comnet
Communication Networks

FDX55 SERIES

anti-streaming RS232/422 drop and repeat data transceiver

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Description

The ComNet™ FDX55 series consists of fully-digital transceiver units designed for implementing simplex or full-duplex RS232 Drop-and-Repeat poll-and-respond traffic signalization/communications data networks utilizing one or two optical fibers. These environmentally-hardened units are ideal for use in unconditioned out-of-plant or roadside installations and the master-configured transceiver unit may be located anywhere within the network, making this equipment ideal for applications involving on-street master controllers with upstream and downstream communication requirements. These units are compatible with the FDX50, FDX51 and FDX52 Series of optical modems, and ComNet model FDX55BE may be used as a cost-effective solution for use as a line-terminating transceiver. Manually resettable anti-streaming is included for unparalleled network protection. Optional battery backup capability provides the highest level of network reliability in the event of a loss of local prime operating power, and maintains continuous communications channel operation. Plug-and-play design ensures ease of installation and no electrical or optical adjustments are ever required. Bi-color (Red/Green) LED indicators are provided for rapidly ascertaining equipment operating status. Packaged in the exclusive ComNet ComFit housing, these units may be either wall or rack-mounted, or may be DIN-rail mounted by the addition of ComNet model DINBKT1 adaptor plate.

Applications

- Access Control Systems
- Building Automation & Environmental Control Systems
- Computer/Data Equipment
- Fire and Alarm Systems
- Traffic Signal Control Equipment

Features

- Meets EIA RS232C/D specifications (Simplex or Duplex)
- NTCIP compatible
- 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 roadside environments
- User-selectable DTE or DCE interface ensures ease of installation and maximum versatility
- Supports Request to Send (RTS) and Clear to Send (CTS) signals
- RJ-11 expansion port provides network branching capability by electrically linking co-located transceiver units
- Voltage transient protection on all power and signal input/output lines provides unconditional protection from power surges and other voltage transient events.
- Optional internal battery backup provides 12 hours operating time in the event of loss of 115 VAC prime operating power, and maintains continuous channel communications.
- Wide optical dynamic range: optical attenuators are never required
- User-configurable optical and electrical Anti-Streaming provides network protection against faulty streaming controller operation
- Hot-swappable rack modules
- Interchangeable between stand-alone or rack mount use – ComFit
- Lifetime Warranty

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specifications

DATA

Data Format:	RS232, RS422
Data Rate:	DC-115 kbps
Operating Mode:	Asynchronous, simplex or full duplex
Bit Error Rate:	<1 in 10^{-9} @ Max. Optical Loss Budget
Anti-Streaming Time-out:	4, 8, 16, 64 Seconds or Infinity (disabled)

WAVELENGTH

FDX55M2, FDX55M2E:	1310 nm, Multimode
FDX55M28:	850 nm, Multimode
FDX55S1, FDX55S1(A)(B)E:	1310/1550 nm, Single Mode
FDX55S2, FDX55S2E:	1310/1550 nm, Single Mode

FIBERS

FDX55M28, FDX55M2, FDX55S2:	2 In/2 Out
FDX55M2E:	2
FDX55S1:	1 In/1 Out
FDX55S1(A)(B)E:	1

OPTICAL EMITTER

Laser

LED INDICATORS

- Transmit Data - Receive Data
- Clear to Send (CTS) - Request to Send (RTS)
- Fault/Anti-Streaming Activated

CONNECTORS

Optical:	ST standard (SC, FC as options only)
Power:	Terminal Block
Data:	Type DB-25S
Expansion Port:	RJ-11

ELECTRICAL & MECHANICAL

Power:	
Surface Mount:	9-30 VDC @ 2.5 W
Rack:	From Rack
Number of Rack Slots:	2
Current Protection:	Automatic Resettable Solid-State Current Limiters
Circuit Board:	Meets IPC Standard
Size (in./cm) (L×W×H)	6.1 × 5.3 × 2.2 in. (15.5 × 13.2 × 5.6 cm)
Shipping Weight:	<2 lbs./0.9 kg

BATTERY BACKUP OPTION

Internal, rechargeable Nickel Metal Hydride (NIMH) battery.
Operating Period: 12 hours typical

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)*

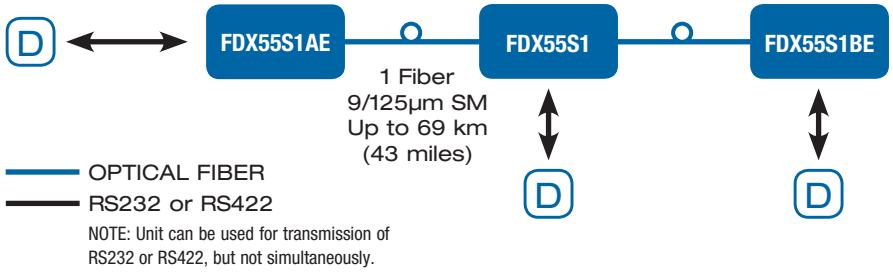
* May be extended to condensation conditions by adding suffix '/C' to model number for conformal coating.

AGENCY COMPLIANCE
PART 15 COMPLIANT E322911 N24621

MADE IN THE USA

PART NUMBER	FIBERS REQUIRED	FIBER
FDX55S1	1 In/1 Out	Single Mode 9/125µm
FDX55M2	2 In/2 Out	Multimode 62.5/125µm
FDX55M28	2 In/2 Out	Multimode 62.5/125µm
FDX55S2	2 In/2 Out	Single Mode 9/125µm

PART NUMBER	FIBERS REQUIRED	FIBER
FDX55S1(A)(B)E	1	Single Mode 9/125µm
FDX55M2E	2	Multimode 62.5/125µm
FDX55S2E	2	Single Mode 9/125µm



NOTE: Unit can be used for transmission of RS232 or RS422, but not simultaneously.

specifications

PART NUMBER	DESCRIPTION	FIBERS REQUIRED	FIBER	OPTICAL PWR BUDGET	MAX. DISTANCE	# RACK SLOTS
FDX55S1	232/422 Drop and Repeat Transceiver (1310/1550 nm)	1 In/1 Out	Single Mode 9/125µm	23 dB	69 km (43 miles)	2
FDX55M2	232/422 Drop and Repeat Transceiver (1310 nm)	2 In/2 Out	Multimode 62.5/125µm	14 dB	4 km (2.5 miles)	2
FDX55M28	232/422 Drop and Repeat Transceiver (850 nm)	2 In/2 Out	Multimode 62.5/125µm	14 dB	3 km (1.8 miles)	2
FDX55S2	232/422 Drop and Repeat Transceiver (1310/1550 nm)	2 In/2 Out	Single Mode 9/125µm	23 dB	69 km (43 miles)	2

PART NUMBER	DESCRIPTION	FIBERS REQUIRED	FIBER	OPTICAL PWR BUDGET	MAX. DISTANCE	# RACK SLOTS
FDX55S1AE	232/422 Line-Terminating Transceiver (1310/1550 nm)	1	Single Mode 9/125µm	23 dB	69 km (43 miles)	2
FDX55S1BE	232/422 Line-Terminating Transceiver (1310/1550 nm)	1	Single Mode 9/125µm	23 dB	69 km (43 miles)	2
FDX55M2E	Line-Terminating Transceiver (850 nm)	2	Multimode 62.5/125µm	14 dB	4 km (2.5 miles)	2
FDX55S2E	232/422 Line-Terminating Transceiver (1310/1550 nm)	2	Single Mode 9/125µm	23 dB	69 km (43 miles)	2

Accessories: 9 Volt DC Plug-in Power Supply, 90-264 VAC, 50/60 Hz (Included)

Options:
- Add '-B' for NIMH battery backup
- Add '/C' for Conformally Coated Circuit Boards (Extra charge, consult factory)
- Add '/SC' for SC connectors, Add '/FC' for FC connectors } (1 meter adapter cables supplied at no cost)
- DIN-Rail Mounting Adaptor Plate Kit – With mounting hardware (Optional, order model DINBKT1)

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.

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