



The ComNet™ FDX72(M,S)1 series Drop-Insert-Repeat 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 FDX72 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. Combine these units with the ComNet FDX70E(A,B)(M,S)1 series products as an end link to create a linear Drop-Insert-Repeat chain. 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
- › 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

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
Relay	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 (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

AGENCY COMPLIANCE



ORDERING INFORMATION

Part Number	Description	Fibers Required	Fiber	Optical PWR Budget	Max Distance ²	# Rack Slots
FDX72M1	Universal Data Drop & Repeat	1 in/1 out	Multimode 62.5/125µm	16 dB	4 km (2.5 mi)	1
FDX72S1	Universal Data Drop & Repeat	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) Add 'B' for Battery Backup					

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.

