

# Energy Management BUS Adapter Type VMU-B M2



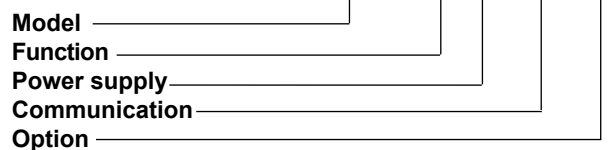
- RS485 Modbus to M-Bus communication adapter
- EM210, EM26 self recognition (option A)
- EM270, EM271 and EM280 self recognition (option B)
- Front diagnostic LED's
- Universal 18 to 260 VAC/DC power supply
- Dimensions: 1-DIN module
- Protection degree (front): IP40

## Product Description

RS485 Modbus to M-Bus compact adapter. The module is provided with universal power supply and is able to recognize and auto-set the variable format and mapping according to the connected Carlo Gavazzi instrument. Housing for DIN-rail mounting, IP40 (front) protection degree.

## How to order

**VMU-B M2 U S1B1 B**



## Type Selection

Function	Power supply	Communication	Option
<b>M2:</b> M-Bus port according EN13757-3:2013	<b>U:</b> From 18 to 260VAC/DC	<b>S1B1:</b> RS485 Modbus to M-Bus	<b>A:</b> EM210, EM26 compatible <b>B:</b> EM270, EM271, EM280 compatible

## Communication

<b>LED 1</b>	Amber. ON steady light: working communication on RS485 bus; Blinking light: not working communication on RS485 bus.		light: M-bus communication with the unit. Both AMBER and GREEN LED OFF light: the module is not power supplied.
<b>LED 2</b>	Green. When M-Bus communication is not available (during the instrument starting) the LED blinks according to the set baudrate: 300 bps: blinking, pause; 2400 bps: blinking, blinking, pause; 9600 bps: blinking, blinking, blinking, pause. ON steady light: NO M-bus communication with the VMU-B unit. ON blinking	<b>RS485</b> Function Type Connections  Addresses  Protocol Boud-rate  Data format	Master function One-drop, bidirectional 3-wire The wires are already screwed on the three screw terminals (wire length: 10 cm). Max. distance 1000 m 247, set automatically by the connected instrument downstream the bus. MODBUS/JBUS (RTU) According to the communication speed set in the connected meter. According to the connected instrument.



## Communication (cont.)

Frame format	According to the connected instrument, see table "Converted variables"	Baud-rate	300 to 9600 bits/s (set automatically by the M-Bus master)
Special functions	None	Data format	According to the connected instrument.
Insulation	By means of optocouplers, 4000 VRMS between communication port to power supply input. No insulation between RS485 port and M-Bus communication port.	Frame format	According to the connected instrument, see relevant protocol
<b>M-Bus</b>		Special functions	None
Function	Slave function	Insulation	By means of optocouplers, 4000 VRMS between communication port to power supply input. No insulation between RS485 port and M-Bus communication port.
Type	One-drop, bidirectional		
Connections	2-wire.		
Addresses	247, set automatically by the connected instrument downstream the bus.		
Protocol	M-Bus according to EN13757:2013		

## General specifications

<b>Operating temperature</b>	-25°C to +55°C (-13°F to 131°F) (R.H. from 0 to 90% non-condensing @ 40°C)	Immunity to conducted disturbances	10V/m from 150KHz to 80MHz
<b>Storage temperature</b>	-30°C to +70°C (-22°F to 158°F) (R.H. < 90% non-condensing @ 40°C)	Surge Radio frequency suppression	2kV on power supply; According to CISPR 22
<b>Installation category</b>	Cat. III (IEC60664, EN60664)	<b>Standard compliance</b>	
<b>Insulation (for 1 minute)</b>	4000 VRMS between communication BUS and power supply	Safety	IEC60664, IEC61010-1 EN60664, EN61010-1
<b>Dielectric strength</b>	4000 VRMS for 1 minute	<b>Approvals</b>	CE
<b>Noise rejection</b>		<b>Connections</b>	Screw-type
CMRR	100 dB, 48 to 62 Hz	Cable cross-section area	Min. 2.5 mm <sup>2</sup> , Max. 6 mm <sup>2</sup> Min./Max. screws tightening torque: 0.5 Nm / 1.1 Nm Other terminals: 1.5 mm <sup>2</sup> ; Min./Max. screws tightening torque: 0.4 Nm / 0.8 Nm
<b>EMC</b>	According to: EN61000-6-2 (industrial immunity) and EN61000-6-3 (light industry emission).	<b>DIN Housing</b>	
Electrostatic discharges	8kV air discharge;	Dimensions (WxHxD)	17.5 x 90 x 67.5 mm
Immunity to irradiated electromagnetic fields	Test with applied current: 10V/m from 80 to 2000MHz; Test without any applied current: 30V/m from 80 to 2000MHz;	Material	Nylon PA66, self-extinguishing: UL 94 V-0 DIN-rail
Burst	On current and voltage measuring input circuits: 4kV	Mounting	
		<b>Protection degree</b>	
		Front	IP40
		Screw terminals	IP20
		<b>Weight</b>	Approx. 100 g (packing included)

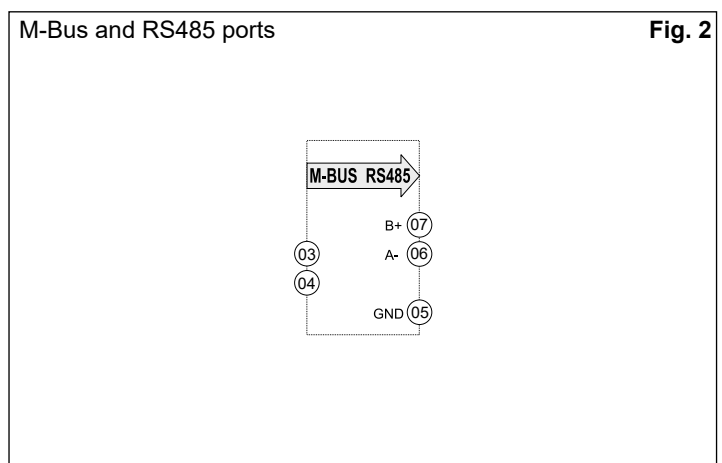
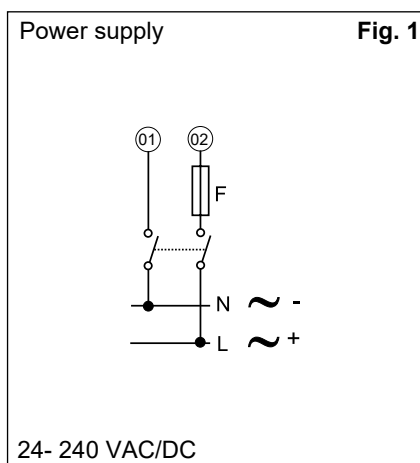
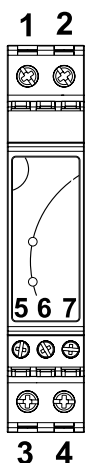
## Power supply specifications

Power supply	18 to 260 VAC/DC	Power consumption	≤ 3VA
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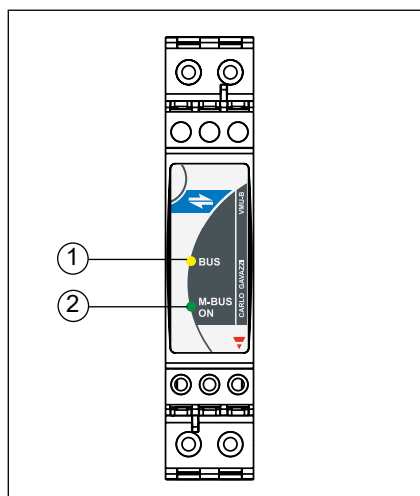
## Insulation between inputs and outputs

	RS485 port	M-Bus port	Power supply
RS485 port	-	0kV	4kV
M-Bus port	0kV	-	4kV
Power supply	4kV	4kV	-

## Wiring diagrams



## Frontal panel description



1. **Amber LED.** ON steady light: working communication on RS485 bus;  
Blinking light: not working communication on RS485 bus.
2. **Green LED.** When M-Bus communication is not available (during the instrument starting) the LED blinks according to the set baudrate:  
300 bps: blinking, pause;  
2400 bps: blinking, blinking, pause;  
9600 bps: blinking, blinking, blinking, pause.  
ON steady light: NO M-bus communication with the VMU-B unit.  
ON blinking light: M-bus communication with the unit.  
Both AMBER and GREEN LED OFF light: the module is not power supplied.

## Dimensions and panel cut-out

