

## **Using the B&B Electronics 485OTLED with a FieldServer**

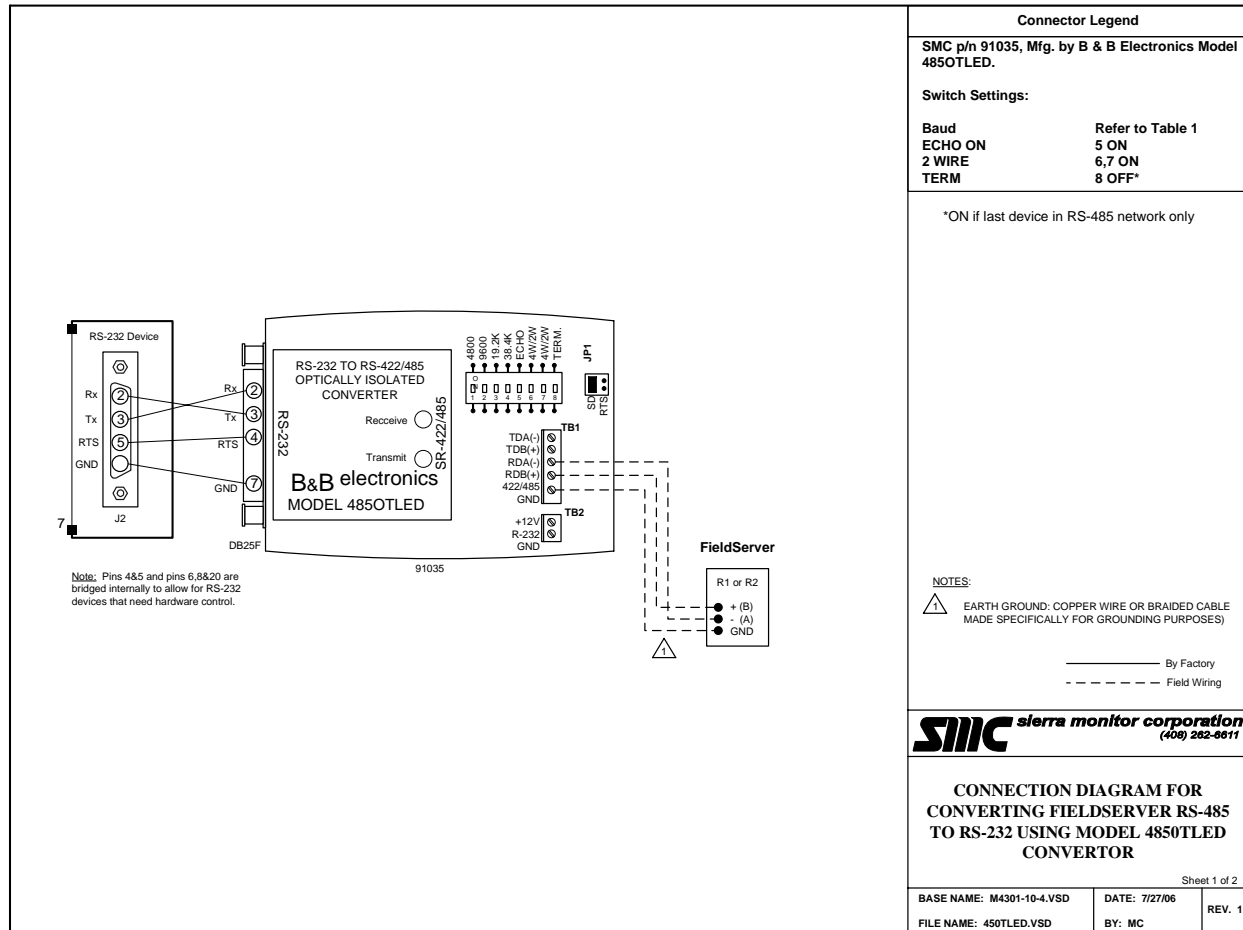
The 485OTLED is an optically isolated RS-485 to RS-232 converter which can be used to convert a FieldServer RS-232 port to RS-485, or a FieldServer RS-485 port to RS-232. The reasons for doing this are application specific, therefore this application note will merely focus on how to set this device up for FieldServer connection, and what to consider for the remote serial device being connected on the other side of the 485OTLED.

### **General Considerations:**

BAUD Rate:	The BAUD rate must be the same on the RS-232 side as it is on the RS-485 side. This also applies to parity and data bit settings. The chosen baud rate must be set on the 485OTLED using dip switches 1-4. The 485OTLED supports a wide range of BAUD rates, but it is recommended that the BAUD be set to 38400 or below to reduce noise problems.
CONTROL:	The RS-485 communications can be driven either by communications detection (SD) or by the RTS pin. Use SD when the FieldServer is the RS-232 device.
TERMINATION:	If the 485OTLED is the last RS-485 device on the network, set dip switch 8 to ON, otherwise it needs to be off.

### Converting FieldServer RS-485 to RS-232

The diagram below shows the connection information for making this conversion. Please remember that Rx of the 485OTLED goes to Tx of the Remote Serial Device, and vice versa. Use an RS-232 mini tester to verify good connection if needed.

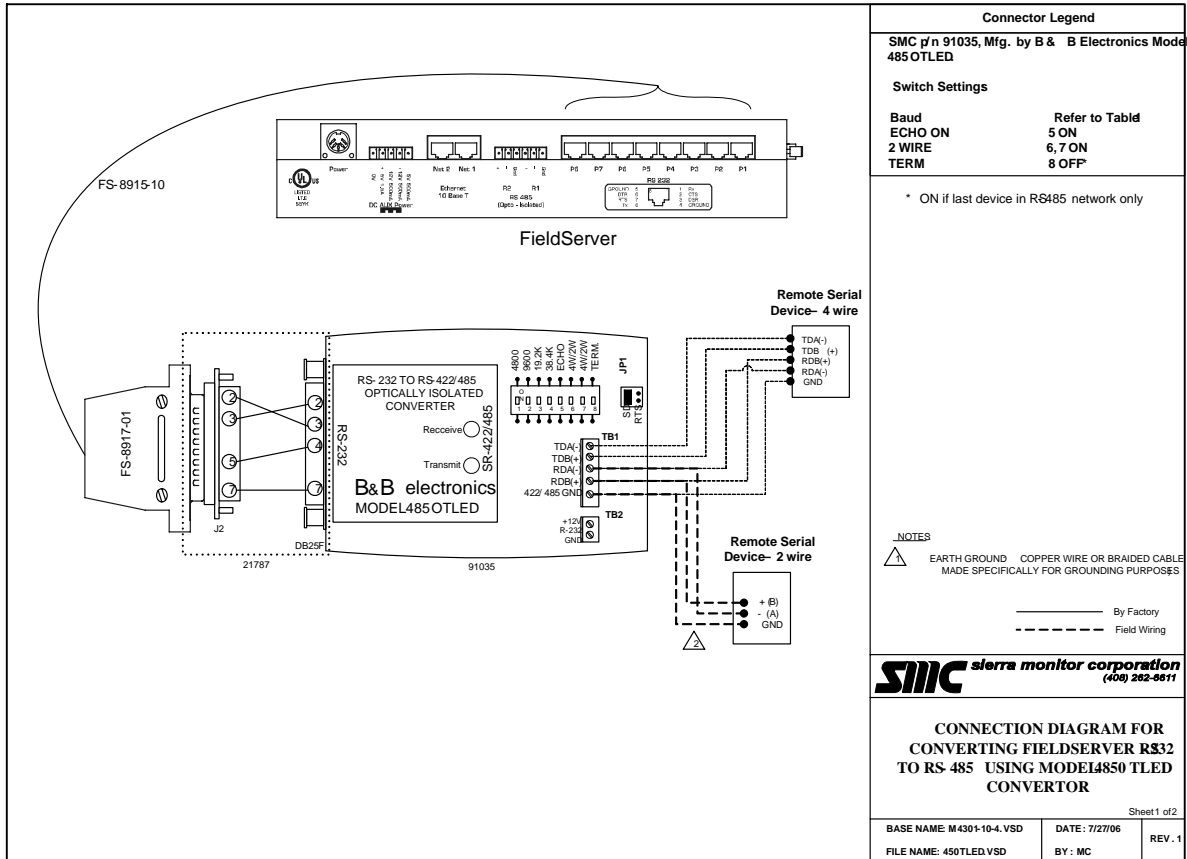


**Table 1: Switch settings for commonly used baud rates**

Baud	Switch 1	Switch 2	Switch 3	Switch 4	R 21	Time out (ms)
1200	OFF	OFF	OFF	OFF	820kU	9
9600	OFF	ON	OFF	OFF	Not Used	1.1
19200	OFF	OFF	ON	OFF	Not Used	0.6
38400	OFF	OFF	OFF	ON	Not Used	0.3

### Converting FieldServer RS-232 to RS-485

The diagram below shows the connection information for making this conversion. It is important to know in this application whether the remote serial device is 2-wire or 4-wire RS-485, and then to make the correct wiring connections and set dip switches 5,6 and 7 accordingly.



**Table 2: RS-485 settings for Remote Serial Device**

Communication	JP1	Switch 5	Switch 6	Switch 7
Mode		Echo	4W/2W	4W/2W
RS-422 Mode (full duplex)	Neither	OFF	OFF	OFF
RS-485 4-Wire Mode (full duplex)	RTS or SD	OFF	OFF	OFF
RS-485 2-Wire Mode (half duplex)	RTS or SD	ON	ON	ON

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