comnet
Communication Networks

FDX57 SERIES

multi-protocol RS232/422/485 data transceiver featuring self-healing ring operation

D
1 or 2*

Description

The ComNet™ FDX57 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 FDX57 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 (Red/Green) LED indicators are provided for rapidly ascertaining equipment operating status, including the location of fiber breaks. Packaged in the exclusive ComNet ComFit housing, these units may be either shelf or rack-mounted, or may be DIN-Rail mounted by the addition of ComNet model DINBKT1 adaptor plate. Plug-and-play design ensures ease of installation, and no electrical or optical adjustments are ever required.

Applications

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

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)
- Tested and certified by an independent laboratory for 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 unconditional 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
- Lifetime Warranty

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

FDX57 SERIES

multi-protocol RS232/422/485 data transceiver featuring self-healing ring operation

specifications

DATA

Data Format:	RS232, RS422, 2 or 4-wire RS485 w/Tri-State, Manchester, bi-phase
Data Rate:	DC-250 k baud, max
Operating Mode:	Asynchronous, simplex or full-duplex
Bit Error Rate:	$<10^{-12}$ @ Maximum Optical Loss Budget

WAVELENGTH

FDX57M1 and FDX57S1	1310/1550 nm

FIBERS

1 In/1 Out

OPTICAL EMITTER

Laser

LED STATUS INDICATORS

1. Power 2. Status 3. Receive Data Active 4. Transmit Data Active
5. Port A Fiber Link Status 6. Port B Fiber Link Status

RING FAILURE RELAY

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

CONNECTORS

Power:	Terminal Plug
Data:	Terminal Plug
Optical:	ST

ELECTRICAL & MECHANICAL

Power:	
Surface Mount:	8-15 VDC @ 4 W
Rack:	From Power Supply Integral to Rack
Number of Rack Slots:	1
Current Protection:	Automatic Resettable Solid-State Current Limiters
Circuit Board:	Meets IPC Standard
Size (in./cm) (L×W×H)	6.1 × 5.3 × 1.1 in., (15.5 × 13.5 × 2.8 cm)
Shipping Weight:	<2 lbs./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)*

* May be extended to condensation conditions by adding suffix '/C' to model number for conformal coating.

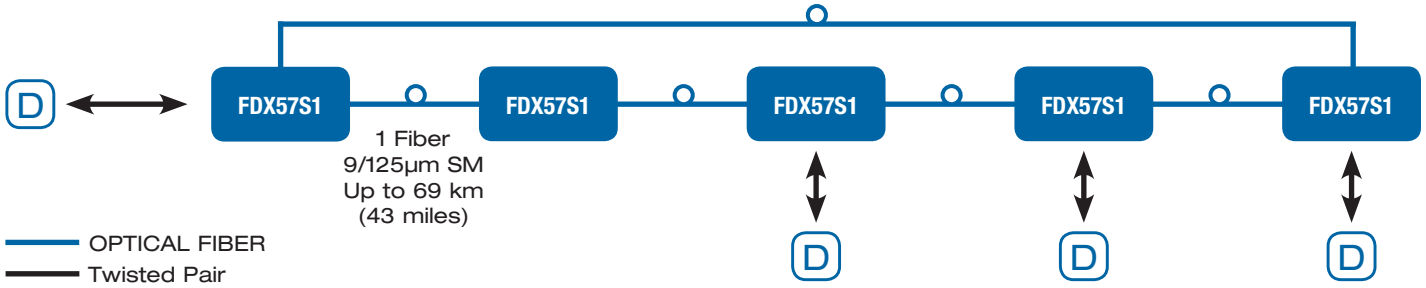
AGENCY COMPLIANCE

MADE IN THE USA

PART NUMBER	DESCRIPTION	FIBERS REQUIRED	FIBER	OPTICAL PWR BUDGET	MAX. DISTANCE	# RACK SLOTS
FDX57M1	Repeater	1	Multimode 62.5/125µm	16 dB	4 km (2.5 miles)	1
FDX57S1	Repeater		Single Mode 9/125µm	19 dB	40 km (25 miles)	

Accessories	9 Volt DC Plug-in Power Supply, 90-264 VAC, 50/60 Hz (Included)
Options	Add '/C' for Conformally Coated Circuit Boards (Extra charge, consult factory)
	DIN-Rail Mounting Adaptor Plate Kit – With mounting hardware (Optional, order model DINBKT1)

In the event of an optical fiber break, all nodes on the network maintain communication with the Master Controller/Computer.



comnet Communication Networks

3 CORPORATE DRIVE | DANBURY, CT 06810 | USA
T: 203.796.5300 | F: 203.796.5303 | TECH SUPPORT: 1.888.678.9427 | INFO@COMNET.NET

8 TURNBERRY PARK ROAD | GILDERSOME | MORLEY | LEEDS, UK LS27 7LE
T: +44 (0)113 307 6400 | F: +44 (0)113 253 7462 | INFO-EUROPE@COMNET.NET

