



**RS-232/485/422 to Fiber Optic Converter
(Part Number: FBR-Serial-2)**

CE FC

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Communications made easy

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RS-232/485/422 to Fiber Optic Converter



Part Number: FBR-Serial-2

■ INTRODUCTION

The FBR-Serial-2 is a multi-function serial to fiber optic converter that supports asynchronous serial communications (RS-232, RS-485, and RS-422) through fiber optic links. Besides the capability of long distance data transmission, fiber lines are inherently resistant to EMI/RFI and transient surges; therefore, they are ideal for data communications near heavy electrical equipment and other electrical or radio interference.

Depending on the fiber cable and the type of converter used, a multi-mode fiber optic converter can extend the RS-232/485/422 distance to up to 1.2 miles (2 km), while a single-mode fiber optic converter can extend the RS-232/485/422 distance to up to 12.4 miles (20 km). Standards can be mixed and matched, so RS-232 devices can be connected to RS-485/422 devices, or RS-485 (2-wire) devices can be connected to RS-422 (4-wire) devices without using a converter and isolator.

The unit supports serial data rates up to 460kbps and features data format auto-sensing and self-adjusting, and, therefore, no DIP switch or jumpers are required. When working with RS-485 signals, the CommFront's auto-turnaround feature eliminates the need for flow control.

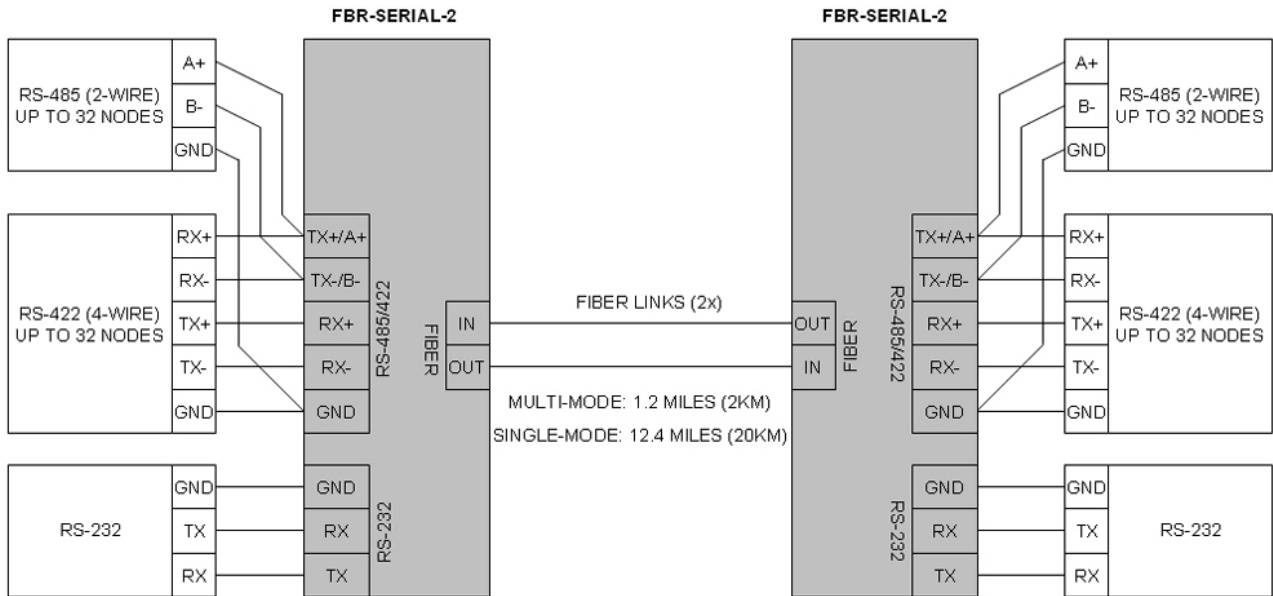
■ FEATURES

- Transmits serial data (RS-232, RS-485 or RS-422) over long distances through fiber cables (Multi-mode: 1.2 miles or 2 km; Single-mode: 12.4 miles or 20 km).
- Standards can be mixed and matched (Same data type, RS-232 to RS-485/422 or RS-485 to RS-422).
- Supports up to 32 nodes of RS-485/422 devices.
- Wide temperature range (-40°F to 158°F / -40°C to 70°C).
- Single or Multi-mode, with ST or SC connectors.
- Built-in surge protection, static protection and circuit protection.
- Surface Mount Technology manufactured to ISO-9001 standards.
- CE/FCC certified.
- 5 Year manufacturer's warranty.

■ SPECIFICATIONS

Compatibility:	EIA/TIA RS-232C, RS-485, and RS-422 standard
Power Source:	9 to 36VDC (External AC to DC power adapter included)
External AC/DC Power Adapter:	9VDC/500mA (Input: 100~240VAC 50/60Hz, US type A plug)
Maximum Power Consumption:	4 Watts
Serial Data Rates:	Up to 460kbps (auto-sensing and self-adjusting)
Wavelength:	1310nm
Usable Fiber Optic Cables:	Multi-mode: 50/125, 62.5/125µm Single-mode: 8.3/125, 8.7/125, 9/125, 10/125µm
Number of Maximum Nodes:	RS-485/422: 32 nodes
Distance (Serial Port):	RS-232: 16ft (5m); RS-485/422: 4000ft (1.2km)
Distance (Fiber Lines):	Multi-mode: 1.2 miles (2km); Single-mode: 12.4 miles (20km)
Connectors (Serial Port/Power):	RS-232/485/422: 8-way terminal block; DC Input: 2-way terminal block
Connectors (Fiber Links):	2x ST Connector or 2x SC Connector
Surge Protection:	600W
Electro-Static Discharge (ESD):	Up to 15KV
Dimensions (H x W x D):	ST: 5.0 x 3.6 x 0.9 in (126 x 91 x 22 mm) SC: 4.5 x 3.6 x 0.9 in (115 x 91 x 22 mm)
Weight:	ST: 8.87 oz (251.4 g) / SC: 8.73 oz (245.3 g)
Operating Temperature:	-40°F to 158°F (-40°C to 70°C)
Operating Humidity:	0 to 90% Non-condensing

■ CONNECTIONS



NOTE: CONNECT ONE DATA TYPE AT A TIME

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FIGURE 1: FBR-SERIAL-2 CONNECTION DIAGRAM

■ DIMENSIONS

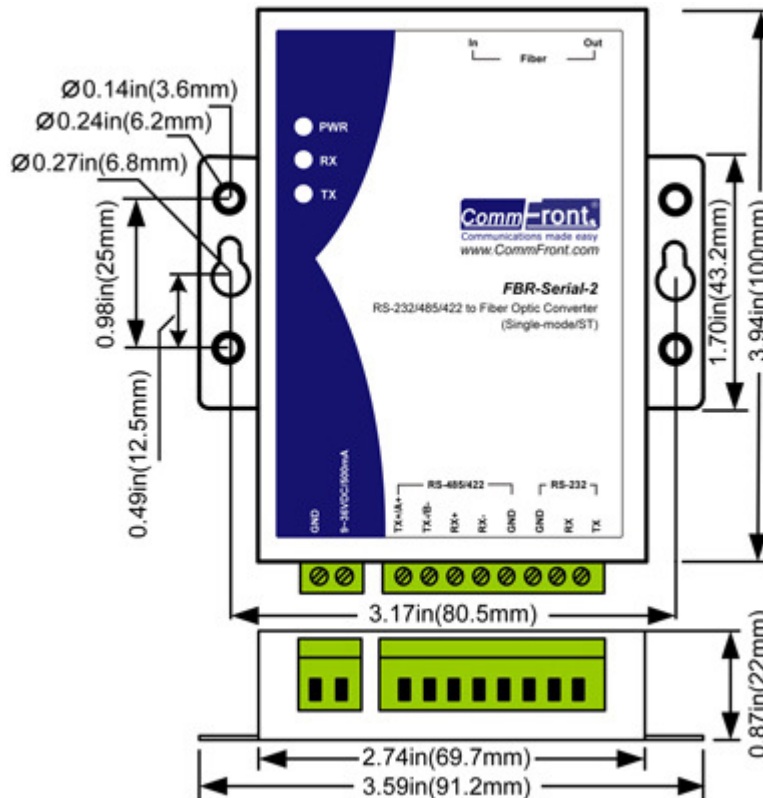


FIGURE 2: FBR-SERIAL-2 DIMENSIONS

■ LED INDICATIONS

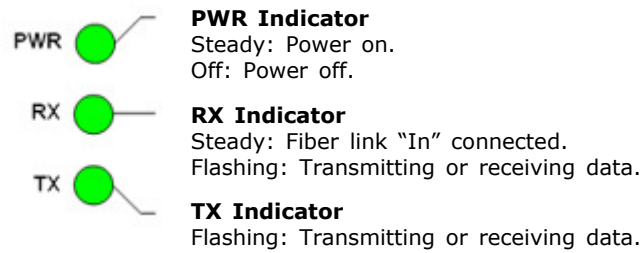


FIGURE 3: FBR-SERIAL-2 LED INDICATIONS

■ TROUBLESHOOTING

- Make sure the Power LED is ON and the RX & TX LEDs are OFF when there is no data communication.
- Check the connections according to the above "CONNECTIONS" diagram (Figure 1).
- Perform a loopback test by using CommFront's 232Analyzer software:
 - 1) Connect the "Fiber In" to "Fiber Out" by using a fiber optic pigtail cable and connect the PC's RS-232 (or RS-485/422) to FBR-Serial-2 according to the above "CONNECTIONS" diagram.
 - 2) Send commands from the 232Analyzer software. You should receive an echo of the commands sent. By performing a simple loopback test like this, you can test both the COM port and the fiber optic module. This is very helpful when you are in doubt about the performance of your converter.