

Serial to Single-mode Fiber Converter

FOSTCDRI-ST, FOSTCDRI-SC



PRODUCT FEATURES

- Data rates up to 115.2 kbps
- 15 km (9 mi) range
- 10 to 48 VDC power input
- Wide operating temperature
- 2000V isolation
- Modbus ASCII/RTU compatible
- EMI/RFI protection

B+B Electronics' ILinx™ fiber converters designed with functionality required for heavier industrial environments. Model FOSTCDRI-Sx industrial-grade isolated converter changes RS-232, RS-422, or RS-485 to single-mode fiber optics.

Designed for industry, FOSTCDRI-Sx extends serial data ranges up to 15 km (9 mi) and provides the most versatile connection possible between asynchronous full or half-duplex serial equipment. In addition to direct point-to-point connectivity, it is capable operating in a multi-drop mode. This allows one serial device to communicate with up to 31 others around a fiber optic ring. Since it supports mixed serial standards, it can replace other converters and isolators and add the EMI/RFI immunity inherent to fiber optic communications. Fiber optic connectors are SC or ST.

B+B Electronics' Automatic Send Data Control circuit controls the RS-422/485 driver chip, eliminating the requirement for special software. Easy to install and configure, it has a 12-position DIP switch to set up the RS-422/485 parameters and removable terminal blocks to connect serial signals and power. In RS-232 mode, the FOSTCDRI-SC supports Transmit Data and Receive Data. Handshaking signals are not passed through.

Fiber Optic Benefits

Fiber optic cable carries serial data up to 15 kilometers (9 miles), much farther and reliably than conventional copper lines.

Power surges, spikes and ground loops are created by electrical equipment, by nearby lightning strikes, and from other sources. They are easily picked up by copper data lines and transmitted to connected devices, garbling data communications and damaging equipment.

However, fiber optic data transmission uses light in glass fiber cable as a communication medium. Being inherently non-electric, fiber optic cable will not pick up noise and provides the most reliable system possible – ideal for spanning areas with severe interference, such as near heavy electrical equipment, welding or radio transmissions. It does not transmit power spikes or surges and prevents ground loops by not providing a conductive path for the ground.

ORDERING INFORMATION

| MODEL NUMBER | SERIAL CONNECTOR | FIBER CONNECTOR | MODBUS |
|--------------|----------------------------|-----------------|--------|
| FOSTCDRI-SC | Terminal Blocks, removable | Single-mode SC | ✓ |
| FOSTCDRI-ST | Terminal Blocks, removable | Single-mode ST | ✓ |

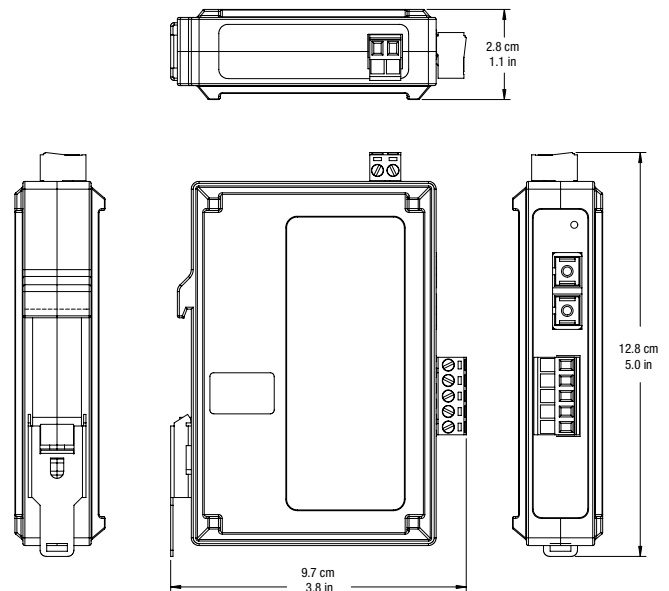
ACCESSORIES

MDR-20-24 - 24 VDC @ 1.0 A DIN rail mount power supply, slim-line

TBKT1 - Replacement Terminal Block, 2-position, 5.08mm

TBKT2 - Replacement Terminal Block, 5-position, 5.08mm

MECHANICAL DIAGRAM - FOSTCDRI-SC



Serial/Single-mode Fiber Converter

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SPECIFICATIONS

SERIAL TECHNOLOGY

Data Rate 9.6 to 115.2 kbps

RS-232

Connector Removable Terminal Block (12 to 28 AWG)

Signals TD, RD, GND

RS-422/485

Connector Removable Terminal Block (12 to 28 AWG)

RS-485, 2-wire Data A(-), Data B(+), GND

RS-422/485, 4-wire TDA(-), TDB(+), RDA(-), RDB(+), GND

ISOLATION

Isolation 2KV RMS, 1 minute

Surge Protection 600 W peak power dissipation

Clamping Time < 1 pico-second

FIBER OPTIC TECHNOLOGY

Connector ST

Type / Wavelength Single-mode / 1310 nm

Output Power (-) 15 to (-) 8 dBm

Receive Sensitivity Less than or equal to (-) 32 dBm

Cable 9/125 micro-meter

Data Rate 9.6 to 115.2 kbps

Maximum Distance 15 km (9 mi)

POWER

Source External

Input Voltage 10 to 48 VDC (Class 2)

Power Consumption 1.4 Watts

Connector Removable terminal block (12 to 28 AWG)

INDUSTRIAL BUS

Modbus ASCII/RTU

MECHANICAL

LED Indicators FO Receive, FO Transmit, Power

Dimensions 12.8 x 9.7 x 2.8 cm (5.0 x 3.8 x 1.1 in)

Enclosure 35mm DIN Mount, Plastic, IP30

Weight 149.7 g (0.3 lbs)

ENVIRONMENTAL

Operating Temperature -40 to +80 °C (-40 to +176 °F)

Storage Temperature -40 to +85 °C (-40 to +185 °F)

Operating Humidity 0 to 95% non-condensing

MTBF 88423 hours

MTBF Calculation Method Parts Count Reliability Prediction

APPROVALS / CERTIFICATIONS - FOSTCDRI-SC

UL 508, File Number: E222870

FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class B Emissions

CE

EN 61000-6-1: 2007 Generic Standards for Residential, Commercial and Light-Industrial Environments

EN 61000-4-2: 2009 Electro-Static Discharge (ESD)

EN 61000-4-3: 2006 +A1 +A2 +IS1 Radiated Field Immunity (RFI)

EN 61000-4-4: 2012 Electrical Fast Transients-Burst Immunity (EFT)

EN 61000-4-6: 2009 Conducted Immunity

Download complete Declaration of Conformity at www.bb.elec.com

FIBER OPTIC CABLES

| MULTI-MODE DUPLEX FIBER | | LENGTH | | | | | | | |
|--------------------------|----------------|--------|----|----|----|-----|-----|-----|-----|
| MODEL NUMBER | CONNECTOR TYPE | 1M | 2M | 3M | 5M | 10M | 15M | 20M | 30M |
| DFMM-LCLC-XX | LC TO LC | ✓ | ✓ | ✓ | ✓ | | | | |
| DFMM-SCLC-XX | SC TO LC | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| DFMM-SCSC-XX | SC TO SC | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| DFMM-STLC-XX | ST TO LC | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| DFMM-STSC-XX | ST TO SC | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| DFMM-STST-XX | ST TO ST | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| SINGLE-MODE DUPLEX FIBER | | LENGTH | | | | | | | |
| MODEL NUMBER | CONNECTOR TYPE | 1M | 2M | 3M | 5M | 10M | 15M | 20M | 30M |
| DFSM-LCLC-XX | LC TO LC | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| DFSM-SCLC-XX | SC TO LC | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| DFSM-SCSC-XX | SC TO SC | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| DFSM-STLC-XX | ST TO LC | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| DFSM-STSC-XX | ST TO SC | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| DFSM-STST-XX | ST TO ST | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |

Note: Model Number change the xx to its fiber length number for the actual Model Number.

Example: If you want a 1M Multi-Mode LC to LC Fiber the part number would be DFMM-LCLC-1M.