

cannon

RPR EN4165-Style
Interconnect Solutions
for Commercial Aerospace



ITT

ENGINEERED FOR LIFE

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

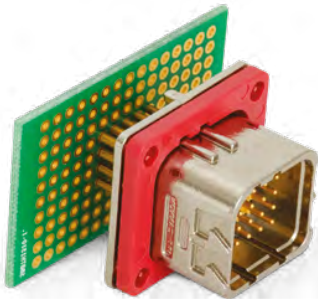
Innovative ARINC 809-Compatible Interconnect for High Speed Data Transfer Offers an Ideal Solution for Today's In-Flight Entertainment / Connectivity (IFE/C) and Navigation Systems

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.

Step 1
Insert the removal tool in to the front of the RPR Receptacle Shell

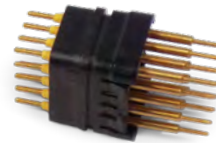


Insert Removal Tool
(For Front Release of Insert)



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



Monoblock Insulator
(Rear Removable) with Integral PCB Contacts

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

Product Testing & Results

Test Performed	Test Method	Performance / Results
Contact Retention:	ARINC 800, Part 2, Section 4.1.3.34	Contact sizes 16, 22, and 24 all passed the contact retention loads of 24.7 lbf (110 N), 10.0 lbf (44 N), and 4.0 lbf (18 N) respectively.
Insert Retention and Durability:	ARINC 800, Part 2, Section 4.1.2.5.13 and 4.1.3.16	Measurements indicated that the inserts met the 56.2 lbf (250 N) retention force.
Temperature Cycling:	EN 2591-305	The temperature TA was 175° C and the temperature TB was -55° C. The connectors passed visual examination.
Dielectric Withstanding Voltage (DWV):	EN 2591-207 at sea level.	Tested arrangements 16-02 and 20-22 passed without breakdown or flashover at indicated voltage.
Insulation Resistance (IR):	EN 2591-206 at ambient temperature	Unmated connector arrangements 16-02 and 20-22 passed 5000 MΩ insulation resistance required.
Intermateability:		The receptacle housings loaded with 20-22 arrangement module, pin and socket, were mated/unmated with EN4165 connectors. Visual examination of keyways polarization, electrical contact engagement, sealed interface compression, and connector latching mechanism indicated all connectors passed successfully.
Plating Adhesion:	MIL-STD-202, Method 107, 5 Cycles at -65, +150°C, 15 minutes dwell	At the conclusion of the final cycle, and after the housings return to room ambient condition, the housings were examined for blistering, peeling, or separation of the plating from the composite substrate. All receptacle housings passed the requirements.

RPR PCB Connector for Commercial Aviation

How to Order | Receptacle Shell

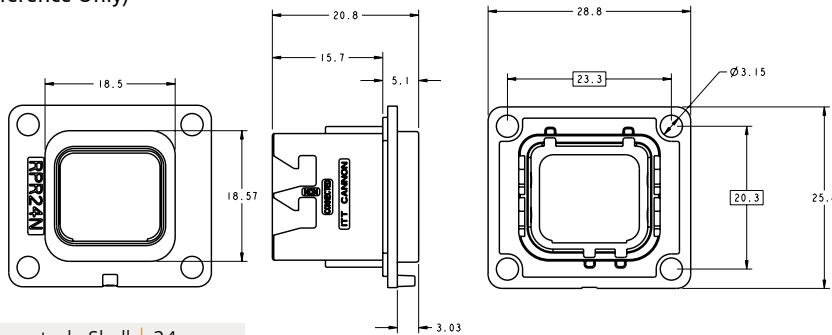


Descriptive Part Number

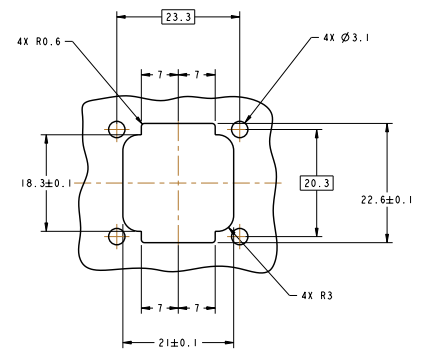
RPR	24	N	-	01	K	S	T	V
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Series								
Shell Style	24	Receptacle						
Shell Keying	N	N-Normal A B C D E						
Latching Mechanism	01	01-Front and Rear Release Blank-Rear Release only						
Coding Plate	K	K-Coding Plate Blank-without Coding Plate						
Sealing Gasket	S	S-Sealing Gasket Blank-without Sealing Gasket						
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)

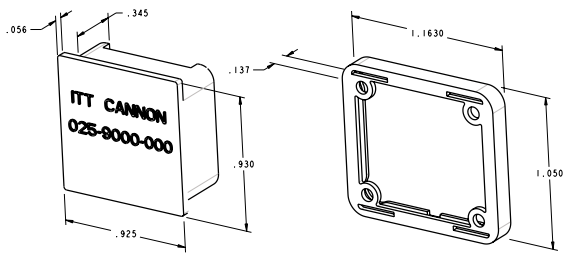


Free Mounting Panel Cutout Dimensions



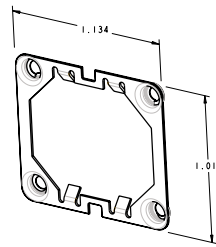
Receptacle Shell | 24

Descriptive Part Numbers (Normal Keying)	Shell Part Numbers	Polarization (Clocking)	Front Release Option
RPR24N-01	348-9550-100	N	Y
RPR24A-01	348-9550-101	A	Y
RPR24B-01	348-9550-102	B	Y
RPR24C-01	348-9550-103	C	Y
RPR24D-01	348-9550-104	D	Y
RPR24N	348-9550-000	N	N
RPR24A	348-9550-001	A	N
RPR24B	348-9550-002	B	N
RPR24C	348-9550-003	C	N
RPR24D	348-9550-004	D	N

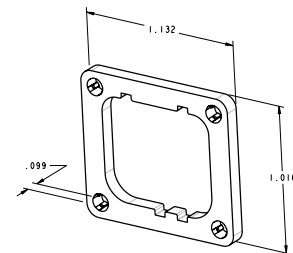


Dust Cap | V

Sealing Gasket | S



Nut Plate | T



Coding Plate | K

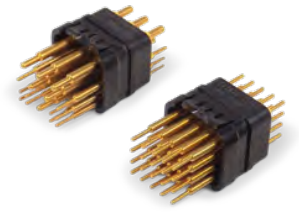
Component Part Numbers	Description
227-9000-000	Nut Plate
075-1198-000	Sealing Gasket
025-9000-000	Dust Cap (Red)
025-9000-001	Dust Cap (Black)
274-1008-000	Front Release Tool

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
Specifications and dimensions subject to change

RPR PCB Connector for Commercial Aviation

How to Order | Insert

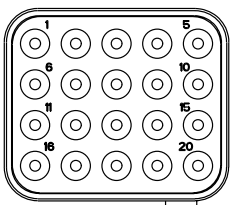


Descriptive Part Number

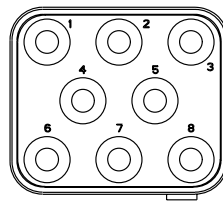
	RPRM	20-22	P	N	AS
Series					
Layout	20-22	See Insert Layouts below			
Gender	P	P - Pin S - Socket			
Keying	N	N - Normal			
Straight PCB		AS - .430" tail length* ($\pm .015$) BS - .539" tail length* ($\pm .015$)			
Right Angle PCB	AS	BR - .384" tail length* ($\pm .015$)			

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

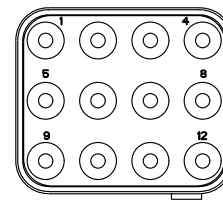
PCB Contacts are pre-loaded in the insert when ordered.



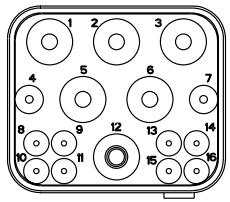
20-22
20 #22 Contacts



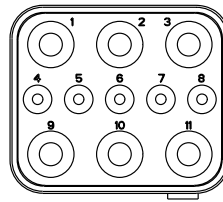
08-16
8 #16 Contacts



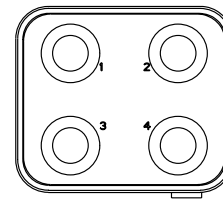
12-20
12 #20 Contacts



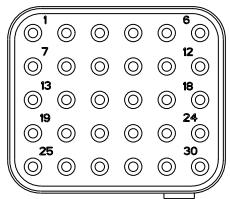
16-02
6 #16 Contacts
2 #22 Contacts
8 #24 Contacts



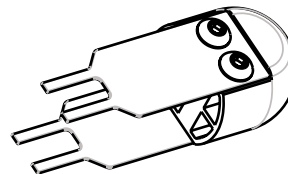
99-01
6 #16 Contacts
5 #22 Contacts



04-12
4 #12 Contacts



30-23
30 #23 Contacts



Insert Removal Tool
274-1008-000

20-22, 16-02 arrangements are available for release;
99-01, 12-20, 08-16, 04-12, and 30-23 will be available late 2018.

Pin Engaging face shown on all layouts.

Straight PCB

Descriptive Part Number	Contact Arrangement	Contact Type	Insert Part Number
RPRM99-01PNAS	99-01	P	143-8174-020
RPRM30-23PNAS	30-23	P	143-8177-020
RPRM20-22PNAS	20-22	P	143-8170-020
RPRM16-02PNAS	16-02	P	143-8175-020
RPRM12-20PNAS	12-20	P	143-8171-020
RPRM08-16PNAS	08-16	P	143-8172-020
RPRM04-12PNAS	04-12	P	143-8173-020
RPRM99-01SNAS	99-01	S	143-8174-040
RPRM30-23SNAS	30-23	S	143-8177-040
RPRM20-22SNAS	20-22	S	143-8170-040
RPRM16-02SNAS	16-02	S	143-8175-040
RPRM12-20SNAS	12-20	S	143-8171-040
RPRM08-16SNAS	08-16	S	143-8172-040
RPRM04-12SNAS	04-12	S	143-8173-040

Right Angle PCB

Descriptive Part Number	Contact Arrangement	Contact Type	Insert Part Number
RPRM99-01PNBR	99-01	P	143-8174-060
RPRM30-23PNBR	30-23	P	143-8177-060
RPRM20-22PNBR	20-22	P	143-8170-060
RPRM16-02PNBR	16-02	P	143-8175-060
RPRM12-20PNBR	12-20	P	143-8171-060
RPRM08-16PNBR	08-16	P	143-8172-060
RPRM04-12PNBR	04-12	P	143-8173-060
RPRM99-01SNBR	99-01	S	143-8174-080
RPRM30-23SNBR	30-23	S	143-8177-080
RPRM20-22SNBR	20-22	S	143-8170-080
RPRM16-02SNBR	16-02	S	143-8175-080
RPRM12-20SNBR	12-20	S	143-8171-080
RPRM08-16SNBR	08-16	S	143-8172-080
RPRM04-12SNBR	04-12	S	143-8173-080

Dimensions shown in inches
Specifications and dimensions subject to change

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.

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

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