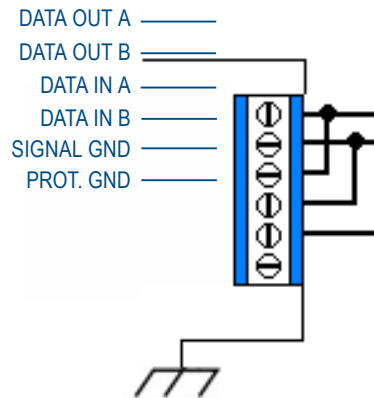


4. Loopback Test continued

Using HyperTerminal or a similar program, connect to the appropriate COM port. Turn off Hyper Terminal local echo. Set baud rate to 9600. Transmit data. If you can see the data you are typing, the test is successful.



5 Troubleshooting

Q. What type of cable do I need for RS-422/485?

A. Category 5 cable is available as Shielded Twisted Pair (STP) as well as Unshielded Twisted Pair (UTP) and generally exceeds the recommendations for RS-422 making it an excellent choice for RS-422 and RS-485 systems.

Q. How do I wire Model BB-485OP for 2-wire?

A. Make sure to externally jump TDA to RDA and TDB to RDB.

Q. Do I have to run a Signal Ground on Model BB-485OP?

A. Yes, all B+B SmartWorx optically isolated devices require a Signal Ground.

Installation Information

Underwriters Laboratories Conditions of Acceptability – When installed in the end-use equipment, consideration should be given to the following:

1. The wiring terminals are suitable for factory wiring only.
2. This device is to be mounted in a suitable enclosure in the end-product.
3. This device is suitable for operation at a maximum surrounding air temperature as described in the documentation.
4. These devices are intended for use in a pollution degree 2 environment.
 - Input Voltage: 10 – 14 VDC
 - Input Power: 1.0 Watt
 - Wire Range: 22 – 14 AWG
 - Tightening Torque: 0.5 Nm
 - Temperature rating of field installed conductors is 105 °C minimum, sized for 60 °C ampacity.
 - Use copper wire only maximum surrounding ambient air temperature 55 °C.

Recommended Accessories

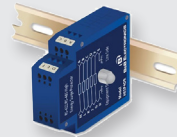
**Level VI Power Supply,
12 VDC, 500 mA,
stripped & tinned,
int'l blade kit**

BB-SMi6-12-V-ST



**Dataline Surge
Suppressor**

BB-HESP4DR



B+B SMARTWORX

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+ QUICK START GUIDE



Model BB-485OP

RS-422/485 Optically Isolated Repeater

Before you begin, be sure you have the following:

- + BB-485OP Repeater
- + 12 VDC Wall Power Supply with Stripped & Tinned Leads

B+B SMARTWORX

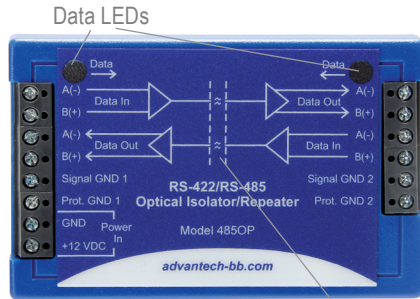
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Product Overview

2000 V, 2-way
Optical Isolation

Gain an extra 1219 m
(4000 ft) range

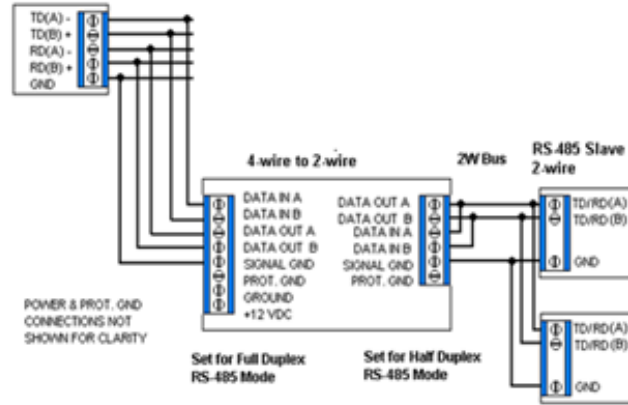
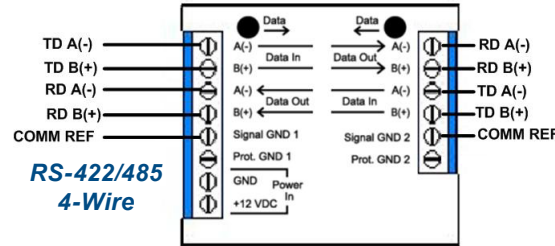
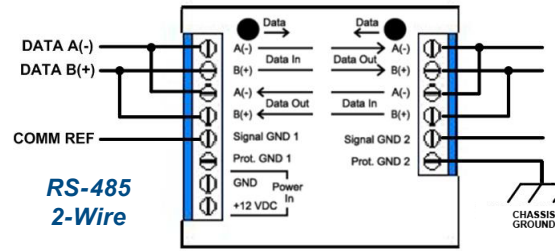


Terminal blocks for
RS-422 or
2 and 4-wire RS-485

Convenient wiring
schematic

1 Wire the BB-485OP

LABEL	SIDE	SIGNAL
A(-) Data In	Left	TDA(-) / Data A(-)
B(+) Data In	Left	TDB(+)/ Data B(+)
A(-) Data Out	Left	RDA(-) / Data A(-)
B(+) Data Out	Left	RDB(+)/ Data B(+)
Signal GND 1	Left	Signal Ground
Prot. GND 1	Left	Protected Ground
GND	Left	Power Ground
A(-) Data Out	Right	RDA(-) / Data A(-)
B(+) Data Out	Right	RDB(+)/ Data B(+)
A(-) Data In	Right	TDA(-) / Data A(-)
B(+) Data In	Right	TDB(+)/ Data B(+)
Signal GND 2	Right	Signal Ground
Prot. GND 2	Right	Protected Ground

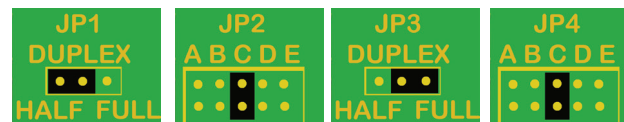


Note: ZW Master is not able to support 4W devices without data loss

RS-485 Master 4-Wire

2 Set the Jumpers

Set the jumpers for 2 or 4-wire and for baud rate. Default on both sides is 2-wire, 9600. If you want to set the unit for 4-wire or change the baud rate, you will need a screwdriver. Remove the 4 screws and open the unit. Set jumpers as shown below.



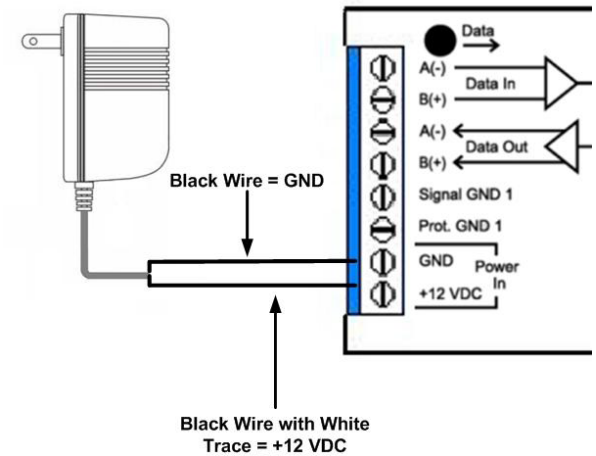
BAUD RATE	TIME (ms)	R26 & R27 (KΩ)	C15 & C16 (mfd)	JP2 & JP4
2400	4.16	STD (430)	STD (0.01)	A
4800	2.08	STD (200)	STD (0.01)	B
9600	1.04	STD (100)	STD (0.01)	C
19.2 K	0.52	STD (56)	STD (0.01)	D
38.4 K	0.26	STD (27)	STD (0.01)	E

If you set the unit for 38.4, it will usually work at higher baud rates. If you need a specific turnaround time, contact B+B SmartWorx Technical Support.

3 Power the Unit

Included Power Supply is rated for 12 VDC@500 mA max

Power Requirements:
10 to 14 VDC, 1 Watt



4 Loopback Test

You can perform a loopback test by connecting the BB-485OP to an RS-422 to an RS-422/485 converter, or by connecting it to a USB to RS-422/485 converter.

Set the BB-485OP for full-duplex on both sides with the jumpers (see Step 2). Attach the RS-232 to RS-422/485 or USB converter to one side of the BB-485OP. Jump Data In A to Data Out A and Data In B to Data Out B on the other side.