

USB-ISO-485

USB To RS-485/RS-422 Isolated Adapter

SERIALCOMM.COM

Datasheet Revision 2.9

GENERAL FEATURES:

- Plug-and-Play (hot-pluggable)
- Adds one RS-485/RS-422 port to USB port
- USB 1.1 and 2.0 compatible
- Provides 2500V Isolation
- Port powered - no external power needed
- Supports 300 baud to 128,000 baud rates
- 6 feet (2m) USB cable for convenience
- Power/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
- Easy to install included drivers
- Built-in surge and static protection
- 5-year replacement manufacturer's warranty
- CE, FCC, RoHS and REACH certified



DESCRIPTION:

The SerialComm USB-ISO-485 is an industrial-grade bi-directional USB-powered 2500V opto-isolated USB to RS-485/RS-422 converter, which makes a half-duplex RS-485 or a full-duplex RS-422 available to a PC via the USB port. The USB-ISO-485 optical isolation protects the USB from voltage surges, lightning strikes, GND loops and noise conditions from the RS-485/RS-422 port. The USB-ISO-485 has a DB9 male connector or RJ-45 connector on the RS-485/RS-422 port, and a USB type A female on the USB port. The USB converter can be wall or panel mounted or used standalone. The adapter is powered from the USB port and no external power is needed. USB cable, terminal block and drivers are included in the package.

The USB-ISO-485 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:



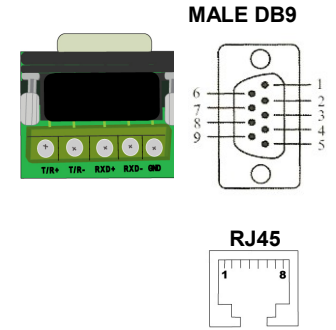
PINOUT CONFIGURATION

DB9 Option

FUNCT.	T/R+	T/R-	RXD+	RXD-	GND
RS-485	D+	D-			GND
RS-422	TX+	TX-	RX+	RX-	GND
PIN #	1	2	3	4	5

RJ45 Option

FUNCT.	T/R+	T/R-	RXD+	RXD-	GND
RS-485	D+	D-			GND
PIN #	5	4			2,7



SPECIFICATIONS:

COMMUNICATION	
STANDARDS:	USB 2.0 & 1.1 Standards - RS-485 & 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 128,000 bps
CONNECTOR TYPES:	USB Side: Type A Female and RS-485 /RS-422 Side: RJ45, DB9 Male or 5 Position Terminal Block
DISTANCE:	USB Side 10ft (3m) & RS485/422 Side: 4000 ft (1.2km)
LED INDICATIONS:	RX (YELLOW), TX (GREEN) and POWER (RED)
DRIVERS:	FTDI drivers are included in package
ELECTRICAL	
POWER SOURCE:	Port Powered from USB Port
CURRENT CONSUMPTION:	Less Than 100 mA
ISOLATION:	2500V (2500Vrms 1 min, AC)
STATIC PROTECTION:	15KV Electric Static Discharge (ESD) Protection
SURGE PROTECTION:	600W Surge Protection
CONVERSION IC:	FTDI FT232RL
MECHANICAL	
WEIGHT:	4.6oz (131 grams)
DIMENSIONS:	RS-485/RS-422 Housing Without Terminal Block: 4.45" X 2.54" X 1.00" (113.1 mm X 64.4 mm X 25.4 mm) RS-485/RS-422 Housing With Terminal Block: 5.28" X 2.54" X 1.00" (134.0 mm X 64.4 mm X 25.4 mm)
ENVIRONMENTAL	
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
RELIABILITY:	Low Failure Rate – 99+% Reliability Since Inception
WARRANTY:	5 Year Replacement Warranty

RS-485 TROUBLESHOOTING INSTRUCTIONS:

Testing RS-485 using two USB-ISO-485 Units:

1. Perform a loop back test on two units:
 - a) Connect the two T/R+ to T/R+ and T/R- to T/R- on two USB-ISO-485 RS-485 ports.
 - b) Connect the two USB connectors on both units to a USB ports on the computer.
 - c) Install the USB-ISO-485 FTDI driver on the computer per instructions provided.
 - d) Running hyper terminal programs on both PCs, send ASCII characters to the USB-ISO-485 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 test the transmit and receive functions of the USB-ISO-485 unit is working properly.
 - e) When power is on the RED light will be on. When there is constant RX data you should see the YELLOW light blink. When there is constant TX data you should see the GREEN light blink.

RS-422 TROUBLESHOOTING INSTRUCTIONS:

Testing RS-422 using one USB-ISO-485 unit:

1. Perform a loop back test on one port:
 - a) Connect the T/R+ to RXD+ and T/R- to RXD- on the RS-422 port..
 - b) Connect the USB connector on the cable to the USB port of the computer.
 - c) Install the USB-ISO-485 FTDI driver on the computer per instructions provided.
 - d) Running a hyper terminal program on the PC, send ASCII characters to the USB-ISO-485 converter from one PC port, and check that the characters are received at the same PC port. This test the transmit and receive functions of the USB-ISO-485 unit is working properly.
 - e) When power is on the RED light will be on. When there is constant RX data you should see the YELLOW light blink. When there is constant TX data you should see the GREEN light blink.

APPLICATIONS:

RS-232 TO RS-485 MODE OPTION:

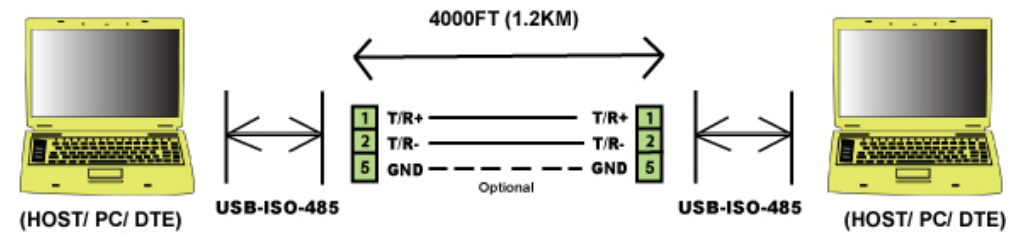


FIGURE 1: EXTENDING USB DATA DISTANCE IN RS-485 MODE

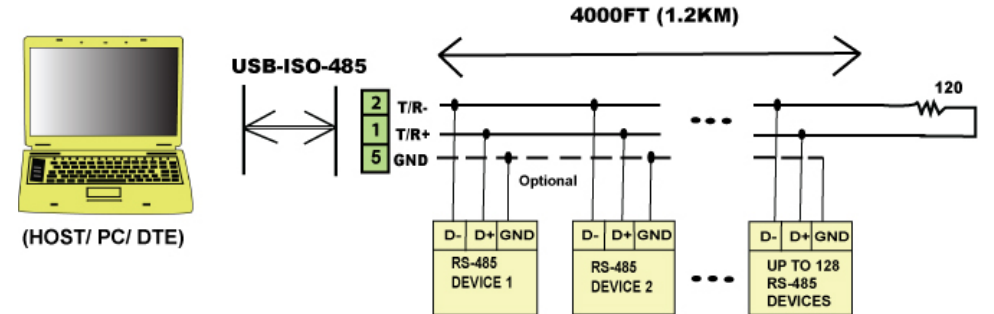


FIGURE 2: MASTER/SLAVE MULTIPLE DROP CONFIG. IN RS-485 MODE

RS-232 TO RS-422 MODE OPTION:

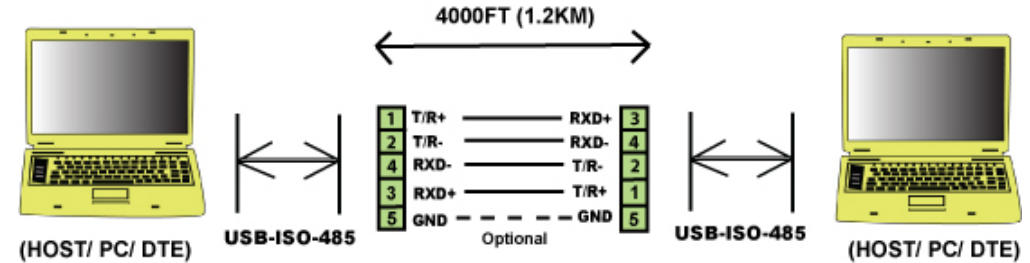


FIGURE 3: EXTENDING RS-232 DATA DISTANCE IN RS-422 MODE

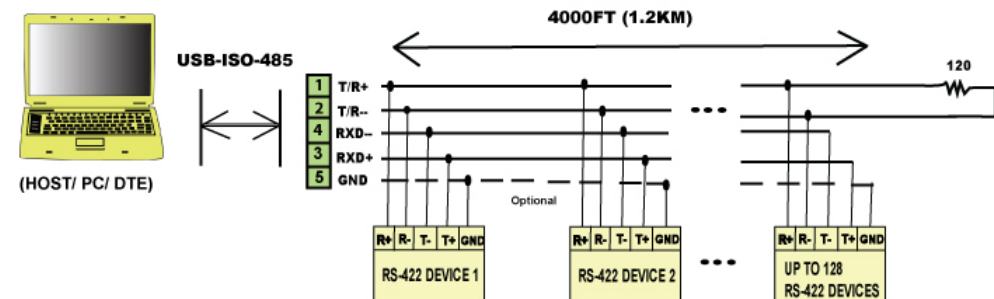


FIGURE 4: MASTER/SLAVE MULTIPLE DROP CONFIG. IN RS-422 MODE