

# 485USB9F-2W & 485USB9F-4W

## USB to RS-485 Mini-Converter

PRODUCT INFORMATION

B&B ELECTRONICS

- ✓ **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**
- ✓ **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 485USB9F-2W and 485USB9F-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. Choose the 485USB9F-2W for RS-485 2-wire applications or the 485USB9F-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     | DB9 Female                             |
| Data Rate     | Up to 921.6 Kbps                       |

#### USB Technology

|           |                           |
|-----------|---------------------------|
| Connector | USB Type B Female         |
| 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 | 2.3 x 1.3 x .6 in (5.8 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 to 70 °C)           |
| Storage Temp   | -40 to 185 °F (-40 to 85 °C)       |
| Op Humidity    | 0 to 95 % (Non-condensing)         |
| MTBF 2-Wire    | 2130833 hours                      |
| MTBF 4-Wire    | 1869313 hours                      |
| MTBF Method    | Parts Count Reliability Prediction |

#### Regulatory

|           |         |
|-----------|---------|
| Approvals | FCC, CE |
|-----------|---------|

### Ordering Information

| Model Number   | Description   |
|----------------|---|
| 485USB9F-2W    | USB to RS-485 2-Wire Converter                        |
| 485USB9F-4W    | USB to RS-485 4-Wire Converter                        |
| 485USB9F-2W-LS | USB to RS-485 2-Wire Converter (Locked Serial Number) |
| 485USB9F-4W-LS | USB to RS-485 4-Wire Converter (Locked Serial Number) |

#### Accessories

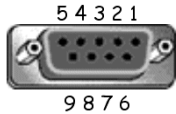
|           |                                     |
|-----------|-------------------------------------|
| USBAMB-3F | 3 ft (1 M) USB Cable (One Included) |
|-----------|-------------------------------------|

## Package Contents

- 485USB9F-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.

## DB9F



| DB9 Female Connector |             |             |
|----------------------|-------------|-------------|
| Pin                  | 485USB9F-2W | 485USB9F-4W |
| 1                    | Not Used    | Not Used    |
| 2                    | Data A(-)   | RDA(-)      |
| 3                    | Data B(+)   | TDB(+)      |
| 4                    | Ground      | Ground      |
| 5                    | Not Used    | Not Used    |
| 6                    | Ground      | Ground      |
| 7                    | Data B(+)   | RDB(+)      |
| 8                    | Data A(-)   | TDA(-)      |
| 9                    | Not Used    | Not Used    |

## Driver Installation

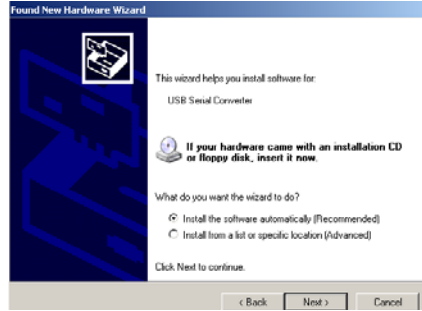
Screen shots are from Windows XP

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

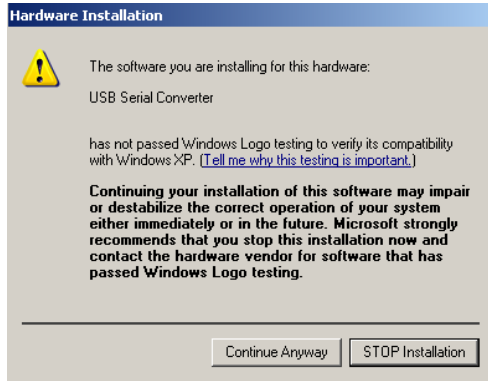
- Connect the converter to your PC's USB port with the supplied cable.
- The Found New Hardware wizard will start.
- When prompted to connect to Windows Update to search for the driver, select "No, not at this time" and click on Next >



- Select Install the software automatically and click Next>

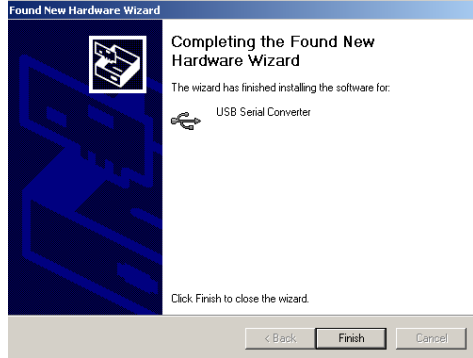


- A warning concerning Windows logo testing will be displayed. Click on Continue Anyway >



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

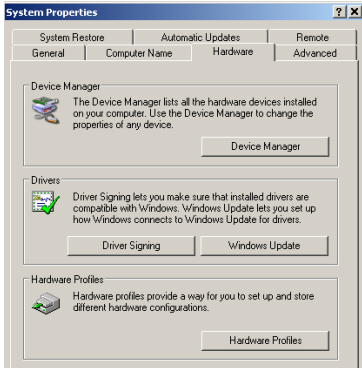
**THE FOUND NEW HARDWARE WIZARD WILL RUN TWICE. ONCE TO INSTALL THE USB DEVICE AND ONCE TO INSTALL THE SERIAL COM PORT.**



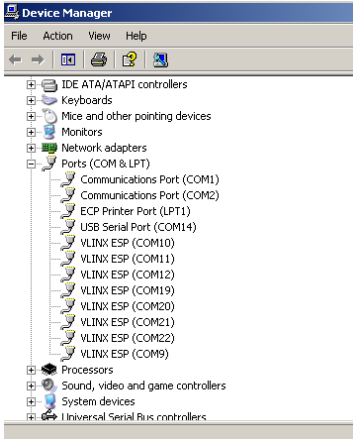
## Check Drivers

Screen shots are from Windows XP

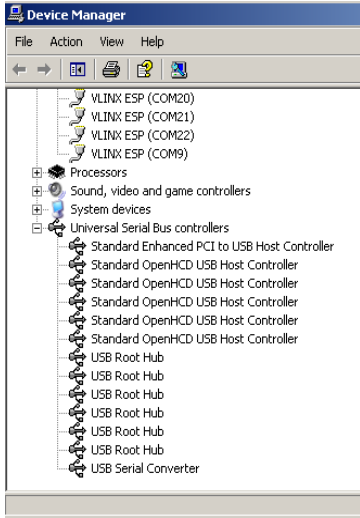
- Right click on My Computer. Select the Hardware tab.



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



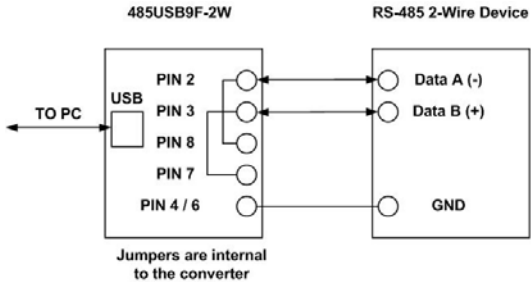
- Expand the USB Controllers tree. The USB Serial Converter will be listed.



## Installation Notes

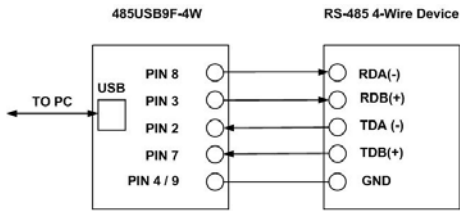
- These USB to serial converters are offered as serialized (each unit has a unique electronic serial number) or with locked serial numbers (each unit has the same electronic serial number). LS models are great for applications, such as field service, in which a pool of converters area shared.
- SEARIALIZED – 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.

## 485USB9F-2W Wiring



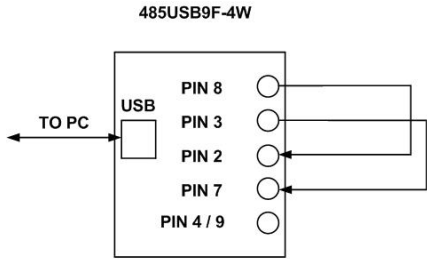
- This converter is used for RS-485 2-Wire Systems.
- Connect RS-485 2-W signal leads as shown above.
- Bias is provided by 4.7KΩ pull-up and pull-down resistors.
- If termination is required, it must be installed externally. In most cases, termination is not required.
- During operation, the receiver 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



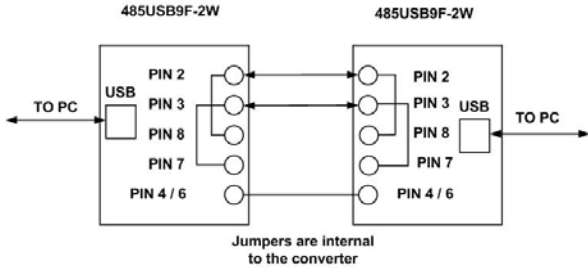
- This converter is used for RS-485 4-Wire Systems.
- Connect the RS-485 4-Wire signal leads as show above.
- Bias is provided by 4.7KΩ pull-up and pull-down resistors.
- If termination is required, it must be installed externally. In most cases, termination is not required.
- During operation, the receiver 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 DB9 pins as show 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](http://www.bb-elec.com).

## 485USBTB-2W Back to Back Test



- 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.