



MULTIPIN  
CONNECTORS

# MULTIPIN CONNECTORS

*Full Line Catalog*

## **SIMPLIFICATION** *is our INNOVATION*

*Radiall is a community of dedicated individuals with a shared purpose: simplify life for all those who innovate. Our manufacturing expertise allows us to deliver lighter and smaller products that simplify implementation and drive performance. We recognize that simplification starts with us, but proves its true benefits when it reaches you.*



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AEROSPACE



DEFENSE



TELECOM



INDUSTRIAL & RAIL



SPACE



TEST & MEASUREMENT



MEDICAL

# OUR COMPANY

*Since 1952, we have been enabling the future through collaboration with our customers. The results are a range of innovative and award-winning products that customers trust for unrivaled repeatability and performance.*

We are a global company with facilities around the world that specializes in manufacturing the highest-quality interconnect components to support the most demanding applications. At Radiall, you can rely on us to be the industry's global market leader.

## INDUSTRIES WE SERVE

For over 60 years, we have fostered relationships grounded in trust by sharing our extensive market knowledge, technological expertise and experience in each and every interaction. Through an understanding of our customers' unique challenges, we are able to design simple solutions specific to their application and requirements.

Visit [www.radiall.com](http://www.radiall.com) for more information.

## OUR VALUES

Guiding Our Actions  
Every Day



### GROW TOGETHER

*With Our Teams and  
the World Around Us*



### BE GENUINE

*To Foster Mutual  
Trust and Grow*



### MAKE IT SIMPLE

*To Accelerate Innovation*



### DARE TO BE AUDACIOUS

*To Make a Difference*



## AWARDS & CERTIFICATIONS

Being recognized for our product performance, innovation and timely fulfillment is a testament to our employees' commitment to our customers. We are a world market leader in reliable, repeatable performance and take great pride in providing award-winning innovation and vendor support.

Our leadership is focused on long-term success and developing key technologies that simplify our customers' lives.

We're committed to our people, the environment and to the highest quality standards including ISO 9001, ISO 14001 and AS9100 certifications. We are compliant with the EU Restriction of Hazardous Substances (RoHS) as well as the Registration, Evaluation, Authorization and Restrictions of Chemicals (REACH) systems.

*Visit our website to view RoHS and REACH compliance information for specific Radiall part numbers.*



Connecticut

Obregón



## IN-HOUSE TECHNOLOGIES

- High-Precision Machining
- Stamping
- Plating
- Molding
- Polishing
- Laser, Ultrasonic, Vapor, Soldering
- Etching on Si
- Thick Film on AlN
- Testing and Simulation



Château-Renault



Shanghai



L'Isle-d'Abeau



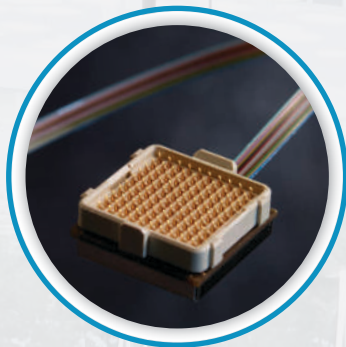
Centr'Alp

# GLOBAL PRESENCE

*Recognizing that relationships are rooted in trust, we strive to earn our customers' confidence by demonstrating our market knowledge, technological expertise and experience in each and every interaction.*

● SALES OFFICES   ● INDUSTRIAL PLANTS

# COMPREHENSIVE PORTFOLIO



### **Active Optics**

Our high-performance, optical interconnection brand, D-Lightsys®, provides optical transceiver and electronic solutions suitable for harsh environments.



### **Antennas**

With a military and industrial focus, we have solutions for radio tactical communications, vehicles, positioning, LMR/PMR and telemetry applications.



### **Microwave Components**

Our range covers a wide frequency spectrum from DC to 50 GHz, and includes terminations, attenuators, couplers, power dividers, filters and other specialized components.



### **Optical Connectors**

Designed for demanding applications where reliability and high performance are required, our cost-effective optical connectors serve telecom, industrial, aerospace and defense markets.



### **Outdoor Connectors**

Designed for outdoor conditions, our range includes high-power RF coaxial connectors, linking antennas and radio units, as well as innovative multi-signal I/O solutions for optical, Ethernet, power or coaxial links between radio and network.



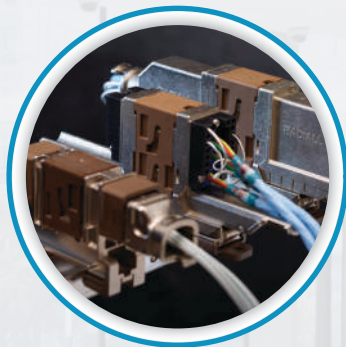
### **RF & Microwave Switches**

The patented design of our unique, modular actuator and transmission links guarantees operation up to 10 million cycles with superior repeatability.



At Radiall, we provide a comprehensive portfolio of products that meet the application requirements of the key industries we serve. By listening to our customers, we continuously develop new solutions and update our extensive range of products.

With over sixty years of experience and an understanding of the ever-changing business and our customers' technical requirements, we deliver the optimal and most cost-effective, end-to-end interconnect solutions available today.



#### ***Multipin Aerospace Connectors***

For more than 40 years, commercial airframes have trusted our range of rack and panel connectors and modular solutions. Our new miniature connector series combines high performance and reduced weight to meet civil and military aerospace industry demands.



#### ***Multipin Industrial Connectors***

Our Van-System brand designs and produces a range of robust circular electrical connectors suitable for harsh environments, such as railways, machine tools, and plant engineering equipment.



#### ***Optical Cable Assemblies***

Our extensive product range and worldwide presence supports customers with standard configurations as well as optimized solutions based on customer requirements.



#### ***RF Cable Assemblies***

Low-loss and high-frequency characterize our extensive range of cable assemblies, including flexible, semi-rigid and hand-formable solutions with a broad combination of cables and connectors.



#### ***RF Coaxial Connectors***

We offer the widest range of RF coaxial connectors in the industry; 55 product series are available, including AEP and Mil QPL connectors.



#### ***Space Qualified Components***

Known for high quality as well as reliability and performance, our product offering includes a wide range of coaxial connectors, cable assemblies, microwave components and switches with a frequency range up to K<sub>a</sub> band.



## SHIPPING INFORMATION

Shipping lead times may vary depending on the location and time zone in which products are stocked or manufactured.

Radiall offers five types of standard packaging, which dictate the first level product container. All of our packages are identified with the Radiall name, part number, lot number and quantity.

# SHIPPING & PACKAGING

*Radiall has various size boxes for optimum packaging and protection.*

- Eco-friendly labeling tape makes it easy to identify Radiall goods. Printing is minimized to reduce processing and 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.



## TAPE & REEL

Available in 100, 500, 1,800, 3,000 or in custom quantities, products are arranged in an anti-static polyester blister tape covered with a ribbon defender and then rolled up on a polyester reel. This packaging is CEI 286-3 compliant and dedicated to surface mount components. It is compatible with all pick and place automatic machines.



### BLISTER TRAY

Custom, stackable trays minimize damage when shipping fragile or large connectors. These trays protect against shock and even have an anti-dust lid/wrapping.



### BULK

Bulk packaging is available in multiple bags or a box containing 10, 20, 25, 50 or 100 of each component part in separate bags.



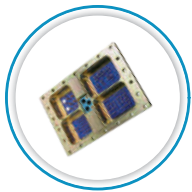
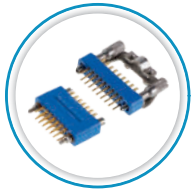
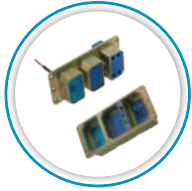
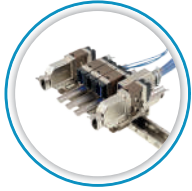
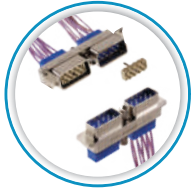
### BLISTER BULK PACK

This packaging is suitable for multipart products and small connectors. Radiall offers four types of blister bulk pack depending on the configuration of the product and number of pieces (10, 20, 50 or 100). It is easy to open and ideal for in-field assembly.

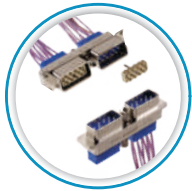


### UNIT PACKAGING

All connectors can be ordered in unit bags. The connector and all of the component parts come in individual tear-proof polyethylene bags. Unit packaging must be specified when ordering: add "W" at the end of the part number (except for adapters and specific products).



ON-BOARD MULTIPIN APPLICATIONS		
	CIVIL AEROSPACE	MILITARY AEROSPACE
EPX® - EN4644	<ul style="list-style-type: none"> <li>• Airframe production break</li> <li>• Avionics</li> <li>• Aerospace general purpose</li> <li>• IFE</li> <li>• Power &amp; flight management</li> <li>• Radar</li> </ul>	<ul style="list-style-type: none"> <li>• Power management</li> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>
HDQX	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Aerospace general purpose</li> <li>• IFE</li> <li>• Flight management</li> <li>• Radar</li> </ul>	
NSX - ARINC 600	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Aerospace general purpose</li> <li>• IFE</li> <li>• Flight management</li> </ul>	
QM	<ul style="list-style-type: none"> <li>• Airframe production break</li> <li>• Aerospace general purpose</li> <li>• IFE</li> </ul>	
DSX - MIL-C-81659 ARINC 404	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Displays</li> <li>• Aerospace general purpose</li> <li>• IFE</li> <li>• Flight management</li> </ul>	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Displays</li> <li>• Flight management</li> </ul>
MM MB	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>
RTX - MIL-STD-1553	<ul style="list-style-type: none"> <li>• Radar</li> <li>• Aerospace general purpose</li> </ul>	<ul style="list-style-type: none"> <li>• Radar</li> <li>• Weapons systems</li> </ul>
MPX - MIL-C-83527		<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> </ul>



ON-GROUND MULTIPIN APPLICATIONS			
	RADARS	INDUSTRIAL	TEST EQUIPMENT
EPX® - EN4644	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>		
HDQX	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>		
B	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>	
MCSR	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>		
MMC	<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>		<ul style="list-style-type: none"> <li>• Avionics</li> <li>• Flight management</li> <li>• Radar</li> <li>• Weapons systems</li> </ul>





# EPX<sup>®</sup> SERIES

EN4644





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## Introduction

## INTRODUCTION

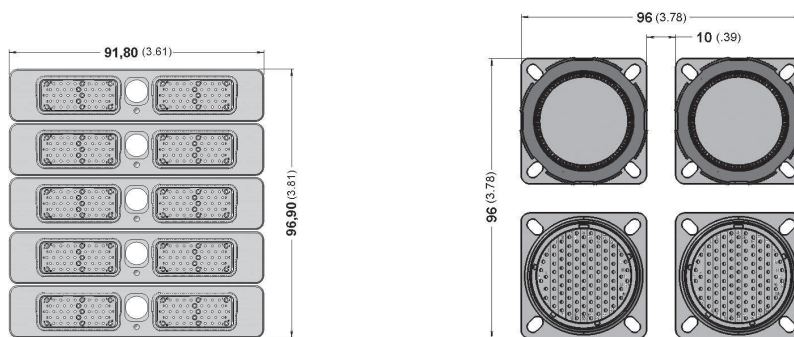
Radiall is recognized in the aerospace and defense industries for offering one of the broadest innovative product portfolios for connector interconnect solutions. The benefit of our experience with ARINC connectors permits Radiall to provide customers with a strong and global solution.

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.

EPX® 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:

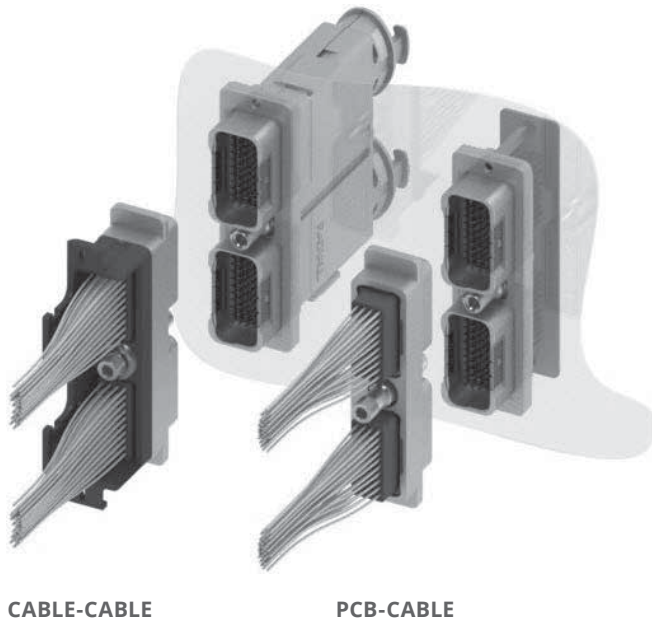
- Inserts can be wired in the workshop and later installed in the shells
- A common panel cut-out simplifies the connector installation
- Inserts can be easily installed and removed from the shell
- Inserts and shells are keyed to prevent mis-mating
- Standard Mil spec tools for contact crimping and 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® is a **versatile solution** available in two different versions:

- Aluminium
- Composite



CABLE-CABLE

PCB-CABLE

## DISCONNECT APPLICATIONS

*Specially designed for panel integration on EWIS applications, EPX® disconnect connectors cover cable-to-cable and PCB-to-cable links in major commercial and business jet aircrafts.*

The connector can be easily identified by the locking device located directly on the connector (quarter turn device for A1 and B1 and central screws for EPXB2). This disconnect solution offers secure mating while answering OEM's most stringent requirements, and provides:

- Modularity with three shell sizes: EPXA1, EPXB1 and EPXB2 - available as lightweight shells and compatible with several options such as ground block functionality. EPX® connectors also feature a large variety of inserts and a unique range of contacts covering any technology. EPX® connectors answer all connecting needs with the use of a limited number of components.
- Space savings with the combination of a slim shell design and high density inserts. In addition, EPX® disconnect stackable shells do not require additional space to lock and unlock the connectors.
- Time savings and cost effectiveness with modular parts that enable pre-wiring. Connectors are easy to assemble as the receptacle can be pre-installed. Inserts will be wired in the shop and plugged later, which saves integration time.



EPXA1



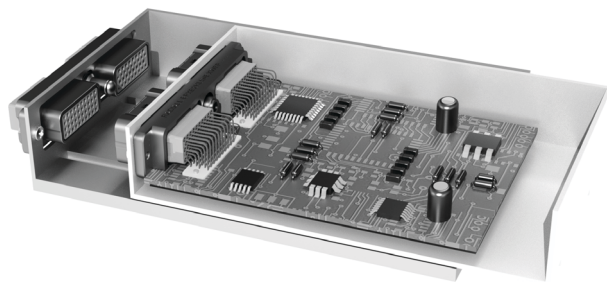
EPXB1



EPXB2

## RACK & PANEL APPLICATIONS

*In response to the need of system miniaturization and new equipment design, Radiall offers EPX® connector solutions for Line Replaceable Unit (LRU) and Line Replaceable Module (LRM). Discover more about these blind mate connectors:*

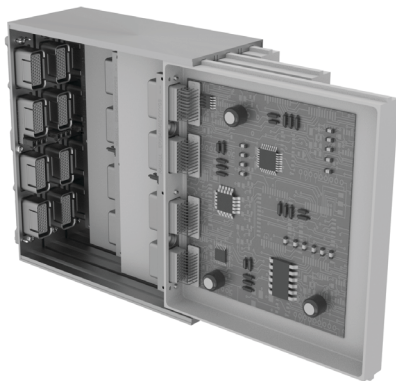


**EPXB2 FOR LRU**

### EPXB2 FOR LRU

Largely used in distributed architecture, small Line Replaceable Units in an aircraft need compact, lightweight and cost-effective connectors.

EPXB2 connectors equipped with centering guide will combine high density, low efforts and lightweight features. Discover the whole range of EPXB inserts offering from signal to power or quadrax contacts (available in straight or right angle PC tails and crimp contacts).



**EPX RACK & PANEL FOR LRM**

### EPX RACK & PANEL FOR LRM

Today, equipment manufacturers look for more cost-effective and easy to maintain solutions such as Line Replaceable Module (LRM). As a result, Radiall has developed a new generation of Rack & Panel connectors. EPX® Rack & Panel connectors feature a modular, lightweight and high density shell that can be used on standalone PCB architecture.

EPX® Rack & Panel connectors are the perfect solution when equipment needs to combine compactness, weight savings and very high density. They offer:

- A modular range: From size 1 to size 4 using the complete range of EPX® inserts.
- Low mating force contacts from EPX® range that can reach very high density.
- A comprehensive range of contacts: Right angle or straight PC tails for signal, coax, quadrax, or power contacts.

## DISCONNECT CONNECTORS

### ELECTRICAL CHARACTERISTICS

EMI Shielding Effectiveness EN2591-213

FREQUENCY (MHz)	LEAKAGE ATTENUATION (dB)
100	65
200 or 300	63
400	62
500 and 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 4 mV according to SAE AS 81714 (MIL-T-81714)
- **Lightning Strike:**
  - 5 kA - 1,600 V for EPX® connectors in aluminium version
  - 3 kA - 1,600 V for EPX® connectors in composite version

### MECHANICAL CHARACTERISTICS

#### MATING/UNMATING

SHELL TYPE	MATERIAL	MATING/UNMATING
EPXA1/EPXB1/EPXB2	Aluminium	100 Cycles
EPXB1/EPXB2	Composite	100 Cycles

- EPXB2 mating torque: 1.2N.m +/- 0.1

#### VARIATION & SHOCK

SHELL TYPE	MATERIAL	VIBRATION <i>For 8 hrs on Each of the 3 Axis/Interruption &lt; 1 µs EN2591-403 EIA 364-28</i>	SHOCK <i>3 Shocks on Each Axis EN2591-402 EIA 364-27</i>
EPXA1 / EPXB1	Aluminium	Acceleration 27.8 g (Test Condition 6 Letter G)	Shock Amplitude 50 g/Duration 11 ms
EPXB1 / EPXB2	Composite		100 Shock Amplitude 300 g/Duration 3 ms
EPXB2	Aluminium		
Disconnect EPX® with Quadrx Contacts	-	Acceleration 16.9 g (Test Condition 5 Letter E)	100 Shock Amplitude 50 g/Duration 11 ms

### ENVIRONMENTAL CHARACTERISTICS

- **Temperature Range:** according to EIA364-32 and EN2591-305
  - For EPXB2 aluminium, EPXB1 and EPXA1 shells: -65 °C/+175 °C (-85 °F/+347 °F)
  - For EPXB2 composite shell: -65 °C/+125 °C (-85 °F/+257 °F)
- **Temperature Life:** 1,000 hours at maximum temperature
- **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:** EN2591-314 EIA 364-03:
  - EPXB insert: 3 cycles at 50,000 ft
  - EPXB Bulkhead class insert: 3 cycles at 55,000 ft
- **Air Leakage for EPXB2 Bulkhead Receptacle:** Level from EN3645; test according EN2591-312 method B:
  - $4.4 \times 10^{-3} \text{ cm}^3/\text{s}$  (=  $16 \times 10^{-6} \text{ m}^3/\text{h}$ )

EPX® Series

## RACK & PANEL CONNECTORS

### ELECTRICAL CHARACTERISTICS

EMI Shielding Effectiveness EN2591-213

FREQUENCY (MHz)	LEAKAGE ATTENUATION (dB)
100	65
200 and 300	63
400	62
500 and 600	60

### OTHER CHARACTERISTICS

- **Shell-to-Shell Conductivity:** < 2.5 mΩ according to EN2591-205
- **Lightning Strike:** 5 kA - 1,600 V

### MECHANICAL CHARACTERISTICS

#### MATING/UNMATING

SHELL TYPE	MATERIAL	MATING/UNMATING
EPXB1/EPXB2/EPXB3/EPXB4	Aluminium	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.

#### VARIATION & SHOCK

SHELL TYPE	MATERIAL	VIBRATION <i>For 8 hrs on Each of the 3 Axis/Interruption &lt; 1 μs EN2591-403 EIA 364-28</i>	SHOCK <i>3 Shocks on Each Axis EN2591-402 EIA 364-27</i>
EPXB1/EPXB2/EPXB3/EPXB4	Aluminium	Acceleration 16.9 g (Test Condition 5 Letter E)	Shock Amplitude 50 g/Duration 11 ms

### ENVIRONMENTAL CHARACTERISTICS

- **Temperature Range:** -65 °C/+125 °C (-85 °F/+257 °F)
- **Temperature Life:** 1,000 hours at maximum temperature
- **Salt Spray:** 96 hours 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 ft EN2591-314 EIA 364-03

EPX® Series

## INSERTS & CONTACT

### 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
5	AWG8	46 <sup>[1]</sup>
	AWG12	23
	AWG16	13

#### GROUND BLOCK CONTACT

617221050

	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 INSERT VOLTAGE (VRMS)
Sea Level	1,500	1,500
50,000 feet	800	600
70,000 feet	800	300

#### INSULATION RESISTANCE

EN2591-206 EIA 364-21

TEMPERATURE	INSULATION RESISTANCE
Ambient Temperature	> 5,000 mΩ
175 °C (+347 °F)	> 200 mΩ

#### Notes

1. Size 5 contacts are not part of SAE AS 39029 (MIL-C-39029, type A).



EPX® Series

## INSERTS & CONTACT

### RETENTION CHARACTERISTICS

Retention forces indicated below are valid for terminated contacts (as per EN2591-409 and EIA364-29).

CONTACT SIZE	RETENTION FORCE	MAX DISPLACEMENT
Ground Block	88 N (20 lbs)	0.30 mm (0.012 in.)
22	53.4 N (12 lbs)	0.38 mm (0.015 in.)
20	89 N (20 lbs)	0.38 mm (0.015 in.)
16	111.2 N (25 lbs)	0.38 mm (0.015 in.)
12	133.45 N (30 lbs)	0.38 mm (0.015 in.)
8	133.45 N (30 lbs)	0.38 mm (0.015 in.)
5	133.45 N (30 lbs)	0.38 mm (0.015 in.)

- **Insert Retention:** 400 N (90 lbs) (EN2591-410 EIA 364-35)
- **Maximum Insert Displacement in the Shell Cavity:** 0.30 mm (0.012 in.)









## Inserts

## INSERT SELECTION TABLE

Insert name should be used when ordering EPX® insert.

Insert code should be used when ordering EPX® assembly kit

Inserts available in Bulkhead class are identified with the following icon: 

SERIES	INSERT NAME	INSERT CODE	CONTACT SIZE & TYPE <sup>(1)</sup>										TOTAL CONTACTS	
			22*	20*	15 OR 16*	16	16	12*	8	8	5	5		
			SIGNAL	POWER	POWER OR COAX	LUXCIS® FIBER OPTIC	POWER IN FIBER OPTIC CAVITY	POWER OR COAX	POWER	QUADRAX OR TWINAX	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	

## Notes

1. Only contacts marked with an asterisk (\*) are included with EPX® insert kit. All other contacts must be ordered separately (i.e. coax, twinax, quadrax and fiber optic contacts).

Inserts

## HOW TO ORDER EPX® INSERTS

Only crimp contacts can be delivered with insert.

EPX

**SERIES PREFIX** \_\_\_\_\_

**INSERT SIZE** <sup>[1]</sup> \_\_\_\_\_

**A:** Insert for EPXA

**B:** Insert for EPXB1, EPXB2, EPXB3 or EPXB4

**CLASS** <sup>[2]</sup> \_\_\_\_\_

**E:** Environmental

**N:** Non-environmental (no rear grommet, no interfacial seal)

**H:** Non-environmental with a rear grommet, available for pin insert only (recommended for crimp contacts)

**T:** Non-environmental with an interfacial seal, available for pin insert only (recommended for PC tail contacts)

**B:** Bulkhead insert with interfacial seal and a Bulkhead rear grommet, available for pin insert only

**INSERT NAME** \_\_\_\_\_

Refer to table on page 1-10 for insert arrangements

**INSERT TYPE** \_\_\_\_\_

**P:** Pin

**S:** Socket

**INSERT KEYING** <sup>[3]</sup> \_\_\_\_\_

**A:** Keying A

**B:** Keying B

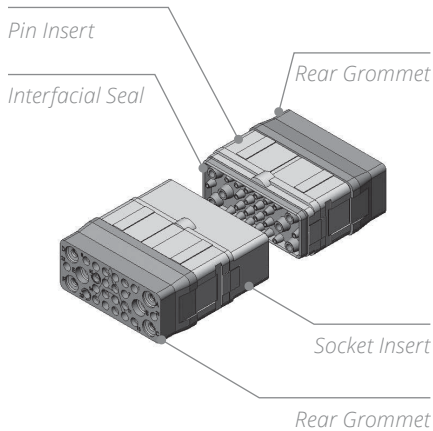
**CONTACT** \_\_\_\_\_

**Without Code:** Insert delivered without contacts

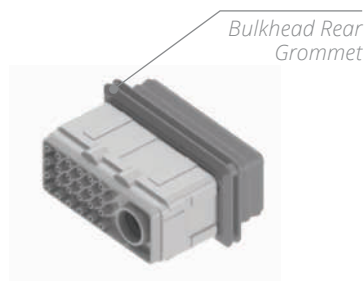
**S:** Signal and power contacts are delivered with inserts but are uninstalled (refer to page 1-10)

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

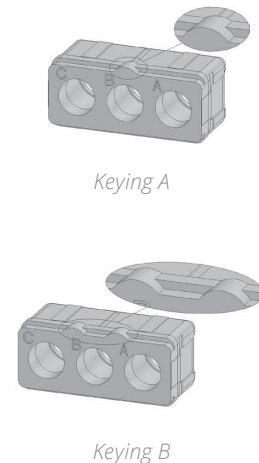
### ENVIRONMENTAL INSERT



### BULKHEAD INSERT



### INSERT KEYING DETAIL



**Notes**

1. Inserts are designed for rear-release and rear-removable contacts.


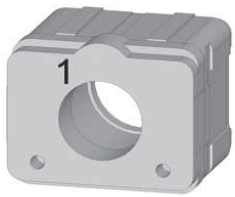
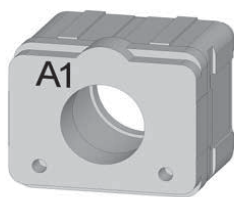
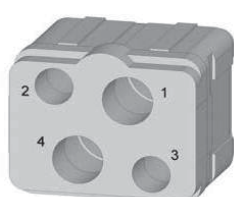
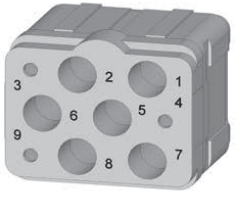
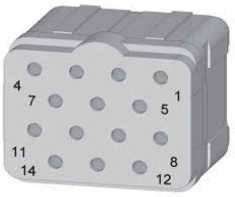
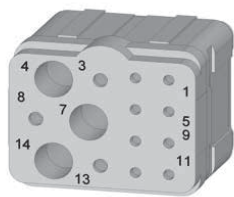
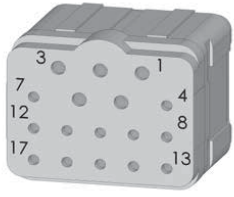
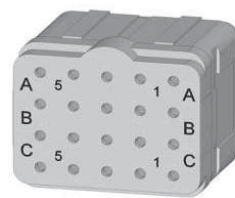
2. Pin and socket inserts can be installed in either plug or receptacle shell. F6, F12C and 12F6 are only available in E class. Insert 00 is only available in N class.

3. For EPXA1, EPXB1, EPXB3 and EPXB4 shells, use only insert keyed A. For EPXB2 shells, use one insert keyed A and one insert keyed B.

Inserts

**EPX® INSERT ARRANGEMENTS**

**EPXA INSERT ARRANGEMENTS**

			
<b>Insert Name 00</b> <b>Insert Code 0</b> Blank Insert <sup>[1]</sup>	<b>Insert Name 1C1</b> <b>Insert Code A</b> 1 × size 5 Coax Contacts	<b>Insert Name 1P1</b> <b>Insert Code B</b> 1 × Size 5 Power Contacts	<b>Insert Name 04</b> <b>Insert Code C</b> 2 × Size 15 or 16 Contacts 2 × Size 12 Contacts
			
<b>Insert Name 09</b> <b>Insert Code D</b> 3 × Size 20 Contacts 6 × Size 15 or 16 Contacts	<b>Insert Name 14</b> <b>Insert Code E</b> 14 × Size 20 Contacts	<b>Insert Name 14M</b> <b>Insert Code F</b> 8 × Size 22 Contacts 3 × Size 20 Contacts 3 × Size 15 or 16 Contacts	<b>Insert Name 17</b> <b>Insert Code G</b> 12 × Size 22 Contacts 5 × Size 20 Contacts
			
<b>Insert Name 20</b> <b>Insert Code H</b> 20 × Size 22 Contacts			

**WEIGHTS**

Average weight per class and type for EPXA inserts without contacts.

INSERT CLASS	INSERT TYPE	
	PIN	SOCKET
E	4.10 g (0.14 oz)	5.30 g (0.19 oz)
N	2.60 g (0.09 oz)	4.00 g (0.14 oz)
H	3.90 g (0.14 oz)	N/A
T	2.80 g (0.10 oz)	N/A

**Notes**

1. P/N for blank insert is EPXAN00.

Inserts

**EPX® INSERT ARRANGEMENTS**

**EPXB INSERT ARRANGEMENTS**

Full size inserts arrangements are compliant with EN4644.

			
<b>Insert Name 00</b> <b>Insert Code 0</b> Blank Insert <sup>[1]</sup>	<b>Insert Name C3</b> <b>Insert Code A</b> 3 × size 5 Coax Contacts	<b>Insert Name P3</b> <b>Insert Code B</b> 3 × Size 5 Power Contacts	<b>Insert Name 3Q3</b> <b>Insert Code C</b> 3 × Size 8 Quadrax Contacts
			
<b>Insert Name 06</b> <b>Insert Code D</b> 6 × Size 12 Medium Power Contacts	<b>Insert Name 10Q2</b> <b>Insert Code E</b> 8 × Size 20 Contacts 2 × Size 8 Quadrax Contacts	<b>Insert Name 12F6</b> <b>Insert Code F</b> 6 × Size 16 Optical LuxCis® Termini 6 × Size 16 Special Electrical Contacts	<b>Insert Name F12C</b> <b>Insert Code G</b> 12 × Size 16 Optical LuxCis® Termini
			
<b>Insert Name 13C1</b> <b>Insert Code H</b> 6 × Size 20 Contacts 4 × Size 15 or 16 Contacts 2 × Size 12 Contacts 1 × Size 5 Coax Contacts	<b>Insert Name 13P1</b> <b>Insert Code J</b> 6 × Size 20 Contacts 4 × Size 15 or 16 Contacts 2 × Size 12 Contacts 1 × Size 5 Coax Contacts	<b>Insert Name 14</b> <b>Insert Code K</b> 14 × Size 15 or 16 Contacts	<b>Insert Name 17</b> <b>Insert Code L</b> 14 × Size 20 Contacts 3 × Size 12 Contacts
			
<b>Insert Name 20C1</b> <b>Insert Code M</b> 19 × Size 20 Contacts 1 × Size 5 Coax Contacts	<b>Insert Name 20P1</b> <b>Insert Code N</b> 19 × Size 20 Contacts 1 × Size 5 Coax Contacts	<b>Insert Name 22</b> <b>Insert Code P</b> 16 × Size 20 Contacts 6 × Size 15 or 16 Contacts	<b>Insert Name 22V</b> <b>Insert Code Q</b> 16 × Size 20 Contacts 6 × Size 16 Contacts

**Notes**

1. P/N for blank insert is EPXBN00.

Inserts

**EPX® INSERT ARRANGEMENTS**

**EPXB INSERT ARRANGEMENTS**

Full size inserts arrangements are compliant with EN4644.

			
<p><b>Insert Name 25P1</b> <b>Insert Code R</b> 24 × Size 22 Contacts 1 × Size 8 Power Contacts</p>	<p><b>Insert Name 25Q1</b> <b>Insert Code S</b> 24 × Size 22 Contacts 1 × Size 8 Quadrax Contacts</p>	<p><b>Insert Name 28</b> <b>Insert Code T</b> 22 × Size 22 Contacts 6 × Size 15 or 16 Contacts</p>	<p><b>Insert Name 30</b> <b>Insert Code U</b> 30 × Size 20 Contacts</p>
			
<p><b>Insert Name 34</b> <b>Insert Code W</b> 18 × Size 22 Contacts 16 × Size 20 Contacts</p>	<p><b>Insert Name 40</b> <b>Insert Code X</b> 40 × Size 22 Contacts</p>	<p><b>Insert Name 48</b> <b>Insert Code Y</b> 48 × Size 22 Contacts</p>	

**WEIGHTS**

Average weight per class and type for EPXB inserts without contacts.

INSERT CLASS	INSERT TYPE	
	PIN	SOCKET
E	7.90 g (0.28 oz)	10.00 g (0.35 oz)
N	5.20 g (0.18 oz)	7.60 g (0.27 oz)
H	7.70 g (0.27 oz)	N/A
T	5.50 g (0.19 oz)	N/A
B	8.50 g (0.30 oz)	N/A

## Contacts

## SIGNAL &amp; 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
- Ethernet links with Quadrax contacts
- High frequency with coax, twinax and triax contacts
- Optical links with LuxCis® contacts

## CONTACT SELECTION TABLE

CONTACT SIZE	WIRE SIZE	TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	CRIMPING TOOL	POSITIONER	SELECTION	INS/EXT TOOL	MATERIAL OF TOOL	
22	22	Pin	617200		282281 M22520/2-01	282970 M22520/2-23	4	282522 (M81969/14-01)	Plastic	
	24						3			
	26	Socket	617300							
20	20	Pin	617221		282281 M22520/2-01	282971 M22520/2-08	7	282522001 (M81969/39-01)	Plastic	
	22						6			
	24	Socket	617320							5
16	16	Pin	617240		282291 M22520/1-01	282972 M22520/1-02	6	282515 (M81969/14-03)	Plastic	
			18	5						
		20	Socket	617340						4
	For Ground Block	20	Pin	617221050		282281 M225520/2-01	282581015 M22520/2-11	7	282886 M81969/1-02	Metal
			Socket	N/A						
	For Optical/Electrical Cavity	16	Pin	617235003 <sup>[1]</sup>		282291 M22520/1-01	282581013	6	282515 (M81969/14-03)	Plastic
		18						5		
		20						4		
	12	12	Pin	617250		282291 M22520/1-01	282972 M22520/1-02	8	282549004 (M81969/14-04)	Plastic
14		7								
16		Socket	617350					6		
8	8	Pin	617291007 for AWG8	617291002 <sup>[2&amp;3]</sup>	R282600000 M22520/ 23-01 + Die set R282650000 M22520/23-02	282588	N/A	282549001	Metal	
	10	Socket	617391008 for AWG8	617391002 <sup>[2&amp;3]</sup>						
5	8	Pin	617280003 for Size 8, 617280004 for Size 10	617280 <sup>[2&amp;4]</sup>	R282600000 M22520/ 23-01 + Die set R282650000 M22520/23-02	282557020	N/A	282946 (M81969/28-01)	Metal	
		Socket	617390003 for Size 8, 617390004 for Size 10	617390 <sup>[2&amp;4]</sup>						282557021
	12	Pin	617260002	617260001 <sup>[2&amp;4]</sup>	282613	282586003	6			
		16	Socket	617370005			617370001 <sup>[2&amp;4]</sup>	282586005	4	

## 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).

Contacts

**OVERSIZED & REDUCED CRIMP BARREL CONTACTS**

CONTACT SIZE		WIRE SIZE	TYPE	PART NUMBER FULL PLATED	CRIMPING TOOL	POSITIONER	SELECTION	INS/EXT TOOL	MATERIAL OF TOOL
22	Reduced Crimp Barrel	28	Pin	617201	282281 M22520/2-01	282970 M22520/2-23	5	282522 (M81969/14-01)	Plastic
		30	Socket	617301			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	282281 M22520/2-01	282971 M22520/2-08		
24			Socket	617324001	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	282291 M22520/1-01	282972 M22520/1-02	5	282515 (M81969/14-03)	Plastic
		22	Socket	617341			5		
		24					4		
	Reduced Crimp Barrel for Optical Electrical Cavity	20	Pin	617235002 <sup>[1]</sup>	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. Electrical contacts for optical inserts are always pin contacts (hermaphrodite).



Contacts

**COAXIAL CRIMP CONTACTS**

CONTACT SIZE	CABLE TYPE	TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	INS/EXT TOOL	MATERIAL OF TOOL
15-16	RG188 FILECAF1709/6 F1709/8 RG174-RG179-RG316 ASNE0639XY 75 Ohms	Pin	617130		282512 (M81969/14-03)	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- RG178DS NEXAN 10036442 75 Ohms	Pin	617103001	617103		
		Socket	617003001	617003		
	RG178-RG196	Pin	617104001	617104		
		Socket	617004001	617004		
	RG180 PAN6422XZ ANSE063WGH 96 Ohms	Pin	617105001	617105		
		Socket	617005001	617005		

Contacts

**TWINAX & TRIAX CRIMP CONTACTS**

CONTACT SIZE	CABLE TYPE	TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	INS/EXT TOOL	MATERIAL OF TOOL
12 Triax	ECS0700	Pin	617190010		282549004 (M81969/14-04)	Plastic
		Socket	617090010			
	M17/176-00002	Pin	617190012			
		Socket	617090012			
8 Triax	TENSOLITE 24463/9PO25X-2 100 Ohms	Pin	617165021	617165020	282549001	Metal
		Socket	617065021	617065020		
	WHITMOR W2675-1575	Pin	617165	617165001		
		Socket	617065	617065001		
8 Twinax	ABS0386WF24 & TYCO 1726A1424A	Pin	617165011	620165010	282549001	Metal
		Socket	617065011	620065010		
5 Triax	PAN6421ZA002 77 Ohms M17/176-00002 EN3375-003 Raychem 106113 77 Ohms	Pin	617150001	617150	282946 (M81969/28-01)	Metal
		Socket	617050001	617050		
	TENSOLITE 24473/03159X 124 Ohms	Pin	617152001	617152		
		Socket	617052001	617052		

## Contacts

## QUADRAX &amp; BMA CRIMP CONTACTS

## QUADRAX CONTACTS



The Quadrax contact offer is compliant with Arinc 600 and EN3155-072 and EN3155-073 standards.

## ENVIRONMENTAL QUADRAX

CONTACT SIZE	CABLE TYPE	TYPE	ENVIRONMENTAL PART NUMBER	EXTRACTION TOOL IN METAL
8	Ethernet Cable ABS0972 and ABS1503	Pin	617175011	282549001
		Socket	617075011	
	TENSOLITE NF24Q100	Pin	617175051	
		Socket	617075051	
	TENSOLITE NF26Q100/JSF Y18	Pin	617175053	
		Socket	617075053	
	TENSOLITE NF22Q100	Pin	617175041	
		Socket	617075041	

## NON-ENVIRONMENTAL QUADRAX

CONTACT SIZE	CABLE TYPE	TYPE	NON-ENVIRONMENTAL PART NUMBER	COMPATIBLE SEALING BOOT PART NUMBER	EXTRACTION TOOL IN METAL
8	Ethernet Cable ABS0972 and ABS1503	Pin	617175012	617939003	282549001
		Socket	620075010		
	TENSOLITE NF24Q100	Pin	617175052		
		Socket	620075050		
	TENSOLITE NF26Q100/JSF Y18	Pin	617175054	617939005	
		Socket	620075021		
	TENSOLITE NF22Q100	Pin	617175040	617939003	
		Socket	620075040		

## BMA CONTACTS



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

CONTACT SIZE	CABLE TYPE	CONNECTOR TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	FREQUENCY RANGE	MAX VSWR	INSERTION LOSS
8	SHF5 - SHF5M <sup>(1)</sup>	Pin	617171011	617171010	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)
	RG142	Pin	617171021	617171020	DC-12.4 GHz	1.35	0.11 dB at Max Frequency (12.4 GHz)
	SHF2.4M <sup>(1)</sup> /UT.085/ Harbour SS405/ Times Tflex405	Pin	617171031	617171030	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)
	SHF5 - SHF5M <sup>(1)</sup>	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 <sup>(1)</sup>	Socket	617071041	617071040	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)

## Notes

1. BMA contacts which can accommodate SHF cables require a termination by Radiall.

Contacts

### LUXCIS® FIBER OPTIC CONTACTS

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

#### OPTICAL PERFORMANCE

	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 & ENVIRONMENTAL CHARACTERISTICS

	STANDARD	PERFORMANCE
Thermal Cycling	SAE AS 13441 Method 1003.1	-55 °C/+125 °C (Cable Dependant)
Temperature Endurance	TIA/EIA 455-4	1,000 h at 125 °C (Cable Dependant)
Vibration	TIA/EIA 455-11	27 g
Shock	TIA/EIA 455-14	50 g, 11 ms
Durability	TIA/EIA 364-09	500 Cycles <sup>(1)</sup>
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

**F7250**

**LUXCIS® SERIES**

**FERRULE TYPE**

- 00:** PC ferrule for single-mode fiber
- 03:** PC ferrule for 50/125 or 62.5/125 µm multi-mode fiber
- 04:** PC ferrule for 100/40 µm multi-mode fiber
- 05:** PC ferrule for 200/230 µm multi-mode fiber
- 50:** APC ferrule for single-mode 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

The sealing plug F718 211 200 is specifically designed to fill the unused LuxCis® Arinc 801 cavities.



**Notes**

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

## Contacts

**SIGNAL PC TAIL CONTACTS***Selection Table for Straight PC Tail Contacts*

Contact termination designations are a combination of 2 letters:

- The first letter characterizes the contact plating  
R = Pure-tin (RoHS); Z = Tin lead; Y = Gold
- The second letter characterizes the length of the PC tail: A to D  
The exact lengths can be found on the assembly kit sections

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

## Contacts

**QUADRAX SIZE 8 PC TAIL CONTACTS***Selection Table for Straight PC Tail Contacts*

Contact termination designations are a combination of 2 letters:

- The first letter characterizes the contact plating  
R = Pure-tin (RoHS); Z = Tin lead; Y = Gold
- The second letter characterizes the length: A to D. The exact dimensions of the lengths can be found on the assembly kit sections




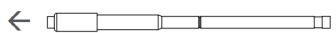



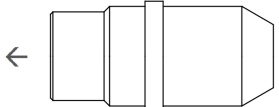



CONTACT TERMINATION	CONTACT TYPE	PART NUMBERS
RA	Pin	617177512
	Socket	617077512
YA	Pin	617177012
	Socket	617077012
ZA	Pin	617177712
	Socket	617077712
RB	Pin	617177501
	Socket	617077502
YB	Pin	617177001
	Socket	617077002
ZB	Pin	617177701
	Socket	617077702
RC	Pin	617177508
	Socket	617077508
YC	Pin	617177008
	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

Contacts






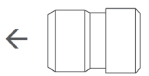

### FILLER PLUGS

Filler plugs are dedicated to non-environmental insert cavities. The arrows show the direction which you have to insert the plug.

SIZE	CONTACT CAVITY VERSION	INS/EXT	COLOR	PART NUMBER	DRAWING
22	For Pin & Socket	Rear/Rear	Black	620920	
20			White	610941	
16 For Electrical Cavity			Blue	620922	
16 For Optical Cavity			Green	F718211200	
12			Yellow	620923	
8	Pin	Rear/Rear	Nickel	619953	
	Socket			619950	
5	Pin	Rear/Rear	White	617930	
	Socket			617931	

### SEALING PLUGS

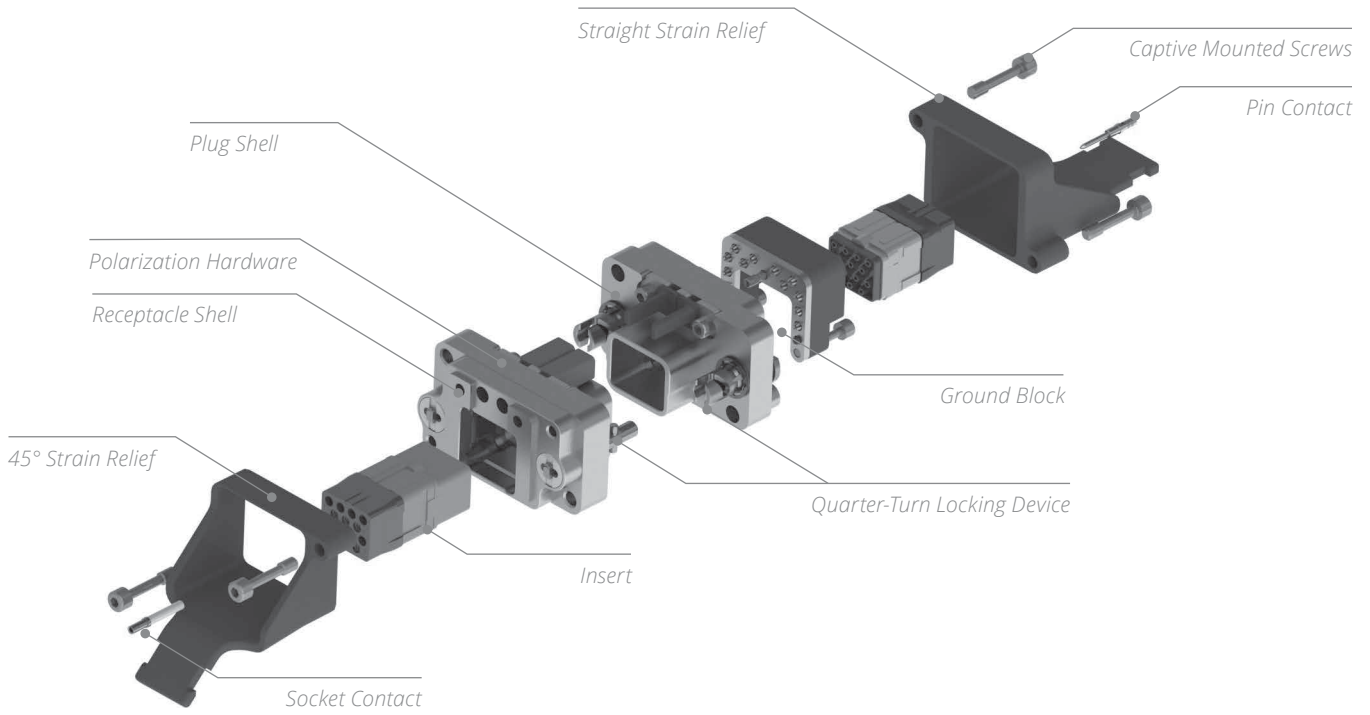
Sealing plugs are dedicated to environmental insert cavities.

SIZE	CONTACT CAVITY VERSION	INS/EXT	COLOR	PART NUMBER	DRAWING
22	For Pin & Socket	Rear/ Rear	Black	616910	
20			Red	616911	
16 For Electrical Cavity			Green	616912	
16 For Optical Cavity				F718211200	
12			Orange	616913	
8			Red	618915	
5				616914013	

Disconnect Application

### EPXA1 PRODUCT OVERVIEW

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

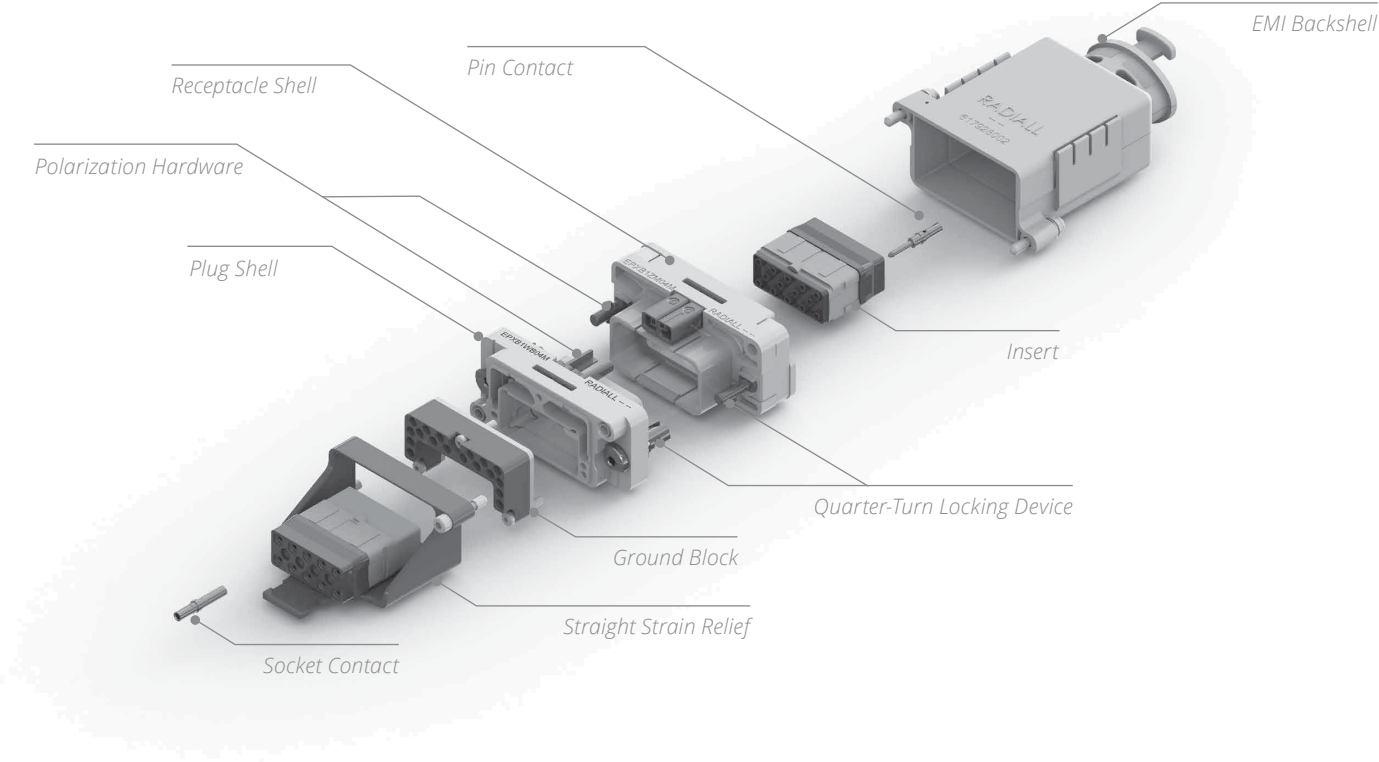




Disconnect Application

**EPXB1 PRODUCT OVERVIEW**

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



Disconnect Application

HOW TO ORDER EPXA1 & EPXB1 SHELL

EPX

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

SHELL MOUNTING OPTION <sup>[1]</sup> \_\_\_\_\_

- B: Plug without mounting holes
- M: Receptacle with two mounting holes, 6-32 UNC for rear panel <sup>[2]</sup>

LOCKING DEVICE \_\_\_\_\_

- 0: Quarter-turn fastener

POLARIZATION CODE <sup>[3]</sup> \_\_\_\_\_

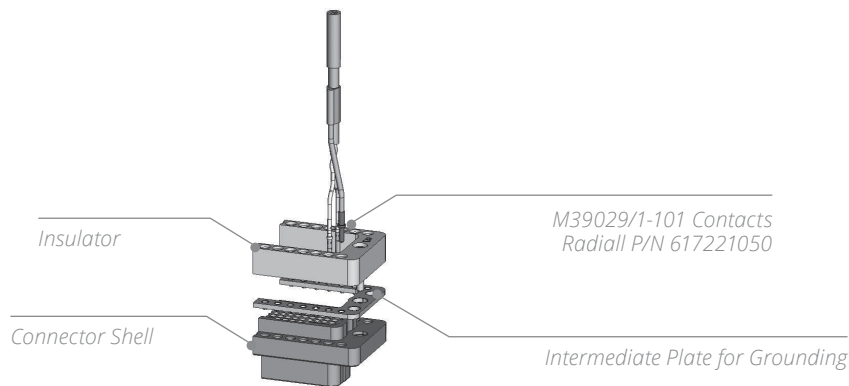
- 4: Shell delivered with polarizing hardware unassembled
- 5: Shell delivered with no polarizing hardware

SHELL CLASS \_\_\_\_\_

- M: Nickel-plated composite for EPXB1
- K: Nickel-plated aluminium for EPXB1 (mateable with version M composite shell)
- N: Nickel-plated aluminium for EPXA1

GROUND BLOCK

Radiall provides a unique patented feature by integrating a ground block directly on the shell. This option permits very short ground terminations.



Notes

1. Recommended locking torque: 1.6 Nm (14.16 in.-lb) for metallic shell and 1.1 Nm (9.73 in.-lb) max for composite shell.
2. Self-locking mounting holes are designed for rear panel mounting.
3. Please see page 1-28 on how to use the polarization device.

*Disconnect Application***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 and EPXB1 plug or receptacles.
- Crimp contacts can be delivered with a kit; check which contacts would be included on page 1-10.
- 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.

**SHELL SELECTION PART**

**EPX**

**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

**POLARIZATION CODE** \_\_\_\_\_

**4:** Shell delivered with polarizing hardware unassembled  
**5:** Shell delivered with no polarizing hardware

**SHELL CLASS** \_\_\_\_\_

**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 1-10 to select insert code

**CONTACTS TERMINATION** \_\_\_\_\_

**XS:** Socket insert without contacts <sup>[1]</sup>  
**XP:** Pin insert without contacts <sup>[1]</sup>  
**SS:** Socket insert with crimp contacts <sup>[1]</sup>  
**SP:** Pin insert with crimp contacts <sup>[1]</sup>

**YA:** Gold PC tail contacts length A <sup>[2]</sup>  
**ZA:** Tin-lead PC tail contacts length A <sup>[2]</sup>  
**RA:** Pure tin (RoHS) PC tail contacts length A <sup>[2]</sup>

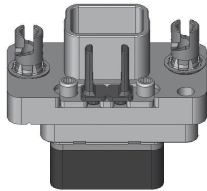
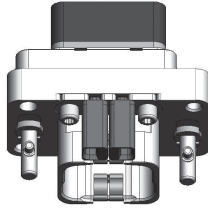
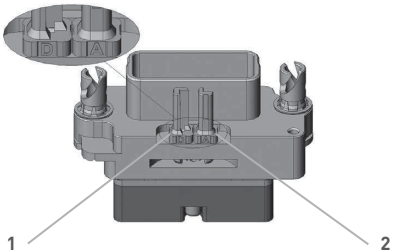
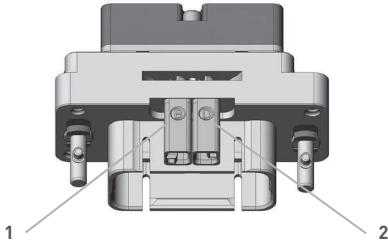
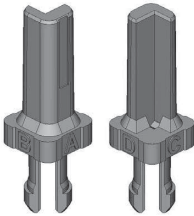
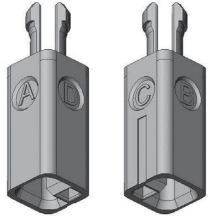
**Notes**

1. These contacts are delivered uninstalled
2. Refer to page 1-29 to select PC tail contacts for receptacle

Disconnect Application

**POLARIZATION CODE FOR EPXA1 & B1**

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

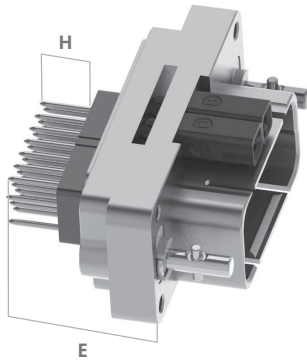
	PLUG	RECEPTACLE
EPXA1		
EPXB1		
Coding Device	 <p>View A and B      View C and D</p>	 <p>View A and D      View C and B</p>

There are 16 possible codings:

<b>KEY POSITION 1</b>	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
<b>KEY POSITION 2</b>	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D

*Disconnect Application***CONTACT TERMINATION FOR EPXB1**

Aluminium and composite shell versions.

**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) <sup>[1]</sup>	-	YA	ZA	RA
19.40 (0.763) <sup>[1]</sup>	-	YB	ZB	RB
21.25 (0.836) <sup>[1]</sup>	-	YC	ZC	RC
25.20 (0.992)	5.40 (0.212)	YD	ZD	RD

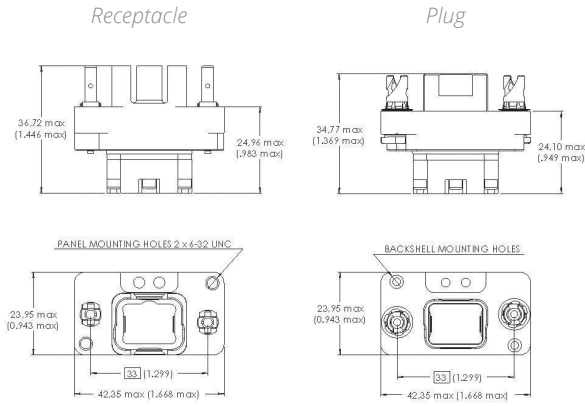
**Notes**

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

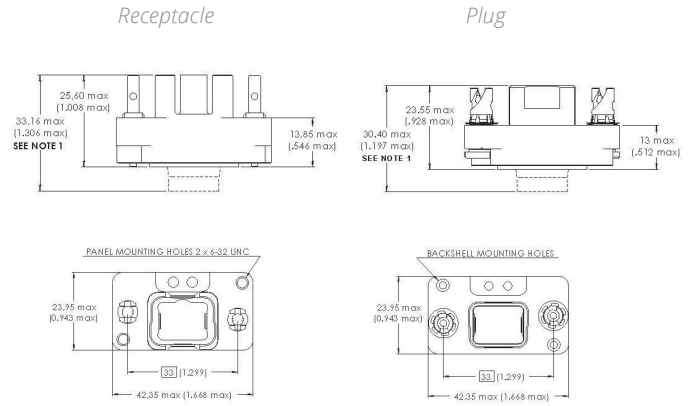
Disconnect Application

EPXA1 SHELL DIMENSIONS

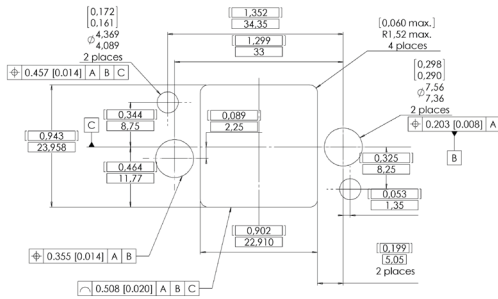
WITHOUT GROUND BLOCK



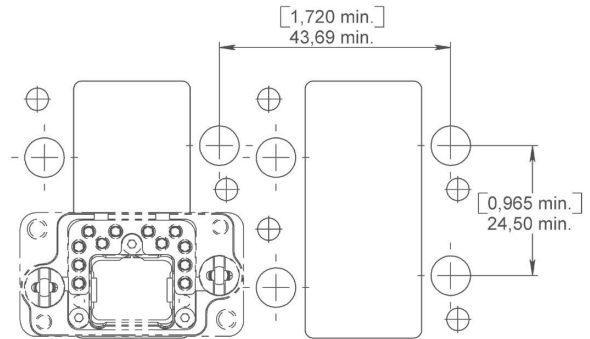
WITHOUT GROUND BLOCK



SINGLE PANEL CUT-OUT [2]



MULTIPLE PANEL CUT-OUT [2]



EPXA1 SHELL WEIGHTS

Weights include the shell with polarization hardware.

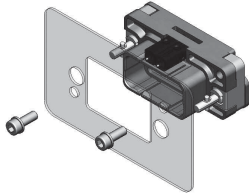
EPXA1	SHELL STYLE	WEIGHT
CLASS N	P	27.0 g (0.95 oz)
	R	33.0 g (1.16 oz)
	W	35.0 g (1.23 oz)
	Z	41.0 g (1.45 oz)

Notes

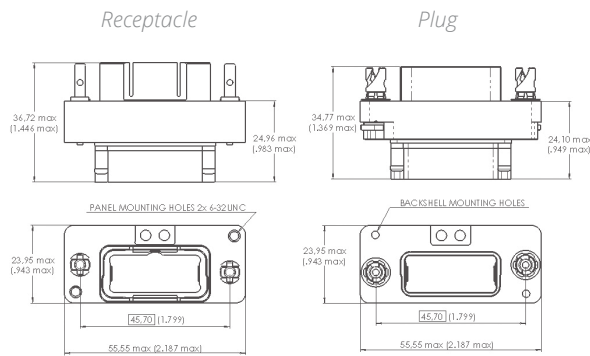
- Maximum dimension for insert with grommets.  
For insert without grommet maximum dimensions will be for receptacle 25.55 mm (1.006 in.) and for the plug 23.52 mm (0.926 in.).
- Rear mounting side view with key post oriented to the upper side.

Disconnect Application

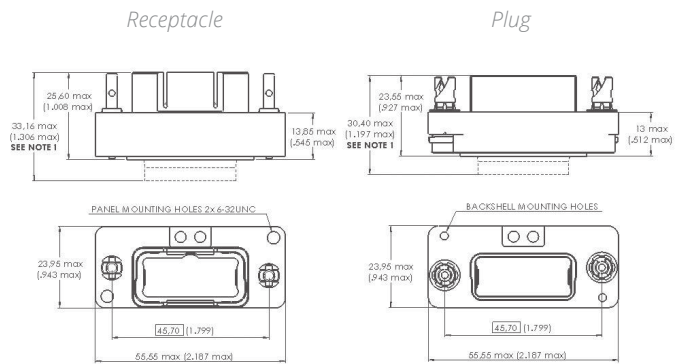
EPXB1 SHELL DIMENSIONS



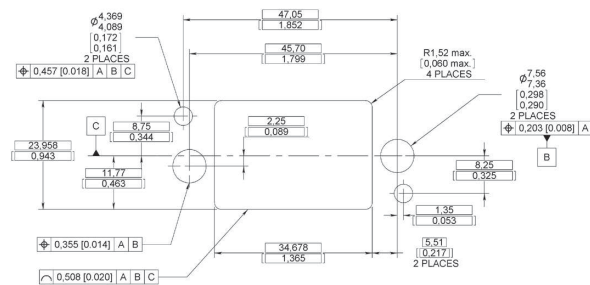
WITHOUT GROUND BLOCK



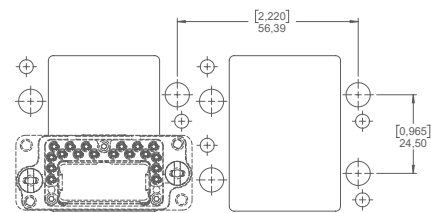
WITHOUT GROUND BLOCK



SINGLE PANEL CUT-OUT [2]



MULTIPLE PANEL CUT-OUT [2]



EPXB1 SHELL WEIGHTS

Weights include the shell with polarization hardware.







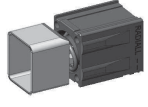



EPXB1	SHELL STYLE	WEIGHT
CLASS K	P	27.0 g (0.95 oz)
	R	33.0 g (1.16 oz)
	W	37.0 g (1.31 oz)
	Z	43.0 g (1.52 oz)
CLASS M	P	25.0 g (0.88 oz)
	R	33.0 g (1.16 oz)
	W	35.0 g (1.23 oz)
	Z	43.0 g (1.52 oz)

Notes

- Maximum dimension for insert with grommet. For insert without grommet: 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 insert 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.).
- Rear mounting side view with polarization hardware oriented to the upper side.

Disconnect Application

**EPXA1 & EPXB1 SPARE PARTS**  
**SPARE PARTS & DUST CAPS**





	PART NUMBER		DESCRIPTION
	EPXA	EPXB1	
	617980032	-	Polarization Kit for Plug Connector
	617980033	-	Polarization Kit for Receptacle Connector
	-	617980030	Polarization Post
	-	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)
	617929033	-	Sealing Inserts for Fly Away Applications: Mateable with Pin Insert
	-	617929023	
	617929032	-	Sealing Inserts for Fly Away Applications: Mateable with Socket Insert
	-	617929022	



## Disconnect Application

## EPXA1 & EPXB1 ACCESSORIES

### STRAIN RELIEFS & EMI BACKSHELLS

	PART NUMBER		DESCRIPTION
	EPXA1	EPXB1	
	617921030	617921029	Straight Strain Relief (Composite)
	617921032	617921031	45° Strain Relief (Composite)
	-	617924016	Straight EMI Backshell (Nickel-Plated Aluminium)
	-	617928002	Straight EMI Backshell (Nickel-Plated Composite)
	-	617921044	Fiber Optic Backshell (Composite)

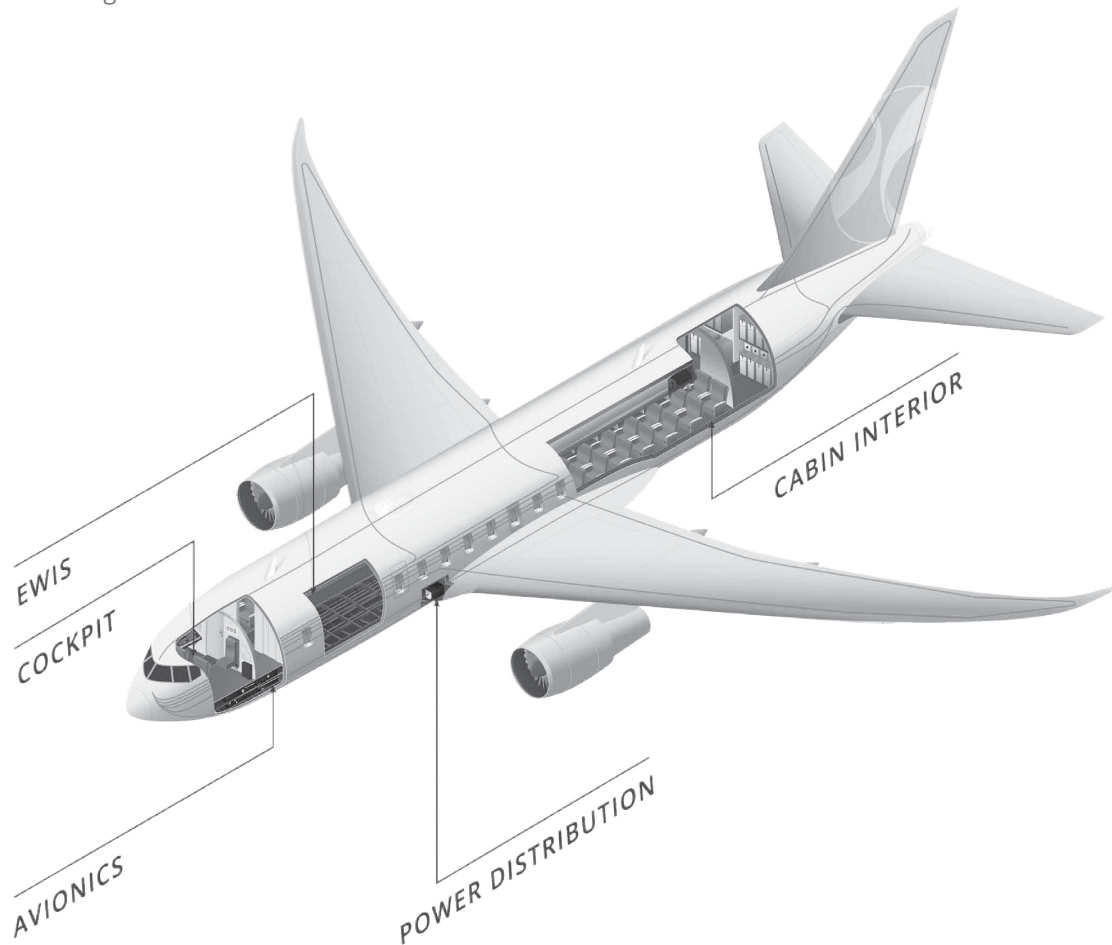
**Notes**

For mounting instructions, please contact Radiall.

*Disconnect Application***EPXB2 CONNECTORS**

Radiall's EPXB2 disconnect connectors have been widely used in the aerospace industry for more than 10 years. Meant to be used in cable-to-cable and PCB-to-cable applications, EPXB2 connectors exceed civil aerospace market expectations in terms of high density, quick installation, and cost and weight savings.

Standardized by EN4644 European standard, Radiall's EPX® has been recognized as the leading rectangular modular connector and used in major commercial and business jet aircrafts. EPXB2 connectors are designed to cover any applications including:

**EWIS**

EPXB2 provides easy maintenance and high reliability, which are key characteristics of EWIS environments.

**CABIN INTERIOR**

EPXB2 combines high speed data with space savings to serve the latest generations of cabin systems.

**COCKPIT**

EPXB2 offers simplified and intuitive installation for Fiber Optic and signal connections that are critical in cockpit design.

**AVIONICS**

EPXB2's compactness, weight and robust design efficiently support avionics systems needs.

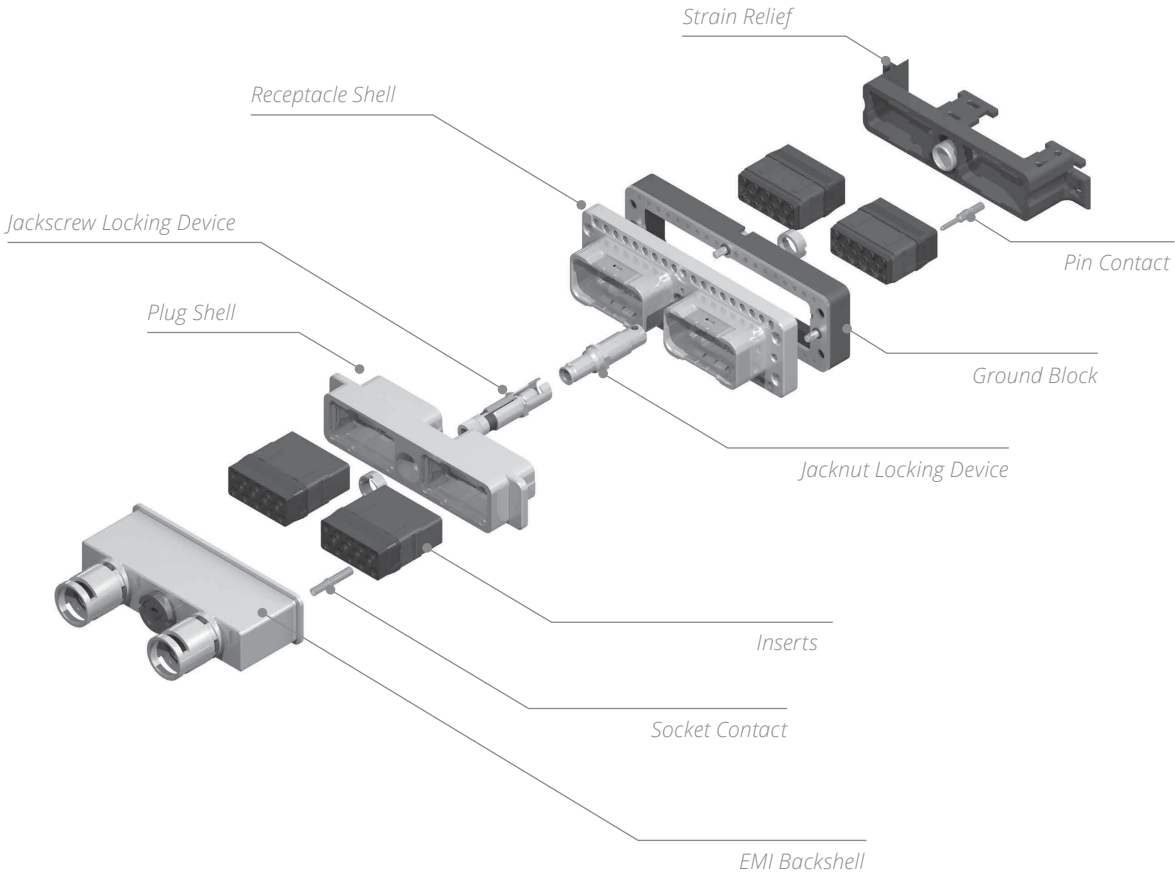
**POWER DISTRIBUTION**

EPXB2's stackable and segregated features make it the perfect solution for power distribution.

Disconnect Application

**EPXB2 PRODUCT OVERVIEW**

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



Disconnect Application

**EPXB2 RANGE OVERVIEW**

Modular and flexible, EPXB2 answers all disconnect connecting needs with the use of a limited number of components. With a large variety of shells and one range of inserts, contacts and accessories, EPXB2 range is completely expandable and fits to your exact needs. You can mix and match solutions to build your connector with:

**SHELL CLASSES - (ALL NICKEL-PLATED)**



Aluminium



Composite



Weight Optimized Aluminium

**SHELL STYLES**

Defining connector types (plug or receptacle) and their key features.



Classic EPXB2



Ground Block



Flange



Bulkhead

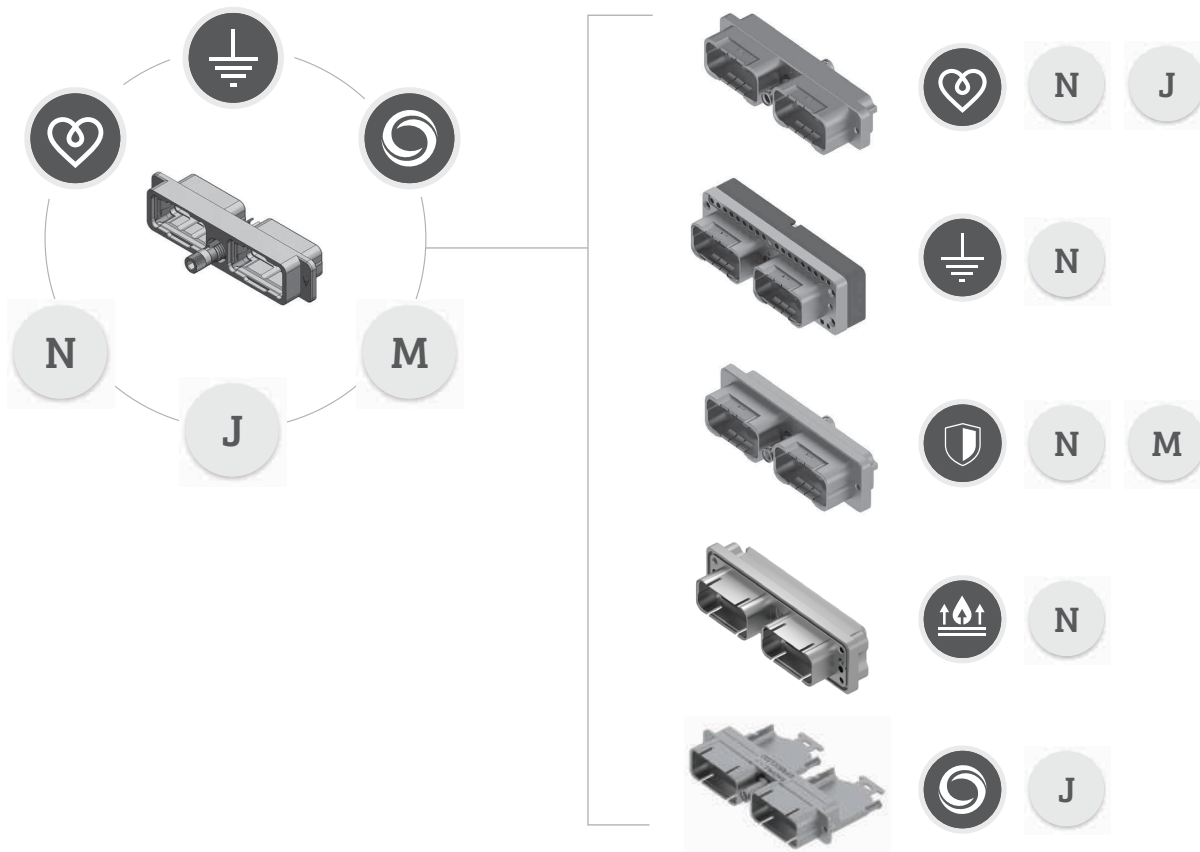


iEPX

**EPXB2 GALAXY**

Plugs

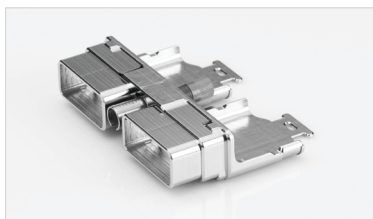
Receptacles



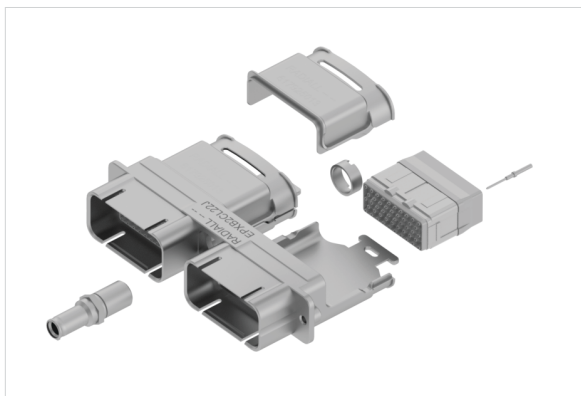
## Disconnect Application

## EPXB2 LATEST INNOVATIONS

## iEPX



Radiall expands the EPX® series by offering iEPX, a new weight optimized EPXB2 shell designed to be used in disconnect panel applications. With an integrated strain relief and EMI backshell to press-in, iEPX provides EMI shielding while reducing cost and weight.

**FEATURES & BENEFITS:**

- Quick and easy to terminate
- Lightweight
- Prevents FOD
- Cable-to-cable connection
- Integrated strain relief

**MIX & MATCH:**

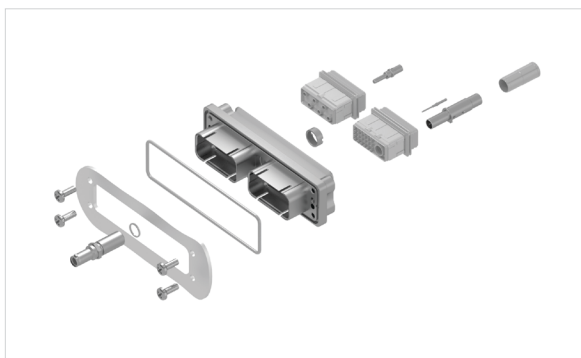
- Fully intermateable with all EPXB2 plugs and receptacles.
- Modular and comprehensive range: iEPX uses all contacts and inserts from EPX® range.

## EPX® BULKHEAD



Radiall's EPXB2 Bulkhead receptacle is a perfect solution for disconnect panel sealing applications. Combining EPX® proven technology with Bulkhead functionality, EPXB2 Bulkhead modular connectors provide effective panel sealing with a user friendly and cost saving approach.

With EPXB Bulkhead pin insert range, Bulkhead receptacle provides permanent sealing between two zones with different environmental conditions.

**FEATURES & BENEFITS:**

- Modular
- Competitive offer
- Optimized and mature design
- Easy and economical integration in the BOM
- PCB-to-cable or cable-to-cable connection

**MIX & MATCH:**

- Fully intermateable with all EPXB2 plugs
- Uses EPX® broad range of accessories and contacts including signal, power, quadrax and fiber optics

Disconnect Application

## HOW TO ORDER EPXB2 SHELL

# EPX

**SERIES PREFIX**

**SHELL SIZE**

**B2:** Two cavity shell

**SHELL STYLE**

*For option compatibility, see the table below.*

**L:** Receptacle with flange

**H:** Classic receptacle

**Z:** Receptacle with ground block

**R:** Receptacle without ground fingers

**C:** iEPX receptacle with integrated strain-relief

**P:** Classic plug

**W:** Plug with ground block

**D:** iEPX plug with integrated strain-relief

**SHELL PLATING**

**N:** Nickel-plated aluminium

**M:** Nickel-plated composite

**J:** Nickel-plated, weight-optimized aluminium

**POLARIZATION CODE** <sup>[2]</sup>

**2:** Polarizing device A to F delivered unassembled

**3:** Polarizing device N to Z delivered unassembled

**LOCKING & POLARIZATION DEVICE** <sup>[1]</sup>

**1:** Jackscrew

**2:** Jacknut

**3:** Without locking device

**SHELL MOUNTING**

**A:** Panel rear mounted connector with 4 × 6-32 mounting holes

**B:** No mounting holes

**D:** Connector with 2 × Ø 3.10 mm thru holes

**F:** Panel rear mounted connector with 2 × 6-32 mounting holes

**L:** Panel rear mounted connector with 2 × 4-40 mounting holes

### AVAILABLE SHELL MOUNTING

	SHELL STYLE	A (4 × 6.32 UNC)	B (no holes)	D (2 × Ø 3.10 mm)	F (2 × 6.32 UNC)	L (2 × 4.40 UNC)
<b>Class N</b> (Aluminium)	L	-	-	✓	✓	✓
	H	-	✓	✓	✓	✓
	Z	✓	✓	-	-	-
	R	✓	-	-	-	-
	P	-	✓	✓	-	✓
	W	✓	✓	-	-	-
	B	✓	-	-	-	-
<b>Class J</b> (Weight-Optimized Aluminium)	H	-	-	-	-	✓
	C	-	-	-	-	✓
	P	-	✓	-	-	-
	D	-	✓	-	-	-
<b>Class M</b> (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. Please see page 1-40 for how to use the polarization coding.

## Disconnect Application

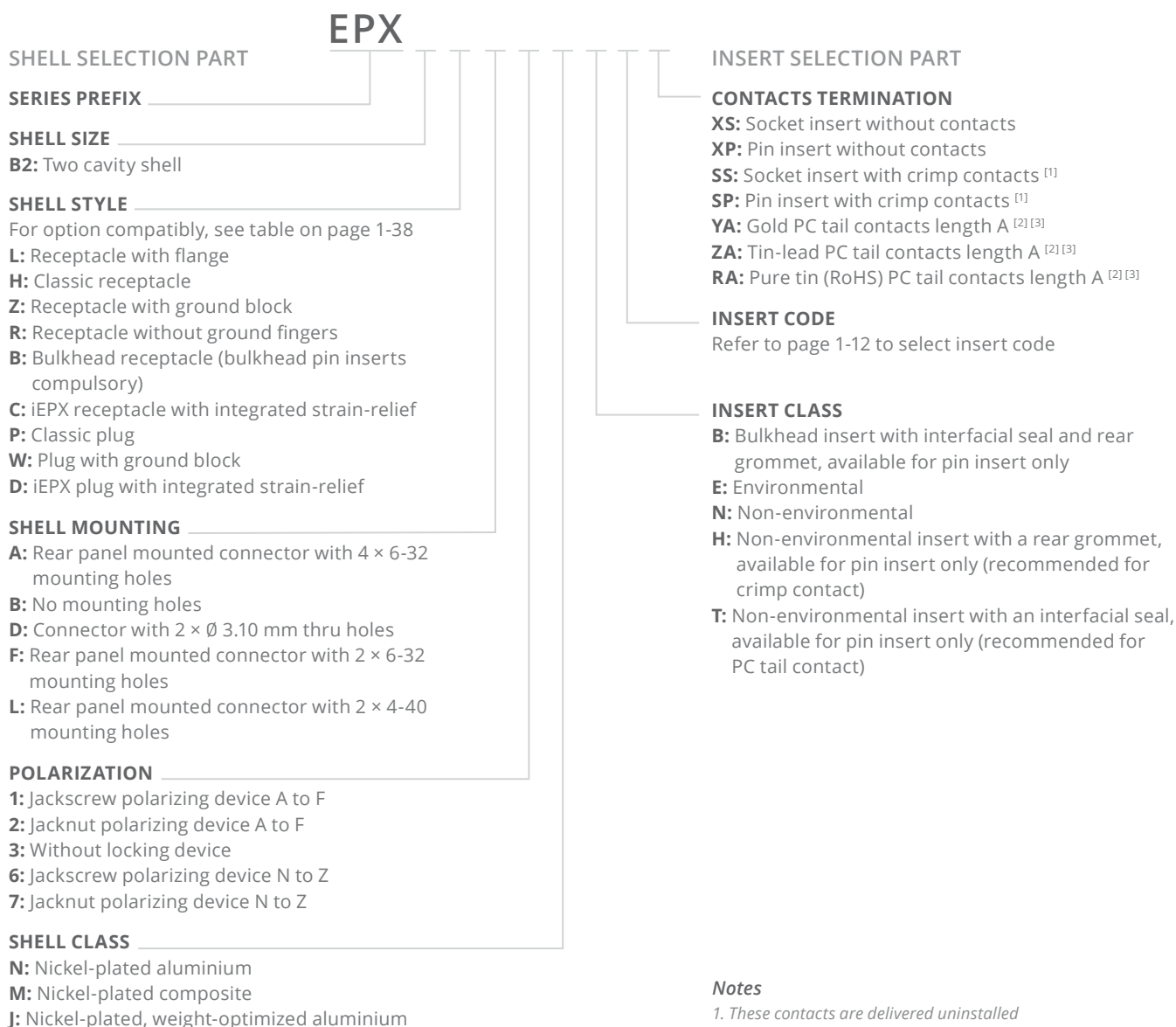
## HOW TO ORDER EPXB2 ASSEMBLY KIT

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 1-10.
- PC tail contacts can also be 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 quadrax are populated. Size 5 coax cavities are not populated.

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



## Notes

1. These contacts are delivered uninstalled
2. Refer to pages 1-41 to select PC tail contacts for receptacle.
3. Not available with iEPX

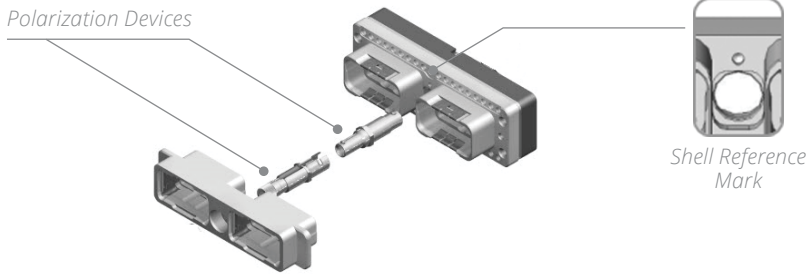
Disconnect Application


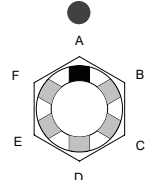
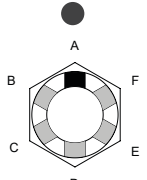
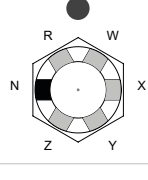
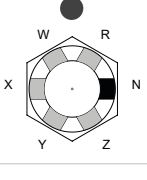


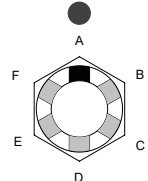
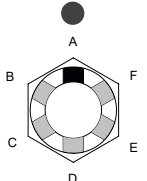
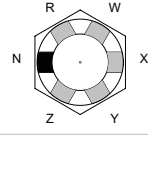
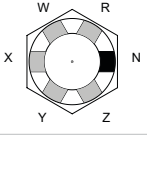

**EPXB2 POLARIZATION CODE**



As a standard, jackscrews are installed in plugs, and jacknuts are installed in receptacle shells; however, they both can be installed in either plugs and receptacles. The nut can be fixed with your automatic screwdriver and the tool bit we provide (P/N 282664).

*Tip: Use the shell reference mark (located at the top of the locking cavity) to choose keying position.*



		KEYING POSITION		AVAILABLE AS	
		RECEPTACLE	PLUG	STANDARD	BULKHEAD
 <p>Jacknut</p>	From A to F			617980029	617980066
	From N to Z			617980028	617980067
	Universal			617980022	N/A
 <p>Jackscrew</p>	From A to F			617980012	N/A
	From N to Z			617980013	N/A
	Universal			617980023	N/A

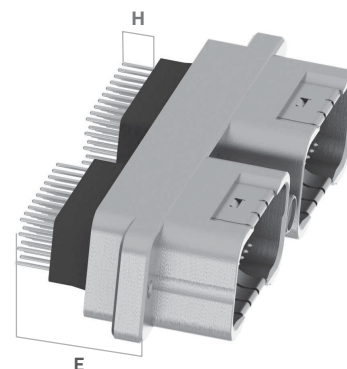
● Shell Reference Mark



Disconnect 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) <sup>[1]</sup>	-	YA	ZA	RA
17.35 (0.683) <sup>[1]</sup>	-	YB	ZB	RB
19.20 (0.755) <sup>[1]</sup>	-	YC	ZC	RC
23.10 (0.909)	5.40 (0.212)	YD	ZD	RD

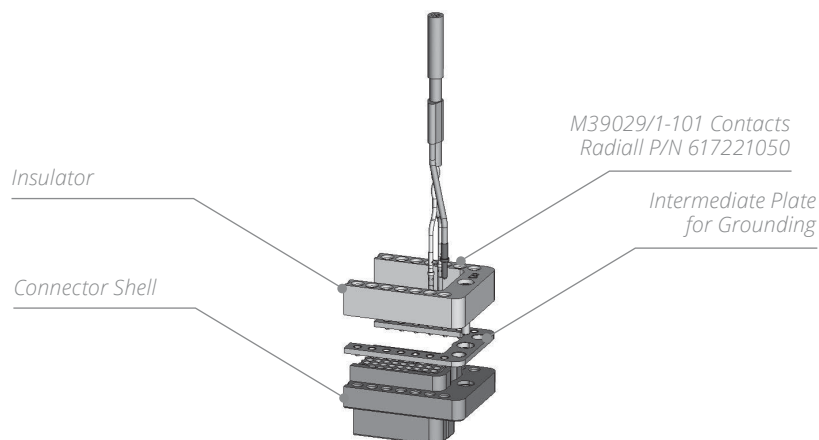


**EPXB2 WEIGHT OPTIMIZED ALUMINIUM AND ALUMINIUM SHELL**

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) <sup>[1]</sup>	-	YA	ZA	RA
17.75 (0.698) <sup>[1]</sup>	-	YB	ZB	RB
19.55 (0.769) <sup>[1]</sup>	-	YC	ZC	RC
23.50 (0.925)	5.40 (0.212)	YD	ZD	RD

**GROUND BLOCK**

Radiall provides a unique patented feature by integrating a ground block directly on the shell. This option permits very short ground terminations.



**Notes**

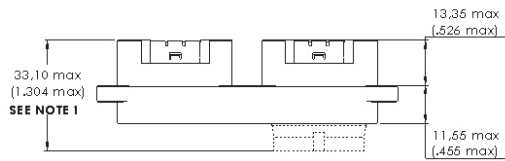
1. These PC tail lengths are not compatible with EPXBE, EPXBH or EPXBB inserts.

Disconnect Application

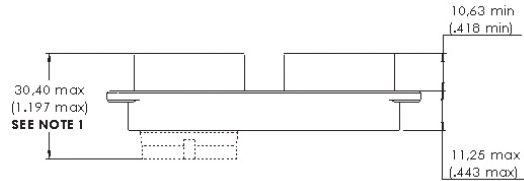
**EPXB2 ALUMINIUM SHELL DIMENSIONS**  
**CLASS N&J**

**CLASSIC**

Receptacle [HL]



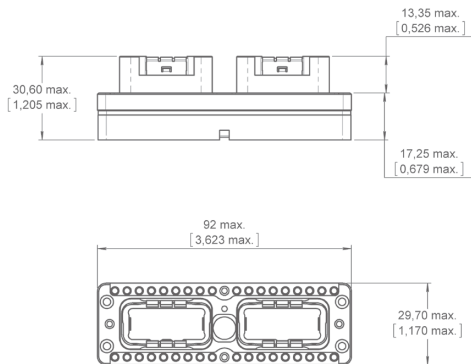
Plug [PB]



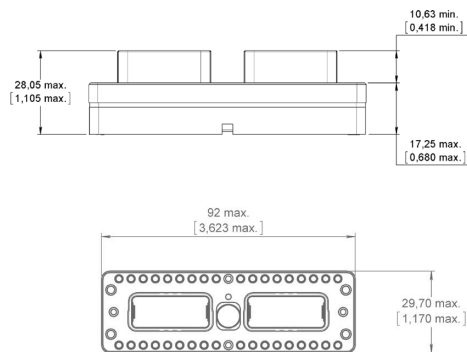
**CLASS N**

**GROUND BLOCK**

Receptacle [ZA]

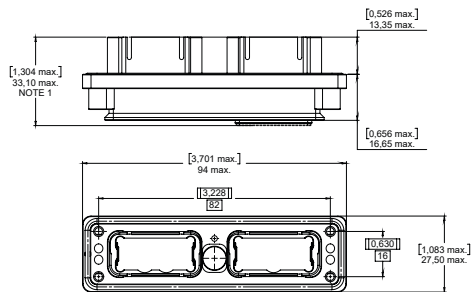


Plug [WA]



**BULKHEAD**

Receptacle [BA]



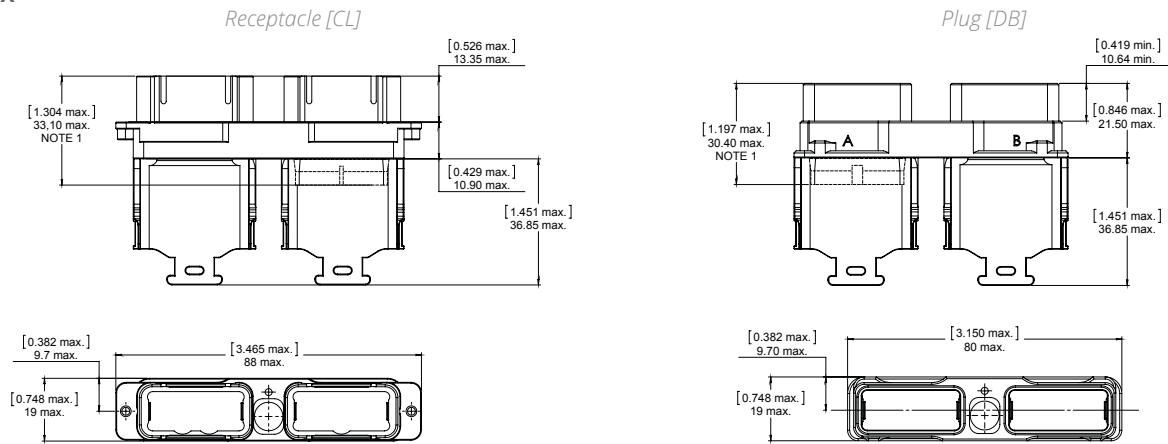
**Notes**

- For insert with grommet: maximum dimension is the one shown in the drawing.  
For insert without grommet: 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 insert 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.).

Disconnect Application

**EPXB2 ALUMINIUM SHELL DIMENSIONS CLASS J**

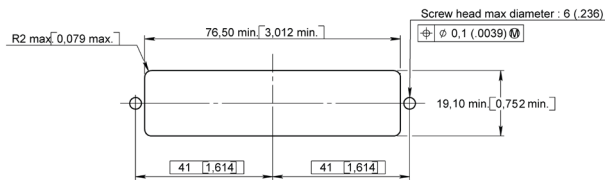
iEPX



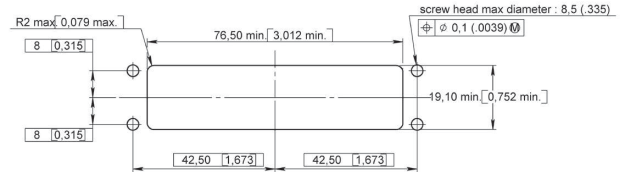
**SINGLE PANEL CUT-OUT**

**CLASS N & J**

Shell Mounting Code D, F and L

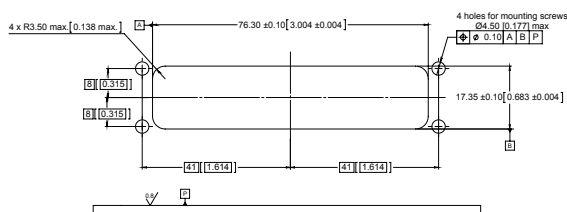


Shell Mounting Code A



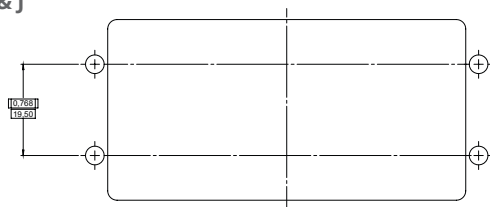
**CLASS N - BULKHEAD RECEPTACLE**

Shell Mounting Code A



**MULTIPLE PANEL CUT-OUT**

**CLASS N & J**



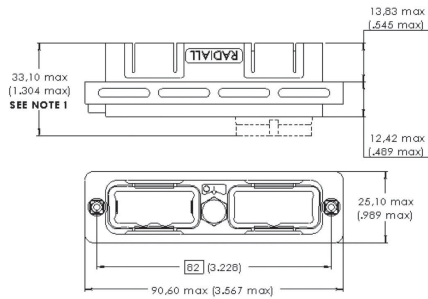
**Notes**

- For insert with grommet: maximum dimension is the one shown in the drawing.  
For insert without grommet: 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 insert 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.).

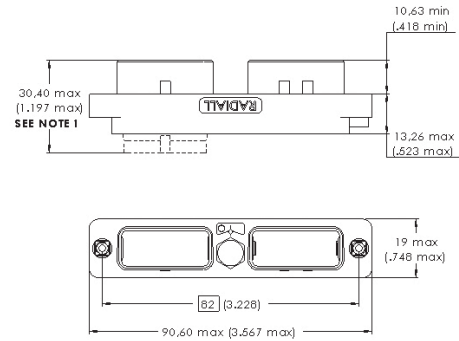
Disconnect Application

**EPXB2 COMPOSITE SHELL DIMENSIONS**  
CLASS M

Receptacle [LL]

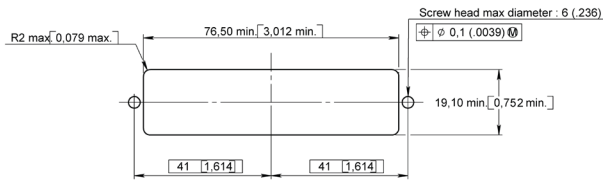


Plug [PB]

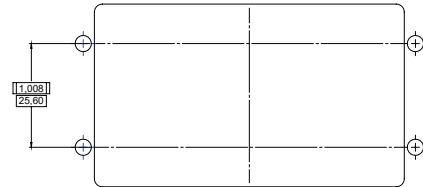


SINGLE PANEL CUT-OUT

Shell Mounting Code D and L



MULTIPLE PANEL CUT-OUT



Notes

- For insert with grommet (EPXBE and EPXBH): maximum dimension is the one shown in the drawing.  
For insert without grommet (EPXBN): 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.).

*Disconnect Application***EPXB2 WEIGHTS**

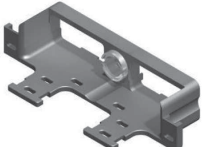




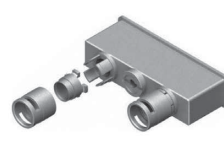



Weights include the shell with no polarization. If locking is needed, please add the following weights:

- Jackscrew: 9.0 g
- Jacknut: 7.8 g
- Bulkhead Jacknut: 8.7 g

CLASS	SHELL MOUNTING	A	B	D	F	L
	SHELL STYLE					
Class N	L	-	-	45 g (1.59 oz)	45 g (1.59 oz)	45 g (1.59 oz)
	H	-	35 g (1.23 oz)	36 g (1.27 oz)	36 g (1.27 oz)	36 g (1.27 oz)
	Z	80 g (2.82 oz)	80 g (2.82 oz)	-	-	-
	R	45 g (1.59 oz)	-	-	-	-
	P	-	30 g (1.06 oz)	30 g (1.06 oz)	-	30 g (1.06 oz)
	W	75 g (2.65 oz)	75 g (2.65 oz)	-	-	-
	B	50 g (1.76 oz)	-	-	-	-
Class J	H	-	-	-	-	27 g (0.95 oz)
	C	-	-	-	-	35 g (1.23 oz)
	P	-	25 g (0.88 oz)	-	-	-
	D	-	30 g (1.06 oz)	-	-	-
Class M	L	-	-	35 g (1.23 oz)	-	35 g (1.23 oz)
	P	-	24 g (0.85 oz)	25 g (0.88 oz)	-	25 g (0.88 oz)

Rack & Panel Application

EPXB2 ACCESSORIES

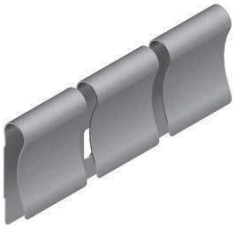






	PART NUMBER	DESCRIPTION
	617922007	Straight Strain Relief (Composite)
	617922014	Straight Strain Relief for Fiber Optic Cable (Anodized Aluminium)
	617928100	Straight EMI Backshell (Nickel-Plated Composite)
	617925069	Short Straight EMI Backshell (Nickel-Plated Composite)
	617925052	EMI Backshell for Braid Shield Termination (Nickel-Plated Aluminium)
	617925054	EMI Backshell For Screened Twisted Pair Cables (Nickel-Plated Aluminium)
	617925056	Backshell for Large Sized Wire Harnesses (Nickel-Plated Aluminium) <sup>[1]</sup>
	617925018	EMI Backshell for iEPX Connectors (Composite)
	617922029	Fiber Optic Backshell (Composite)

Notes

1. Not compatible with jackscrew


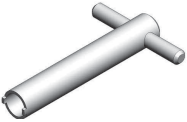



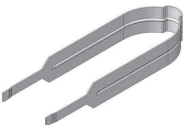


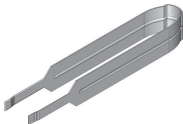
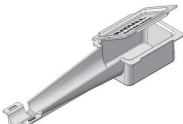


## Rack &amp; Panel Application

## EPXB2 SPARE PARTS

	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
	617980066	Bulkhead Jacknut - A/B/C/D/E/F
	617980067	Bulkhead Jacknut - N/R/W/X/Y/Z
	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)
	617929023	Sealing Inserts for Fly Away Applications: Mateable with Pin Insert
	617929022	Sealing Inserts for Fly Away Applications: Mateable with Socket Insert

Rack & Panel Application

DISCONNECT TOOLS

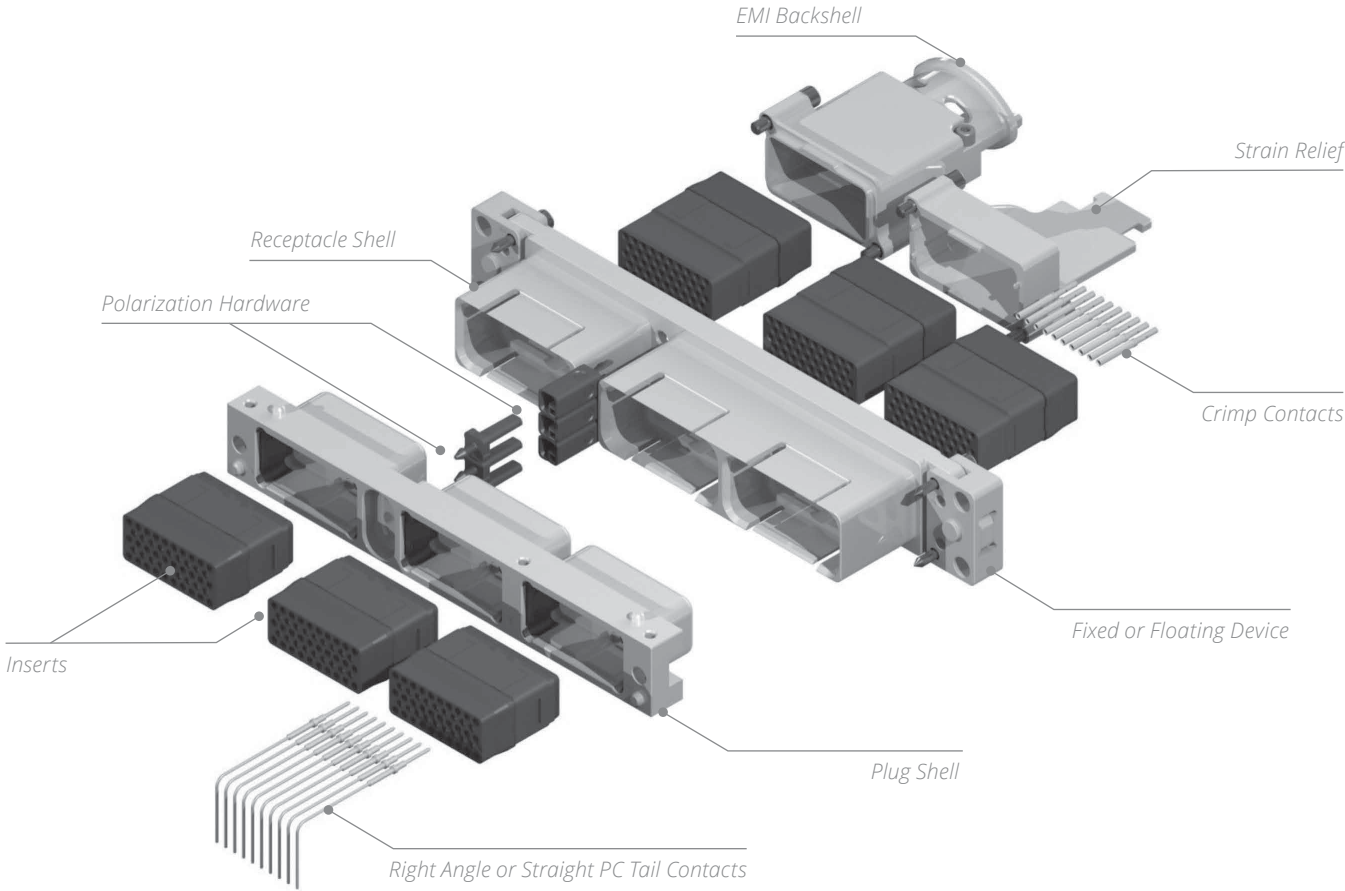
	PART NUMBER	DESCRIPTION	TO BE USED WITH		
			EPXA1	EPXB1	EPXB2
	282664	1/4 in. Hex. Screwdriver Bit to Affix the Nut of the Jackscrew or the Jacknut to the EPXB2 Accessories	-	-	✓
	282665	Spigot Wrench to Affix the Nut of the Jackscrew or the Jacknut to the EPXB2 Accessories	-	-	✓
	282666	Allen Wrench for 1/4 turn Fastener (3/32 in.)	✓	✓	-
	282666002	Allen Wrench for Rear Accessories (5/64 in.)	-	✓	-
	282666001	Allen Wrench for Jackscrew (9/64 in.)	-	-	✓
	282521002	Insert Extraction Tool	-	✓	✓
	282521004	Right Angle Insert Extraction Tool	-	✓	✓
	282521007	Bulkhead Insert Extraction Tool	-	-	✓
	282521005	Insert Extraction Tool	✓	-	-
	617954020	Plastic Box to Protect Wired Inserts during Handling	✓	✓	✓
	F780855000	Hexagonal Key 2 mm (5/64 in.) Flats for Sleeve Holder Removal	-	✓	✓
	282668001	Tweezers to Change Polarizing Posts and Keys	-	✓	-



Rack & Panel Application

**EPXB3 PRODUCT OVERVIEW**

Detailed View of Receptacle and Plug with Accessories for the EPXB3 Rack & Panel Connector:



## HOW TO ORDER EPXB1, B2, B3 & B4 SHELL

EPX

**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 1-52 for codes)

- M:** Plug, fixed connector with  $\varnothing$  3.96 mm holes and 4-40 UNC on side
- N:** Plug, fixed connector with 8-32 UNC and 4-40 UNC on side
- S:** Plug or Receptacle, fixed with 4 x 8-32 UNC
- T:** Receptacle, floating with 4 x 8-32 UNC (two axes) <sup>[1]</sup>

**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 1-54 for the code selection
- 0 (ZERO):** Plug, no panel cut-out coding

**Notes**

1. This floating option is not available in EPXB4 version.

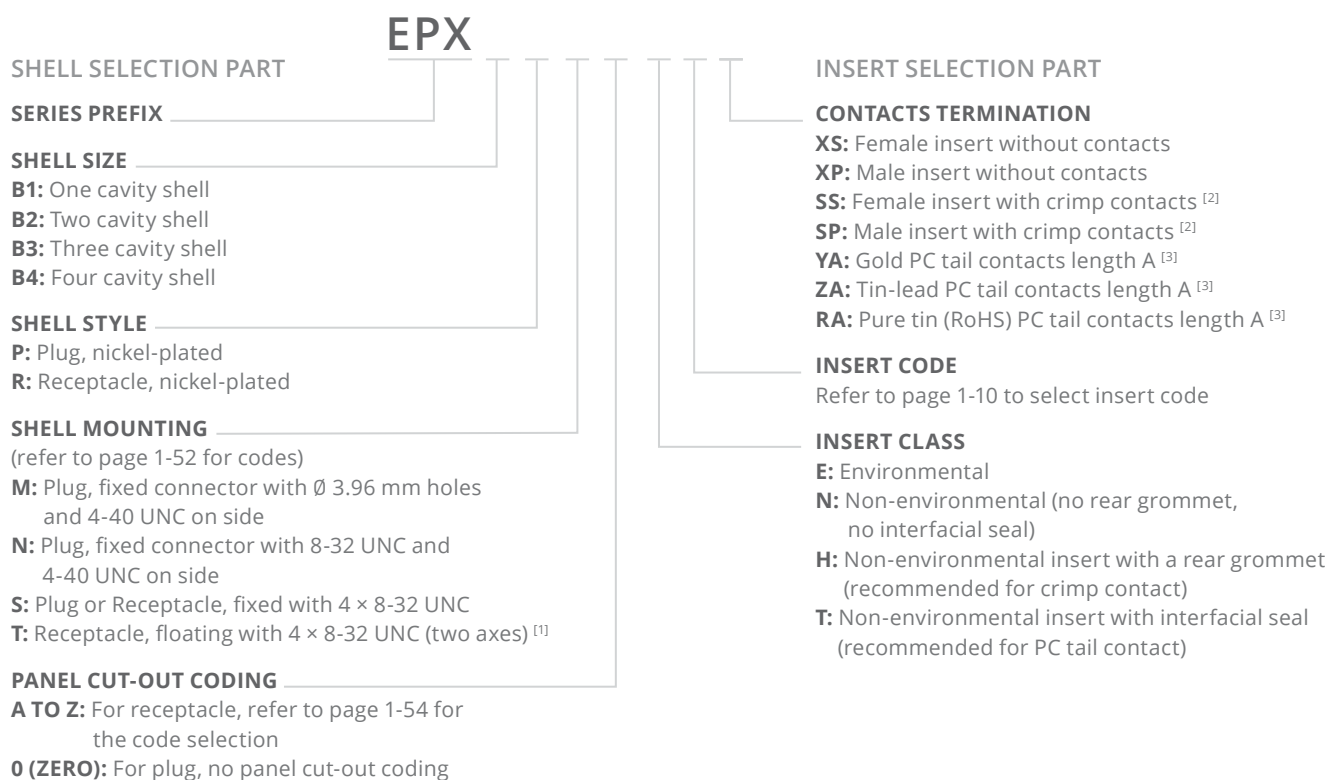
## HOW TO ORDER EPXB1, EPXB2, B3 & B4 ASSEMBLY KIT FOR LRM

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 hardware 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 1-10.
- 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.


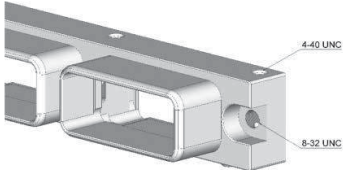
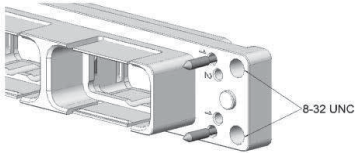
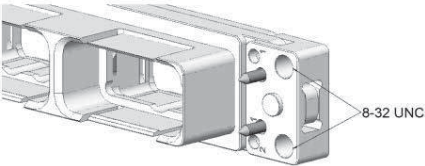


### Notes

1. This floating option is not available in EPXB4 version
2. These contacts are delivered uninstalled
3. Refer to page 1-53 to select PC tail contacts for plug

Rack & Panel Application

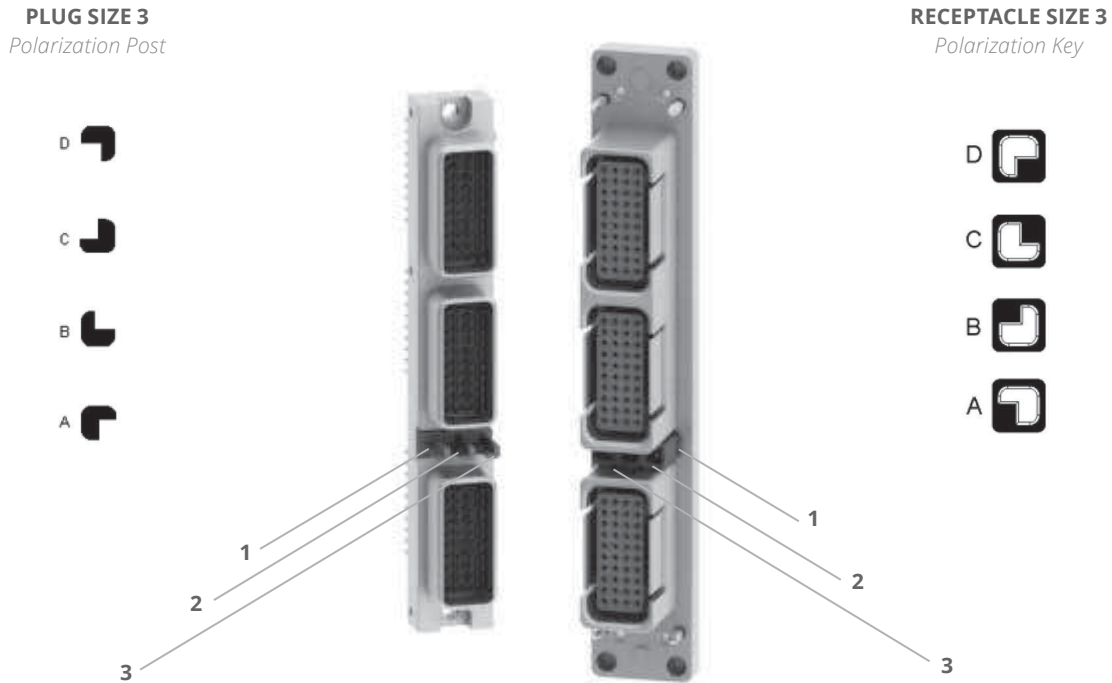
**EPXB SHELL MOUNTING**

RECEPTACLE SIDE	CODE	PLUG SIDES
N/A	M	<p>Fixed Connector with <math>\varnothing</math> 3.96 mm Holes and 4-40 UNC Front or Side Mount</p> 
N/A	N	<p>Connector with 8-32 UNC and 4-40 UNC Front or Side Mount</p> 
<p>Fixed with 4 x 8-32 UNC Panel Rear Mount</p> 	S	N/A
<p>Floating with 4 x 8-32 UNC Panel Rear Mount</p> 	T	N/A

Rack & Panel Application

**EPXB POLARIZATION CODE**

A polarization device is included in the part number and should be installed as shown below. Each shell has three polarization hardware, which can be in four different positions. Each polarization hardware can have its own position; this allows a large range of codification.

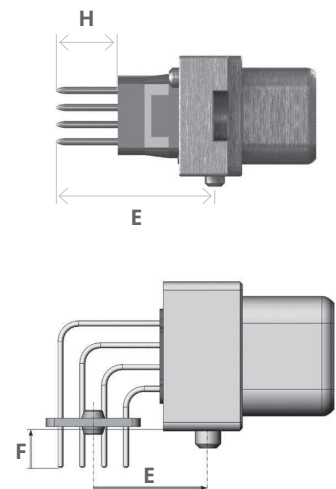


Connectors are shown front side with cavity A upwards.

**CONTACT TERMINATIONS 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) <sup>[1]</sup>	-	YA	ZA	RA
13.80 (0.543) <sup>[1]</sup>	-	YB	ZB	RB
15.60 (0.614) <sup>[1]</sup>	-	YC	ZC	RC
19.55 (0.769)	5.40 (0.212)	YD	ZD	RD

RIGHT ANGLE PC TAIL CONTACT TERMINATION				
MINI LENGTH F MM (INCH)	MINI LENGTH E MM (INCH)	GOLD	TIN-LEAD	PURE TIN (ROHS)
2.20 (0.086)	12.85 (0.505) <sup>[1]</sup>	GA	LA	TA
3.60 (0.141)	20.10 (0.791)	GB	LB	TB
3.60 (0.141)	12.85 (0.505) <sup>[1]</sup>	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

Rack & Panel Application

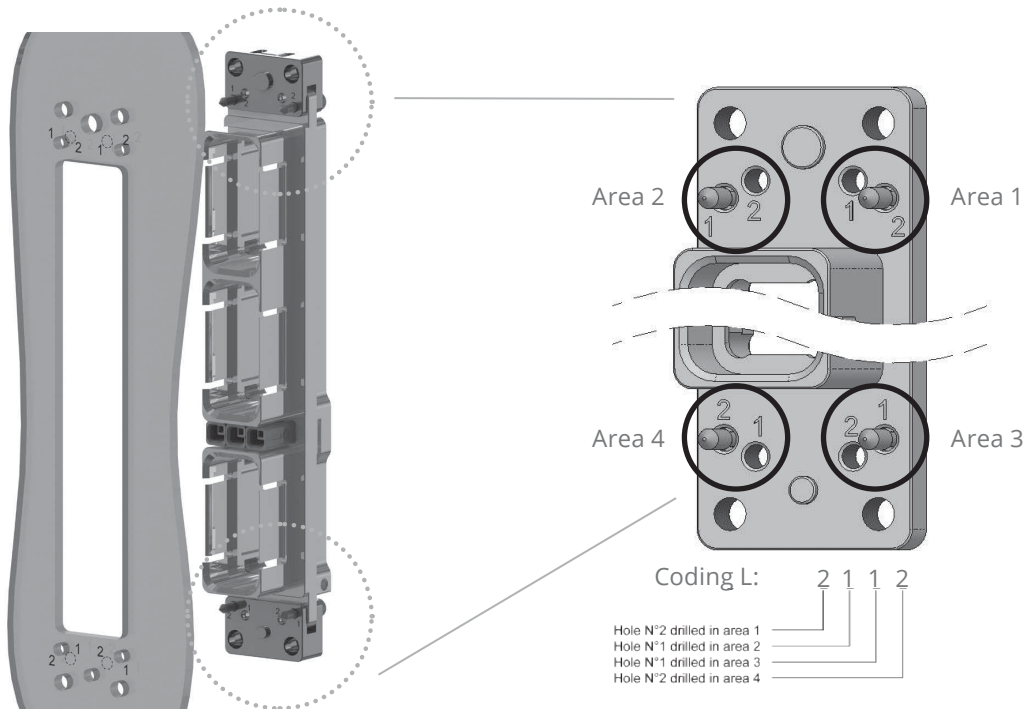
**EPXB PANEL CUT-OUT CODING**

When several connectors are used with the same equipment, 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 <sup>(1)</sup>			

**CODING PINS ARE FOR RECEPTACLE ONLY.**



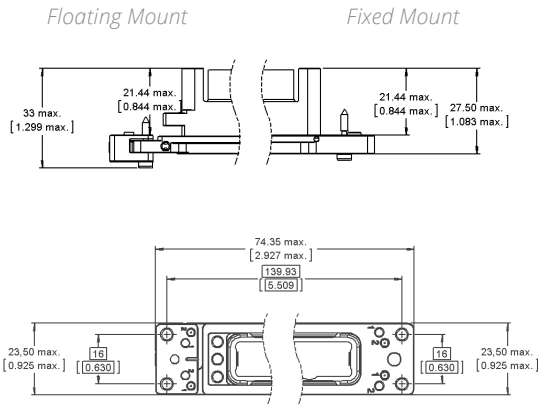
**Notes**

1. Z panel cut-out coding is only available with fix mounting.

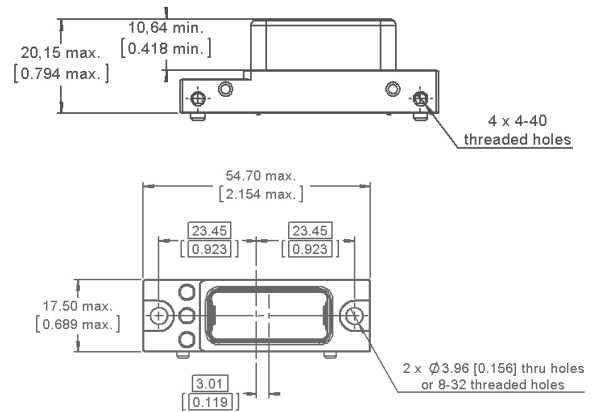
Rack & Panel Application

EPXB1 SHELL DIMENSIONS & PANEL CUT-OUTS

RECEPTACLE

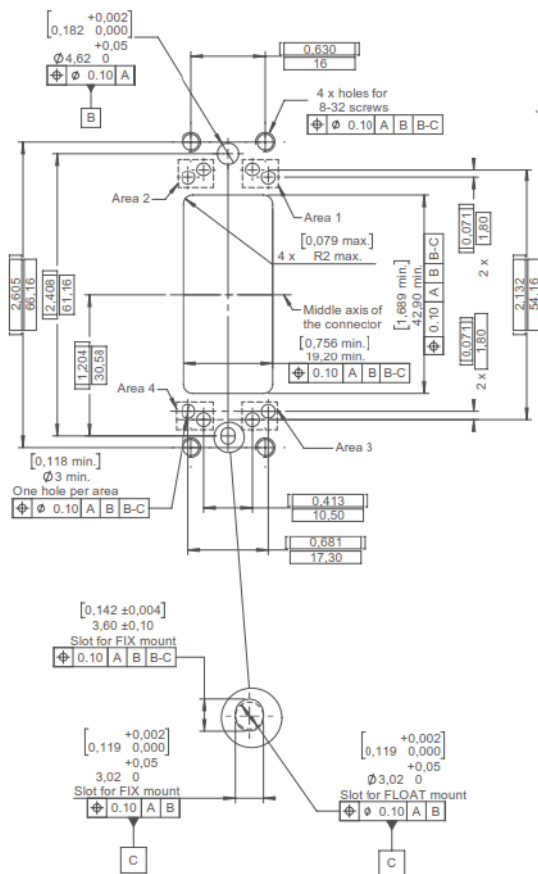


PLUG

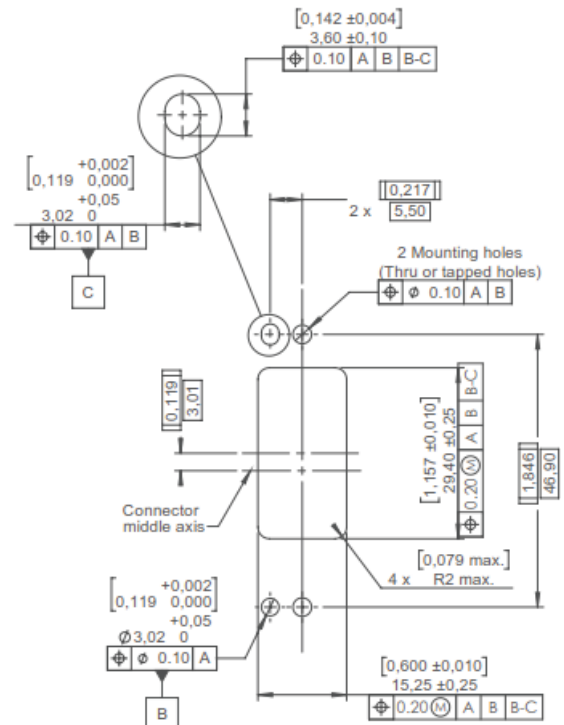


PANEL CUT-OUTS

Receptacle - Shown from the Rear Side



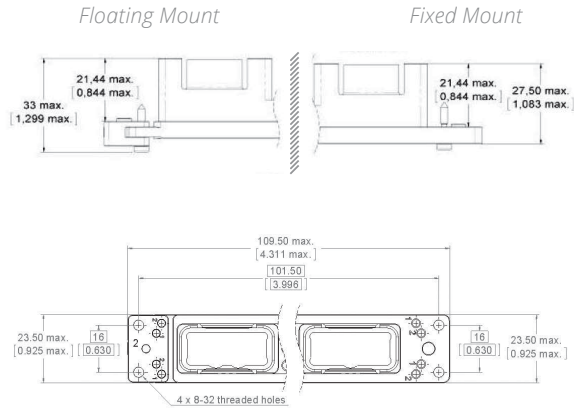
Plug - Shown from the Front Side



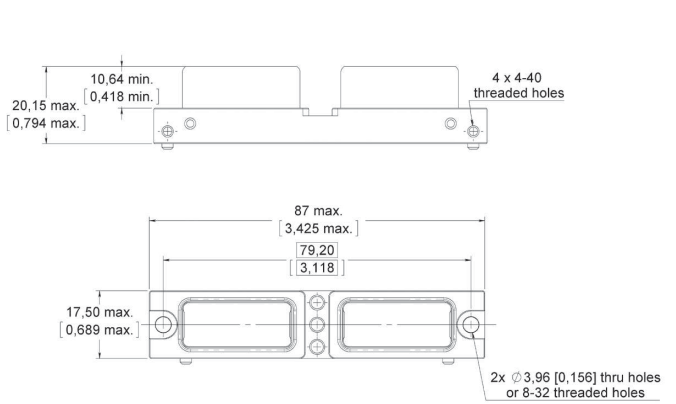
Rack & Panel Application

EPXB2 SHELL DIMENSIONS & PANEL CUT-OUTS

RECEPTACLE

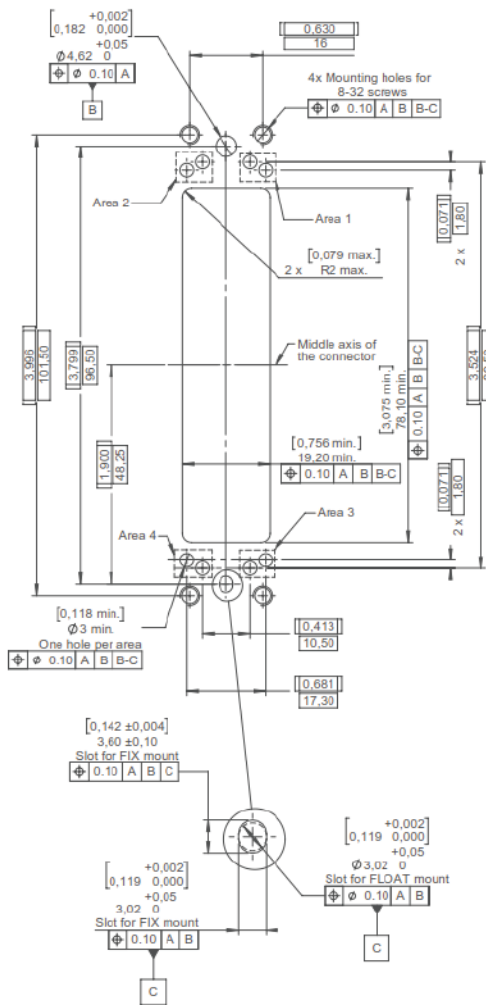


PLUG

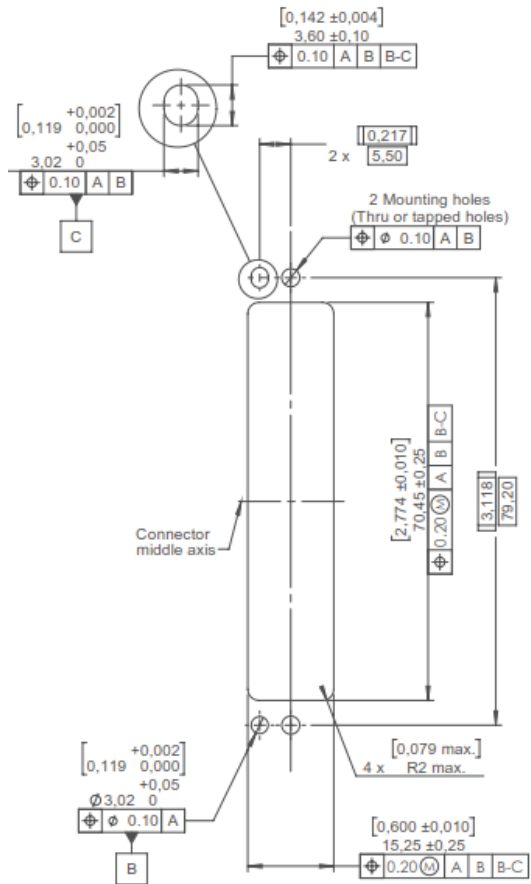


PANEL CUT-OUTS

Receptacle - Shown from the Rear Side



Plug - Shown from the Front Side

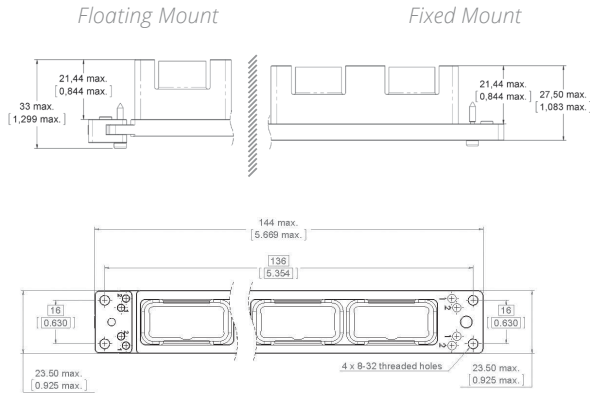




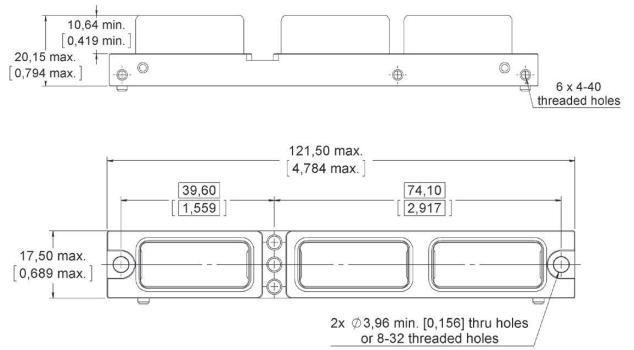
Rack & Panel Application

EPXB3 SHELL DIMENSIONS & PANEL CUT-OUTS

RECEPTACLE

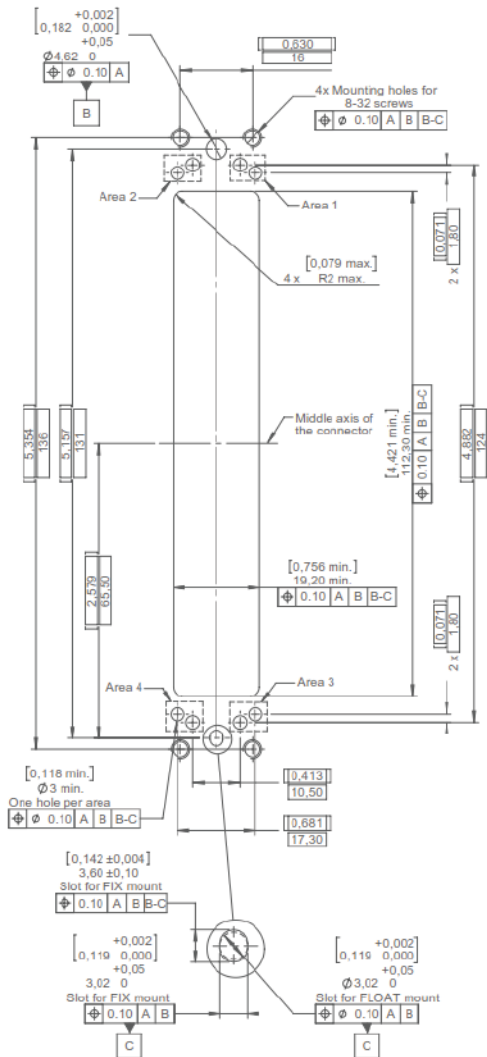


PLUG

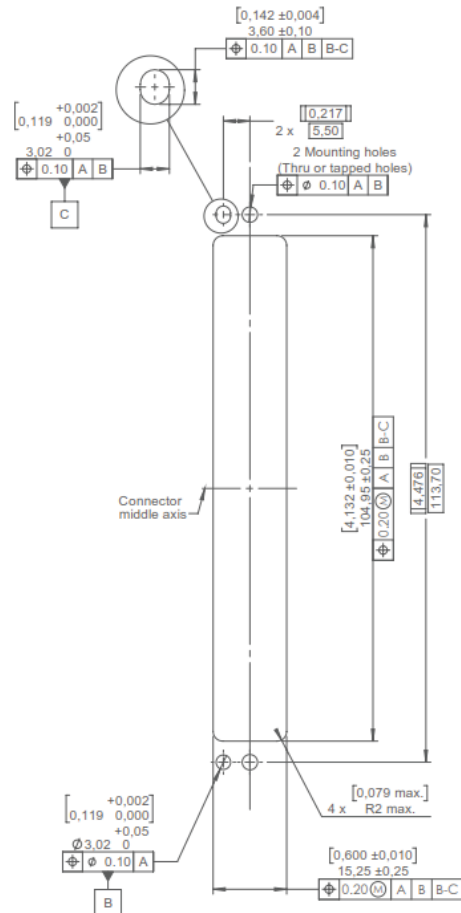


PANEL CUT-OUTS

Receptacle - Shown from the Rear Side



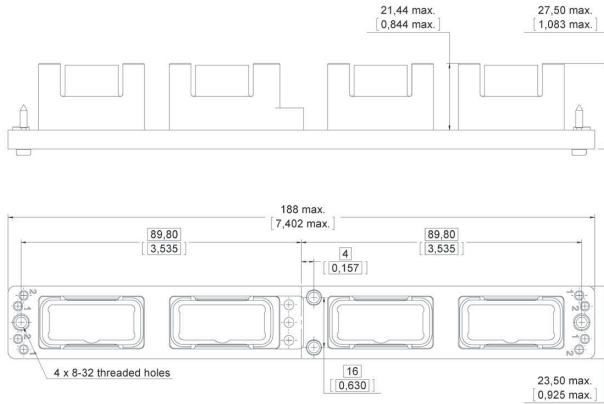
Plug - Shown from the Front Side



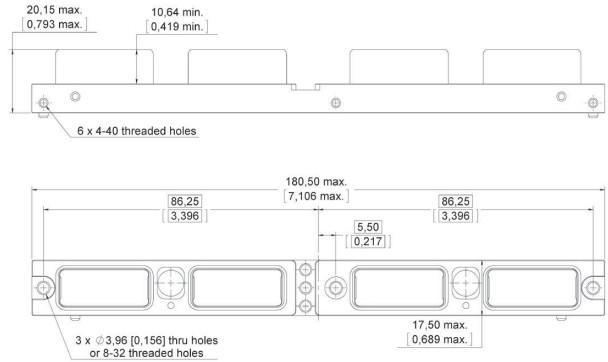
Rack & Panel Application

EPXB4 SHELL DIMENSIONS & PANEL CUT-OUTS

RECEPTACLE

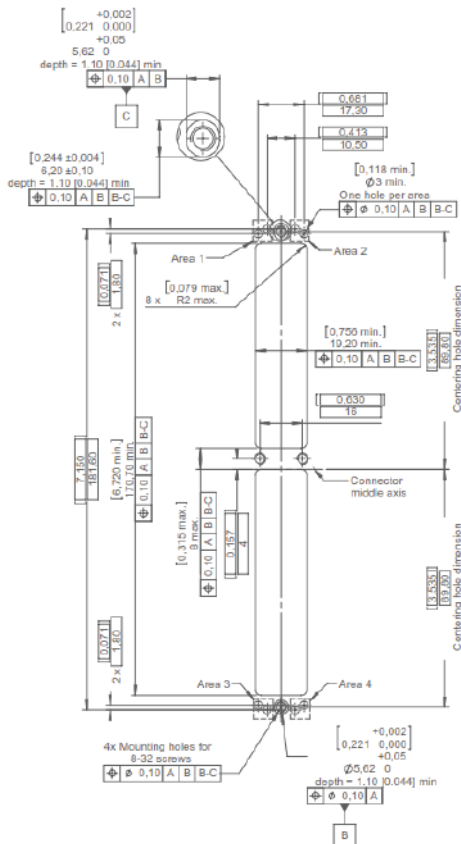


PLUG

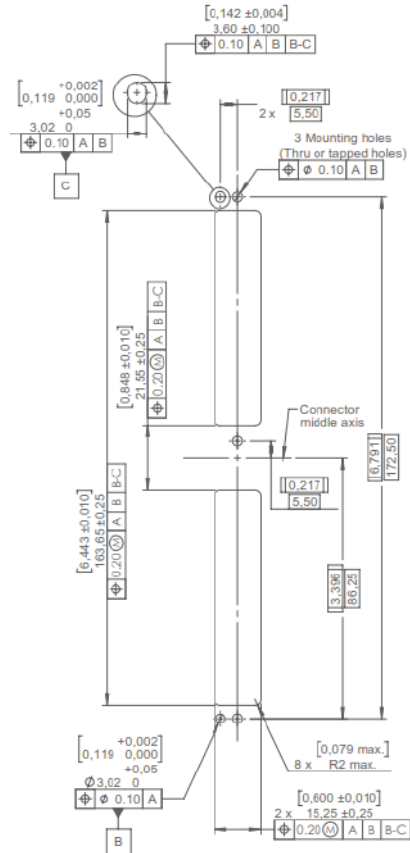


PANEL CUT-OUT

Receptacle - Shown from the Rear Side



Plug - Shown from the Front Side



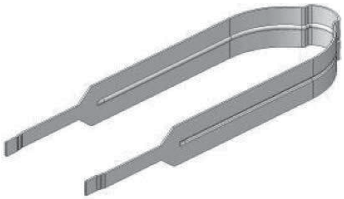
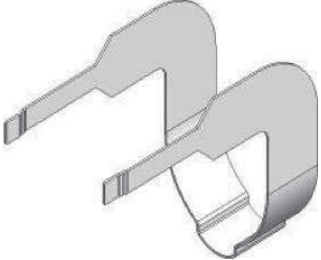
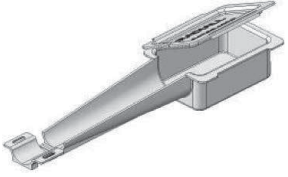

## Rack &amp; Panel Application

## RACK &amp; PANEL ACCESSORIES

	PART NUMBER	DESCRIPTION
	617925073	EMI Backshell for Receptacle Only (Aluminium, Nickel-Plated)
	617922022	Straight Strain Relief for Receptacle Only (Composite)
	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)
	617980052	Coding Pin
	617980030	Polarization Post
	617980031	Polarization Key

Rack & Panel Application

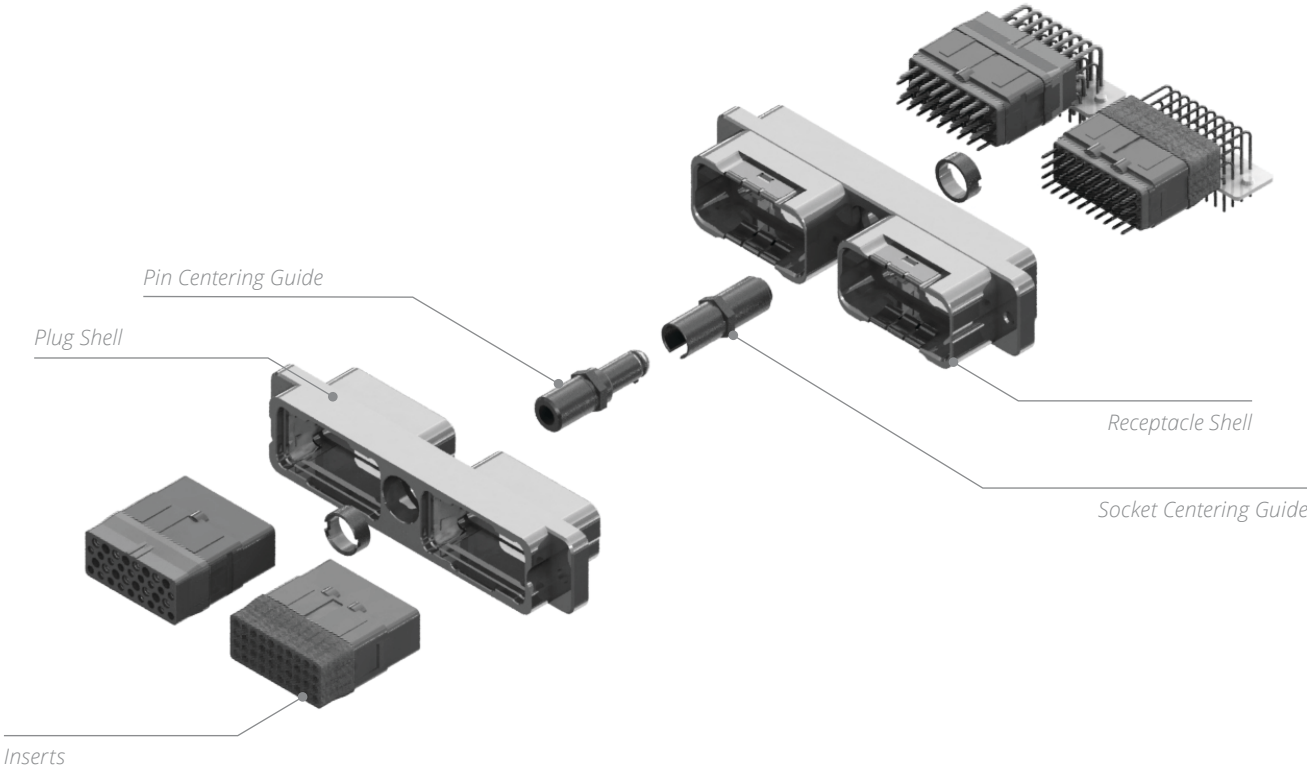
**RACK & PANEL TOOLS**

	PART NUMBER	DESCRIPTION
	282521002	Insert Extraction Tool
	282521004	Right Angle Insert Extraction Tool
	617954020	Plastic Box to Protect Wired Inserts During Handling
	F780855000	Hexagonal Hex 2 mm (5/64 in.) Flats for Sleeve Holder Removal

Rack & Panel Application

### EPXB2 FOR LRU PRODUCT OVERVIEW

Detailed View of a Receptacle and Plug for the EPXB2 LRU Connector:



Rack & Panel Application

## HOW TO ORDER EPXB2 SHELL FOR LRU

EPX

**SERIES PREFIX** \_\_\_\_\_

**SHELL SIZE** \_\_\_\_\_

**B2:** Two cavity shell

**SHELL STYLE** \_\_\_\_\_

For compatibility options, see the table below

**L:** Receptacle with flange

**H:** Classic receptacle

**Z:** Receptacle with ground block

**R:** Receptacle without ground fingers

**P:** Classic plug

**W:** Plug with ground block

**D:** iEPX plug with integrated stain-relief

**SHELL MOUNTING** \_\_\_\_\_

**A:** Panel rear mounted connector with 4 × 6-32 mounting holes

**D:** Connector with 2 × Ø 3.10 mm thru holes

**F:** Panel rear mounted connector with 2 × 6-32 mounting holes

**L:** Panel rear mounted connector with 2 × 4-40 mounting holes

**LOCKING & POLARIZATION DEVICE <sup>(1)</sup>** \_\_\_\_\_

**4:** Pin centering guide

**5:** Socket centering guide

**POLARIZATION CODE** \_\_\_\_\_

**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 × 6.32 UNC)	B (No Holes)	D (2 × Ø 3.10 mm)	F (2 × 6.32 UNC)	L (2 × 4.40 UNC)
<b>Class N</b> (Aluminium)	L	-	-	✓	✓	✓
	H	-	✓	✓	✓	✓
	Z	✓	✓	-	-	-
	R	✓	-	-	-	-
	P	-	✓	✓	-	✓
	W	✓	✓	-	-	-
<b>Class J</b> (Weight-Optimized Aluminium)	H	-	-	-	-	✓
	P	-	✓	-	-	-
<b>Class M</b> (Composite)	L	-	-	✓	-	✓
	P	-	✓	✓	-	✓

**Notes**

1. 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

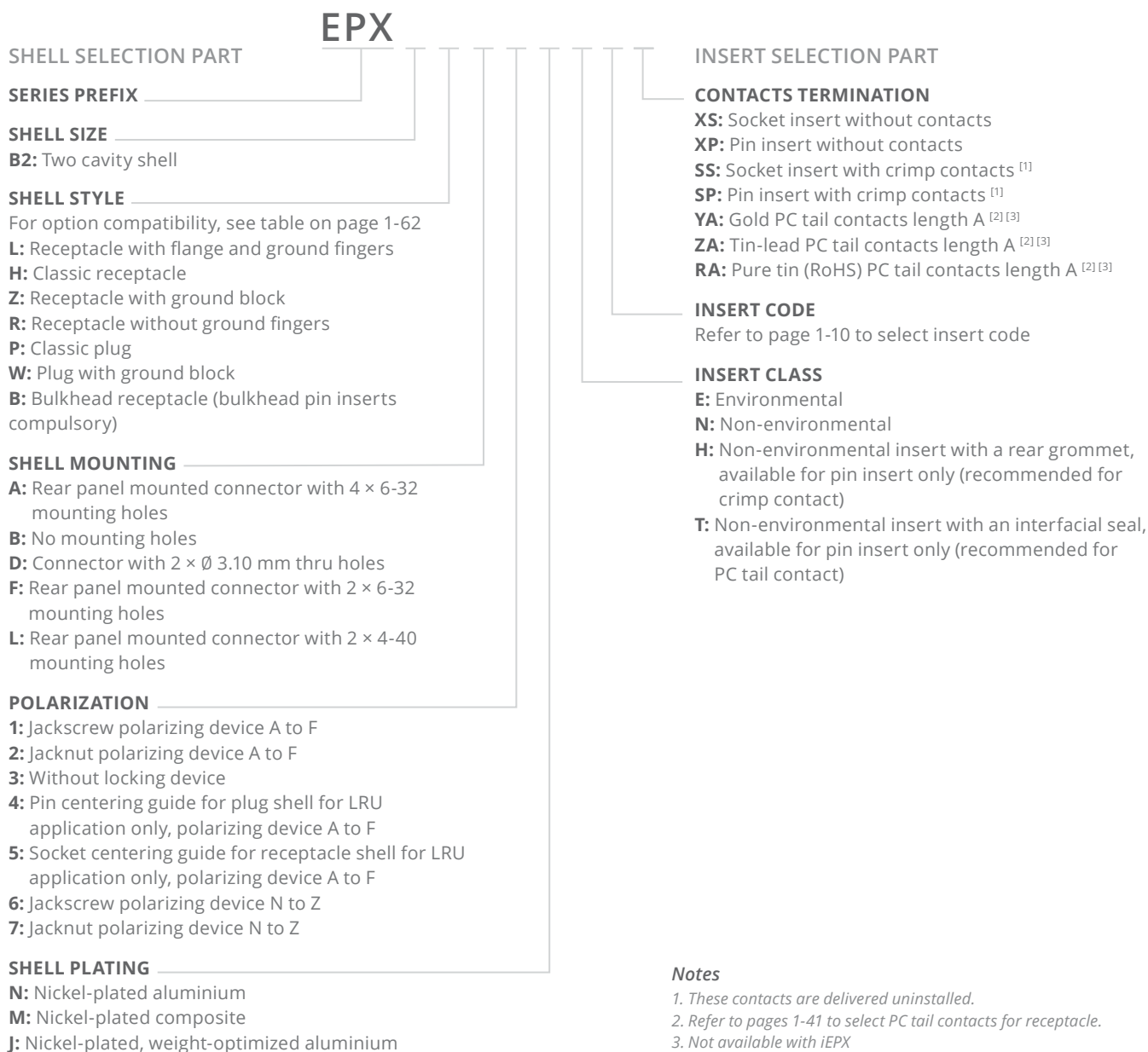
## HOW TO ORDER EPXB2 ASSEMBLY KIT FOR LRU

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 1-10.
- 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 quadrax are populated. Size 5 coax cavities are not populated.

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



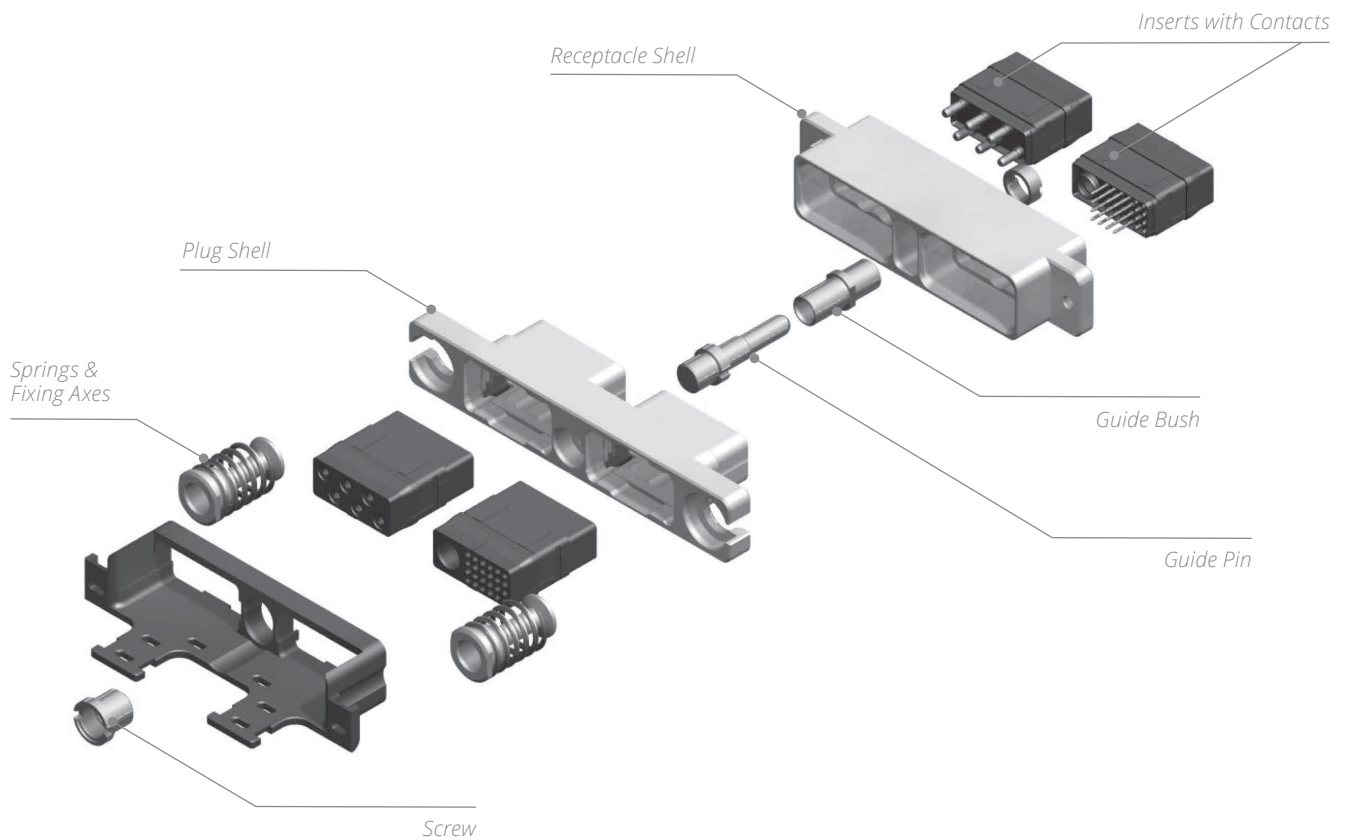
*Rack & Panel Application***EPX GALLEY ARINC 810 PRODUCT OVERVIEW**

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 that fits 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:





## Rack &amp; Panel Application

## HOW TO ORDER EPX® GALLEY EQUIPMENT CONNECTOR RECEPTACLE AND PLUG ASSEMBLY KIT

PART NUMBER	DESCRIPTION
617610188 or 617610558	Receptacle Assembled Kit <sup>(1)</sup>
617610189	Plug Assembled Kit <sup>(1)</sup>

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

### RECEPTACLE KITS

#### SHELL WITH 2 SELF-LOCKING THREADED HOLES

617610188

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

#### SHELL WITH 2 THRU HOLES

617610558

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 Socket Contact

#### Notes

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

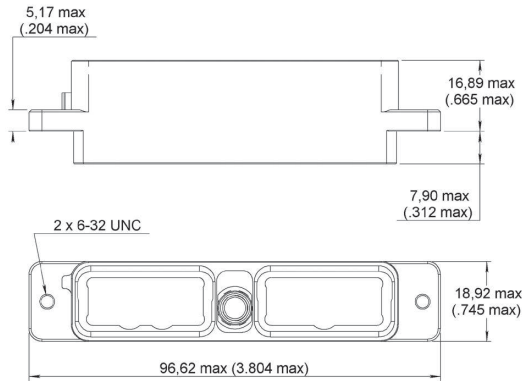
Rack & Panel Application

**DIMENSIONS & PANEL CUT-OUT**

EPX® GALLEY EQUIPMENT CONNECTOR PER ARINC 810

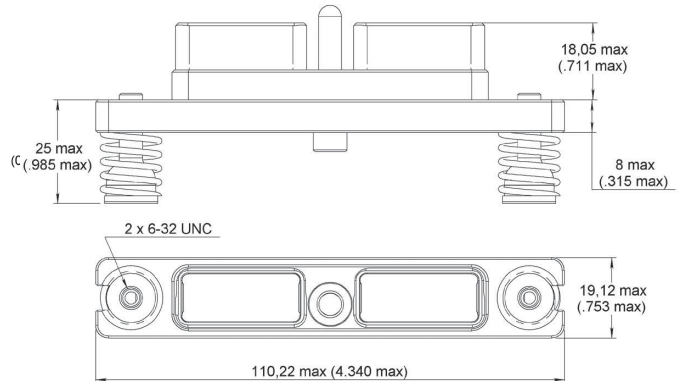
**RECEPTACLE**

Front Mount



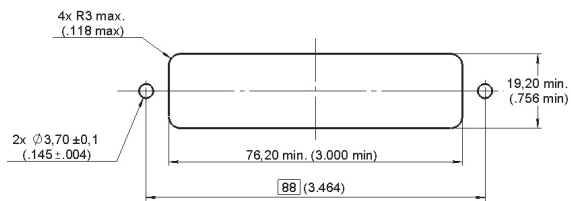
**PLUG**

Rear Mount

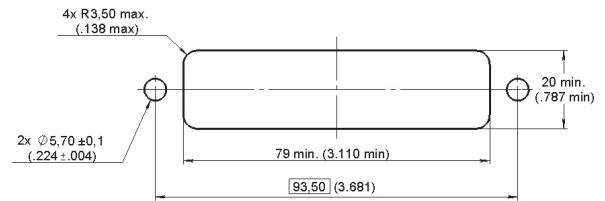


**PANEL CUT-OUT**

Receptacle



Plug



## MULTI-GANG EPX® CONNECTORS

A whole range of multigang connectors are available for disconnect and Rack & Panel applications.

Multigang connectors features and benefits:

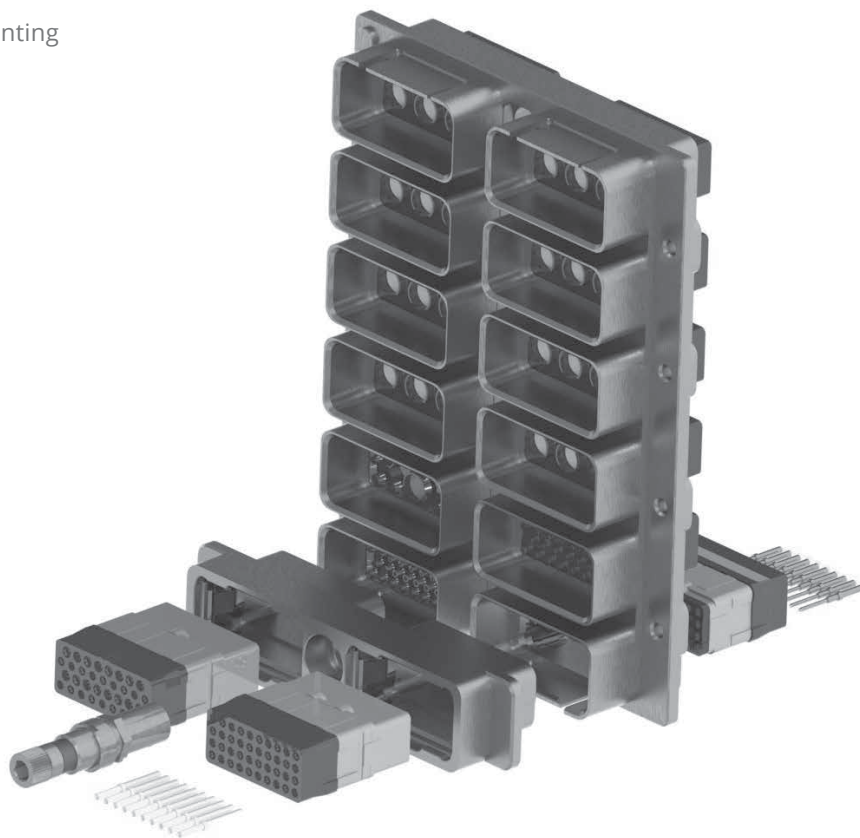
- Weight-saving design
- Make installation easier and quicker
- Utilize EPX modularity and its whole range of inserts
- Take advantage of EPX connector functionalities and use EPXB2 standard plug shells with a multigang shell

### SPECIFICATIONS

- Several cavities for EPXB inserts (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



Notes



## QM SERIES

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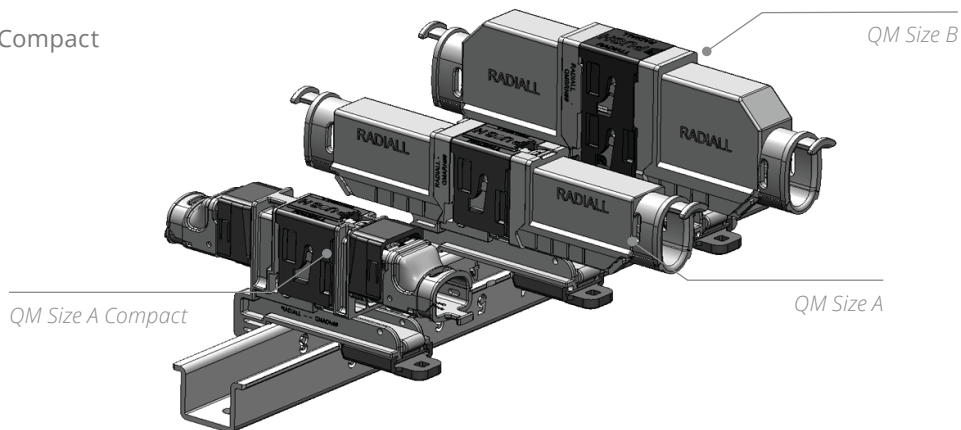
## Introduction

**INTRODUCTION****A MODULAR & TOOL-LESS CONNECTOR**

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

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

- QM Size B
- QM Size A
- QM Size A Compact



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 offers 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.

**APPLICATION**

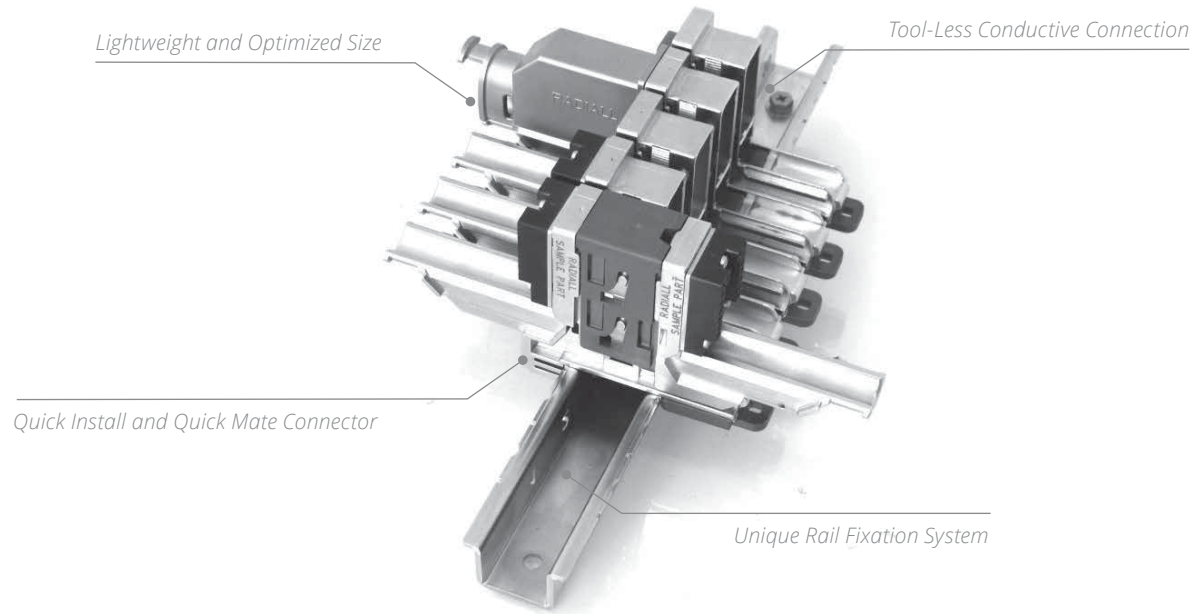
Interconnect solution for aerospace and harsh environment applications.



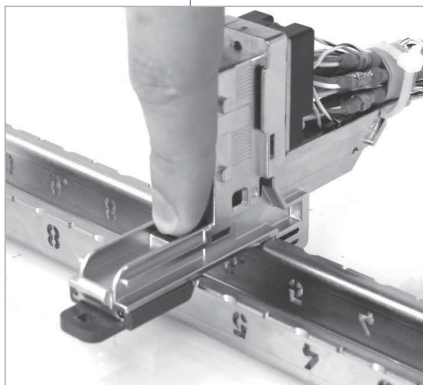


Introduction

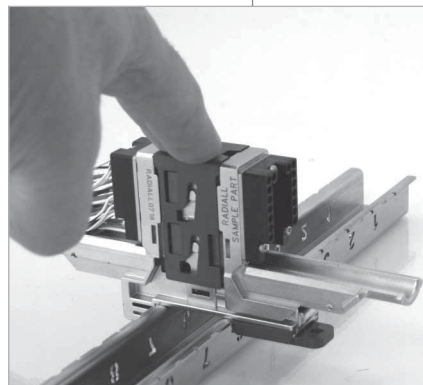
**FEATURES & BENEFITS**



**USER FRIENDLY - NO TOOLS NEEDED**



Click to Install



Push to Lock

## Introduction

**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
5	AWG8	46 <sup>(1)</sup>
	AWG10	33
	AWG12	23

**EMI SHIELDING EFFECTIVENESS**

FREQUENCY (MHZ)	LEAKAGE ATTENUATION (DB)
100	65
200	63
300	61
400	59
500	58

**Notes**

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

---

 Introduction
**DIELECTRIC WITHSTANDING VOLTAGE**

EIA 364-20 (EIA364 Standard) with Leakage Current &lt; 1mA

LEVEL	ENVIRONMENTAL INSERTS VOLTAGE (VRMS)	NON-ENVIRONMENTAL VOLTAGE (VRMS)
Sea Level	1,500	1,500
50,000 ft	800	600
70,000 ft	800	300

**INSULATION RESISTANCE**

EIA 364-21 (EIA364 Standard)

TEMPERATURE	INSULATION RESISTANCE
Ambient Temperature	> 5,000 mΩ
155 °C (+347 °F)	> 200 mΩ

**ENVIRONMENTAL CHARACTERISTICS**

- **Shell-to-Shell Conductivity:** < 2.5 mΩ, operating voltage: 400 Vrms or 500 Vdc at sea level
- **Voltage Stability (Ground Block):** Maximum variation 4 mV SAE AS 81714 (MIL-T-81714)
- **Magnetic Permeability:** < 2 μ
- **Lightning Strike:** 3.6 kA according to EIA-364, Test procedure 75, Type B Test level 1
- **Comparative Tracking Index (CTI), Including Inserts:** 250 V

## Introduction

**MECHANICAL CHARACTERISTICS****VIBRATION & SHOCK**

SHELL TYPE	MATERIAL	VIBRATION	SHOCK
		FOR 5 HOURS IN EACH OF THE 3 AXIS/INTERRUPTION < 1MS EIA 364-28 (EIA364 STANDARD)	THREE SHOCKS IN EACH AXIS EIA 364-27 (EIA364 STANDARD) CONDITION A
QM Series	Composite	4 Rail Positions = Acceleration 13.8 Grms 0.2G <sup>2</sup> /Hz from 10 to 400 HZ and 0.03 G <sup>2</sup> /hz from 400 to 2,000 Hz	4 Rail Positions = Shock Amplitude 50 G/duration 11 ms
		22 Rail Positions = Acceleration 6.2 Grms 0.04 g <sup>2</sup> /Hz from 10 to 400 Hz 0.006 g <sup>2</sup> /Hz at 2,000 Hz	22 Rail Positions = Shock Amplitude 15 G/duration 11 ms

Interruption shall not exceed 1 $\mu$ s, 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	100 Cycles	250 N max
QM Size A			125 N max

**RETENTION CHARACTERISTICS**

Contact retention EIA 364-29 (EIA364 standard) on terminated connectors.

CONTACT SIZE	RETENTION FORCE	MAX DISPLACEMENT
Ground Block	88 N (20 lb)	0.30 mm (0.012 in.)
22	53.4 N (12 lb)	0.38 mm (0.015 in.)
20	89 N (20 lb)	0.38 mm (0.015 in.)
16	111.2 N (25 lb)	0.38 mm (0.015 in.)
12	133.45 N (30 lb)	0.38 mm (0.015 in.)
8	133.45 N (30 lb)	0.38 mm (0.015 in.)
5	133.45 N (30 lb)	0.38 mm (0.015 in.)

- Insert Retention: 400 N (90 lb) (EIA 364-35 = EIA364 standard)
- Max Displacement: 0.30 mm (0.012 in.)

**ENVIRONMENTAL CHARACTERISTICS**

- Temperature Range: -65 °C/+155 °C (EIA 364-32 - test condition 4)
- Temperature Life: 1,000 H at 155 °C (EIA 364-17 - method A)
- Salt Spray: 96 hours (nickel-plating) EIA 364-26 (EIA364 standard) test condition A
- Humidity: 10 days with temperature variation from -10 °C to +65 °C EIA 364-31 Method 4, test condition B (EIA364 standard).
- Altitude Immersion: 3 cycles at 50,000 ft EIA 364-03 (EIA364 standard).

For more details, please refer to QM product specification.

Inserts

### INSERT SELECTION TABLE

QM size B connectors will use EPXB inserts.

QM size A connectors will use EPXA inserts.

SERIES	INSERT NAME	INSERT CODE	CONTACT SIZE & TYPE <sup>[1]</sup>										TOTAL CONTACTS	
			22*	20*	15 OR 16*	16	16	12*	8	8	5	5		
			SIGNAL	POWER	POWER OR COAX	LUXCIS® FIBER OPTIC	POWER IN FIBER OPTIC CAVITY	POWER OR COAX	POWER	QUADRAX OR TWINAX	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
	6	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	

Notes

1. 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).

Inserts

**HOW TO ORDER QM INSERT**

**EPX**

**SERIES PREFIX** \_\_\_\_\_

**INSERT SIZE** <sup>[1]</sup> \_\_\_\_\_

**A:** Insert for QM size A  
**B:** Insert for QM size B

**CLASS** <sup>[2]</sup> \_\_\_\_\_

**E:** Environmental

**INSERT NAME** \_\_\_\_\_  
 Refer to table on page 2-7 for inserts arrangement.

**INSERT TYPE** \_\_\_\_\_

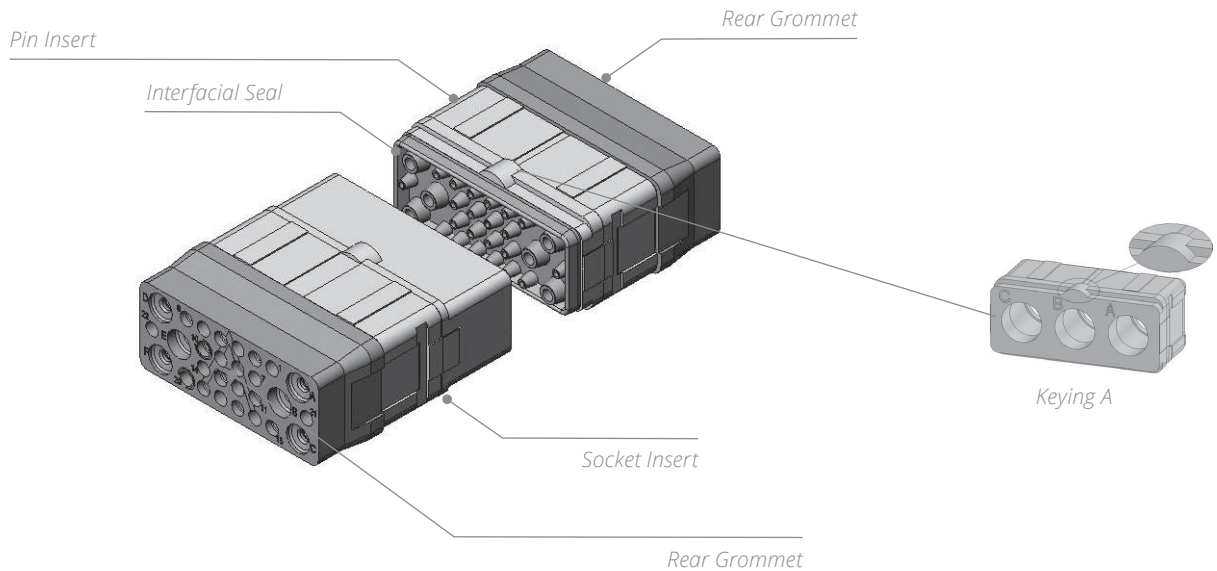
**P:** Pin  
**S:** Socket

**INSERT KEYING** \_\_\_\_\_

**A:** Insert with keying A

**CONTACT WITHOUT CODE** \_\_\_\_\_

**S:** Signal and power crimp contacts are delivered with insert but uninstalled (refer to page 2-4)  
 Inserts 00, 1C1, 1P1, F6, C3, P3, 3Q3, 12F6, F12C and 3T3 are not available in S contact version.

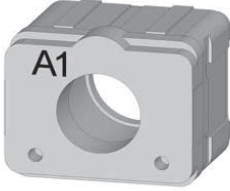
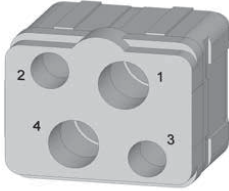
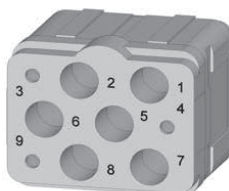
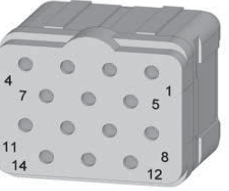
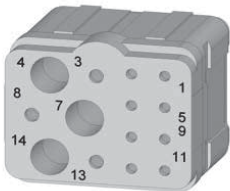
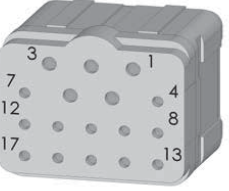
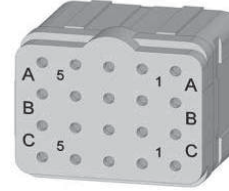
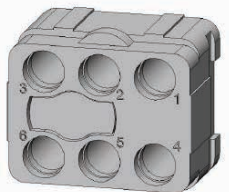


**Notes**

1. Inserts are designed for rear release and rear removable contacts
2. Pin and socket inserts can be installed in either plug or receptacle shell

Inserts

EPXA INSERTS ARRANGEMENTS

			
<b>Insert Name 1C1</b> Insert Name A 1 x Size 5 Coax Contacts	<b>Insert Name 1P1</b> Insert Code B 1 x Size 5 Power Contacts	<b>Insert Name 04</b> Insert Code C 2 x Size 15 or 16 Contacts 2 x Size 12 Contacts	<b>Insert Name 09</b> Insert Code D 3 x Size 20 Contacts 6 x Size 15 or 16 Contacts
			
<b>Insert Name 14</b> Insert Code E 14 x Size 20 Contacts	<b>Insert Name 14M</b> Insert Code F 8 x Size 22 Contacts 3 x Size 20 Contacts 3 x Size 15 or 16 Contacts	<b>Insert Name 17</b> Insert Code G 12 x Size 22 Contacts 5 x Size 20 Contacts	<b>Insert Name 20</b> Insert Code H 20 x Size 22 Contacts
			
<b>Insert Name F6</b> Insert Code J 6 x Size 16 Optical LuxCis® Termini			

WEIGHTS

Average weight per class and type for EPXA inserts without contacts.

INSERT CLASS FOR EPXA	INSERT TYPE	
	PIN	SOCKET
E	4.10 g (0.14 oz)	5.30 g (0.19 oz)

Inserts

**EPXB INSERTS ARRANGEMENTS**

Full size inserts arrangements are compliant with EN4644.

<b>Insert Name C3</b> Insert Code A 3 × Size 5 Coax Contacts	<b>Insert Name P3</b> Insert Code B 3 × Size 5 Power Contacts	<b>Insert Name 3Q3</b> Insert Code C 3 × Size 8 Quadrax Contacts	<b>Insert Name 06</b> Insert Code D 6 × Size 12 Medium Power Contacts
<b>Insert Name 10Q2</b> Insert Code E 8 × Size 20 Contacts 2 × Size 8 Quadrax Contacts	<b>Insert Name 12F6</b> Insert Code F 6 × Size 16 Optical LuxCis® Termini 6 × Size 16 Special Electrical Contacts	<b>Insert Name F12C</b> Insert Code G 12 × Size 16 Optical LuxCis® Termini	<b>Insert Name 13C1</b> Insert Code H 6 × Size 20 Contacts 4 × Size 15 or 16 Contacts 2 × Size 12 Contacts 1 × Size 5 Contact
<b>Insert Name 13P1</b> Insert Code J 6 × Size 20 Contacts 4 × Size 15 or 16 Contacts 2 × Size 12 Contacts	<b>Insert Name 14</b> Insert Code K 14 × Size 15 or 16 Contacts	<b>Insert Name 17</b> Insert Code L 14 × Size 20 Contacts 3 × Size 12 Contacts	<b>Insert Name 20C1</b> Insert Code M 19 × Size 20 Contacts 1 × Size 5 Contact
<b>Insert Name 20P1</b> Insert Code N 19 × Size 20 Contacts 1 × Size 5 Power Contact	<b>Insert Name 22</b> Insert Code P 16 × Size 20 Contacts 6 × Size 15 or 16 Contacts	<b>Insert Name 22V</b> Insert Code Q 16 × Size 20 Contacts 6 × Size 16 Contacts	<b>Insert Name 25P1</b> Insert Code R 24 × Size 22 Contacts 1 × Size 8 Power Contact



Inserts

Full size inserts arrangements are compliant with EN4644.

			
<p><b>Insert Name 25Q1</b> Insert Code S 24 x Size 22 Contacts 1 x Size 8 Quadrax Contact</p>	<p><b>Insert Name 28</b> Insert Code T 22 x Size 22 Contacts 6 x Size 15 or 16 Contacts</p>	<p><b>Insert Name 30</b> Insert Code U 30 x Size 20 Contacts</p>	<p><b>Insert Name 34</b> Insert Code W 18 x Size 22 Contacts 16 x Size 20 Contacts</p>
			
<p><b>Insert Name 40</b> Insert Code X 40 x Size 22 Contacts</p>	<p><b>Insert Name 48</b> Insert Code Y 48 x Size 22 Contacts</p>		

**WEIGHTS**

Average weight per class and type for EPXB inserts without contacts.

INSERT CLASS FOR EPXB	INSERT TYPE	
	PIN	SOCKET
E	7.90 g (0.28 oz)	10.00 g (0.35 oz)

## Contacts

**SIGNAL & POWER CRIMP CONTACTS**

QM series offers a wide range of contacts compliant with EN3155 and SAE AS 39029. The available contacts cover aerospace applications for terminating cables.

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

**FEATURES & BENEFITS**

- Significantly reduced 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 1.27 µm
- For crimp version, no changes are required for the crimping process
- Product qualification is available upon request

**CONTACT SELECTION TABLE**

CONTACT SIZE	WIRE SIZE	TYPE	PART NUMBER FULL PLATED	CRIMPING TOOL	POSITIONER	SELECTOR	INS/EXT TOOL	MATERIAL OF TOOL	
22	22	Pin	617200	282281 M22520/2-01	282970 M22520/2-23	4	282522 (M81969/14-01)	Plastic	
	24					3			
	26	Socket	617300						
20	20	Pin	617221	282281 M22520/2-01	282971 M22520/2-08	7	282522001 (M81969/39-01)	Plastic	
	22					6			
	24	Socket	617320			5			
16	16	Pin	617240	282291 M22520/1-01	282972 M22520/1-02	6	282515 (M81969/14-03)	Plastic	
		Socket	617340			5			
						4			
	For Ground Block	20	Pin	617221050	282281 M22520/2-01	282581015 M22520/2-11	7	282886 M81969/1-02	Metal
			Socket	N/A					
	For Optical/Electrical Cavity	16	Pin	617235003 <sup>[1]</sup>	282291 M22520/1-01	282581013	6	282515 (M81969/14-03)	Plastic
		18					5		
20		4							

**Notes**

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

Contacts

CONTACT SELECTION TABLE

CONTACT SIZE	WIRE SIZE	TYPE	PART NUMBER FULL PLATED	CRIMPING TOOL	POSITIONER	SELECTOR	INS/EXT TOOL	MATERIAL OF TOOL
12	12	Pin	617250	282291 M22520/1-01	282972 M22520/1-02	8	282549004 (M81969/14-04)	Plastic
	14	Socket	617350			7		
	16					6		
8	8	Pin	617291002 <sup>[2] [3]</sup>	R282600000 M22520/23-01 + Die set R282650000 M22520/23-02	282588	N/A	282549001	Metal
		Socket	617391002 <sup>[2] [3]</sup>					
5	8	Pin	617280 <sup>[2] [4]</sup>	R282600000 M22520/23-01 + Die set R282650000 M22520/23-02	282557020	N/A	282946 (M81969/28-01)	Metal
		Socket	617390 <sup>[2] [4]</sup>		282557021			
	12	Pin	617260001 <sup>[2] [4]</sup>	282613	282586003	6		
	16	Socket	617370001 <sup>[2] [4]</sup>		282586005	4		

OVERSIZED & REDUCED CRIMP BARREL CONTACTS

CONTACT SIZE	WIRE SIZE	TYPE	PART NUMBER FULL PLATED	CRIMPING TOOL	POSITIONER	SELECTOR	INS/EXT TOOL	MATERIAL OF TOOL	
22	Reduced Crimp Barrel	28	Pin	617201	282281 M22520/2-01	282970 M22520/2-23	5	282522 (M81969/14-01)	Plastic
		30	Socket	617301		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	282281 M22520/2-01	282971 M22520/2-08	4	282522001 (M81969/39-01)	Plastic
		24	Socket	617324001		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	282291 M22520/1-01	282972 M22520/1-02	5	282515 (M81969/14-03)	Plastic
		22	Socket	617341			5		
		24					4		
	Reduced Crimp Barrel for Optical Electrical Cavity	20	Pin	617235002 <sup>[1]</sup>	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. 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).

## Contacts

## COAXIAL CRIMP CONTACTS

CONTACT SIZE	CABLE TYPE	TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	INS/EXT TOOL	MATERIAL OF TOOL
15-16	RG188 FILECAF1709/6 F1709/8 RG174-RG179-RG316 ASNE0639XY 75 Ohms	Pin	617130		282512 (M81969/14-03)	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- RG178DS NEXAN 10036442 75 Ohms	Pin	617103001	617103		
		Socket	617003001	617003		
	RG178-RG196	Pin	617104001	617104		
		Socket	617004001	617004		
	RG180 PAN6422XZ ANSE063WGH 96 Ohms	Pin	617105001	617105		
		Socket	617005001	617005		

## TWINAX &amp; TRIAX CRIMP CONTACTS

CONTACT SIZE	CABLE TYPE	TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	INS/EXT TOOL	MATERIAL OF TOOL
12 Triax	ECS0700	Pin	617190010		282549004 (M81969/14-04)	Plastic
		Socket	617090010			
	M17/176-00002	Pin	617190012			
		Socket	617090012			
8 Triax	TENSOLITE 24463/9PO25X-2 100 Ohms	Pin	617165021	617165020	282549001	Metal
		Socket	617065021	617065020		
	WHITMOR W2675-1575	Pin	617165	617165001		
		Socket	617065	617065001		
8 Twinax	ABS0386WF24 & TYCO 1726A1424A	Pin	617165011	620165010	282549001	Metal
		Socket	617065011	620065010		
5 Triax	PAN6421ZA002 77 Ohms M17/176-00002 EN3375-003 Raychem 106113 77 Ohms	Pin	617150001	617150	282946 (M81969/28-01)	Metal
		Socket	617050001	617050		
	TENSOLITE 24473/03159X 124 Ohms	Pin	617152001	617152		
		Socket	617052001	617052		

Contacts

## QUADRAX & BMA CRIMP CONTACTS

### QUADRAX CONTACTS



The Quadrax contact offer is compliant with Arinc 600 and EN3155-072 and EN3155-073 standards.

### ENVIRONMENTAL QUADRAX

CONTACT SIZE	CABLE TYPE	TYPE	ENVIRONMENTAL PART NUMBER	EXTRACTION TOOL IN METAL
8	Ethernet Cable ABS0972 & ABS1503	Pin	617175011	282549001
		Socket	617075011	
	TENSOLITE NF24Q100	Pin	617175051	
		Socket	617075051	
	TENSOLITE NF26Q100/JSF Y18	Pin	617175053	
		Socket	617075053	
	TENSOLITE NF22Q100	Pin	617175041	
		Socket	617075041	

### NON-ENVIRONMENTAL QUADRAX

CONTACT SIZE	CABLE TYPE	TYPE	NON-ENVIRONMENTAL PART NUMBER	COMPATIBLE SEALING BOOT PART NUMBER	EXTRACTION TOOL IN METAL
8	Ethernet Cable ABS0972 & ABS1503	Pin	617175012	617939003	282549001
		Socket	620075010		
	TENSOLITE NF24Q100	Pin	617175052		
		Socket	620075050		
	TENSOLITE NF26Q100/JSF Y18	Pin	617175054	617939005	
		Socket	620075021		
	TENSOLITE NF22Q100	Pin	617175040	617939003	
		Socket	620075040		

### BMA CONTACTS



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

CONTACT SIZE	CABLE TYPE	CONNECTOR TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	FREQUENCY RANGE	MAX VSWR	INSERTION LOSS
8	SHF5 - SHF5M <sup>(1)</sup>	Pin	617171011	617171010	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)
	RG142	Pin	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	617171031	617171030	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)
	SHF5 - SHF5M <sup>(1)</sup>	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 <sup>(1)</sup>	Socket	617071041	617071040	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)

Notes

1. The BMA contacts, which can accommodate SHF cables, require a termination by Radiall.

Contacts

### LUXCIS® FIBER OPTIC CONTACTS

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

#### OPTICAL PERFORMANCE

	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 & ENVIRONMENTAL CHARACTERISTICS

	STANDARD	PERFORMANCE
Thermal Cycling	SAE AS 13441 Method 1003.1	-55 °C/+125 °C (Cable Dependent)
Temperature Endurance	TIA/EIA 455-4	1000 h at 125 °C (Cable Dependent)
Vibration	TIA/EIA 455-11	27 Grms
Shock	TIA/EIA 455-14	50 G, 11 ms
Durability	TIA / EIA 364-09	500 Cycles <sup>(1)</sup>
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

**F7250**

**LUXCIS® SERIES** \_\_\_\_\_

**FERRULE TYPE** \_\_\_\_\_

- 00:** PC ferrule for single-mode fiber
- 03:** PC ferrule for 50/125 or 62.5/125 µm multi-mode fiber
- 04:** PC ferrule for 100/40 µm multi-mode fiber
- 05:** PC ferrule for 200/230 µm multi-mode 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

The sealing plug F718 211 200 is specifically designed to fill the unused LuxCis® Arinc 801 cavities.



**Notes**

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

Contacts

### FILLER PLUGS

Filler plugs are dedicated to non-environmental insert cavities.

SIZE	CONTACT CAVITY VERSION	INS/EXT	COLOR	PART NUMBER	DRAWING
22	For Pin & Socket	Rear/Rear	Black	620920	
20			White	610941	
16 For Electrical Cavity			Blue	620922	
16 For Optical Cavity			Green	F718211200	
12			Yellow	620923	
8	Pin	Rear/Rear	Nickel	619953	
	Socket			619950	
5	Pin		White	617930	
	Socket			617931	

### SEALING PLUGS

Sealing plugs are dedicated to environmental insert cavities.

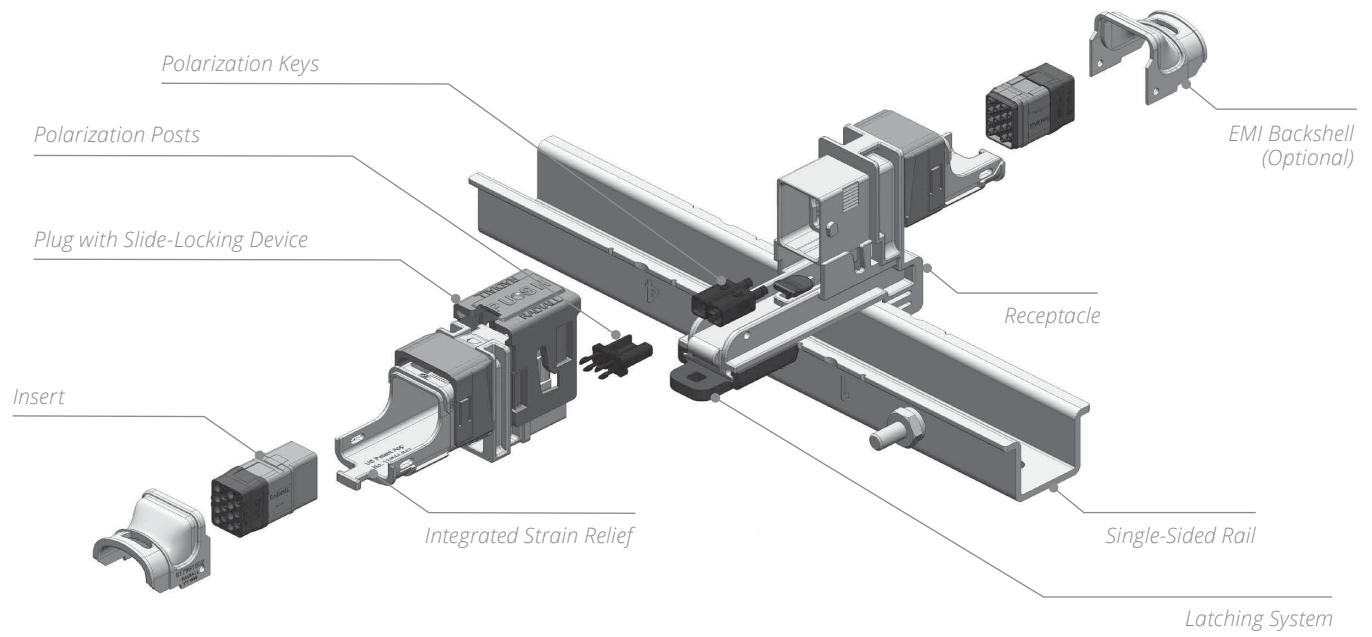
SIZE	CONTACT CAVITY VERSION	INS/EXT	COLOR	PART NUMBER	DRAWING	
22	For Pin & Socket	Rear/Rear	Black	616910		
20			Red	616911		
16 For Electrical Cavity			Green	616912		
				F718211200		
16 For Optical Insert			Orange	616913		
12				Red	618915	
8					616914013	
5						

Notes

The arrows show the direction which you have to insert the plug.

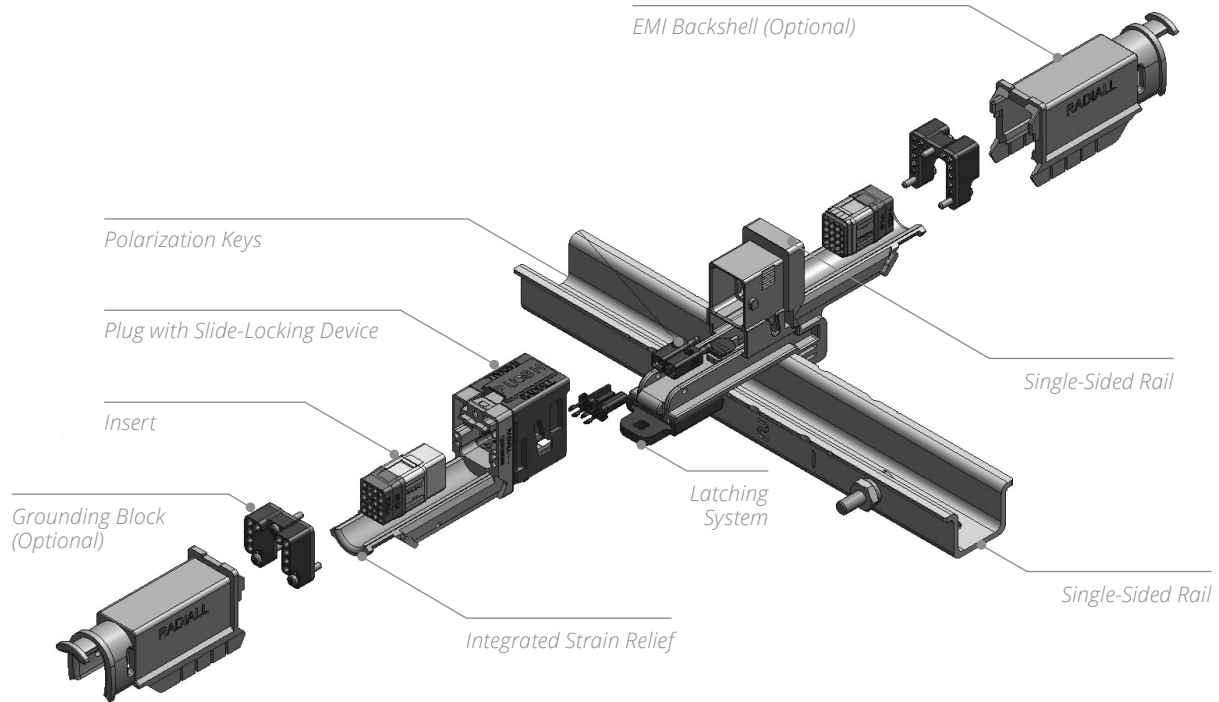
Connectors

QM SIZE A COMPACT PRODUCT OVERVIEW

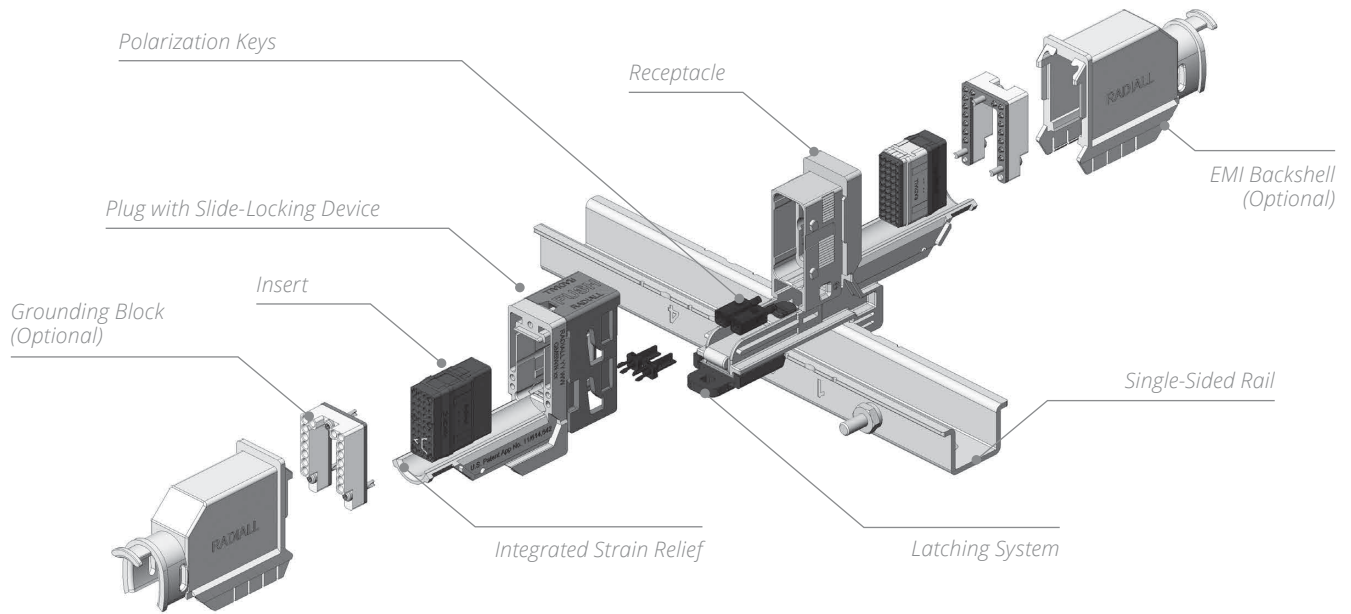




## QM SIZE A GROUNDING BLOCK PRODUCT OVERVIEW



### QM SIZE B PRODUCT OVERVIEW



Connectors

HOW TO ORDER QM SHELL

QM

SERIES PREFIX \_\_\_\_\_

SHELL SIZE \_\_\_\_\_

- A: QM size A shell
- B: QM size B shell

PRODUCT TYPE \_\_\_\_\_

- C: Plug for QM size A Compact only
- D: Receptacle for QM size A Compact only
- P: Plug <sup>[2]</sup>
- R: Receptacle <sup>[2]</sup>
- W: Plug with ground block <sup>[1][2]</sup>
- Z: Receptacle with ground block <sup>[1][2]</sup>

FINISH \_\_\_\_\_

- N: Nickel-plating

POLARIZATION \_\_\_\_\_

- 00: Delivered without polarizing keys
- WITHOUT CODE: Delivered with polarizing keys not installed
- \*\* : Delivered with polarizing keys installed according to code (see table 2 on page 2-22).




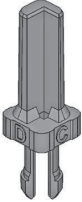
Notes

1. Shells with ground block are not compatible with EMI backshell.
2. Available with QM size A and QM size B.

Connectors

**POLARIZATION CODE**

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

POLARIZATION KEYS FOR RECEPTACLE		POLARIZATION POSTS FOR PLUG	
			
View Shows A and D	View Shows C and B	View Shows A and B	View Shows C and D

There are 16 possible codings:

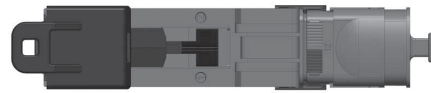
<b>KEY POSITION 1</b>	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
<b>KEY POSITION 2</b>	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D

**QM SIZE A COMPACT CONNECTOR**

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



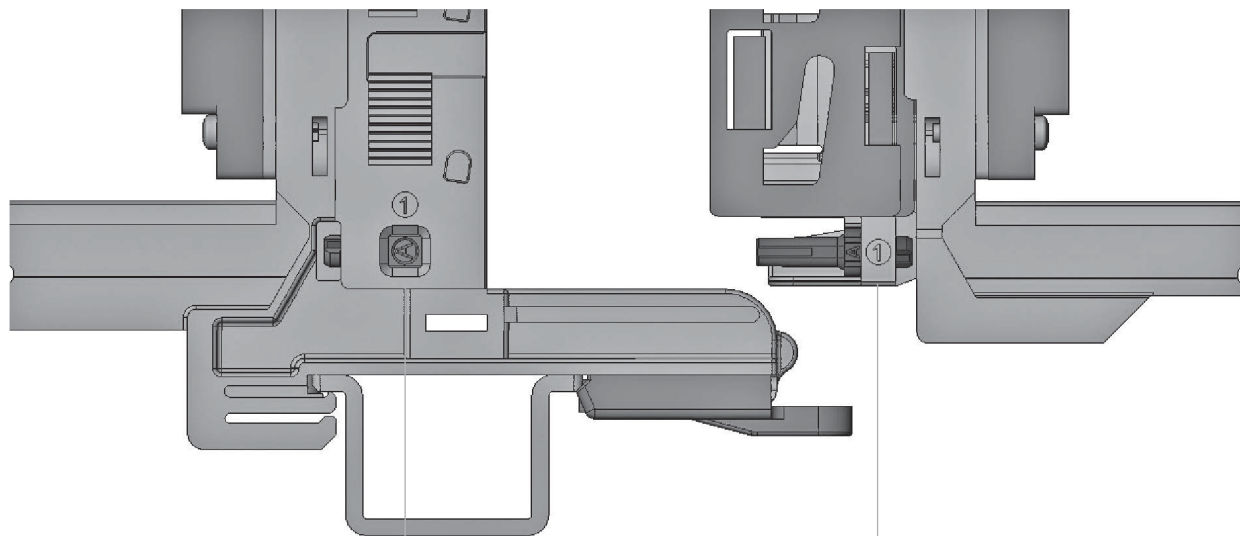
*Polarization Posts Under QMACN*



*Polarization Keys Under QMADN*

**QM SIZE A & B CONNECTOR**

**Tips to Read Polarization Code:** In order to properly read the polarization code, you can read the part number marked on the connector at the same time.



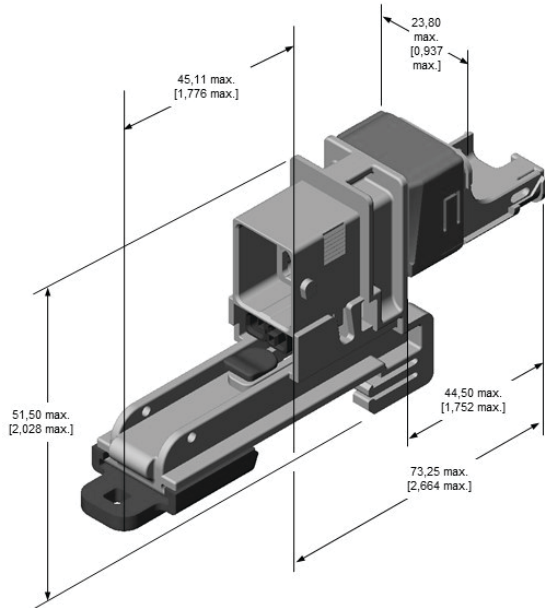
*Code on Polarization Keys*

*Code on Polarization Posts*

Connectors

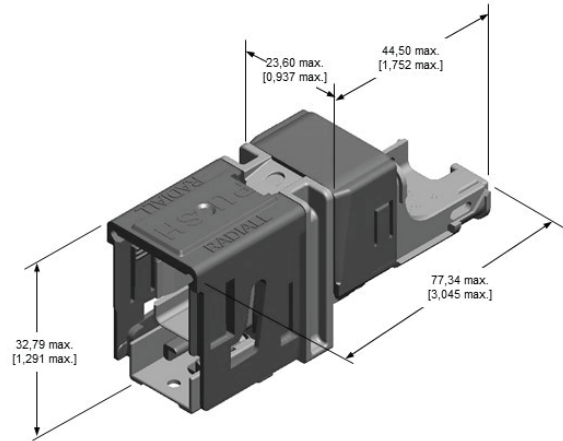
QM SIZE A COMPACT SHELL DIMENSIONS

RECEPTACLE



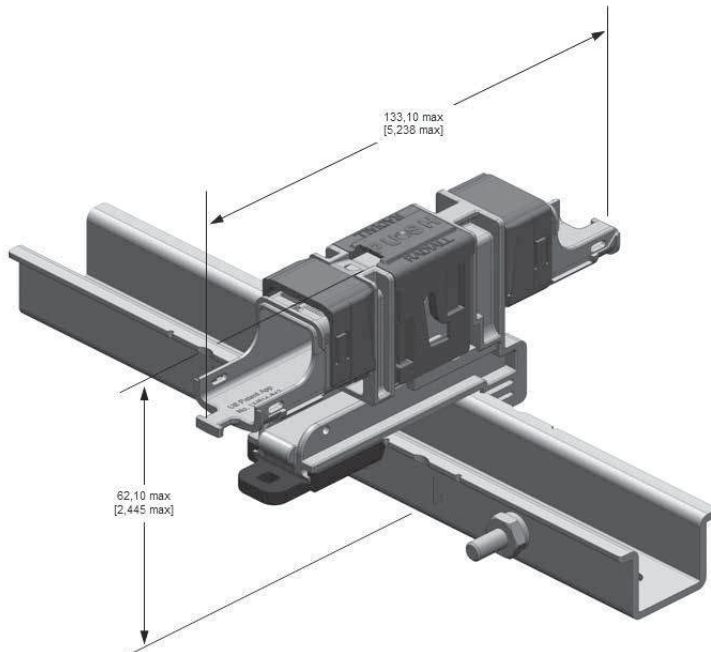
QMADN: 39 G

PLUG



QMACN: 24 G

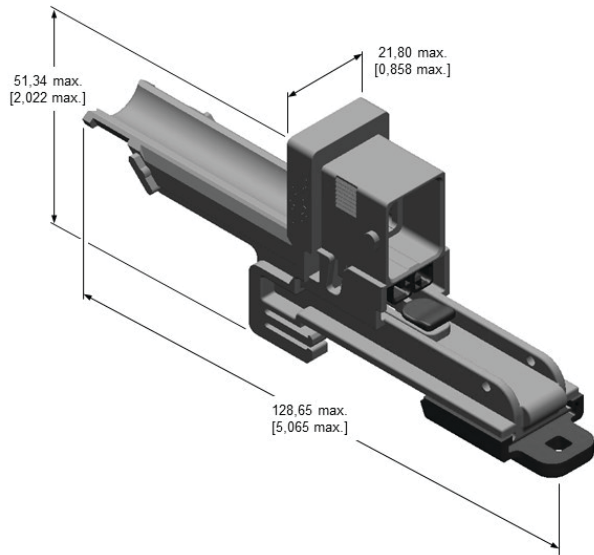
MATED PAIR



Connectors

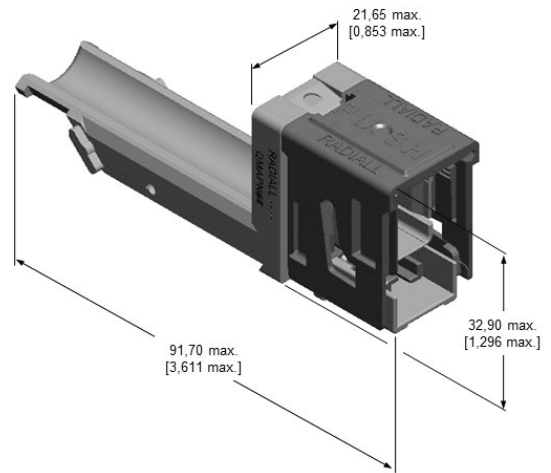
QM SIZE A SHELL DIMENSIONS

RECEPTACLE



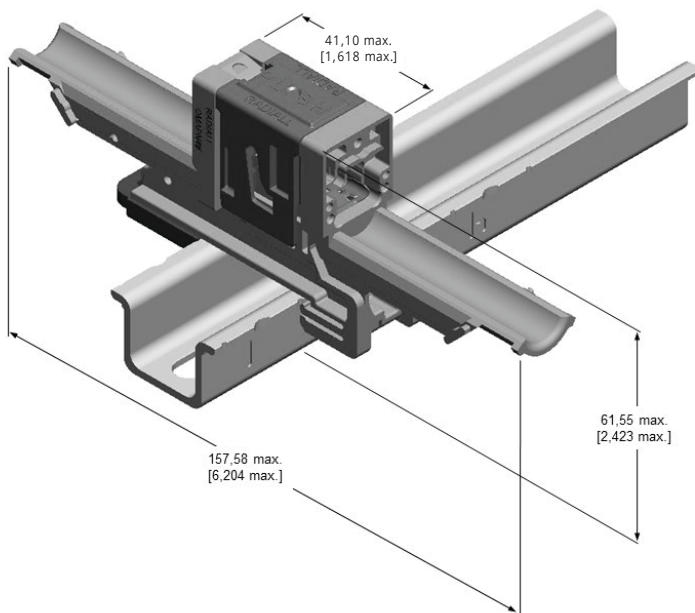
QMARN: 39 G  
QMAZN: 45 G

PLUG



QMAPN: 24 G  
QMAWN: 30 G

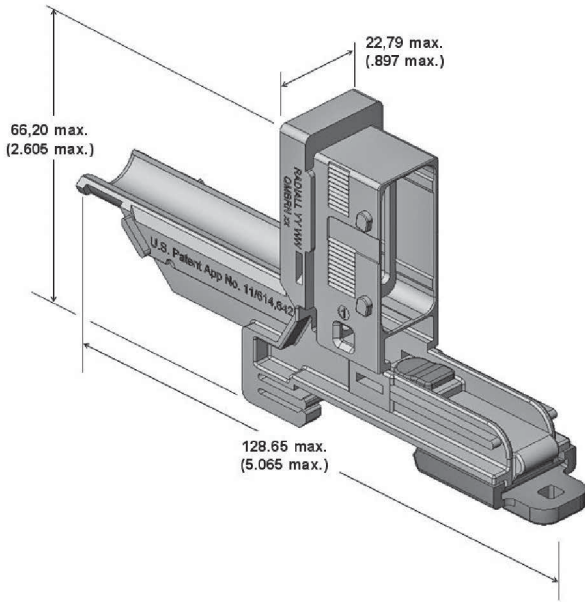
MATED PAIR



Connectors

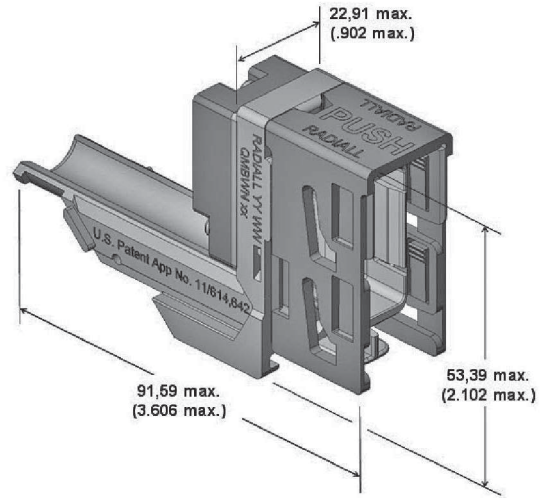
QM SIZE B SHELL DIMENSIONS

RECEPTACLE



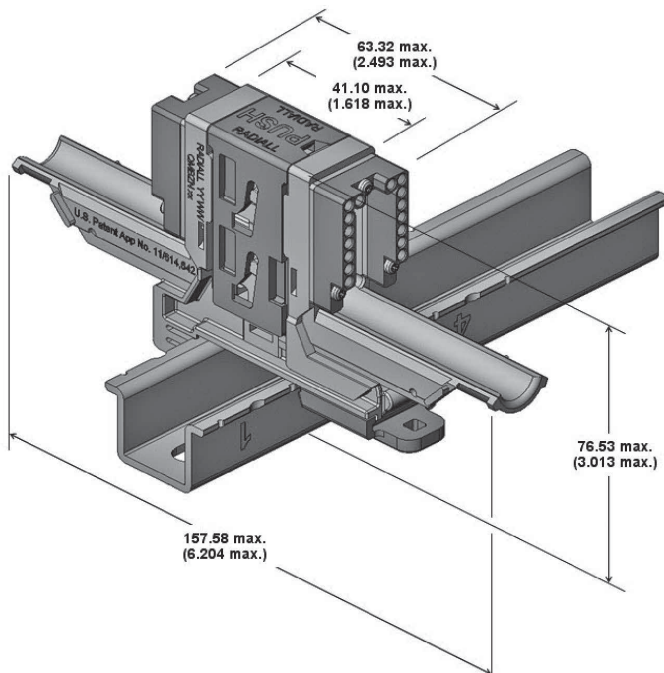
QMBRN: 42 G  
QMBZN: 50 G

PLUG



QMBPN: 31 G  
QMBWN: 38 G

MATED PAIR



Accessories

HOW TO ORDER QM MOUNTING DEVICE

QM

**SERIES PREFIX** \_\_\_\_\_

**MOUNTING DEVICE** \_\_\_\_\_

**L:** L-Bracket  
**U:** Single-sided rail  
**H:** Double-sided rail

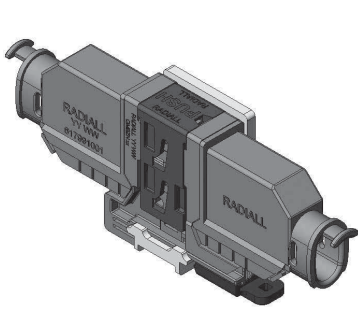
**RAIL NAME** \_\_\_\_\_  
 Refer to tables on page 2-28 for rail name.

**MOUNTING DEVICE MATERIAL** \_\_\_\_\_

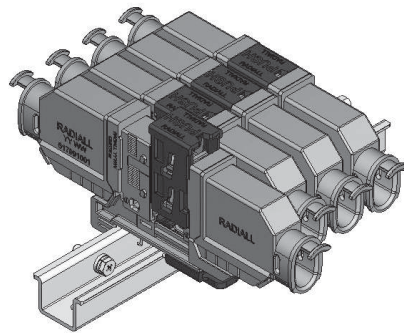
**A:** Aluminium

**FINISH** \_\_\_\_\_

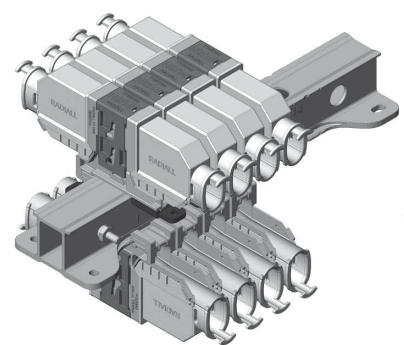
**N:** Nickel



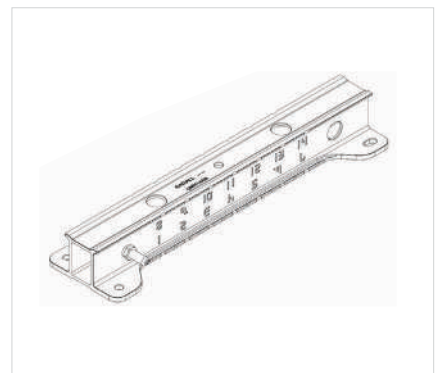
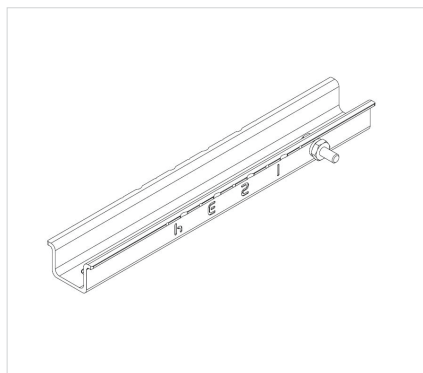
L-Bracket



Single-Sided Rail <sup>(1)</sup>



Double-Sided Rail



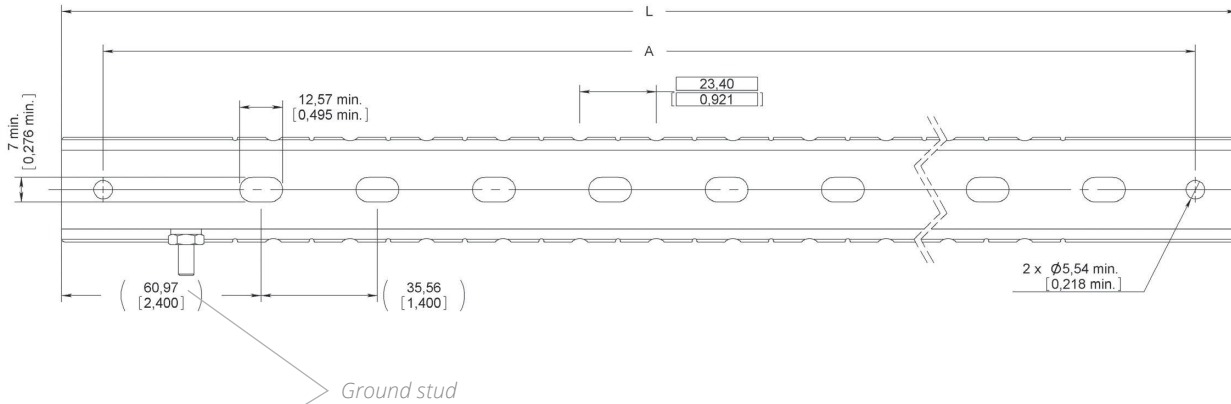
Notes

1. Single-sided rails are delivered with slot and ground stud.

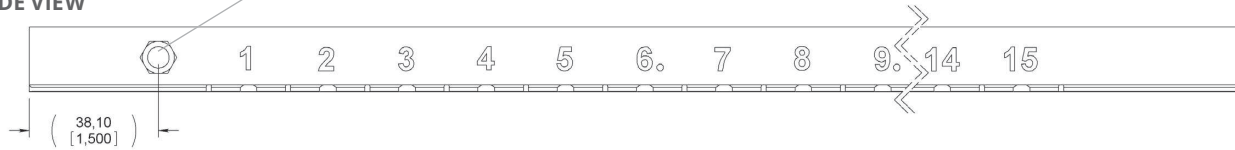


Accessories

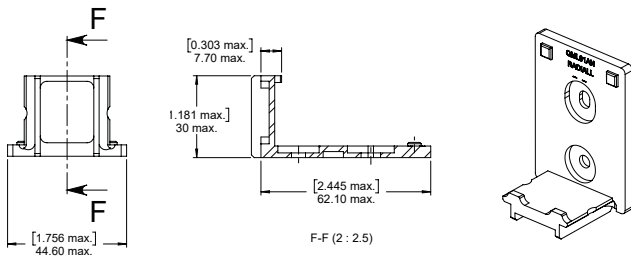
TOP VIEW



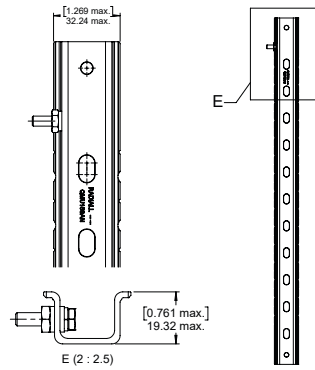
SIDE VIEW



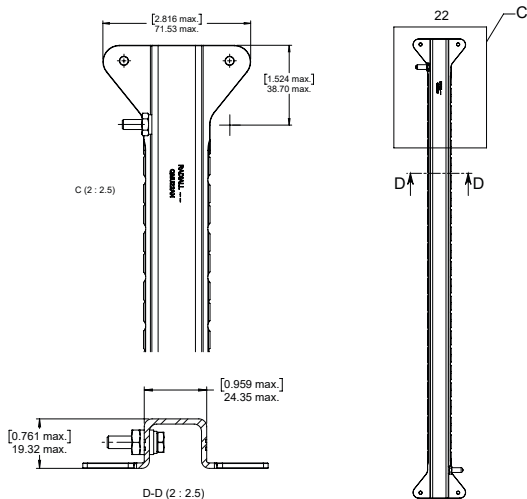
RAIL QM L-BRACKET



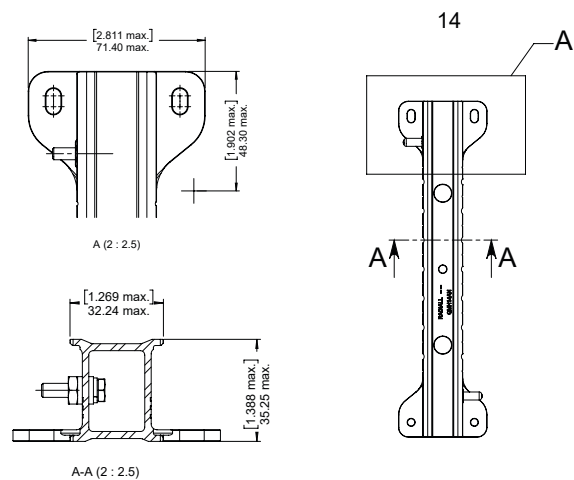
SINGLE-SIDED RAIL QM GENERAL



SINGLE-SIDED RAIL QM #22



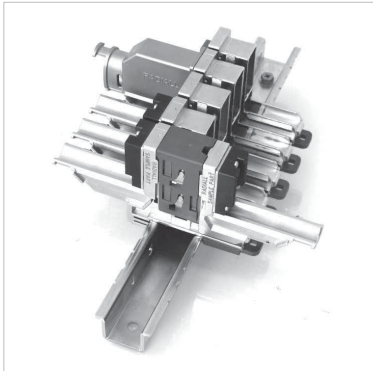
DOUBLE-SIDED RAIL QM



## DIMENSIONS OF MOUNTING DEVICES

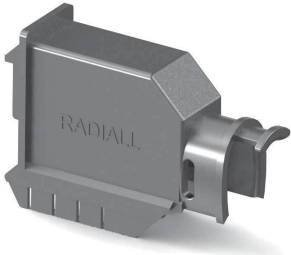

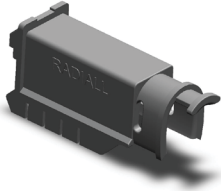
RAIL NAME	NUMBER OF CONNECTOR POSITIONS	TYPE OF MOUNTING DEVICE	LENGTH MM MAX (INCH)	NUMBER OF GROUND STUDS	WEIGHT G (OZ)
01	1	L-Bracket	30 (1.181)	-	27 (0.95)
04M	4	Single	127 (5.000)	1	52 (1.83)
06M	6	Single	173.74 (6.840)	1	69 (2.43)
08M	8	Single	220.50 (8.681)	1	86 (3.03)
10M	10	Single	266.19 (10.48)	1	100 (2.53)
12M	12	Single	313.95 (12.360)	1	120 (4.23)
14M	14	Single	360.95 (14.211)	1	137 (4.83)
14	14	Double	270,76 (10,66)	2	263 (9.28)
16M	16	Single	407.67 (16.050)	1	156 (5.50)
16	16	Double	294,3 (11,58)	2	279 (9.84)
18M	18	Single	454.40 (17.890)	1	171 (6.03)
18	18	Double	317.5 (12.5)	2	298 (10.51)
20	20	Double	340.86 (13.42)	2	313 (11.04)
22	22	Single	621.54 (24.470)	2	261 (9.21)
22	22	Double	364.23 (14.34)	2	332 (11.71)
24	24	Double	387.6 (15.26)	2	351 (12.38)
26	26	Double	410.97 (16.18)	2	370 (13.05)
28	28	Double	434.34 (17.1)	2	370 (13.05)
30	30	Double	457.71 (18.02)	2	405 (14.29)
32	32	Double	481.33 (18.95)	2	424 (14.96)
34	34	Double	504.69 (19.87)	2	443 (15.63)
36	36	Double	528.06 (20.79)	2	462 (16.30)
38	38	Double	551.43 (21.71)	2	481 (16.97)
40	40	Double	574.8 (22.63)	2	499 (17.60)
42	42	Double	598.17 (23.55)	2	519 (18.31)
44	44	Double	621.54 (24.47)	2	540 (19.05)

### STRAIN RELIEFS & BACKSHELLS








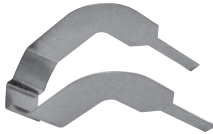


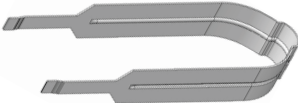

QM connectors can be equipped with backshells to provide complete shielding.

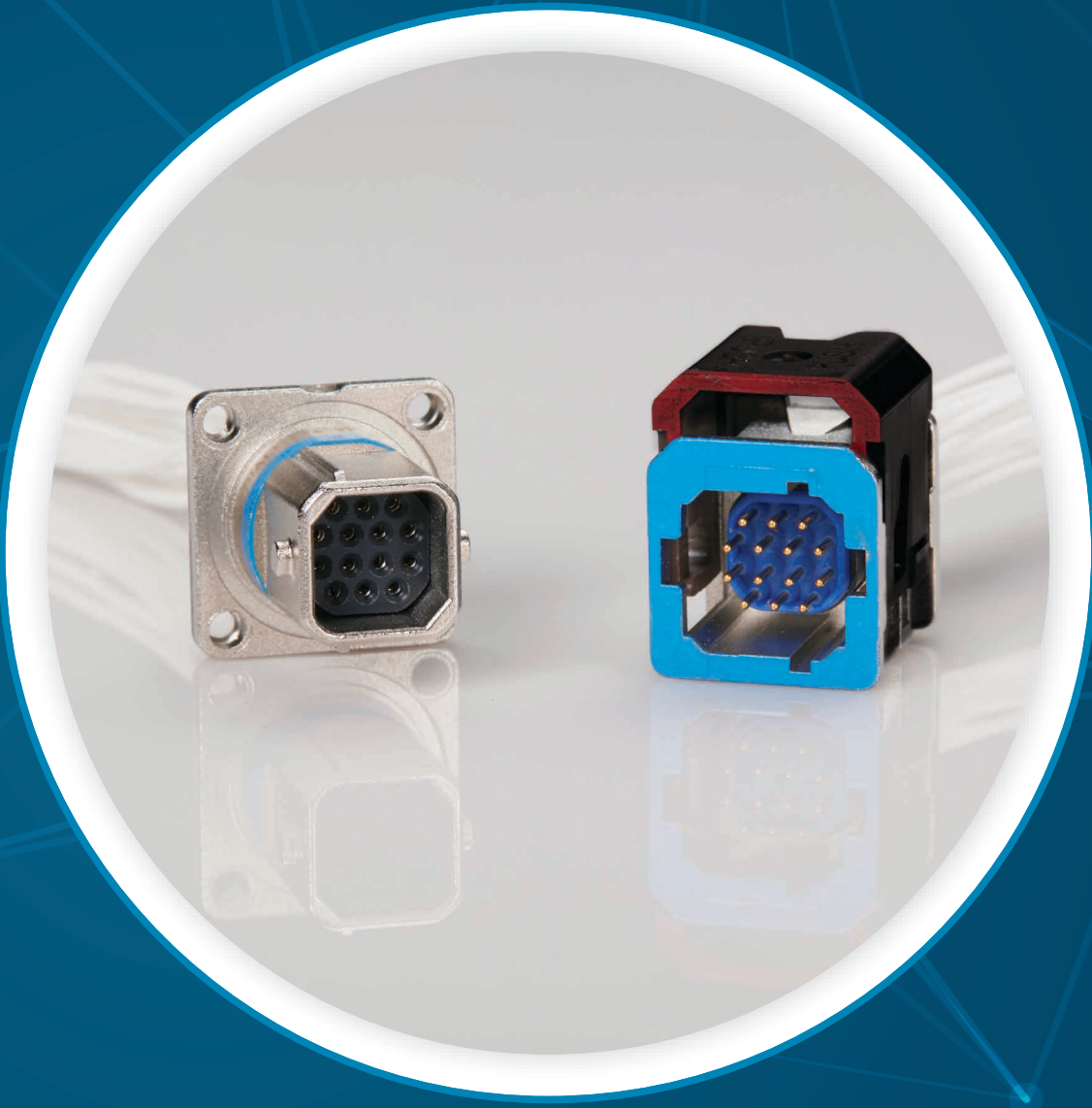
Backshells are compatible with plug and receptacle side. They provide EMI-RFI shielding specially needed in aircraft with a composite architecture. They are easy to install as they require no specific tools, and the backshells combine cost savings and high performances.

	PART NUMBER	DESCRIPTION
	617 991 001	QM Size B EMI Backshell
	617 991 002	QM Size A Compact EMI Backshell
	617 991 010	QM Size A EMI Backshell

Accessories

**SPARE PARTS & TOOLS**

	<b>PART NUMBER</b>	<b>DESCRIPTION</b>
	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
	617 980 030	Polarization Post
	617 980 031	Polarization Key
	282 668 001	Tweezers for Polarizing Post and Key
	282 521 004	Right Angle Insert Extraction Tool
	F780 855 000	Hexagonal Key 5/64 in. (2 mm)/ 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)



## QUICKFUSIO™ SERIES

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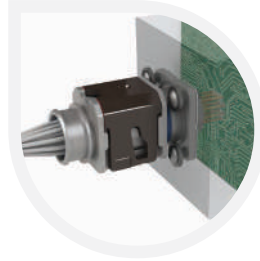
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Spare Parts & Tools..... 3-23

*Introduction***INTRODUCTION**

Radiall's experience in rectangular connectors and ability to design innovative solutions make the QuickFusio™ series the perfect miniature interconnect solution for cabin interiors and EWIS aerospace applications. Combining high performance with competitive costs, this lightweight, tool-less connector features The Radiall Touch: one finger mating - in a snap!

The QuickFusio™ series is a versatile range that covers any wiring systems including harness-to-harness and equipment-to-harness. The QuickFusio™ series is available in different shell styles in order to make installing the miniature connector in any aircraft area feasible.

**PANEL MOUNT****BOX MOUNT****BUNDLE MOUNT****STRUCTURE MOUNT****APPLICATIONS**

The QuickFusio™ series is the perfect solution for major commercial aerospace and defense OEMs and is perfectly suited for:

- Cabin Interiors: In Flight Entertainment (IFE), Lighting, Seat Actuators, In-Seat Power Supply, Passenger Service Units (PSU)
- Electrical Wiring Systems (EWIS)
- Sensors





## Introduction

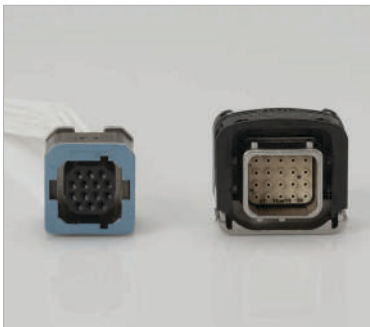
## FEATURES &amp; BENEFITS

*Competitive Cost*

QuickFusio™ series is optimized to meet customer expectations in terms of competitive price positioning. The use of standard SAE-AS-38999 contacts in QuickFusio™ inserts and the unique mating mechanism enables quick mating and reduces overall cost.

*Simple Wiring*















By squaring a circle, Radiall has created an innovative design compatible with standard SAE-AS-38999 size 11 accessories. The unique design covers any type of wiring combination and is easy to install due to the Radiall Touch: one finger mating – in a snap!

*Lightweight Solution*

Extremely compact, QuickFusio™ series is 20% lighter and 40% smaller than the competition. This small, dense solution eliminates wasted space and reduces the overall weight. QuickFusio™ is only 20 grams per pair when equipped with size 22 contacts.

Introduction

RANGE OVERVIEW

PLUGS	RECEPTACLES (MATEABLE WITH ALL PLUGS)			
	Receptacle Outputs	Square Flange Receptacle for Panel and Box Mount <sup>(1)</sup>	In-Line Receptacle and Platform for Bundle Mount	In-Line Receptacle and Platform for Structure Mount <sup>(2)</sup>
 Threaded Accessory	Threaded Output			
 Banding Platform	Banding Platform Output			
 Banding Platform and Tie-Wrap	Banding Platform and Tie-Wrap Output			
	Short Receptacle Output with Straight PC Tail Contacts			
	Short Receptacle Output with Right Angle PC Tail Contacts			

Notes

1. Sealed square flange versions will soon complete the existing square flange receptacle range. Please contact your local representative for additional information.
2. Shell style not yet available. Please contact your local representative for additional information.

Introduction

**PRODUCT SELECTION GUIDE**  
**TWO INNOVATIVE SOLUTIONS TO MEET CUSTOMERS' NEEDS**

To meet all customers' needs and expectations, the QuickFusio™ series is available in two different versions: QuickFusio and QuickFusio+.

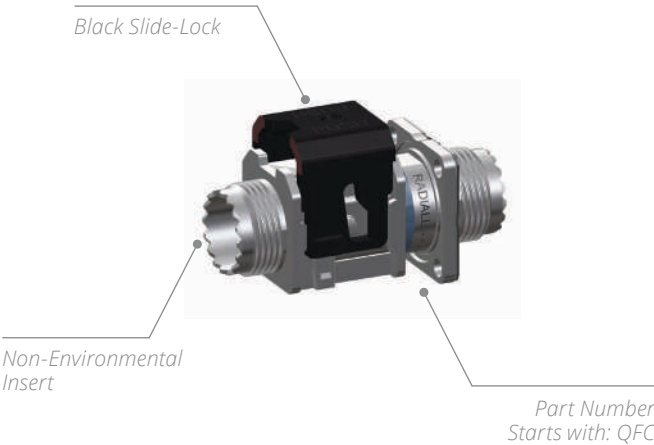
- The QuickFusio connector offers the perfect balance between extreme competitive cost and performance needed in pressurized environments, especially in cabin applications.
- Qualified in accordance to EWIS standard, the QuickFusio+ connector meets even more stringent requirements and is suitable for both pressurized and non-pressurized environments.

To choose your connector, determine your performance requirements below:

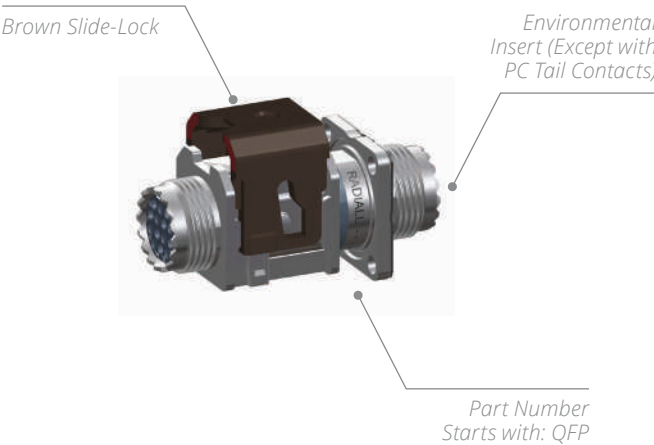
PERFORMANCE	QUICKFUSIO	QUICKFUSIO+
Operating Temperature	-55 °C to +125 °C (-67 °F to +257 °F)	-65 °C to +175 °C (-85 °F to +347 °F)
Altitude Immersion	No Sealing	55,000 ft
DWV at 70,000 ft (Mated Connector)	325 Vrms	1,000 Vrms
Salt Spray	48 h	96 h
Vibrations	20 g Sinus - 4 Hours on each of the 3 Axis	27.8 grms - 8 Hours on each of the 3 Axis
Lightning Strike	N/A	5 KA - 1,600 V
Shell to Shell Conductivity	10 mΩ max	2.5 mΩ max

**HOW TO DIFFERENTIATE YOUR CONNECTORS?**

**QUICKFUSIO**



**QUICKFUSIO+**



Characteristics

**TECHNICAL CHARACTERISTICS**

**ELECTRICAL CHARACTERISTICS**

CURRENT RATING	CONTACT SIZE	CABLE GAUGE	QuickFusio	QuickFusio+
			MAX CURRENT AMPS (A)	MAX CURRENT AMPS (A)
23		AWG22	5	5
		AWG24	3	3
		AWG26	2	2
22		AWG22	5	5
		AWG24	3	3
		AWG26	2	2
20		AWG20	7.5	7.5
		AWG22	5	5
		AWG24	3	3
16		AWG16	13	13
		AWG18	10	10
		AWG20	7.5	7.5
12		AWG12	23	23
		AWG14	17	17
		AWG16	13	13

DIELECTRIC WITHSTANDING VOLTAGE (DWV)	At Sea Level	All Inserts	QuickFusio	QuickFusio+
			1,500 Vrms	1,500 Vrms
		Insert 22	1,000 Vrms	1,300 Vrms
		Insert Q1	N/A	1,000 Vrms
		At 70,000 ft	All inserts	325 Vrms
		Insert 22	125 Vrms	325 Vrms
		Insert Q1	N/A	125 Vrms
INSULATION RESISTANCE	Ambient Temperature		> 5,000 MΩ	> 5,000 MΩ
	At High Temperature		> 200 MΩ at 125 °C	> 200 MΩ at 175 °C
LIGHTNING STRIKE	Current Pulse		N/A	5KA
	Voltage Pulse		N/A	1,600 V

EMI SHIELDING EFFECTIVENESS	FREQUENCY (MHz)	QuickFusio	QuickFusio+
		LEAKAGE ATTENUATION (dB)	LEAKAGE ATTENUATION (dB)
	100	65	65
	200	63	63
	300	63	63
	400	62	62
	500	60	60
	600	55	55
	800	50	50
	1000	50	50

SHELL TO SHELL CONDUCTIVITY	QuickFusio	QuickFusio+
	10 mΩ max	2.5 mΩ max
MAGNETIC PERMEABILITY	< 2 μ	< 2 μ

Characteristics

**MECHANICAL CHARACTERISTICS**

		QuickFusio		QuickFusio+	
		RETENTION FORCE	MAX DISPLACEMENT	RETENTION FORCE	MAX DISPLACEMENT
CONTACT RETENTION	CONTACT SIZE				
	23	44 N	0.30 mm	44 N	0.30 mm
	22	44 N		44 N	
	20	67 N		67 N	
	16	110 N		110 N	
12	110 N	110 N			

	CONTACT SIZE	MAXIMUM INSERTION FORCE	MAXIMUM EXTRACTION FORCE	MAXIMUM INSERTION FORCE	MAXIMUM EXTRACTION FORCE
		CONTACT INSERTION EXTRACTION FORCE			
	23	44 N	44 N	44 N	44 N
	22	44 N	44 N	44 N	44 N
	20	89 N	89 N	89 N	89 N
	16	89 N	89 N	89 N	89 N
	12	133 N	133 N	133 N	133 N

MECHANICAL ENDURANCE			QuickFusio	QuickFusio+
			500 Mating Cycles	500 Mating Cycles
VIBRATIONS	Square Flange Receptacle and Universal Plugs	Electrical and Optical Contacts	Acceleration 20 g Sinus (4 Hours on each of the 3 Axis) EN 2591 - 403	Acceleration 27.8 g (8 Hours on each of the 3 Axis) EN 2591 - 403
		Quadrax Contact	N/A	Acceleration 16.91 g (8 Hours on each of the 3 Axis) EN 2591 - 403
	In-Line Receptacle and Universal Plugs	-	Acceleration 11.33 g <sup>(1)</sup> RTCA-DO-160G Test Curve E1	Acceleration 11.33 g <sup>(1)</sup> RTCA-DO-160G Test Curve E1 Windmilling & High Power Test
SHOCK - 3 SHOCKS ON EACH AXIS			Shock Amplitude 50 Half Sinus/ Duration 11 ms	Shock Amplitude 50 Half Sinus/ Duration 11 ms
INSERT RETENTION IN SHELL			254 N	254 N

**ENVIRONMENTAL CHARACTERISTICS**

	QuickFusio	QuickFusio+
OPERATING TEMPERATURE	-55 °C to +125 °C (-67 °F to +257 °F)	-65 °C to +175 °C (-85 °F to +347 °F)
TEMPERATURE LIFE	1,000 Hours at 125 °C	1,000 Hours at 175 °C
SALT SPRAY	48 Hours	96 Hours
ALTITUDE IMMERSION (ALL INSERTS EXCEPT 22)	No Sealing	55,000 ft
SEAL LEAKAGE (CLASS B) - INSERT 22	N/A	Resistant to Running Water
FLAMMABILITY	EN 2591-317 FAR 25,853	EN 2591-317 FAR 25,853
SMOKE AND TOXICITY	EN 2591-317 FAR 25,853 (F)	EN 2591-317 FAR 25,853 (F)

Notes

1. Minimum level validated by Radiall, other levels can be tested on demand.

Characteristics

**GIGABIT ETHERNET**

To respond to the growing demand in civil aerospace for faster digital networks, Radiall has combined Gigabit Ethernet protocols into a miniature connector, opening new perspectives for cabin and avionics networks. To meet customers' every expectations, Radiall developed two different solutions:

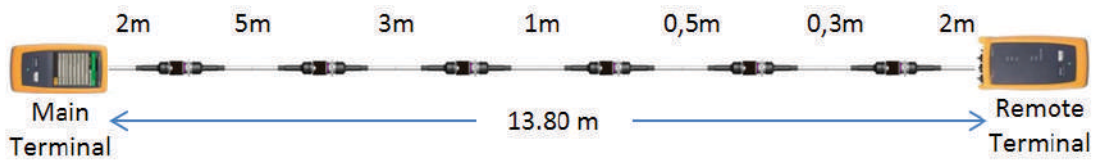
- A 10 Gb/s offer
- A 1 Gb/s offer

**I. QUICKFUSIO™ 10 GB/S**

Available with QuickFusio and QuickFusio+

QuickFusio™ 10 Gb/s meets cat6A requirements following TIA568 C.2 specification and offers excellent high frequency and digital performance. Capitalizing on its expertise and ability to innovate, Radiall specifically designed a new insert called XG, which provides efficient crosstalk shielding between the pairs of cables.

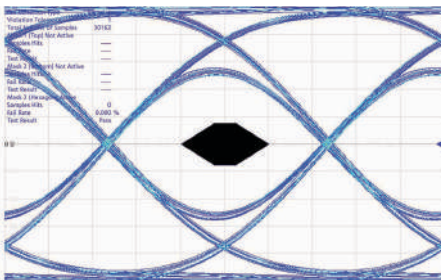
QuickFusio™ 10 Gb/s was successfully tested with cables measuring up to 68 meters fitted with 6 QuickFusio connections. The results shown below concern a set-up based on Arinc 800 part 4 specification, tested with a Gore Ethernet cable RCN9047-26 equipped as follow <sup>[1]</sup>:



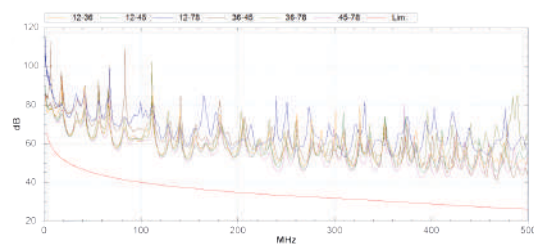
They proved QuickFusio™ 10 Gb/s to effectively minimize crosstalk, prevent perturbation from the environment, ensure reliability and maintain signal integrity.

Transmission Characteristics:

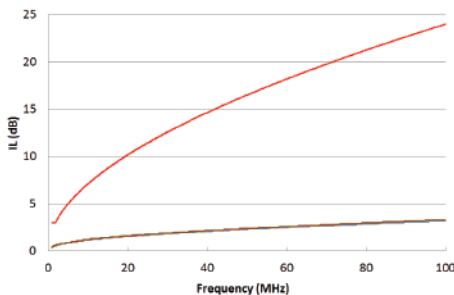
**EYE DIAGRAM**



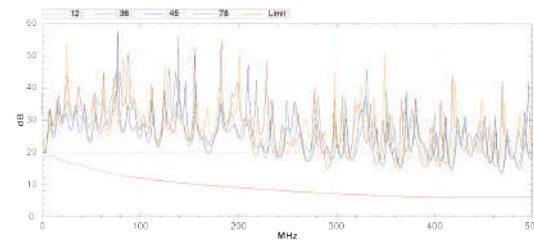
**NEAR-END CROSSTALK (NEXT):**



**INSERTION LOSS (IL):**



**RETURN LOSS (RL):**



**Notes**

Test reports are available upon request.

1. For specific information on the Ethernet offer for QuickFusio™ equipped with PC tail contacts, please ask your local representative.

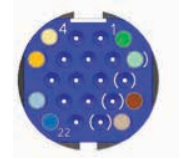
Characteristics

II. QUICKFUSIO™ 1 GB/S

The 1 Gb/s offer passes the Ethernet cat5e performance level due to a specific layout configuration developed in the insert IG, which preserves the signal integrity while minimizing crosstalk, insertion loss and return loss effects.

Single Ethernet cable configuration (available with QuickFusio and QuickFusio+)

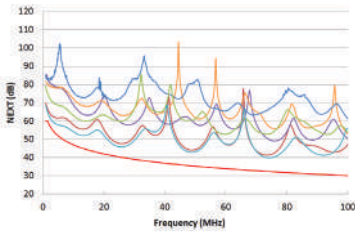
The single Ethernet configuration was tested with the same configuration (based on Arinc 800 part 4 specification) as QuickFusio™ 10 Gb/s. [1]



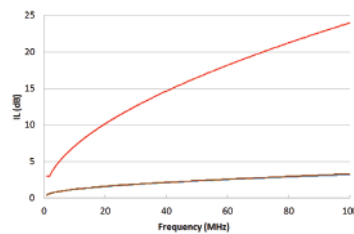
Insert IG Contact Mapping

Transmission Characteristics:

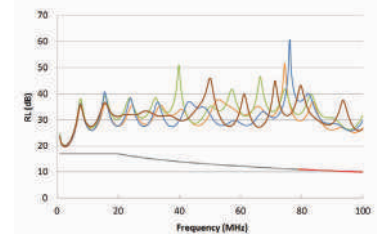
NEAR-END CROSSTALK (NEXT):



INSERTION LOSS (IL):

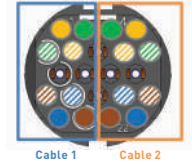
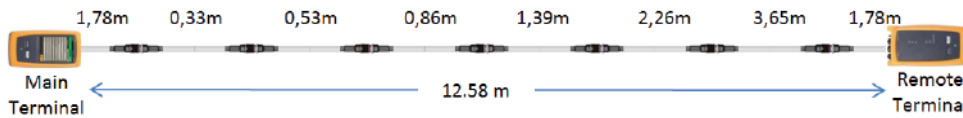


RETURN LOSS (RL):



DOUBLE ETHERNET CABLE CONFIGURATION (AVAILABLE WITH QUICKFUSIO)

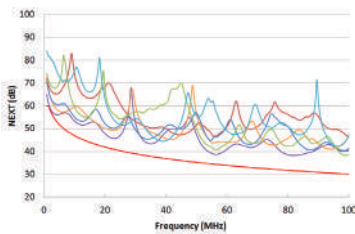
For this insert layout, the following configuration was tested with a Thermax MX10G-26FLX Ethernet cable. [1]



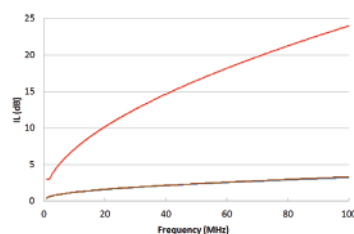
Insert IG Contact Mapping

Transmission Characteristics:

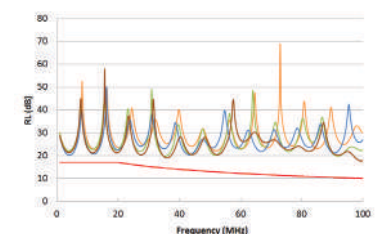
NEAR-END CROSSTALK (NEXT):



INSERTION LOSS (IL):



RETURN LOSS (RL):



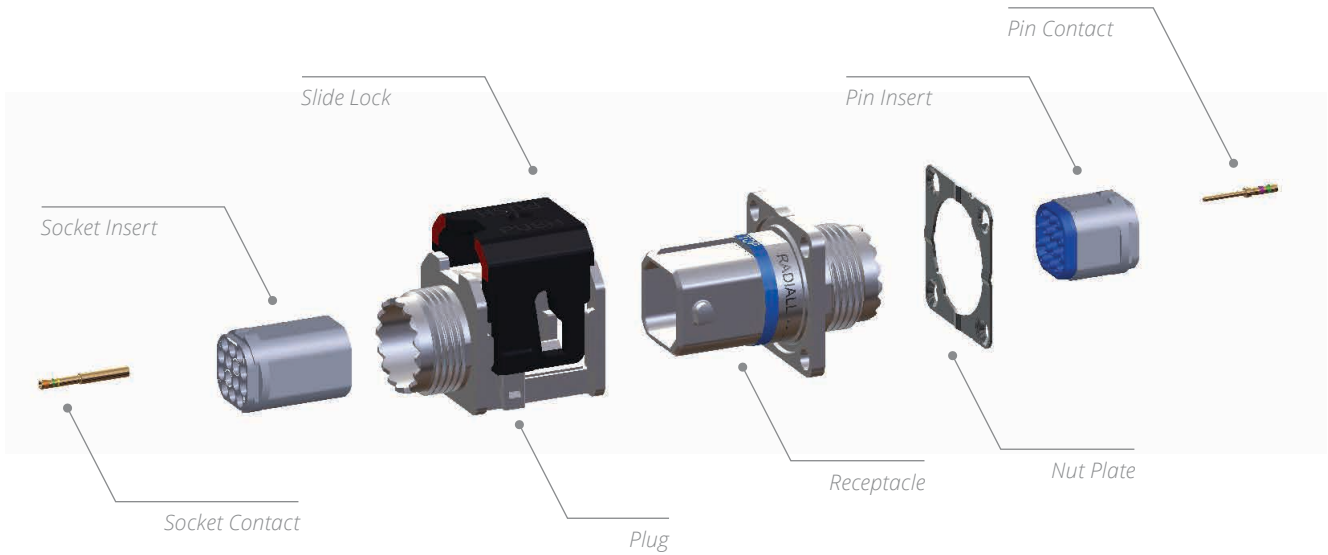
Refer to mounting instruction ref. MI IN 27 00004 EN (QuickFusio) and ref. MI IN 27 00001 EN (QuickFusio+) to ensure proper cable and connector assembly. Test reports are available upon request.

Notes

1. For specific information on the Ethernet offer for QuickFusio™ equipped with PC tail contacts, please ask your local representative.

Inserts

PRODUCT OVERVIEW



MATERIALS AND PLATING

Plug and Receptacle

- Shell: high grade thermoplastic (nickel-plated)
- Insert retention clip: beryllium copper
- Slide lock (plug): high grade thermoplastic
- Nut plate (receptacle): stainless steel

Insert

- Grommet and interfacial seal: fluorosilicone elastomer
- Insulators: high grade thermoplastic
- Retention clip: metallic

Contacts

- Copper alloy, gold-plated over nickel

Bundle Mount Platform (For In-Line Receptacle)

- Silicone pad: silicone rubber
- Cradle: high grade thermoplastic

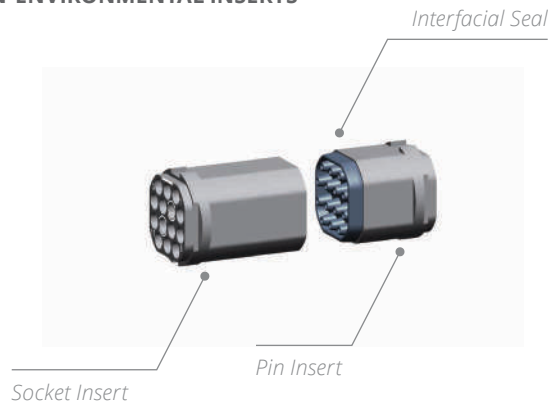




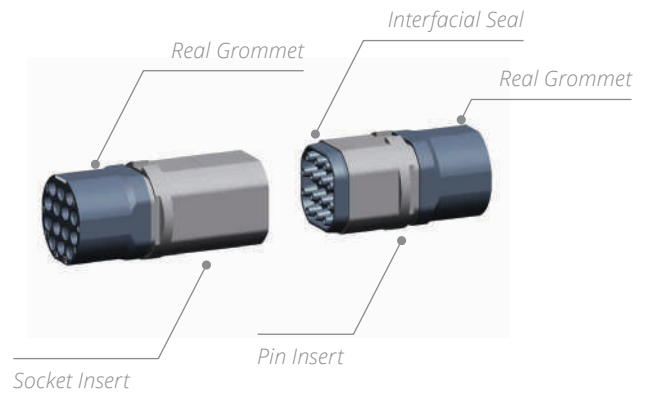
Inserts

INSERT OVERVIEW

NON-ENVIRONMENTAL INSERTS



ENVIRONMENTAL INSERTS



INSERT ARRANGEMENTS

Except for F4 and Q1 inserts, all inserts are available in environmental and non-environmental versions.

<b>Insert Name 22</b> 22 × Size 23 Contacts	<b>Insert Name 14</b> 14 × Size 22 Contacts	<b>Insert Name 07</b> 7 × Size 20 Contacts	<b>Insert Name F4</b> 4 × LuxCis® Arinc 801 Contacts
<b>Insert Name M4</b> 3 × Size 20 Contacts 1 × Size 12 Contact	<b>Insert Name M9</b> 2 × Size 16 Contacts 7 × Size 22 Contacts	<b>Insert Name 04</b> 4 × Size 16 Contacts	<b>Insert Name Q1</b> 1 × Size 8 Quadrax Contact
			<b>Insert Only Available:</b> • In environmental version • With accessory thread or banding platform rear output shell
<b>Insert Name IG</b> For 1 Gb/s Ethernet Applications	<b>Insert Name XG</b> For 10 Gb/s Ethernet Applications <sup>[1]</sup>		<b>Insert Only Available:</b> • In non-environmental version

Notes

1. To order insert XG, please contact your local representative.

Inserts

### HOW TO ORDER QUICKFUSIO™

QuickFusio™ is delivered fully assembled including the shell, with insert mounted and with or without contacts based on your selection.

Tips to help you in your selection:

- QuickFusio+ connectors are fitted with environmental inserts (except for short receptacles with PC tail contacts which are fitted with non-environmental inserts).
- QuickFusio connectors are always fitted with non-environmental inserts.
- For crimp contacts, you can use either pin or socket inserts in QuickFusio and QuickFusio+ plugs or receptacles (however, if scoop proof option is needed, please use pin inserts in receptacles).
- PC tail contacts are only available as pin PC tail contacts in short receptacle rear output (if PC tails are selected then all the cavities are populated).
- Short receptacle is dedicated to PC tail terminations. If crimp contacts are needed in short receptacle, please ask your local representative.

## QFC

**SERIES PREFIX** \_\_\_\_\_

**QFC:** QuickFusio

**QFP:** QuickFusio+

**SHELL SIZE** \_\_\_\_\_

**5:** One size available

**SHELL TYPE** <sup>[1]</sup> \_\_\_\_\_

**PN:** Plug (Nickel-plated)

**RN:** Square flange receptacle (nickel-plated)

**REAR OUTPUT** \_\_\_\_\_

**1:** Short receptacle <sup>[2]</sup>

**2:** Accessory thread

**3:** Banding platform

**A:** Banding platform and tie-wrap (orientation 0°) <sup>[1]</sup>

**INSERT CLASS** <sup>[3]</sup> \_\_\_\_\_

**N:** Non-environmental (without grommet, always the interfacial seal on pin insert)

**E:** Environmental (for QuickFusio+ only)

**INSERT NAME** \_\_\_\_\_

Refer to page 3-11 to select your insert name.

**INSERT TYPE** <sup>[4]</sup> \_\_\_\_\_

**P:** Pin inserts

**S:** Socket inserts

**CONTACT TERMINATION** <sup>[5]</sup> \_\_\_\_\_

**X:** Contact not supplied with the connector

**S:** Crimp contacts are supplied with connector

**YB:** Gold finish straight PC tail contacts <sup>[6] [7] [8]</sup>

**GB:** Gold finish right angle PC tail contacts <sup>[6] [7] [8]</sup>

**RB:** Pure tin straight PC tail contacts <sup>[6] [7] [8]</sup>

**TB:** Pure tin right angle PC tail contacts <sup>[6] [7] [8]</sup>

**CODING** \_\_\_\_\_

Refer to page 3-13 to select your coding (A to N).

**Notes**

1. For other options, please contact your local representative
2. Not available with shell types WN and LN
3. Refer to the table to the right to select your insert class.
4. For F4 insert: pin inserts only available on plug side and socket inserts with sleeve holder on receptacle side.
5. Size 8 and optical contacts must be ordered separately
6. F4 and Q1 inserts are not available with PC tail contacts
7. Only available with short receptacle rear output <sup>[1]</sup>
8. Refer to page 3-13 for PC tail lengths

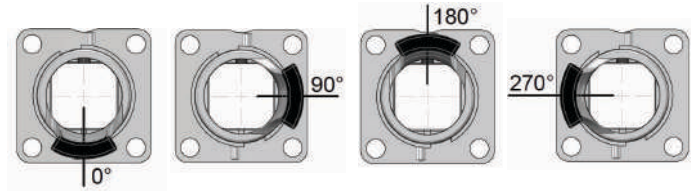
CONTACT TERMINATION	QUICKFUSIO	QUICKFUSIO+	
	NON-ENVIRONMENTAL	NON-ENVIRONMENTAL	ENVIRONMENTAL
X	√	-	√
S	√	-	√
YB to TB	√	√	-

Inserts

**TIE-WRAP OUTPUT POSITIONS, CONTACT TERMINATIONS & CODING**

**TIE-WRAP OUTPUT ANGULAR POSITIONS**

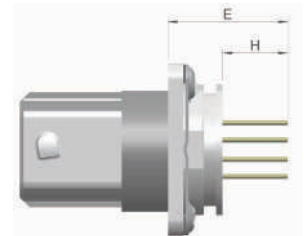
For tie-wrap output orientation 90°, 180° or 270° please contact your local representative for additional information.



**CONTACT TERMINATION**

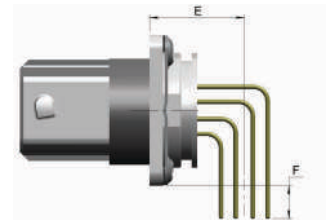
**STRAIGHT PC TAIL CONTACT TERMINATION SIZE #23 TO SIZE #12 CONTACTS**

MINI LENGTH E MM (INCH)	MINI LENGTH H MM (INCH)	GOLD	PURE TIN (ROHS)
14.25 (0.561)	7.42 (0.292)	YB	RB



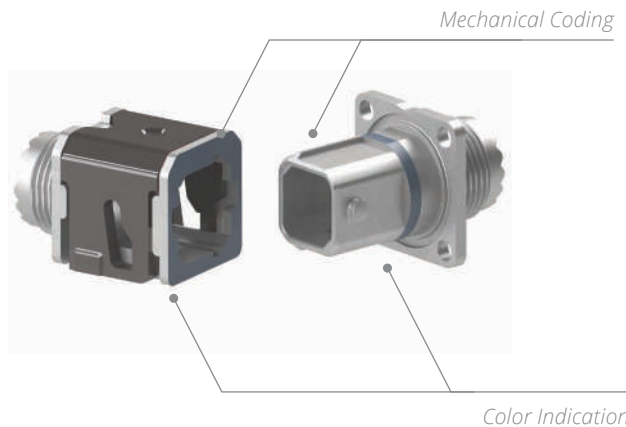
**RIGHT ANGLE PC TAIL CONTACT TERMINATION SIZE #23 TO SIZE #12 CONTACTS**

MINI LENGTH E MM (INCH)	MINI LENGTH H MM (INCH)	GOLD	PURE TIN (ROHS)
12.19 (0.480)	4.43 (0.174)	GB	TB



**CODING**

The QuickFusio™ series is available in 6 different codings through specific mechanical shapes. Each of these mechanical codings is associated with one particular color, which enables quick and easy wiring. One universal N coding, mateable with the 6 other codings, is also available.



	CODING A	CODING B	CODING C	CODING D	CODING E	CODING F	CODING N UNIVERSAL CODING
Color and Mechanical Shape Coding							

Inserts

**WEIGHT - QUICKFUSIO**

PLUG <sup>(1)</sup>				
INSERT NAME	INSERT TYPE	THREADED ACCESSORY	BANDING PLATFORM	BANDING PLATFORM & TIE WRAP
22 /IG	Pin	8.50 g (0.30 oz)	8.60 g (0.30 oz)	8.90 g (0.31 oz)
22 /IG	Socket	9.20 g (0.33 oz)	9.30 g (0.33 oz)	9.60 g (0.34 oz)
14	Pin	8.50 g (0.30 oz)	8.60 g (0.30oz)	8.90 g (0.31 oz)
14	Socket	9.20 g (0.33 oz)	9.30 g (0.33 oz)	9.60 g (0.34 oz)
07	Pin	8.15 g (0.29 oz)	8.25 g (0.29 oz)	8.55 g (0.30 oz)
07	Socket	8.60 g (0.30 oz)	8.70 g (0.30 oz)	9.00 g (0.32 oz)
04	Pin	8.15 g (0.29 oz)	8.25 g (0.29 oz)	8.55 g (0.30 oz)
04	Socket	8.60 g (0.30 oz)	8.70 g (0.30 oz)	9.00 g (0.32 oz)
M4	Pin	8.15 g (0.29 oz)	8.25 g (0.29 oz)	8.55 g (0.30 oz)
M4	Socket	8.60 g (0.30 oz)	8.70 g (0.30 oz)	9.00 g (0.32 oz)
M9	Pin	8.55 g (0.302 oz)	8.65 g (0.305 oz)	8.95 g (0.316 oz)
M9	Socket	9.25 g (0.326 oz)	9.35 g (0.330 oz)	9.65 g (0.340 oz)
XG	Pin	8.45 g (0.30 oz)	8.55 g (0.30 oz)	8.85 g (0.31 oz)
XG	Socket	9.30 g (0.33 oz)	9.40 g (0.33 oz)	9.70 g (0.34 oz)

SQUARE FLANGE RECEPTACLE <sup>(1)</sup>					
INSERT NAME	INSERT TYPE	THREADED ACCESSORY	BANDING PLATFORM	BANDING PLATFORM & TIE WRAP	SHORT RECEPTACLE
22 /IG	Pin	7.20 g (0.25 oz)	7.30 g (0.26 oz)	7.60 g (0.27 oz)	6.75 g (0.24 oz)
22 /IG	Socket	7.85 g (0.28 oz)	7.95 g (0.28 oz)	8.25 g (0.29 oz)	N/A
14	Pin	7.20 g (0.25 oz)	7.30 g (0.26 oz)	7.60 g (0.27 oz)	6.75 g (0.24 oz)
14	Socket	7.85 g (0.28 oz)	7.95 g (0.28 oz)	8.25 g (0.29 oz)	N/A
07	Pin	6.85 g (0.25 oz)	6.95 g (0.25 oz)	7.25 g (0.26 oz)	6.40 g (0.23 oz)
07	Socket	7.30 g (0.26 oz)	7.40 g (0.26 oz)	7.70 g (0.27 oz)	N/A
04	Pin	6.85 g (0.25 oz)	6.95 g (0.25 oz)	7.25 g (0.26 oz)	6.40 g (0.23 oz)
04	Socket	7.30 g (0.26oz)	7.40 g (0.26 oz)	7.70 g (0.27 oz)	N/A
M4	Pin	6.85 g (0.25 oz)	6.95 g (0.25 oz)	7.25 g (0.26 oz)	6.40 g (0.23 oz)
M4	Socket	7.30 g (0.26 oz)	7.40 g (0.26 oz)	7.70 g (0.27 oz)	N/A
M9	Pin	7.25 g (0.256 oz)	7.35 g (0.259 oz)	7.65 g (0.270 oz)	9.40 g (0.332 oz)
M9	Socket	7.90 g (0.279 oz)	8.00 g (0.282 oz)	8.30 g (0.293 oz)	N/A
XG	Pin	7.10 g (0.25 oz)	7.20 g (0.25 oz)	7.50 g (0.27 oz)	6.65 g (0.24 oz)
XG	Socket	7.95 g (0.28 oz)	8.05 g (0.28 oz)	8.35 g (0.30 oz)	N/A

IN-LINE RECEPTACLE <sup>(1)(2)</sup>				
INSERT NAME	INSERT TYPE	THREADED ACCESSORY	BANDING PLATFORM	BANDING PLATFORM & TIE WRAP
22 /IG	Pin	5.40 g (0.19 oz)	5.50 g (0.19 oz)	5.80 g (0.20 oz)
22 /IG	Socket	6.05 g (0.21 oz)	6.15 g (0.22 oz)	6.45 g (0.23 oz)
14	Pin	5.40 g (0.19 oz)	5.50 g (0.19 oz)	5.80 g (0.20 oz)
14	Socket	6.05 g (0.21 oz)	6.15 g (0.22 oz)	6.45 g (0.23 oz)
7	Pin	5.05 g (0.18 oz)	5.15 g (0.18 oz)	5.45 g (0.19 oz)
7	Socket	5.50 g (0.19 oz)	5.60 g (0.20 oz)	5.90 g (0.21 oz)
4	Pin	5.05 g (0.18 oz)	5.15 g (0.18 oz)	5.45 g (0.19 oz)
4	Socket	5.50 g (0.19 oz)	5.60 g (0.20 oz)	5.90 g (0.21 oz)
M4	Pin	5.05 g (0.18 oz)	5.15 g (0.18 oz)	5.45 g (0.19 oz)
M4	Socket	5.50 g (0.19 oz)	5.60 g (0.20 oz)	5.90 g (0.21 oz)
M9	Pin	5.45 g (0.192 oz)	5.55 g (0.196 oz)	5.85 g (0.206 oz)
M9	Socket	6.10 g (0.215 oz)	6.20 g (0.219 oz)	6.50 g (0.229 oz)
XG	Pin	5.30 g (0.19 oz)	5.40 g (0.19 oz)	5.70 g (0.20 oz)
XG	Socket	6.15 g (0.22 oz)	6.25 g (0.22 oz)	6.55 g (0.23 oz)

**Notes**

1. Connector weight includes non-environmental insert only without contacts.
2. Connector weight does not include the bundle mount platform. Bundle mount platform weight is 3.35 g (0.12 oz).

Inserts

**WEIGHT - QUICKFUSIO+**

PLUG <sup>(1)</sup>				
INSERT NAME	INSERT TYPE	THREADED ACCESSORY	BANDING PLATFORM	BANDING PLATFORM & TIE WRAP
22 /IG	Pin	9.45 g (0.33oz)	9.55 g (0.34 oz)	9.85 g (0.35 oz)
22 /IG	Socket	10.10 g (0.36 oz)	10.20 g (0.36 oz)	10.50 g (0.377 oz)
14	Pin	9.35 g (0.33 oz)	9.45 g (0.33 oz)	9.75 g (0.34 oz)
14	Socket	10.00 g (0.35 oz)	10.10 g (0.36 oz)	10.40 g (0.37 oz)
07	Pin	9.05 g (0.32 oz)	9.15 g (0.32 oz)	9.45 g (0.33 oz)
07	Socket	9.50 g (0.34 oz)	9.60 g (0.34 oz)	9.90 g (0.35 oz)
04	Pin	9.00 g (0.32 oz)	9.10 g (0.32 oz)	9.40 g (0.33 oz)
04	Socket	9.45 g (0.33 oz)	9.55 g (0.34 oz)	9.85 g (0.35 oz)
F4	Pin	9.50 g (0.34 oz)	9.60 g (0.34 oz)	N/A
Q1	Pin	8.60 g (0.30 oz)	8.70 g (0.31 oz)	N/A
Q1	Socket	9.25 g (0.33 oz)	9.35 g (0.33 oz)	N/A
M4	Pin	9.05 g (0.32 oz)	9.15 g (0.32 oz)	9.45 g (0.33 oz)
M4	Socket	9.50 g (0.34 oz)	9.60 g (0.34 oz)	9.90 g (0.35 oz)
XG	Pin	9.50 g (0.34 oz)	9.60 g (0.34 oz)	9.90 g (0.35 oz)
XG	Socket	10.35 g (0.37 oz)	10.45 g (0.37 oz)	10.75 g (0.38 oz)

SQUARE FLANGE RECEPTACLE <sup>(1)</sup>					
INSERT NAME	INSERT TYPE	THREADED ACCESSORY	BANDING PLATFORM	BANDING PLATFORM & TIE WRAP	SHORT RECEPTACLE
22 /IG	Pin	8.10 g (0.29 oz)	8.20 g (0.29 oz)	8.50 g (0.30 oz)	6.75 g (0.24 oz)
22 /IG	Socket	8.80 g (0.31 oz)	8.90 g (0.31 oz)	9.20 g (0.32 oz)	N/A
14	Pin	8.00 g (0.28 oz)	8.10 g (0.29 oz)	8.40 g (0.30 oz)	6.75 g (0.24 oz)
14	Socket	8.65 g (0.31 oz)	8.75 g (0.31 oz)	9.05 g (0.32 oz)	N/A
07	Pin	7.75 g (0.27 oz)	7.85 g (0.28 oz)	8.15 g (0.29 oz)	6.40 g (0.23 oz)
07	Socket	8.20 g (0.29 oz)	8.30 g (0.29 oz)	8.60 g (0.30 oz)	N/A
04	Pin	7.70 g (0.27 oz)	7.80 g (0.28 oz)	8.10 g (0.29 oz)	6.40 g (0.23 oz)
04	Socket	8.10 g (0.29 oz)	8.20 g (0.29 oz)	8.50 g (0.30 oz)	N/A
F4	Socket	9.00 g (0.32 oz)	9.10 g (0.32 oz)	N/A	N/A
Q1	Pin	7.30 g (0.26 oz)	7.40 g (0.26 oz)	N/A	N/A
Q1	Socket	7.95 g (0.28 oz)	8.05 g (0.28 oz)	N/A	N/A
M4	Pin	7.75 g (0.27 oz)	7.85 g (0.28 oz)	8.15 g (0.29 oz)	6.40 g (0.23 oz)
M4	Socket	8.20 g (0.29 oz)	8.30 g (0.29 oz)	8.60 g (0.30 oz)	N/A
XG	Pin	8.20 g (0.29 oz)	8.30 g (0.29 oz)	8.60 g (0.30 oz)	6.65 g (0.24 oz)
XG	Socket	9.05 g (0.32 oz)	9.15 g (0.32 oz)	9.45 g (0.33 oz)	N/A

IN-LINE RECEPTACLE <sup>(1)(2)</sup>				
INSERT NAME	INSERT TYPE	THREADED ACCESSORY	BANDING PLATFORM	BANDING PLATFORM & TIE WRAP
22 /IG	Pin	6.30 g (0.22 oz)	6.40 g (0.23 oz)	6.70 g (0.24 oz)
22 /IG	Socket	7.00 g (0.25 oz)	7.10 g (0.25 oz)	7.40 g (0.26 oz)
14	Pin	6.20 g (0.22 oz)	6.30 g (0.22 oz)	6.60 g (0.23 oz)
14	Socket	6.85 g (0.24 oz)	6.95 g (0.25 oz)	7.25 g (0.26 oz)
7	Pin	5.95 g (0.22 oz)	6.05 g (0.21 oz)	6.35 g (0.22 oz)
7	Socket	6.40 g (0.23 oz)	6.50 g (0.23 oz)	6.80 g (0.24 oz)
4	Pin	5.90 g (0.21 oz)	6.00 g (0.21 oz)	6.30 g (0.22 oz)
4	Socket	6.30 g (0.22 oz)	6.40 g (0.23 oz)	6.70 g (0.24 oz)
F4	Socket	7.20 g (0.25 oz)	7.30 g (0.26 oz)	N/A
Q1	Pin	5.50 g (0.19 oz)	5.60 g (0.20 oz)	N/A
Q1	Socket	6.15 g (0.22 oz)	6.25 g (0.22 oz)	N/A
M4	Pin	5.95 g (0.21 oz)	6.05 g (0.21 g)	6.35 g (0.22 oz)
M4	Socket	6.40 g (0.23 oz)	6.50 g (0.23 oz)	6.80 g (0.24 oz)
XG	Pin	6.40 g (0.23 oz)	6.50 g (0.23 oz)	6.80 g (0.24 oz)
XG	Socket	7.25 g (0.26 oz)	7.35 g (0.26 oz)	7.65 g (0.27 oz)

**Notes**

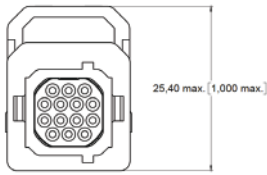
1. Connector weight includes environmental insert without contacts, except for Short receptacles which are equipped with non-environmental inserts.
2. Connector weight does not include the bundle mount platform. Bundle mount platform weight is 3.35 g (0.12 oz).

Inserts

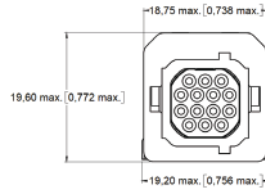
**DIMENSIONS**

**PLUGS - QUICKFUSIO AND QUICKFUSIO+ (PN)**

**FRONT VIEW OF THE CONNECTOR**

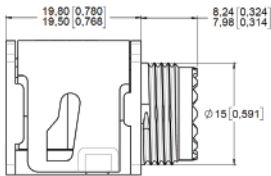


Slide Open

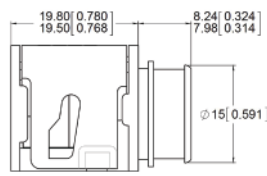


Slide Closed

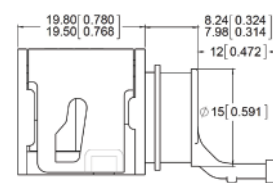
**STANDARD DIMENSIONS**



Rear Output #2  
Accessory Thread

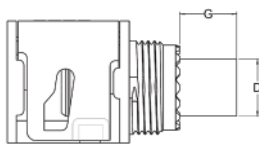


Rear Output #3  
Banding Platform

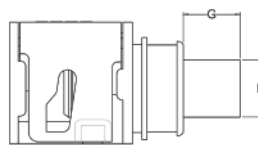


Rear Output #A  
Banding Platform  
and Tie-Wrap

**STANDARD DIMENSIONS FOR ENVIRONMENTAL INSERTS F4 AND Q1**



Rear Output #2  
Accessory Thread



Rear Output #3  
Banding Platform

INSERT NAME	GROMMET PROTRUSION (G) MAX MM (INCH)	GROMMET DIAMETER (D) MAX MM (INCH)
F4	9.50 (0.37)	10.95 (0.43)
Q1	3.50 (0.14)	11.25 (0.44)

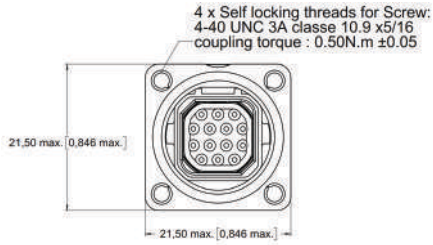
**Notes**

Other inserts do not have grommet protrusion.

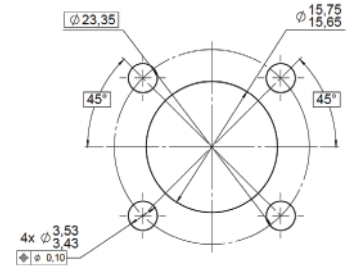
Inserts

SQUARE FLANGE RECEPTACLES QUICKFUSIO AND QUICKFUSIO+ (RN)

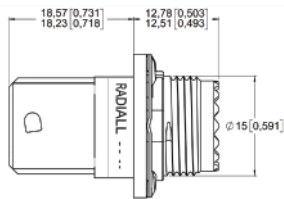
FRONT VIEW OF THE CONNECTOR



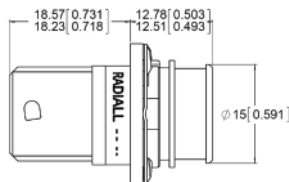
PANEL CUT-OUT



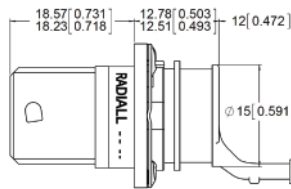
STANDARD DIMENSIONS



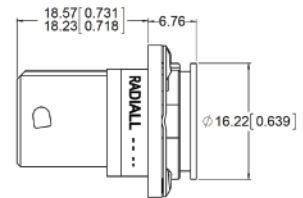
Rear Output #2  
Accessory Thread



Rear Output #3  
Banding Platform

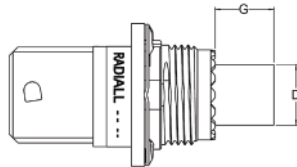


Rear Output #A  
Banding Platform  
and Tie-Wrap

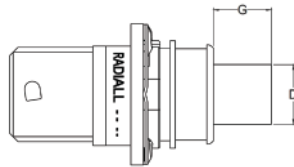


Rear Output #1  
Short Receptacle

STANDARD DIMENSIONS FOR ENVIRONMENTAL INSERTS F4 AND Q1



Rear Output #2  
Accessory Thread



Rear Output #3  
Banding Platform

INSERT NAME	GROMMET PROTRUSION (G) MAX MM (INCH)	GROMMET DIAMETER (D) MAX MM (INCH)
F4	9.50 (0.37)	10.95 (0.43)
Q1	3.50 (0.14)	11.25 (0.44)

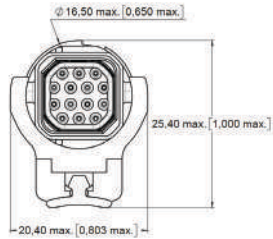
Notes

Other inserts do not have grommet protrusion.

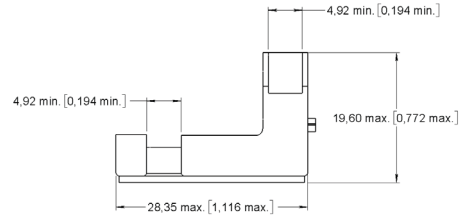
Inserts

IN LINE RECEPTACLES QUICKFUSIO AND QUICKFUSIO+ (WN AND LN)

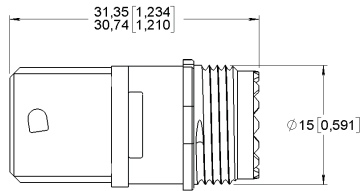
FRONT VIEW OF THE CONNECTOR



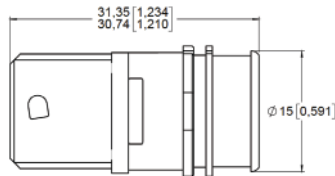
BUNDLE MOUNT PLATFORM



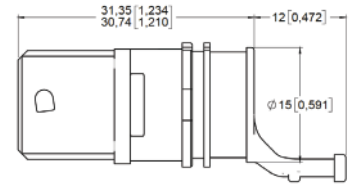
STANDARD DIMENSIONS



Rear Output #2  
Accessory Thread

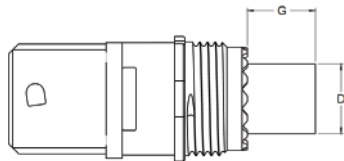


Rear Output #3  
Banding Platform

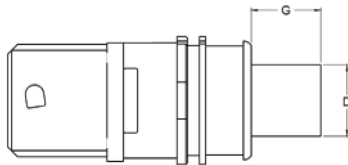


Rear Output #A  
Banding Platform  
and Tie-Wrap

STANDARD DIMENSIONS FOR ENVIRONMENTAL INSERTS F4 AND Q1



Rear Output #2  
Accessory Thread



Rear Output #3  
Banding Platform

INSERT NAME	GROMMET PROTRUSION (G) MAX MM (INCH)	GROMMET DIAMETER (D) MAX MM (INCH)
F4	9.50 (0.37)	10.95 (0.43)
Q1	3.50 (0.14)	11.25 (0.44)

Notes

Other inserts do not have grommet protrusion.



Contacts

**ELECTRICAL CONTACTS**

QuickFusio™ connectors use highly standardized contacts per SAE-AS39029 and EN3155:

- Signal and power contacts
- High frequency with coax, twinax and triax contacts
- Ethernet links with Quadrax contacts
- Fiber Optic

CONTACT SIZE	WIRE SIZE	TYPE	RADIALL PART NUMBER	STANDARD PART NUMBER	CRIMPING TOOL	POSITIONER	INS./EXT. TOOL	TYPE OF TOOL
23	AWG22 AWG24 AWG26	Pin	670210	N/A	282281 M22520/2-01	282581019	282549049 M81969/1-05	Metal
		Socket	670310	N/A				
22	AWG22 AWG24 AWG26	Pin	670200	M39029/58-360 EN3155-008P2222	282281 M22520/2-01	282562 M22520/2-09	282522 M81969/14-01	Plastic
		Socket	670350	M39029/57-354 EN3155-003S2222				
20	AWG20 AWG22 AWG24	Pin	670220	M39029/58-363 EN3155-008P2020	282291 M22520/1-01	282567 M22520/1-04	282549029 M81969/14-10	Plastic
		Socket	670370	M39029/57-357 EN3155-003S2020				
16	AWG16 AWG18 AWG20	Pin	670230	M39029/58-364 EN3155-008P1616	282291 M22520/1-01	282567 M22520/1-04	282515 M81969/14-03	Plastic
		Socket	670380	M39029/57-358 EN3155-003S1616				
12	AWG12 AWG14 AWG16	Pin	670240	M39029/58-365 EN3155-008P1212	282291 M22520/1-01	282567 M22520/1-04	282549004 M81969/14-04	Plastic
		Socket	670390	M39029/57-359 EN3155-003S1212				

**QUADRAX CRIMP CONTACTS**

CONTACT SIZE	WIRE SIZE	CLASS	TYPE	RADIALL PART NUMBER	EXTRACTION TOOL	TYPE OF TOOL
8	NF24Q100	Environmental	Pin	670175012	282549001 M81969/28-03 or M81969/14-06	Metal
			Socket	670075012		
	NF26Q100	Environmental	Socket	670075029		
		Non-Environmental	Socket	670075028		
	ABS1503KD24	Environmental	Pin	670175023		
			Socket	670075023		

**COAXIAL CRIMP CONTACTS**

CONTACT SIZE	WIRE SIZE	CLASS	TYPE	RADIALL PART NUMBER	EXTRACTION TOOL	TYPE OF TOOL
8	EN4604-010 (KX)	Non-Environmental	Pin	670101007	282549001 M81969/28-03 or M81969/14-06	Metal
			Socket	670001007		

QuickFusio is also compatible with coaxial contacts EN3155-067 and EN3155-068.

**TRIAx CONTACTS**

QuickFusio™ is compatible with triax contacts per EN3155-012; EN3155-024; EN3155-013 and EN3155-025.

Contacts

### LUXCIS® ARINC 801 FIBER OPTIC CONTACTS

The LuxCis® Arinc 801 product range is a proven and flexible fiber optic interconnect solution that offers high speed communication in the aerospace market and other harsh environments.

#### OPTICAL PERFORMANCE

	SINGLEMODE UPC	SINGLEMODE APC	MULTIMODE PC
Wave length	1,310-1,550 nm		850-1,300 nm
Insertion loss Mean	- 0.15 dB	- 0.2 dB	- 0.10 dB
Standard deviation	0.1 dB	0.12 dB	0.07 dB
Return loss	> 50 dB	> 65 dB	> 20 dB

Insertion Loss against a reference pathcord: IEC 61300-3-4 Method B, also described in ARINC 805

Return Loss: IEC 61300-3-6, also described in ARINC 805

#### MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

TEST	STANDARD	LUXCIS® ARINC 801 IN QUICKFUSIO+ CONNECTOR
Thermal Cycling	SAE AS 13441 Method 1003.1	-55 °C/+125 °C (Cable Dependent)
Temperature Endurance	TIA/EIA 455-11	1,000 h @ 125 °C (Cable Dependent)
Vibration	EN2591-403-Method B-Level G	27.8 grms
Shocks	EN2591-402	50 grms
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
Salt Spray	SAE AS 13441 Method 1001.1	96 h
Altitude Immersion	TIA/EIA 455-15A	Minimum Pressure Equivalent to an Altitude of 16,764 m (55,000 ft.).

#### LUXCIS® CONTACT PART NUMBERING SYSTEM

**F725**

**LUXCIS® SERIES** \_\_\_\_\_

**FERRULE TYPE** \_\_\_\_\_

- 00:** PC ferrule for single-mode fiber
- 03:** PC ferrule for 50/125 or 62.5/125 µm multi-mode fiber
- 04:** PC ferrule for 100/40 µm multi-mode fiber
- 05:** PC ferrule for 200/230 µm multi-mode fiber
- 50:** APC ferrule for single-mode 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**

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



Contacts

**Q-MTITAN™ FIBER OPTIC CONTACTS**

Q-MTitan™ is a ruggedized High Density optical solution for harsh environments. It brings multifiber capability through a standard #8 Quadrax cavity. With Q-MTitan™ protecting the MT ferrule, customers can take advantage of the parallel optic technology in harsh environments.

**OPTICAL PERFORMANCE**

	MULTIMODE PC
Wavelength	850-1,300 nm
Insertion Loss	< 0.50 dB
Return Loss	> 20 dB



**MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS**

The Q-MTitan™ contact has followed a full qualification test file in multipin connectors sharing the same quadrax cavity design with the QuickFusio™. The following data show the main performance of Q-MTitan™. For additional information, please contact your local Radiall representative.

TEST	STANDARD	Q-MTITANTM CONTACTS
Thermal Cycling	EN 2591-6305	-55 °C/+125 °C (Cable Dependent)
Temperature Endurance	EN 2591-6301	1,000 h @ 125 °C (Cable Dependent)
Vibration	TIA/EIA 455-11C	28 g
Mechanical Endurance	EN 2591-406	200 Cycles
Cable Cycling Flexing	EN 2591-609	10 Cycles/3 N
Cable Pulling	EN2591-610	68 N
Damp Heat Cycling	EN 2591-6321	10 Cycles/24 h - 95% RH - + 38 °C/+65 °C

**Q-MTitan™ Series F735 Offers:**

- High Density of MT ferrule (12 or 24 fibers)
- Compatibility with round and ribbon multi-fiber cables
- Sealing and cable retention functions on round multi-fiber cables
- Convenient inspection and cleaning with efficient tool kits provided
- User friendly solution: insertion and extraction using standard size 8 tool



Q-MTitan™ contacts are available as pre-terminated cable assembly designed and manufactured based on customer specifications, including various fiber management configurations. Please contact your local Radiall representative with your application requirement.

Contacts

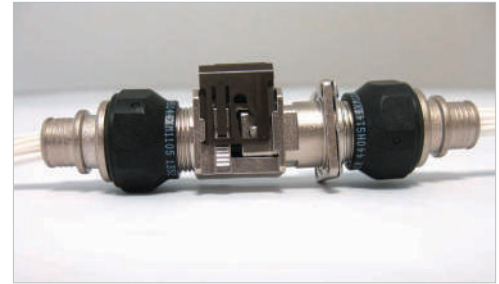
**ACCESSORIES**

**ACCESSORIES FOR THREADED OUTPUT SHELLS**

The QuickFusio™ series is compatible with a wide range of standard rear accessories.

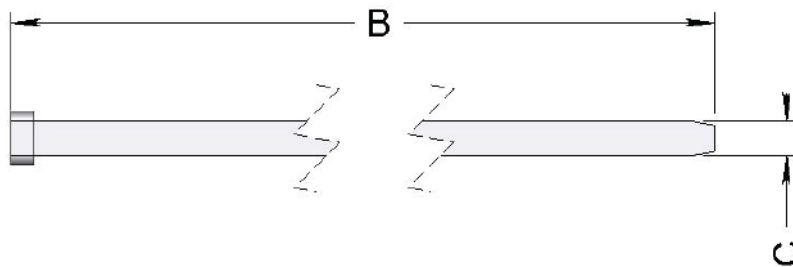
The threaded output has been designed per MIL-DTL-38999 series III size 11 rear dimensions. QuickFusio plug and receptacle connectors are suitable for use with Mil-DTL-38999 series III type backshells.

When using F4 and Q1 inserts, refer to page 3-13 to 3-15 to check special grommet protrusion.



**ACCESSORIES FOR BANDING OUTPUT SHELLS**

BAND SHIELD TERMINATOR			
Radiall Part Number	Size	Length B	Length C
627990002	Micro	190.5 mm (7.5 in.) - 215.9 mm (8.5 in.)	2.79 mm (0.110 in.) - 2.87 mm (0.113 in.)



**SEALING PLUGS**

Sealing plugs are dedicated to environmental inserts.

CONTACT SIZE	RADIALL PART NUMBER	COLOR	STANDARD PART NUMBER
22	616910	Black	MS27488-22-2
20	616911	Red	MS27488-20-2
16	616912	Green	MS27488-16-2
12	616913	Orange	MS27488-12-2
8	618915	Red	N/A

**Notes**

To be used with banding tool A30199

Contacts

SPARE PARTS & TOOLS

	PART NUMBER	DESCRIPTION
	627954001	Dust Cap for Plug Shell (Pink)
	627954002	Dust Cap for Receptacle Shell (Pink)
	627954003	ESD Dust Cap for Receptacle Shell (Black)
	627954004	ESD Fly Cap for Receptacle Shell (Black)
	627802001	Sleeve Holder for F4 Insert
	282549048	Extraction Tool for Sleeve Holder
	670950013	Sealing Boot for Size 8 Quadrax Contacts Cable: NF 24 Q100 and ABS1503KD24
	627990001	Screw Kit (4 x UNC 4-40 3A 5/16 Screws and 4 x Washers)
	282690050	Flat Screwdriver for Slide Lock Opening FACOM_AN_2.5 x 50
	627900001	Bundle Mount Platform
	282690051	Holding Wrench for Rear Threaded Accessory

Notes



# HDQX SERIES

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 Features ..... 4-3  
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**CONTACTS**

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**CONNECTORS & ACCESSORIES**

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 Accessories & Tools ..... 4-13

## Introduction

**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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## Introduction

### FEATURES

#### HDQX CONNECTOR BENEFITS

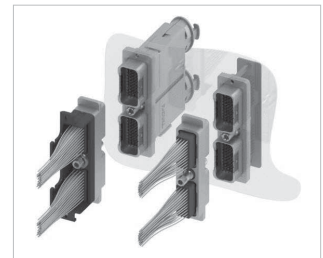
- High-density solution for size 8 cavities using standard ARINC 600 Quadrax contacts and size 8 BMA RF coax, triax and twinax contacts
- Space-saving connector for limited space applications
- Rectangular connector is stackable
- Lightweight composite strain relief
- Simple and secure connection with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

#### AVAILABLE HDQX RANGE CONNECTORS

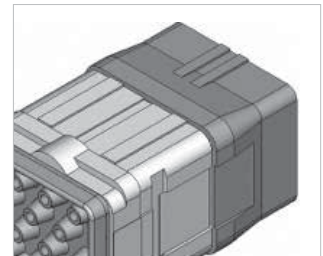
- Class N: Non-environmental plug and receptacle
- Class E: Environmental plug and receptacle (connector sealed on the electrical line)
- Class P: Panel sealed receptacle (feed-through sealed connector)

#### MAIN FEATURES

- 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



*Class P Connector Pair*



*Cable-to-PCB Application*



*Cable-to-Cable Application*

## Introduction

**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:**
  - 1,000 Vrms between outer body and signal contacts as per EN2591-207, Method C
  - 1,000 Vrms between signal contacts
  - DWV altitude (70,000 ft): 125 Vrms for the quadrax contacts as per ARINC 600

**MECHANICAL CHARACTERISTICS**

- **Mating/Unmating:** 100 cycles
- **Impact Test:** 8 drops at 1.20 m as per EN2591-613
- **Bending Moment (Applied to Accessories):** 100 N as per EN2591-404
- **Mechanical Axial Strength (Applied to Accessories):** 100 N as per EN2591-420

**VIBRATION & SHOCKS**

SERIES	MATERIAL	VIBRATION	SHOCK
		For 8 Hours 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 16.9 g (Method B Figure 2 Table 1 Level E)	Shock Amplitude 50 g/Duration 11 ms

**OTHER CHARACTERISTICS**

- **Temperature Range:** -65 °C/+150 °C (-85 °F/+302 °F), 5 cycles as per EN2591-305
- **Temperature Life:** 1,000 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 ft as per EN2591-314
- **Sand and 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:** 2 μ as per EN2591-513

## Contacts

## 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 <sup>[1]</sup>	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	SHF2.4 M <sup>[1]</sup> /UT.085 Harbour SS405 Times Tflex405	Pin	617171030	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)
8	SHF5 - SHF5M <sup>[1]</sup>	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 <sup>[1]</sup>	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) <sup>[2]</sup>
620176009	YA	2.80 (0.110)
620176016	ZA	
620176509	RA	
620176008	Y	5.65 (0.222)
620176010	Z	
620176508	R	
620176011	YB	8.50 (0.334)
620176012	ZB	
620176511	RB	
620176013	YC	11.90 (0.469)
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.



## HOW TO ORDER HDQX CONNECTORS

# HDQX

**SERIES PREFIX** \_\_\_\_\_

**CONNECTOR SIZE** \_\_\_\_\_

**12:** 12 size 8 cavities

**SHELL STYLE** \_\_\_\_\_

**P:** Plug for RR/RR (rear release/rear removal) contacts

**R:** Receptacle for RR/RR (rear release/rear removal) contacts

**F:** Receptacle for FR/FR (front release/front removal) 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 <sup>[2]</sup>

**Cx:** Crimp BMA contacts <sup>[1][2]</sup>

**Yx:** Gold PC tail Quadrax contacts <sup>[3]</sup>

**Zx:** Tin lead PC tail Quadrax contacts <sup>[3]</sup>

**Rx:** Pure tin PC tail Quadrax contacts <sup>[3]</sup>

**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 4-11 for codes

**Notes**

1. BMA contacts are not available with class E and P.

2. See Table 1 on page 4-8

3. See Table 2 on 4-8

### CONTACTS TERMINATION

**TABLE 1:**  
CRIMPED CONTACT TERMINATION  
FOR RR/RR RECEPTACLE AND PLUG

CABLE	QUADRAX	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 (0.110)	YA	ZA	RA
5.65 (0.222)	Y	Z	R
8.50 (0.334)	YB	ZB	RB
11.90 (0.469)	YC	ZC	RC

### SHELL MOUNTING

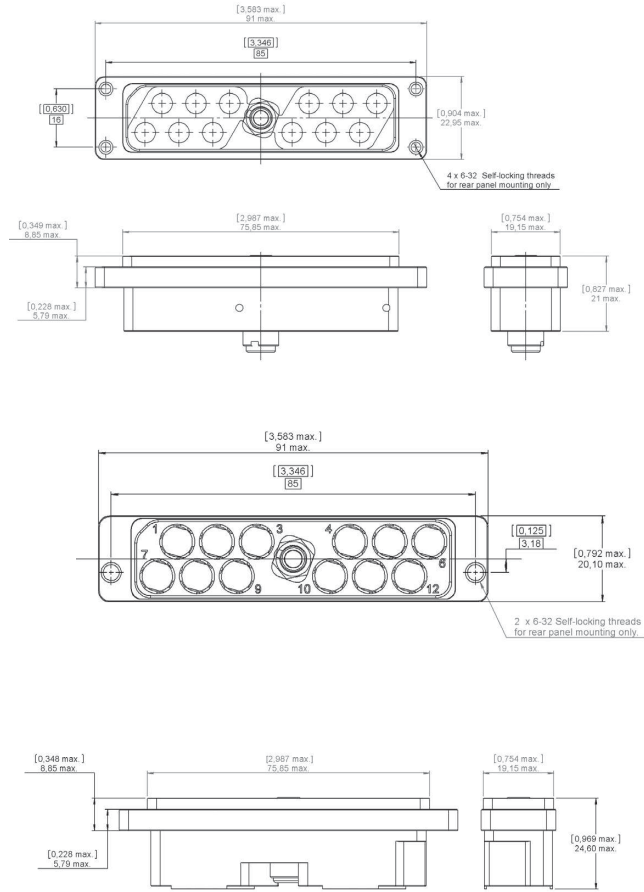
Both shell mounting 00 and 01 are available with RR/RR and FR/FR receptacle.

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	

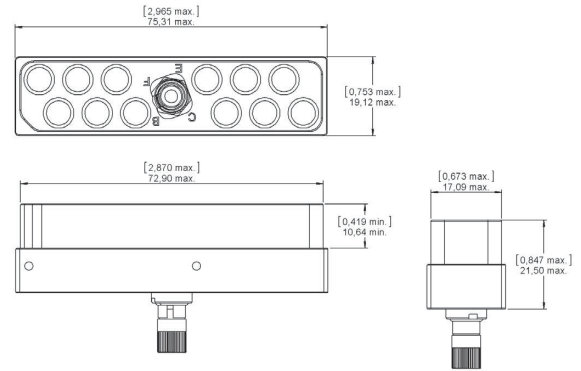


## DIMENSIONS

### RECEPTACLE



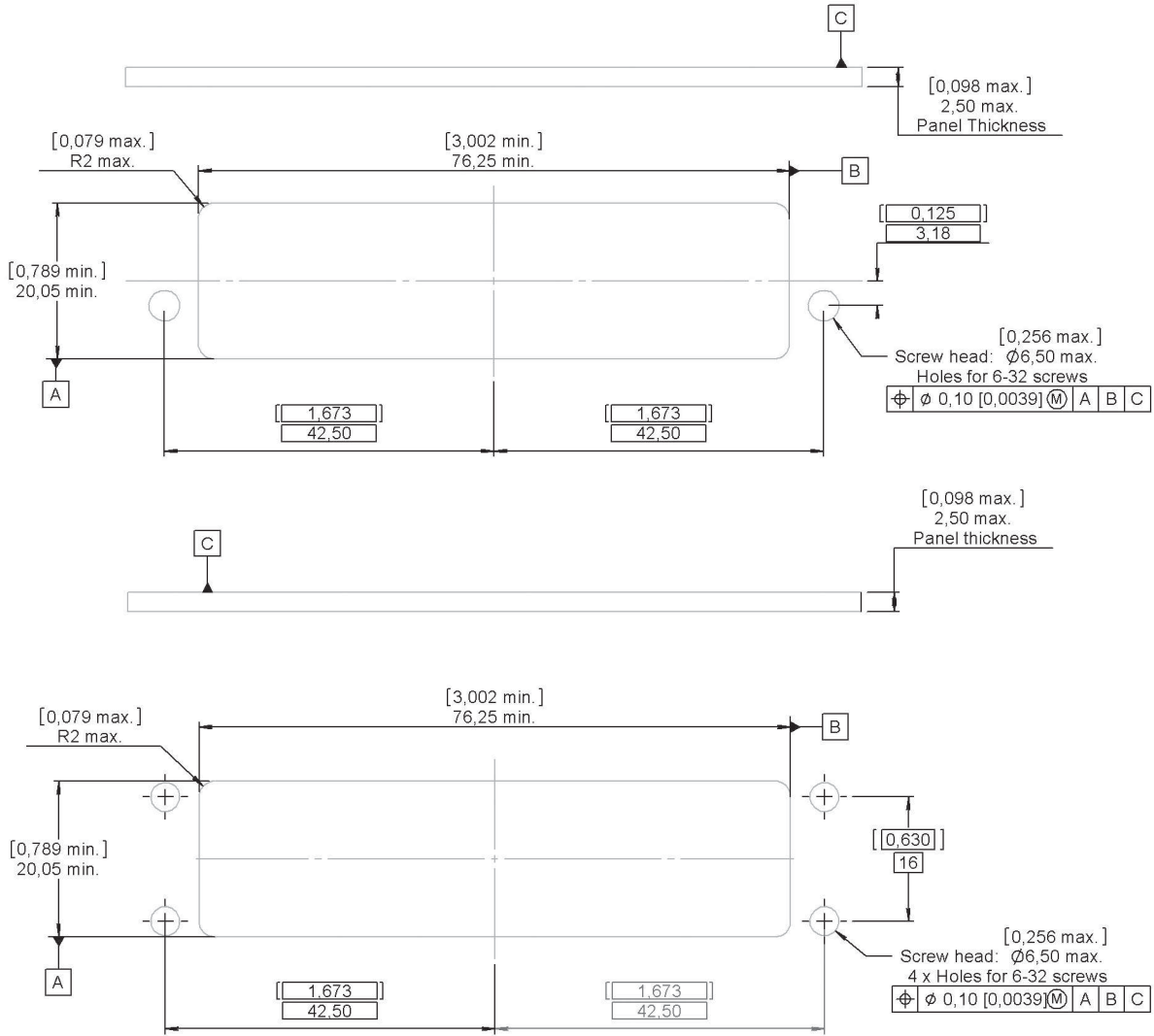
### PLUG



Not Applicable

## PANEL CUT-OUT

### RECEPTACLE



Connectors & Accessories

**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**

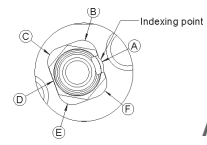
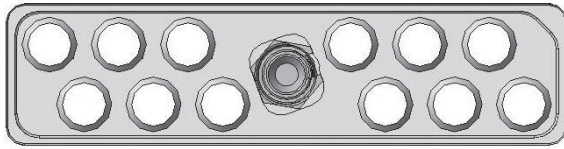
In the standard version, the jackscrew is mounted on the plug shell and the jack nut is mounted on the receptacle shell.

There are two 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 two sets is accomplished using an indexing point shown below in the drawings:

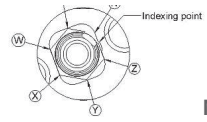
DESIGNATION	POLARIZING POSITIONS	CODING DEVICE	PART NUMBER	
Jackscrew	A to F		617612801	
	N to Z		617612803	
	Universal		617612806	
Jacknut for Front Release Receptacle	A to F		617612805	
	N to Z		617612804	
Jacknut for Rear Release Receptacle	A to F		617612800	
	N to Z		617612802	
Jacknut	Universal		617612807	

Connectors & Accessories

PLUG SHELL



A TO F

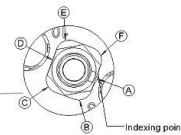
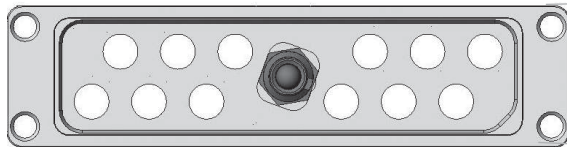


N TO Z

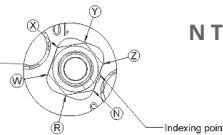
MATING FACE SHOWN

A	B	C	D	E	F
N	R	W	X	Y	Z

RECEPTACLE SHELL



A TO F


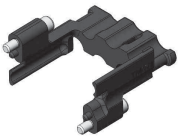

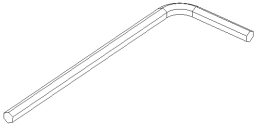


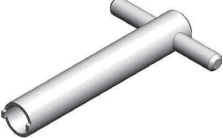


N TO Z

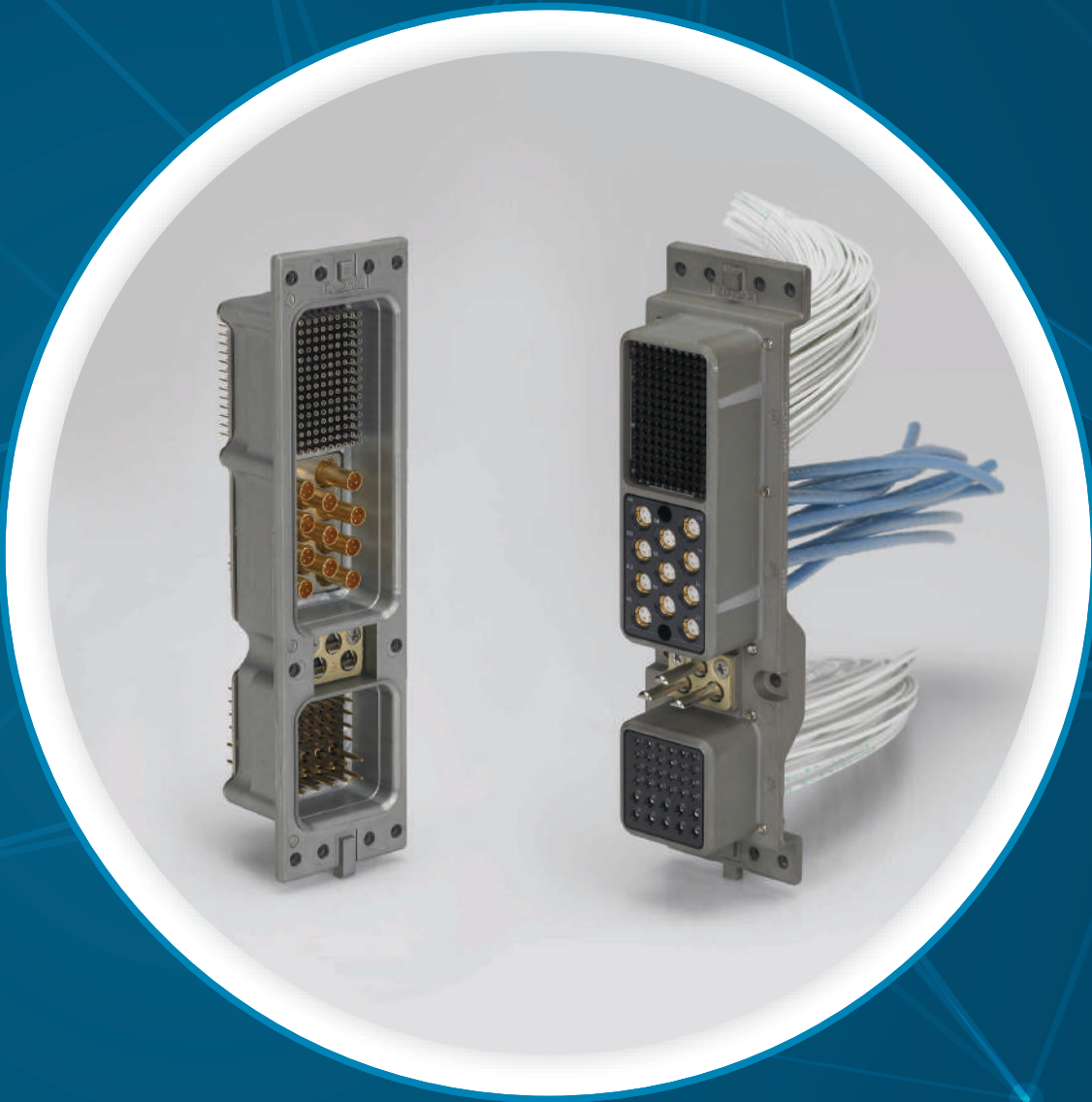
MATING FACE SHOWN

A	B	C	D	E	F
N	R	W	X	Y	Z

**ACCESSORIES & 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 in.)
	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

Notes



## NSX - BPX SERIES

*Arinc 600*





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NSX-Arinc

## INTRODUCTION

### NSX & 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 SERIES (ARINC 600 STANDARD)

Radiall NSX series offers the following versions including 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.

*NSX-Arinc***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: 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

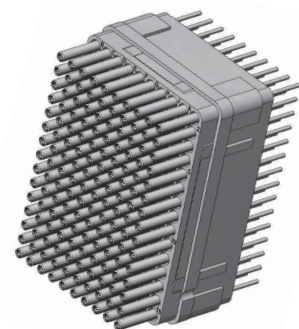
**Selective Plating Contacts**

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 1.27 µm
- No impact on PCB design
- Product qualification is available upon request



NSX-Arinc

## 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 and Grommet	Fluorosilicone	-
Contacts	Copper Alloy	Gold over Nickel
Retention Clip	Copper Alloy	-
Insert Retention Plate	Aluminum 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

NSX-Arinc

**ELECTRICAL CHARACTERISTICS**

CONTACT SIZE	WIRE				MAX CURRENT (A)
	AWG	CROSS SECTION (MM <sup>2</sup> )	OUTSIDE DIA. MM (INCHES)		
			MIN.	MAX.	
22	22	0.38	0.66 (0.026)	1.4 (0.055)	5
	24	0.21			3
	26	0.14			2
20	20	0.60	1 (0.040)	1.8 (0.071)	7.5
	22	0.38			5
	24	0.21			3
16	16	1.34	1.7 (0.066)	2.6 (0.102)	13
	18	0.93			10
	20	0.60			7.5
12	12	3.18	2.4 (0.094)	3.4 (0.134)	23
	14	1.91			17
	16	1.34			13
8	8	9	4.65 (0.183)	6.48 (0.255)	46
	10	5			33

**MECHANICAL & ENVIRONMENTAL CHARACTERISTICS**

- **Temperature Range:** - 65 °C/+125 °C
- **Temperature Life:** 1,000 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. (16.4 g from 50 to 2,000 Hz, 8 hours per direction)
- **Shock:** 50g 11 ms half sine, MIL-STD-1344 method 2004.1 three 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 QUADRIX
Retention Force min (oz)	12	20	25	30	25	25

NSX-Arinc

**COAX CONTACTS ELECTRICAL CHARACTERISTICS**

- Nominal Impedance: 50Ω
- DWV: 1,500 VAC – IR at 25°C = 5,000 MΩ
- V.S.W.R.: Size 5 → 1.3 from DC to 1,500 MHz and insertion loss = 0.3 dB, Size 1 → 1.3 from DC to 5,000 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 <sup>-3</sup> )	0.15 (5.3 10 <sup>-3</sup> )
20	0.22 (7.8 10 <sup>-3</sup> )	0.40 (14.1 10 <sup>-3</sup> )
16	0.72 (25.4 10 <sup>-3</sup> )	0.75 (26.5 10 <sup>-3</sup> )
12	1.50 (53.0 10 <sup>-3</sup> )	1.50 (53.0 10 <sup>-3</sup> )
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 5-5 except the following.

**MATERIAL**

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

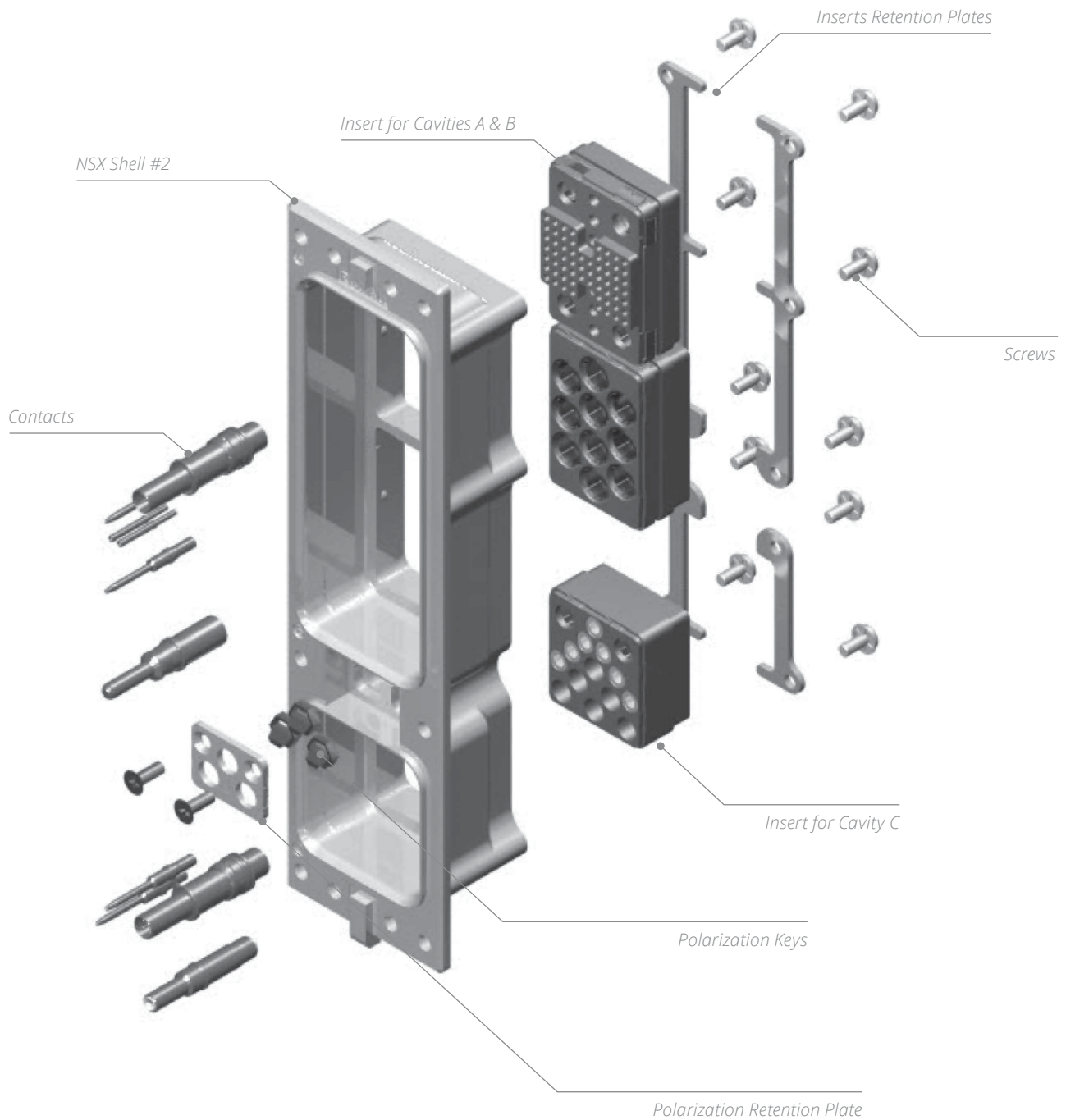
FREQUENCY (MHz)	LEAKAGE ATTENUATION (dB)
100	65
200	63
300	63
400	62
800	60
1,000	60



EMI/RFI Performances

## 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 PREFIX** \_\_\_\_\_

**CLASS** \_\_\_\_\_

- N:** Non-environmental
- E:** Environmental, with grommets and compound, plug with O-ring
- H:** Environmental, plug without O-ring (plug only)
- C:** Non-environmental, with grommets

**SHELL SIZE** \_\_\_\_\_

- 1:** Size 1
- 2:** Size 2
- 3:** Size 3

**SHELL STYLE** \_\_\_\_\_

- S:** RoHS plated receptacle
- T:** RoHS plated plug
- F:** Nickel-plated receptacle
- B:** Nickel-plated plug
- M:** Nickel-plated plug EMI version (see pages 5-70)

**INSERT COMBINATION CODE** \_\_\_\_\_

See combination code (pages 5-21 to 5-27) and contacts arrangements (pages 5-11 to 5-20)  
 T-cas application combination code: 310 (see page 5-24)

**CONTACT TERMINATION** <sup>[1]</sup> \_\_\_\_\_

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

**MODIFICATION CODE** \_\_\_\_\_

See pages 5-28 to 5-29

**POLARIZATION CODE** <sup>[2]</sup> \_\_\_\_\_

See pages 5-30 to 5-32

**DELIVERY CODE FOR T-CAS APPLICATION** \_\_\_\_\_

See page 5-41

**Notes**







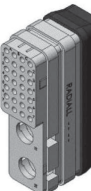

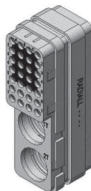





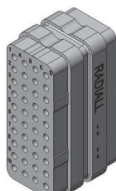

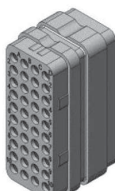
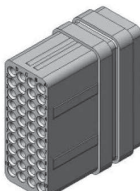



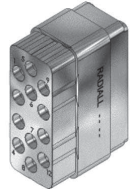

REMARK: dust caps conductive on receptacle and non conductive on plug are included in the delivery.

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.

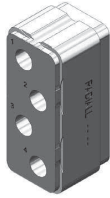







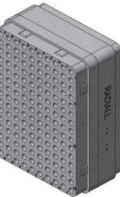




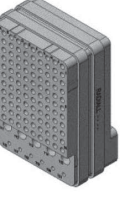
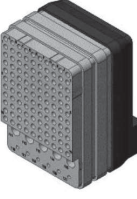

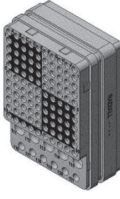
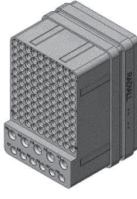


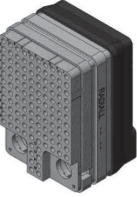

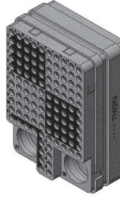


How to Order

**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	 60 × #22 RR/RR	 60 × #22 RR/RR	 60 × #22 FR/FR	N/A	 60 × #22 RR/RR	 60x#22 RR/RR
30T2	1-A/B	 28 × #22 RR/RR 2 × #8G RR/RR	 28 × #22 RR/RR 2 × #8G RR/RR	 28 × #22 FR/FR 2 × #8G RR/RR	 28 × #22 FR/FR 2 × #8G FR/FR	 28 × #22 RR/RR 2 × #8G RR/RR	 28x#22 RR/RR 2x#8G RR/RR
4C	1-A/B	 4 × #5G RR/RR	N/A	N/A	 4 × #5G FR/FR	 4 × #5G RR/RR	N/A
40	1-C	 40 × #22 RR/RR	 40 × #22 RR/RR	 40 × #22 FR/FR	N/A	 40 × #22 RR/RR	 40 × #22 RR/RR
12F12	1-C	 h12 × #16 RR/RR LuxCis®	 12 × #16 RR/RR LuxCis®	N/A	N/A	 12 × #16 RR/RR LuxCis®	 12 × #16 RR/RR LuxCis®

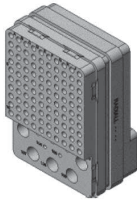
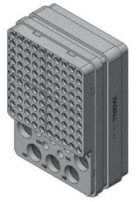
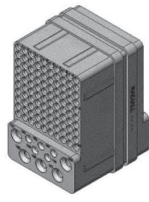

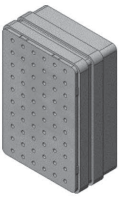



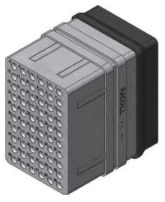






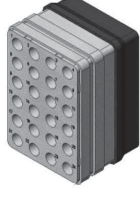







How to Order

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	 4 × #12 RR/RR <sup>(1)</sup>	Available <sup>(1)</sup>	N/A	N/A	 4 × #12 RR/RR	 4 × #12 RR/RR
5C2	1-C	 2 × #5 RR/RR 1 × #12 RR/RR 2 × #16 RR/RR	 2 × #5 RR/RR 1 × #12 RR/RR 2 × #16 RR/RR	N/A	 2 × #5 FR/FR 1 × #12 FR/FR 2 × #16 FR/FR	 2 × #5 RR/RR 1 × #12 RR/RR 2 × #16 RR/RR	 2 × #5 RR/RR 1 × #12 RR/RR 2 × #16 RR/RR
150	2/3-A/B	 150 × #22 RR/RR	 150 × #22 RR/RR	 150 × #22 FR/FR	N/A	 150 × #22 RR/RR	 150 × #22 RR/RR
121	2/3-A/B	 110 × #22 RR/RR 6 × #20 RR/RR 5 × #16 RR/RR	 110 × #22 RR/RR 6 × #20 RR/RR 5 × #16 RR/RR	 110 × #22 FR/FR 6 × #20 RR/RR 5 × #16 RR/RR	 110 × #22 FR/FR 6 × #20 FR/FR 5 × #16 FR/FR	 110 × #22 RR/RR 6 × #20 RR/RR 5 × #16 RR/RR	 110 × #22 RR/RR 6 × #20 RR/RR 5 × #16 RR/RR
120T2	2/3-A/B	 118 × #22 RR/RR 2 × #8G RR/RR	 118 × #22 RR/RR 2 × #8G RR/RR	 118 × #22 FR/FR 2 × #8G RR/RR	 118 × #22 FR/FR 2 × #8G FR/FR	 118 × #22 RR/RR 2 × #8G RR/RR	 118 × #22 RR/RR 2 × #8G RR/RR

Notes

1. For BPX series, 4 insert will be supplied with FR/RR contacts.

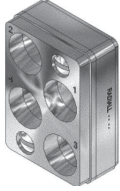
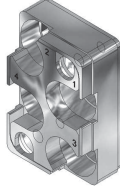
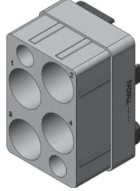


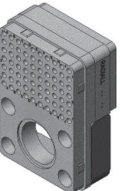
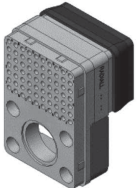
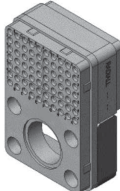

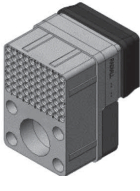
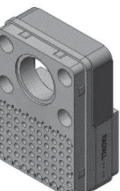


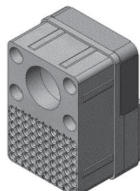
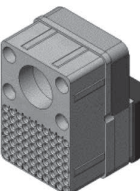
How to Order

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	 100 × #22 RR/RR 5 × #20 RR/RR 5 × #12 RR/RR	N/A	N/A	 100 × #22 FR/FR 5 × #20 FR/FR 5 × #12 FR/FR	 100 × #22 RR/RR 5 × #20 RR/RR 5 × #12 RR/RR	 100 × #22 RR/RR 5 × #20 RR/RR 5 × #12 RR/RR
60A	2/3-A/B	 60 × #20 RR/RR	 60 × #20 RR/RR	N/A	 60 × #20 FR/FR	 60 × #20 RR/RR	 60 × #20 RR/RR
35	2/3-A/B	 35 × #16 RR/RR	 35 × #16 RR/RR	N/A	 35 × #16 FR/FR	 35 × #16 RR/RR	 35 × #16 RR/RR
24	2/3-A/B	 24 × #12 RR/RR	 24 × #12 RR/RR	N/A	 24 × #12 FR/FR	 24 × #12 RR/RR	 24 × #12 RR/RR
10T10	2/3-A/B	 10 × #8G RR/RR <sup>[1]</sup>	Available <sup>[1]</sup>	N/A	 10 × #8G FR/FR	 10 × #8G RR/RR	 10 × #8G RR/RR

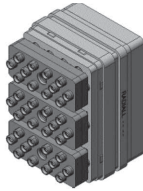
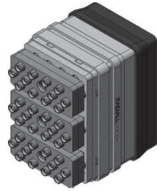
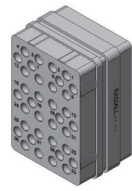









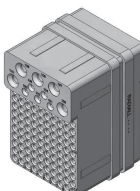






Notes

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

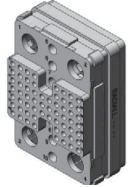
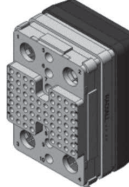
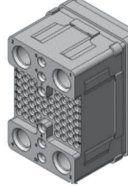
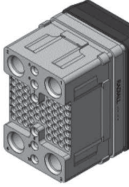

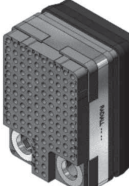



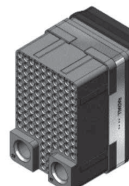
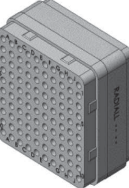

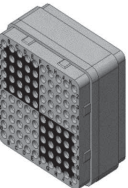
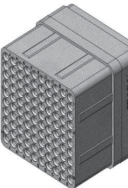

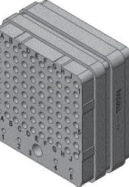
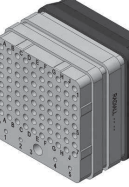
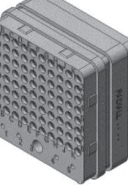
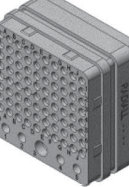
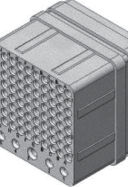
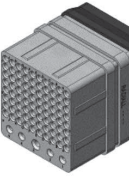
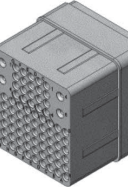

How to Order

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	 4 × #1G FR/RR	N/A	N/A	 4 × #1G FR/FR	 4 × #1G FR/RR	N/A
C2	2/3-A/B	 2 × #1G FR/RR	N/A	N/A	N/A	 2 × #1G FR/RR	N/A
71C1	2/3-A/B	 70 × #22 RR/RR 1 × #1 FR/RR	 70 × #22 RR/RR 1 × #1 FR/RR	 70 × #22 RR/RR 1 × #1 FR/RR	N/A	 70 × #22 RR/RR 1 × #1 FR/RR	 70 × #22 RR/RR 1 × #1 FR/RR
1C71	2/3-A/B	 70 × #22 RR/RR 1 × #1 FR/RR	 70 × #22 RR/RR 1 × #1 FR/RR	 70 × #22 FR/FR 1 × #1 FR/RR	N/A	 70 × #22 RR/RR 1 × #1 FR/RR	 70 × #22 RR/RR 1 × #1 FR/RR

How to Order

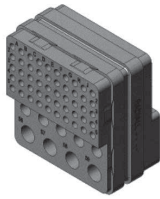
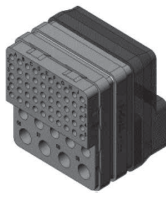

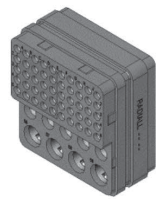
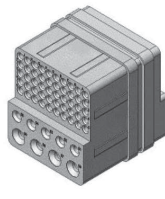

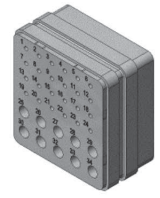
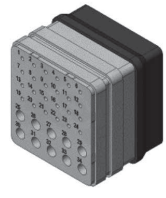
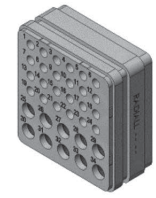
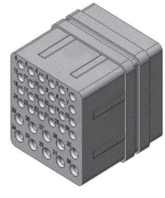



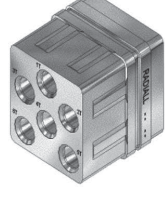


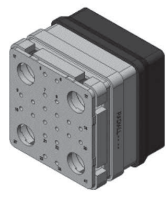
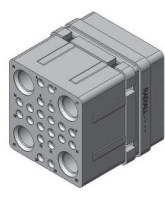
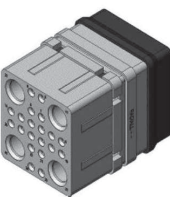
INSERT NAME	SHELL SIZE CAVITY	EQUIPMENT SIDE RECEPTACLE SHELL				AVIONIC SIDE PLUG SHELL	
		VERSION N	VERSION E	VERSION F	VERSION G	VERSION N	VERSION E
36F36	2/3-A/B	 36 × #16 RR/RR LuxCis®	 36 × #16 RR/RR LuxCis®	N/A	N/A	 36 × #16 RR/RR LuxCis®	 36 × #16 RR/RR LuxCis®
20F12Q8	2/3-A/B	 12 × #16 RR/RR LuxCis® 8 × #8G RR/RR	 12 × #16 RR/RR LuxCis® 8 × #8G RR/RR	N/A	 12 × #16 RR/RR LuxCis® 8 × #8G FR/FR	 12 × #16 RR/RR LuxCis® 8 × #8G RR/RR	 12 × #16 RR/RR LuxCis® 8 × #8G RR/RR
110R	2/3-A/B	 100 × #22 RR/RR 5#20 RR/RR 5#12 RR/RR	 100 × #22 RR/RR 5#20 RR/RR 5#12 RR/RR	N/A	 100 × #22 FR/FR 5#20 FR/FR 5#12 FR/FR	 100 × #22 RR/RR 5#20 RR/RR 5#12 RR/RR	 100 × #22 RR/RR 5#20 RR/RR 5#12 RR/RR
Q11	2/3-A/B	 11 × #8G RR/RR	 11 × #8G RR/RR	N/A	 11 × #8G FR/FR	 11 × #8G RR/RR	 11 × #8G RR/RR

How to Order

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	 62 × #22 RR/RR 6 × #16 RR/RR 4 × #8G RR/RR	 62 × #22 RR/RR 6 × #16 RR/RR 4 × #8G RR/RR	N/A	N/A	 62 × #22 RR/RR 6 × #16 RR/RR 4 × #8G RR/RR	 62 × #22 RR/RR 6 × #16 RR/RR 4 × #8G RR/RR
118Q2	2/3-A/B	 118 × #22 RR/RR 2 × #8G RR/RR	 118 × #22 RR/RR 2 × #8G RR/RR	 118 × #22 FR/FR 2 × #8G RR/RR	 118 × #22 FR/FR 2 × #8G FR/FR	 118 × #22 RR/RR 2 × #8G RR/RR	 118 × #22 RR/RR 2 × #8G RR/RR
100	2/3-C	 100 × #22 RR/RR	 100 × #22 RR/RR	 100 × #22 FR/FR	N/A	 100 × #22 RR/RR	 100 × #22 RR/RR
85	2/3-C	 80 × #22 RR/RR 4 × #20 RR/RR 1 × #16 RR/RR	 80 × #22 RR/RR 4 × #20 RR/RR 1 × #16 RR/RR	 80 × #22 FR/FR 4 × #20 RR/RR 1 × #16 RR/RR	 80 × #22 FR/FR 4 × #20 FR/FR 1 × #16 FR/FR	 80 × #22 RR/RR 4 × #20 RR/RR 1 × #16 RR/RR	 80 × #22 RR/RR 4 × #20 RR/RR 1 × #16 RR/RR
84	2/3-C	N/A	N/A	N/A	N/A	 80 × #22 RR/RR 4 × #20 RR/RR	 80 × #22 RR/RR 4 × #20 RR/RR





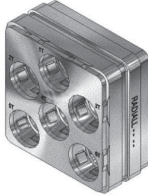


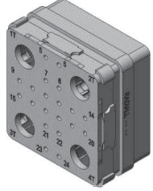
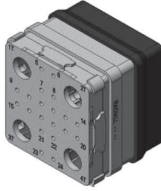

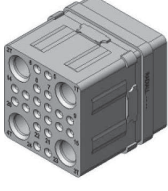



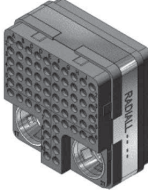
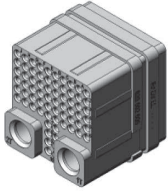

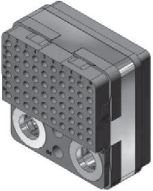


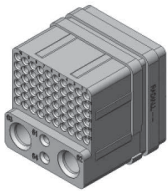




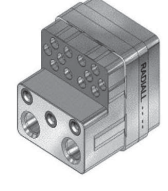
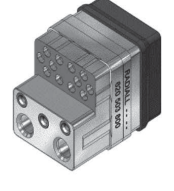
How to Order

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	 50 × #22 RR/RR 5 × #16 RR/RR 4 × #12 RR/RR	 50 × #22 RR/RR 5 × #16 RR/RR 4 × #12 RR/RR	 50 × #22 FR/FR 5 × #16 RR/RR 4 × #12 RR/RR	 50 × #22 FR/FR 5 × #16 FR/FR 4 × #12 FR/FR	 50 × #22 RR/RR 5 × #16 RR/RR 4 × #12 RR/RR	 50 × #22 RR/RR 5 × #16 RR/RR 4 × #12 RR/RR
34	2/3-C	 24 × #20 RR/RR 10 × #16 RR/RR	 24 × #20 RR/RR 10 × #16 RR/RR	N/A	 24 × #20 FR/FR 10 × #16 FR/FR	 24 × #20 RR/RR 10 × #16 RR/RR	 24 × #20 RR/RR 10 × #16 RR/RR
6T6	2/3-C	 6 × #8G RR/RR <sup>(1)</sup>	Available <sup>(1)</sup>	N/A	 6 × #8G FR/FR	 6 × #8G RR/RR	 6 × #8G RR/RR
24T4	2/3-C	 20 × #20 RR/RR 4 × #8G RR/RR	 20 × #20 RR/RR 4 × #8G RR/RR	N/A	N/A	 20 × #20 RR/RR 4 × #8G RR/RR	 20 × #20 RR/RR 4 × #8G RR/RR























Notes

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

How to Order

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	 6 × #8G RR/RR	 6 × #8G RR/RR	N/A	 6 × #8G FR/FR	 6 × #8G RR/RR	 6 × #8G RR/RR
20Q4	2/3-C	 20 × #20 RR/RR 4 × #8G RR/RR	 20 × #20 RR/RR 4 × #8G RR/RR	N/A	 20 × #20 FR/FR 4 × #8G FR/FR	 20 × #20 RR/RR 4 × #8G RR/RR	 20 × #20 RR/RR 4 × #8G RR/RR
68Q2	2/3-C	 68 × #22 RR/RR 2 × #8G RR/RR	 68 × #22 RR/RR 2 × #8G RR/RR	N/A	 68 × #22 FR/FR 2 × #8G FR/FR	 68 × #22 RR/RR 2 × #8G RR/RR	 68 × #22 RR/RR 2 × #8G RR/RR
62Q2	2/3-C	 60 × #22 RR/RR 2 × #16 RR/RR 2 × #8G RR/RR	 60 × #22 RR/RR 2 × #16 RR/RR 2 × #8G RR/RR	N/A	 60 × #22 FR/FR 2 × #16 FR/FR 2 × #8G FR/FR	 60 × #22 RR/RR 2 × #16 RR/RR 2 × #8G RR/RR	 60 × #22 RR/RR 2 × #16 RR/RR 2 × #8G RR/RR
17F12Q2	2/3-C	 12 × #16 RR/RR LuxCis® 3 × #16 RR/RR 2 × #8G RR/RR	 12 × #16 RR/RR LuxCis® 3 × #16 RR/RR 2 × #8G RR/RR	N/A	 12 × #16 RR/RR LuxCis® 3 × #16 FR/FR 2 × #8G FR/FR	 12 × #16 RR/RR LuxCis® 3 × #16 RR/RR 2 × #8G RR/RR	 12 × #16 RR/RR LuxCis® 3 × #16 RR/RR 2 × #8G RR/RR








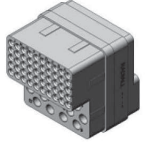


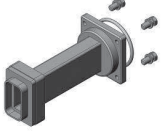
How to Order

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	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR	N/A	 4 × #20 FR/FR 3 × #16 FR/FR 4 × #12 FR/FR 2 × #8G FR/FR	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR
11WQ2	2/3-C	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR	N/A	 4 × #20 FR/FR 3 × #16 FR/FR 4 × #12 FR/FR 2 × #8G FR/FR	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR
13C2	2/3-C	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #5 RR/RR	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #5 RR/RR	N/A	 4 × #20 FR/FR 3 × #16 FR/FR 4 × #12 FR/FR 2 × #5 FR/FR	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #5 RR/RR	 4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #5 RR/RR
12F5C2	2/3-C	 1 × #16 RR/RR 5 × #16 RR/RR LuxCis® 4 × #12 RR/RR 2 × #5 RR/RR	 1 × #16 RR/RR 5 × #16 RR/RR LuxCis® 4 × #12 RR/RR 2 × #5 RR/RR	N/A	N/A	 1 × #16 RR/RR 5 × #16 RR/RR LuxCis® 4 × #12 RR/RR 2 × #5 RR/RR	 1 × #16 RR/RR 5 × #16 RR/RR LuxCis® 4 × #12 RR/RR 2 × #5 RR/RR
6P6	2/3-C	 6 × #8 RR/RR <sup>(1)</sup>	Available <sup>(1)</sup>	N/A	N/A	 6 × #8 RR/RR	 6 × #8 RR/RR

Notes:

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

How to Order

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	 <p>7 × #16 RR/RR 6 × #10 RR/RR 2 × #8G RR/RR</p>	N/A	N/A	 <p>7 × #16 FR/FR 6 × #10 FR/FR 2 × #8G FR/FR</p>	 <p>7 × #16 RR/RR 6 × #10 RR/RR 2 × #8G RR/RR</p>	N/A
46Q2	2/3-C	 <p>40 × #22 RR/RR 2 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR</p>	N/A	N/A	 <p>40 × #22 FR/FR 2 × #16 FR/FR 4 × #12 FR/FR 2 × #8G FR/FR</p>	 <p>40 × #22 RR/RR 2 × #16 RR/RR 4 × #12 RR/RR 2 × #8G RR/RR</p>	N/A
62F12	2/3-C	N/A	N/A	 <p>50 × #22 FR/FR 12 × #16 RR/RR LuxCis®</p>	N/A	 <p>50 × #22 RR/RR 12 × #16 RR/RR LuxCis®</p>	 <p>50 × #22 RR/RR 12 × #16 RR/RR LuxCis®</p>
WAVE GUIDE	2 - A&B	 <p>Wave Guide Equipment Side</p>				 <p>Wave Guide Avionic Side</p>	

How to Order

**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

How to Order

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

CODE	INSERT COMBINATION ON SHELL		
	CAVITY A	CAVITY B	CAVITY C
528	150	150	11WQ2
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

CODE	INSERT COMBINATION ON SHELL		
	CAVITY A	CAVITY B	CAVITY C
566	150	121	BLANK
567	150	118Q2	BLANK
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

## How to Order

## 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

How to Order

FOR SHELL SIZE 3

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

Notes

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 page 5-42)



## How to Order

## 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

How to Order

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

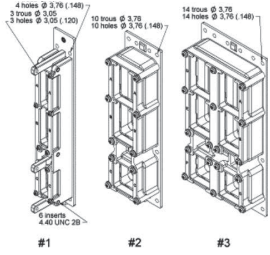
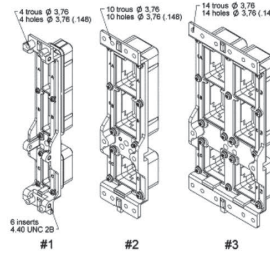
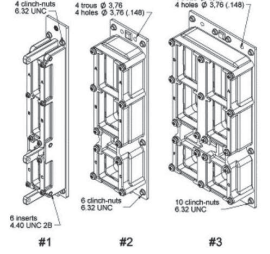
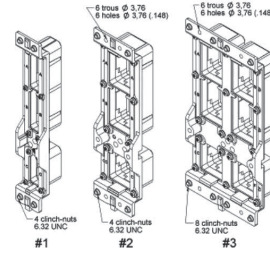
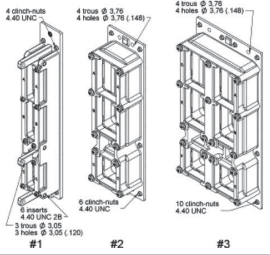
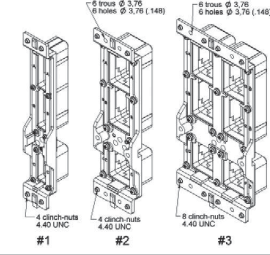
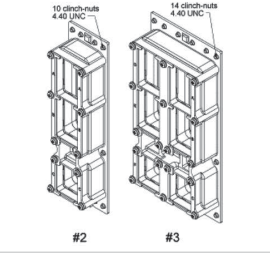
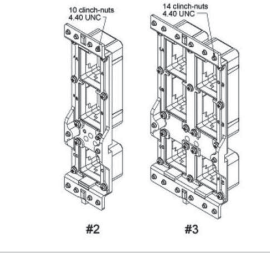
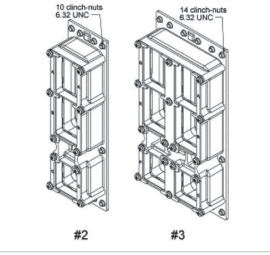
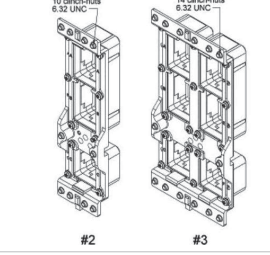
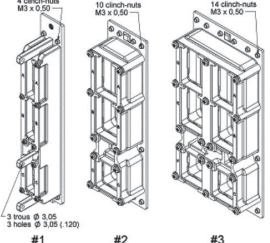
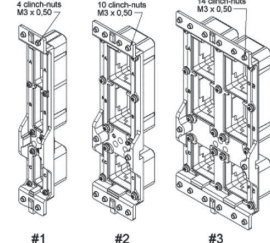
## How to Order

## FOR SHELL SIZE 3

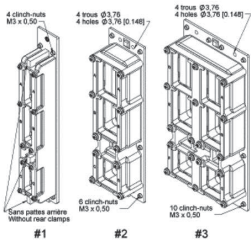
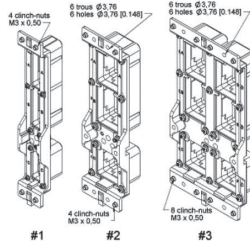
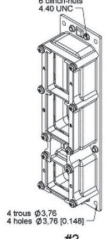
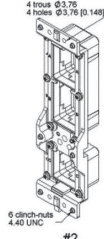
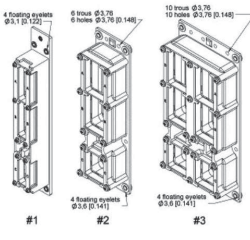
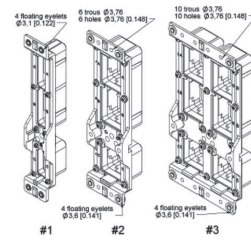
CODE	INSERT COMBINATION ON SHELL					
	CAVITY A	CAVITY B	CAVITY C	CAVITY D	CAVITY E	CAVITY F
629	C4	120T2	17F12Q2	C4	120T2	11Q2
630	C4	C4	BLANK	C4	C4	34
631	BLANK	150	13C2	BLANK	Q11	BLANK
632	BLANK	150	13C2	150	150	68Q2
633	150	150	100	Q11	Q11	11Q2
634	150	120T2	34	150	120T2	34
635	Q11	121	11Q2	Q11	121	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

How to Order

MODIFICATION CODE

CODE	RECEPTACLE SHELL	PLUG SHELL
00	 <p>Ø 3.76 Ø (0.148) All Holes</p>	 <p>Ø 3.76 Ø (0.148) All Holes</p>
01	 <p>Shell Size 1: Qty = 4 6-32 UNC &amp; Qty = 6 4-40 UNC</p> <p>Shell Size 2: Qty = 6 6-32 UNC</p> <p>Shell Size 3: Qty = 10 6-32 UNC</p>	 <p>6-32 UNC</p> <p>Shell Size 1: Qty = 4 Shell Size 2: Qty = 4 Shell Size 3: Qty = 8</p> <p>Size 1 Plug is Without Threaded Inserts</p>
03	 <p>Shell Size 1: Qty = 6 4-40 UNC 2B &amp; Qty = 3 Holes Ø 3.05 (0.120)</p> <p>Shell Size 2: Qty = 6 &amp; Qty = 4 Holes Ø 3.76 (0.148)</p> <p>Shell Size 3: Qty = 10 &amp; Qty = 4 Holes Ø 3.76 (0.148)</p>	 <p>Shell Size 1 Plug is Without Threaded Inserts</p> <p>Shell Size 1: Qty = 4 4-40 UNC</p> <p>Shell Size 2: Qty= 4 4-40 UNC &amp; Qty= 6 Soles Ø 3.76 (0.148)</p> <p>Shell Size 3: Qty = 8 &amp; Qty= 6 Holes Ø 3.76 (0.148)</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>

How to Order

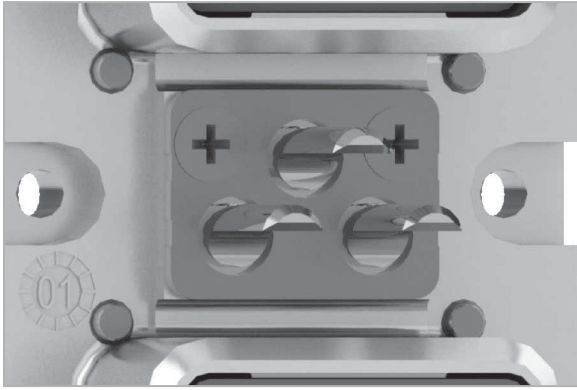
CODE	RECEPTACLE SHELL	PLUG SHELL
11	 <p>M3 x 0.50</p> <p>Shell Size 1: Qty = 4 Shell Size 2: Qty = 6 Shell Size 3: Qty = 10</p> <p>Size 1 Receptacle is Without Threaded Inserts</p>	 <p>M3 x 0.50</p> <p>Shell Size 1: Qty = 4 Shell Size 2: Qty = 4 Shell Size 3: Qty = 8</p> <p>Shell Size 1 Plug is Without 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: Qty = 4 Floating Eyelets Ø 3.1 (0.122)</p> <p>Shell Size 2: Qty = 6 Ø 3.76 (0.148) + 4 Floating Eyelets</p> <p>Shell Size 3: Qty = 10 Ø 3.76 (0.148) + 4 Floating Eyelets</p>	 <p>Shell Size 1: Ø 3.1 (0.122)</p> <p>Shell Size 2 and 3: Ø 3.6 (0.141)</p> <p>4 Floating Eyelets</p>

How to Order

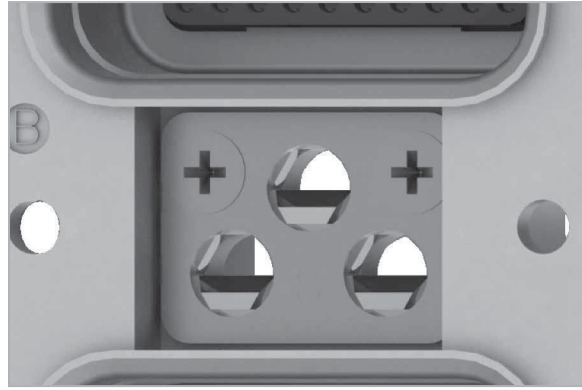
### POLARIZATION CODE

#### POSITION OF POLARIZATION KEYS AND POSTS

Connectors are shown front side, with "RADIAL" upward.



POSTS



KEYS

#### POSITION CODING

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



1



2



3



4



5



6

## How to Order

## 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

How to Order

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

CODE NUMBER	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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
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188	5	5	3	2	6	6
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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
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197	6	5	6	5	6	5
198	6	5	5	6	6	5
199	1	5	4	1	6	4

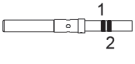




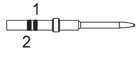

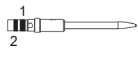
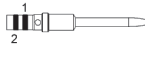



## How to Order


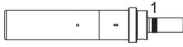
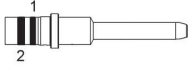
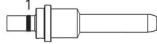

CODE NUMBER	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
200	1	5	3	2	6	4
201	1	5	2	3	6	4
202	1	5	1	4	6	4
203	1	5	6	5	6	4
203	1	5	6	5	6	4
204	1	5	5	6	6	4
205	2	5	4	1	6	3
206	2	5	3	2	6	3
207	2	5	2	3	6	3
208	2	5	1	4	6	3
209	2	5	6	5	6	3
210	2	5	5	6	6	3
211	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

**SIGNAL, POWER & GROUND CONTACTS CRIMP TERMINATION**

CONTACT SIZE		22	22 REDUCED CRIMP BARREL	20	16	16 REDUCED CRIMP BARREL
<i>Ins. Ext Tool (Metallic)</i>	Radial P/N	282885		282886	282546	
	Mil Spec P/N	M81969/1.01		M81969/1.02	M81969/1.03	
<i>Ins. Ext Tool (Plastic)</i>	Radial P/N	282522		282549029	282515	-
	Mil Spec P/N	M81969/14.01		M81969/14.02	M81969/14.03	-
<i>Positioner</i>	Radial P/N	282970		282971	282972	
	Mil Spec P/N	M22520/2.23		M22520/2.08	M22520/1.02	
<i>Crimping Tool</i>	Radial P/N	282281		282281	282291	
	Mil Spec P/N	M22520/2.01		M22520/2.01	M22520/1.01	
<i>Contact</i>	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 
<i>Wire</i>	Selector	4-3-3	5-4	5-6-7	6-5-4	5-4-3-2
	Striping Length ± .020 mm (in.)	3.5 (0.138)		4 (0.157)	6 (0.236)	
	Wire Outside Diameter mm (in.)	1.4 (0.055)	1.2 (0.047)	1.8 (0.071)	2.6 (0.102)	1.97 (0.077)
	Cross Section (mm <sup>2</sup> )	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
<i>Contact Arrangement</i>		See Contact Arrangement page 5-11 to 5-20				

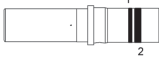
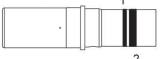
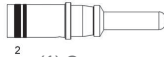

Contacts

CONTACT SIZE		12	12 REDUCED CRIMP BARREL	12
Ins. Ext Tool (Metallic)	Radiall P/N	282549004		-
	Mil Spec P/N	M81969/28.02		M81/969/19.02
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	620340  (1) Orange (2) Yellow	620341  (1) Orange	-
	Pin	620240  (1) Orange (2) Yellow	620241  (1) Orange	619240 (front release rear removable contact)  (1) Orange (2) Yellow
Wire	Selector	8-7-6	2-3-4-5	8-7-6
	Striping Length ± .020 mm (in.)	6 (0.236)		
	Wire Outside Diameter mm (in.)	3.4 (0.0134)	2.4 (0.094)	3.4 (0.134)
	Cross Section (mm <sup>2</sup> )	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 5-11 to 5-20		

Notes

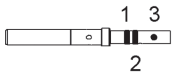
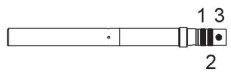
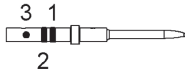
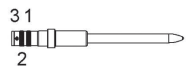
Radiall recommends plastic extraction tools for environmental cavities 22-20-16 and 12 (the metallic extraction tool leads to damage risk of triple silicon web).

Contacts

CONTACT SIZE		8	8 GROUNDED		5	
Ext Tool (Metallic)	Radial 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	Radial P/N	-	-	282588	282557	
	Mil Spec P/N	M22520/23.09	M22520/23.09	-	-	
Die	Radial P/N	-	-	-	-	
	Mil Spec P/N	M22520/23.02	M22520/23.02	M22520/23.02	-	
Crimping Tool	Radial 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 removable contact)  (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 (in.)	11.5 (0.453)	11.5 (0.453)	-	8.0 (0.315)	
	Wire Outside Diameter mm (in.)	5.7 (0.224)	5.7 (0.224)	-	3.4 (0.134)	5.7 (0.234)
	Cross Section (mm <sup>2</sup> )	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 5-11 to 5-20			

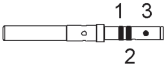
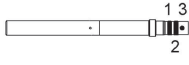
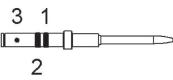
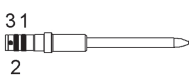
Contacts

**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	<p>620380</p>  <p>(1) Orange (2) Green (3) Yellow</p>	<p>620390</p>  <p>(1) Orange (2) Red (3) Yellow</p>
	Pin	<p>620280</p>  <p>(1) Orange (2) Green (3) Yellow</p>	<p>620290</p>  <p>(1) Orange (2) Red (3) Yellow</p>
Wire	Selector	4-3-3	7-6-5
	Striping Length ± .020 mm (in.)	3.5 (0.138)	4 (0.157)
	Wire Outside Diameter mm (in.)	1.4 (0.055)	1.8 (0.071)
	Cross Section (mm <sup>2</sup> )	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 5-11 to 5-20	

Contacts

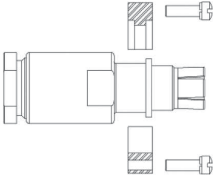
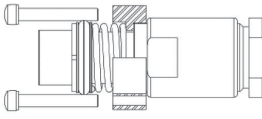
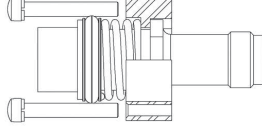
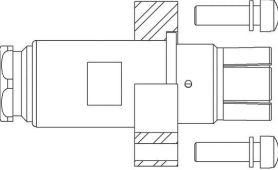
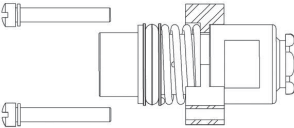
**ALUMEL CONTACTS-CRIMP TERMINATION**

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 (in.)	3.5 (0.138)	4 (0.157)
	Wire Outside Diameter mm (in.)	1.4 (0.055)	1.8 (0.071)
	Cross Section (mm <sup>2</sup> )	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 5-11 to 5-20	

Contacts

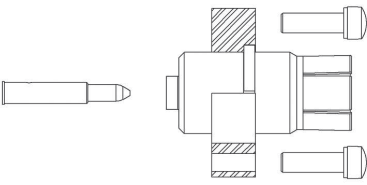
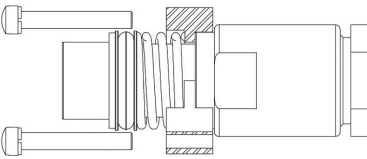
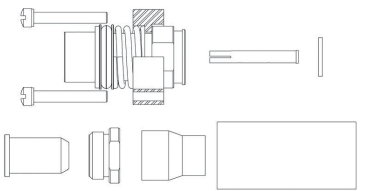
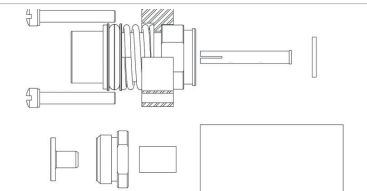
**COAXIAL CONTACTS**

**SIZE 1**

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		

Contacts

SIZE 1

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

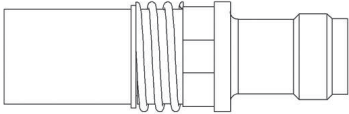
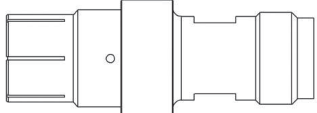


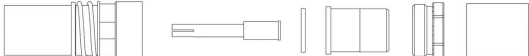

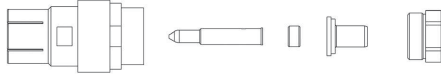
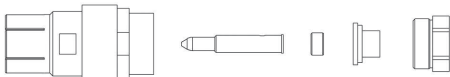
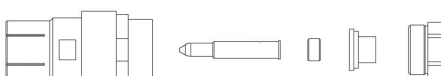
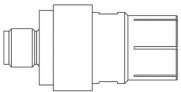

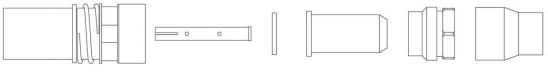
WIRE	TYPE	PART NUMBER	CONTACT	CONTACT ARRANGEMENTS
RG 142	Pin	620011		71C1-1C71-C2
Not Applicable SMA Termination	Pin	620044		71C1-1C71-C2
ASNE0691WM	Socket	620101011		71C1-1C71-C2
ASNE0692WN	Socket	620101012		71C1-1C71-C2
ASNE0692WN	Pin	620001012		71C1-1C71-C2
RD316	Pin	620043001		71C1-1C71-C2

DELIVERY CODE FOR T-CAS APPLICATION

CODE	CONNECTOR DETAILS		SOCKET CONTACTS FOR PLUG	PIN CONTACTS FOR RECEPTACLE
No Code	Contacts	Size 1 RF Coaxial Contacts to be Ordered Separately	620117 620146	620049
	Inserts (For Plug)	Mating Side Insert: Thermoplastic		
		Size 1 RF Coax Retention Plate: Stainless Steel		
Inserts (For Receptacle)	Aluminum Alloy Nickel-Plated			
N	Connector Delivered with Coaxial Contacts		620116	620049

Contacts

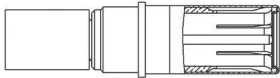
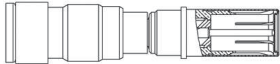
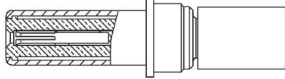
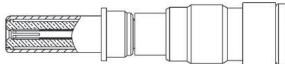
SIZE 1 RF COAXIAL CONTACTS FOR NSX T-CAS CONNECTOR

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	
RG 142	Pin	620046	
UT 141	Pin	620047	
UT .085	Pin	620047010	
SMA TERMINATION	Pin	620049	
ASNE0692WN- ASNE0406WD	Pin	620019105	
ASNE0692WN	Socket	620119105	

Contacts

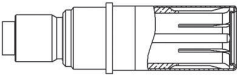
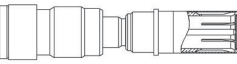
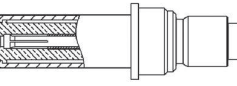
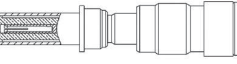
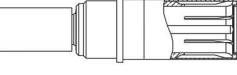
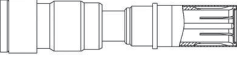
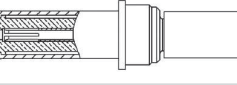
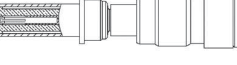

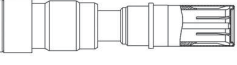
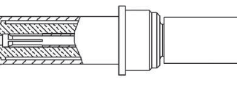
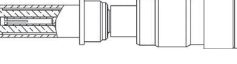
SIZE 8



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

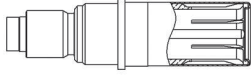
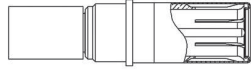
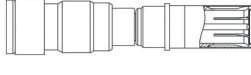
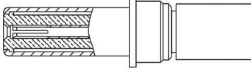
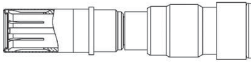




WIRE	TYPE	PART NUMBER	CONTACT	FOR INSERT <sup>(1)</sup>	INS/EXT TOOL	
RG316-KX22 -RG179 ASNE0639XY	Socket	619054		For All Size 8 Cavities	282549001 (M81969/28.03)	
		619054001 Environmental				
	Pin	619154			-	
		619154001 Environmental				
Gore GSC-03-8174 8-00	Socket	619053			For All Size 8 Cavities	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				

Notes

1. Except for inserts 6T6 and 10T10.

Contacts

SIZE 8

WIRE	TYPE	PART NUMBER	CONTACT	FOR INSERT <sup>[1]</sup>	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			

Notes

1. Except for inserts 6T6 and 10T10.

Contacts

SIZE 8




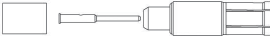
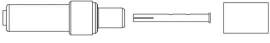



WIRE	TYPE	PART NUMBER	CONTACT	FOR INSERT <sup>(1)</sup>	INS/EXT TOOL
RG316	Socket	619056		For All Size 8 Cavities	-
		619056001 Environmental			
	Pin	619156			-
		619156001 Environmental			-

Notes

1. Except for inserts 6T6 and 10T10

Contacts

SIZE 5


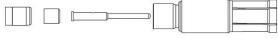




WIRE	TYPE	PART NUMBER	CONTACT	FOR INSERT	INS/EXT TOOL
RG 58 RG 141	Pin	620120 <sup>[1]</sup>		For All Size 5 Cavities	282946 (M81969/28.01)
	Socket	620020 <sup>[1]</sup>			
RG 142 RG 223 RG 400	Pin	620121 <sup>[1]</sup>			
	Socket	620021 <sup>[1]</sup>			
ASNE0639XY RG 179 RG 316 KX 22	Pin	620122 <sup>[1]</sup>			
	Socket	620022 <sup>[1]</sup>			282946 (M81969/28.01)

Notes

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

Contacts

SIZE 5

WIRE	TYPE	PART NUMBER	CONTACT	FOR INSERT	INS/EXT TOOL
ASNE 0633WG RG 178 KX 21	Pin	620123 <sup>[1]</sup>		For All Size 5 Cavities	282946 (M81969/28.01)
	Socket	620023 <sup>[1]</sup>			
RG 180 RG 195	Pin	620124 <sup>[1]</sup>			
	Socket	620024 <sup>[1]</sup>			282946 (M81969/28.01)
RD 316	Pin	620129 <sup>[1]</sup>			
	Socket	620029 <sup>[1]</sup>			282946 (M81969/28.01)

Notes

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







Contacts

SIZE 5

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			282946 (M81969/28.01)
ASNE0690WL	Pin	620184			282946 (M81969/28.01)
ASNE0690WL	Socket	620084		282946 (M81969/28.01)	

Contacts

SIZE 16

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			

CONCENTRIC TWINAX CONTACTS

SIZE 5

WIRE	TYPE	PART NUMBER	FOR INSERT	INS/EXT TOOL
MIL C 17/17600002	Pin	616195001 <sup>[1]</sup>	For All Size 5 Cavities	282946 (M81969/28.01)
	Socket	616095001 <sup>[2]</sup>		

SIZE 10



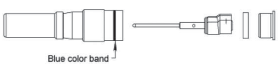



WIRE	TYPE	PART NUMBER	FOR INSERT	INS/EXT TOOL
EN 3375-006 ASNE 0290XM	Pin	620167001	15T6Q2	(M81969/14-05)
	Socket	620067001		

Notes

- 616195001 contact environmental version is 616195009
- 616095001 contact environmental version is 616095009

Contacts

SIZE 8

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 <sup>(1)</sup> 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				

Notes

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

## Contacts

## QUADRAX CONTACTS

## SIZE 8

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	

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**

	<b>MULTI-MODE (PC) 850 / 1300 NM</b>	<b>SINGLE-MODE (UPC) 1310 / 1550 NM</b>
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 & ENVIRONMENTAL CHARACTERISTICS**

	<b>STANDARD</b>	<b>PERFORMANCES</b>
Thermal Cycling	SAE AS 13441 Method 1003.1	-55 °C/+125 °C (Cable Dependant)
Temperature Endurance	TIA/EIA 455-4	1,000 h at 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 single-mode fiber
- 03:** PC ferrule for 50/125 or 62,5/125 um multi-mode fiber
- 04:** PC ferrule for 100/40 um multi-mode fiber
- 05:** PC ferrule for 200/230 um multi-mode fiber
- 50:** APC ferrule for single-mode 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**

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

Contacts

**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 (MM)	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	



**Notes**

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





## Contacts

**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 multi-mode 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

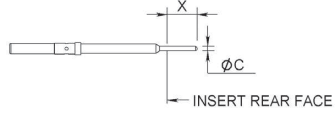
	PART NUMBER	DESCRIPTION
	620946005	Pin Quadrax Adapter for EN4531 Contact
	620946006	Socket Quadrax Adapter for EN4531 Contact

Contacts

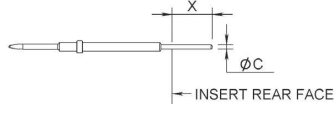
**NSX E/N/H/C-REAR REMOVABLE CONTACTS**

**REAR REMOVABLE PC TAIL CONTACTS**

**SIZE 22 SOCKET CONTACTS**

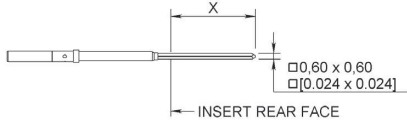
PART NUMBER	CONTACT TERMINATION	DIMENSION X MM (INCH)	C DIA. MM (INCH)	INS/EXT TOOL	FIGURE
620 305	YA	5.20 (0.205) 4.20 (0.165)	0.635 (0.025)	282890	
620305005	ZA				

**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 (0.025)	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 (0.303) 6.30 (0.248)	282890	
620303	V	10.70 (0.421) 9.30 (0.366)		
620308	W	12.30 (0.484) 13.70 (0.540)		



Contacts

## 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.

# NSX

**SERIES PREFIX** \_\_\_\_\_

**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** \_\_\_\_\_

- F:** Nickel-plated receptacle
- S:** RoHS chromatisation plated receptacle

**INSERT COMBINATION CODE** \_\_\_\_\_

See combination code pages 5-21 to 5-27 and contacts arrangement pages 5-11 to 5-20  
 T-cas application combination code: 310 (see page 5-24)

**CONTACT TERMINATION** \_\_\_\_\_

WITHOUT CONTACTS

**X:** Without contacts

WIRE WRAP

- K:** Wire wrap contact, 1 level (1 = 0.272)
- V:** Wire wrap contact, 2 levels (1 = 0.390)
- W:** Wire wrap contact, 3 levels (1 = 0.524)
- L:** Wire wrap contact, 4 levels (1 = 0.660)

**PC TAIL CONTACTS**

ROHS	GOLD	PRE-TINNED	LENGTH (IN.)
RA	YA	ZA	0.150
R	Y	Z	0.250
RB	YB	ZB	0.375
RC	YC	ZC	0.500

**MODIFICATION CODE** <sup>[1]</sup> \_\_\_\_\_

See pages 5-28 to 5-29

**POLARIZATION CODE** \_\_\_\_\_

See pages 5-30 to 5-32

**Without code:** polarization hardware is delivered unassembled

**DELIVERY CODE FOR T-CAS APPLICATION** \_\_\_\_\_

See page 5-41

**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 5-31.

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 (0.181/0.150)	282500	Orange	Green	
620360005	ZA					
620360500	RA					
620361	Y	7.20/6.40 (0.283/0.252)				
620361005	Z					
620361500	R					
620362	YB	10.30/9.50 (0.406/0.374)				
620362005	ZB					
620362500	RB					
620363	YC	13.60/12.80 (0.535/0.504)				
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 (0.181/0.150)	282503	Orange	Red	0.85/0.80 (0.033/0.031)	
620214019	ZA						
620214518	RA						
620214010	Y	7.20/6.40 (0.283/0.252)					
620214013	Z						
620214510	R						
620214003	YB	10.30/9.50 (0.406/0.374)					
620214008	ZB						
620214503	RB						
620214021	YC	13.60/12.80 (0.535/0.504)					
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 (0.181/0.150)	282504	Orange	Blue	1.32/1.22 (.052/.048)	
620234019	ZA						
620234518	RA						
620234004	Y	7.20/6.40 (0.283/0.252)					
620234017	Z						
620234504	R						
620234003	YB	10.30/9.50 (0.406/0.374)					
620234008	ZB						
620234503	RB						
620234021	YC	13.60/12.80 (0.535/0.504)					
620234022	ZC						
620234521	RC						

Contacts

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 (0.181/0.150)	282549005	Orange	Yellow	
620244019	ZA					
620244518	RA					
620244005	Y	7.20/6.40 (0.283/0.252)	282549005	Orange	Yellow	
620244016	Z					
620244505	R					
620244003	YB	10.30/9.50 (0.406/0.374)	282549005	Orange	Yellow	
620244008	ZB					
620244503	RB					
620244021	YC	13.60/12.80 (0.535/0.504)	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 (0.256/0.287)	282500	Orange	Green	
620351	V	9.9/0.4 (0.374/0.405)				
620352	W	13.3/0.4 (0.508/0.540)				
620353	L	16.8/0.4 (0.645/0.677)				

SIZE 16 PIN COAX CONTACTS

PART NUMBER	CONTACT TERMINATION	DIMENSION X MM (INCH)	INS/EXT TOOL
618155001	YA	3.8/4.6 (0.150/0.181)	282504
618155002	Y	6.4/7.2 (0.252/0.283)	
618155011	YB	9.5/10.3 (0.374/0.405)	

Contacts

**SIZE 12 PIN COAX CONTACTS**

PART NUMBER	CONTACT TERMINATION	DIMENSION X MM (INCH)	INS/EXT TOOL
618149017	YA	3.8/4.6 (0.150/0.181)	282549005
618149016	Y	6.4/7.2 (0.252/0.283)	
618149018	YB	9.5/10.3 (0.374/0.405)	
618149012	YC	12.8/13.6 (0.503/0.535)	
618149013	ZC	12.8/14.1 (0.503/0.558)	

**SIZE 8 PIN COAX CONTACTS**

PART NUMBER	CONTACT TERMINATION	DIMENSION X MM (INCH)	INS/EXT TOOL
619140009	YA	12.40/12.20 (0.488/0.480)	282549009
619140014	ZA		
619140509	RA		
619140010	Y	15.05/14.85 (0.592/0.584)	
619140013	Z		
619140510	R		
619140007	YB	18.15/17.95 (0.715/0.706)	
619140008	ZB		
619140507	RB		
619140011	YC	21.45/21.25 (0.844/0.836)	
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 (0.181/0.150)	282549006
620133509	RA		
620133006	Y	7.20/6.40 (0.283/0.252)	
620133007	Z		
620133506	R		
620133003	YB	10.30/9.50 (0.406/0.374)	
620133001	ZB		
620133503	RB		
620133010	YC	13.60/12.80 (0.535/0.504)	
620133510	RC		

## Contacts

## 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 (0.181/0.150)	282549009
619162015	ZA		
619162514	RA		
619162011	Y	7.20/6.40 (0.283/0.252)	
619162012	Z		
619162511	R		
619162016	YB	10.30/9.50 (0.406/0.374)	
619162017	ZB		
619162516	RB		
619162009	YC	13.60/12.80 (0.535/0.504)	
619162010	ZC		
619162509	RC		

## SIZE 8 PIN QUADRAX CONTACTS

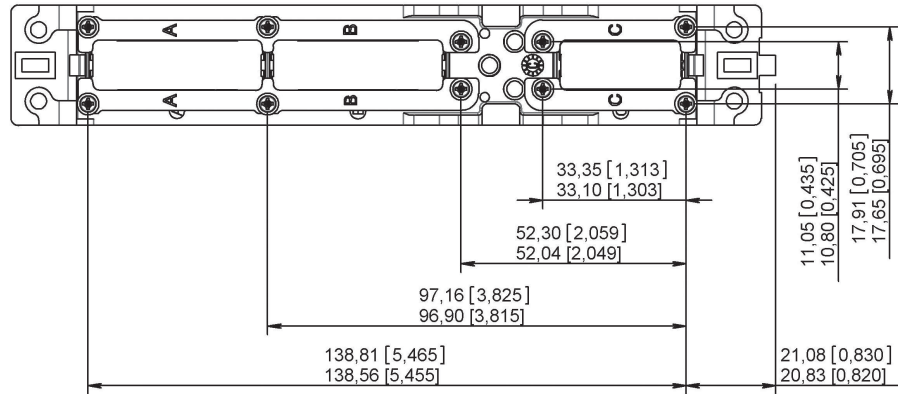
PART NUMBER	CONTACT TERMINATION	DIMENSION X MM (INCH)	INS/EXT TOOL
620176009	YA	4.60/3.80 (0.181/0.150)	282549009
620176016	ZA		
620176509	RA		
620176008	Y	7.20/6.40 (0.283/0.252)	
620176010	Z		
620176508	R		
620176011	YB	10.30/9.50 (0.406/0.374)	
620176012	ZB		
620176511	RB		
620176013	YC	13.60/12.80 (0.535/0.504)	
620176014	ZC		
620176513	RC		

Contacts

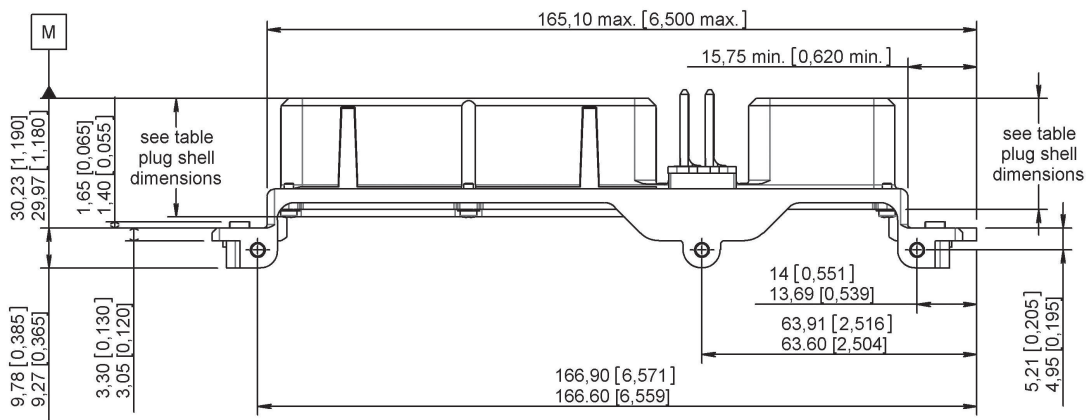
**DIMENSIONS**

**NON-ENVIRONMENTAL SIZE 1 PLUG SHELL**

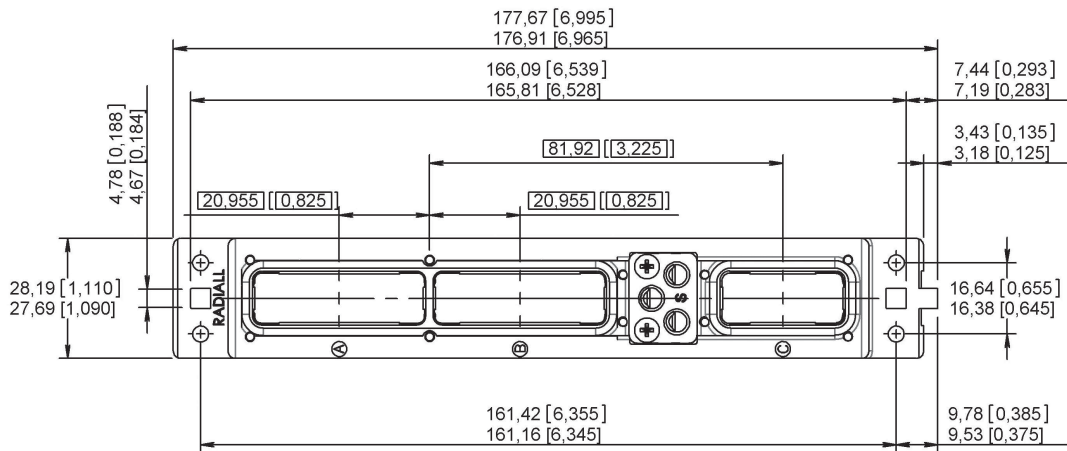
**FRONT VIEW**



**SIDE VIEW**



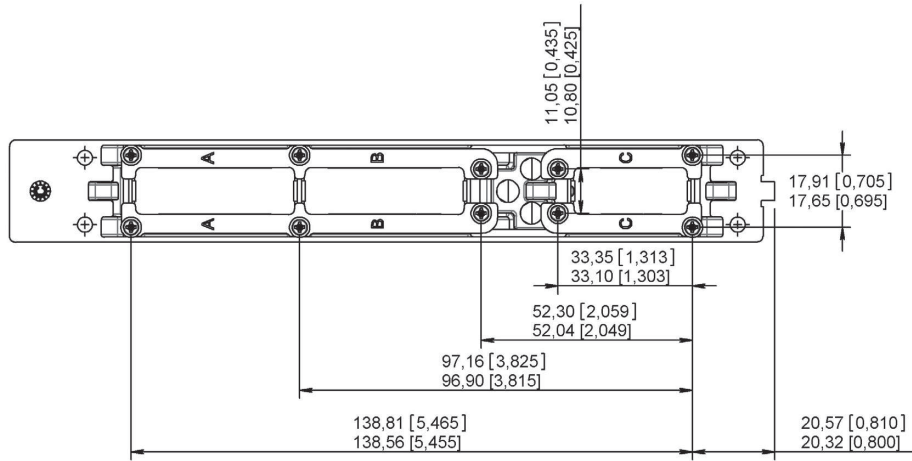
**REAR VIEW**



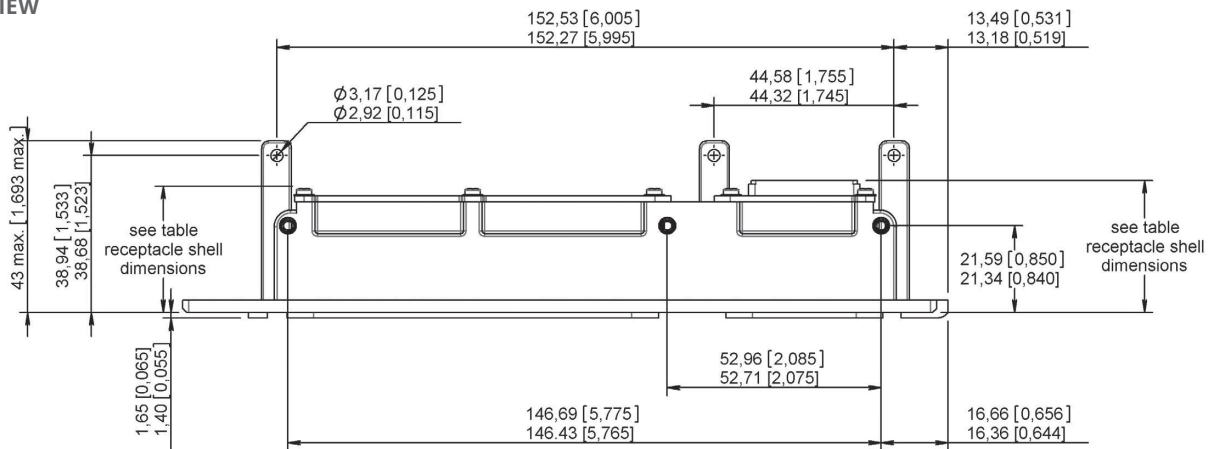
Contacts

NON-ENVIRONMENTAL SIZE 1 RECEPTACLE SHELL

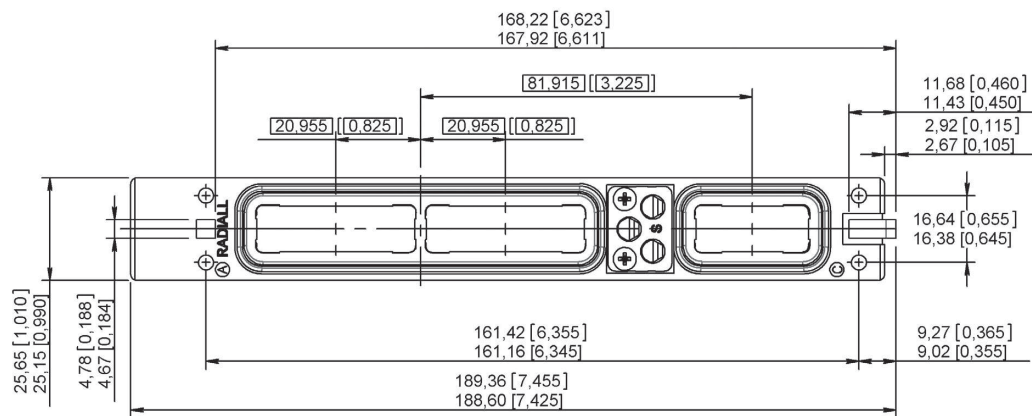
FRONT VIEW



SIDE VIEW



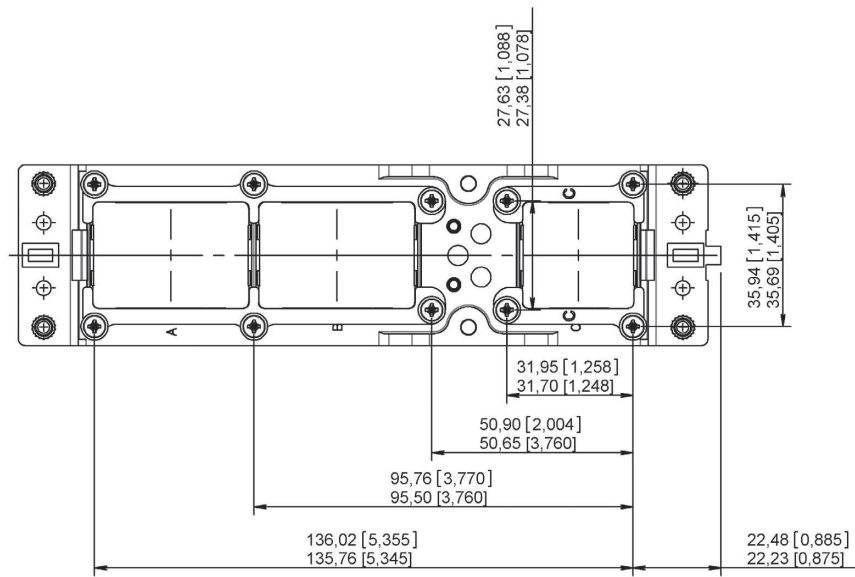
REAR VIEW



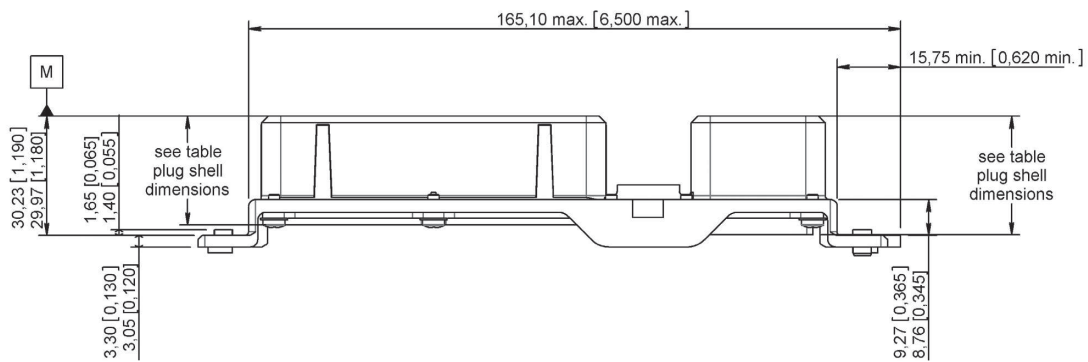
Contacts

NON-ENVIRONMENTAL SIZE 2 PLUG SHELL

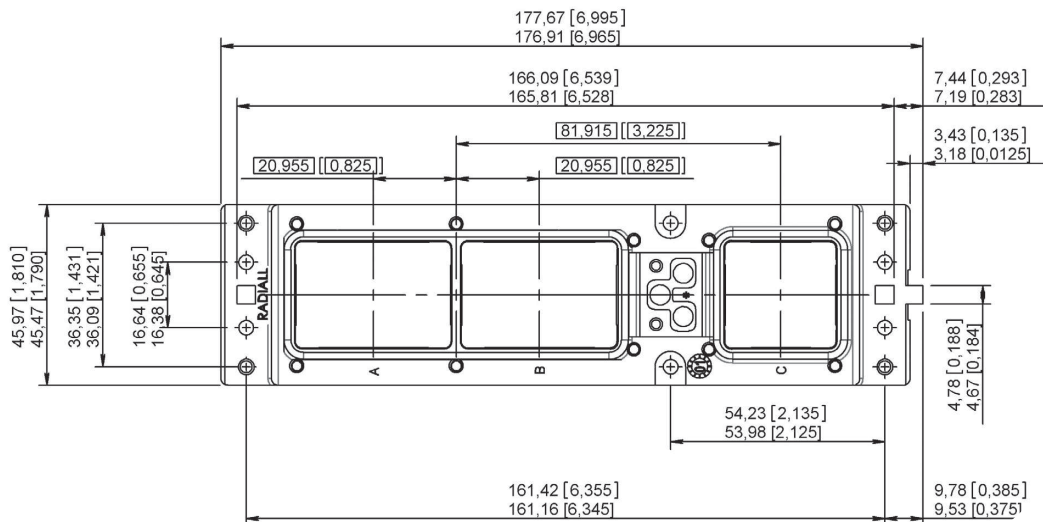
FRONT VIEW



SIDE VIEW



REAR VIEW

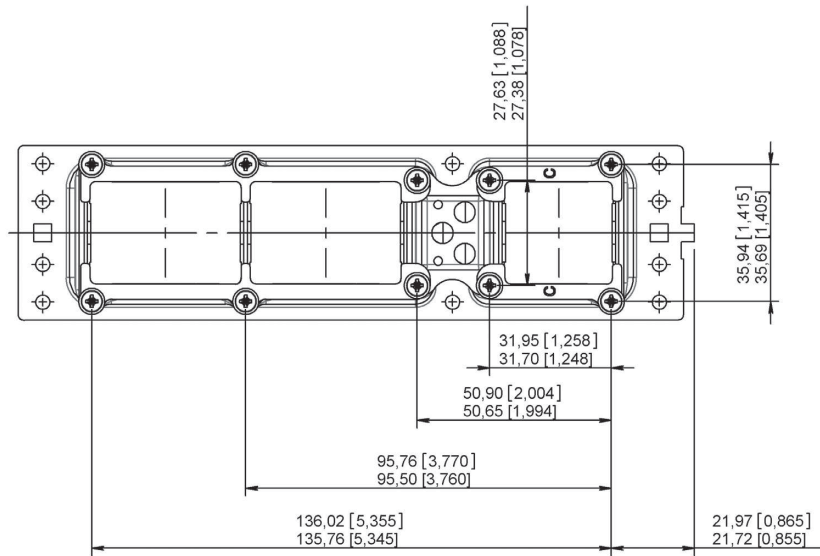




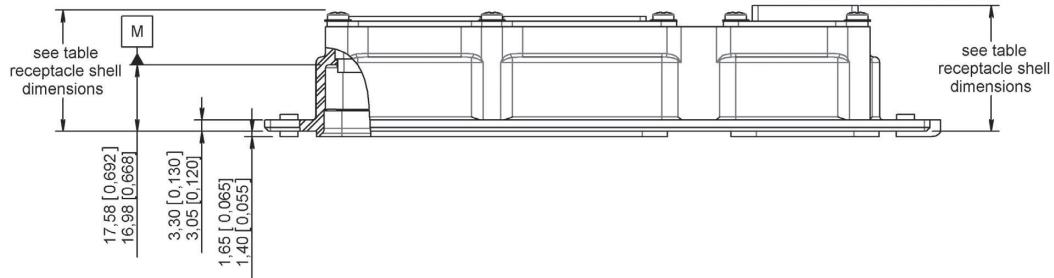
Contacts

NON-ENVIRONMENTAL SIZE 2 RECEPTACLE SHELL

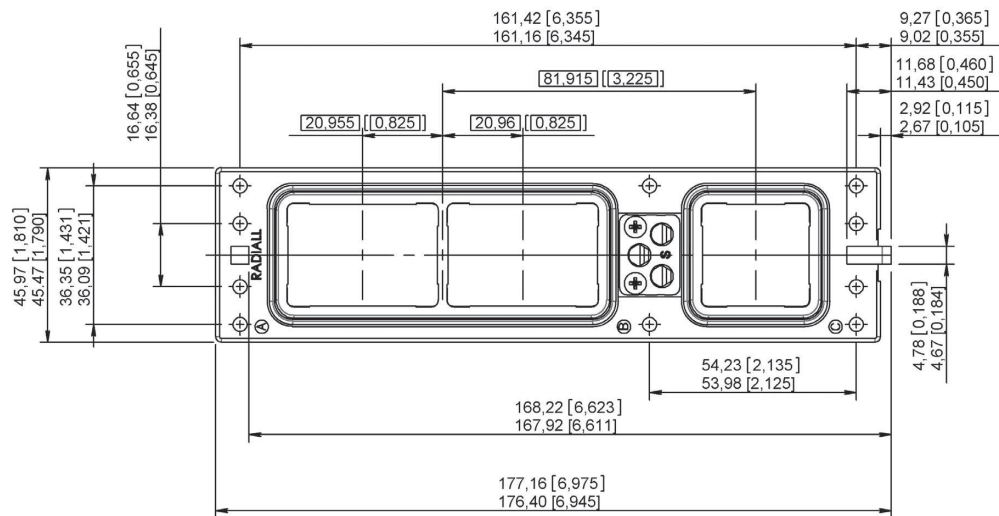
FRONT VIEW



SIDE VIEW



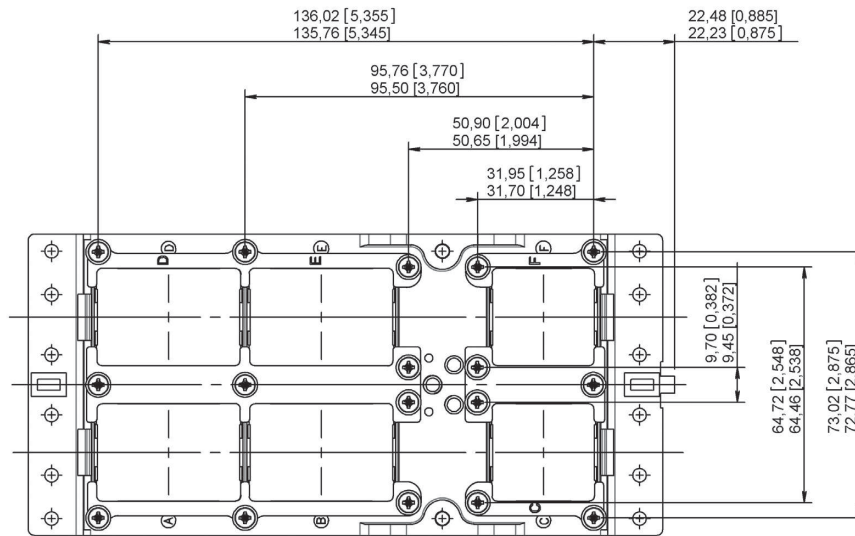
REAR VIEW



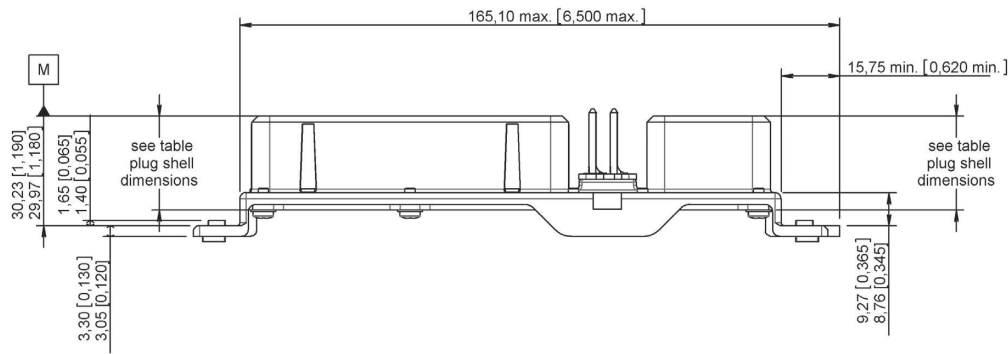
Contacts

NON-ENVIRONMENTAL SIZE 3 PLUG SHELL

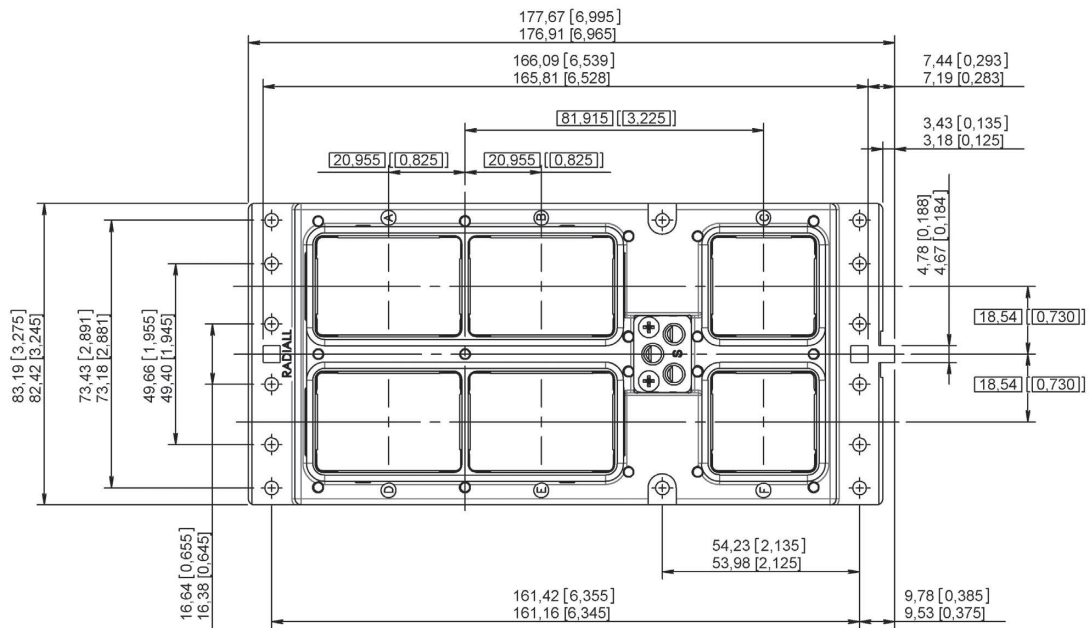
FRONT VIEW



SIDE VIEW



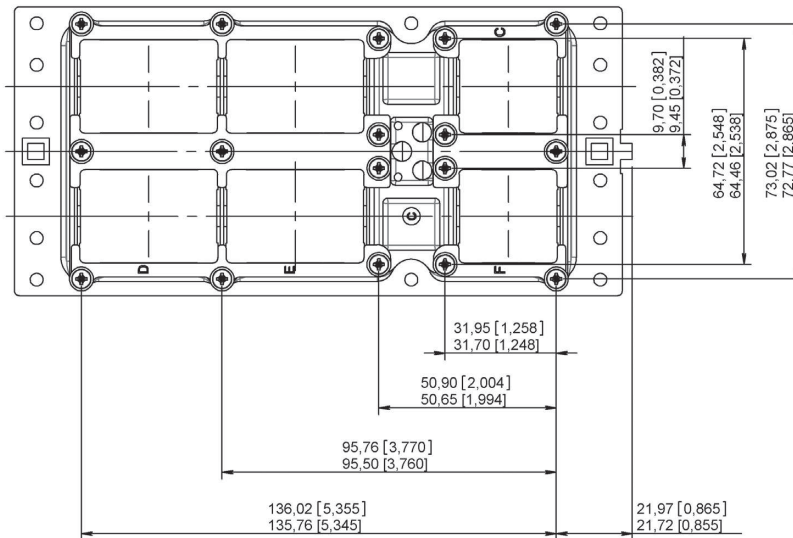
REAR VIEW



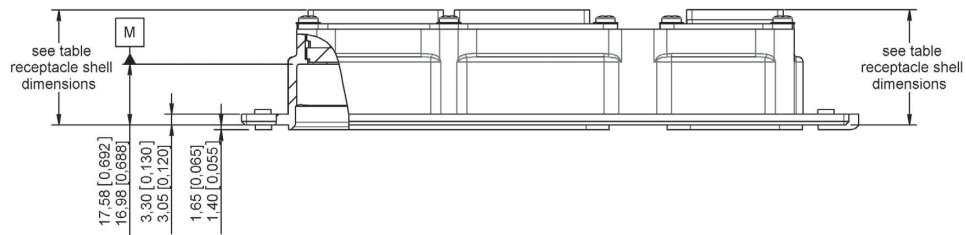
Contacts

NON-ENVIRONMENTAL SIZE 3 RECEPTACLE SHELL

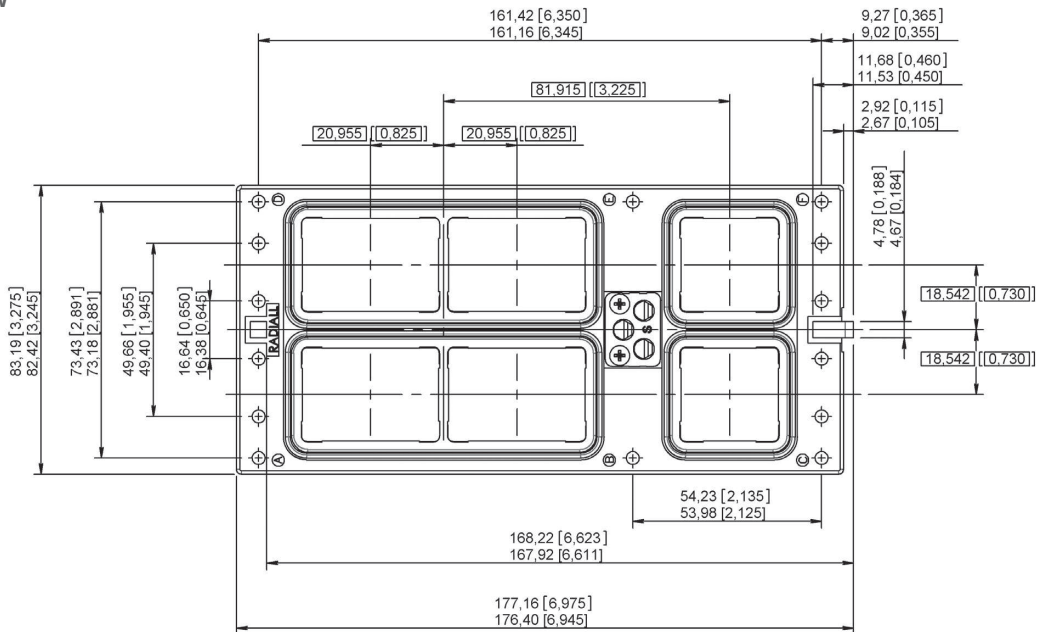
FRONT VIEW



SIDE VIEW



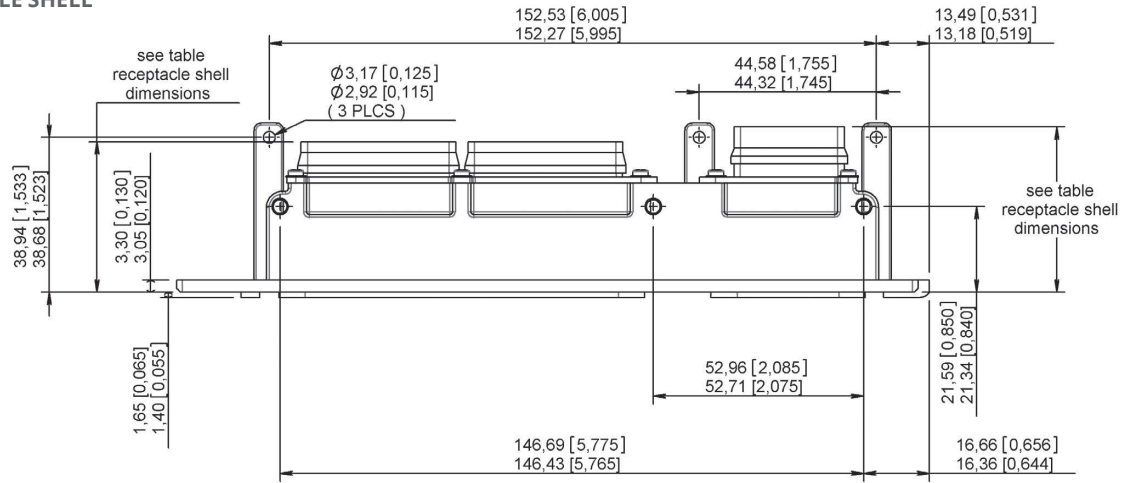
REAR VIEW



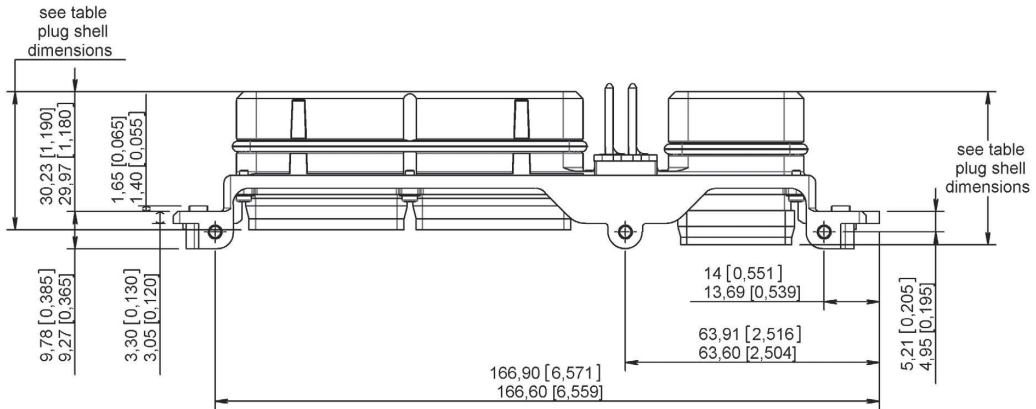
Contacts

ENVIRONMENTAL SIZE 1 - PLUG & RECEPTACLE

RECEPTACLE SHELL



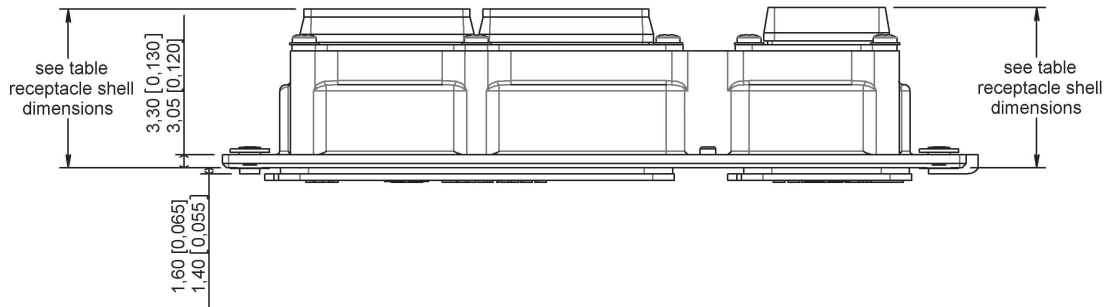
PLUG SHELL



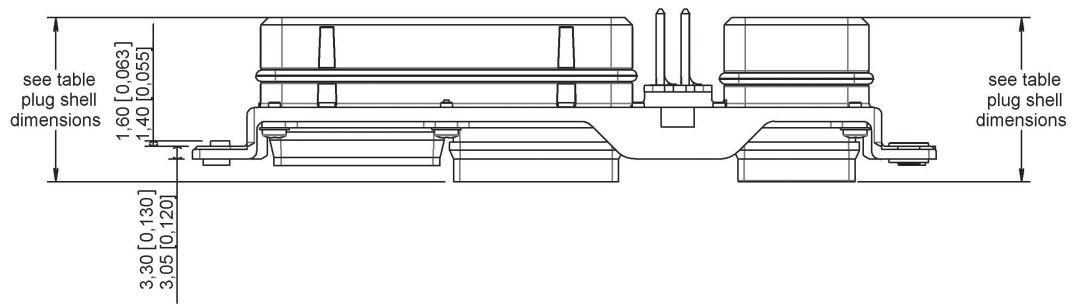
Contacts

ENVIRONMENTAL SIZE 2 & 3-PLUG & RECEPTACLE

RECEPTACLE SHELL



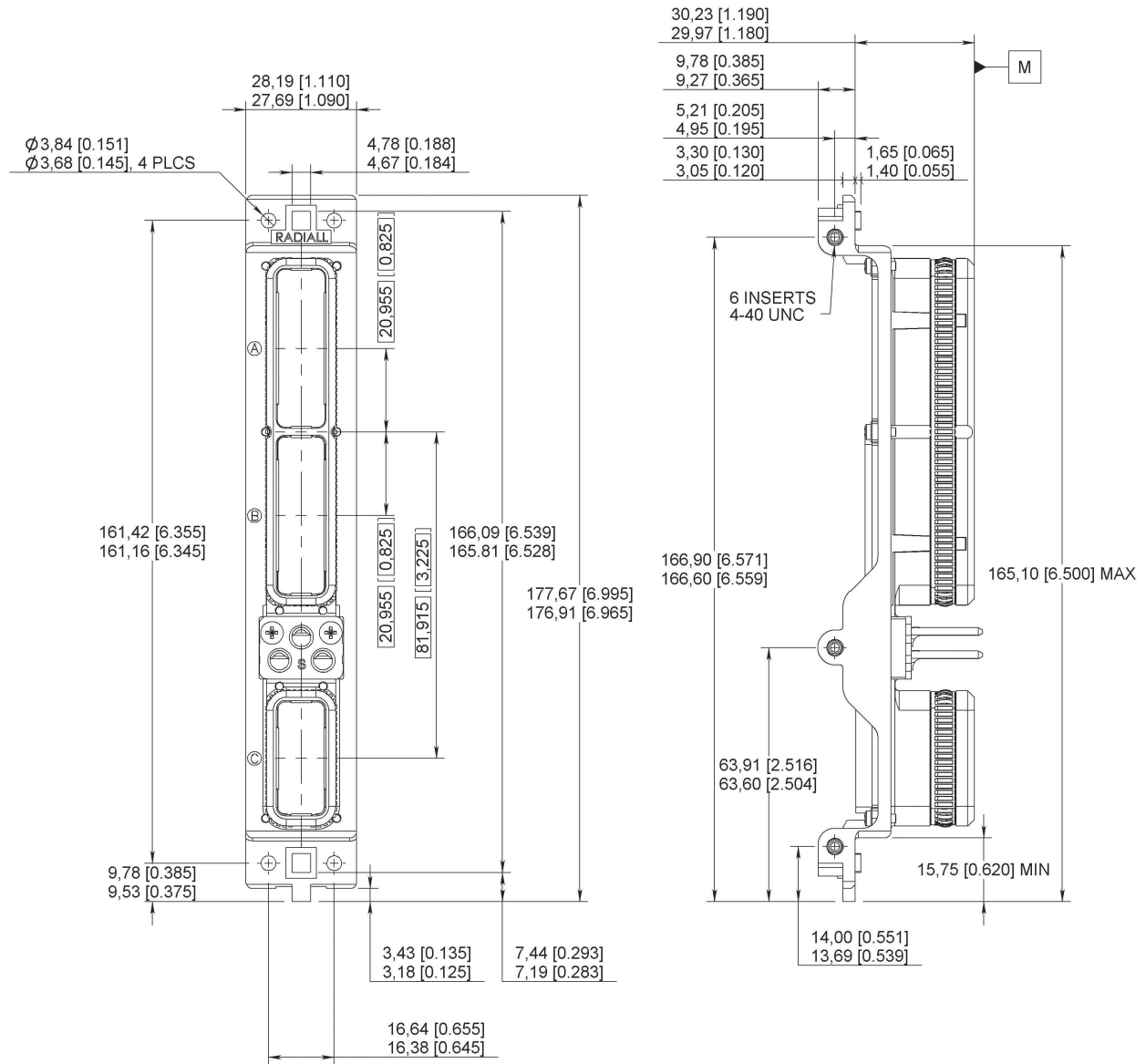
PLUG SHELL



Contacts

EMI/RFI NSX SIZE 1 PLUG

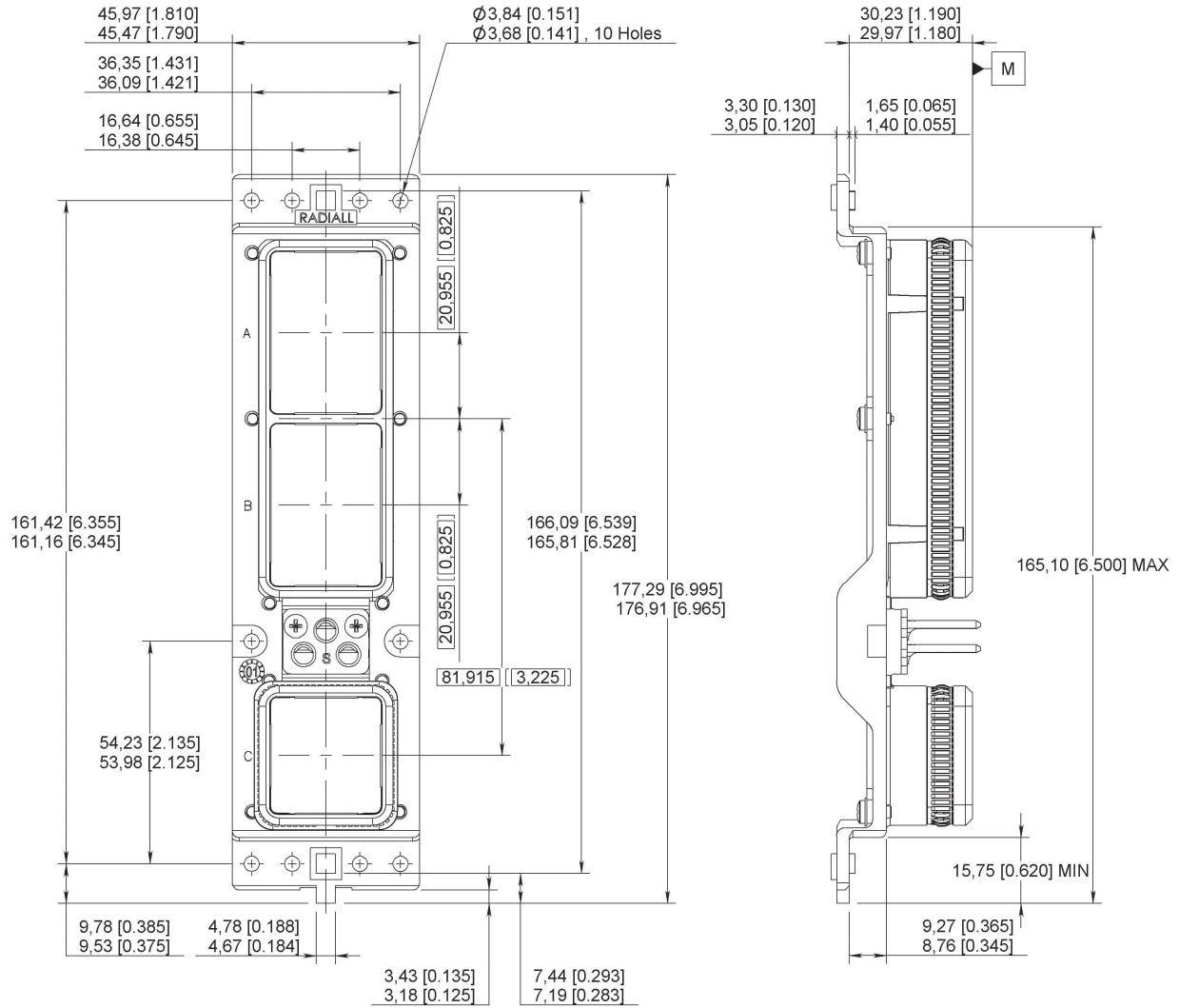
How To Order - See Page 5-10



Contacts

EMI/RFI NSX SIZE 2 PLUG

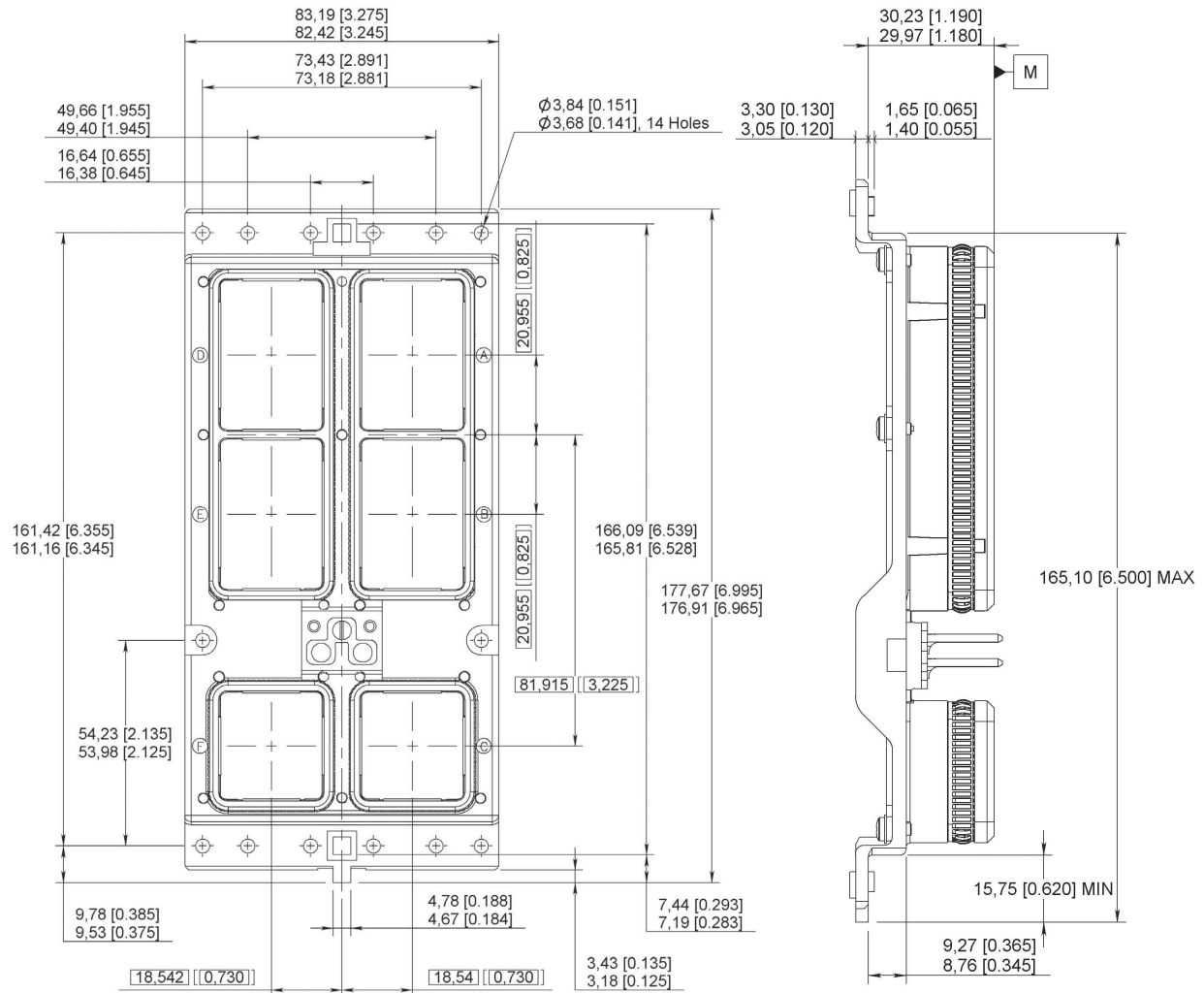
How To Order - See Page 5-10



Contacts

EMI/RFI NSX SIZE 3 PLUG

How To Order - See Page 5-10





## Contacts

## 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®				

Contacts

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)
			16		
		34	20	30.5 (1.200)	39.3 (1.547)
			16		
		20T4	20	30.5 (1.200)	39.3 (1.547)
			8		
		20Q4	20	30.5 (1.200)	39.3 (1.547)
			8		
		13C2	20	30.5 (1.200)	39.3 (1.547)
			16		
			12		
			5		
		6T6	8	30.5 (1.200)	39.3 (1.547)
		Q6	8	30.5 (1.200)	39.3 (1.547)
		62Q2	22	28 (1.102)	36.8 (1.449)
			16		
			8		
		68Q2	22	28 (1.102)	35.5 (1.398)
			8		36.8 (1.449)
		11Q2	20	30.5 (1.200)	39.3 (1.547)
			16		
			12		
			8		
		11WQ2	20	30.5 (1.200)	39.3 (1.547)
			16		
			12		
			8		
		59	22	28 (1.102)	35.5 (1.398)
16	30.5 (1.200)		39.3 (1.547)		
12					
12F5C2	16 LuxCis®	30.5 (1.200)	39 (1.535)		
	16				
	5				
17F12Q2	16 LuxCis®	30.5 (1.200)	39 (1.535)		
	16				
	12				
	5				

Contacts

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	CLASSE 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						

Contacts

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	CLASSE 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)	-	-
		20						
		34	16	33.45 (1.317)	43 (1.693)	-	30.93/29.84 (1.218/1.175)	
			20					
		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)	38.9 (1.531)	30.93/29.84 (1.218/1.175)	30.93/29.84 (1.218/1.175)	
			16					
			8					
		68Q2	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					
		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							

Notes

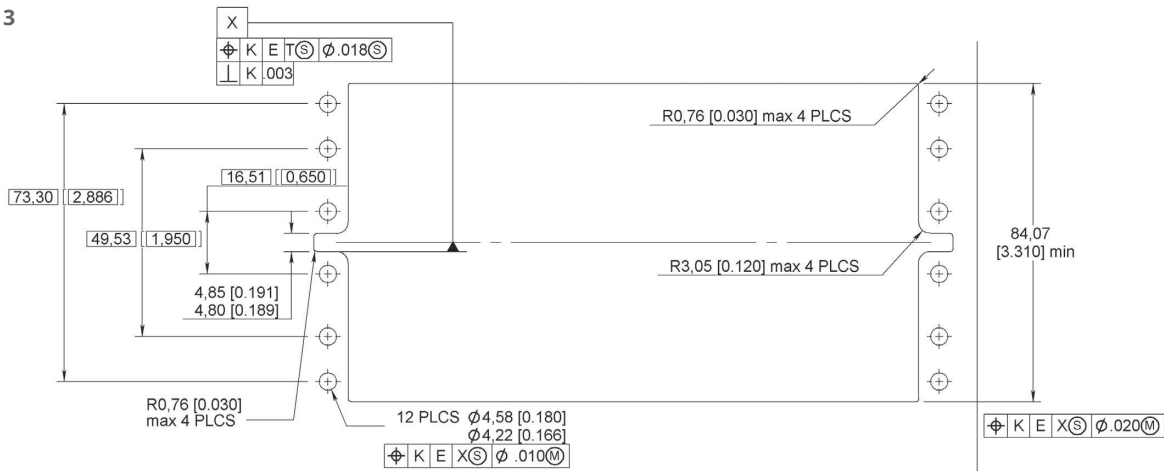
CLASS F: size 22 contacts are front release and front removable. Other sizes are rear release and rear removable.  
 CLASS G: all contacts are front release and front removable.

Contacts

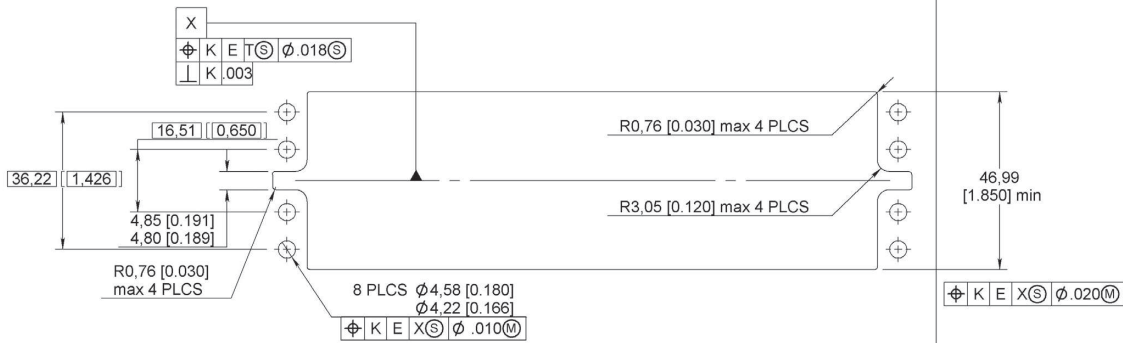
PANEL CUT-OUT

PANEL CUT OUT FOR PLUG SIZE 1, 2 & 3

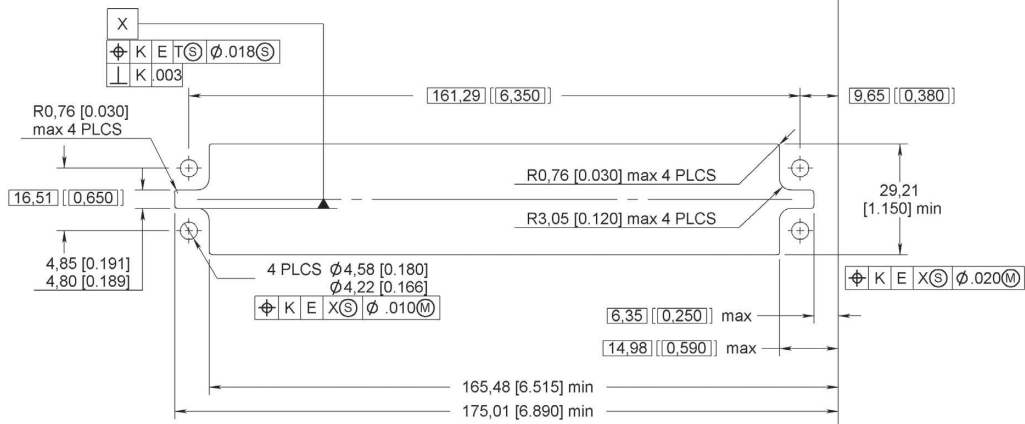
SIZE 3



SIZE 2



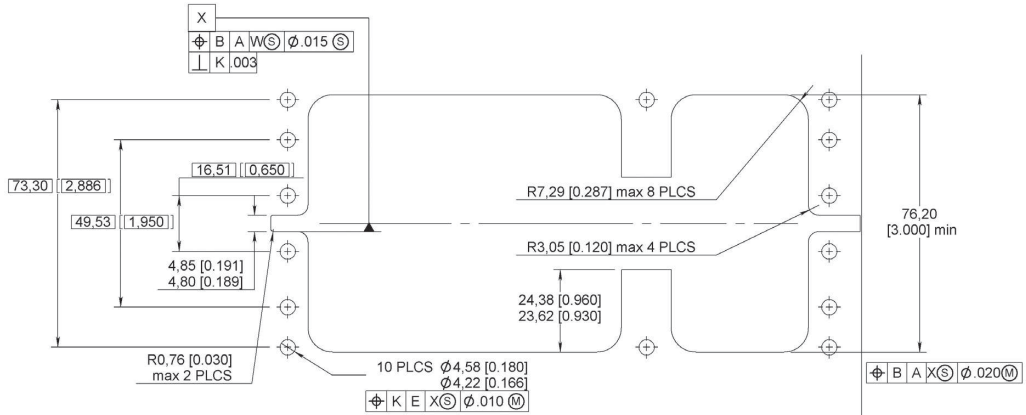
SIZE 1



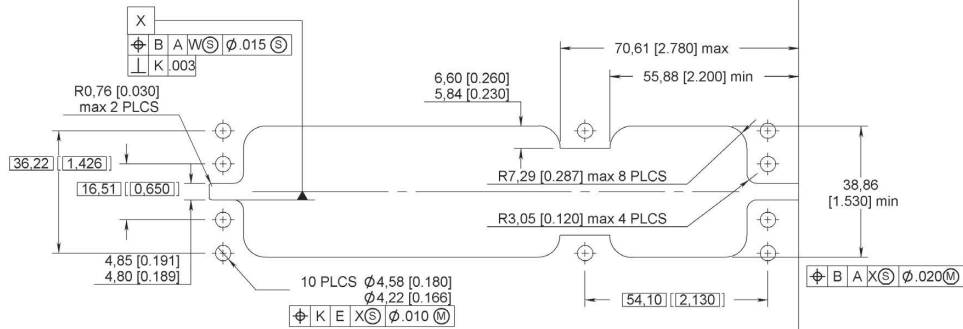
Contacts

PANEL CUT OUT FOR RECEPTACLE SIZE 1, 2 & 3

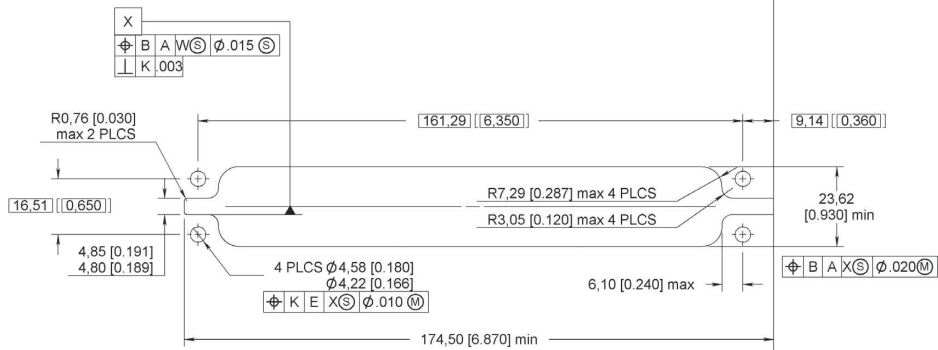
SIZE 3



SIZE 2



SIZE 1

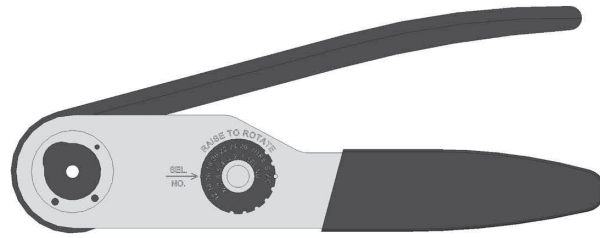


Contacts

**TOOLS**

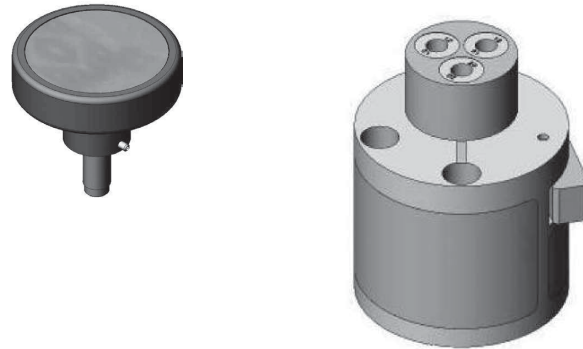
**CRIMPING TOOLS**

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



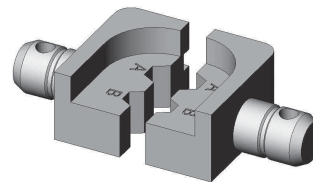
**POSITIONERS**

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



## Contacts

## 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)



## Contacts

## ACCESSORIES

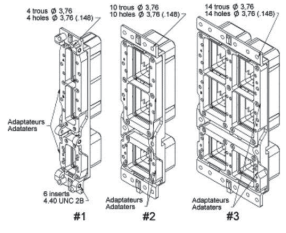
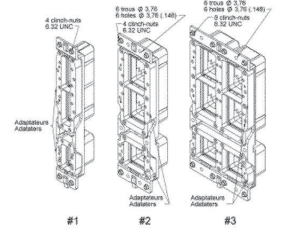
### EMI BACKSHELLS

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

- Backshell adapters plates
- Radiall backshell solution

Backshell adapters plates:

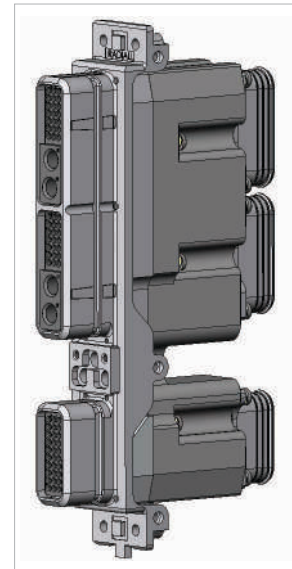
Backshell adapters plates can be delivered with NSX connectors when choosing modification code 60 and 61.

COMBINATION CODE	RECEPTACLE SHELL	PLUG SHELL
60 [1]	-	 <p>Shell Size 1: Q<sup>ty</sup> = 4 Holes Ø 3.76 (0.148) &amp; Q<sup>ty</sup> = 6 4-40 UNC 2B</p> <p>Shell Size 2: Q<sup>ty</sup> = 10 Holes Ø 3.76 (0.148)</p> <p>Shell Size 3: Q<sup>ty</sup> = 14 Holes Ø 3.76 (0.148) Delivered with Backshell Adapters Plates</p>
61 [1]	-	 <p>Shell Size 1: Q<sup>ty</sup> = 4 6-32 UNC</p> <p>Shell Size 2: Q<sup>ty</sup> = 6 Holes Ø 3.76 (0.148) &amp; Q<sup>ty</sup> = 4 6-32 UNC</p> <p>Shell Size 3: Q<sup>ty</sup> = 6 Holes Ø 3.76 (0.148) &amp; Q<sup>ty</sup> = 8 6-32 UNC Delivered with Backshell Adapters Plates</p>

### RADIALL BACKSHELL SOLUTION

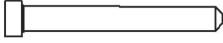








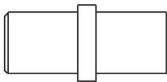



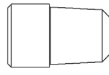


- High EMI performances
- Easy installation and maintenance with:
  - Modular backshells (1 or 2 pieces backshells)
  - Captive screws
- Available on size 1, 2 and 3 Arinc 600 connectors
- Round or oblong chimneys

Please, contact Radiall for more information about NSX backshells



Contacts

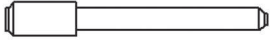
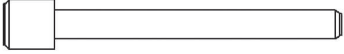


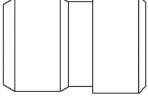
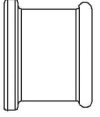
**FILLER PLUGS (NON-ENVIRONMENTAL)**

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	Eed	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	 →

## Contacts

**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	← 



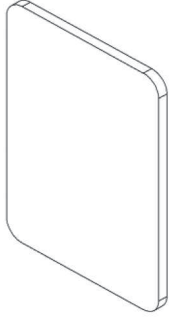
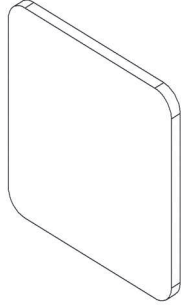
**Notes**

The arrows show the direction which you have to insert the plug.

Contacts

**DUMMY INSERTS**

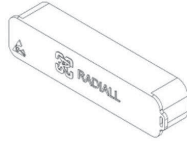
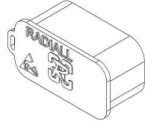


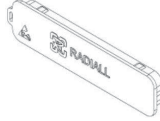
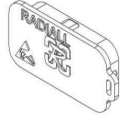

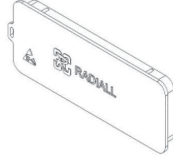

When a cavity shell is not fitted with one of the inserts shown on pages 5-11 to 5-20, the cavity shell is fitted with a dummy insert. Dummy inserts are made of aluminium alloy and are available for each cavity shell nickel or RoHS plating.

SHELL SIZE	CAVITY	DUMMY INSERT P/N	FIGURE
1	A or B	620913001 (Nickel) 620913005 (RoHS)	
	C	620913002 (Nickel) 620913006 (RoHS)	
2 & 3	A or B or D or E	620913003 (Nickel) 620913007 (RoHS)	
	C or F	620913004 (Nickel) 620913008 (RoHS)	

Contacts

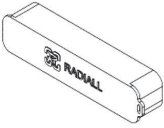
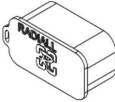
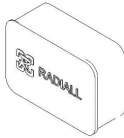


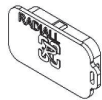


**DUST CAPS**

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	

Contacts

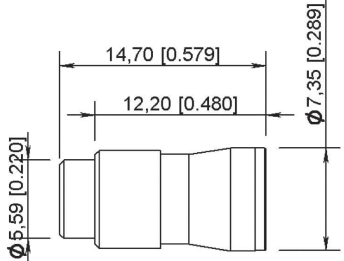
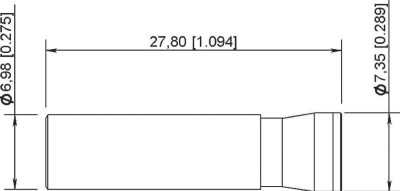
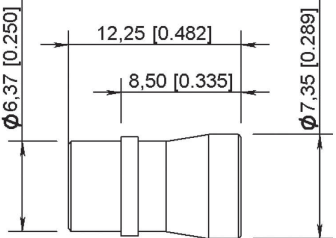
DUST CAPS

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	

## Contacts

## CAVITY REDUCERS

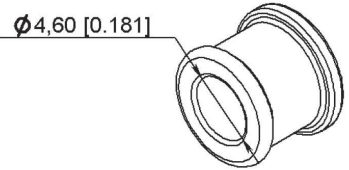
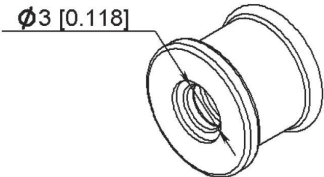
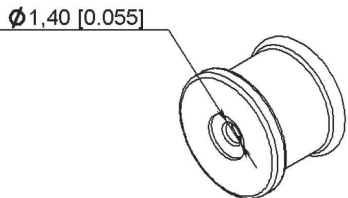
The following parts are cavity reducers which allows the use of a size 12 contact in a size 5 cavity. These parts are made of copper alloy and are plated with gold over nickel. Once installed, they cannot be removed.

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	

Contacts

**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.

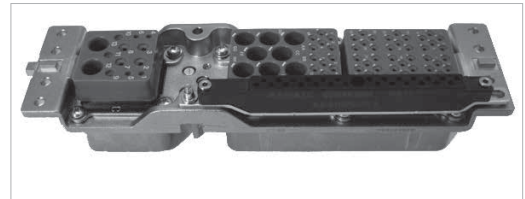
ELECTRICAL CHARACTERISTICS	CABLE OUTSIDE DIA. MM (INCH)	CABLE	PART NUMBER	FIGURE
5	5 (0.197)	RG 58 RG 141 RG 142 RG 223 RG 400	620939201	
	3.81 (0.150)	RG 180 RG 195	620939200	
	2.59 (0.102) & 2.01 (0.079)	RG 179 RG 316 KX 21	620914001	

**GROUNDING BLOCK (PART NUMBER 620981002)**

Radiall provides a unique feature by integrating a ground block directly on the plug shell for sizes #2 & #3.

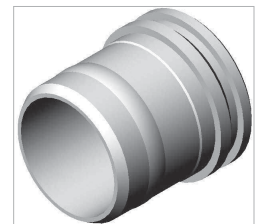
This option allows very short ground terminations.

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.





*NSX-Single Shell Connector***INTRODUCTION**

NSX single shell connectors are designed to accommodate all large cavity inserts. Their characteristics are shown on page 5-5 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

NSX-Single Shell Connector

## HOW TO ORDER NSX-SINGLE SHELL CONNECTOR

# NSX

**SERIES PREFIX** \_\_\_\_\_

**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 Removeable
- C:** Non-environmental with grommets
- F:** Non-environmental receptacle shell  Rear Removeable
- G:** Non-environmental receptacle shell

**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 5-95)

**CONTACT ARRANGEMENT** \_\_\_\_\_

See contact arrangements on pages 5-11 to 5-20.  
Only use insert for A & B cavities.

**CONTACT TERMINATION** <sup>[1]</sup> \_\_\_\_\_

WITHOUT CONTACTS

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

WIRE WRAP

- K:** Wire wrap contact, 1 level (1 = 0.272)
- V:** Wire wrap contact, 2 levels (1 = 0.390)
- W:** Wire wrap contact, 3 levels (1 = 0.524)

**PC TAIL CONTACTS**

ROHS	GOLD	PRE-TINNED	LENGTH (IN.)
RA	YA	ZA	0.150
R	Y	Z	0.250
RB	YB	ZB	0.375
RC	YC	ZC	0.500

**MODIFICATION CODE** \_\_\_\_\_

- 00:** 4 mounting holes 0.146/0.156 dia
- 01:** 4 clinch nuts 4.40 UNC
- 03:** 4 each 0.122 dia mounting holes c'sunk 0.230 dia × 100°
- 04:** 4 each 0.122 dia mounting holes c'sunk 0.230 dia × 82°
- 05:** 4 each 0.137 dia mounting holes c'sunk 0.230 dia × 82°
- 23:** 4 floating eyelets 0.122 - 0.126 dia

**POLARIZATION CODE** <sup>[2]</sup> \_\_\_\_\_

See pages 5-91 to 5-92.  
Without code: polarization hardware is delivered unassembled.

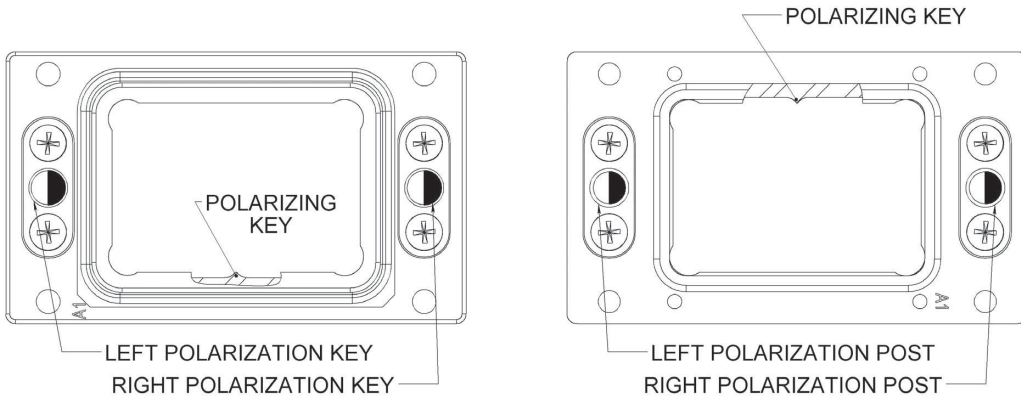
**Notes**

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.

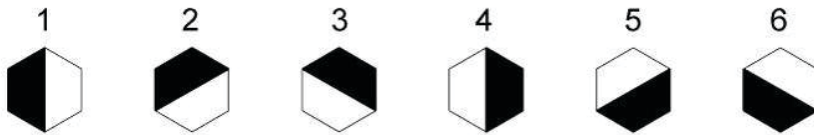
NSX-Single Shell Connector

**INSTALLATION**

**HORIZONTAL**



**MATING FACE**

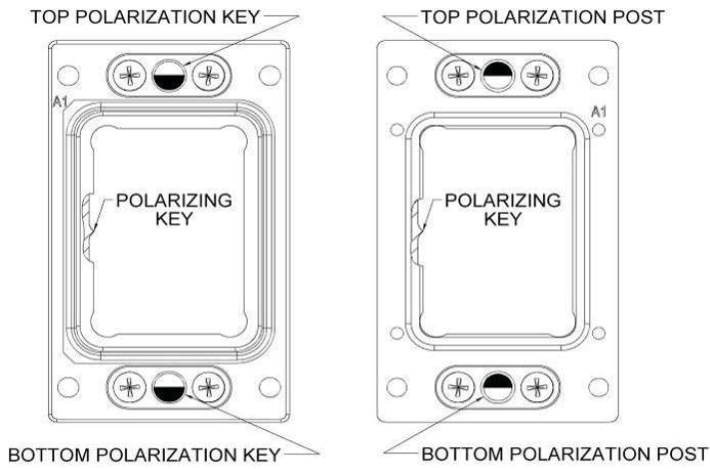


**POSITION OF POST (DARK) AND KEYHOLE (LIGHT)**

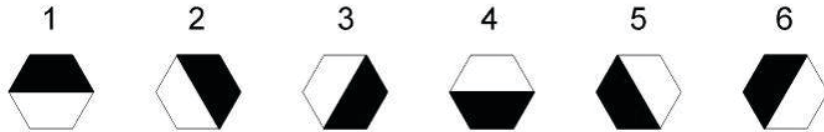
POSITION	EQUIPMENT RECEPTACLE		RACK PLUG	
	LEFT. KEY	RIGHT. KEY	LEFT. POST	RIGHT. POST
01	1	1	1	1
02	3	4	4	5
03	2	4	4	6
04	1	4	4	1
05	6	4	4	2
06	5	4	4	3
07	4	5	3	4
08	3	5	3	5
09	2	5	3	6
10	1	5	3	1
11	6	5	3	2
12	5	5	3	3
13	4	6	2	4
14	3	6	2	5
15	2	6	2	6
16	1	6	2	1
17	6	6	2	2
18	5	6	2	3
19	4	1	1	4
20	3	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

NSX-Single Shell Connector

**VERTICAL**



**MATING FACE**



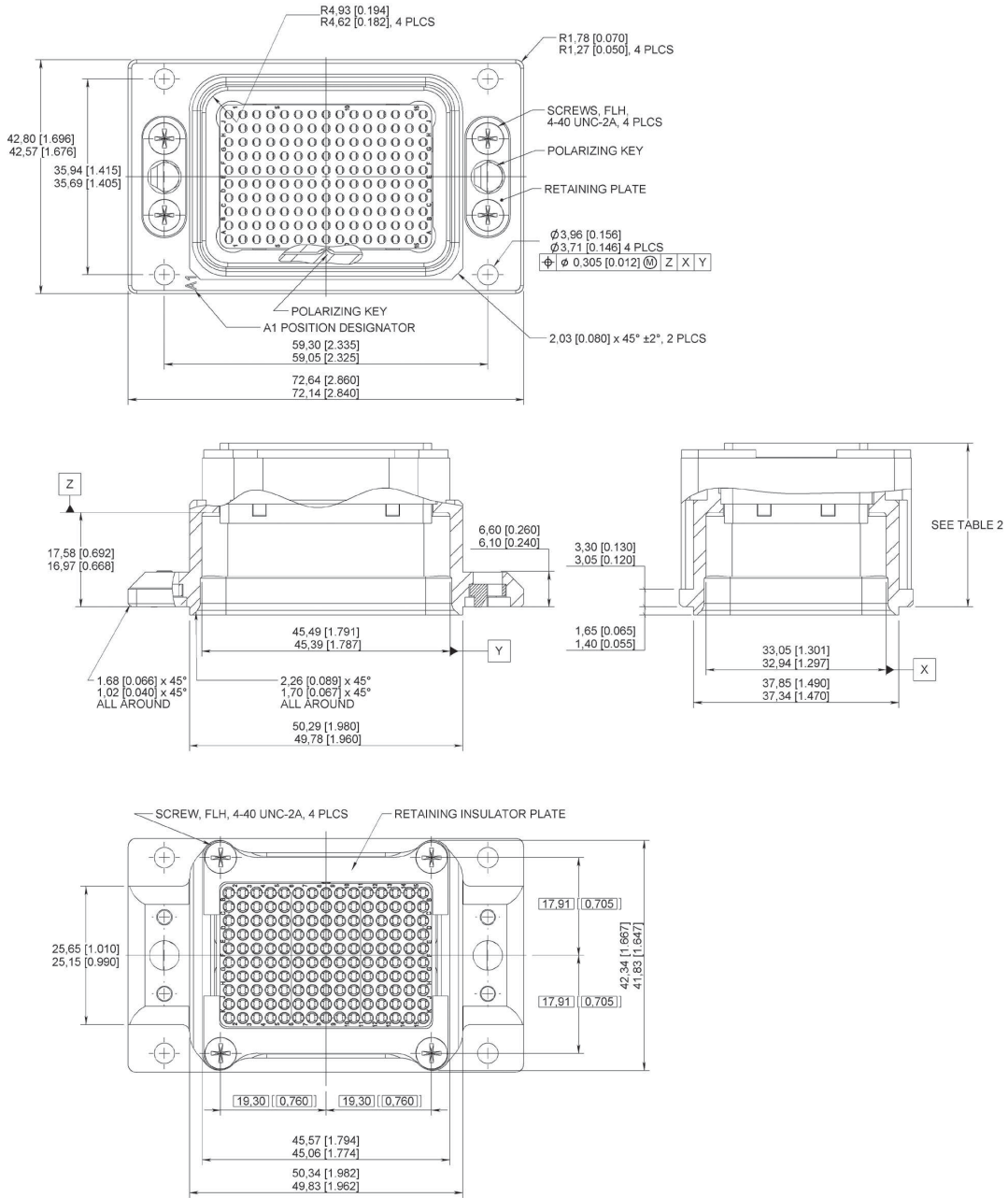
**POSITION OF POST (DARK) AND KEYHOLE (LIGHT)**

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

NSX-Single Shell Connector

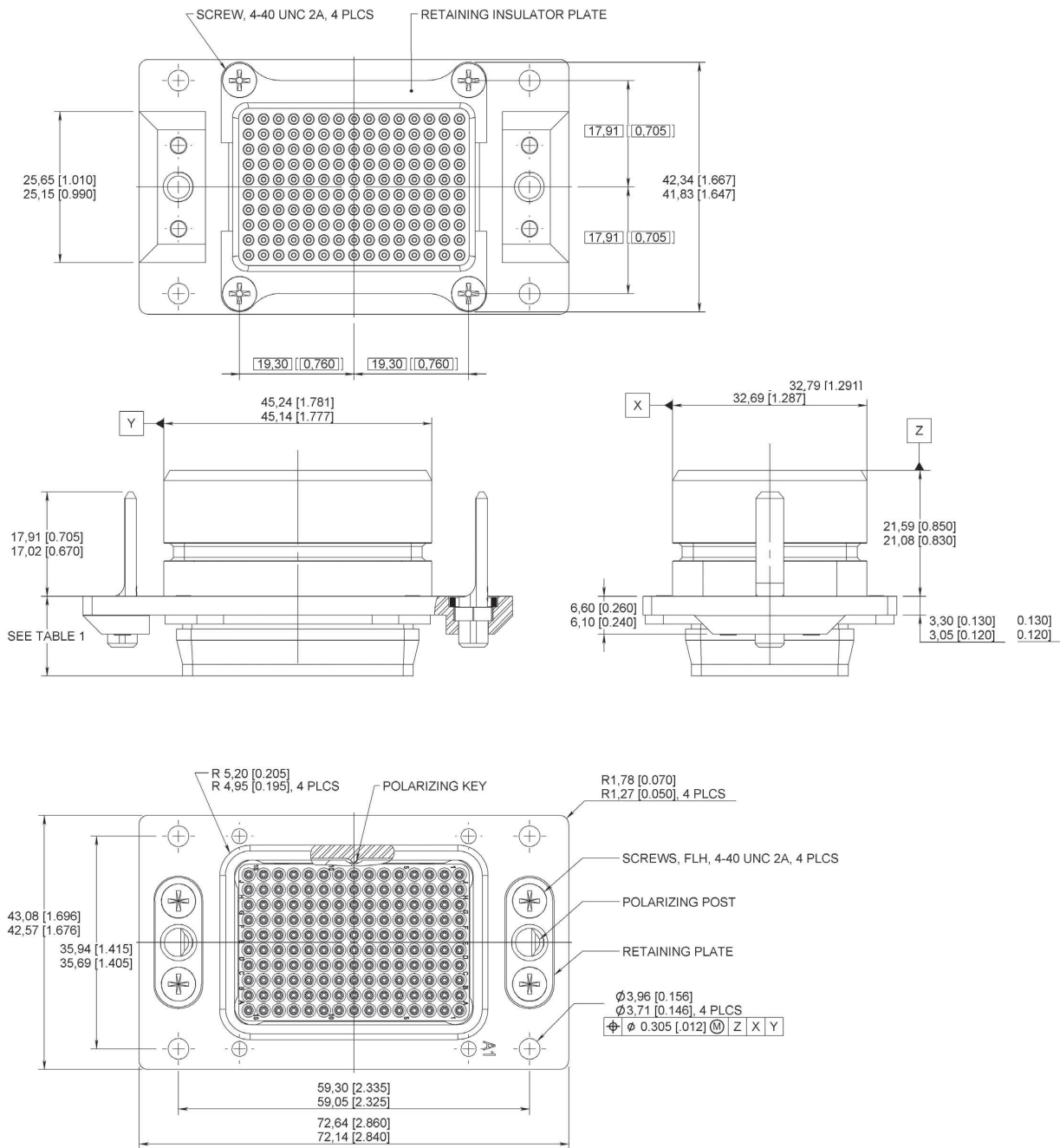
**DIMENSIONS**

**NSX SINGLE SHELL RECEPTACLE DIMENSIONS**



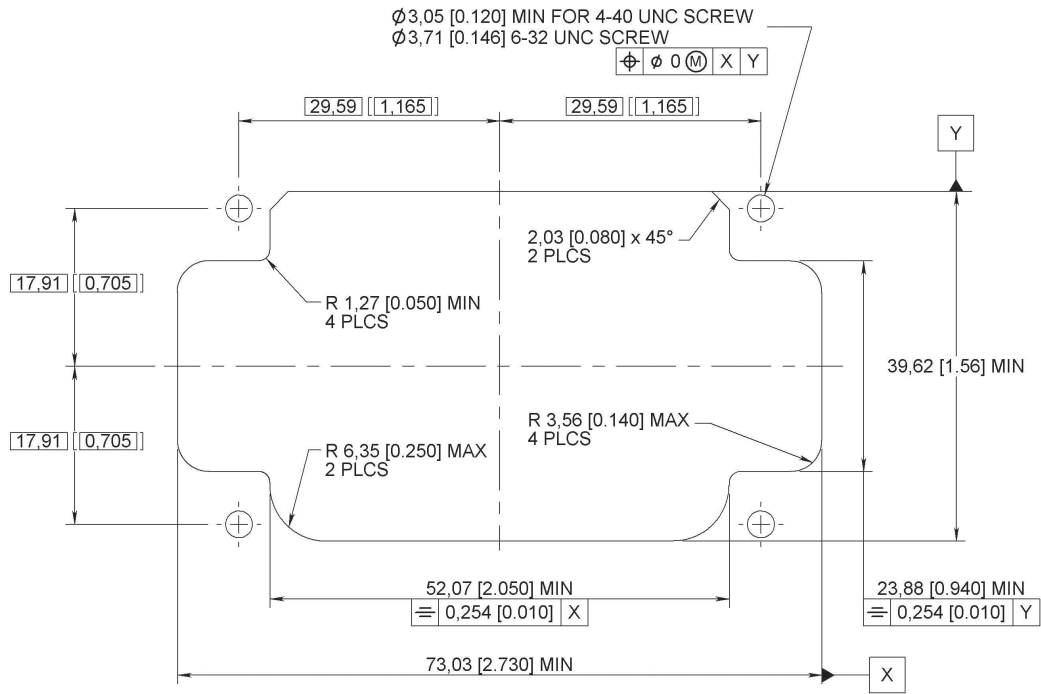
NSX-Single Shell Connector

NSX SINGLE SHELL PLUG DIMENSIONS

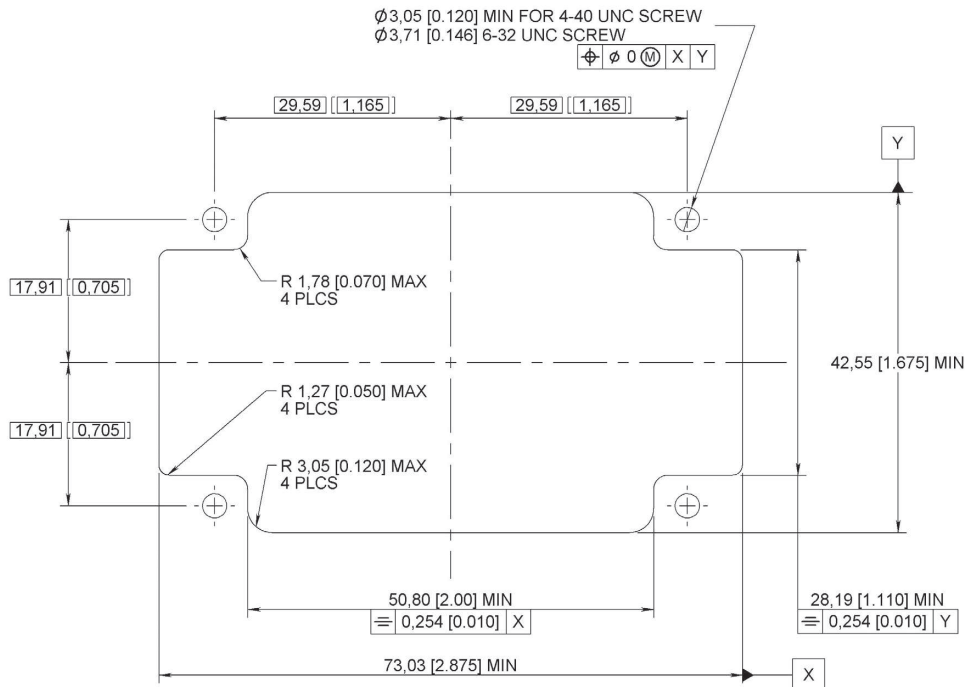


## NSX SINGLE SHELL PANEL CUT-OUT

### RECEPTACLE



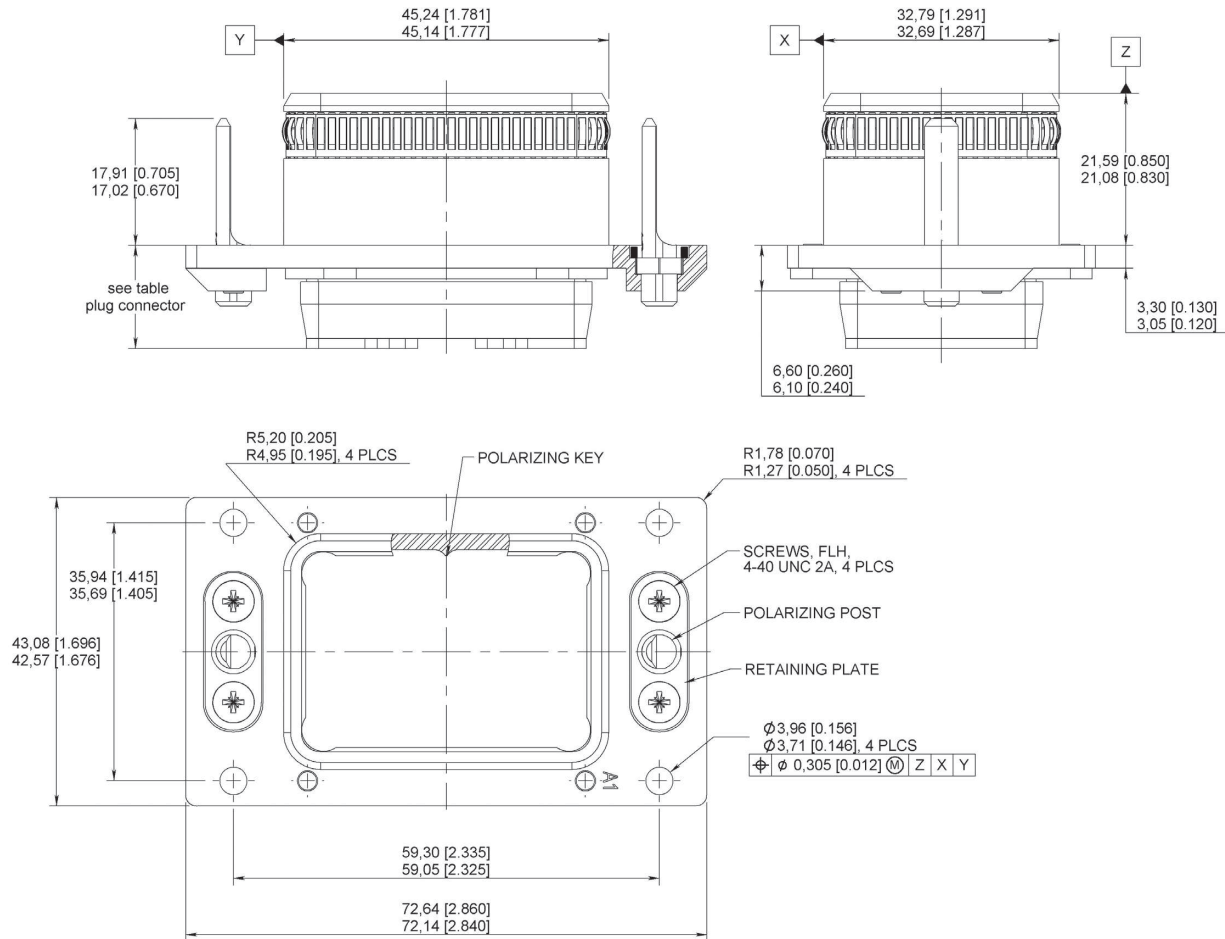
### PLUG



NSX-Single Shell Connector

### EMI/RFI NSX SINGLE SHELL PLUG DIMENSIONS

How to Order - See Page 5-90





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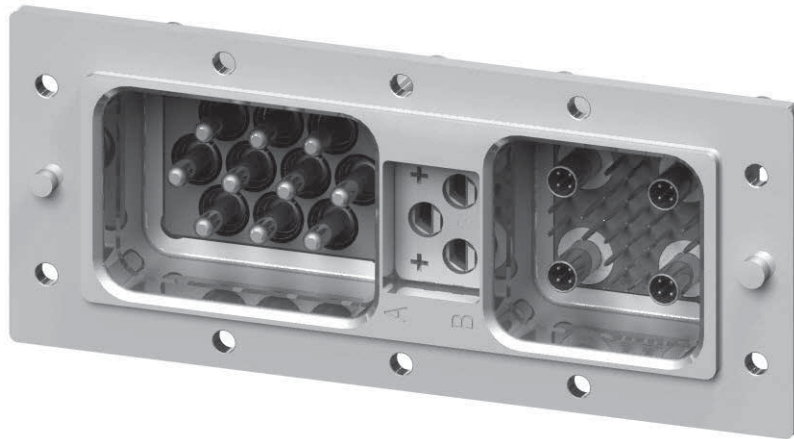
BPX

## 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:



## CHARACTERISTICS

### ELECTRICAL

BPX electrical characteristics are the same as NSX connectors (see pages 5-5 to 5-7) except the following:

- **Magnetic Permeability:** 2.0 Ohms max

BPX

**MECHANICAL & ENVIRONMENTAL CHARACTERISTICS**

Identical to NSX connectors except the following:

- **Mating and Unmating Forces:**
  - Shell size 1: 70 lb (311 N) max
  - Shell size 2: 140 lb (623 N) max
  - Shell size 3: 130 lb (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

BPX

## HOW TO ORDER CONNECTOR

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

**BPX****SERIES PREFIX****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 quadrx 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 5-100

**CONTACT TERMINATION <sup>[1]</sup>**

## WITHOUT CONTACTS

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

## WIRE WRAP

**K:** Wire wrap contact, 1 level (1 = 0.272)**V:** Wire wrap contact, 2 levels (1 = 0.390)**PC TAIL CONTACTS**

ROHS	GOLD	PRE-TINNED	LENGTH (IN.)
RA	YA	ZA	0.150
R	Y	Z	0.250

**MODIFICATION CODE****00:** 4 mounting holes 0.146/0.156 dia**POLARIZATION CODE <sup>[1]</sup>**

See pages 5-31 to 5-33.

**Without code:** polarization hardware is delivered unassembled.**Notes**

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.

BPX

**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 5-34 to 5-57).

**ACCESSORIES**

**SEALING BOOT**

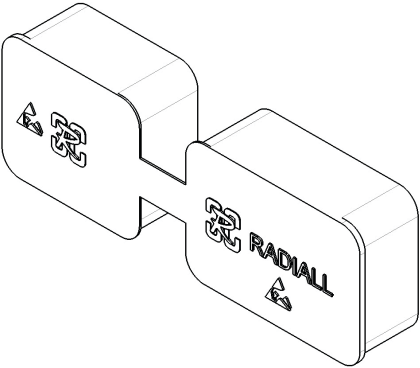
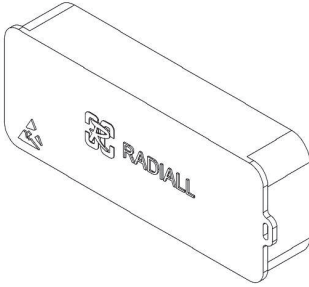
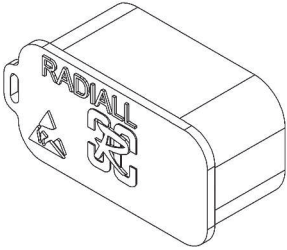
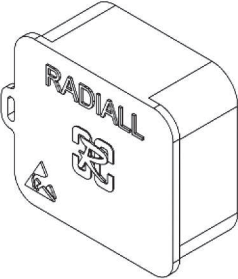
The sealing boots are designed to slide down over the back of crimped contacts after they have been installed in the connector. The assembly provides bend support and moisture sealing to the contact/cable assembly. For BPX connectors size, 8 coaxial and concentric twinax contacts must be fitted with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

	WIRE DIA MM (INCH)	WIRE TYPE	PART NUMBER	FIGURE
<b>SEALING BOOT FOR CAVITY INSERT SIZE 8</b>	3.68 (0.145)	Tensolite (S280W502-1)	619960005	

BPX

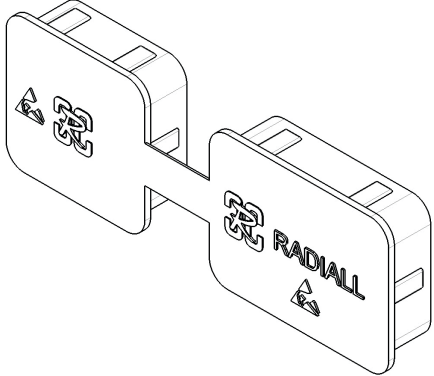
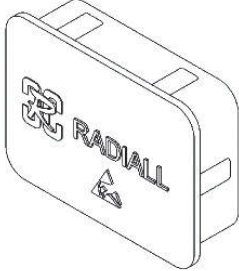
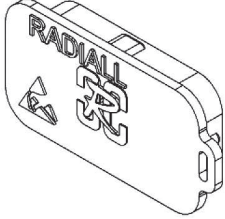
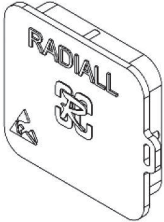
**DUST CAPS**

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	

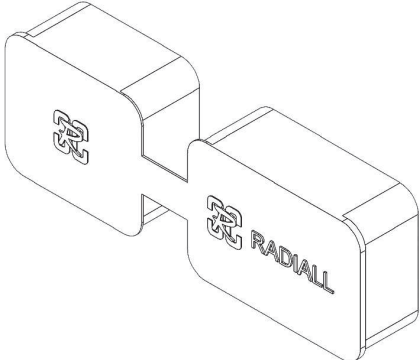
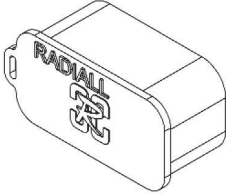
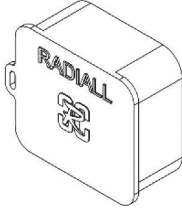
BPX

DUST CAPS

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	
		3	B, E	620995012	
	C	620995016			

BPX

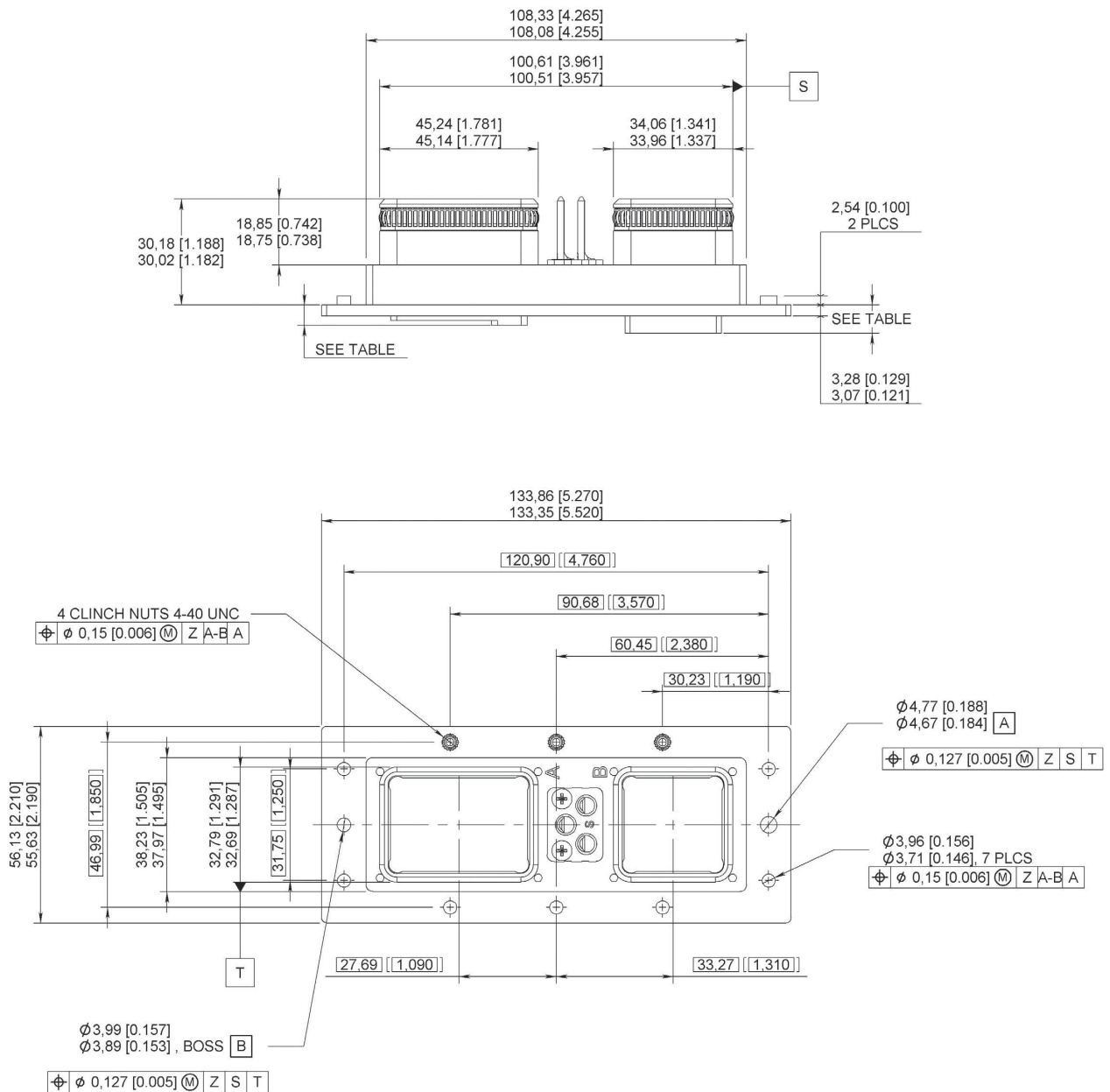
DUST CAPS

TYPE	SHELL TYPE	SHELL SIZE	CAVITY	PART NUMBER	FIGURE
Non Conductive	Plug	1	A and B	618953	
		2	A and B C and D		
		3	B, E	620995002	
		C	620995006		

BPX

## DIMENSIONS

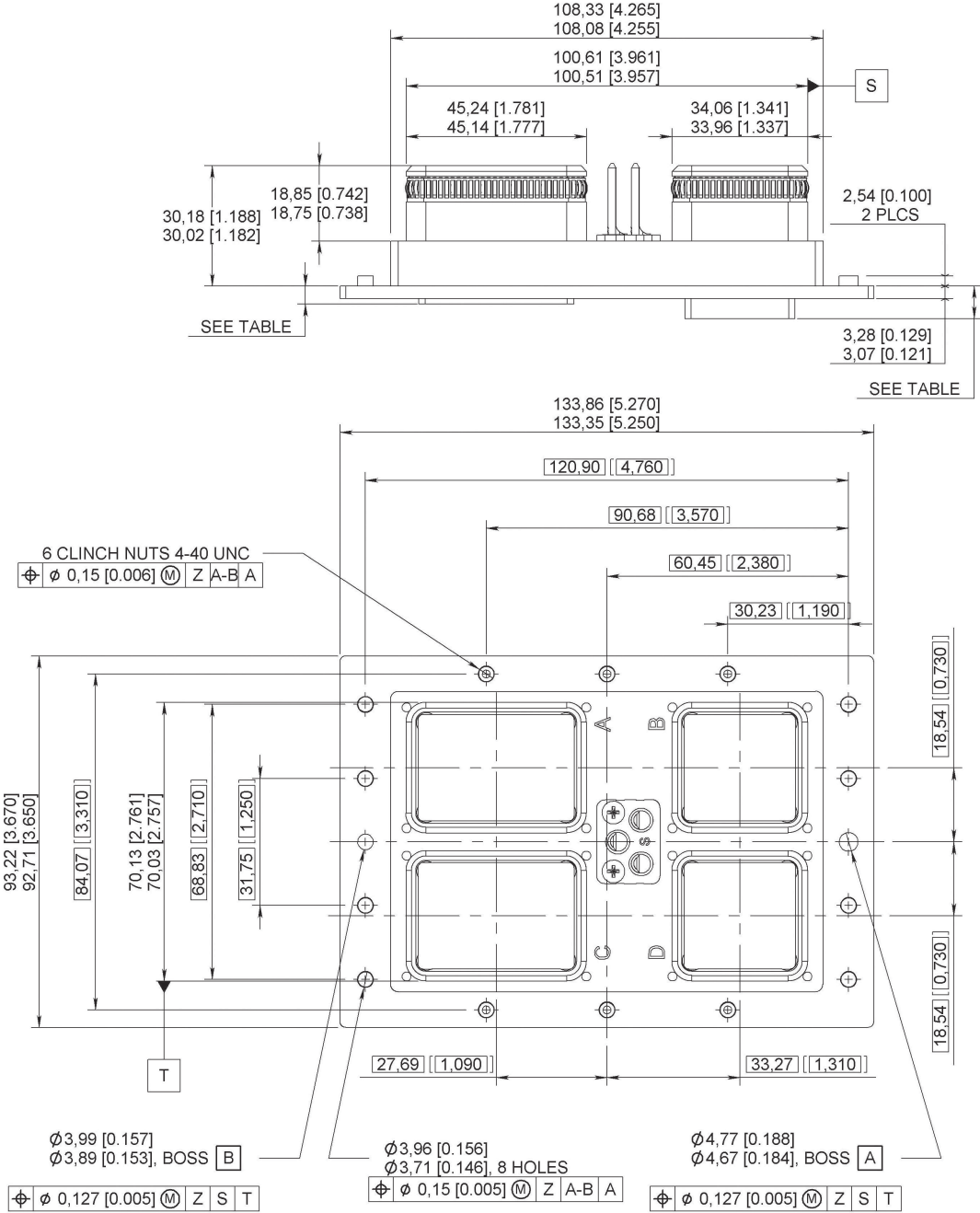
### SIZE 1 PLUG DIMENSIONS





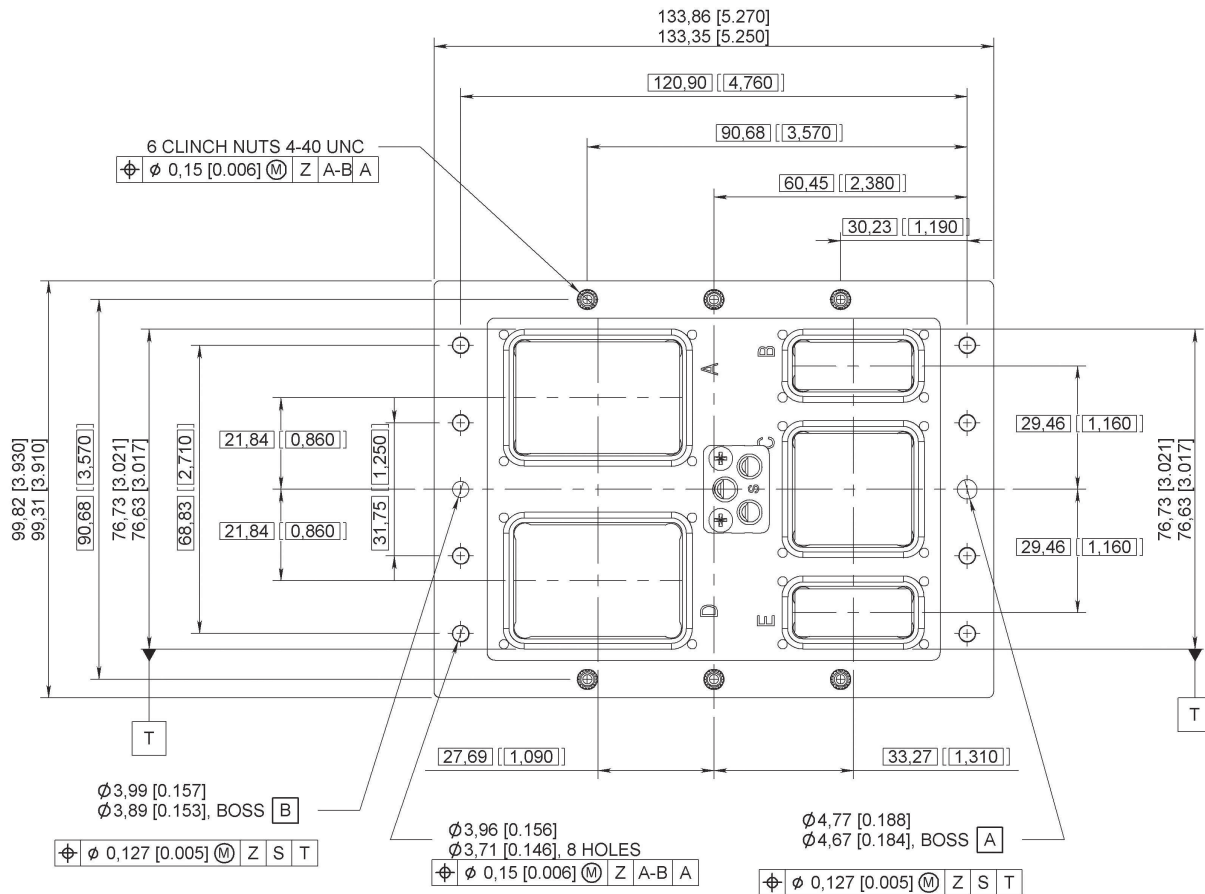
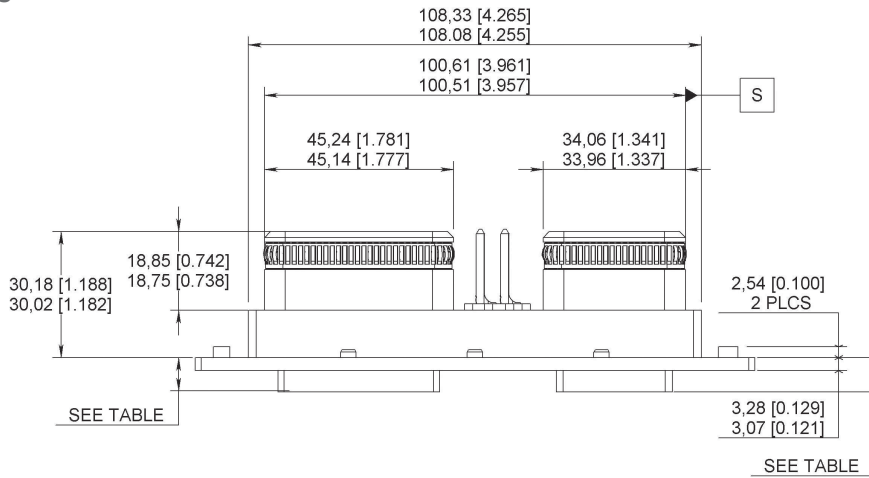
BPX

SIZE 2 PLUG DIMENSIONS



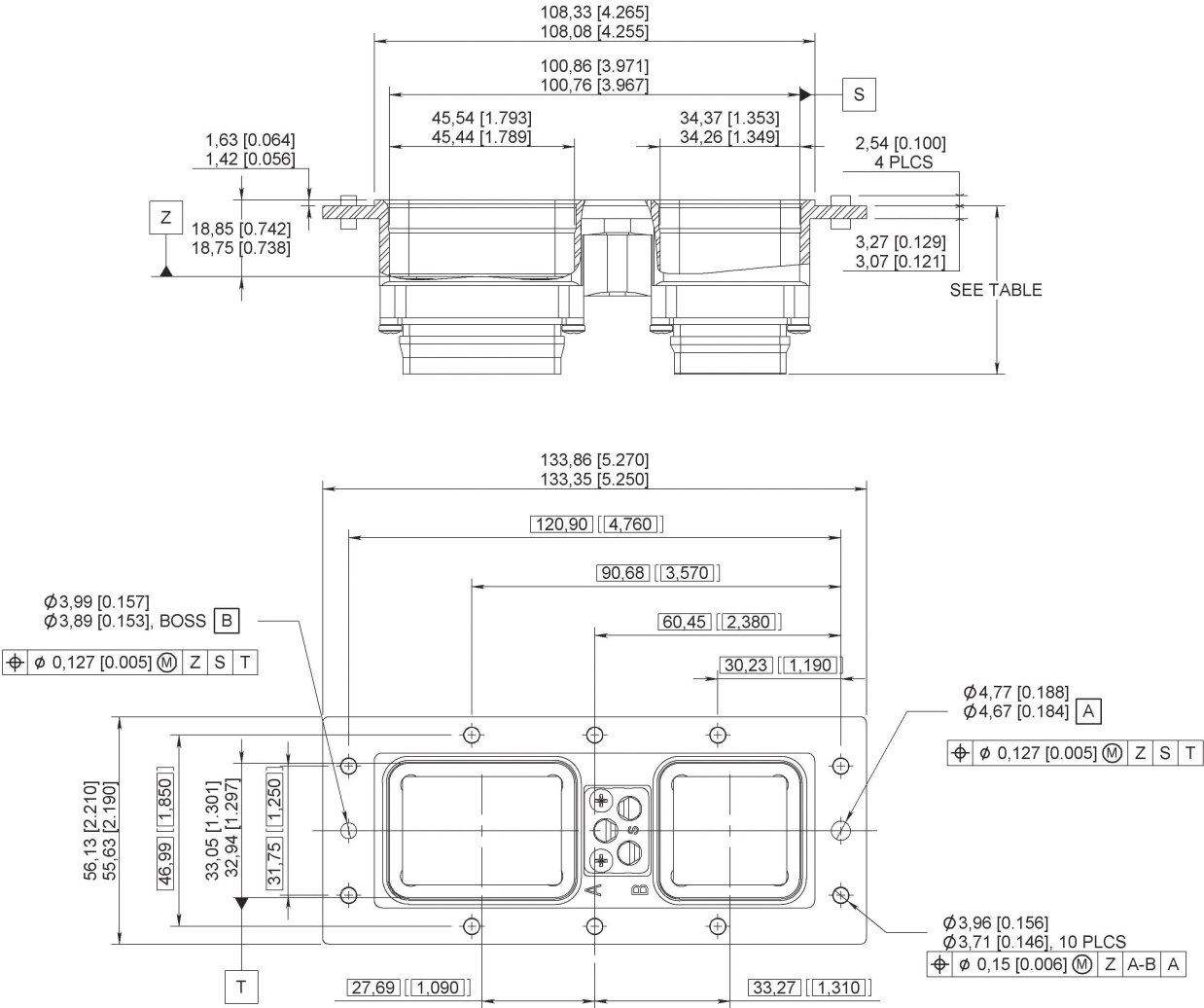
BPX

SIZE 3 PLUG DIMENSIONS



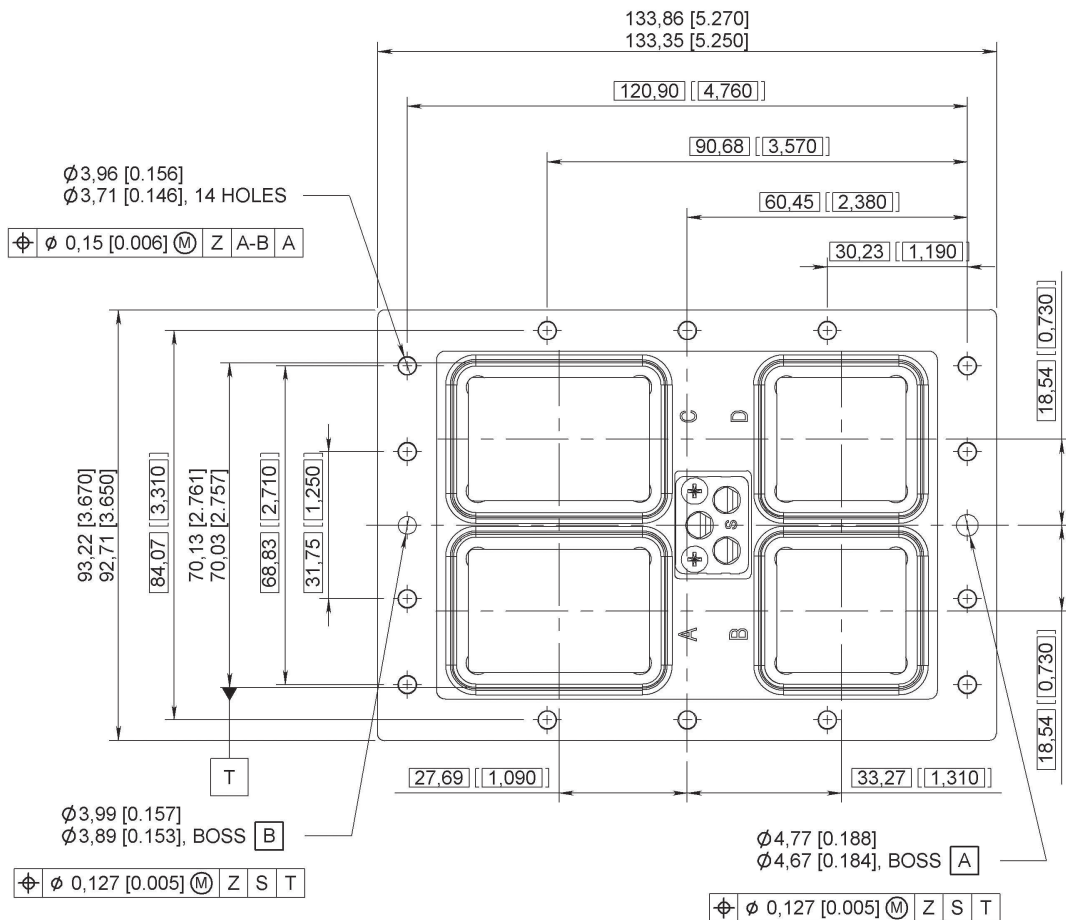
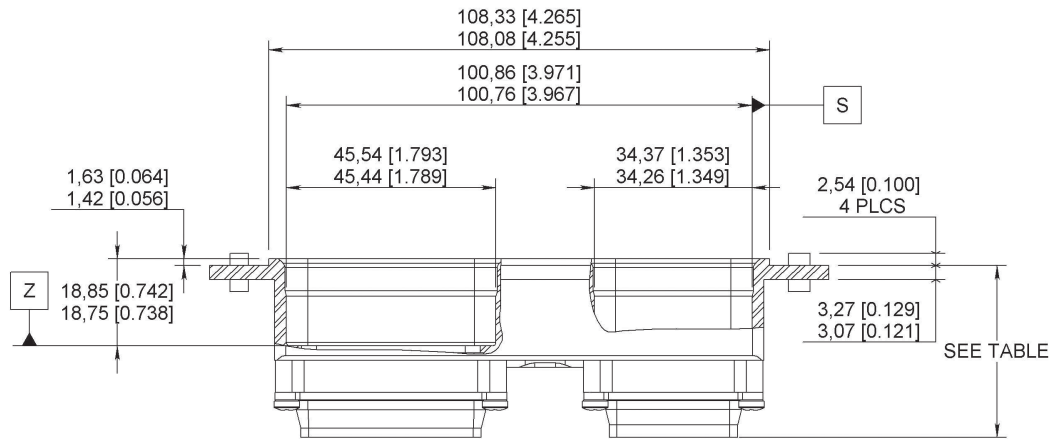
BPX

SIZE 1 RECEPTACLE DIMENSIONS



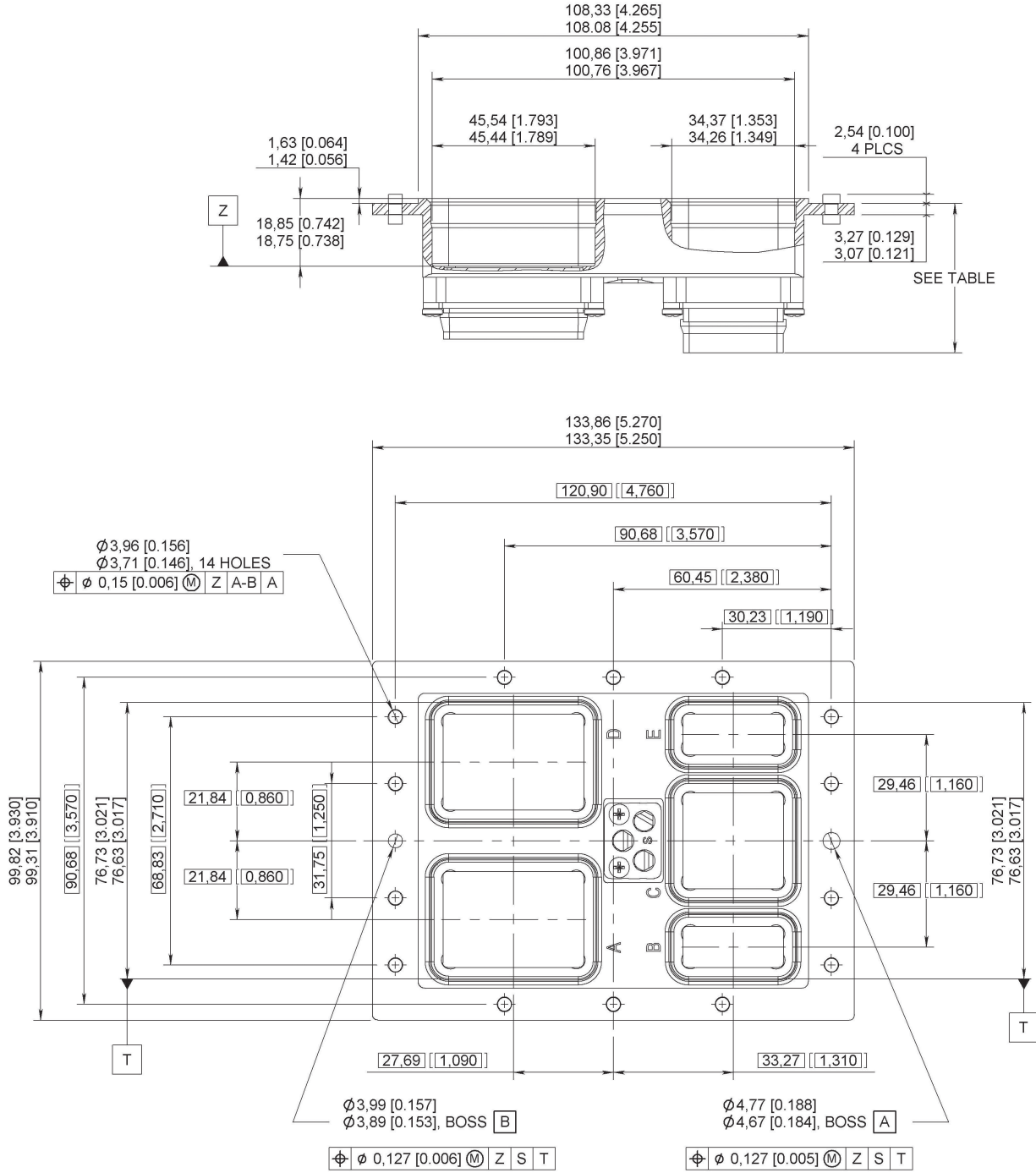
BPX

SIZE 2 RECEPTACLE DIMENSIONS



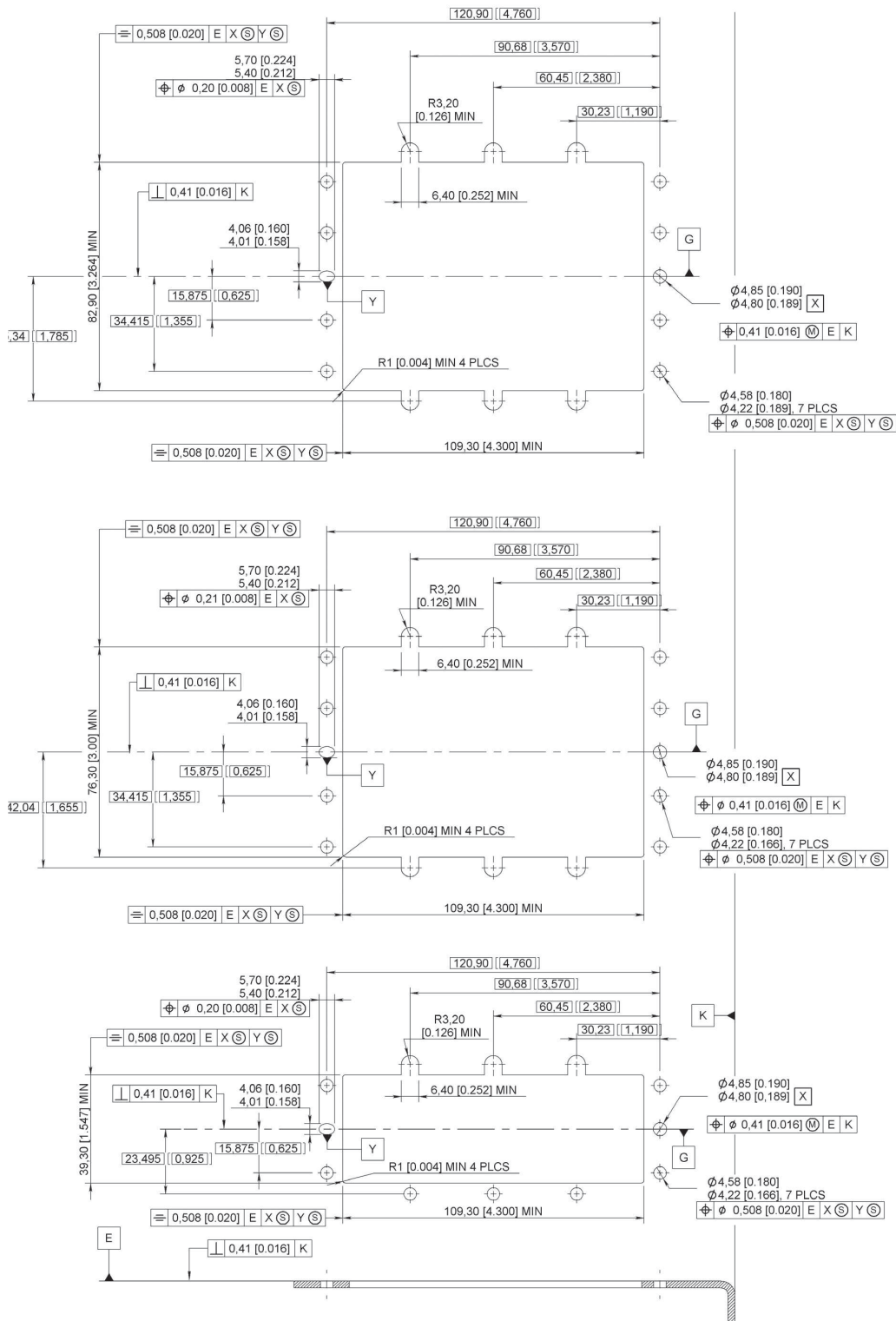
BPX

SIZE 3 RECEPTACLE DIMENSIONS



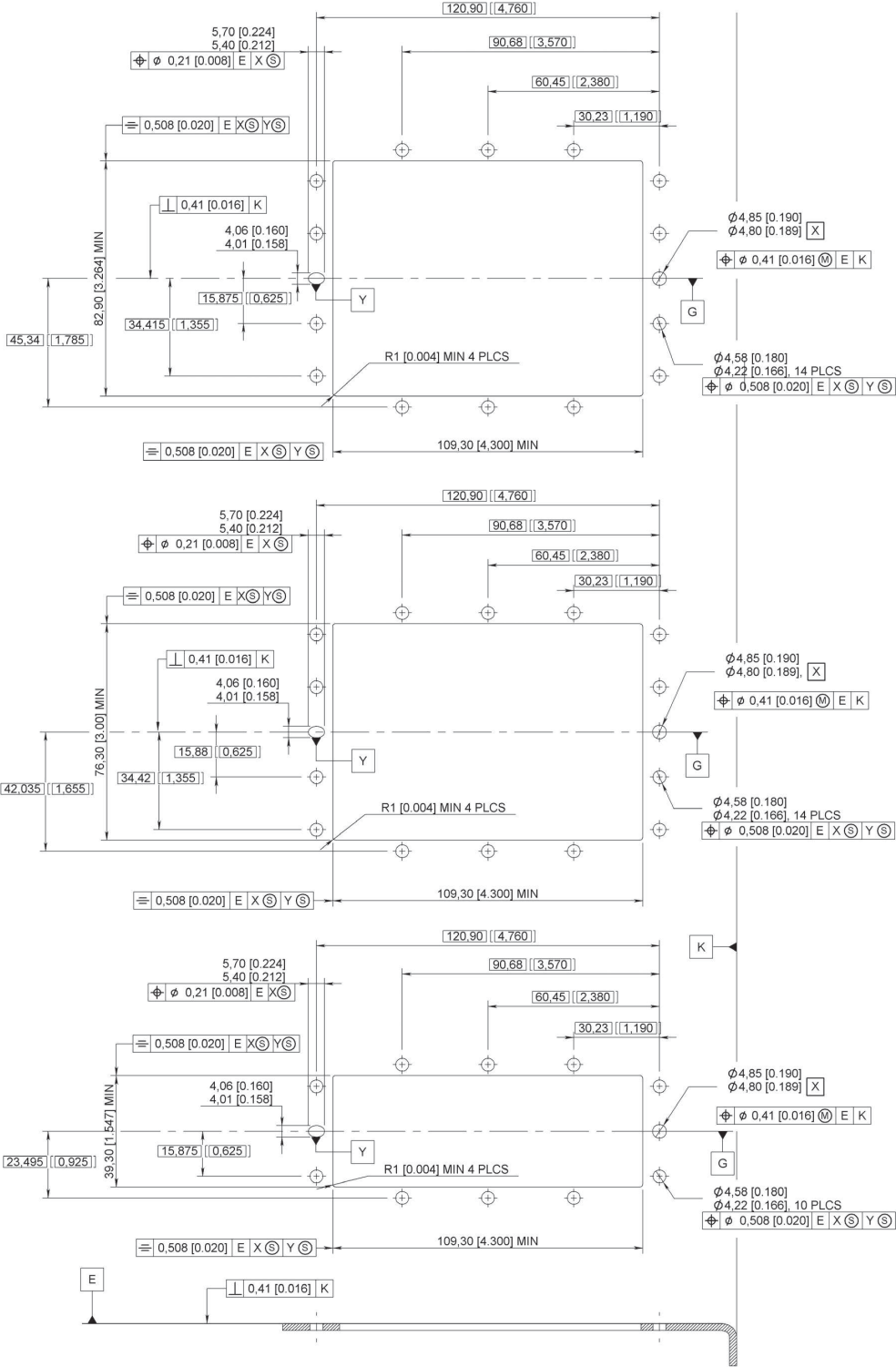
BPX

## PANEL CUT-OUT FOR PLUG



BPX

FOR RECEPTACLE



Notes





## MPX SERIES

*MIL-DTL-83527B, AECMA EN3682*



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*Introduction***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.



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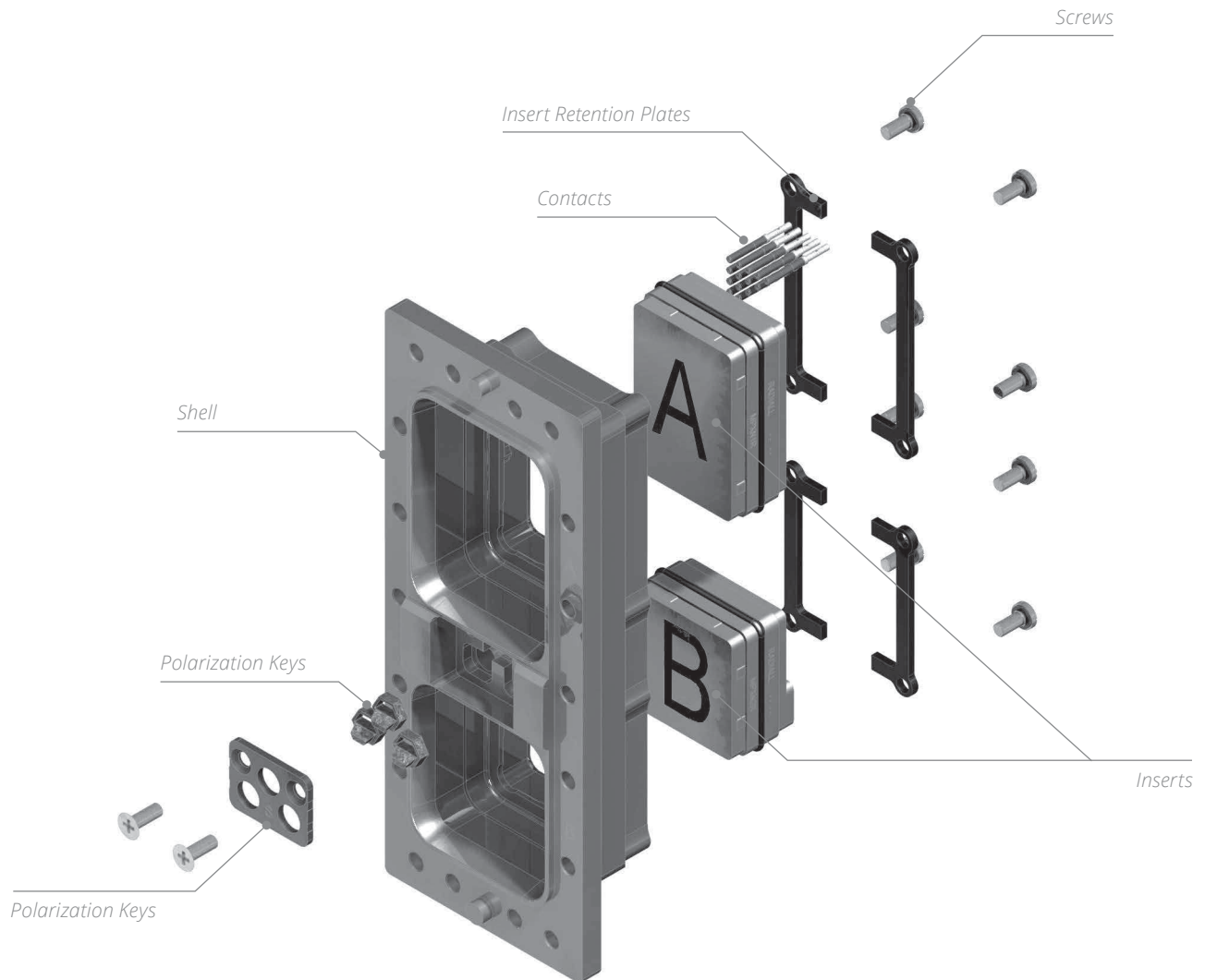
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© Eurocopter-Remy Michelin

*Introduction***PRODUCT OVERVIEW**

Detailed view of the various parts of an MPX connector:



## Introduction

**TECHNICAL CHARACTERISTICS****ELECTRICAL**

- Insulation Resistance (Test Procedure 21 of EIA364):  $\geq 1,000 \text{ M}\Omega\text{-}500 \text{ Vdc}$
- Shell-to-Shell Conductivity (Test Procedure 83 of EIA364):  $\leq 2.5 \text{ m Ohms}$
- Size 8 Grounding (Test Procedure 83 of EIA364):  $\leq 10 \text{ m Ohms}$

**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
1,000	60

**CONTACTS RESISTANCE**

(Test Procedure 23 and 06 of EIA364)

CONTACT SIZE	WIRE				MAX CURRENT (A)	CONTACT RESISTANCE (M $\Omega$ )
	AWG	CROSS SECTION (MM <sup>2</sup> )	MIN DIAMETER INCH (MM)	MAX DIAMETER INCH (MM)		
22	22	0.38	0.030 (0.76)	0.052 (1.32)	5	17
	24	0.21			3	23
	26	0.14			2	38
20	20	0.60	0.035 (0.89)	0.060 (1.52)	7.5	11
	22	0.38			5	17
	24	0.21			3	23
16	16	1.34	0.048 (1.21)	0.080 (2.03)	13	6
	18	0.91			10	8
	20	0.60			7.5	10
12	12	3.18	0.091 (4.85)	0.216 (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): 1,000 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 and Unmating (Test Procedure 9 of EIA364): 500 Cycles
- Mating and 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

## Introduction

## MATERIALS

DESCRIPTION	MATERIAL	FINISH
Shell & 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 & 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

## 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)

Introduction

**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 ORDERING 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**

**SERIES PREFIX** \_\_\_\_\_

**SHELL SIZE** \_\_\_\_\_

- 2:** 2 cavities
- 3:** 4 cavities
- 4:** 6 cavities

**SHELL TYPE** \_\_\_\_\_

- R:** Receptacle shell
- A:** Plug shell

**MODIFICATION CODE** \_\_\_\_\_

Refer to page 6-19

**POLARIZATION CODE** \_\_\_\_\_

- BLANK:** Polarization device delivered unassembled
- 00:** Polarizing keys or posts are not delivered
- OTHER:** Please refer to page 6-20



## Introduction

### INSERT ORDERING INFORMATION

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

#### SERIES PREFIX \_\_\_\_\_

#### CLASS <sup>[1]</sup> \_\_\_\_\_

**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

#### INSERT SIZE \_\_\_\_\_

**1:** Insert for A, C and E shell cavities

**2:** Insert for B, D and F shell cavities

#### INSERT TYPE \_\_\_\_\_

**P:** Insert for plug shell

**R:** Insert for receptacle shell

#### CONTACT ARRANGEMENT <sup>[2]</sup> \_\_\_\_\_

Refer to pages 6-12 to 6-18

#### TRIAx CONTACT GROUNDING <sup>[3]</sup> \_\_\_\_\_

Letter omitted-triax and quadrax contacts are grounded

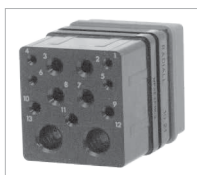
**A-**Triax contacts not grounded

#### CONTACT DELIVERY \_\_\_\_\_

Letter omitted-insert is delivered without contacts

**S-**Insert is delivered with crimp signal and power contacts (no coax, triax, twinax or quadrax contacts)

# MPX



### 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 6-11 for part numbers.

3. When A is omitted triax and quadrax contacts cavities are grounded to the shell.

Introduction

**HOW TO ORDER MPX ASSEMBLY KIT**  
**How To Order Assembled Connectors**

**MPX**

**SERIES PREFIX** \_\_\_\_\_

**CLASS** <sup>[1]</sup> \_\_\_\_\_

**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 page 6-9 to 6-11

**TRIAx CONTACT GROUNDING** \_\_\_\_\_

Letter omitted-triax and quadrax contacts are grounded  
**A-**Triax contacts not grounded

**CONTACT TYPE** <sup>[2]</sup> \_\_\_\_\_

**X:** Without contacts  
**S:** Crimp contacts  
 Rear release PC-Tail: see page 6-22 to 6-31 and consult us for the PCB foot print.

**MODIFICATION CODE** \_\_\_\_\_

Refer to page 6-19

**POLARIZATION CODE** \_\_\_\_\_

**BLANK:** Polarization device delivered unassembled  
**00:** Polarizing keys or posts are not delivered  
**OTHER:** Please refer to page 6-20



**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.

## Introduction

**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	-	-	-	-

## Introduction

## STTEA CODES (EUROPE)

CODE	SHELL SIZE	INSERT COMBINATION ON SHELL					
		CAVITY A	CAVITY B	CAVITY C	CAVITY D	CAVITY E	CAVITY F
226	3	150	34	150	100	-	-
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	-	-

## Introduction

## STTEA CODES (EUROPE)

CODE	SHELL SIZE	INSERT COMBINATION ON SHELL					
		CAVITY A	CAVITY B	CAVITY C	CAVITY D	CAVITY E	CAVITY F
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
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

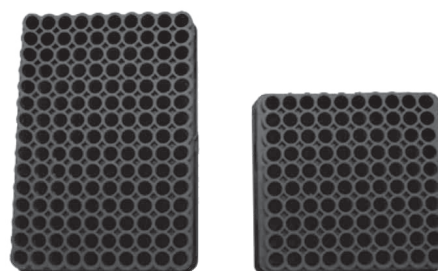
These inserts are available for receptacle shell only and are designed to be fitted with front release front removable size 22 pc tail contacts and thus do not have rear grommets. Socket insert mating side shown. These inserts are not normalized.

## 618500061

NUMBER OF CONTACTS	CONTACT SIZE	LOCATION
150	22	1 to 150

## 618500081





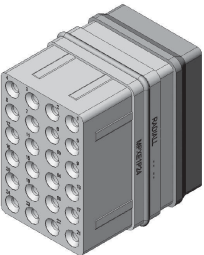


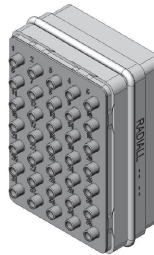
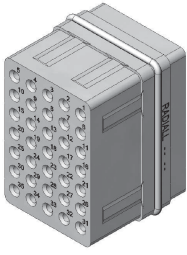
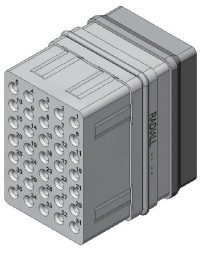

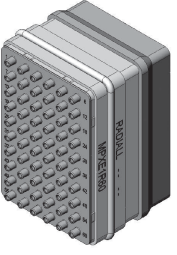


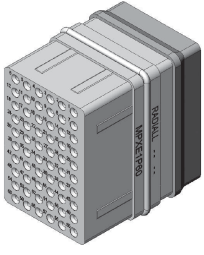


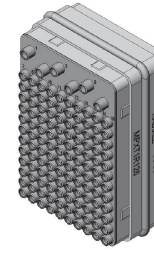

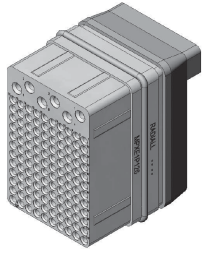
NUMBER OF CONTACTS	CONTACT SIZE	LOCATION
100	22	1 to 100



Introduction



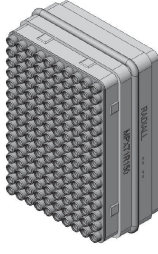
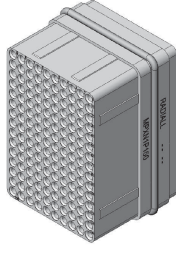
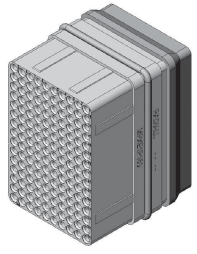
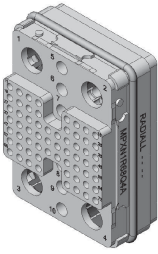

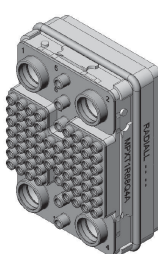
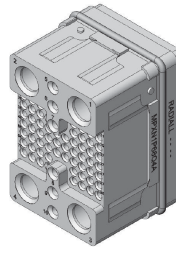
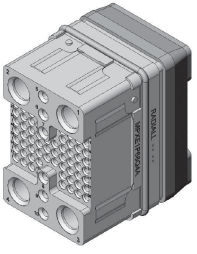
**INSERT LAYOUT FOR CAVITIES A, C OR E**

The symbol A represents that the insert is available in a non-grounded version (see page 6-7 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)					
	24 × #12 RR/RR	24 × #12 RR/RR	24 × #12 RR/RR	24 × #12 RR/RR	24 × #12 RR/RR
35 (A)					
	35 × #16 RR/RR	35 × #16 RR/RR	35 × #16 RR/RR	35 × #16 RR/RR	35 × #16 RR/RR
60 (A)					
	60 × #20 RR/RR	60 × #20 RR/RR	60 × #20 RR/RR	60 × #20 RR/RR	60 × #20 RR/RR
126 (A)					
	120 × #22 RR/RR 6 × #16 RR/RR	120 × #22 RR/RR 6 × #16 RR/RR	120 × #22 RR/RR 6 × #16 RR/RR	120 × #22 RR/RR 6 × #16 RR/RR	120 × #22 RR/RR 6 × #16 RR/RR

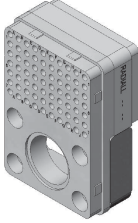
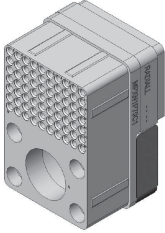
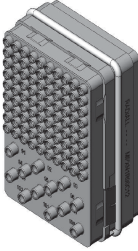
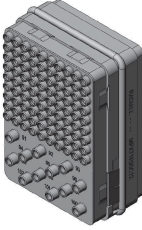

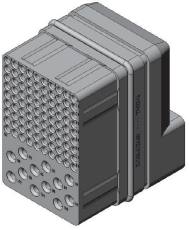





Introduction

The symbol A represents that the insert is available in a non-grounded version (see page 6-7 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)					
	150 × #22 RR/RR	150 × #22 RR/RR	150 × #22 RR/RR	150 × #22 RR/RR	150 × #22 RR/RR
68Q4 (A)					
	62 × #22 RR/RR 6 × #16 RR/RR 4 × #8 RR/RR	62 × #22 RR/RR 6 × #16 RR/RR 4 × #8 RR/RR	62 × #22 RR/RR 6 × #16 RR/RR 4 × #8 RR/RR	62 × #22 RR/RR 6 × #16 RR/RR 4 × #8 RR/RR	62 × #22 RR/RR 6 × #16 RR/RR 4 × #8 RR/RR

Introduction





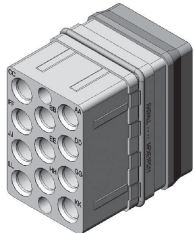





The symbol A represents that the insert is available in a non-grounded version (see page 6-7 for triax contact grounding)

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
	70 × #22 RR/RR 1 × #1 FR/RR			70 × #22 RR/RR 1 × #1 FR/RR	
90C12 (A)		Not Available			
	90 × #22 RR/RR12 × #16 RR/RR		90 × #22 RR/RR12 × #16 RR/RR	90 × #22 RR/RR12 × #16 RR/RR	90 × #22 RR/RR12 × #16 RR/RR
C12T6 (Metallic Insert)					
	12 × #12 RR/RR 6 × #8 RR/RR	12 × #12 RR/RR 6 × #8 RR/RR	12 × #12 RR/RR 6 × #8 RR/RR	12 × #12 RR/RR 6 × #8 RR/RR	12 × #12 RR/RR 6 × #8 RR/RR



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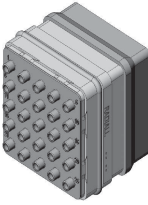
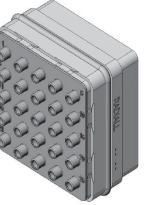
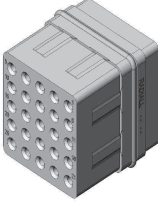
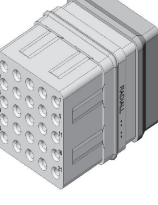








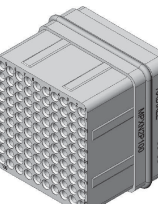
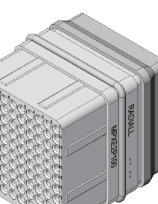



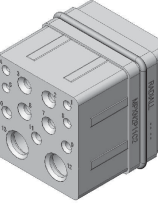

The symbol A represents that the insert is available in a non-grounded version (see page 6-7 for triax contact grounding)

INSERT NAME	EQUIPMENT SIDE RECEPTACLE SHELL			AVIONIC SIDE PLUG SHELL	
	VERSION N	VERSION E	VERSION T	VERSION N	VERSION E
Q11 (Metallic Insert)					
	11 × #8 RR/RR	11 × #8 RR/RR	11 × #8 RR/RR	11 × #8 RR/RR	11 × #8 RR/RR
T10 (Metallic Insert)					
	10 × #8 RR/RR	10 × #8 RR/RR	10 × #8 RR/RR	10 × #8 RR/RR	10 × #8 RR/RR

Introduction




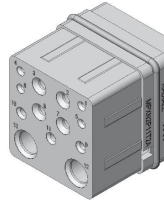

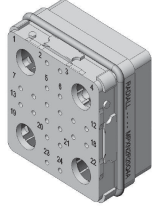
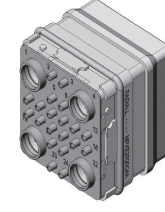

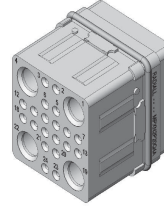
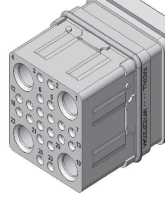
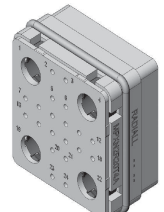
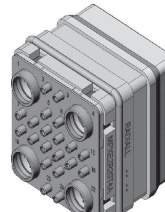
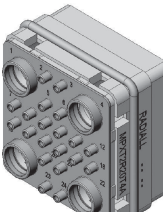
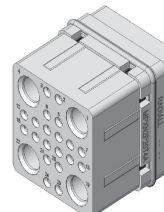
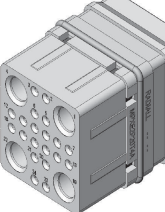
**INSERT LAYOUT FOR CAVITIES B, D OR F**

The symbol A represents that the insert is available in a non-grounded version (see page 6-7 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)					
	25 × #16 RR/RR	25 × #16 RR/RR	25 × #16 RR/RR	25 × #16 RR/RR	25 × #16 RR/RR
34 (A)					
	24 × #20 RR/RR 10 × #16 RR/RR	24 × #20 RR/RR 10 × #16 RR/RR	24 × #20 RR/RR 10 × #16 RR/RR	24 × #20 RR/RR 10 × #16 RR/RR	24 × #20 RR/RR 10 × #16 RR/RR
100 (A)					
	100 × #22 RR/RR	100 × #22 RR/RR	100 × #22 RR/RR	100 × #22 RR/RR	100 × #22 RR/RR
11C2 (A)					
	4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #5 RR/RR	4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #5 RR/RR	4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #5 RR/RR	4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #5 RR/RR	4 × #20 RR/RR 3 × #16 RR/RR 4 × #12 RR/RR 2 × #5 RR/RR



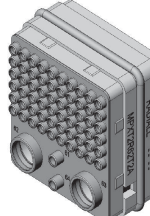
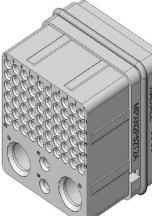
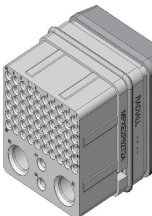



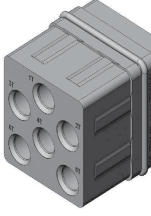




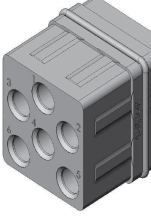

Introduction

The symbol A represents that the insert is available in a non-grounded version (see page 6-7 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)					
	4 × #20 RR/RR 3 × #16 RR/RR 2 × #8 RR/RR 4 × #12 RR/RR	4 × #20 RR/RR 3 × #16 RR/RR 2 × #8 RR/RR 4 × #12 RR/RR	4 × #20 RR/RR 3 × #16 RR/RR 2 × #8 RR/RR 4 × #12 RR/RR	4 × #20 RR/RR 3 × #16 RR/RR 2 × #8 RR/RR 4 × #12 RR/RR	4 × #20 RR/RR 3 × #16 RR/RR 2 × #8 RR/RR 4 × #12 RR/RR
20Q4 (A)					
	20 × #20 RR/RR 4 × #8 Quadrax RR/RR	20 × #20 RR/RR 4 × #8 Quadrax RR/RR	20 × #20 RR/RR 4 × #8 Quadrax RR/RR	20 × #20 RR/RR 4 × #8 Quadrax RR/RR	20 × #20 RR/RR 4 × #8 Quadrax RR/RR
20T4 (A)					
	20 × #20 RR/RR 4 × #8 RR/RR	20 × #20 RR/RR 4 × #8 RR/RR	20 × #20 RR/RR 4 × #8 RR/RR	20 × #20 RR/RR 4 × #8 RR/RR	20 × #20 RR/RR 4 × #8 RR/RR

Introduction

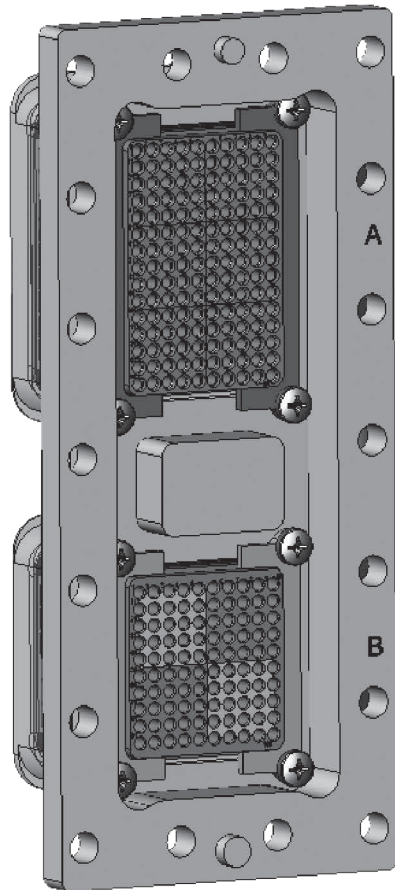
The symbol A represents that the insert is available in a non-grounded version (see page 6-7 for triax contact grounding)

INSERT NAME	EQUIPMENT SIDE RECEPTACLE SHELL			AVIONIC SIDE PLUG SHELL	
	VERSION N	VERSION E	VERSION T	VERSION N	VERSION E
62T2 (A)					
	60 × #22 RR/RR 2 × #16 RR/RR 2 × #8 RR/RR	60 × #22 RR/RR 2 × #16 RR/RR 2 × #8 RR/RR	60 × #22 RR/RR 2 × #16 RR/RR 2 × #8 RR/RR	60 × #22 RR/RR 2 × #16 RR/RR 2 × #8 RR/RR	60 × #22 RR/RR 2 × #16 RR/RR 2 × #8 RR/RR
Q6 (Metallic Insert)					
	6 × #8 RR/RR	6 × #8 RR/RR	6 × #8 RR/RR	6 × #8 RR/RR	6 × #8 RR/RR
T6 (Metallic Insert)					
	6 × #8 RR/RR	6 × #8 RR/RR	6 × #8 RR/RR	6 × #8 RR/RR	6 × #8 RR/RR

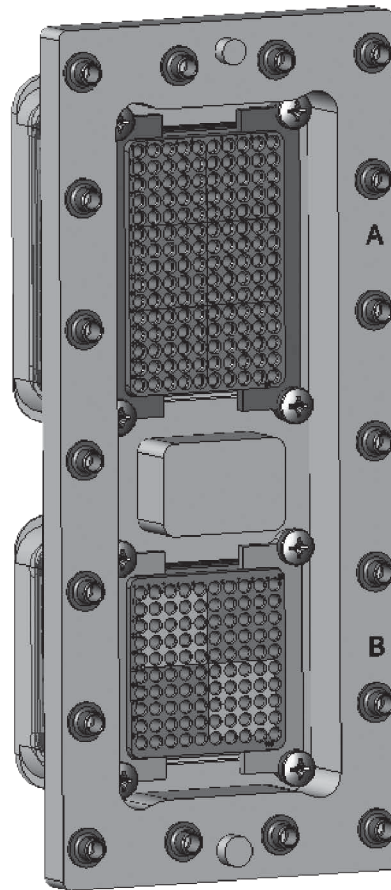
## Introduction

## MODIFICATION CODE

CODE	RECEPTACLE SHELL	PLUG SHELL
00	Sizes 2,3 and 4 : All Holes Ø .150 inch (3.80 mm)	Sizes 2,3 and 4 : All Holes Ø .150 inch (3.80 mm)
10	Sizes 2,3 and 4 : All Holes Fitted with M3 × 0.02 inch (0.50 mm) clinch-nuts	Sizes 2,3 and 4 : All Holes Fitted with M3 × 0.02 inch (0.50 mm) clinch-nuts



CODE 00



CODE 10

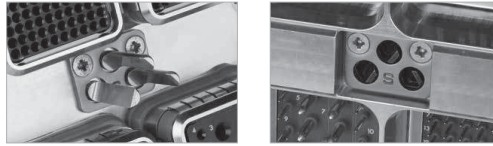
Introduction

**POLARIZATION CODE**

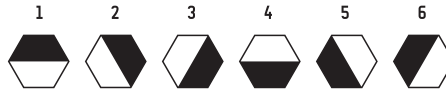
**POSITION OF POLARIZATION KEYS & POSTS**

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

CODE NUMBER	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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
58	1	3	1	4	2	4
59	1	3	6	5	2	4

## Introduction

## POSITION CODINGS

CODE NUMBER	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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

CODE NUMBER	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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

## Introduction

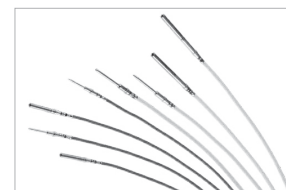
## CONTACTS

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 &amp; POWER CRIMP CONTACTS

## Release Rear Removable

CONTACT SIZE <sup>[2]</sup>	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 <sup>2</sup> )	WIRE OUTSIDE DIA. INCH (MM)	STRIPPING LENGTH INCH (MM)						
-	26	0.14	0.030 (0.76) to 0.052 (1.32)	0.137 (3.5)	618200	618300	282281 (M22520/2-01)	282970 (M22520/2-23)	3	282885 (M81969/1-01)
	24	0.21							3	
	22	0.38							4	
20 Reduced Crimp Barrel	26	0.14	0.030 (0.76) to 0.052 (1.32)	0.157 (4.0)	-	618311	282281 (M22520/2-01)	282971 (M22520/2-08)	3	282549029 (M81969/14-10)
	24	0.21							3	
	22	0.38							4	
20	24	0.21	0.035 (0.89) to 0.060 (1.52)	-	618210	618310	282281 (M22520/2-01)	282971 (M22520/2-08)	5	282549029 (M81969/14-10)
	22	0.38							6	
	20	0.60							7	
16	20	0.60	0.048 (1.21) to 0.080 (2.03)	-	618230	618330	282291 (M22520/1-01)	282972 (M22520/1-02)	4	282515 (M81969/14-03)
	18	0.93							5	
	16	1.34							6	
12	14	3.18	0.091 (2.31) to 0.114 (2.90)	0.236 (6.0)	618240	618340	282291 (M22520/1-01)	282579 (M22520/1-11)	7	282549004 (M81969/14-04)
	12	1.91							8	
12 Reduced Crimp Barrel	20	0.60	0.048 (1.21) to 0.080 (2.03)	-	-	618341	282291 (M22520/1-01)	282579 (M22520/1-11)	4	282549004 (M81969/14-04)
	18	0.93							5	
	16	1.34							6	
12 Enlarged Crimp Barrel	10	5.0	0.234 (5.70)	0.354 (9.0)	-	618342	282296 (DANIELS M300 BT) <sup>[1]</sup>	282586	1	282549001 (M81969/28-03)
8 Non-Environmental	10	5.0	0.234 (5.70)	0.354 (9.0)	618270	618370	282296 (DANIELS M300 BT) <sup>[1]</sup>	282586	6	282549001 (M81969/28-03)
8 Environmental					618270001	618370001				

## Notes

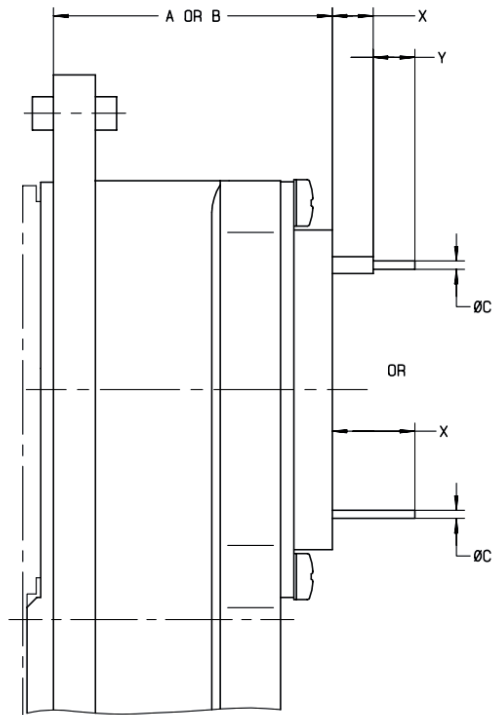
1. DANIELS WA27-309-EP air pressure tool with crimp setting 5 can also be used  
Crimp setting 5 is not adjustable and must be set by the factory
2. Contacts size 22, 20, 16 and 12 are M39029/94 & M39029/93 or EN3155/026 & EN3155/027 design



Introduction

**SIGNAL & POWER PC TAIL CONTACTS**  
Release Rear Removable

For details on A & B dimensions, refer to page 6-34.



**GOLD PC TAIL CONTACTS**

CONTACT SIZE	CONTACT ARRANGEMENT	PIN	SOCKET	EXT. TOOL	X INCH (MM)	Y INCH (MM)	C INCH (MM)
22	618500061 and 618500081	-	618304001	282500	0.163/0.191 (4.15/4.85)	0.173/0.181 (4.40/4.60)	0.024/0.027 (0.60/0.70)
		-	618304002		0.085/0.112 (2.15/2.85)	0.232/0.240 (5.90/6.10)	
		-	618360		0.150/0.180 (3.80/4.60)	N/A	
		-	618361		0.252/0.283 (6.40/7.20)	N/A	
		-	618362		0.374/0.405 (9.50/10.3)	N/A	

**PRE-TINNED PC TAIL CONTACTS**

CONTACT SIZE	CONTACT ARRANGEMENT	PIN	SOCKET	EXT. TOOL	X INCH (MM)	Y INCH (MM)	C INCH (MM)
22	618500061 and 618500081	-	618304003	282500	0.163/0.191 (4.15/4.85)	0.173/0.201 (4.40/5.10)	0.031 (0.80) max
		-	618304004		0.085/0.112 (2.15/2.85)	0.232/0.260 (5.90/6.60)	
		-	618360001		0.150/0.201 (3.80/5.10)	N/A	
		-	618361001		0.252/0.303 (6.40/7.70)	N/A	
		-	618362001		0.374/0.425 (9.50/10.80)	N/A	

## Introduction

## SIGNAL & 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)
22	150 126 70C12 100 62T2	-	618302	282885 (M81969/1-01)	0.059/0.087 (1.50/2.20)	0.145/0.154 (3.70/3.90)	0.024/0.027 (0.60/0.70)
		-	618303001		0.209/0.248 (5.30/6.30)	N/A	
		-	618303002	or	0.391/0.431 (9.95/10.95)	N/A	
		-	618303003	282522 (M81969/14-01)	0.138/0.177 (3.50/4.50)	N/A	
		-	618303004	0.150/0.169 (3.80/4.30)	0.145/0.154 (3.70/3.90)		
		-	618303005	0.303/0.343 (7.70/8.70)	N/A		

#### PRE-TINNED PC TAIL CONTACTS

CONTACT SIZE	CONTACT ARRANGEMENT	PIN	SOCKET	EXT. TOOL	X INCH (MM)	Y INCH (MM)	C INCH (MM)
22	150 126 70C12 100 62T2	-	618302001	282885 (M81969/1-01)	0.059/0.107 (1.50/2.70)	0.145/0.174 (3.70/4.40)	0.031 (0.80) max
		-	618303007		0.209/0.268 (5.30/6.80)	N/A	
		-	618303008	or	0.391/0.451 (9.95/14.45)	N/A	
		-	618303009	282522 (M81969/14-01)	0.138/0.197 (3.50/5.00)	N/A	
		-	618303010	0.150/0.189 (3.80/4.80)	0.145/0.174 (3.70/4.40)		
		-	618303011	0.303/0.363 (7.70/9.20)	N/A		



#### GOLD PC TAIL CONTACTS

CONTACT SIZE	CONTACT ARRANGEMENT	PIN	SOCKET	EXT. TOOL	X INCH (MM)	Y INCH (MM)	C INCH (MM)
20	11T2 11C2 34, 60 47T2 20T4	618213001	-	282886 (M81969/1-02)	0.281/0.321 (7.15/8.15)	N/A	0.037/0.040 (0.95/1.01)
		618213002	-		0.137/0.177 (3.50/4.50)	N/A	
		618213005	-	or	0.517/0.557 (13.15/14.15)	N/A	0.032/0.034 (0.81/0.86)
		-	618316001	282549029 (M81969/14-02)	0.391/0.431 (9.95/10.95)	N/A	

#### PRE-TINNED PC TAIL CONTACTS

CONTACT SIZE	CONTACT ARRANGEMENT	PIN	SOCKET	EXT. TOOL	X INCH (MM)	Y INCH (MM)	C INCH (MM)
20	11T2 11C2 34, 60 47T2 20T4	618213006	-	282886 (M81969/1-02)	0.281/0.341 (7.15/8.65)	N/A	0.045 (1.15) max
		618213007	-		or	0.137/0.197 (3.50/5.00)	
		618213008	-	282549029 (M81969/14-02)	0.517/0.577 (13.15/14.65)	N/A	0.037 (0.95) max

## Introduction

## SIGNAL &amp; 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 11C2 11T2 25, 34 35, 126	618233001	-	282546 (M81969/1-03) or 282515 (M81969/14-03)	0.281/0.321 (7.15/8.15)	N/A	0.057/0.061 (1.45/1.55)
		618233002	-		0.370/0.409 (9.40/10.40)	N/A	
		618233003	-	0.137/0.177 (3.50/4.50)	N/A		



## PRE-TINNED PC TAIL CONTACTS

CONTACT SIZE	CONTACT ARRANGEMENT	PIN	SOCKET	EXT. TOOL	X INCH (MM)	Y INCH (MM)	C INCH (MM)
16	62T2 11C2 11T2 25, 34 35, 126	618233001	-	282546 (M81969/1-03) or 282515 (M81969/14-03)	0.281/0.321 (7.15/8.15)	N/A	0.057/0.061 (1.45/1.55)
		618233002	-		0.370/0.409 (9.40/10.40)	N/A	
		618233003	-	0.137/0.177 (3.50/4.50)	N/A		

## GOLD PC TAIL CONTACTS

CONTACT SIZE	CONTACT ARRANGEMENT	PIN	SOCKET	EXT. TOOL	X INCH (MM)	Y INCH (MM)	C INCH (MM)
12	11C2 11T2, 6T4 24, C12T6 70C12	618243001	-	282547 (M81969/28-02) or 282549004 (M81969/14-04)	0.281/0.321 (7.15/8.15)	N/A	0.076/0.080 (1.95/2.05)
		618243002	-		0.137/0.177 (3.50/4.50)	N/A	
		618243003	-	0.076/0.120 (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 11T2, 6T4 24, C12T6 70C12	618243001	-	282547 (M81969/28-02) or 282549004 (M81969/14-04)	0.281/0.321 (7.15/8.15)	N/A	0.076/0.080 (1.95/2.05)
		618243002	-		0.137/0.177 (3.50/4.50)	N/A	
		618243003	-	0.076/0.120 (1.95/3.05)	N/A		

Introduction

**COAXIAL CRIMP CONTACTS**  
**Rear Release Rear Removable**  
**DESIGN AS PER EN3155-028 & 029 <sup>[1]</sup>**

CONTACT SIZE	CONTACT ARRANGEMENT	CABLE	PIN	SOCKET	CENTER CONTACT			OUTER BODY		
					CRIMPING TOOL	POSITIONER TOOL	SEL	CRIMPING TOOL	POSITIONER TOOL	SEL
16	126 62T2 11C2 11T2 34 25 35	RG179 RG316 KX22DS ASNE0752WS ASNE0632WK	618150	618050	282281 (M22520/2-01)	282555	282292 (M22520/4-01)	282556	-	4
		ASNE0639XY								1
		F1703-134 AXON P813859 & P822817 ASNE0690WL	618151	618051						2
		KX21DS	-	618053						
		RG178 KX21	618154	618054						
		ASNE0633WG								1

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

CONTACT SIZE <sup>[2]</sup>	CONTACT ARRANGEMENT	CABLE	PIN	SOCKET	CENTER CONTACT			OUTER BODY		
					CRIMPING TOOL	POSITIONER TOOL	SEL	CRIMPING TOOL	POSITIONER TOOL	SEL
12	11C2 11T2 24 6T4 C12T6 70C12	RG179 RG316 ASNE0639XY	618140	618040	282281 (M22520/2-01)	282580	282297 (M22520/31-01)	282581	-	4
		ASNE0690WL	618140003	618040003						3
		BUS 3910 AXON P503031	618141	618041						5
		ASNE0633WG RG178 KX21	618142	618042						4

**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 <sup>[3]</sup>	618020 <sup>[3]</sup>	282281 (M22520/2-01)	282550	282293 (M22520/5-01)	282246 (M22520/ 5-05 hex A)	6
		RG141 ASNE0293XF							8
		RG142 RG223	-	618021001					8
		RG400							6
		ASNE0691WM	618124001	618024001					8
		ASNE0639XY RG179 RG187	618123 <sup>[3]</sup>	618023 <sup>[3]</sup>					7

**Notes**

- 1. Ins/ext tool: 282546 (M81696/1-03)
- 2. Ins/ext tool: 282547 (M81696/28-02)
- 3. Ins/Ext tool: 282946 (M81969/28-01)

Introduction

**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 11T2 T6 47T2 C12T6 6T4	RG58 KX15 RG316 RG141	-	618030 <sup>[1]</sup>	282281 (M22520/2-01)	282572	6	282293 (M22520/5-01)	282236 (M22520/5-45 hex A)
		KX22 RG316 RG174	-	618032 <sup>[1]</sup>			7		
			RG400	-			618033 <sup>[1]</sup>		
	ASNE0691WM	618135	618035 <sup>[1]</sup>	Solder					

**PC TAIL COAX CONTACTS**

Rear Release Rear Removable

SIZE 16 PC TAIL MATING INTERFACE AS PER EN3155-028 & 029

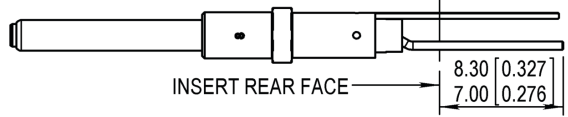
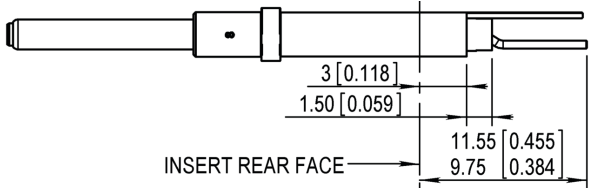
CONTACT TYPE	PART NUMBER <sup>[2]</sup>	CONTACT DRAWING <sup>[3]</sup>	REAR EXTENSION FROM ALL INSERT INCH (MM)	REAR EXTENSION FROM 126 & 62T2 INSERTS ONLY INCH (MM)
Pin	618153		0.275/0.327 (7.00/8.30)	0.297/0.349 (7.55/8.85).
Pin	618153001		0.383/0.435 (9.75/11.05)	0.405/0.457 (10.30/11.60).

**Notes**

1. Ins/Ext tool: 282549001 (M81969/28-03)
2. Contacts Ins/ext tool: 282546 (M81969/1-03).
3. For PC drill patern please contact Radiall.

Introduction

SIZE 16 PRE-TINNED PC TAIL

CONTACT TYPE	PART NUMBER <sup>(1)</sup>	CONTACT DRAWING <sup>(2)</sup>	REAR EXTENSION FROM ALL INSERT INCH (MM)	REAR EXTENSION FROM 126 & 62T2 INSERTS ONLY INCH (MM)
Pin	618153002	 <p>Technical drawing of contact 618153002. Dimensions shown from the insert rear face: 8.30 [0.327] and 7.00 [0.276].</p>	0.275/0.346 (7.00/8.80)	0.297/0.368 (7.55/9.35)
Pin	618153003	 <p>Technical drawing of contact 618153003. Dimensions shown from the insert rear face: 3 [0.118], 1.50 [0.059], 11.55 [0.455], and 9.75 [0.384].</p>	0.383/0.455 (9.75/11.55)	0.405/0.476 (10.30/12.10)

Notes

1. Contacts Ins/ext tool: 282546 (M81969/1-03).
2. For PC drill patern please contact Radiall.

## Introduction

**QUADRAX CONTACTS**

Rear Release Rear Removable

**SIZE 8 QUADRAX CONTACTS DESIGN AS PER EN3155-072 & 073**

CABLE	CONTACT TYPE	PART NUMBER <sup>[1]</sup> NON-ENVIRONMENTAL	PART NUMBER <sup>[1]</sup> ENVIRONMENTAL	INS/EXT TOOL
ABS972 ABS1503KD24	Pin	620175010	620175011	282549001 M81969/14.06
	Socket	620075010	620075011	
TENSOLITE NF24Q100 (100Ω)	Pin	620175050	620175051	
	Socket	620075050	620075051	
GORE RCN8487-1 (110Ω)	Pin	620175021	620175020	
	Socket	620075021	620075020	
THERMAX 956S-4T200 GORE RCN8422 (110Ω)	Pin	620179002	620179001	
	Socket	620079002	620079001	

**CONCENTRIC TWINAX CONTACTS**

Rear Release Rear Removable

**SIZE 8 CRIMP CONTACTS**

Design as per EN3155-034 &amp; 035 interchangeable with 042 &amp; 043 interface in accordance with M39029/95.

CONTACT SIZE <sup>[1 &amp; 3]</sup>	CONTACT ARRANGEMENT	CABLE	PIN CONTACT <sup>[2]</sup>	SOCKET CONTACT <sup>[2]</sup>
8	6T4 62T2 20T4 11T2 T6 47T2 C12T6	EN 3375-004 EN 3375-005	618160	618060
		EN 3375-003 M17/176-00002	618161	618061
		EN 3375-003 EN 3375-004 EN 3375-005 M17/176-00002	618162	618062
		ECS 700	618166	618066
		M17/176-00002	618180	-

**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.

Introduction

**CONCENTRIC TWINAX CONTACTS**

**Rear Release Rear Removable**

**SIZE 8 PC TAIL CONTACTS MATING INTERFACE DESIGN AS PER EN3155-034 & 035**

CONTACT TYPE	PART NUMBER <sup>(1)</sup>	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	<p>Technical drawing of contact part 618 163. Side view shows dimensions: 8,30 [0,327] total length, 7,00 [0,276] length to insert rear face, and 2,50 max. [0,098 max.] protrusion. Cross-section shows a diameter of <math>\phi 8,70</math> max. [0,343 max.] and a length of 8,20 [0,323] to the rear face, with 7,80 [0,307] to the tail start.</p>	0.275/0.327 (7.00/8.30)	0.275/0.327 (7.00/8.30)	0.199/0.250 (5.05/6.35)
Pin	618 164	<p>Technical drawing of contact part 618 164. Side view shows dimensions: 13,20 [0,520] total length, 12,20 [0,480] length to insert rear face, and 2,50 max. [0,098 max.] protrusion. Cross-section shows a diameter of <math>\phi 8,70</math> max. [0,343 max.] and a length of 8,20 [0,323] to the rear face, with 7,80 [0,307] to the tail start.</p>	0.480/0.520 (12.20/13.20)	0.098/0.138 (2.50/3.50)	0.403/0.443 (10.25/11.25)
Pin	618164001	<p>Technical drawing of contact part 618164001. Side view shows dimensions: 14,15 [0,557] total length, 13,15 [0,518] length to insert rear face, and 2,50 max. [0,098 max.] protrusion. Cross-section shows a diameter of <math>\phi 8,70</math> max. [0,343 max.] and a length of 8,20 [0,323] to the rear face, with 7,80 [0,307] to the tail start.</p>	0.518/0.557 (13.15/14.15)	0.234/0.238 (5.95/6.05)	0.441/0.480 (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.
2. This alignment boot protrudes 2.5 mm max from the rear face of the insert; these 2.5 mm are taken into account in the dimensions listed above.



Introduction

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

CONTACT TYPE	PART NUMBER <sup>(1)</sup>	CONTACT DRAWING	REAR EXTENSION FROM ALL INSERT INCH (MM)	PC TAIL LENGTH INCH (MM)	REAR EXTENSION FROM 62T2 INSERT ONLY INCH (MM)
Pin	618163005		0.275/0.347 (7.00/8.80)	0.297/0.347 (7.55/8.80)	0.199/0.270 (5.05/6.85)
Pin	618164002		0.480/0.540 (12.20/13.70)	0.098/0.157 (2.50/4.00)	0.403/0.463 (10.25/11.75)
Pin	618164003		0.518/0.577 (13.15/14.65)	0.234/0.258 (5.95/6.55)	0.441/0.500 (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.
2. This alignment boot protrudes 2.5 mm max from the rear face of the insert; these 2.5 mm are taken into account in the dimensions listed above.

Introduction

**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)

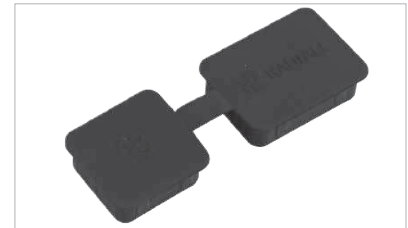
DESCRIPTION	PART NUMBER
EMI Backshell for Cavities A, C and E	618801002
EMI Backshell for Cavities B, D and F	618800002
Backshell Termination	618802010
Backshell Blank Termination	618802011



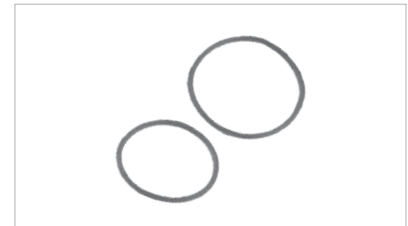
## Introduction

**DUST CAPS**

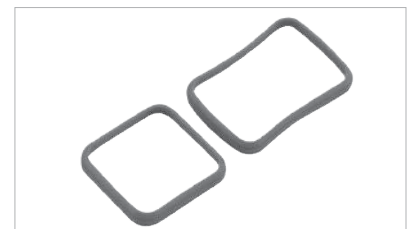
DESCRIPTION	PART NUMBER
Conductive Dust Cap for Receptacle Shell	618953001
Conductive Dust Cap for Plug Shell	618953002
Non Conductive Dust Cap for Plug Shell	618953

**O-RING FOR INSERTS**

DESCRIPTION	PART NUMBER
O-Ring for Inserts for A,C and E Cavities	618953020
O-Ring for Inserts for B,D and F Cavities	618953021

**COUPLING SEALS**

DESCRIPTION	PART NUMBER
Coupling Seals for A,C and E Shell Cavities	618953010
Coupling Seals for B,D and F Shell Cavities	618953011

**EMI SPRING**

DESCRIPTION	PART NUMBER
Kit Made of One EMI Spring for A,C and E Shell Cavities and of One EMI Spring for B, D and F	618810
EMI Spring for A,C and E Shell Cavities	618810001
EMI Spring for B,D and 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

**PLUG & RECEPTACLE OVERVIEW**

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 6-35 to 6-40 for A and B description.

**PLUG**

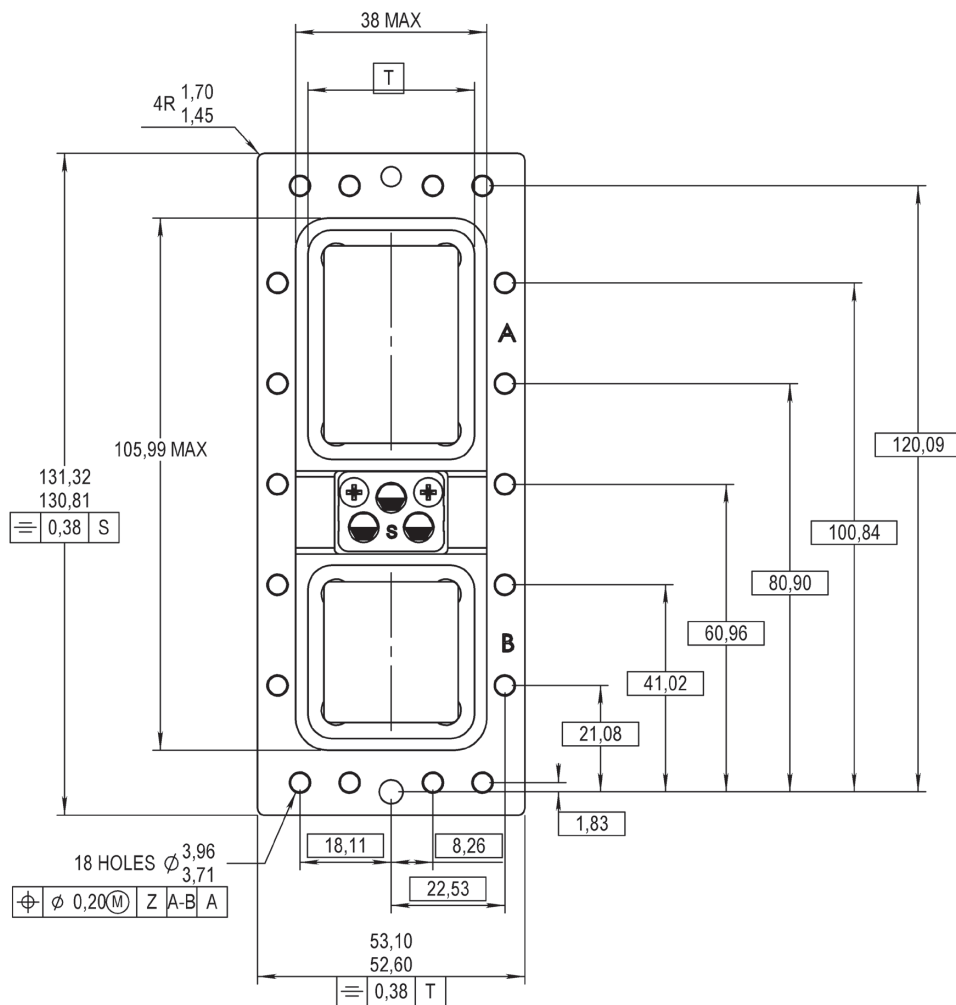
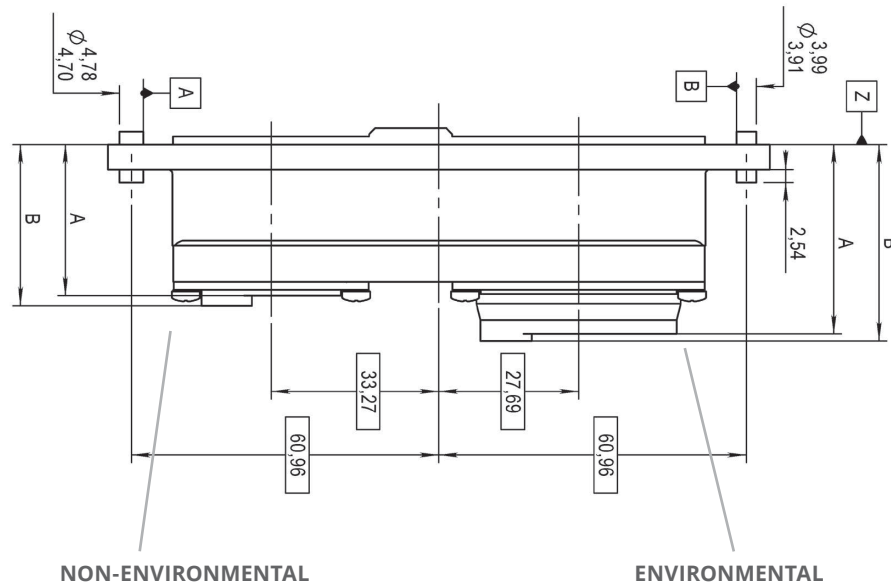
INSERT DESCRIPTION	A AND/OR B DIMENSION FOR ENVIRONMENTAL PLUG INCH (MM)	A AND/OR B DIMENSION FOR NON-ENVIRONMENTAL PLUG INCH (MM)
60, T6, 11C2, 34 C12T6, 24, 35, 47T2, 13T4 6T4, 11T2, 25, 20T4, 20Q4, Q6, Q11	0.386/0.449 (9.80/11.40)	No Rear Extension of Inserts from Shell
150, 100	0.228/0.295 (5.80/7.50)	
62T2, 68Q4	A: Signal Contacts 0.228/0.295 (5.80/7.50) B: Power Contacts 0.468/0.512 (11.90/13.00)	
70C12, 126, 118Q2	A: Signal Contacts 0.228/0.295 (5.80/7.50) B: Power Contacts 0.386/0.449 (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)	

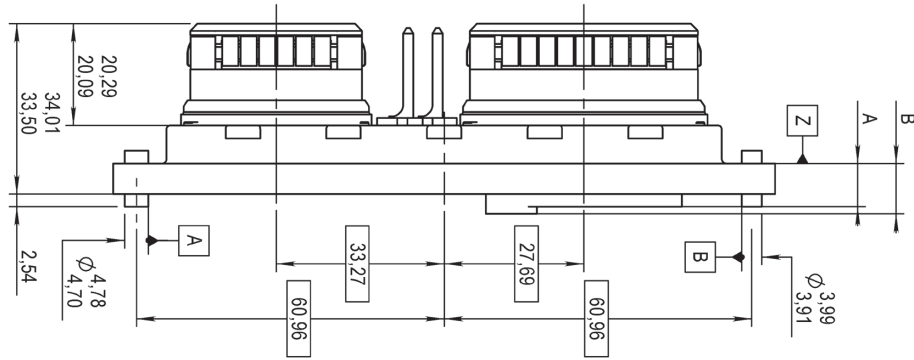
Dimensions

SHELL 2 DIMENSIONS - RECEPTACLE



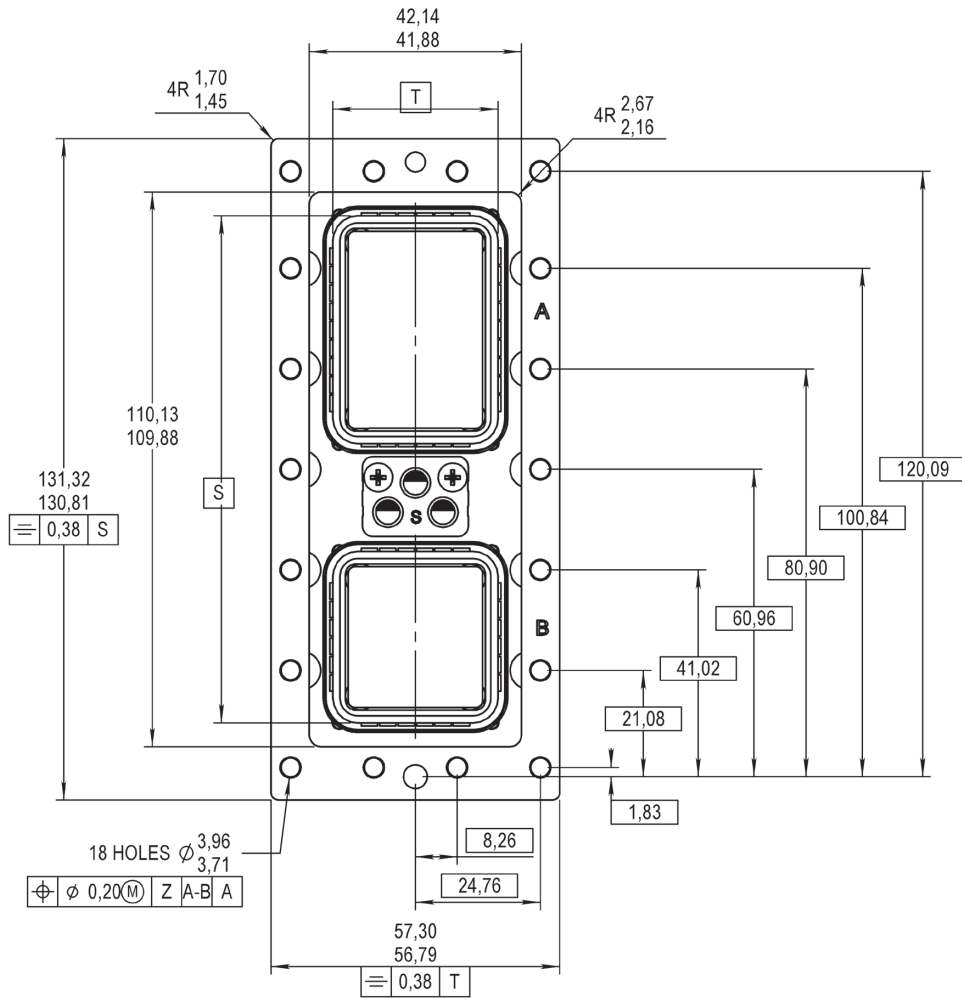
Dimensions

SHELL 2 DIMENSIONS - PLUG



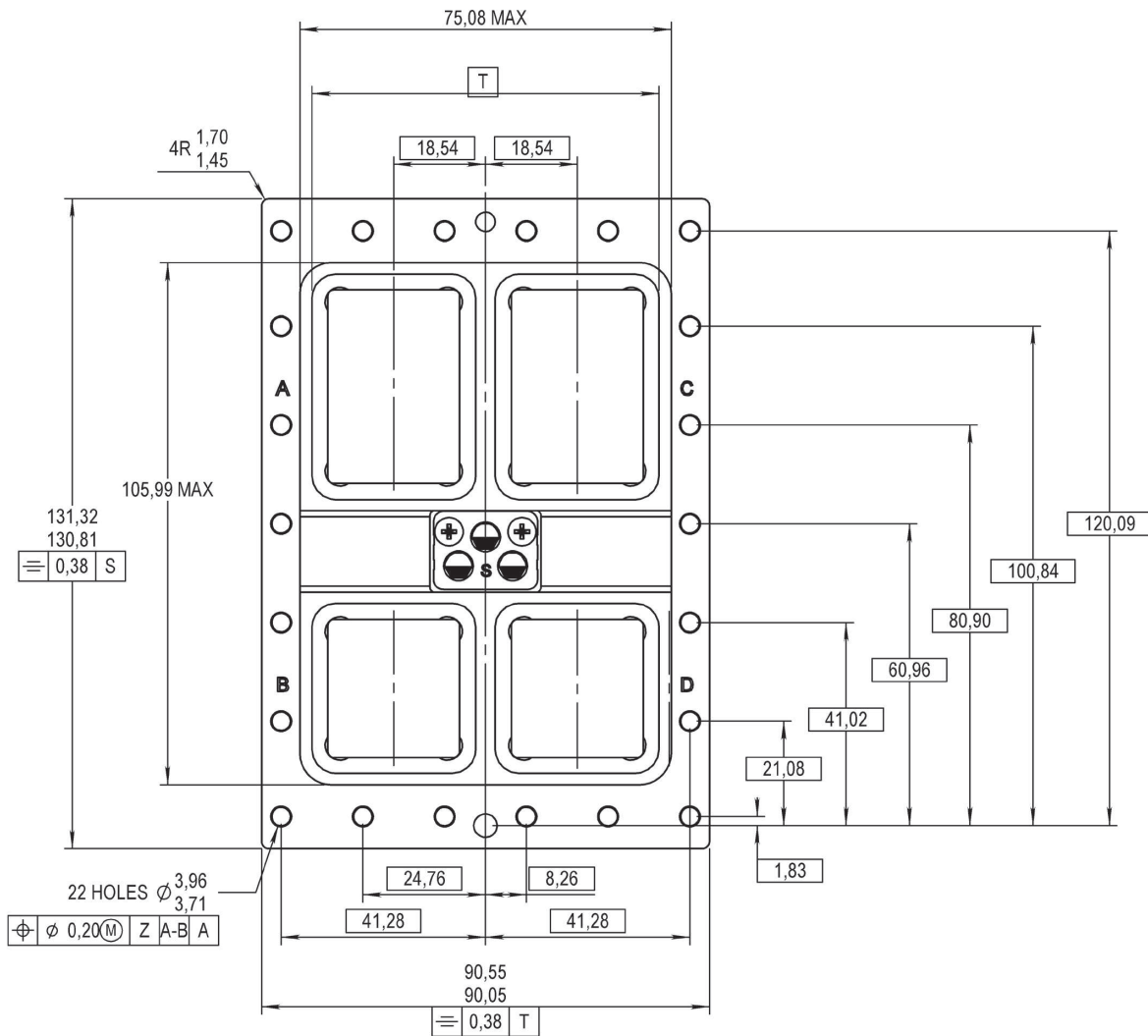
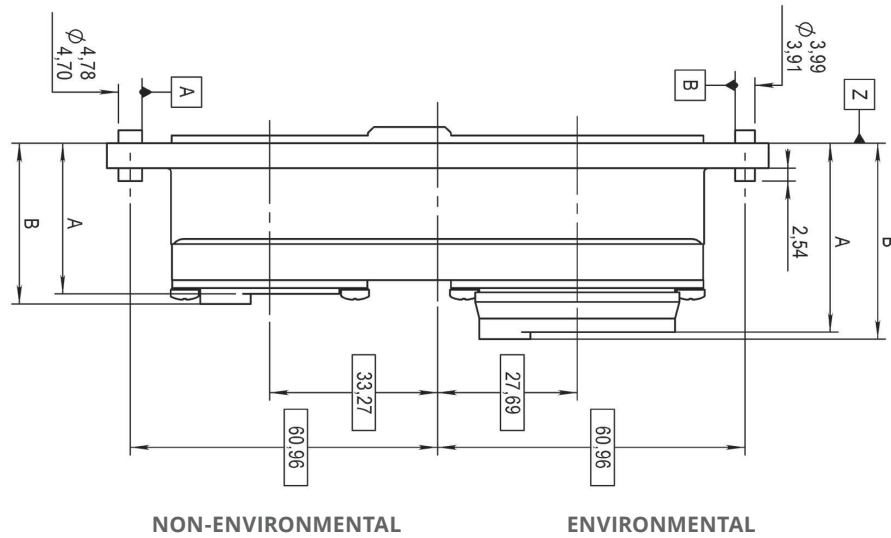
NON-ENVIRONMENTAL

ENVIRONMENTAL



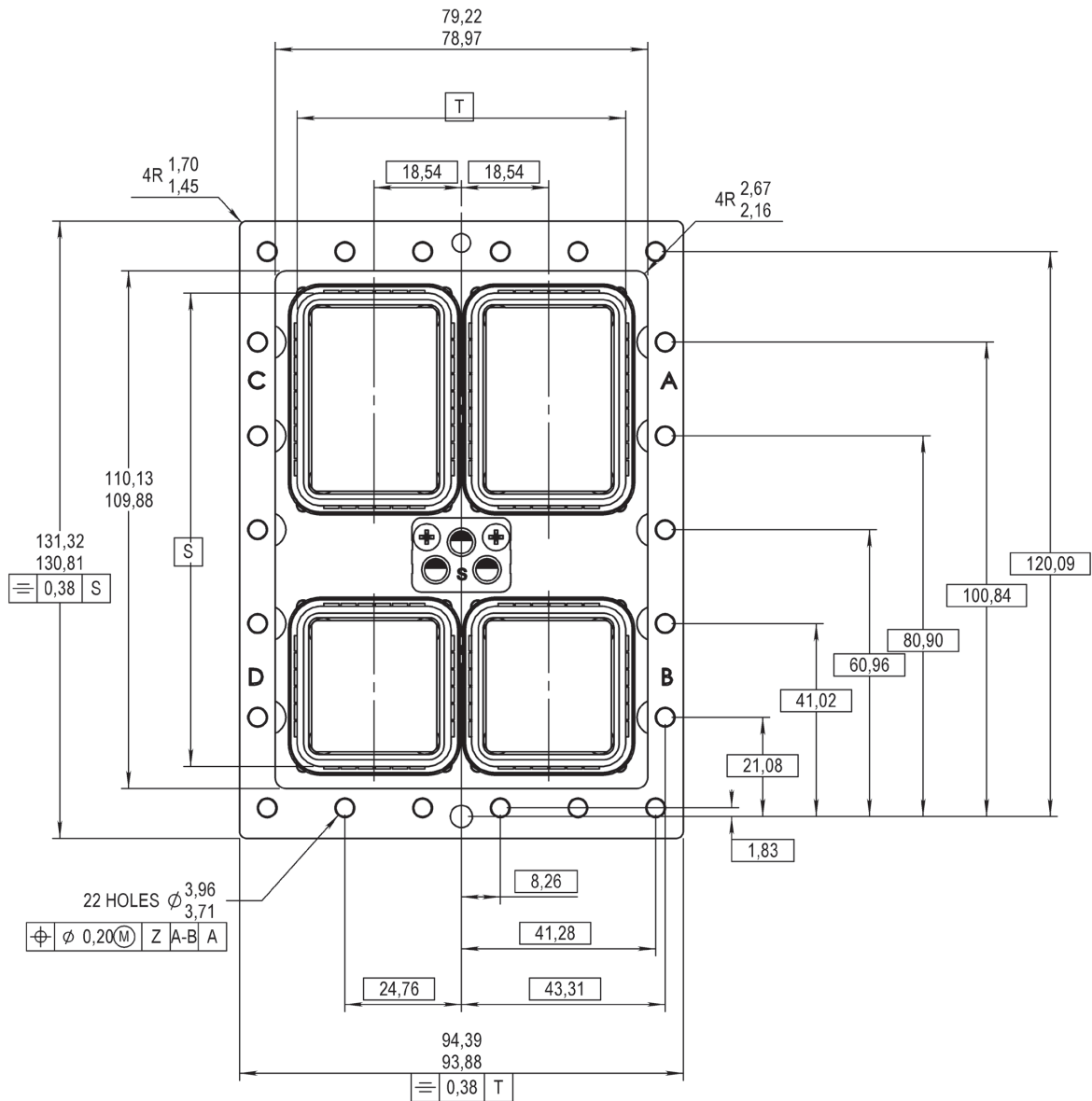
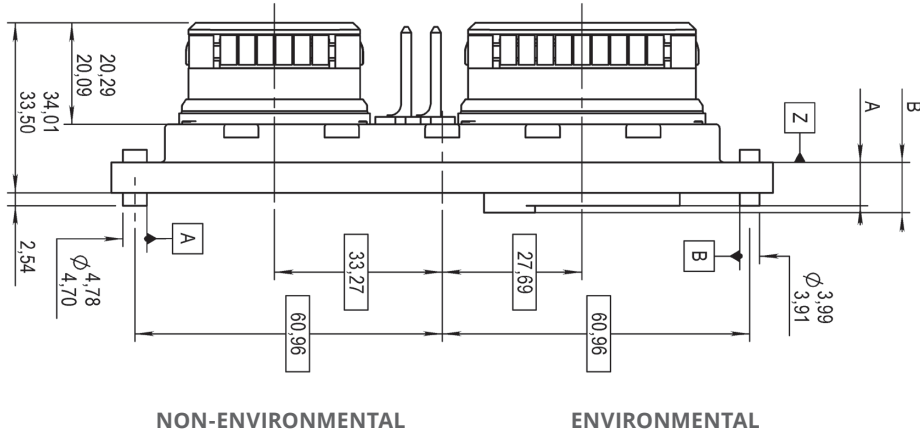
Dimensions

SHELL 3 DIMENSIONS - RECEPTACLE



Dimensions

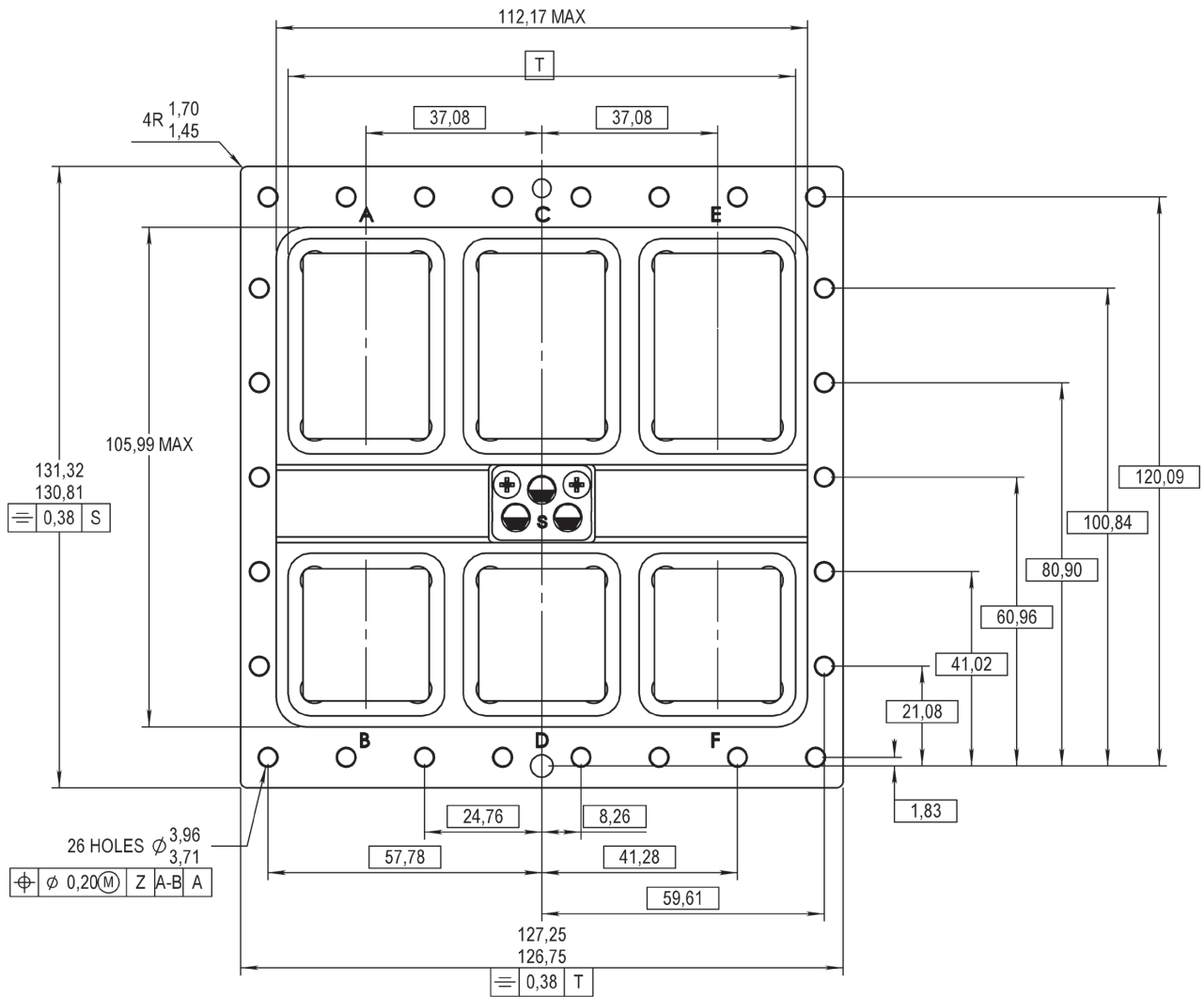
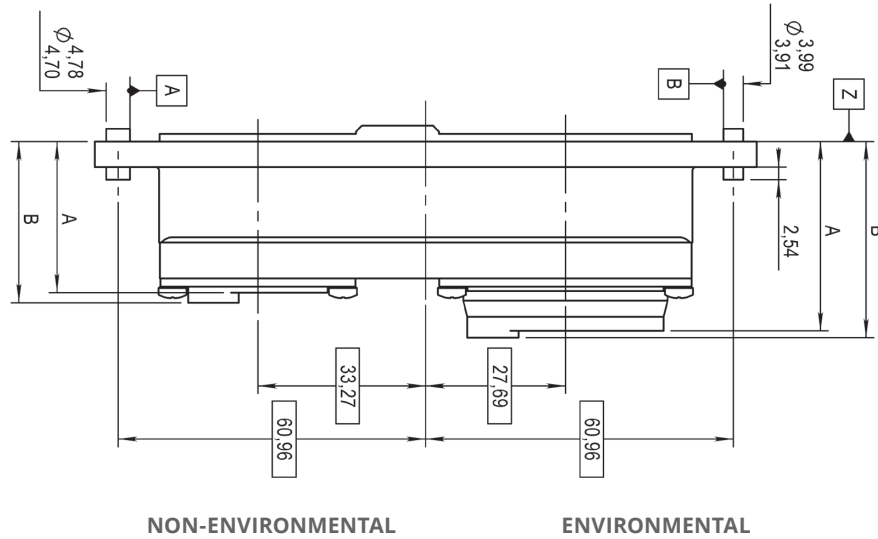
SHELL 3 DIMENSION - PLUG





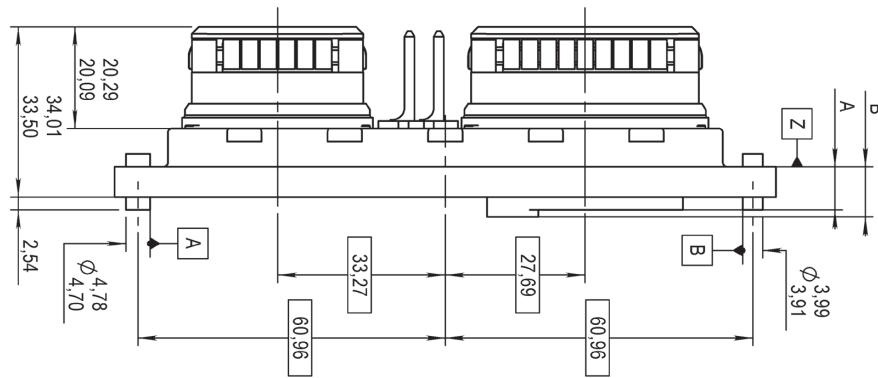
Dimensions

SHELL 4 DIMENSIONS - RECEPTACLE



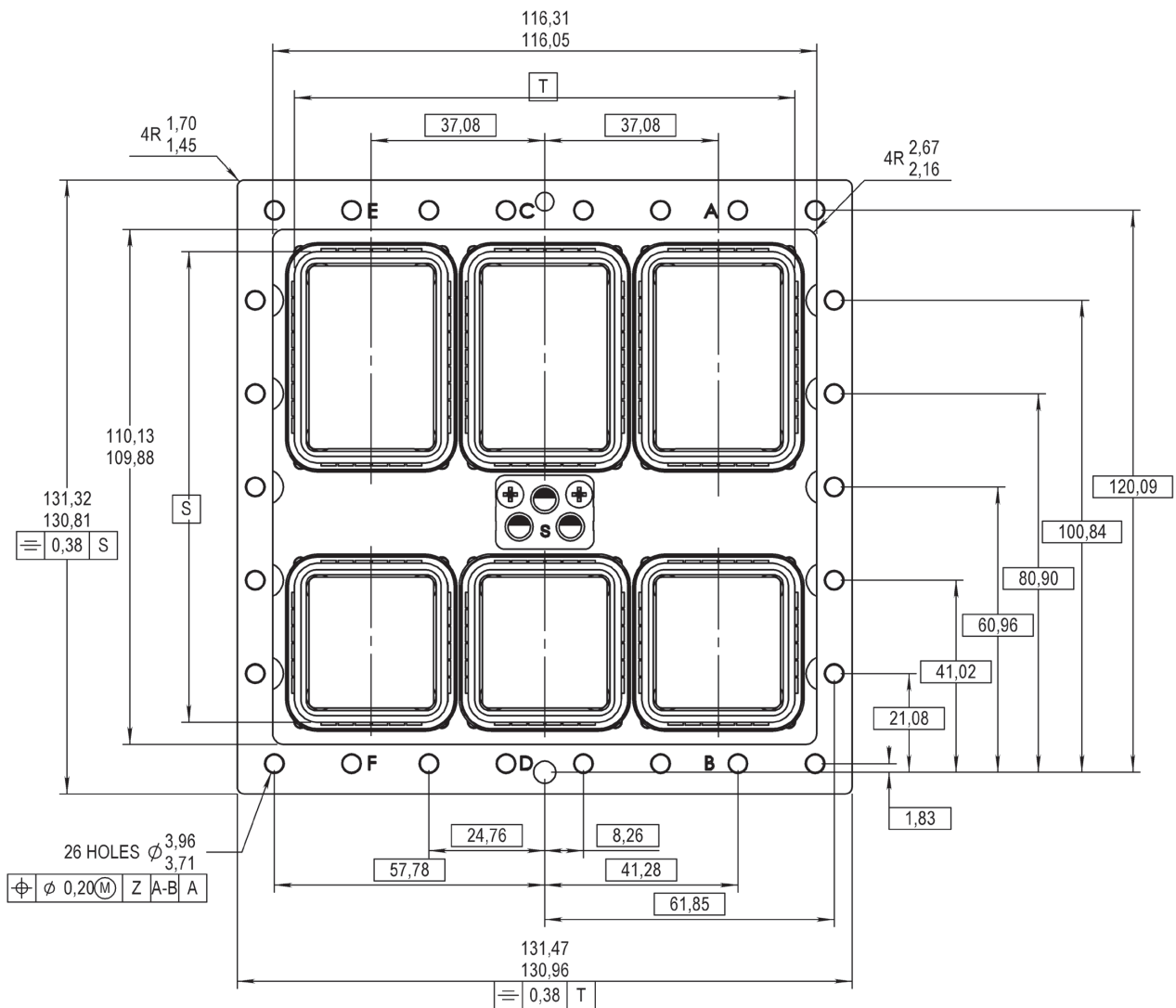
Dimensions

SHELL 4 DIMENSIONS - PLUG



NON-ENVIRONMENTAL

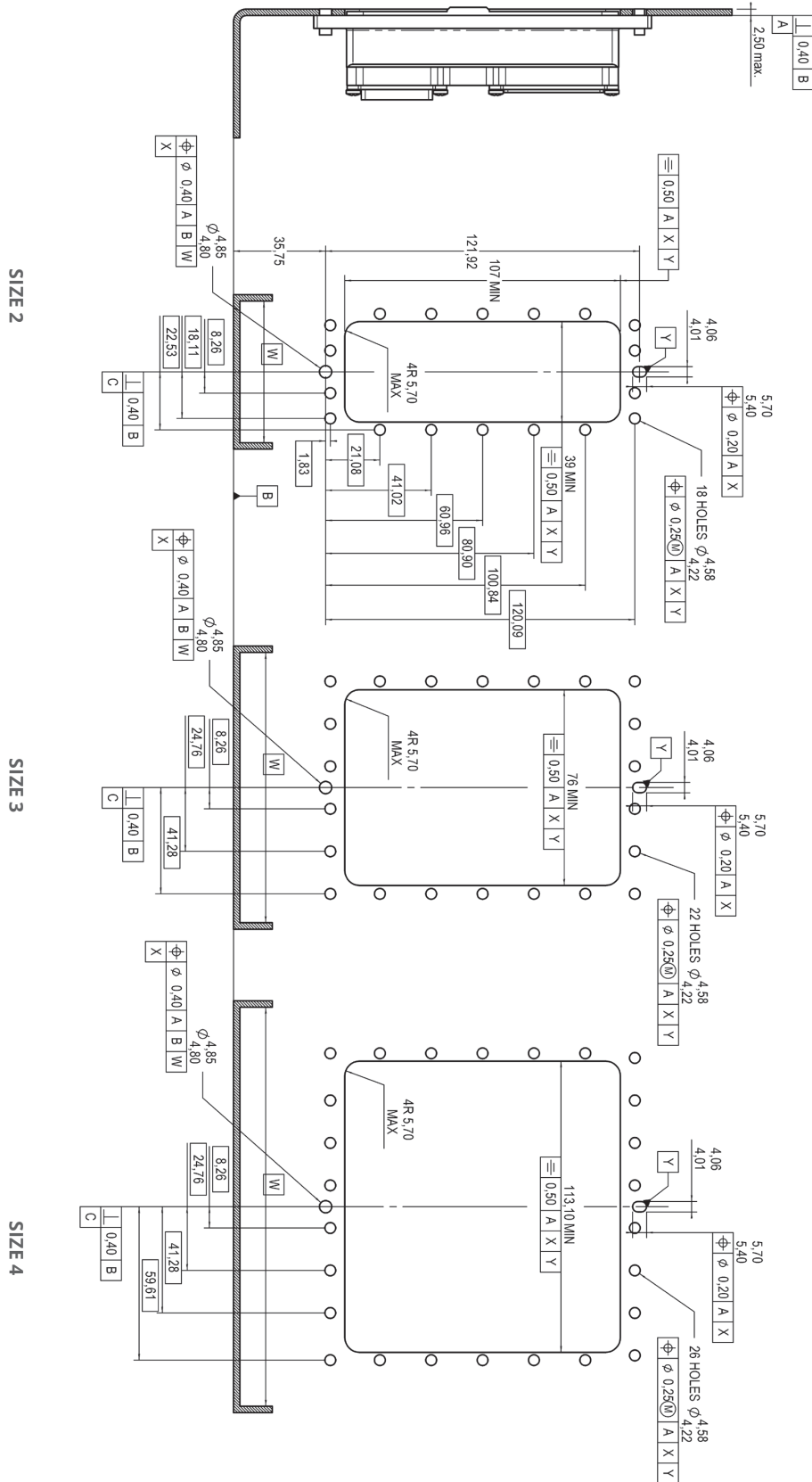
ENVIRONMENTAL





Dimensions

EQUIPMENT RECEPTACLE PANEL CUT-OUT





## DSX SERIES

*SAE AS81659, Arinc 404*



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*Introduction***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.



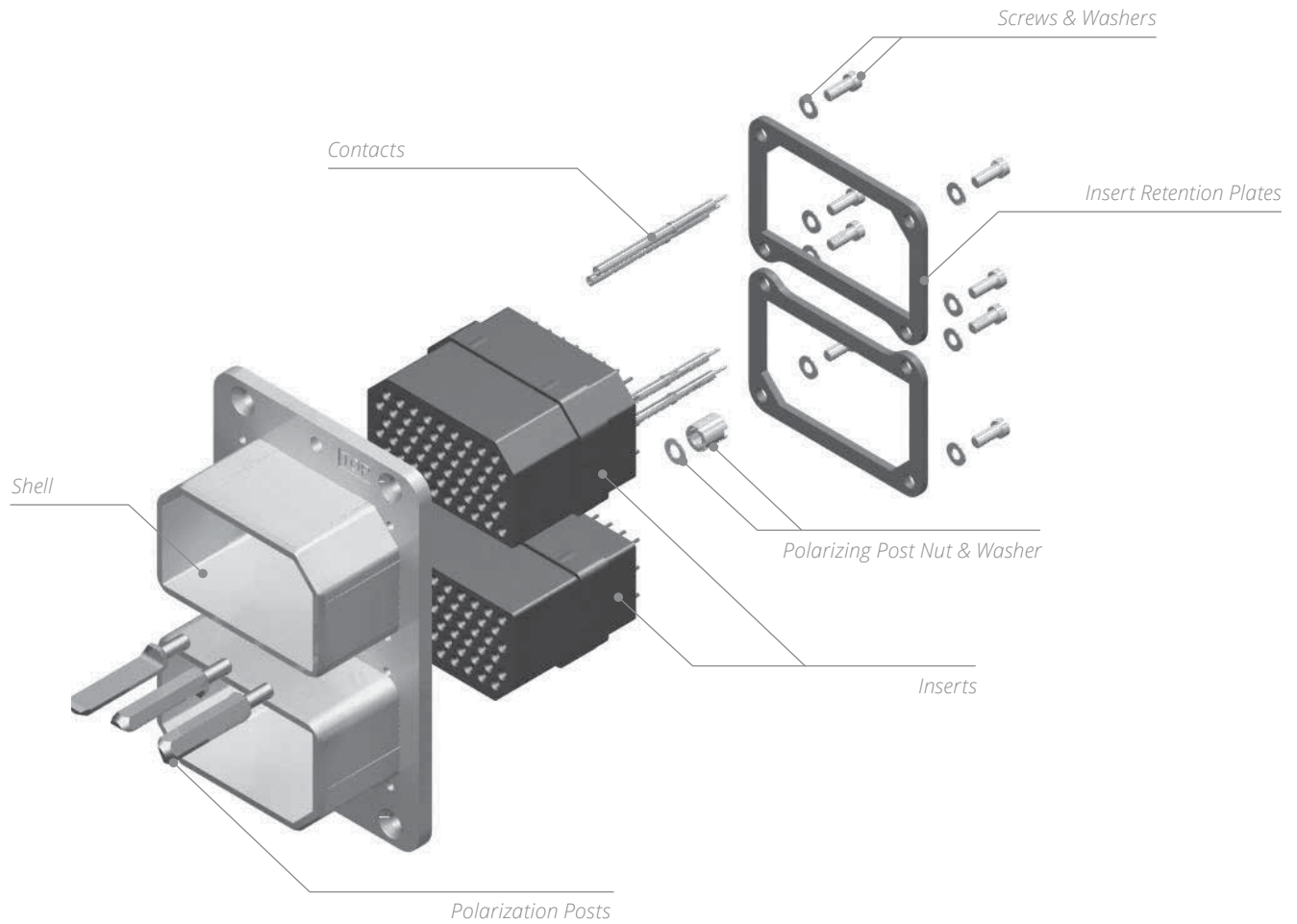
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DSX-SAE AS81659

## PRODUCT OVERVIEW

Detailed view of the various parts of this series connector.



DSX-SAE AS81659

## TECHNICAL CHARACTERISTICS

### ELECTRICAL

- Magnetic Permeability:  $<2 \mu$
- Insulation Resistance:  $>5,000 \text{ M}\Omega$
- Dielectric Withstanding Voltage: See Contact Arrangement on pages 7-8 to 7-10
- Contact Resistance: According to Requirements of SAE AS39029

### COAX CONTACTS ELECTRICAL CHARACTERISTICS

- Nominal Impedance:  $50 \Omega$  VSWR
  - Sizes 5, 7 and 9: 1.3 from DC to 1,500 MHz
  - Sizes 1 and 3: 1.3 from DC to 5,000 MHz

CONTACT SIZE	AWG	CROSS SECTION MM <sup>2</sup> (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:  $-65 \text{ }^\circ\text{C}$  ( $-85 \text{ }^\circ\text{F}$ )/ $+125 \text{ }^\circ\text{C}$  ( $+257 \text{ }^\circ\text{F}$ )
- Temperature Life: 1,000 hours at  $+125 \text{ }^\circ\text{C}$  ( $+257 \text{ }^\circ\text{F}$ )
- Salt Spray: EIA 364-26 (MIL-STD-1344A Method 1001.1 Test Condition B (48 hours))
- Altitude Moisture Injection: Insulation Resistance  $> 100 \text{ M}\Omega$  altitude 50,000 ft
- Fluid Resistance: Resistance to 20 hours Immersion in Fluids MIL PRF 5606 & MIL PRF 23699
- Durability: 500 Matings and Unmating Cycles
- Vibration: EIA 364-28 (MIL-STD-1344A Method 2005 Test Condition IV (20 g-10-2,000 Hz))
- Shock: EIA 364-27 (MIL-STD-1344A Method 2004 Test Condition A (50 g -11 ms-half sine))
- Mating Force:  $< 200 \text{ N}$  (45 lbs) per Insert
- Insert Retention Force:  $> 534 \text{ N}$  (120 lbs) in each Direction
- Contact Retention Force: Max Axial Displacement = 0.3 mm (0.012 in.)

CONTACT SIZE	22	20HD	16	12
Axial Load N (lbs)	66 N (15)	89 N (20)	111 N (25)	133.5 N (30)

DSX-SAE AS81659

## TECHNICAL CHARACTERISTICS

### MATERIALS

DESCRIPTION	MATERIAL	PLATING
Shell	Aluminium Alloy	Cadmium Yellow Chromate <sup>(1)</sup>
Insert	Thermosetting Resin	-
Metallic Insert	Aluminium Alloy	Cadmium Clear Chromate <sup>(1)</sup>
Interfacial Seal & Grommet	Silicone Rubber	-
Retention Clip	Copper Alloy	-
Contact	Copper Alloy	Gold Over Nickel Under Plate
Insert Retention Plate	Aluminium Alloy	Blue Snodised <sup>(1)</sup>
Polarizing Posts	Stainless Steel	-
Polarizing Keys	Zinc Alloy	Cadmium Yellow Chromate
Polarizing Keys Retention Plate	Aluminium Alloy	Cadmium Yellow Chromate <sup>(1)</sup>
Screws, Washers, Clinch-Nuts	Corrosion Resistant Steel	-
Sealing Plugs & Filler Plugs	PTFE	-
Sealing Boots & Sleeves	Fluorinated Silicon Rubber	-
Sealing Bushing	PEI	-
Junction Shells	Aluminium Alloy	Yellow Anodized or Nickel-Plated

### 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)

#### Notes

1. More platings are available, see descriptions in modification codes

DSX-SAE AS81659

## HOW TO ORDER CONNECTORS

# DSX

### SERIES PREFIX \_\_\_\_\_

### 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 shell  
**P:** Plug shell

### GROUNDING EMI/RFI \_\_\_\_\_

- G:** With grounding spring (only for plug connector)

### TERMINATION STYLE <sup>[5]</sup> \_\_\_\_\_

- X:** Without contacts (for crimp contacts only)  
**S:** Crimp <sup>[1]</sup>  
**V:** Wire wrap two levels <sup>[4]</sup>  
**W:** Wire wrap three levels <sup>[4]</sup>  
**Y:** PC tail contact <sup>[4]</sup>

### CONTACT ARRANGEMENT <sup>[2 & 5]</sup> \_\_\_\_\_

See available contact arrangements on pages 7-8 to 7-10

### CONTACT TYPE <sup>[5]</sup> \_\_\_\_\_

- S:** Socket  
**P:** Pin

### GANG B \_\_\_\_\_

### GANG C \_\_\_\_\_

### GANG D \_\_\_\_\_

### MODIFICATION CODE \_\_\_\_\_

See pages 7-11 to 7-16 for selection.  
 Modification code will help in choosing the appropriate plating for your application.

### POLARIZATION CODE <sup>[3]</sup> \_\_\_\_\_

See pages 7-17 to 7-20 for selection.

### Notes

*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 7-36 to 7-40.*

- For reduced crimp barrel, thermocouple or fiber optic contacts, use code X and order contact separately.
- For contact arrangements which include coax or quadrax contacts, use termination code X. Quadrax and coax contacts must be ordered separately.
- 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.
- 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.
- Gang A

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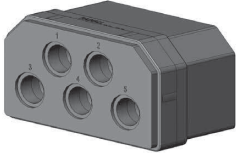
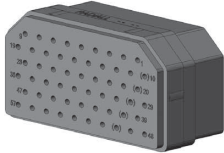
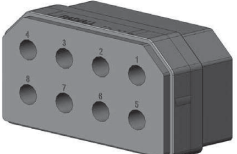
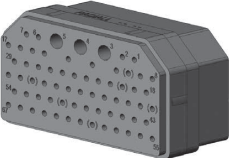
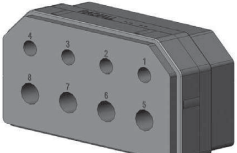
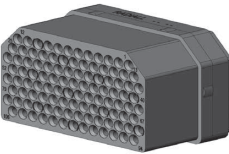
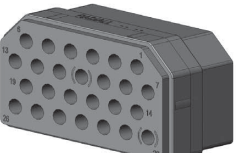

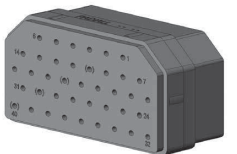

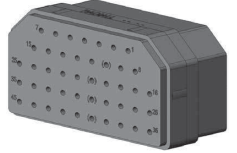
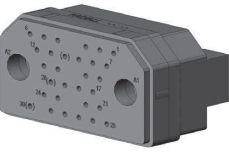
### CONTACT ARRANGEMENTS

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 <sup>(1)</sup>	 5 × #5 (Power)	2,500 V-60 Hz This Insert is Available in Class N Only	✓	-	-	57 <sup>(1)</sup>	 57 × #20 HD	1,500 V-60 Hz	✓	✓	✓
8	 8 × #12	1,500 V-60 Hz	✓	✓	✓	67	 64 × #20 HD 3 × #16	1,000 V-60 Hz	✓	✓	✓
D8	 4 × #16 4 × #12	1,500 V-60 Hz	✓	✓	✓	106	 106 × #22	1,000 V-60 Hz	✓	✓	✓ <sup>(2)</sup>
26	 26 × #16	1,500 V-60 Hz	✓	✓	✓	40C1	 1 × #5 (Coax) 39 × #20 HD	1,500 V-60 Hz	✓	✓	-
40	 40 × #20 HD	1500V-60Hz	✓	✓	✓	40T1 <sup>(1)</sup>	 1 × #5 (Coax) 39 × #20 HD	1,500 V-60 Hz Size 5 Contact Cavity Grounded to the Shell	✓	✓	-
45	 45 × #20 HD	1,500 V-60 Hz	✓	✓	✓	32C2	 2 × #5 (Coax) 30 × #20 HD	1,000 V-60 Hz	✓	✓	-

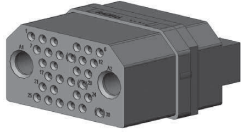
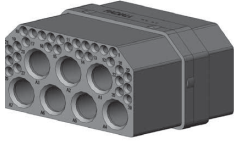
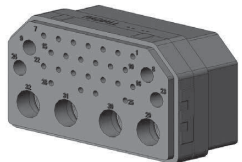
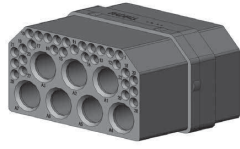
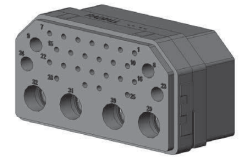
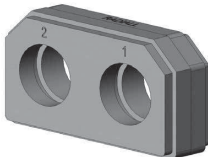
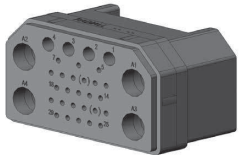
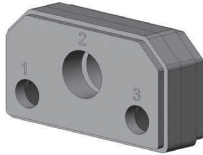
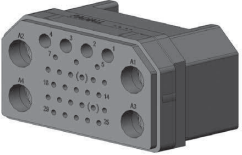
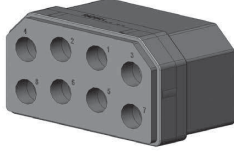
**Notes**

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.

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Pin insert mating side shown

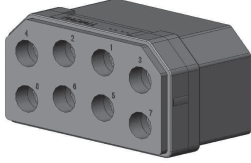

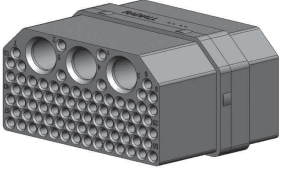
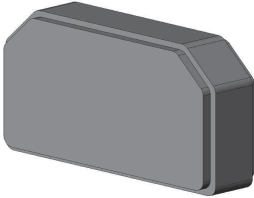
INSERT NAME	NUMBER OF CONTACTS	DWV	CLASS			INSERT NAME	NUMBER OF CONTACTS	DWV	CLASS		
			N	E	T				N	E	T
32T2 <sup>(1)</sup>	 2 × #5 (Coax) 30 × #20 HD	1,000 V – 60 Hz Size 5 Contact Cavities Grounded to the Shell	✓	✓	-	36C7 <sup>(1)</sup>	 7 × #5 (Coax) 29 × #22	1,000 V – 60 Hz	✓	✓	✓ <sup>(2)</sup>
32C4	 4 × #9 (Coax) 4 × #16 24 × #20 HD	1,500 V – 60 Hz	✓	✓	✓	36T7 <sup>(1)</sup>	 7 × #5 (Coax) 29 × #22	1,000 V – 60 Hz Size 5 Contact Cavities Grounded to the Shell	✓	✓	✓ <sup>(2)</sup>
32T4 <sup>(1)</sup>	 4 × #9 (Coax) 4 × #16 24 × #20 HD	1,500 V – 60 Hz Size 9 Contact Cavities Grounded to the Shell	✓	✓	-	MC2	 2 × #1 (Coax)	This Insert is Metallic	✓	-	-
33C4	 4 × #5 (Coax) 4 × #1625 × #20 HD	1,000 V – 60 Hz	✓	✓	✓	MC3	 2 × #7 (Coax) 1 × #3 (Coax)	This Insert is Metallic	✓	-	-
33T4 <sup>(1)</sup>	 4 × #5 (Coax) 4 × #16 25 × #20 HD	1,000 V – 60 Hz Size 5 Contact Cavities Grounded to the Shell	✓	✓	✓	C8	 8 × #9 (Coax)	1,000 V – 60 Hz	✓	✓	✓

Notes

- Contact arrangements are not referenced in the MS3157 and SAE AS81659 standards.
- Class T insert are for pin contacts only except insert arrangement 106; 36C7 and 36T7 which are for socket contacts only.

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Pin insert mating side shown

INSERT NAME	NUMBER OF CONTACTS	DWV	CLASS		
			N	E	T
T8*	 <p>8 × #9 (Coax)</p>	Size 9 Contact Cavities Grounded to the Shell. Pin Contact Available Only	✓	✓	✓
6CU	 <p>6 × #8 Quadrax</p>	Size 8 Contact Cavities Grounded to the Shell. Non-Environmental Only	✓	✓	-
81C3	 <p>78 × #22 3 × #5 (Coax)</p>	1,000 V-60 Hz	✓ For Pin Contact Only	-	-
00*		Dummy Insert	-	-	-

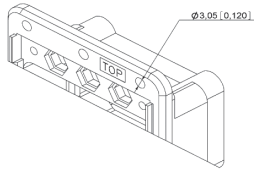
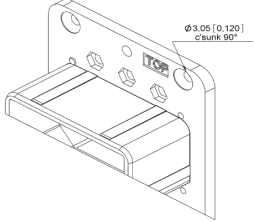
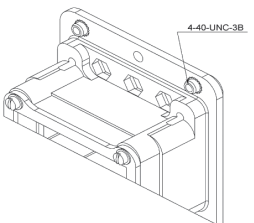
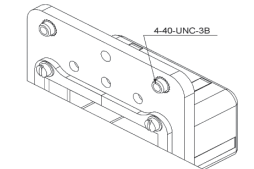
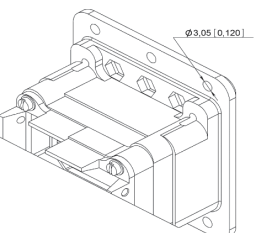
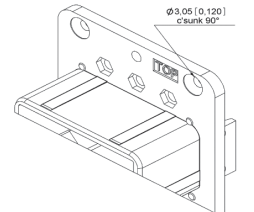
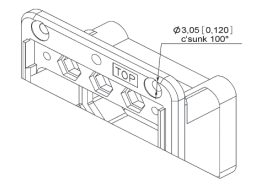
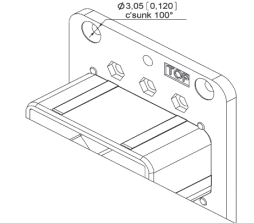
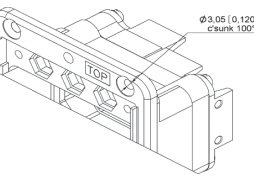
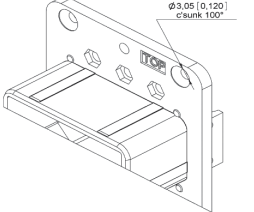


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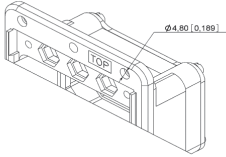
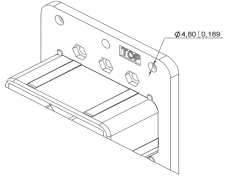
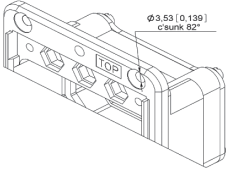
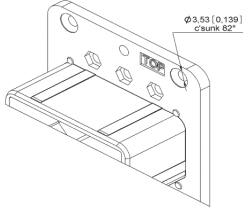
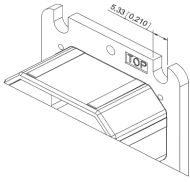
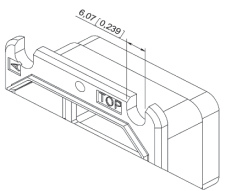
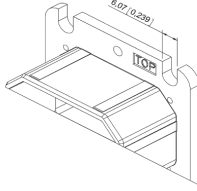
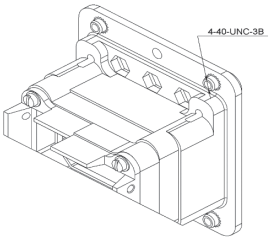
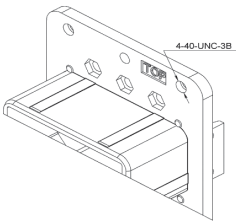
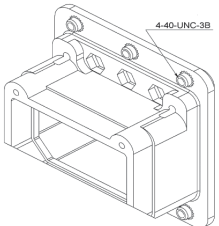
### MODIFICATION CODE

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

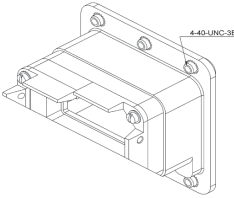
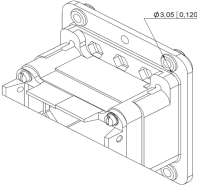
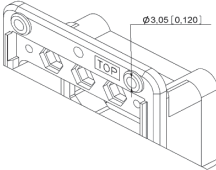
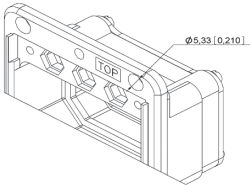
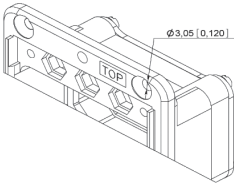
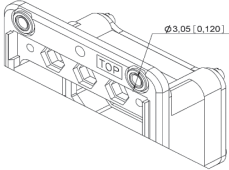
- There is only 4 mm between the connector flange when fully mated. Please note that the modification code and screw type should be selected accordingly.
- The modification code with floating eyelets can be mated with the fixed modification.

CODE	RECEPTACLE SHELL	PLUG SHELL
00	 <p>                     Sizes 1,2 and 3:                      6 Holes Ø3,05 (0.120)                      Size 4:                      10 Holes Ø3,05 (0.120)                 </p>	 <p>                     Sizes 1 and 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 and 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 and 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 and 3:                      6 Holes Ø3,05 (0.120) with                      Attaching Tabs for Radial                      Backshell                      Not Available                      in Size 4                 </p>	 <p>                     Sizes 1 and 2:                      4 Holes Ø3,05 (0.120) c'sunk 90°                      with Attaching Tabs for Radial                      Backshell                      Size 3:                      6 Holes Ø3,05 (0.120) c'sunk 90°                      with Attaching Tabs for Radial                      backshell                      Not Available                      in Size 4                 </p>
03	 <p>                     Sizes 1 and 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 and 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 and 2:                      4 Holes Ø3,05(0.120)                      c'sunk 100° with Attaching Tabs                      for Radial Backshell                      Size 3:                      6 Holes Ø3,05(0.120) c'sunk 100°                      with Attaching Tabs for Radial                      Backshell                      Not Available                      in Size 4                 </p>	 <p>                     Sizes 1 and 2:                      4 Holes Ø3,05(0.120) c'sunk 100°                      with Attaching Tabs for Radial                      Backshell                      Size 3:                      6 Holes Ø3,05(0.120) c'sunk 100°                      with Attaching Tabs for Radial                      Backshell                      Not Available                      in Size 4                 </p>

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CODE	RECEPTACLE SHELL		PLUG SHELL	
05		Sizes 1,2 and 3: 4 Holes Ø4,80 (0.189)  Size 4: 10 Holes Ø4,80 (0.189)		Sizes 1,2 and 3: 4 Holes Ø4,80 (0.189)  Size 4: 10 Holes Ø 4,80 (0.189)
08		Sizes 1 and 2: 4 Holes Ø3,53 (0.139) c'sunk 82°  Size 3: 6 Holes Ø3,53 (0.139) c'sunk 82°		Sizes 1 and 2: 4 Holes Ø3,53 (0.139) c'sunk 82°  Size 3: 6 Holes Ø3,53 (0.139) c'sunk 82°
12	-	-		Sizes 1, 2 and 3: 4 Mounting Slots 5,33 (0.210) Wide
13		Sizes 1, 2 and 3: 4 Mounting Slots 6,07 (0.239) Wide		Sizes 1, 2 and 3: 4 Mounting Slots 6,07 (0.239) Wide
17		Sizes 1 and 2: 4 Clinch Nuts 4.40 UNC 3B with Attaching Tabs for Radial Backshell  Size 3: 6 Clinch Nuts 4.40 UNC 3B with Attaching Tabs for Radial Backshell  Not Available in Size 4		Sizes 1 and 2: 4 Clinch Nuts 4.40 UNC 3B with Attaching Tabs for Radial Backshell  Size 3: 6 Clinch Nuts 4.40 UNC 3B with Attaching Tabs for Radial Backshell  Not Available in Size 4
18		Sizes 1, 2 and 3: 6 Clinch Nuts 4.40 UNC 3B  Not Available in Size 4	-	-

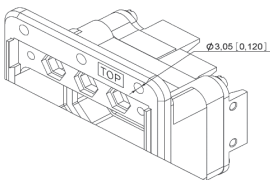
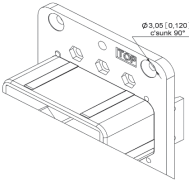
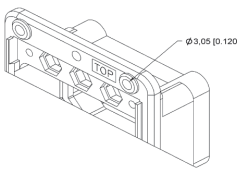
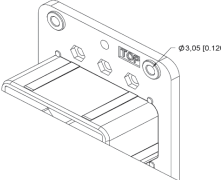
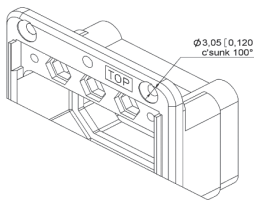
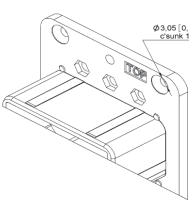
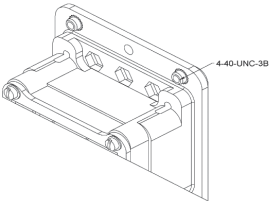
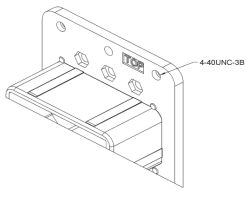
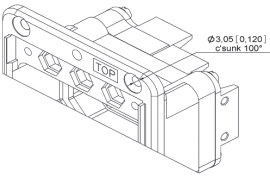
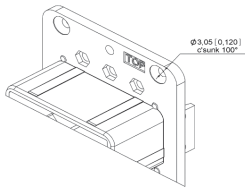
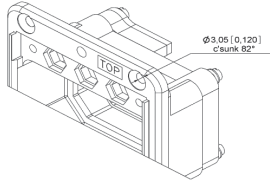
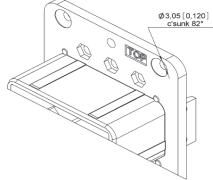
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CODE	RECEPTACLE SHELL	PLUG SHELL
19	 <p>← 4.40 UNC 3B</p>	<p>Sizes 1, 2 and 3: 6 Clinch Nuts 4.40 UNC 3B with Attaching Tabs for Radial Backshell</p> <p>Not Available in Size 4</p>
22	 <p>Ø3,05 (0,120)</p>	<p>Sizes 1 and 2: 4 Floating Eyelets Ø3,05 (0,120) with Attaching Tabs for Radial Backshell</p> <p>Size 3: 6 Floating Eyelets Ø3,05 (0,120) with Attaching Tabs for Radial Backshell</p> <p>Not Available in Size 4</p>
23	 <p>Ø3,05 (0,120)</p>	<p>Sizes 1 and 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>Ø5,33 (0,210)</p>	<p>Sizes 1, 2 and 3: 6 Holes Ø5,33 (0,210)</p>
26	 <p>Ø3,05 (0,120)</p>	<p>Sizes 1 and 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 Ø3,05(0,120) c'sunk 90°</p>
33	 <p>Ø3,05 (0,120)</p>	<p>Sizes 1 and 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>

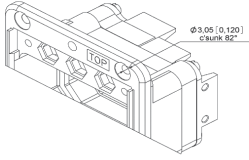
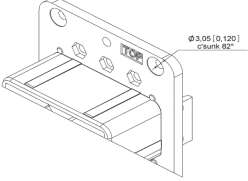
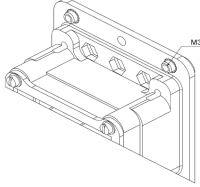
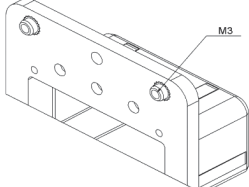
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CODE	RECEPTACLE SHELL		PLUG SHELL	
34		<p>Sizes 1 and 2: 4 Flush Rear Embedded Floating Eyelets Ø3,05 (0.120)</p> <p>Size 3: 6 Flush Rear Embedded Floating Eyelets Ø3,05 (0.120)</p> <p>Size 4: 10 Flush Rear Embedded Floating Eyelets Ø3,05 (0.120)</p>		<p>Sizes 1 and 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>
35		<p>Sizes 1 and 2: 4 Flush Front Embedded Floating Eyelets M2.5 Threaded</p> <p>Size 3: 6 Flush Rear Embedded Floating Eyelets M2.5 Threaded</p>		<p>Sizes 1 and 2: 4 Flush Rear Embedded Floating Eyelets M2.5 Threaded</p> <p>Size 3: 6 Flush Rear Embedded Floating Eyelets M2.5 Threaded</p>
36		<p>Sizes 1 and 2: 4 Flush Front Embedded Floating Eyelets M2.5 Threaded with Attaching Tabs for Radiall Backshell</p> <p>Size 3: 6 Flush Front Embedded Floating Eyelets M2.5 Threaded with Attaching Tabs for Radiall Backshell</p> <p>Not Available in Size 4</p>		<p>Sizes 1 and 2: 4 Flush Front Embedded Floating Eyelets M2.5 Threaded with Attaching Tabs for Radiall Backshell</p> <p>Size 3: 6 Flush Front Embedded Floating Eyelets M2.5 Threaded with Attaching Tabs for Radiall Backshell</p> <p>Not Available in Size 4</p>
55	-	-		Sizes 1, 2 and 3: Spring Loaded Shell 6 Places
60		Similar to Modification Code 00 except that the Shell, Keys and Keys Retention Plate are Nickel-Plated.		Similar to Modification Code 00 except that the Shell, Keys and Keys Retention Plate are Nickel-Plated.
61		Similar to Modification Code 22 except that the Shell, Keys and Keys Retention Plate are Nickel-Plated.  Not Available in Size 4		Similar to Modification Code 22 except that the Shell, Keys and Keys Retention Plate are Nickel-Plated.  Not Available in Size 4

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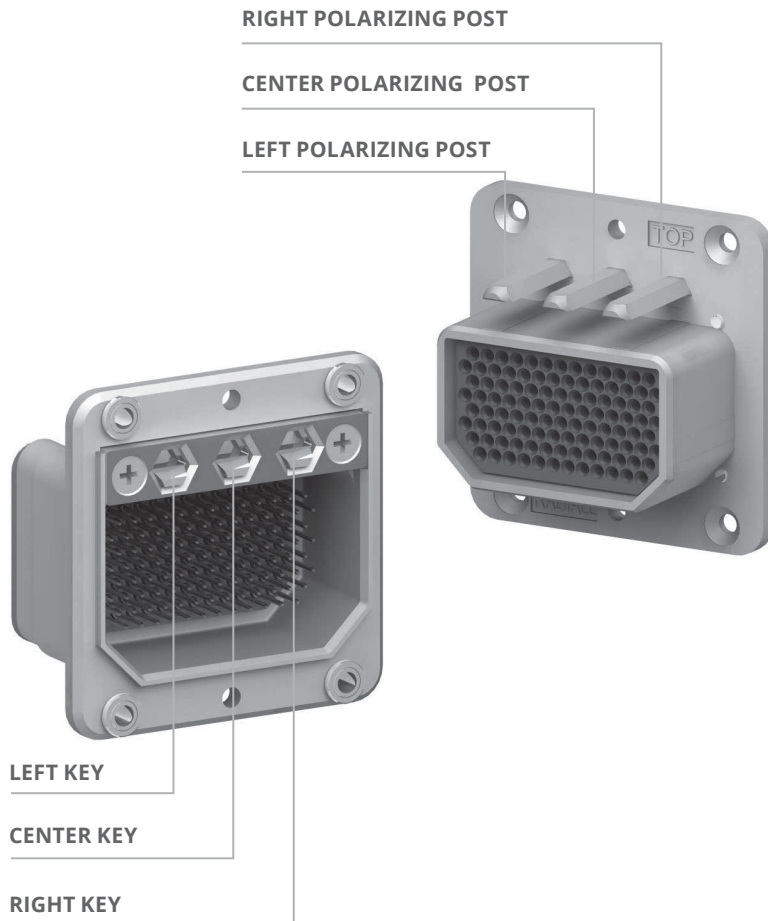
CODE	RECEPTACLE SHELL	PLUG SHELL
62	 <p>Similar to Modification Code 02 except that the Shell, Keys and Keys Retention Plate are Nickel-Plated.</p> <p>Not Available in Size 4</p>	 <p>Similar to Modification Code 02 except that the Shell, Keys and Keys Retention Plate are Nickel-Plated.</p> <p>Not Available 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 and 2: 4 Holes Ø3,05 (0.120) c'sunk 100° with Attaching Tabs for Radial Backshell</p> <p>Size 3: 6 Holes Ø3,05 (0.120) c'sunk 100° with Attaching Tabs for Radial Backshell Shells are Nickel-Plated.</p> <p>Not Available in Size 4</p>	 <p>Sizes 1 and 2: 4 Holes Ø3,05 (0.120) c'sunk 100° with Attaching Tabs for Radial Backshell</p> <p>Size 3: 6 Holes Ø3,05 (0.120) c'sunk 100° with Attaching Tabs for Radial Backshell. Shells are Nickel-Plated</p> <p>Not Available for Size 4</p>
73	 <p>Sizes 1 and 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 and 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>

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CODE	RECEPTACLE SHELL		PLUG SHELL	
77	 <p>Technical drawing of the Receptacle Shell for code 77. It shows a perspective view of a rectangular component with four circular holes on the top surface. A dimension line indicates a hole diameter of <math>\phi 3,05</math> (0.120) with a chamfered edge of <math>c'sunk 82^\circ</math>.</p>	<p>Sizes 1 and 2: 4 Holes <math>\phi 3,05</math> (0.120) c'sunk <math>82^\circ</math> with Attaching Tabs for Radiall Backshell</p> <p>Size 3: 6 Holes <math>\phi 3,05</math> (0.120) c'sunk <math>82^\circ</math> with Attaching Tabs for Radiall Backshell</p> <p>Not Available for Size 4</p>	 <p>Technical drawing of the Plug Shell for code 77. It shows a perspective view of a rectangular component with four circular holes on the top surface. A dimension line indicates a hole diameter of <math>\phi 3,05</math> (0.120) with a chamfered edge of <math>c'sunk 82^\circ</math>.</p>	<p>Sizes 1 and 2: 4 Holes <math>\phi 3,05</math> (0.120) c'sunk <math>82^\circ</math> with Attaching Tabs for Radiall Backshell</p> <p>Size 3: 6 Holes <math>\phi 3,05</math> (0.120) c'sunk <math>82^\circ</math> with Attaching Tabs for Radiall Backshell</p> <p>Not Available for Size 4</p>
79	 <p>Technical drawing of the Receptacle Shell for code 79. It shows a perspective view of a rectangular component with four circular holes on the top surface. A dimension line indicates a hole diameter of <math>\phi 3,05</math> (0.120) with a chamfered edge of <math>c'sunk 82^\circ</math>.</p>	<p>Sizes 1 and 2: 4 M3 Clinch Nuts</p> <p>Size 3: 6 M3 Clinch Nuts</p> <p>Size 4: 10 M3 Clinch Nuts</p>	 <p>Technical drawing of the Plug Shell for code 79. It shows a perspective view of a rectangular component with four circular holes on the top surface. A dimension line indicates a hole diameter of <math>\phi 3,05</math> (0.120) with a chamfered edge of <math>c'sunk 82^\circ</math>.</p>	<p>Sizes 1 and 2: 4 M3 Clinch Nuts</p> <p>Size 3: 6 M3 Clinch Nuts</p> <p>Size 4: 10 M3 Clinch Nuts</p>

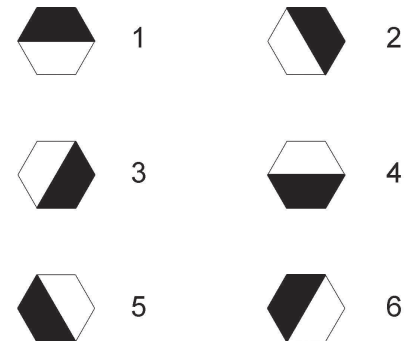
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### POLARIZATION CODE



### 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	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

### POLARIZATION CODE TABLE

POLARIZATION CODE	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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

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POLARIZATION CODE	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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
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

POLARIZATION CODE	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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



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POLARIZATION CODE	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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	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

POLARIZATION CODE	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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

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POLARIZATION CODE	RECEPTACLE SHELL			PLUG SHELL		
	LEFT KEY	CENTER KEY	RIGHT KEY	LEFT POST	CENTER POST	RIGHT POST
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

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

CONTACT SIZE	AWG	CROSS SECTION (MM <sup>2</sup> )	WIRE OUTSIDE DIA MM (INCH)	STRIPING LENGTH MM (INCH)	PIN	SOCKET	CRIMPING TOOL	POSITIONNER	SEL.	INS/EXT TOOL
22	22 24 26	0.38 0.21 0.14	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 3 3	282885 (M81969/ 1-01)
22 Reduced Crimp Barrel	28 30	0.093 0.055	1.2 (0.047)	3.5	616201	616301			5 4	
20 HD	20 22 24	0.60 0.38 0.21	1.8 (0.071)	4.0 (0.157)	616210 (M39029/ 11-145)	616310 (M39029/ 12-149)		282971 (M22520/ 2-08)	7 6 5	282886 (M81969/ 1-02)
20 HD Reduced Crimp Barrel	26 28 30	0.14 0.093 0.055	1.25 (0.049)	4.0 (0.157)	616211	616311			6 5 4	
16	16 18 20	1.34 0.93 0.60	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 5 4	282546 (M81969/ 1-03)
16 Reduced Crimp Barrel	20 22 24	0.60 0.38 0.21	1.80 (0.071)	6.0 (0.236)	616231	616331			5 4	
12	12 14 16	3.18 1.91 1.34	3.4 (0.134)	6.0 (0.236)	616240 (M39029/ 11-147)	616340 (M39029/ 11-151)		282579 (M22520/ 1-11)	8 7 6	282547 (M81969/ 28-02)
For Cavity 5	12 14	3.18 1.91	3.4 (0.134)	8.0 (0.315)	616261	616361	1 1		282946 (M81969/ 28-01)	
	10 8	5.0 9.0	5.7 (0.234)		616266	616366	282296 (DANIELS M300BT) <sup>[1]</sup>	282557		5 8

**THERMOCOUPLE CONTACTS SIZES 22 & 20 HD-MADE OF CHROMEL**

CONTACT SIZE	AWG	CROSS SECTION (MM <sup>2</sup> )	WIRE OUTSIDE DIA MM (INCH)	STRIPING LENGTH MM (INCH)	PIN	SOCKET	CRIMPING TOOL	POSITIONNER	SEL.	INS/EXT TOOL
22	22 24 26	0.38 0.21 0.14	1.4 (0.055)	3.5 (0.138)	620280	620380	282281 (M22520/ 2-01)	282970 (M22520/ 2-23)	4 3 3	282885 (M81969/ 1-01)
20 HD	20 22 24	0.60 0.38 0.21	1.8 (0.071)	4.0 (0.157)	620290	620390			282971 (M22520/ 2-08)	

**THERMOCOUPLE CONTACTS SIZES 22 & 20 HD-MADE OF ALUMEL**

CONTACT SIZE	AWG	CROSS SECTION (MM <sup>2</sup> )	WIRE OUTSIDE DIA MM (INCH)	STRIPING LENGTH MM (INCH)	PIN	SOCKET	CRIMPING TOOL	POSITIONNER	SEL.	INS/EXT TOOL
22	22 24 26	0.38 0.21 0.14	1.4 (0.055)	3.5 (0.138)	620281	620381	282281 (M22520/ 2-01)	282970 (M22520/ 2-23)	4 3 3	282885 (M81969/ 1-01)
20 HD	20 22 24	0.60 0.38 0.21	1.8 (0.071)	4.0 (0.157)	620291	620391			282971 (M22520/ 2-08)	

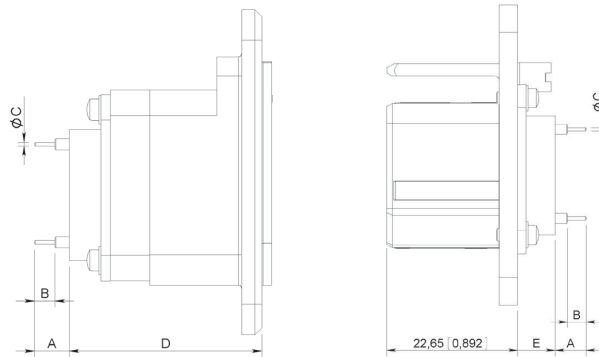
**Notes**

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.

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SIZES 22 & 20 HD-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)			
	36C7 for Pin Contacts	616206 [1]	616306 [1]		5.9/6.7 (0.232/0.263)	3.8 (0.149)		-	7.85/7.44 (0.293/0.309)
			-		0.82/0.10 (0.032/0.004)				
	36C7 for Socket Contacts	-	616306		4/3.3 (0.157/0.130)	9.4 (0.370)		-	-
			616303		11.72/11 (0.461/0.433)				
20 HD	40-45-57-32C2-32C4-40C1	616216 [1]	-	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 [1]		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)				



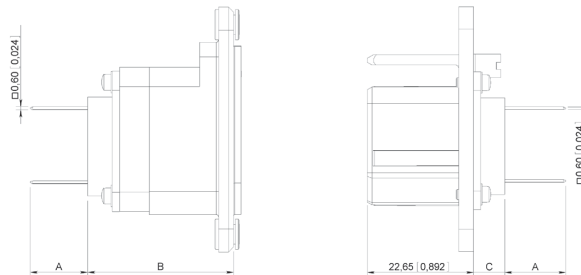
Notes

1. Connectors delivered in the "Y" termination style will be fitted with contacts marked by "[1]" (see above table). If another style of pc tail contact is desired, use termination style "x" when ordering the connector and order contacts separately.

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**SIZES 22 & 20 HD-WIRE WRAP CONTACTS**

CONTACT SIZE	AWG	CONTACT ARRANGEMENT	PIN	SOCKET	EXT. TOOL	DIMENSIONS MM (INCH)		
						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)	282527	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 <sup>(1)</sup>	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			282293 (M22520/5- 01)	282246 (M22520/5-05)	A
		RG 213 KX 4	-	616102001	282291 (M22520/1-01)	282997 (M22520/1-13)	8		282247 (M22520/5-61)	A
		RG 214 RG 225	-	616103001	Solder Contact				282246 (M22520/5-05)	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 (Vrms)	1,000	1,500	2,500

**Notes**

1. For other cable, please contact Radiall.

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## COAXIAL CRIMP CONTACTS SIZE 3

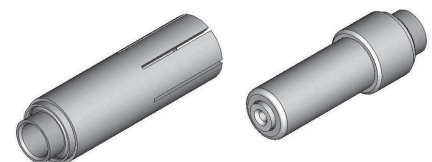
CONTACT SIZE	CONTACT ARRANGEMENT	CABLE <sup>(1)</sup>	PIN	SOCKET	CENTER CONTACT			OUTER BODY				
					CRIMPING TOOL	POSITIONER	SEL.	CRIMPING TOOL	DIE	HEX		
3	MC3	RG 142 RG 223	616013	-	Solder			282293 (M22520/5-01)	282246 (M22520/5-05)	A		
			-	616113	282291 (M22520/1-01)	282997 (M22520/5-05)	7					
		RG 316	616015 Right Angle <sup>(1)</sup>	-	Solder					B		
		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 7-29). Coaxial cavities without any contact can be fitted with sealing plugs when used in DSX E connectors.

CONTACT SIZE	CONTACT ARRANGEMENT	CABLE <sup>(1)</sup>	PIN <sup>[3&amp;4]</sup>	SOCKET <sup>[3&amp;4]</sup>	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			
		RG 179 RG 187	-	616022002		282550 DANIELS K345	B			
		RG 196 RG 178 KX 21	616123	616023		282974				6
		RG 195 RG 180	616124	616024		282974				7
		RG 316 DS	616163	616026						
		UT .085	616125	-		Solder				
		UT .141	616128	616028		Solder				



## Notes

- For other cable, please contact Radiall
- Dielectric withstanding voltage at sea level: 1,500 Vrms. Except 1,000 Vrms for 616015
- Dielectric withstanding voltage at sea level: 750 Vrms
- Extraction tool: 282946 (M81969/28-01)

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### COAXIAL CRIMP CONTACTS SIZE 7

CONTACT SIZE	CONTACT ARRANGEMENT	CABLE <sup>(1)</sup>	PIN <sub>[2 &amp; 3]</sub>	SOCKET <sub>[2 &amp; 3]</sub>	CENTER CONTACT			OUTER BODY		
					CRIMPING TOOL	POSITIONER	SEL.	CRIMPING TOOL	DIE	HEX
7	MC3	RG 58 RG 141 KX 15	610120	-	Solder			282293 (M22520/5-01)	282246 (M22520/5-05)	A
		RG 174 RG 316 KX 22 RG 188	610126	-						B
		RG 58 KX 15	-	616030	282281 (M22520/2-01)	282550 (DANIELS K345)	6			A
		RG 141	-	616030			8			A
		RG 142 RG 223 KX 23	-	616031			8			A
		RG 174 RG 316 KX 22	-	616032			7			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.

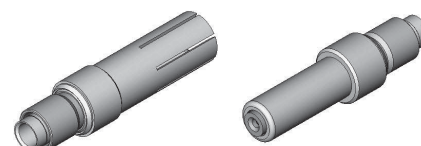
CONTACT SIZE	CONTACT ARRANGEMENT	CABLE <sup>(1)</sup>	PIN <sub>[2 &amp; 3]</sub>	SOCKET <sub>[2 &amp; 3]</sub>	CENTER CONTACT			OUTER BODY		
					CRIMPING TOOL	POSITIONER	SEL.	CRIMPING TOOL	DIE	HEX
9	C8 T8 32C4 32T4	RG 58 KX 15	616140	616040	282281 (M22520/2-01)	282974	6	282293 (M22520/5-01)	282246 (M22520/5-05)	A
		RG 141	-	-			8			
		RG 142 RG 223 KX 23	616141	616041			8			B
		RG 174 RG 179 RG 188 RG 316 KX 22	616142	616042			7			
		RG 178 RG196 KX 21	616143	616043			6			
		RG 180 RG 195	616144	616044			6			

### COAXIAL CRIMP CONTACTS SIZE 15

CONTACT SIZE	CONTACT ARRANGEMENT	CABLE <sup>(1)</sup>	PIN <sub>[2 &amp; 3]</sub>	SOCKET <sub>[2 &amp; 3]</sub>	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 Vrms
3. Extraction tool: 282946 (M81969/28-01)
4. Dielectric withstanding voltage at sea level: 350 Vrms



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**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**

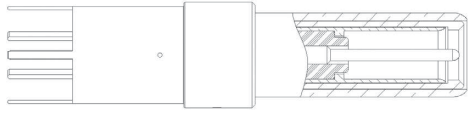

CONTACT SIZE	CONTACT ARRANGEMENT	CABLE	PIN	SOCKET
The Following Contacts have to be Installed in the Non-Environmental Inserts				
9	C8 T8 32C4 32T4	RGX 179	616196001	616096001
The Following Contacts have to be Installed in the Environmental Inserts				
9	32C4 32T4	RGX 179	/	616096002


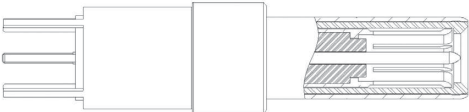


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### TRIAx CONTACTS WITH PC TAIL SIZE 5

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 and 40T1 = 3.2/4.0 (0.125/0.158)
	616195008		36C7 and 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 and T8 = 1.30/2.15 (0.051/0.085)  32C4 and 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	

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**FIBER OPTIC CONTACTS & 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 (MM)	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 7-42.

	PART NUMBER	DESCRIPTION
	616925001	Pin Adapter for #5 Cavity
	616925002	Socket Adapter for #5 Cavity

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**SEALING PLUGS & FILLER PLUGS**

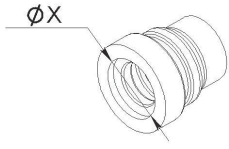
Filler plugs are used in non-environmental connectors and sealing plugs are used in environmental connectors and conform to MS27488

CONTACT SIZE	SEALING PLUGS	FILLER PLUGS
Size 22	616910	620920
Size 20 HD	616911	610941
Size 16	616912	620922
Size 12	616913	616923
Size 5	See Notes	620924, 616923 <sup>[1]</sup> or 616917 <sup>[2]</sup> for Pin Contact Cavity 620925 for Socket Contact Cavity
Size 9	See Notes	616915 <sup>[2]</sup>

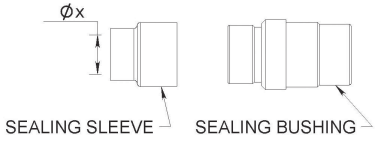
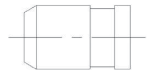
**SEALING BOOTS**

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 <sup>[3]</sup>		

**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**

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

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**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.

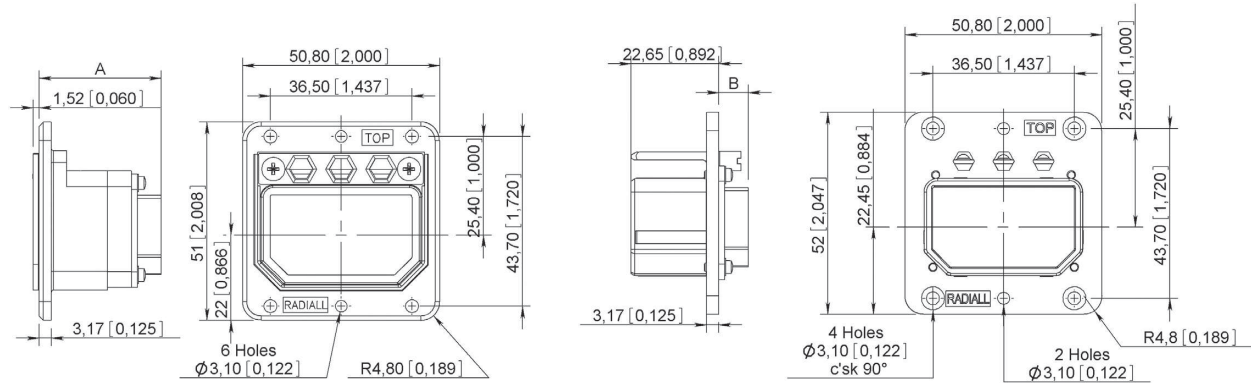
Backshells do not ensure EMI functions and cannot be installed on size 4 connectors as there is limited access to screws.

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	

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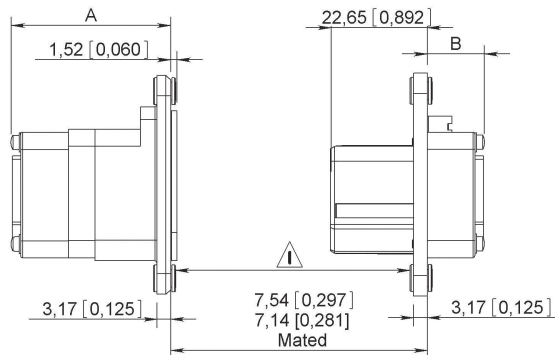
## DIMENSIONS

### 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)

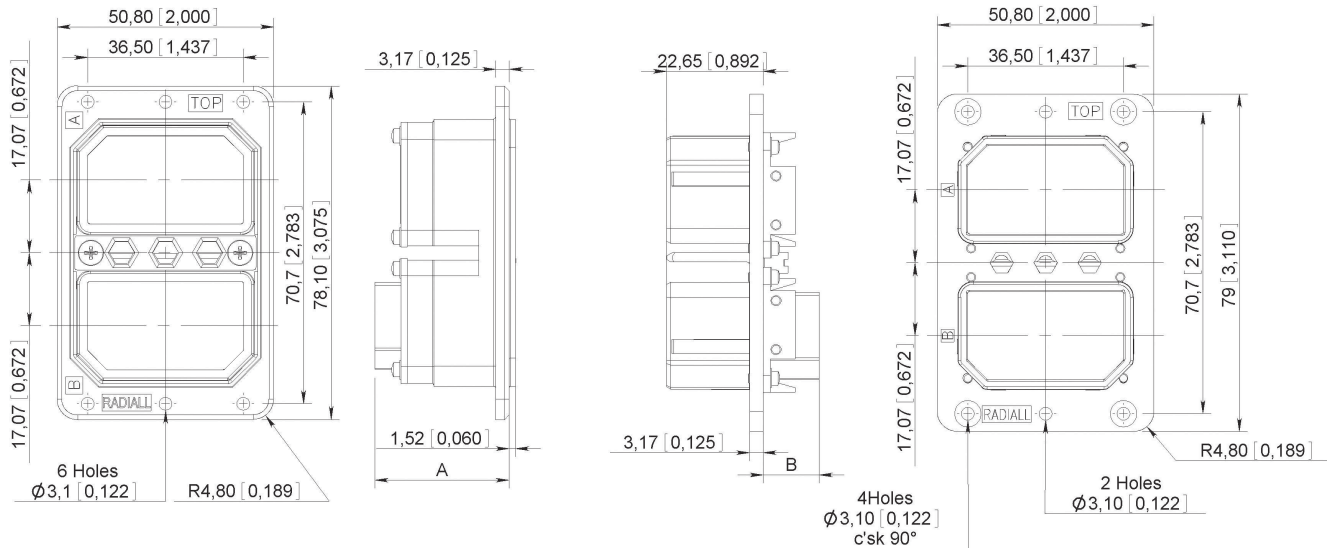


MAX DIMENSION MM (INCH)	ALL CRIMP CONTACT ARRANGEMENTS EXCEPT MC2-MC3-106	CONTACT ARRANGEMENT 106	CONTACT ARRANGEMENT 36C7 & 36T7
A	38.5 (1.516)	33.5 (1.319)	39.05 (1.537)
B	14.2 (0.559)	9.5 (0.374)	18.55 (0.730)

**⚠ Important Note:** Only 4 mm of space is available on the modification code selection.

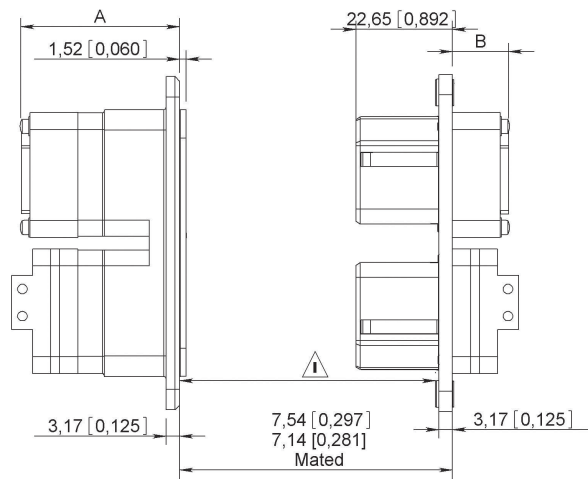
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**SHELL SIZE 2 NON-ENVIRONMENTAL (WITHOUT GROMMET SEAL)**



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)**

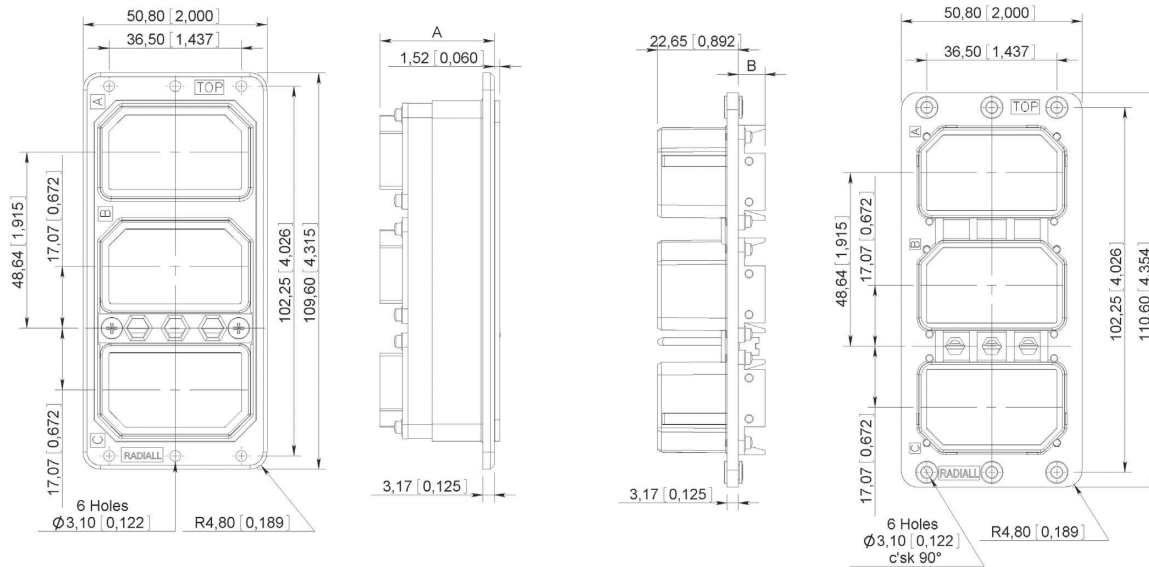


MAX DIMENSION MM (INCH)	ALL CRIMP CONTACT ARRANGEMENTS EXCEPT MC2-MC3-106	CONTACT ARRANGEMENT 106	CONTACT ARRANGEMENT 36C7 & 36T7
A	38.5 (1.516)	33.5 (1.319)	39.05 (1.537)
B	14.2 (0.559)	9.5 (0.374)	18.55 (0.730)

**⚠ Important Note:** Only 4 mm of space is available on the modification code selection.

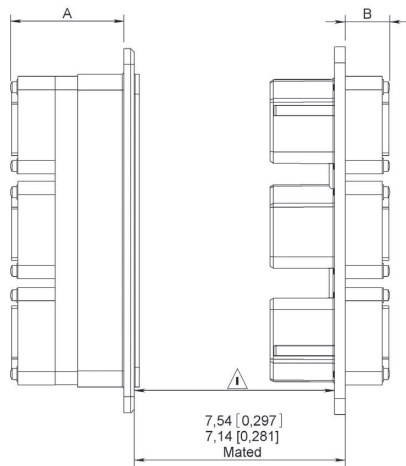
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**SHELL SIZE 3 NON-ENVIRONMENTAL (WITHOUT GROMMET SEAL)**



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)**

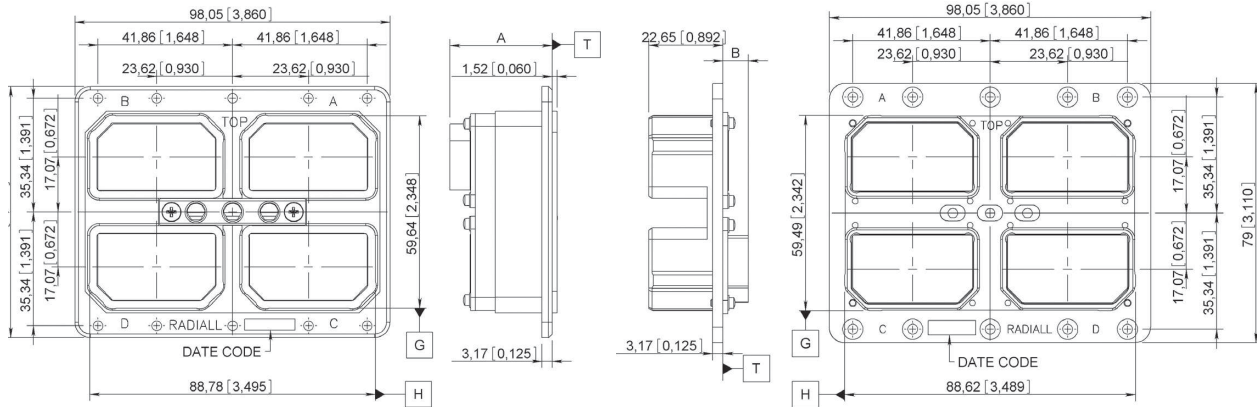


MAX DIMENSION MM (INCH)	ALL CRIMP CONTACT ARRANGEMENTS EXCEPT MC2-MC3-106	CONTACT ARRANGEMENT 106	CONTACT ARRANGEMENT 36C7 & 36T7
A	38.5 (1.516)	33.5 (1.319)	39.05 (1.537)
B	14.2 (0.559)	9.5 (0.374)	18.55 (0.730)

⚠ Important Note: Only 4 mm of space is available on the modification code selection.

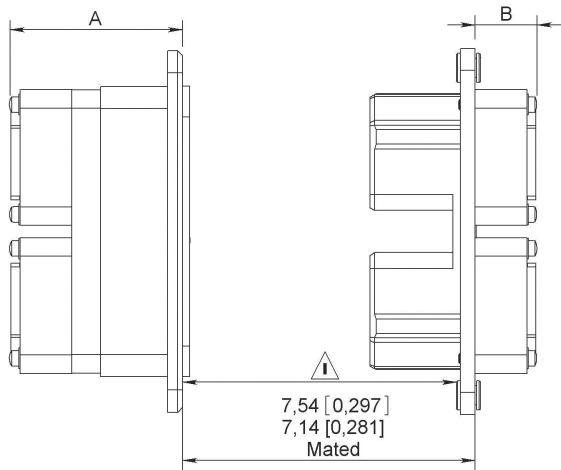
DSX-SAE AS81659

**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 (0.730)

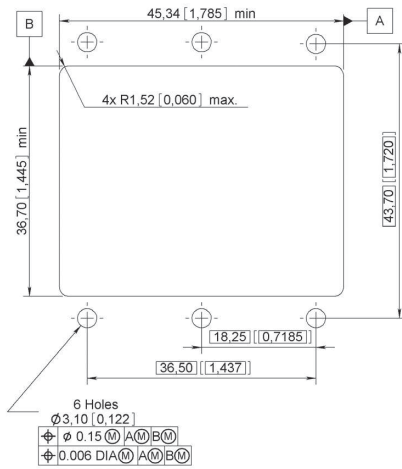
⚠ Important Note: Only 4 mm of space is available on the modification code selection.



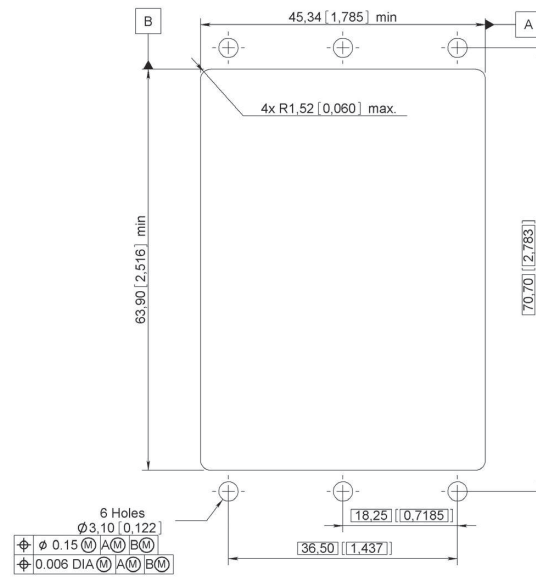
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## PANEL CUT-OUTS

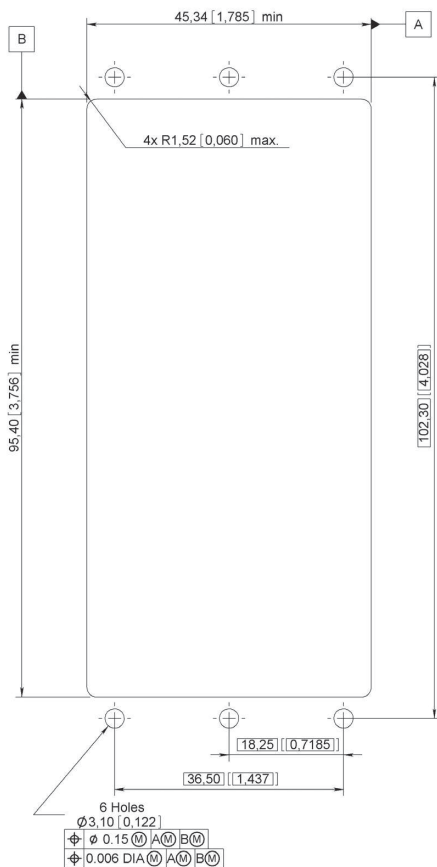
### SHELL SIZE 1



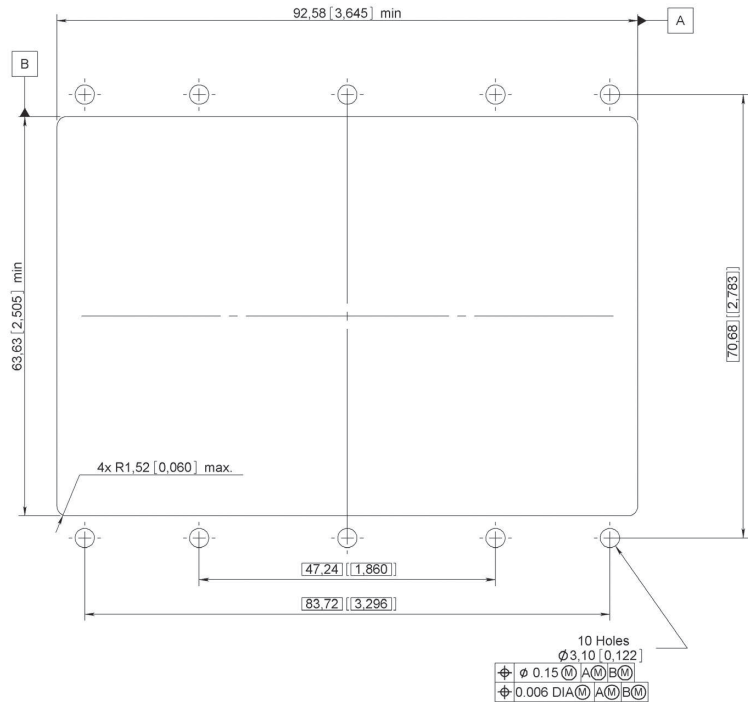
### SHELL SIZE 2



### SHELL SIZE 3



### SHELL SIZE 4



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## CROSS REFERENCE FROM RADIALL 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
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RADIALL PART NUMBER	MIL PART NUMBER
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RADIALL PART NUMBER	MIL PART NUMBER
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RADIALL PART NUMBER	MIL PART NUMBER
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DSXN1RS33C4P00**	M8165966A20103
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DSXN2PS26SS26S73	M8165969A20004
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DSXN2PS32C4SXC8S73	M8165969A20160

RADIALL PART NUMBER	MIL PART NUMBER
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RADIALL PART NUMBER	MIL PART NUMBER
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DSXN2RS32C4PXC8P23	M8165972A20159
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DSXN2RS33C4PXC8P01	M8165971A20107
DSXN2RS33C4PXC8P23	M8165972A20107
DSXN2RS40C1PS40C1P00	M8165970A20131
DSXN2RS40C1PS40C1P01	M8165971A20131
DSXN2RS40C1PS40C1P23	M8165972A20131
DSXN2RS40PS40P00	M8165970A20011
DSXN2RS40PS40P01	M8165971A20011
DSXN2RS40PS40P23	M8165972A20011
DSXN2RS45PS45P00	M8165970A20019
DSXN2RS45PS45P01	M8165971A20019
DSXN2RS45PS45P23	M8165972A20019
DSXN2RS57PS106S00	M8165970A20133
DSXN2RS57PS106S01	M8165971A20133
DSXN2RS57PS106S23	M8165972A20133
DSXN2RS57PS26P00	M8165970A20147
DSXN2RS57PS26P01	M8165971A20147
DSXN2RS57PS26P23	M8165972A20147
DSXN2RS57PS57P00	M8165970A20027
DSXN2RS57PS57P01	M8165971A20027
DSXN2RS57PS57P23	M8165972A20027
DSXN2RS67PS106S00	M8165970A20071
DSXN2RS67PS106S01	M8165971A20071
DSXN2RS67PS106S23	M8165972A20071
DSXN2RS67PS67P00	M8165970A20035
DSXN2RS67PS67P01	M8165971A20035
DSXN2RS67PS67P23	M8165972A20035

RADIALL PART NUMBER	MIL PART NUMBER
DSXN2RXC8PS106S00	M8165970A20117
DSXN2RXC8PS106S01	M8165971A20117
DSXN2RXC8PS106S23	M8165972A20117
DSXN2RXC8PS32C4P00	M8165970A2-0155
DSXN2RXC8PS32C4P01	M8165971A20155
DSXN2RXC8PS32C4P23	M8165972A20155
DSXN2RXC8PS57P00	M8165970A20145
DSXN2RXC8PS57P01	M8165971A20145
DSXN2RXC8PS57P23	M8165972A20145
DSXN2RXMC2PS40C1P01	M8165971A20109
DSXN2RXMC2PS40C1P23	M8165972A20109
DSXN2RXMC2PS57P00	M8165970A20111
DSXN2RXMC2PS57P01	M8165971A20111
DSXN2RXMC2PS57P23	M8165972A20111
DSXN2RXMC2S40C1P00	M8165970A20109
DSXN2RXMC3PS106S00	M8165970A20115
DSXN2RXMC3PS106S01	M8165971A20115
DSXN2RXMC3PS106S23	M8165972A20115
DSXN2RXMC3PS67P00	M8165970A20113
DSXN2RXMC3PS67P01	M8165971A20113
DSXN2RXMC3PS67P23	M8165972A20113
DSXT1RS106S00	M8165961A20042
DSXT1RS26P00	M8165961A20001
DSXT1RS32C2P00	M8165961A20139
DSXT1RS32C4P00	M8165961A20149
DSXT1RS33C4P00	M8165961A20103
DSXT1RS40C1P00	M8165961A20141
DSXT1RS40P00	M8165961A20009
DSXT1RS45P00	M8165961A20017
DSXT1RS57P00	M8165961A20025
DSXT1RS67P00	M8165961A20033
DSXT1RSD8P00	M8165961A20083
DSXT1RXC8P00	M8165961A20135
DSXT2RS106SS106S00	M8165962A20044
DSXT2RS106SS26P00	M8165962A20057
DSXT2RS106SS67P00	M8165962A20089
DSXT2RS106SXC8P00	M8165962A20087
DSXT2RS26PS106S00	M8165962A20059
DSXT2RS26PS26P00	M8165962A20003
DSXT2RS32C2PS106S00	M8165962A20129
DSXT2RS32C2PS40C1P00	M8165962A20121
DSXT2RS32C2PS45P00	M8165962A20123
DSXT2RS32C2PS57P00	M8165962A20125

DSX-SAE AS81659

RADIALL PART NUMBER	MIL PART NUMBER
DSXT2RS32C2PS67P00	M8165962A20127
DSXT2RS32C4PS106S00	M8165962A20151
DSXT2RS32C4PXC8P00	M8165962A20159
DSXT2RS33C4PS106S	M8165962A20105
DSXT2RS33C4PXC8P00	M8165962A20107
DSXT2RS40C1PS40C1P00	M8165962A20131
DSXT2RS40PS40P00	M8165962A20011
DSXT2RS45PS45P00	M8165962A20019
DSXT2RS57PS106S00	M8165962A20133
DSXT2RS57PS26P00	M8165962A20147
DSXT2RS57PS57P00	M8165962A20027
DSXT2RS67PS106S00	M8165962A20071
DSXT2RS67PS67P00	M8165962A20035
DSXT3RS106SS106SS67P00	M8165963A20091
DSXT3RS26PS26PS26P00	M8165963A20005
DSXT3RS40PS40PS40P00	M8165963A20013
DSXT3RS45PS45PS45P00	M8165963A20021
DSXT3RS57PS57PS57P00	M8165963A20029

RADIALL PART NUMBER	MIL PART NUMBER
DSXT3RS67PS106SS67P00	M8165963A20079
DSXT3RS67PS67PS106S00	M8165963A20075
DSXT3RS67PS67PS67P00	M8165963A20037
DSXT3RS67PS67PXC8P00	M8165963A20073
DSXT3RXC8PXC8PS106S00	M8165963A20067
DSXT3RXC8PXC8PXC8P00	M8165963A20065
DSXT4RS106SS106SS106SS106S00	M8165964A20048
DSXT4RS106SS106SS67PS67P00	M8165964A20101
DSXT4RS106SS67PS106SSC8P00	M8165964A20097
DSXT4RS106SS67PSC8PSC8P00	M8165964A20099
DSXT4RS106SSC8PS106SS106S00	M8165964A20095
DSXT4RS26PS26PS26PS26P00	M8165964A20007
DSXT4RS40PS40PS40PS40P00	M8165964A20015
DSXT4RS45PS45PS45PS45P00	M8165964A20023
DSXT4RS57PS57PS57PS57P00	M8165964A20031
DSXT4RS67PS67PS33C4PS33C4P00	M8165964A20081
DSXT4RSC8PSC8PS67PS67P00	M8165964A20085



DSX-F

## HOW TO ORDER DSX-F CONNECTORS

# DSX

### SERIES PREFIX \_\_\_\_\_

### CLASS \_\_\_\_\_

**F:** Front release front removable contacts, inserts without interfacial seal

**K:** Front release front removable contacts, inserts with interfacial seal

### SHELL SIZE \_\_\_\_\_

**1:** One gang shell

**2:** Two gang shell

**3:** Three gang shell

**4:** Four gang shell

### SHELL TYPE \_\_\_\_\_

**R:** Receptacle

**A:** Plug

### TERMINATION STYLE <sup>[5]</sup> \_\_\_\_\_

**X:** Without contacts

**V:** Wire wrap two levels

**W:** Wire wrap three levels

**Y:** PC tail contact

### CONTACT ARRANGEMENT <sup>[1, 2 & 5]</sup> \_\_\_\_\_

To be chosen among the following: <sup>[4]</sup>

26-40-45-57-67-33C4-106-81C3

### CONTACT TYPE \_\_\_\_\_

**S:** Socket

**P:** Pin

### GANG B \_\_\_\_\_

### GANG C \_\_\_\_\_

### GANG D \_\_\_\_\_

### MODIFICATION CODE \_\_\_\_\_

See pages 7-11 to 7-16 for selection.

### POLARIZATION CODE <sup>[3]</sup> \_\_\_\_\_

See pages 7-17 to 7-20 for selection.

*For technical characteristics please see page 7-5.*

### Notes

1. For mixed contact arrangements, order coax contacts separately see contacts available on pages 7-24 to 7-26. 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.

5. Gang A

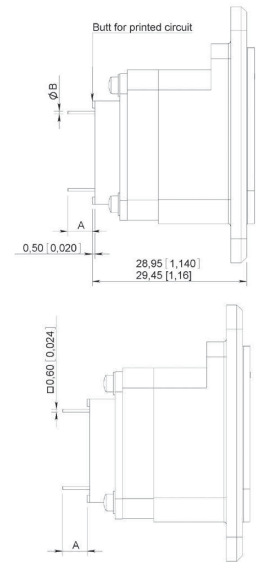
DSX-F

## CONTACTS

### CONTACTS WITH PC TAIL SIZES 22, 20 HD & 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 <sup>(1)</sup>	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 90.283/0.2520	282549009

### CONTACTS WITH WIRE WRAP POST SIZES 22 & 20 HD

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)
20 HD	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 7-28.

#### Notes

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



## HOW TO ORDER DSX-DATA BUS CONNECTORS

DSX

SERIES PREFIX \_\_\_\_\_

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
- A:** Plug

GANG A BUS CONTRACT ARRANGEMENT <sup>[1]</sup> \_\_\_\_\_

GANG B CONTRACT ARRANGEMENT \_\_\_\_\_

MODIFICATION CODE \_\_\_\_\_

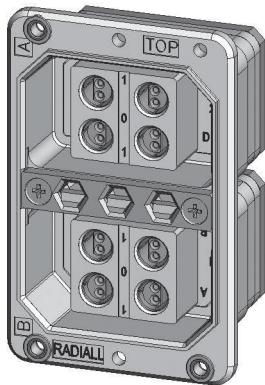
See pages 7-11 to 7-16 for selection.

POLARIZATION CODE \_\_\_\_\_

See pages 7-17 to 7-20 for selection.

*For technical characteristics please see pages 7-5.*

*For any additional information ask for the RP2667 DSX Data Bus from Radiall.*



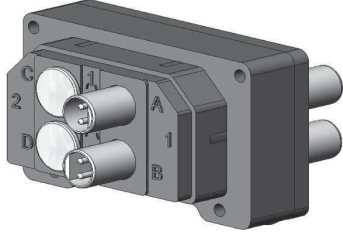
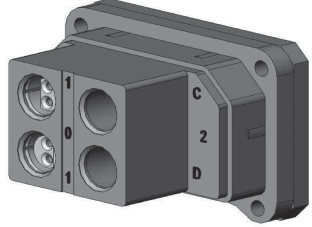
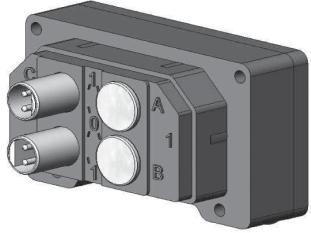
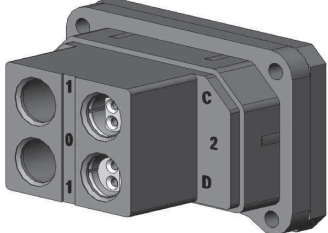
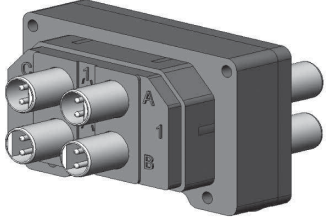
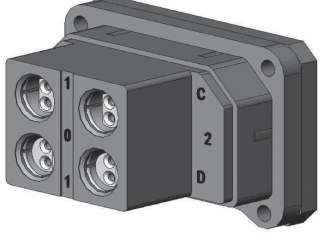
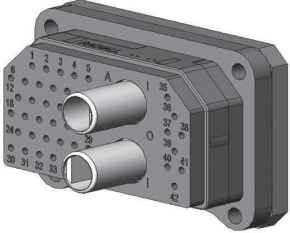
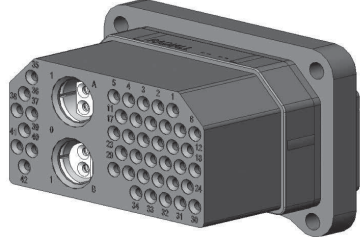
### Notes

1. Data bus contact arrangements have no interfacial seal and no rear grommet.

DSX-DATA Bus

### 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 × Twinax Location A, B</p>	B2S1	 <p>2 × Twinax Location A, B</p>
B2TP2-H2TP2	 <p>2 × Twinax Location C, D</p>	B2S2	 <p>2 × Twinax Location C, D</p>
B4TP-H4TP	 <p>4 × Twinax Location A, B, C, D</p>	B4S	 <p>4 × Twinax Location A, B, C, D</p>
S42B2P	 <p>2 × Twinax 42 × #20 HD Location A, B</p>	S42B2S	 <p>2 × Twinax 42 × #20 HD Location A, B</p>

## 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 =  $75 \pm 5\Omega$

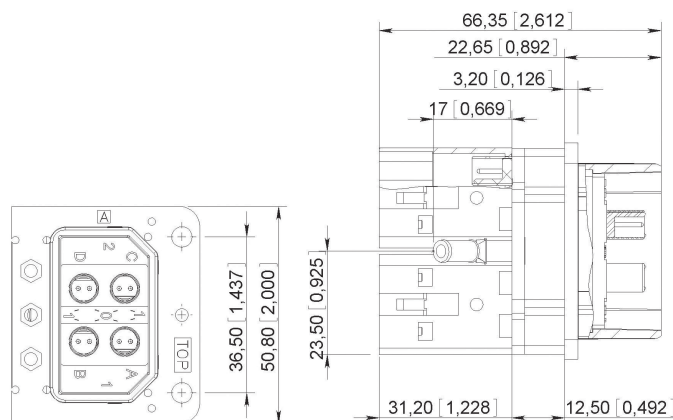
Shielded twisted pair (each conductor = AWG 20) Outer diameter = 5.35 mm (0.206 inch max)

For Fileca F2709/9 cable the designation used are H2TP1, H2TP2, H4TP.

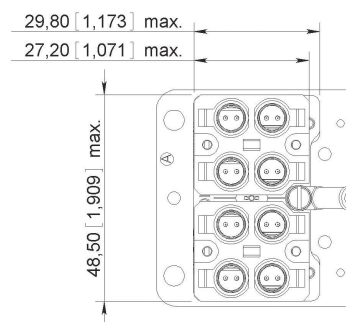
Description: differential impedance =  $75 \pm 5\Omega$

Shielded twisted pair (each conductor = AWG 22) Outer diameter = 4.80 mm (0.189 inch max)

#### MATING FACE

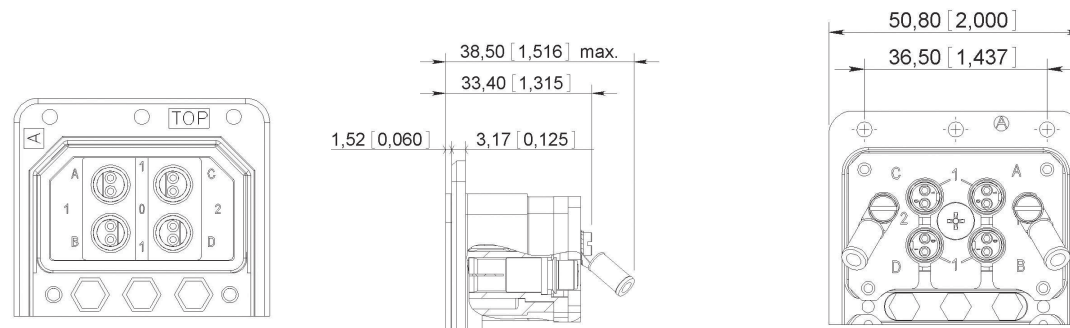


#### WIRING REAR FACE



### B2TP, H2TP, B4TP & H4TP EQUIPMENT CONNECTOR

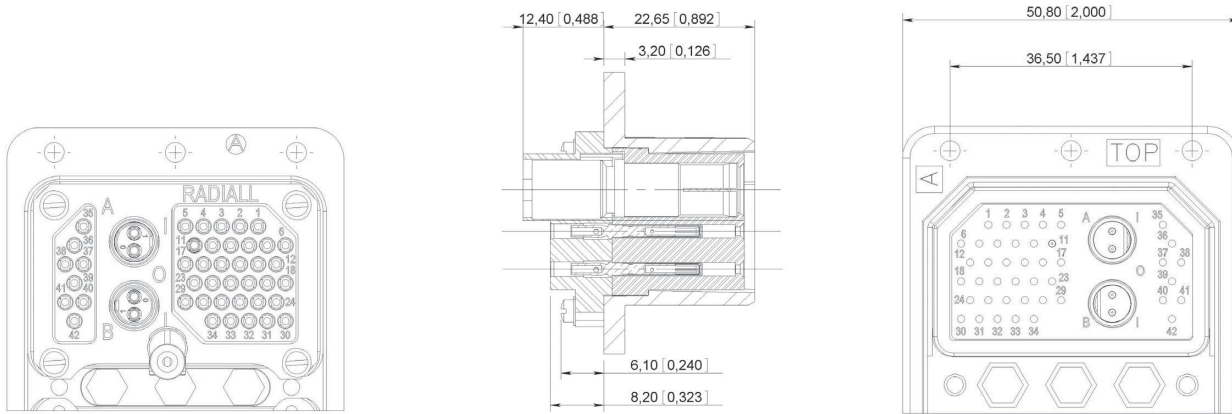
The equipment connector is comprised of one receptacle shell fitted with an insert incorporating 2 (B2S) or 4 (B4S) twinax socket contacts.



DSX-DATA Bus

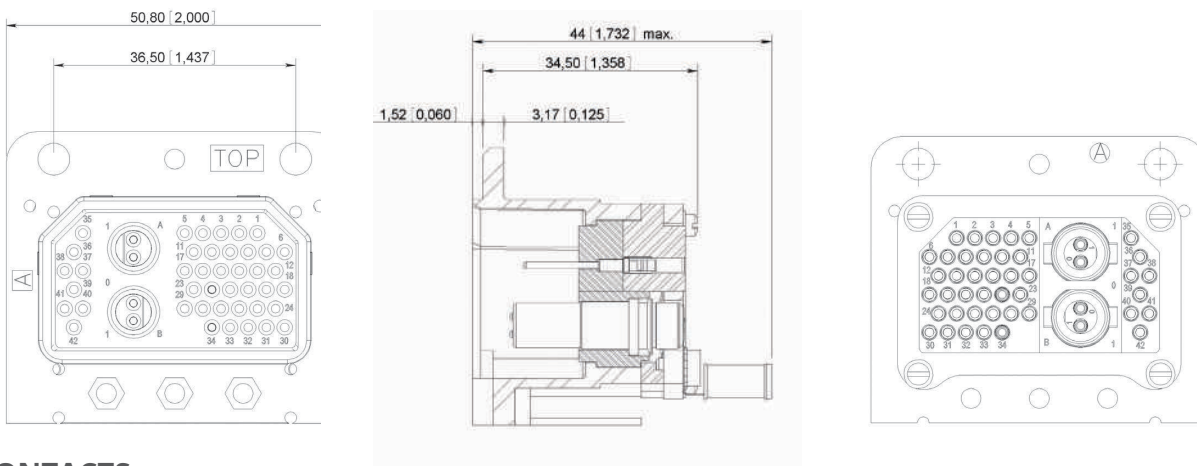
**S42B2P AIRCRAFT CONNECTOR**

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	N/A	
42B2P	AWG 20 AWG 22 AWG 24	616192	-			7 6 5		

DSX-ARINC 404 Shell Type B

## HOW TO ORDER ARINC 404 SHELL TYPE B CONNECTORS

DSX

**SERIES PREFIX** \_\_\_\_\_

**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 7-49 and 7-50.

**TERMINATION STYLE** <sup>[2 & 3]</sup> \_\_\_\_\_

**X:** Without contacts  
**S:** Crimp <sup>[1]</sup>  
**Z:** Fixed solder cup  
**K:** Wire wrap one level <sup>[5]</sup>  
**V:** Wire wrap two levels <sup>[5]</sup>  
**W:** Wire wrap three levels <sup>[5]</sup>  
**Y:** PC tail contact <sup>[5]</sup>

**GANG B** \_\_\_\_\_

**GANG C** \_\_\_\_\_

**GANG D** \_\_\_\_\_

**MODIFICATION CODE** \_\_\_\_\_  
 See pages 7-11 to 7-16 for selection.

**POLARIZATION CODE** <sup>[4]</sup> \_\_\_\_\_  
 See pages 7-17 to 7-20 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 polarizing 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 <sup>[1]</sup>
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 <sup>[1]</sup>
Polarizing Posts	Stainless Steel	-
Polarizing Keys	Zinc Alloy	Cadmium Yellow Chromate <sup>[1]</sup>
Polarizing Keys Retention Plate	Aluminium Alloy	Yellow Anodised <sup>[1]</sup>
Screws, Washers, Clinch-Nuts	Corrosion Resistant Steel	-

### ELECTRICAL CHARACTERISTICS

They are the same as those described for SAE AS81659 connectors on page 7-5.

### MECHANICAL & 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.

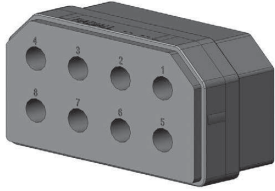
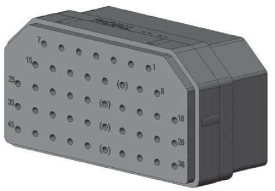
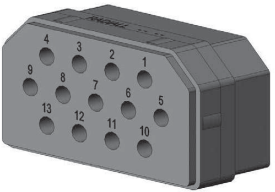
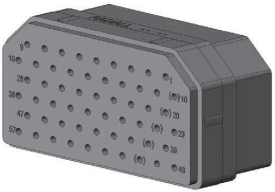
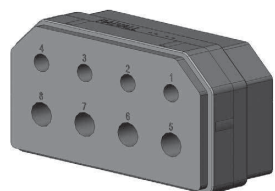
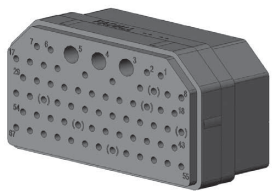
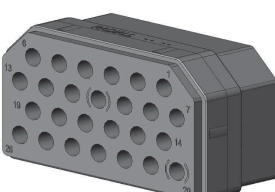
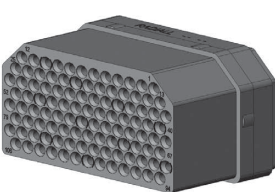
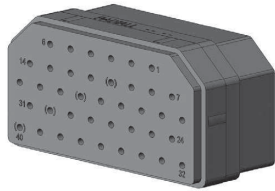
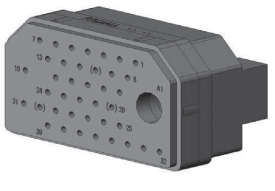
#### Notes

1. More platings are available, see descriptions in modification codes

DSX-ARINC 404 Shell Type B

**CONTACT ARRANGEMENTS**

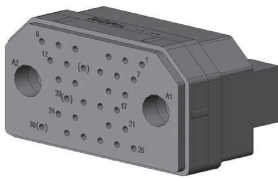
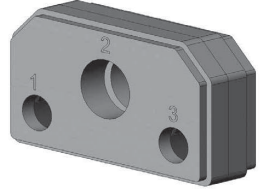
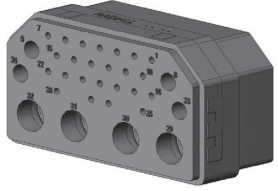
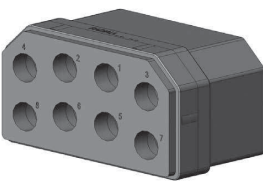
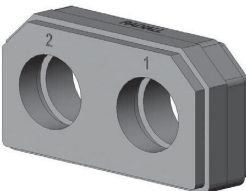
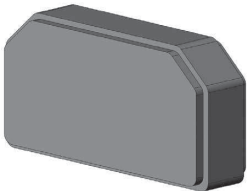
Pin insert mating side is shown below in the table.

INSERT NAME	NUMBER OF CONTACTS	DWV	TERMINATION AVAILABILITY	INSERT NAME	NUMBER OF CONTACTS	DWV <sup>(1)</sup>	TERMINATION AVAILABILITY
8	 8 × #12	1,500 V-60 Hz	S-Z	45	 45 × #20	1,500 V-60 Hz	For Pin S-Z-Y-K-V-W For Socket S-Z-W
13	 13 × #16	1,800 V-60 Hz	S-Z For Pin	57	 57 × #20	1,500 V-60 Hz	For Pin S-Z-Y-K-V-W For Socket S-Z-W
D8	 4 × #16 4 × #12	1,500 V-60 Hz	S-Z	67	 64 × #20 HD 3 × #16	1,000 V-60 Hz	For Pin S-Z-Y-K-V-W For Socket S-Z-W
26	 26 × #16	1,500 V-60 Hz	For Pin S-Z-K For Socket S-Z	106	 106 × #22	1,000 V-60 Hz	S-Y-V-W
40	 40 × #20	1,500 V-60 Hz	For Pin S-Z-Y-K-V-W For Socket S-Z-W	40C1	 1 × #5 (Coax) 39 × #20	1,500 V-60 Hz	For Pin S-Z-Y-K-V-W For Socket S-Z-W

**Notes**

1. Dielectric withstanding voltage

DSX-ARINC 404 Shell Type B

INSERT NAME	NUMBER OF CONTACTS	DWV	TERMINATION AVAILABILITY	INSERT NAME	NUMBER OF CONTACTS	DWV	TERMINATION AVAILABILITY
32C2	 <p>2 × #5 (Coax) 30 × #20</p>	1,500 V-60 Hz 1,000 V for Coax Cavity	For Pin S-Z-Y-K-V-W For Socket S-Z-W	C3	 <p>2 × #7 (Coax) 1 × #3</p>	Metallic	S
32C4	 <p>4 × #9 (Coax) 4 × #16 24 × #20</p>	1,500 V-60 Hz 1,000 V for Coax Cavity	For Pin S-Z-Y-K-V-W For Socket S-Z-W	C8	 <p>8 × #9 (Coax)</p>	1,000 V-60 Hz	S
C2	 <p>2 × #1 (Coax)</p>	Metallic	S	00		-	Dummy Insert



DSX-ARINC 404 Shell Type B

## CONTACTS

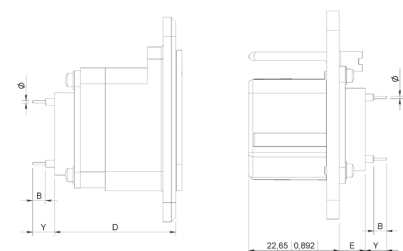
### SIGNAL AND POWER CRIMP CONTACTS SIZES 22, 20 HD, 16 & 12

CONTACT SIZE	WIRE				PIN RADIALL P/N MIL P/N	SOCKET RADIALL P/N MIL P/N	CRIMPING TOOL	POSITIONER	SEL.	INS/EXT TOOL
	AWG	CROSS SECTION (MM)	WIRE OUTSIDE DIA. (INCH)	STRIPING LENGTH MM (INCH)						
22	22	0.38	1.4 (0.055)	3.05 (0.138)	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							3	
26	0.14	3								
22 Reduced Crimp Barrel	28	0.093	1.4 (0.055)	3.05 (0.138)	616201	616301		5		
30	0.055	4								
20 HD	20	0.60	1.8 (0.071)	4.0 (0.157)	616210 (MIL 39029/11-145)	616310 (MIL 39029/12-149)		7	282886 (M81969/1-02)	
	22	0.38						6		
24	0.21	5								
20 HD Reduced Crimp Barrel	26	0.14	1.8 (0.071)	4.0 (0.157)	616211	616311		6		
	28	0.093						5		
30	0.055	4								
20	20	0.60	1.8 (0.071)	4.0 (0.157)	610220	610325	282971 (M22520/1-01)	4		282943
	22	0.38						3		
24	0.21	3								
20 Reduced Crimp Barrel	26	0.14	1.8 (0.071)	4.0 (0.157)	610221	610321		3		
	28	0.093						3		
30	0.055	2								
16	16	1.34	2.6 (0.102)	6.0 (0.236)	616230 (MIL 39029/11-146)	616330 (MIL 39029/12-150)		6	282546 (M81969/1-03)	
	18	0.93						5		
20	0.60	4								
16 Reduced Crimp Barrel	20	0.60	2.6 (0.102)	6.0 (0.236)	616231	616331		5		
	22	0.38					5			
24	0.21	4								
12	12	3.18	3.4 (0.134)	6.0 (0.236)	616240 (MIL 39029/11-174)	616340 (MIL 39029/12-151)	282972 (M22520/1-02)	8		282547 (M81969/28-02)
	14	1.91						7		
16	1.34	6								

### 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 <sup>[1]</sup>	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)				
		-	616306 <sup>[1]</sup>		5.9/6.7 (0.232/0.263)	3.8 (0.149)			
20HD	67	610216 <sup>[1]</sup>	/	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)		0.75 (0.029)	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 <sup>[1]</sup>	/	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)



#### Notes

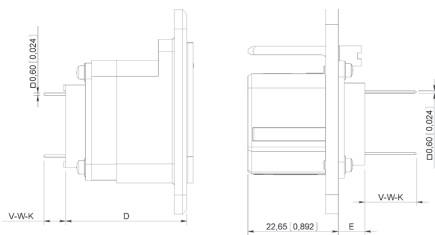
1. Connectors delivered in the "Y" termination style will be fitted with contacts marked by "[1]". If you want to use another kind of PC tail contact use termination "X" when ordering the connector and order contacts separately.

DSX-ARINC 404 Shell Type B

**CONTACTS WITH WIRE WRAP POST SIZES 22, 20 HD & 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.

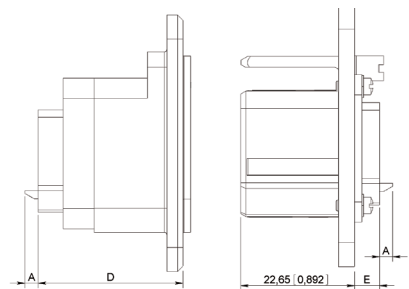
CONTACT SIZE	AWG	CONTACT ARRANGEMENT	PIN	SOCKET	EXTRACTION TOOL	DIMENSIONS MM (INCH)				
						D	E	K (1 WRAP)	V (2 WRAP)	W (3 WRAP)
22	26 28 30	106	610203 (2 Wrap Levels)	610303 (2 Wrap Levels)	282948	25.25/25.75 (0.0994/1.013)	1.55/1.75 (0.061/0.069)	-	10/11 (0.394/0.433)	12.50/13.50 (0.492/0.531)
			610204 (3 Wrap Levels)	610304 (3 Wrap Levels)						
20 HD	26 28 30	67	610217 (1 Wrap Level)	-		29.70/30.30 (1.169/1.192)	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)
			610215 (2 Wrap Levels)							
		32C4	610214 (3 Wrap Levels)							
20	26 28 30	40-45-57 32C2-40C1	610228 (1 Wrap Level)	-		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)
			610225 (2 Wrap Levels)							
			610224 (3 Wrap Levels)							



**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
20 HD	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)	
				29.20/29.80 (1.149/1.173)	
16	26-67	5 (0.197)	4.5 (0.177)	29.70/30.30 (1.169/1.192)	
	32C4			28.55/29.15 (1.124/1.147)	
12	8-D8				



DSX-ARINC 404 Shell Type B

**THERMOCOUPLE CONTACT SIZES 22 & 20HD**

Refer to page 7-22.

**FIBER OPTIC TERMINI SIZES 16 & 12**

Refer to page 7-23.

**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				-	282247 (M22520/5-61)	A
		SMA	616009	-	SMA Termination					

**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					

Dielectric Withstanding Voltage at Sea Level: 1,500 Vrms

**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					

Extraction Tool: 282946 (M81969/28-01)

**Notes**

For other cables, please consult Radiall.

DSX-ARINC 404 Shell Type B

**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						

Extraction Tool: 282946 (M81969/28-01)

Dielectric Withstanding Voltage at Sea Level: 750 Vrms

**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					

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

**Notes**

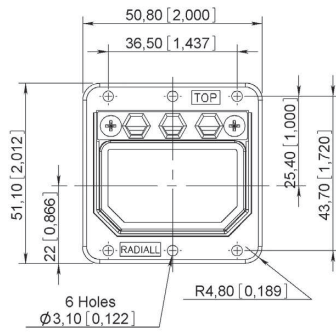
For other cables, please consult Radiall.

For dust caps and backshells, please refer to page 7-29 and 7-30.

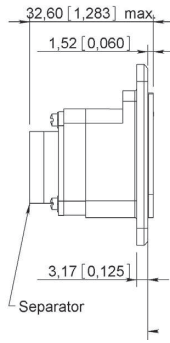
DSX-ARINC 404 Shell Type B

**DIMENSIONS**

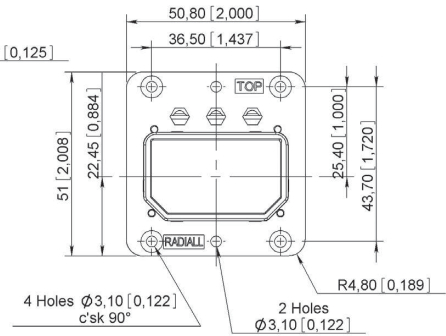
**SHELL SIZE 1**



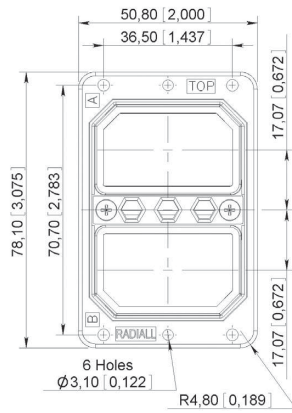
**RECEPTACLE**



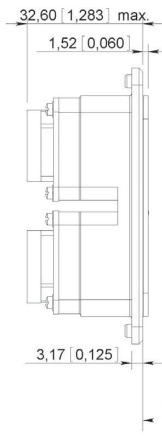
**PLUG**



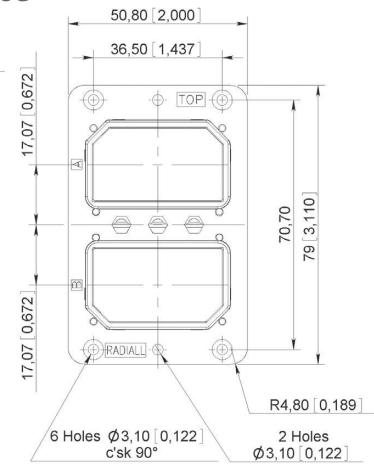
**SHELL SIZE 2**



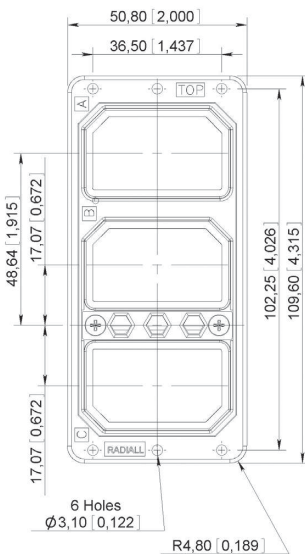
**RECEPTACLE**



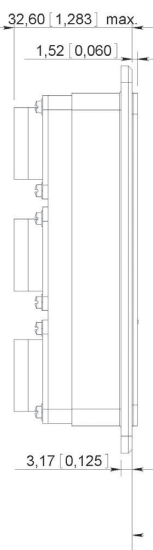
**PLUG**



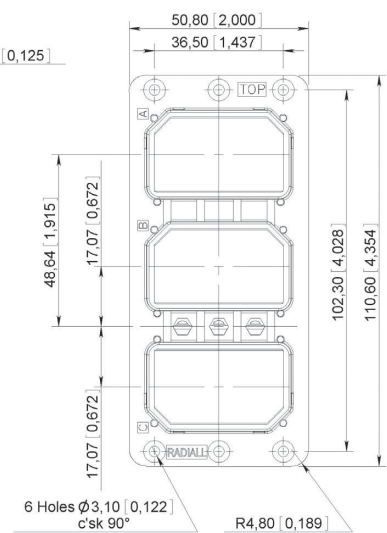
**SHELL SIZE 3**



**RECEPTACLE**



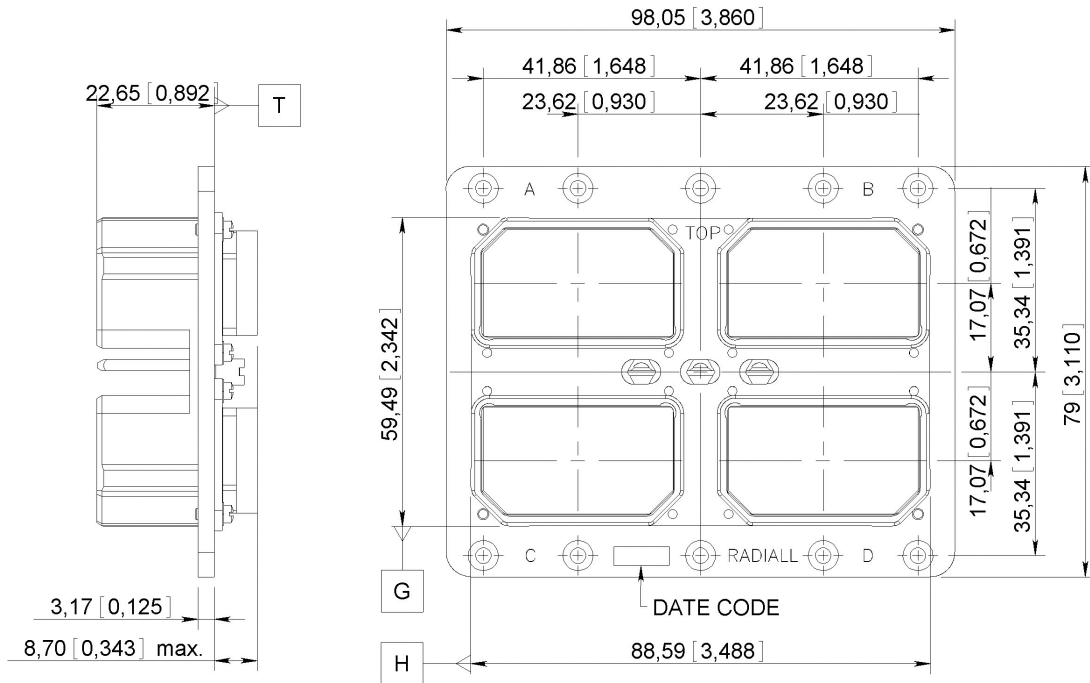
**PLUG**



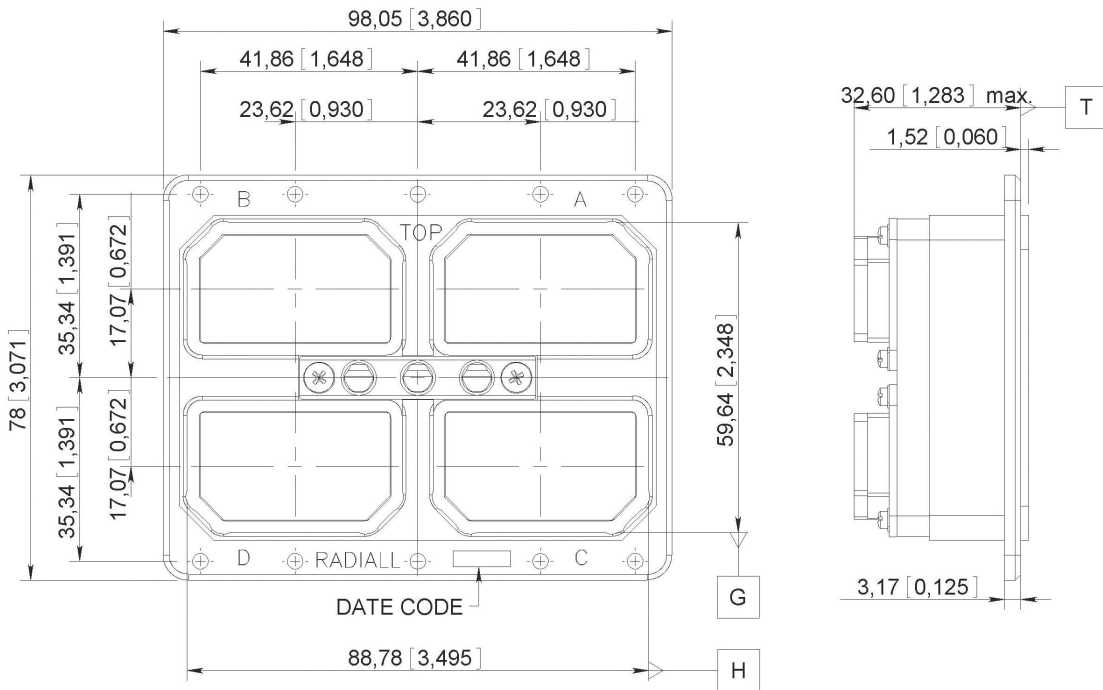
DSX-ARINC 404 Shell Type B

SHELL SIZE 4

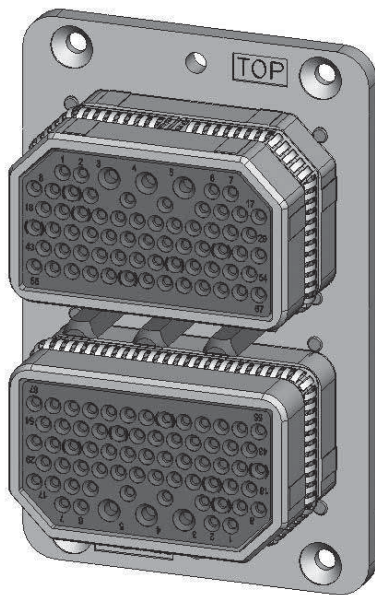
PLUG



RECEPTACLE



## 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:** 2.5 mΩ max. Measured according to method 3007 of MIL-STD-1344A.
- **Shielding Effectiveness:** >70 dB at 4 GHz. Measured according to method 3008 of MIL-STD-1344A.

## MATERIALS

DESCRIPTION	MATERIAL	PLATING
Grounding Spring Fingers	Copper Alloy	Nickel

DSX-ARINC 404 Shell Type A

## TECHNICAL CHARACTERISTICS

### ELECTRICAL, MECHANICAL & ENVIRONMENTAL CHARACTERISTICS

Refer to SAE AS81659 standards page 7-5

#### 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	-



DSX-ARINC 404 Shell Type A

## HOW TO ORDER-ARINC 404 SHELL TYPE A CONNECTORS

DSX

**SERIES PREFIX** \_\_\_\_\_

**ONE SIZE** \_\_\_\_\_

**1:** One gang shell

**SHELL TYPE** \_\_\_\_\_

**E:** Receptacle

**F:** Plug

**CONTACT ARRANGEMENT** \_\_\_\_\_

See table below and page 7-49.

**TERMINATION STYLE** <sup>[2 & 3]</sup> \_\_\_\_\_

**X:** Without contacts

**S:** Crimp <sup>[1]</sup>

**Z:** Fixed solder cup

**K:** Wire wrap one level <sup>[4]</sup>

**V:** Wire wrap two levels <sup>[4]</sup>

**W:** Wire wrap three levels <sup>[4]</sup>

**Y:** PC tail contact <sup>[4]</sup>

**MODIFICATION CODE** \_\_\_\_\_

See page 7-60.

### 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.

DSX-ARINC 404 Shell Type A

**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

DSX-ARINC 404 Shell Type A

**CONTACT ARRANGEMENTS**

They are the same inserts as those used in Arinc 404 shell type B connectors (see page 7-49).

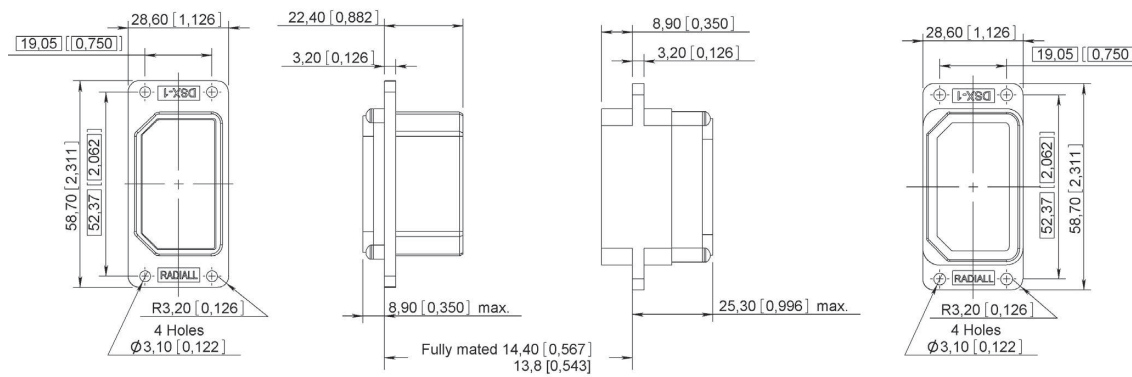
**CONTACTS**

The contacts used are those shown on page 7-51 to 7-54.

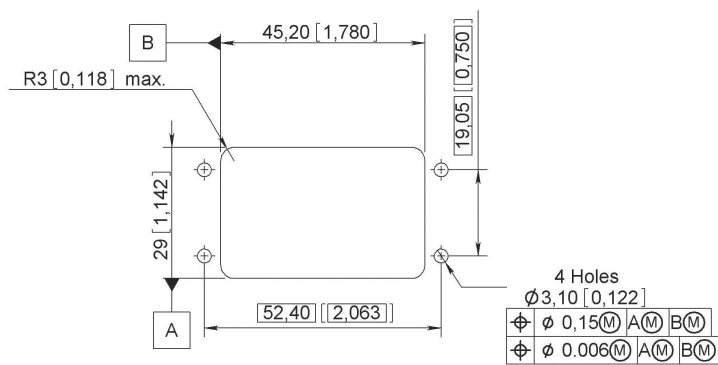
**ACCESSORIES**

Refer to page 7-54

**DIMENSIONS**



**PANEL CUT-OUT**

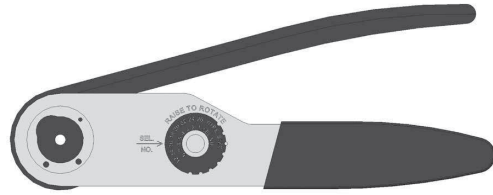


DSX-ARINC 404 Shell Type A

**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	-



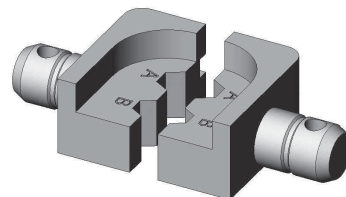
**INSERTION/EXTRACTION TOOLS**

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





## MMC SERIES

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## Introduction

### 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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© Courtesy of US Army

### 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.



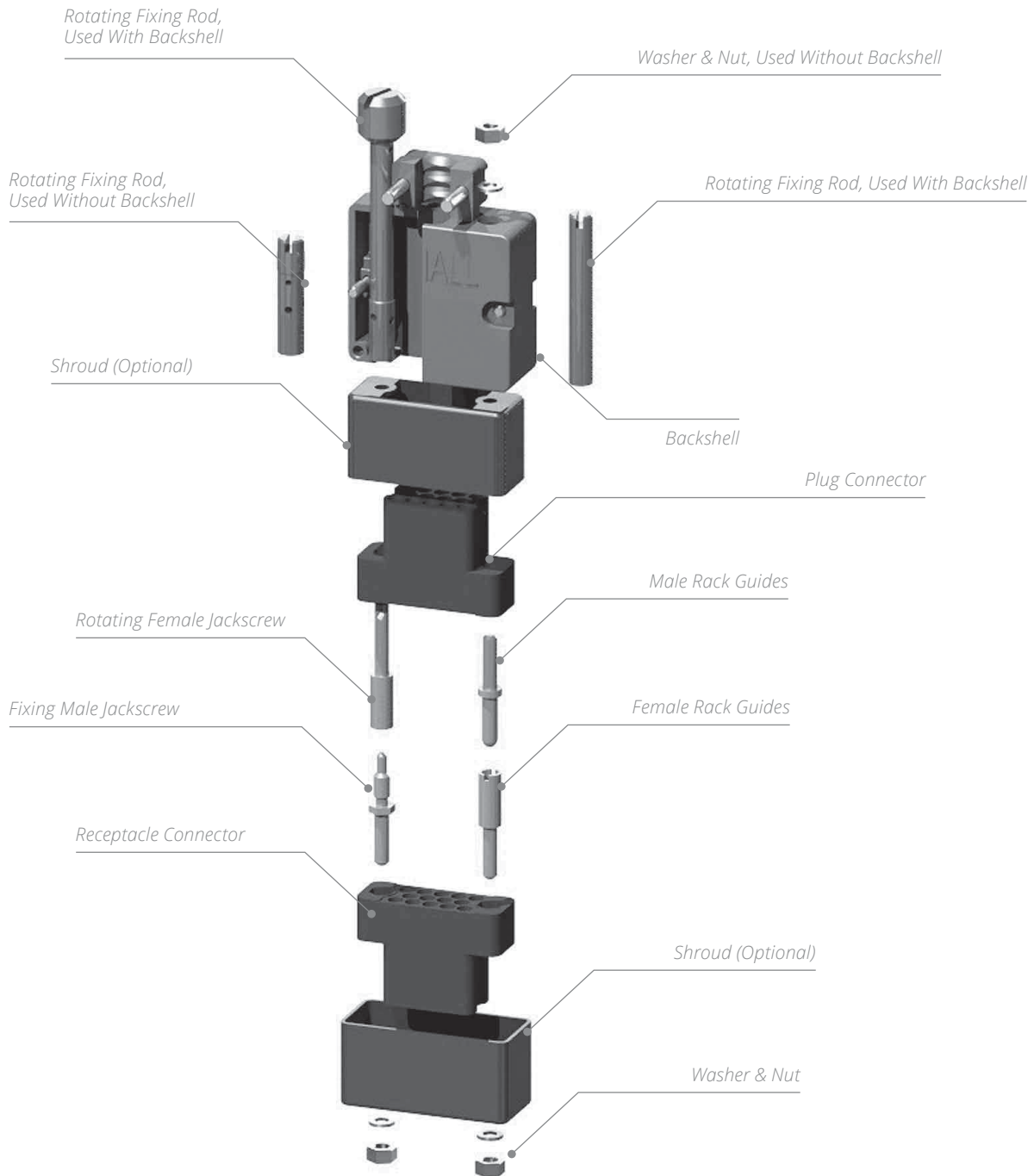
Introduction

**PRODUCT OVERVIEW**

Detailed view of the various parts of this series connector.

**JACKSCREWS**

**RACK GUIDES**



## Introduction

## ELECTRICAL CHARACTERISTICS

### EQUIPMENT WIRE CONTACTS

WIRE SECTION	AWG	16	18	20	22	24	26	28
	MM2	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 1,000 MHz
- Dielectric Withstanding Voltage: 600 Vrms at 50 Hz (At Sea Level)
- Insulation Resistance: ≥ 5,000 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: > 5,000 MΩ
- Dielectric Withstanding Voltage: 1,500 Vrms at 50 Hz (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 2,000 Hz
- Shock: 50 g (1.76 oz)
- Temperature Range: -55 °C at +125 °C (-131 °F to 257 °F)
- Humidity: 21 days
- Salt Spray: 48H

Introduction

**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
14	7 (0.246)	Plug Connector
20	8 (0.282)	
26	11 (0.388)	
34	19 (0.670)	
42	22 (0.776)	
690501	7 (0.246)	Receptacle Connector
690511	8 (0.282)	
690521	11 (0.388)	
690531	19 (0.670)	
690541	22 (0.776)	
690962	2 (0.070)	Rack Guide
690952		
690963	8 (0.282)	
690953		
690965	6 (0.211)	Short Jackscrew
690955		
690966	15 (0.529)	Long Jackscrew
690949	18 (0.634)	
690956	16 (0.564)	
690939	18 (0.634)	

REFERENCES	MASSES G (OZ)	TYPE
690940	15 (0.529)	Shroud Male
690941	16 (0.564)	
690942	18 (0.634)	
690943	22 (0.776)	
690930	14 (0.493)	Shroud Female
690931	15 (0.529)	
690932	17 (0.599)	
690933	25 (0.881)	
690905	57 (2.010)	Backshell Top Entry
690908	65 (2.292)	
690911	77 (2.716)	
690914	101 (3.562)	
690917	125 (4.409)	Backshell Side Entry
20521500	39 (1.375)	
(14) 690848001	14 (0.493)	Strain Relief Top Entry
(20) 690848002	16 (0.564)	
(26) 690848003	18 (0.634)	
(50) 690848006	28 (0.987)	
(75) 690848007	40 (1.410)	

Introduction

### 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:

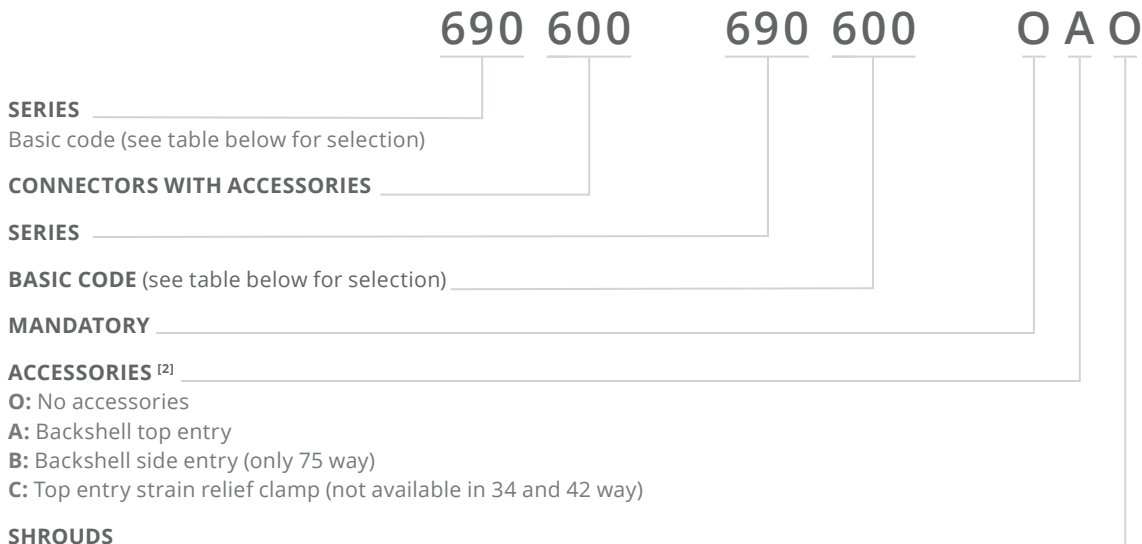
- The engraved letters "P" and "R" on the mating faces
- The contact identification and position of the cavities is a mirror image of the mating half.

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)



<b>IN</b>	1	3	5	7
<b>CODE</b>	B	C	D	E

<b>IN</b>	1	3	5	7
<b>CODE</b>	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

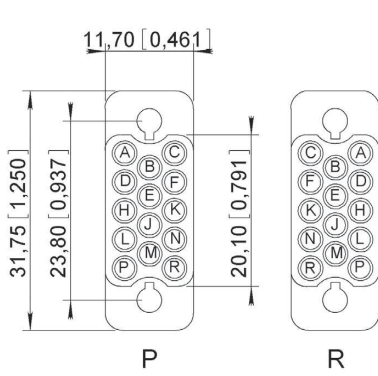
**Notes**

1. Not available in 42 way
2. Not available in 14 way

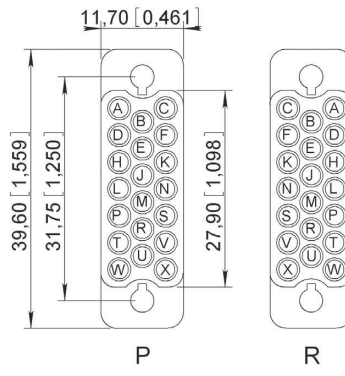
When connector has a shroud with polarizing, polarization starts from the cavity A or 1 side of the connector (refer to page 8-28)

Contacts

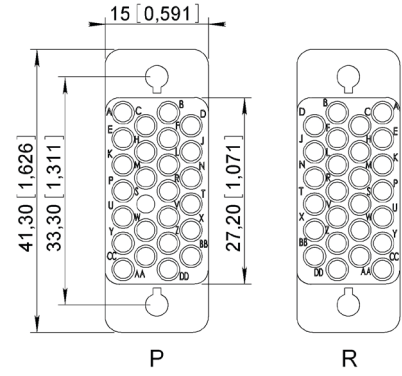
**CONTACT ARRANGEMENTS**  
VIEW WIRING SIDE MM (INCH)



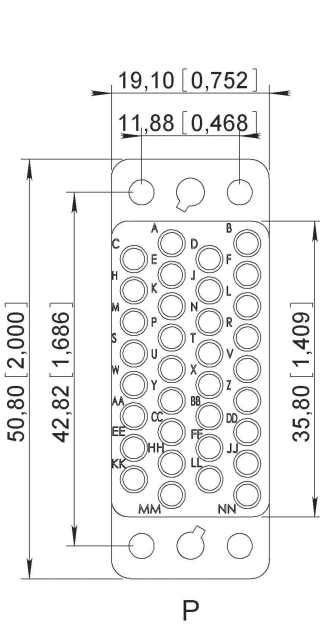
14 CONTACTS



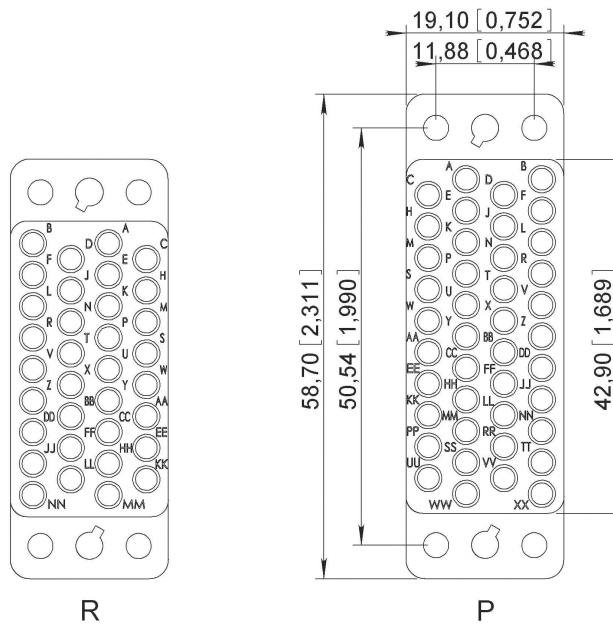
20 CONTACTS



26 CONTACTS



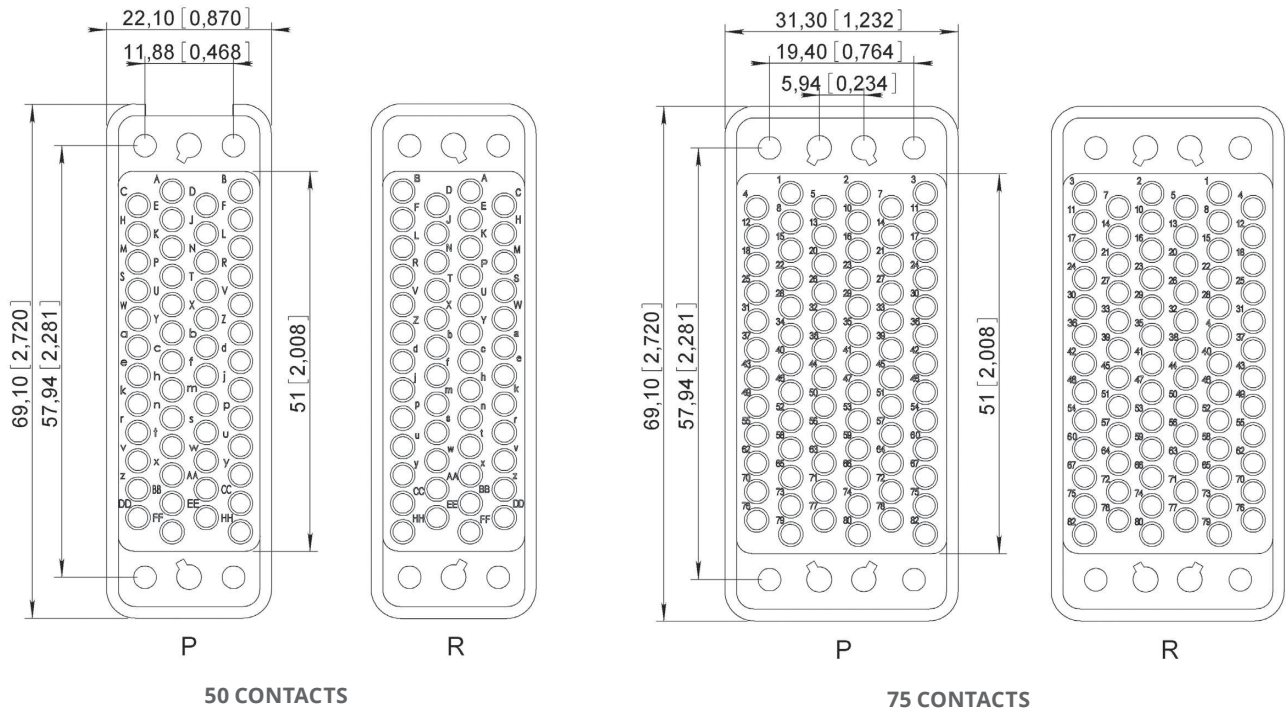
34 CONTACTS



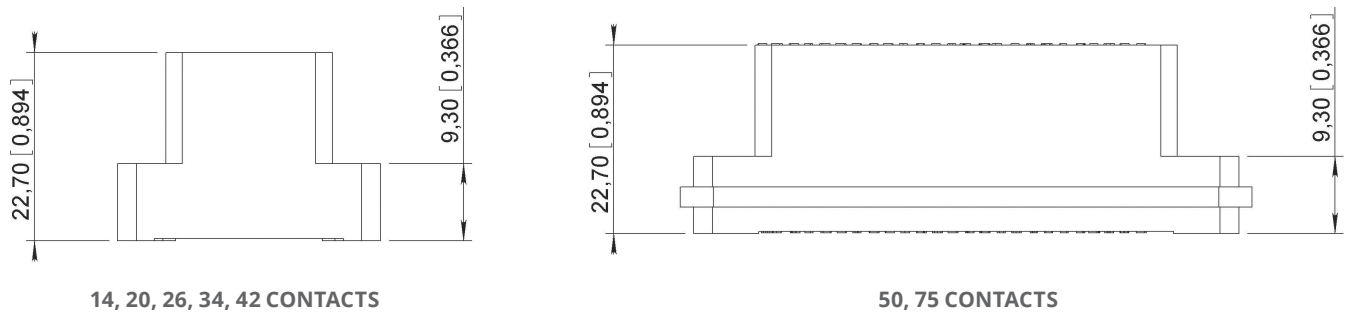
42 CONTACTS

Contacts

**CONTACT ARRANGEMENTS**  
VIEW WIRING BLOCK MM (INCH)

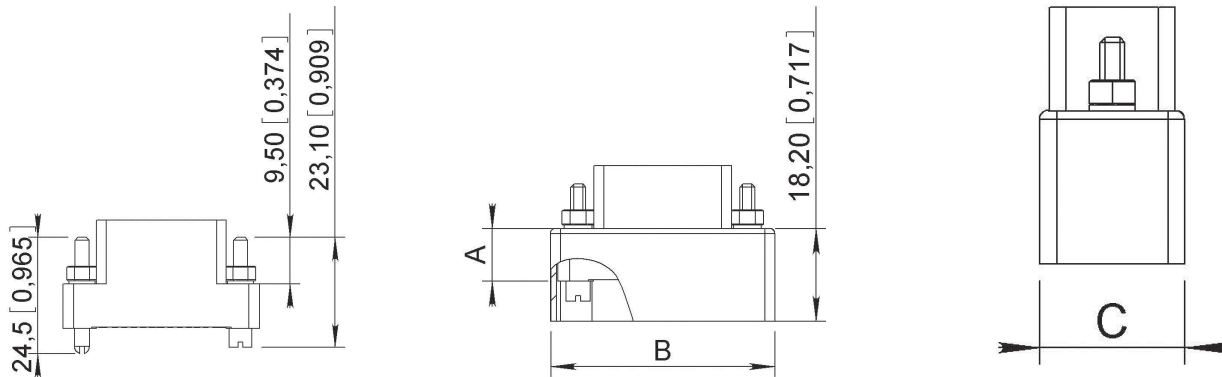


**HEIGHT DIMENSIONS MM (INCH)**



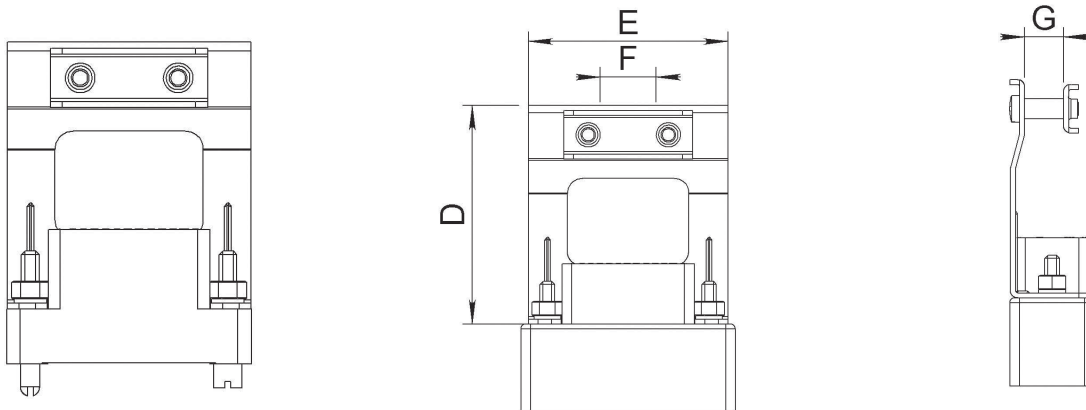
Contacts

**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)

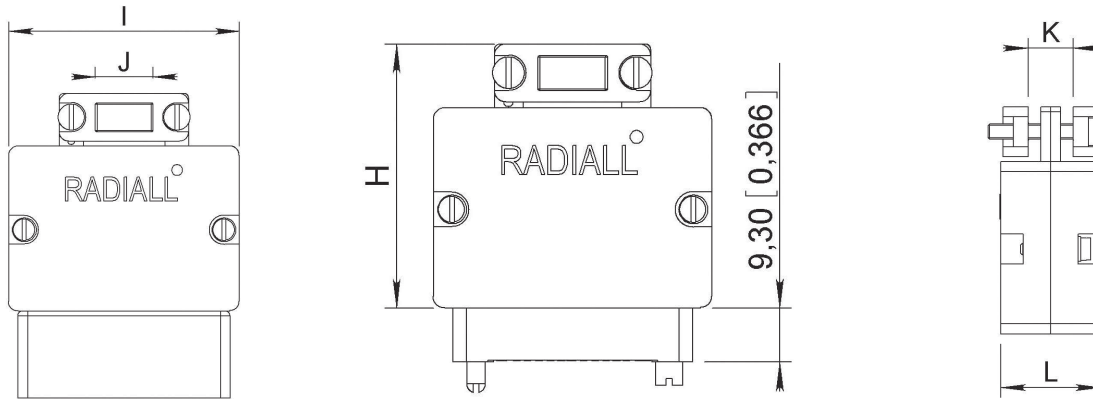
**STRAIN RELIEF CABLE CLAMP (TOP ENTRY) MM (INCH)**



NUMBER OF CONTACTS	D	E	CABLE ENTRY DIMENSIONS	
			F	G MAX
14	44 (1.732)	31.5 (1.240)	5 (.0197)	8 (0.315)
20		39.5 (1.555)	12 (0.472)	
26		41.1 (1.618)		10 (0.394)
34	Cable Clamp Not Available			
42	Cable Clamp Not Available			
50	53 (2.086)	65.6 (2.582)	26 (1.023)	14 (0.551)
75				18 (0.708)

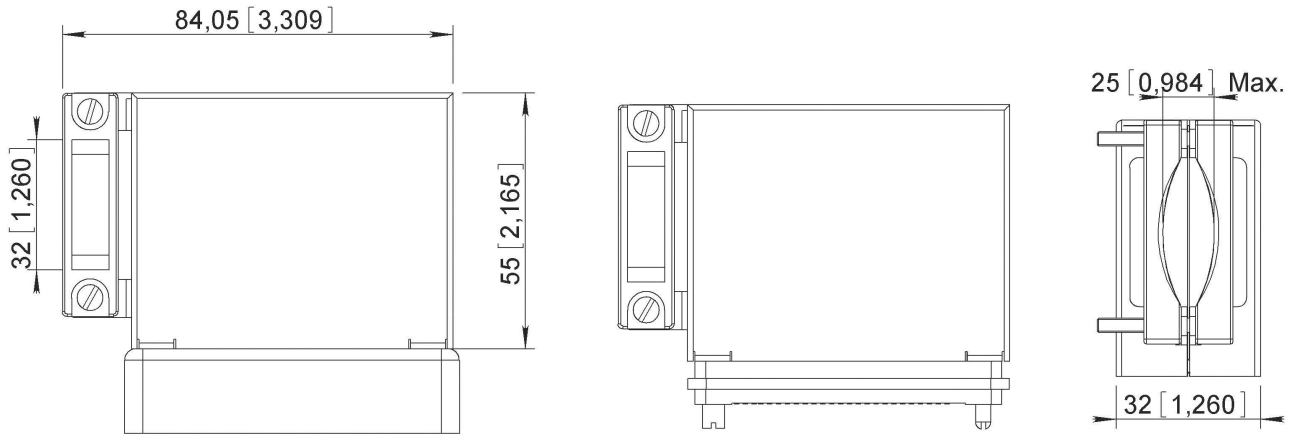
Contacts

**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 (0.299)	13 (0.512)	17 (0.670)
20		47 (1.850)	15 (0.590)		
26		48.5 (1.909)	17 (0.670)	17 (0.670)	21 (0.827)
34	52.5 (2.067)	53.5 (2.106)	22 (0.866)	20 (0.787)	24 (0.945)
42	47 (1.850)	61 (2.401)	32 (1.260)	12 (0.472)	21.5 (0.846)
50	66.5 (2.618)	68.5 (2.697)	26 (1.023)	21 (0.827)	25 (0.984)
75	47 (1.850)	68 (2.677)	40 (1.575)		30.5 (1.200)

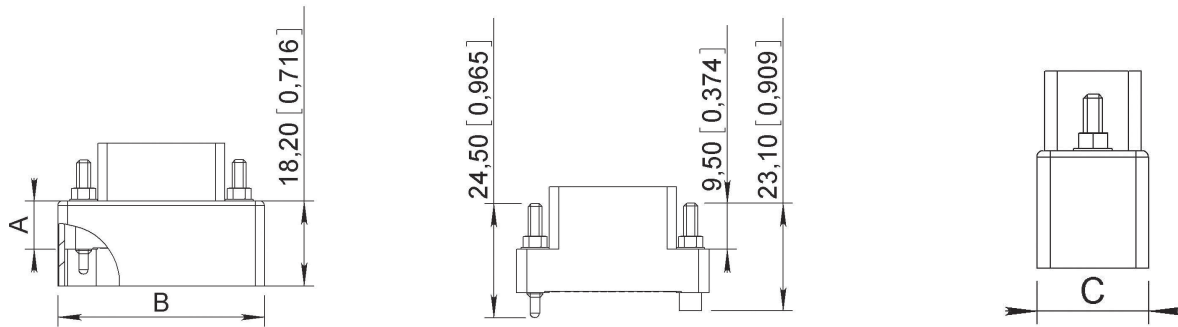
**BACKSHELL SIDE ENTRY-AVAILABLE ONLY FOR 75 WAY MM (INCH)**





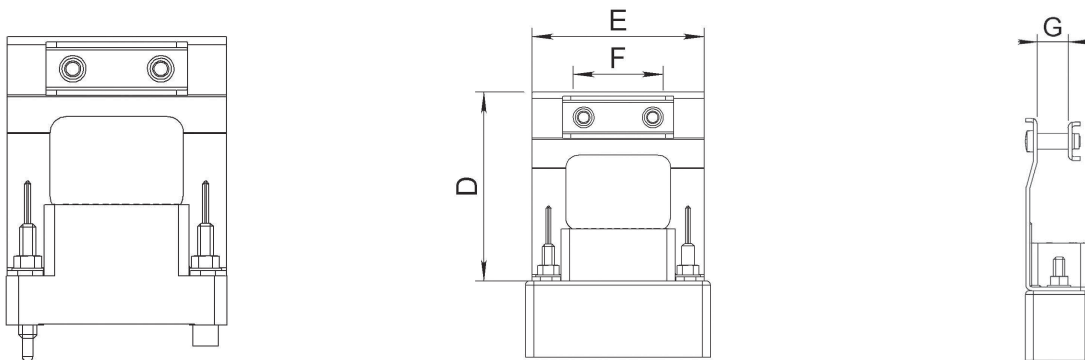
Contacts

**FIXED JACKSCREWS DIMENSIONS**  
CONNECTOR BLOCK MM (INCH)



NUMBER OF CONTACTS	A	B		C	
		MALE	FEMALE	MALE	FEMALE
14	10.1 (0.397)	34.8 (1.370)	37.2 (1.464)	14.2 (0.559)	16.6 (0.653)
20		42.2 (1.661)	45.1 (1.775)		
26		44.2 (1.740)	46.4 (1.827)		
34	10.3 (0.405)	54 (2.126)	56.4 (2.220)	22.2 (0.874)	24.6 (0.968)
42	Shroud Not Available				
50	10.3 (0.405)	72 (2.834)	74.6 (2.937)	25.3 (0.996)	27.8 (1.094)
75		72.4 (2.850)	74.7 (2.940)	34.4 (1.354)	37 (1.456)

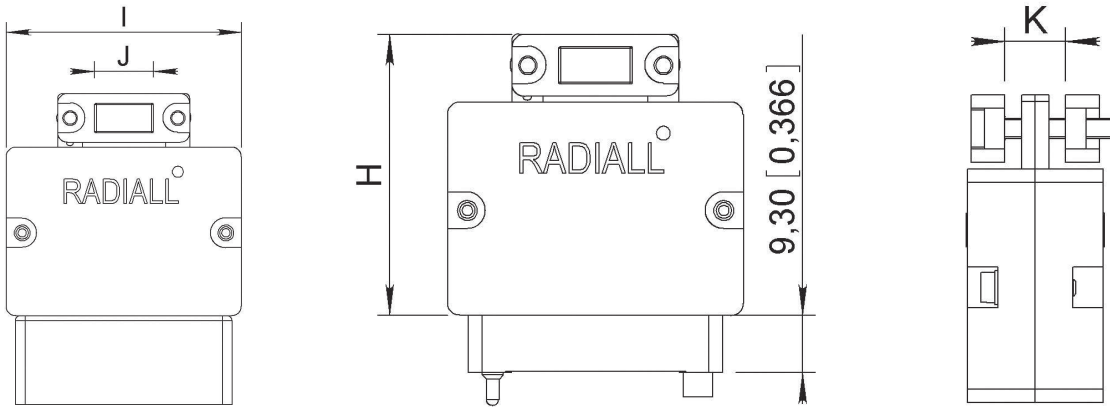
**STRAIN RELIEF CABLE CLAMP (TOP ENTRY) MM (INCH)**



NUMBER OF CONTACTS	D	E	CABLE ENTRY DIMENSIONS	
			F	G MAX
14	44 (1.732)	31.5 (1.240)	5 (0.197)	8 (0.315)
20		39.5 (1.555)		
26		41.1 (1.618)	12 (0.472)	
34	Cable Clamp Not Available			
42	Cable Clamp Not Available			
50	53 (2.086)	65.6 (2.582)	26 (1.023)	14 (0.551)
75				18 (0.708)

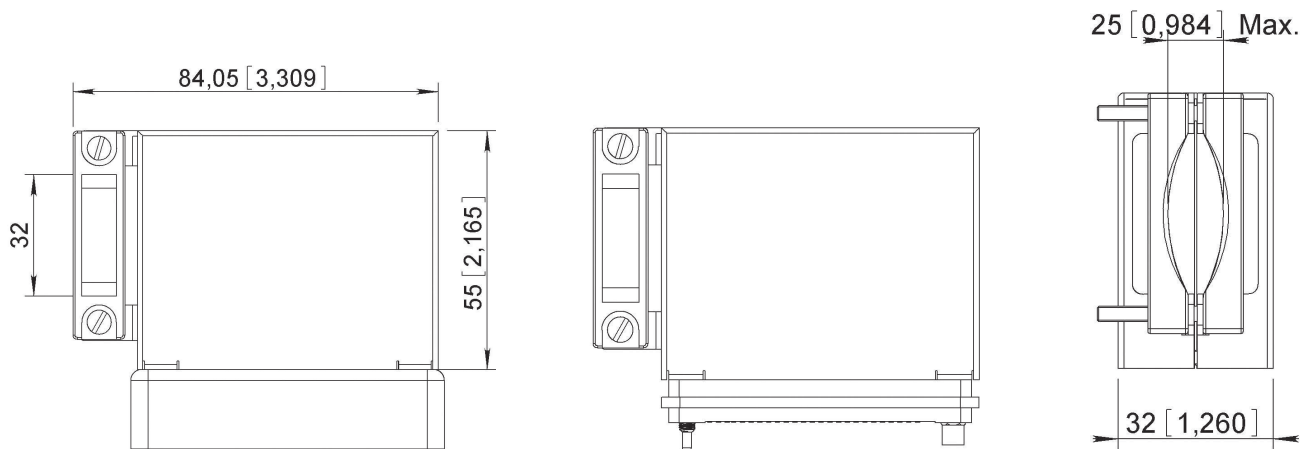
Contacts

**FIXED JACKSCREWS DIMENSIONS**  
**BACKSHELL TOP ENTRY-MM (INCH)**



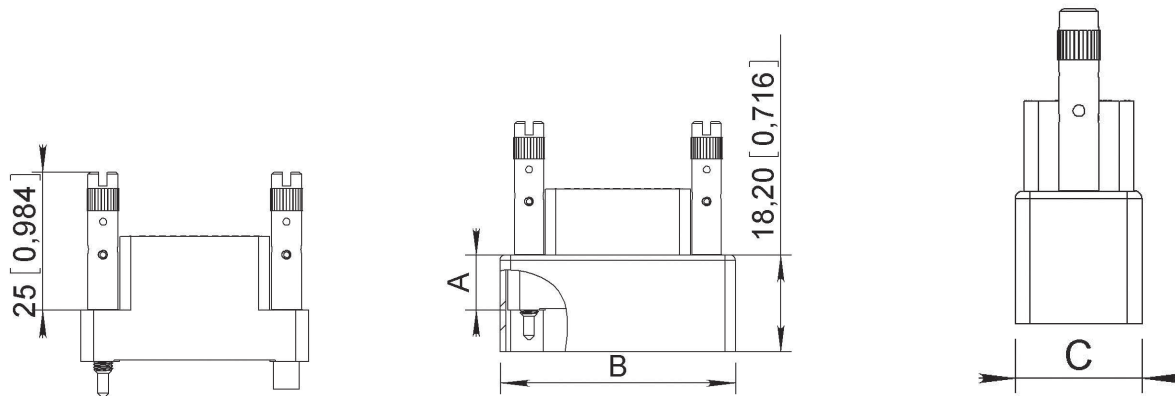
NUMBER OF CONTACTS	H	I	CABLE ENTRY DIMENSIONS		L
			J	K MAX	
14	46 (1.811)	39 (1.535)	7.6 (0.299)	13 (0.512)	17 (0.670)
20		47 (1.850)	15 (0.590)		
26		48.5 (1.909)	17 (0.670)	17 (0.670)	
34	52.5 (2.067)	53.5 (2.106)	22 (0.866)	20 (0.787)	24 (0.945)
42	47 (1.850)	61 (2.401)	32 (1.260)	12 (0.472)	21.5 (0.846)
50	66.5 (2.618)	68.5 (2.697)	26 (1.023)	21 (0.827)	25 (0.984)
75	47 (1.850)	68 (2.677)	40 (1.575)		30.5 (1.200)

**BACKSHELL SIDE ENTRY-AVAILABLE ONLY FOR 75 WAY MM (INCH)**



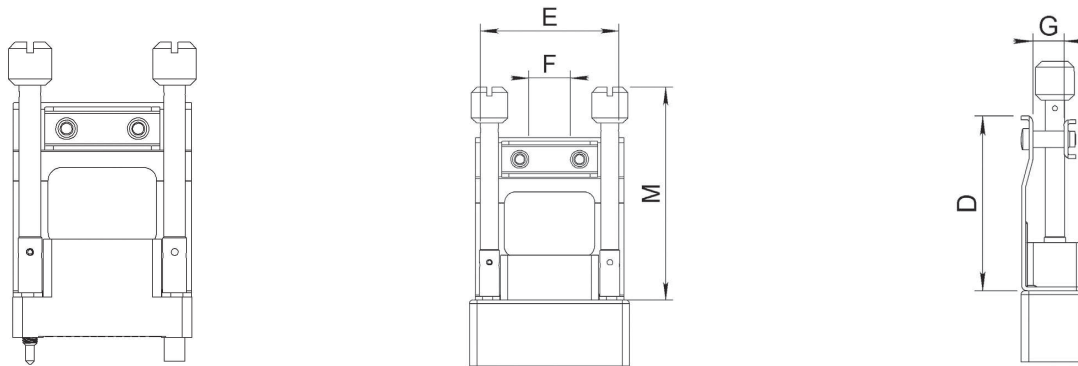
Contacts

**ROTATING JACKSCREWS DIMENSIONS**  
CONNECTOR BLOCK MM (INCH)



NUMBER OF CONTACTS	A	B		C	
		MALE	FEMALE	MALE	FEMALE
14	10.1 (0.397)	34.8 (1.370)	37.2 (1.464)	14.2 (0.559)	16.6 (0.653)
20		42.2 (1.661)	45.1 (1.775)		
26		44.2 (1.740)	46.4 (1.827)		
34	10.3 (0.405)	54 (2.126)	56.4 (2.220)	22.2 (0.874)	24.6 (0.968)
42	Shroud Not Available				
50	10.3 (0.405)	72 (2.834)	74.6 (2.937)	25.3 (0.996)	27.8 (1.094)
75		72.4 (2.850)	74.7 (2.940)	34.4 (1.354)	37 (1.456)

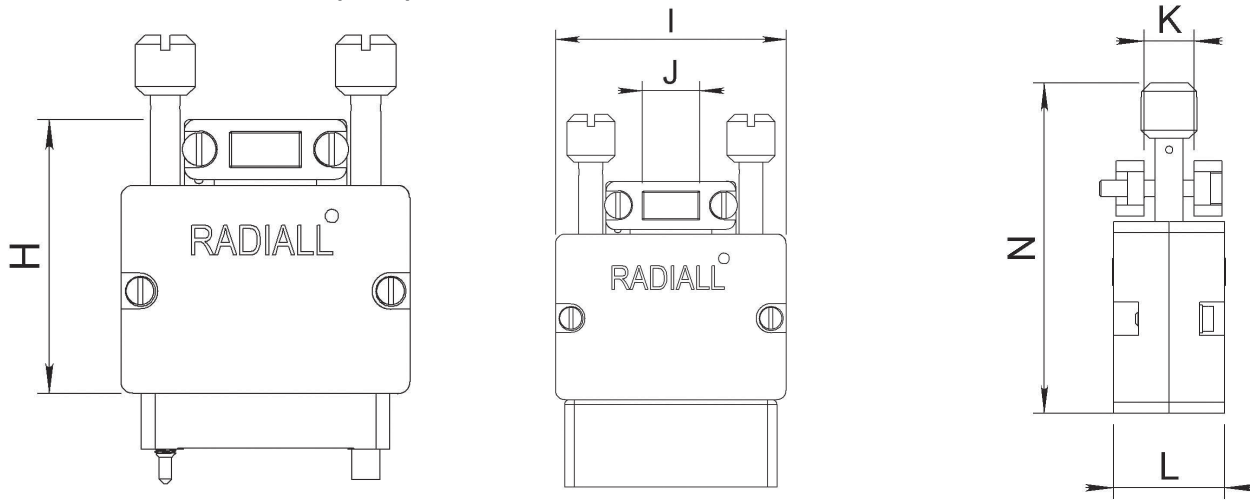
**STRAIN RELIEF CABLE CLAMP (TOP ENTRY) MM (INCH)**



NUMBER OF CONTACTS	D	E	M	CABLE ENTRY DIMENSIONS	
				F	G MAX
14	44 (1.732)	31.5 (1.240)	60 (2.362)	5 (0.197)	8 (0.315)
20		39.5 (1.555)		12 (0.472)	
26		41.1 (1.618)		10 (0.394)	
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 (0.551)
75					18 (0.708)

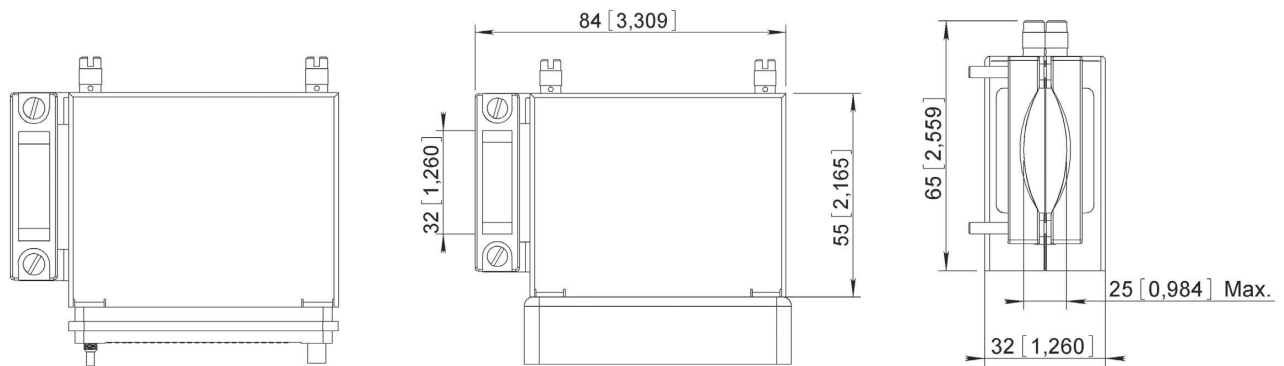
Contacts

**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)	

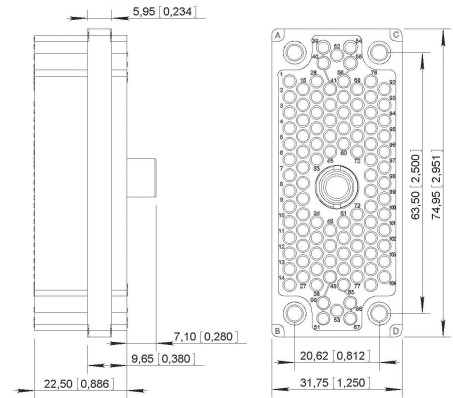
**BACKSHELL SIDE ENTRY-AVAILABLE ONLY FOR 75 WAY MM (INCH)**



Contacts

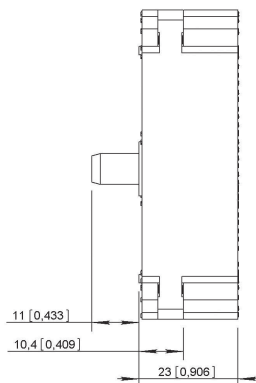
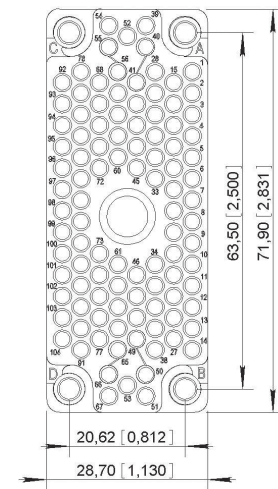
**BLOCK 104 CONTACTS**

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

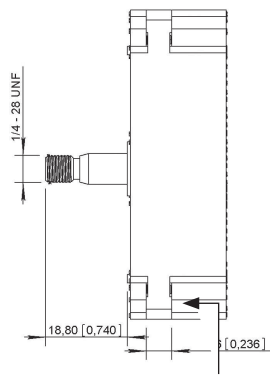


VIEW WIRING SIDE MM (INCH)

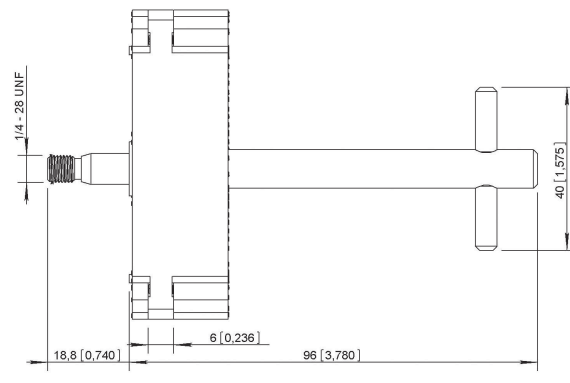
CENTRAL GUIDE	P TYPE-RACK GUIDES				PART NUMBER
	A	B	C	D	
Central Rack Guide	No Guides				690481
	Male	Female	Female	Male	690480
	Male	-	-	Male	690482
	Male	Male	Male	Male	690483
Sunken Hex. Nut 4 A/F	No Guides				690471
	Male	Female	Female	Male	690470
	Male	-	-	Male	690472
	Male	Male	Male	Male	690473
Central Jackscrew	No Guides				690476
	Male	Female	Female	Male	690475
	Male	-	-	Male	690477
	Male	Male	Male	Male	690478



RACK GUIDE



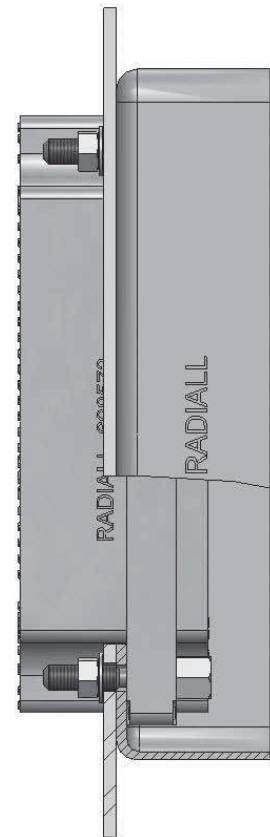
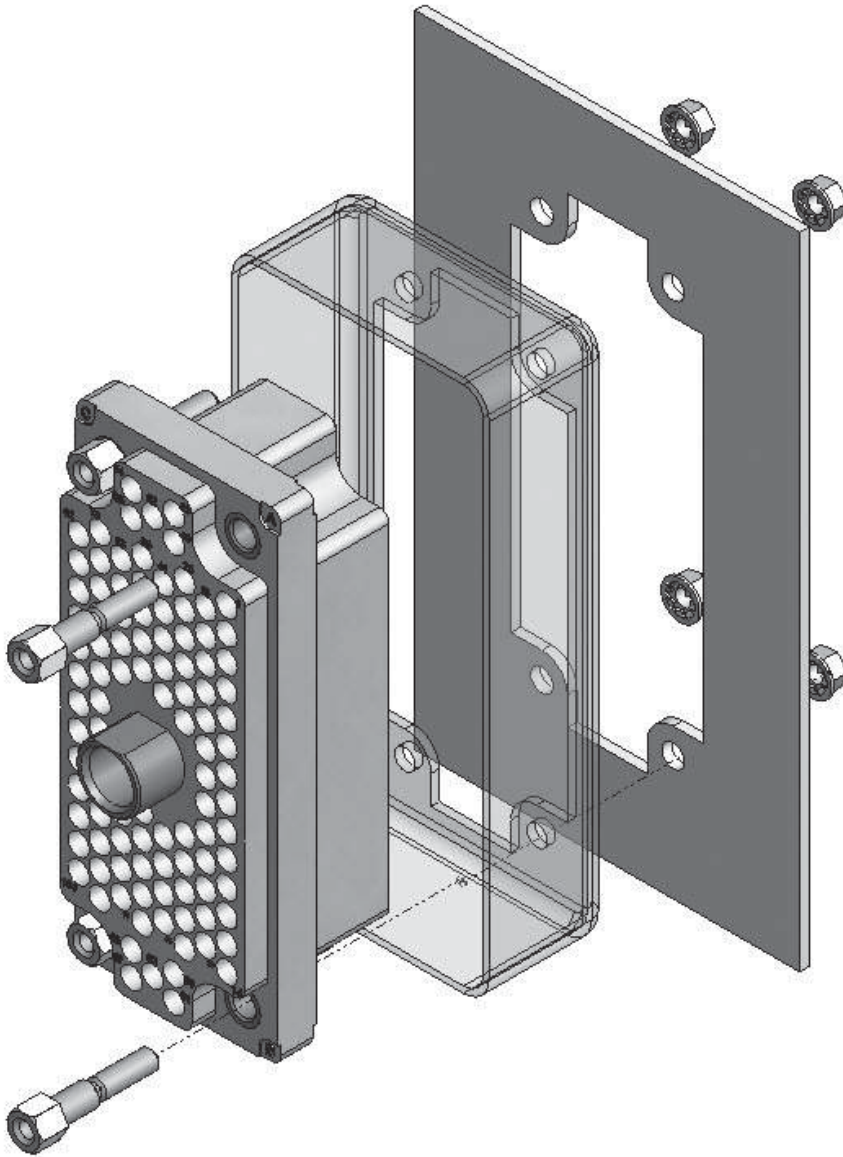
SUNKEN HEX. NUT



CENTRAL JACKSCREW

Contacts

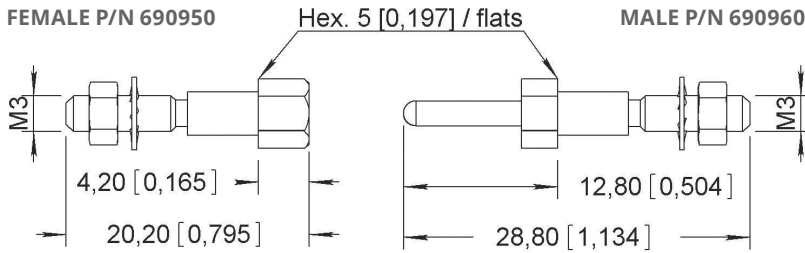
Detailed view of the connector with shroud mounted on a panel.



VIEW ONCE ALL ASSEMBLED

Contacts

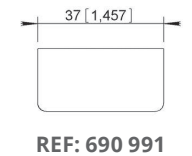
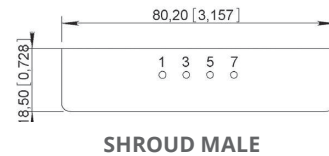
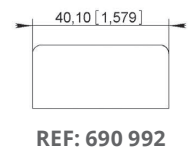
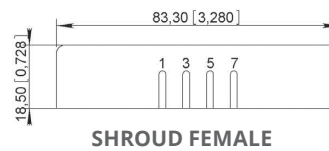
**GUIDES TO MOUNT IN POSITIONS A, B, C, D**



**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

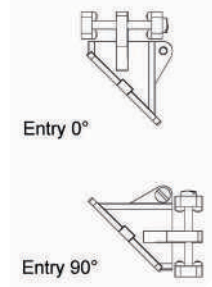


MALE SHROUD-USE ONLY THIS REFERENCE TO ORDER WITHOUT POLARIZING CODE

To order with polarizing: add the polarization code at the end of the shroud part number, see example: 690991110.

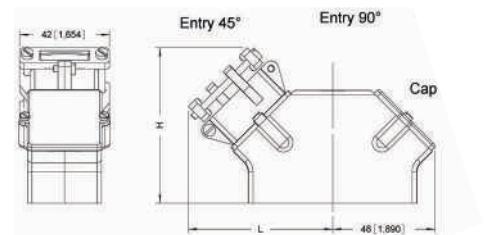
**BACKSHELL-CAST ALUMINIUM PAINTED BLACK ASSEMBLY KIT**

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)**

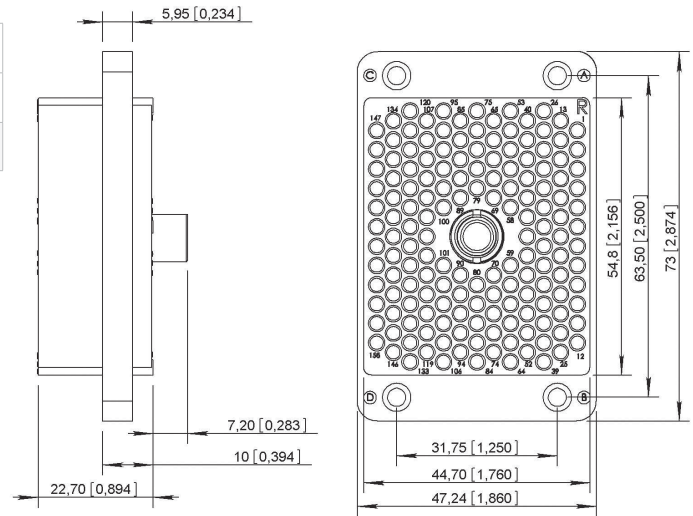
DESCRIPTION	PART NUMBER
Body (In 2 Parts)	690977
Entry 0-90°	690980
Entry 45°	690979
Cap	690978



Contacts

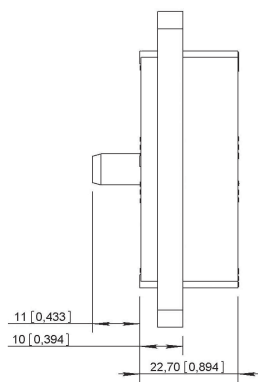
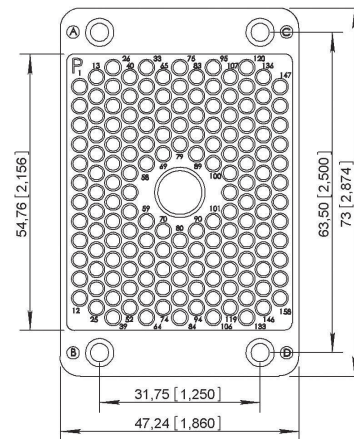
**BLOCK 158 CONTACTS**

R TYPE		GUIDES SUPPLIED UNMOUNTED	
CENTRAL GUIDE	WITHOUT GUIDES	4 FEMALE	2 MALE/ 2 FEMALE
Mates with All Blocks P	690686	690670	690680

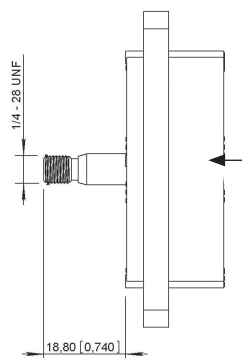


VIEW WIRING SIDE MM (INCH)

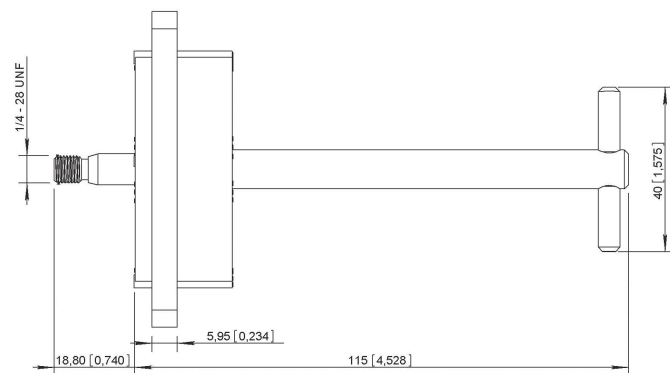
P TYPE		GUIDES SUPPLIED UNMOUNTED	
CENTRAL GUIDE	WITHOUT GUIDES	4 FEMALE	2 MALE/ 2 FEMALE
Central Rack Guide	690681	690678	690683
Sunken Hex. 4 A/F	690671	690679	690684
Central Jackscrew	690676	690677	690682



RACK GUIDE



SUNKEN HEX. NUT

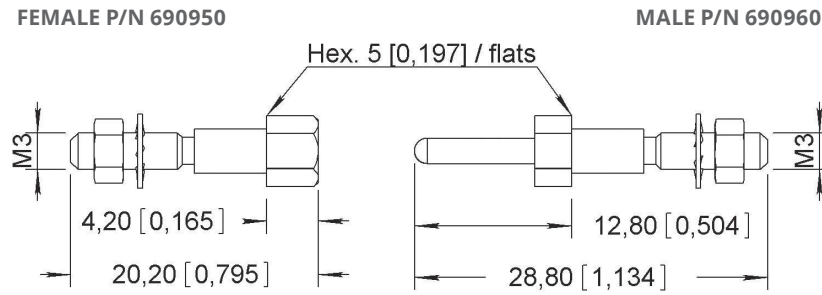


CENTRAL JACKSCREW

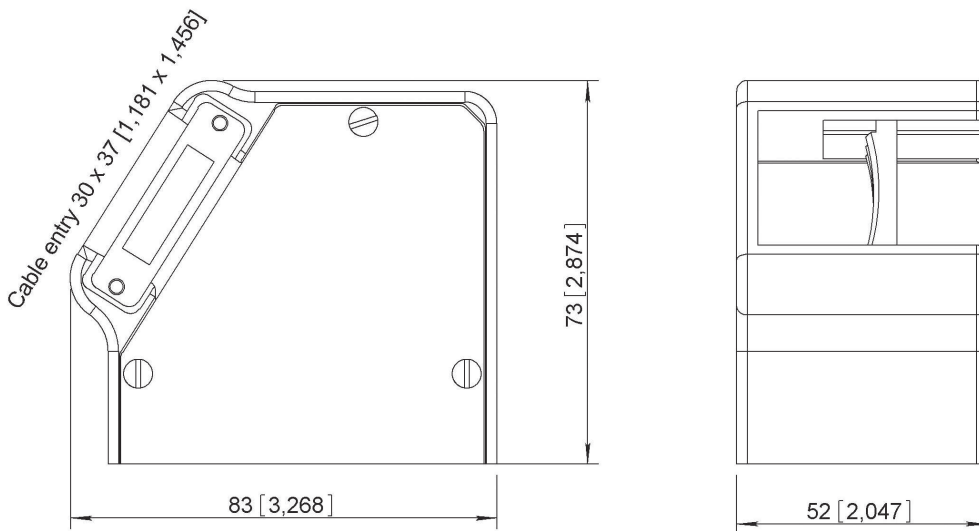


Contacts

GUIDES TO MOUNT IN POSITIONS A, B, C, D-MM (INCH)



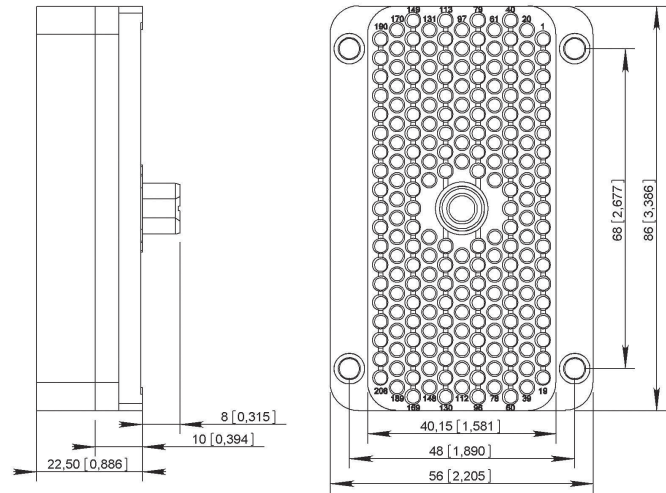
BACKSHELL P/N 690985-MM (INCH)



Contacts

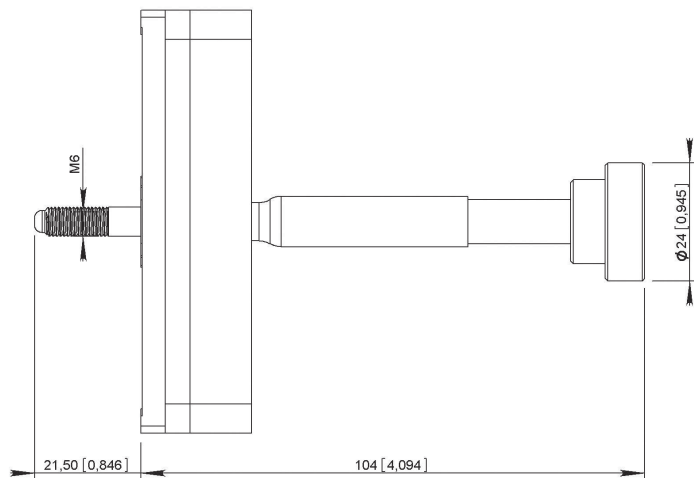
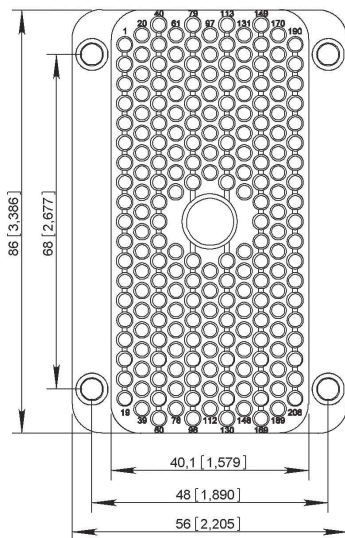
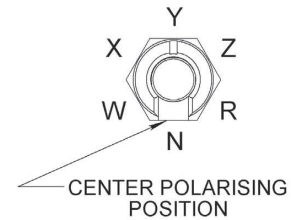
**BLOCK 208 CONTACTS**

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



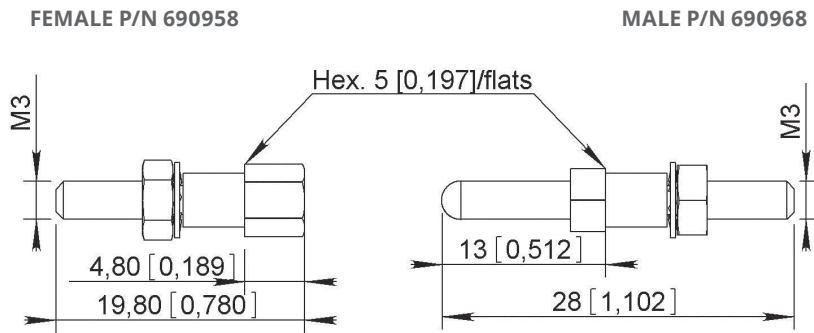
VIEW WIRING SIDE MM (INCH)

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

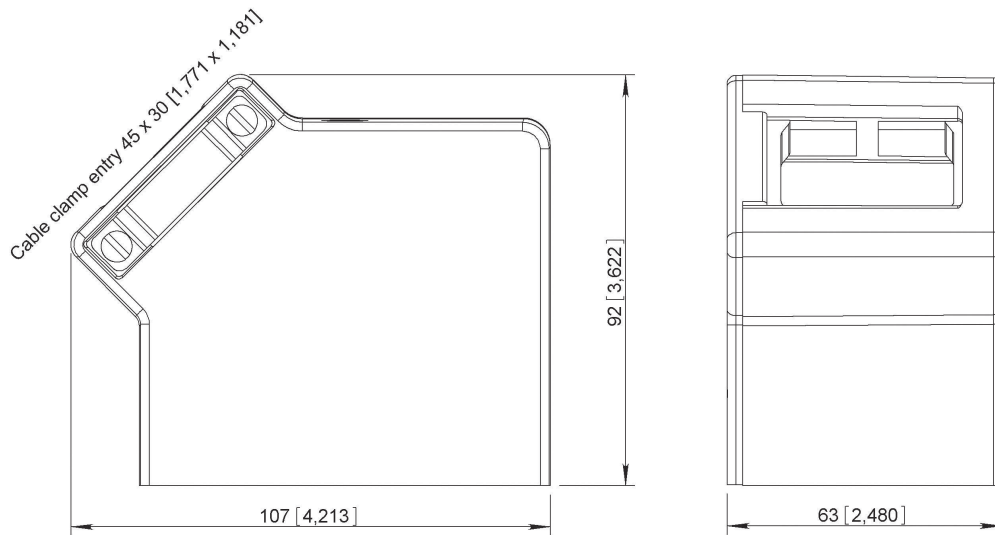


Contacts

GUIDES TO MOUNT IN POSITIONS A, B, C, D-MM (INCH)



BACKSHELL P/N 690982-MM (INCH)



Contacts

### 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

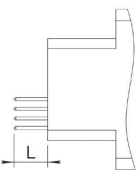
No tool is necessary for the insertion, the extraction is from the rear using an extraction tool introduced by the mating face of the connector.

### FRONT RELEASE & 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.

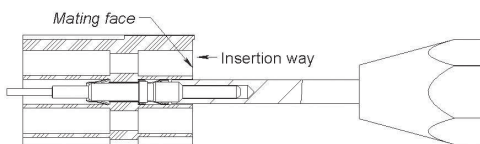
These size 16 contacts fit with all standard MMC connectors cavities from 14 to 208 which allow to mix them on a same connector with micro-coaxial contacts and crimping contacts.

TYPE	CONTACTS ARRANGEMENTS	CONTACT <sup>[1]</sup>		REPLACEMENT CONTACT <sup>[2]</sup>		
		PIN	SOCKET	PIN	SOCKET	
Mini-Wrapping 0.6 (.024) Flats 2 Wraps		L=10.6 (.417)	690220	690320	690220001	690320001
Mini-Wrapping 0.6 (.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

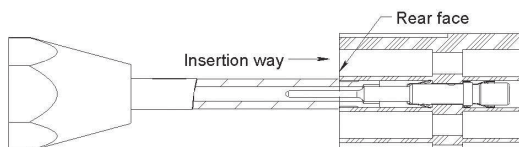
### INSTALLATION AND EXTRACTION OF FR/FR CONTACTS.

#### CONTACT INSTALLATION

1. Insert the contact fitted with the retention clip through the mating face and push insertion tool 282501.

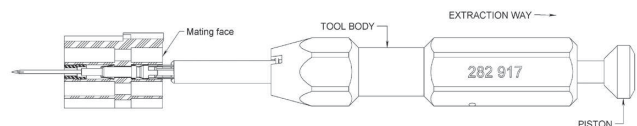


2. Introduce the sleeve by the rear face with tool 282502 and push it until it flushes with the insulator.



#### 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.

#### Notes

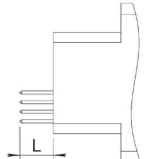
1. Contact with retention clip and anti-rotation sleeve, must be used for the original or initial equipment of the connectors.
2. Contact without retention clip and anti-rotation sleeve for the replacement of damaged contacts.

Contacts

**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 <sup>2</sup> (SQ.IN)	Ø MAX. ON SLEEVE MM (INCH)	PIN	SOCKET				
16 18 20	1.34 (0.053) 0.93 (0.037) 0.60 (0.024)	3.10 (0.122)	690200	690300	282975	282291 M22520/1.01	6 5 4	282920
16 18 20	1.34 (0.053) 0.93 (0.037) 0.60 (0.024)	3.10 (0.122)	690201	690301			6 5 4	
20 22 24	0.60(0.024) 0.38 (0.015) 0.22 (0.009)	2.20 (0.086)	690215	690315	282976		4 3 2	282920
24 26 28	0.22 (0.009) 0.14 (0.006) 0.093 (0.004)	1.60 (0.063)	690235	690335			4 2 2	

**WIRE WRAP CONTACTS**

TYPE	CONTACTS ARRANGEMENTS	CONTACTS		TOOLS		
		PIN	SOCKET	INSERTION	EXTRACTION	
Mini-Wrapping Ø 0.6 (0.024) Flats 2 Wraps		L=10.6 (0.417)	690241	690341	282921	282920
Wrapping Standard Ø 1.2 (0.047) Flats 3 Wraps		L=19.5 (0.767)	690240	690340		

Contacts

**TWISTED PAIR CRIMP CONTACTS**

CABLES				TOOLS <sup>[3]</sup>				CONTACTS & WIRING INSTRUCTIONS <sup>[4]</sup>	
AWG SIZE	SECTION IN MM <sup>2</sup> (SQ.IN)	Ø MAX. ON INSULATOR	CENTER CONTACT		OUTER CONTACT		SOCKET <sup>[1]</sup>	PIN <sup>[2]</sup>	
			POSITION ON CRIMPING TOOL <sup>[5]</sup>	POSITIONER	CRIMPING TOOL	POSITIONER			
24	Stranded Wire Cable	0.22 (0.009)	0.96 (0.038)	2	282981/M22520/2.04	282292 /M22520/4.01	282973/M22520/4.02	690070 B	690170 B
26	Stranded Wire Cable	0.14 (0.006)	0.84 (0.033)	2					
28		0.093 (0.004)	0.73 (0.029)	1					
30		0.055 (0.002)	0.66 (0.026)	1					
26	Single Wire Cable	0.12 (0.005)	0.85 (0.033)	3					
28		0.08 (0.003)	0.67 (0.026)	2					
30		0.05 (0.002)	0.58 (0.023)	1					
26	Stranded Wire Cable	0.14 (0.006)	0.84 (0.033)	2					
28		0.093 (0.004)	0.73 (0.029)	1					
26	Single Wire Cable	0.12 (0.005)	0.85 (0.033)	3					
28		0.08 (0.003)	0.67 (0.026)	2					
30	Stranded Wire Cable	0.055 (0.002)	0.66 (0.026)	1					
30	Single Wire Cable	0.05 (0.002)	0.58 (0.023)	1					

**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 8-29 to 8-32
5. Crimping tool for all 282281/M22520/2.01

Contacts

**COAXIAL CRIMP CONTACTS**

CABLES			TOOLS <sup>[3]</sup>				CONTACTS & WIRING INSTRUCTIONS <sup>[4]</sup>	
CABLE REFERENCE	IMPEDANCE $\Omega$	OUTER DIAMETER	CENTER CONTACT		OUTER CONTACT		SOCKET <sup>[1]</sup>	PIN <sup>[2]</sup>
			CRIMP TOOL	POSITIONER	CRIMP TOOL	POSITIONER		
RG178/U RG196/U KX21	50	2 (0.079)	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 (0.100) $\pm$ 0.13 (0.005)					690040 D	690140 D
RG179/U	75							



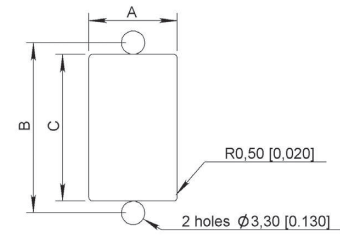
**Notes**

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 8-29 to 8-32

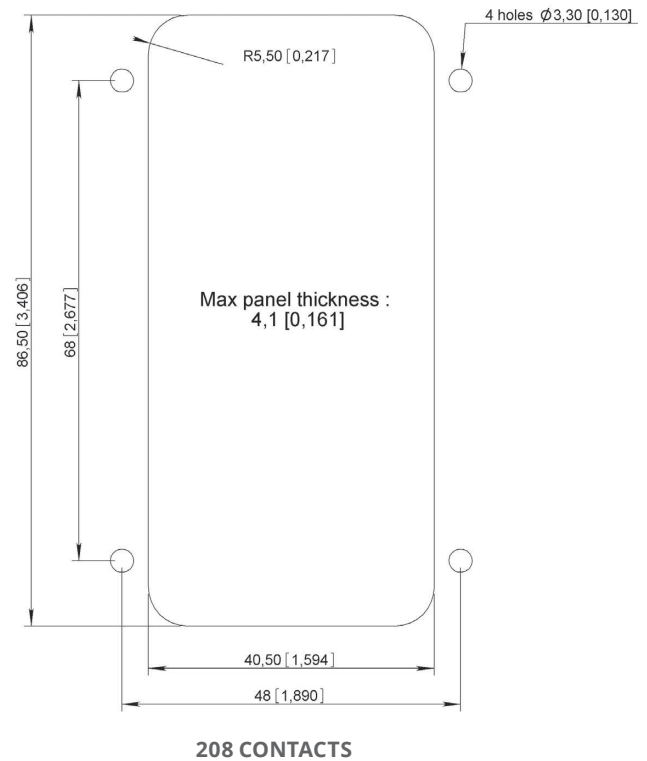
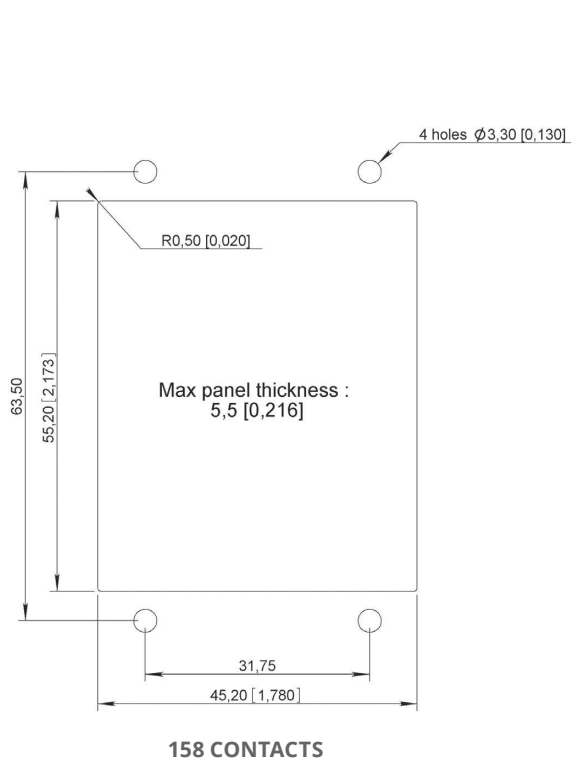
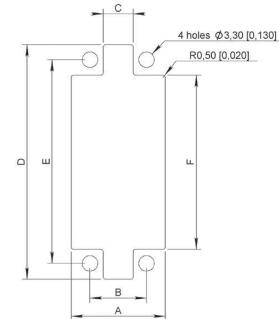
Contacts

PANEL CUT-OUT

NUMBER OF CONTACTS	A	B	C	MAX. PANEL THICKNESS
14	12.4 (0.488)	23.8 (0.937)	20.8 (0.819)	6 (0.236)
20	12.4 (0.488)	31.7 (1.248)	28.7 (1.130)	
26	15.7 (0.618)	33.3 (1.311)	29.2 (1.150)	



NUMBER OF CONTACTS	A	B	C	D	E	F	MAX. PANEL THICKNESS
34	19.8 (0.779)	11.9 (.468)	6.3 (0.248)	49.3 (1.940)	42.8 (1.685)	36.6 (1.441)	6 (0.236)
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 (0.764)	14.2 (0.559)	72.5 (2.854)	63.5 (2.500)	55.6 (2.189)	5.5 (0.216)
104	29.3 (1.153)	20.6 (0.811)	12.7 (0.500)				

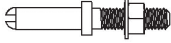
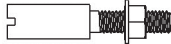
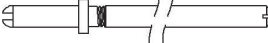


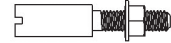
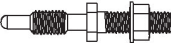
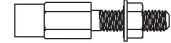

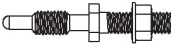

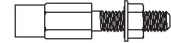

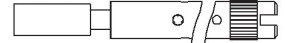
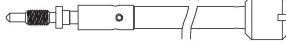
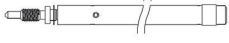

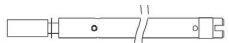




Contacts

**SPARE PARTS**

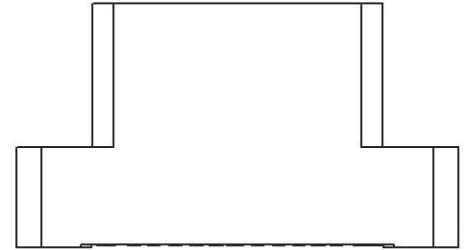
Jackscrew and rack guide selection table

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	
									
							For 75 Contacts 690967001 Side Entry		
		Female	690956			690939			
									
					For 75 Contacts 690957001 Side Entry				

Contacts

**SPARE PARTS**  
**INSULATOR BLOCKS ONLY**

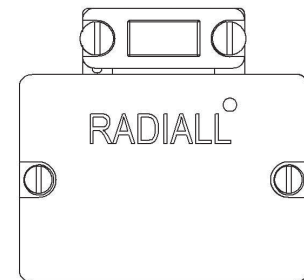
NUMBER OF CONTACTS	BLOCK	
	TYPE P	TYPE R
14	690401	690501
20	690411	690511
26	690421	690521
34	690431	690531
42	690441	690541
50	690451	690551
75	690461	690561



**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

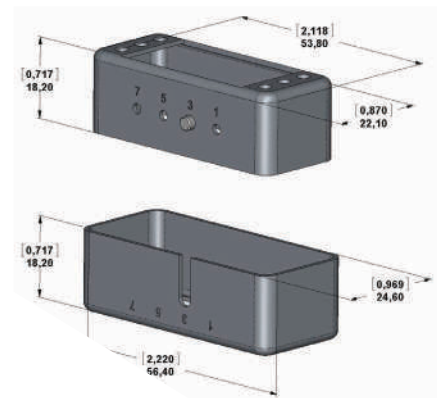
**SHROUDS**

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



Contacts

**WIRING INSTRUCTIONS**

**TWISTED PAIR CONTACT**

**WIRING INSTRUCTIONS A**

CONTACT REF: 690060

WIRE SIZES: AWG 26

690160

AWG 28

690061

AWG 30

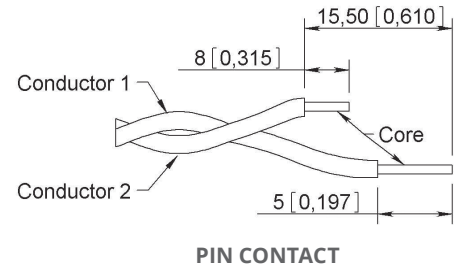
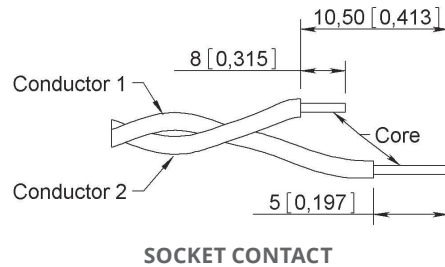
690161

690062

690162

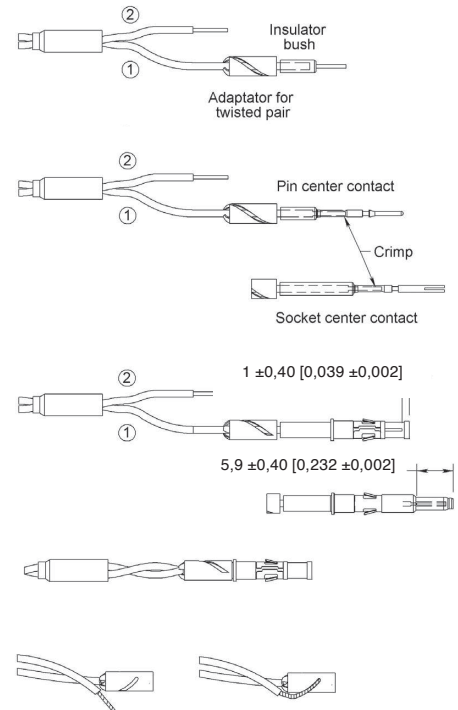


**1-WIRE STRIPPING**



**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 8-24.
- 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 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 8-24.



**TWISTED PAIR CONTACT**

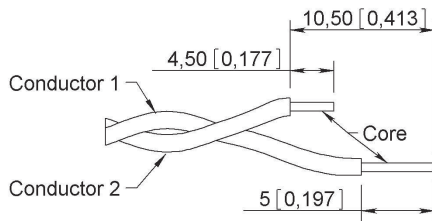
**CABLING INSTRUCTIONS B**

CONTACT REF: 690070  
690170

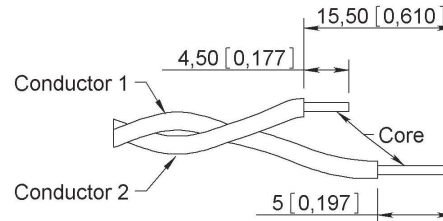
WIRE SIZES: AWG 24



**1-WIRE STRIPPING**



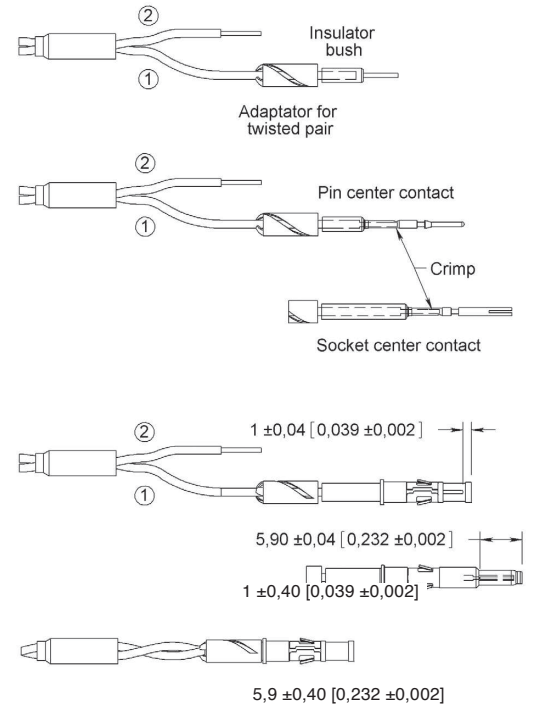
**SOCKET CONTACT**



**PIN CONTACT**

**2-WIRING INSTRUCTIONS**

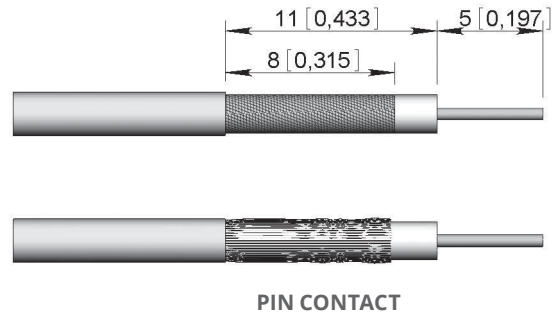
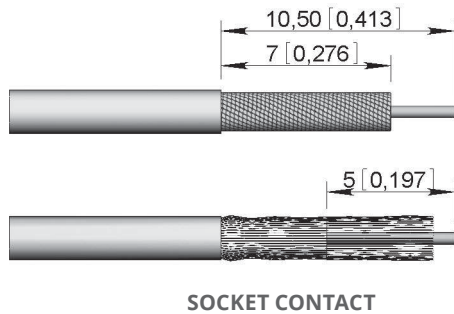
- Slide the ferrule over the twisted pair cable
- Following the type of contact, strip the 2 conductors to the shown dimensions here above
- Slide adaptor over conductor ①
- Slide insulator bush over conductor ①
- Put the core of the cable ① into the center contact (pin or socket) until it butts against 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 8-24.
- 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 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 8-24.



**COAXIAL CONTACTS**  
**CABLING INSTRUCTIONS C**  
 CONTACT REF: 690020  
 690120

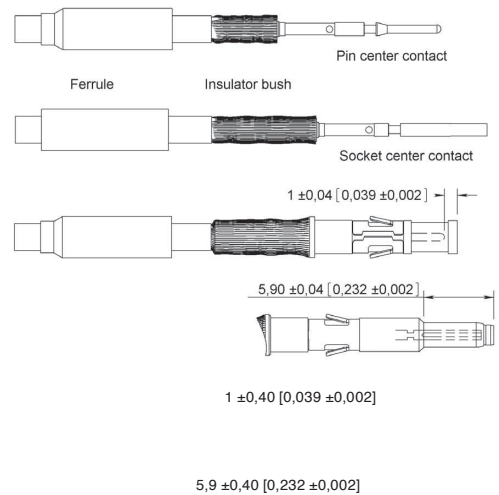


**1-WIRE STRIPPING**



**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 8-25.
- 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 8-25.



Contacts

**COAXIAL CONTACTS**

**CABLING INSTRUCTIONS D**

CONTACT REF: 690040  
690140

WIRE SIZES: AWG 24



**BODY**

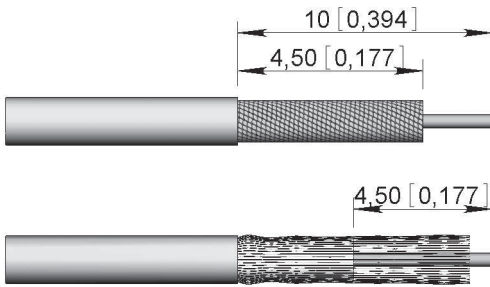


**CENTER CONTACT**

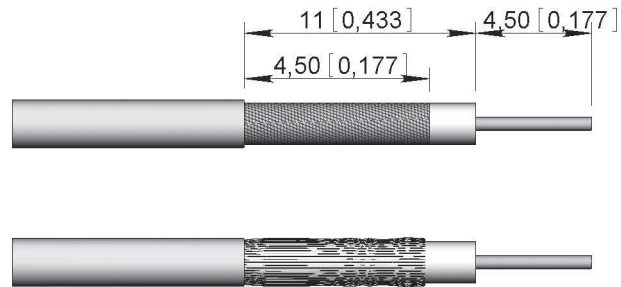


**FERRULE**

**1-WIRE STRIPPING**



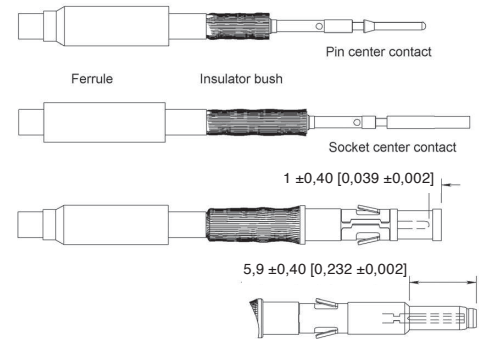
**SOCKET CONTACT**



**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 8-25.
- 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 8-25.

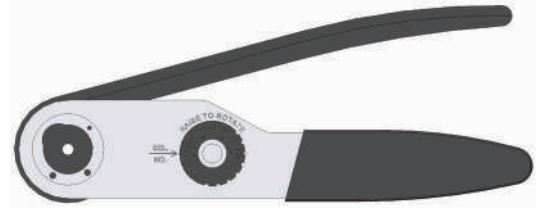


Contacts

**TOOLS**

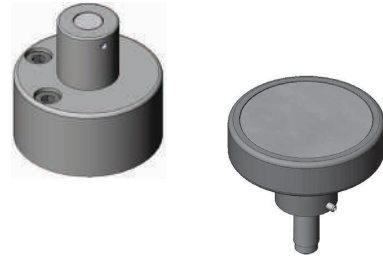
**CRIMP TOOLS**

PART NUMBER	MIL SPEC P/N
282281	M22520/2-01
282291	M22520/1-01
282292	M22520/4-01



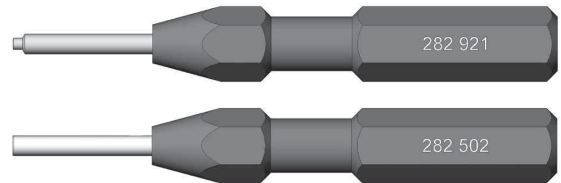
**POSITIONERS**

PART NUMBER	MIL SPEC P/N
282973	M22520/4-02
282976	Daniels TP616
282975	Daniels TP617
282981	M22520/2-04



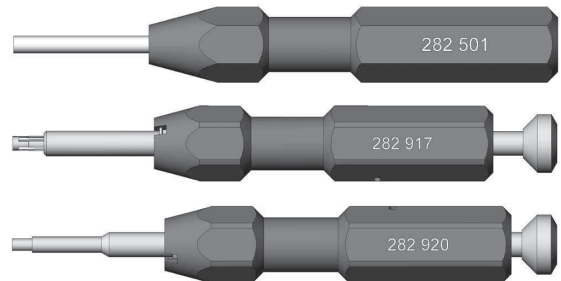
**INSERTION TOOL**

PART NUMBER	MIL SPEC P/N
282502	-
282921	Wire Wrap



**EXTRACTION TOOL**

PART NUMBER
282501
282917
282920



Notes





## B & MCS-R SERIES

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*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.

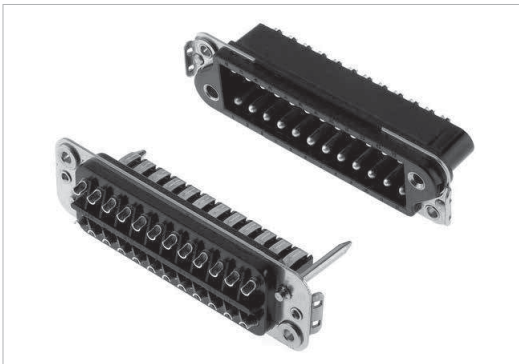
## FEATURES

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.

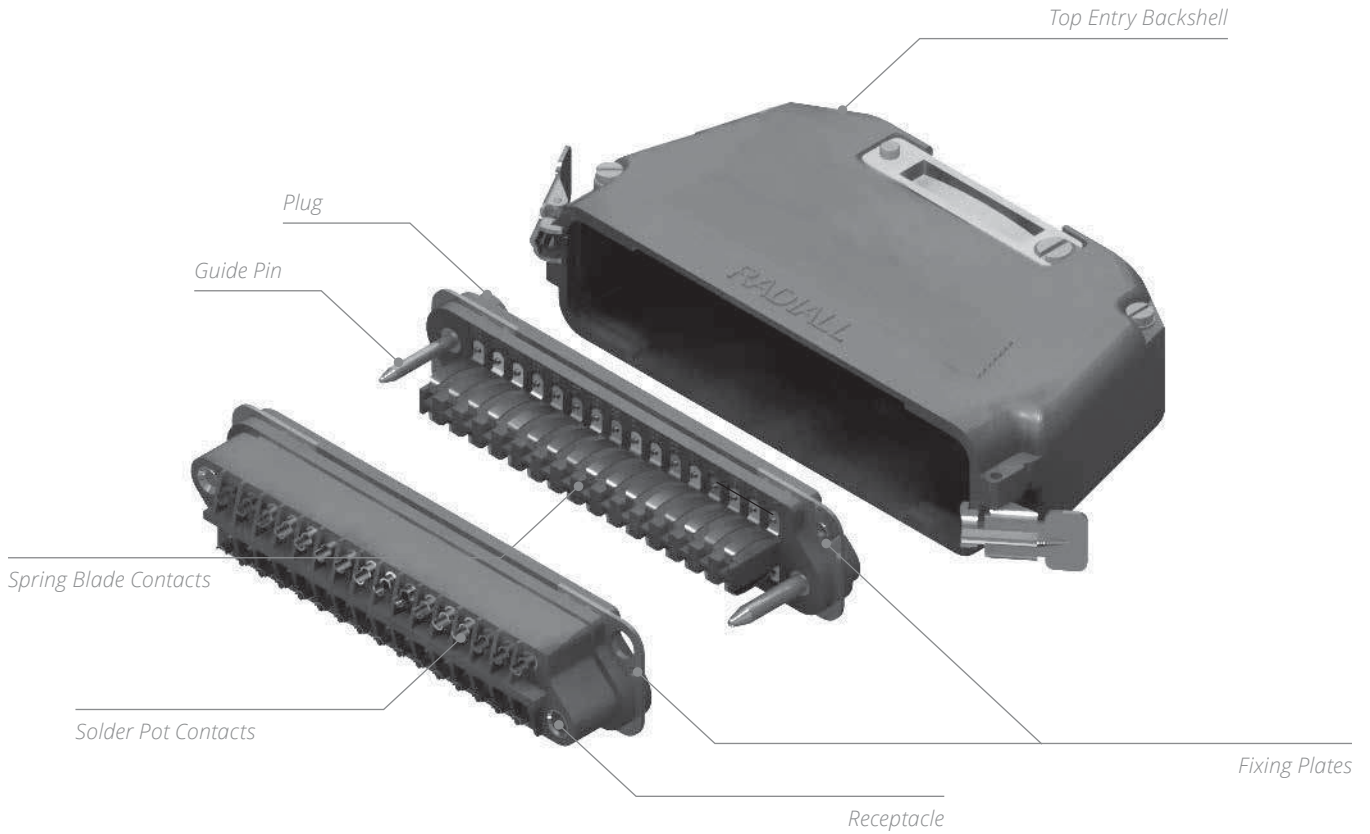
The B series connector is only available with solder pot termination for gauge 16 wires. Standard receptacle connectors are fitted with floating eyelets, which allows 0.75 mm radial float.



B Series

## 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: > 1,500 Vrms
  - Between Contacts and Earth: > 2,000 Vrms
- Insulation Resistance: > 5,000 MΩ
- Contact Resistance: < 10 mΩ

**MECHANICAL & ENVIRONMENTAL**

- Temperature Range: -55 °C (-131 °F) to +125 °C (+257 °F)
- Humidity: 21 Days
- Mating and 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)

*B Series***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 9-18 to 9-19 for ordering.

The plug connector is fitted with spring leaf contacts and the receptacle box type connector with pin contacts.

**CONNECTOR PART NUMBER**

**B**

**SERIES PREFIX** \_\_\_\_\_

**CONTACT ARRANGEMENT** \_\_\_\_\_  
08-14-24-32

**PRODUCT TYPE** \_\_\_\_\_  
**M:** Plug connector  
**F:** Receptacle connector <sup>[2]</sup>

**TERMINATION STYLE** <sup>[1]</sup> \_\_\_\_\_  
**71:** Ø 2.30 solder pot  
**73:** Ø 3.20 solder pot  
**74:** PC Tail  
**75:** 5 mm terminal blade  
**78:** NFC 20120 terminal blade  
**80:** Screw cup termination

**MODIFICATION CODE** \_\_\_\_\_  
**NV:** Without locking  
**VP:** Brackets for locking system receptacle only (see page 9-17 for details)

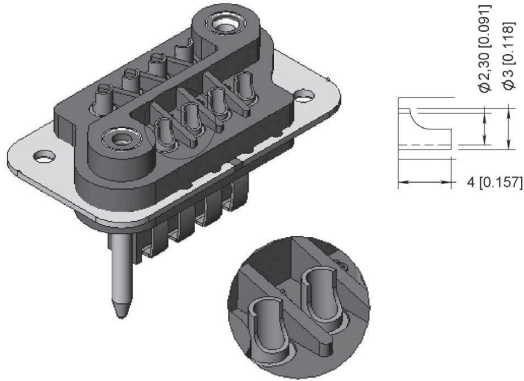
**Notes**

1. Please refer to page 9-6 for views of termination styles.
2. Receptacle connector: only the 71 termination style is available.

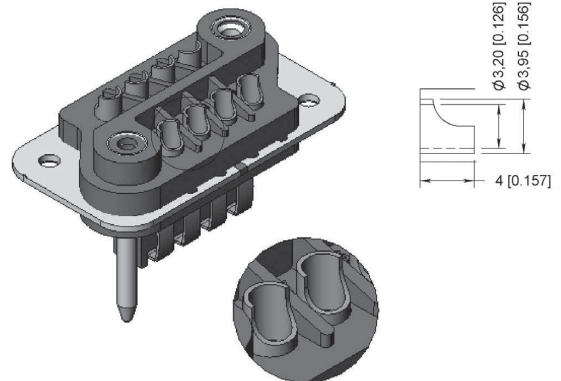
B Series

**TERMINATION STYLES**

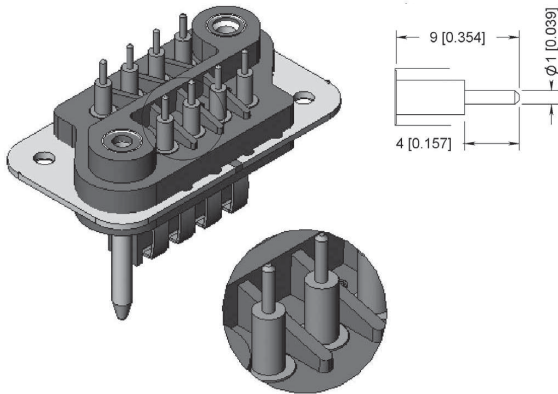
Following are the different termination styles available in details



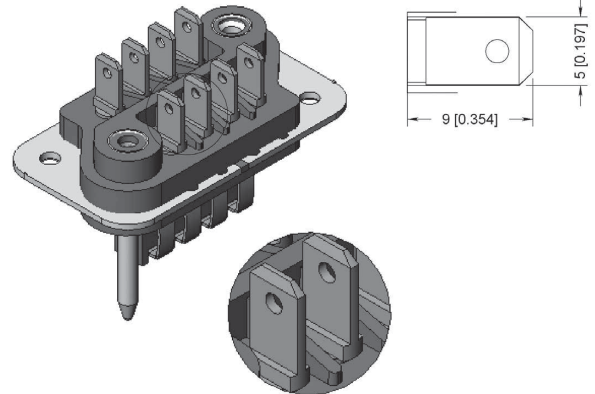
STYLE 71



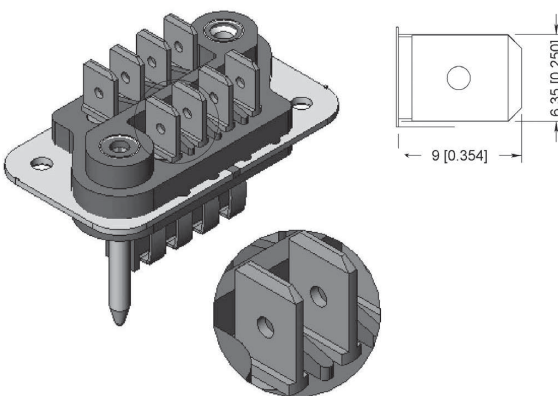
STYLE 73



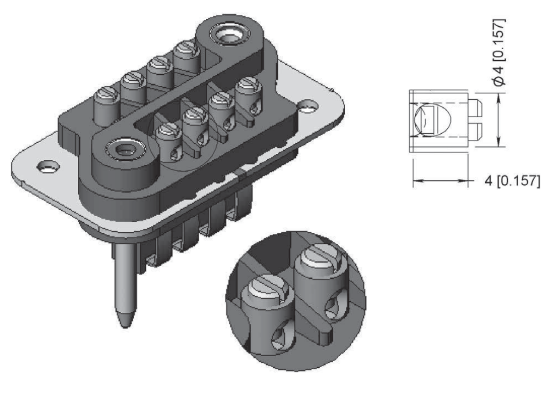
STYLE 74



STYLE 75



STYLE 78

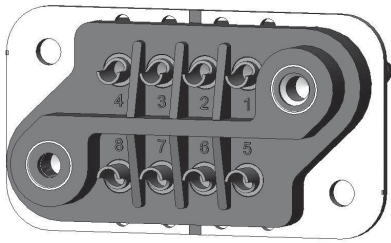


STYLE 80

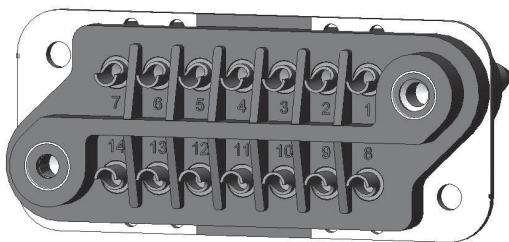


B Series

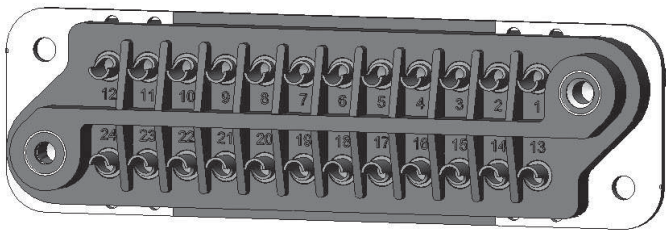
CONTACT ARRANGEMENTS



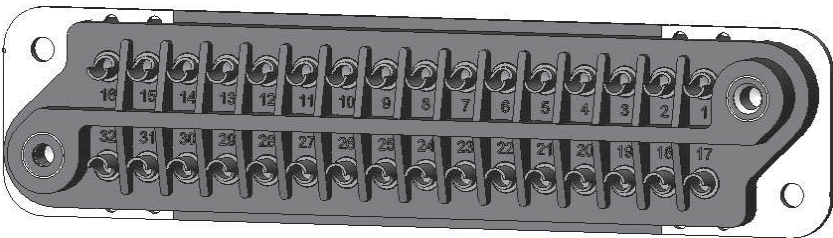
8 CONTACTS



14 CONTACTS



24 CONTACTS



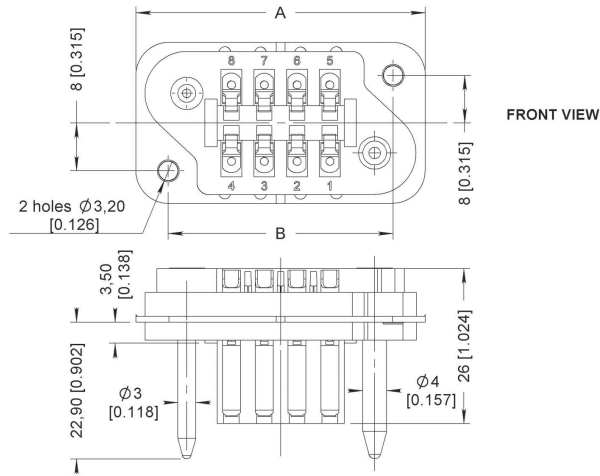
32 CONTACTS

B Series

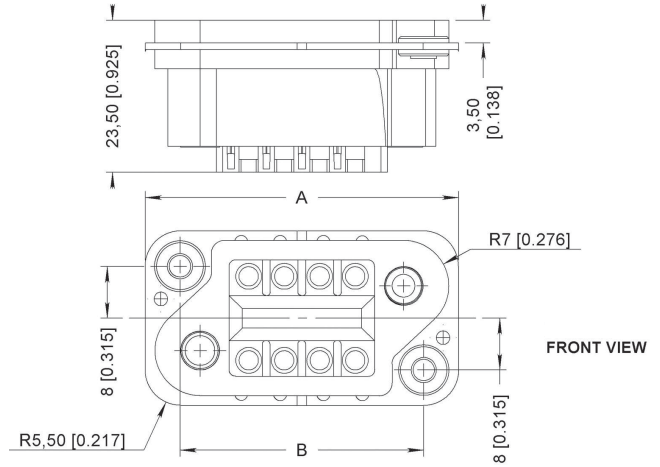
## DIMENSIONS

### SINGLE SHELL DIMENSIONS-MM(INCH)

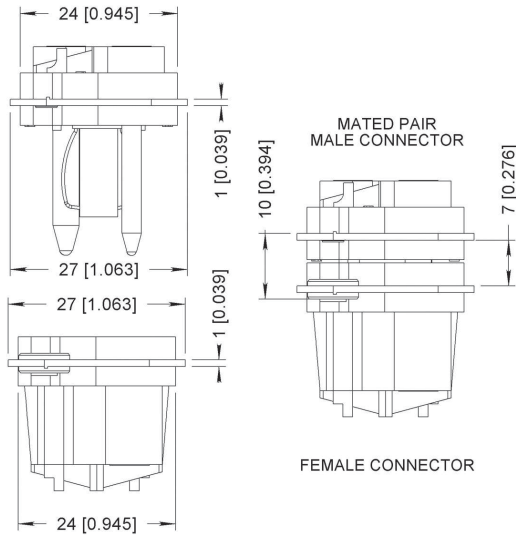
#### MALE



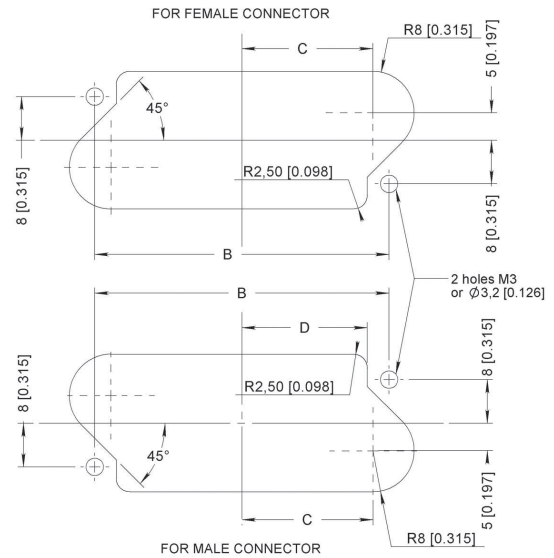
#### FEMALE



#### 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)

*MCS-R 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.

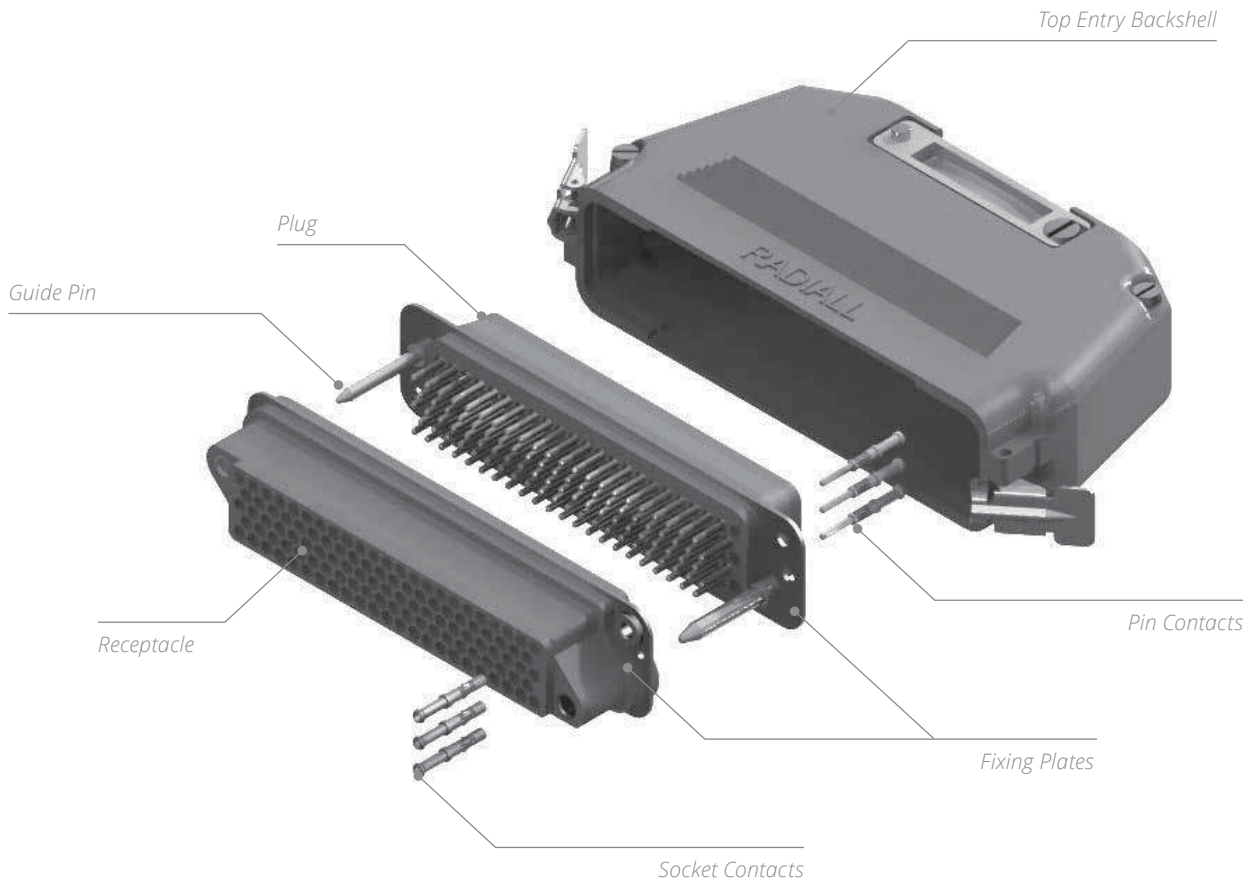
Three termination styles on the contacts are available, wire contacts with solder pot or crimp for wire size gauge 16 and micro coaxial contacts, crimp style.



MCS-R Series

### PRODUCT OVERVIEW

Detailed view of the various parts of this series connector



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MCS-R Series

## TECHNICAL CHARACTERISTICS

### ELECTRICAL

- Current Rating by Contact: 13 A
- Operating Voltage: 350 Vrms at 50 Hz
- Test Voltage: 1,500 Vrms at 50 Hz
- Insulation Resistance: > 5,000 M $\Omega$
- Contact Resistance: < 12 m $\Omega$

### ELECTRICAL WITH MICRO COAXIAL CONTACTS

- Impedance: 50  $\Omega$
- Operating Frequency Range: 0 to 1,000 MHz
- VSWR of Pair of Contacts: < 1.4 from 0 to 1,000 MHz
- Insertion Loss of a Pair of Contacts at 1,000 MHz: < 0.20 dB
- Test Voltage at Sea Level (Mated Pair): 600 Vrms at 50 Hz
- Insulation Resistance: > 5,000 M $\Omega$
- Contact Resistance: < 12 m $\Omega$

### MECHANICAL & ENVIRONMENTAL

- Temperature Range: -55 °C (-131 °F) to +125 °C (+257 °F)
- Humidity: 21 Days
- Mating and Unmating: 500 Cycles
- Contact Retention: > 50 N

MCS-R Series

**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 9-18 to 9-19 for ordering.

For contact references please refer to page 9-15.

## MCSR

**SERIES PREFIX** \_\_\_\_\_

**CONTACT ARRANGEMENT** \_\_\_\_\_

028-048-083-113

**PRODUCT TYPE** \_\_\_\_\_

**M:** Plug connector

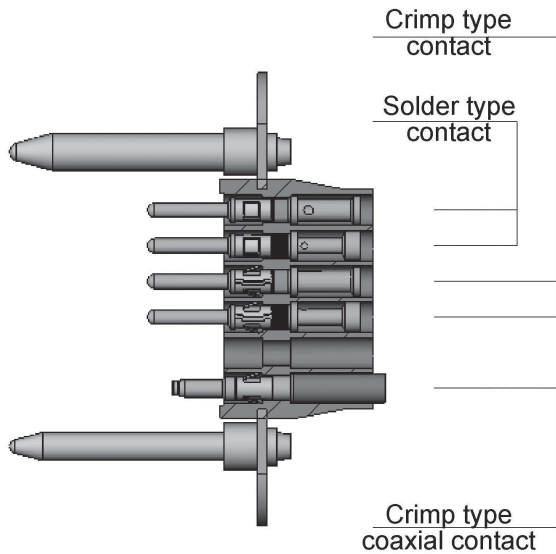
**F:** Receptacle connector

**MODIFICATION CODE** \_\_\_\_\_

**00:** Without locking

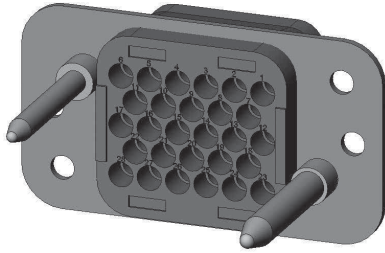
**VP:** Brackets for locking system receptacle only (see page 9-16 for detail)

## TERMINATION STYLES

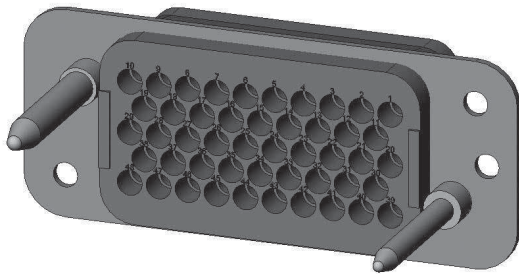


MCS-R Series

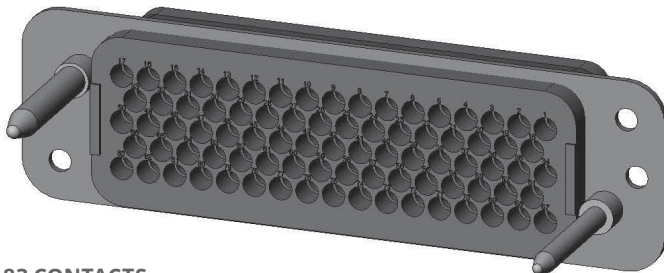
**CONTACT ARRANGEMENTS**  
PLUG VIEW SHOWN



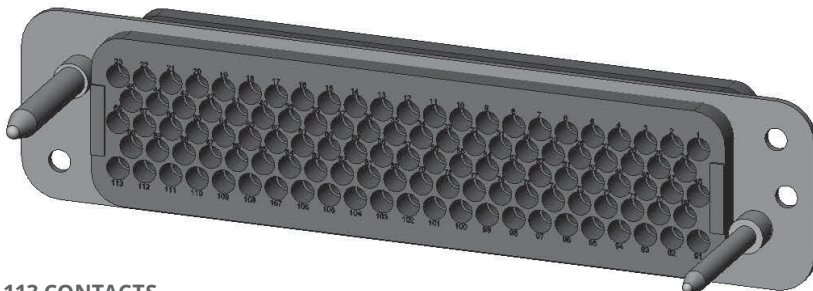
28 CONTACTS



48 CONTACTS



83 CONTACTS



113 CONTACTS

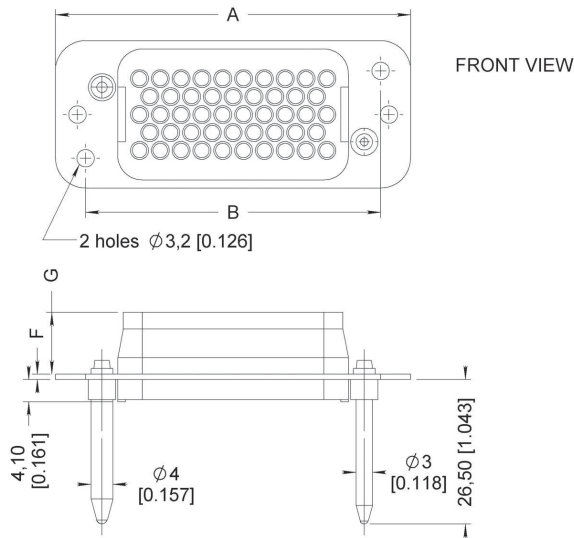


MCS-R Series

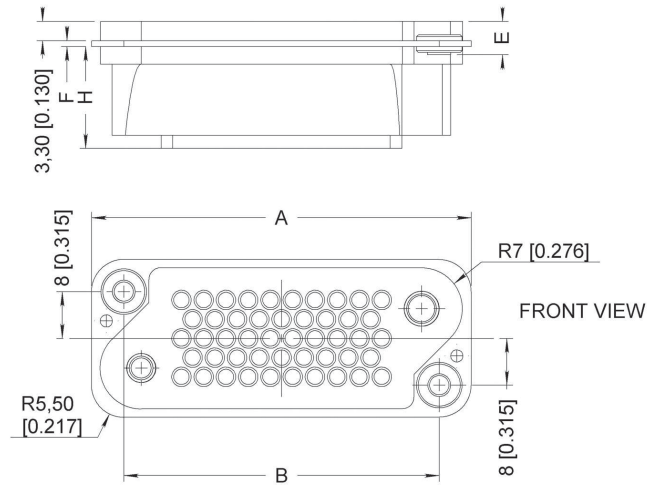
**DIMENSIONS**

**SINGLE SHELL DIMENSIONS MM (INCH)**

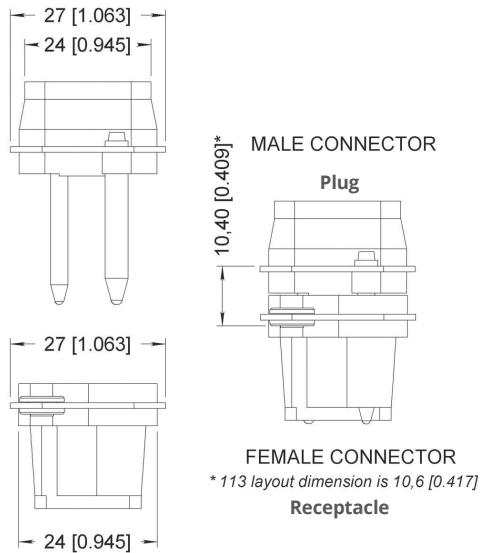
**PLUG**



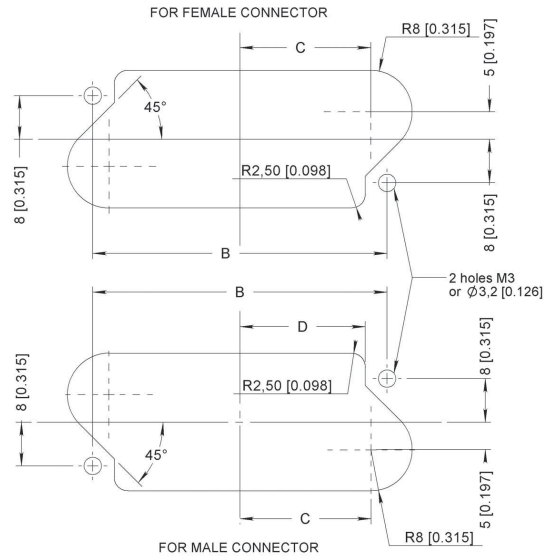
**RECEPTACLE**



**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)			

MCS-R Series

**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

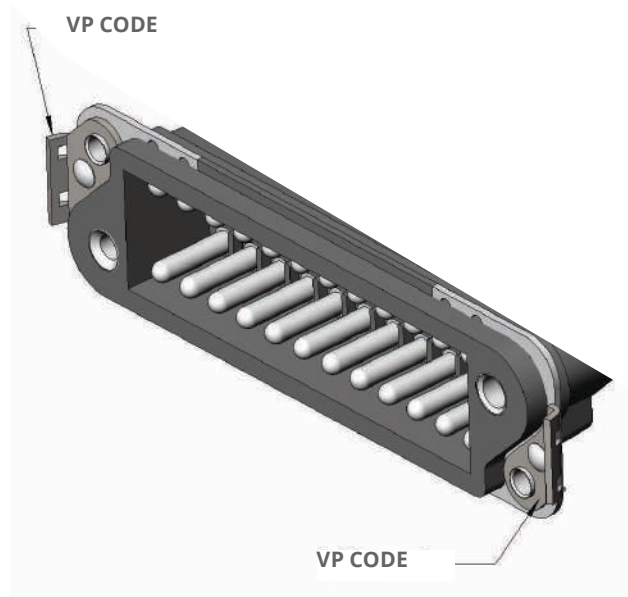
MCS-R Series

### 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

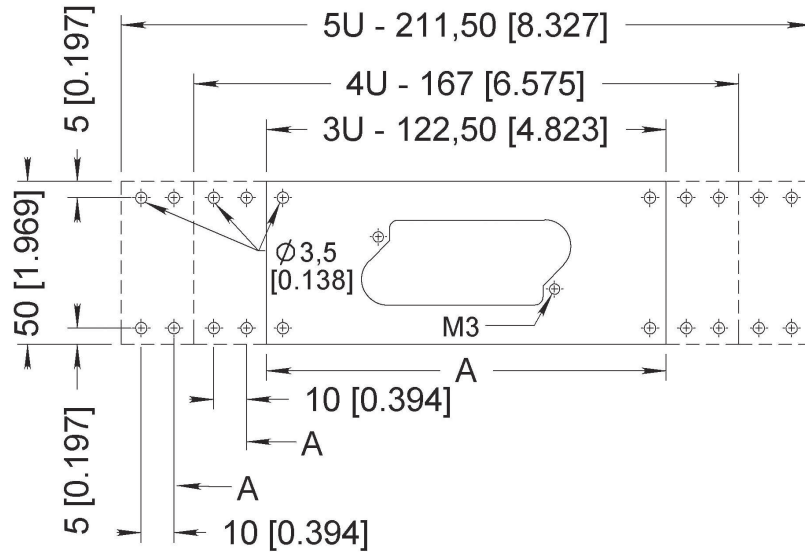
The brackets replace the floating eyelets on the receptacle connector

On both series B and MCSR when VP code is ordered, the corresponding hood must be ordered with the male connector

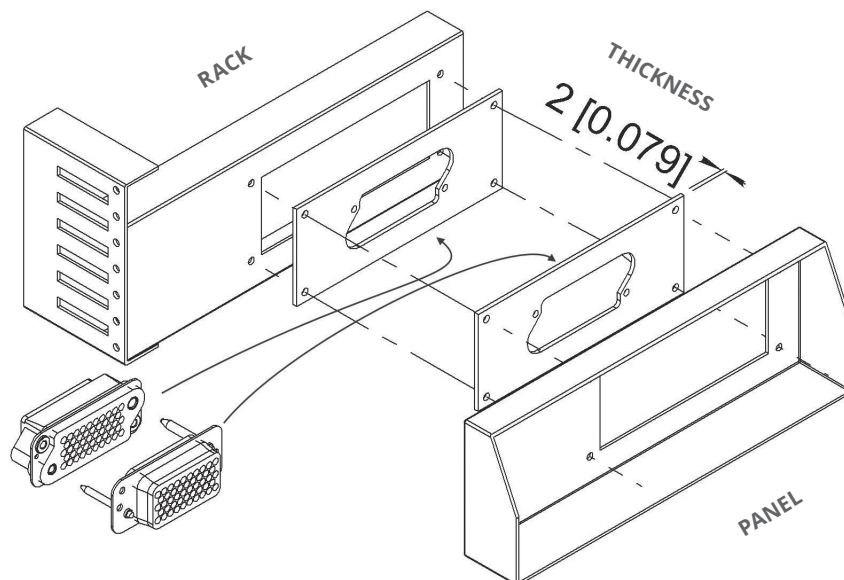


### CONNECTORS MOUNTING PLATES

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)



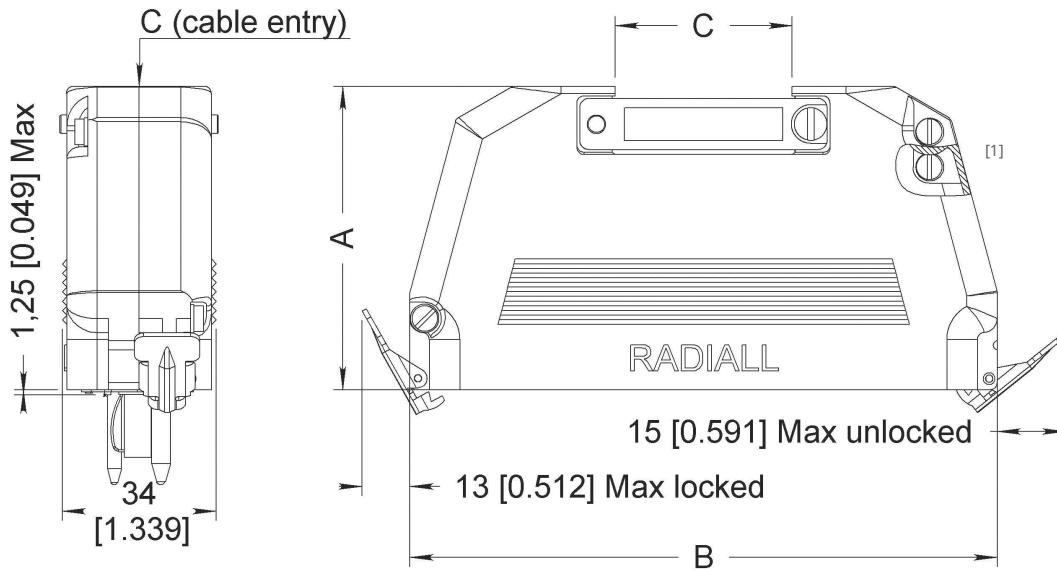
### CONNECTORS ACCESSORIES

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



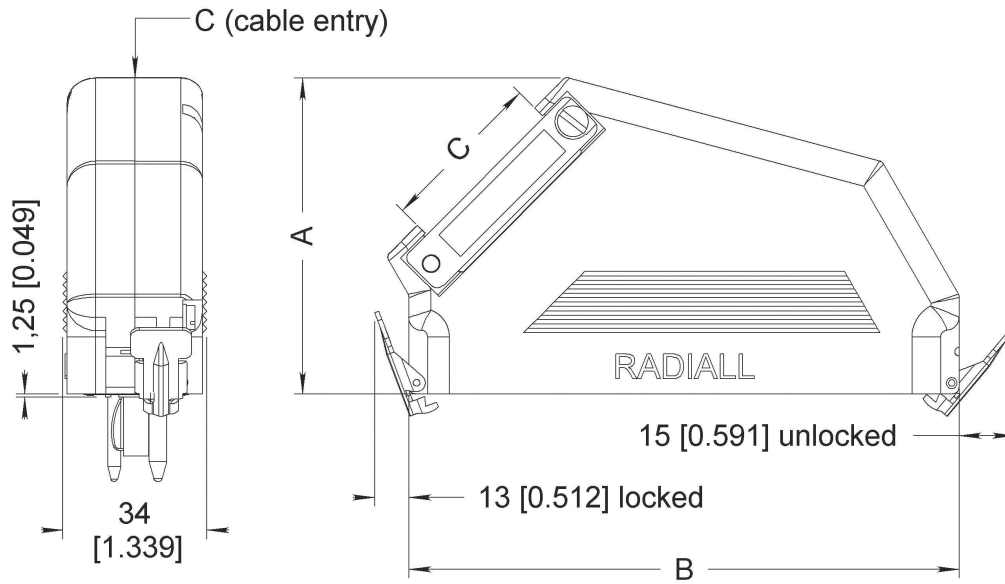
PART NUMBER FOR TOP ENTRY	NUMBER OF CONTACTS		B & MCSR DIMENSIONS MM (INCH)			
	B SERIES	MCSR SERIES	A	B	C	
612813	8	28	52.5 (2.067)	60.5 (2.382)		26 × 10 (1.024 × 0.394)
612823	14	48		77 (3.031)		26 × 15 (1.024 × 0.591)
612837	24	83	65.5 (2.579)	104.5 (4.114)		38 × 20 (1.496 × 0.787)
612845	32	113		126.5 (4.980)		38 × 20 (1.496 × 0.787)





**Notes**

1. This screw is for grounding purpose.

MCS-R Series

SIDE ENTRY



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 × 10 (1.024 × 0.394)
612824	14	48		77 (3.031)	 26 × 15 (1.024 × 0.591)
612838	24	83	73 (2.874)	104.5 (4.114)	 38 × 20 (1.496 × 0.787)
612846	32	113		126.5 (4.980)	 38 × 20 (1.496 × 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 braided 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.

### 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 <sup>[1]</sup> over the dielectric .
- Place the center contact <sup>[2]</sup> over the conductor, the contact must butt against the insulator bushing <sup>[1]</sup>.
- Crimp the center contact with tool 282281.
- Slide the cable and contact into the body <sup>[3]</sup> ensuring that it's pushed home, then trim back the braid over the body <sup>[3]</sup>.
- Slide the ferrule over the braid up to the body shoulder.
- Place the assembly into tool 282292 and crimp the ferrule.

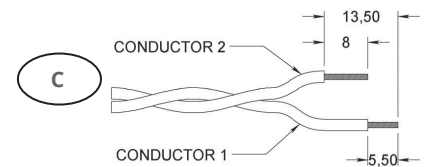
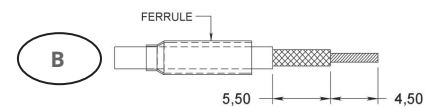
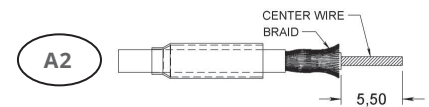
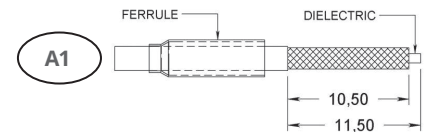
After sliding the ferrule over the cable, strip the latter to dimensions shown in B (mounting of coaxial contacts without insulator bushing).

- 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.

### MICRO COAXIAL CONTACTS WITH TWIN CONDUCTOR CABLE <sup>[4]</sup>

After sliding the ferrule over the twin conductors and stripping them to dimensions shown in C.

- Slide the adaptor 2 and the insulator bushing <sup>[1]</sup> over conductor 1.
- Place the center contact <sup>[2]</sup> 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 <sup>[3]</sup>, ensuring that its home.
- Slide the adaptor 2 onto the body <sup>[3]</sup> 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 <sup>[3]</sup>.
- Place the assembly into tool 282292 and crimp the ferrule.



### Notes

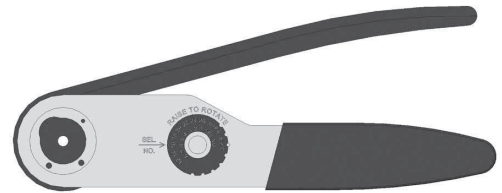
1. Insulating bush
2. Socket or pin contact
3. Contact body
4. Conductor 1 is for the center contact, whilst conductor 2 is for earthing.

MCS-R Series

**TOOLS**

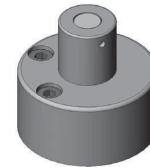
**CRIMP TOOLS**

PART NUMBER	MIL SPEC P/N
282281	M22520/2-01
282291	M22520/1-01
282292	M22520/4-01



**POSITIONERS**

PART NUMBER	MIL SPEC P/N
282973	M22520/4-02
282976	Daniels TP616
282975	Daniels TP617

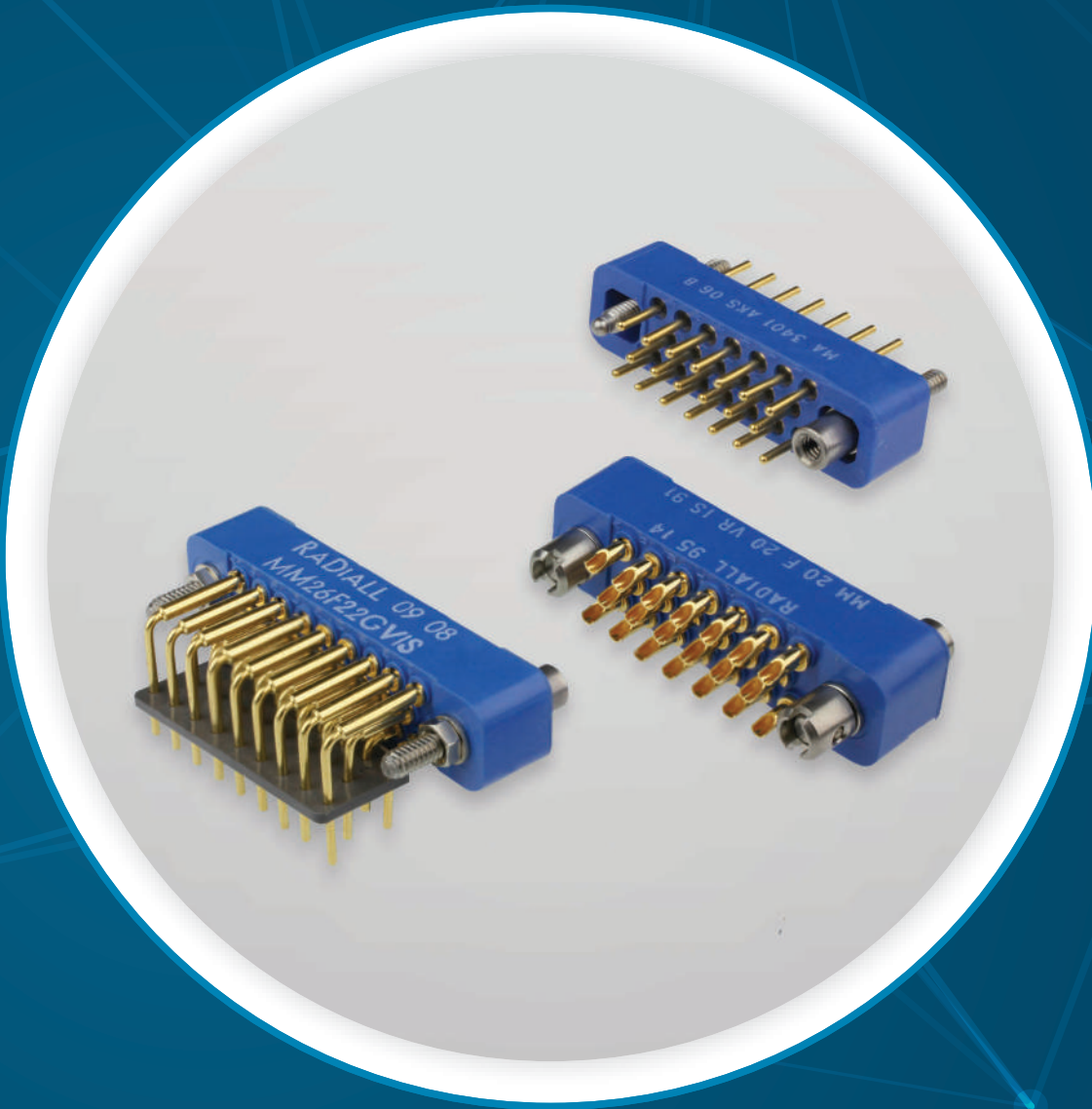


**EXTRACTION TOOL**

PART NUMBER
282920







## MM & MB SERIES

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Features .....	10-3
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## 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  $\emptyset$  0.76 mm / 0.030 inch.

The series offers four types of terminations:

- Solder pot for wire (AWG 22 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  $\emptyset$  1 mm / 0.039 inch.

The series offers three types of terminations:

- Solder pot for wire (AWG 20 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.

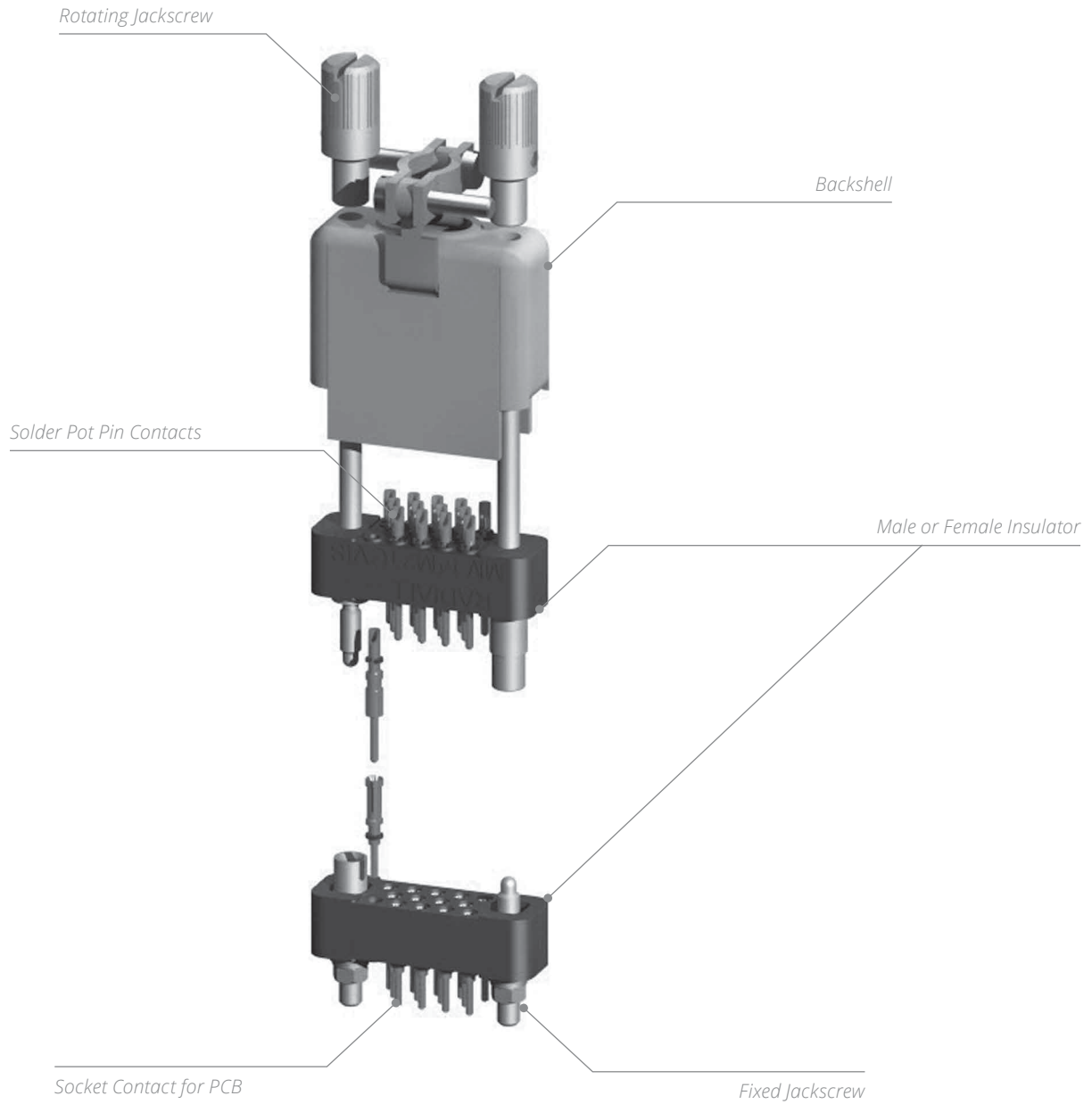


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MM Series

### PRODUCT OVERVIEW

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



## MM Series

**TECHNICAL CHARACTERISTICS****ELECTRICAL**

Conforms to MIL-C-28748 performance requirements and UTE-C-93426 HE611 standard.

- Current Rating: 5A
- Test Voltage at Sea Level: 1,000 Vrms/50 Hz
- Operating Voltage at Sea Level: 350 Vrms/50 Hz
- Operating Voltage at 70,000 ft: 90 Vrms/50 Hz
- Insulation Resistance: > 5,000 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

**SERIES** \_\_\_\_\_

**MM SERIES** \_\_\_\_\_

Contact arrangement (refer to page 10-7)

07 - 14 - 20 - 26: 34: 50

**CONTACT TYPE** \_\_\_\_\_

**M:** Pin

**F:** Socket

**TERMINATION STYLE (REFER TO PAGE 10-8)** \_\_\_\_\_

**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 10-11)** \_\_\_\_\_

**00:** Without guides and jackscrews <sup>[1]</sup>

**G3:** Rack guides <sup>[2]</sup>

**GV:** Fixed jackscrews <sup>[2]</sup>

**VR:** Short rotating jackscrews

**VL:** Long rotating jackscrews <sup>[3]</sup>

**THREAD, GUIDES OR JACKSCREWS** \_\_\_\_\_

**00:** Without guides and jackscrews

**IS:** ISO (M2 × 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 10-13) and rotating jackscrews

2. Connectors to be used with backshell HA (see page 10-13)

3. VL jackscrew assembly is not available for termination style type 22

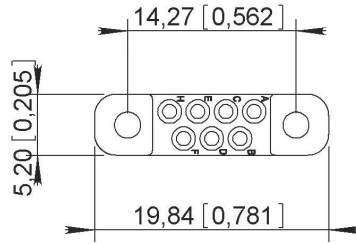


MM Series

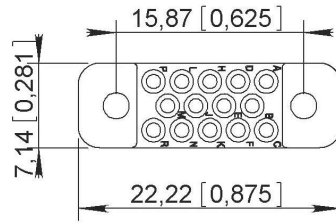
### CONTACT ARRANGEMENTS

#### MALE CONNECTOR

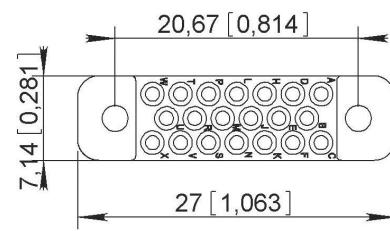
WIRING SIDE DIMENSIONS MM (IN.)



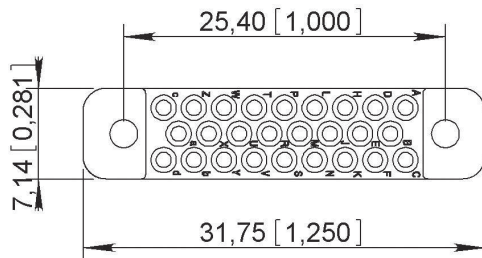
07



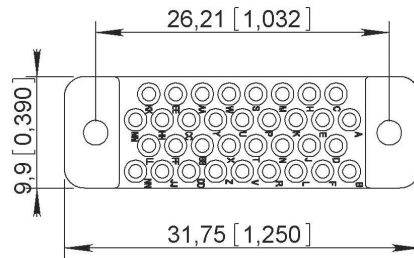
14



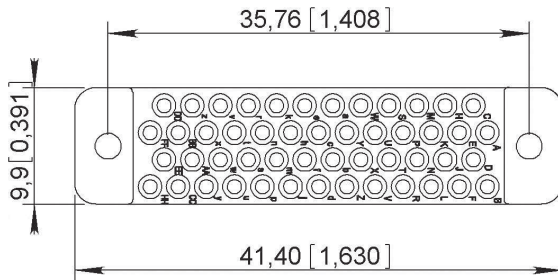
20



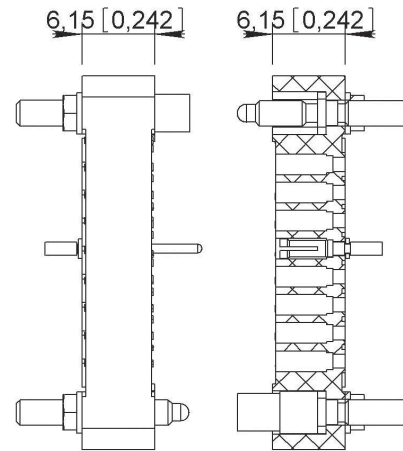
26



34



50



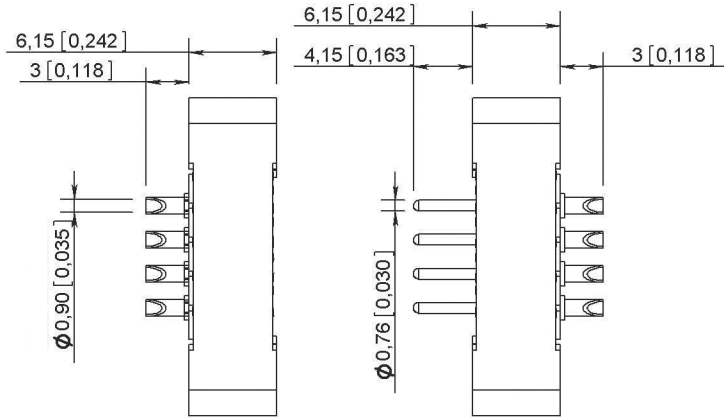
12,30 [0,484] Max mated dimension

#### MATING DIMENSIONS

### TERMINATION STYLES

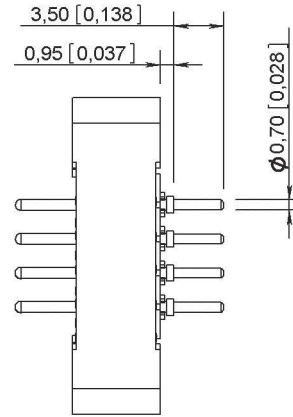
#### TYPE 20

Solder pot



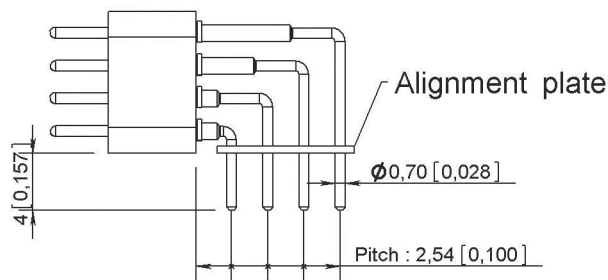
#### TYPE 21 <sup>(1)</sup>

Straight solder pin for PCB



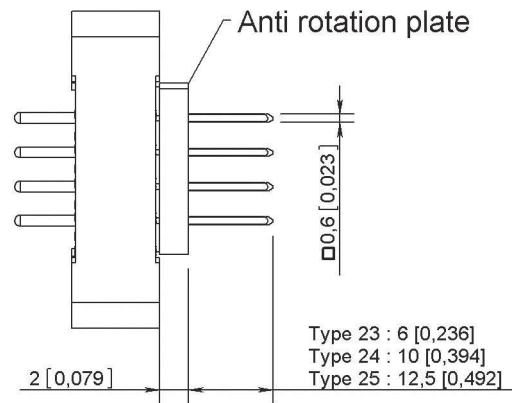
#### TYPE 22

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)



#### Notes

Dimensions mm (inch)

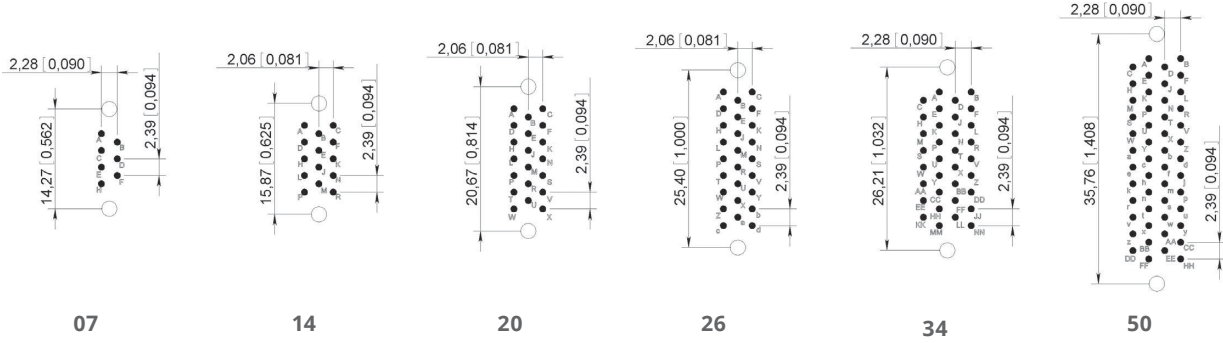
1. For termination style type 21, the connectors are supplied with insulating washers in order to make space between the insulator and the PCB

MM Series

**PRINTED CIRCUIT DRILL PATTERN**

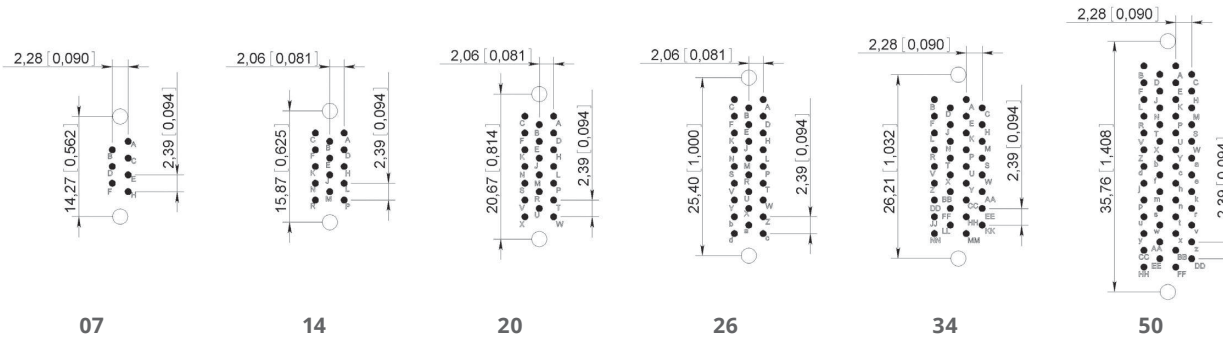
**TYPE 21 TERMINATION STYLE - Connector with socket contacts**

**PCB COMPONENT SIDE VIEW**



**TYPE 21 TERMINATION STYLE - Connector with pin contacts**

**PCB COMPONENT SIDE VIEW**

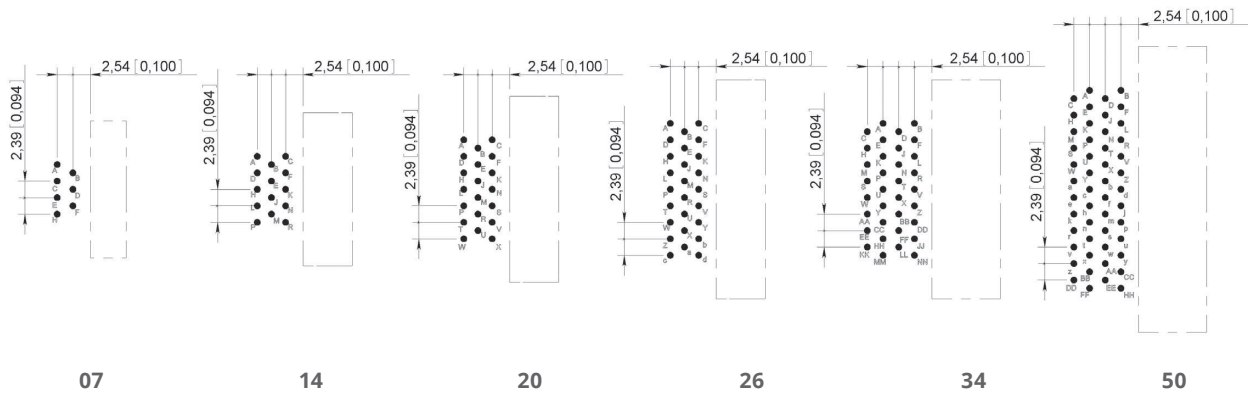


**Notes**

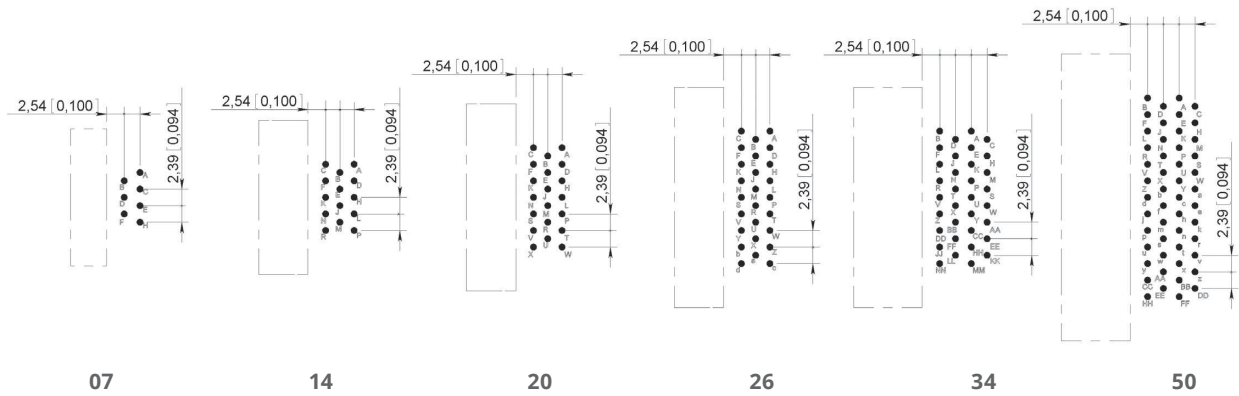
- Printed circuit drilling 0.8 mm ±0.05 (0.031 ±0.002)
- Drilling to fix the connector. Required for guides G3 and GV fixing only  
2.2 mm (0.087) for ISO guides and 2.4 mm (0.094) for UNC guides

MM Series

**TYPE 22 TERMINATION STYLE - Connector with socket contacts**  
PCB COMPONENT SIDE VIEW



**TYPE 22 TERMINATION STYLE - Connector with pin contacts**  
PCB COMPONENT SIDE VIEW



**Notes:**

- Printed circuit drilling 0.8 mm ±0.05 (0.031 ±0.002)

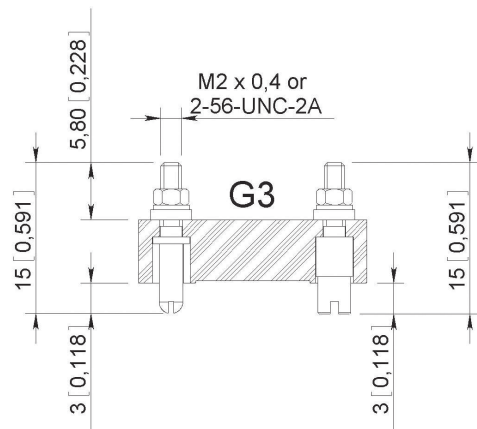
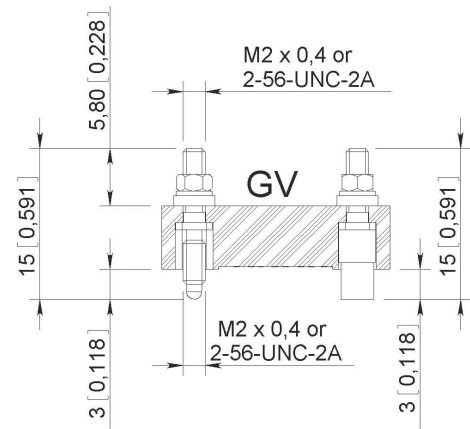
## MM Series

**GUIDES & JACKSCREWS**

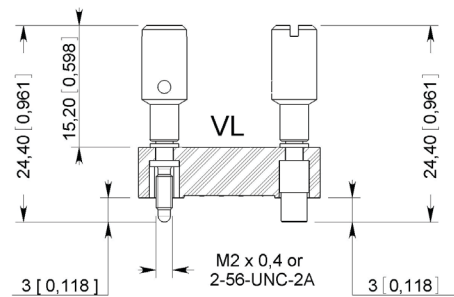
Stainless steel guides and jackscrews are supplied with either ISO (M2 x 0.4) or UNC (2-56 UNC) threads. The guides or jackscrews types (G3 – GV – VL – VR) and the type of thread (ISO or UNC) required are to be defined in the part number on page 10-6.

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**

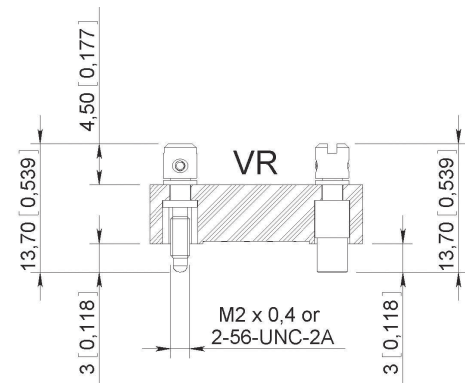
These guide and jackscrews can be used with backshell HA

**LONG AND SHORT ROTATING JACKSCREWS TYPE VL – VR**

Mating torque: 0.2 Nm

Not available for termination style type 22

Cannot be used with any backshell



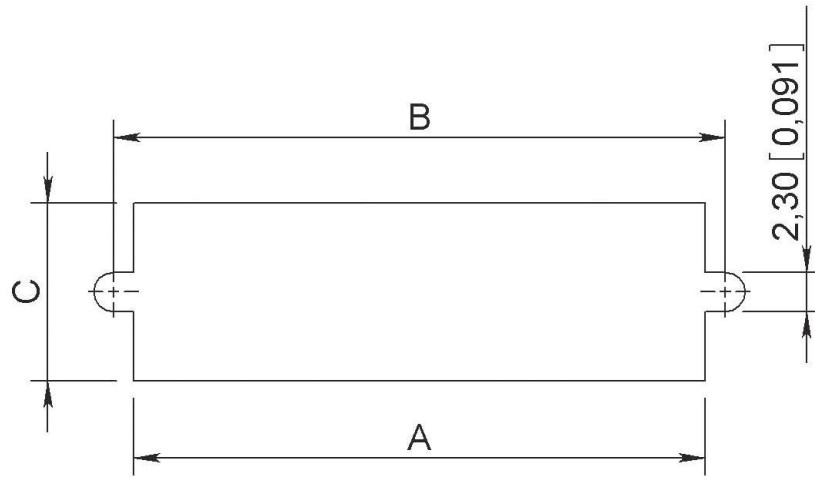
Mating torque: 0.2 Nm

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)	

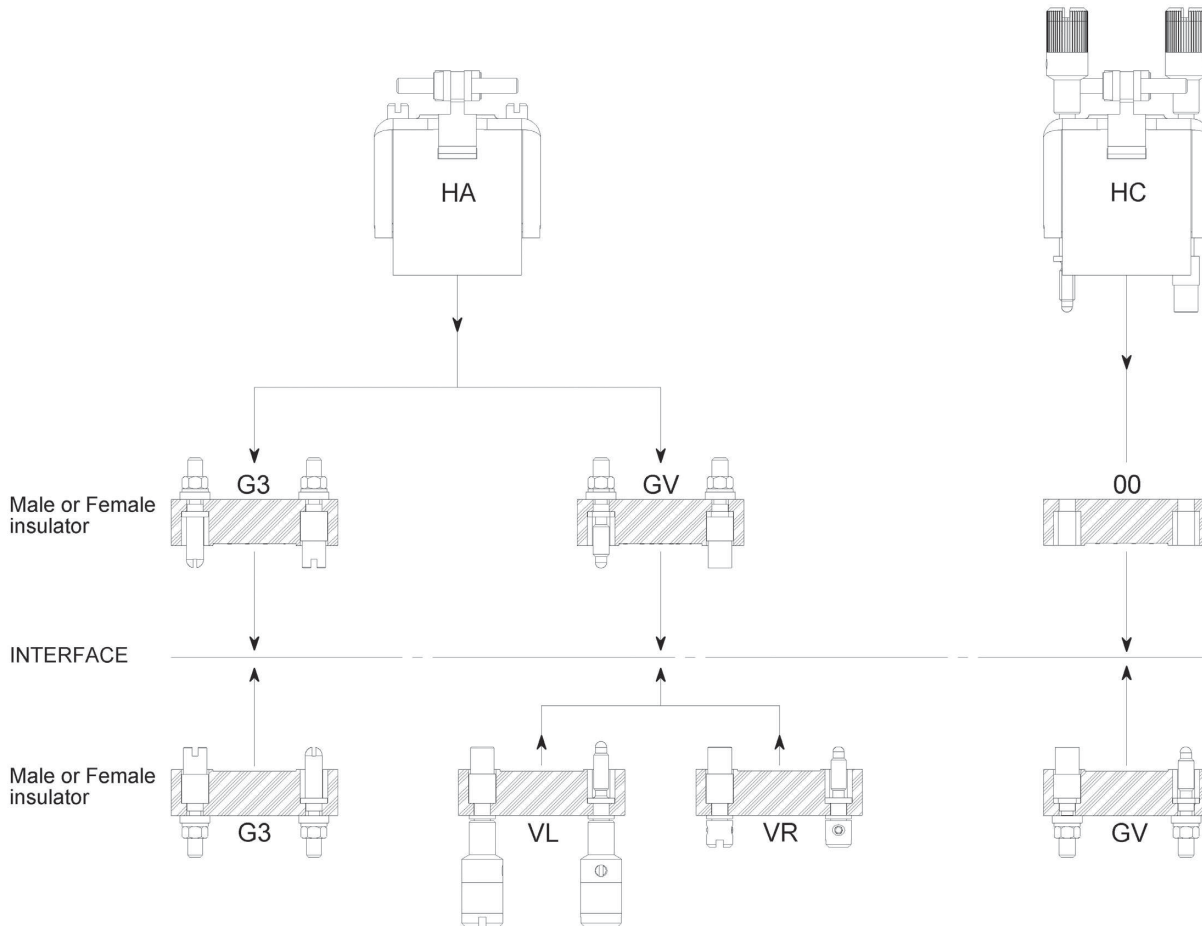


MM Series

### CONNECTOR MATING COMPATIBILITY

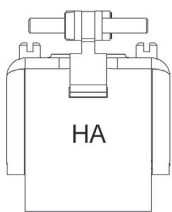
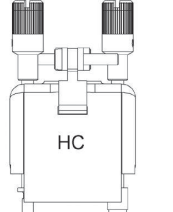
TERMINATION STYLE TYPE 20 ONLY - Use with backshell

#### BACKSHELL TYPE



Use without backshell - All termination style type

### BACKSHELL TYPE AVAILABILITY

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)

MM Series

**TOP ENTRY BACKSHELLS**

**TYPE HA**

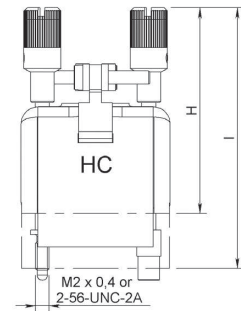
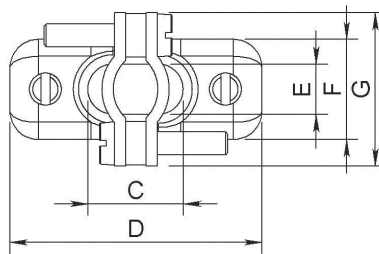
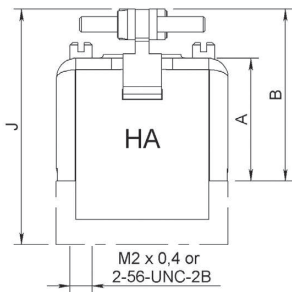
Backshells supplied with two internal threaded posts which are screwed into the guides G3 or jackscrews GV.

**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: 0.15 NM**

CONTACT ARRANGEMENT	A	B	C	D	E	F	G	H	I	J
07	15.9 (0,626)	23.15 (0.911)	5.5 (0.216)	19.8 (0.779)	4 (0.157)	6.8 (0.268)	13.5 (0.531)	31.9 (1.256)	38.2 (1.504)	29.4 (1.157)
14			10 (0.394)	22.2 (0.874)	6 (0.236)	8.8 (0.346)				
20			14 (0.551)	27 (1.063)						
26			19 (0.748)	31.8 (1.252)	9.5 (0.374)	11.8 (0.464)	15.7 (0.618)			
34										
50			30.5 (1.201)	38.5 (1.516)	29.7 (1.169)	41.4 (1.630)				

**Notes:**

Dimensions mm (inch)

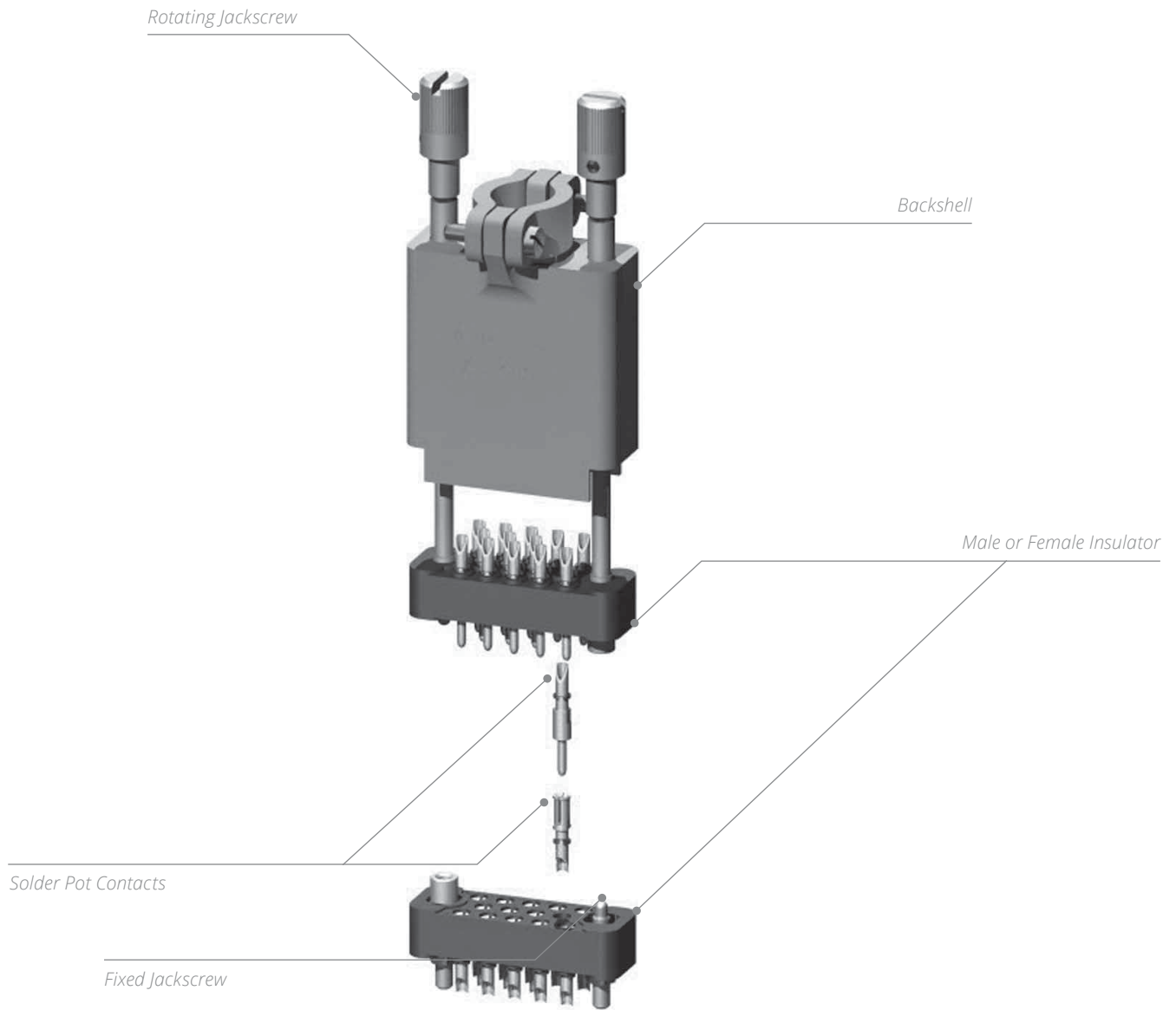
Fixing of backshells only suitable for insulator with termination style type 20 (solder pot).



MB Series

## PRODUCT OVERVIEW

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



## MB Series

**TECHNICAL CHARACTERISTICS****ELECTRICAL**

Conforms to MIL-C-28748 performance requirements standard.

- Current Rating: 7.5A
- Test Voltage at Sea Level: 1,500 Vrms/50 Hz
- Operating Voltage at Sea Level: 500 Vrms/50 Hz
- Insulation Resistance: > 5,000 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: 20 g/10-2,000 Hz
- Humidity: 21 Days
- Contact Insertion Force: 3 N
- 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
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 & 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)

MB Series

## HOW TO ORDER CONNECTORS

MM

### SERIES

#### MB SERIES

Contact arrangement (refer to page 10-18)

02: 03 : 05 : 07 - 11 - 14

20: 26 : 34 : 42 - 50 - 75

#### CONTACT TYPE

**M:** Pin

**F:** Socket

#### TERMINATION STYLE (REFER TO PAGE 10-19)

**85:** Solder pot

**86:** Straight solder pin for PCB

**87:** Right angle solder pin for PCB

#### GUIDES AND JACKSCREWS (REFER TO PAGE 10-25)

**00:** Without guides and jackscrews <sup>[1]</sup>

**G1:** Rack guides <sup>[2]</sup>

**GV:** Fixed jackscrews <sup>[2]</sup>

**VR:** Short rotating jackscrews

**VL:** Long rotating jackscrews <sup>[3]</sup>

#### 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:

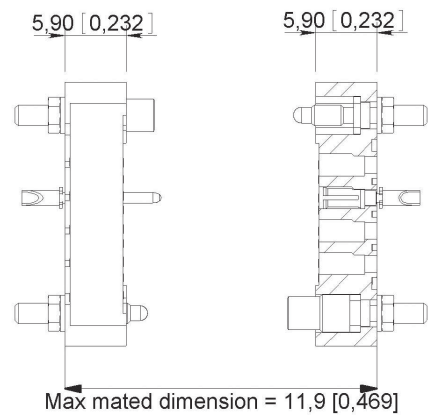
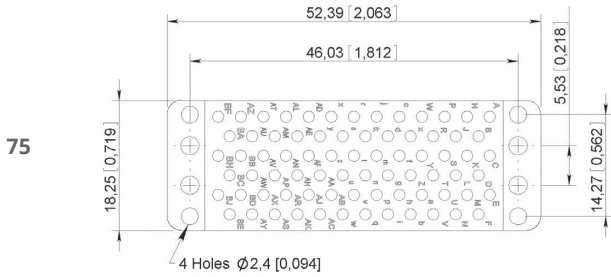
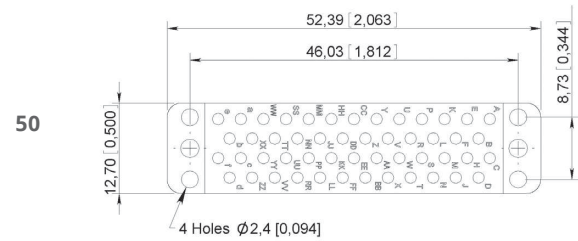
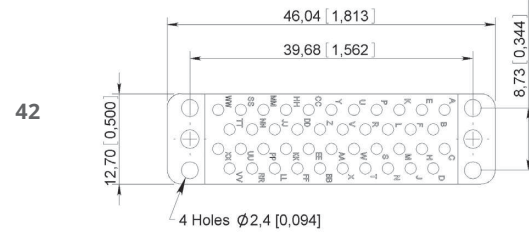
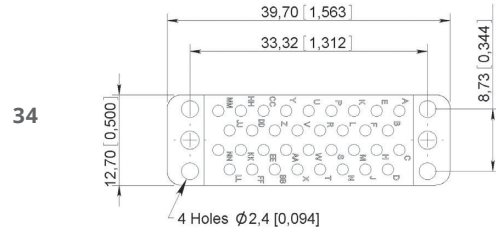
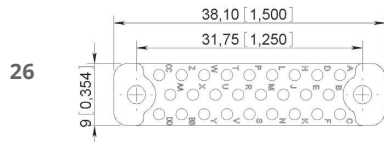
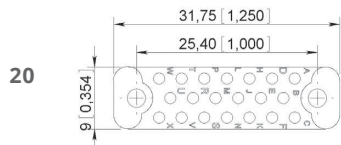
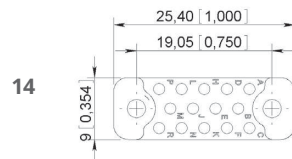
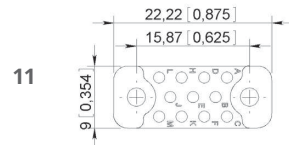
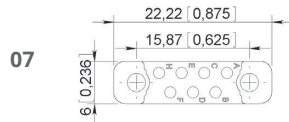
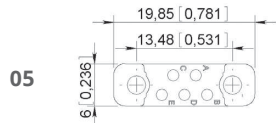
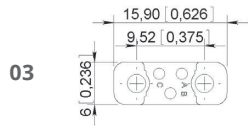
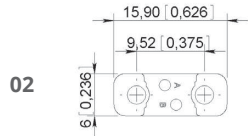
1. Connectors to be used with backshell HC and HV (see page 10-26) or rack guides G1

2. Connectors to be used with backshell HA and HL (see page 10-26)

A spring clip locking system can be fitted (see page 10-30)

3. VL jackscrews assembly is only available for termination style type 85

### CONTACT ARRANGEMENTS



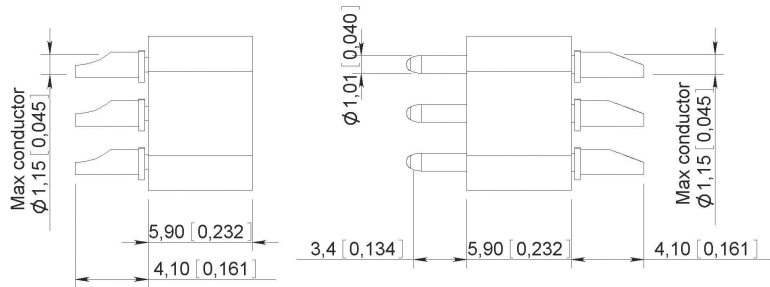
**MATING DIMENSIONS**

## TERMINATION STYLES

All contacts arrangement and termination style have contacts stopped in rotation (except contact arrangements 42, 50 and 75 for these please contact us).

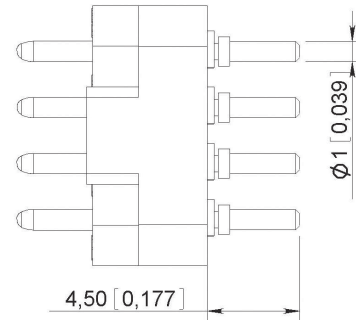
### TYPE 85

Solder pot



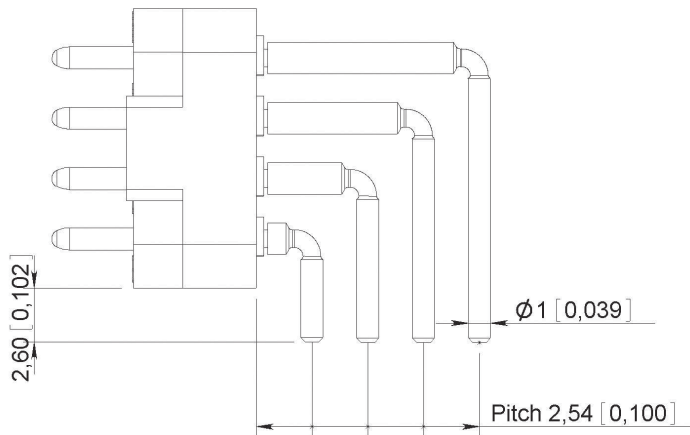
### TYPE 86 <sup>[1]</sup>

Straight solder pin for PCB



### TYPE 87

Right angle solder pin for PCB



### Notes

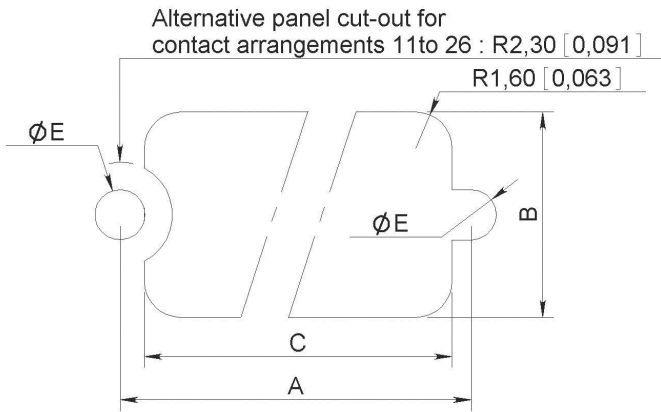
Dimensions mm (inch)

1. The connectors are supplied with insulating washers which act as spacers between the insulator and the PCB

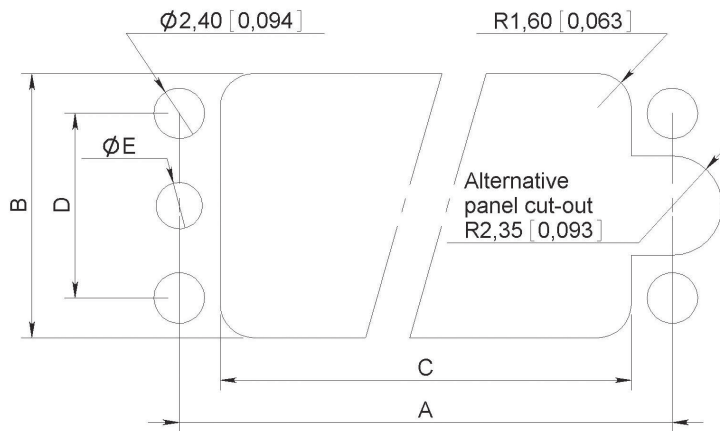
PANEL CUT-OUT

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)

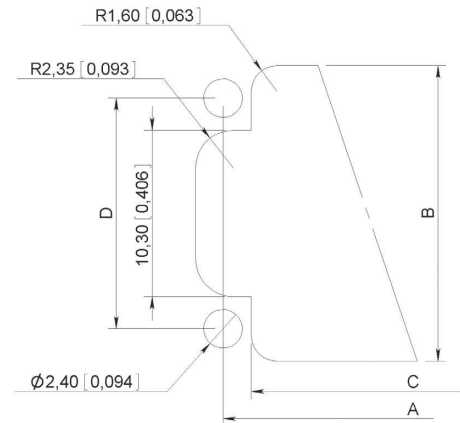
CONTACT ARRANGEMENTS 02 - 03 - 05 - 07 - 11 - 14 - 20 - 26



CONTACT ARRANGEMENTS 34 - 42 - 50



CONTACT ARRANGEMENT 75

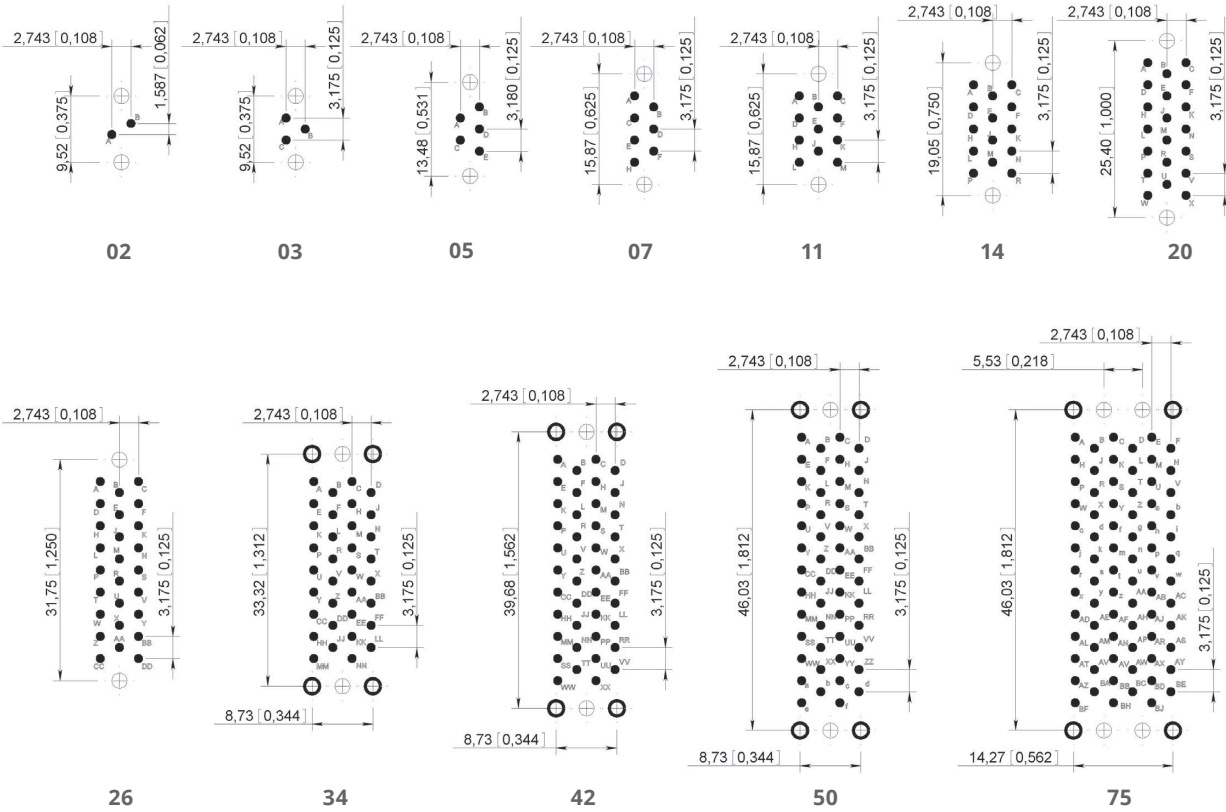


Notes

Dimensions mm (inch)

### PRINTED CIRCUIT DRILL PATTERN

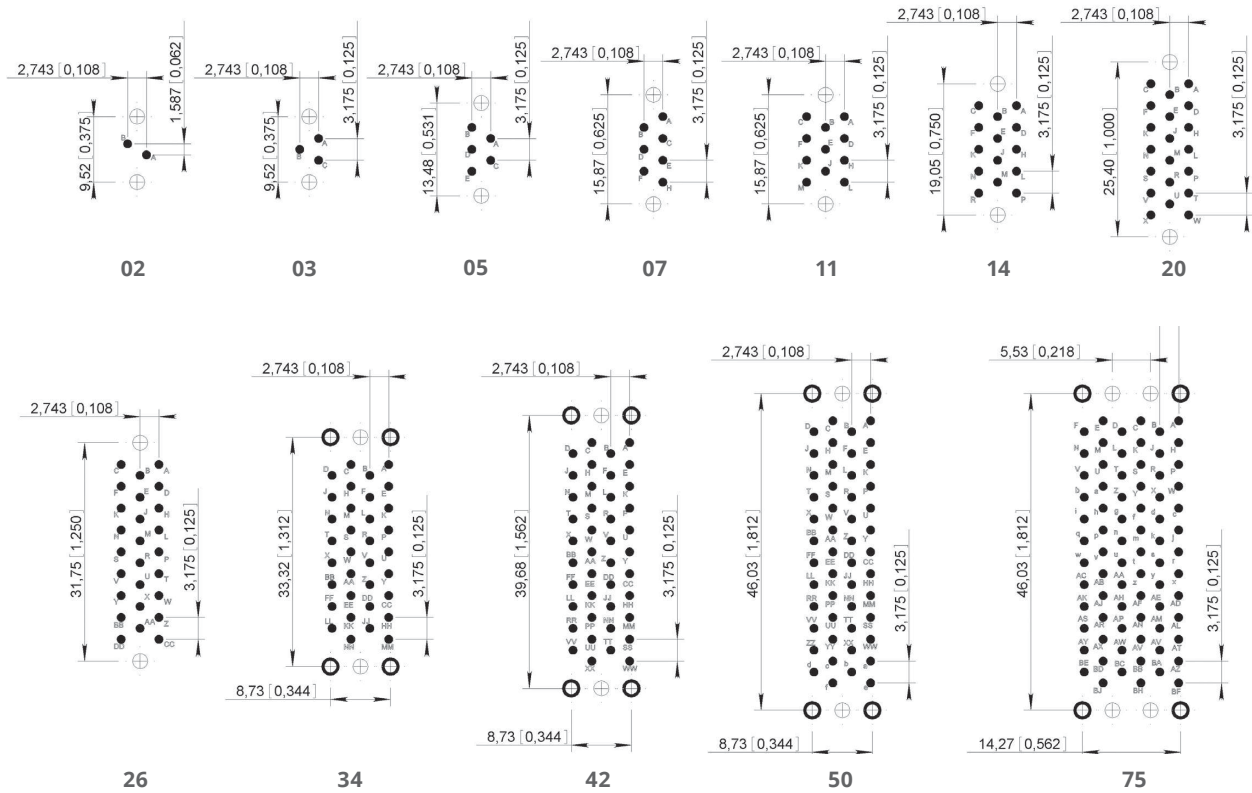
TYPE 86 TERMINATION STYLE - Connector with SOCKET contacts – PCB component side view in mm (inch)



**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

**TYPE 86 TERMINATION STYLE - Connector with PIN contacts – PCB component side view in mm (inch)**



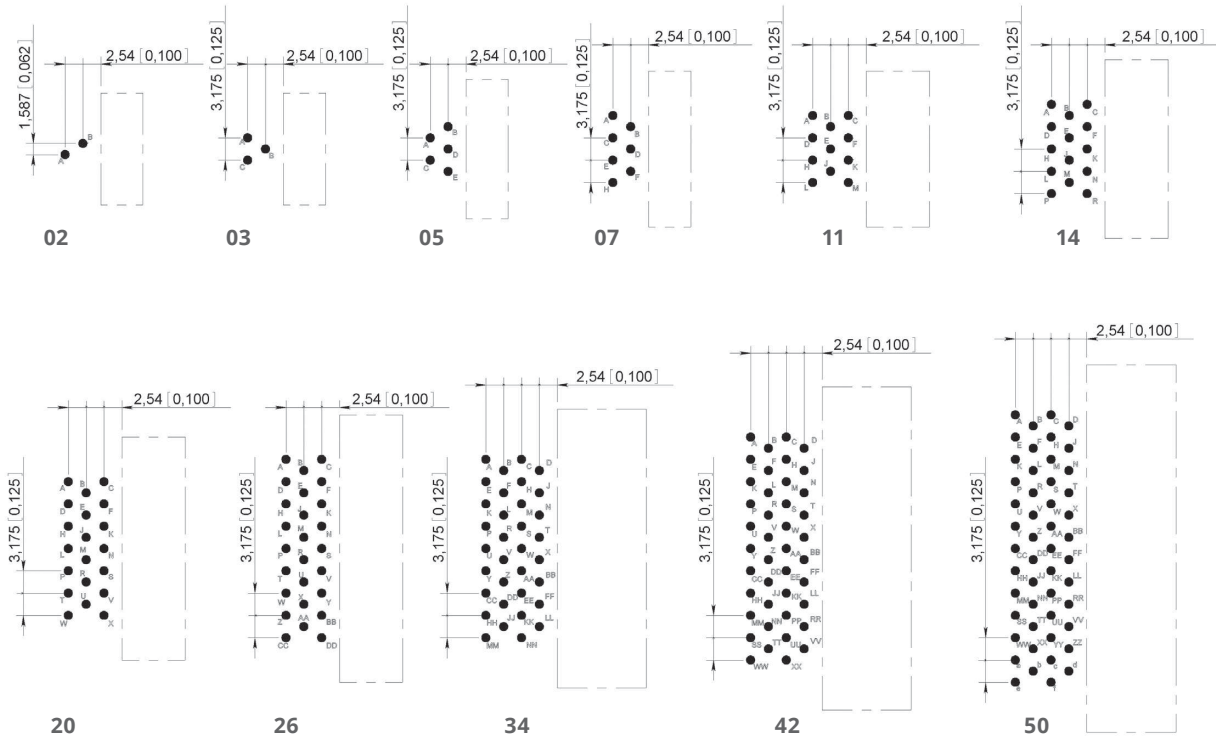
**Notes:**

- 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

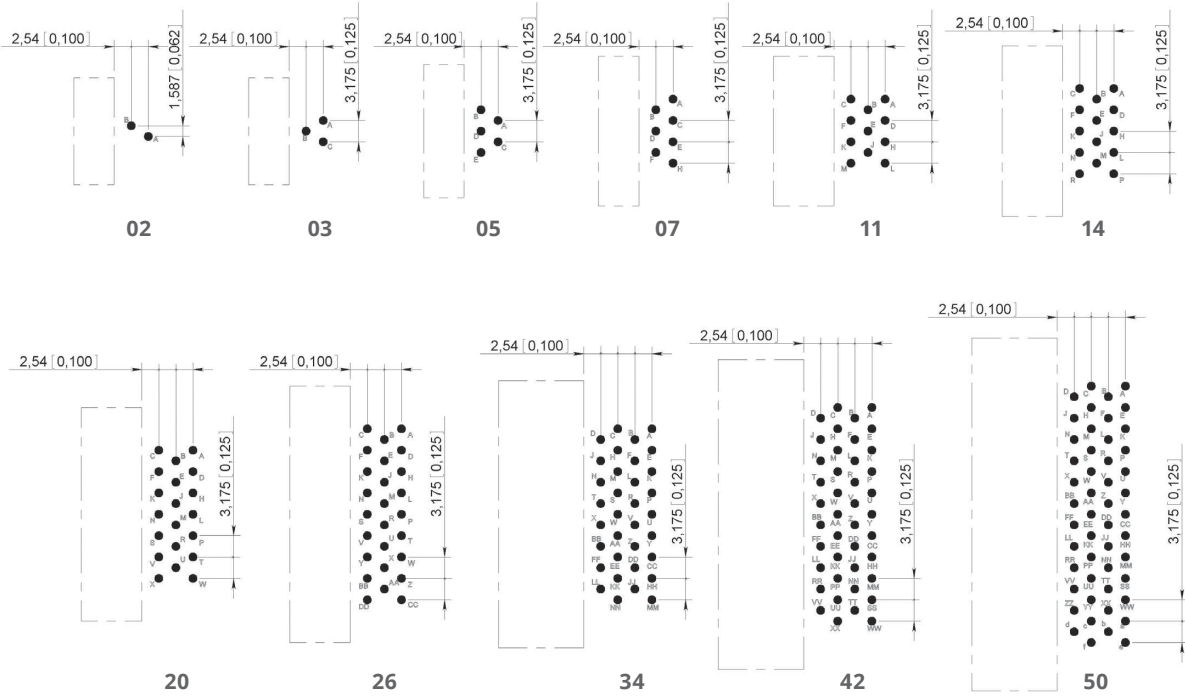
**TYPE 87 TERMINATION STYLE - Connector with SOCKET contacts – PCB component side view in mm (inch)**



**Notes:**

- Printed circuit drilling  $\varnothing 1.1 +0.1 (0.043 +0.003)$

**TYPE 87 TERMINATION STYLE - Connector with PIN contacts – PCB component side view in mm (inch)**



**Notes:**

• Printed circuit drilling  $\varnothing 1.1 +0.1 (0.043 +0.003)$

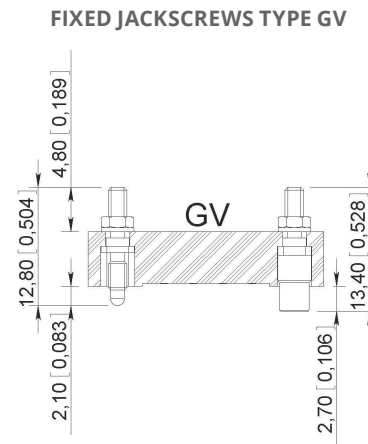
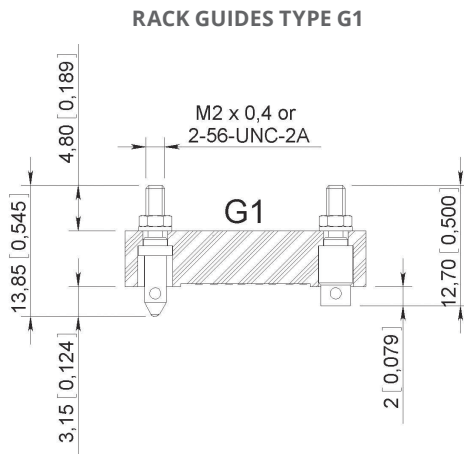
## MB Series

**GUIDES & 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 10-17.

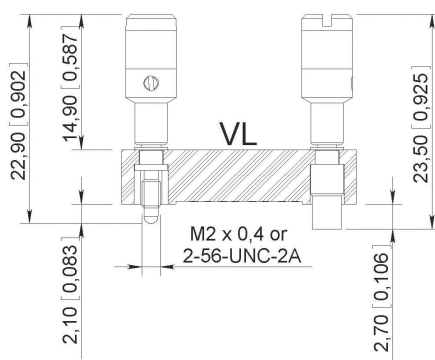
The standard configuration of guides and jackscrews is:

- 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.



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.

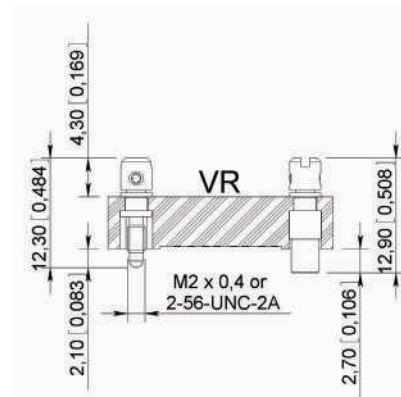
These guide and jackscrews can be used with backshells HA and HL

**LONG AND SHORT ROTATING JACKSCREWS TYPE VL – VR**

Mating torque: 0.2 Nm

Not available for termination style type 87

Cannot be used with backshell

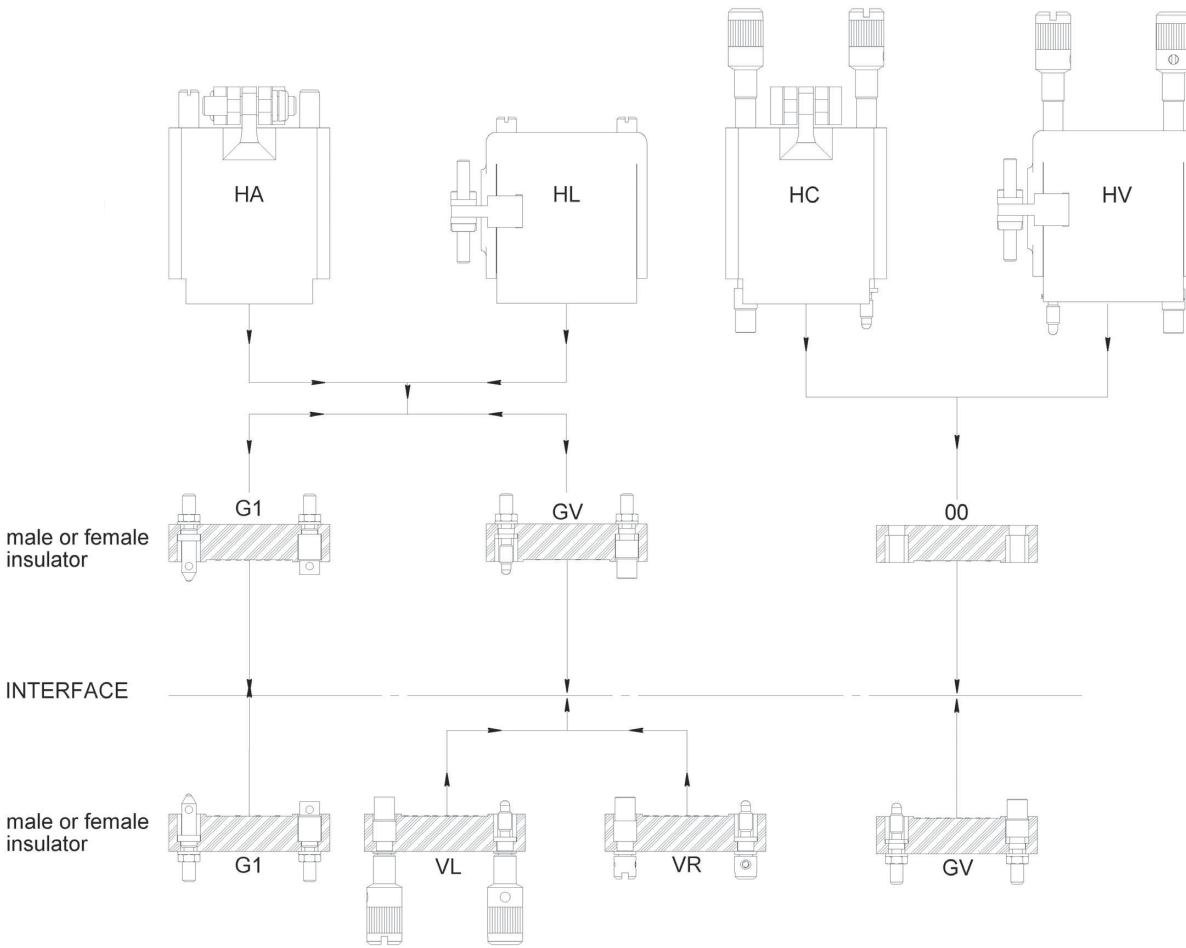


Mating torque: 0.2 Nm

Cannot be used with backshell

### CONNECTOR MATING COMPATIBILITY

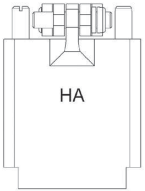
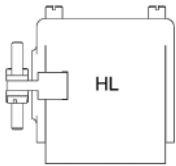
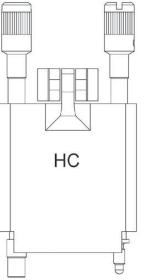
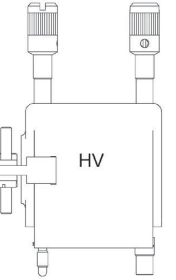
TERMINATION STYLE TYPE 85 ONLY - Use with backshell



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				
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)
07	07			-	-
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)

**Notes**

1. Available for male contact arrangement only

MB Series

**TOP ENTRY BACKSHELLS**

**TYPE HA**

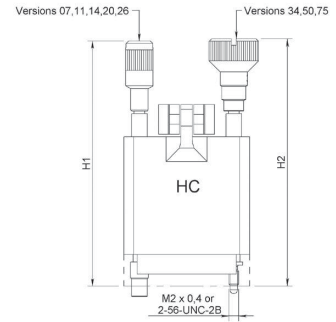
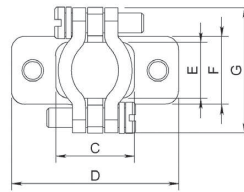
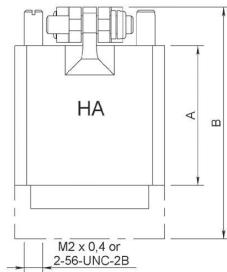
Backshells supplied with two internal threaded posts which are screwed into the guides G1 or jackscrews GV.

**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: 0.15 NM**

CONTACTS ARRANGEMENTS <sup>[1]</sup>	A	B	C	D	E	F	G	H1	H2 <sup>[2]</sup>					
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)	25.4 (1)	8.7 (0.342)	10.3 (0.405)	15.87 (0.625)	48.8 (1.921)	N/A					
14			12.7 (0.500)						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)	N/A	N/A					
26			23 (0.905)	38.1 (1.500)					23.8 (0.937)	55.2 (2.173)	N/A			
34			20.6 (0.811)	39.7 (1.563)					52.4 (2.063)	18.2 (0.716)	19.8 (0.779)	34.52 (1.359)	N/A	55.6 (2.189)
50			22.2 (0.874)	23 (0.905)										
75														

**Notes**

Dimensions mm (inch)

- Fixing of backshells only suitable for insulator with termination style type 85 (solder pot)
- Backshells 34, 50 and 75 are fitted with 4 screws to be fixed to the connector block

## MB Series

## SIDE ENTRY BACKSHELLS

## TYPE HA

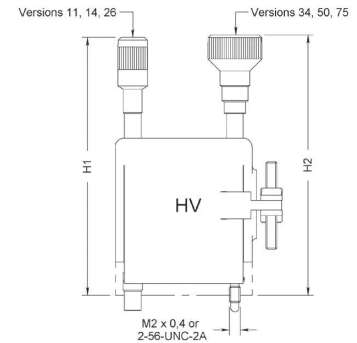
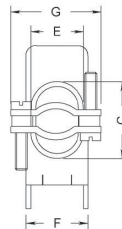
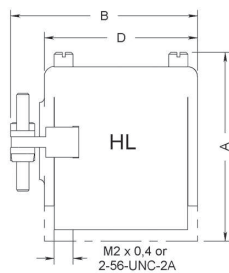
Backshells supplied with two internal threaded posts which are screwed into the guides G1 or jackscrews GV.

## 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 <sup>[1]</sup>	-	MB75HVNC <sup>[1]</sup>



MATING TORQUE: 0.15 NM

CONTACTS ARRANGEMENTS <sup>[2]</sup>	A	B	C	D	E	F	G	H1	H2 <sup>[3]</sup>
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)	23.8 (0.937)	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)				14.3 (0.563)
50		64.3 (2.531)	22.2 (0.874)	52.4 (2.063)		18.2 (0.717)	19.8 (0.780)	N/A	
75		65.5 (2.579)	23 (0.906)	52.4 (2.063)					

## Notes

Dimensions mm (inch)

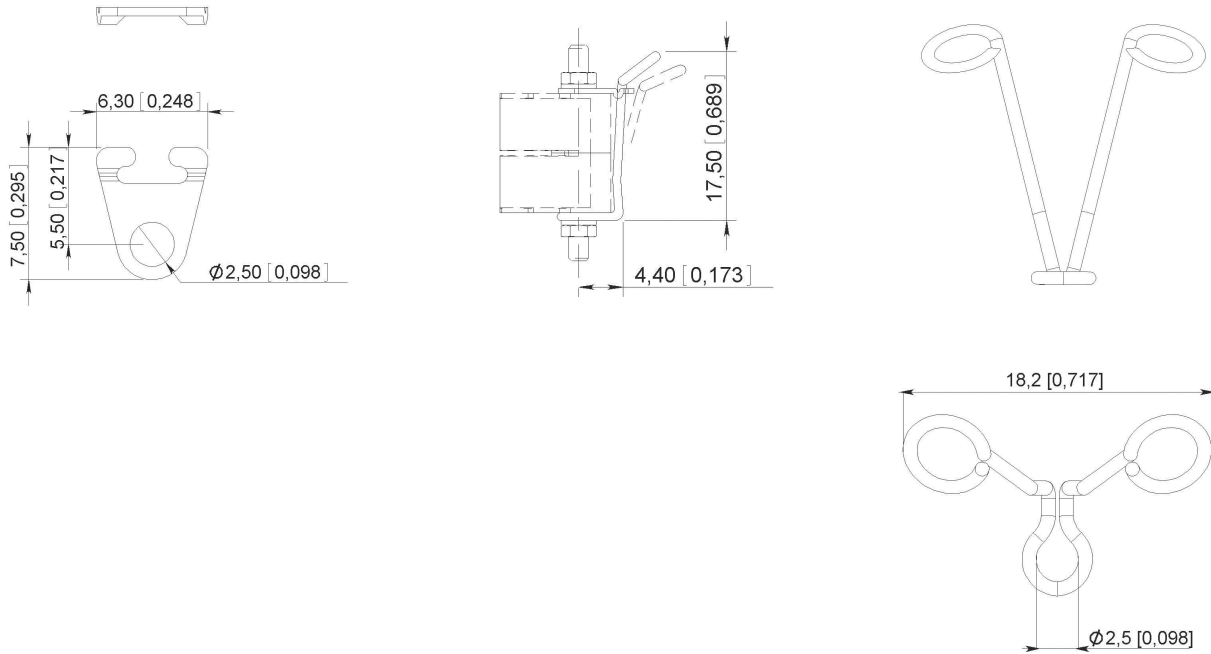
- Available for male contact arrangement only
- Fixing of backshells only suitable for insulator with termination style type 85 (solder pot)
- Backshells 34, 50 and 75 are fitted with 4 screws to be fixed to the connector block

## 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.

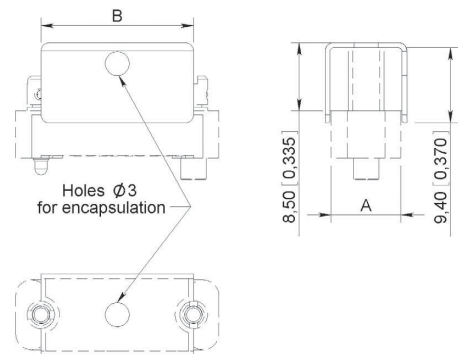
Part number of a pair: 624895



### 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)







## RTX SERIES

EN3716



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RTX Series

**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

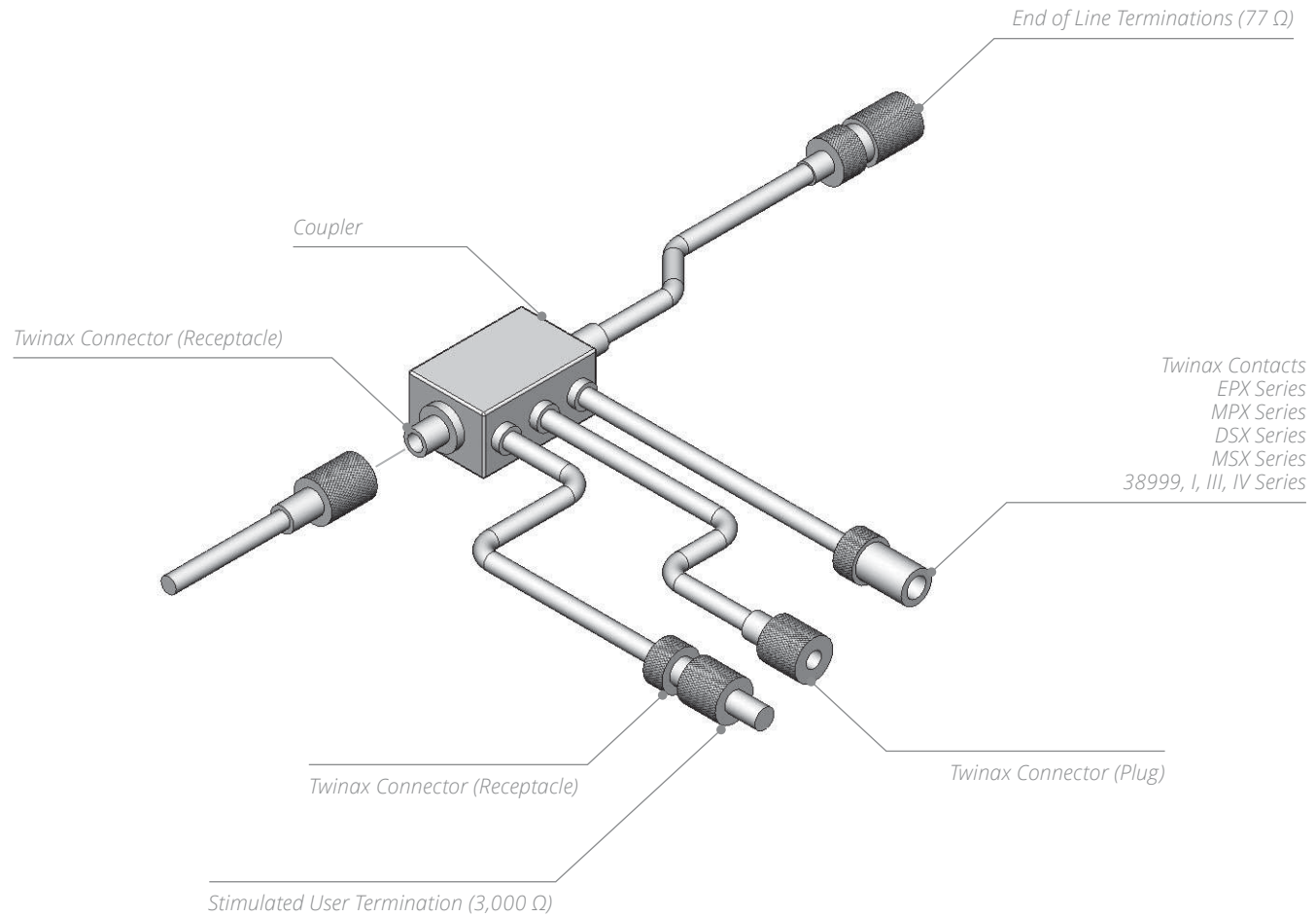
EPX EN4644

MPX MIL DTL-83527B / EN3682

DSX SAE AS81659 / Arinc 404

MIL-DTL-38999

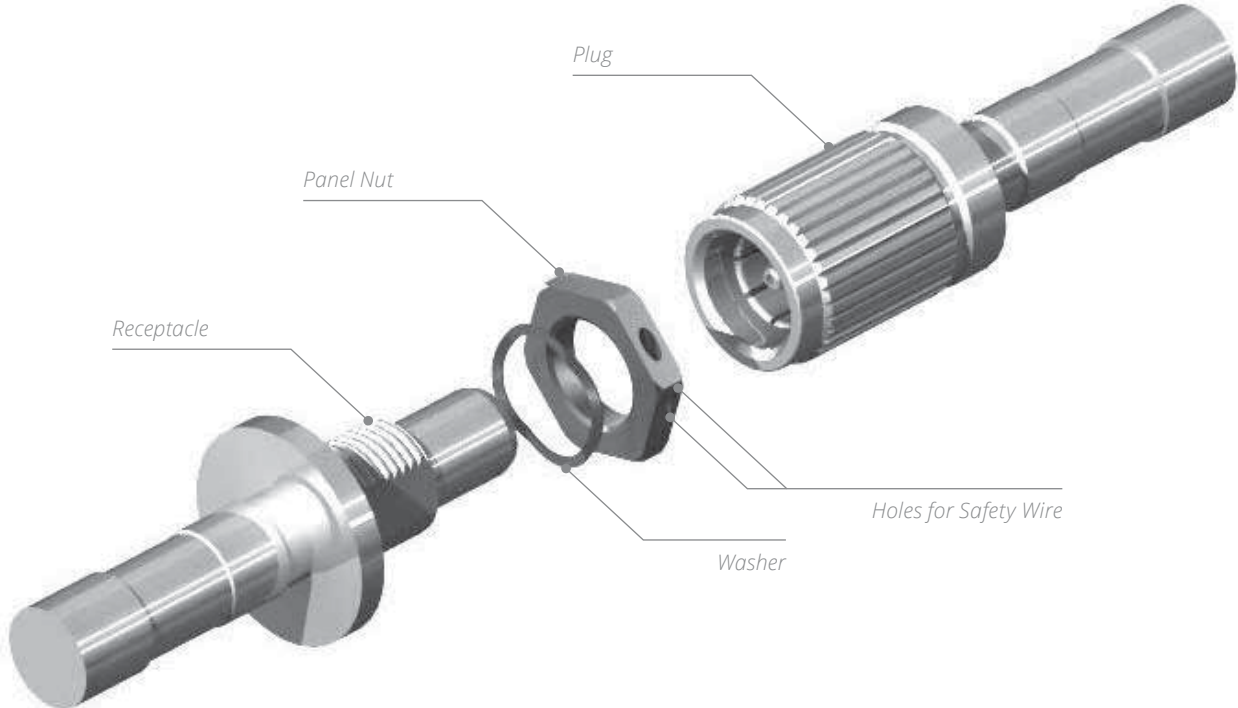
**APPLICATIONS**



RTX Series

**PRODUCT OVERVIEW**

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



## TECHNICAL CHARACTERISTICS

### ELECTRICAL

- Frequency Range: 5 MHz max
- Insulation Resistance: at 25 °C (77 °F)  $\geq 5000 \text{ M}\Omega$   
at 150 °C (302 °F)  $\geq 1,000 \text{ M}\Omega$
- DWV (Sea Level): 900 Vac RMS – 50 Hz
- DWV (70,000 ft): 200 Vac RMS – 50 Hz
- Contact Resistance:
  - Center & 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: 1,000 Hours at 150 °C (+302 °F)
- Salt Spray: 500 Hours
- Altitude Immersion: 47 kPa (0.68 psi)
- Air Leakage: 0.5 cm<sup>3</sup>/s
- Sand & 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:  $1 \leq C \leq 1.25 \text{ Nm}$  ( $8.85 \leq C \leq 11 \text{ lb in.}$ )
  - Unmating:  $C \leq 1.35 \text{ Nm}$  ( $11.95 \text{ lb in.}$ )
- RoHs statue: Not RoHs

## RTX Series

**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 & Crimp Pot	Copper Alloy Gold over Nickel
Ferrule	Nickel-Plated Brass
Insulator & 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.

RTX

SERIES PREFIX \_\_\_\_\_

CONNECTOR TYPE \_\_\_\_\_

003: Receptacle

004: Plug

INTERMEDIATE CONTACT TYPE \_\_\_\_\_

F: Socket

M: Pin

CABLE TYPE <sup>(1)</sup> \_\_\_\_\_

01: Twisted pair single braid

02: Twisted pair double braid



### Notes

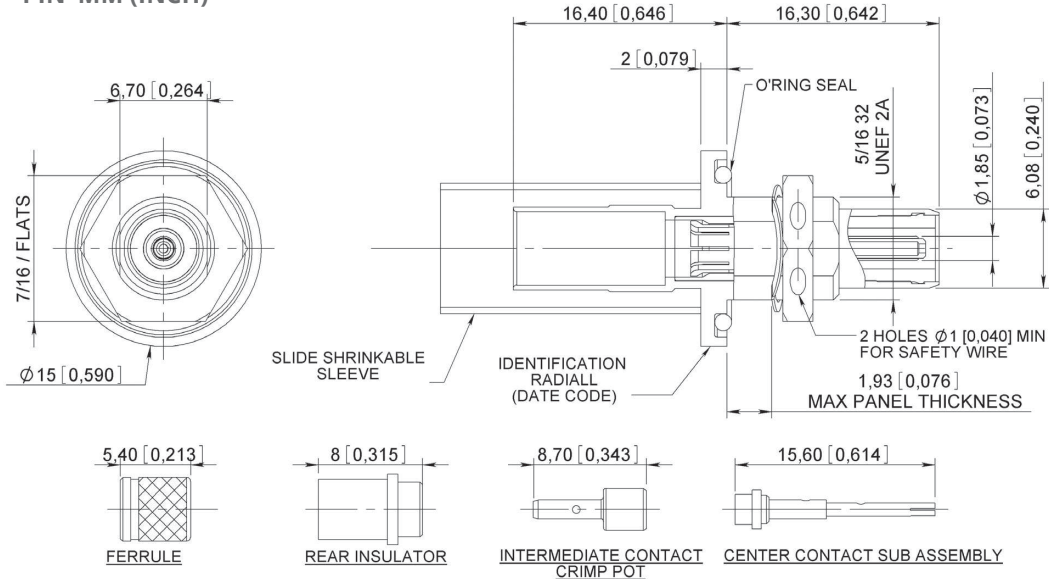
1. A version for triaxial cable is also available, please consult Radiall.



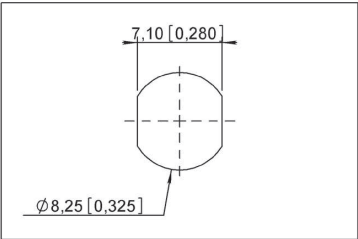
RTX Series

**DIMENSIONS & PANEL CUT-OUT**  
**RECEPTACLE - PIN MM (INCH)**

RTX003M -

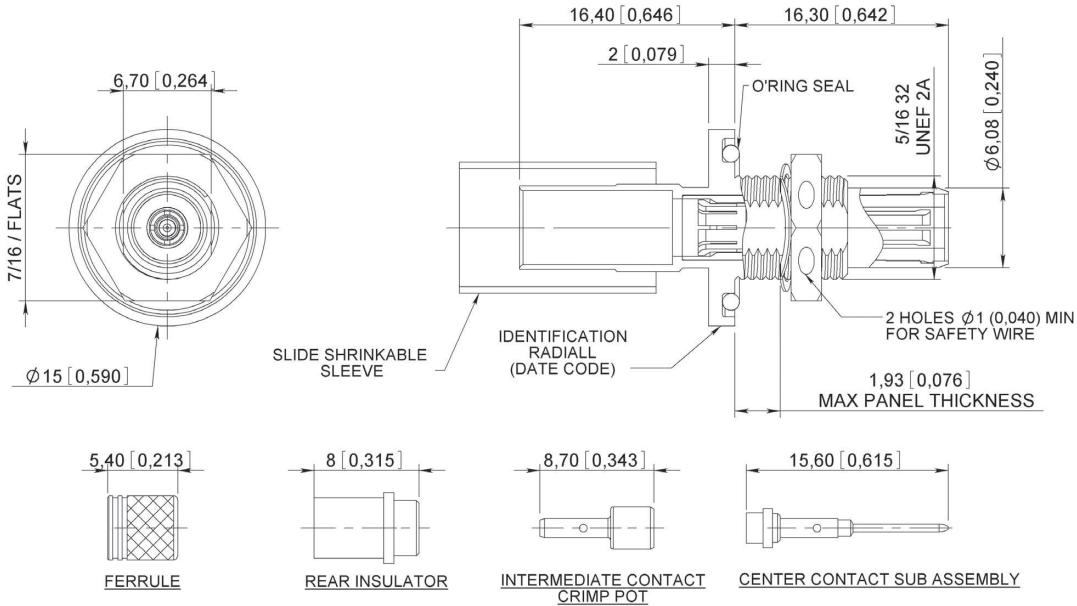


**PANEL CUT OUT**



**RECEPTACLE - SOCKET MM (INCH)**

RTX003F -

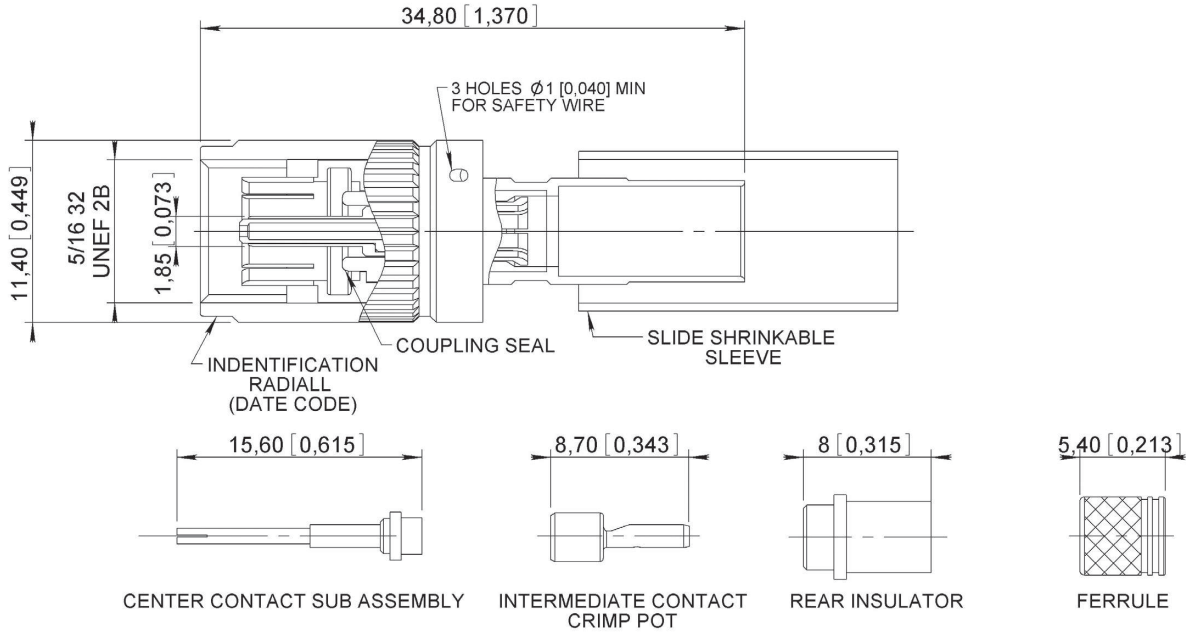


RTX Series

### DIMENSIONS

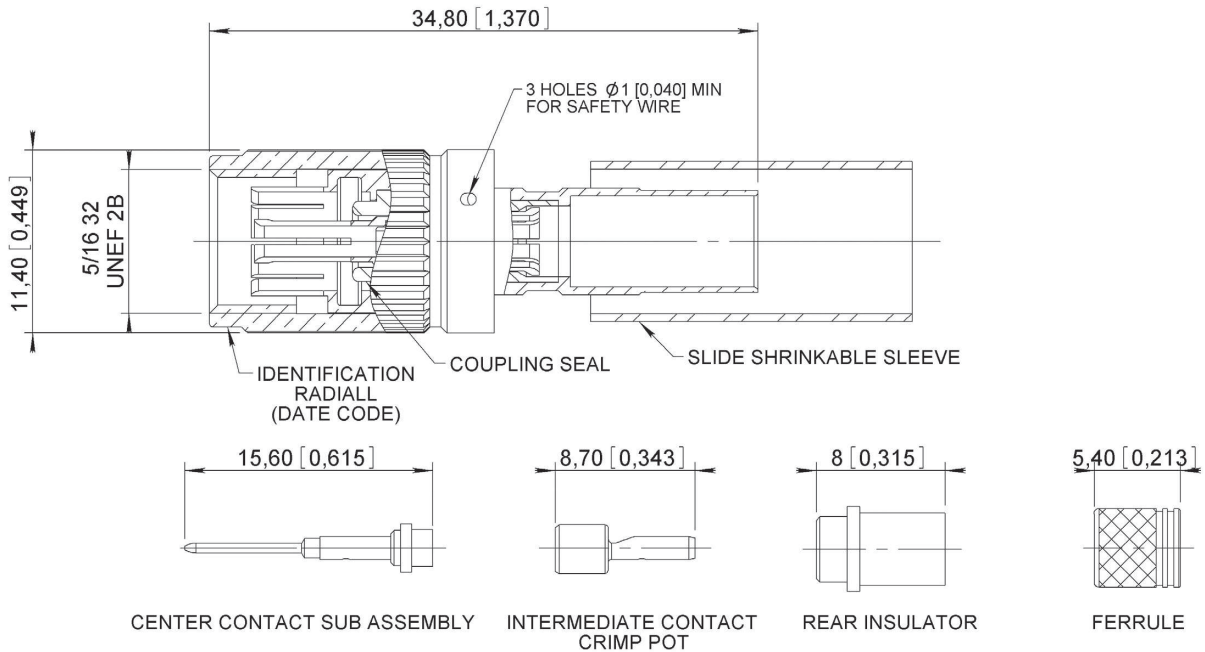
#### PLUG - PIN MM (INCH)

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.

# RTX

**SERIES PREFIX** \_\_\_\_\_

**CONNECTOR TYPE** \_\_\_\_\_

**003:** Receptacle

**004:** Plug

**INTERMEDIATE CONTACT TYPE** \_\_\_\_\_

**F:** Socket

**M:** Pin

**TERMINATION VALUE**<sup>[1]</sup> \_\_\_\_\_

**770:** End of line terminations (77  $\Omega$ )

**302:** Simulated user terminations (3,000  $\Omega$ )

## TECHNICAL CHARACTERISTICS

RTX series terminations have the same technical characteristics as the RTX plug and receptacle except the following:

- **Termination Values:**  $77 \pm 5 \Omega$  or  $3,000 \pm 60 \Omega$
- **DWV:** 700 Vac RMS – 60Hz
- **Working Voltage:** 120 Vac RMS – 60 Hz

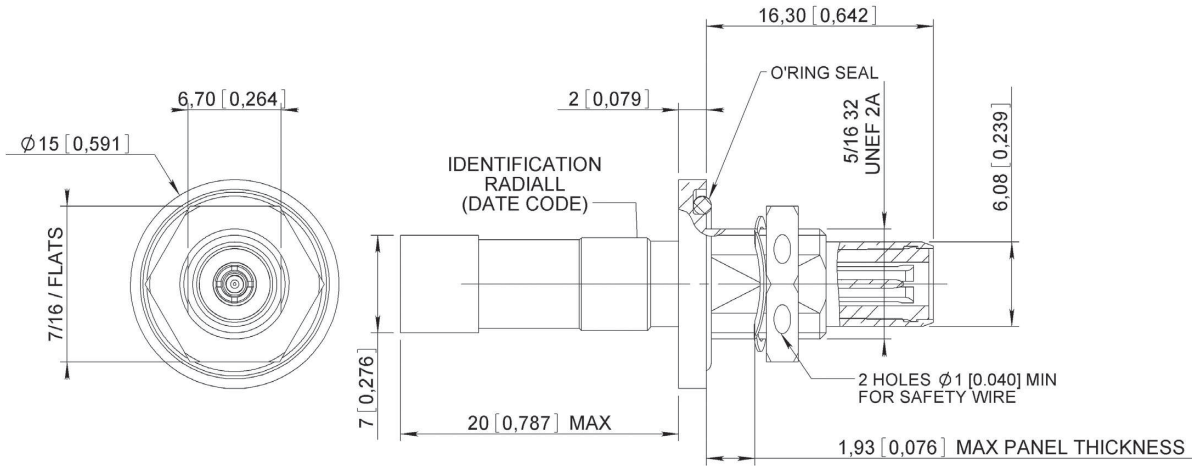
### Notes

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)

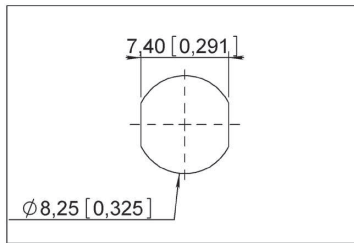
### DIMENSIONS RTX TERMINATIONS

#### RECEPTACLE TERMINATION MM(INCH)

RTX003 -

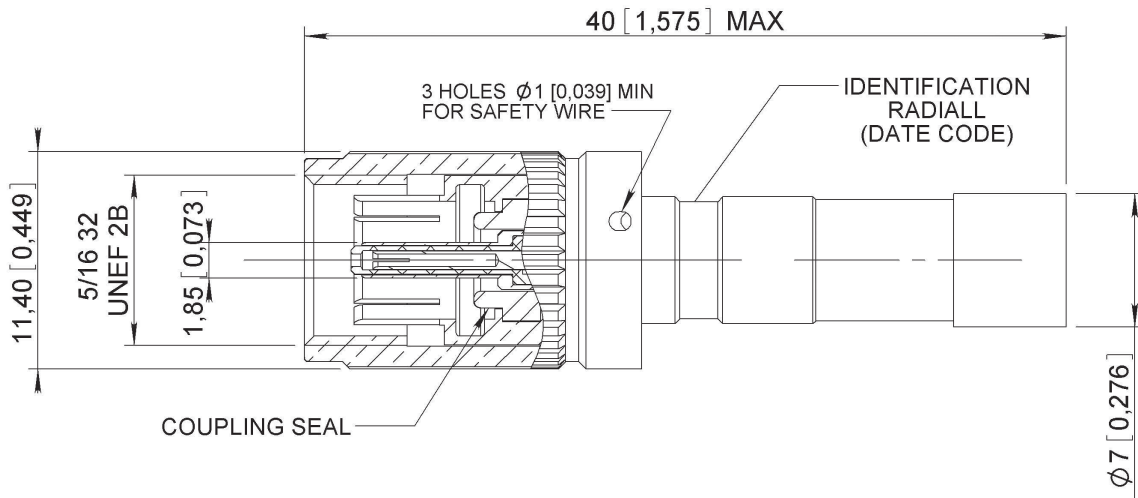


#### PANEL CUT OUT



#### PLUG TERMINATION MM(INCH)

RTX004 -



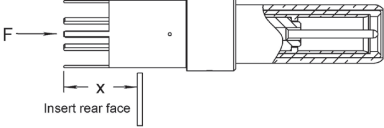
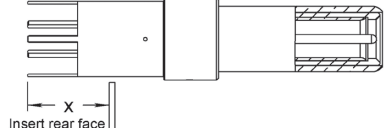
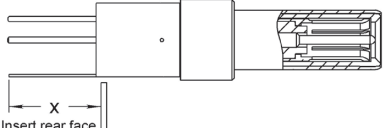
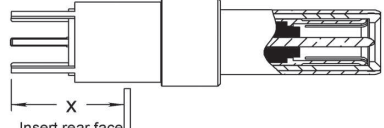
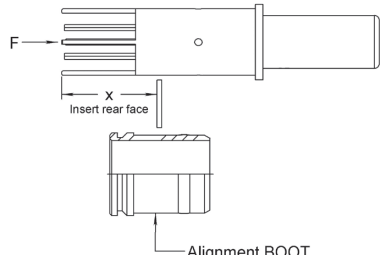
## TWINAX CONTACTS CRIMP TERMINATION

CONNECTOR SERIES	CONTACT				INSERTION/EXTRACTION TOOL
	SIZE	CABLE	TYPE	PART NUMBER	
MIL DTL 38999	8	MIL-C17/17600002 EN3375-003ST	Socket	670050 <sup>[1]</sup>	282549001 M81969/28-03
			Pin	670150 <sup>[1]</sup>	
		EN3375-004DT Or EN3375-005DT	Socket	670051 <sup>[1]</sup>	
			Pin	670151 <sup>[1]</sup>	
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 <sup>[3]</sup>	282946 M81969/28-01
			Pin	616195001 <sup>[3]</sup>	
			Socket	616095009 <sup>[2]</sup>	
			Pin	616195009 <sup>[2]</sup>	
		PAN 6421	Socket	616095005 <sup>[3]</sup>	
			Pin	616195005 <sup>[3]</sup>	
	9	MIL-C-17/17600002	Socket	616096003 <sup>[3]</sup>	
			Pin	616196003 <sup>[3]</sup>	
			Socket	616096004 <sup>[2]</sup>	
			Pin	616196004 <sup>[2]</sup>	
			Socket	616096006 <sup>[2]</sup>	
			Pin	616096006 <sup>[2]</sup>	
MPX MIL DLT 83527B	8	EN3375-004DT EN3375-005DT	Socket	618060 <sup>[1]</sup>	282549001 M81969/28-03
			Pin	618160 <sup>[1]</sup>	
		MIL-C-17/17600002 or EN3375-003ST	Socket	618061 <sup>[1]</sup>	
			Pin	618161 <sup>[1]</sup>	
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.

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 (0.125/0.158) 36C7, 36T7 = 5.40/6.10 (0.212/0.240)	282946 M81969/28-01
		616195008			
	9	616196005		C8, T8 = 1.30/2.15 (0.050/0.085) 32C4, 32T4 = 6.45/7.30 (0.253/0.288)	
		616196007		C8, T8 = 0 32C4, 32T4 = 3.70/4.35 (0.145/0.170)	
MPX MIL DLT 83527B	8	618163 <sup>[1]</sup>		7.65 ± 0.5 (0.282/0.321)	282549001 M81969/28-03

Notes

1. For 62T2 contact arrangement, the rear extension from the insert is 0.303/0.343 (8.2 ± 0.5). This contact is delivered with an alignment boot.

RTX Termination Series

## TOOLS

### INSERTION / EXTRACTION TOOL

282549001 - M81969/28-03



282946 - M81969/28-01



Notes





## MIL-DTL SERIES

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*MIL-DTX Series***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 and jam-nut receptacles), and plating for 38999 type shells to withstand high performances:

- Aluminum Olive drab Cadmium (500 h salt spray)
- Nickel plated Aluminum (48h salt spray)
- Nickel plated Composite (2,000 h salt spray)
- Nickel Aluminum Bronze (500 h 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.

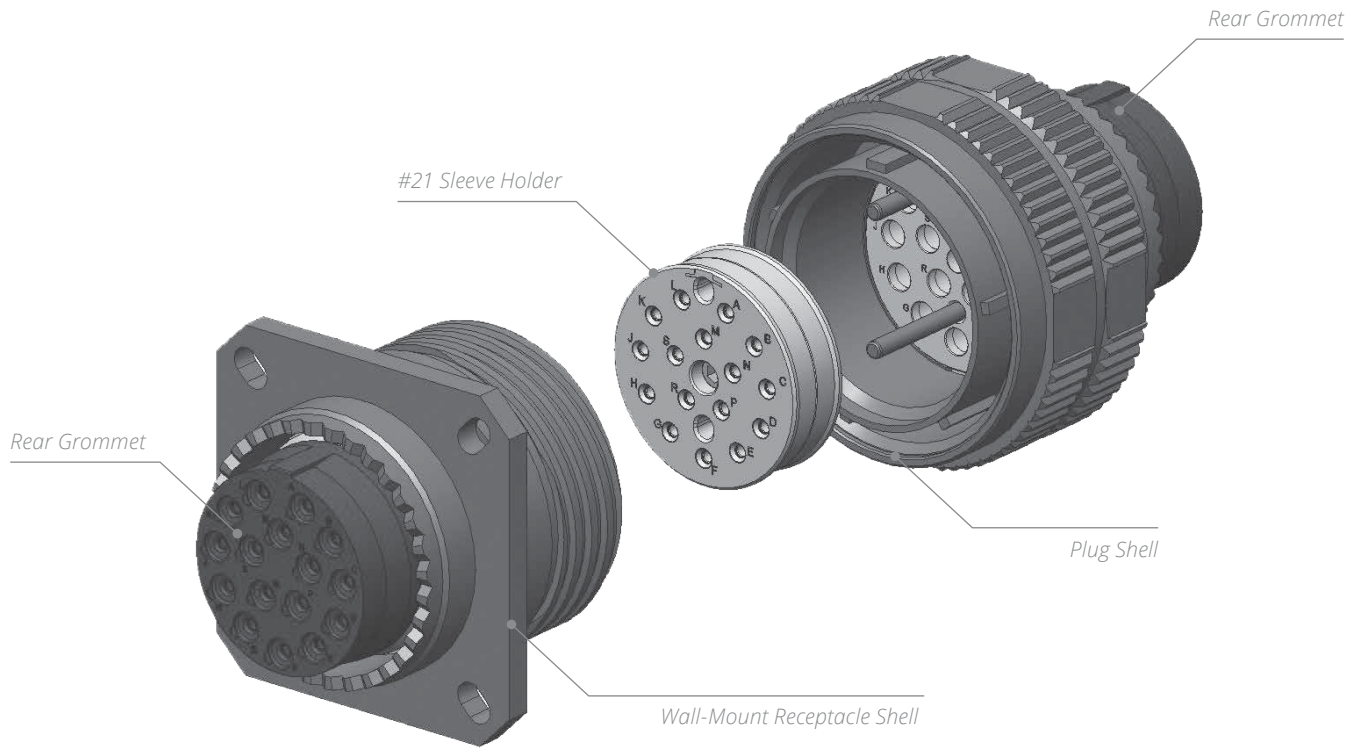
**APPLICATION**

Interconnect solution for aerospace and military harsh environment applications.



MIL-DTX Series

## PRODUCT OVERVIEW



MIL-DTX Series

**HOW TO ORDER MIL-DTL-38999 TYPE CONNECTORS**  
**PART NUMBERS FOR LUXCIS® MIL-DTL-38999 TYPE CONNECTORS**

**R8**

**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:** \_\_\_\_\_  
**2FO:** 2 LuxCis® contacts (shell size 11)  
**2FO2E:** 2 LuxCis® + 2 electrical contacts (shell size 13)  
**4FO:** 4 LuxCis® contacts (shell size 13)  
**6FO:** 6 LuxCis® contacts (shell size 15)  
**8FO:** 8 LuxCis® contacts (shell size 17)  
**12FO:** 12 LuxCis® contacts (shell size 19)  
**16FO:** 16 LuxCis® contacts (shell size 21)  
**24FO:** 24 LuxCis® contacts (shell size 23)  
**32FO:** 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

**Notes**

*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*

MIL-DTX Series

**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®		

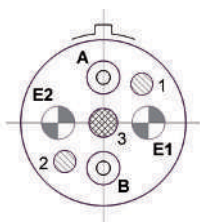
1 & 2: Alignment pins

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.

MIL-DTX Series

### 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) 850/1,300 NM	SINGLEMODE (UPC) 1,310/1,550 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	1,000 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 MM 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**

**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

**Notes**

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



MIL-DTX Series

## QUADRAX & COAXIAL CONTACTS

### SIZE 8 QUADRAX & COAXIAL CONTACTS

	TYPE		SOCKET CONTACT	PIN CONTACT	CABLE
	Size 8	Quadrax	Environmental	670075023	670175023
Quadrax		670175012		670175012	Tensolite NF 24 Q 100
Quadrax		Non-Environmental	670075028	-	Tensolite NF 24 Q 100
Coax			670001007	670101007	EN3645 EN4165



## SHELL DIMENSIONS

### SQUARE FLANGE AND JAM NUT RECEPTACLES

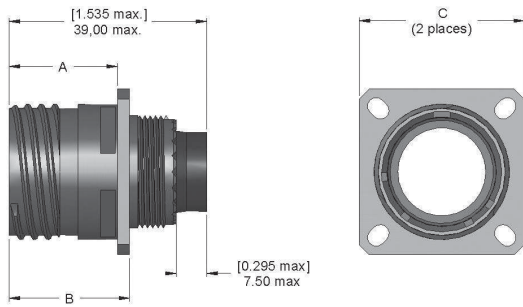


FIG. 1 SQUARE FLANGE RECEPTACLES

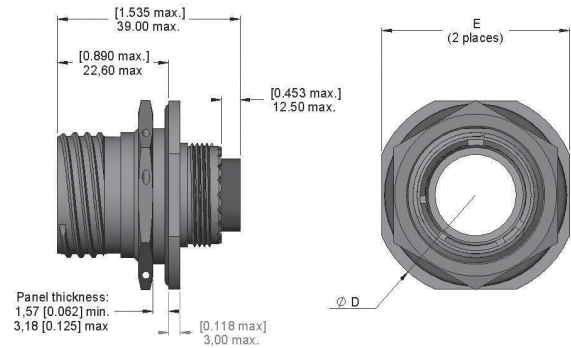
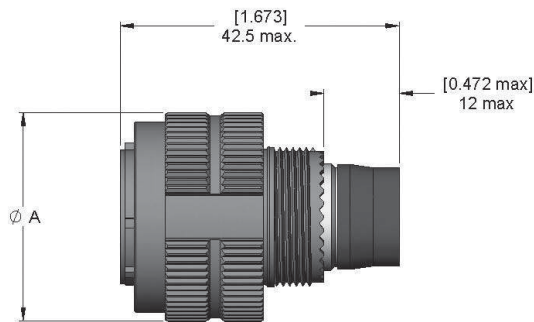


FIG. 2 JAM NUT RECEPTACLES

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	20.83 (0.820)	19.69 (0.775)	23.15 (0.911)	23.19 (0.913)	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					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	20.07 (0.790)	18.92 (0.745)		23.14 (0.911)	40.10 (1.575)	52.70 (2.075)	49.60 (1.953)
23					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)



## QUICK INSTALL (QR)

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## Introduction

## INTRODUCTION

The development of the Quick Install range (QR connector series) highlights Radiall's ability to innovate for customer needs and design a reliable and competitive industrial solution in record time.

Radiall's Quick Install is a lightweight solution that reduces harness integration and maintenance time. It can also replace EN3545 due to the same panel cutout. This new connector provides high performances, weight reduction and tool-less panel mounting and locking.

Utilizing Radiall's ability to design innovative solutions, this interconnect system was designed with two tool-less mechanisms that save up to 80% of installation time compared to the legacy screwed connector:

- A unique locking device system to ensure a quick, tool-less install on the panel
- A slide lock, which has already been mastered and qualified on other product ranges, to ensure instant manual mating of the harness connector. The slide technology features visual and audible indicators to guarantee that the installation and mating is locked.

## APPLICATIONS

The innovative Quick Install has a positive impact on the total cost of ownership and provides customers with a proven and reliable high performance solution for cable-to-cable, optical and equipment versions onboard commercial aircraft.

## FEATURES & BENEFITS

### 15% LIGHTER THAN THE COMPETITION



It features a unique design made of composite material with a slim form factor that provides 15% weight savings compared to the legacy screwed connector. With an average weight of 45 g per mated pair, the weight reduction represents up to 20 kg for a typical aircraft.

### 80% INSTALLATION TIME SAVINGS



- A unique locking device system to ensure a quick, tool-less installation on the panel
- A slide lock, which has already been mastered and qualified on other product ranges, to ensure instant manual mating of the harness connector

### A TOOL-LESS AND FOD-PROOF DESIGN



The Quick Install provides customers with a proven and reliable high performance solution that can replace the cable-to-cable, optical and equipment versions of EN3545.

### SELF INSPECTION AT MATING



The slide technology features visual and audible indicators guarantee that the installation and mating tools are locked.

## ELECTRICAL CHARACTERISTICS

### DIELECTRIC WITHSTANDING VOLTAGE: EN2591-207 WITH CURRENT LEAKAGE <2 mΩ

PRESSURE	CONTACT SIZES	CONNECTORS	
		MATED (VRMS)	UNMATED (VRMS)
Initial Measurement and After Damp Heat Steady State Test	22, 20, 16, 12 10, 08	-	1,300 (#22) 1,500
After Interfacial Sealing Test		1,300 (#22) 1,500	-
During Low Air Pressure Test (12,1 kPa)		-	600

Introduction

**INSULATION RESISTANCE: EN2591-206**

> 5,000 MΩ initial

> 1,000 MΩ after endurance at temperature, immersion at low air pressure, interfacial sealing and during fluid resistance test

**ELECTRICAL STRESS TESTS**

- Power supply voltage spikes ABD0100.1.8 and ED14/DO160 section 17, 2,000 V
- Lightning functional link ED14/DO160 section 22.5.1 « pin injection test » - 5A – 1,500 V/1,500 A

**MECHANICAL CHARACTERISTICS**

**VIBRATION & SHOCK**

SHELL TYPE	VIBRATION	SHOCK
QR Series	4h/axis 0.017 g <sup>2</sup> /Hz from 10 to 50 Hz and 0.1 g <sup>2</sup> /Hz from 50 to 2,000 Hz (129 m/s <sup>2</sup> )  Discontinuities < 1 μs Discontinuities < 2ns for Quadrax Contacts  EN2591-403 Method B Condition D	50 g/Duration 11 ms EN2591-402 Method A

**MATING/UNMATING**

SHELL TYPE	MATING/UNMATING	MATING FORCE
PANEL LOCKING	50 Cycles	30 N max
PLUG TO RECEPTACLE	100 Cycles	90 N max for Arrangement 12 80 N max for All Other Arrangements

**OTHER CHARACTERISTICS**

- **Interfacial Sealing Test:** 12.1 kPa with sealing plug
- **Flammability/Density/Toxicity** ABD0031 (AITM)
  - **Flammability**
    - Burn length (average) must not exceed 152 mm (6 inches)
    - After flame time (average) must not exceed 15 seconds
    - After flame time of drips (average) must not exceed 3 seconds
  - **Density**
    - Dm (flaming) < 200
    - Dm (non flaming) < 200
- **Toxicity**
  - Hydrogen Fluoride: 100 ppm max
  - Hydrogen Chloride: 150 ppm max
  - Hydrogen Cyanide: 150 ppm max
  - Sulfur Dioxide: 100 ppm max
  - Nitrous Gases: 100 ppm max
  - Carbon Monoxide: 1,000 ppm max

**ENVIRONMENTAL CHARACTERISTICS**

- **Temperature Range:** -55 °C/+175 °C
- **Temperature Life:** 1,000 hours at 175 °C
- **Salt Spray:** 96 hours
- **Humidity:** 56 days
- **Altitude Immersion:** (12,1 kPa) 3 cycles – 50,000 feet (15,000 m)

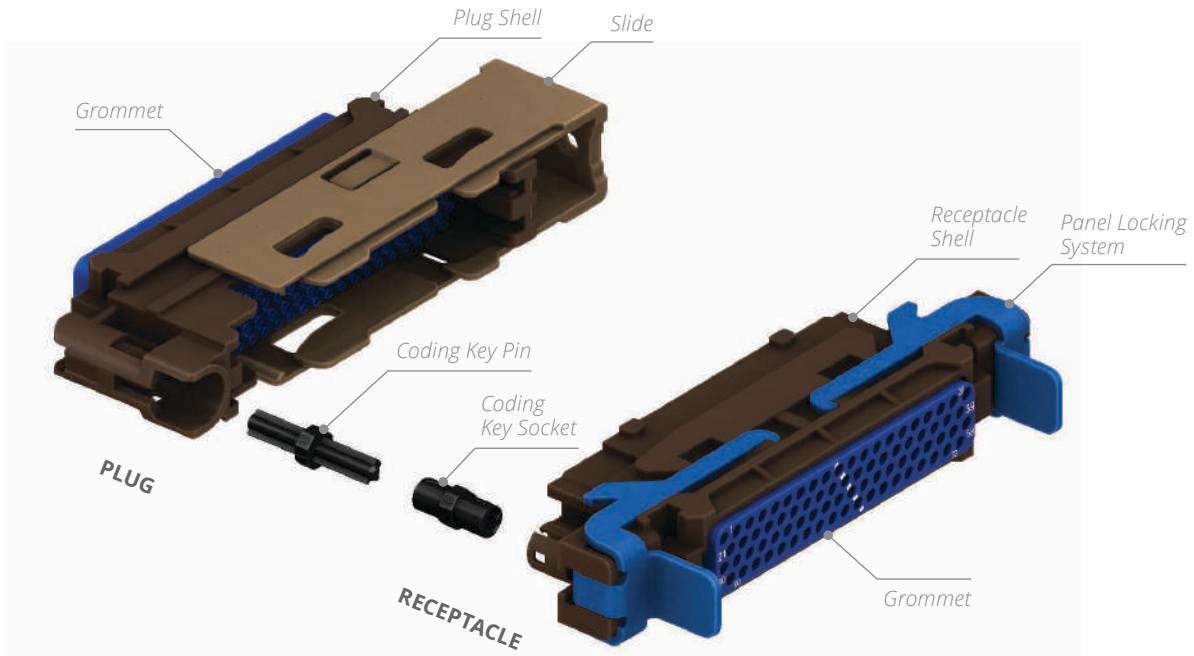
For more details, please refer to the QR qualification test reports.

QR Series

**QR PRODUCT OVERVIEW**

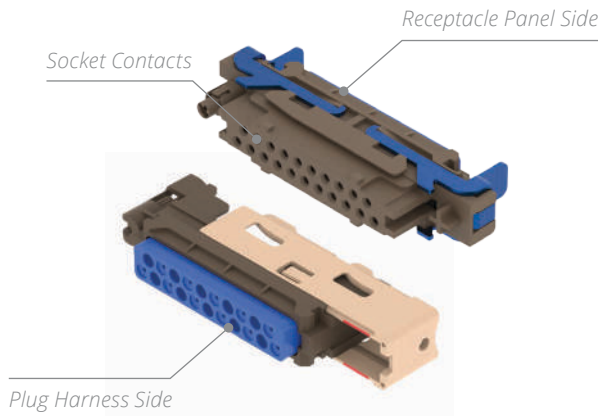
The QR connector is composed of two subassemblies:

- A receptacle connector
- A plug connector

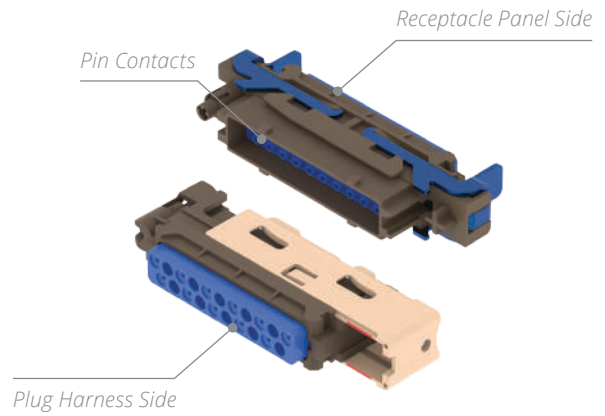


For each Receptacle/Plug, there is one version for male contacts and one for female contacts.

**STANDARD VERSION**



**REVERSED VERSION**



**Notes**

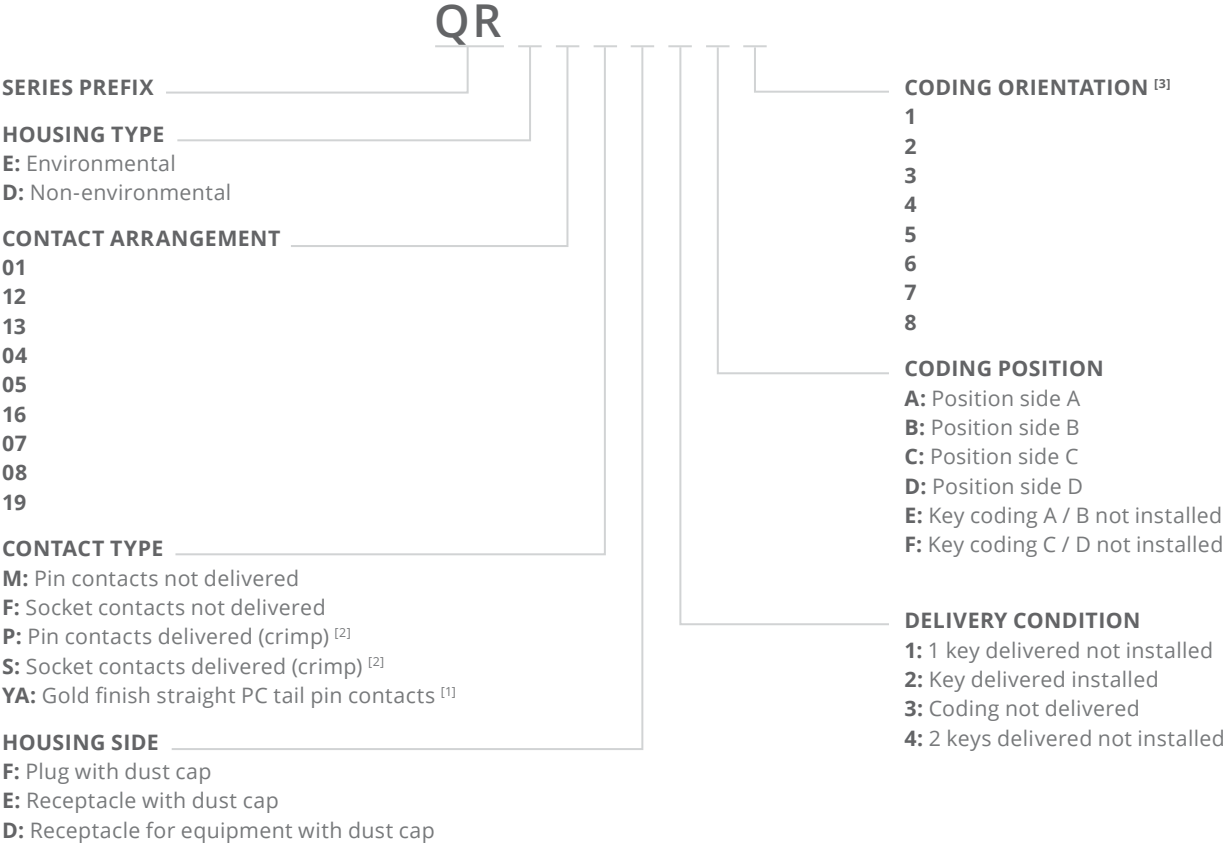
Except for the cavity change, the interior design of the shell is slightly different between a housing (socket or plug) for male contacts and its counterpart for female contacts



QR Series

**HOW TO ORDER QR CONNECTORS**

- Both pin and socket contacts can be used in plugs or receptacles.
- Standard versions are receptacle equipped with socket contacts and plug equipped with pin contacts.
- Reversed versions are receptacle equipped with pin contacts and plug equipped with socket contacts.
- PC tail contacts are only compatible with receptacle for equipment.
- Cross reference between QR and EN3545 is not possible (not compatible).
- Connectors are delivered with a protective cover designed to protect the contact cavities from dust and FOD. Radiall recommends keeping the cap installed while the connector is not mated or while access to the active area is not necessary.



**Notes**

1. For other PC tail extension options, please contact us
2. Not applicable for arrangement 07. For arrangement 08 the contacts size 8 must be ordered separately
3. Optional if installed

QR Series

**POLARIZATION CODE**

QR

SERIES PREFIX \_\_\_\_\_

HOUSING TYPE \_\_\_\_\_

P: Plug

R: Receptacle

CODING KEY \_\_\_\_\_

E: Key coding A / B not installed

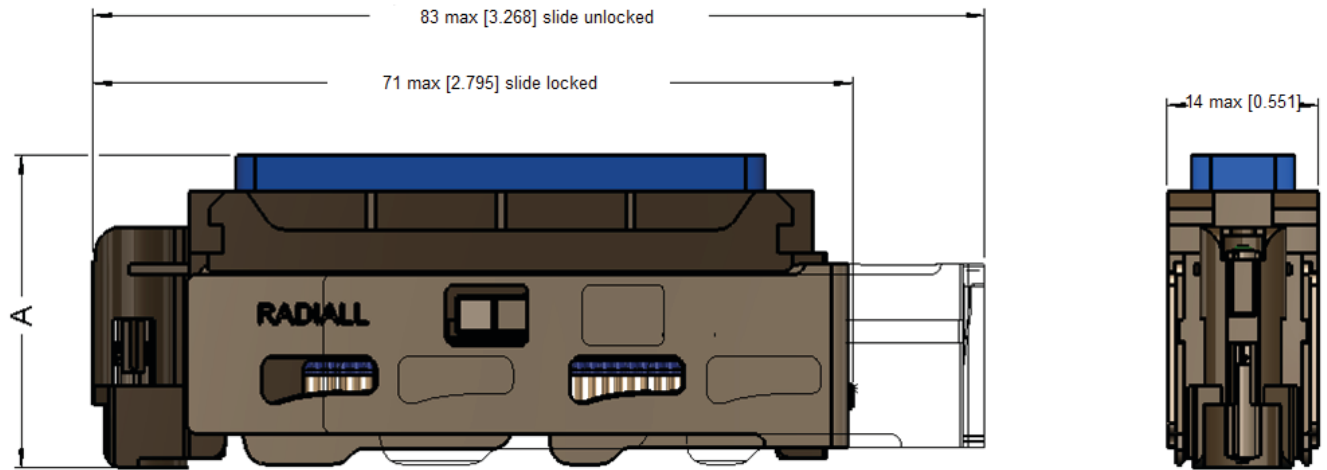
F: Key coding C / D not installed

The polarization is made with 2 pairs of modular keys to ensure a coding of each arrangement. There are 4 modular coding keys (2 for the receptacle and 2 for the plug). Every key has 2 sides (A and B or C and D). To ensure proper mating between them, the coding shall be the same on plug and receptacle connectors (for example, coding A2 for both keys).

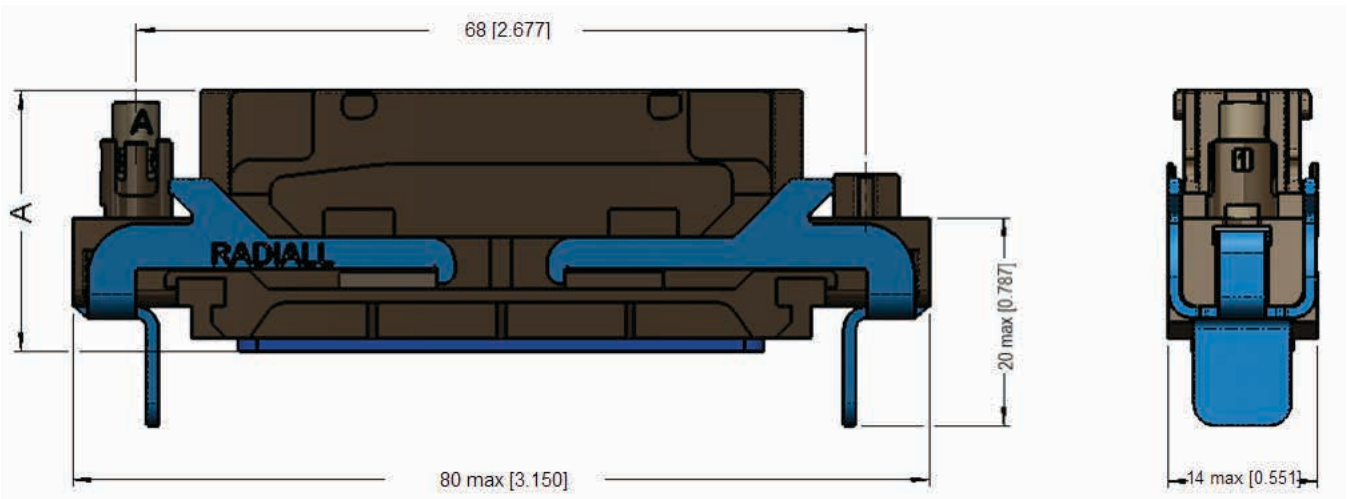
	PLUG	RECEPTACLE
QR		
CODING DEVICE	 <p>View A View B View C View D</p>	 <p>View A View B View C View D</p>

QR Series

## QR SHELL DIMENSIONS PLUG



## RECEPTACLE FOR CRIMP CONTACTS <sup>[1]</sup>

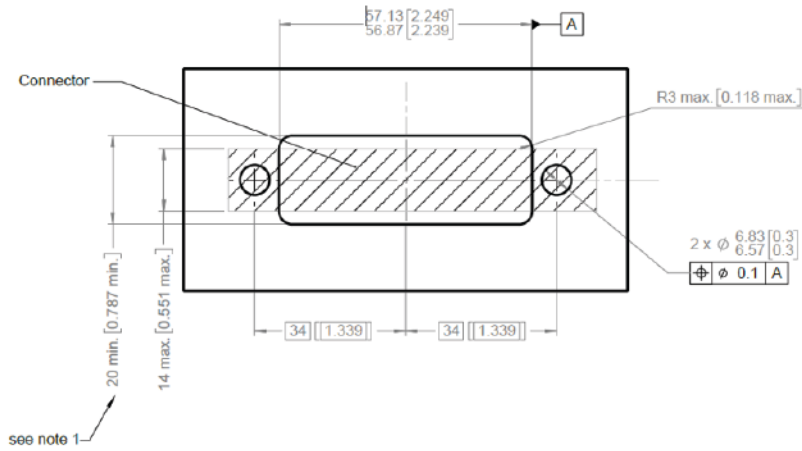


CONTACT ARRANGEMENT	GROMMET PROTRUSION (A) MAX MM (INCH) FOR RECEPTACLE	GROMMET PROTRUSION (A) MAX MM (INCH) FOR PLUG
01, 04, 05, 12, 13	27 [0.984]	31.50 [1.102]
07, 08	32 [1.181]	33.50 [1.220]
16, 19	37.50 [1.614]	41.50 [1.614]

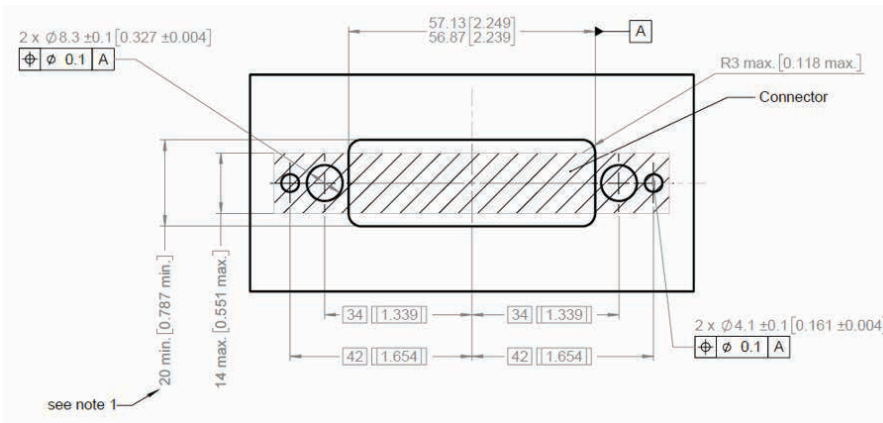
### Notes

1. Receptacles with PC Tail contacts have a different design. Please contact us for details.

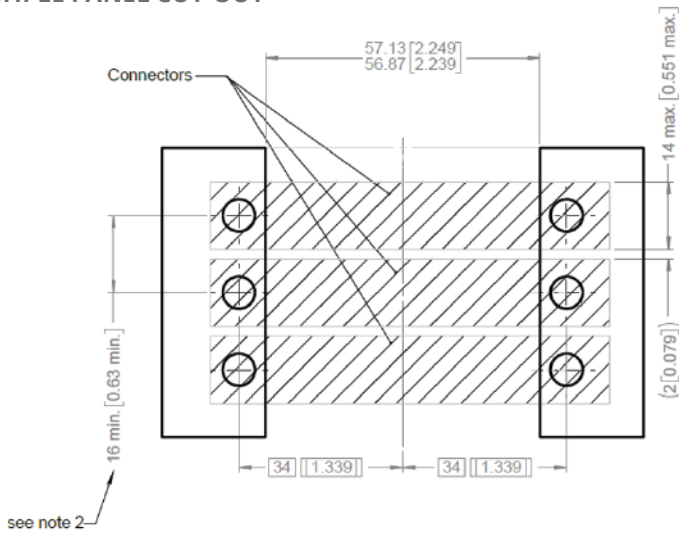
**PANEL CUT-OUT STANDARD QUICK INSTALL (PANEL THICKNESS 0.8 - 1.73 [0.0315 - 0.068])**



**PANEL CUT-OUT QUICK INSTALL EQUIPMENT (PANEL THICKNESS 2 [0.079] MAX)**



**MULTIPLE PANEL CUT-OUT**



**Notes**

1. The minimum cutout width is contingent on the radius cutout value. Therefore, to achieve a desired narrow/wide cutout width, the radius must change accordingly.
2. The pitch between connectors depends on the minimum gap desired. A commonly used gap of 2 mm is used to define the pitch advised here.

QR Series

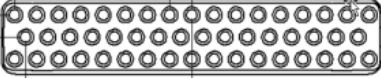
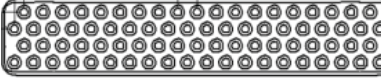
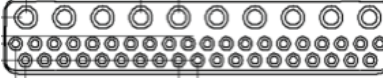
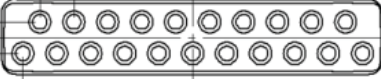
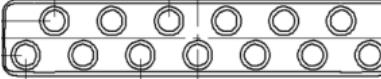

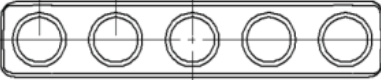
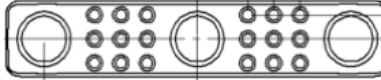
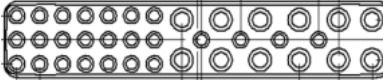
### QR SHELL WEIGHTS

HOUSING SIDE	CONTACT ARRANGEMENT	WEIGHT	
		WITH CAVITIES FOR PIN CONTACTS (M)	WITH CAVITIES FOR SOCKET CONTACTS (F)
<b>PLUG (P)</b> 1 CODING KEY INCLUDED	01	22g	23g
	12	22g	23g
	13	22g	24g
	04	22g	23g
	05	22g	23g
	16	25g	26g
	07	22g	24g
	08	22g	24g
	19	22g	24g
<b>RECEPTACLE (R)</b> 1 CODING KEY INCLUDED	01	23g	25g
	12	23g	25g
	13	23g	25g
	04	23g	25g
	05	23g	24g
	16	25g	27g
	07	23g	25g
	08	22g	26g
	19	22g	25g

QR Series

QR ARRANGEMENTS

CONTACT ARRANGEMENT NAME	CONTACT SIZE & TYPE						TOTAL QUANTITY OF CONTACTS
	22	20	16	12	10	8	
	SIGNAL	POWER	POWER	POWER	POWER OR TRIAXIAL	POWER OR QUADRAX OR TWINAX OR TRIAX	
07	-	-	-	-	-	5	5
16	-	-	-	-	7	-	7
05	-	-	-	13	-	-	13
04	-	-	21	-	-	-	21
08	-	18	-	-	-	3	21
19	-	25	12	-	-	-	37
13	39	-	10	-	-	-	49
01	-	50	-	-	-	-	50
12	78	-	-	-	-	-	78

		
<b>Arrangement 01:</b> 50 Contacts #20	<b>Arrangement 12:</b> 78 Contacts #22	<b>Arrangement 13:</b> 39 Contacts #22 10 Contacts #16
		
<b>Arrangement 04:</b> 21 Contacts #16	<b>Arrangement 05:</b> 13 Contacts #12	<b>Arrangement 16:</b> 7 Contacts #10
		
<b>Arrangement 07:</b> 5 Contacts #8	<b>Arrangement 08:</b> 18 Contacts #20 3 Contacts #8	<b>Arrangement 19:</b> 25 Contacts #20 12 Contacts #16

## Contacts

## SIGNAL &amp; POWER CRIMP CONTACTS

## ELECTRICAL CHARACTERISTICS

Signal &amp; Power Crimp Contacts for Copper Cables

CONTACT SIZE	WIRE SIZE	TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	CRIMPING TOOL	POSITIONER	SELECTOR OF JAWS	INS/EXT TOOL
22	AWG26 AWG24 AWG22	Pin	670200 (per M39029/58-360) or 628200 (per EN3155-008M2222) <sup>[1]</sup>		282281 (M22520/2-01)	282562 (M22520/2-09)	2 3 4	282522 (M81969/14-01)
		Socket	670350 (M39029/57-354) or 628300 (per EN3155-003F2222) <sup>[1]</sup>			(M22520/2-06)		
20	AWG24 AWG22 AWG20	Pin	628220 (per EN3155-014M2020)		282281 (M22520/2-01)	(M22520/2-08)	5 6 7	282522001 (M81969/39-01)
		Socket	628320 (per EN3155-015F2020)					
16	AWG20 AWG18 AWG16	Pin	670230 (per M39029/58-364) or 628240 (per EN3155-008M1616) <sup>[1]</sup>		282291 (M22520/1-01)	(M22520/1-04) Blue	4 5 6	282515 (M81969/14-03)
		Socket	670380 (per M39029/57-358) or 628340 (per EN3155-003F1616) <sup>[1]</sup>					
12	AWG14 AWG12	Pin	670240 (per M39029/58-365) or 628250 (per EN3155-008M1212) <sup>[1]</sup>		282291 (M22520/1-01)	(M22520/1-04) Yellow	7 8	282549004 (M81969/14-04)
		Socket	670390 (per M39029/57-359) or 628350 (per EN3155-003F1212) <sup>[1]</sup>					
10	AWG12 AWG10	Pin	628260 (per EN3155-008M1010)		Manual tool: 282296 (M300BT) Pneumatic tool: (M22520/23-01)	Manual tool: DMC TP1526 Pneumatic tool: DMC WA23-102L	Manual tool: 2 (cable awg12) 4 (cable awg10) Pneumatic tool: DMC WA-101DA	282549033 (M81969/14-05)
		Socket	628360 (per EN3155-003F1010)					
8	AWG08	Pin	628291001	628291	M22520/23-01	DMC WA23-296	DMC WA23-2	282549051 (M81969/14-12)
		Socket	628391001	628391				

## Notes

1. M39029 contacts are used when contacts are supplied with the connector assemblies.

## Contacts

## COAXIAL CRIMP CONTACTS

### SIZE 8 COAXIAL CRIMP CONTACTS

CONTACT SIZE	CABLE TYPE	CONTACT GENDER	NON-ENVIRONMENTAL PART NUMBER <sup>[1]</sup>	EXTRACTION TOOL
8	RG400 (ASNE0293XF)	Pin	691800021	282549051 (M81969/14-12)
		Socket	691810020 691810021	
	EN4604-003WZ (Draka F1703-195)	Pin	691800020	
	EN4604-005WL (ASNE0690WL Draka F1703-158)	Socket	619054002	
Pin		619156002		

## TWINAX & TRIAX CRIMP CONTACTS

### SIZE 8 TWINAX CRIMP CONTACTS

CONTACT SIZE	CABLE TYPE	CONTACT GENDER	NON-ENVIRONMENTAL PART NUMBER <sup>[1]</sup>	EXTRACTION TOOL
8	ABS0386WF24 (Draka F2703-37)	Pin	617165014	282549051 (M81969/14-12)
		Socket	620065010	
	EN3375-009WX26 (ASNE0807WX26 Nexans ET133199)	Pin	628165012	
		Socket	620065012	

### TRIAx CRIMP CONTACTS

CONTACT SIZE	CABLE TYPE	CONTACT GENDER	NON-ENVIRONMENTAL PART NUMBER <sup>[1]</sup>	EXTRACTION TOOL
8	EN3375-004 EN3375-005	Pin	691800071	282549051 (M81969/14-12)
		Socket	691800171	
	EN3375-003	Pin	691800070	
		Socket	691800170	
	EN3375-004CWJ24	Pin	ABS2231P02	
		Socket	ABS2231S02	
10	EN3375-006XM24 (ASNE0290XM24)	Pin	691800090	282549033 (M81969/14-05)
		Socket	691800190	

## QUADRAX CRIMP CONTACTS

CONTACT SIZE	CABLE TYPE	CONTACT GENDER	NON-ENVIRONMENTAL PART NUMBER	ENVIRONMENTAL PART NUMBER	EXTRACTION TOOL
8	DRAKA F4704-4 (ABS0972KB24) DRAKA F4704-5 (ABS1503KD24)	Pin	628175070	[1]	282549051 (M81969/14-12)
		Socket	628075070	[1]	
	NF26Q100	Pin	617175070	628175072	
		Socket	617075070	628075072	
	NF24Q100	Pin	617175070	628175071	
		Socket	617075070	628075071	
	NF22Q100	Pin	617175040	[1]	
		Socket	620075040	[1]	
	JSFY02	Pin	628179002	[1]	
		Socket	620079002	[1]	

### Notes

1. Please contact Radiall for environmental applications



Contacts

**FIBER OPTIC CONTACTS & Q-MTITAN**

**QR COMPATIBILITY**

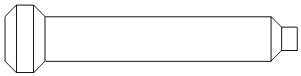
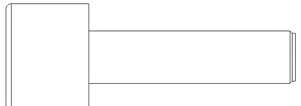
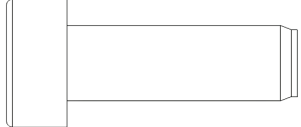
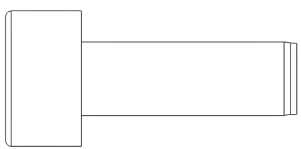
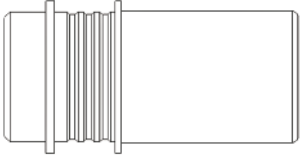
Fiber optic contacts EN4531 with adapters in size 8 cavities are available with arrangements 07 (up to 5 contacts) and 08 (mix of optical and electrical contacts) <sup>[1]</sup>

12-channel Q-MTitan ARINC 846 fiber optic contact fits size 8 Quadrax cavities without adapters (5 Q-MTitan = 60 fiber optic in a Quick Install connector) <sup>[1]</sup>

**SEALING PLUGS**

Sealings plugs are dedicated to environmental insert cavities.

The sealing is guaranteed between each individual contact cavities. No filler plug or dummy contacts are necessary. Sealing plugs in unused cavities are optional, but recommended for future usage in order to avoid dust or FOD to enter the cavities.









SIZE	CONTACT CAVITY VERSION	COLOR	PART NUMBER	DRAWING
22	For Pin & Socket	Black	616910 (MS27488-22-2) or (E0616BC2200)	
20		Red	616911 (MS27488-20-2) or (E0616BC2000)	
16		Green	616912 (MS27488-16-2)	
		Blue	or (E0616BC1600)	
12 & 10		Orange	616913 (MS27488-12-2)	
		Yellow	or (E0616BC1200)	
08		Red	628950020 (E0616BC0803)	

**Notes**

1. Please contact Radiall for performance information

## Accessories

## ACCESSORIES, SPARE PARTS &amp; TOOLS

	PART NUMBER	DESCRIPTION
	628954001	Receptacle Dust Cap
	628954002	Plug Dust Cap
	282654001	Handle for test bench connector easier disconnection (Cable Clamps for Electrical Contacts)
	282654002	Handle for test bench connector easier disconnection (Cable Clamps for Quadrx Contacts)
	282700500	Set of Mounting Tools for Key A, B, C, D
	282700100	Tool for Coding Key A - White <sup>[1]</sup>
	282700200	Tool for Coding Key B - Green <sup>[1]</sup>
	282700300	Tool for Coding Key C - Yellow <sup>[1]</sup>
	282700400	Tool for Coding Key D - Blue <sup>[1]</sup>

## Notes

1. Tools for coding key are compatible with receptacle and plug.

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*Accessories***ACCESSORIES FOR CABLE**

The Quick Install series is compatible with a wide range of standard cable clamp accessories.

The Quick Install plug and receptacle are suitable for use with EN3545-007 straight and right angle cable clamps for standard contacts and size 8 contacts.



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