## In-line USB Converters

Models BB-USOPTL4-A, BB-USOPTL4-LS-A, BB-USPTL4-A, BB-USPTL4-A, BB-USPTL4-B-A, BB-USO9ML4



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## **PRODUCT FEATURES**

- Adds a COM port to your PC
- 2000 V RMS optical isolation (select models)
- 460.8 kbps data rate
- Quick, easy in-line installation
- Powered by USB port; no power supply required
- High retention USB port
- USB cable included
- · Locked Serial Number option (-LS models)

Models BB-USOPTL4-A, BB-USPTL4-A and BB-USO9ML4 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. High retention USB port holds standard USB cables tight.

Models BB-USOPTL4-A & BB-USO9ML4 include circuitry with 2000 Volts isolation to protect against ground loops and voltage spikes. Models BB-USOPTL4-A and BB-USPTL4-A use pluggable terminal blocks on the RS-422/485 side while Model BB-USO9ML4 uses a DB9 connector on the RS-422/485 side. Two LEDs indicate data Transmit or Receive. The converters draw power from the USB port so no power supply is required. (USB cable included.)

Just install the drivers on the CD ROM and plug the converter into an available USB port on your computer or USB hub. The device appears as an additional COM port in Windows Device Manager, compatible with Windows applications.

## Universal Serial Bus (USB)

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 the RS-422/RS-485 Application Note (available on website) for more information on termination and DC biasing of an RS-485 network.

#### **ORDERING INFORMATION**

MODEL NO.	ISOLATION	RS-422/RS-485 CONNECTOR	LOCKED SERIAL NUMBER?
BB-USOPTL4-A	2 kV	Pluggable Terminal Block	-
BB-USOPTL4-LS-A	2 kV	Pluggable Terminal Block	Yes
BB-USPTL4-A	_	Pluggable Terminal Block	-
BB-USPTL4-LS-A	-	Pluggable Terminal Block	Yes
BB-USO9ML4	2 kV	DB9 Male Connector	_

#### **ACCESSORIES - sold separately**

BB-TB5P508SR-2PK - 5-position terminal block with strain relief paddle board, 2 pack BB-USBAMBM-3F - 1 m (3.3 ft) Type A Male to Type B Male, gray (one included) BB-TBKT2 - Replacement Terminal Block - 5-position, 5.08mm, 8A, 30 BB-9PAMF6 - DB9m/DB9f serial cable, 1.8m (6 ft)

## **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	-	V
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.

All product specifications are subject to change without notice. BB-USOPTL4-x-A\_BB-USPTL4-x-A\_& LS\_BB-USO9ML4\_4419ds-B



# **In-line USB Converters**

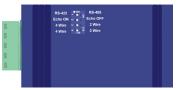
Models BB-USOPTL4-A, BB-USOPTL4-LS-A, BB-USPTL4-A, BB-USPTL4-A, BB-USO9ML4



### **SPECIFICATIONS**

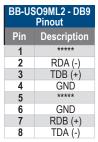
RS-485 2-Wire	A(-), RDA(-), TDB(+), RDB(+), GND  ta A(-), Data B(+), GND  minal block (BB-USOPTL4-A, BB-USOPTL4-LS-A,  -USPTL4-A, BB-USPTL4-LS-A)  9 male connector (BB-USO9ML4)  0.8 Kbps  V RMS (BB-USOPTL4-A, BB-USOPTL4-LS-A,  -USO9ML4)  kV ESD  dbus ASCII/RTU  K\O on receive lines in RS-422/485 mode
RS-485 2-Wire  Ten Connector  BB- DBS Data Rate  Isolation  BS Surge Protection Industrial Bus Bias  4.7  USB TECHNOLOGY  USB Compatibility  1 Ten Addition  BB Addition  Ten Addition  BB Addition  BB Addition  Ten Add	ta A(-), Data B(+), GND minal block (BB-USOPTL4-A, BB-USOPTL4-LS-A, -USPTL4-A, BB-USPTL4-LS-A) 9 male connector (BB-USO9ML4) 0.8 Kbps V RMS (BB-USOPTL4-A, BB-USOPTL4-LS-A, -USO9ML4) κV ESD dbus ASCII/RTU ΚΩ on receive lines in RS-422/485 mode and 2.0
Tent	minal block (BB-USOPTL4-A, BB-USOPTL4-LS-A, -USPTL4-A, BB-USPTL4-LS-A)  9 male connector (BB-USO9ML4)  0.8 Kbps  V RMS (BB-USOPTL4-A, BB-USOPTL4-LS-A, -USO9ML4)  kV ESD  dbus ASCII/RTU  KΩ on receive lines in RS-422/485 mode
Connector         BB-DBS           Data Rate         460           Isolation         2 k           BB         Surge Protection         15k           Industrial Bus         Mo           Bias         4.7           USB TECHNOLOGY           USB Compatibility         1.1	-USPTL4-A, BB-USPTL4-LS-A) 9 male connector (BB-USO9ML4) 0.8 Kbps V RMS (BB-USOPTL4-A, BB-USOPTL4-LS-A, -USO9ML4) kV ESD dbus ASCII/RTU KΩ on receive lines in RS-422/485 mode and 2.0
Data Rate         460           Isolation         2 k           BB         Surge Protection         15k           Industrial Bus         Mo           Bias         4.7           USB TECHNOLOGY         USB Compatibility         1.1	0.8 Kbps V RMS (BB-USOPTL4-A, BB-USOPTL4-LS-A, -USO9ML4) kV ESD dbus ASCII/RTU KΩ on receive lines in RS-422/485 mode and 2.0
Surge Protection 15k Industrial Bus Mo Bias 4.7 USB TECHNOLOGY USB Compatibility 1.1	-USO9ML4) kV ESD dbus ASCII/RTU KΩ on receive lines in RS-422/485 mode and 2.0
Industrial Bus Mo Bias 4.7 USB TECHNOLOGY USB Compatibility 1.1	dbus ASCII/RTU KΩ on receive lines in RS-422/485 mode and 2.0
Bias 4.7 USB TECHNOLOGY USB Compatibility 1.1	$K\Omega$ on receive lines in RS-422/485 mode and 2.0
USB TECHNOLOGY USB Compatibility 1.1	and 2.0
USB Compatibility 1.1	
. ,	
Speed 1.5	, 12 Mbps
	pe B High Retention (15 N / 3.4 lbs-force withdrawal)
	(32/64 bit), 10 (32/64 bit), 2008-r2 (32/64 bit), 12 Server-r2 (32/64 bit)
POWER	
USB Low	w power device (draws <100 mA)
INDICATORS	
LEDs Tra	insmit Data, Receive Data
MECHANICAL	
Dimensions 8.9	x 4.3 x 2.1 cm (3.5 x 1.7 x 0.8 in)
	30, Plastic
MEANTIME BETWEEN FAILUR	ES(MTBF)
MTBF BB-USOPTL4-x-A 1,3	18,809 hours
,	12,584 hours
	0,087 hours
	_ 217F Parts Count Reliability Method
ENVIRONMENTAL	
	o +70 °C (32 to +158 °F)
Operating Humidity 0 to	95%, non-condensing

REGULATORY - USOPTL4-A & USOPTL4-LS-A				
CE - Directives	2014/30/EC - Electromagnetic Compatibility 2011/65/EU - Reduction of Hazardous Substances (RoHS2) 2012/19/EU - Waste Electrical and Electronic Equipment (WEEE)			
CE - Standards	EN 55032: Class B - Electromagnetic Compatibility of Multimedia Equipment - Emission Requirements EN 55024 - Information Technology Equipment - Immunity Characteristics EN 61000-6-1 - Generic Immunity for Residential, Commercial, Light-Industrial Environments EN 61000-6-3 A1 - Generic Emissions for Residential, Commercial, Light-Industrial Environments (Class B)			
REGULATORY - USO9ML4				
CE - Directives	2004/108/EC - Electromagnetic Compatibility Directive 2011/65/EU - Reduction of Hazardous Substances Directive (RoHS2) 2012/19/EU - Waste Electrical and Electronic Equipment (WEEE)			
CE - Standards	EN 55032 Class B - Information technology equipment - RF Emissions EN 55024 - Information technology equipment - immunity characteristics EN 61000-6-1 - Generic Standards - Residential, Commercial, Light-Industrial Environments			



Models UxPTL4x

**DIP Switch** -see Quick Start Guides for configuration details.







Model BB-USO9ML4

## MECHANICAL DIAGRAM - BB-USOPTL4-A & BB-USOPTL4-LS-A

