485USBTB-2W & 485USBTB-4W

USB to RS-485 Mini-Converter

PRODUCT INFORMATION

✓ **Connect RS-485 Devices to your USB Port**

✓ **Perfect for Field Service Applications**

✓ **Small – Fits easily into any laptop bag**

✓ **USB Port Powered**

✓ **USB 2.0 (12 Mbps) Compatible**

✓ **RS-485 Data rates up to 921.6 Kbps**

✓ **Removable Terminal Block for Easy Wiring**

✓ **High Retention USB Connector**

✓ **Supports Windows 98, ME, 2000, XP, & Vista**

Universal Serial Bus (USB) has become the connectivity workhorse of today's PCs, replacing the familiar serial ports. However, many commercial and industrial devices still use the RS-485 interface. To connect these devices to modern PCs, you need a simple and reliable conversion solution. The 485USBTB-2W and 485USBTB-4W offer this solution in a space saving, USB Port powered package. Simply plug the converter into an available USB port on your computer or USB hub and install the drivers supplied on CD ROM. The device will show up as an additional COM port in the Windows Device Manager which is fully compatible with your Windows applications. Select the 485USBTB-2W for RS-485 2-wire applications or the 485USBTB-4W for RS-485 4-wire applications. Locked serial number versions are also available (see the installation notes in the driver section). A one meter USB cable is included. Remember, when it comes to USB to Serial Conversion, B&B Electronics Ulinx™ brand is your number one choice.

Specifications

Serial Technology	
RS-485 2-Wire	Data A(-), Data B(+), Ground
RS-485 4-Wire	TDA(-), TDB(+), RDA(-), RDB(+), Ground
Connector	Removable Terminal Block (28 to 16 AWG)
Data Rate	Up to 921.6 Kbps
USB Technology	
Connector	USB Type B Female (High Retention)
Standard	2.0 (Backward Compatible)
Data Rate	12 Mbps
Power	
Source	USB Port
Input Voltage	5 VDC
Consumption	~ 0.5 W (Low power device, draws less than 100 mA)
Software	
Driver CD	Windows 98, ME, 2000, XP, Vista
Mechanical	
Dimensions	2.6 x 1.3 x .6 in (6.5 x 3.2 x 1.6 cm)
Enclosure	In-line mounted, plastic
Weight	0.23 lbs (104.3 g) with USB Cable
Environmental	
Operating Temp	32 to 158°F (0 to70 °C)
Storage Temp	-40 to 185 °F (-40 to 85 °C)
Op Humidity	0 to 95 % (Non-condensing)
MTBF	1869313 hours
MTBF Method	Parts Count Reliability Prediction
Regulatory	
Approvals	FCC, CE

Ordering Information

Model Number	Description
485USBTB-2W	USB to RS-485 2-Wire Converter
485USBTB-4W	USB to RS-485 4-Wire Converter
485USBTB-2W-LS	USB to RS-485 2-Wire Converter (Locked Serial Number)
485USBTB-4W-LS	USB to RS-485 4-Wire Converter (Locked Serial Number)
Accessories	
USBAMBM-3F	3 ft (1 M) USB Cable (One Included)
7372	Replacement TB (One Included)

B&B ELECTRONICS

B&B electronics
MANUFACTURING COMPANY

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PRODUCT INFORMATION

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Package Contents

- 485USBTB-xx USB to RS-485 Mini-Converter
- 3ft (1m) USB Cable
- Datasheet
- CD with Drivers for Windows 98, ME, 2000, XP and Vista

If any item is missing or damaged, contact B&B Electronics for a replacement.

Terminal Block

485USBTB-2W	
Position	Signal
A(-)	Data A (-)
B(+)	Data B (+)
A(-)	Data A (-)
B(+)	Data B (+)
GND	Ground
485USBTB-4W	
TDA(-)	Transmit Data A (-)
TDB(+)	Transmit Data B (+)
RDA(-)	Receive Data A (-)
RDB(+)	Receive Data B (+)
GND	Ground

Driver Installation
Screen shots are from Windows XP

THE FOUND NEW HARDWARE WIZARD WILL RUN TWICE. ONCE TO INSTALL THE USB DEVICE AND ONCE TO INSTALL THE SERIAL COM PORT.
- Connect the converter to your PCs USB port with the supplied cable.
- The Found New Hardware wizard will start.
- When prompted to connect to Windows Update to search for the driver, select "No, not at this time" and click on Next >

- Select Install the software automatically and click Next>
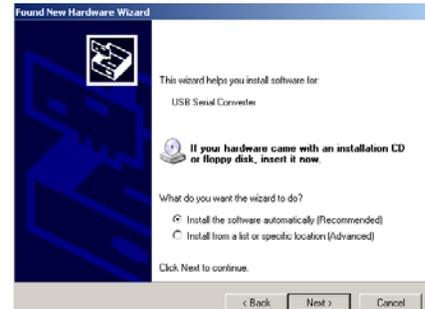
- A warning concerning Windows logo testing will be displayed. Click on Continue Anyway >

- The Completing the Found New Hardware Wizard will be displayed. Click on Finish >

**THE FOUND NEW HARDWARE WIZARD WILL RUN TWICE. ONCE TO INSTALL THE USB DEVICE AND ONCE TO INSTALL THE SERIAL COM PORT.**

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Check Drivers
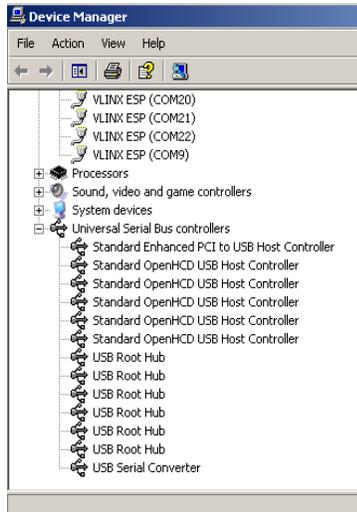### Screen shots are from Windows XP

- Right click on My Computer. Select the Hardware tab.

- Expand the Ports (COM & LPT) tree. The USB Serial Port will be listed as the next available COM Port.
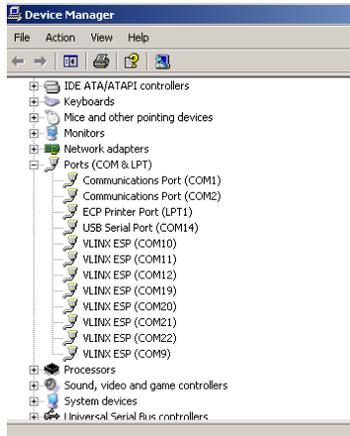

- Expand the USB Controllers tree. The USB Serial Converter will be listed.

Installation Notes

- These USB to serial converters are offered as serialized (each unit has a unique electronic serial number) or with locked serial numbers (each unit has the same electronic serial number). LS models are great for applications, such as field service, in which a pool of converters area shared.
- SEARIALIZED – Select a serialized model if the USB to serial Converter is to be assigned to a unique COM port. If you plug in a converter with a different serial number, the driver installation procedure will be initiated again. This will also allocate another COM port and USB Controller in Windows. This will happen even if the first converter is not plugged in.
- LOCKED SERIAL NUMBER – Select a locked serial number model (-LS suffix) if you desire different USB to serial converters of the same type to share a single COM port (one at a time). With the locked serial number models, you only need to install the driver once, provided two converters are not plugged in at the same time. The locked serial number products are intended for uses, such as field service, in which PC's and converters are mixed and matched.
- Instructions for uninstalling the driver are located on the CD ROM.
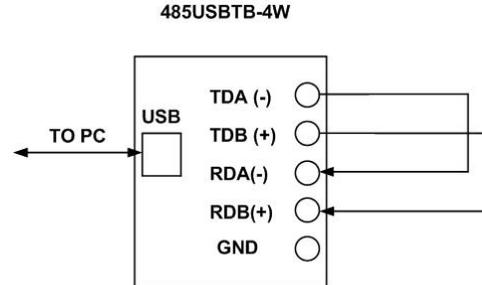
485USBTB-2W Wiring

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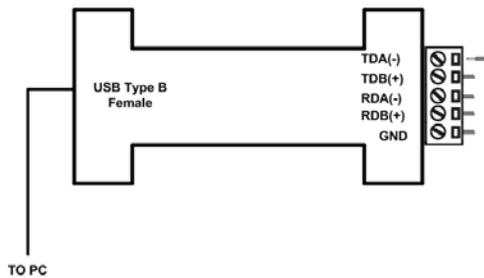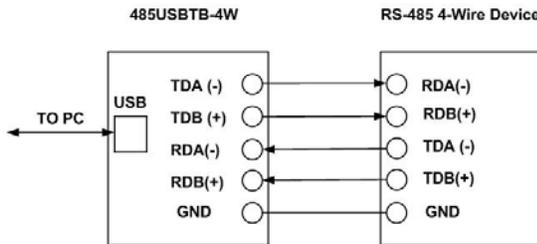
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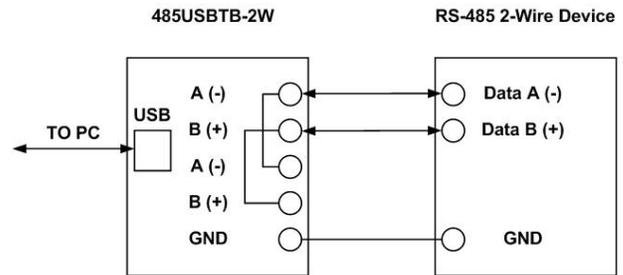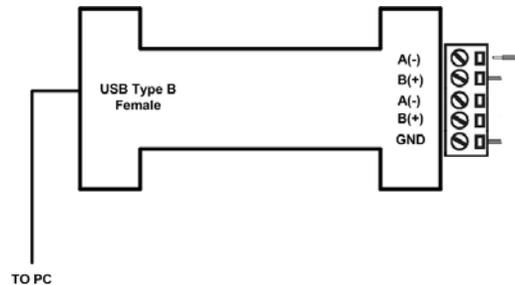
- This converter is used for RS-485 2-Wire Systems.
- Loosen the screws to open the Terminal Block lead clamps for the A(-), B(+), and GND terminals.
- Insert the RS-485 2-Wire signal leads in accordance with the diagram above. The TB will accept 28 to 16 AWG wire.
- Tighten the screws to close the TB lead clamps. Ensure the clamps hold the leads securely. However, do not over tighten.
- Bias is provided by 4.7KΩ pull-up and pull-down resistors.
- If termination is required, it must be installed externally. In most cases, termination is not required.
- During operation, the receiver toggles with the transmit data.
- Refer to B&B Electronics' RS-422/485 Application Note for more information regarding biasing and termination.

485USBTB-4W Wiring

- This converter is used for RS-485 4-Wire Systems.
- Loosen the screws to open the Terminal Block lead clamps for the TDA(-), TDB(+), RDA(-), RDB(+), and GND terminals.
- Insert the RS-485 2-Wire signal leads in accordance with the diagram above. The TB will accept 28 to 16 AWG wire.
- Tighten the screws to close the TB lead clamps. Ensure the clamps hold the leads securely. However, do not over tighten.
- Bias is provided by 4.7KΩ pull-up and pull-down resistors.
- If termination is required, it must be installed externally. In most cases, termination is not required.
- During operation, the receiver is always active.
- Refer to B&B Electronics' RS-422/485 Application Note for more information regarding termination and biasing.
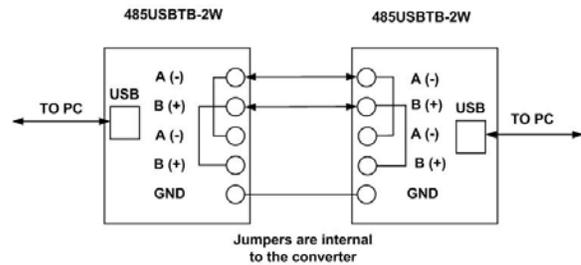
485USBTB-4W Loop Back Test

- Loopback TDA(-) to RDA(-) and TDB(+) to RDB(+) as shown in the diagram above.
- Using Hyper Terminal or similar program, connect to the appropriate COM port. Set the desired baud rate. Ensure Hyper Terminal local echo is OFF.
- Transmit data. If the same character string is returned, the test is good.
- A detailed description of this test is located in the technical notes section of our web page, www.bb-elec.com.

485USBTB-2W Back to Back Test

Jumpers are internal to the converter

- Due to the circuit configuration, a loop back test is not possible with this model. However, two converters can be used in a back to back configuration.
- Wire the converters as shown above.
- Using Hyper Terminal or similar program, connect to the appropriate COM ports. Set the desired baud rate.
- Transmit data. If the same string is received on the distant end, the test is good.

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