

# FTD1/FRD1 Fiber Transmitter and Receiver

## SINGLE-CHANNEL BIDIRECTIONAL DATA

### Product Features

- Bidirectional Data Channel That Supports EIA RS-232C/D, RS-422/RS-485 (2-wire/4-wire) with Tri-State, Manchester, and Bi-Phase Communication
- Multimode Fiber Support for Distances up to 4 km (2.5 mi)
- Single-Mode Support for Distances up to 69 km (42.9 mi)
- Designed to Meet NEMA TS 1/TS 2 and Caltrans Traffic Signal Control Equipment Environmental Standards
- Laser Diode for Transmission of Optical Signals
- Voltage Transient Protection on All Power and Signal Input/Output Lines
- LED Status Indicators for Monitoring All Critical Operating Parameters
- Hot-Swappable Rack Modules
- Stand-Alone or Rack-Mountable Modular Design



FTD1M1ST



The **FTD1/FRD1** fiber transmitter and receiver provide transmission of bidirectional data over one optical fiber. The **FTD1** transmitter and **FRD1** receiver can be used with multimode or single-mode optical fiber. When using single-mode fiber, the **FTD1/FRD1** transmitter and receiver offer an optical budget of 23 dB and provide a transmission distance of 69 km.

The **FTD1/FRD1** plug-and-play design ensures ease of installation by requiring no electrical or optical adjustments. Modular in design, **FTD1** and **FRD1** 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 **FTD1/FRD1** 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>						
FTD1M1ST	FRD1M1ST	ST	1 in, 1 out	1310/1550 nm	16 dB	4 km (2.5 mi)
<b>Single Mode (9/125 µm)</b>						
FTD1S1ST	FRD1S1ST	ST	1 in, 1 out	1310/1550 nm	23 dB	69 km (42.9 mi)
FTD1S1FC	FRD1S1FC	FC	1 in, 1 out	1310/1550 nm	23 dB	69 km (42.9 mi)
<b>Note:</b> The unit can be used for transmission of RS-232 or RS-422, but not simultaneously.						

## DATA/ELECTRICAL

Number of Channels	1
Data Communication	RS-232, RS-422, and RS-485 (2-wire/4-wire) with Tri-State, Manchester, and Bi-Phase
Maximum Baud Rate	250 Kbps
Operating Mode	Asynchronous, simplex or full-duplex
Bit Error Rate	<1 in 10 <sup>-9</sup> at maximum optical loss budget
Power	
Surface Mount	8 to 15 VDC at 2 W
Rack Mount	Provided by rack
MTBF	>100,000 hours
Current Protection	Automatic resettable solid-state current limiters
Circuit Board	Meets IPC standard
LED Indicators	Power, Data In, Data Out, Link, Loop Back

## MECHANICAL

Connectors	
Power	Terminal block
Optical	ST or FC
Data	Terminal block
Relay	Terminal block
Number of Rack Slots	1

## GENERAL

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
Dimensions	15.5 × 13.5 × 2.8 cm (6.1" D × 5.3" W × 1.1" H)
Unit Weight	0.34 kg (0.75 lb)
Shipping Weight	0.90 kg (2.00 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

\*At the time of this printing, all certifications are pending. Please consult the factory, our Web site ([www.pelco.com](http://www.pelco.com)), or the most recent B.O.S.S.® update for the current status of certifications.

## RECOMMENDED ACCESSORIES

EURACK	4 RU rack accessory with European power supply
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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