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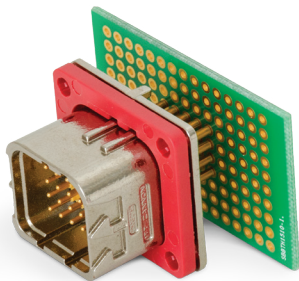
Innovative ARINC 809-Compatible Interconnect for High Speed Data Transfer Offers an Ideal Solution for Today's In-Flight Entertainment / Connectivity (IFE/C) and Navigation Systems

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
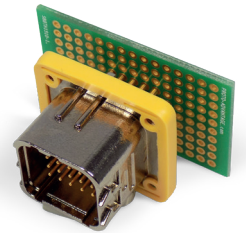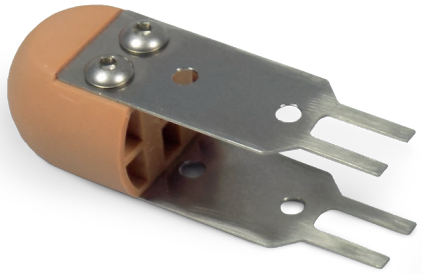
In-Flight Entertainment / Connectivity

Avionics Systems

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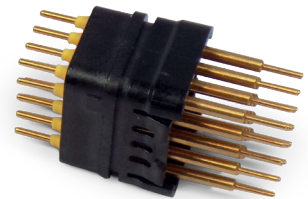

Precision PCB Tail Alignment - A modular rectangular connector housing a monoblock insert allows for a cost-effective solution with added reliability and prevention of splayed PCB contacts.

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
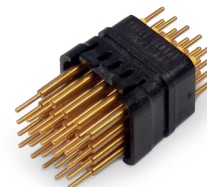
Step 2
Once insert removal tool is fully inserted, pull back on RPR Receptacle shell while pulling the insulator from the rear of the shell

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

ITT

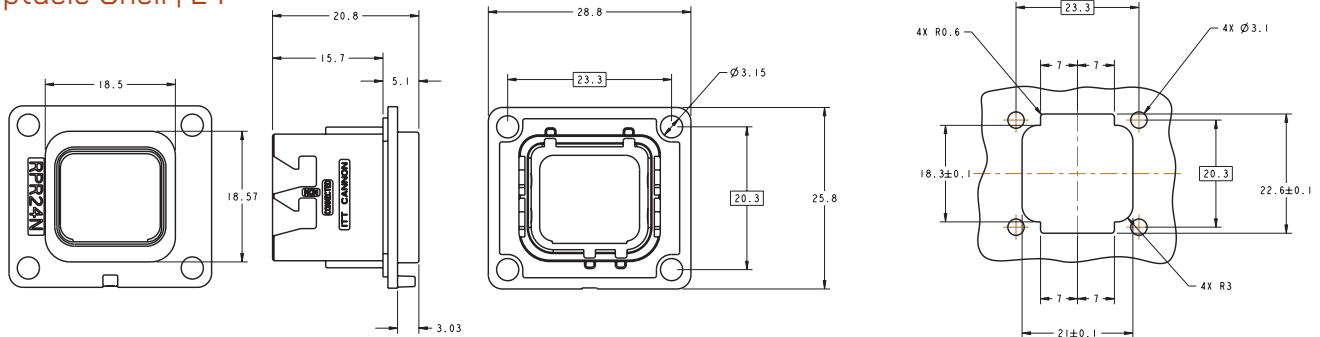# RPR PCB Connector for Commercial Aviation

How to Order | Receptacle Shell

Descriptive Part Number

RPR	24	N	–	01	K	T	V

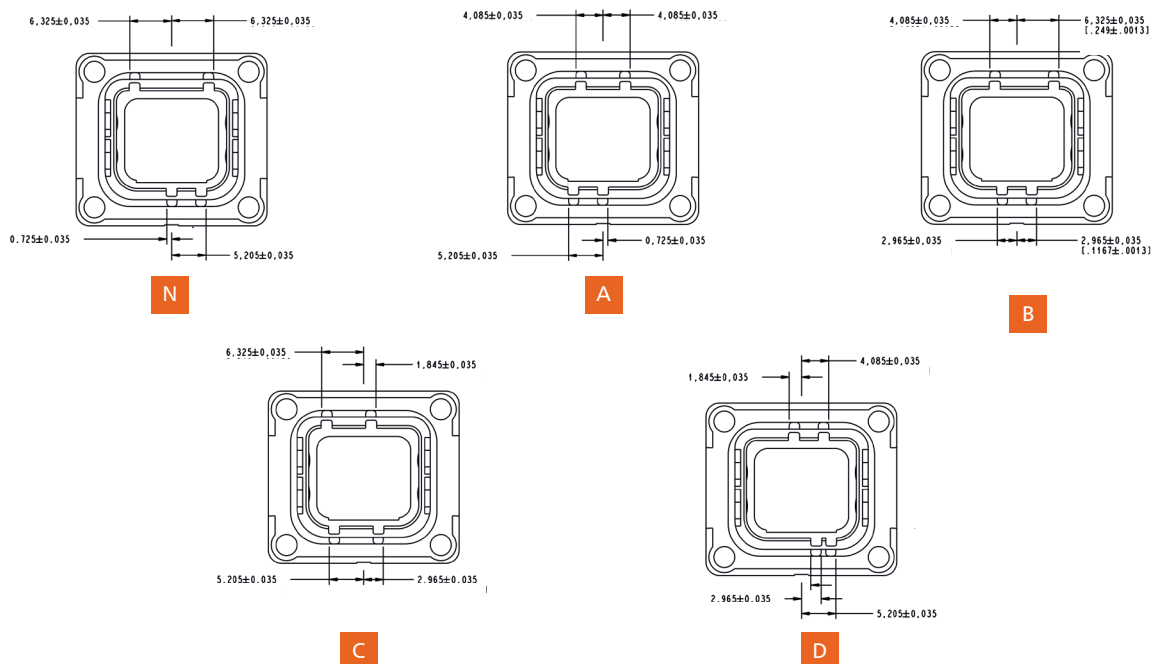|		
Series		
Shell Style	24	RPR Receptacle
Shell Keying	N	N-Normal | A | B | C | D
Latching Mechanism	01	01-Front Release | Blank-Rear Release only
Coding Plate	K	K-Coding Plate | Blank-without Coding Plate
Nut Plate	T	T-Nut Plate | Blank-without Nut Plate
Dust Cap	V	V-Red (Standard) | W-Black (Conductive)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

Standard Receptacle Shell Dimensions
(For Reference Only)

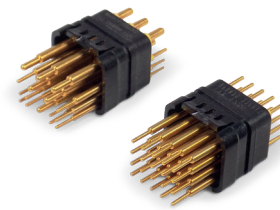Free Mounting Panel Cutout Dimensions

Receptacle Shell | 24

Shell Keying

N

A

B

C

D

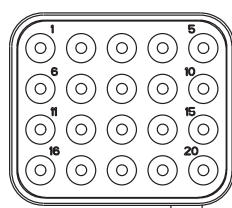# RPR PCB Connector for Commercial Aviation

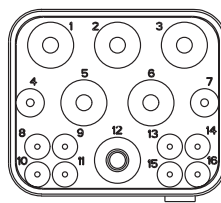## How to Order | Insert

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)

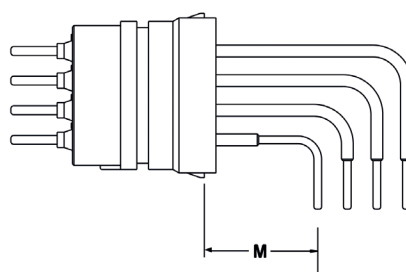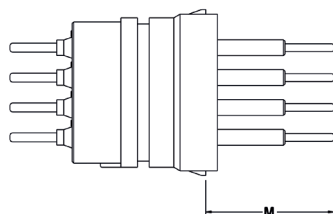* Please add .05" to obtain dimension from rear flange to end of PCB tail.

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)

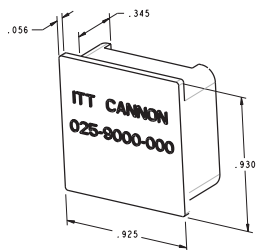| Descriptive Part Number	Contact Arrangement	Contact Type
RPRM20-22PNBS	20-22	PIN
RPRM16-02PNBS	16-02	PIN
RPRM20-22SNBS	20-22	SOCKET
RPRM16-02SNBS	16-02	SOCKET

Right Angle PCB

PCB Tail Length (M) = .318" (± .015)

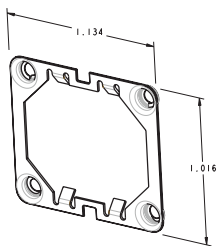| Descriptive Part Number	Contact Arrangement	Contact Type
RPRM20-22PNCR	20-22	PIN
RPRM20-22SNCR	20-22	SOCKET

Dimensions shown in inches
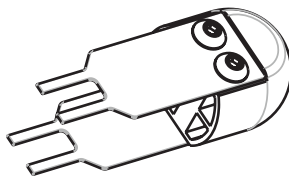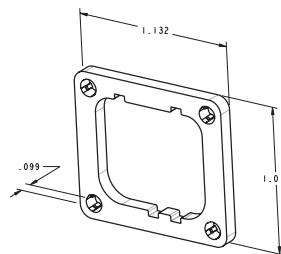Specifications and dimensions subject to change

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℃, 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	

Specifications and dimensions subject to change
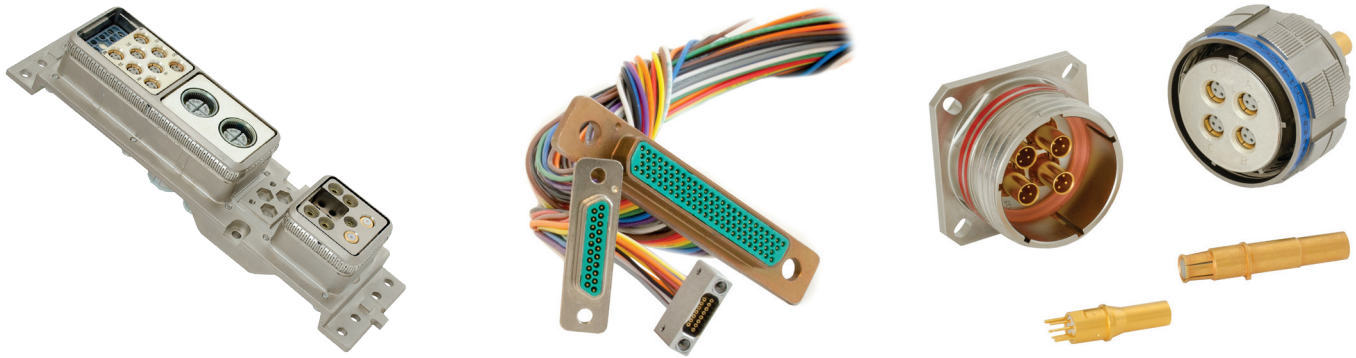
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Amazing things happen

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 diversifies 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

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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.

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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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