

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


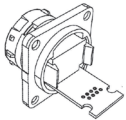

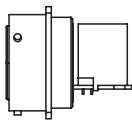



APPLICATIONS

- 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 – bayonet, 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	Bayonet	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

USBFTV - USB-A

MAIN CHARACTERISTICS

- Sealed against fluids and dust (IP68)
- Shock, vibration and traction-resistant
- No cabling operation in-field and no tools required
- Improved EMI-protection
- Tri-Start thread coupling mechanism (MIL-DTL-38999 series III-type) with anti-decoupling device
- 2 mechanical coding / polarization possibilities by the user (receptacle insert rotation)
- USBF TV plug retention in the receptacle: 100 N in the axis
- Mating cycles: 500 to 1500

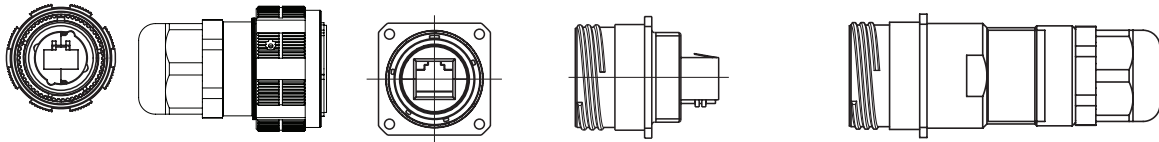
ENVIRONMENTAL PROTECTION

- Sealing (when mated): IP68 (Temporary immersion)
- Salt Spray: 48-hour with nickel-plating > 500-hour with olive drab cadmium 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 > 1 micros
- 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
- Temperature Range: -40°F to +185°F (-40°C to +85°C)

DATA TRANSMISSION

USB 2.0 and 3.0 specifications

Data Rate: Up to 480 Mb/s (2.0) or 5g Bit/s (3.0) for high-speed

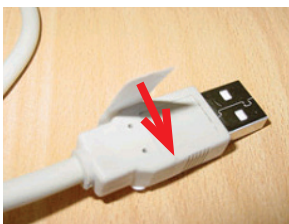


PLATING	PLUG	RECEPTACLES				
	STANDARD	SQUARE FLANGE RECEPTACLE				
		FEMALE USB-A		SOLDER (4 TINNED HOLES)		
Marine Bronze	USBFTV6BZ	USBFTV21BZ	USBFTV2PE1BZ	USBFTV22BZ	USBFTV2PE2BZ	USBFTV2PEM2BZ
Nickel	USBFTV6N	USBFTV21N	USBFTV2PE1N	USBFTV22N	USBFTV2PE2N	USBFTV2PEM2N
Olive Drab Cadmium	USBFTV6G	USBFTV21G	USBFTV2PE1G	USBFTV22G	USBFTV2PE2G	USBFTV2PEM2G

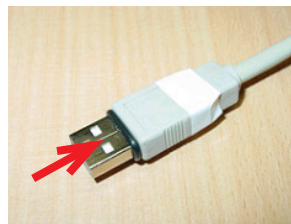
Note: Use prefix USB3FTV for 3.0 version on both plugs and receptacles.

BOLD = Stocked Items

PLUG ASSEMBLY INSTRUCTIONS



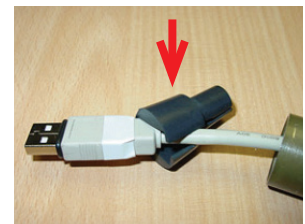
STEP 1: If you need a full sealing to IP68, install the white sticker around the front face of the USB-A plug, covering the four holes of the overmolding.



STEP 2: Insert the black O-ring around the front face of the USB-A plug. This O-ring will ensure connection sealing.



STEP 3: Insert the USB cordset into the metallic backshell.



STEP 4: Insert the retention spacer laterally to the cable (this spacer is soft in order to adapt to different shapes of overmolding) and slide the overmolding of the USB-A plug into this retention spacer.

IMPORTANT NOTE

The connection sealing is not done by the black retention spacer (which is slotted), but by the front face O-Ring (fig. 2)

USBFTV TRANSVERSALLY SEALED



PLATING	SQUARE FLANGE RECEPTACLE			
	STANDARD USB-A PLUG	OPEN CABLE	W/BACKSHELL AND PLASTIC GLAND	W/ BACKSHELL AND METAL GLAND
Nickel	USBFTV2S*2N**A	USBFTV2S*2N**OPEN	USBFTV2PES*2N**A	USBFTV2PEMS*2N**A
Olive Drab Cadmium	USBFTV2S*2G**A	USBFTV2S*2G**OPEN	USBFTV2PES*2G**A	USBFTV2PEMS*2G**A

* Coding A, B, C, D ** Select for Cordset Length 03 = 11.81 (0.30M) 05 = 19.68 (0.50M) 10 = 39.37 (1.00M)

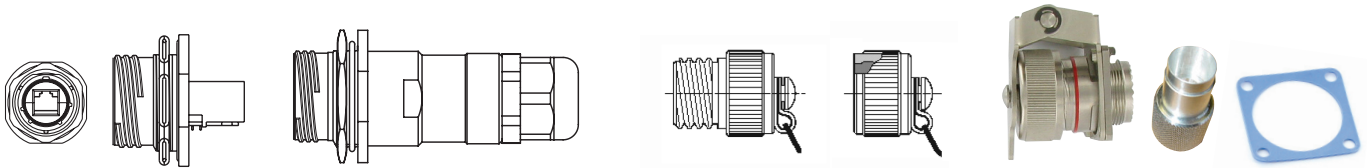
Note: Use prefix USB3FTV for 3.0 version on both plugs and receptacles.



PLATING	JAM NUT RECEPTACLE			
	STANDARD USB-A PLUG	OPEN CABLE	W/BACKSHELL AND PLASTIC GLAND	W/ BACKSHELL AND METAL GLAND
Nickel	USBFTV7S*2N**A	USBFTV7S*2N**OPEN	USBFTV7PES*2N**A	USBFTV7PEMS*2N**A
Olive Drab Cadmium	USBFTV7S*2G**A	USBFTV7S*2G**OPEN	USBFTV7PES*2G**A	USBFTV7PEMS*2G**A

* Coding A, B, C, D ** Select for Cordset Length 03 = 11.81 (0.30M) 05 = 19.68 (0.50M) 10 = 39.37 (1.00M)

Note: Use prefix USB3FTV for 3.0 version on both plugs and receptacles.



RECEPTACLES					ACCESSORIES					
JAM NUT RECEPTACLES					METALLIC DUST CAPS			SELF-CLOSING CAP*	INSERT REMOVAL TOOL	FLANGED GASKET
FEMALE USB-A		SOLDER (4 TINNED HOLES)			PLUG §	BOX MOUNT §	JAM NUT §			
USBFTV71BZ	USBFTV7PE1BZ	USBFTV72BZ	USBFTV7PE2BZ	USBFTV7PEM2BZ	USBFTVC6BZ	USBFTVC2BZ	USBFTVC7BZ	USBFTVSCC for square flange only	USBFODE	JE15
USBFTV71N	USBFTVPE1N	USBFTV72N	USBFTVPE2N	USBFTV7PEM2N	USBFTVC6N	USBFTVC2N	USBFTVC7N			
USBFTV71G	USBFTVPE1G	USBFTV72G	USBFTVPE2G	USBFTV7PEM2G	USBFTVC6G	USBFTVC2G	USBFTVC7G			

§ Nylon Cord Lengths: Plugs = 6.30 (160.0) Box Mount and Jam Nut = 4.134 (105.0)

BOLD = Stocked Items

Note: Use prefix USB3FTV for 3.0 version on both plugs and receptacles.

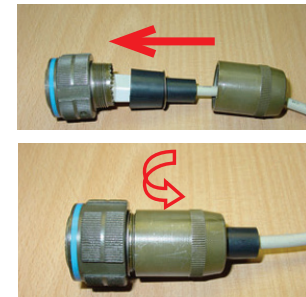
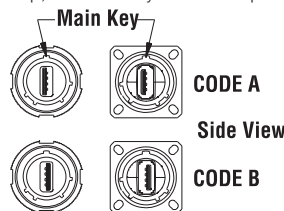
PLUG ASSEMBLY INSTRUCTIONS



STEP 5: Insert the friction ring laterally to the cable



STEP 6: Choose the right coding (2 positions) and insert the USB-A plug into the protective plug. Note that at this step, the main key is used for polarization.



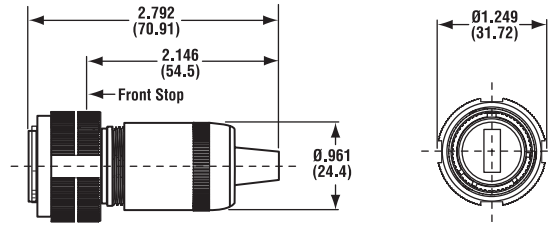
STEP 7: Screw the backshell onto the plug body. A wrench may be necessary to fully tighten.

All dimensions in inches (millimeters in parenthesis)

USBFTV USB-A DIMENSIONS

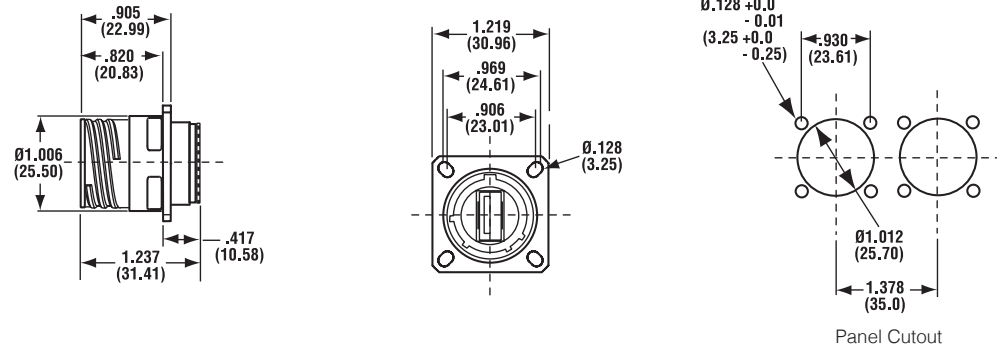
PLUG

USB3FTV 6
USBFTV 6



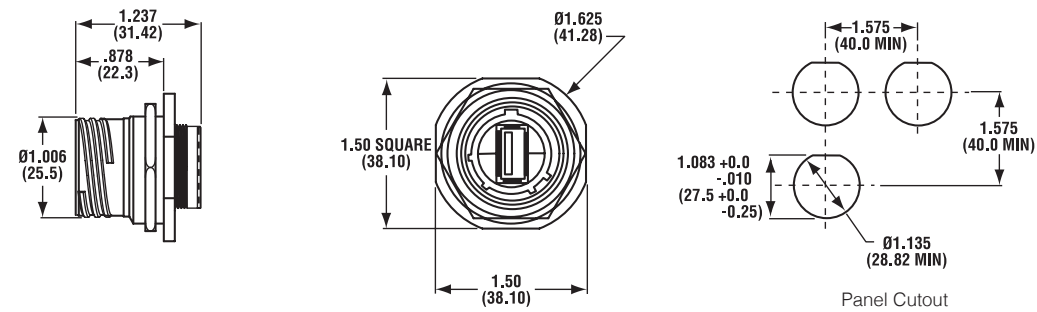
RECEPTACLE

USB3FTV 2
USBFTV 2
Square flange receptacle
4 mounting holes



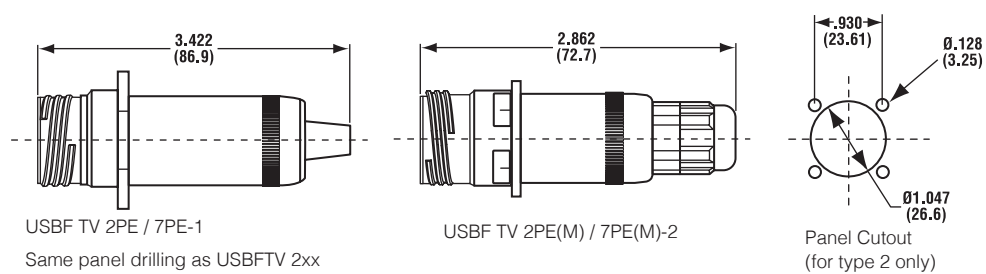
RECEPTACLE

USB3FTV 7
USBFTV 7
Jam nut receptacle
Hexagonal-nut mounting



RECEPTACLE

USB3F TV 2PE /7PE
USBFTV 2PE /7PE
Receptacle with
backshell termination type 1



USBFTV 2PE / 7PE-1

USBFTV 2PE(M) / 7PE(M)-2

Same panel drilling as USBFTV 2xx

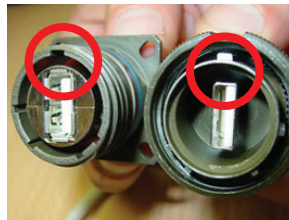
Panel Cutout
(for type 2 only)

RECEPTACLE ASSEMBLY INSTRUCTIONS



INSERTION

STEP 1: Insert the USB module from the rear. Reference is main key.



STEP 2: Take care to have a coding compatible with the coding used for the plug: in the front view, the white shapes in the USBs must be on the same side.



EXTRACTION

STEP 1: To remove the USB module, insert the removal tool USBF ODE from the front.



Removal Tool



STEP 2: Push back the module as shown.

All dimensions in inches (millimeters in parenthesis)

REINFORCED USBFTV

ENVIRONMENTAL PROTECTION

- Sealing: IP68 (when mated)
- Salt spray: 48-hour with nickel-plating (ROHS) > 500-hour with olive drab cadmium
- Vibrations: MIL-STD-810F method 514.5 fig 514.5.C CAT14
- Temperature range: -40°F to +185°F (-40°C to +85°C) (MIL-STD-810F)
- Data transmission during vibration & temperature tests

OTHER FEATURES

- Type: USB2.0
- Voltage: 5V DC - 500 mA maximum
- Electromagnetic compatibility: 89/336/EEC and Part 15 Class B

We offer reinforced USB memory keys in different capacities. They can ONLY be used with our USBFTV series receptacles. When mated on the receptacle, the system is IP68.



IMPORTANT NOTE

USBFTV memory key to be used with USBF TV receptacle.

Plating	REINFORCED USBFTV MEMORY KEYS			
	512MB	1024MB	2048MB	4096MB
Nickel	USBFTVKEY6*0512N**	USBFTVKEY6*1024N**	USBFTVKEY6*2048N**	USBFTVKEY6*4096N**
Olive Drab Cadmium	USBFTVKEY6*0512G**	USBFTVKEY6*1024G**	USBFTVKEY6*2048G**	USBFTVKEY6*4096G**

* Coding A or B ** Blank = without CAP CAP = with CAP

BOLD = Stocked Items

RUGGED USB

ENVIRONMENTAL PROTECTION

- Sealing: IP68 (when closed)
- Salt spray: 48-hour with nickel-plating (ROHS) > 96-hour with black coating (ROHS) > 500-hour with olive drab cadmium
- Vibrations: MIL-STD-810F method 514.5 fig 514.5.C CAT14

OTHER FEATURES

- Type: USB2.0
- Voltage: 5V DC - 500 mA max
- Electromagnetic compatibility: 89/336/EEC and Part 15 Class B

We offer reinforced USB memory keys in different capacities. When mated, the system is IP68. Shells are metallic with 1/4-turn bayonet coupling.

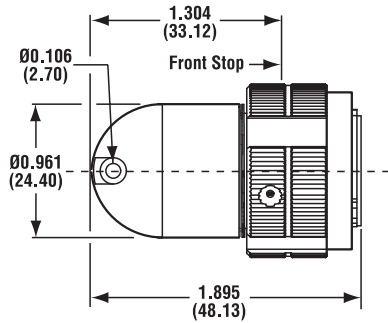


IMPORTANT NOTE

Compatible with any standard USB port

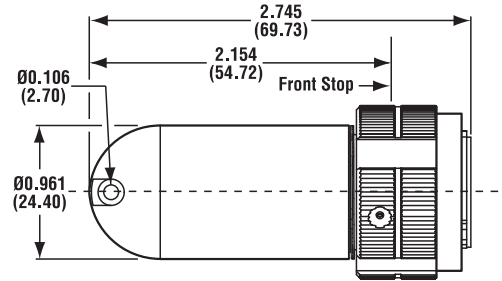
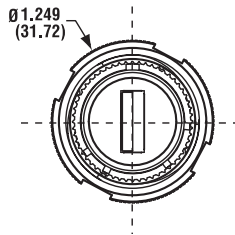
Plating	RUGGED USB MEMORY KEYS			
	512MB	1024MB	2048MB	4096MB
Nickel	USBFKEY0512N	USBFKEY1024N	USBFKEY2048N	USBFKEY4096N
Green	USBFKEY0512G	USBFKEY1024G	USBFKEY2048G	USBFKEY4096G
Black	USBFKEY0512B	USBFKEY1024B	USBFKEY2048B	USBFKEY4096B

REINFORCED USBFTV DIMENSIONS

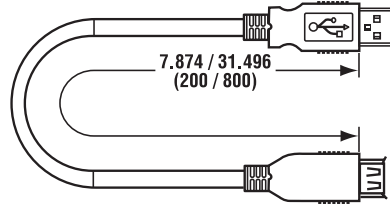


UP TO 4GB MEMORY SIZE

COMMON DIMENSION



FROM 8 TO 64GB MEMORY SIZE

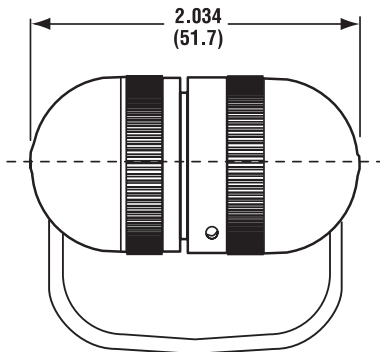


USB Cordset is included with each memory key

REINFORCED USBFTV MEMORY KEYS				
8192MB	16384MB	16384GT MB	32768MB	64GB
USBFTVKEY6*8192N**	USBFTVKEY6*16384N**	USBFTVKEY6*16384GTN**	USBFTVKEY6*32768N**	USBFTVKEY6*64N**
USBFTVKEY6*8192G**	USBFTVKEY6*16384G**	USBFTVKEY6*16384GTG**	USBFTVKEY6*32768G**	USBFTVKEY6*64G**

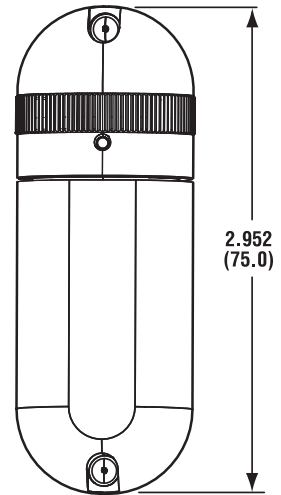
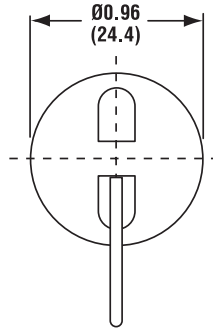
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RUGGED USB DIMENSIONS

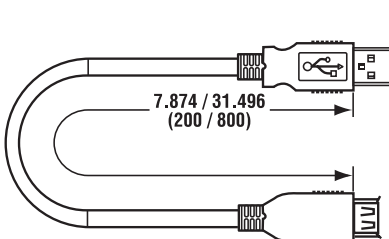


UP TO 4GB MEMORY SIZE

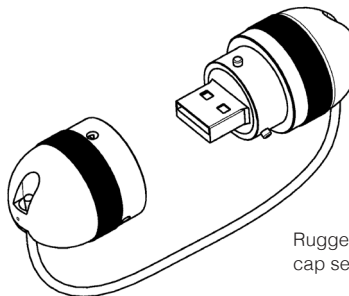
COMMON DIMENSION



FROM 8 TO 64GB MEMORY SIZE



USB Cordset is included with each memory key



Rugged metallic USB key with cap sealing IP67

RUGGED USB MEMORY KEYS				
8192MB	16384MB	16384GT MB	32768MB	64GB
USBFKEY8192N	USBFKEY16384N	USBFKEY16384GTN	USBFKEY32768N	USBFKEY64N
USBFKEY8192G	USBFKEY16384G	USBFKEY16384GTG	USBFKEY32768G	USBFKEY64G
USBFKEY8192B	USBFKEY16384B	USBFKEY16384GTB	USBFKEY32768B	USBFKEY64B