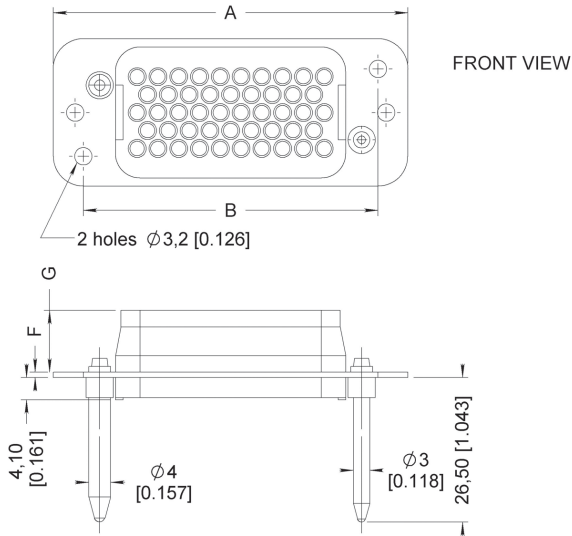
113 contacts

MCS-R SERIES

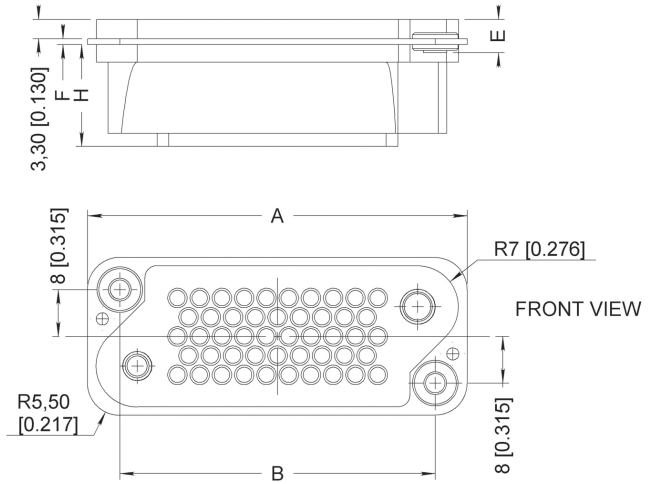
Dimensions

SINGLE SHELL DIMENSIONS mm (inch)

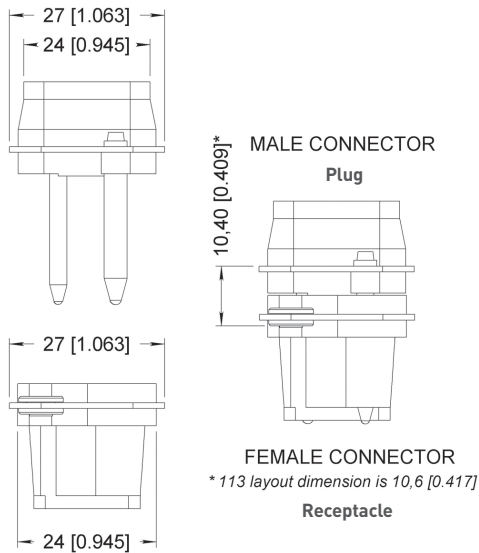
Plug



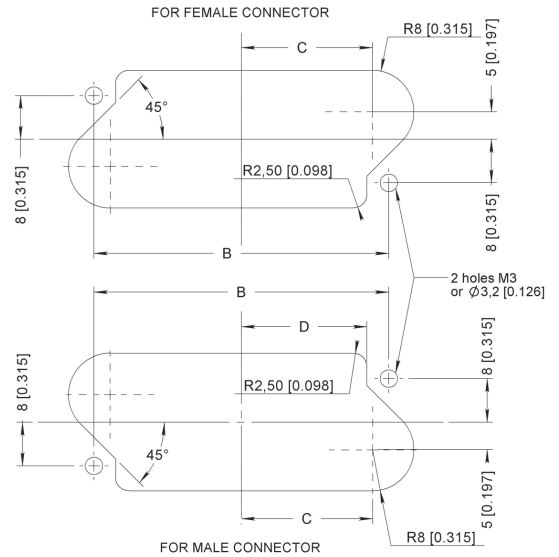
Receptacle



Mated Shell Dimensions



Panel Cut Outs



| Contact Arrangement | Plug & receptacle connector dimensions mm(inch) | | | | | | | |
|---------------------|---|---------------|---------------|--------------|-------------|-------------|--------------|--------------|
| | A | B | C | D | E | F | G | H |
| 028 | 48.5 [1.909] | 37.5 [1.476] | 15.75 [0.620] | 15.5 [0.610] | 5.3 [0.209] | 1 [0.039] | 11.5 [0.452] | 17.7 [0.697] |
| 048 | 65 [2.559] | 54 [2.126] | 24 [0.945] | 23.5 [0.925] | 5.3 [0.209] | | | |
| 083 | 92.5 [3.642] | 81.5 [3.209] | 37.75 [1.486] | 37.5 [1.476] | 5.3 [0.209] | | | |
| 113 | 114.5 [4.508] | 103.5 [4.075] | 48.75 [1.919] | 48.5 [1.909] | 5.5 [0.217] | 1.2 [0.047] | 11.3 [0.445] | 17.5 [0.689] |

Contact References ⁽¹⁾

MICRO COAXIAL CONTACTS

| Cable type | Type | Part number | Outer conductor Description | | Center conductor Description | |
|---------------------------------------|--------|-------------|-----------------------------|---------|------------------------------|-----------------------|
| | | | Crimping tool | Setting | Crimping Tool | Positionner |
| RG178 RG196 KX21 | Pin | 614120 | 282281 M22520/2-01 | 1 | 282292 M22520/4-01 | 282973 M22520/4-02 |
| | Socket | 690020 | | | | |
| RG174 RG188 RG316 KX3 – KX22 | Pin | 614140 | 282281 M22520/2-01 | 2 | 282292 M22520/4-01 | 282973 M22520/4-02 |
| | Socket | 690040 | | | | |
| AWG26 Twisted pair cable Ø1.1 | Pin | 614160 | 282281 M22520/2-01 | 2 | 282292 M22520/4-01 | 282973 M22520/4-02 |
| | Socket | 690060 | | | | |
| AWG24 Twisted pair cable Ø1.3 | Pin | 614170 | 282281 M22520/2-01 | 2 | 282292 M22520/4-01 | 282973 M22520/4-02 |
| | Socket | 690070 | | | | |

CRIMP WIRE CONTACTS ⁽²⁾

| Cable type | Type | Part number | Crimping tool | Positionner | Extraction tool |
|-------------------------|--------|-------------|-----------------------|-------------|-----------------|
| AWG16 AWG18 AWG20 | Pin | 614200 | 282291 M22520/1-01 | 282975 | 282920 |
| | Socket | 690300 | | | |
| AWG20 AWG22 AWG24 | Pin | 614200 | 282291 M22520/1-01 | 282976 | 282920 |
| | Socket | 690300 | | | |

SOLDER WIRE CONTACTS ⁽²⁾

| Cable type | Type | Part number | Extraction tool |
|-------------------------|--------|-------------|-----------------|
| AWG16 AWG18 AWG20 | Pin | 614230 | 282920 |
| | Socket | 614330 | |
| AWG20 AWG22 AWG24 | Pin | 614240 | 282920 |
| | Socket | 614340 | |



NOTES:

(1) For other termination please consult us

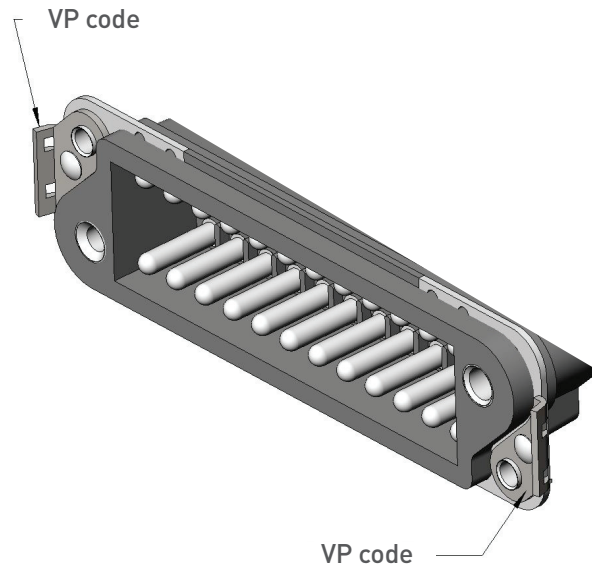
(2) Stripping length for cable types AWG16-18-20 is 6 and for types AWG20-22-24 it is 5

Locking System Code VP

The brackets can only be used on the receptacle connector and enables it to be fastened securely when its mating half is fitted with a hood

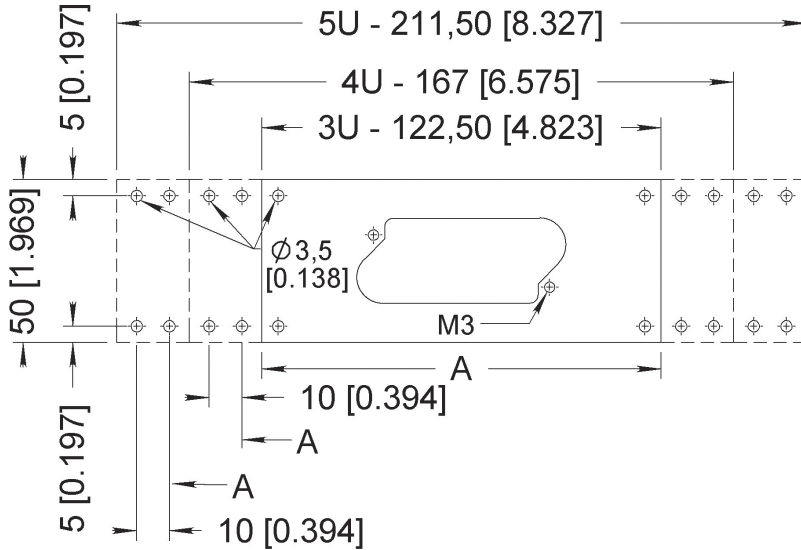
The brackets replace the floating eyelets on the receptacle connector

On both series B and MCSR when **VP code** is ordered, the corresponding hood must be ordered with the male connector

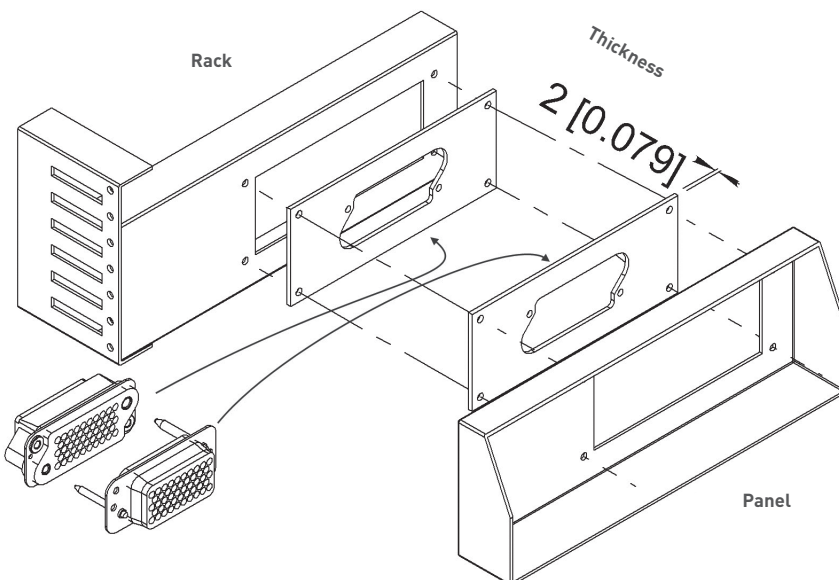


Connectors Mounting Plates

The mounting plates already blanked out, simplify the wall cut out on the rack or panel as well as on any other item designed to support the connector. The latter is directly fitted to the mounting plate, which can then be easily secured with accuracy on the equipment due to the four oblong holes of the mounting plate.



| Series | | Reference following number of cut outs | | |
|---------------------------|------|--|----------------|------------------|
| B | MCSR | 3 U | 4 U | 5 U |
| 14 | 48 | PP314 | PP414 | PP514 |
| 24 | 83 | PP324 | PP424 | PP524 |
| 32 | 113 | - | PP432 | - |
| Dimensions A mm (inch) | | 114.5 (4.508) | 139 (5.472) | 183.5 (7.224) |



MCS-R SERIES

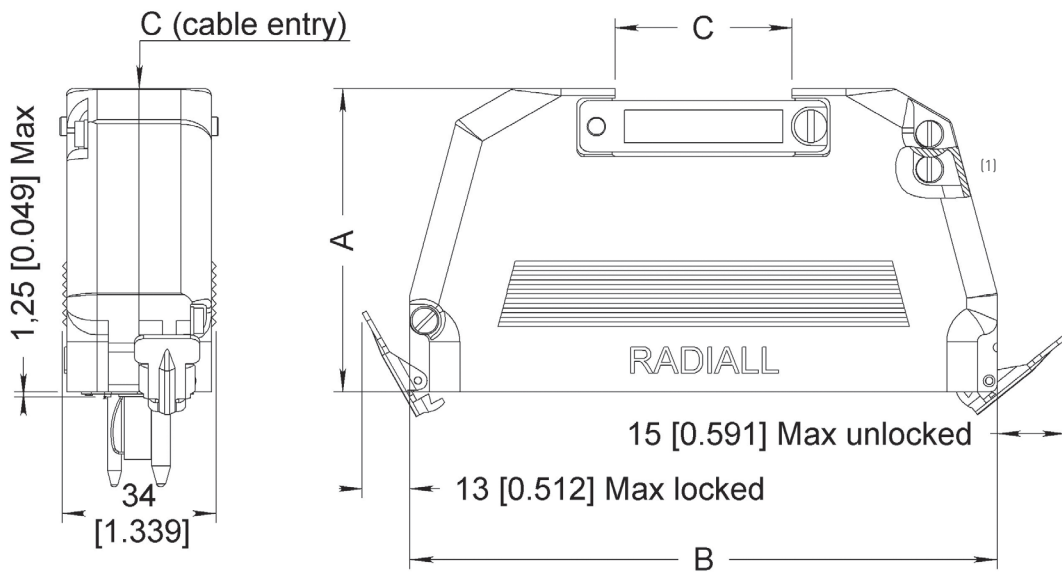
Connectors Accessories





The backshells for both series B and MCSR are available in four sizes and are supplied in two halves which enables them to be fitted after the wiring of the connectors.

They are available either with TOP or SIDE (45°) cable entry.

Each backshell is fitted with a pair of locking clips, one fixed on each end. This allows the connector backshell assembly to be fastened securely to the mating connector fitted with the VP brackets.

TOP ENTRY



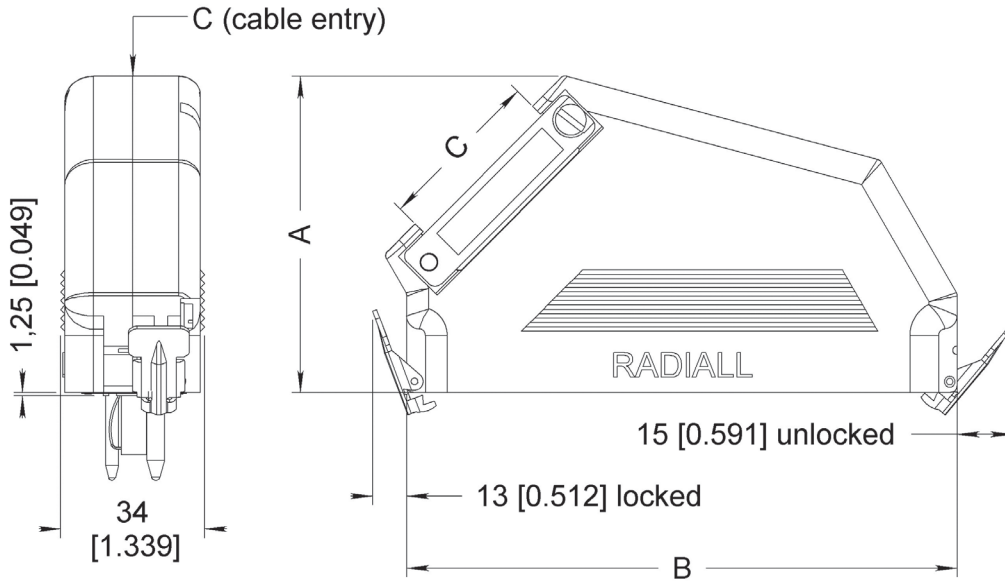
| Part number for TOP ENTRY | Number of contacts | | B & MCSR dimensions mm (inch) | | |
|---------------------------|--------------------|-------------|-------------------------------|------------------|--|
| | B series | MCSR series | A | B | C |
| 612813 | 8 | 28 | 52.5 [2.067] | 60.5 [2.382] |  26 x 10 (1.024 x 0.394) |
| 612823 | 14 | 48 | | 77 [3.031] |  26 x 15 (1.024 x 0.591) |
| 612837 | 24 | 83 | 65.5 [2.579] | 104.5 [4.114] |  38 x 20 (1.496 x 0.787) |
| 612845 | 32 | 113 | | 126.5 [4.980] |  38 x 20 (1.496 x 0.787) |

NOTE:





(1) This screw is for grounding purpose.

Connectors Accessories

SIDE ENTRY



MCS-R SERIES

| Part number for SIDE ENTRY | Number of contacts | | B & MCSR dimensions mm (inch) | | |
|----------------------------|--------------------|-------------|-------------------------------|------------------|--|
| | B series | MCSR series | A | B | C |
| 612814 | 8 | 28 | 63 [2.480] | 60.5 [2.382] |  26 x 10 [1.024 x 0.394] |
| 612824 | 14 | 48 | | 77 [3.031] |  26 x 15 [1.024 x 0.591] |
| 612838 | 24 | 83 | 73 [2.874] | 104.5 [4.114] |  38 x 20 [1.496 x 0.787] |
| 612846 | 32 | 113 | | 126.5 [4.980] |  38 x 20 [1.496 x 0.787] |

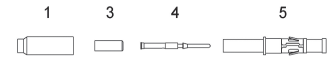
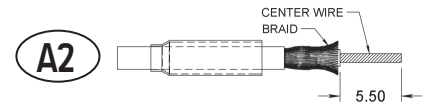
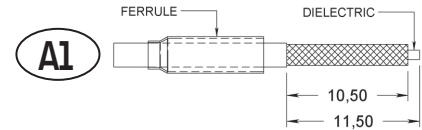
Micro Coaxial Contacts Assembly Instructions

Three different modes of assembly are to be considered depending on the cable type used. The two first assemblies A and B are applicable for braid coaxial cables, whilst the third assembly C is applicable for twin conductor cable. The three mounting procedures are identical for both contact types, pin and socket.

A Mounting procedure coaxial cables

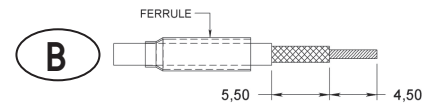
After sliding the ferrule over the cable and stripping the latter to the dimensions shown in A1.

- Comb the braid in opening it up, strip the center wire to the dimension shown in A2.
- Slide the insulator bushing ⁽¹⁾ over the dielectric .
- Place the center contact ⁽²⁾ over the conductor, the contact must butt against the insulator bushing ⁽¹⁾.
- Crimp the center contact with tool 282281.
- Slide the cable and contact into the body⁽³⁾ ensuring that it's pushed home, then trim back the braid over the body ⁽³⁾.
- Slide the ferrule over the braid up to the body shoulder.
- Place the assembly into tool 282292 and crimp the ferrule.



B After sliding the ferrule over the cable, strip the latter to dimensions shown in B (mounting of coaxial contacts without insulator bushing).

- Comb the braid and place the center contact over the conductor butting it against the dielectric.
- Place the sub assembly into tool 282281 and crimp the center contact.
- The following steps are identical to those indicated in A.

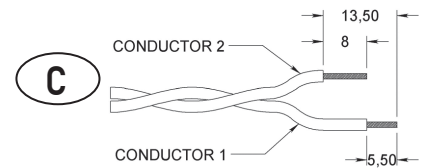


C Micro coaxial contacts with twin conductor cable

After sliding the ferrule over the twin conductors and stripping them to dimensions shown in C.

Note: conductor 1 is for the centre contact, whilst conductor 2 is for earthing.

- Slide the adaptor 2 and the insulator bushing ⁽¹⁾ over conductor 1.
- Place the center contact ⁽²⁾ over the conductor, butting it against the sheath.
- Place the sub assembly into tool 282281 and crimp the centre contact.
- Slide the cable and contact into the body ⁽³⁾, ensuring that its home.
- Slide the adaptor 2 onto the body ⁽³⁾ against the shoulder.
- Place conductor 2 into the helical slot.
- Slide the ferrule over the adaptor and conductor 2, up to the shoulder of the body ⁽³⁾.
- Place the assembly into tool 282292 and crimp the ferrule.



NOTES:

- (1) Insulating bush
- (2) Socket or pin contact
- (3) Contact body

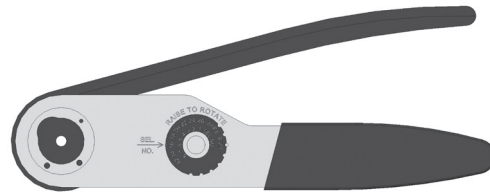
Tools

CRIMP TOOLS

282281 – M22520/2-01

282291 – M22520/1-01

282292 – M22520/4-01

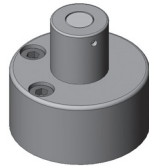


POSITIONERS

282973 – M22520/4-02

282976 – Daniels TP616

282975 – Daniels TP617



EXTRACTION TOOL

282920



MCS-R SERIES

MCS-R SERIES

Notes



MM & MB Series



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SECTION 9 TABLE OF CONTENTS

Introduction

The Radiall miniature and subminiature rectangular multicontact connectors meet the requirements of the standard MIL-C-28748 performance requirements. They are rugged connectors and offer high performance for high contact density.

The connectors in each series consist of an insulator with male and female contacts which include several pin sizes.

Features

Each connector features a male guide at one end and a female guide at the other. This arrangement ensures polarization of the connector when coupled. These guides can be smooth (rack guides) or screw closing (fixed or rotating jackscrews).

The **contacts male or female** are made of copper base alloy plated gold over nickel. The female contacts have 4 slots which ensures perfect mating, constant contact pressure and excellent mechanical and electrical performance. The contacts have a slight amount of float in order to allow self alignment during mating. Each series includes a different termination type; solder pot, straight or right angle solder pin for PCB, and wrapping.

The MM series

This series consists of six sizes of connectors with contact arrangements for 7, 14, 20, 26, 34 and 50 size 22 contacts
Ø 0.76mm / 0.030inch.

The series offers four types of terminations:

- Solder pot for wire (AWG22 max)
- Straight solder pin for PBC
- Right angle solder pin for PBC
- Wire wrap

These connectors are fitted with rack guides or fixed or rotating jackscrews at each end. A protective covering for wire terminations can be installed on the connector.

The MB series

This series consists of twelve sizes of connectors with contact arrangements for 2, 3, 5, 11, 14, 20, 25, 34, 42, 50 and 75 size 20 contacts Ø 1mm / 0.039inch.

The series offers three types of terminations:

- Solder pot for wire (AWG20 max)
- Straight solder pin for PBC
- Right angle solder pin for PBC

These connectors are fitted with rack guides or fixed or rotating jackscrews at each end.

Wires and soldered terminations for wire can be protected by either top or side entry backshells or by potting covers for 2 to 14 contacts connectors.

A range of **top and side entry backshells** with cable clamps in yellow anodized aluminium alloy are available. They are designed to protect the soldered wire connections, provide strain relief to the cable and facilitate the disengagement of the mated connectors.

Fitted with threaded posts they are suitable for connectors fitted with rack guides or fixed jackscrews. When fitted with rotating jackscrew guides they are fixed to the connectors without guides and jackscrews.

For the MB series there are also thermoplastic covers for "potting" ensuring that the terminated wires at the back of the insulator are protected.

Applications

Their mass and volume make them particularly suitable for the following applications: civil and military, in-flight equipment, instrumentation, missile, etc.

Originally developed for rack and panel assemblies they can be adapted for cable to cable applications with cable clamp backshell.



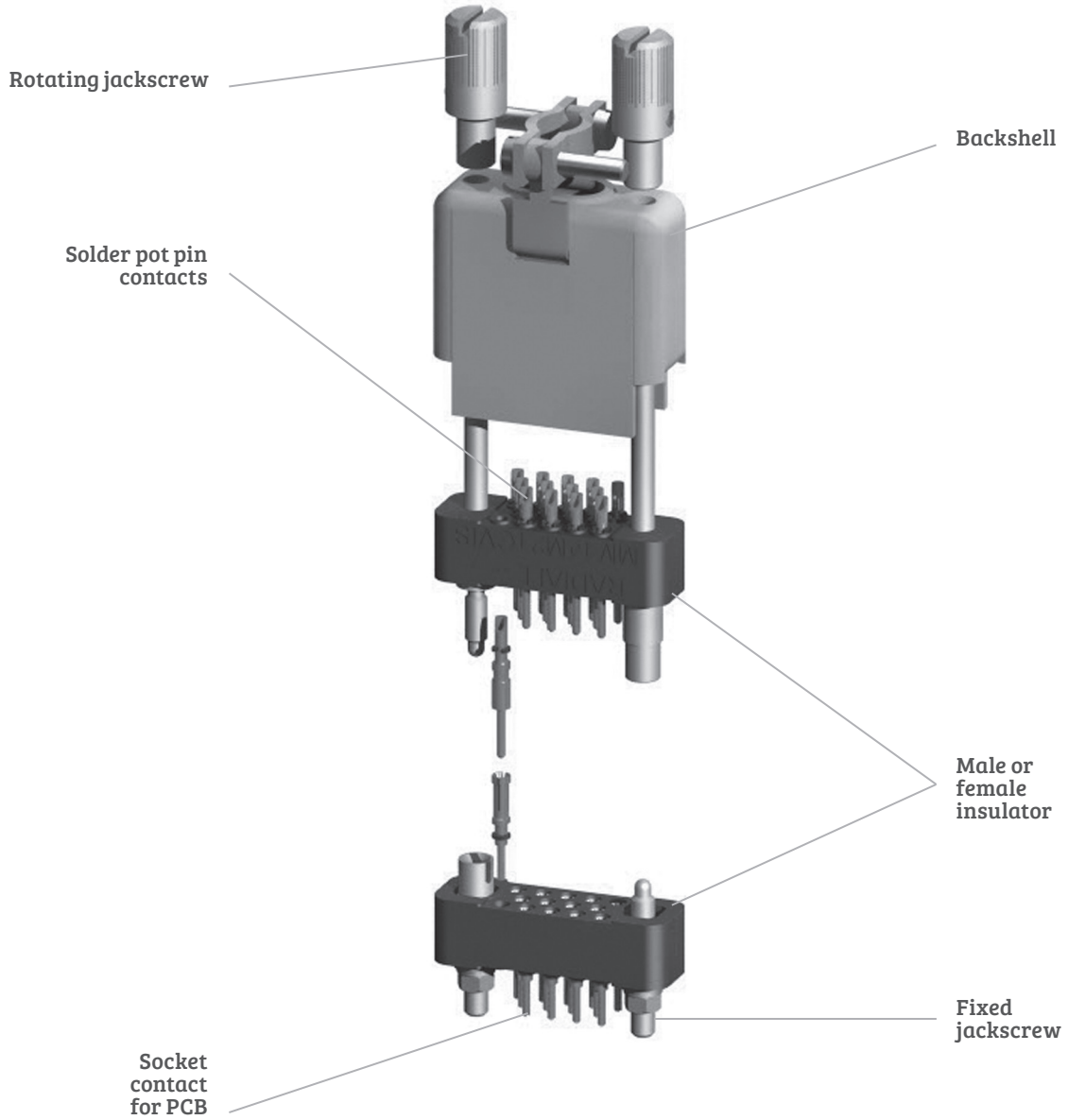
© Dassault Aviation - K. Tokunaga

MM & MB SERIES

MM SERIES

Product Overview

Detailed view of the various parts of the MM series connector.



Technical Characteristics

ELECTRICAL

Conforms to MIL-C-28748 performance requirements and UTE-C-93426 HE611 standard.

- Current rating: 5A
- Test voltage @ sea level: 1000 Vrms / 50 Hz
- Operating voltage @ sea level: 350 Vrms / 50 Hz
- Operating voltage @ 70,000 feet: 90 Vrms / 50 Hz
- Insulation resistance: > 5000 MΩ
- Contact resistance: < 5 mΩ

MECHANICAL & ENVIRONMENTAL

Conforms to MIL-C-28748 performance requirements and UTE-C-93426 HE611 standard.

- Temperature range: - 55°C (-131°F) to 125°C (257°F)
- Durability: 500 mating cycles
- Shock: 100g / 6ms
- Vibration: 20g / 10-2000 Hz
- Humidity: 56 days
- Contact insertion force: 3N
- Salt spray: 48 hours

MATERIALS

| Description | Material | Finish |
|---------------------|--|------------------|
| Insulator | glass filled diallylphthalate conform to MIL-M-14SDG-F | / |
| Pin contact | copper alloy | gold over nickel |
| Socket contact | copper alloy | gold over nickel |
| Guides & jackscrews | stainless steel | / |
| Backshells | aluminium alloy | yellow anodized |

MASSES g (oz)

Weight of connectors mated

| Contact arrangement | 07 | 14 | 20 | 26 | 34 | 50 |
|--|------------|-------------|------------|-------------|-------------|-------------|
| Without guides | 2.8 [0.99] | 5 [0.18] | 6.6 [0.23] | 8.1 [0.29] | 12.1 [0.43] | 15 [0.53] |
| With guides or jackscrew | 4.7 [0.17] | 7 [0.25] | 8.4 [0.30] | 10 [0.35] | 13 [0.46] | 17.1 [0.60] |
| With backshells and guides or jackscrews | 12 [0.42] | 15.5 [0.55] | 17 [0.60] | 19.4 [0.68] | 23.2 [0.81] | 32.8 [1.16] |

MM SERIES

How to Order Connectors

| | | | | | |
|----|----|---|----|----|----|
| MM | 34 | M | 20 | VL | IS |
|----|----|---|----|----|----|

Series _____
MM series

Contact arrangement (refer to page 9-9) _____
07 - 14 - 20 - 26: 34: 50

Contact type _____
M: pin
F: socket

Termination style (refer to page 9-10) _____
20: solder pot
21: straight solder pin for PBC
22: right angle solder pin for PBC
23: wrapping contact 1 wrap
24: wrapping contact 2 wrap
25: wrapping contact 3 wrap

Guides and jackscrews (refer to page 9-13) _____
00: without guides and jackscrews ⁽¹⁾
G3: rack guides ⁽²⁾
GV: fixed jackscrews ⁽²⁾
VR: short rotating jackscrews
VL: long rotating jackscrews ⁽³⁾

Thread, guides or jackscrews _____
00: without guides and jackscrews
IS: ISO (M2 x 0.4)
NC: 2-56 UNC

Connector Identification

The part number is printed on the insulator side

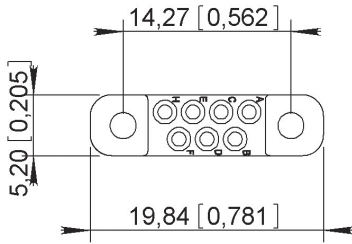
NOTES:

- (1) Connectors to be used with backshell HC (see page 9-15) and rotating jackscrews
- (2) Connectors to be used with backshell HA (see page 9-15)
- (3) VL jackscrew assembly is not available for termination style type 22

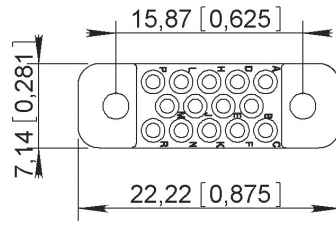
Contact Arrangements

MALE CONNECTOR wiring side dimensions mm (inch)

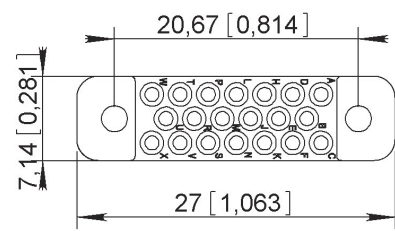
MM SERIES



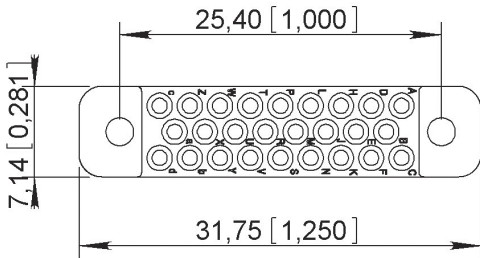
07



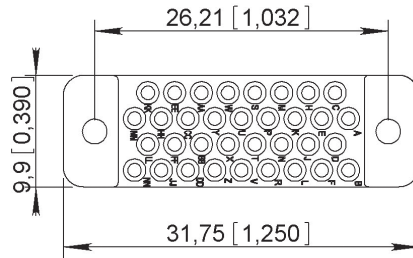
14



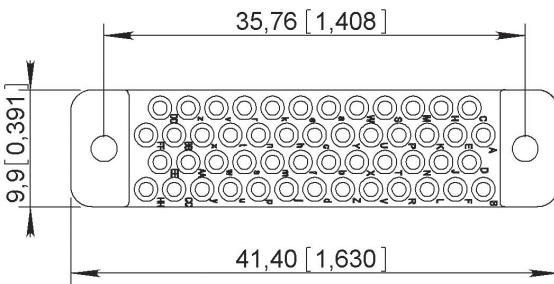
20



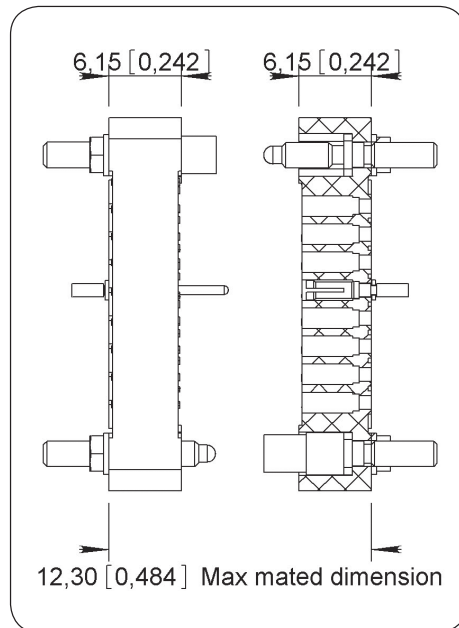
26



34



50



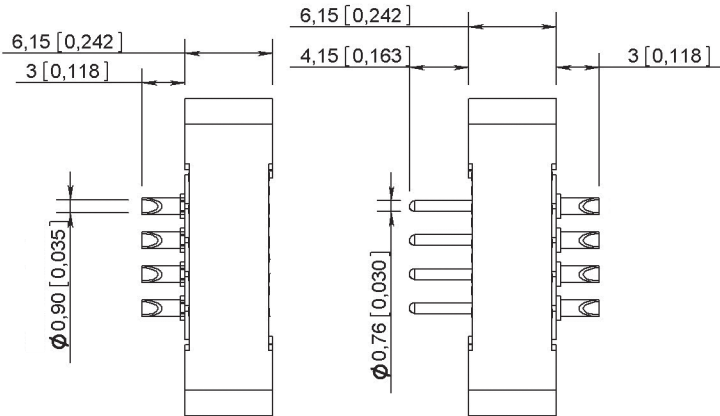
Mating dimensions

Termination Styles

TYPE 20

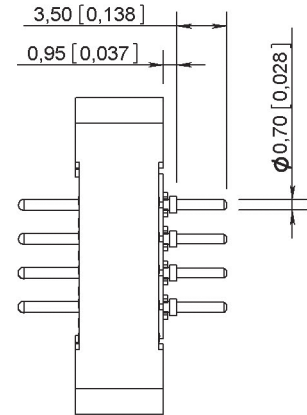
Solder pot

Dimensions mm (inch)



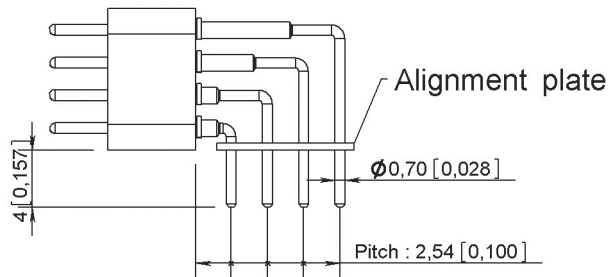
TYPE 21 ⁽¹⁾

Straight solder pin for PCB



TYPE 22

Right angle solder pin for PCB

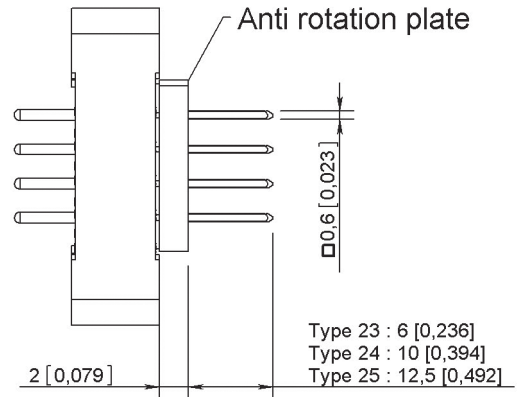


TYPE 23 - 24 - 25

23: wire wrap termination (1 level)

24: wire wrap termination (2 level)

25: wire wrap termination (3 level)

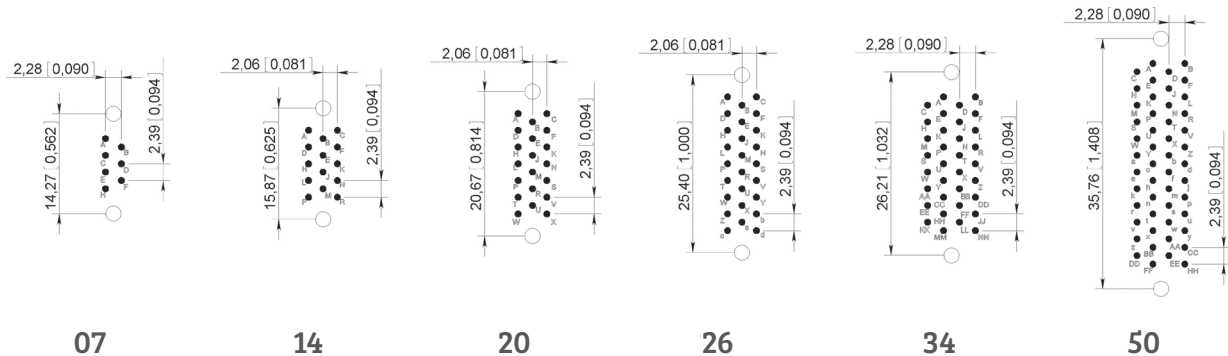


NOTE:

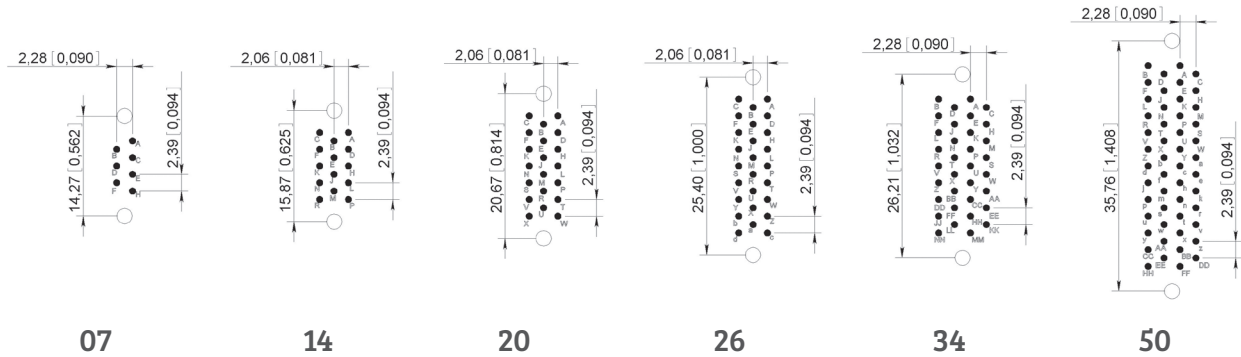
(1) For termination style type 21, the connectors are supplied with insulating washers in order to make space between the insulator and the PCB

Printed Circuit Drill Pattern

TYPE 21 Termination style - Connector with socket contacts
PCB component side view



TYPE 21 Termination style - Connector with pin contacts
PCB component side view



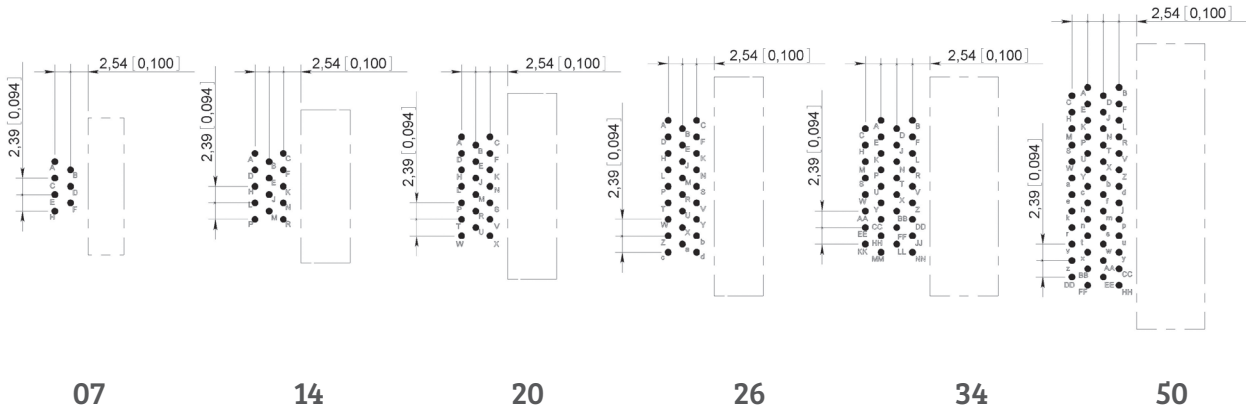
NOTES:

- Printed circuit drilling 0.8 mm ±0.05 [0.031 ±0.002]
- Drilling to fix the connector. Required for guides G3 and GV fixing only
2.2mm [0.087] for ISO guides and 2.4mm [0.094] for UNC guides

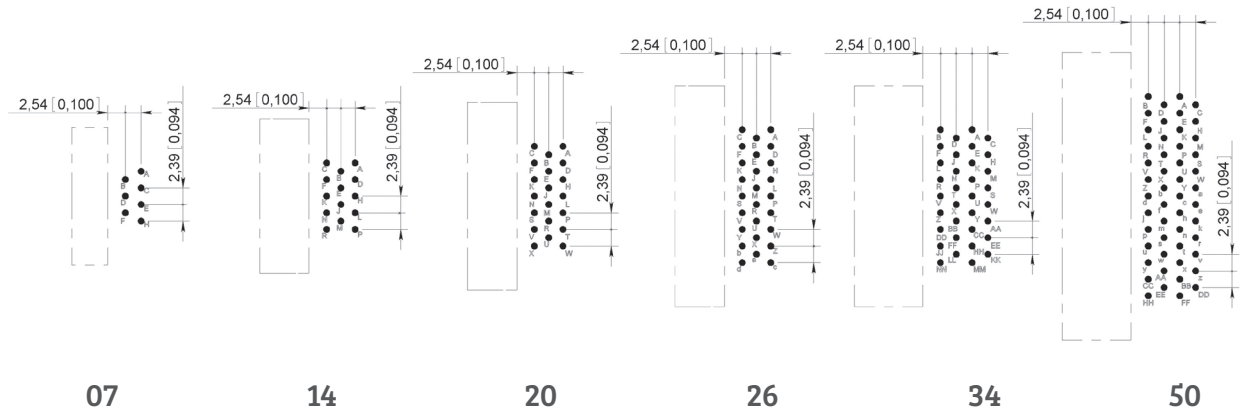
MM SERIES

Printed Circuit Drill Pattern

TYPE 22 Termination style - Connector with socket contacts
PCB component side view



TYPE 22 Termination style - Connector with pin contacts
PCB component side view



NOTE:

- Printed circuit drilling 0.8 mm ±0.05 [0.031 ±0.002]

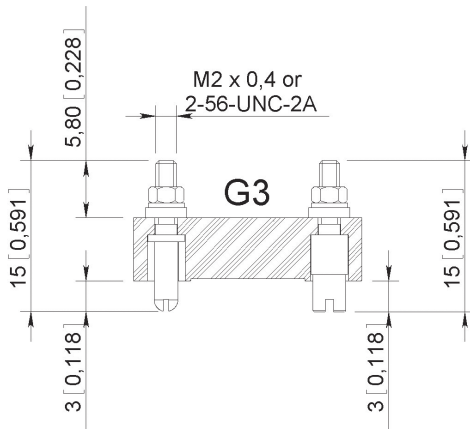
Guides and Jackscrews

Stainless steel guides and jackscrews are supplied with either ISO (M2 x 0.4) or UNC (2-56 UNC) threads. The guides or jackscrews types (G3 – GV – VL – VR) and the type of thread (ISO or UNC) required are to be defined in the part number on page 9-8.

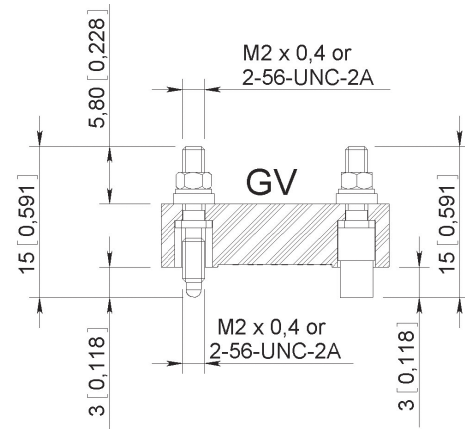
The standard configuration of guides and jackscrews is:

- Male guide (or jackscrew) at the end nearest contact A of the female connector.
- Female guide (or jackscrew) at the end nearest contact A of the male connector.

RACK GUIDES TYPE G3

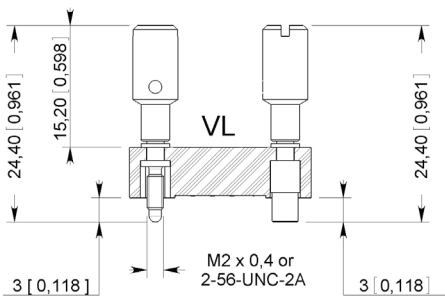


FIXED JACKSCREWS TYPE GV

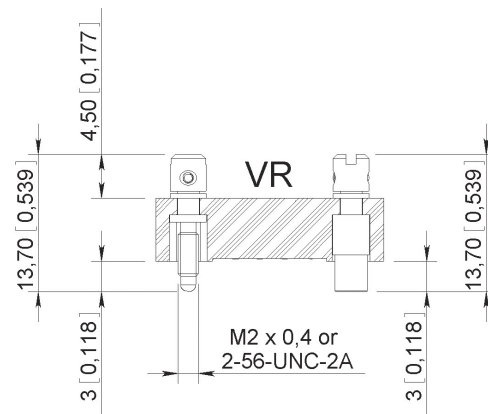


These guide and jackscrews can be used with backshell HA

LONG AND SHORT ROTATING JACKSCREWS TYPE VL – VR



Mating torque: 0.2N.m
Not available for termination style type 22
Cannot be used with any backshell

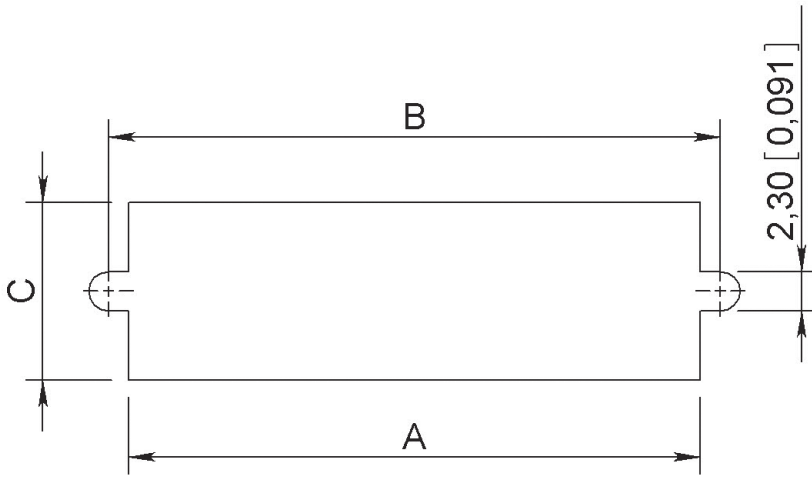


Mating torque: 0.2N.m
Cannot be used with any backshell

MM SERIES

Panel Cut-Out

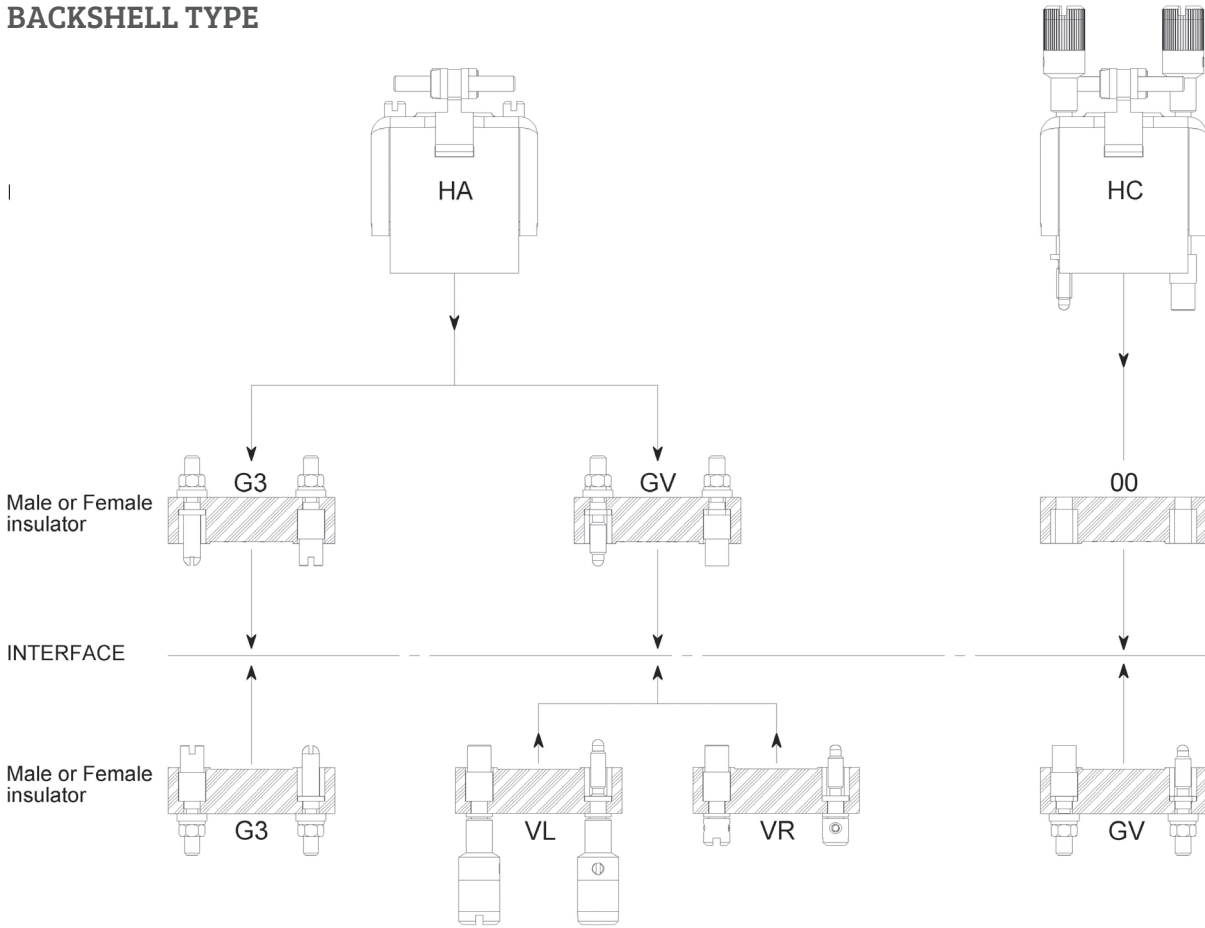
| Contact Arrangement | Dimensions mm (inch) | | |
|---------------------|----------------------|---------------|--------------|
| | A | B | C |
| 07 | 11.9 [0.468] | 14.27 [0.562] | 5.8 [0.228] |
| 14 | 13.5 [0.531] | 15.87 [0.625] | 7.6 [0.299] |
| 20 | 18.3 [0.720] | 20.67 [0.814] | |
| 26 | 23 [0.905] | 25.4 [1] | |
| 34 | 23.9 [0.940] | 26.2 [1.031] | 10.4 [0.409] |
| 50 | 33.4 [1.315] | 35.76 [1.408] | |



Connector Mating Compatibility

Use with backshell – Termination style type 20 only

BACKSHELL TYPE



Use without backshell – All termination style type

Backshell Type Compatibility

| Thread | | Hood | | Thread | |
|------------------|-------------------|--------|--------|-------------------|------------------|
| NC (2-56 UNC) | ISO (M2 x 0.4) | HA | HC | ISO (M2 x 0.4) | NC (2-56 UNC) |
| 07 | 07 | | | 07 | 07 |
| 14 | 14 | | | 14 | 14 |
| 20 | 20 | | | 20 | 20 |
| 26 | 26 | | | 26 | 26 |
| 34 | 34 | | | 34 | 34 |
| 50 | 50 | 50 | 50 | | |

Fixing of hoods only suitable for insulator with termination style type 20 (solder pot)

Top Entry Backshells

TYPE HA

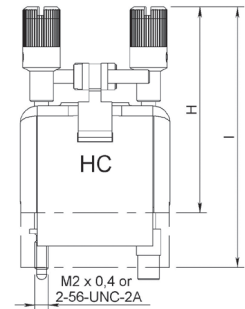
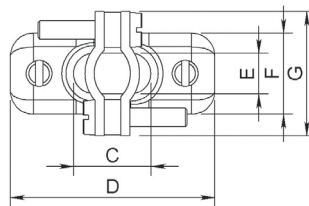
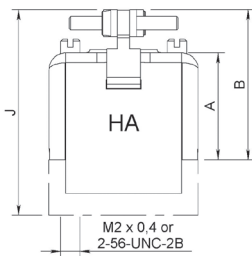
Backshells supplied with two internal threaded posts which are screwed into the guides G3 or jackscrews GV.

TYPE HC

Backshells supplied with two long rotating jackscrews. These backshells are mounted on connectors without guides or jackscrews (code 00).

PART NUMBERS

| Contacts Arrangements | Type HA | | Type HC | |
|-----------------------|-----------------------|-----------------------|----------------------|----------------------|
| | With threads M2 x 0.4 | With threads 2-56 UNC | With screws M2 x 0.4 | With screws 2-56 UNC |
| 07 | MM07HAIS | MM07HANC | MM07HCIS | MM07HCNC |
| 14 | MM14HAIS | MM14HANC | MM14HCIS | MM14HCNC |
| 20 | MM20HAIS | MM20HANC | MM20HCIS | MM20HCNC |
| 26 | MM26HAIS | MM26HANC | MM26HCIS | MM26HCNC |
| 34 | MM34HAIS | MM34HANC | MM34HCIS | MM34HCNC |
| 50 | MM50HAIS | MM50HANC | MM50HCIS | MM50HCNC |



Mating torque: 0.15N.m

Dimensions mm (inch)

| Contact Arrangement | A | B | C | D | E | F | G | H | I | J |
|---------------------|-----------------|------------------|-----------------|-----------------|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 07 | | | 5.5 [0.216] | 19.8 [0.779] | 4 [0.157] | 6.8 [0.268] | | | | |
| 14 | | | 10 [0.394] | 22.2 [0.874] | | | 13.5 [0.531] | | | 29.4 [1.157] |
| 20 | 15.9 [0.626] | 23.15 [0.911] | 14 [0.551] | 27 [1.063] | 6 [0.236] | 8.8 [0.346] | | 31.9 [1.256] | 38.2 [1.504] | |
| 26 | | | | 31.8 [1.252] | | | | | | |
| 34 | | | 19 [0.748] | | | | | | | 30.4 [1.197] |
| 50 | 30.5 [1.201] | 38.5 [1.516] | 29.7 [1.169] | 41.4 [1.630] | 9.5 [0.374] | 11.8 [0.464] | 15.7 [0.618] | 46.6 [1.835] | 52.9 [2.083] | 44.8 [1.764] |

NOTE:

Fixing of backshells only suitable for insulator with termination style type 20 (solder pot).

Notes



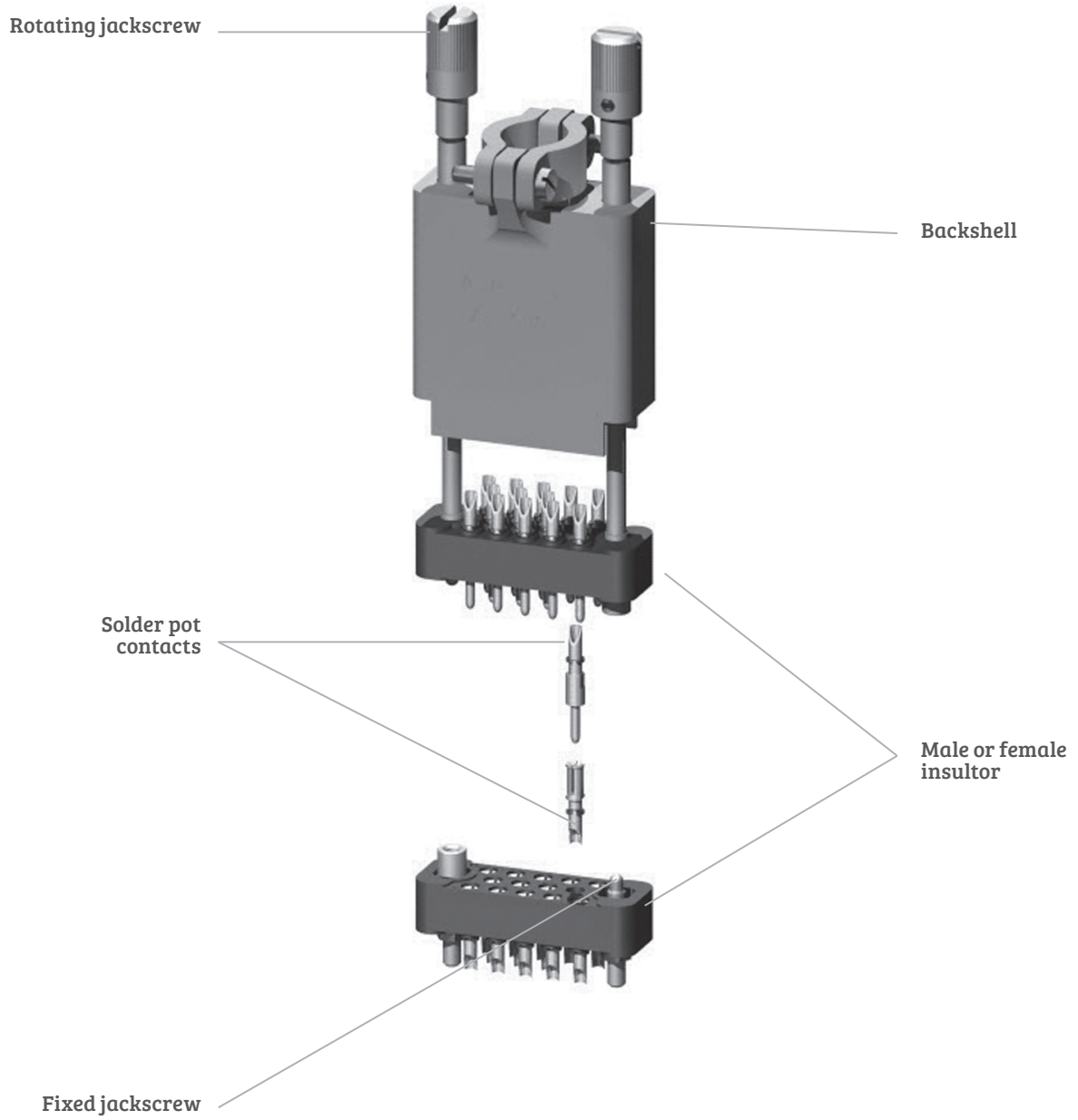
MM SERIES



MB SERIES

Product Overview

Detailed view of the various parts of the MB series connector.



Technical Characteristics

ELECTRICAL

Conforms to MIL-C-28748 performance requirements standard.

- Current rating: 7.5A
- Test voltage @ sea level: 1500 Vrms / 50 Hz
- Operating voltage @ sea level: 500 Vrms / 50 Hz
- Insulation resistance: > 5000 MΩ
- Contact resistance: < 5 mΩ

MECHANICAL & ENVIRONMENTAL

- Temperature range: - 55°C (-131°F) to 125°C (257°F)
- Durability: 500 mating cycles
- Shock: 50g / 11ms
- Vibration: 20g / 10-2000 Hz
- Humidity: 21 days
- Contact insertion force: 3N
- Salt spray: 48 hours

MATERIALS

| Description | Material | Finish |
|---------------------|---|------------------|
| insulator | glass filled diallyphthalate conform to MIL-M-14SDG-F | / |
| pin contact | copper alloy | gold over nickel |
| socket contact | copper alloy | gold over nickel |
| guides & jackscrews | stainless steel | / |
| backshells | aluminium alloy | yellow anodized |
| spring lever clamps | stainless steel | / |
| potting moulds | nylon | / |

MASSES g (oz)

Weight of connectors mated

| Contact arrangement | 02 | 03 | 05 | 07 | 11 | 14 | 20 | 26 | 34 | 42 | 50 | 75 |
|-------------------------------|---------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Without guides | 2.2 (0.07) | 2.30 (0.81) | 4 (0.14) | 3.7 (0.13) | 5.6 (0.20) | 6.4 (0.23) | 8.6 (0.30) | 11 (0.39) | 15.2 (0.54) | 17.6 (0.62) | 20.5 (0.72) | 32.7 (1.15) |
| With rack guides | 3.9 (0.14) | 4 (0.14) | 4.7 (0.17) | 5.4 (0.19) | 7.3 (0.26) | 8.1 (0.29) | 10.3 (0.36) | 12.7 (0.45) | 16.9 (0.60) | 19.3 (0.68) | 22.2 (0.78) | 36.2 (1.28) |
| With backshells and jackscrew | - | - | - | 12.4 (0.44) | 17.5 (0.62) | 20.4 (0.72) | 28 (0.99) | 31.5 (1.11) | 37.2 (1.31) | - | 45.2 (1.59) | 62 (2.19) |

How to Order Connectors

| | | | | | | |
|----|----|---|----|----|----|----|
| MB | 34 | M | 20 | VL | 00 | IS |
|----|----|---|----|----|----|----|

Series

MB series

Contact arrangement (refer to page 9-21)

02: 03 : 05 : 07 - 11 - 14
20: 26 : 34 : 42 - 50 - 75

Contact type

M: pin
F: socket

Termination style (refer to page 9-22)

85: solder pot
86: straight solder pin for PCB
87: right angle solder pin for PCB

Guides and jackscrews (refer to page 9-28)

00: without guides and jackscrews ⁽¹⁾
G1: rack guides ⁽²⁾
GV: fixed jackscrews ⁽²⁾
VR: short rotating jackscrews
VL: long rotating jackscrews ⁽³⁾

Shipment without backshell and accessories

Thread, guides or jackscrews

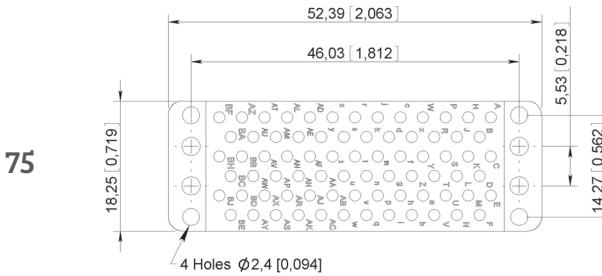
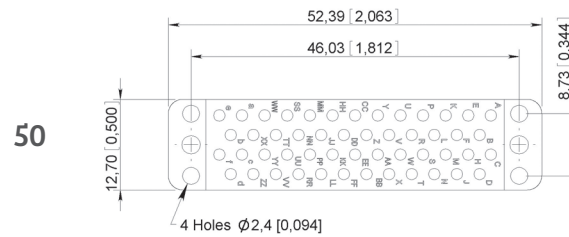
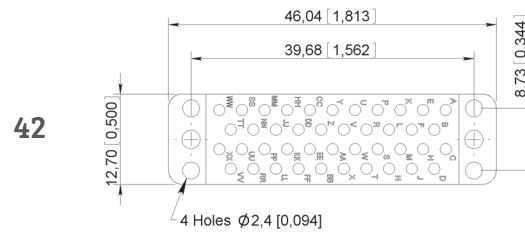
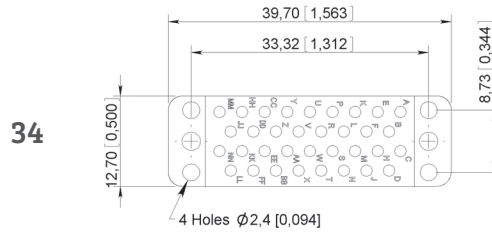
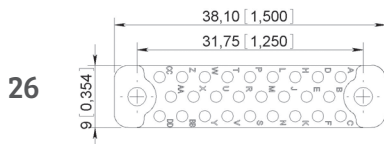
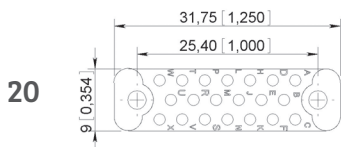
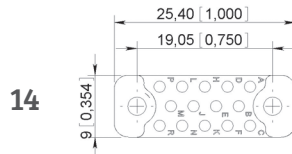
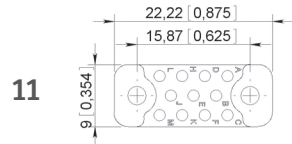
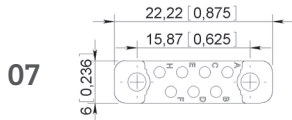
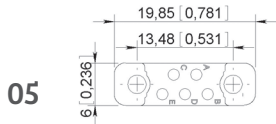
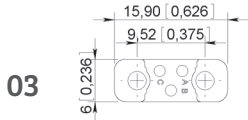
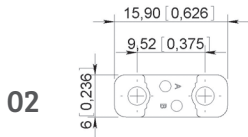
00: without guides and jackscrews
IS: ISO (M2 x 0.4)
NC: 2-56 UNC

NOTES:

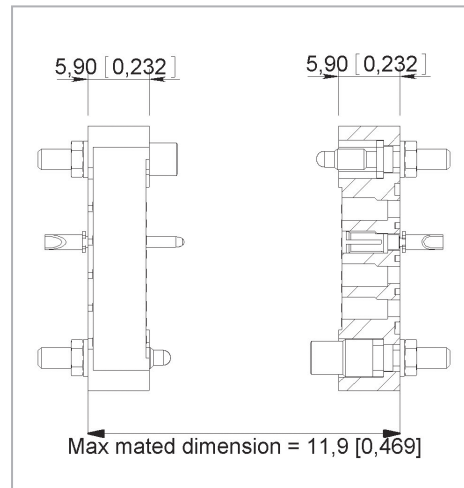
- (1) Connectors to be used with backshell HC and HV (see page 9-29) or rack guides G1
- (2) Connectors to be used with backshell HA and HL (see page 9-29)
 A spring clip locking system can be fitted (see page 9-33)
- (3) VL jackscrews assembly is only available for termination style type 85

Contact Arrangements

MB SERIES



MATING DIMENSIONS



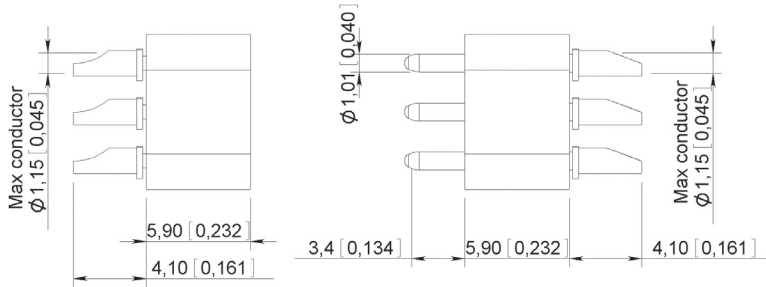
Termination Styles

DIMENSIONS mm (inch)

All contacts arrangement and termination style have contacts stopped in rotation [except contact arrangements 42, 50 and 75 for these please contact us].

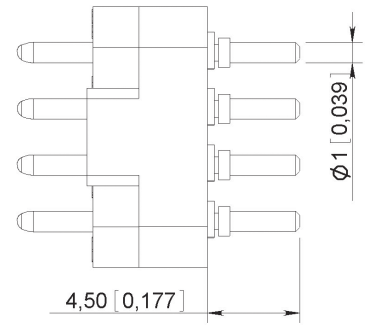
TYPE 85

Solder pot



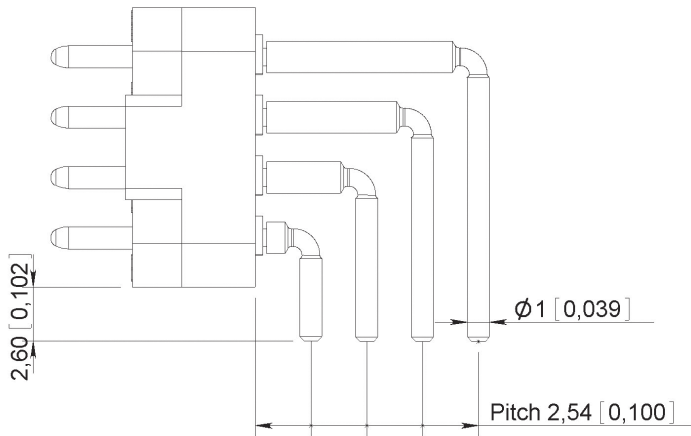
TYPE 86 (1)

Straight solder pin for PCB



TYPE 87

Right angle solder pin for PCB



NOTE:

(1) The connectors are supplied with insulating washers which act as spacers between the insulator and the PCB

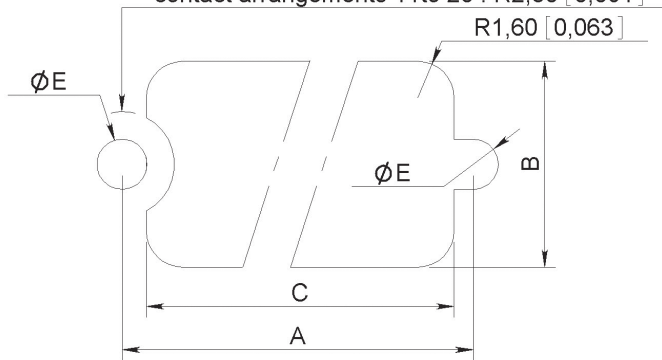
Panel Cut-Out

dimensions mm (inch)

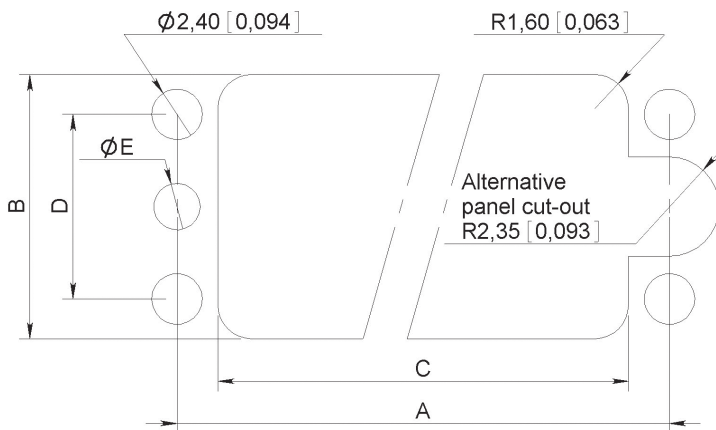
| Dimensions | | | | | | | | | | | | |
|-------------|-----------------|-----------------|------------------|------------------|------------------|------------------|-----------------|------------------|------------------|------------------|------------------|------------------|
| | 02 | 03 | 05 | 07 | 11 | 14 | 20 | 26 | 34 | 42 | 50 | 75 |
| A | 9.52 (0.375) | 9.52 (0.375) | 13.48 (0.531) | 15.87 (0.625) | 15.87 (0.625) | 19.05 (0.750) | 25.4 (1) | 31.75 (1.250) | 33.34 (1.313) | 39.68 (1.562) | 46.03 (1.812) | 46.03 (1.812) |
| B | 6 (0.236) | 6 (0.236) | 6 (0.236) | 6 (0.236) | 9 (0.354) | 9 (0.354) | 9 (0.354) | 9 (0.354) | 12.5 (0.500) | 12.5 (0.500) | 12.5 (0.500) | 18.28 (0.720) |
| C | 7.2 (0.283) | 7.2 (0.283) | 11 (0.433) | 13.5 (0.531) | 13.5 (0.531) | 17 (0.669) | 23.5 (0.925) | 29.5 (1.161) | 29.46 (1.160) | 35.81 (1.410) | 42.16 (1.660) | 42.16 (1.660) |
| D | - | - | - | - | - | - | - | - | 8.73 (0.344) | 8.73 (0.344) | 8.73 (0.344) | 14.27 (0.562) |
| ØE (ISO) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) | 2.2 (0.087) |
| ØE (NC) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) | 2.4 (0.094) |

CONTACT ARRANGEMENTS 02 - 03 - 05 - 07 - 11 - 14 - 20 - 26

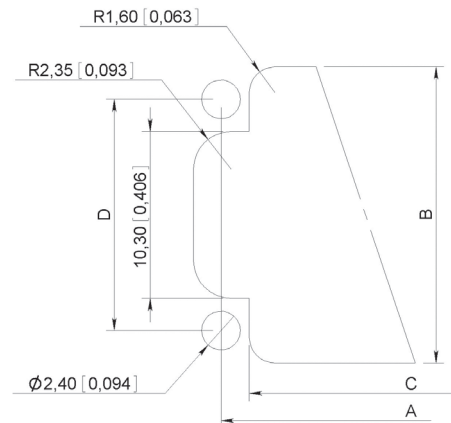
Alternative panel cut-out for contact arrangements 11 to 26 : R2,30 [0,091]



CONTACT ARRANGEMENTS 34 - 42 - 50

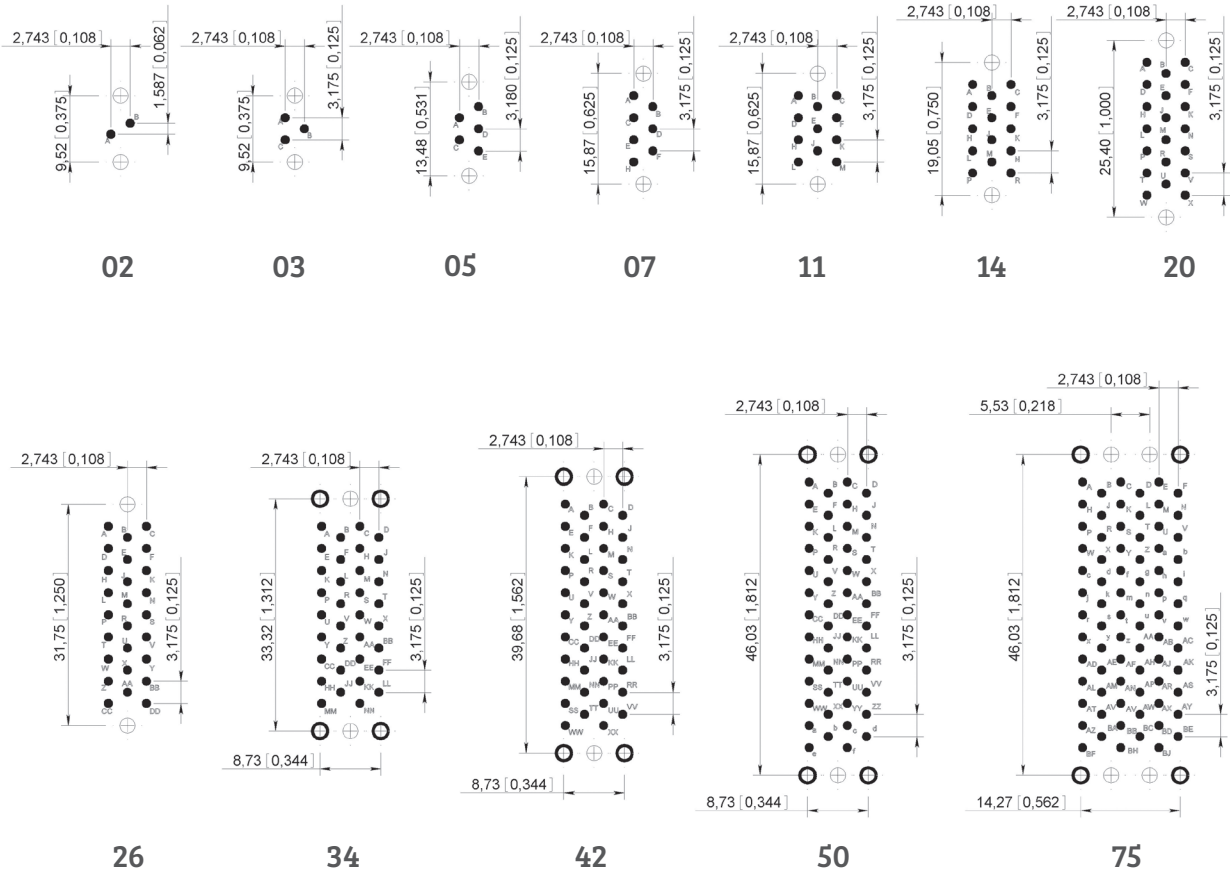


CONTACT ARRANGEMENT 75



Printed Circuit Drill Pattern

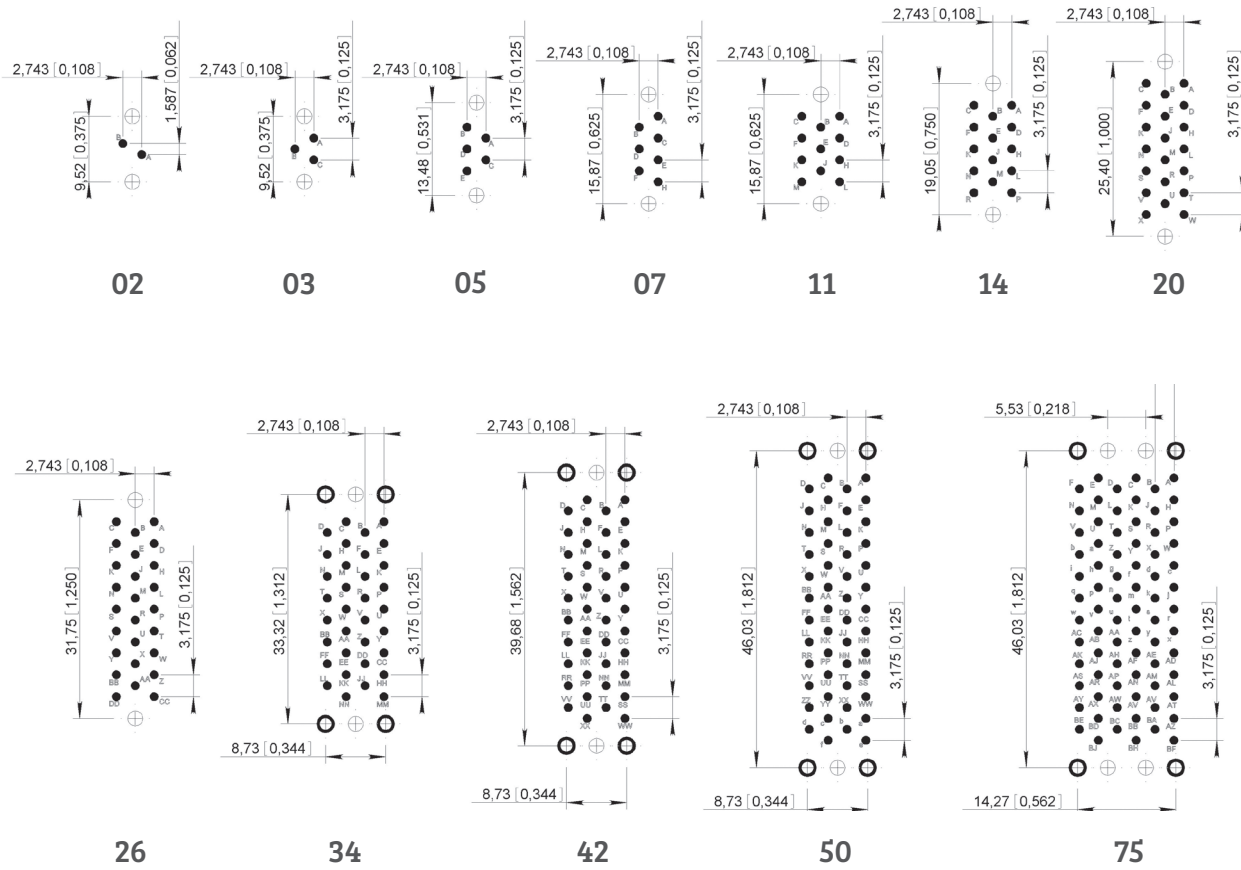
TYPE 86 Termination style - connector with SOCKET contacts – PCB component side view in mm (inch)



- NOTES:**
- Printed circuit drilling \varnothing 1.1 +0.1 [0.043 +0.003]
 - Drilling to fix the connector \varnothing 2.4 [0.094]
 - ⊕ Drilling to fix the connector. Required for guides G1 and GV fixing only:
 2.2 [0.087] \varnothing for ISO guides
 2.4 [0.094] \varnothing for UNC guides

Printed Circuit Drill Pattern

TYPE 86 Termination style - connector with PIN contacts – PCB component side view in mm (inch)



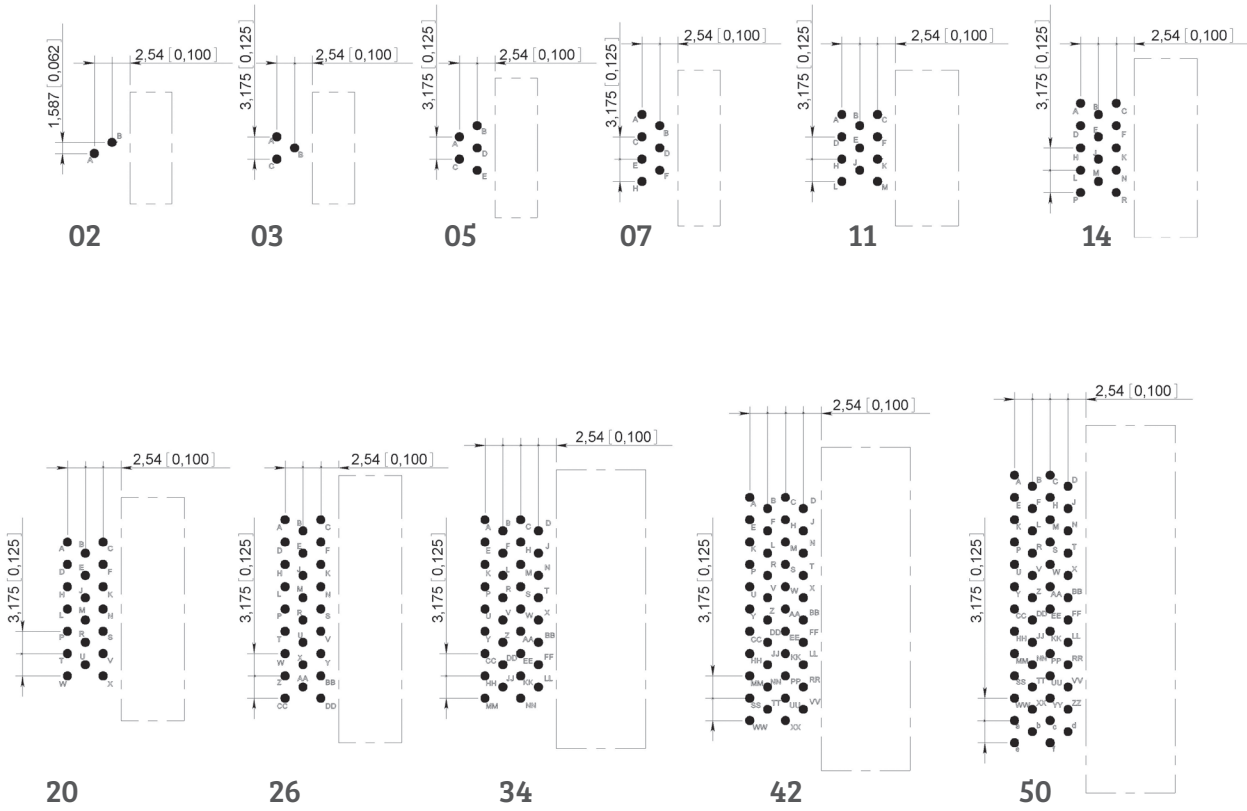
NOTES:

- Printed circuit drilling $\varnothing 1.1 +0.1 (0.043 +0.003)$
- Drilling to fix the connector $\varnothing 2.4 (0.094)$
- ⊕ Drilling to fix the connector. Required for guides G1 and GV fixing only:
 - 2.2 (0.087) \varnothing for ISO guides
 - 2.4 (0.094) \varnothing for UNC guides

MB SERIES

Printed Circuit Drill Pattern

TYPE 87 Termination style - connector with SOCKET contacts – PCB component side view in mm (inch)

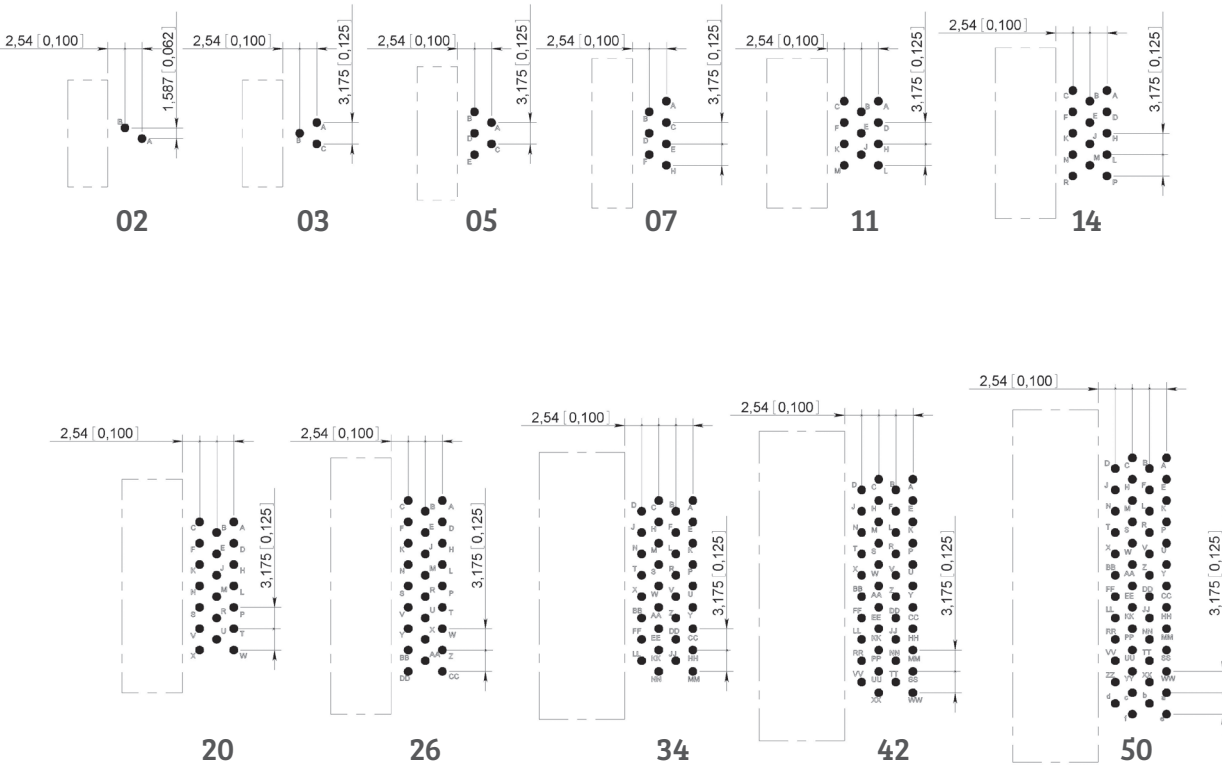


NOTE:

- Printed circuit drilling $\varnothing 1.1 +0.1 [0.043 +0.003]$

Printed Circuit Drill Pattern

TYPE 87 Termination style - connector with PIN contacts – PCB component side view in mm (inch)



NOTE:

- Printed circuit drilling $\varnothing 1.1 +0.1 (0.043 +0.003)$

MB SERIES

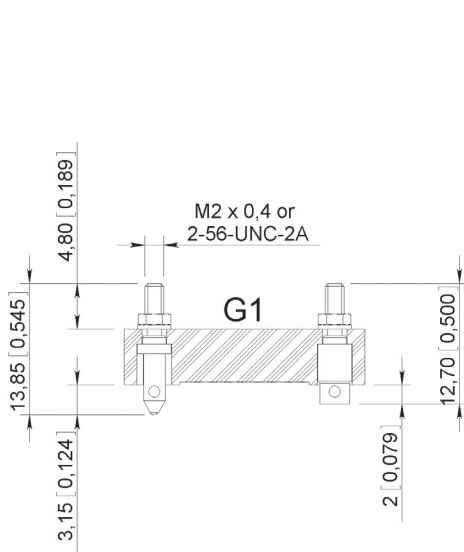
Guides and Jackscrews

Stainless steel guides and jackscrews are supplied with either ISO (M2 x 0.4) or UNC (2-56 UNC) threads. The guides or jackscrews types G1 – GV – VL and VR and type of thread (ISO or UNC) required are to be defined in the part number on page 9-20.

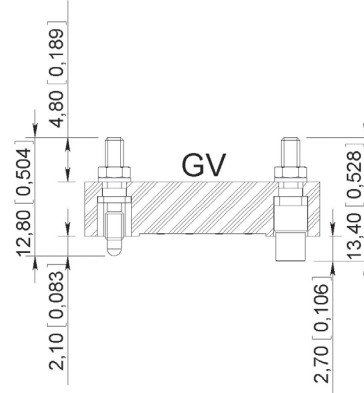
The standard configuration of guides and jackscrews is:

- Male guide (or jackscrew) at the end nearest contact A of the female connector.
- Female guide (or jackscrew) at the end nearest contact A of the male connector.

RACK GUIDES TYPE G1



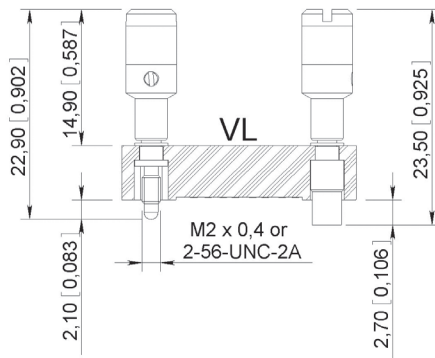
FIXED JACKSCREWS TYPE GV



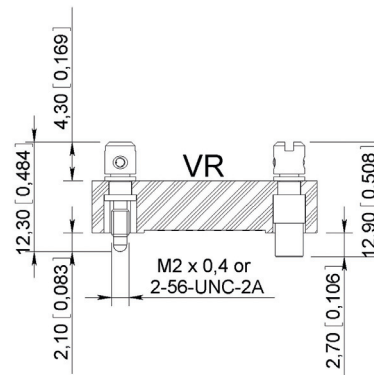
The 2,3, 5 and 7 way GV jackscrews are held securely in place by two flats on the jackscrews whereas the jackscrews for the other contact arrangements have a square section to avoid rotation.

These guide and jackscrews can be used with backshells HA and HL

LONG AND SHORT ROTATING JACKSCREWS TYPE VL – VR



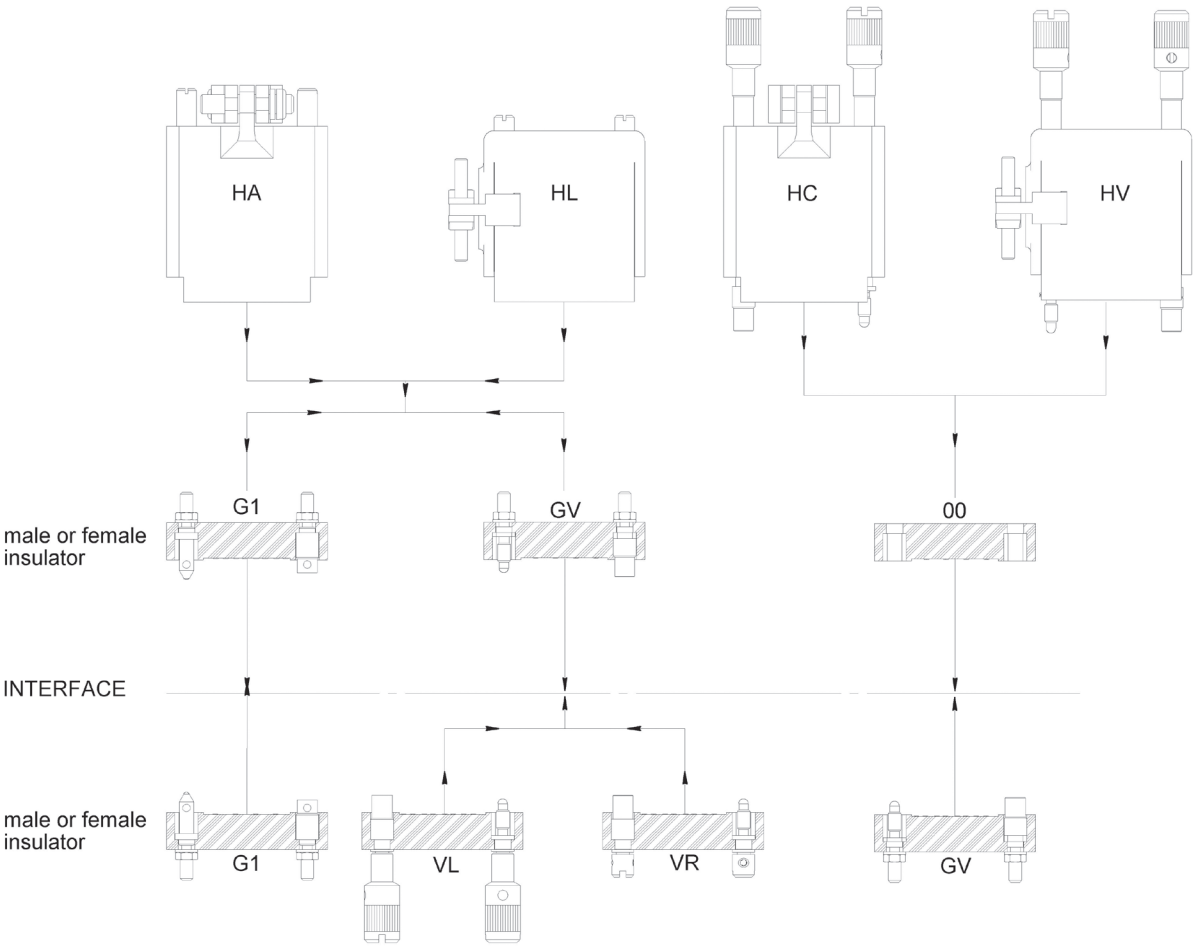
Mating torque: 0.2N.m
Not available for termination style type 87
Cannot be used with backshell



Mating torque: 0.2N.m
Cannot be used with backshell

Connector Mating Compatibility

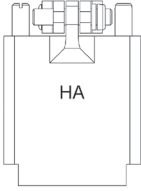
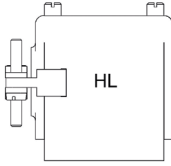
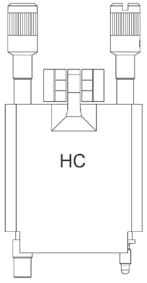
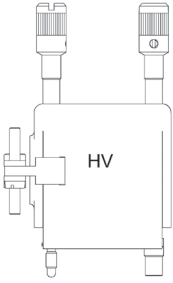
Use with backshell – Termination style type 85 only



Use without backshell – All termination style type

MB SERIES

Backshell Type Availability

| Thread | | Backshell | | Thread | | | |
|------------------|-------------------|---|--|---|--|----|----|
| NC (2-56 UNC) | ISO (M2 x 0.4) | | | ISO (M2 x 0.4) | NC (2-56 UNC) | | |
| 07 | 07 |  <p>HA</p> |  <p>HL</p> | - | - | | |
| 11 | 11 | | | - | 11 | | |
| 14 | 14 | | | - | 14 | | |
| 20 | 20 | | | - | - | | |
| 26 | 26 | | | - | 26 | | |
| 34 | 34 | | | - | 34 | | |
| 50 | 50 | | | - | 50 | | |
| 75 | 75 | | | - | 75 ⁽¹⁾ | | |
| 07 | 07 | | |  <p>HC</p> |  <p>HV</p> | - | - |
| 11 | 11 | | | | | 11 | 11 |
| 14 | 14 | 14 | 14 | | | | |
| 20 | 20 | - | - | | | | |
| 26 | 26 | 26 | 26 | | | | |
| 34 | 34 | 34 | 34 | | | | |
| 50 | 50 | 50 | 50 | | | | |
| 75 | 75 | - | 75 ⁽¹⁾ | | | | |

Fixing of backshells only suitable for insulator with termination style type 85 (solder pot)

NOTE:

(1) Available for male contact arrangement only

Top Entry Backshells

TYPE HA

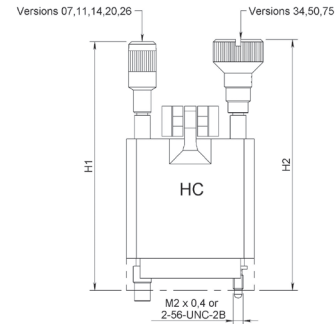
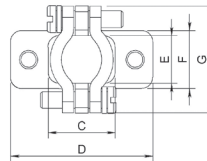
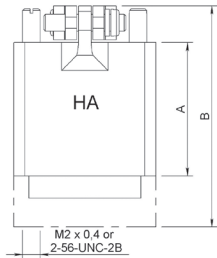
Backshells supplied with two internal threaded posts which are screwed into the guides G1 or jackscrews GV.

TYPE HC

Backshells supplied with two long rotating jackscrews. These backshells are mounted on connectors without guides or jackscrews.

PART NUMBERS

| Contacts Arrangements | Type HA | | Type HC | |
|-----------------------|-----------------------|-----------------------|----------------------|----------------------|
| | With threads M2 x 0.4 | With threads 2-56 UNC | With screws M2 x 0.4 | With screws 2-56 UNC |
| 07 | MB07HAIS2 | MB07HANC | MB07HCIS | MB07HCNC |
| 11 | MB11HAIS2 | MB11HANC | MB11HCIS | MB11HCNC |
| 14 | MB14HAIS2 | MB14HANC | MB14HCIS | MB14HCNC |
| 20 | MB20HAIS2 | MB20HANC | MB20HCIS | MB20HCNC |
| 26 | MB26HAIS2 | MB26HANC | MB26HCIS | MB26HCNC |
| 34 | MB34HAIS2 | MB34HANC | MB34HCIS | MB34HCNC |
| 50 | MB50HAIS2 | MB50HANC | MB50HCIS | MB50HCNC |
| 75 | MB75HAIS2 | MB75HANC | MB75HCIS | MB75HCNC |



Mating torque:
0.15N.m

Dimensions mm (inch)

| Contacts arrangements ⁽¹⁾ | A | B | C | D | E | F | G | H1 | H2 ⁽²⁾ |
|--------------------------------------|---------------|--------------|---------------|--------------|--------------|--------------|---------------|---------------|-------------------|
| 07 | 9.52 (0.375) | 22.9 (0.902) | 9.13 (0.359) | 22.2 (0.874) | 5.95 (0.234) | 7.5 (0.295) | 13.5 (0.531) | 30.62 (1.205) | n/a |
| 11 | 23.8 (0.937) | 37.2 (1.465) | 11.9 (0.468) | | 8.7 (0.342) | 10.3 (0.405) | 23.8 (0.937) | 15.87 (0.625) | 48.8 (1.921) |
| 14 | | | 12.7 (0.500) | 25.4 (1) | | | | n/a | |
| 20 | 30.16 (1.187) | 48.4 (1.905) | 18.26 (0.719) | 31.7 (1.248) | 12.7 (0.500) | 14.3 (0.563) | 26.98 (1.062) | 55.2 (2.173) | n/a |
| 26 | | | 23 (0.905) | 38.1 (1.500) | | | | | n/a |
| 34 | | | 20.6 (0.811) | 39.7 (1.563) | | | | | n/a |
| 50 | | | 22.2 (0.874) | 52.4 (2.063) | | | | | 18.2 (0.716) |
| 75 | | | 23 (0.905) | | | | | n/a | |

NOTES:

- (1) Fixing of backshells only suitable for insulator with termination style type 85 (solder pot)
- (2) Backshells 34, 50 and 75 are fitted with 4 screws to be fixed to the connector block

Side Entry Backshells

TYPE HA

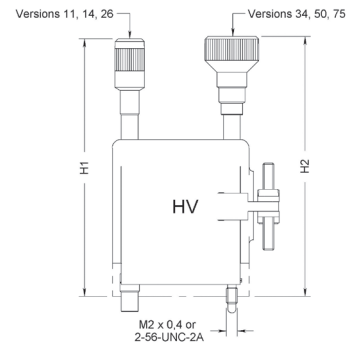
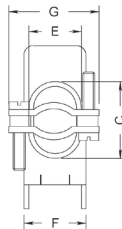
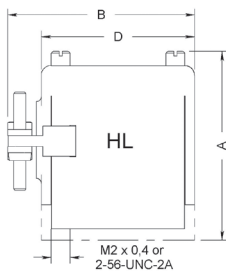
Backshells supplied with two internal threaded posts which are screwed into the guides G1 or jackscrews GV.

TYPE HC

Backshells supplied with two long rotating jackscrews. These backshells are mounted on connectors without guides or jackscrews.

PART NUMBERS

| Contacts Arrangements | Type HA | | Type HC | |
|-----------------------|-----------------------|-------------------------|----------------------|-------------------------|
| | With threads M2 x 0.4 | With threads 2-56 UNC | With screws M2 x 0.4 | With screws 2-56 UNC |
| 11 | MB11HLIS2 | MB11HLNC | MB11HVIS | MB11HVNC |
| 14 | MB14HLIS2 | MB14HLNC | MB14HVIS | MB14HVNC |
| 26 | MB26HLIS2 | MB26HLNC | MB26HVIS | MB26HVNC |
| 34 | MB34HLIS2 | MB34HLNC | MB34HVIS | MB34HVNC |
| 50 | MB50HLIS2 | MB50HLNC | MB50HVIS | MB50HVNC |
| 75 | - | MB75HLNC ⁽¹⁾ | - | MB75HVNC ⁽¹⁾ |



Mating torque: 0.15N.m

Dimensions mm (inch)

| Contacts arrangements ⁽²⁾ | A | B | C | D | E | F | G | H1 | H2 ⁽³⁾ |
|--------------------------------------|-----------------|-----------------|-----------------|-----------------|--------------|--------------|------------------|-----------------|-------------------|
| 11 | 31.7 [1.248] | 29.8 [1.173] | 11.9 [0.469] | 22.2 [0.874] | 8.7 [0.343] | 10.3 [0.406] | 15.87 [0.625] | 48.8 [1.921] | n/a |
| 14 | | 32.9 [1.295] | 12.7 [0.500] | 25.4 [1] | | | | | n/a |
| 26 | 37.7 [1.484] | 49.2 [1.937] | 23 [0.906] | 38.1 [1.500] | 8.72 [0.343] | 14.3 [0.563] | 26.98 [1.062] | n/a | n/a |
| 34 | | 51.6 [2.031] | 20.6 [0.811] | 39.7 [1.563] | 12.7 [0.500] | | | | 49.2 [1.937] |
| 50 | | 64.3 [2.531] | 22.2 [0.874] | 52.4 [2.063] | | | | | |
| 75 | | 65.5 [2.579] | 23 [0.906] | 52.4 [2.063] | 19.8 [0.780] | | | | 34.52 [1.359] |

NOTES:

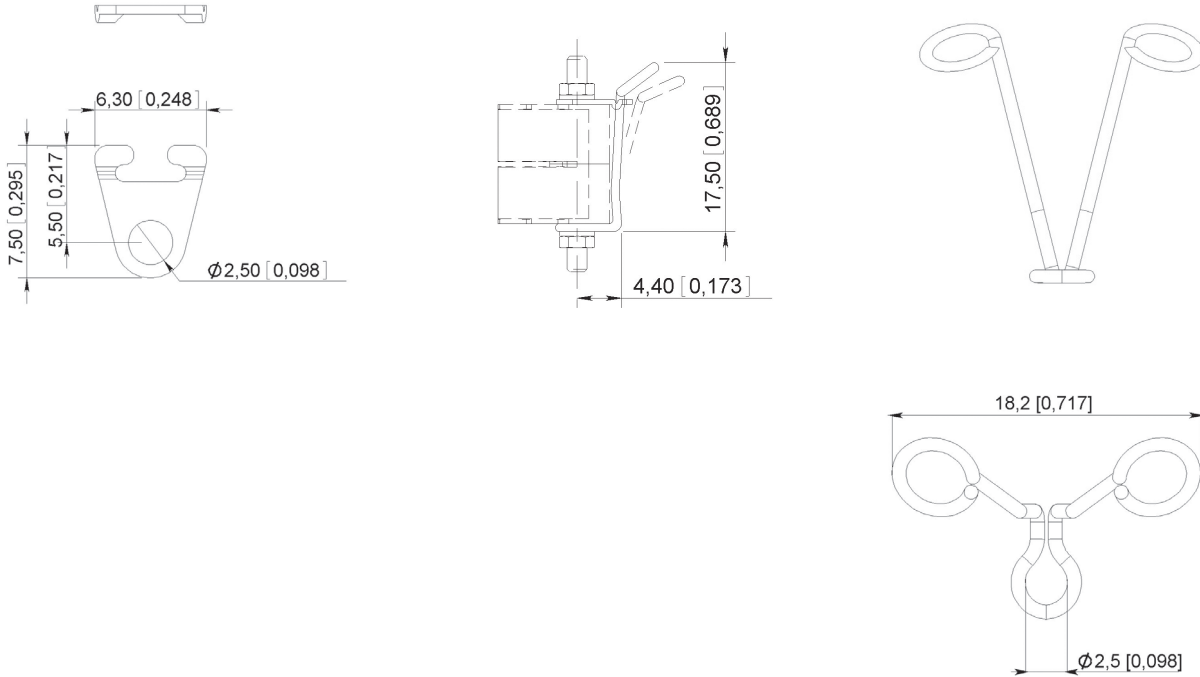
- (1) Available for male contact arrangement only
- (2) Fixing of backshells only suitable for insulator with termination style type 85 (solder pot)
- (3) Backshells 34, 50 and 75 are fitted with 4 screws to be fixed to the connector block

Accessories

SPRING LOCKING SYSTEM

This simple locking system avoids accidental disconnection of connectors fitted to equipment which may be subjected to severe vibration. This system can be used where connector fitted with G1 guides are used with or without backshell.

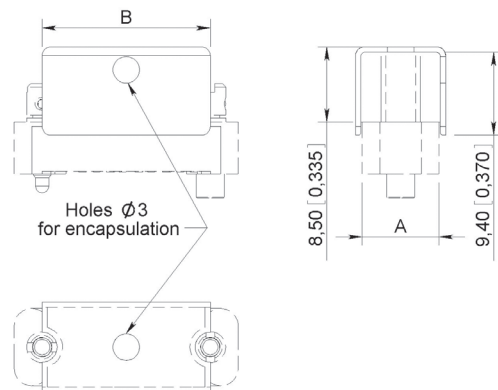
Part number of a pair: 624895



POTTING MOULDS

The plastic potting moulds are designed to fit onto the wiring side of the connectors in order so that the wiring and back end can be encapsulated. They can be used with connectors fitted with G1 guides and GV and VR jackscrews.

| Contacts Arrangements | Part numbers | Type HA | |
|-----------------------|--------------|-------------|--------------|
| | | A | B |
| 02 -03 | 624994 | 5.9 [0.232] | 9.5 [0.374] |
| 05 | 624992 | 5.9 [0.232] | 13.5 [0.531] |
| 07 | 624991 | 5.9 [0.232] | 15.9 [0.626] |
| 11 | 624993 | 9 [0.354] | 15.9 [0.626] |
| 14 | 624995 | 9 [0.354] | 19 [0.748] |



MB SERIES

Notes



RTX Series
EN3716



Contents

RTX series

| | |
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| Introduction | 10-4 |
| Applications | 10-4 |
| Product overview | 10-5 |
| Technical characteristics | 10-6 & 10-7 |
| How to order connectors | 10-8 |
| Dimensions & Panel cut out | 10-9 & 10-10 |

RTX Terminations series

| | |
|----------------------------------|----------------|
| How to order connectors | 10-11 |
| Technical characteristics | 10-11 |
| Dimensions & Panel cut out | 10-12 |
| Twinax contacts | 10-13 to 10-14 |
| Tools | 10-15 |

SECTION 10 TABLE OF CONTENTS

Introduction

The digital data bus defined by MIL-STD-1553B is commonly considered as a worldwide standard regarding digital avionics equipment such as navigation by radar, communications, weapon control systems, etc.

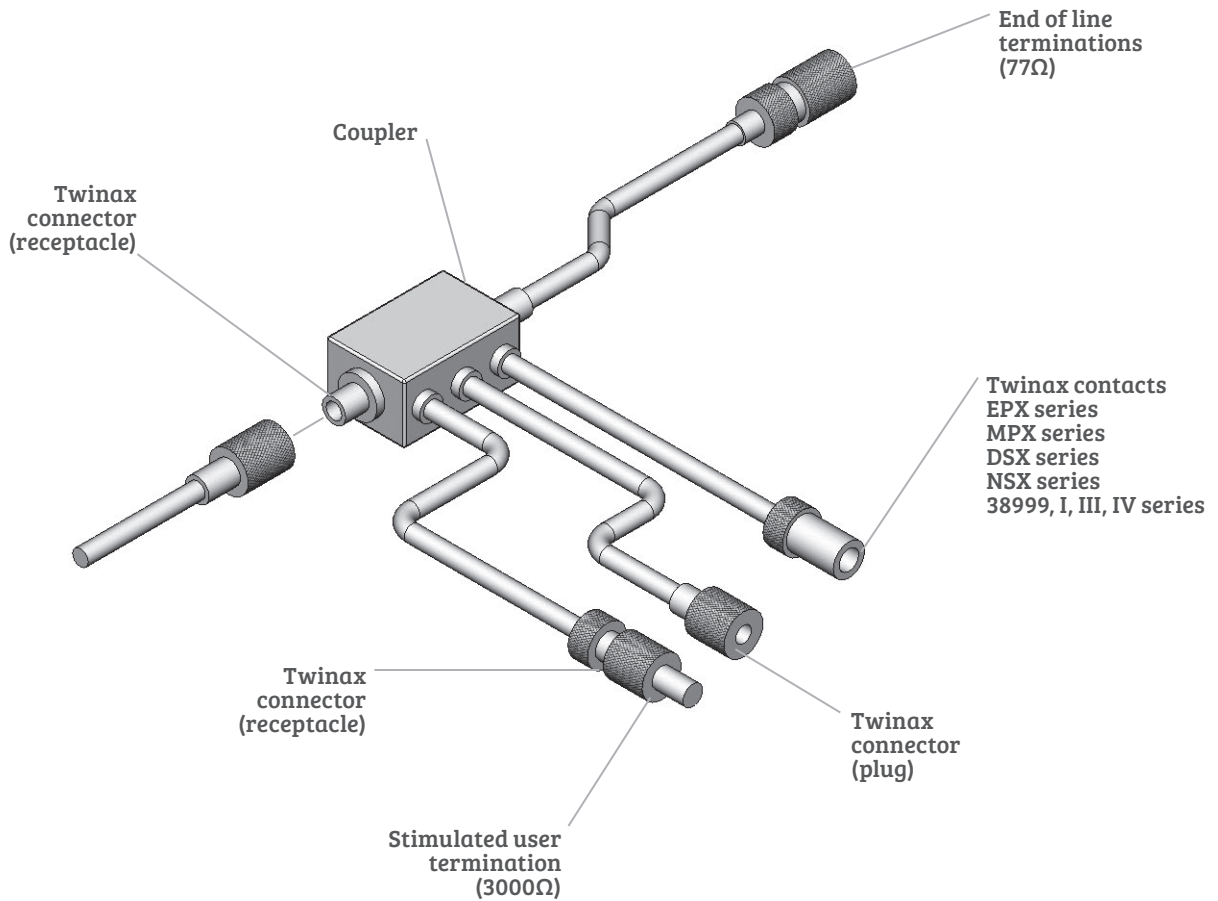
All these systems linked together exchange data through a network of “shielded twisted pairs,” transformer couplers and twinax connectors.

Radiall offers the RTX range of twinax connectors, contacts and terminations suitable for use on this digital data bus.

In addition, Radiall can supply twinax contacts for installation into multipin connectors to connect equipment to the data bus.

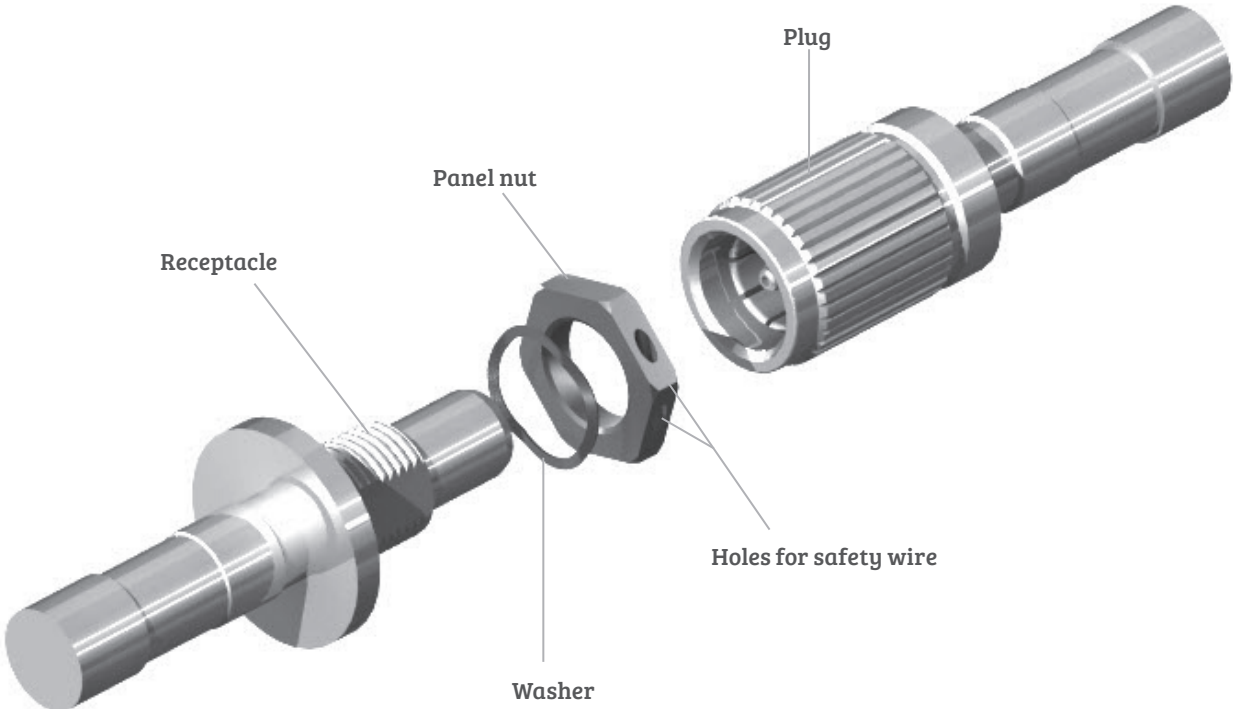
- NSX Arinc 600
- EPX EN4644
- MPX MIL DTL-83527B / EN3682
- DSX SAE AS81659 / Arinc 404
- MIL-DTL-38999

Applications



Product Overview

Detailed view of the various parts of the RTX series connector.



RTX SERIES

Technical Characteristics

ELECTRICAL

Frequency range: 5 MHz max

Insulation resistance:

@ 25°C (77°F) $\geq 5000 \text{ M}\Omega$

@ 150°C (302°F) $\geq 1000 \text{ M}\Omega$

DWV (sea level): 900 Vac RMS – 50 Hz

DWV (70000feet): 200 Vac RMS – 50 Hz

Contact resistance:

Center and intermediate contacts: $\leq 35 \text{ m}\Omega$

Outer body: $\leq 8 \text{ m}\Omega$

MECHANICAL & ENVIRONMENTAL

Temperature range: -65°C (-149°F) to +150°C (+302°F)

Temperature life: 1000 hours at 150°C (+302°F)

Salt spray: 500 hours

Altitude immersion: 47 kPa (.68 psi)

Air leakage: 0,5cm³/s

Sand and dust: 1 cycle – wind speed 3,5±0,5m/s

Humidity: 28 days

Shock: 100g – 6 ms

Vibration: AECMA EN2591 test D3 – method B

Mating & unmating: 500 cycles

Contact retention: > 45 N

Locking torque (C)

Mating : $1 \leq C \leq 1.25 \text{ N.m}$ ($8.85 \leq C \leq 11 \text{ Lb.inch}$)

Unmating: $C \leq 1.35 \text{ N.m}$ (11.95 Lb.inch)

RoHs statue: Not RoHs

Technical Characteristics

MATERIALS

| Description | Material / Finish |
|------------------------------|-------------------------------|
| Coupling ring | Tin-lead plated brass |
| Plug outer body | Copper alloy tin-lead plated |
| Receptacle outer body | Tin-lead plated brass |
| Center contact and crimp pot | Copper alloy gold over nickel |
| Ferrule | Nickel plated brass |
| Insulator and sheath | PTFE |

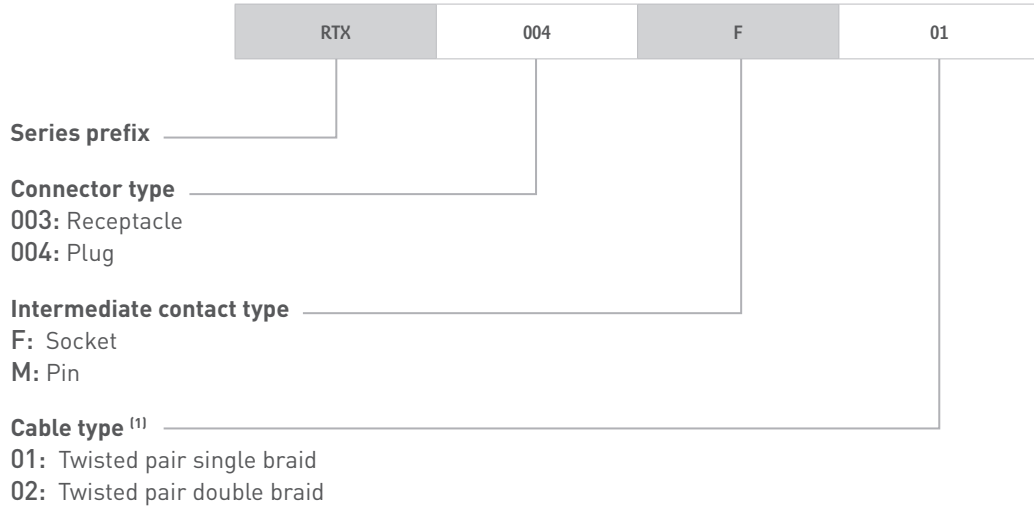
WEIGHT

| Description | Weight g (oz) |
|-------------|---------------|
| Plug | 12 (0.423) |
| Receptacle | 9 (0.317) |

RTX SERIES

How to Order RTX Connectors

The RTX series consists of plugs, receptacles (crimp version) and terminations. The plug has a knurled and threaded coupling ring which provides mating and locking. The jam nut style receptacle is provided with an o-ring for sealing to the bulkhead.



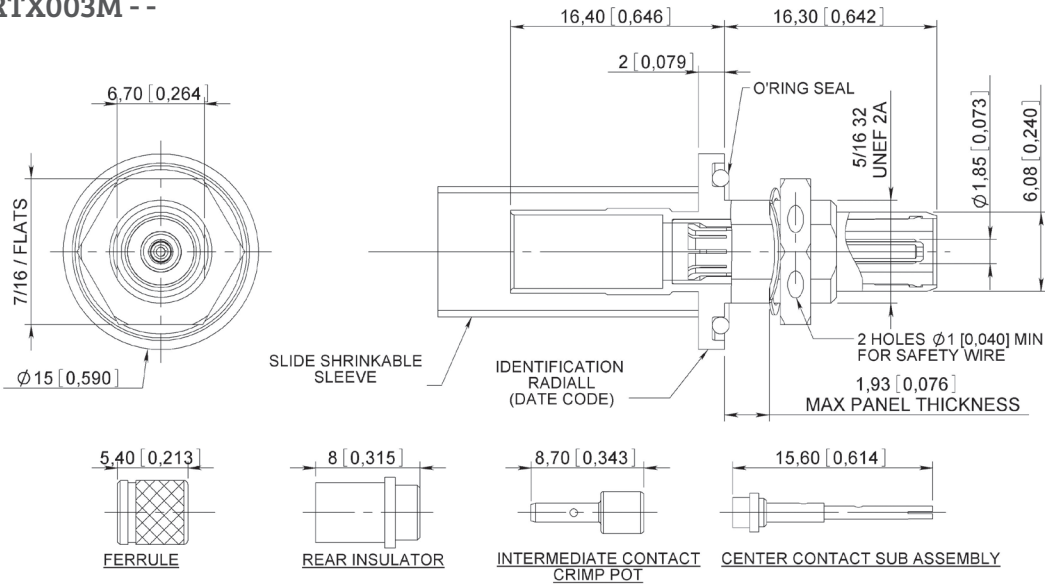
NOTES:

(1) A version for triaxial cable is also available, please consult Radiall

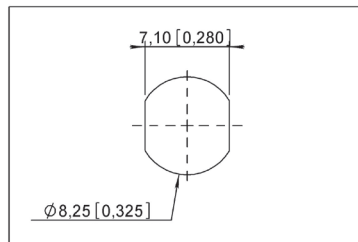
Dimensions & Panel Cut Out

RECEPTACLE – PIN mm (inch)

RTX003M --

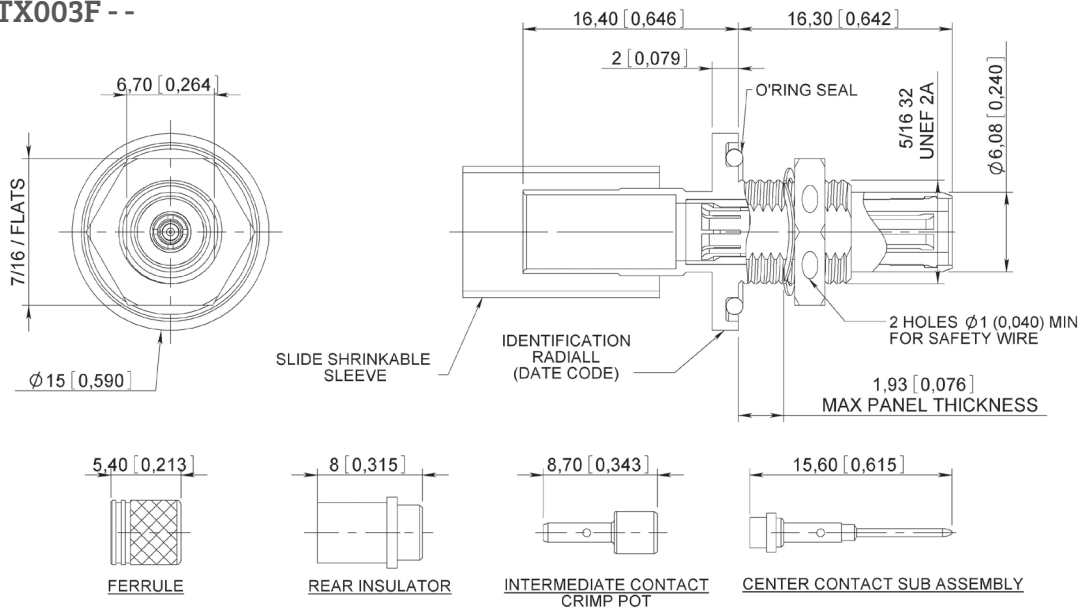


PANEL CUT OUT



RECEPTACLE – SOCKET mm (inch)

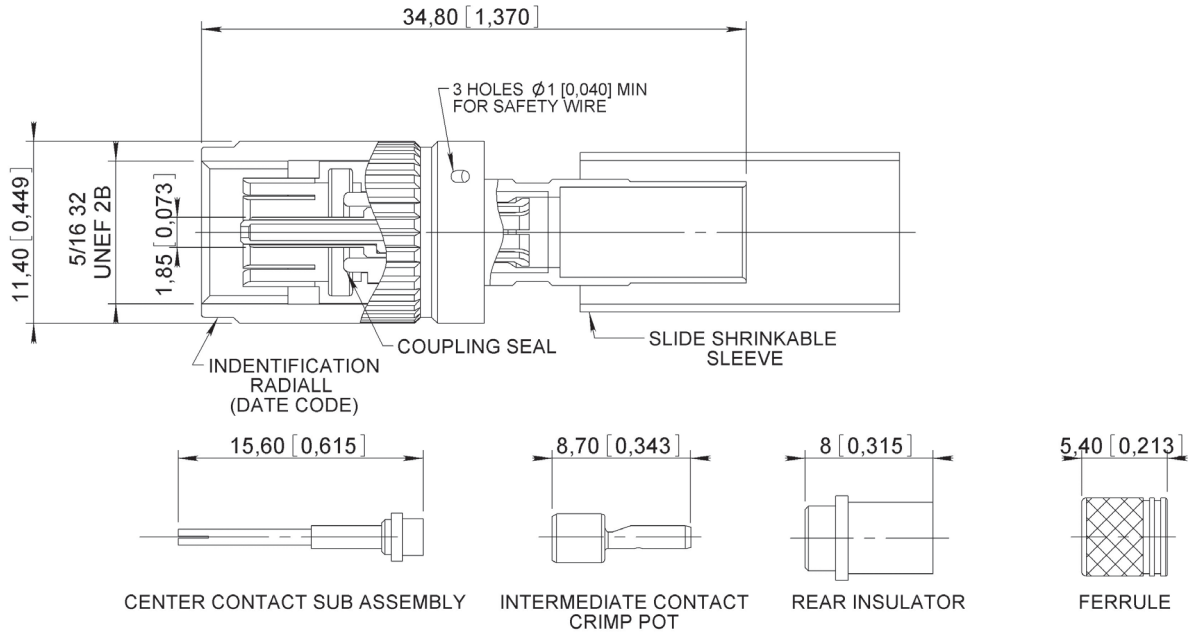
RTX003F --



Dimensions

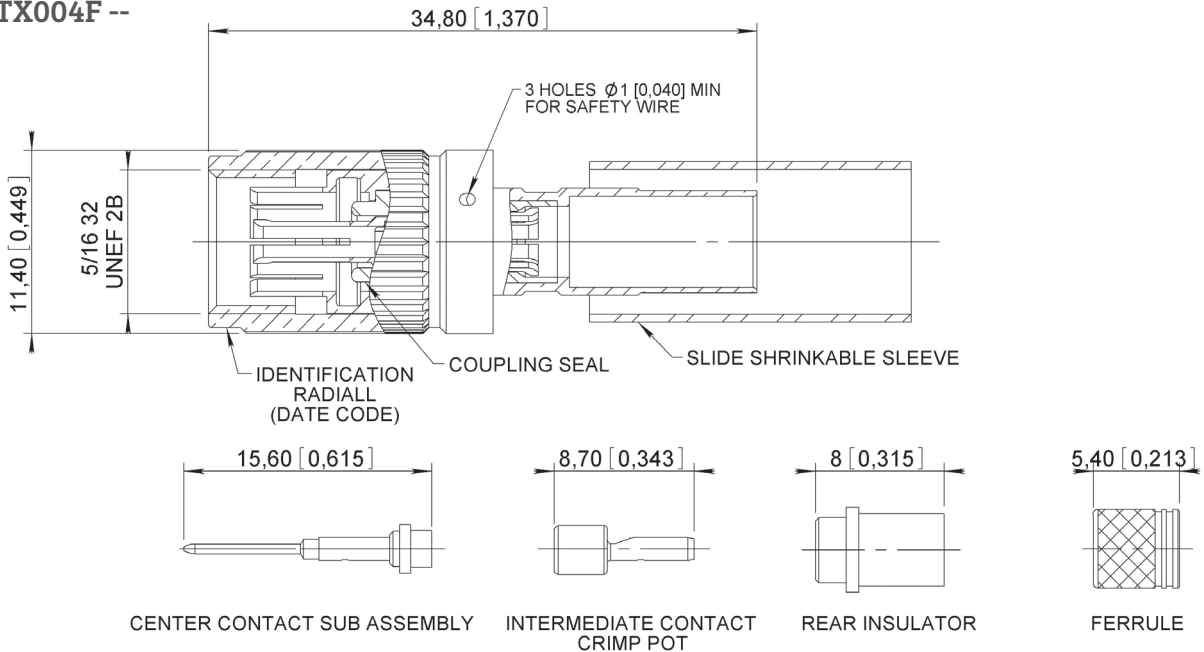
PLUG – PIN mm (inch)

RTX004M --



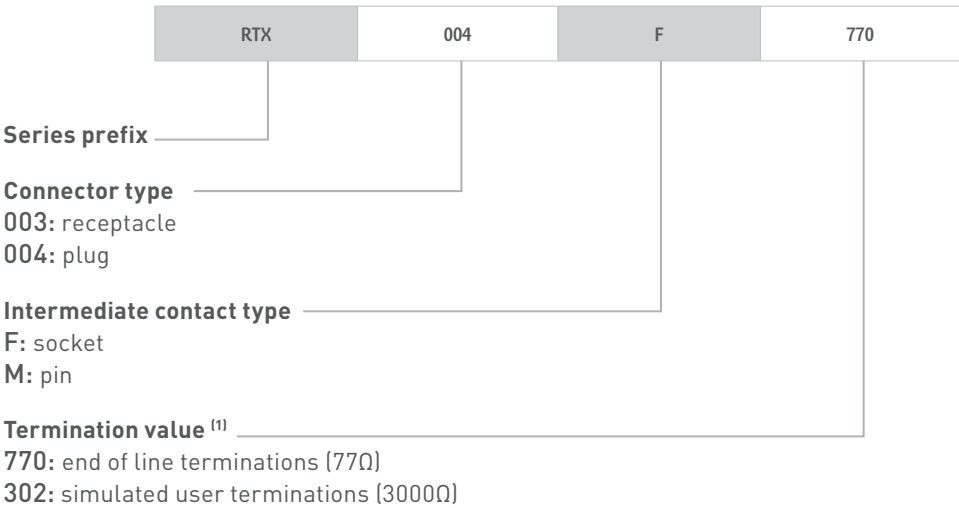
PLUG – SOCKET mm (inch)

RTX004F --



How to Order RTX Terminations

RTX series terminations are used to simulate a bus user or as end of line load.



Technical Characteristics

RTX series terminations have the same technical characteristics as the RTX plug and receptacle except the following:

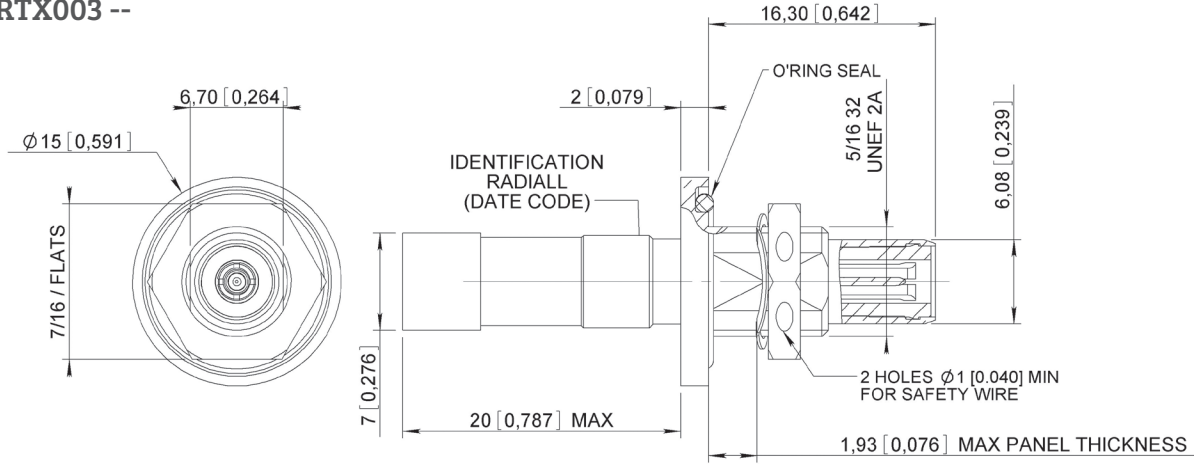
- Termination values:** 77 ± 5 Ω or 3000 ± 60 Ω
- DWV:** 700 Vac RMS – 60Hz
- Working voltage:** 120 Vac RMS – 60 Hz

NOTES:
 (1) Write the two first significant digits of the resistance value plus 1 digit giving the number of zeros of the resistance value (i.e. 5500 will be written 552)

Dimensions RTX Terminations

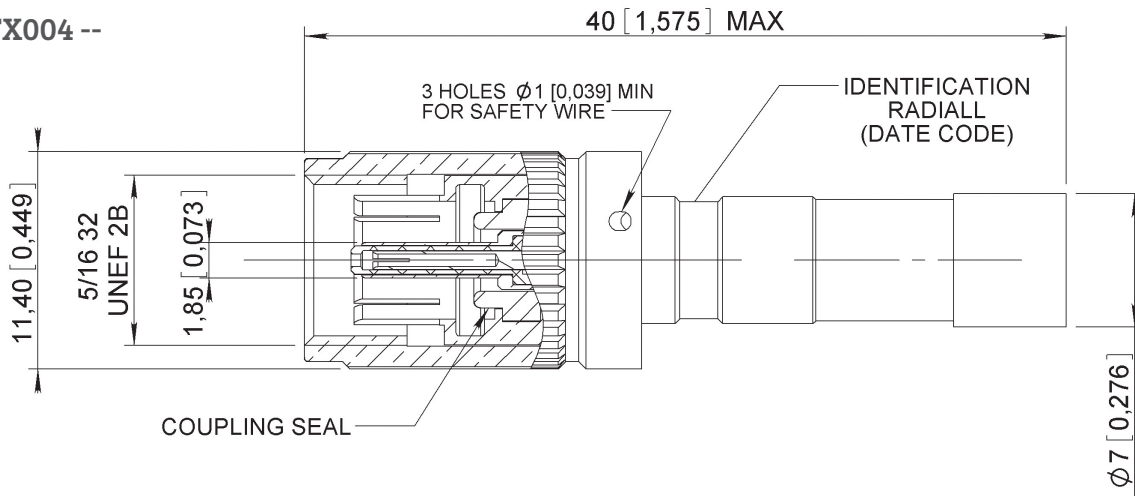
RECEPTACLE TERMINATION mm(inch)

RTX003 --



PLUG TERMINATION mm(inch)

RTX004 --



Twinax Contacts

CRIMP TERMINATION

| Connector series | Contact | | | | Insertion/Extraction tool |
|---------------------------------|----------|---|--------------------------|--------------------------|---------------------------|
| | Size | Cable | Type | Part Number | |
| MIL DTL 38999 | 8 | MIL-C17/17600002 EN3375-003ST | Socket | 670050 ⁽¹⁾ | 282549001 M81969/28-03 |
| | | | Pin | 670150 ⁽¹⁾ | |
| | | EN3375-004DT Or EN3375-005DT | Socket | 670051 ⁽¹⁾ | |
| | | | Pin | 670151 ⁽¹⁾ | |
| EPX EN 4644 | 5 | MIL-C-17/17600002 or PAN 6421 | Socket | 617050 | 282946 M81969/28-01 |
| | | | Pin | 617150 | |
| DSX ARINC 404 SAE AS81659 | 5 | MIL-C-17/17600002 | Socket | 616095001 ⁽³⁾ | 282946 M81969/28-01 |
| | | | Pin | 616195001 ⁽³⁾ | |
| | | | Socket | 616095009 ⁽²⁾ | |
| | | | Pin | 616195009 ⁽²⁾ | |
| | PAN 6421 | Socket | 616095005 ⁽³⁾ | | |
| | | Pin | 616195005 ⁽³⁾ | | |
| | 9 | MIL-C-17/17600002 | Socket | 616096003 ⁽³⁾ | |
| | | | Pin | 616196003 ⁽³⁾ | |
| | | | Socket | 616096004 ⁽²⁾ | |
| | | | Pin | 616196004 ⁽²⁾ | |
| MPX MIL DLT 83527B | 8 | EN3375-004DT EN3375-005DT | Socket | 618060 ⁽¹⁾ | 282549001 M81969/28-03 |
| | | | Pin | 618160 ⁽¹⁾ | |
| | | MIL-C-17/17600002 or EN3375-003ST | Socket | 618061 ⁽¹⁾ | |
| | | | Pin | 618161 ⁽¹⁾ | |
| ARINC | 8 | MIL-C-17/17600002 or EN3375-003ST | Socket | 619070001 / 002 [env] | 282549001 M81969/28-03 |
| | | | Pin | 619170001/ 002 [env] | |
| ARINC | 8 | PAN6421ZA002 | Socket | 619070011 / 012 [env] | |
| | | | Pin | 619170011/ 012 [env] | |
| ARINC | 8 | EN3375-004 Raychem 10613 ASNE0479WJ | Socket | 619070021 / 022 [env] | |
| | | | Pin | 619170021/ 022 [env] | |
| ARINC | 8 | 10614 Triple shielded | Socket | 619070031 / 032 [env] | |
| | | | Pin | 619170031/ 032 [env] | |

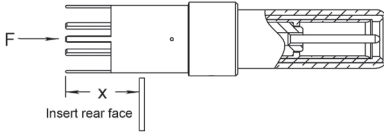
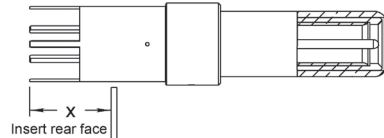
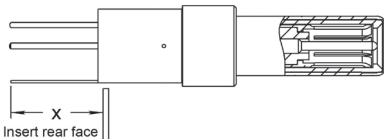
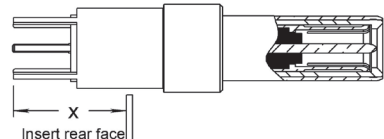
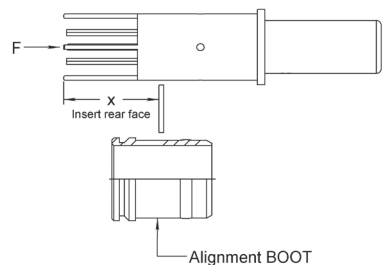
Notes:

- (1) In order to have environmental versions add 001 to the part number except for 619x70xxx contacts
- (2) These contacts are to be installed in environmental connectors only
- (3) These contacts are to be installed in non environmental connectors only

RTX SERIES

Twinax Contacts

PC TAIL TERMINATIONS

| Connector series | Contact | | | | Insertion/Extraction tool |
|---------------------------------|----------|-----------------------|--|---|---------------------------|
| | Pin Size | Part number | Contact drawing | Rear extension from insert = X mm (inch) | |
| DSX ARINC 404 SAE AS81659 | 5 | 616195003 |  | 32C2, 32T2, 33C4, 33T4, 40C1, 40T1 = 3.2/4.0 (.125/.158) 36C7, 36T7 = 5.40/6.10 (.212/.240) | 282946 M81969/28-01 |
| | | 616195008 |  | | |
| | 9 | 616196005 |  | C8, T8 = 1.30/2.15 (.050/.085) 32C4, 32T4 = 6.45/7.30 (.253/.288) | |
| | | 616196007 |  | C8, T8 = 0 32C4, 32T4 = 3.70/4.35 (.145/.170) | |
| MPX MIL DLT 83527B | 8 | 618163 ⁽¹⁾ |  | 7.65 ± 0.5 (.282/.321) | 282549001 M81969/28-03 |

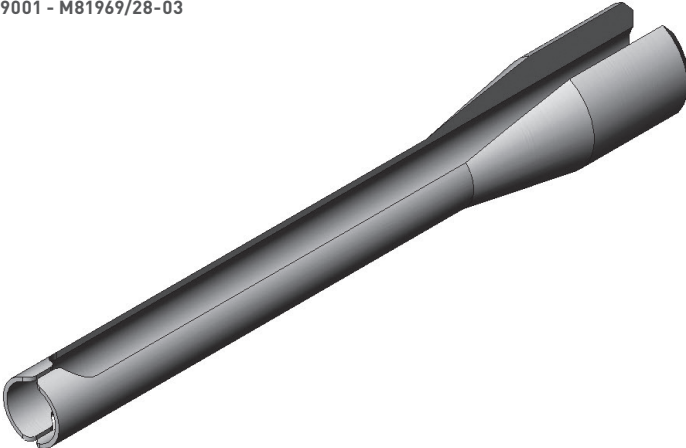
Notes:

(1) For 62T2 contact arrangement, the rear extension from the insert is .303/.343 [8.2 ± 0.5]. This contact is delivered with an alignment boot

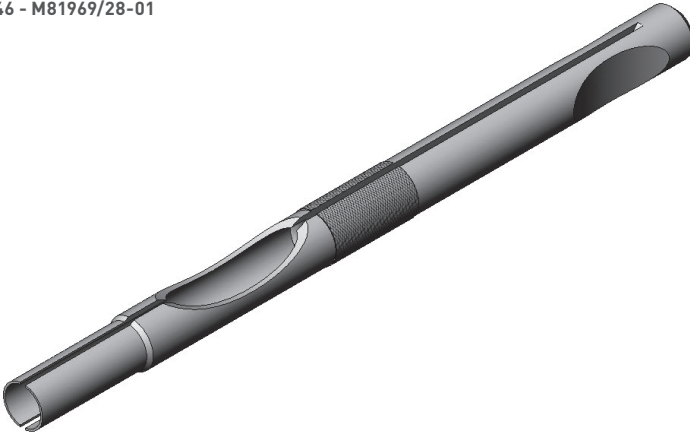
Tools

INSERTION / EXTRACTION TOOL

282549001 - M81969/28-03



282946 - M81969/28-01



RTX SERIES

RTX SERIES

Notes



MIL-DTL 38999 Type Connectors



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SECTION 11 TABLE OF CONTENTS

MIL-DTL-38999

Introduction

Radiall offers a wide range of MIL-DTL-38999 type connectors for applications in both military and civil aviation markets.

Whether your needs are for crimped coax or quadrax contacts, or for LuxCis® optical contacts, you will find products that suit your requirements.

Radiall proposes various sizes (from 11 to 25), types (plugs, wall-mount & jam-nut receptacles), and plating for 38999 type shells to withstand high performances:

- Aluminum Olive drab Cadmium (500h salt spray)
- Nickel plated Aluminum (48h salt spray)
- Nickel plated Composite (2000h salt spray)
- Nickel Aluminum Bronze (500h salt spray)

Radiall also provides an extensive range of inserts: nine optical arrangements including one that mixes electrical and optical contacts.

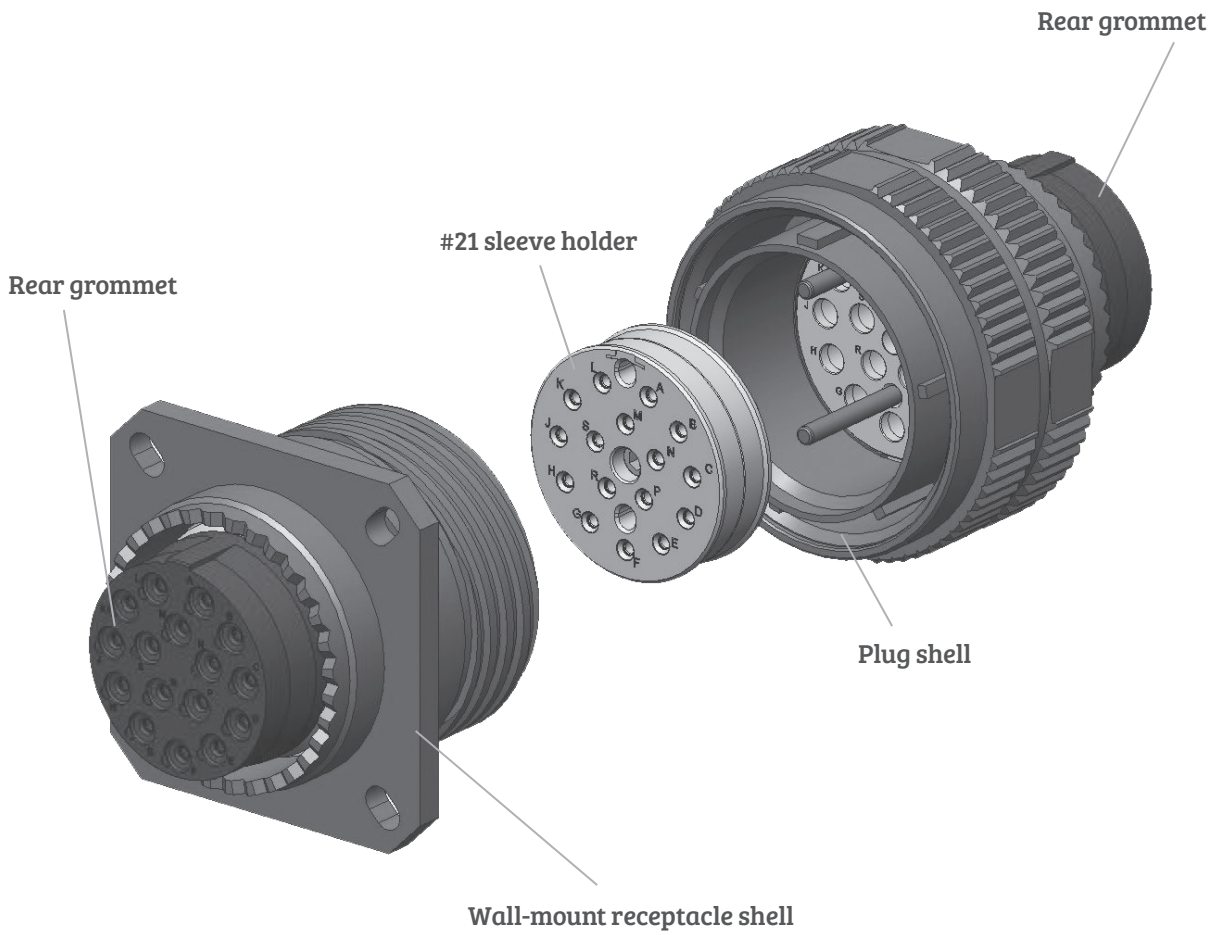
Apart from our LuxCis contacts range, you will also find Radiall's Quadrax & Coaxial contact offer, for environmental and non-environmental needs.

Application

Interconnect solution for aerospace and military harsh environment applications.



Product Overview



MIL-DTL-38999

MIL-DTL-38999

How to order MIL-DTL-38999 type connectors

PART NUMBERS FOR LUXCIS® MIL-DTL-38999 TYPE CONNECTORS

| | | | | | | | |
|----|---|----|---|-----|---|---|---|
| R8 | W | 15 | 0 | 6F0 | S | A | N |
|----|---|----|---|-----|---|---|---|

R8: LuxCis® MIL-DTL-38999 series

Shell type: _____

- W:** Plug
- R:** Square flange receptacle
- N:** Jam nut receptacle

Shell size: _____

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

Shell material and finish: _____

- O:** Aluminium olive drab cadmium
- N:** Nickel plated Aluminium
- M:** Nickel plated composite
- G:** Nickel aluminium bronze

Contact layout: _____

- 2F0:** 2 LuxCis® contacts (shell size 11)
- 2F02E:** 2 LuxCis® + 2 electrical contacts (shell size 13)
- 4F0:** 4 LuxCis® contacts (shell size 13)
- 6F0:** 6 LuxCis® contacts (shell size 15)
- 8F0:** 8 LuxCis® contacts (shell size 17)
- 12F0:** 12 LuxCis® contacts (shell size 19)
- 16F0:** 16 LuxCis® contacts (shell size 21)
- 24F0:** 24 LuxCis® contacts (shell size 23)
- 32F0:** 32 LuxCis® contacts (shell size 25)

Insert type: _____

- S:** Sealed insert for plug (R8W)
- P:** Sealed insert for receptacle (R8R or R8N)

Insert material: _____

- A:** Anodized aluminium
- C:** Non metalized composite

Polarization: _____

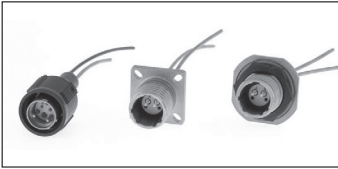
N-A-B-C-D-E

Electrical contacts are to be ordered separately
 Anodized aluminum inserts are recommended when specific EMI protection is required
 All connectors are supplied with a plastic cap
 Accessories such as backshell or metalized caps are only available for harness assemblies manufactured by Radiall.
 Please contact your sales representative for other plating alternatives or for specific requirements

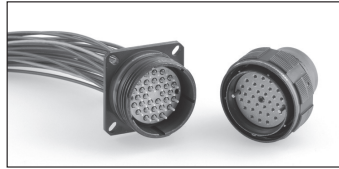
Inserts for LuxCis® contacts

MIL-DTL-38999 TYPE CONNECTORS FOR LUXCIS® CONTACT

The LuxCis® product range also includes MIL-DTL-38999 type connectors



Size 11 MIL-DTL-38999 type connectors



Size 25 MIL-DTL-38999 type connectors



Removable sleeveholder for easy access to the ferrules and sleeves for inspection and cleaning

SHELLS ARRANGEMENT

| | | | | |
|---------------------|--------------------|---------------------|--------------------|---------------------|
| | | | | |
| Size 11, 2 LuxCis® | Size 13, 4 LuxCis® | Size 15, 6 LuxCis® | Size 17, 8 LuxCis® | Size 19, 12 LuxCis® |
| | | | | |
| Size 21, 16 LuxCis® | | Size 23, 24 LuxCis® | | Size 25, 32 LuxCis® |

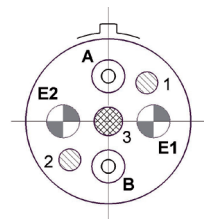
1 & 2: Alignment pins

3: Sleeve-holder screw

A, B, ... : Optical cavities

All views show the front face of a plug.

The LuxCis® product range also includes hybrid connectors, mixing electrical and LuxCis® cavities.



Size 13 connector with 2 electrical and 2 LuxCis® cavities

Hybrid connectors are available in all sizes; please see your local Radiall representative for more details.

LuxCis® Fiber Optic Contacts

The LuxCis® product range is a proven, flexible and always expanding fiber optic interconnect solution offering high speed communication in aerospace and other harsh environments.

OPTICAL PERFORMANCES

| | MultiMode (PC) 850 / 1300 nm | SingleMode (UPC) 1310 / 1550 nm |
|--|---------------------------------|------------------------------------|
| Insertion Loss (IL) Mean (IEC 61300-3-4 Method B) | 0.1 dB | 0.15 dB |
| Return Loss (RL) (IEC 61300-3-6) | > 20 dB | > 50 dB |

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

| | Standard | Performances |
|---|----------------------------|---|
| Thermal cycling | SAE AS 13441 method 1003.1 | -55°C/+125°C (cable dependant) |
| Temperature endurance | TIA/EIA 455-20 | 1000 h @ 125°C (cable dependant) |
| Vibration | TIA/EIA 455-11 | 43 Grms |
| Shocks | TIA/EIA 455-14 | 330 G, 3 ms |
| Durability | TIA / EIA 364-09 | 500 cycles |
| Maintenance ageing | SAE AS 13441 method 2002.1 | 10 cycles |
| Cable retention 1.8 mm diameter 900 µm diameter | SAE AS 13441 method 2009.1 | 68 N 7 N |
| Humidity | TIA EIA 455-5 | 10 cycles / 24 h 90% RH -25°C / +65°C |

LUXCIS® CONTACT PART NUMBERING SYSTEM



F725: LuxCis® series

Ferrule type

- 00:** PC ferrule for SingleMode fiber
- 03:** PC ferrule for 50/125 or 62,5/125 um MultiMode fiber
- 04:** PC ferrule for 100/40 um MultiMode fiber
- 05:** PC ferrule for 200/230 um MultiMode fiber
- 50:** APC ferrule for SingleMode fiber

Cable type and diameter

- 118:** 900 µm cable
- 318:** 1.2 mm cable with strengthening members, tight structure
- 419:** 1.6 to 2.2 mm cable, loose structure
- 519:** 1.6 to 2.2 mm cable, tight structure

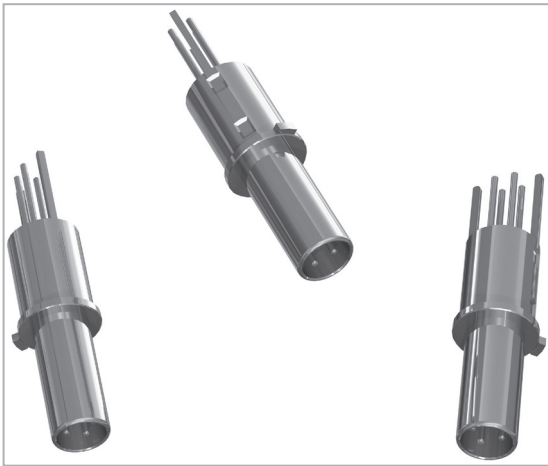
NOTE:

Radiall can support you with your cable and harness assemblies
Please contact your sales representative

Quadrax & Coaxial Contacts

SIZE 8 QUADRAX & COAXIAL CONTACTS

| Type | | Socket contact | Pin contact | Cable |
|--------|---------|--------------------|-------------|-----------------------|
| Size 8 | Quadrax | Environmental | 670075023 | Draka F 4703-2 |
| | Quadrax | | 670175012 | Tensolite NF 24 Q 100 |
| | Quadrax | Non- Environmental | 670075028 | Tensolite NF 24 Q 100 |
| | Coax | | 670001007 | EN3645 EN4165 |



MIL-DTL-38999

Shell Dimensions

SQUARE FLANGE AND JAM NUT RECEPTACLES

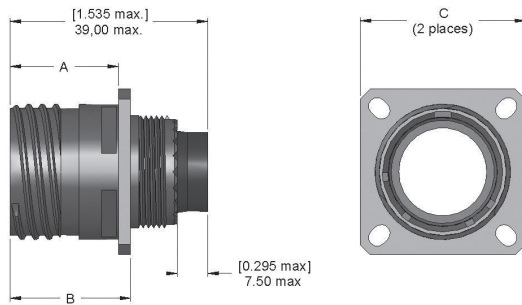


Fig. 1 Square flange receptacles

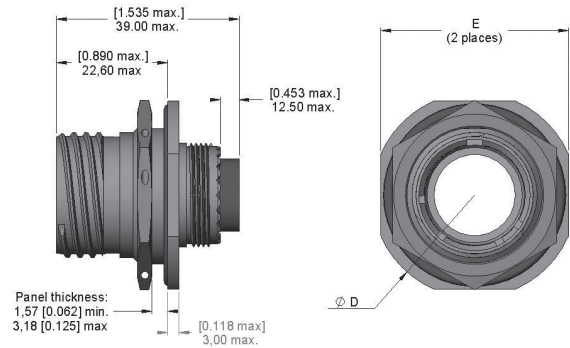
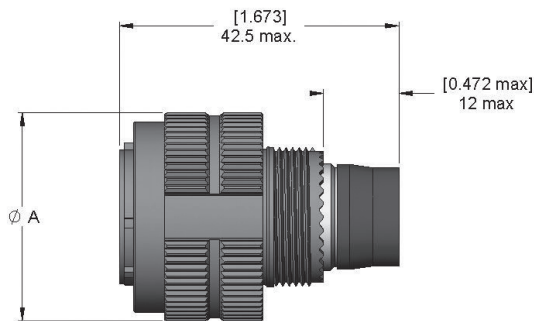


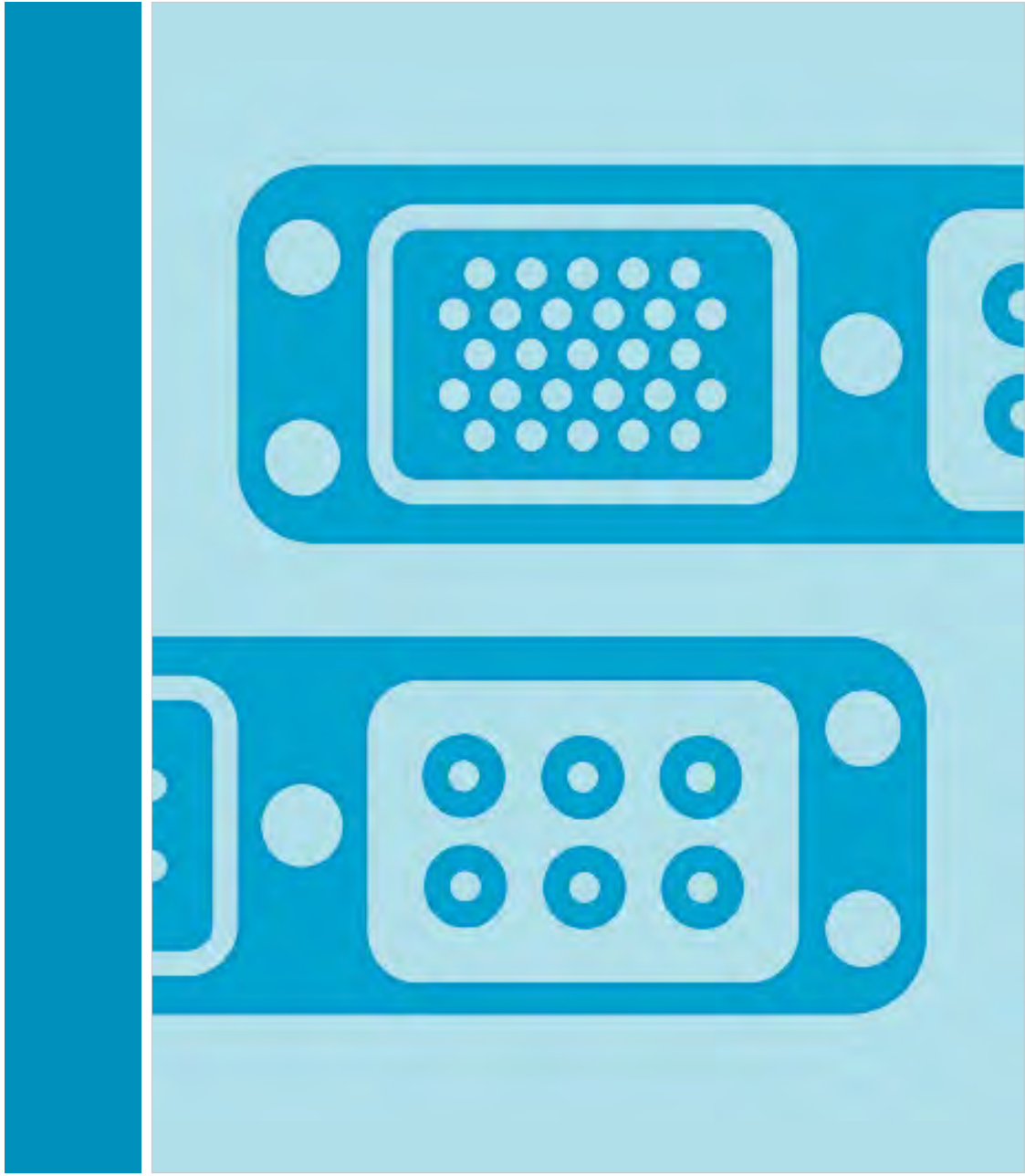
Fig. 2 Jam nut receptacles

| Shell size | Figure 1 | | | | Figure 2 | | |
|------------|------------------|-----------------|------------------|-----------------|------------------|-----------------------|------------------|
| | A max. mm (inch) | | B max. mm (inch) | | C max. mm (inch) | Dia. D max. mm (inch) | E max. mm (inch) |
| | Metallic shell | Composite shell | Metallic shell | Composite shell | | | |
| 11 | | | | | 26.50 (1.043) | 35.20 (1.386) | 32.20 (1.268) |
| 13 | | | | | 28.90 (1.137) | 38.40 (1.512) | 35.30 (1.390) |
| 15 | 20.83 (0.820) | 19.69 (0.775) | 23.15 (0.911) | 23.19 (0.913) | 31.30 (1.232) | 41.60 (1.638) | 38.50 (1.516) |
| 17 | | | | | 33.70 (1.323) | 44.80 (1.764) | 41.70 (1.642) |
| 19 | | | | | 36.90 (1.449) | 49.50 (1.949) | 46.40 (1.827) |
| 21 | | | | | 40.10 (1.575) | 52.70 (2.075) | 49.60 (1.953) |
| 23 | 20.07 (0.790) | 18.92 (0.745) | 23.14 (0.911) | 23.14 (0.911) | 43.30 (1.701) | 55.90 (2.200) | 52.80 (2.079) |
| 25 | | | | | 46.40 (1.823) | 59.00 (2.323) | 56.00 (2.205) |

PLUGS



| Shell size | Dia. A max. mm (inch) |
|------------|-----------------------|
| 11 | 25.00 (0.984) |
| 13 | 29.40 (1.157) |
| 15 | 32.50 (1.280) |
| 17 | 35.70 (1.405) |
| 19 | 38.50 (1.516) |
| 21 | 41.70 (1.642) |
| 23 | 44.90 (1.768) |
| 25 | 48.00 (1.890) |



Multipin Connector Series

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