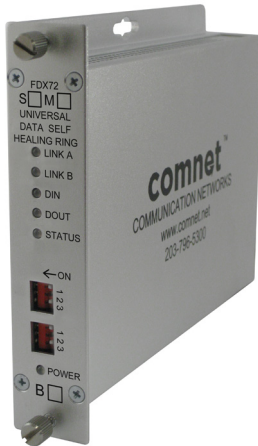**POWER SUPPLY INCLUDED**

75° −40° HARDENED

DATA 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 unparalleled 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

Laser Diode

LED Indicators

› 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)[1]

AGENCY COMPLIANCE
FC PART 15 COMPLIANT CE cULus E322911 RoHS COMPLIANT N24621

MADE IN THE USA

ORDERING INFORMATION

Part Number	Description	Fibers Required	Fiber	Optical PWR Budget	Max Distance[2]	# 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.

D ←→ FDX72S1SHR — 1 Fiber 9/125µm SM Up to 69 km (43 miles) — FDX72S1SHR — FDX72S1SHR ↕ D — FDX72S1SHR ↕ D — FDX72S1SHR ↕ D

— OPTICAL FIBER
— TWISTED PAIR