PRODUCT INFORMATION

B&B ELECTRONICS

FOSTCDRI-PH-xx

Heavy Industrial RS-232/422/485 to Fiber Optic Converter

- ✓**IEEE-61850-3**
- ✓**IEEE 1613**
- ✓**Multi-mode, Single Mode, ST, SC Versions**
- ✓**-40 to 85°C Operating Temperature**
- ✓**Rugged IP30 Metal Panel Mount Case**
- ✓**2G Shock, 3G Vibration**
- ✓**2kV Triple Isolation**

The ILinx™ FOSTCDRI-PH-xx is our premium Heavy Industrial Serial to Fiber Optic Converter. Designed for rugged industrial environments, it has been put through some of the most exacting compliance tests in the industry. Meeting the requirements of IEC 61850-3 and IEEE 1613, it is suitable for installation in electrical substations. These specifications are more stringent than the NEMA TS1/TS2 requirements for transportation applications. Powerful isolation protects your equipment and data from damaging ground loops and surges. Additional isolation on the power supply circuits adds a third degree of protection.

Packaged in a rugged IP30 metal case, it converts serial signals to multi-mode or single mode fiber optic. Our bit-wise enabled circuitry automatically detects the data rate without setting a DIP switch.

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

Remember, when it comes to reliable communications in harsh industrial environments, B&B Electronics' ILinx™ brand converters and isolators are your number one choice.

Specifications

Serial Technology	
RS-232	TD, RD, GND
RS-422	TDA(-), TDB(+), RDA(-), RDB(+)
RS-485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+)
RS-485 2-Wire	Data A(-), Data B(+)
Serial Connector	5 Position, Removable Terminal Block
Data Rate	9.6 to 115.2 Kbps
Isolation	2 KV RMS, 1 minute
Surge Protection	600 W Peak Power Dissipation Clamping time < 1 pico-second
Industrial Bus	MODBUS ASCII / RTU
Bias	Built-in, switchable 1.2KΩ XMT/RCV
Termination	Built-in, switchable 120Ω
Fiber Optic Technology	
Type / Wavelength	Multi-mode or Single Mode 1310 nM
Output Power (MM)	-19 (min), -14 (max) dBm
Output Power (SM)	-15 (min), -8 (max) dBm
RCV Sensitivity	≤ -32 dBm
Cable	62.5 / 125 µM (MM), 9 / 125µM (SM)
Data Rate	9.6 to 115.2 kbps
Distance	2 kM (MM), 15 kM (SM)
Fiber Light	Modulated
Power	
Source	External
Power Connector	2 Position Removable Terminal Block
Input Voltage	10 to 48 VDC (56 VDC Maximum)
Power Consumption	0.9 W typical (2.6W with termination)
Terminal Blocks	
Wire Size Accepted	28 to 12 AWG
Pitch	5.08 mm
Insulation Resistance	≥500 MΩ @ 500 VDC
Maximum Torque	5 Kg / cm
Indicators	
Power	Red LED
TD / RD (Each Port)	Green LED
Mechanical	
Dimensions	5.2 x 3.7 x 1.3 in 132.4 x 92.9 x 33.0 mm
Enclosure	IP30 Metal, Panel Mount
Weight	0.46 lbs (208.65 grams)
MTBF	127103 Hours
MTBF Calc. Method	Parts Count Reliability Prediction
Environmental	
Operating Temperature	-40 to 85°C (-40 to 176°F)
Storage Temperature	-40 to 85°C (-40 to 176°F)
Operating Humidity	0 to 95% Non-condensing
Regulatory	
Approvals	FCC, CE, IEC 61850-3, IEEE 1613

Ordering Information

FOSTCDRI-PH-MC	Serial to Multi-mode SC
FOSTCDRI-PH-MT	Serial to Multi-mode ST
FOSTCDRI-PH-SC	Serial to Single Mode SC
FOSTCDRI-PH-ST	Serial to Single Mode ST

B&B electronics MANUFACTURING COMPANY

International Headquarters: 815-433-5100 Fax 433-5104 *www.bb-elec.com*
European Headquarters: +353 91 792444 Fax +353 91 792445 *www.bb-europe.com*

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IEC 61850-3 Electro Magnetic Interference Specifications

Test	Description		Test Level	Level
61000-4-2	ESD	Enclosure Contact	8 kV	4
		Enclosure Air	15 kV	4
61000-4-3	Radiated RFI	Enclosure Ports	10 V/m	---
61000-4-4	Burst (Fast Transient)	Signal Ports	4 kV @ 2.5 Khz	---
		DC Power Ports	4 kV	4
61000-4-5	Surge	Signal Ports	2 kV line to earth, 1 kV line to line	4
		DC Power Ports	2 kV line to earth, 1 kV line to line	3
61000-4-6	Induced (Conductive) RFI	Signal Ports	10 V RMS	3
		DC Power Ports	10 V RMS	3
61000-4-12	Damped Oscillatory	Signal Ports	2.5 kV common, 1 kV diff mode @ 1MHz	3
		DC Power Ports	2.5 kV common, 1 kV diff mode @ 1MHz	3
61000-4-16	Mains Frequency Voltage	Signal Ports	30 V Continuous, 300 V for 1 s	4
		DC Power Ports	30 V Continuous, 300 V for 1 s	4
61000-4-17	Ripple on DC Power Supply	DC Power Ports	10%	3

IEEE 1613 C37.90 Electromagnetic Interference Specifications

Test	Description		Test Level	Level
C37.90.3	ESD	Enclosure Contact	8 kV	---
		Enclosure Air	15 kV	---
C37.90.2	Radiated RFI	Enclosure Ports	10 v/m	---
C37.90.1	Fast Transient	Signal Ports	4 kV @ 2.5 kHz	---
		DC Power Ports	4 kV	---

Environmental Specifications

Test	Description		Test Level	Level
60068-2-1	Cold Temperature	Test Ad	(-)40 C, 16 Hours	---
60068-2-2	Dry Heat	Test Bd	(+)85 C, 16 Hours	---
60068-2-30	Humidity (damp heat cycle)	Test Dd	90% (non-condensing) (+)55C, 6 Cycles	---
60255-21-1	Vibration	Test Fc	2g@10 to 150 Hz	Class 2
60255-21-2	Shock	Test Ea	30g@11 mS	Class 2
60068-2-32	Drop	---	6 faces, 3 edges, total 10 drops at 1 m	---