

# FTV10D1/FRV10D1 Fiber Transmitter and Receiver

## SINGLE-CHANNEL DIGITALLY ENCODED VIDEO WITH BIDIRECTIONAL DATA



### Product Features

- 10-Bit Digitally Encoded Video for High-Quality Video Transmission over a Single Fiber
- Bidirectional Data Channel that Supports RS-232, RS-422, RS-485 (2-wire/4-wire), Manchester, Bi-Phase, and Coaxitron® Communication
- Supports Pelco Coaxitron "Up-the-Coax" Control Signals for a Distance up to 48 km (30 mi)
- Multimode Fiber Support for Distances up to 3 km (2 mi)
- Single-Mode Fiber Support for Distances up to 69 km (43 mi)
- Exceeds All Requirements for RS-250C Short-Haul Transmission
- Laser Diode for Transmission of Optical Signals
- Compatible with NTSC, PAL, and SECAM Video Standards
- Designed to Meet NEMA TS-1/TS-2 and Caltrans Traffic Signal Control Equipment Environmental Standards
- Stand-Alone and Rack-Mountable Modular Design
- LED Status Indicators for Monitoring All Critical Operating Parameters

#### FRV10D1S1ST

Available in multimode and single-mode versions, the **FTV10D1/FRV10D1** fiber transmitter and receiver allow transmission of one unidirectional composite video channel and one bidirectional data channel over one optical fiber. In addition, the "up-the-coax" technology allows Coaxitron® pan/tilt/zoom (PTZ) control data to be transmitted the full distance of the fiber (up to 48 km for single-mode fiber). When using single-mode fiber, the **FTV10D1** transmitter and the **FRV10D1** receiver offer an optical power budget of 23 dB.

The **FTV10D1** transmitter and the **FRV10D1** receiver are compatible with each other and other fiber models. The **FRV10D1** receiver is also backward compatible with the FSV10D1 transmitter.

The **FTV10D1/FRV10D1** plug-and-play design ensures ease of installation by requiring no electrical or optical adjustments. Modular in design, **FTV10D1** and **FRV10D1** units can be rack-mounted using the EURACK/USRACK chassis, or stand-alone modules can be placed on a desktop or mounted to a wall (wall mount kit not required).

For stand-alone and wall mount installations, external power is required for the **FTV10D1/FRV10D1** units. The units can be powered with the recommended FEXTPS fiber external power supply.

# TECHNICAL SPECIFICATIONS

## MODELS

Transmitter	Compatible Receiver	Fiber Optical Connector Type	Number of Fibers	Wavelength	Optical Power Budget	Maximum Transmission Distance*
<b>Multimode (62.5/125 µm)</b>						
FTV10D1M1ST	FRV10D1M1ST	ST	1	1310/1550 nm	16 dB	3 km (2 mi)
<b>Single Mode (9/125 µm)</b>						
FTV10D1S1ST	FRV10D1S1ST	ST	1	1310/1550 nm	23 dB	69 km (43 mi)
FTV10D1S1FC	FRV10D1S1FC	FC	1	1310/1550 nm	23 dB	69 km (43 mi)
<b>Note:</b> This product requires a fiber installation with a minimum 30 dB connector return loss.						
*Distance may be limited by optical dispersion.						

## VIDEO

Video Input	1.0 Vp-p, 75 ohms
Overload	>1.5 Vp-p
Bandwidth	5 Hz to 10 MHz
Differential Gain	<2%
Differential Phase	<0.7°
Tilt	<1%
Signal-to-Noise Ratio	67 dB at maximum optical loss budget
Max. Coaxial Cable (RG59)	100 m (300 ft) camera to fiber optic module to maintain 6 Mhz bandwidth

## DATA

Interface	RS-232, RS-422, RS-485 (2- or 4-wire), and UTC (up-the-coax)
Rate	DC-115 Kbps (NRZ)

## ELECTRICAL

Wavelength	1310/1550 nm, multimode and singlemode
Power	
Surface Mount	8 to 15 VDC at 2 W
Rack Mount	Provided by rack
Number of Fibers	1
Optical Emitter	Laser diode
LED Indicators	Link, Video, Data

## MECHANICAL

Connectors	
Optical	ST or FC
Power	Terminal block
Video	BNC (gold-plated center pin)
Data	Terminal block
Number of Rack Slots	1

## GENERAL

Dimensions	15.00 × 13.20 × 2.75 cm (5.90" L × 5.20" W × 1.10" H)
MTBF	>100,000 hours
Operating Temperature	-40° to 75°C (-40° to 167°F)
Storage Temperature	-40° to 85°C (-40° to 185°F)
Relative Humidity	0% to 95%, noncondensing
Unit Weight	0.7 kg (1.5 lb)
Shipping Weight	0.9 kg (2.0 lb)

## CERTIFICATIONS/RATINGS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- Designed to meet NEMA TS 1/TS 2 and Caltrans traffic signal control equipment environmental standards

## RECOMMENDED ACCESSORIES

EURACK	4 RU rack accessory with European power supply (includes EU, UK, and AUS power line cords)
USRACK	4 RU rack accessory with North American power supply
FEXTPS	Fiber External Power Supply with multiple plug adaptors (North American, Australian, United Kingdom, and European); 100 to 240 VAC, 50 to 60 Hz input, 9 VDC output

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