Quick Start Guide
ILinx FOSTCDRI-PH-xx
## Triple Isolated Serial to Fiber Optic Converter

1. Check for Required Hardware

☐ ILinx FOSTCDRI-PH-xx Fiber Optic Converter
☐ This Quick Start Guide
☐ Additional Items Required but not included
  o A 10 to 48 VDC Power Supply. The Converter draws 2.6W Max.
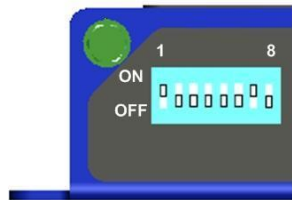
2. Information – UL Class 1 Div 2

1. Refer to the Nonincendive Field Wiring Apparatus Control Drawing for important information .
2. Power, Input / output (I/O) wiring for the end use enclosure must be in accordance with Class 1 Division 2 wiring methods (Article 501.10(B) of the National Electric Code, NFPA 70) and in accordance with the local authority having jurisdiction.
3. Maximum ambient air temperature 85°C.
4. Temperature rating of field installed conductors 105°C. Use Copper Wire Only.
5. These devices must be installed in end use enclosure suitable for the location.
6. **WARNING – EXPLOSION HAZARD** SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS 1, DIVISION 2.
7. **WARNING – EXPLOSION HAZARD**: DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.
8. **WARNING –** THIS APPARATUS IS SUITABLE FOR USE IN CLASS 1 DIVISION 2, GROUPS A, B, C, AND D OR NONHAZARDOUS LOCATIONS ONLY.

3. Front / Back Panel, TB1
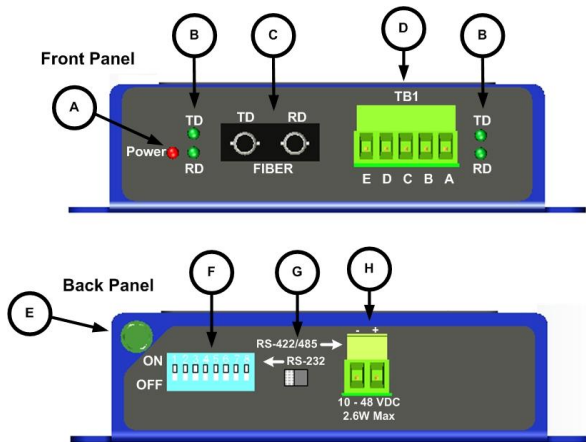
A	Power LED	Red, ON When Power Applied
B	Data LEDs	Green. LEDs Flash When Data is on Port. Left LED's for Fiber, Right LED's for Copper
C	Fiber Optic Connectors	ST or SC, MM or SM, depending on model.
D	Serial TB	5 Position, Removable
E	Ground Lug	Chassis Ground to Earth Ground
F	DIP Switch	Used to Configure
G	Serial Mode Switch	Used to configure serial mode. RS-232 or RS-422/485.
H	Power TB	2 Position, Removable

TB1 – RS-422/485		
Terminal	RS-485 2-Wire	RS-422/485 4-Wire
A	---	TDA(-)
B	---	TDB(+)
C	DATA A(-)	RDA(-)
D	DATA B(+)	RDB(+)
E	Ground	Ground

TB1 – RS-232		
Terminal	Signal	Direction
A	RD	Output
B	---	---
C	TD	Input
D	---	---
E	Ground	----

4. Configuration DIP Switch

Highlighted settings indicate factory default.

Communications Mode

	Switch			
	1	2	3	4
RS-485 2-Wire Half Duplex	ON	ON	ON	ON
RS-485 4-Wire Full Duplex	ON	OFF	OFF	OFF
RS-422 Full Duplex	OFF	OFF	OFF	OFF

Built-in Termination Resistor	Switch 5
Use the 120Ω Built-in Termination	ON
Use External or No Termination	OFF

Built-in Transmit Bias Resistor	Switch 6
Use External or No Bias Resistor	ON
Use the 1.2K Ω Transmit Bias Resistor	OFF

| Built-in Receive Bias Resistor	Switch 7
Use External or No Bias Resistor	ON
Use the 1.2K Ω Receive Bias Resistor	OFF

Fiber Optic Mode	Switch 8
Multi-drop Ring	ON
Point-to-Point	OFF

For an explanation of RS-485 termination and biasing requirements, refer to B&B Electronics' RS-485 application note. This publication can be downloaded at: www.bb-elec.com

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International Office: 707 Dayton Road · PO Box 1040 · Ottawa, IL 61350 USA
815.433.5100 Fax 815.433.5104 orders@bb-elec.com support@bb-elec.com

European Office: Westlink Commercial Park · Oranmore · County Galway · Ireland
+353 91 792444 Fax +353 91 792445 orders@bb-elec.com support@bb-elec.com

5. Power & Ground Connection

1. It is recommended that the chassis be grounded.

2. Connect a grounding wire from the ground lug to a good source of Earth Ground.

3. Connect Power. Power Requirements: 10 to 48 VDC, 2.6W Maximum.
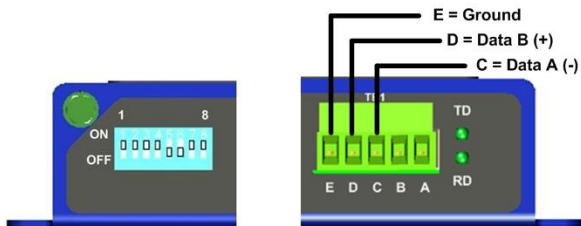
4. The terminal block will accept 28 to 12 AWG wire.
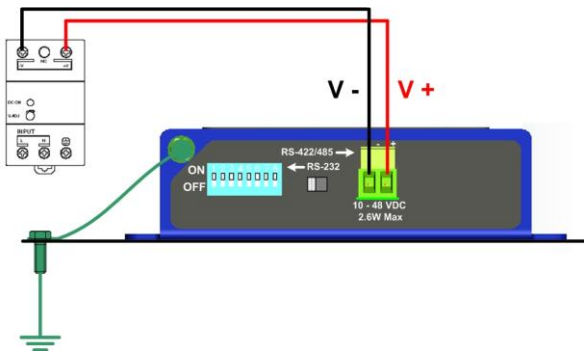
6. Wiring Examples

For RS-422/485 Place the Serial Mode Switch to RS-422/485. For RS-232, place the switch to RS-232.
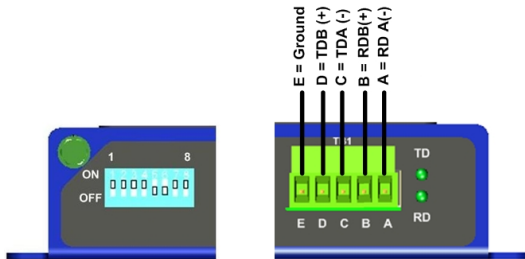
2-Wire RS-485

E = Ground
D = Data B (+)
C = Data A (-)
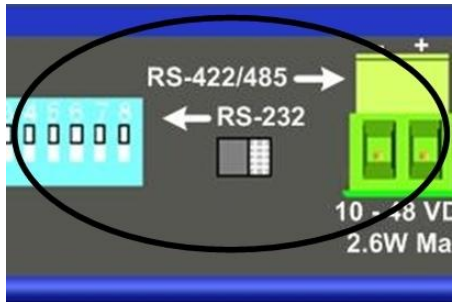
DIP Switch

1	2	3	4	5	6	7
ON	ON	ON	ON	X	X	X

Positions 5, 6, and 7 are used for termination and biasing. See Section 4. Position 8 is used for fiber optic point-to point or multi-drop ring.
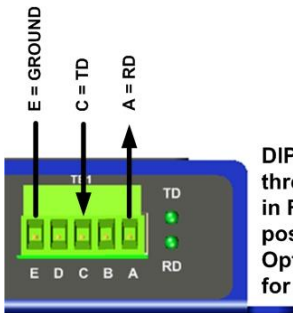
RS-422 / 4-Wire RS-485

E = Ground
D = TDB (+)
C = TDA (-)
B = RDB(+)
A = RD A(-)

DIP Switch

1	2	3	4	5	6	7
X	OFF	OFF	OFF	X	X	X

Position 1 = ON for RS-485, OFF for RS-422
Positions 5, 6, and 7 are used for termination and biasing. See Section 4. Position 8 is used for fiber optic point-to point or multi-drop ring.
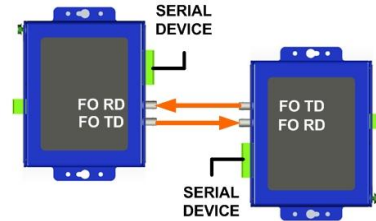
RS-232

E = GROUND
C = TD
A = RD

DIP Switch positions 1 through 7 have no effect in RS-232 mode. Set position 8 to OFF for Fiber Optic Point-to-Point or ON for Multi-drop.

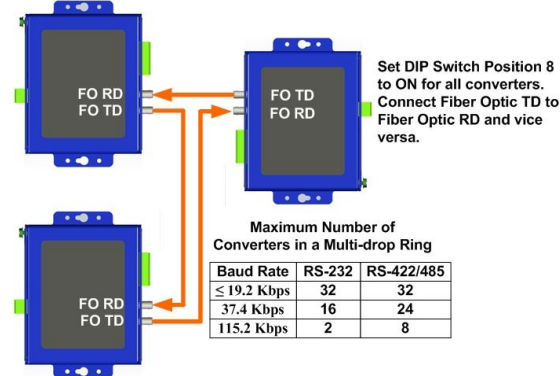## 7. Fiber Optic

Point-to-Point

SERIAL DEVICE
FO RD
FO TD
FO TD
FO RD
SERIAL DEVICE

Set DIP Switch Position 8 to OFF on both converters. Connect Fiber Optic TD to Fiber Optic RD and vice versa.

Multi-drop Ring

FO RD
FO TD
FO TD
FO RD
FO RD
FO TD

Set DIP Switch Position 8 to ON for all converters. Connect Fiber Optic TD to Fiber Optic RD and vice versa.

Maximum Number of Converters in a Multi-drop Ring

Baud Rate	RS-232	RS-422/485
≤ 19.2 Kbps	32	32
37.4 Kbps	16	24
115.2 Kbps	2	8

Model Number	Connector	Fiber Type	Range	Size
FOSTCDRI-PH-MT	ST	MM	2 kM	62.5/125 µm
FOSTCDRI-PH-MC	SC	MM	2 kM	62.5/125 µm
FOSTCDRI-PH-ST	ST	SM	15 kM	9/125 µm
FOSTCDRI-PH-SC	SC	SM	15 kM	9/125 µm
Wavelength = 1310 nM				

8. RS-232 Loopback Test

1. Configure the converter for RS-232.
2. Set DIP Switch Position 8 to OFF.
3. Cross connect the fiber optic TD and RD.
4. Connect a PC to the serial port.
5. Using hyper terminal or similar program, connect the appropriate COM Port. Ensure hyper terminal local echo is off.
6. Transmit data. If the same characters are returned, the test is good.

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