Weidmueller 2682600000 IE-CS-MBGW-2TX-1COM Serial/Ethernet Converter/Modbus Gateway Installation Guide

2682600000 IE-CS-MBGW-2TX-1COM Serial/ Ethernet Converter/Modbus Gateway Installation Guide

Contents

Introduction

Device IE-CS-MBGW-2TX-1COM is a multi-purpose Serial/Ethernet converter and Modbus TCP/RTU-ASCII protocol gateway and is equipped with one configurable RS232/422/485 port and two Ethernet RJ45 ports (acting like an unmanaged 2-Port switch).
If configured as a Serial/Ethernet converter it can be used to convert data streams between serial and Ethernet networks. The converter supports standard device server features like Virtual COM Mode, TCP Server/Client, or

UDP Server/Client operation modes.
Running as a Modbus protocol gateway it can be used to convert data streams between protocols Modbus TCP (Ethernet) and Modbus ASCII/RTU (serial-based). The device supports the operation modes “ASCII/RTU Master to TCP Slave Gateway” and “TCP Master to ASCII/RTU Slave Gateway”.
The devices are designed for industrial applications and fitted with robust housing. To ensure reliable, error-free operation, and to prevent damage or injury, please read the operating instructions, all safety information provided in this document, and any other safety information that was supplied with the product.

Safety notice

	The device heats up during operation. Allow the unit to cool down or use protective gloves when carryi ng out any work.
	The device may only be connected to the supply voltage shown on the product label. A higher voltage than specified will destroy the device. The device must be supplied by a SELV source as defined in the Low Voltage Directive 2014/35/EU and 2014/30/EU.
	Installation, commissioning, and maintenance may only be performed by qualified electricians.
	Observe the operating instructions.

	• Indoor use and pollution degree II, it must be wiped with a dry cloth to clean up the device and label. • Do not block air ventilation holes. • If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. • Shall be mounted in the Industrial Control Panel and the ambient temperature does not exceed 70 de grees C.

Intended use: The device is intended for the realization of communication networks within an industrial environment, it is intended to be used in a restricted access location. The device may only be used within the scope of the specified technical data. The device is intended to be mounted to a well-grounded mounting surface, such as a metal panel. Any other use may result in unintentional malfunction and damage. Observing the documentation is part of the intended use.
Environmental conditions: This equipment is intended to be used in a restricted access location. When planning the installation site make sure that the ambient temperature during operation will not exceed the temperature given in the technical data.
Also, make sure that the airflow will not be compromised by other devices.
Ensure that the mounted and wired device is not exposed to any mechanical stress.
FCC compliance: This device complies with part 15 of 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.

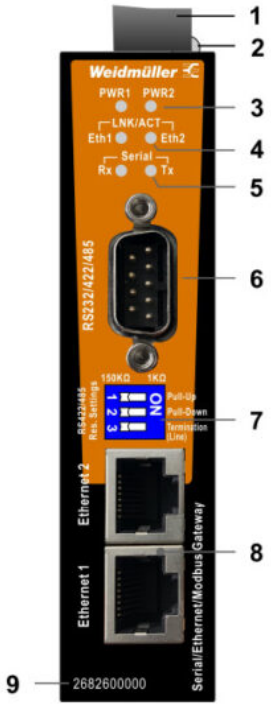
Package Checklist

1 x Serial/Ethernet-Converter/Modbus-Gateway	1 x Serial/Ethernet-Converter/Modbus
1 x 4-Pin Terminal connector	1 x Wall mounting kit

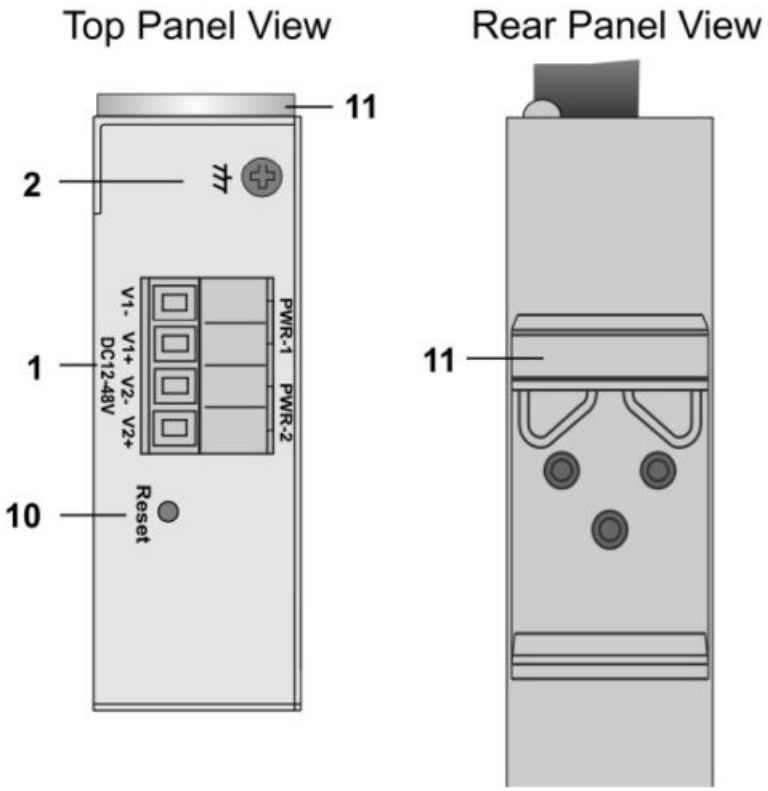
Panel Layouts

IE-CS-MBGW-2TX-1 COM

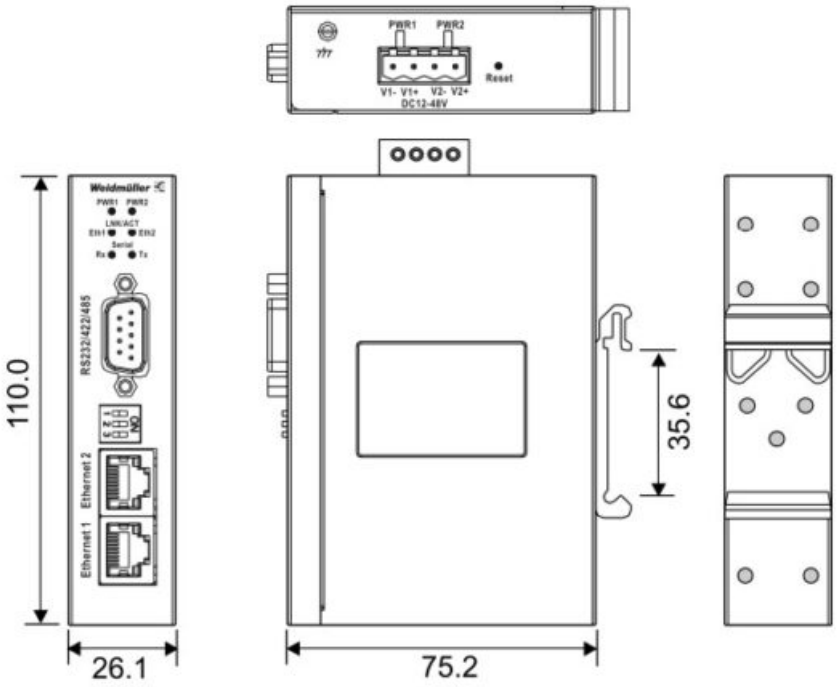
Front Panel View



1. Terminal block for power input PWR1/PWR2
2. Grounding screw / Frame ground (Note: The shielding ground of the LAN port is electrically connected to the grounding screw)
3. Power input LEDs (PWR1 / PWR2)
4. Link/Activity LEDs Ethernet Ports
5. Data Transmission LEDs Serial Port
6. Serial Port (DB9 male Connector)
7. DIP Switches for serial line settings SW1: Sets Pull-Up resistor to 1 KΩ (ON) or 150 KΩ (OFF).
   SW2: Sets Pull-Down resistor to 1 KΩ (ON) or 150 KΩ (OFF).
   SW3: Enables / Disables Line Termination.
   By factory default, all DIP switches are set to OFF.
8. Ethernet RJ45 Ports 10/100BASE-T(X)
9. Article Number
10. Reset Button
11. DIN-rail kit

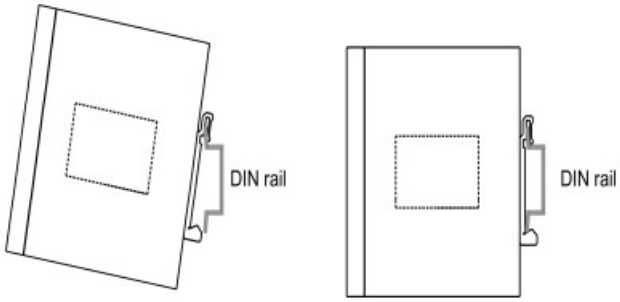


Mounting Dimensions



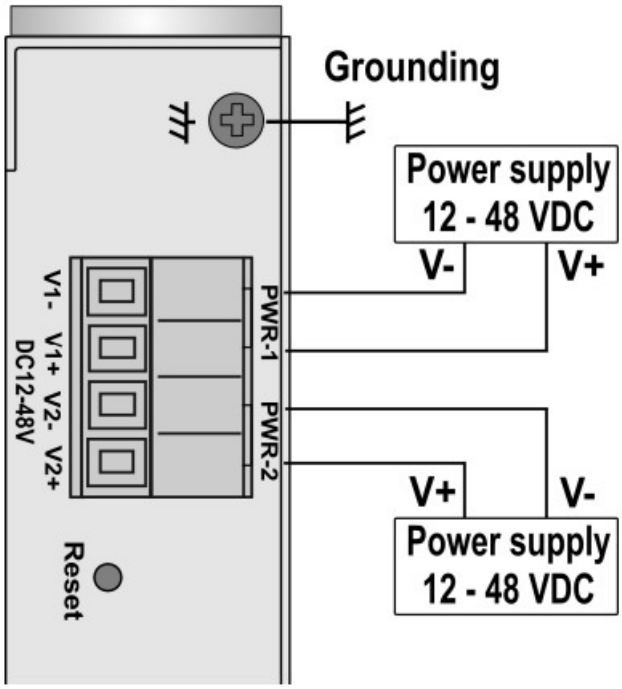
DIN-Rail Mounting

Slide the device onto DIN-rail and make sure that the Din-rail clip clicks into the rail firmly.
STEP 1: Insert the top of the DINRail into the slot just below the stiff metal spring.
STEP 2: The DIN-Rail attachment unit will snap into place as shown below.
To remove the device from the DIN rail simply reverse steps 1 and 2.



Grounding

⚠	**ATTENTION** – Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). – Do the ground connection from the ground screw to the grounding surface prior to connecting devices. – This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel. – The shielding ground of the RJ45 ports is electrically connected to the ground connection (screw).
⚠	**Warning** • Take into consideration the following guidelines before wiring the device • The terminal block is mating with Plug and is suitable for 12-24AWG. Torque value 4.5 lb-in. • The temperature rating of the input connection cable should be higher than 105°C. • Supplied by SELV source evaluated by UL 61010-1 or 61010-2-201 power supply only.

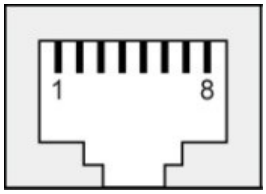


Communication Connections

The Converter/Gateway is equipped with:
2 x RJ45 Ethernet Port 10/100BASE-T(X)/Auto MDI-X
1 x Serial Interface (DB9 male connector)
Please use RJ45 Ethernet Ports only cables suitable for the respective type of communication and ensure that signals are protected from possible interference.

10/100BASE-T(X) RJ45 Ports

The 10/100BASE-T(X) ports are used to connect to Ethernet-enabled devices. The below table shows pinouts for both MDI (NIC-type) ports and MDI-X (HUB/Switch-type) ports. Auto MDI-X ensures that both wiring schemes are supported (Automatic crossover).

MDI Port Pinouts		**MDI-X Port Pinouts**		**8-pin RJ45**
Pin	Signal	Pin	Signal	
1	Tx+	1	Rx+	
2	Tx-	2	Rx-	
3	Rx+	3	Tx+	
6	Rx-	6	Tx-	

Serial Interface DB-9 Connector
Pinouts DB-9 Connector (male)

Pin #	**RS-232 (DTE Device)**	**RS 422 1**	**RS-48511 (4-wire)**	**RS-485 (2-wire)**	
1	DCD	RX-	RX-	DATA-	
2	RXD	RX+	RX+	DATA+	
3	TXD	TX+	TX+	—	
4	DTR	TX-	TX-	—	
5	GND	GND	GND	GND	
6	DSR	—	—	—	
7	RTS			—	
8	CTS			—	
9	RI	—	—	—	

Note: Table with correct pinouts for RS-422 and RS-485 4-wire interface modes. In previous document V1.3, the assignments for RX-/RX+ and TX-/TX+ were reversed!

Device Access (Login to Web Interface)

For configuration, the Web interface can be accessed via the following factory default settings:

IP address / Netmask:	**192.168.1.110 / 255.255.255.0**
Username:	**admin**
Password:	**Weidmueller**

Connect the PC to any Ethernet port of the Converter/Gateway and set the PC's IP address to a free one in the range 192.168.1.0 / 255.255.255.0
Start a web browser and enter the IP address of the connected device into the browser's address line (**http://192.168.1.110**).

After the appearance of the prompt (login) enter the login credentials. After confirmation of your input with “OK,” the home page of the Converter/Gateway will be displayed.

Device Reset

- Press the reset button for < 5 seconds to reboot the device (Warm Start).
- Press the reset button for >= 5 seconds to reset the Converter/Gateway to factory-default settings.

LED Indicators

Description of front panel LED indicators:

LED	Color	Status	Description
PWR1	Green	On	Power is supplied to power input PWR1.
PWR2	Green	On	Power is supplied to power input PWR2.
Eth1	Green	On	Ethernet Port 1 is connected.
		Blinking	Data is transmitted.
Eth2	Green	On	Ethernet Port 2 is connected.
		Blinking	Data is transmitted.
Rx	Amber	On	Receiving serial data.
Tx	Green	On	Transmitting serial data.

Disposal information

Observe the notes for proper disposal of the product. You can find the notes here:

https://www.weidmueller.com/disposal

Specifications

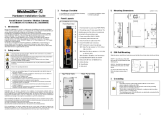
Interfaces	
Ethernet Ports	2 x RJ45 10/100BASE-T(X) auto-negotiation speed, F/H duplex mode and auto MDI/MDI-X connection

Serial Port	lx DB9 connector (male) • Interface Settings RS-232/422/485 • Baud Rates 110 bps to 460800 bps • Data Bits 7, 8 • Parity odd, even, none, mark, space • Stop Bits 1, 2 • RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND • RS-422: Rx-, Rx+, Tx+, Tx-, GND • RS-485 4 wire: Rx-, Rx+, Tx+, Tx-, GND • RS-485 2 wire: Data-, Data+, GND • Flow Control XON/XOFF, RTS/CTS, DTR/DSR
LED Indicators	PWR 1 / 2 (Power supply) Eth 1 / 2 (Ethernet Port Link / Activity) Tx / Rx (Serial Port Data Transmit / Receive)
DIP Switch	SW1:Sets Pull-Up resistor to 1 KO (ON) or 150 0 (OFF) SW2:Sets Pull-Do wn res. to 1 KO (ON) or 150 KO (OFF) SW3: Enables (ON) / Disables (OF F) Line Termination
Power supply	
Input Voltage	24 V DC (12 to 48 V DC), 2 redundant inputs
Current Consumption	0.05 A — 0.1 A
Connection	One removable 4-pin terminal block, Wiring cable 12- 24AWG
Overload Current Protection	Present
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	IP30 protection, metal
Dimension (W x H x D)	26.1 x 110 x 75.2 mm (1.02 x 4.33 x 2.95 inch)
Weight	200 g
Installation	DIN-rail, Wall
Environmental conditions	
Operating Temperature	-40 to 70°C (-40 to 158°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	up to 2000 m
Regulatory Approvals	
Safety	UL 61010-1; UL 61010-2-201
EMC	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD : Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: P ower: 0,5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms

Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-31
Vibration	IEC 60068-2-6
MTBF	
Time	1.479.078 hrs
Database	Telcordia SR332
Warranty	
Time Period	15 years

Contact Information
Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26, 32758 Detmold / Germany
Phone +49 (0) 5231 14-0, Fax +49 (0) 5231 14-292083
E-Mail weidmueller@weidmueller.com, Internet www.weidmueller.com

Documents / Resources

	Weidmueller 2682600000 IE-CS-MBGW-2TX-1COM Serial/Ethernet Converter/Modbus Gateway [pdf] Installation Guide 2682600000, IE-CS-MBGW-2TX-1COM, Serial Ethernet Converter Modbus Gateway, IE-CS-MBGW-2TX-1COM Serial Ethernet Converter Modbus Gateway, 2682600000 IE-CS-MBGW-2TX-1COM Serial Ethernet Converter Modbus Gateway

References

- WeidmÃ¼ller: Industrial Connectivity from Detmold with Love
- Disposal instructions