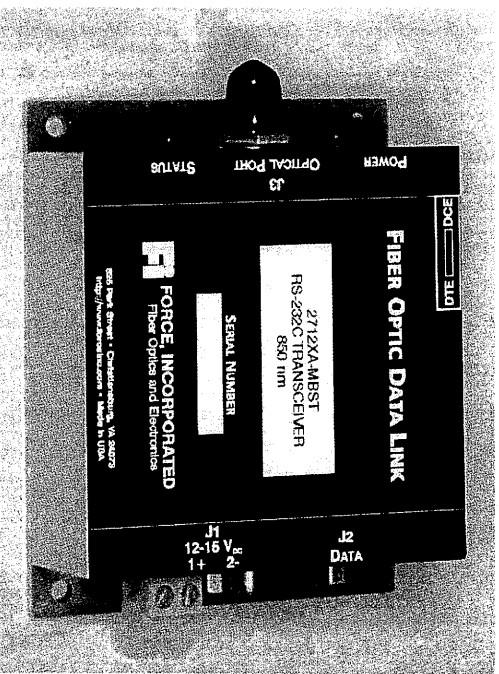


TB 120F

SINGLE-FIBER DATA MODEM: RS-232C/485/422/TTL

MODEL 2712



FEATURES

- Rugged Enclosure
- DCE-DTE Switchable, No Further User Adjustments Required
- Full-Duplex Asynchronous Data Transmission

- 0-12 dB Optical Loss Range
- Small Size, Light Weight
- Wide Temperature Range
- DC - 14.4 kBaud Operation
- Link Status Indicator
- Complete EMI/RFI, Ground-Loop, and Lightning Immunity
- Factory Selectable RS-232C, RS-422, RS-485, or TTL Interface

APPLICATIONS

- Computer to Keyboard Communications
- Card-Key Access Systems
- Connect Smart Sensors to Computers
- Connect Peripherals to Computers

The Force, Incorporated Model 2712 Single-Fiber Data Modem: RS-232C/485/422/TTL incorporates two single-fiber transceivers which will interface with RS-232C, RS-485, RS-422, or TTL type signals. The data format must be specified at the time the order is placed and cannot be changed by the user in the field. When configured for EIA RS-232C, the link is capable of transferring full-duplex asynchronous data and can be switched to operate with either DCE or DTE configured systems. The design incorporates all RS-232C "handshaking" signals.

The Model 2712 can also be configured as a 4-wire RS-422 link, a 2-wire RS-485 link, or a TTL link. The transceiver operates over a wide range of optical losses and supports data rates from DC to 14.4 kBaud. A status indicator LED allows the user to determine that the data link is established before data exchange is attempted. All data connections are made through an EIA compatible DB9 connector. Power, +12 Volts DC nominal, is provided through screw terminals on a 2-pin Weidmuller connector. Both single-mode and multimode units are available.

Other than the DCE-DTE switch on the RS-232C version, no user adjustments are required. Used with a good quality fiber (2.5 dB/km @ 850 nm & 400 MHz•km), the Model 2712 transceiver will function over 5 km of fiber maximum.



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OPTICAL AND ELECTRICAL SPECIFICATIONS: @ 25°C, 62.5/125 μm FIBER

	Min.	Typ.	Max.	Units	Notes
Type VIII LED					1
Optical Output Power (Tx)	-15	-13		dBm	2
Optical Sensitivity (Rx)		-30	-27	dBm	2
Optical Loss Range	0		12	dB	3
Data Rate	DC		14.4	kBaud	
Power Supply Voltage	+12		+15	V _{DC}	4
Power Supply Current		70	90	mA	
Input Voltage Level (RS-232C)			±30	Volts	
Input Voltage Level (RS-422/485)			±14	Volts	
Input Voltage Level (TTL Low)		0.8	1.2	Volts	
Input Voltage Level (TTL High)	1.7	2.4		Volts	
Output Voltage Level (RS-232C)	±5	±9		Volts	
Output Voltage Level (RS-422/485)	1.5		5.0	Volts	
Output Voltage Level (TTL Low)			0.4	Volts	
Output Voltage Level (TTL High)	3.5			Volts	
Required Fiber Bandwidth	50			MHz	

ENVIRONMENTAL CHARACTERISTICS

	Min.	Typ.	Max.	Units	Notes
Operating Temperature Range	0		+50	°C	5
Storage Temperature Range	-20		+70	°C	
Humidity	0		95	%	6

PHYSICAL CHARACTERISTICS

Physical Dimensions	Min.	Typ.	Max.	Units	Notes
	Weight	6	170		
Physical Dimensions	3.75 x 3.00 x 1.125			8	
	95.3 x 76.2 x 28.6			in.	
				mm	

SPECIFICATION NOTES

- 1) See Application Note 103, "Force, Incorporated LED Characteristics." AN103 lists wavelength range, spectral width, temperature behavior, and more.
- 2) Optical output power and optical sensitivity are average values.
- 3) **In all cases, the Model 2712 Fiber Optic Transceiver will be either optical loss limited to 12 dB or distance limited to 5 km, whichever is reached first.**
- 4) Supply voltage is DC ranging from +12 Volts to +15 Volts. Operation at higher voltage is possible, but the upper operating temperature of the part should be derated 5 °C for every Volt over +15 Volts. The unit will tolerate moderate amounts of ripple, but this should not exceed 0.5 Volts peak-to-peak. It is critical that the supply voltage NEVER drops below +12 Volts for any part of the waveform. Voltages below +12 Volts will cause the internal voltage regulators to lose regulation which will disrupt the operation of the unit and cause unpredictable results. The input of the unit is filtered with approximately 100 μF of capacitance. Power supplies with fast-blow fuses may trip when powering the link.
- 5) Most parameters are relatively unaffected by varying temperature. The transmitter output power does drift with temperature. In general, output drops at higher temperatures and increases at lower temperatures. See AN103 for details.
- 6) Humidity is RH non-condensing.
- 7) The bottom of the box serves as a heat sink. It is imperative that good thermal contact be provided between the bottom of the box and external heat sink. Silicone grease or pads are recommended to improve thermal conductivity.
- 8) The RS-485 version requires customer supplied 120 Ohm terminating resistor between Port A and Port B. This resistor can be mounted on the external connector.