Owner's Manual

Industrial-Grade USB to RS-422/485 Serial Adapter

Models: U208-001-IND (1-Port), U208-002-IND (2-Port), U208-004-IND (4-Port)

Este manual esta disponible en español en la página de Tripp Lite: www.tripplite.com/support

Ce manuel est disponible en français sur le site Web de Tripp Lite : www.tripplite.com/support

Русскоязычная версия настоящего руководства представлена на веб-сайте компании Tripp Lite по адресу: www.tripplite.com/support

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Important Safety Instructions

- Always read the safety instructions carefully
- Keep this Owner's Manual for future reference
- If any of the following situations arise, schedule an appointment to have your equipment inspected by a service technician:
  - o The equipment has been exposed to moisture
  - o The equipment has been dropped and damaged
  - o The equipment shows obvious signs of breakage
  - o The equipment is not functioning properly or is not functioning according to the Owner's Manual instructions

Product Features

- Add up to four RS-422 or RS-485 serial devices via the USB port on your desktop or notebook computer
- Integrated FTDI chipset with COM retention automatically reassigns COM values to ports in the event of a disconnection or reboot
- Rugged all-metal enclosure designed for industrial applications
- DIP switch controls provide easy port configuration with minimal software requirements
- Features auto-detect and auto-switching of RS-422 and RS-485 devices
- RS-485 mode supports Auto Transceiver Turn Around (ATTA)
- Supports USB 2.0 specifications and earlier
- Supports serial communications speeds up to 1 Mbps
- Transmission Echo for RS-485 collision detection
- Wall-mount option provides a secure installation
- ESD protection to +/- 15 kV
- LED for indicate TxD or RxD activity
- USB-powered—no external power adapter required

System Requirements

- Computer with an available USB port
- Windows™ XP or later
- Mac® OS X 10.4 or later
- Linux 2.6.31 or later

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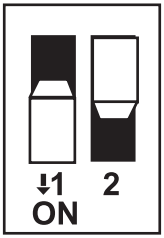
Package Includes

- Industrial-Grade USB to Serial Adapter
- USB A to B Cable (M/M), 3 ft. (1 m)
- Jumper Connectors (2 per port)
- Driver CD
- Owner's Manual

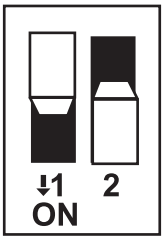
DIP Switch Settings

The U280-00X-IND USB to Serial Adapter features an independent DIP switch for each serial port. See below for DIP switch settings:

1 **Auto RS-422/485 Detection (Default):** Automatically detects the RS-422 or RS-485 mode and sets the port accordingly.



2 **RS-422 (4-Wire) or RS-485 (4-Wire):** Sets the port specifically for use in 4-Wire mode.



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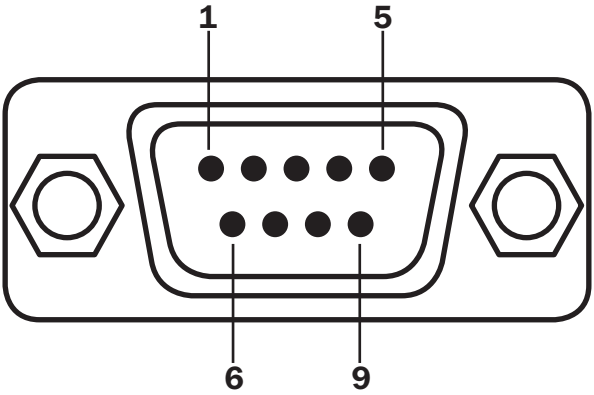
Pin Assignment

The included serial adapter uses a male DB9 connector. Please see the connector's pin assignment below:



Pin	RS-422	RS-485 (2-Wire)	RS-485 (4-Wire)
1	Tx-	D-	Tx-
2	Tx+	D+	Tx+
3	Rx+	N/A	Rx+
4	Rx-	N/A	Rx-
5	GND	GND	GND

Jumper Settings

The included serial adapters feature independent TX and RX termination resistors for each serial port. The jumper settings (short pins) can be modified to avoid impedance mismatch problems when operating under a multi-drop transmission. To modify the settings, open the metal covers and set the jumper setting with the included connectors to enable or disable 120 ohm termination resistors. The factory default setting is OPEN (disable 120 ohm termination resistors across two wires).

Open (Default)

Short

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Installation

Note: *In most cases, the U208-004-IND will receive sufficient power from the connected computer to operate. In the event that additional power is required, connect a user-supplied external power supply between the external power connection on the unit and an external power source. The U208-004-IND is compatible with listed LPS 5V DC power supplies using a 5.5 x 2.1 x 9.5 mm output plug with a positive tip and negative sleeve.*

1. Using the included USB cable, connect the USB to Serial adapter to an available USB port on your computer.
2. Insert the included Driver CD into the computer's CD/DVD drive. If your computer does not have a CD/DVD drive, you can download the software at www.tripplite.com/support.
3. In the Driver CD, navigate to the Drivers folder and the driver file applicable to your operating system.
4. Run the driver file and follow the install prompts to complete installation.
5. Set the DIP switches on the unit to the appropriate serial mode (see **DIP Switch Settings** for more information).
6. Connect the serial cable between the serial device and the serial ports on the unit.

   Note: *The RX status LED will blink green when serial data is being received. The TX status LED will blink yellow when serial data is being sent.*

Specifications

Input Connector	USB Type-B, Female
Output Connector	U208-001-IND – (x1) DB9, Male U208-002-IND – (x2) DB9, Male U208-004-IND – (x4) DB9, Male
LEDs	Green: Serial Data Received Yellow: Serial Data Transmitted
Supported Protocols	RS-422, RS-485
Max Baud Rate	921.6 Kbps
Max Data Transfer Speeds	1 Mbps
Stop Bits	1, 2
Data Bits	7, 8
FIFO	U208-001-IND – Tx: 256B Rx: 128B U208-002-IND – Tx: 4 kB per port Rx: 4 kB per port U208-004-IND – Tx: 2 kB per port Rx: 2 kB per port
Flow Control	Xon/Xoff
Parity	Odd, Even, Mark, Space, No Parity
Operating Temperature	32 to 104°F (0 to 40°C)
Storage Temperature	14 to 131°F (-10 to 55°C)
Relative Humidity	5% to 90% RH, Non-Condensing

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Warranty and Product Registration

2-YEAR LIMITED WARRANTY

TRIPP LITE warrants its products to be free from defects in materials and workmanship for a period of two (2) years from the date of initial purchase. TRIPP LITE's obligation under this warranty is limited to repairing or replacing (at its sole option) any such defective products. To obtain service under this warranty, you must obtain a Returned Material Authorization (RMA) number from TRIPP LITE or an authorized TRIPP LITE service center. Products must be returned to TRIPP LITE or an authorized TRIPP LITE service center with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment, which has been damaged by accident, negligence or misapplication or has been altered or modified in any way.

EXCEPT AS PROVIDED HEREIN, TRIPP LITE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL TRIPP LITE BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, TRIPP LITE is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise.

PRODUCT REGISTRATION

Visit www.tripplite.com/warranty today to register your new Tripp Lite product. You'll be automatically entered into a drawing for a chance to win a FREE Tripp Lite product!*

* No purchase necessary. Void where prohibited. Some restrictions apply. See website for details.

FCC Notice, Class B

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications to this equipment not expressly approved by Tripp Lite could void the user's authority to operate this equipment.

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Warranty and Product Registration

WEEE Compliance Information for Tripp Lite Customers and Recyclers (European Union)

Under the Waste Electrical and Electronic Equipment (WEEE) Directive and implementing regulations, when customers buy new electrical and electronic equipment from Tripp Lite they are entitled to:

- Send old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country)
- Send the new equipment back for recycling when this ultimately becomes waste

Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended.

Tripp Lite has a policy of continuous improvement. Specifications are subject to change without notice.

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