

## FEATURES

- RoHS compliant, single-port serial communications adapter for USB 2.0 or 3.0
- Supports full-duplex RS-422/485 protocol
- Supports 4-wire RS-485 protocol
- Includes type FT232R UART with 128-byte receive/256-byte transmit FIFO buffers
- Speeds up to 3Mbps asynchronous
- Supports 7 or 8 data bits, 1 or 2 stop bits, and odd / even / mark / space / no parity
- ±15kV ESD Protection (IEC 6100) on 422/485 signals
- All required power drawn from host USB port, no external power adapter required
- Compact, industrial, metal backshell
- Operating temperature of -40° to +85°C
- Supported for use in Windows CE

## FACTORY OPTION

- -NT No RC Termination

## APPLICATIONS

- Scales
- Data entry terminals
- Data acquisition and automation modules
- Transportation



## FUNCTIONAL DESCRIPTION

The USB-422-485-IND is a rugged industrial serial communications adapter designed for use in demanding real-world applications such as transportation, military embedded control systems, remote data acquisition, mobile, and more. This intelligent module provides a cost-effective solution for transferring high-speed asynchronous serial data over USB. The adapter provides easy connectivity between the computer and standard communication ports or remote serial devices. No PC reconfiguration, assignment of IRQs, or jumper settings required. The adapter will be recognized as a USB to Serial Adapter and install in the system as a standard COM port.

This model has RX always enabled and TX is tri-stated and should be used only as a 4-wire slave. If used for 2-wire 485 the connector must be jumpered and RX will get the TX echo. If used for 422 or a 4-wire master the TX is tri-stated and requires advanced users with the expert knowledge of both TX and RX wire pair's idle 1 bias level during tri-state.

## ACCESSORIES

The module is available with an optional screw terminal adapter board model ADAP9 to break out signals for ease of connection.

## SOFTWARE

The USB-422-485-IND is a plug-and-play device using the built in OS drivers which allows quick connect or disconnect without having to fumble with locating driver media whenever you need an RS-422/485 port. The USB-422/485-IND is supported for use in most USB supported operating systems and includes a free Linux and Windows compatible software package. The software package includes sample programs and source code in C#, Delphi, Visual Basic, and Visual C++ for Windows.

## SPECIFICATIONS

### Communications Interface

Serial Port: RS-422/485  
 Connector: DB-9 Male  
 Character Length: 7 or 8 bits  
 Parity: Even, odd, mark, space or none  
 Stop Interval: 1 or 2 bits  
 Serial Data Rates: 300bps up to 3Mbps asynchronous  
 Input/Output Voltage:  $\pm 14V$   
 Receiver Input Sensitivity:  $\pm 200mV$   
 Termination:  $120\Omega$  w/0.01 $\mu F$  capacitor on Receive lines  
 (Factory Option to remove it)

Bias: Transceiver and Receiver via  $10k\Omega$   
 ESD Protection:  $\pm 15kV$  on all signal pins

**Bus Type** USB 2.0 Full-Speed  
 USB 3.0 Compatible

### Environmental

Operating Temp:  $-40^{\circ}$  to  $+85^{\circ}C$   
 Storage Temp:  $-65^{\circ}$  to  $+150^{\circ}C$   
 Humidity: 5% to 95%, non-condensing  
 Power Required: 5VDC at  $\sim 11mA$  with no load  
 Cable Length: 6 feet  
 Backshell Dimensions: 1.236" x 0.657" x 2.094"  
 (31.4mm x 16.7mm x 53.2mm)

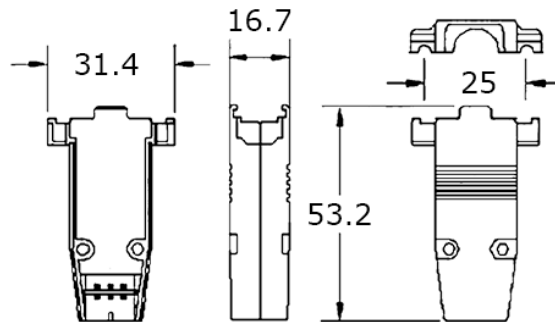
### Ordering Guide

USB-422-485-IND  
 USB-422-485-IND-NT

USB to RS-422/485 industrial serial adapter  
 As above, with no termination on receive lines

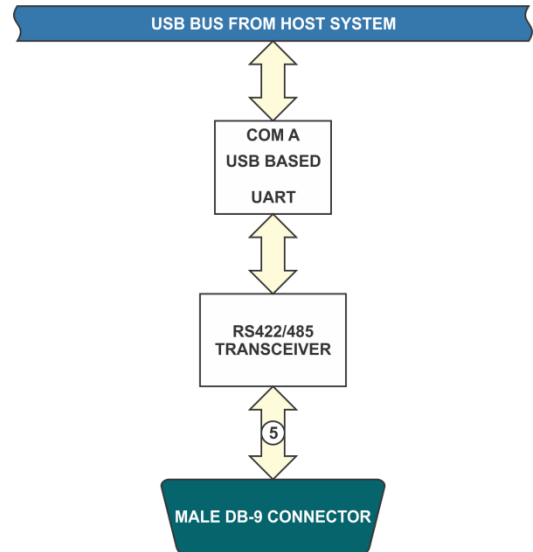
| PIN | DB9M |
|-----|------|
| 1   | -RX  |
| 2   | +TX  |
| 3   | -TX  |
| 4   |      |
| 5   | GND  |
| 6   |      |
| 7   |      |
| 8   |      |
| 9   | +RX  |

Pinout Table



Units: mm $\pm 0.5$

Backshell Drawing



BLOCK DIAGRAM

