M-Bus 10 Converters Data Sheet

M-Bus Converters (C01 - C04)

C01 C02 C03 C04

Features

- Serial ports RS232 and RS485
- Up to 10 simultaneously connected slave devices
- ESD protection for the RS232/485 data line
- 1000 VDC isolation protection
- Power supply: +12 to +30 VDC or 24 VAC
- Transmission speed up to 9600 bps
- Tx, Rx and power LED indicators
- RS485 embedded termination 120 ohm
- Operating temperatures: -40°C to +75°C
- DIN-rail mounting
- Compact size - single module format (1M)
- Dimensions: 90x56.4x17.5 mm
- 3 years warranty
- Customization of OEM is welcomed

Introduction

C01 - C04 family products are reliable M-Bus electrical standard converters. They enable communication in master mode with up to 10 simultaneously connected slave devices. Dedicated EMC integrated circuits guarantee improved connection quality by limiting the impact of interferences typical for an industrial environment.

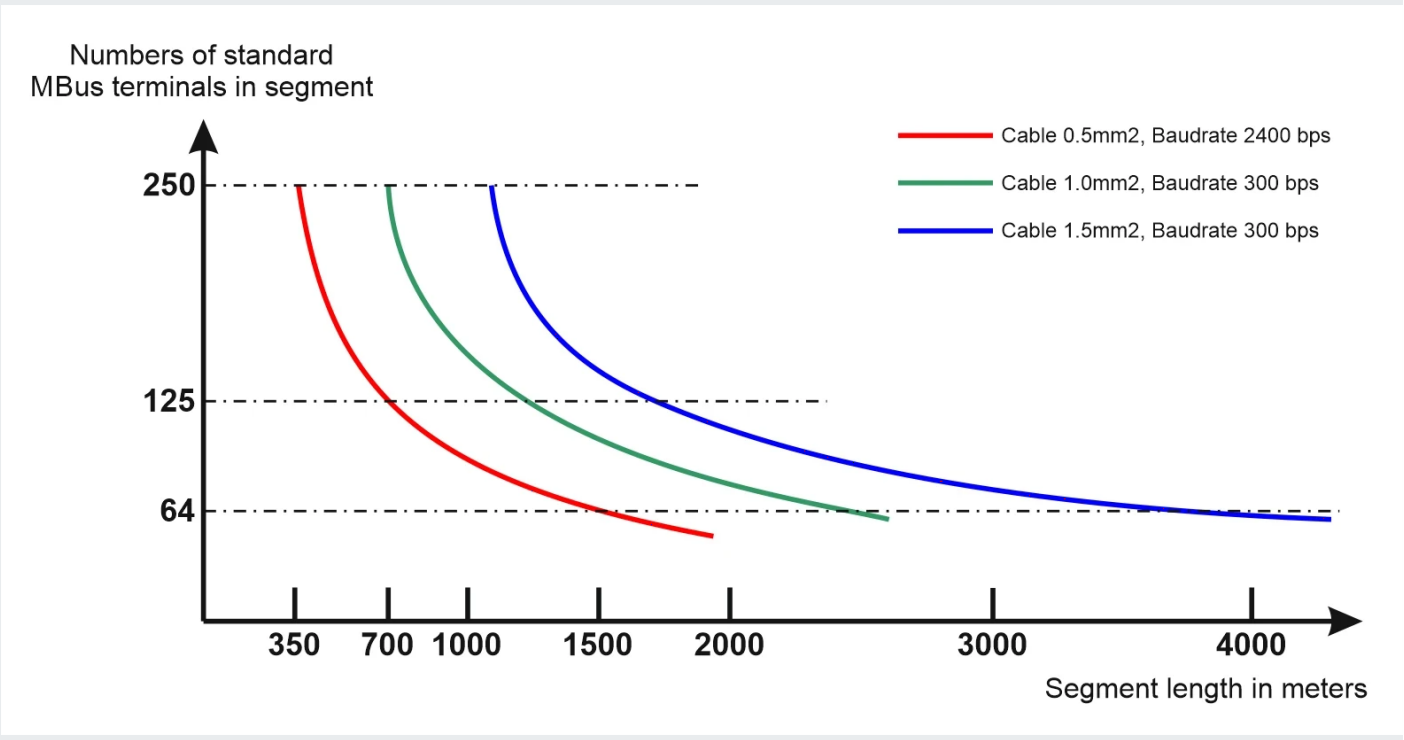
Specifications

Redisage PN	C01	C02	C03	C04

Converter ports	Serial	1 x passive RS232	1 x active RS232	1 x RS485	1 x active RS232/RS485
	M-Bus	1 x M-Bus master with up to 10 x slaves			
Power	Voltage	12-30 VDC / 24 VAC			
	Power	< 1 W			
Frame ground connection		yes			
Serial interface	RS232	TxD, RxD, GND			
	RS485	A, B			
	M-Bus	MBus+, MBus -			
1000 VDC isolation side		RS232	RS232	RS485	RS232/RS485
Baud rate		up to 9600 bps			
LED indicators		communication Tx, Rx, power			
		RS232 OK	N/A		
RS485 termination		120 ohm manually enabled			
Connector	RS232	3-pin terminal block max. 2.5 mm^2 wire			
	RS485	3-pin terminal block max. 2.5 mm^2 wire			
	Power	3-pin terminal block max. 2.5 mm^2 wire			
	M-Bus	3-pin terminal block max. 2.5 mm^2 wire			
Transmission distance	RS485	max. 1,200 m at 9.6 kbps; max. 400 m at 115.2 kbps (Belden 9841 2P twisted-pair cable, if different cables are used, the transmission distance may change)			
	RS232	max. 15 m at 115.2 kbps			

M-Bus	see: M-Bus max. transmission distance
Mounting and enclosure	DIN rail, plastic PA - UL 94 V0, black/green
Temperatures	-40°C to +75°C operating and storage
Humidity	10 - 90% RH, non-condensing
ESD protection	±4 kV contact discharge / ±8 kV air discharge
Certification	CE, RoHS, EMC, LVD
Norms	61000-6-2 - Immunity standard for industrial environments 61000-6-4 - Emission standard for industrial environments

M-Bus max. transmission distance



Passive vs. Active RS232

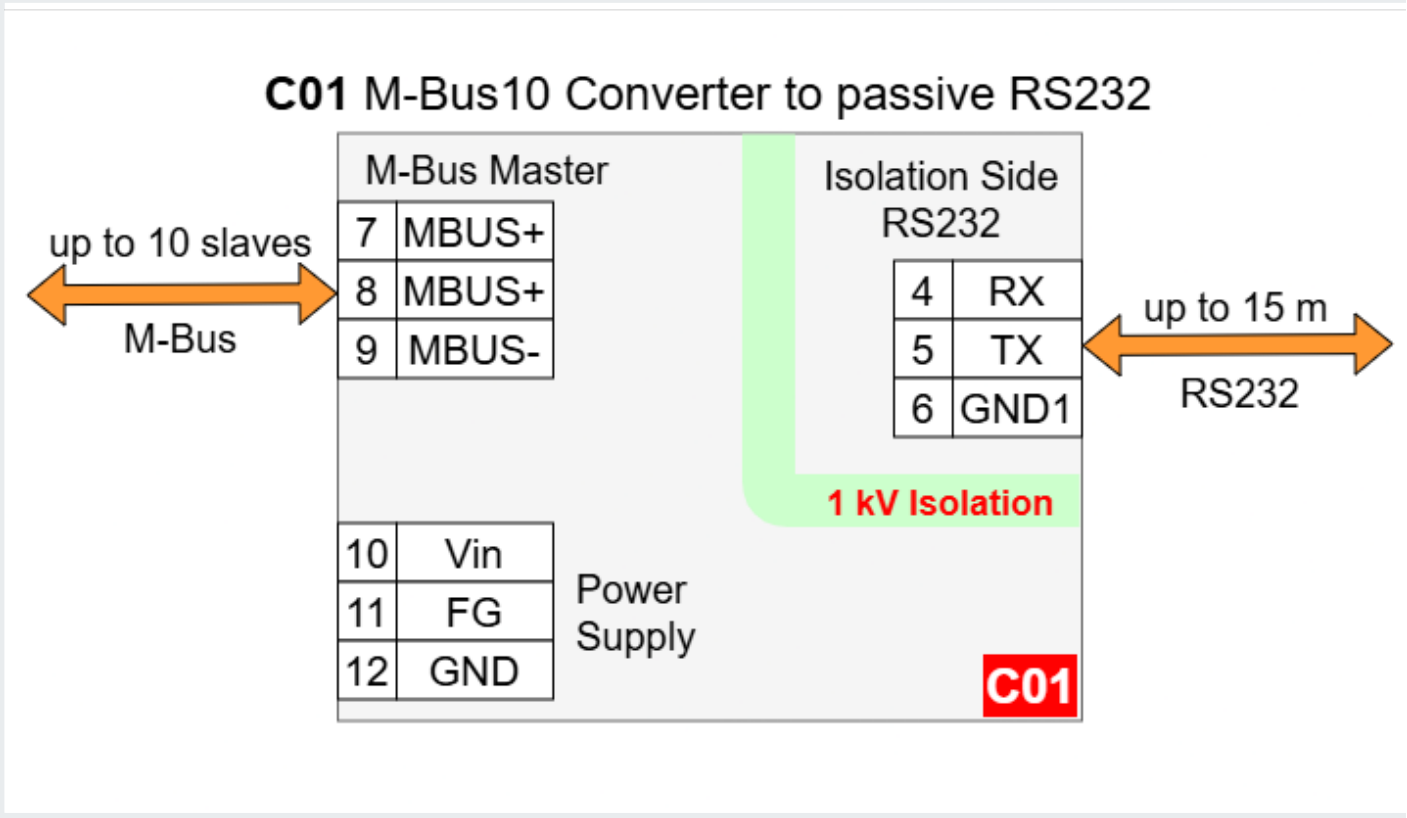
Devices equipped with a **passive RS232 interface** do not include an internal voltage converter. In this case, the connected external device must supply the necessary voltage to drive the RS232 data lines. This means the RS232 port is functional only when connected to a host device capable of providing the required signaling levels.

In contrast, devices with an **active RS232 interface** feature an integrated voltage converter that generates the appropriate RS232 voltage levels internally. As a result, the data lines are powered

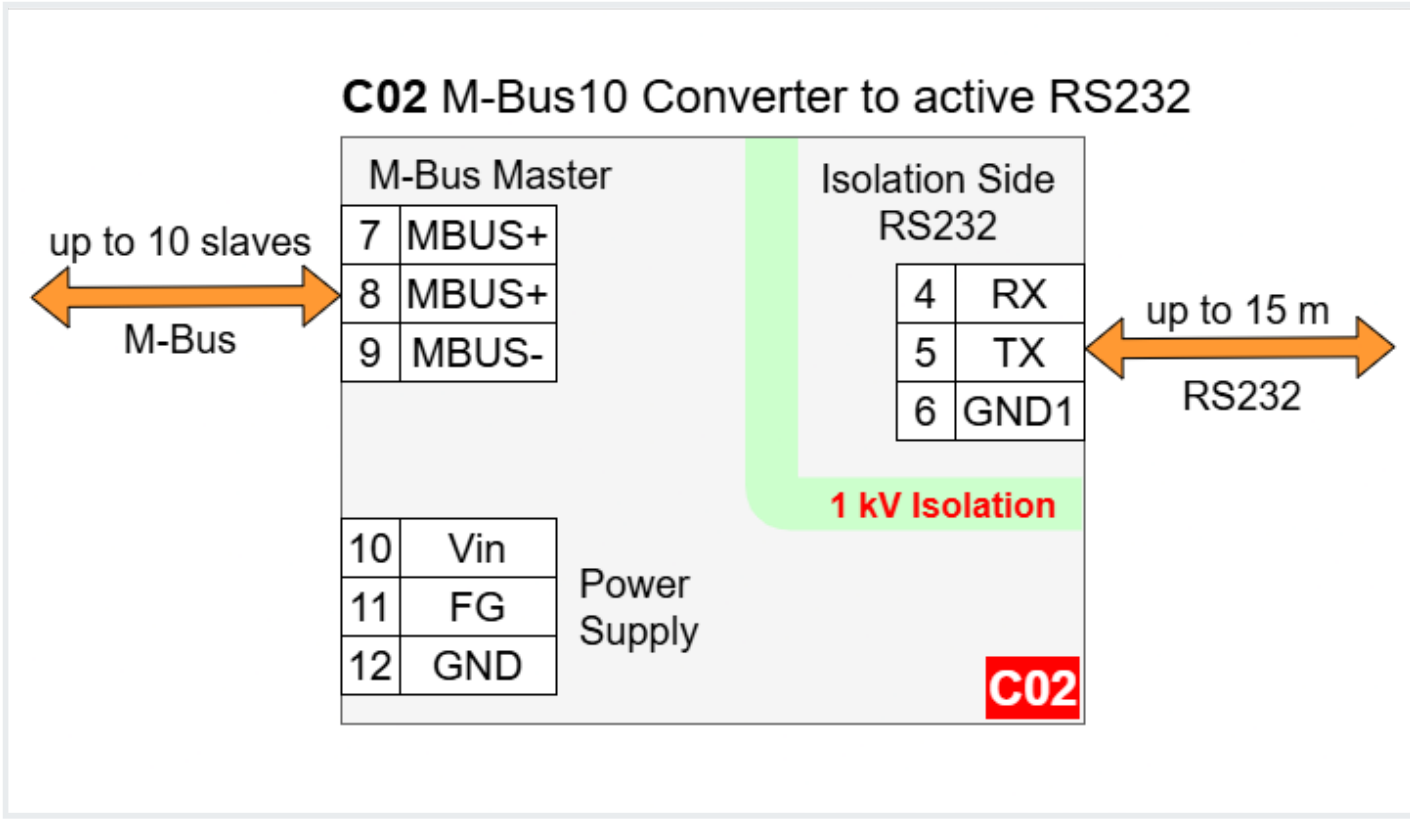
by the converter itself, ensuring proper signal levels regardless of the capabilities of the connected device.

Variants

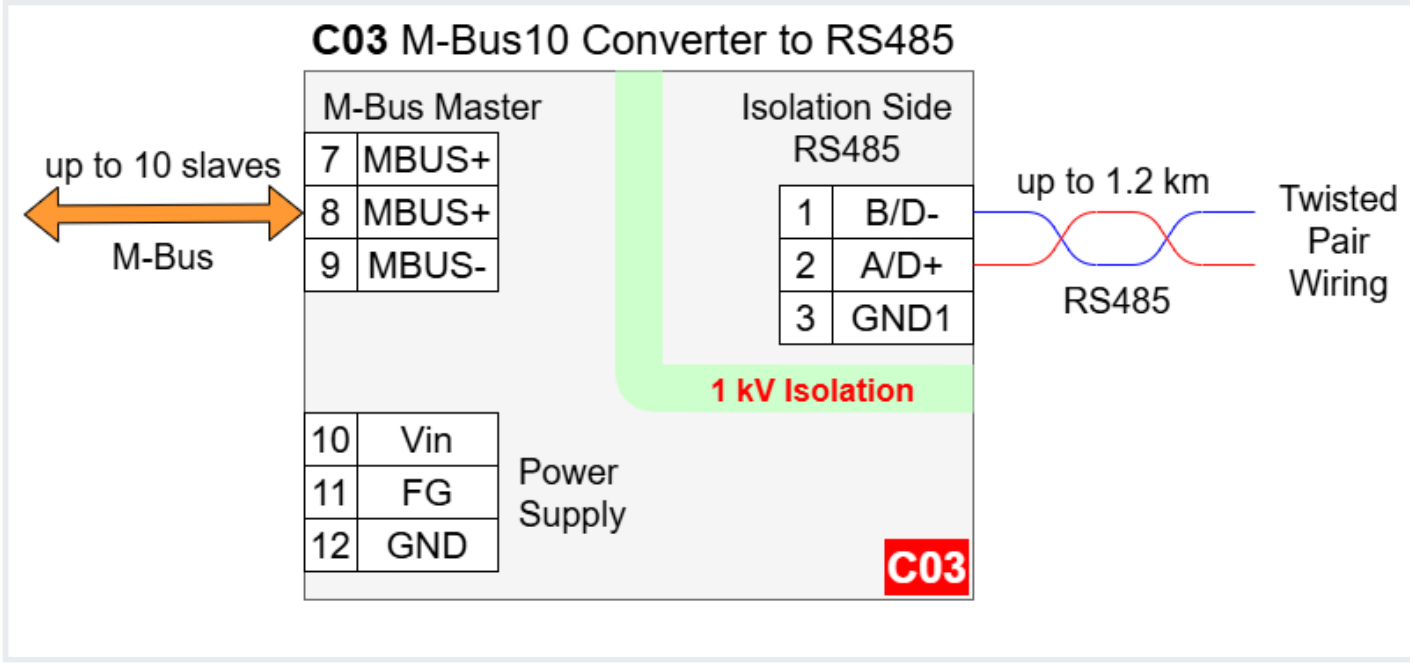
C01 - M-Bus10 Converter to passive RS232



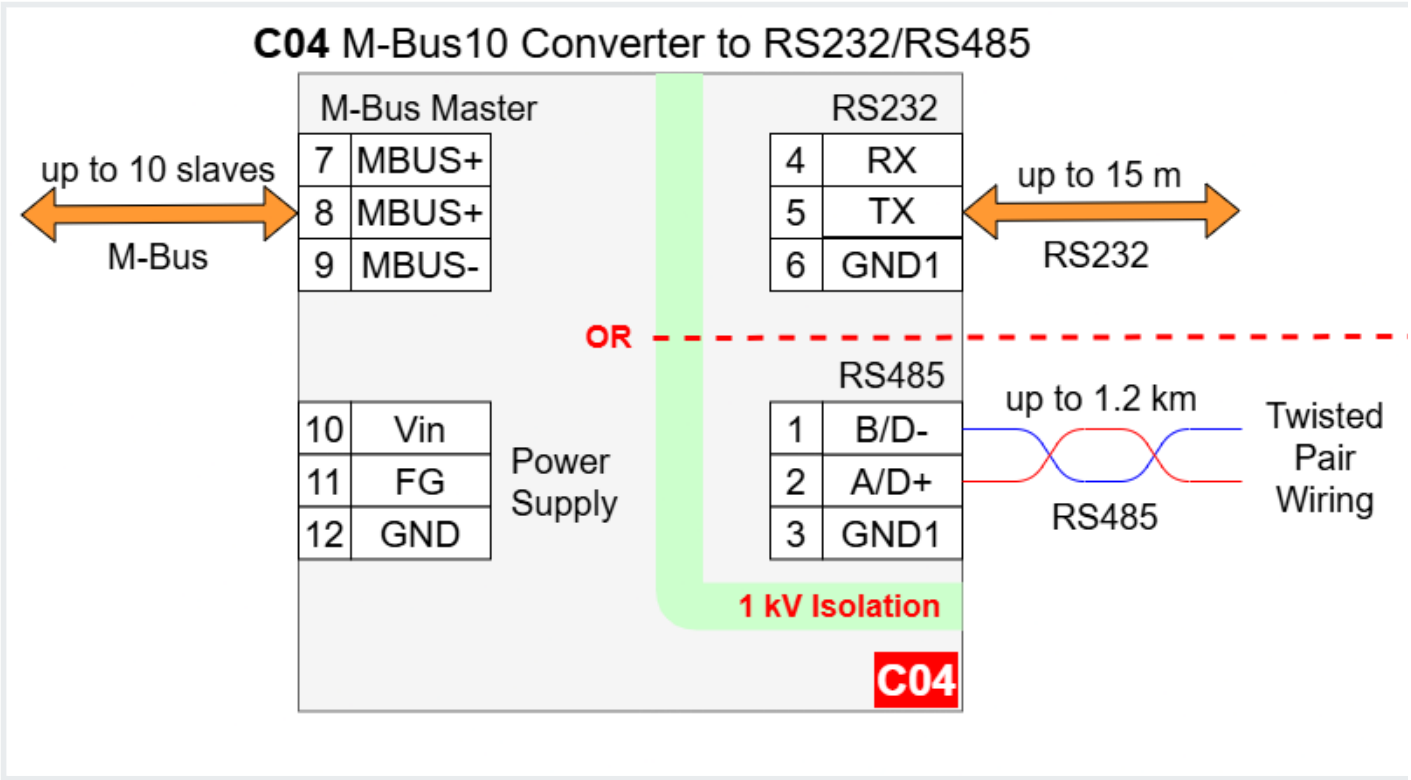
C02 - M-Bus10 Converter with active RS232 interface



C03 - M-Bus10 Converter to RS485



C04 - M-Bus10 Converter to RS232/RS485 with active RS232/RS485 interface

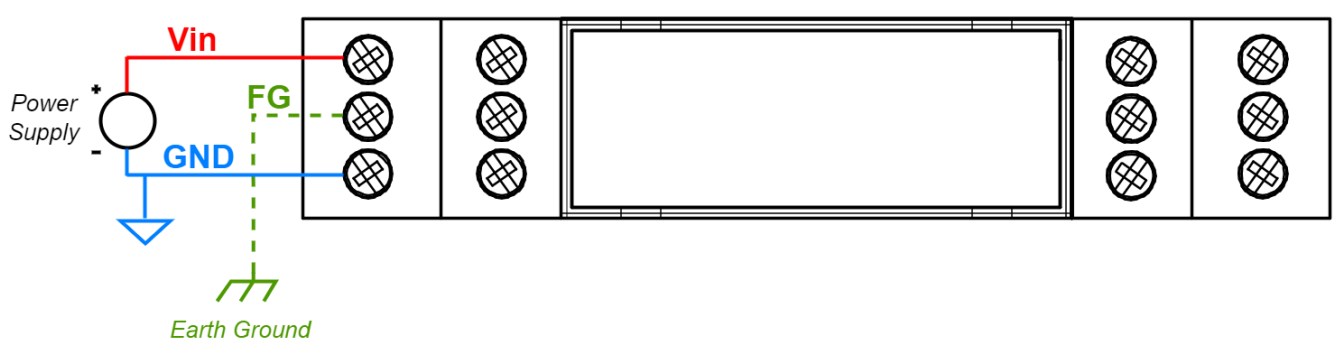


In the C04 gateway user can use only RS232 or only RS485 interface of one port as they occupy the same internal bus of the device.

Frame ground FG

Electronic circuits are constantly prone to electrostatic discharge ESD. Redisage Electronics modules feature a design for the frame ground terminal block FG. The frame ground provides a path for bypassing ESD, which provides enhanced static protection ESD abilities and ensures the module is more reliable. Connecting FG terminal block to the earth ground will bypass the ESD disturbances outside the device so will provide a better level of protection against ESD.

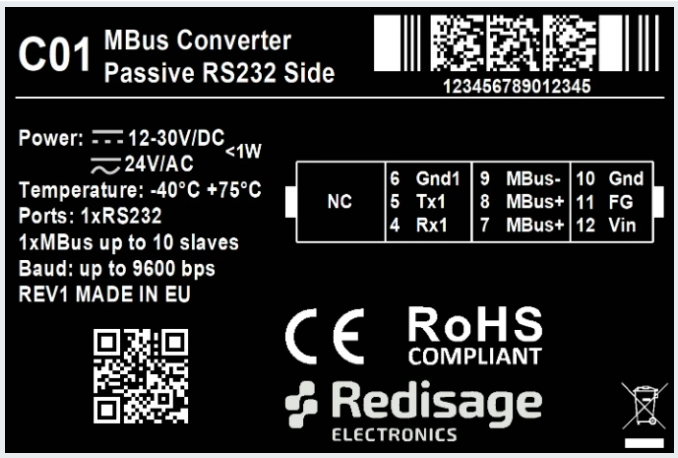
Frame Ground FG connection reference drawing is provided below.



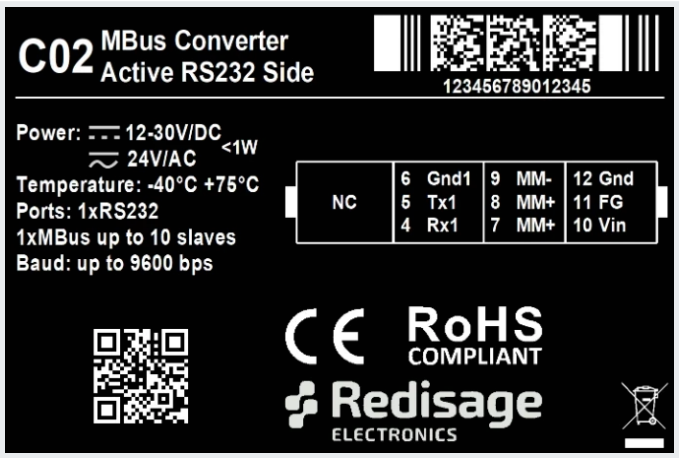
If earth ground is not available FG can be left floating or it can be connected with the power supply GND.

Pin assignments

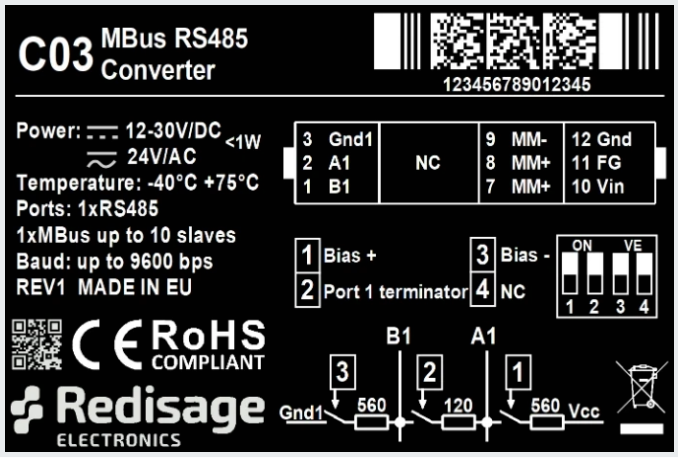
C01



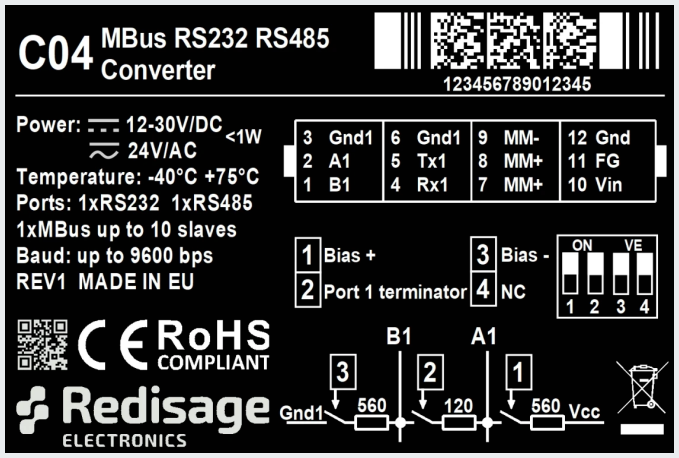
C02



C03

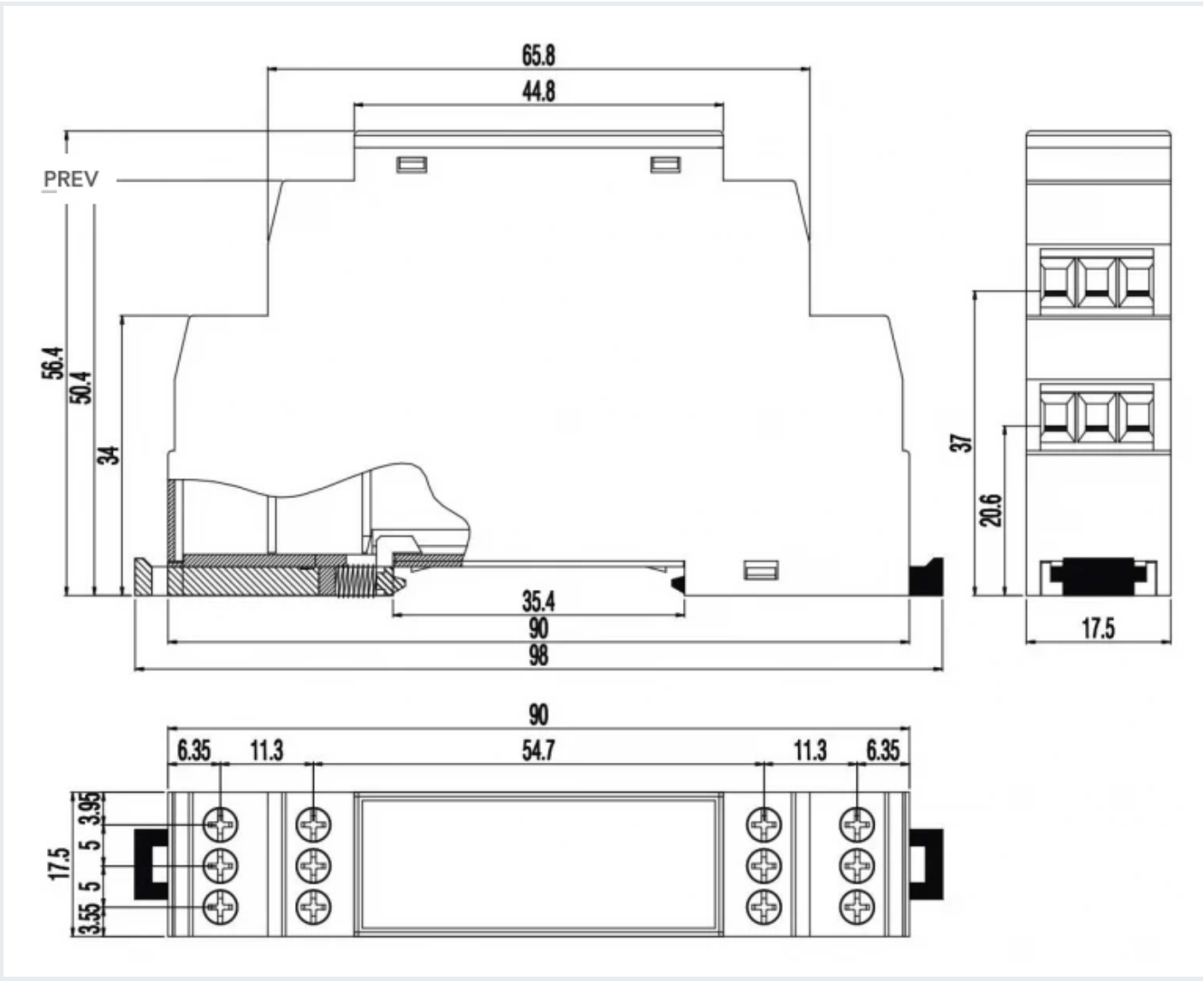


C04



Enclosure dimensions

1U Module Enclosure
98 x 17.5 x 56.4
Units: mm



Additional notes

Related information and links		
Ordering information	Accessories	Similar products

Products family sample photo

https://redisage.com

DISCLAMER NOTES

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

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SC-D

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