

Amphenol RJ Field Series



NO HAZARDOUS ON-FIELD CABLING AND GROUNDING

The Amphenol RJ Field series allows the use of an Ethernet Class D/ CAT5e and Class E/CAT6 connection for Ethernet over twisted-pair networks in harsh environments. The RJStop® connection system protects from shock, dust and fluid. No hazardous on-field cabling and grounding required!

- Connections for 10Base-T, 100Base-TX, or 1000Base-T networks
- No tools required
- Mechanical coding/polarization

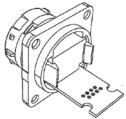
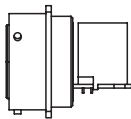
APPLICATIONS

- Robotics
- Military data hubs
- Special machines
- Welding machines
- Communications
- CNC machines
- Process & motion control
- Diagnostics

FEATURES

- CAT5e & CAT6 Cable
- USB-A 2.0, USB-B 2.0, USB-A 3.0
- Mating systems – tri-start thread, triple-lead, latch, push-pull

TECHNICAL SPECIFICATIONS

							
SERIES	RJF RB	RJF 544	RJF-EZ	RJF	RJFTV	USBFTV (USB-A)	USBBFTV (USB-B)
Shape	Circular	Circular	Rectangular	Circular	Circular	Circular	Circular
Coupling System	Reverse Bayonet	Push-Pull	Lever	Tri-Start Thread	Tri-Start Thread	Tri-Start Thread	Tri-Start Thread
Material	Plastic	Plastic	Plastic	Metal	Metal	Metal	Metal
Data Type	CAT5e & CAT6	CAT5e & CAT6	CAT5e	CAT5e & CAT6	CAT5e & CAT6	USB-A 2.0 & 3.0	USB-B 2.0
Number of possible Codings (polarizations)	1	1	1	4	4	4	4
RoHS Options Available	Yes	No	No	Yes	Yes	Yes	Yes
Mating Cycles	500 min.	500 min.	500 min.	500 min.	500 min.	up to 1500	up to 1500

RJF RB - REVERSE BAYONET

MAIN CHARACTERISTICS

- Composite material
- Sealed against fluids and dust (IP68)
- Shock, vibration, and traction resistant
- No-cabling operation in-field and no tools required
- Reverse bayonet coupling
- RJ45 cordset retention in the plug: 70 N in the axis
- Mating cycles: 500 min.
- IDC receptacle
- PCB receptacle
- RoHS compliant

ENVIRONMENTAL PROTECTION

- Sealing: IP68
- Salt Spay > 1000-hour
- Fire retardant/low smoke: UL94 VO and NFF 16102, DIN 5510-2
- Thermal shock: 5 cycles at -40°F to +212°F (-40°C to +100°C)
- Operating temperature: -40°F to +185°F (-40°C to +85°C)

DATA TRANSMISSION

10 Base-T, 100 Base-TX and 1000 Base-T networks

CAT5e per TIA/EIA 568B and Class D per ISO/IEC 11801

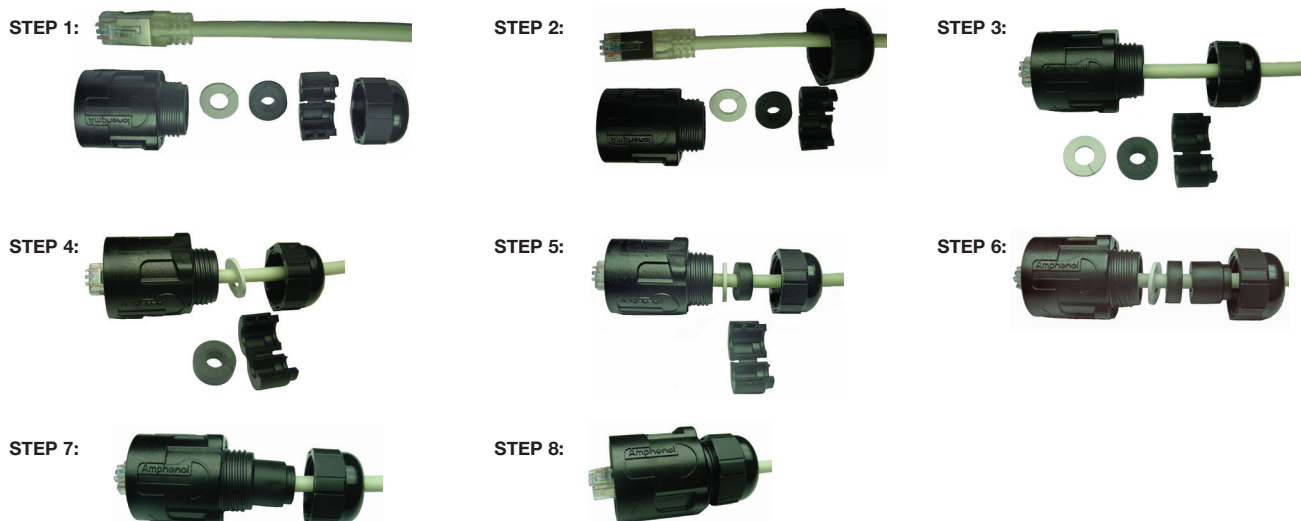
CAT6 per TIA/EIA 568B and Class E per ISO/IEC 11801



PLUG	RECEPTACLES						DUSTCAPS	
PLUG	JAM NUT STRAIGHT	JAM NUT RIGHT ANGLE	IDC CAT6			CORDSET	DUSTCAP FOR RECEPTACLE TYPES 71X & 72X	DUSTCAP FOR RECEPTACLE TYPES 73X
			JAM NUT UNSHIELDED	JAM NUT PARTIAL SHIELDED	JAM NUT 100% SHIELDED			
RJFRB6	RJFRB71	RJFRB71RA	RJFRB73U	RJFRB73F	RJFRB73S	RJFRB72**100BTX	RJFRBC7	RJFRBC75

** Select for cordset length PCB available, please contact us.
 03 = 11.81 (0.30M)
 05 = 19.68 (0.50M)
 10 = 39.37 (1.00M)
 15 = 59.05 (1.50M)

ASSEMBLY INSTRUCTIONS

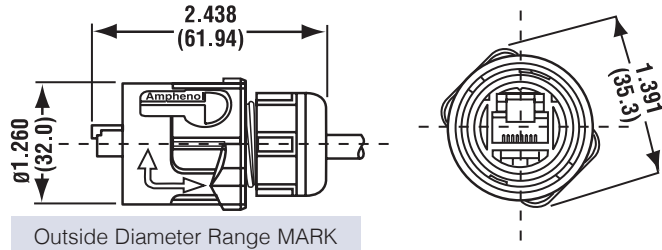


All dimensions in inches (millimeters in parenthesis)

PLUG

RJF RB 6

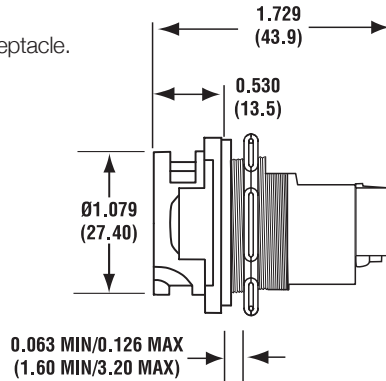
Plug with Plastic Gland



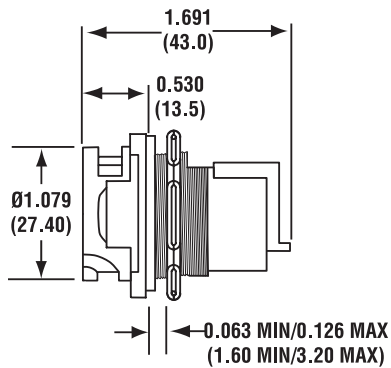
RECEPTACLES

RJF RB 71

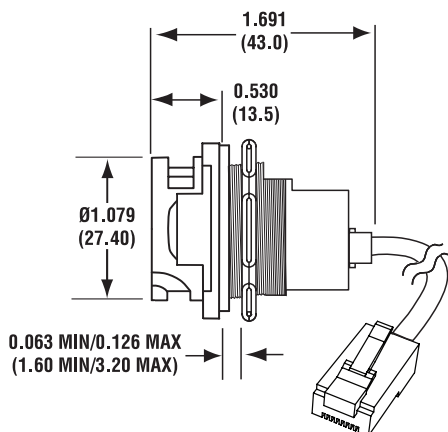
RJ45 Female Receptacle.

**RJF RB 71 RA**

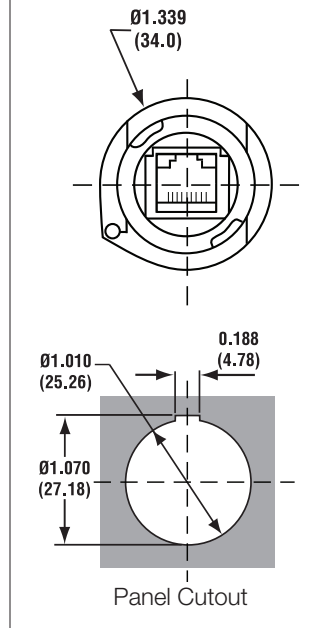
RJ45 Right Angle Female Receptacle.

**RJF RB 72XX 100BTX**

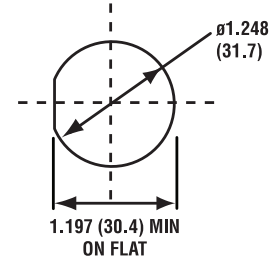
RJ45 Cordset



COMMON RECEPTACLE DIMENSIONS

**RJF RB 73X**

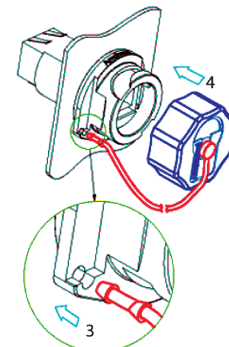
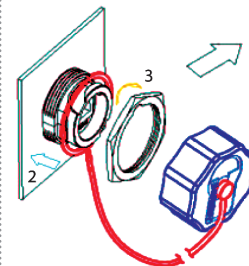
IDC CAT6 Termination (Rear Mount)



Panel Cutout

ACCESSORIES

IP68 DUSTCAPS

**RJF RB C7**Cap for receptacles
RJFRB71 / 71RA /
72xxxCord length
2.76" (70.0)**RJF RB C75**Cap for receptacles
RJFRB73xCord length
3.93" (100.0)

All dimensions in inches (millimeters in parenthesis)

SELF-CLOSING CAP

This self-closing cap automatically protects the RJ Field square flange receptacles (MIL-C-26482-type), protecting your system from dust and water projections. The same cap can be used to protect USB and IEEE1394 receptacles. A spring automatically closes the upper part of the cap when either the RJ Field plug, RJ45 cordset, USB or IEEE1394 cordset, or USB key are removed from the receptacle.



Plating	RJ45	USB-A	USB-B	IEEE1394
Black-Anodized	RJF21BSCC	USBF21BSCC	USBBF21BSCC	FWF21BSCC
Nickel	RJF21NSCC	USBF21NSCC	USBBF21NSCC	FWF21NSCC

BOLD = Stocked Items

CAT5e & CAT6 CABLE



General construction: A four-pair, 24 AWG, 100 Ohm SFTP round patch cable, designed to the ISO / IEC 11801 Category 5e requirements (CAT5e on 76m). The cable contains four twisted pairs, cabled, double-shielded with Kevlar reinforcement strands, jacketed in black UV-resistant polyurethane HFFR. Designed for fixed or portable applications in harsh environments.

HFFR: HALOGEN-FREE FLAME-RETARDANT

Jacket Compound Specification:

Halogen-free flame-retardant polyether-based polyurethane. Glossy finish.
Excellent hydrolysis resistance. High microbial resistance. UV-resistant. High flexibility.

CAT5e

PHYSICAL CHARACTERISTICS

Conductors	24 AWG (0.25 mm ²) Tinned copper, 7x0.2 mm
Insulation	Color-coded 568-B, Linear low-density polyethylene, Nom. Dia. 0.039" (1mm) nickel
Assembly	Pairs cabled with Kevlar-strength members and separation-tape wrapped
Shields	Inner: Aluminum mylar 100% coverage Outer: Tinned-copper braid 80% coverage
Jacket	Black, special PUR compound
Weight	40 lbs / mft (59 kg/km)
Outside Dia.	0.28" (7.1 mm) nom.
Min. Bend Radius (During installation)	67.5mm (9 x O.D.)
Min. Bend Radius (During operation)	37.5mm (5 x O.D.)
Min. Flexes to Failure	Passes IEC 61156-6 requirements
Temperature	-40°F to +185°F (-40°C to +85°C)

ELECTRICAL CHARACTERISTICS

DC Resistance	96 Ohms/KM @ 20°C
Impedance	100 ± 15 Ohms 1-100 MHz
Attenuation	772 KHz 2.70 db/100m nom. 20 MHz 13.8 db/100m nom.
	1 MHz 3.15 db/100m nom. 31.25 MHz 17.7 db/100m nom.
	4 MHz 6.45 db/100m nom. 62.5 MHz 25.6 db/100m nom.
	10 MHz 9.90 db/100m nom. 100 MHz 33 db/100m nom.
	16 MHz 12.3 db/100m nom.
Capacitance	46pF/m nom. @ 1KHz
LCL	43 dB min. @ 64 KHz
Capacitance Unbalance	3.4 pF/m max. @ 1KHz (wire to ground)
Insulation Resistance	150 M Ohm min.
Voltage Rating	230 VMS
Dielectric Strength	VAC/1 min - 700 v/min.
Propagation Delay	(100 MHz) 5.2 ns/m max. @ 100 MHz
Delay Skew	20 ns/100m max. @ 100 MHz
Resistance Unbalance	3% max. @ 20°
Structural Return Loss	(100 MHz) 23 db/100m min. @ 1-20 MHz
Spark Test	3 KV (tested during production)
Velocity of propagation	67% nom.

CAT6

PHYSICAL CHARACTERISTICS

Conductors	26 AWG (0.14 mm ²) tinned copper
Insulation	Polyethylene Nom. Dia. 0.039" (1mm)
Assembly	Pairs cabled with Kevlar strength members and separation tape wrapped
Shields	Inner: aluminium mylar 100% coverage Outer: tinned copper braid 80% coverage
Jacket	Black, special PUR compound
Weight	36.9 lbs / mft (55 kg/km)
Outside Dia.	0.272" (6.9 mm) nom.
Min. Bend Radius (During installation)	72mm (10x O.D.)
Min. Bend Radius (During operation)	36mm (5 x O.D.)
Min. Flexes to Failure	Passes IEC 61156-6 requirements
Temperature	-40°F to +185°F (-40°C to +85°C)

ELECTRICAL CHARACTERISTICS

DC Resistance	290 Ohm/Km		
Impedance	100+/-5 Ohm		
Attenuation	Frequency	Insertion Loss	N.E.X.T (Near End Crosstalk Loss)
	1MHz	3.1 dB	75.3 dB min
	4MHz	5.8 dB	66.3 dB min
	8MHz	8.0 dB	61.8 dB min
	10MHz	9.0 dB	60.3 dB min
	16MHz	11.4 dB	57.2 dB min
	20MHz	12.8 dB	55.8 dB min
	25MHz	14.1 dB	54.3 dB min
	31.25MHz	16.1 dB	52.8 dB min
	62.5MHz	23.2 dB	48.4 dB min
	100MHz	29.9 dB	45.3 dB min
	200MHz	43.7 dB	40.8 dB min
	250MHz	49.7 dB	39.3 dB min
Capacitance	50nF/km nom. @ 1KHz		
Capacitance Unbalance	1600 pF/km max. @ 1KHz (wire to ground)		
Insulation Resistance	5 GOhm/km		
Voltage Rating	230 V		
Dielectric Strength	VAC/1 min - 700 v/min.		
Propagation Delay	4.6 ns/m		
Delay Skew	45 ns/100m		
Resistance Unbalance	2%		
Structural Return Loss	15.6dB		
Velocity of propagation	72% nom.		

REEL OF CABLE (WITHOUT RJ45 PLUG ON ENDS)

CAT5e		CAT6	
LENGTH (M/FT)	PART NUMBER	LENGTH (M/FT)	PART NUMBER
100 m /~328 ft	190-038045-00	100 m /~328 ft	191-031179-00
300 m /~984 ft	190-038045-01	300 m /~984 ft	191-031179-01