

USB to RS422 Converter UC-RS422

The UC-RS422 is a high-performance industrial USB Type-C to 4-wire full-duplex RS422 converter. Designed to interface modern PCs and laptops with industrial RS422 field devices, it features high-speed differential transmitters and receivers capable of driving cables up to 1,200 meters. With built-in line termination and ± 15 kV ESD protection, it ensures robust communication in noise-heavy industrial automation environments.



Key Features

- Industrial USB to 4-wire full-duplex RS-422 converter
- Reversible USB Type-C host connector
- Simultaneous bidirectional full-duplex differential data transfer
- Bus-powered directly from USB host port (5V DC)
- High-performance FTDI chipset architecture
- Supports standard baud rates from 300 bps to 250 kbps
- Drives up to 256 receiver nodes across a 1,200 m bus
- ± 15 kV ESD protection across differential signal terminals
- Independent LED status indicators for Power, TX, and RX
- Compact enclosure with removable terminal block

Ordering Information

Product Code	Description
UC-RS422	USB to RS422 Converter (Type-C, 4-Wire Full-Duplex, 256 Nodes)
SPD-RS485	Surge Protection Device RS485
UC-RS232-RS422	RS232 to RS422 Converter
UC-RS485	USB to RS485 Converter
UC-ISO-RS485	USB to Isolated RS485 Converter

Applications

- **Machinery & Robotics Control:** High-speed full-duplex command streaming between PC controllers and automated machinery.
- **Environmental & Meteorological Sensors:** Interfacing long-cable wind sensors, weather stations, and telemetry units.
- **CNC & Motion Controller Commissioning:** Direct parameter tuning and diagnostic data capture from PC USB ports.
- **Factory Automation & DAQ:** Collecting continuous serial data streams without half-duplex turn-around latency.

Specifications

Parameter	Value
Mounting Type	Inline / Field Portable
Dimensions	60 mm x 40 mm x 20 mm (L x W x H)
Enclosure Material	Industrial ABS Plastic
Operating Temperature	0 °C to +85 °C
Storage Temperature	−40 °C to +85 °C
Relative Humidity	5% to 95% RH (non-condensing)

Electrical Specifications

Parameter	Specification
Power Supply	5V DC (Bus Powered via USB Type-C)
Working Current	200 mA Max
Baud Rate Range	300 bps to 250 kbps
Data Format	7/8 Data bits, 1/2 Stop bits, None/Even/Odd Parity
RS422 Bus Capacity	Up to 256 receiver nodes
RS422 Receiver Input Range	±12 V between A and B max
RS422 Transmit Output	Line A pulled up (+5V), Line B pulled down (0V)
RS422 Termination	120 Ω built-in between lines
USB Connector	USB Type-C Receptacle (USB 2.0 Full Speed)

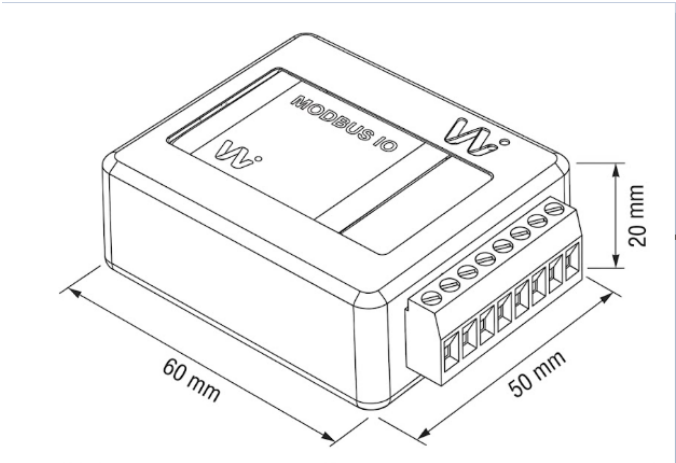
Isolation & Protection Specifications

Parameter	Value	Standard / Notes
Isolation Barrier	Non-Isolated	Direct high-speed USB-to-RS422 transceiver interface
ESD Protection	±15 kV Air / ±8 kV Contact	IEC 61000-4-2 Human-Body Model & Contact
Surge Clamping	600W TVS	Fast bidirectional clamping diodes on all differential pins

LED Indications and Diagnostics

LED	Color	Status	Description
TX	Red	Blinking	Data transmitting from PC to RS422 field device
RX	Green	Blinking	Data receiving from RS422 field device into PC

Mechanical Dimensions

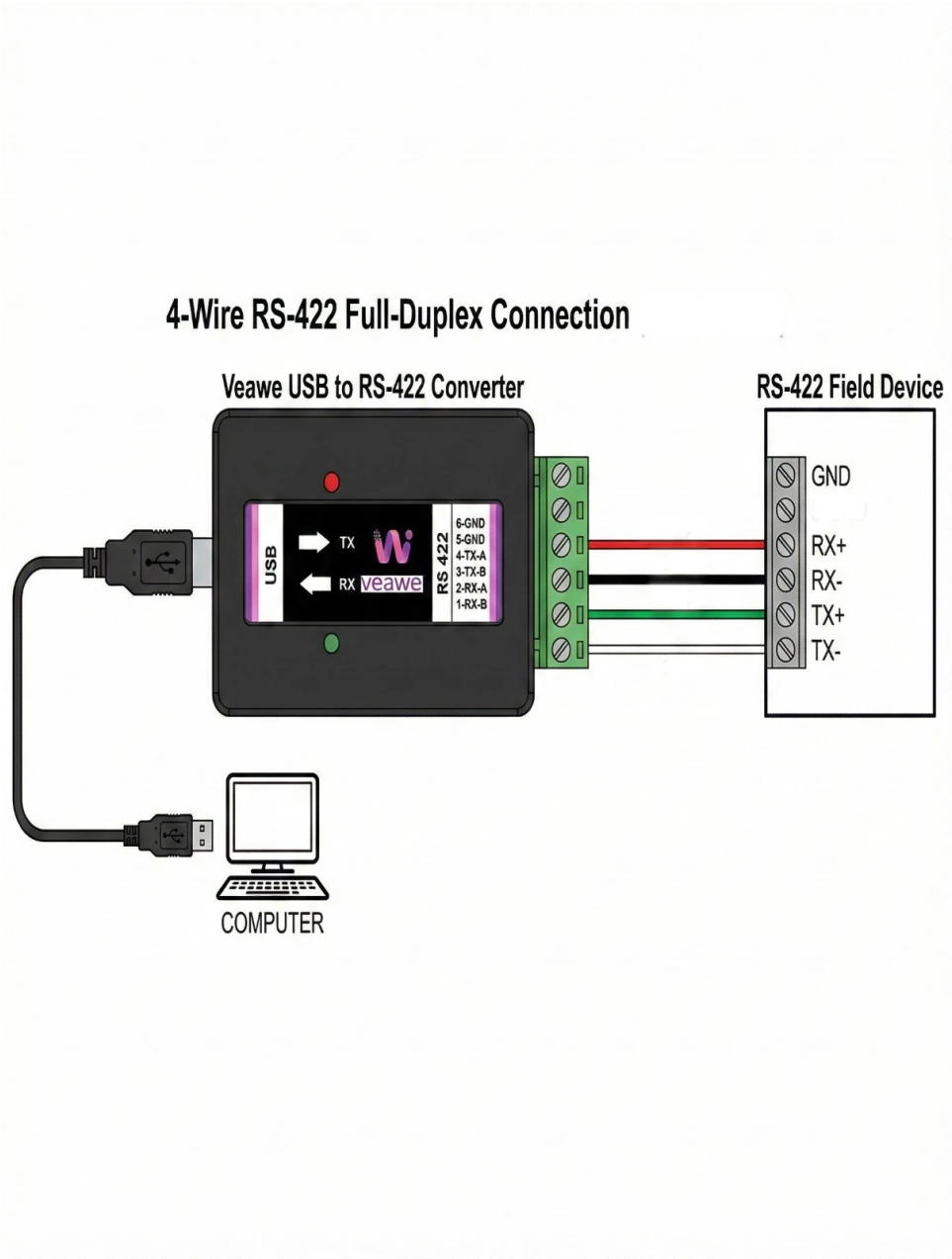


Terminal Details & Port Pinouts

6-Pin Screw Terminal Block

Pin #	Label	Signal	Connection to Field Device
1	1-RX-B	RS422 Receive B	Connects to Field Device TX-B (TX-)
2	2-RX-A	RS422 Receive A	Connects to Field Device TX-A (TX+)
3	3-TX-B	RS422 Transmit B	Connects to Field Device RX-B (RX-)
4	4-TX-A	RS422 Transmit A	Connects to Field Device RX-A (RX+)
5	5-GND	Ground	Common Signal Ground reference
6	6-GND	Ground	Common Signal Ground reference

4-Wire Full-Duplex Connection Diagram



Revision History

Revision	Date	Description of Change
Rev 1.0	2026-09-19	Initial datasheet release

Get the latest version of this datasheet : [click here..](#)

Support

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