B&B ELECTRONICS

Double Your Fiber Distance with A Duplex Fiber Repeater

Model FOSTDRP

Description

Model FOSTDRP is used to overcome fiber loss, connector loss, and splice loss in a fiber optic link. Used in the middle of a fiber optic link, model FOSTDRP effectively doubles the transmission distance. Model FOSTDRP acts as an active splice to increase the optical power on the fiber rather than attenuate it.

Model FOSTDRP works by receiving the optical signal, converting it to an electronic signal and retransmitting the amplified and squared signal back out the optical fiber. Two independent paths are provided in each unit to boost a duplex data link or two simplex links. The repeater comes with four ST type connectors and is compatible with all of B&B Electronics' fiber optic modems. Two LEDs indicate activity on the fiber optic link in either direction.

Installation

Model FOSTDRP must be located in the middle of the link at a point where power is available. This would normally be at a central wiring room. Model FOSTDRP is installed in-line with the communications link. A typical application using the unit with B&B's model 232FLST is shown in Figure 1. Figure 2 shows the module in a typical campus setup.

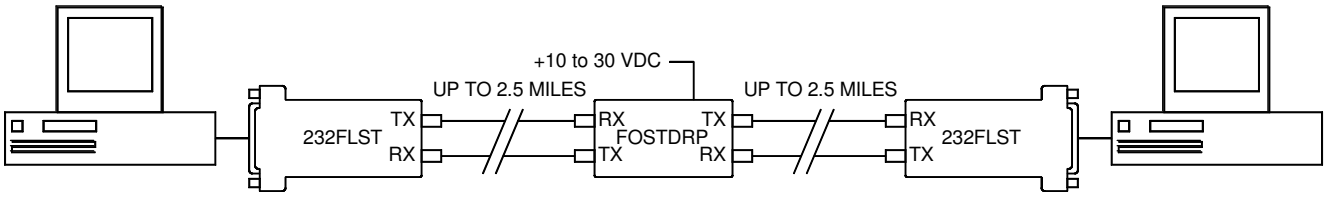

Figure 1. Point-to-Point Repeater

Fiber Optic Connections

Model FOSTDRP uses two separate LED emitters and photo-detectors operating at 820 nm wavelength. Connections to the emitters and detectors are on ST type connectors. Almost any multimode glass fiber size can be used including 50/125 μm, 62.5/125 μm, 100/140 μm, and 200 μm. One fiber is required for each connection between a transmitter and receiver.

Power Budget

The most important consideration in planning the fiber optic link is the "Power Budget" of the fiber link. This value represents the amount of loss in dB that can be present in the link between the transmitter and receiver before the units fail to perform properly. This value includes line attenuation as well as connector loss.

The Power Budget for your link can be figured by subtracting the power output of the transmitter (Pt) in dBm from the minimum power required at the receiver (Pr). Pt(dBm) – Pr(dBm) = Power Budget (dB).

Example: When used with B&B's fiber optic modems, Pt = -13.3 dBm, Pr = -25.4 dBm, so the typical connector to connector Power Budget on either side of the repeater is 12.1 dB. Because 62.5/125 μm cable typically has a line attenuation of 3 dB per km at 820 nm, this 12.1 dB Power Budget translates into 4.0 km or 2.5 miles. This assumes no extra connectors or splices in the link. Each extra connection would typically add 0.5 dB of loss, reducing the possible distance by 166 m (547 ft.). The actual loss should be measured before assuming distances. The fiber optic test kit model FOT710 is available from B&B Electronics for measuring loss in a fiber link.

Specifications

Transmission Line:	Dual multimode optical cable
Coupled Power Output (Transmitter):	-13.3 dBm typical, -15.4 dBm minimum (Measured out of 1 meter of 62.5/125 μm cable)
Coupled Power Input (Receiver):	Requires -25.4 dBm minimum
Optical Center Wavelength:	820 nm
Propagation Skew (Tplh – Tphl):	50 ns typical with receiver power = -13.3 dBm 30 ns typical with receiver power = -21.0 dBm
Data Rates:	DC to 1 Mbps
Typical Range:	Up to 2.5 miles on 62.5/125 μm multimode glass fiber
Connectors:	ST type (X4)
Power Supply:	Requires 10 – 30 VDC @ 130 mA max.
Dimensions:	3.9 x 1.7 x 0.8 in (10.1 x 4.2 x 2.0 cm)
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PRODUCT INFORMATION

B&B ELECTRONICS

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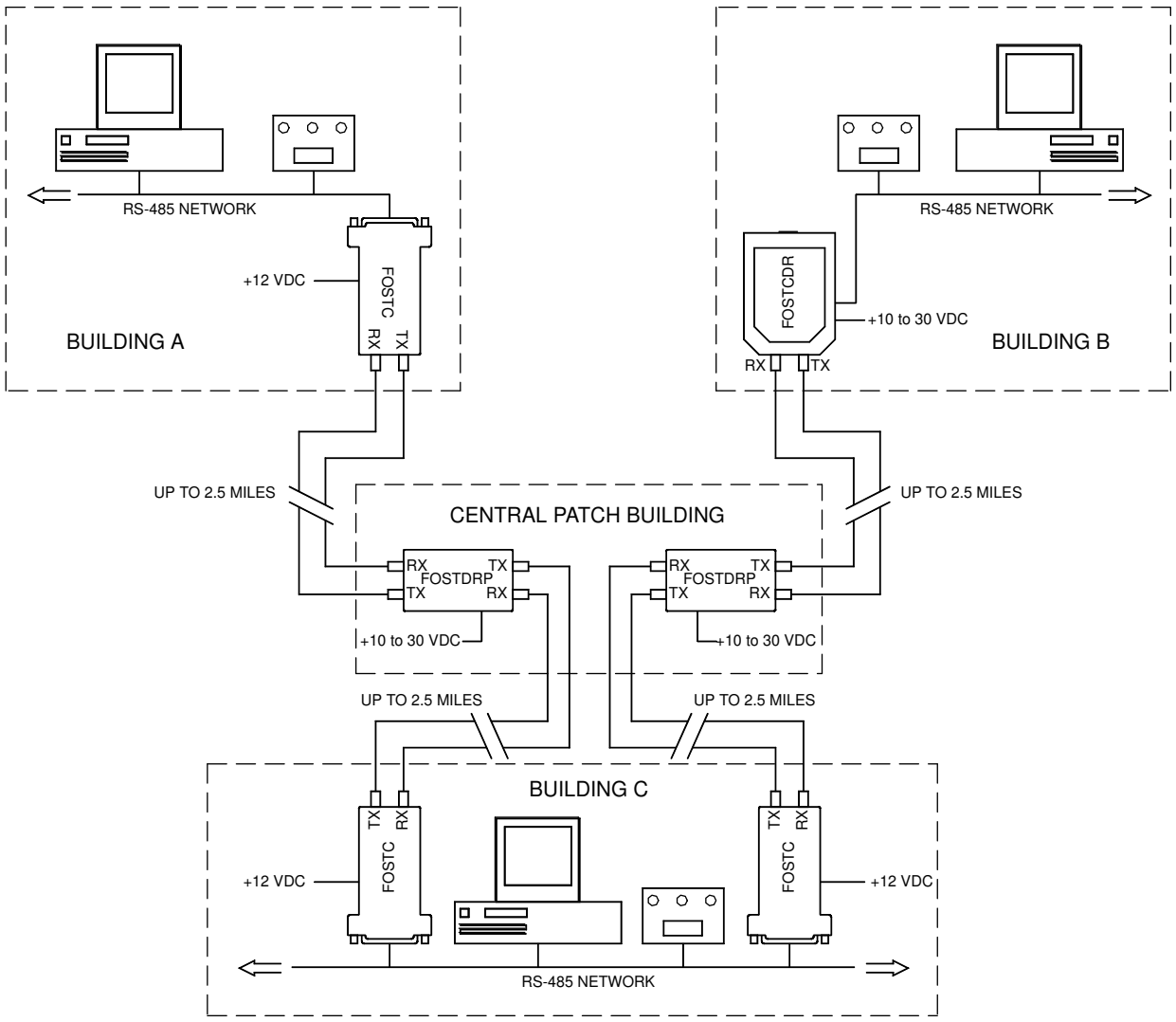

Figure 2. Typical Campus Setup

Dimensions: 3.9 x 1.7 x 0.8 in (10.1 x 4.2 x 2.0 cm)

DECLARATION OF CONFORMITY

Manufacturer's Name:	B&B Electronics Manufacturing Company
Manufacturer's Address:	P.O. Box 1040 707 Dayton Road Ottawa, IL 61350 USA
Model Numbers:	FOSTDRP
Description:	Duplex Fiber Repeater
Type:	Light industrial ITE equipment
Application of Council Directive:	89/336/EEC
Standards:	EN 50082-1 (IEC 801-3, IEC 801-4) EN 50081-1 (EN 55022) EN 61000 (-4-2, -4-3, -4-4, -4-6, -4-8) ENV 50204

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