In-line USB Converters
USOPTL4 & USPTL4

PRODUCT FEATURES

- 2000 V RMS optical isolation
- 15KV ESD surge protection
- Adds a COM port to your PC
- LEDs for transmit and receive lines
- USB 1.0, 1.1 and 2.0 compatible (12 Mbps)
- Automatic configuration on Windows 2000, XP, Vista. 7 (32/64 bit), 8 (32/64 bit)
- No power supply required (powered from USB bus)

Models USOPTL4 and USPTL4 are USB to one port RS-422/485 converters. Supporting 2-wire RS-485 or 4-wire RS-422/485 communications, these devices are great for applications requiring long range or multi-drop capabilities. Both models use pluggable terminal blocks on the RS-422/485 side. Two LEDs indicate data transmit or receive. Model USOPTL4 includes circuitry with 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 install the drivers supplied on CD ROM and plug the converter into an available USB port on your computer or USB hub. The device show ups as an additional COM port in the Windows Device Manager, and is compatible with Windows applications.

Universal Serial Bus (USB) has become the connectivity workhorse of today's PCs, replacing classic 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. 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 or 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.

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
USOPTL4	Isolated RS-422/485 Inline USB Converter
USOPTL4-LS	Locked Serial Number Version of USOPTL4
USPTL4	Non-isolated RS-422/485 Inline USB Converter
USPTL4-LS	Locked Serial Number Version of USPTL4

ACCESSORIES

9PAMF6 - DB9 to DB9 serial cable, male to female, 6 ft. (1.8 m)
TB5P508SR-2PK - 5-position terminal block with strain relief paddle board, 2 pack

Locked Serial Numbers Explained

We configure our single-port USB to serial converters in two ways. In standard format, each product has a unique serial number. "Locked serial" format uses the same serial number that is associated with a model type.

If your converter will always be used with the same computer, the standard serialized model is all you need. If the converter is shared among several computers, like field service laptops, the locked serial number model lets you plug and play without having to worry about matching the two.

Description	Serialized	Locked Serial Number
Every unit is assigned a unique COM port	✔	-
Same type model numbers shares the same COM port	-	✔
Ideal applications	Fixed Locations	Field Service

When ordering Locked Serial Number versions, add a "-LS" to the item number. Serialized and Lock Serial Number versions sell for the same price.

SPECIFICATIONS

SERIAL TECHNOLOGY	
RS-422/485 4-Wire	TDA(-), RDA(-), TDB(+), RDB(+), GND
RS-485 2-Wire	DATA A(-), DATA B(+), GND
Connector	Terminal block
Data Rate	460.8 Kbps
Isolation	2 kV RMS
Surge Protection	15kV ESD
Industrial Bus	Modbus ASCII/RTU
Bias	4.7 KΩ on receive lines in RS-422/485 mode

USB TECHNOLOGY	
USB Compatibility	1.1 and 2.0
Speed	1.5, 12 Mbps
Connector	Type B High Retention (15 N / 3.4 lbs-force withdrawal)
Operating System	Windows 2000, XP (32/64 bit), Vista (32/64 bit), 7 (32/64 bit), 8 (32/64 bit), 2003 & 2008 Server (32/64 bit)

POWER	
USB	Low power device (draws <100 mA)

INDICATORS	
LEDs	Transmit data, Receive data

MECHANICAL	
Dimensions	8.9 x 4.3 x 2.1 cm (3.5 x 1.7 x 0.8 in)
Enclosure	IP 30, Plastic
MTBF USOPTL4	311,327 hours
MTBF USPTL4	1,012,584 hours
MTBF Calc. Method	MIL 217F Parts Count Reliability

ENVIRONMENTAL	
Operating Temperature	0 to 70°C (32 to 158°F)
Operating Humidity	0 to 95% Non-condensing

APPROVALS / CERTIFICATIONS		
Emissions	EN 55022: 2010 + AC:2011 Class B Emissions	
CE	EN 61000-6-1: 2007	Generic Standards for Residential, Commercial and Light-Industrial Environments
	EN 61000-4-2: 2009	Electro-Static Discharge (ESD)
	EN 61000-4-3: 2006	+A1 +A2 +IS1 Radiated Field Immunity (RFI)
	EN 61000-4-4: 2012	Electrical Fast Transients-Burst Immunity (EFT)
	EN 61000-4-6: 2009	Conducted Immunity

MECHANICAL DIAGRAM

4.3 cm
1.7 in

8.9 cm
3.5 in

2.1 cm
0.8 in