

Isolated RS232 to RS232 Repeater UC-ISO-232-232

The UC-ISO-232-232 is an industrial-grade isolated RS232 to RS232 repeater designed to provide complete galvanic isolation between two RS232 devices. Featuring 2.5 kVrms signal isolation and 1 kVrms power isolation, it prevents dangerous ground loops, suppresses high-voltage electrical surges, and safeguards delicate serial ports on industrial PCs, PLCs, weighing controllers, and instrumentation.



Key Features

- 2.5 kV RMS optical signal isolation and 1.0 kV RMS power isolation
- Bi-directional full-duplex RS-232 signal repeating
- Pure hardware isolation with zero protocol configuration
- Supports standard baud rates from 300 bps to 250 kbps
- Independent LED status indicators for Power, TX, and RX
- ± 15 kV ESD protection across all signal lines
- 9V to 30V DC industrial power supply input (nominal 24V DC)
- 35 mm DIN rail and wall mountable housing
- Dimensions: 110 mm $\times$ 50 mm $\times$ 55 mm

Ordering Information

Product Code	Description
UC-ISO-232-232	Isolated RS232 To RS232 Repeater (2.5kVrms Isolation, 9~24V DC)
SPD-RS485	Surge Protection Device RS485
UC-ISO-232-485	Isolated RS232 To RS485 Converter
UC-RS232	USB to RS232 Converter
UC-ETH-RS232-D	Ethernet Dual RS232 Converter

Applications

- **Ground Loop Break:** Completely breaks common ground connections between industrial equipment connected across different electrical panels.
- **Serial Port Protection:** Protects expensive PLC communication cards and PC serial ports from line surges and lightning strikes.
- **Noise Isolation in Substation Environments:** Eliminates common-mode interference on RS232 links in power substations and heavy manufacturing plants.
- **Weighbridge & Industrial Instrument Interfacing:** Isolates sensitive load-cell transmitters and digital indicators from host PCs.

Specifications

Parameter	Value
Mounting Type	35 mm DIN Rail Mounting
Dimensions	110 mm x 50 mm x 55 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	9V ~ 24V DC (nominal 24V DC)
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
RS232 Ports	2x DB9 Male connectors (DCE configuration)
RS232 Maximum Input Level	±30 V DC max
RS232 Output Voltage Level	±7 V nominal

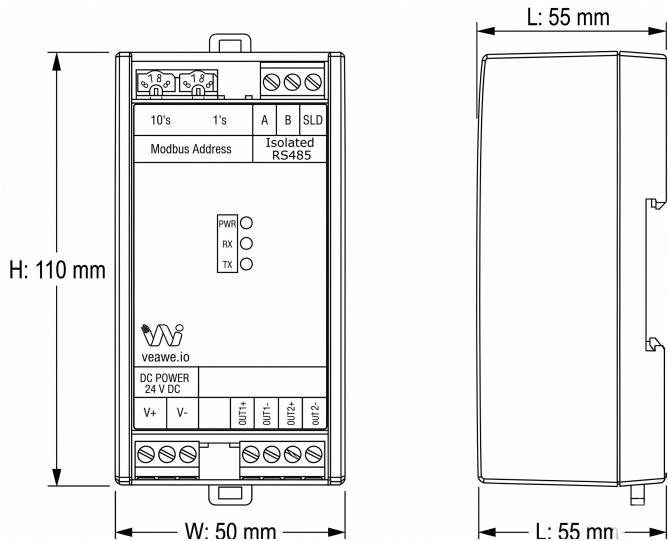
Isolation & Protection Specifications

Parameter	Value	Standard / Notes
Galvanic Signal Isolation	2,500 V RMS	Galvanic barrier between Port 1 and Port 2
Power Isolation	1,000 V RMS	Isolated internal DC-DC converter
Reverse Polarity Protection	Integrated	Series diode on DC power input
ESD Immunity	±15 kV Air / ±8 kV Contact	IEC 61000-4-2 Air Discharge and Contact Discharge
Surge Clamping	600W TVS	TVS clamping across all communication pins

LED Indications and Diagnostics

LED	Color	Status	Description
PWR	Red	ON	Operating power connected
TX	Red	Blinking	RS232 Data transmission active
RX	Green	Blinking	RS232 Data reception active

Mechanical Dimensions



Terminal Details & Port Pinouts

Top Port: RS232 Port 1 (DB9 Male)

DB9 Pin	Signal	Direction	Description
2	RX	Input	RS232 Receive data (connects to host TX)
3	TX	Output	RS232 Transmit data (connects to host RX)
5	GND	Ground	Signal Ground reference
1, 4, 6, 7, 8, 9	NC	–	No connection

Bottom Port: RS232 Port 2 (DB9 Male) & Power Supply

Pin / Terminal	Label	Signal	Description
DB9 Pin 2	RX	Input	RS232 Receive data (connects to device TX)
DB9 Pin 3	TX	Output	RS232 Transmit data (connects to device RX)
DB9 Pin 5	GND	Ground	Isolated Signal Ground reference
Screw V+	24V+	Power	Power Supply Positive (+9V to +24V DC input)
Screw V-	GND	Power	Power Supply Negative (Ground return)

Revision History

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

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Support

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