High Speed Ruggedized USB to RS485/422/232 Interface Converter

• Ideal for RS485 Multi-Point Applications

The Model 4176/4177 is a high speed ruggedized USB to RS485/422/232 interface converter from Electro Standards Laboratories. With its integrated rate buffering, the Model 4176/4177 converts USB 2.0 compliant data from a standard PC to a serial asynchronous data interface over RS232 or RS485/422 networks. The baud rate is user selectable with operating speeds up to 1.5 Mbps for RS232 and up to 3 Mbps for RS485/422. When operating in RS485 (RS422 compatible) mode, the converter can be configured for 2-wire half duplex or 4-wire full duplex operation. This converter provides an industrial solution for applications requiring a single point-to-point or a **multi-point communications link** over short and long distances. Typical applications include USB PC to PC long distance communications, factory automation, multi-drop data collection devices, barcode readers, time clocks, scales, data entry terminals, ATMs and serial communications in harsh environments.

Desktop Unit

Model 4176
(Cat No. 304176)

The Model 4176/4177 is designed to operate from -40°C to +85°C and is a member of the Electro Standards Laboratories0 rugged media converter family. The unit features ESD protection circuitry on the USB I/O connector as well as all receivers and transmitters for both the RS232 and RS485/422 interfaces. The unit's power input is protected from transients. Other features include user selectable asynchronous data format, TX, RX and Power indicator LEDs.

BOARD UNIT

The converter is available as a board only **(Model 4177)** with front mounting threaded brackets for rack mounting in embedded applications.

DESKTOP UNIT

It is also available in a desktop package **(Model 4176)** for applications that require an enclosure. In this configuration it can be ordered with the USB I/O connector on the front (default location) or back of the unit. Accessories include DIN rail mounting hardware.

Specifications:

USB Interface:
Connectors: USB, Type B, High Retention

USB Data Format:
Type: USB 2.0 Compliant USB Client
Rate: Supports Low Speed (1.5 Mbps) and Full Speed (12 Mbps) USB Data transfer rates.

Copper Interface:
Connectors: DB9, Female
Type: RS232, RS485/422 (2-Wire/4-Wire)
Terminations: RS485/422 120 Ohm jumper selectable

Bit Rate (user selectable):
RS232:   300 to 1.5 Mbps
RS485:   300 to 3 Mbps

Network Configurations:
RS232:   Point-to-Point
RS485/422 Point-to-Point
           Multi-Point (Default ~280 uSec TX disable time)
(User configurable TX disable time via a single thru-hole resistor)

Indicators:
LEDs: TXD, RXD, PWR

Power:
Input Power: 5V at 250 mW (Typical)
Connectors: USB, Type B, High Retention

**Operating Environment:**
-40°C to +85°C

Model 4177 Mechanical (Board Only):
Model / Cat No: 4177 / 304177
Size: 4.8" x 3.9" x 0.63"
Weight: Approx. 3.5 oz (99g)
Mounting: Mounting Holes, Rt Angle Brackets

Model 4176 Mechanical (Desktop Unit):
Model / Cat No: 4176 / 304176
Size: 5" x 4.25" x 1.4"
Weight: Approx. 10.1 oz (286g)
Mounting: 4 Threaded Holes Std, DIN rail

Electro Standards Laboratories
ADVANCED SYSTEMS DESIGN & SERVICES

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High Speed Ruggedized USB to RS485/422/232 Converter
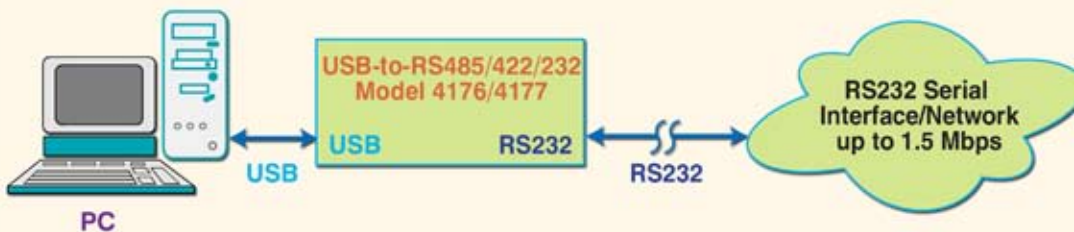

Board Unit

Model 4177
(Cat No. 304177)
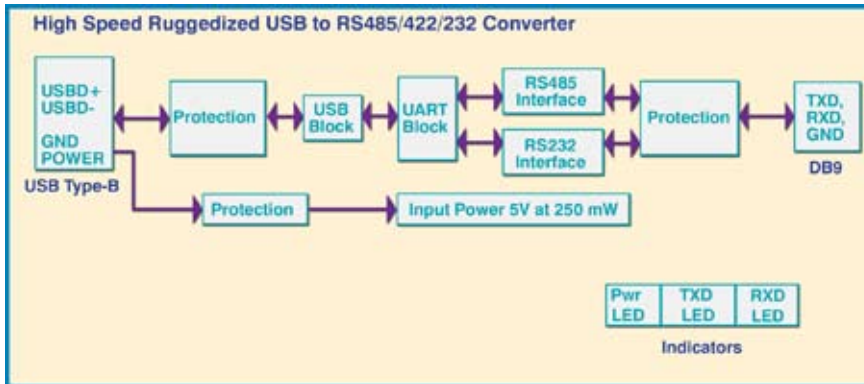
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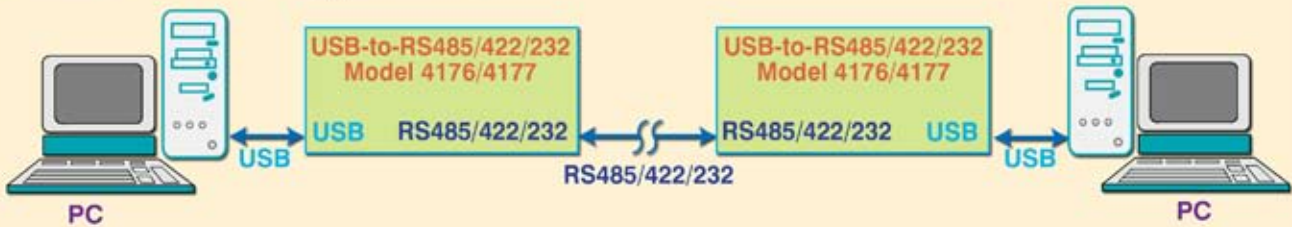
Point-to-Point PC USB Communications.

Model 4176/4177 Application:

RS232 Serial Interface/Network up to 1.5 Mbps

PC USB to RS232 communications to serial interface/network.

Model 4176/4177 Application:

RS485 Serial Interface/Network up to 3 Mbps
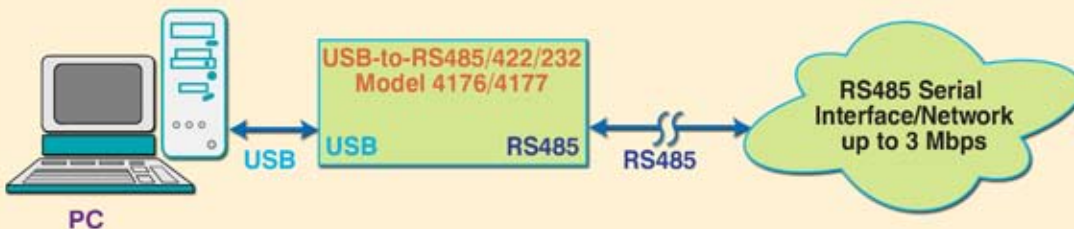
PC USB to RS485 communications to serial interface/network.