

# FT85011A/FR85011A Fiber Transmitter and Receiver

## SINGLE-CHANNEL DIGITALLY ENCODED VIDEO WITH BIDIRECTIONAL DATA

### Product Features

- 8-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
- Patent-Pending Transmission Technology Allowing Coaxitron Control at Full-Distance Capabilities
- Integrated Wavelength Division Multiplexing (WDM) in 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
- Meets NEMA TS 2 and Caltrans Traffic Signal Control Equipment Environmental Standards
- No Performance Adjustments Required
- 12 VDC or 24 VAC Power Supply



- Stand-Alone and Rack-Mountable Modular Design
- LED Indicators for Monitoring of Signal Status, Laser Status, Data Activity, and Operating Power

Available in multimode and single-mode versions, the **FT85011A/FR85011A** fiber transmitter and receiver provide the ability to transmit one unidirectional composite video channel and one bidirectional data channel over one optical fiber. In addition, patent-pending technology provides the solution for allowing Coaxitron® pan/tilt/zoom (PTZ) control data to be transmitted the full distance of the fiber (up to 6 km for multimode fiber and up to 46 km for single-mode fiber). When using single-mode fiber, the **FT85011A** transmitter and the **FR85011A** receiver offer an exceptional optical power budget of 28 dB.

Modular in design, the **FT85011A** and **FR85011A** units can be rack mounted or can be used as stand-alone modules. Rack mounting is accomplished using the RK5000 Series rack mount chassis. Stand-alone modules can be placed on a desktop or can be mounted to a wall.

In addition to compatibility with each other, the **FT85011A** transmitter and the **FR85011A** receiver are compatible with other fiber models. The **FT85011A** transmitter is backward compatible with the FR85011 receiver. The **FR85011A** receiver is backward compatible with the FS85011 and FT85011 transmitters.



SINGLE-CHANNEL VIDEO AND BIDIRECTIONAL DATA APPLICATION



SINGLE-CHANNEL VIDEO AND COAXITRON DATA APPLICATION



C2604 / NEW 7-06



International Standards Organization Registered Firm; ISO 9001 Quality System



# TECHNICAL SPECIFICATIONS

## MODELS

### FT85011A Transmitter and Compatible Receivers

Model No.		Fiber Optic Connector Type	Wavelength (Video/Data)	Optical Power Budget	Maximum Transmission Distance
FT85011A Transmitter	Compatible Receivers				
<b>Multimode (62.5/125 <math>\mu</math>m)</b>					
FT85011AMSTR	FR85011AMSTR	ST	1310/850 nm	26 dB*	6 km (3.7 mi) <sup>†</sup>
	FR85011MSTR	ST	1310/850 nm	20 dB*	6 km (3.7 mi) <sup>†</sup>
<b>Single-Mode (9/125 <math>\mu</math>m)</b>					
FT85011ASSTR	FR85011ASSTR	ST	1310/1550 nm	28 dB	46 km (28.6 mi) <sup>‡</sup>
	FR85011SSTR	ST	1310/1550 nm	20 dB	30 km (18.6 mi) <sup>‡</sup>
FT85011ASFCR	FR85011ASFCR	FC	1310/1550 nm	28 dB	46 km (28.6 mi) <sup>‡</sup>
	FR85011SFCR	FC	1310/1550 nm	20 dB	30 km (18.6 mi) <sup>‡</sup>

\*When using 50/125  $\mu$ m multimode fiber, subtract 3 dB from the optical power budget.

<sup>†</sup>Maximum transmission distance is limited by fiber bandwidth.

<sup>‡</sup>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 FT85011AMSTR, for example, is CT85011AMSTR.
- 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

### FR85011A Receiver and Compatible Transmitters

Model No.		Fiber Optic Connector Type	Wavelength (Video/Data)	Optical Power Budget	Maximum Transmission Distance
FR85011A Receiver	Compatible Transmitters				
<b>Multimode (62.5/125 <math>\mu</math>m)</b>					
FR85011AMSTR	FT85011AMSTR	ST	1310/850 nm	26 dB*	6 km (3.7 mi) <sup>†</sup>
	FT85011MSTR	ST	1310/850 nm	20 dB*	6 km (3.7 mi) <sup>†</sup>
	FS85011MST				
<b>Single-Mode (9/125 <math>\mu</math>m)</b>					
FR85011ASSTR	FT85011ASSTR	ST	1310/1550 nm	28 dB	46 km (28.6 mi) <sup>‡</sup>
	FT85011SSTR	ST	1310/1550 nm	20 dB	30 km (18.6 mi) <sup>‡</sup>
	FS85011SST				
FR85011ASFRC	FT85011ASFRC	FC	1310/1550 nm	28 dB	46 km (28.6 mi) <sup>‡</sup>
	FT85011SFCR	FC	1310/1550 nm	20 dB	30 km (18.6 mi) <sup>‡</sup>
	FS85011SFC				

\*When using 50/125  $\mu$ m multimode fiber, subtract 3 dB from the optical power budget.

<sup>†</sup>Maximum transmission distance is limited by fiber bandwidth.

<sup>‡</sup>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 of rack-mountable transmitters and receivers, replace the first letter *F* in the model number with the letter *C*. The conformal coated version of FR85011AMSTR, for example, is CR85011AMSTR.
- 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 (FT85011A)/ Video Output (FR85011A)	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)

## DATA

Number of Channels	1
Data Communication	RS-232, RS-422, RS-485 (2-wire/4-wire), Manchester, Bi-Phase, Coaxitron
Maximum Baud Rate	500 kbps

## GENERAL

Operating Temperature	-40° to 167°F (-40° to 75°C)
Input Power Requirements	12 VDC or 24 VAC, 300 mA
LED Indicators	Power, Video Present, Optic Fault, Data Tx, Data Rx
Dimensions	8.75" D x 1.08" W x 4.81" H (22.23 x 2.74 x 12.22 cm)
Unit Weight	1.48 lb (0.67 kg)
Shipping Weight	3 lb (1.36 kg)

## MECHANICAL

Connectors	
Video	BNC
Rack Power/Alarm	4-pin connector
Standalone Power	2-pin connector, screw terminal
Data	9-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
  - 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

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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