

MDB-M-6

POWER OVER MODBUS
DISTRIBUTION BOX

Mounting and operating instructions

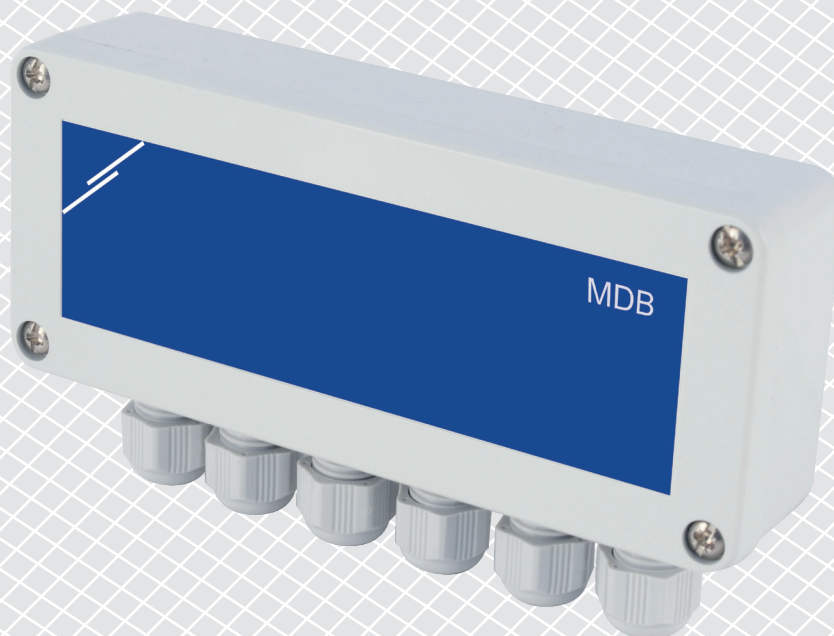


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SAFETY AND PRECAUTIONS



Read all the information, the datasheet, Modbus map, mounting and operating instructions and study the wiring and connection diagram before working with the product. For personal and equipment safety, and for optimum product performance, make sure you entirely understand the contents before installing, using or maintaining this product.



For safety and licensing (CE) reasons, unauthorised conversion and /or modifications of the product are inadmissible.



The product should not be exposed to abnormal conditions, such as extreme temperatures, direct sunlight or vibrations. Long-term exposure to chemical vapours in high concentration can affect the product performance. Make sure the work environment is as dry as possible; avoid condensation.



All installations shall comply with local health and safety regulations and local electrical standards and approved codes. This product can only be installed by an engineer or a technician who has expert knowledge of the product and safety precautions.



Avoid contacts with energised electrical parts. Always disconnect the power supply before connecting, servicing or repairing the product.



Always verify that you apply appropriate power supply to the product and use appropriate wire size and characteristics. Make sure that all the screws and nuts are well tightened and fuses (if any) are fitted well.



Recycling of equipment and packaging should be taken into consideration and these should be disposed of in accordance with local and national legislation / regulations.



In case there are any questions that are not answered, please contact your technical support or consult a professional.

PRODUCT DESCRIPTION

MDB-M/6 is a compact PoM distribution box. It is suitable for power and data distribution between connected units and compatible with transmitters, intelligent sensors, sensor controllers, HVAC controllers, fan speed controllers and all other Sentera products with Modbus RTU communication.

ARTICLE CODES

Article code	Supply	I _{max}	Connection type
MDB-M-6	24 VDC (PoM)	1,5 mA	RJ45

INTENDED AREA OF USE

- Distribute power and data between Modbus RTU compatible units

TECHNICAL DATA

- Supply voltage: 24 VDC (Power over Modbus)
- Total I/O current rating: I_{max} 1,5 A
- RJ45 connectors for Power over Modbus communication and power supply
- Surface mountable
- Maximum total cable length: up to 100 meters
- Easy to install
- Reduces installation and equipment costs
- Protection class: IP65
- Enclosure: ABS plastic, colour: grey (RAL7035)
- Storage temperature: -40–85 °C
- Operating ambient conditions:
 - temperature range: -30–70 °C
 - rel. humidity: 20–90 % rH (non-condensing)

STANDARDS

- Low Voltage Directive 2014/35/EU CE
 - EN 60664-1:2007 Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests
- EMC Directive 2014/30/EU
 - EN 55022:2010 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement Amendment AC:2011 to EN 55022:2010
 - EN 55024:2010 Information technology equipment - Immunity characteristics - Limits and methods of measurement
 - EN 61000-3-2:2014 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
 - EN 61000-3-3:2013 Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
- WEEE Directive 2012/19/EU
- RoHs Directive 2011/65/EU

WIRING AND CONNECTIONS

RJ45 connection

Pin 1	Supply voltage, 24 VDC
Pin 2	
Pin 3	Modbus RTU communication, signal A
Pin 4	
Pin 5	Modbus RTU communication, signal /B
Pin 6	
Pin 7	
Pin 8	Ground, supply voltage

ATTENTION

Make sure that supply voltages from different power sources do not come into contact with each other. Never connect cables in the MDB-M-6 with Power wires (pins 1,2,7 and 8), connected to different Power supplies. If the connected units have a different Power supply, only crimp the data wires (pins 3,4,5,6) in the RJ45 connectors. (See "Wiring and Connections").

MOUNTING INSTRUCTIONS IN STEPS

Before you start mounting the unit, read carefully **"Safety and Precautions"**. Choose a smooth surface for installation: a wall, panel, etc.

Follow these steps:

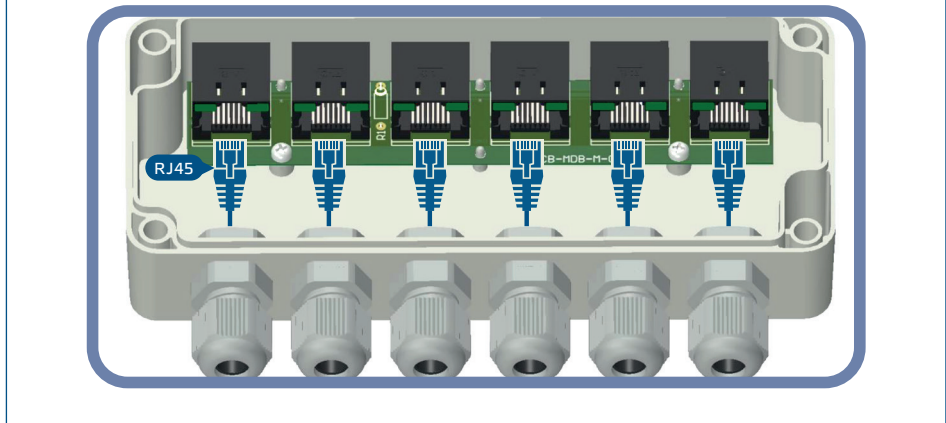
1. Unscrew the front cover of the enclosure to remove it.
2. Fix the enclosure onto the surface by means of suitable fasteners while adhering to the mounting dimensions in **Fig. 1 Mounting dimensions** and the correct mounting position in **Fig. 2 Mounting position**.

Fig. 1 Mounting dimensions	Fig. 2 Mounting position	
	Correct	Incorrect

3. Insert the cables through the cable glands.
4. Crimp the RJ45 cable.

5. Plug the RJ45 jack into the socket (see Fig. 3).
6. Tighten the cable gland.

Fig. 3 Wiring diagram



7. Put back the front cover and secure it with the screws.
8. Switch on the power supply.*

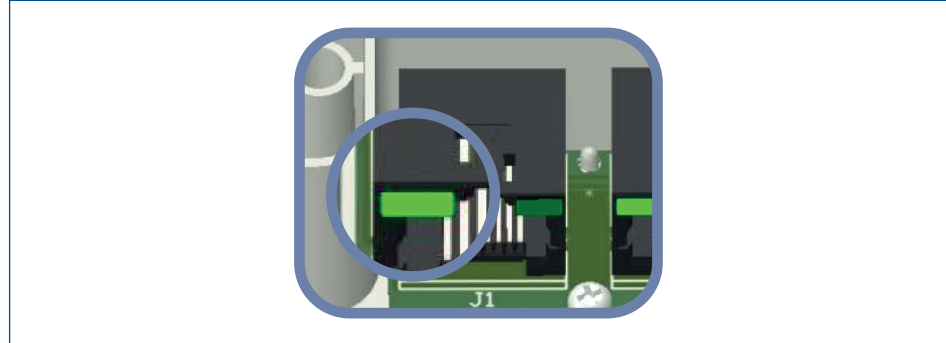
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VERIFICATION OF INSTALLATION

- When the green LED on the left of each RJ45 socket is on, supply voltage is detected (see Fig. 4 below).

Fig. 4 Power indication



ATTENTION

The maximum power supply per channel must not exceed 1,5 A.

ATTENTION

The maximum cable length should not exceed 100 m. When connecting longer cables, please use Sentera's DPOM8 or PDM8 power supply modules with built-in signal repeater.

TRANSPORT AND STORAGE

Avoid shocks and extreme conditions. Stock in original packing.

WARRANTY AND RESTRICTIONS

Two years from the delivery date against defects in manufacturing. Any modifications or alterations to the product after the date of publication relieve the manufacturer of any responsibilities. The manufacturer bears no responsibility for any misprints or mistakes in this data.

MAINTENANCE

In normal conditions these controllers are maintenance-free. If soiled, clean with a dry or damp cloth. In case of heavy pollution, clean with a non-aggressive product. In these circumstances, the unit should be disconnected from the main supply. Pay attention that no fluids enter the unit. Only reconnect the controller to the main supply when it is completely dry.