



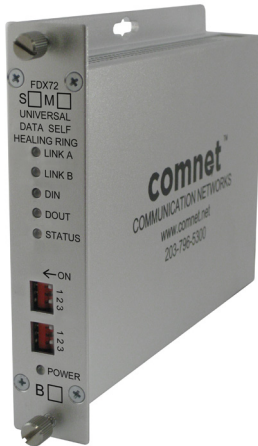
INCLUDED



HARDENED



1 OR 2\*



The ComNet™ FDX72SHR series Self-Healing Ring Transceiver unit is a fully-digital modem designed for implementing RS232, RS422 or RS485 2 or 4-wire data communications networks of the highest possible reliability. A network of FDX72SHR units can support one full-duplex or two half-duplex data channels. These transceivers also feature data translation to convert between data protocols. Data re-clocking and regeneration permit an almost unlimited number of transceiver/controller units to be used within the network. These environmentally hardened transceivers are ideal for use in unconditioned out-of-plant or roadside installations and, unlike many competing designs, only one optical fiber is required between units to implement a fully self-healing ring. Bi-color indicating LEDs are provided for rapidly ascertaining equipment operating status, including the location of fiber breaks. Plug-and-play design ensures ease of installation, and no electrical or optical adjustments are ever required.

## FEATURES

- › Meets EIA RS232 and RS422/RS485 (2 or 4-wire) specifications (Simplex or Duplex Operation)
- › Two Data Channel Capability: One full duplex or two half-duplex channels
- › Only one optical fiber required between units for Fault Tolerant/Self-Healing Ring Operation
- › Full data re-clocking and regeneration: no limit to the number of transceiver units used within the network
- › Supports supervised multiple master architecture for unparallelled network reliability
- › Remote Fault Indication allows the user to determine when a fiber break or loss of prime operating power has occurred, or a transceiver in the field has failed
- › LED status indicators provide rapid indication of all critical operating parameters, including the location of fiber breaks or failed transceivers
- › May be used to provide serial data protocol conversion between nodes (consult factory)
- › Designed to meet full compliance with the environmental requirements (ambient operating temperature, mechanical shock, vibration, humidity with condensation, high-line/low-line voltage conditions and transient voltage protection) of NEMA TS-1/TS-2 and the Caltrans Specification for Traffic Signal Control Equipment.
- › Robust design assures extremely high reliability in unconditioned out-of-plant/roadside environments
- › NTCIP compatible
- › Voltage transient protection on all power and signal input/output lines provides protection from power surges and other voltage transient events.
- › Wide optical dynamic range: optical attenuators are never required
- › Hot-swappable rack modules
- › Interchangeable between stand-alone or rack mount - ComFit package
- › Units may be DIN-Rail mounted by the addition of ComNet model DINBKT1 or DINBKT4 adaptor plate
- › Lifetime Warranty

## APPLICATIONS

- › High Reliability Traffic Signalization Networks
- › Access Control Networks
- › Industrial Control/Factory Automation and SCADA Networks
- › Serial Data Protocol Conversion

\* 1 channel of full-duplex or 2 channels of half-duplex serial data

SPECIFICATIONS

Data

Data Format	RS232, RS422, 2 or 4-wire RS485 w/Tri-State, Manchester, bi-phase, Sensornet
Data Rate	DC-1Mbaud (RS422 & RS485) DC-250kbps (RS232)
Operating Mode	Asynchronous, simplex or full-duplex
Bit Error Rate	<10-12 @ Maximum Optical Loss Budget

Wavelength

1310/1550 nm, MM and SM

Number of Fibers

1

Optical Emitter  
LED Indicators

- Laser Diode
- > Power > Status > Receive Data Active
- > Transmit Data Active > Port A Fiber Link Status
- > Port B Fiber Link Status

Ring-Failure Relay

Normally closed contact: Solid-State relay contacts rated at 0.5 mA, resistive load.

Connectors

Optical	ST
Power	Terminal Block
Data	Terminal Block

Power

Operating Voltage Range	8 to 15 VDC (or from C1 Rack, sold separately)
Power Consumption	4 W

Electrical & Mechanical

Number of Rack Slots	1
Current Protection:	Automatic Resettable Solid-State Current Limiters
Circuit Board	Meets IPC Standard
Size	6.1 × 5.3 × 1.1 in (15.5 × 13.5 × 2.8 cm)
Shipping Weight:	<2 lb / 0.9 kg

Environmental

MTBF	>100,000 hours
Operating Temp	-40° C to +75° C
Storage Temp	-40° C to +85° C
Relative Humidity	0% to 95% (non-condensing) <sup>1</sup>

AGENCY COMPLIANCE



ORDERING INFORMATION

Part Number	Description	Fibers Required	Fiber	Optical PWR Budget	Max Distance <sup>2</sup>	# Rack Slots
FDX72M1SHR	Universal Data Self Healing Ring	1 in/1 out	Multimode 62.5/125µm	16 dB	4 km (2.5 mi)	1
FDX72S1SHR	Universal Data Self Healing Ring	1 in/1 out	Single mode 9/125µm	19 dB	40 km (25 mi)	1
Accessories	DC Plug-in Power Supply, 90-264 VAC, 5060 Hz (Included)					
Options	[1] Add 'C' for Conformally Coated Circuit Boards to extend to condensation conditions (Extra charge, consult factory) DIN-Rail Mounting Adaptor Plate Kit - With Mounting Hardware (Optional, order model DINBKT1 or DINBKT4)					

NOTE: This product requires a fiber installation with a minimum 30 dB connector return loss. The use of Super Polish Connectors is recommended. Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J  
In a continuing effort to improve and advance technology, product specifications are subject to change without notice.  
[2] Distance may be limited by optical dispersion.

TYPICAL APPLICATION

In the event of an optical fiber break, the color and pattern of LEDs will aid in locating the fiber break.

