SerialComm®
Data Conversion Experts

# USB-4485
**Industrial USB To 4 Port RS-485 / RS422 Converter**

**SERIALCOMM.COM**

Datasheet Revision 2.7

## GENERAL FEATURES:

- Plug-and-Play (hot-pluggable)
- Adds 4 RS485/RS422 ports with 1 USB port
- Four optional terminal blocks included
- USB 1.1 and 2.0 compatible
- Port powered - no external power needed
- Supports 300 baud to 230,400 baud rates
- 3 feet (1m) cable for convenience
- Transmit / Receive LED indicators
- Data direction auto-turnaround - no flow control necessary
- Internal 128/385 byte TX / RX buffers
- No IRQs, IO, DMA required. No IRQ conflicts
- Supports remote wakeup and power management
- Easy to install included drivers
- Built-in surge and static protection
- 5-year manufacturer's warranty
- CE, FCC, RoHS and REACH certified

## DESCRIPTION:

The SerialComm USB-4485 is an industrial grade bi-directional USB-powered or externally powered USB to 4 Port RS-485/RS-422 converter, housed in heavy-duty steel case, which makes four half-duplex RS-485 or four full-duplex RS422 ports available to a PC via one USB port. The USB-4485 has four DB9 male connectors on the RS-485/RS-422 serial ports, and a USB type B female on the USB port. This converter is ideal for implementing point-to-point, multi-drop, star networks. The adapter is powered from the USB port or an included external 100VAC-240VAC to 5VDC power supply. USB cable, four terminal blocks, power supply and drivers are included in the package.

The USB-4485 uses the latest FTDI chipset and is fully compatible with Windows 10 32/64, Windows 8 32/64, Windows 7 32/64, Vista 32/64, Server 2003, Server 2008, Server 2008 R2, XP 32/64, 2000 98Se, CE, Mac 8/9/x, Linux.

## CERTIFICATIONS:

CE FC RoHS REACH

## FRONT PANEL:


## PINOUT CONFIGURATION:

**RS-485 / RS-422 SIDE – DB9 MALE**

**COM 1**

| | | | | | |
|---|---|---|---|---|---|
| RS-485 | D- | D+ | | | GND |
| RS-422 | T- | T+ | R+ | R- | GND |
| PIN # | 1 | 2 | 3 | 4 | 5 |

**COM 2**

| | | | | | |
|---|---|---|---|---|---|
| RS-485 | D- | D+ | | | GND |
| RS-422 | T- | T+ | R+ | R- | GND |
| PIN # | 1 | 2 | 3 | 4 | 5 |

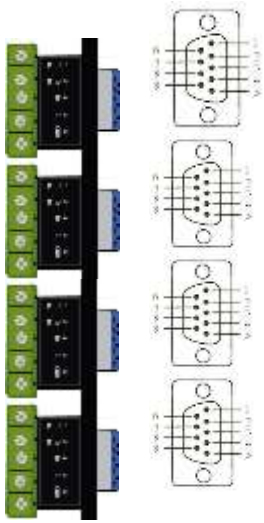
**COM 3**

| | | | | | |
|---|---|---|---|---|---|
| RS-485 | D- | D+ | | | GND |
| RS-422 | T- | T+ | R+ | R- | GND |
| PIN # | 1 | 2 | 3 | 4 | 5 |

**COM 4**

| | | | | | |
|---|---|---|---|---|---|
| RS-485 | D- | D+ | | | GND |
| RS-422 | T- | T+ | R+ | R- | GND |
| PIN # | 1 | 2 | 3 | 4 | 5 |

MALE DB9



## SPECIFICATIONS:

| | |
|---|---|
| **COMMUNICATION** | |
| STANDARDS: | USB 2.0 and 1.1 Standards - RS-485 and RS-422 Standards |
| OPERATING SYSTEM: | Windows 10 (32/64), Windows 8.1 (32/64), Windows 8 (32/64), Windows 7 (32/64), Vista (32/64), Server 2012, Server 2008 R2, Server 2008, Server 2003, XP (32/64), 2000, 98Se, CE, Mac 8/9/X, Linux and Android |
| BAUD RATES: | From 300 bps to 230,400 bps |
| CONNECTOR TYPES: | USB Side: Type B Female and RS-485/RS-422 Side: DB9 Male or Dual Function 5 Position Terminal Block |
| DISTANCE: | USB Side 10ft (3m) and RS-485/RS-422 Side: 4000 ft (1.2km) |
| LED INDICATIONS: | TX1, RX1, TX2, RX2, TX3, RX3, TX4, and RX4 |
| DRIVERS: | FTDI drivers are included in package |
| **ELECTRICAL** | |
| POWER SOURCE: | Port Powered From USB Port or 5VDC/1A (Input: 100-240VAC 50/60Hz, USB Type A Plug) |
| CURRENT CONSUMPTION: | Less Than 300 mA |
| STATIC PROTECTION: | 15KV Electric Static Discharge (ESD) Protection |
| SURGE PROTECTION: | 600W Surge Protection |
| CONVERSION IC: | FTDI FT4232H |
| **MECHANICAL** | |
| HOUSING: | Heavy Duty Steel Case |
| WEIGHT: | 16.1oz (456.5 grams) |
| DIMENSIONS: | 6.30" X 3.94" X 1.36" (160.0 mm X 100.0 mm X 34.4 mm) |
| **ENVIRONMENTAL** | |

## FUNCTIONAL DIAGRAM:


| | |
|---|---|
| **OPERATING TEMP.:** | -40° F to 185° F (-40°C to 85° C) |
| **STORAGE TEMP:** | -40° F to 185° F (-40°C to 85° C) |
| **OPERATING HUMIDITY:** | 5% To 95% - No Condensation |
| **QUALITY** | |
| **PRODUCT SAFETY:** | CE, FCC, RoHS and REACH Third-party Certified |
| **QUALITY MANAGEMENT** | Manufactured and Distributed to ISO 9001:2015 QMS |
| **MEAN TIME BEFORE FAILURE:** | 885,034 Hours |
| **RELIABILITY:** | Low Failure Rate – 99+% Reliability Since Inception |
| **WARRANTY:** | 5 Year Replacement Warranty |

## APPLICATIONS:

### RS-232 TO RS-485 MODE OPTION:

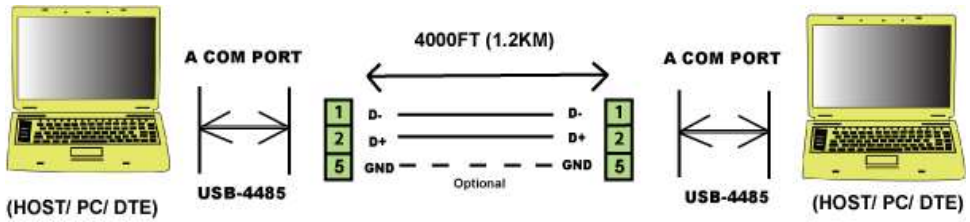



**FIGURE 1: EXTENDING A COM PORT DISTANCE IN RS-485 MODE**

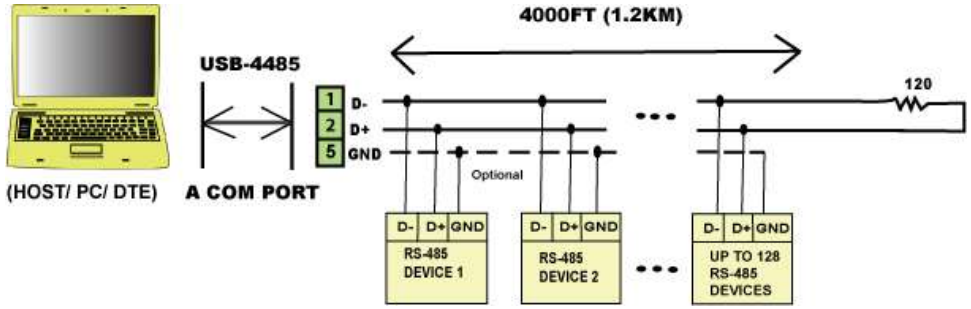



**FIGURE 2: MASTER/SLAVE MULTIPLE DROP CONFIG. IN RS-485 MODE**

### RS-232 TO RS-422 MODE OPTION:

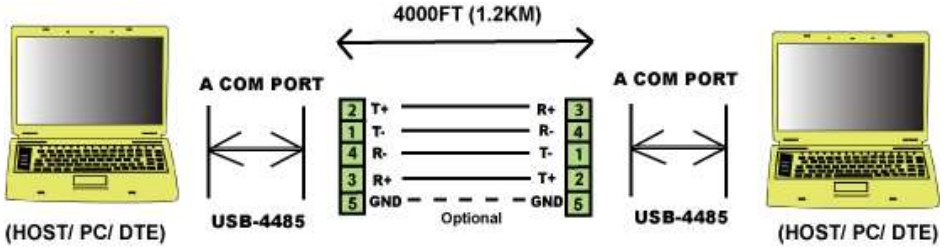



**FIGURE 3: EXTENDING A COM PORT DISTANCE IN RS-422 MODE**

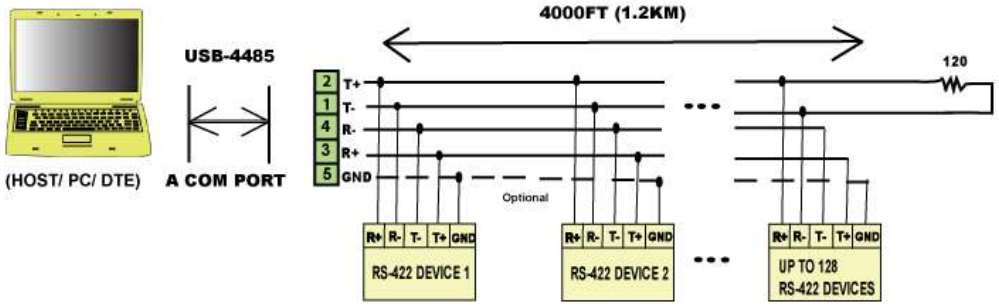



**FIGURE 4: MASTER/SLAVE MULTIPLE DROP CONFIG. IN RS-422 MODE**

## RS-422 TROUBLESHOOTING INSTRUCTIONS:

Using one USB-4485 unit:

1. Perform a loop back test on one port:
   a) Connect the TX+ to RX+ and TX- to RX- on one of the four RS-422 ports.
   b) Connect the USB connector on the cable to the USB port of the computer.
   c) Install the USB-4485 FTDI driver on the computer per instructions provided.
   d) Running a hyper terminal program on the PC, send ASCII characters to the USB-4485 converter from one PC port, and check that the characters are received at the same PC port. This tests that the transmit and receive functions of the USB-4485 unit is working properly.
   e) When there is constant TX data you should see the associated TX light blink. When there is constant RX data you should see the associated RX light blink.

## RS-485 TROUBLESHOOTING INSTRUCTIONS:

Using USB-4485 using two RS-485 Ports:

1. Perform a loop back test on two units:
   a) Connect the two D+ to D+ and D- to D- on two USB-4485 RS-485 ports.
   b) Connect the USB connector on the unit to a USB port on the computer.
   c) Install the USB-4485 FTDI driver on the computer per instructions provided.
   d) Running hyper terminal programs on both PCs, send ASCII characters to the USB-4485 converter from one PC port, and check that the characters are received at the 2nd PC port. Repeat the test in the opposite direction. This tests that the transmit and receive functions of the USB-4485 unit is working properly.
   e) When there is constant TX data you should see the associated TX light blink. When there is constant RX data you should see the associated RX light blink.