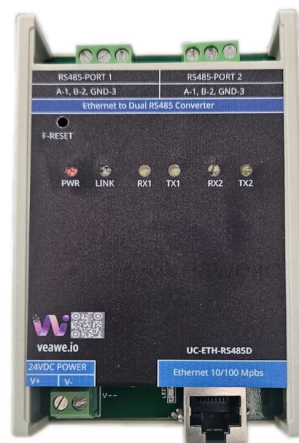


Ethernet to Dual RS485 Converter UC-ETH-RS485-D

The UC-ETH-RS485-D is a dual-port industrial Ethernet to RS485 device server and Modbus gateway. Featuring two independently configurable RS485 serial communication channels and an auto-sensing 10/100M RJ45 Ethernet port, it integrates serial field devices into IP networks. It supports transparent data routing, multi-client TCP/UDP socket modes, and bi-directional Modbus TCP to Modbus RTU protocol conversion.



Key Features

- 2 independent RS-485 serial ports with isolated screw terminals
- Auto-sensing 10/100M Ethernet RJ45 port with 2 kV magnetic isolation
- Bi-directional Modbus TCP to Modbus RTU protocol gateway on both ports
- Multi-client TCP Server, TCP Client, UDP, and Httpd socket modes
- Transparent data pass-through for ASCII and proprietary protocols
- Built-in web server for browser-based network configuration
- Configurable baud rates from 300 bps to 250 kbps per channel
- Up to 256 nodes per RS-485 segment with built-in 120 Ω termination
- ± 15 kV ESD and TVS surge protection across Ethernet, serial, and power lines
- 12V to 24V DC wide supply voltage with reverse polarity protection
- 35 mm DIN rail and wall mountable housing
- Dimensions: 110 mm $\times$ 70 mm $\times$ 50 mm

Ordering Information

Product Code	Description
UC-ETH-RS485-D	Ethernet to Dual RS485 Converter (Modbus TCP/RTU Gateway, 12~24V DC)
SPD-ETH-RJ45	Ethernet Surge Protection Device
SPD-RS485	Surge Protection Device RS485
UC-ETH-RS485	Ethernet to Single RS485 Converter
UC-ETH-RS232-D	Ethernet Dual RS232 Converter

Applications

- **Modbus TCP to RTU Bridging:** Interfacing PLC Ethernet networks to legacy Modbus RTU energy meters, VFD drives, and I/O modules.
- **Factory Automation & SCADA:** Consolidating multiple distributed RS485 field loops onto high-speed plant-wide LAN backbones.
- **Virtual COM Port Extension:** Accessing remote serial instruments from centralized control room software without changing legacy software drivers.
- **Smart Building & Energy Management:** Centralizing power meters, HVAC controllers, and solar string monitoring.

Specifications

Parameter	Value
Mounting Type	35 mm DIN Rail & Wall Mounting
Dimensions	110 mm x 70 mm x 50 mm (L x W x H)
Enclosure Material	Industrial ABS Plastic
Operating Temperature	−40 °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	12V ~ 24V DC (30V DC maximum limit)
Working Current	200 mA Max
Reverse Polarity Protection	Integrated series diode on DC power input
Ethernet Port	1x RJ45 10/100 Mbps auto-negotiation, auto MDI/MDIX
Ethernet Isolation	2,000 V RMS built-in transformer magnetic isolation
Serial Ports	2x Independent RS485 Channels (Screw Terminal blocks)
Baud Rate Range	300 bps to 250 kbps
Data Format	7/8 Data bits, 1/2 Stop bits, None/Even/Odd Parity
RS485 Receive Input	±12 V between A and B max
RS485 Transmit Output	A pulled up to +5V, B pulled down to 0V
RS485 Termination	120 Ω termination built-in on both channels
Max Receivers	Up to 256 transceiver nodes per channel

Isolation & Protection Specifications

Parameter	Value	Standard / Notes
Ethernet Isolation	2,000 V RMS	Galvanic magnetic barrier across RJ45
RS485 ESD Immunity	±15 kV Air / HBM, ±8 kV Contact	IEC 61000-4-2 ESD protection across all RS485 lines
Surge Protection	Fast Transient Clamping	TVS protection across Ethernet, RS485, and power lines

LED Indications and Diagnostics

LED	Color	Status	Description
PWR	Red	ON	Operating power connected and regulated
LINK	Green	ON / Blinking	Ethernet physical link established / network activity
RX1	Yellow	Blinking	Data receiving from RS485 Channel 1 bus
TX1	Green	Blinking	Data transmitting onto RS485 Channel 1 bus
RX2	Yellow	Blinking	Data receiving from RS485 Channel 2 bus
TX2	Green	Blinking	Data transmitting onto RS485 Channel 2 bus
F-RESET	—	Push Button	Restores factory default network & serial parameters

Network & Gateway Configuration

Default Factory Settings

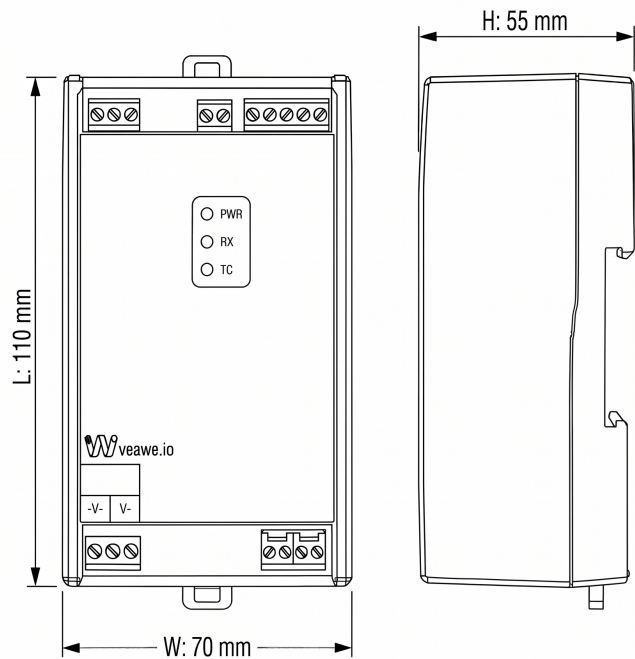
Parameter	Default Value	Notes
IP Address	192.168.0.7	Static IP (DHCP selectable in web interface)
Subnet Mask	255.255.255.0	Class C Subnet
Default Gateway	192.168.0.1	Default router IP
Web UI Port	80	HTTP browser access (http://192.168.0.7)
Web Username / Password	admin / admin	Default credentials
Channel 1 TCP Port	23	Default socket port for RS485-1
Channel 2 TCP Port	26	Default socket port for RS485-2
Default Serial Settings	115200 bps, 8, N, 1	Configurable 300 bps to 250 kbps

Operating Modes & Features

- **Modbus TCP to Modbus RTU Mode:** Under **RS485 Settings**, select the operation mode to **Modbus TCP to Modbus RTU**. The converter transparently handles Modbus frame wrapping, checksum calculation, and transaction identification between TCP clients and RTU slaves on both channels.
- **Transparent Serial Connection:** Set Work Mode to **None** for raw serial data pass-through over TCP/UDP. Suitable for custom protocols, ASCII terminals, Virtual COM ports, and Telnet server connections.
- **Packet Transmission Mechanisms:**
 - **Auto Mode (0/0):** Automatically transmits packet after 4 byte-times of silence (~350 μ s @ 115200 Baud) or when buffer reaches 1,460 bytes. Recommended for Modbus RTU and most protocols.
 - **Fixed Packet Mode:** User-defined packet timeout (in milliseconds) and packet length (in bytes).
- **Web to Serial Testing:** Built-in browser tool allowing technicians to send and receive test ASCII or Hex data directly over the web UI.

Mechanical Dimensions

DIMENSIONAL DIAGRAM - VEAWE UIO-444-20mA MODULE



Dimensions: 110 mm x 70 mm x 55 mm (L x W x H)

Terminal Details & Port Pinouts

RS485 & Power Screw Terminal Blocks

Terminal Block	Pin	Label	Description
RS485-PORT 1	1	A-1	Channel 1 Non-inverting RS485 data signal (+)
<i>(Top Left)</i>	2	B-2	Channel 1 Inverting RS485 data signal (-)
	3	GND-3	Channel 1 Signal Ground reference
RS485-PORT 2	1	A-1	Channel 2 Non-inverting RS485 data signal (+)
<i>(Top Right)</i>	2	B-2	Channel 2 Inverting RS485 data signal (-)
	3	GND-3	Channel 2 Signal Ground reference
24VDC POWER	1	V+	Power Supply Positive (+12V to +24V DC)
<i>(Bottom Left)</i>	2	V-	Power Supply Negative (Ground return)
Ethernet	–	RJ45	10/100M auto-sensing Ethernet jack (2 kV magnetic isolation)

[!WARNING] Connecting external power supply terminals to RS485 signal terminals will damage the device permanently. Always verify wiring before applying power.

Revision History

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

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

Support

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