Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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Industrial Serial to Fiber Optic Converters

Models FOSTCDRI, FOSTCDRI-INV

B+B SmartWorx
Powered by ADVANTECH
www.advantech-bb.com

PRODUCT FEATURES

- Data rates up to 115.2 kbps
- 10 – 48 VDC input power range
- Wide operating temperature
- 2,000V, 3-way optical isolation
- Modbus ASCII/RTU compatible
- EMI / RFI protection
- UL Class 1/Division 2
- Inverted fiber state option (Model FOSTCDRI-INV)
- TD, RD and Power LEDs

Model 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.

ORDERING INFORMATION

MODEL NUMBER	SERIAL CONNECTOR	FIBER CONNECTOR	ISOLATION
FOSTCDRI	Terminal Block	Multi-mode ST	2,000 V
FOSTCDRI-INV	Terminal Block	Multi-mode ST	2,000 V

ACCESSORIES

MDR-40-24 - 24 VDC, 1A, slim-line DIN rail power supply

DFMM-STST-1M - Multi-mode fiber optic cable with ST/ST connectors (62.5/125 micro-meter), 1 meter

TBKT1 - Replacement 2-position terminal block, 5.08 mm

TBKT2 - Replacement 5-position terminal block, 5.08 mm

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.

All product specifications are subject to change without notice.
FOSTCDRI, FOSTCDRI-INV_0218ds

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Industrial Serial to Fiber Optic Converters

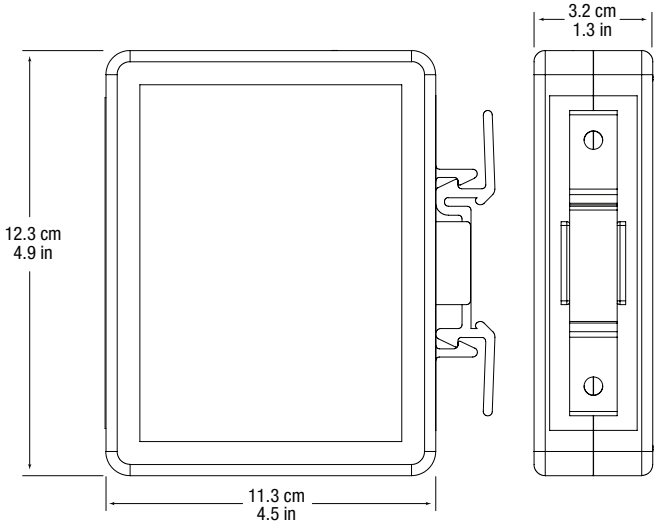
Models FOSTCDRI, FOSTCDRI-INV

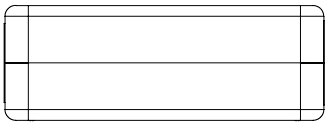
SPECIFICATIONS

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

TERMINAL BLOCKS	
Wire Size Accepted	28 to 12 AWG
Pitch	5.08 mm
Insulation Resistance	≥ 500 MΩ @ 500 VDC
Maximum Torque	5 Kg / cm
LED INDICATORS	
Power	Red LED
FO Receive	Red LED
FO Transmit	Red LED
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)	
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	
APPROVALS / CERTIFICATIONS - FOSTCDRI-INV	
UL 508, File Number: E222870	
FCC Part 15, CISPR, EN 55022: 2010 + AC:2011 Class A Emissions	
CE	

MECHANICAL DIAGRAM





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