

USB-ISO-R-485

Rugged USB To RS232/RS485/RS422 Isolated Converter

USB 1.1 and 2.0 Compatible
FDTI Virtual COM port
300 to 115,200 Baud Rate
Port-powered or 12-48VDC



Industry-Proven Reliability



GENERAL FEATURES

- Plug-and-Play (hot-pluggable)
- Adds one USB to RS-232/RS-485/RS-422 port
- USB 1.1 and 2.0 compatible
- Provides 2KV Isolation
- Port powered or 9-48VDC external powered (can power simultaneously)
- Supports 300 baud to 115,020 baud rates
- Power/Transmit/Receive LED indicators
- Data direction auto-turnaround - no flow control necessary
- Included FDTI drivers. Easy to install
- Built-in 600W surge and 8KV static protection
- Standalone, panel or DIN mounted
- 5-year replacement manufacturer's warranty
- CE, FCC, RoHS and REACH certified

DESCRIPTION

The SerialComm **USB-ISO-R-485** is a rugged, industrial-grade bi-directional USB-powered 2KV opto-isolated USB to RS-232/RS-485/RS-422 converter, which a USB virtual COM port to either half-duplex RS-485 or a full-duplex RS-232 / RS-422. The **USB-ISO-R-485** optical isolation protects the USB from voltage surges, lightning strikes, GND loops, and noise conditions from the RS-232/ RS-485/RS-422 ports. The USB converter (**USB-ISO-R-485**) can be standalone, panel or DIN mounted. The converter is powered by the USB port or an optional 9-48VDC external power supply.

COMPATIBILITY

The **USB-ISO-R-485** uses the latest FTDI chipset and is fully compatible with Win 11 32/64, Win 10 32/64, Win 8 32/64, Win 7 32/64, Vista 32/64, XP, Server 2025, 2022, 2019, 2016, 2012, 2008, 2003, 2000, Mac 13/12/10/9/8 and Linux.

FTDI drivers are Included, however many operating systems already include FTDI drivers such as Windows and MAC.

PINOUT CONFIGURATION

RS-485/RS-422 OPTION:

FUNC.	T+/D+	T-/D-	GND	R+	R-
RS-485	D+	D-	GND		
RS-422	T+	T-	GND	R+	R-
PIN	1	2	3	4	5

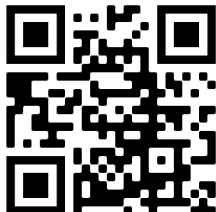
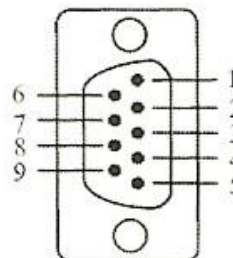
RS-232 OPTION:

FUNC.	DCD	DTR	DSR	RTS	CTS	TX	RX	GND
PIN	1	4	6	7	8	2	3	5
RS-232	TIED			TIED		TX	RX	GND

POWER:

FUNC.	V-	FG	V+
PIN	1	2	3

DB9 MALE



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Jeddy Ventures Limited Liability Company
2400 Belmar Blvd, Unit B-15
Wall Township, NJ 07719
PHONE: 1 (877) 218-7964
FAX: 1 (732) 7490-3598
EMAIL: sales@serialcomm.com
SITE: SerialComm.com



Certified to
ISO 9001:2015



REVISION: 4.0

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SPECIFICATIONS

COMMUNICATION

STANDARDS:	USB 2.0 and 1.1 Standards – EIA RS-232C Standard – RS-485 and RS-422 Standards
OPERATING SYSTEM:	Windows 11 (32/64), Windows 10 (32/64), Windows 8.1 (32/64), Windows 8 (32/64), Windows 7 (32/64), Vista (32/64), XP, Server 2025, 2022, 2019, 2016, 2012, 2008, 2003, 2000, Mac 13/12/10/9/8 and Linux
BAUD RATES:	From 300 to 115,200 baud
CONNECTOR TYPES:	DC Input: 3-way Terminal Block USB Side: Type A Female RS-232 Side: DB9 Female RS-485/RS-422 Side: 5-way Terminal Block
DISTANCE:	USB Side: 15 ft (5m) RS-232 Side: 50 ft (15m) RS-485/RS-422 Side: 4,000 ft (1.2km)
LOAD CAPACITY:	RS-485/RS-422: Up to 32 Nodes
LED INDICATIONS:	RX (Green), TX (Green), and POWER (Green)
DRIVERS:	FTDI drivers are Included, however many operating systems already include FTDI drivers such as Windows and MAC.

ELECTRICAL

POWER SOURCE:	Port Powered from USB Port or 9-48VDC
POWER CONSUMPTION:	No-load: 0.38W at 24VDC Full-load: 0.41W at 24VDC
ISOLATION:	2000V (2000Vrms 1 min, AC)
STATIC PROTECTION:	8KV Electrostatic Discharge (ESD) Protection
SURGE PROTECTION:	600W Surge Protection

MECHANICAL

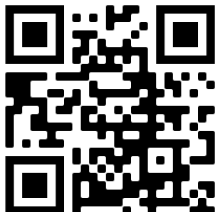
HOUSING:	IP30 Grade Protection, Steel Enclosure
DIN RAIL:	Optional DIN Rail Mounts
WEIGHT:	8.1oz (226g)
DIMENSIONS:	3.94" X 2.72" X 0.87" (100mm X 69mm X 22mm)

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

CERTIFICATIONS:	CE: EU Directive 2014/30/EU FCC: Part 15B RoHS: RoHS 2.0 REACH: SVHC 247 SHOCK: IEC 60068-2-27 FREE FALL: IEC 60068-2-32 VIBRATION: IEC 60068-2-6
QUALITY MANAGEMENT:	Manufactured and distributed to ISO 9001:2015 QMS
MEAN TIME BEFORE FAILURE:	Low Failure Rate - 281,860 Hours MTBF
WARRANTY:	5-Year Replacement Warranty
RETURNS:	90-Day Risk Free Returns



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APPLICATIONS

USB TO RS-485 MODE OPTION:

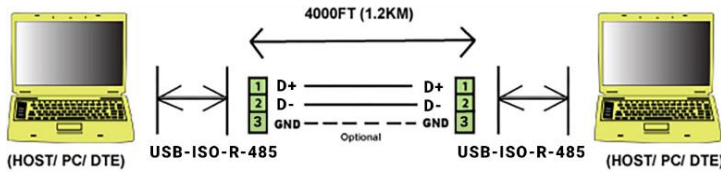


FIGURE 1: EXTENDING USB DATA DISTANCE IN RS-485 MODE

USB TO RS-422 MODE OPTION:

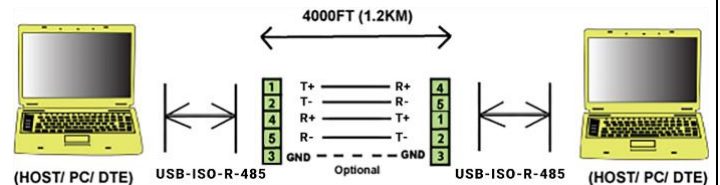


FIGURE 5: EXTENDING USB DATA DISTANCE IN RS-422 MODE

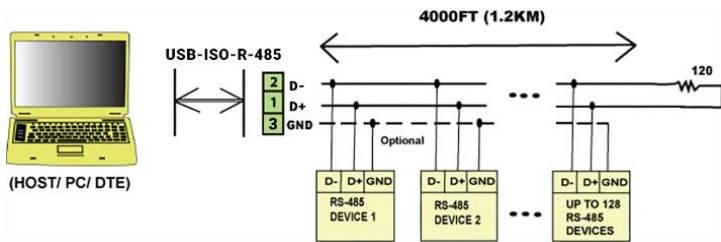


FIGURE 2: MASTER/SLAVE MULTIPLE DROP CONFIG. IN RS-485 MODE

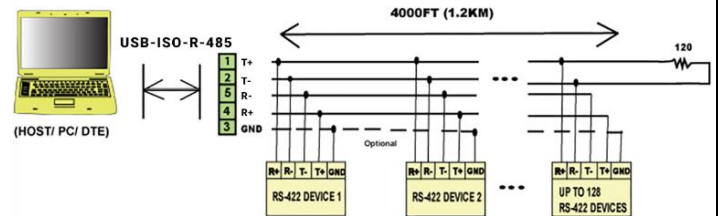


FIGURE 6: MASTER/SLAVE MULTIPLE DROP CONFIG. IN RS-422 MODE

USB TO RS-232 MODE OPTION:

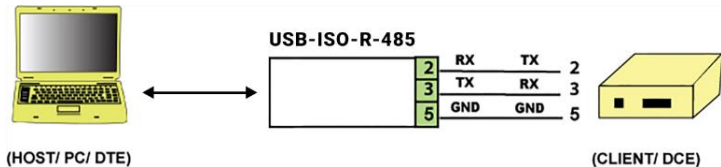


FIGURE 3: USB TO RS-232 DEVICE

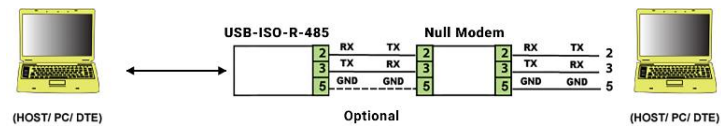


FIGURE 4: USB TO RS-232 HOST



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RS-485 TROUBLESHOOTING INSTRUCTIONS

Testing RS-485 using two **USB-ISO-R-485** units:

1. Perform a loopback test on two units:
 - a. Connect the two D+ to D+ and D- to D- on two half-duplex **USB-ISO-R-485** RS-485 ports.
 - b. Install the **USB-ISO-R-485** FTDI driver on the computer with instructions provided. Most Operating systems already have the FTDI driver built-in eliminating the requirement to install the driver.
 - c. Connect the two USB connectors on both units to two USB ports on the computer. Make sure you hear the USB beep sound. This will indicate the USB was installed properly and a virtual COM port was assigned.
 - d. Running hyper terminal programs on both PCs, send ASCII characters to the **USB-ISO-R-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. These tests demonstrate proper transmit and receive functionality of both **USB-ISO-R-485** units.
 - e. When power is on, the POWER (green) light will be on. When there is constant transmitting data you should see the TXD (green) light blinking. When there is constant receiving data, you should see the RXD (green) light blinking.

RS-232 OR RS-422 TROUBLESHOOTING INSTRUCTIONS

Testing RS-232/RS-422 using one **USB-ISO-R-485** unit:

1. Perform a loopback test on one port:
 - a. For full-duplex RS-232, connect the RX to TX and GND to GND on the RS-232 port. For full-duplex RS-422, connect the T+ to R+ and T- to R- on the RS-422 port.
 - b. Install the **USB-ISO-R-485** FTDI driver on the computer with instructions provided. Most Operating systems already have the FTDI driver built-in eliminating the requirement to install the driver.
 - c. Connect the two USB connectors on both units to two USB ports on the computer. Make sure you hear the USB beep sound. This will indicate the USB was installed properly and a virtual COM port was assigned.
 - d. Running hyper terminal programs on both PCs, send ASCII characters to the **USB-ISO-R-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. These tests demonstrate proper transmit and receive functionality of both **USB-ISO-R-485** units.
 - e. When power is on, the POWER (green) light will be on. When there is constant transmitting data you should see the TXD (green) light blinking. When there is constant receiving data, you should see the RXD (green) light blinking.



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