

+ Additional Powering Information

1. Power requirement: 10 to 48 VDC, 1.4 W, Class 2.
2. Loosen the screws to open the terminal block lead clamps.
3. Insert the power lead. TB will accept 12-28 AWG wire.
4. Tighten the screw to close the terminal block lead clamp. Ensure the clamp holds the lead securely. However, do not over tighten.

+ Additional Information

For more information about serial communications, visit B&B Advantech B+B SmartWorx web site:

www.advantech-bb.com

B+B SmartWorx maintains an extensive online technical library available for download free of charge.

The following titles are of particular interest to users of this product.

“RS-422/485 Application Note”

“RS-232 Connections That Work - DTE/DCE”

“An Overview of Fiber Optic Technology”

+ Recommended Accessories

Industrial Power Supply

Model# MDR-20-24



B+B SMARTWORX

Powered by

ADVANTECH

1-888-948-2248 | Europe: +353 91 792444

advantech-bb.com

707 Dayton Road | PO Box 1040 | Ottawa, IL 61350

Phone: 815-433-5100 | Fax: 815-433-5109

www.advantech-bb.com | E-mail: support@advantech-bb.com

+ QUICK START GUIDE



FOSTCDRI-SC FOSTCDRI-ST

Industrial Serial to Single-mode
Fiber Optic Converter

**Before you begin, be
sure you have the following:**

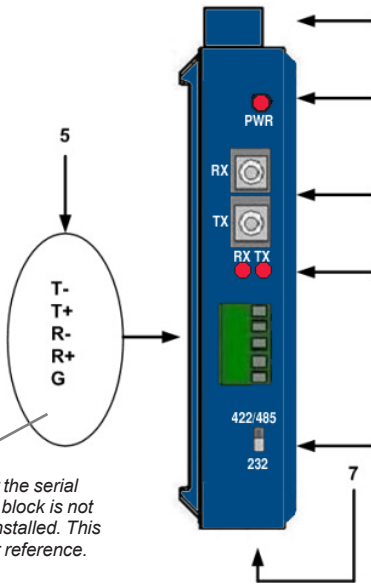
- + FOSTCDRI-SC or FOSTCDRI-ST
Serial to Fiber Optic (SM) Converter
- + Power Terminal Block (installed)
- + Serial Terminal Block (installed)
- + Fiber Optic Dust Cover (installed)
- + Power Supply (not included, sold separately)

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Product Overview



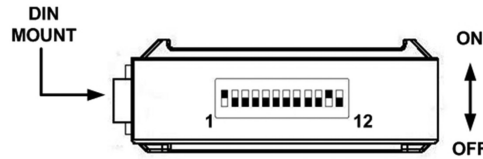
NOTE: The label for the serial connection terminal block is not visible with the TB installed. This detail is provided for reference.

1	Power Terminal Block	2-position, removable
2	Power LED	ON when power applied
3	Fiber Port	Single-mode, SC or ST connectors
4	Fiber RX LED	Flashes when data received
4	Fiber TX LED	Flashes when data transmitted
5	Serial Port TB	5-position, removable
6	Serial Switch	Selects RS-232 or RS-422/485 mode
7	DIP Switch	12-position

Wiring Terminal Information:

- Copper Wire Only.
- One Conductor Per Terminal.
- Wire Range 28 to 16 AWG.
- Tightening Torque, 1.7 lb-in.
- Temperature Rating of Field Wiring - 105 °C (221 °F) minimum sized for 60 °C (140 °F) ampacity.

1 | DIP Switch (SW1)



POSITION	ON	OFF
1	RS-485	RS-422
2	Half-Duplex	Full-Duplex
3	2-wire	4-wire
4	2-wire	4-wire
5	Termination IN	Termination Out
6	TX Bias OUT	TX Bias IN
7	RX Bias OUT	RX Bias IN
8	57.6 kbps	-
9	38.4 kbps	-
10	19.2 kbps	-
11	9.6 kbps	-
12	Multi-drop	Point-to-Point

NOTE: Multi-drop mode allows one serial device to communicate with up to 31 others around a fiber optic ring.

2 | Terminal Block

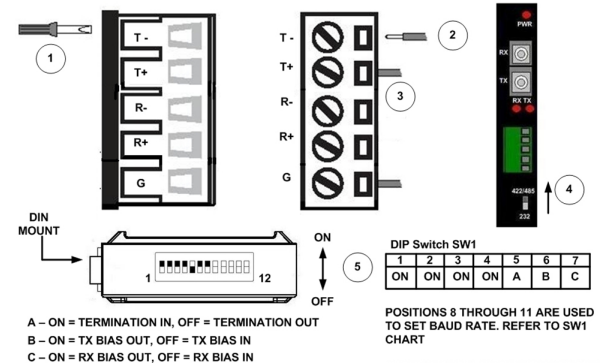
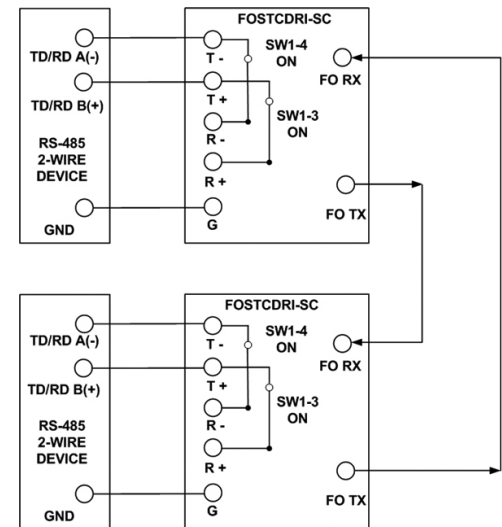
TERMINAL	RS-232
T-	Output
T+	Not used
R-	Input
R+	Not used
G	Ground

TERMINAL	RS-485 2-WIRE	RS-422/485 4-WIRE
T-	Data A (-)	TD A (-)
T+	Data B (+)	TB B (+)
R-	Not used	RD A (-)
R+	Not used	RD B (+)
G	Ground	Ground

3 | RS-422/485 Baud Rate Timeout

	SW1	SW1	SW1	SW1	TIMEOUT
BAUD	8	9	10	11	(MS)
9600	OFF	OFF	OFF	ON	1.30
19.2K	OFF	OFF	ON	OFF	0.56
38.4K	OFF	ON	OFF	OFF	0.27
57.6K	ON	OFF	OFF	OFF	0.22
76.8K	ON	OFF	ON	ON	0.14
115.2K	ON	OFF	ON	OFF	0.10

4 | RS-485 2-Wire



RS-485 2-Wire - continued

Installation Notes:

- In 2-Wire mode, T(-) and T(+) terminals are tied to the R(-) and R(+) terminals with DIP Switch SW1-3 and SW1-4.
- If Termination is required, a 120Ω resistor can be placed across the R(-) and R(+) terminals by setting SW1-5 to ON.
- This converter has 1.2 KΩ pull-up/down bias resistors built in. To use this bias, set SW1-6 and SW1-7 to ON.

RS-422/RS-485 4-Wire - continued

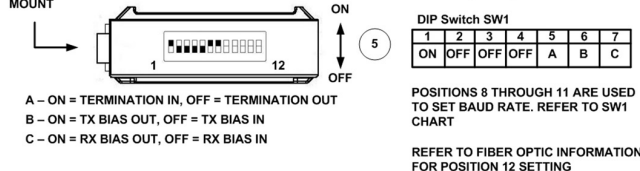
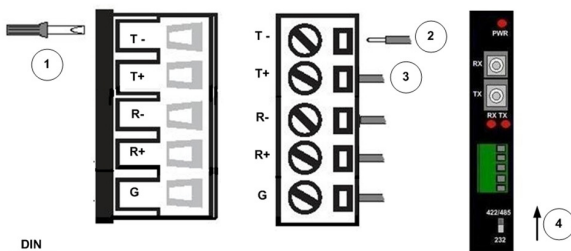
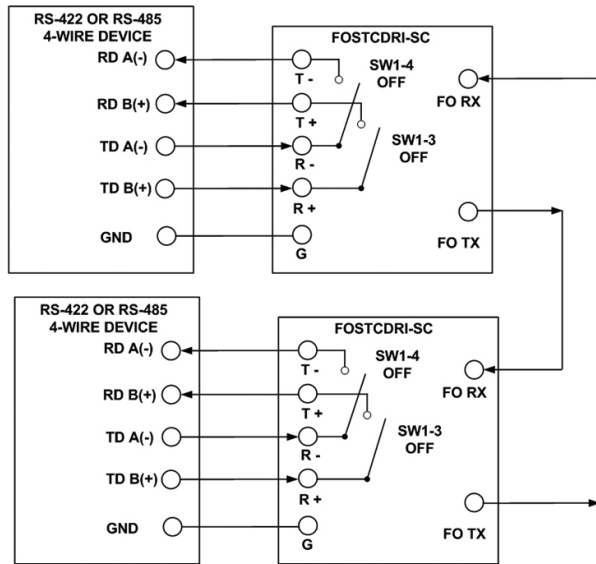
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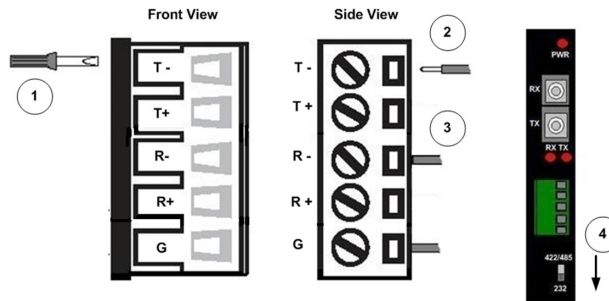
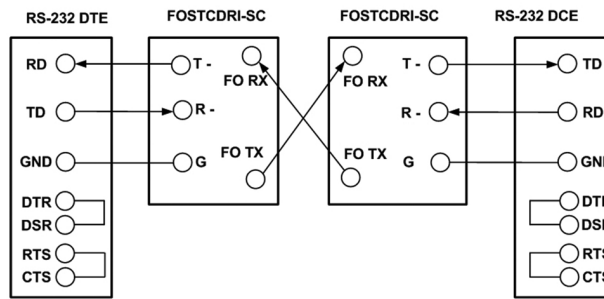


B+B Smart Worx' RS-485 Application Note contains more information about termination and biasing. This reference is available for download from the website.

5 RS-422/RS-485 4-WIRE



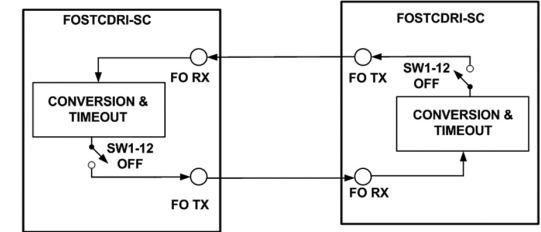
6 RS-232 Configuration



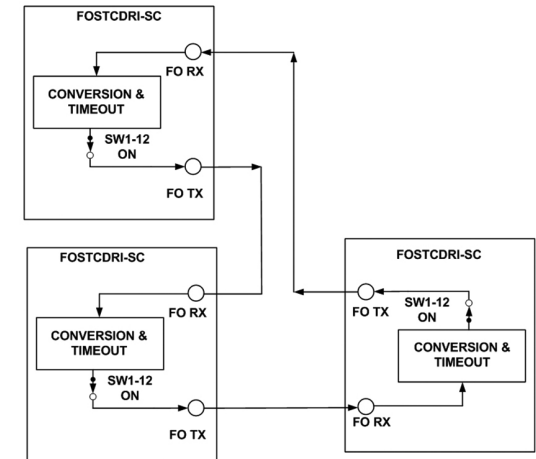
Installation Notes:

- Set DIP Switch SW1 Positions 1 through 11 (on the bottom of the converter) to OFF. Set SW1 position 12 to OFF for point-to-point fiber mode.
- The wiring example shows a DTE device on one end and a DCE device on the other.
- Handshaking signals are not passed through.
- The loopback jumpers shown in the wiring diagram may or may not be required. Refer to the operating manual for your RS-232 device for more information.

7 Fiber Optic



Fiber Optic Point-to-Point



Fiber Optic Multi-drop Ring

1. Ensure your fiber optic cable is terminated with an SC type connector. 9/125 micro-meter single-mode cable is recommended.
2. Connect the converter's transmitter to the distant end receiver and vice-versa.
3. DIP Switch SW1-12 is used to select point-to-point or multi-drop mode. For point-to-point, set the switch to OFF for both converters. For multi-drop, set the switch to ON for each converter in the ring. With SW1-12 in the ON position, receive data will be looped back to the fiber optic transmitter. Data will repeat around the ring until it finally reaches its source. When the data is received by the originator, timeout circuitry will prevent it from being re-transmitted.

Maximum Converters in a Fiber Ring

Baud Rate	RS-232	RS-422/485
19.2 kbps and lower	32	32
37.4 kbps	16	24
3115.2 kbps	2	8