Industrial Serial to Fiber Optic Converters
Models FOSTCDRI, FOSTCDRI-INV

FOSTCDRI is Advantech B+B SmartWorx’ premium industrial serial to multi-mode fiber optic converter. Its rugged design is UL approved and certified for Class 1/Division 2 industrial environments. It extends data communications up to 4 km (2.5 miles). It provides three-way optical isolation on the input, output and power lines.

In addition to direct point-to-point connectivity, it is capable of operating in a multi-drop mode. This allows one serial device to communicate with up to 31 other devices around a fiber ring. Since it supports mixed standards, you can replace other converters and isolators and add the EMI / RFI protection inherent to fiber optic communications.

In RS-232 mode, the converter supports Transmit and Receive data. Handshaking signals are not passed through. An Automatic Send Data Control circuit controls the RS-422/485 driver chip, eliminating the requirement for external software.

Easy to install and configure, it has a 12-position DIP switch on the bottom to configure RS-422/485 parameters. Serial data and power cables connect to removable terminal blocks. ST connectors are used for the fiber.

Model FOSTCDRI-INV features an “inverted fiber state” and is suitable for applications requiring the fiber optic transmit light to be Off in the idle state.

What is the difference between Model FOSTCDRI and Model FOSTCDRI-INV?

The FOSTCDRI keeps the light in the fiber turned On when no data is transmitted and the input signal is in the MARK state (idle). If light is lost or too low, the electrical signals go to the SPACE state. The input signal turns the light Off/On in step with the data. This model has an indicator for Transmit and Receive, if no light is received, the RD LED will come on, the RD output will be positive relative to GND (normally negative), and in RS-422 or RS-485 mode, no light will set the TD(A)- line high relative to TD(B)+. The usual voltage with light in the fiber and no signal sets the B line high relative to A (about 4.4 Volts DC no termination).

The FOSTCDRI-INV is the opposite. The fiber is Off in the idle state.
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SPECIFICATIONS

SERIAL TECHNOLOGY
Data Rate 9.6 to 115.2 kbps
RS-232 Connector Removable terminal block
Signals TD, RD, GND
RS-422/485 Connector 5-position, removable terminal block
RS-485, 2-wire Data A(-), Data B(+), GND
RS-422/485, 4-wire TDA(-), TDB(+), RDA(-), RDB(+), GND
Bias Built-in, switchable, 1.2KΩ
Termination Built-in, switchable, 120Ω

ISOLATION
Rating 2KV RMS, 1 minute
Surge Protection 600 W peak power dissipation
Clamping Time < 1 pico-second
Lines Protected 2-way (input, output lines)
Method Optical

FIBER OPTIC TECHNOLOGY
Type / Wavelength Multi-mode / 820 nm
Output Power -16dBm min, -12dBm typical, -9dBm maximum
Receive Sensitivity -24dBm min, -25.4dBm maximum
Cable 62.5/125 micro-meter
Connector ST
Data Rate 9.6 to 115.2 kbps
Maximum Distance 4 km (2.5 mi)
Idle State, FOSTCDRI Transmitter light ON
Idle State, FOSTCDRI-INV Transmitter light OFF

INDUSTRIAL BUS
Modbus ASCII/RTU

POWER
Source External
Input Voltage 10 to 48 VDC (56 VDC maximum)
Consumption 0.5 W (typical), 1.3W (with termination)
Connector 2-position, removable terminal block, 24 to 14 AWG

MECHANICAL
Dimensions 12.3 x 11.3 x 3.2 cm (4.9 x 4.5 x 1.3 in)
Enclosure IP 20 plastic, 35 mm DIN mount
Weight 199.6 g (0.44 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 138904 hours
MTBF Calculation Method Parts Count Reliability Prediction

APPROVALS / CERTIFICATIONS - FOSTCDRI
UL Class 1 Division 2, Groups A, B, C, D
File Number: E222870 (HAZLOC E245458)
CE

APPROVALS / CERTIFICATIONS - FOSTCDRI-INV
UL 508, File Number: E222870
CE

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