Information – UL Class 1 Division 2

1. Power, input /output (I/O) wiring must be in accordance with Class 1 Division 2 wiring methods [Article 501.10(B) of the National Electric Code, NFPA70] and in accordance with the local authority having jurisdiction.

2. Maximum ambient air temperature is 80 °C.

3. WARNING – EXPLOSION HAZARD: SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABLITY FOR CLASS 1, DIVISION 2.

4. WARNING – EXPLOSION HAZARD: WHEN IN HAZARDOUS LOCATIONS, TURNING OFF POWER BEFORE REPLACING OR WIRING MODULES.

5. WARNING – EXPLOSION HAZARD: DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

6. WARNING – THIS APPARATUS IS SUITABLE FOR USE IN CLASS 1 DIVISION 2, GROUPS A, B, C, AND D, OR UNCLASSIFIED AREAS.

Document Number: 710-10573-00_485DRCI_4116qsg

Recommended Accessories

MDR-20-24
Power Supply

485HESP
RS-485 Hi-Energy Surge Protector w/ Terminal Blocks

B+B SmartWorx
Powered by ADVANTECH

1-888-948-2248 | Europe: +353 91 792444
advantech-bb.com

707 Dayton Road | PO Box 1040 | Ottawa, IL 61350
Phone: 815-433-5100 | Fax: 815-433-5109
www.advantech-bb.com | E-mail: support@advantech-bb.com

QUICK START GUIDE

485DRCI

Triple Isolated RS-232 to RS-422/485 Converter

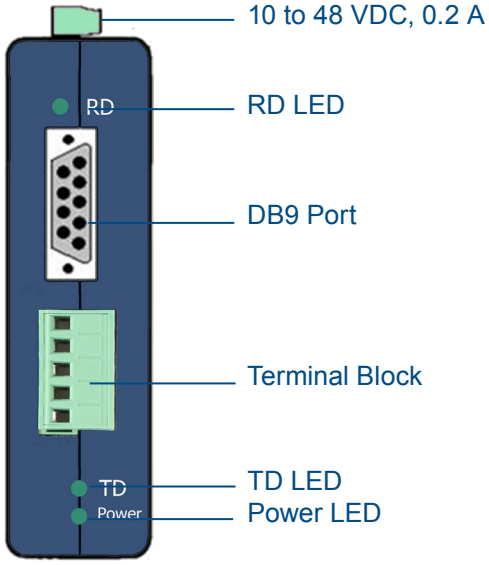
Before you begin, be sure you have the following:

+ 485DRCI
+ Required, but not included:
  - 10-48VDC Power Supply 0.2A
  - RS-232 cable; converter is a DCE device.
  - RS-422/485 Cable

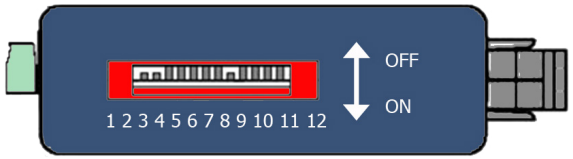
B+B SmartWorx
Powered by ADVANTECH

Fast and easy on the web: ***www.advantech-bb.com***

Product Overview



1 Set DIP Switches

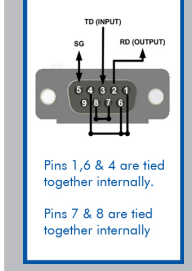


COMMUNICATIONS MODE				
Switch	**1**	**2**	**3**	**4**
RS-485 2-Wire Half-Duplex	ON	ON	ON	ON
RS-485 4-Wire Full-Duplex	ON	OFF	OFF	OFF
RS-422 Full-Duplex	OFF	OFF	OFF	OFF

BUILT-IN TERMINATION RESISTOR	SWITCH
	5
Use Built-in 120Ω Termination	ON
Use External or No Termination	OFF

BUILT-IN TRANSMIT BIAS RESISTOR	SWITCH
	6
Use External or No Bias Resistor	ON
Use Built-in 1.2K Ω Transmit Bias Resistor	OFF

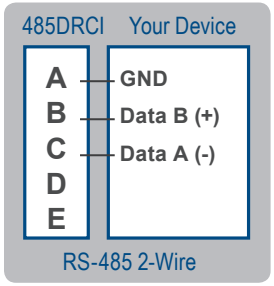
BUILT-IN RECEIVE BIAS RESISTOR	SWITCH
	7
Use External or No Bias Resistor	ON
Use built-in 1.2K Ω Receive Bias Resistor	OFF



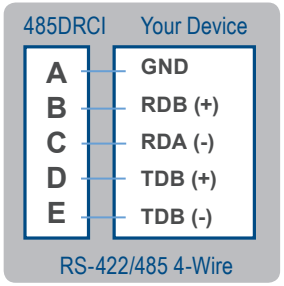
PIN	SIGNAL	DIRECTION
1	DCD	***
2	RD	OUTPUT
3	TD	INPUT
4	DTR	***
5	GND	***
6	DSR	***
7	RTS	***
8	CTS	***
9	RI	***

DB9 Pinouts

2 Wire the Converter



RS-485 2-Wire



RS-422/485 4-Wire

DIP SWITCH RS-422/485 4-WIRE						
1	**2**	**3**	**4**	**5**	**6**	**7**
ON/OFF	OFF	OFF	OFF	...	...	...

Position 1 = ON for RS-485, OFF for RS-422.
Positions 5, 6, 7 are used for termination and biasing.
Positions 8 - 12 are used to set baud rate.

DIP SWITCH RS-485 2-WIRE						
1	**2**	**3**	**4**	**5**	**6**	**7**
ON	ON	ON	ON	x	x	x

Positions 5,6,7 are used for termination and biasing.
Positions 8 -12 are used to set baud rate.

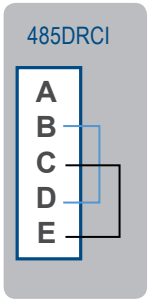
3 RS-422/485 Timeout

SWITCH SELECTABLE						
Baud (Kbps)	**8**	**9**	**10**	**11**	**12**	**Timeout (ms)**
2.4	ON	OFF	OFF	OFF	OFF	4.37
4.8	OFF	ON	OFF	OFF	OFF	2.03
9.6	OFF	OFF	ON	OFF	OFF	1.02
19.2	OFF	OFF	OFF	ON	OFF	0.57
38.4	OFF	OFF	OFF	OFF	ON	0.27

RESISTOR SELECTABLE			
Baud (Kbps)	**8 thru 12**	**R11 Value**	**Timeout (ms)**
1.2	OFF	820 KΩ	8.32
57.6	OFF	16 KΩ	0.16
115.2	OFF	8.2 KΩ	0.08

Pre-defined timeouts are set using switches 8 through 12. Resistor selectable baud rates are set by inserting a through-hole resistor (R-11) on the circuit board. Timeout selections are equal to one character time at the indicated baud rate. Setting the converter to 9600 will generally work at 9600 and higher baud rates. In RS-422 mode, timeouts are not required.

4 Loopback Test



Configure for RS-485 Four-Wire, 9600 baud. Jumper terminals B to D and C to E. Connect a PC to the RS-232 port using HyperTerminal or similar program, connect to the appropriate COM port. (Remember to set the baud rate to 9600.) Turn off HyperTerminal local echo. Transmit data. The same data should be returned.

5 Check LEDs

LEDs	
Power LED	Red. ON when power is applied
Data LEDs	Green, LEDs flash when data is present on the port