

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


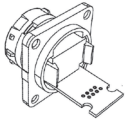

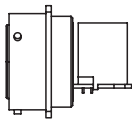



APPLICATIONS

- 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

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

RJFTV

MAIN CHARACTERISTICS

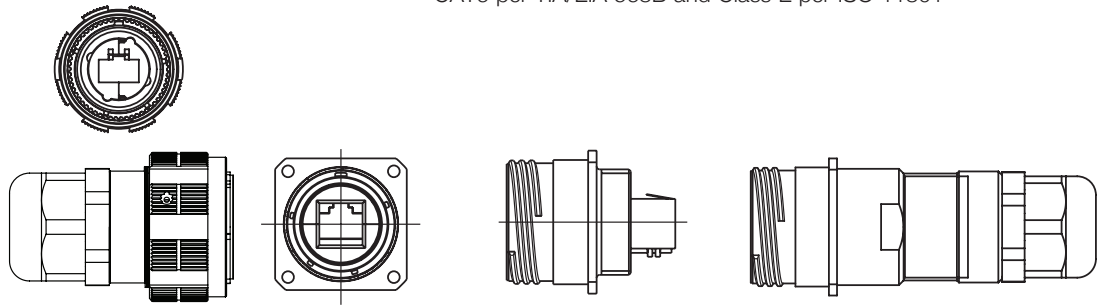
- Sealed against fluids and dusts (IP68)
- Shock, vibration and traction-resistant
- No cabling operation in-field and no tools required
- Mechanical coding / polarization (4 positions)
- Improved EMI-protection
- Tri-Start thread coupling mechanism (MIL-DTL-38999 series III-type) with anti-decoupling device
- Robust metallic shells
- RJ45 cordset retention in the plug: 100 N in the axis
- Mating cycles: 500 min.
- Compatible with cable diameters from 0.236 in. (6 mm) to 0.512 in. (13.0 mm)

ENVIRONMENTAL PROTECTION

- Sealing: IP68
- Salt Spray: 48-hour with aluminum shell - nickel-plating > 500-hour with aluminum shell - olive drab cadmium plating; 1000-hour with marine bronze shell
- Fire-retardant/low-smoke: UL94 V0 and NF F 16 101 & 16 102
- Vibrations: 10 – 500 Hz, 10 g, 3 axes: no discontinuity > 10 nanos.
- Compounded versions tested per NAS 1599 (5-3000 Hz, 20g, 12h)
- Shocks: IK06; weight of 250 g drop from 40 cm [15.75 in] onto connectors (mated pair)
- Humidity: 21 days, 109.4°F (43°C), 98% humidity
- 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)

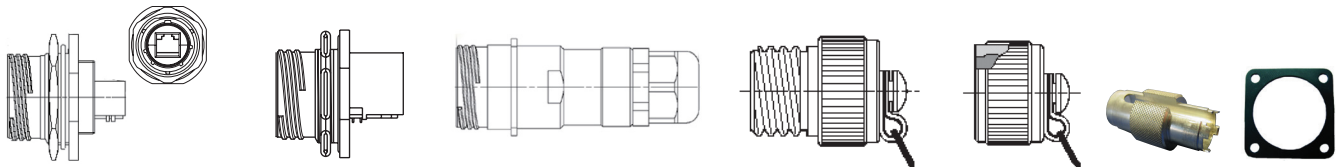
DATA TRANSMISSION

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 11801



PLATING	PLUG		RECEPTACLES				
	CABLE GLANDS PLASTIC	METAL	STANDARD BOX MOUNT	CORDSET BOX MOUNT	RIGHT ANGLE FEMALE RJ45	CABLE GLANDS PLASTIC	METAL
MARINE BRONZE	RJFTV6BZ	RJFTV6MBZ	RJFTV21BZ††	RJFTV22BZ**100BTX††	RJFTV21RABZ††	RJFTV2PE1BZ	RJFTV2PEM1BZ
NICKEL	RJFTV6N	RJFTV6MN	RJFTV21N††	RJFTV22N**100BTX††	RJFTV21RAN††	RJFTV2PE1N	RJFTV2PEM1N
OLIVE DRAB CADMIUM	RJFTV6G	RJFTV6MG	RJFTV21G††	RJFTV22G**100BTX††	RJFTV21RAG††	RJFTV2PE1G	RJFTV2PEM1G

** Select for Cordset Length 03 = 11.81 (0.30M) 05 = 19.68 (0.50M) 10 = 39.37 (1.00M) 15 = 59.05 (1.50M) **BOLD** = Stocked Items
 †† Use prefix RJFTV6 for CAT6 version (receptacles only)



PLATING	JAM NUT RECEPTACLE			ACCESSORIES					INSERT REMOVAL TOOL	FLANGE GASKET	
	STANDARD JAM NUT	CORDSET JAM NUT	RIGHT ANGLE FEMALE RJ45	CABLE GLAND		DUST CAP					
				PLASTIC	METAL	PLUG	BOX MOUNT	JAM NUT			
Marine Bronze	RLFTV71BZ††	RJFTV72BZ**100BTX††	RJFTV71RABZ††	RJFTV7PE1BZ††	RJFTV7PEM1BZ††	RJFTVC6BZ	RJFTVC2BZ	RJFTVC7BZ	-	RJFODE	JE19
Nickel	RJFTV71N††	RJFTV72N**100BTX††	RJFTV71RAN††	RJFTV7PE1BN††	RJFTV7PEM1N††	RJFTVC6N	RJFTVC2N	RJFTVC7N	RJFTVSCCN		
Olive Drab Cadmium	RJFTV71G††	RJFTV72G**100BTX††	RJFTV71RAG††	RJFTV7PE1BG††	RJFTV7PEM1G††	RJFTVC6G	RJFTVC2G	RJFTVC7G	RJFTVSCCG		

†† Use prefix RJFTV6 for CAT6 version (receptacles only)
 ** Select for Cordset Length 03 = 11.81 (0.30M) 05 = 19.68 (0.50M) 10 = 39.37 (1.00M) 15 = 59.05 (1.50M) **BOLD** = Stocked Items
 *** Only for RJFTV2 type flanged receptacles

All dimensions in inches (millimeters in parenthesis)

RJFTV TRANSVERSALLY-SEALED



PLATING	RECEPTACLE			JAM NUT RECEPTACLE		
	STANDARD SEALED BOX MOUNT	CORDSET SEALED BOX MOUNT	RIGHT ANGLE SEALED FEMALE RJ45	STANDARD SEALED JAM NUT	CORDSET SEALED JAM NUT	RIGHT ANGLE SEALED FEMALE RJ45
Marine Bronze	RJFTV2S*1BZ††	RJFTV2S*2B**100BZTX††	RJFTV2S*1RABZ††	RJFTV7S*1BZ††	RJFTV7S*2B**100BZTX††	RJFTV7S*1RABZ††
Nickel	RJFTV2S*1N††	RJFTV2S*2N**100BZTX††	RJFTV2S*1RAN††	RJFTV7S*1N††	RJFTV7S*2N**100BZTX††	RJFTV7S*1RAN††
Olive Drab Cadmium	RJFTV2S*1G††	RJFTV2S*2G**100BZTX††	RJFTV2S*1RAG††	RJFTV7S*1G††	RJFTV7S*2G**100BZTX††	RJFTV7S*1RAG††

* Coding A, B, C, D ** Select for Cordset Length 03 = 11.81 (0.30M) 05 = 19.68 (0.50M) 10 = 39.37 (1.00M) 15 = 59.05 (1.50M)
 †† Use prefix RJFTV6 for CAT6 version (receptacles only)

RJFTV HERMETICALLY SEALED



PLATING	RECEPTACLE			JAM NUT RECEPTACLE		
	STANDARD HERMETIC BOX MOUNT	CORDSET HERMETIC BOX MOUNT	RIGHT ANGLE HERMETIC FEMALE RJ45	STANDARD HERMETIC JAM NUT	CORDSET HERMETIC JAM NUT	RIGHT ANGLE HERMETIC FEMALE RJ45
Marine Bronze	RJFTV2H*1BZ††	RJFTV2H*2B**100BZTX††	RJFTV2H*1RABZ††	RJFTV7H*1BZ††	RJFTV7H*2B**100BZTX††	RJFTV7H*1RABZ††
Nickel	RJFTV2H*1N††	RJFTV2H*2N**100BZTX††	RJFTV2H*1RAN††	RJFTV7H*1N††	RJFTV7H*2N**100BZTX††	RJFTV7H*1RAN††
Olive Drab Cadmium	RJFTV2H*1G††	RJFTV2H*2G**100BZTX††	RJFTV2H*1RAG††	RJFTV7H*1G††	RJFTV7H*2G**100BZTX††	RJFTV7H*1RAG††

†† Use prefix RJFTV6 for CAT6 version (receptacles only)
 * Coding A, B, C, D ** Select for Cordset Length 03 = 11.81 (0.30M) 05 = 19.68 (0.50M) 10 = 39.37 (1.00M) 15 = 59.05 (1.50M)

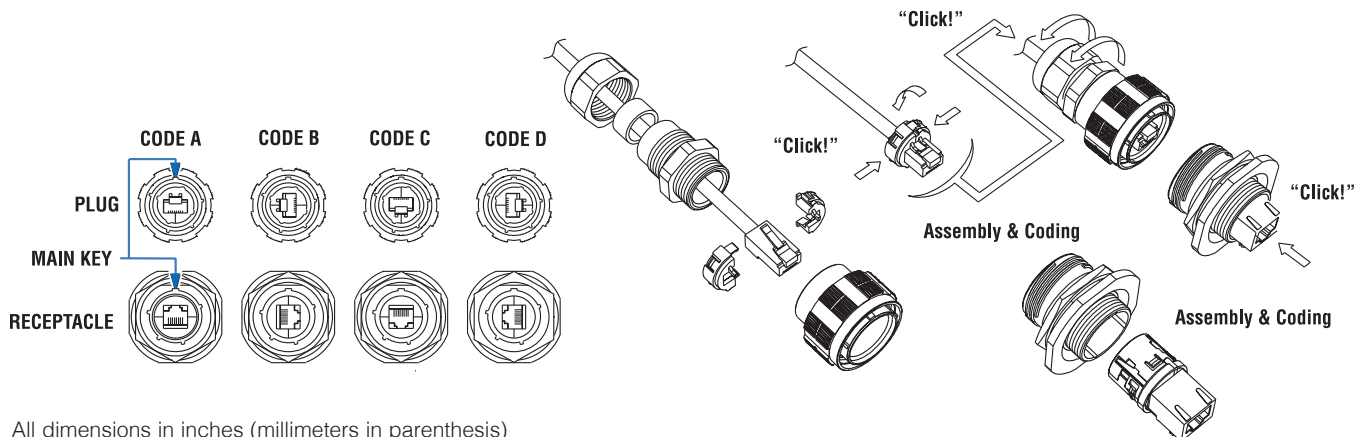
SPECIALS



PLATING	THROUGH BULKHEAD RECEPTACLE		STAND-OFF RECEPTACLE	
	NON METALLIZED INSERTS	METALLIZED INSERTS	SQUARE FLANGE	JAM NUT
Nickel	RJFTVB2NISOBRUT††	RJFTVB2NISONI††	RJFTV2S*5NF459††	RJFTV7S*5NF459††
Olive Drab Cadmium	RJFTVB2GISOBRUT††	RJFTVB2GISONI††	RJFTV2S*5GF459††	RJFTV7S*5GNF459††

†† Use prefix RJFTV6 for CAT6 version (receptacles only) * Coding A, B, C, D

ASSEMBLY INSTRUCTIONS

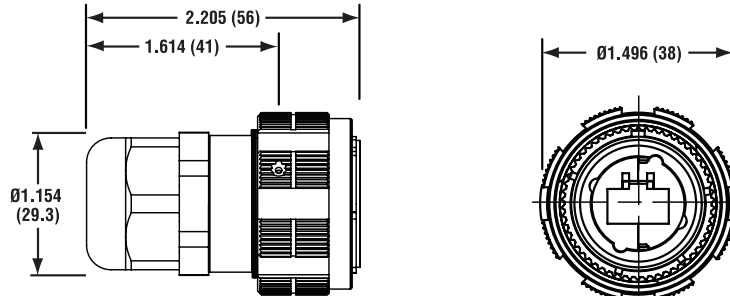


All dimensions in inches (millimeters in parenthesis)

PLUG

RJF TV 6

Plug with plastic or metal gland



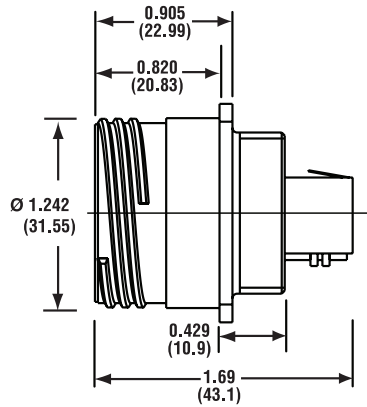
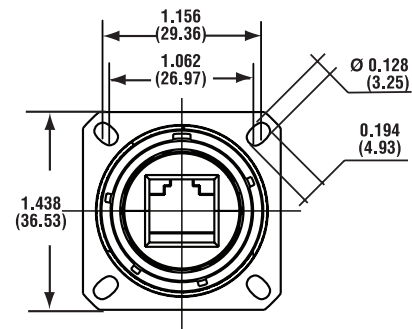
Cable Exit Range .236 (6.0) to .512 (13.0)

RECEPTACLES

RJF TV6 21

RJF TV 21

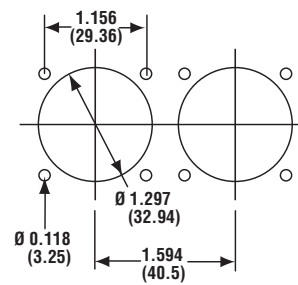
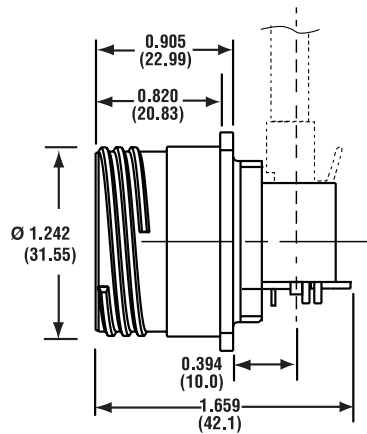
Square flange

COMMON
RECEPTACLE DIMENSIONS

RJF TV6 21 RA

RJF TV 21 RA

Right-angle square flange



Panel Cutout

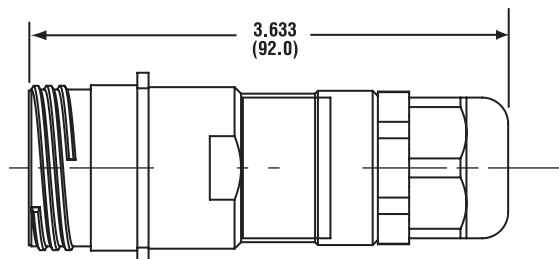
RJF TV6 2 PE (M)

RJF TV 2 PE (M)

RJF TV 7 PE (M)

RJF TV6 7 PE (M)

IP68 backshell: • Shell type 2PE and 7PE plastic or metal gland



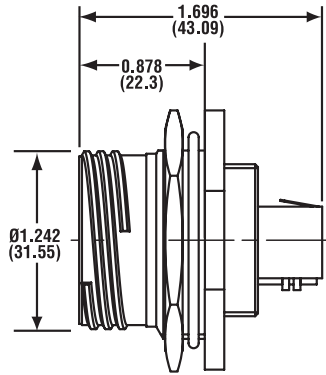
Cable Exit Range .216 (5.5) to .512 (13.0)

All dimensions in inches (millimeters in parenthesis)

RECEPTACLES

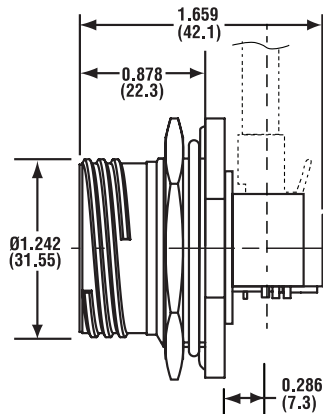
RJF TV6 71
RJF TV 71

Jam nut receptacle

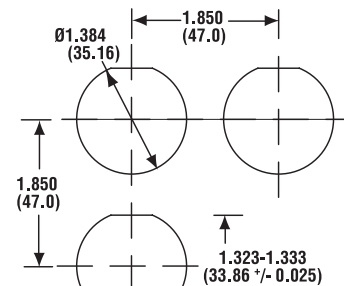
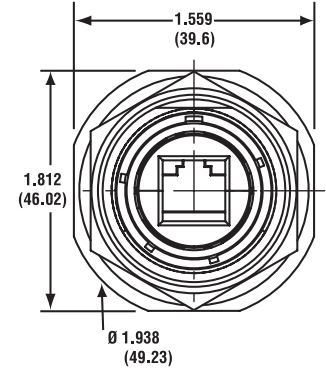


RJF TV6 71 RA
RJF TV 71 RA

Right-angle jam nut



COMMON
RECEPTACLE DIMENSIONS

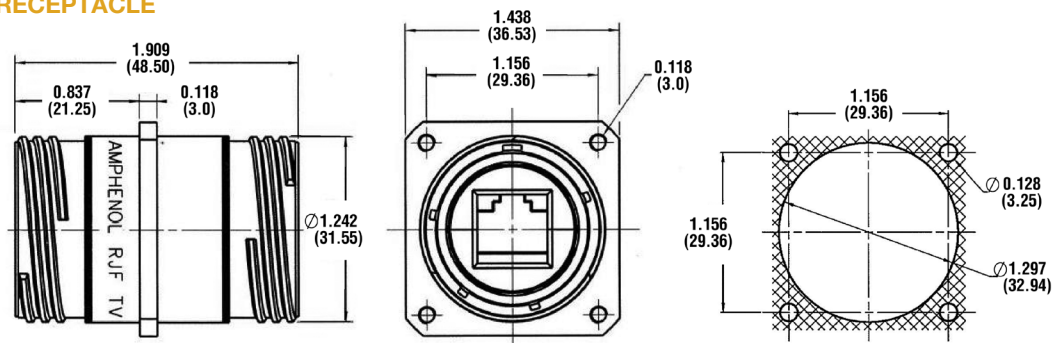


Panel Cutout

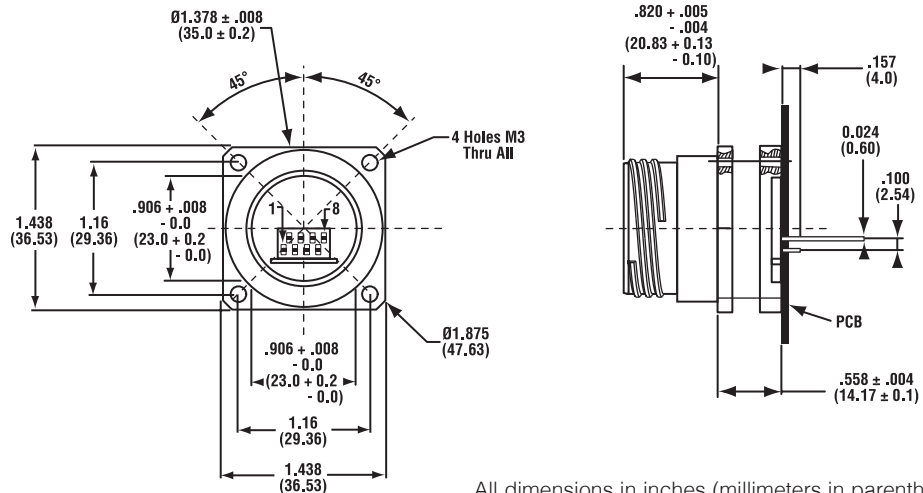
SPECIALS

THROUGH BULKHEAD RECEPTACLE

Max Panel Thickness
.352 (8.94)



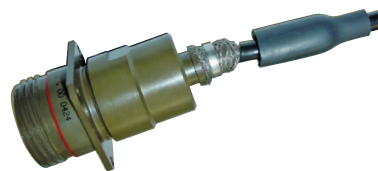
STAND-OFF RECEPTACLE



All dimensions in inches (millimeters in parenthesis)

RJFTV - WITH 360° EMI BACKSHELLS

RJFTV series receptacles and plugs with EMI backshells provide a solution with 360-degree shielding offering similar protection as the standard MIL-DTL-38999 series III connectors. With those solutions, we recommend using our reinforced and double-shielded CAT5e cable.

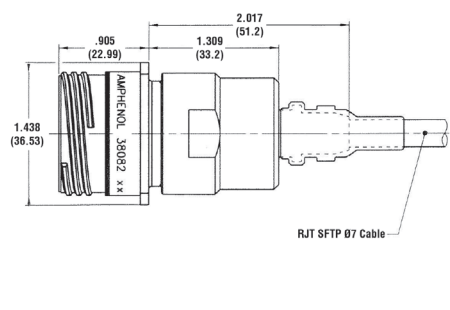


RJFTV RECEPTACLES AND PLUGS WITH 360° EMI BACKSHELLS

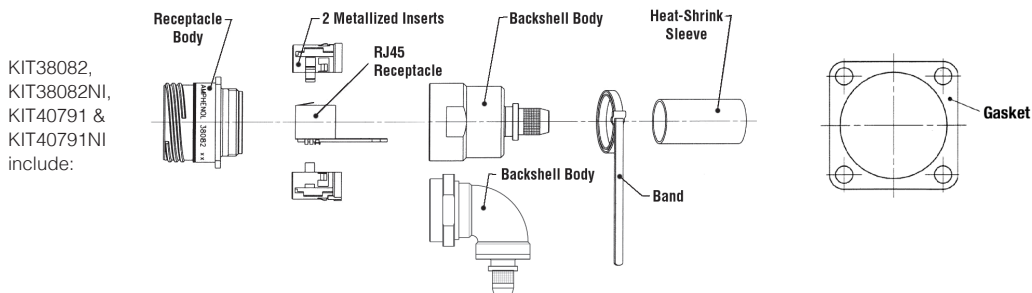
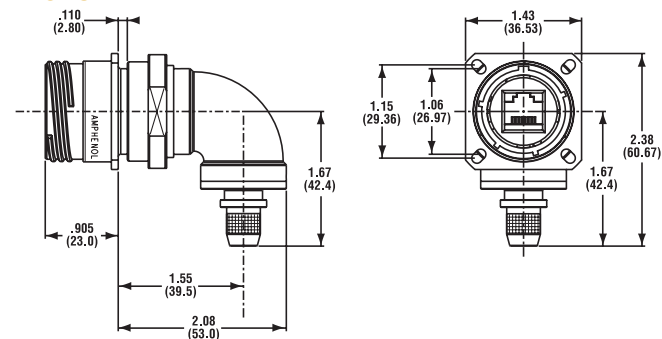
PART NUMBERS

PLATING	RECEPTACLE		JAM NUT		PLUG	
	SQUARE FLANGE STRAIGHT	RIGHT ANGLE	STANDARD STRAIGHT	RIGHT ANGLE	GROUNDED STRAIGHT	RIGHT ANGLE
Nickel	KIT38082NI	KIT40791NI	KIT38204NI	KIT40771NI	KIT38081NI	KIT40792NI
Olive Drab Cadmium	KIT38082	KIT40791	KIT38204	KIT40771	KIT38081	KIT40792

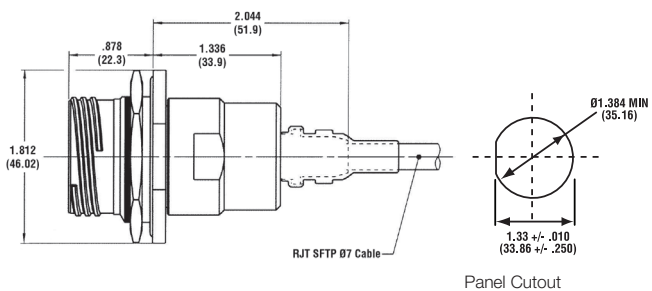
SQUARE FLANGE RECEPTACLE STRAIGHT



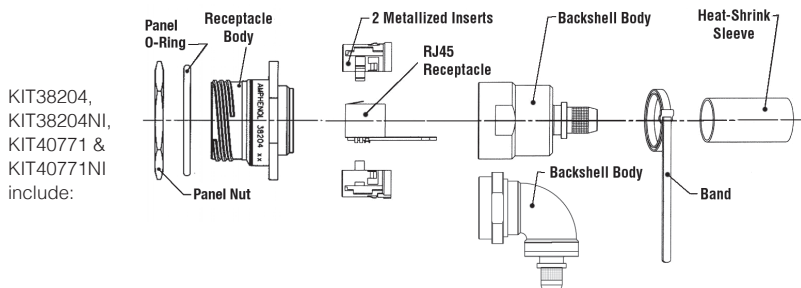
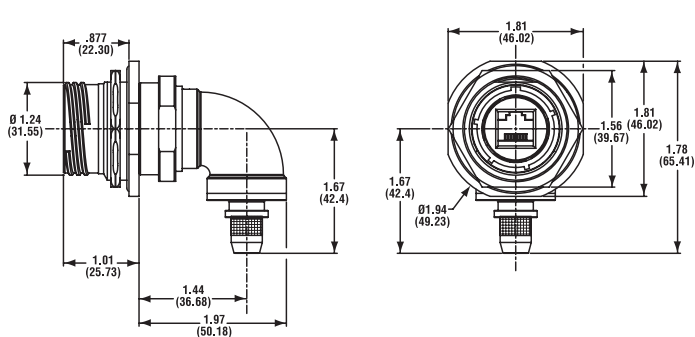
SQUARE FLANGE RECEPTACLE RIGHT ANGLE BACKSHELL



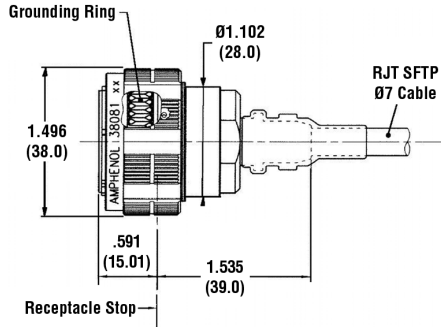
JAM NUT RECEPTACLE STRAIGHT BACKSHELL



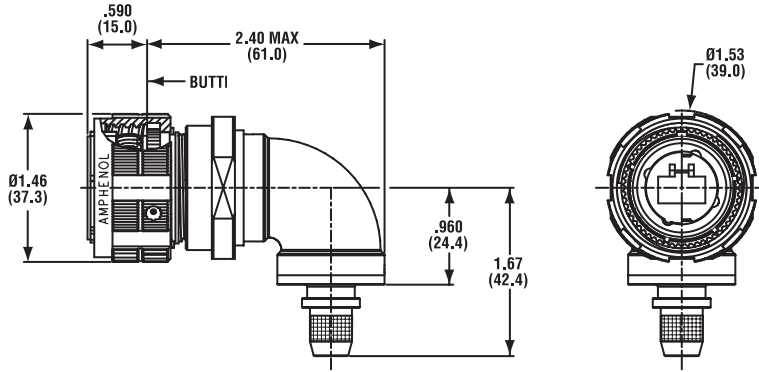
JAM NUT RECEPTACLE RIGHT ANGLE BACKSHELL



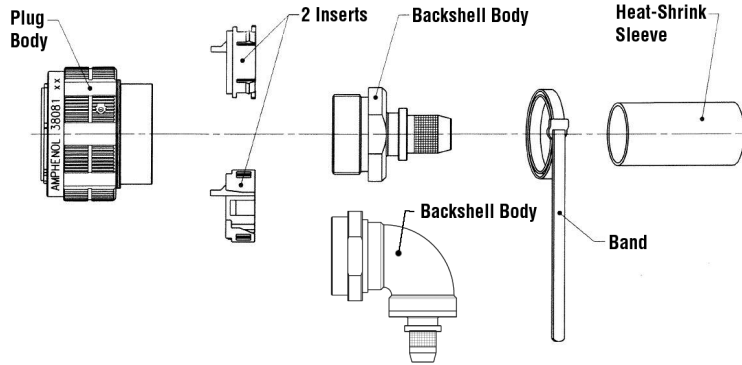
PLUG STRAIGHT BACKSHELL



PLUG RIGHT ANGLE BACKSHELL



KIT38081, KIT38081NI, KIT40792 & KIT-40792NI include:



IMPORTANT NOTE

With these plugs, the standard RJ45 plug is not provided. The crimping of a standard RJ45 onto the cable must be done by the user.

We advise using our double shielded, reinforced CAT5e cable with these RJFTV series EMI connectors. Contact us to check backshell compatibility for other cable types. We also provide assembled cordsets (see examples below).

