

cannon

RPR Series EN4165-Style
Interconnect Solutions
for Commercial Aerospace



ITT

Introducing ITT Cannon's RPR EN4165-Style Connector with PCB Contacts for Commercial Aviation Applications

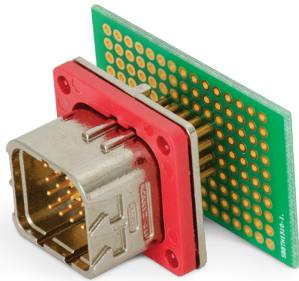
Innovative ARINC 809-Compatible Interconnect for High Speed Data Transfer Offers an Ideal Solution for Today's In-Flight Entertainment / Connectivity (IFE/C) and Navigation Systems

The Challenge

The comfort and convenience of high speed data to support improved passenger experience is driving the demand for more advanced, higher speed data transfer rates in commercial aerospace applications. To keep pace, manufacturers are pushing the interconnect industry to adapt and evolve, requiring more cost-effective, lightweight and reliable connector solutions.

The Solution

ITT Cannon's RPR EN4165-Style Connector with PCB Contacts offers innovative design and cost efficiency while retaining high speed data transfer performance in commercial aircraft systems. This lightweight modular rectangular interconnect uses various sizes of PCB contacts in both straight and right angle configurations, and offers additional accessories for LRU applications. It also features Precision PCB tail alignment and is front-release, rear removable with a Cannon-designed latching mechanism.



The CANNON Difference

- Committed partner for off-the-shelf or custom interconnect solutions
- Ideal for high-speed Ethernet and PCB Applications
- Durable and reliable, even in the harshest environments

Key Product Features

- Compact & Lightweight - Our RPR EN4165-Style PCB Connector features a composite construction that is ideal for ultimate weight savings
- Cost Effective - Housing a monoblock insulator and integral PCB Contacts, this is the new cost effective solution for PCB applications and panel mounts
- Intermateable - The Cannon RPR PCB Connector is intermateable with other EN4165 plugs from current suppliers



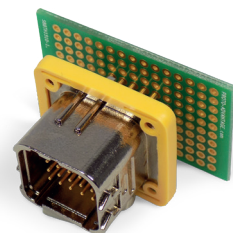
In-Flight Entertainment / Connectivity



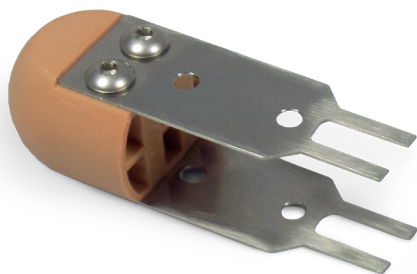
Avionics Systems



Our RPR EN4165-Style Connector with PCB Contacts Features Innovative Front-Release, Rear Removable Insert with Proprietary Latching Mechanism



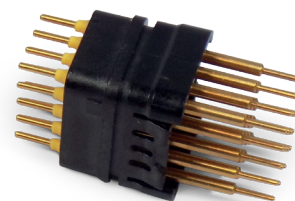
Precision PCB Tail Alignment - A modular rectangular connector housing a monoblock insert allows for a cost-effective solution with added reliability and prevention of splayed PCB contacts.



Insert Removal Tool
(For Front Release of Insert)



RPR Receptacle Shell



Monoblock Insulator

Step 1

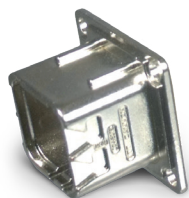
Insert the removal tool in to the front of the RPR Receptacle Shell

Step 2

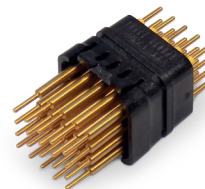
Once insert removal tool is fully inserted, pull back on RPR Receptacle shell while pulling the insulator from the rear of the shell

Front Release, Rear Removable Insert with Highly-Engineered Latching Mechanism - Service, repair and maintenance are made easier through front release, rear removable inserts. The addition of a latch mechanism allows for front release and rear removal of the insert from the shell after PCB/Panel mounting. This enables access to or removal of electronics from the equipment panel as opposed to a rear release mechanism inside the box, which is frequently inaccessible. One of the first of its kind in market, our proprietary latching mechanism is an option on all of Cannon's RPR receptacles.

Material / Finish



Shell
Composite / Nickel



Insert
Thermoplastic and Fluorinated Silicone

Contacts
Copper Alloy / Gold over Nickel

RPR PCB Connector for Commercial Aviation

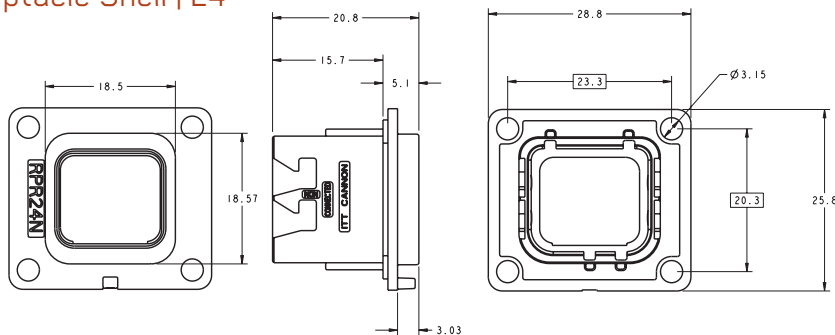
How to Order | Receptacle Shell



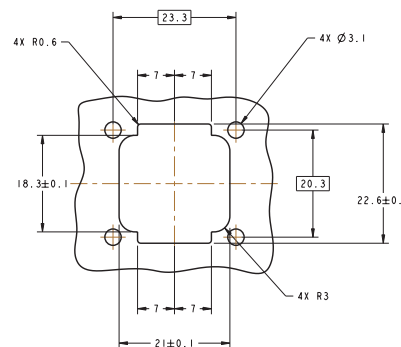
Descriptive Part Number

| | | | | | | | | |
|--------------------|----|--|----|---|----|---|---|---|
| | | RPR | 24 | N | 01 | K | T | V |
| Series | | | | | | | | |
| Shell Style | 24 | RPR Receptacle | | | | | | |
| Shell Keying | N | N-Normal A B C D | | | | | | |
| Latching Mechanism | 01 | 01-Front Release Blank-Rear Release only | | | | | | |
| Coding Plate | K | K-Coding Plate Blank-without Coding Plate | | | | | | |
| Nut Plate | T | T-Nut Plate Blank-without Nut Plate | | | | | | |
| Dust Cap | V | V-Red (Standard) W-Black (Conductive) Blank-without Dust Cap | | | | | | |

Standard Receptacle Shell Dimensions (For Reference Only)

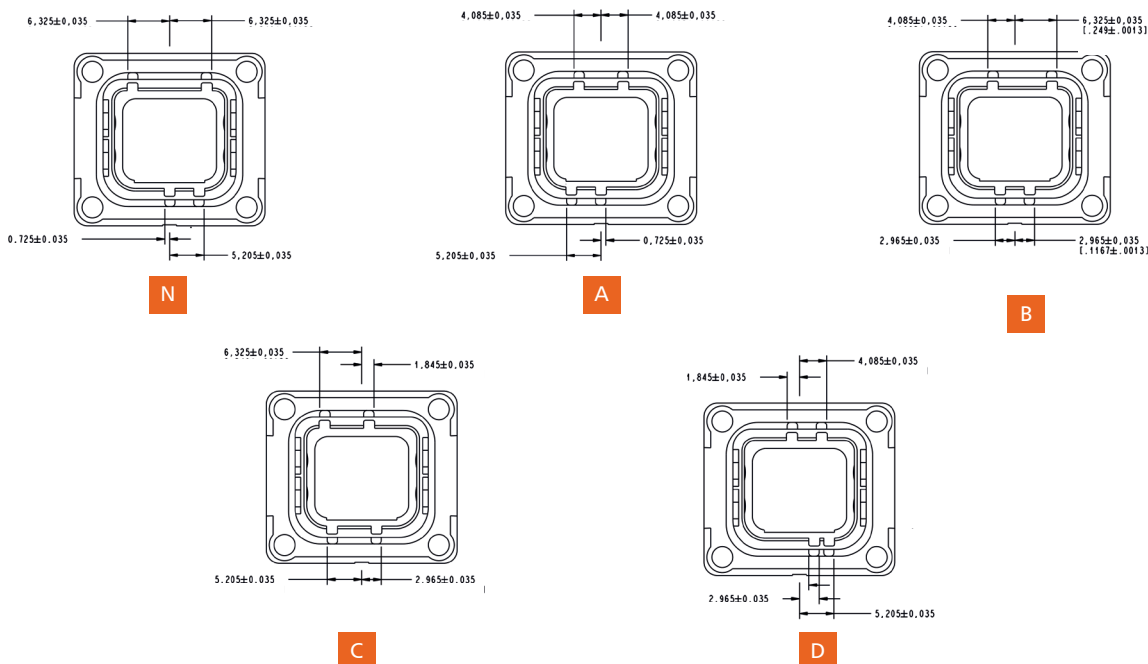


Free Mounting Panel Cutout Dimensions



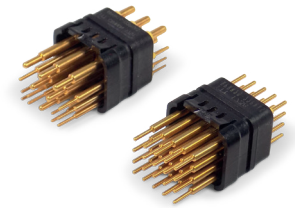
Receptacle Shell | 24

Shell Keying



RPR PCB Connector for Commercial Aviation

How to Order | Insert

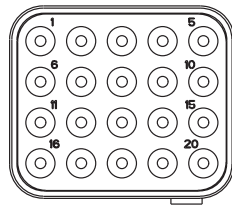


Descriptive Part Number

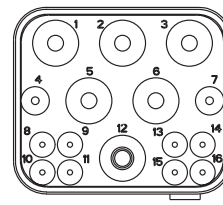
| | RPRM | 20-22 | P | N | AS |
|-------------|------|---|---|---|----|
| Series | | | | | |
| Layout | RPRM | RPR Insert | | | |
| Gender | P | P - Pin S - Socket | | | |
| Keying | N | N - Normal | | | |
| PCB Contact | AS | AS - Straight PCB .430" tail length* (± .015) | | | |
| | | BS - Straight PCB .539" tail length* (± .015) | | | |
| | | CS - Right Angled PCB .318" tail length* (± .015) | | | |

* Please add .05" to obtain dimension from rear flange to end of PCB tail.

Shell Keyrings



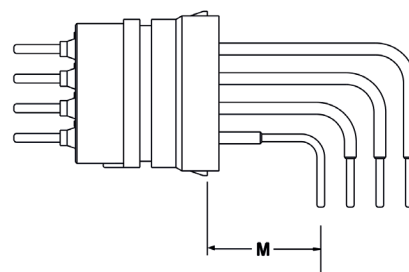
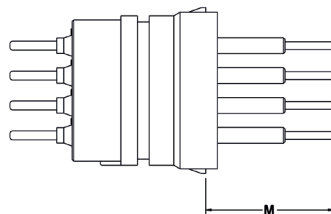
20-22
20 #22 Contacts



16-02
6 #16 Contacts
2 #22 Contacts
8 #24 Contacts

PCB Contacts are pre-loaded in the insert when ordered.

Contact ITT for additional layouts including 99-01, 12-20, 08-16, 04-12, 01-08 and 30-23.



Straight PCB

PCB Tail Length (M) = .430" (± .015)

| Descriptive Part Number | Contact Arrangement | Contact Type |
|-------------------------|---------------------|--------------|
| RPRM20-22PNAS | 20-22 | PIN |
| RPRM16-02PNAS | 16-02 | PIN |
| RPRM20-22SNAS | 20-22 | SOCKET |
| RPRM16-02SNAS | 16-02 | SOCKET |

Straight PCB

PCB Tail Length (M) = .539" (± .015)

| Descriptive Part Number | Contact Arrangement | Contact Type |
|-------------------------|---------------------|--------------|
| RPRM20-22PNBS | 20-22 | PIN |
| RPRM16-02PNBS | 16-02 | PIN |
| RPRM20-22SNBS | 20-22 | SOCKET |
| RPRM16-02SNBS | 16-02 | SOCKET |

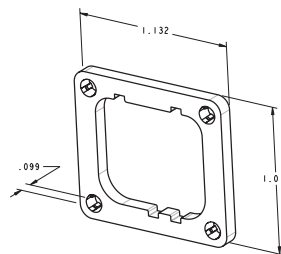
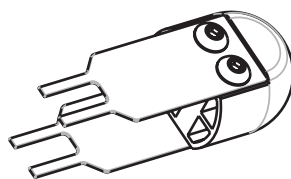
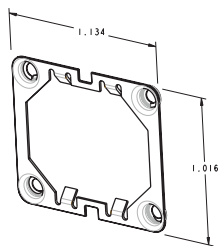
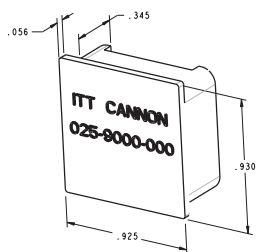
Right Angle PCB

PCB Tail Length (M) = .318" (± .015)

| Descriptive Part Number | Contact Arrangement | Contact Type |
|-------------------------|---------------------|--------------|
| RPRM20-22PNCR | 20-22 | PIN |
| RPRM20-22SNCR | 20-22 | SOCKET |

Dimensions shown in inches
Specifications and dimensions subject to change

Accessories



Dust Cap | V

Nut Plate | T

Insert Removal Tool

Coding Plate | K

| Component Part Numbers | Description |
|------------------------|-------------------------------|
| 227-9000-000 | Nut Plate |
| 274-1008-000 | Insert Removal Tool |
| 025-9000-000 | Red Dust Cap (Non-Conductive) |
| 025-9000-001 | Black Dust Cap (Conductive) |
| 274-1008-000 | Front Release Tool |

| Coding Plate Part Numbers | Polarization | Color |
|---------------------------|--------------|--------|
| 253-0051-006 | N | Black |
| 253-0051-007 | A | Red |
| 253-0051-008 | B | Blue |
| 253-0051-009 | C | Green |
| 253-0051-010 | D | Yellow |

Dimensions shown in inches

Product Testing & Results

| Rated Current | | Contact Retention in Insert per EN 2591-409 | | Dielectric Withstanding Voltage (DWV) per EN 2591-207 (sea level) | |
|---------------|----------------|---|------------------|---|---------------|
| Contact Size | Current Rating | Contact Size | Axial Load DMV | Contact Size | DWV |
| 24 | 3A | 24 | 4.0 lbf / 18 N | 24 | 1300 V ac/rms |
| 22 | 5A | 22 | 10.0 lbf / 44 N | 22 | 1300 V ac/rms |
| 16 | 13A | 16 | 24.7 lbf / 110 N | 16 | 1500 V ac/rms |

| Test Performed | Test Method | Performance |
|-------------------------------|------------------------------------|---|
| Insert Retention and Housing: | EN 2591-410 | No displacement with 25.4 daN axial load |
| Insulation Resistance (IR): | EN 2591-206 at ambient temperature | Greater than 5000 MΩ |
| Intermateability: | | Intermateable with EN4165 plugs |
| Salt Spray | EN 2591-307 | 500 Hours |
| Plating Adhesion: | MIL-STD-202, Method 107 | 5 Cycles at -65, +150°C, 15 minutes dwell |
| Mechanical Endurance | EN 2591-406 | 500 mating cycles* |
| Vibration | EN 2591-403, Method B | 50 Hz @ 0.1 g2/Hz, 100-2000Hz @ 0.4 g2/Hz |
| Shock | EN 2591-402, Method A | 100G, half sine wave, 6 ms. shocks. Applied one each way for each of three axes (i.e. six total shocks) |

* Misalignment or mishandling during mating/unmating may cause damage

EN4165 Socket Mated to ITT Cannon RPR Receptacle

| ITT Cannon RPR Receptable | ITT RPR Insert | Compatible EN4165 Plug | Compatible EN4165 Insert |
|---------------------------|----------------|------------------------|--------------------------|
| RPR24 | RPRM20-22PN | EN4165M61A | EN416520-22 A1NB |
| RPR24 | RPRM20-22SN | EN4165M61A | EN4165A20-22 1NA |
| RPR24 | RPRM16-02PN | EN4165M61A | |
| RPR24 | RPRM16-02SN | EN4165M61A | |

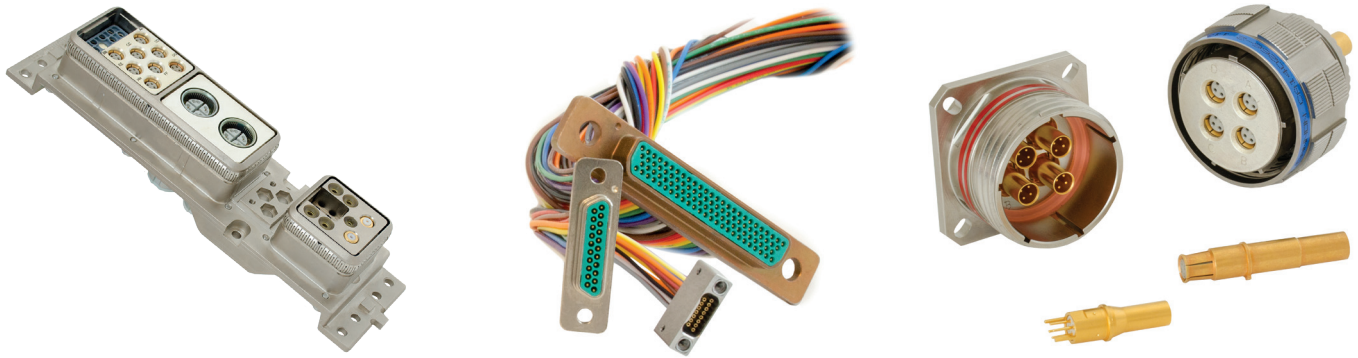


Amazing things happen

When great things connect

ITT Cannon is a leading global manufacturer of connector products serving international customers in the aerospace and defense, industrial and medical end market.

Whether delivering critical specs to aircraft pilots, streaming data through communications satellites or enabling ultrasound equipment to give expectant parents a first look at their unborn child, ITT Cannon connects the world's most important information to the people who need it.



More than a Century of Connections

Since 1915, Cannon products have been used in a history of "firsts." "From the first "talking" movie to the first man on the moon, Cannon has set the standard for reliable, harsh environment interconnect solutions." Today we proudly continue our legacy of innovation with a goal to connect the world and inspire the successes of the next century—because amazing things happen when great things connect.

Visit ittcannon.com to learn more.

About ITT

ITT is a diversified leading manufacturer of highly engineered critical components and customized technology solutions for the energy, transportation and industrial markets. Building on its heritage of innovation, ITT partners with its customers to deliver enduring solutions to the key industries that underpin our modern way of life. Founded in 1920, ITT is headquartered in White Plains N.Y., with employees in more than 35 countries and sales in a total of approximately 125 countries.

For more information visit itt.com

Connect with your ITT Cannon representative
today or visit us at www.ittcannon.com

Connect with the experts

From the invention of rack-and-panel and D-subminiature, to the latest fiber-optic and miniature circular connectors, Cannon has been synonymous with innovation, reliability and quality for more than 100 years. Today, we continue to innovate on behalf of our valued customers worldwide. Because amazing things happen when great things connect.



Why ITT

ITT is a focused, multi-industrial company that designs and manufactures highly engineered critical components and customized technology solutions. ITT Cannon is a leading global manufacturer of connector products serving international customers in the aerospace and defense, industrial and medical end markets. We design and engineer a variety of interconnect solutions that make it possible to transfer data, signal and power in an increasingly connected world.

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