

# Heavy-Duty USB to Serial Converters With Port-to-Port Isolation

Models BB-USR602 & BB-USR604

**B+B SMARTWORX**

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## PRODUCT FEATURES

- USB to serial conversion adds 2 or 4 serial ports to your PC
- 2 kV optical isolation; 8 kV contact, 15 kV air ESD protection
- 921.6 kbps serial data rate
- 480 Mbps, full-speed, USB 1.1/2.0 (high retention USB port)
- -40 to +80 °C wide operating temperature
- DIN rail or panel mount rugged metal case
- UL Class 1/Division 2
- Redundant power inputs (terminal block, locking barrel plug); power source required (not included, sold separately)
- Included: USB cable, DIN rail/panel mount hardware

These industrial grade, isolated, USB to serial converters allow you to add two or four RS-232/422/485 ports to your PC. Built to rugged specifications, the BB-USR602 and BB-USR604 offer 2 kV port-to-port isolation. This means that your upstream PC is isolated from the downstream serial devices and the downstream serial devices are isolated from each other and the upstream PC.

Additional features, such as a heavy-duty metal enclosure with panel and DIN rail mounting options, high ESD protection, shock and vibration testing and wide operating temperatures, make them ideal for use in harsh environments. Designed for industrial use, they are also suitable for instrumentation, utilities, and laboratory applications.

Full speed (480 Mbps) USB 2.0 support allows connectivity with modern computer technology. The serial ports are configurable for RS-232, RS-422 and RS-485 (2-wire & 4-wire). Modbus support enables them to be used with a wide variety of industrial devices. Each unit comes with DIN rail and panel mounting hardware, giving maximum flexibility for your installation. USB cable included.

The converters feature redundant power inputs (terminal block, locking barrel plug). An external power source is required (power supply not included, sold separately).

## ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION	SERIAL PORTS
<b>BB-USR602</b>	USB to Isolated Converter	2 (DB9M)
<b>BB-USR604</b>	USB to Isolated Converter	4 (DB9M)

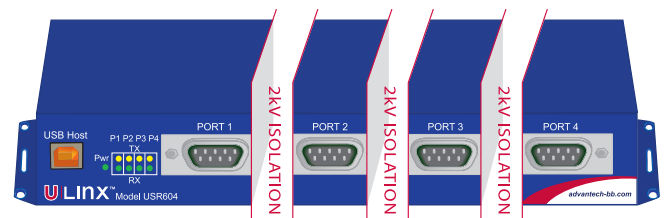
## ACCESSORIES - sold separately

BB-PS12VLB-INT-MED - 12 VDC power supply, locking barrel plug, international blades  
BB-MDR-20-24 - 24 VDC, 24 W power supply, DIN rail

## WHAT IS PORT TO PORT ISOLATION?

Most isolated USB to Serial Converters isolate the upstream device from the downstream device. This is fine when you are working with a single port unit. However, with multi-port devices, you need the additional protection offered by port-to-port isolation.

Simply put, port-to-port isolation isolates the upstream device from the downstream devices as well as the downstream devices from each other. This is the only way you can be sure that ground loop or surge can not be transferred through Port 1 to a device connected to Port 2.



All product specifications are subject to change without notice.  
BB-USR602 & BB-USR604\_4918ds

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## SPECIFICATIONS

SERIAL TECHNOLOGY	
RS-232	TD, RD, RTS, CTS, DTR, DSR, DCD, GND
RS-422/485 4-Wire	TDA(-), RDA(-), TDB(+), RDB(+), GND
RS-485 2-Wire	DATA A(-), DATA B(+), GND
Connector	DB9 Male
Data Rate	921.6 Kbps
Isolation	2 kV port-to-port
Surge Protection	+/- 0.5 kVDC Ports, +/- 1 kV Signal Ports
Industrial Bus	Modbus ASCII/RTU
Bias	1 K $\Omega$ on Receive Lines in RS-422/485 Mode
USB TECHNOLOGY	
USB Compatibility	1.1 and 2.0
Speed	1.5, 12, and 480 Mbps
Connector	Type B High Retention (15 N / 3.4 lb. 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	
Source	External (Dual Input) <i>(power supply not included, sold separately)</i>
Power Connector	Terminal Block Locking Barrel Plug
Input Voltage	10 to 48 VDC
Power Consumption	BB-USR602 – 3.5 Watts, maximum BB-USR604 – 4.5 Watts, maximum
INDICATORS	
Power	Green LED
TD / RD (Each Port)	Green / Amber LED

## SPECIFICATIONS - continued

MECHANICAL	
Dimensions BB-USR602	13.8 x 3.5 x 8.8 cm (5.4 x 1.4 x 3.5 in)
Dimensions BB-USR604	20.3 x 3.5 x 12.0 cm (8.0 x 1.4 x 4.7 in)
Enclosure	IP30, Metal
Weight	BB-USR602 = 0.38 kg, BB-USR604 = 0.68 kg
MEANTIME BETWEEN FAILURES (MTBF)	
MTBF BB-USR602	90013 hours
MTBF BB-USR604	51098 hours
MTBF Calc. Method	MIL 217F Parts Count Reliability
ENVIRONMENTAL	
Operating Temperature	-40 to +80 °C
Storage Temperature	-40 to +85 °C
Operating Humidity	0 to 95% Non-condensing
APPROVALS / CERTIFICATIONS	
UL File: E245458	
Emissions	FCC Class B, CISPR Class B (EN55022)
CE	EN61000-6-2 Industrial
Shock	IEC60068-2-27
Vibration	IEC60068-2-6
Freefall (Drop)	IEC60068-2-32

## MECHANICAL DIAGRAM - BB-USR604

