

# FT8301/FR8301 Fiber Transmitter and Receiver

## SINGLE-CHANNEL DIGITALLY ENCODED VIDEO

### Product Features

- 8-Bit Digitally Encoded Video for High-Quality Video Transmission over a Single Fiber
- Multimode Fiber Support for Distances up to 6 km
- Single-Mode Fiber Support for Distances up to 30 km
- Exceeds All Requirements for the RS-250C Medium-Haul Transmission Specification
- Compatible with NTSC, PAL, and SECAM Video Standards
- Meets NEMA TS 2 and Caltrans Traffic Signal Control Equipment Environmental Standards
- No Performance Adjustments Required
- 12 VDC or 24 VAC Power Supply
- LED Indicators for Monitoring of Signal Status and Operating Power



FR8301 RECEIVER

The **FT8301/FR8301** fiber transmitter and receiver provide the ability to transmit one composite video channel over one optical fiber. The **FT8301** transmitter and the **FR8301** receiver are available in multi-mode and single-mode versions.

Compact in size, the **FT8301** transmitter can be used as a standalone module. The **FR8301** receiver, which is available in the standard size of 3 RUs, can be rack mounted or can be used as a standalone module. Rack mounting is accomplished using the RK5000 Series rack mount chassis. Standalone modules can be placed on a desktop or can be mounted to a wall.



FT8301 TRANSMITTER



C1641 / REVISED 1-06



International Standards  
Organization Registered Firm;  
ISO 9001 Quality System



# TECHNICAL SPECIFICATIONS

## MODELS

Model No.		Fiber Optic Connector Type	Wavelength	Optical Power Budget	Maximum Transmission Distance
FT8301 Transmitter	Compatible Receiver				
<b>Multimode (62.5/125 µm)</b>					
FT8301MST*	FR8301MSTR	ST	850 nm	15 dB†	2 km (1.2 mi)††
<b>Multimode – Extended Distance (62.5/125 µm)</b>					
FT8301MSTE*	FR8301MSTRE	ST	1310 nm	20 dB†	6 km (3.7 mi)††
<b>Single-Mode (9/125 µm)</b>					
FT8301SST*	FR8301SSSTR	ST	1310 nm	20 dB	30 km (18.6 mi)§
FT8301SFC*	FR8301SFCR	FC	1310 nm	20 dB	30 km (18.6 mi)§

\*Nonrackmountable compact transmitter.

†When using 50/125 µm multimode fiber, subtract 3 dB from the optical power budget.

††Maximum transmission distance is limited by fiber bandwidth.

§Maximum transmission distance is based on attenuation of 0.5 dB/km plus a 5 dB buffer for connector and splice losses.

### Notes:

- For conformal coated models, replace the first letter *F* in the model number with the letter *C*. The conformal coated version of FT8301MST, for example, is CT8301MST.
- For models with higher optical power budgets, contact the factory.

## Supplied Accessories

- Regulated switching power supply with multiple plug adapters (North American, Australian, United Kingdom, and European); 100-240 VAC, 50-60 Hz input, 12 VDC output  
**Note:** In extreme temperature conditions, it is recommended that an industrial-rated outdoor power supply such as the Pelco® WCS1-4 power supply be used.
- Wall clip for attachment of single module to wall

## VIDEO

Number of Channels	1
Modulation Type	Pulse code modulation, 8-bit resolution
Video Input	1.0 Vp-p, 75 ohms; NTSC, PAL, and SECAM
Bandwidth	6.5 MHz
Gain	Unity
Differential Gain	<2%
Differential Phase	<1°
Tilt	<1%
Signal-to-Noise Ratio	>60 dB (CCIR weighted)

## GENERAL

Operating Temperature	-40° to 167°F (-40° to 75°C)
Input Power Requirements	12 VDC or 24 VAC, 170 mA
LED Indicators	
Transmitter	Power, Video Present
Receiver	Power, Video Present, Optic Fault
Dimensions	
Transmitter	4.12" D x 3.90" W x 1.38" H (10.46 x 9.90 x 3.51 cm)
Receiver	8.75" D x 1.08" W x 4.81" H (22.23 x 2.74 x 12.22 cm)
Unit Weight	
Transmitter	0.82 lb (0.37 kg)
Receiver	1.40 lb (0.64 kg)
Shipping Weight	
Transmitter	3 lb (1.36 kg)
Receiver	3 lb (1.36 kg)

## MECHANICAL

Connectors	
Video	BNC
Rack Power/Alarm	4-pin connector
Standalone Power	2-pin connector, screw terminal
Fiber Optic	ST for multimode fiber ST or FC for single-mode fiber

## CERTIFICATIONS

- CE, Class B
- UL Listed
- UL Listed to Canadian safety standards
- FCC, Class B
- C-Tick
- Complies with FDA requirements for Class 1 laser products
- Meets NEMA TS 2 and Caltrans traffic signal control equipment standards for ambient operating temperature, mechanical shock and vibration, humidity with condensation, high-line/low-line voltage conditions, and transient voltage protection—certified by an independent testing laboratory  
**Note:** Conformal coating is required for operation in environments with relative humidity above 95% (condensing).

## OPTIONAL ACCESSORIES

### (Applicable to FR8301 Receiver Only)

WM5001-3U	Wall mount base kit for single-width module
WM5001-3UEXP	Wall mount expansion kit for single-width module
RK5000-3U	19-inch rack mount chassis for 14 slots, no power (3 RUs)
RK5000PS-3U	19-inch rack mount chassis for 12 slots with power (3 RUs)
EPS5000-120	External rack power supply, 1 RU, dual 120 W power outputs
RK5001B-3U	Blank filler panel, single width
RK5002B-3U	Blank filler panel, double width
RK5001-1UEXP	Adapter kit that allows a 3 RU single-width fiber module to be used in RK5000PS-5U rack mount chassis



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