Biasing

Bias is provided by 4.7kΩ pull-up/down resistors on the Data-In lines. This value is adequate for most applications without termination. If another value is required, space is provided on the PC for through-hole resistor placement (R12, R21, R14, and R23).

For more information on Biasing, see B+B SmartWorx Application Notes at:
www.bb-elec.com/Learning-Center.aspx

UL 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 – 30 V DC
- Input Power: 0.7 Watts
- Wire Range: 12 – 24 AWG
- Tightening Torque: 4 kgf-cm
- Temperature rating of field installed conductors is 105 °C minimum, sized for 60 °C ampacity.
- Use copper wire only
- Maximum surrounding ambient air temperature 80 °C

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Recommended Accessories

Model MDR-20-24
Power Supply

Model HESP4DR
Data Line Surge Suppressor

B+B SmartWorx
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QUICK START GUIDE

485OPDR

Optically Isolated RS-422/485 Repeater

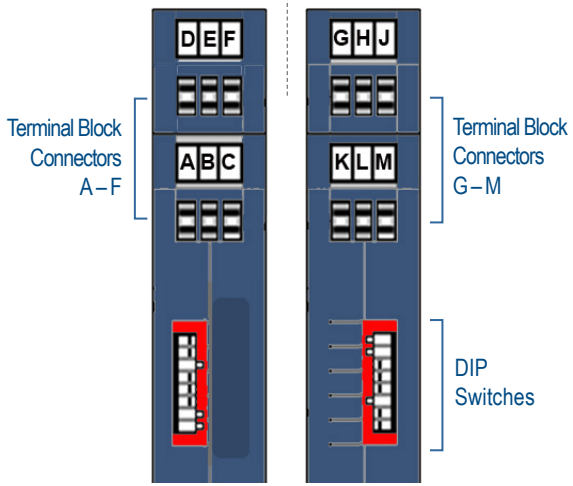
Before you begin, be sure you have the following:

+ 485OPDR Repeater
+ 10-30VDC, 0.7W Power Supply
+ RS-422/RS-485 Cable

B+B SmartWorx
Powered by ADVANTECH

Product Overview

External Power Supply 10 to 30 V DC
Connections: Ground/V(-) = M V (+) = J



NOTE: Terminal block and DIP switch factory default settings are shown on the product.

+ All connections for power and data are made through screw terminal block connections.

	ISOLATED						NON-ISOLATED					
Signal	OUT (+)	IN (+)	Protected Ground	OUT (-)	IN (-)	Signal Ground	IN (-)	OUT (-)	+10 to 30 VDC	IN (+)	OUT (+)	Ground
Terminal Block	A	B	C	D	E	F	G	H	J	K	L	M

1 DIP Switches

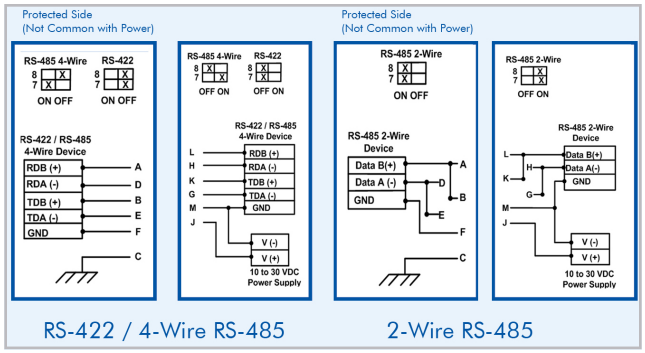
Two sets of DIP switches must be set, one for each side. Setting the baud rate to 9600 will generally allow you to communicate with higher baud rates.

For more information, visit ***www.advantech-bb.com***

	SW-7: TX Enable	SW-8: RX Enable
RS-485 2-Wire Half Duplex	ON	ON
RS-485 4-Wire Full Duplex	ON	OFF
RS-422 Full Duplex	OFF	OFF

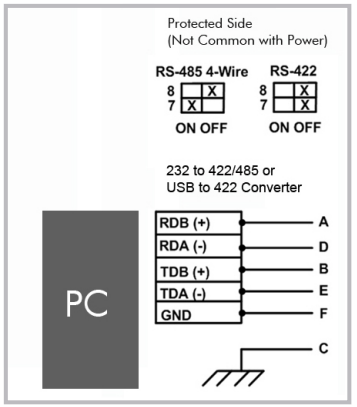
SWITCH							
K Baud (ms)	1	2	3	4	5	6	Timeout
1.2	OFF	OFF	OFF	OFF	OFF	OFF	9.02
2.4	ON	OFF	OFF	OFF	OFF	OFF	4.73
4.8	OFF	ON	OFF	OFF	OFF	OFF	2.20
9.6	OFF	OFF	ON	OFF	OFF	OFF	1.1
19.2	OFF	OFF	OFF	ON	OFF	OFF	0.62
38.4	OFF	OFF	OFF	OFF	ON	OFF	0.29
57.6	OFF	OFF	OFF	OFF	OFF	ON	0.17
76.8	OFF	OFF	OFF	ON	OFF	ON	0.15
115.2	OFF	OFF	OFF	ON	ON	ON	0.11
RS-422 Full Duplex	OFF						

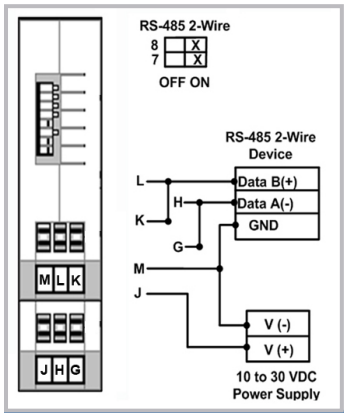
2 Wiring Examples



3 Loopback Test

You can perform a loopback test by connecting either an RS-232 to RS-422/485 converter or a USB to RS-422/485 converter to the 485OPDR.





Jump L to K and H to G and power the 485OPDR. Set dip switches to RS-422 or RS-485, depending upon what you are using to connect to the PC. Set the baud rate to 9600.

	SW-7: TX Enable	SW-8: RX Enable
RS-485 4-Wire Full Duplex	ON	OFF
RS-422 Full Duplex	OFF	OFF

SWITCH							
K Baud (ms)	1	2	3	4	5	6	Timeout
9.6	OFF	OFF	ON	OFF	OFF	OFF	1.1

Using HyperTerminal or a similar program, connect to the appropriate COM port. Remember to set the baud rate to 9600. Turn off HyperTerminal local echo. Start typing. If you can see the data you are typing, the loopback is successful.