



Electro Standards Laboratories

ADVANCED SYSTEMS DESIGN & SERVICES



SPECIFICATIONS

Desktop Unit... Model 4176 (Cat No. 304176)

Board Unit...Model 4177 (Cat No. 304177)

Included USB A-B Cable, 6 ft....(Cat No. 507366)

DIN Rail Mounted UnitModel 4176-DIN (Cat No. 304176-DIN)

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

■ Ideal for RS485 Multi-Point Applications

The Model 4176/4177/4176-DIN 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.

The Model 4176/4177/4176-DIN is designed to operate from -40°C to +85°C and is a member of the Electro Standards Laboratories' 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

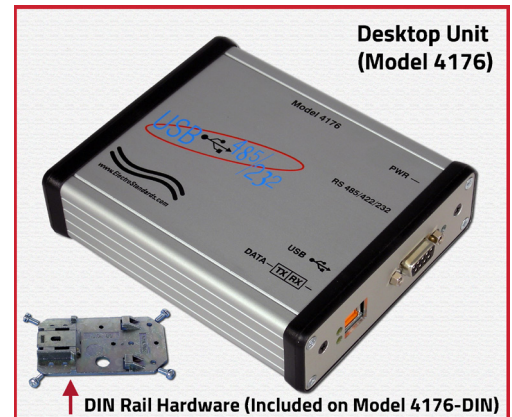
The converter is available as a board only (**Model 4177**) with front mounting threaded brackets for rack mounting in embedded applications.

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.

DIN RAIL MOUNTED UNIT

This unit is also available as a DIN Rail Mounted configuration (**Model 4176-DIN**) for applications that require 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)

★ **Municipalities, schools, government:**

Models 4176 & 4177 are on GSA Schedule!



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 4177, Cat No 304177

Size: 4.8" x 3.9" x 0.63"

Weight: Approx. 3.5 oz (99g)

Mounting: Mounting Holes, Right Angle Brackets

Model 4176 Mechanical (Desktop Unit):

Model 4176, Cat No 304176

Size: 5" x 4.25" x 1.4"

Weight: Approx. 10.1 oz (286g)

Model 4176-DIN Mechanical (DIN Rail Mounted Unit):

Model 4176-DIN, Cat No 304176-DIN

Size: 5" x 4.25" x 1.4"

Weight: Approx. 10.1 oz (286g)

Mounting: 4 Threaded Holes Standard, DIN rail

USB A-B Cable (6 FT): Included with Model 4176 is the cable ESL Cat. No. 507366. (USB Type A to USB Type B)

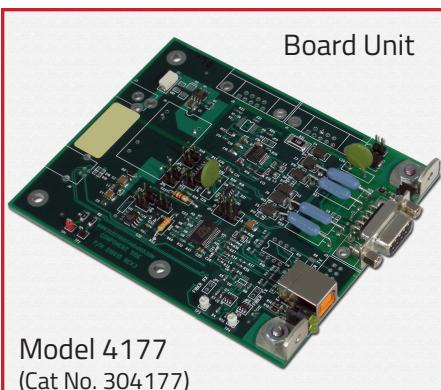
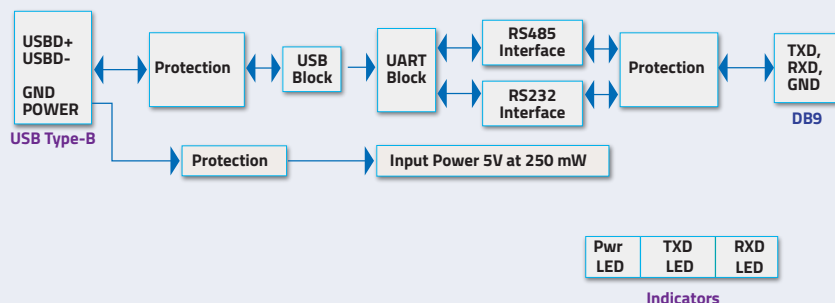
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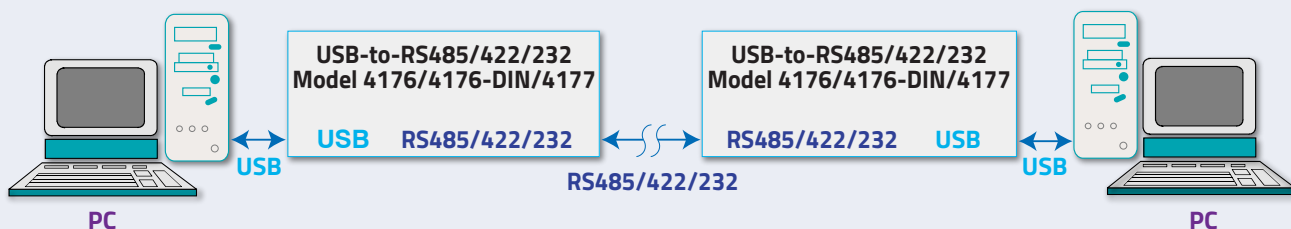
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Model 4176/4176-DIN/4177 Application:



Point-to-Point PC USB Communications.

Model 4176/4176-DIN/4177 Application:



PC USB to RS232 communications to serial interface/network.

Model 4176/4176-DIN/4177 Application:



PC USB to RS485 communications to serial interface/network.