

Model: FOSTCDRI-SM

Supplemental Information

- Figure 1 is a mechanical diagram.
- Figure 2 is a wiring diagram for RS-232 Operation. Ensure the RS-232 / RS-422/485 Switch is in the RS-232 position. The FOSTCDRI-SM supports TD, RD, and Ground. If your RS-232 device requires handshaking signals, contact B&B's technical support for alternate products. The diagram shows a DTE to DCE connection. For more information regarding RS-232 wiring, refer to B&B's technical note "RS-232 Connections That Work." This document is free and available for download on B&B's web page.
- Figures 3 and 4 are wiring diagrams for RS-422/485 operation. Ensure the RS-232 / RS-422/485 switch is in the RS-422/485 position. The tables below contain the DIP switch settings. If termination is required, a 120 Ω termination resistor can be placed across the R- and R+ lines by placing DIP switch position 5 to "on." Transmit and receive bias can be inserted by positioning DIP switch positions 6 and 7 to "on." Bias is provided by 10K Ω pull up / pull down resistors. Refer to B&B's RS-422/485 Application Note for more information regarding termination and bias. This document is free and available for download on B&B's web page. DIP switch positions 3 and 4 are used to select 2-wire or 4-wire mode. In 2-wire mode, T- is tied to R- and T+ is tied to R+.
- The FOSTCDRI-SM uses a duplex SC single-mode fiber optic transceiver operating at a nominal wavelength of 1310 nm and complies with the industry standard for a 1x9 footprint. One fiber cable is required for each connection between a transmitter and receiver. For point-to-point operation, connect the transmit side to the distant end receive side and vice versa. Set DIP switch position 12 to "off." For multi-drop operation, connect the transmitters to the receivers around the ring and set DIP switch position 12 to "on" on each converter. In the multi-drop mode, DIP switch position 12 routes the fiber optic receive data to the fiber optic transmitter in addition to the conversion circuitry. This causes the data to repeat around the ring. When the data reaches its source, the timeout circuitry will prevent it from being retransmitted. Refer to Table 3 for the maximum recommended number of converters in a fiber optic ring. Figures 5 and 6 illustrate the fiber optic connections for point-to-point and multi-drop operation.



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Figure 1 - Mechanical Diagram

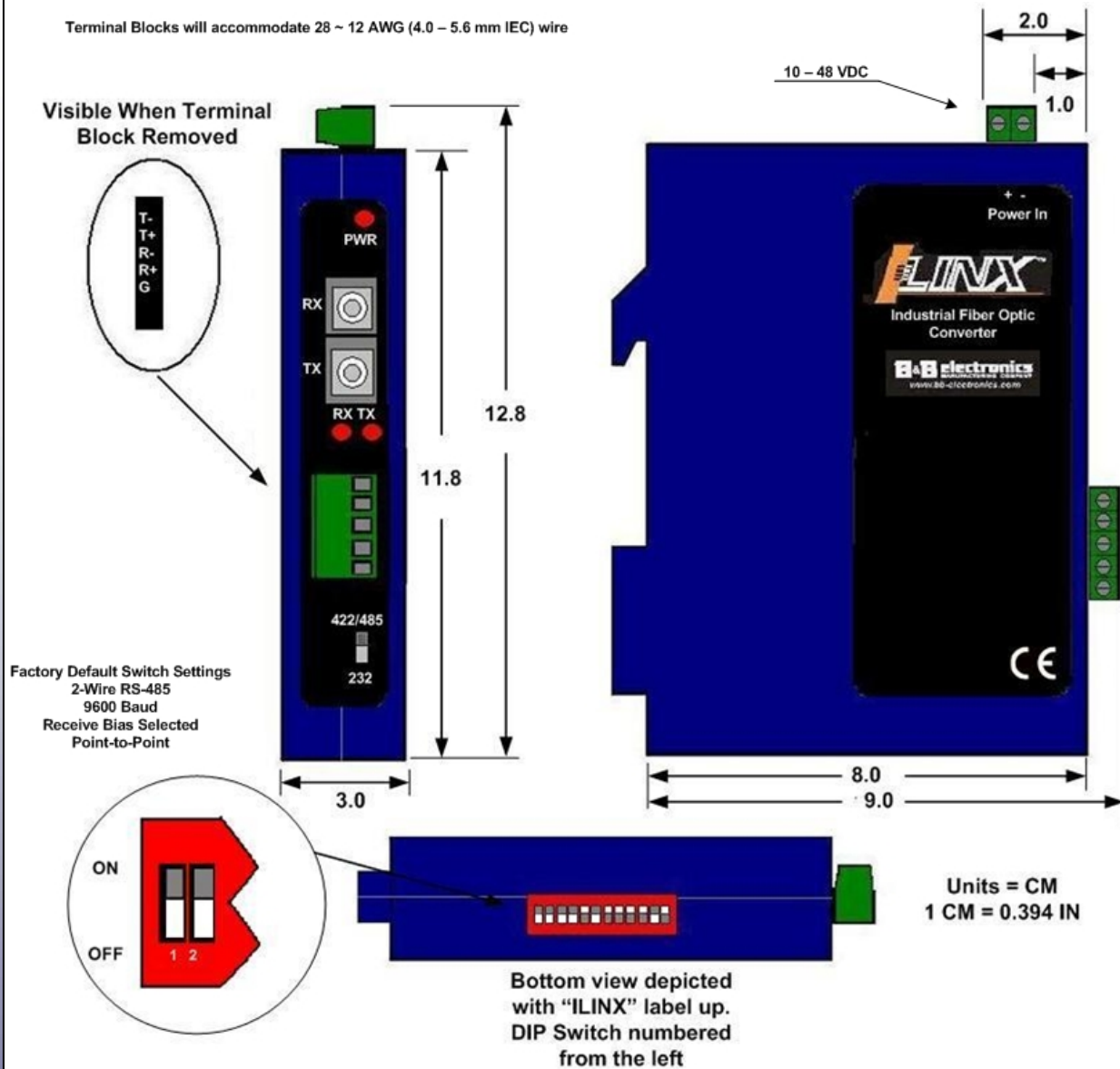


Figure 2 - RS-232 Wiring

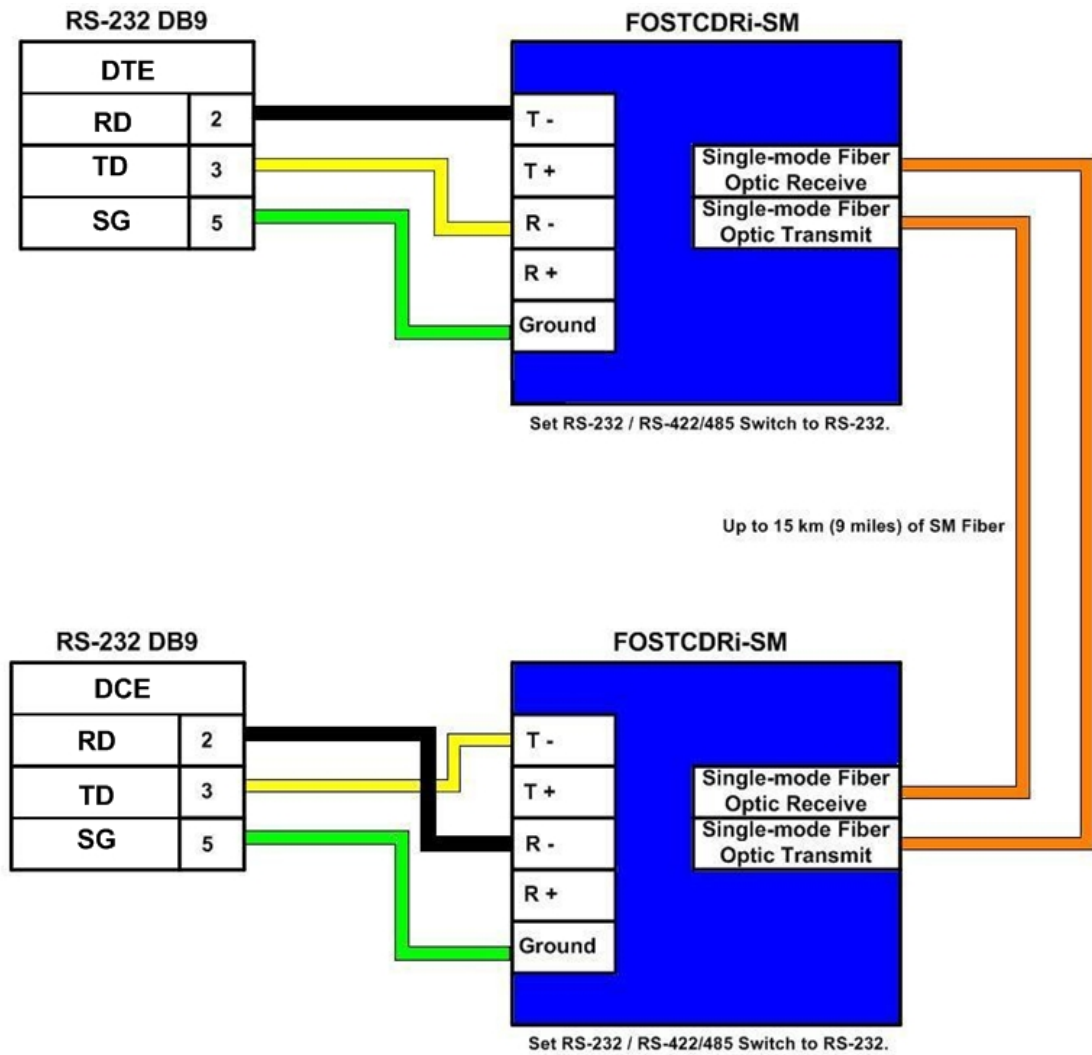


Figure 3 - RS-422, 4-W RS-485 Wiring

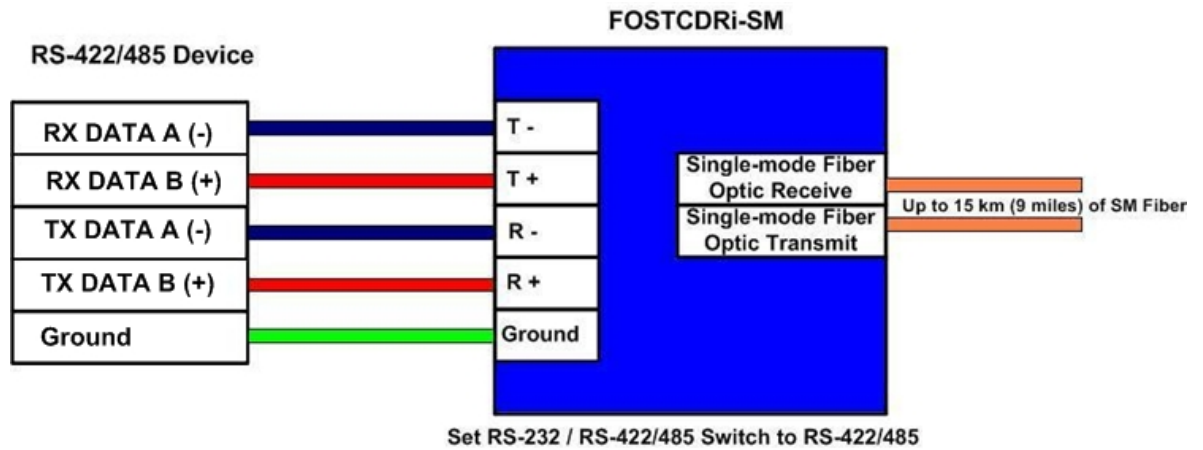


Figure 4 - RS-485 2-W Wiring

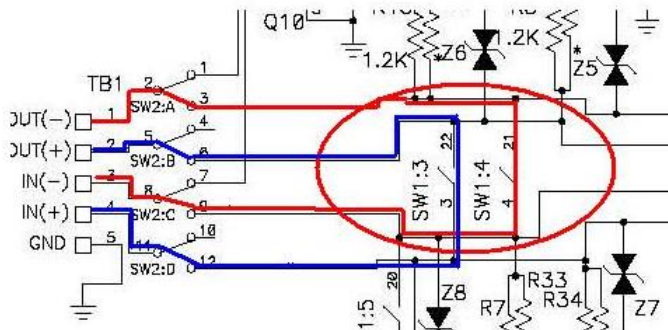
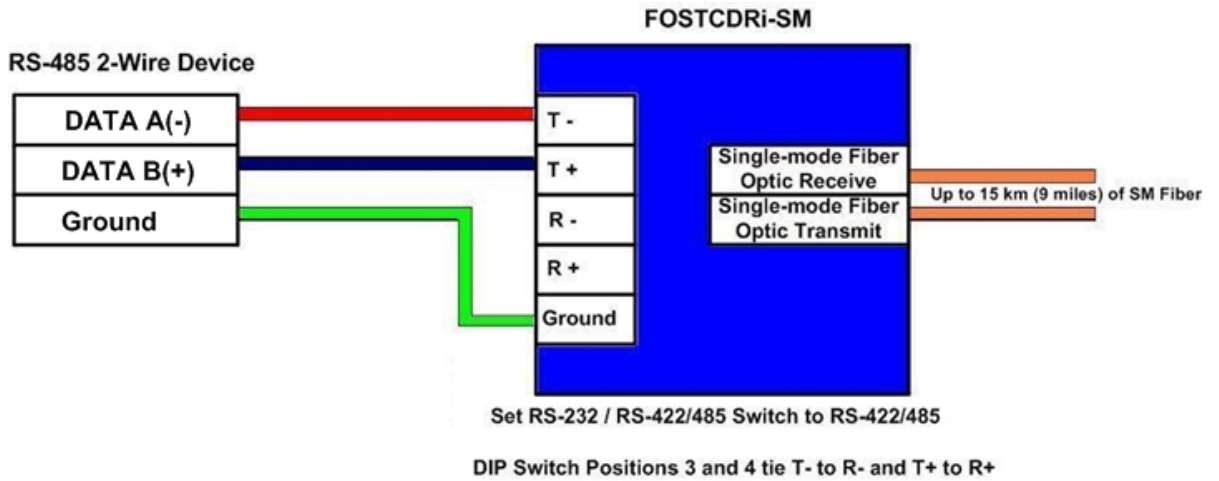


Figure 5 - Point-to-point Setup

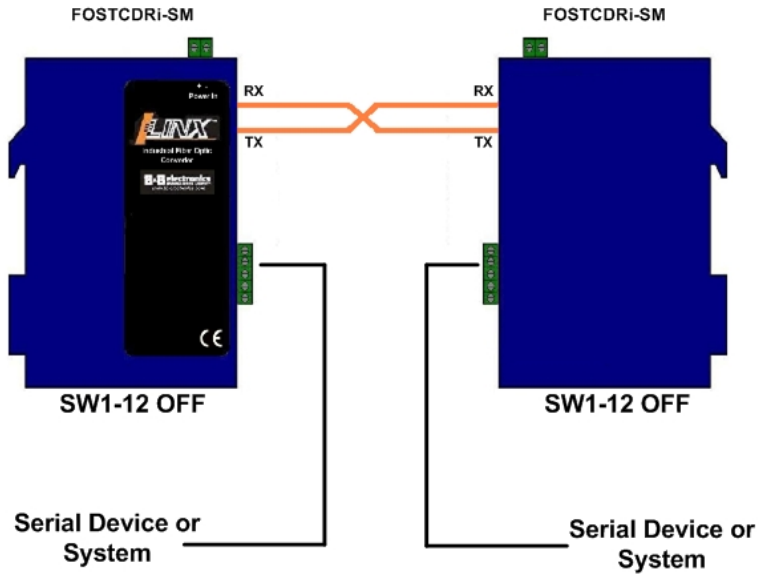
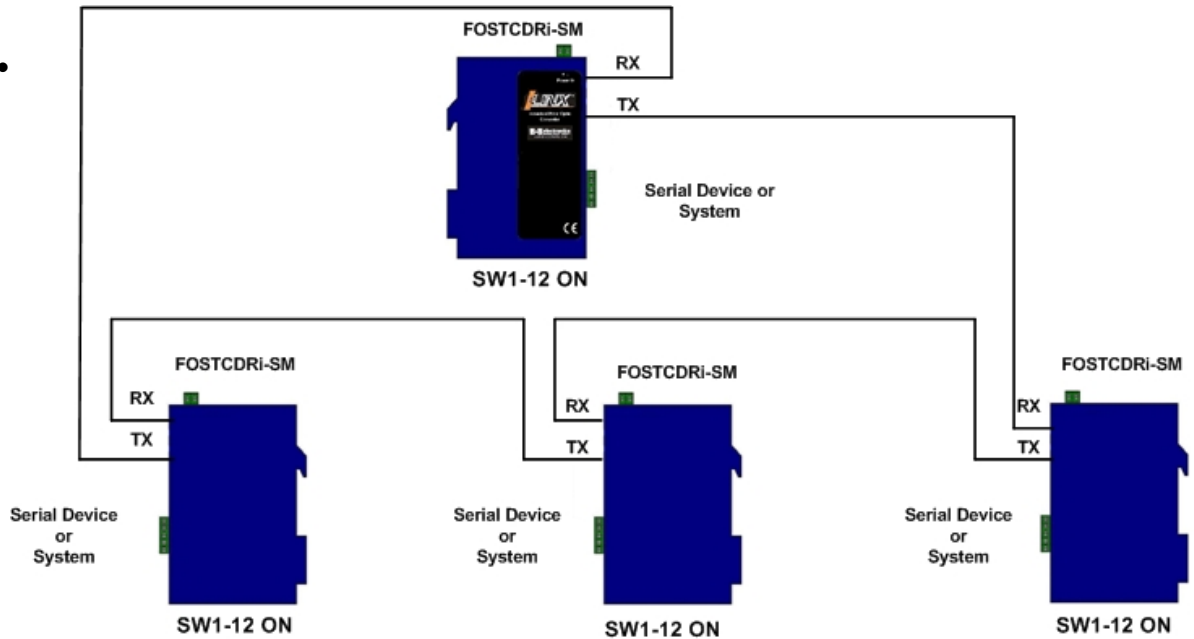


Figure 6 - Multi-drop Setup



Tables

Table 1 – RS-485 Timeout Selection

Baud Rate	POS 8	POS 9	POS 10	POS 11	Time (ms)
9600	OFF	OFF	OFF	ON	1.30
19.2 K	OFF	OFF	ON	OFF	0.56
38.4 K	OFF	ON	OFF	OFF	0.27
57.6 K	ON	OFF	OFF	OFF	0.22
76.8 K	ON	OFF	ON	ON	0.14
115.2 K	ON	ON	ON	OFF	0.10

Table 3 – Maximum Converters in a Fiber Ring

Baud Rate	RS-232	RS-422/485
19.2 kbps and below	32	32
38.4 kbps	16	24
57.6 kbps	8	16
115.2 kbps	2	8

Table 2 – RS-422/485 Mode Selection

	POS 1	POS 2	POS 3	POS 4
RS-485 2-WIRE (half-duplex)	ON	ON	ON	ON
RS-485 4-WIRE (full-duplex)	ON	OFF	OFF	OFF
RS-422 (full-duplex)	OFF	OFF	OFF	OFF

Table 4 – DIP Switch Legend

Switch	On	Off
POS 1	TX Send Data	TX Enable
POS 2	RX Send Data	RX Enable
POS 3	2 Wire	4 Wire
POS 4	2 Wire	4 Wire
POS 5	Termination In	Termination Out
POS 6	TX Bias Res Out	TX Bias Res In
POS 7	Rx Bias Res Out	Rx Bias Res In
POS 8	57.6 kbps	
POS 9	38.4 kbps	
POS 10	19.2 kbps	
POS 11	9.6 kbps	
POS 12	Multi-drop	Point to Point



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