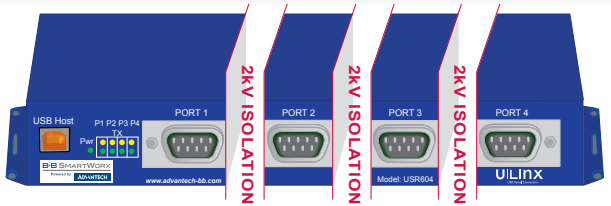
SELECTING A USB-SERIAL CONVERTER
FOR YOUR NEXT PROJECT

B+B SmartWorx Powered by ADVANTECH

Use the selection tables on p2 to quickly narrow your search for a USB to Serial Converter that best suits your next project. Below are a few helpful questions to help narrow your selection:

- **What is the serial data type of the device you are connecting too?**
  - RS-232
  - RS-422/RS-485 (2 wire or 4 wire connections)
  - TTL (3.3V or 5V)
- **How many serial ports do you want supported from one USB port?**
  - B+B SmartWorx offers 1, 2, 4 and 8 port solutions.
- **Are you considering Serial Isolation to help protect against surges, spikes and grounding issues?**
  - Some B+B SmartWorx models offer 2kV or 3kV isolation on each serial port.
- **Mechanical things you should consider:**
  - What physical serial connector best suits the application - DB9 or Terminal Block?
    Most prefer a DB9 for an RS-232 connection and a Terminal Block for RS-422/485 connections.
  - Are you considering a design with a high retention USB connector?
    Retain a positive connection so you do not disrupt data communications.
  - Is there a particular mounting format or physical size that fits the application best?
    Inline, compact design (common for field service applications).
    DIN Rail Mountable (good for in cabinet designs).
    Panel Mountable (use on a desktop or flat panel mounted).
  - How do you plan to power the converter? -from the USB bus or from an external power supply?
- **What environmental or safety aspects are you looking for?**
  - Is the device meant for field service or will it be left alone in a harsh environment application?
  - Do you need a device that supports UL or UL Class 1 Division 2 ratings?
  - Are shock, vibration or drop testing specification needed for the application?
- **Once you have a product selected, you should ask a few more questions:**
  - Do you have all the accessories needed to make the connections you need?
    Cables, Power Supplies , Cabinets, Surge Protection
  - When do you need product? Do you need samples for proof of concept and full production?

Assistance
If you need additional product assistance, contact B+B SmartWorx technical support online chat.



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.

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 share same COM port	-	✔
Ideal applications	Fixed Locations	Field Service

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

USB-SERIAL CONVERTER

PRODUCT SELECTION GUIDE (continued)

HIGH RETENTION USB PORTS GRIP USB CABLES TIGHT

The world is fast adopting USB as a cost-effective, useful tool. But, without a strong retention mechanism for the connector, it can been deemed inadequate for some industrial applications. Manufacturers have responded with proprietary connectors and cables featuring a custom thumbscrew. While this attempts to address the issue, it adds cost and size. Worse yet, it requires the purchase of a custom USB cable that you will not find at a local store when you are stuck on a job site.

Now you can forget about annoying cable disconnections due to vibration. B+B SmartWorx designs high-retention Type B USB ports connectors into most USB products. These orange color high retention ports are 50% stronger than conventional ones, so they hold on tight to standard USB cable connections. The interface meets Class 1/Division 2 minimum withdrawal requirements of 15N. You can rest assured that your USB connections will hold together in demanding applications.

USB TO SERIAL SELECTION TABLE

								
Product Series:	**In Line Isolated**	**In Line**	**Miniature**	**TTL**	**USR600**	**DIN**	**Panel Mount**	**xSU2-x00**
USB PORTS								
High Retention USB	✔* (see Model#s below)	✔			✔	✔	✔	
SERIAL PORTS								
Number of Serial Ports	1	1	1	1	2, 4	1, 2	2, 4	4, 8
Serial Interface	RS-232 or RS-422/485	RS-422/485	RS-232 or RS-422/485	TTL (3.3V or 5V)	RS-232/422/485	RS-422/485	1 RS-232 or RS-422/485	RS-232 or RS-232/422/485
Serial Connector	DB9 or Terminal Block	Terminal Block	DB9 or Terminal Block	DB9	DB9	Terminal Block	DB9 or Terminal Block	DB9
Isolation	2kV				2kV (Port-to-Port)	3kV (Port-to-Port)	2kV (Port-to-Port)	
Built-in Surge Protecton				600W TVS				
SPECIFICATIONS								
Temperature	0 to 70°C	0 to 70°C	0 to 70°C	0 to 70°C	-40 to 80°C	0 to 70°C	0 to 70°C	0 to 70°C
Power Input	USB Bus	USB Bus	USB Bus	USB Bus	10-48 VDC	USB Bus	USB Bus or 10-30VDC	USB Bus
DIN					✔	✔		
Panel					6-way mounting options		✔	
In Line	✔	✔	✔	✔				
Desktop								✔
UL					UL C1/D2		✔	
MODEL #								
	USO9ML2	USPTL4	232USB9M	TTL3USB9M	USR602	USOPTL4DR	USO9ML2-2P	QSU2-100
	USO9ML2-LS	USPTL4-LS	232USB9M-LS	TTL3USB9M-LS	USR604	USOPTL4DR-2	USO9ML2-4P	QSU2-400
	USO9ML4*		485USB9F-2W-LS	TTL5USB9M		USOPTL4DR-LS	USOPTL4-2P	ESU2-100
	USOPTL4*		485USB9F-4W	TTL5USB9M-LS			USOPTL4-4P	ESU2-400
	USOPTL4-LS*		485USB9F-4W-LS					
			485USBTB-2W					
			485USBTB-2W-LS					
			485USBTB-4W					
			485USBTB-4W-LS					

*High retention USB port.

orders@advantech-bb.com
support@advantech-bb.com
Corporate Headquarters: 707 Dayton Road, PO Box 1040 Ottawa, IL 61350 USA 815-433-5100 Fax 433-5104
European Office: Westlink Commercial Park, Oranmore Co. Galway Ireland +353 91 792444 Fax +353 91 792445