



Models: **USOPTL4** and **USPTL4**

Connect and Isolate an RS-422/485 Network to your USB Port

Features

- 2000 V RMS optical isolation
- 15KV ESD surge protection
- Adds a COM port to your PC
- Protects against surges, spikes and ground loops
- LEDs for transmit and receive lines
- USB 1.0, 1.1 and 2.0 compatible (12 Mbps)
- Automatic configuration on Windows 98, ME, 2000, XP, Vista
- No power supply required (powered from USB bus)
- Includes 1 meter USB cable

Applications

- Factory floor
- Medical
- Kiosk
- Point of sale
- SCADA



Connects PCs or laptops with USB ports to devices with RS-232, RS-422, or RS-485 ports.

Models USOPTL4 and USPTL4 are USB to one port RS-422/485 converters. Supporting 2-wire RS-485 or a 4-wire RS-422/485 communications, these devices are great for any application that requires long range or multi-drop capabilities. Both models use pluggable terminal blocks on the RS-422/485 side and have a pair of LEDs that indicate data being transmitted or received. Model USOPTL4 includes special circuitry that adds 2000 volts isolation protection against ground loops and voltage spikes. Both products draw power from the USB port so no power supply is required.

Simply plug the converter into an available USB port on your computer or USB hub and the device will show up as an additional COM port in the Windows Device Manager. Configured as an additional COM port, the converter is now compatible with your Windows applications.

Universal Serial Bus (USB) has become the connectivity workhorse of today's PCs, replacing the familiar serial ports. But many commercial and industrial devices still use RS-422/485 interfaces. To connect these devices to modern PCs you need robust and reliable conversion solutions. At the same time, USB ports are becoming more common on commercial and industrial equipment such as point-of-sale peripherals, medical devices, scientific instrumentation, laboratory equipment and other devices. Sometimes these are used in environments where surges, spikes and ground loops are likely to occur.

RS-485 Control

No special software is required to control the RS-485 receiver or transmit line driver. The driver is automatically enabled during each byte transmitted in RS-485 mode. The transmitter is always enabled in RS-422 mode. The receiver is tri-stated during each byte transmitted in the echo-off mode. The receiver is always enabled in the echo-on mode. There are 4.7k Ohm pull-up/pull-down resistors on the RDA and RDB lines. A termination resistor may be added to R16 if needed. See B&B's RS-422/RS-485 Application Note (available on our website) for more information on termination and DC biasing of an RS-485 network.

Dip Switch Set-up

Dip switches allow the module to be configured for two-wire or four-wire, RS-422 or RS-485 modes. In two-wire mode the TDA (-) and RDA (-) are tied together and so are TDB (+) and RDB (+), making multi-dropping this converter into an existing network easy.

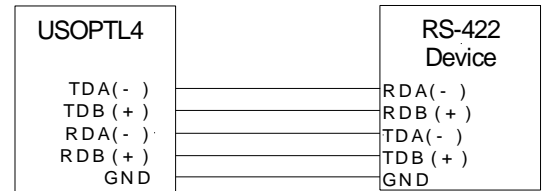
Switch	OFF	ON
One	TD always enabled (TD 422)	TD only enabled during data transmission. (TD 485)
Two	RD always enabled (ECHO ON)	RD disabled during data transmission. (ECHO OFF)
Three	Four-wire mode (4-Wire)	Two-wire mode (2-Wire)
Four	Four-wire mode (4-Wire)	Two-wire mode (2-Wire)

Specifications

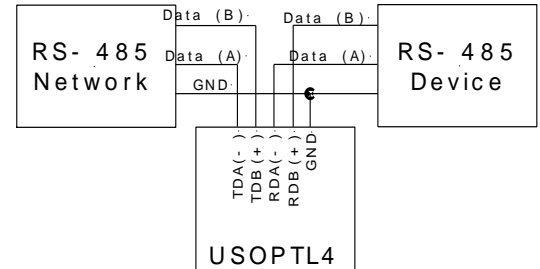
Dimensions: 3.5 x 1.7 x 0.8 in (8.9 x 4.3 x 2.1 cm)
 Temperature Range: 0 to 70°C (32 to 158°F)
 RS-422/485 Baud Rate: Up to 460.8 kbps
 RS-422/485 Connector: Pluggable (removable) terminal blocks
 USB Baud Rate: 12 Mbps
 USB Connector: USB type-B female
 USB Power: Low power device (draws < 100mA)
 Operating System: Windows 98/SE, 2000, ME, XP, Vista
 Accessories: Driver CD, USB Cable
 Isolation: 2000 V RMS (excludes model USPTL4)
 Surge Protection: 15KV ESD

Ordering Information

Model	Description
USOPTL4	USB to RS-422/485 Optically Isolated Converter
USPTL4	USB to RS-422/485 Converter



USOPTL4 in a four-wire set-up with all switches in the OFF position.



USOPTL4 in a two-wire set-up with all switches in the ON position.



DECLARATION OF CONFORMITY

Manufacturer's Name: B&B Electronics Manufacturing Company
 Manufacturer's Address: P.O. Box 1040
 707 Dayton Road
 Ottawa, IL 61350 USA

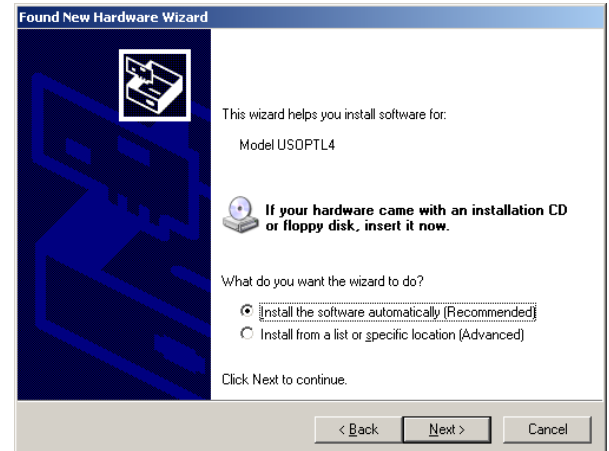
Model Numbers: USOPTL4, USPTL4
 Description: Optically Isolated USB to RS-422/485 Converter
 Type: Light industrial equipment
 Application of Council Directive: 89/336/EEC
 Standards: EN 55022
 EN 61000-6-1
 EN 61000 (-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11)

Michael J. Fahrion, Director of Engineering

Installation for Windows - using model USOPTL4



#1. Plug the USOPTL4 into an available USB port on your computer or connected hub. The screen above appears, telling you that there is a new device plugged into the USB bus. Click on *No, not this time*, then the **Next>** button.



#2. The screen above appears. Make sure *Install the software automatically* is selected. Then select the **Next>** button.



#3. The screen above will appear. Click the **Finish** button to complete the installation.



#4. You will also need to continue to install the serial port the same as installing the converter. Click the **Next** button followed by the **Finish** button. It will take a couple seconds for the serial port to be installed.

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