In-line USB Converters

Models BB-USOPTL4, BB-USPTL4, BB-USO9ML4

www.advantech.com


BB-USOPTL4


BB-USO9ML4

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, BB-USPTL4 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 & BB-USO9ML4 include circuitry with 2000 Volts isolation to protect against ground loops and voltage spikes. Models BB-USOPTL4 and BB-USPTL4 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	2 kV	Pluggable Terminal Block	–
BB-USOPTL4-LS	2 kV	Pluggable Terminal Block	Yes
BB-USPTL4	–	Pluggable Terminal Block	–
BB-USPTL4-LS	–	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	-	✔
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-BB-USPTL4-BB-USO9ML2_1019ds

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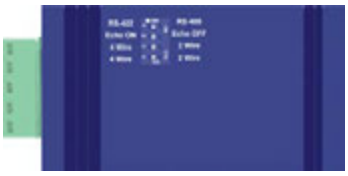
BB-USPTL4



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 (BB-USOPTL4, BB-USOPTL4-LS, BB-USPTL4, BB-USPTL4-LS) DB9 male connector (BB-USO9ML4)
Data Rate	460.8 Kbps
Isolation	2 kV RMS (BB-USOPTL4, BB-USOPTL4-LS, BB-USO9ML4)
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)
Windows O/S	8.1 (32/64 bit), 10 (32/64 bit), 2008-r2 (32/64 bit), 2012 Server-r2 (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	IP30, Plastic
MEANTIME BETWEEN FAILURES(MTBF)	
MTBF BB-USOPTL4-xx	1,318,809 hours
MTBF BB-USPTL4-xx	1,012,584 hours
MTBF BB-USO9ML4	380,087 hours
MTBF Calculation	MIL 217F Parts Count Reliability Method
ENVIRONMENTAL	
Operating Temperature	0 to +70 °C (32 to +158 °F)
Operating Humidity	0 to 95%, non-condensing

REGULATORY - USOPTL4 & USOPTL4-LS	
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

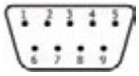


Models UxPTL4x



DIP Switch
-see Quick Start Guides for configuration details.

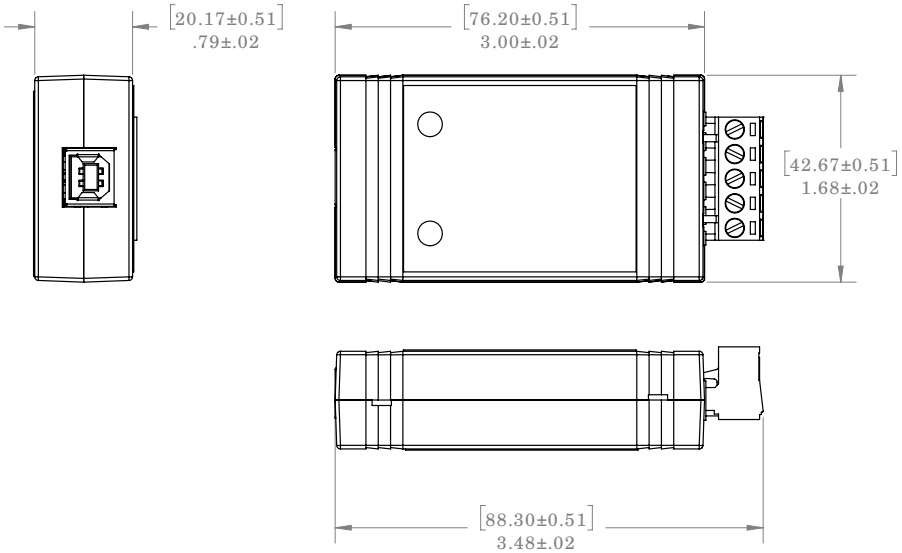
BB-USO9ML2 - DB9 Pinout	
Pin	Description
1	*****
2	RDA (-)
3	TDB (+)
4	GND
5	*****
6	GND
7	RDB (+)
8	TDA (-)

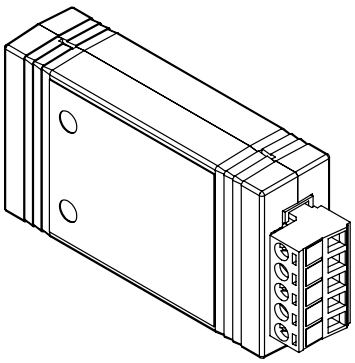




Model BB-USO9ML4

MECHANICAL DIAGRAM - BB-USOPTL4 & BB-USOPTL4-LS





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