



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. Plug-and-play design ensures ease of installation, and no electrical or optical adjustments are ever required.



INCLUDED



HARDENED



1 OR 2*

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
- › 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 protection from power surges and other voltage transient events.
- › Wide optical dynamic range: optical attenuators are never required
- › Indicating LEDs display equipment operating status, including the location of fiber breaks or failed transceivers
- › Hot-swappable rack modules
- › Interchangeable between stand-alone or rack mount use - ComFit
- › 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 |
| Data Rate | DC-250 k baud, max |
| Operating Mode | Asynchronous, simplex or full-duplex |
| Bit Error Rate | <10-12 @ Maximum Optical Loss Budget |

Wavelength

1310/1550 nm

Fibers

1 In/1 Out

Optical Emitter

Laser

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

| | |
|---------|---------------|
| Power | Terminal Plug |
| Data | Terminal Plug |
| Optical | ST |

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 (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) ¹ |



ORDERING INFORMATION

| Part Number | Description | Fibers Required | Fiber | Optical PWR Budget | Maximum Distance | # Rack Slots |
|-------------|---|-----------------|-----------------------------------|--------------------|------------------|--------------|
| FDX57M1 | Repeater | 1 | Multimode ² 62.5/125µm | 16 dB | 4 km (2.5 miles) | 1 |
| FDX57S1 | Repeater | 2 | Single Mode 9/125µm | 19 dB | 40 km (25 miles) | 1 |
| Accessories | DC Plug-in Power Supply, 90-264 VAC, 50/60 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] For 50/125µm fiber, subtract 4 dB from the optical power budget.

TYPICAL APPLICATION

