10/100M Ethernet to Fiber Optic Converter

Part Number: FBR-Ethernet-2 (DIN-Rail/Wall-Mount)

Single-Mode (12.4miles/20km) or Multi-Mode (1.2miles/2km)

Connector types: ST, SC or FC

Http://www.CommFront.com
INTRODUCTION
The FBR-Ethernet-2 (DIN-Rail/Wall-Mount) is an economical 10/100M Ethernet to fiber optic media converter, which provides one channel for media conversion between 10/100BaseTX and 100BaseFX fiber optic links. Depending on the fiber cable and the type of media converter used, a multi-mode media converter can extend the 10/100M Ethernet distance to up to 1.2 miles (2 km), while a single-mode media converter can extend the distance to up to 12.4 miles (20 km). The FRB-Ethernet-2 is a plug and play unit featuring auto-negotiation for half or full-duplex and 10 or 100Mbps data rates, it also supports MDI (straight-through) and MDIX (crossover) cables, no DIP switch or jumper settings are required.

FEATURES
- Enclosed in a rugged, rustless ABS housing.
- Direct DIN-Rail or wall/panel mounting without using any unsecured brackets or adapters.
- Converts 10/100BaseTX to 100BaseFX fiber optic links.
- Transmits 10/100M Ethernet data over a long distance through fiber cables (Multi-mode: 1.2 miles or 2 km; Single-mode: 12.4 miles or 20 km).
- Auto-negotiation of speed and duplex mode on TX port.
- Auto-MDIX on TX port.
- Store-and-forward mechanism.
- LED indications.
- Single or Multi-mode, with ST, SC or FC connectors.
- A wide range of fiber optic cables is supported.
- Built-in surge protection, static protection and circuit protection.
- Surface Mount Technology manufactured to RoHS and ISO-9001 standards.
- CE/FCC certified.
- 5 Year manufacturer’s warranty.

SPECIFICATIONS
Compatibility: IEEE802.3 10Base-T; IEEE802.3u 100Base-TX and 100Base-FX
Power Source: 9 to 30VDC (External AC to DC power adapter included)
External AC/DC Power Adapter: 9VDC/500mA (Input: 100~240VAC 50/60Hz, US type A plug)
Features: Auto-negotiation for half/full-duplex and 10/100M on TX port; Auto-MDIX on TX port
Switching Method: Store-and-forward
Speed: 10BaseT: 10/20Mbps for half/full-duplex
100BaseT: 100/200Mbps for half/full-duplex
Current Consumption: Less than 200mA
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
Distance (Ethernet): 10BaseT: Cat. 3, 4, 5 up to 328ft (100m)
100BaseT: Cat. 5 up to 328ft (100m)
Distance (Fiber Lines): Multi-mode: 1.2 miles (2km); Single-mode: 12.4 miles (20km)
Connectors (Ethernet/Power): RJ45 (Female) / Terminal Block (9-way)
Connectors (Fiber Links): 2x ST Connector, 2x SC Connector or 2x FC Connector
Surge Protection: 600W
Electro-Static Discharge (ESD): Up to 15KV
Dimensions (H x W x D): ST: 4.9 x 2.9 x 1.3 in (125 x 73 x 33 mm)
SC: 4.7 x 2.9 x 1.3 in (120 x 73 x 33 mm)
FC: 4.6 x 2.9 x 1.3 in (117 x 73 x 33 mm)
Weight: ST: 4.6 oz (130 g) / SC: 4.6 oz (129 g) / FC: 4.6 oz (129g)
Operating Temperature: 32ºF to 158ºF (0ºC to 70ºC)
Operating Humidity: 0 to 90% Non-condensing
**CONNECTIONS**

**FIGURE 1: FBR-ETHERNET-2 CONNECTION DIAGRAM**

**RJ45 / TERMINAL BLOCK PIN ASSIGNMENT**

<table>
<thead>
<tr>
<th>RS45</th>
<th>Terminal Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TX+</td>
</tr>
<tr>
<td>2</td>
<td>TX-</td>
</tr>
<tr>
<td>3</td>
<td>RX+</td>
</tr>
<tr>
<td>6</td>
<td>RX-</td>
</tr>
<tr>
<td>4,5,7,8 (Not Connected)</td>
<td>-</td>
</tr>
</tbody>
</table>

**INSTALLATIONS**

**FIGURE 2: DIN-RAIL MOUNTING**

1. Pull
2. Push
### LED INDICATIONS (FRONT VIEW)

- **PWR**
  - Steady: Power on
  - Off: Power off

- **LNK/ACT (TX)**
  - Steady: Network connected
  - Flashing: Transmitting or receiving data
  - Off: Network disconnected

- **LNK/ACT (FX)**
  - Steady: Fiber links connected
  - Flashing: Transmitting or receiving data
  - Off: Fiber links disconnected

- **FDX**
  - Steady: Full-duplex mode
  - Off: Half-duplex mode or network disconnected

- **10/100M**
  - Steady: 100M network
  - Off: 10M network

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### TROUBLESHOOTING

- Make sure the Power is connected and turned on.
- Check the connections according to the above “CONNECTIONS” diagram (Figure 1).
- Check the LED status and identify the possible problems by using the table below:

<table>
<thead>
<tr>
<th>LED</th>
<th>State</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWR (Power)</td>
<td>Steady</td>
<td>Power on</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Power off</td>
</tr>
<tr>
<td>LNK/ACT (TX)</td>
<td>Steady</td>
<td>Network connected</td>
</tr>
<tr>
<td>(TX Port Link/Activity)</td>
<td>Flashing</td>
<td>Transmitting or receiving data</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Network disconnected</td>
</tr>
<tr>
<td>LNK/ACT (FX)</td>
<td>Steady</td>
<td>Fiber links connected</td>
</tr>
<tr>
<td>(FX Port Link/Activity)</td>
<td>Flashing</td>
<td>Transmitting or receiving data</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Fiber links disconnected</td>
</tr>
<tr>
<td>FDX</td>
<td>Steady</td>
<td>Full-duplex mode</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Half-duplex mode or network disconnected</td>
</tr>
<tr>
<td>10/100M</td>
<td>Steady</td>
<td>100M network</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>10M network or network disconnected</td>
</tr>
</tbody>
</table>