FT8301A/FR8301A Fiber Transmitter and Receiver

SINGLE-CHANNEL DIGITALLY ENCODED VIDEO

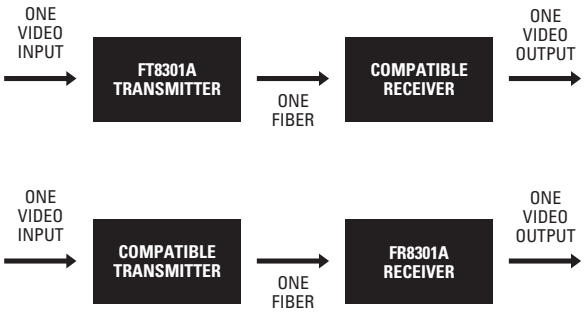
Product Features

- 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 46 km
- Exceeds All Requirements for the RS-250C Medium-Haul Transmission Specification
- Compatible with NTSC, PAL, and SECAM Video Standards
- Designed to meet NEMA TS 2 and Caltrans Traffic Signal Control Equipment Environmental Standards
- No Performance Adjustments Required
- 12 VDC or 24 VAC Power Supply
- Standalone and Rack-Mountable Modular Design
- LED Indicators for Monitoring of Signal Status, Laser Status, and Operating Power

The **FT8301A/FR8301A** fiber transmitter and receiver provide the ability to transmit one composite video channel over one optical fiber. The **FT8301A** transmitter and the **FR8301A** receiver are available in multimode and single-mode versions. When using single-mode fiber, the **FT8301A** transmitter and the **FR8301A** receiver offer an exceptional optical power budget of 28 dB and provide a transmission distance of up to 46 km.

Modular in design, the **FT8301A** and **FR8301A** units can be rack mounted or can be used as standalone modules. 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.

In addition to compatibility with each other, the **FT8301A** transmitter and the **FR8301A** receiver are compatible with other fiber models. The **FT8301A** transmitter is compatible with the FR8302A receiver and is also backward compatible with the FR8301 receiver. The **FR8301A** receiver is compatible with the miniature FT8301A transmitter and is also backward compatible with the FT8301 transmitter.



International Standards Organization Registered Firm; ISO 9001 Quality System

MODELS

FT8301A Transmitter and Compatible Receivers

Model No.		Fiber Optic Connector Type	Wavelength	Optical Power Budget	Maximum Transmission Distance
FT8301A Transmitter	Compatible Receivers				
Multimode (62.5/125 µm)					
FT8301AMSTR	FR8301AMSTR, FR8302AMSTR-2	ST	850 nm	20 dB*	2 km (1.2 mi)†
	FR8301MSTR	ST	850 nm	15 dB*	2 km (1.2 mi)†
Multimode – Extended Distance (62.5/125 µm)					
FT8301AMSTRE	FR8301AMSTRE, FR8302AMSTRE-2	ST	1310 nm	26 dB*	6 km (3.7 mi)†
	FR8301MSTRE	ST	1310 nm	20 dB*	6 km (3.7 mi)†
Single-Mode (9/125 µm)					
FT8301ASSTR	FR8301ASSTR, FR8302ASSTR-2	ST	1310 nm	28 dB	46 km (28.6 mi)††
	FR8301SSTR	ST	1310 nm	20 dB	30 km (18.6 mi)††
FT8301ASFCR	FR8301ASFCR, FR8302ASFCR-2	FC	1310 nm	28 dB	46 km (28.6 mi)††
	FR8301SFCR	FC	1310 nm	20 dB	30 km (18.6 mi)††

*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 FT8301AMSTR, for example, is CT8301AMSTR.
- 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

TECHNICAL SPECIFICATIONS

MODELS

FR8301A Receiver and Compatible Transmitters

Model No.		Fiber Optic Connector Type	Wavelength	Optical Power Budget	Maximum Transmission Distance
FR8301A Receiver	Compatible Transmitters				
Multimode (62.5/125 µm)					
FR8301AMSTR	FT8301AMSTR, FT8301AMST, FT8301MST	ST	850 nm	20 dB*	2 km (1.2 mi)†
Multimode – Extended Distance (62.5/125 µm)					
FR8301AMSTRE	FT8301AMSTRE, FT8301AMSTE, FT8301MSTE	ST	1310 nm	26 dB*	6 km (3.7 mi)†
Single-Mode (9/125 µm)					
FR8301ASSTR	FT8301ASSTR, FT8301ASST, FT8301SST	ST	1310 nm	28 dB	46 km (28.6 mi)††
FR8301ASFCR	FT8301ASFCR, FT8301ASFC, FT8301SFC	FC	1310 nm	28 dB	46 km (28.6 mi)††

*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 FR8301AMSTR, for example, is CR8301AMSTR.
- 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

TECHNICAL SPECIFICATIONS

VIDEO

Number of Channels	1
Modulation Type	Pulse code modulation, 8-bit resolution
Video Input (FT8301A)/ Output (FR8301A)	BNC, 1.0 Vp-p, 75 ohms or UTP, 100 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	Power, Video Present, Optic Fault
Dimensions	8.75" D x 1.08" W x 4.81" H (22.23 x 2.74 x 12.22 cm)
Unit Weight	1.54 lb (0.70 kg)
Shipping Weight	3 lb (1.36 kg)

MECHANICAL

Connectors	
Video	BNC UTP, 2-pin connector, spring-cage terminal
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 A
- UL Listed
- UL Listed to Canadian safety standards
- FCC, Class A
- C-Tick
- Complies with FDA requirements for Class 1 laser products
- Designed to meet 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 (certification pending)

  Note: Conformal coating is required for operation in environments with relative humidity above 95% (condensing).

OPTIONAL ACCESSORIES

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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