USER GUIDE
SIG-M-2

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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.

1. INTRODUCTION

Sentera products operate on an offline Modbus RTU network to communicate between devices and control output devices. Each network is controlled by a master device that handles the communication to/from slave devices on that same network. The connections between the devices use Power over Modbus (denoted as PoM from this point on) which provide 24 VDC supply voltage and Modbus communication over the same cable.

This document describes how to connect this offline network to the online SenteraWeb cloud by means of a Sentera internet gateway, model SIG-M-2.

SenteraWeb is used primarily for easy configuration of Sentera products, but it can also be used as a cloud platform with many additional features:

- Data logging - view measurement data, plot diagrams and export data.
- Alerts & warnings - set up alerts and warnings when sensor values exceed certain ranges or errors occur.
- Day-week scheduler - create different regimes depending on the specific day or week.
- Online accessibility - read/write device parameter settings remotely.
- User management - define users and configurators for each installation.

2. PREPARATIONS

Before connecting the products, we highly recommend completing the following preparatory tasks:

2.1 RECORD THE SERIAL NUMBERS

During configuration, all serial numbers of the connected devices are required. The serial numbers of the Sentera devices are clearly stated on the technical label of the device, on the packaging and on the enclosed mounting instruction - see **Fig.1**.

Fig. 1 SIG-M-2 - Serial number

Each device with a Modbus register map has a unique serial number.

ATTENTION

The serial numbers on the product, installation guide and box are identical.

2.2 FIREWALL AND ROUTER SETTINGS

To enable communication between the gateway and the SenteraWeb cloud, the Sentera internet gateway must be granted access to the following destinations:

- www.senteraweb.eu
- senteraweb.eu
- broker.senteraweb.eu

In addition, SenteraWeb cloud must be able to send messages to the internet gateway to guarantee proper functioning. Therefore, the following ports must be open on the router:

- 80 – http protocol
- 443 – https protocol
- 1883 – MQTT

⚠ ATTENTION

Communication will not work if this is not configured correctly!

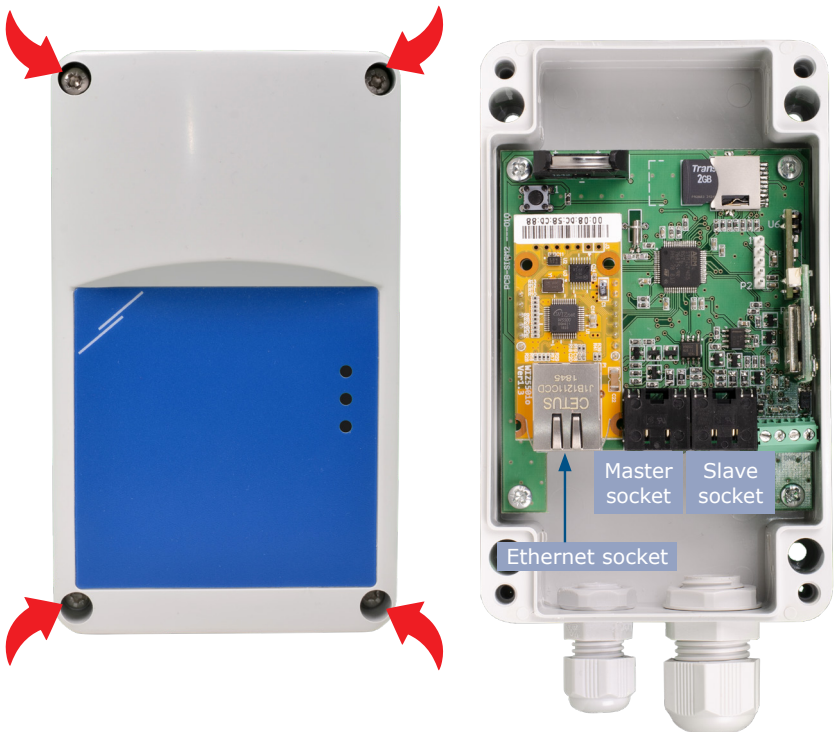
3. CONNECT THE INTERNET GATEWAY

Before you start mounting the unit, read carefully "**Safety and Precautions**". Then proceed with the following mounting steps:

1. Unscrew the front cover of the internet gateway - see **Fig. 2**.

Fig. 2 SIG-M-2 - RJ45 Sockets

SIG-M-2



- The PCB is equipped with three RJ45 sockets:
  - Metal-coloured RJ45 socket (Ethernet socket) - Connection to internet with an Ethernet LAN cable
  - "Master" RJ45 socket - The first of two PoM sockets. It's used to connect the Modbus master device and the power supply.
  - "Slave" RJ45 socket - The second PoM socket is used to connect the Modbus slave devices.

2. Connect 24 VDC power supply to the Master socket of the gateway. We recommend that you use a Sentera 24 VDC power supply (article code SEPS8-24-40 or DRPS8-24-40).

Sentera power supplies feature RJ45 sockets that simplify the wiring. On top of that they also offer protection against overvoltage and overload. This increases the safety of your installation.

The PoM sockets use the following pin connections - see **Fig. 3**.

Fig. 3 RJ45 sockets (Power over Modbus)

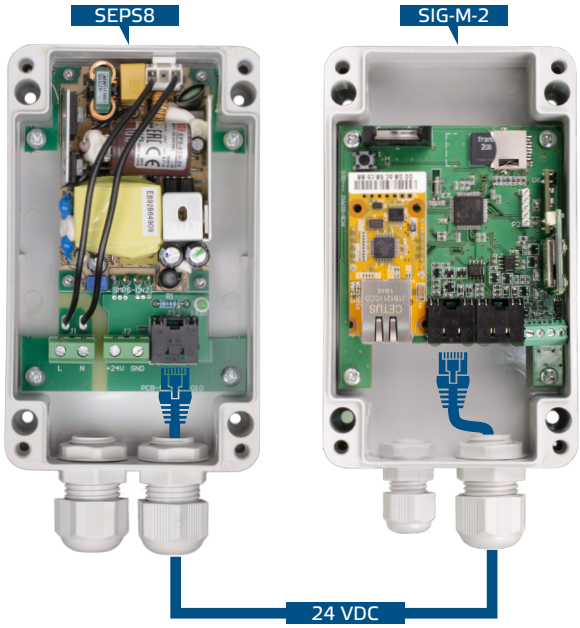
Pin 1 Pin 2	24 VDC	Supply voltage
Pin 3 Pin 4	A	Modbus RTU communication, signal A
Pin 5 Pin 6	/B	Modbus RTU communication, signal /B
Pin 7 Pin 8	GND	Ground, supply voltage

We advise you to use a Cat5e or higher type of ethernet cable for the connection with the gateway- see **Fig. 4**.

ATTENTION

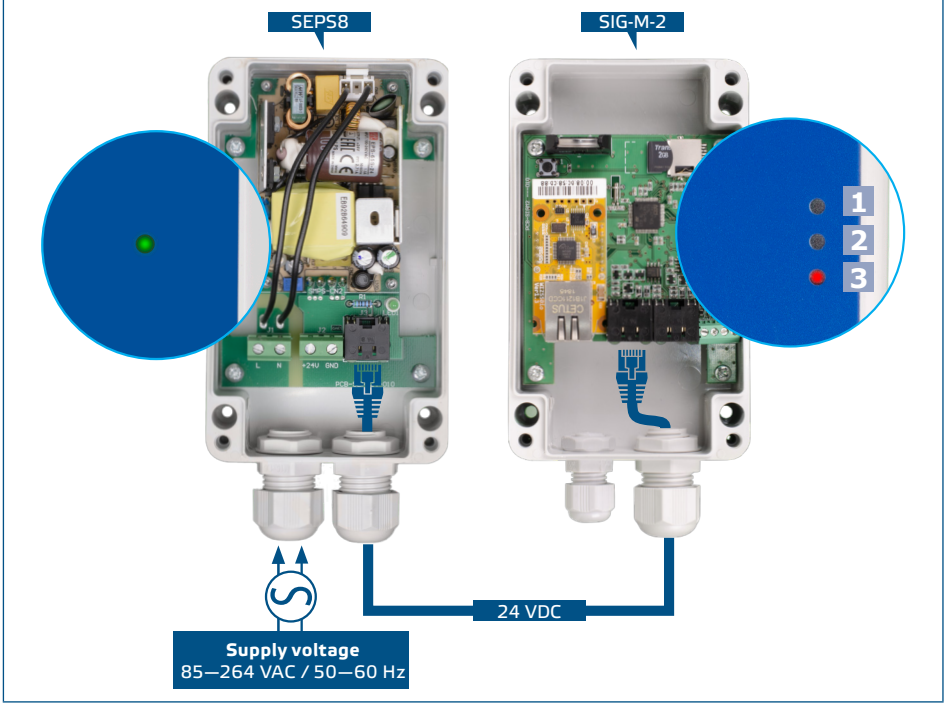
Do NOT connect 24 VDC to the Ethernet connector. This may destroy the unit!

Fig. 4 Connecting the power supply



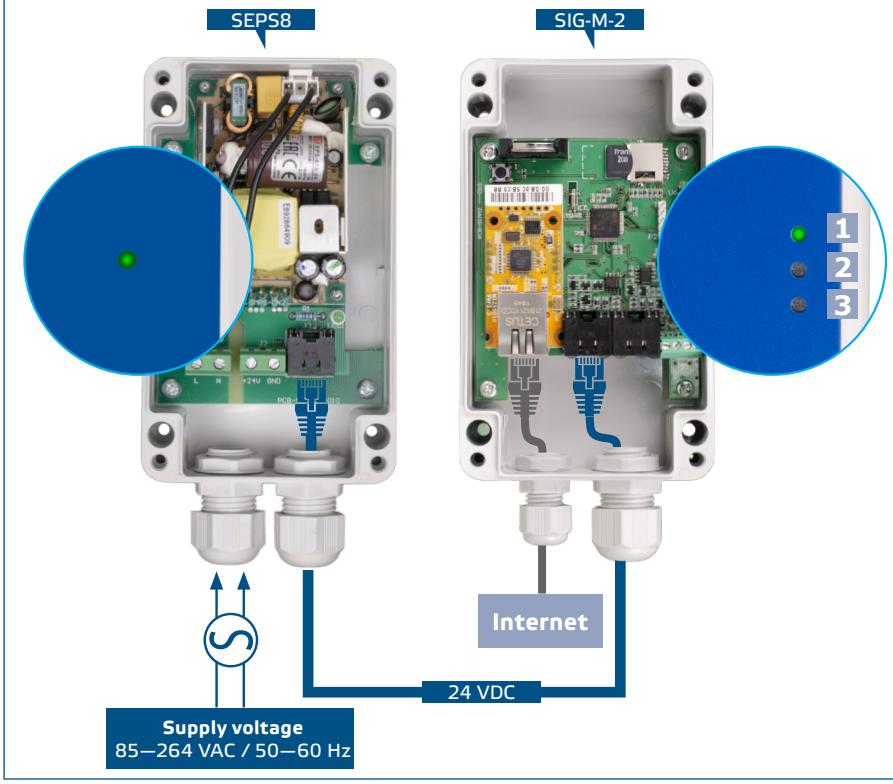
Activate the power supply. The red LED (3) of the gateway turns on - see **Fig. 5**.

Fig. 5 LED indications



3. Connect the Ethernet LAN cable to the metal-shielded RJ45 socket and make sure the cable has connection to the internet - see **Fig. 6**.

Fig. 6 Connecting the Ethernet LAN cable



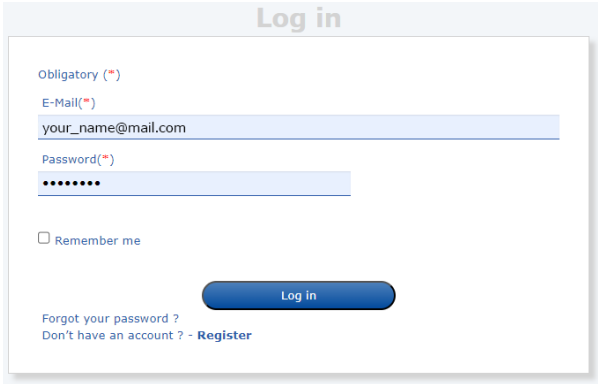
Verify if the top green LED (1) lights up. This indicates that the gateway is connected to SenteraWeb.

4. CREATE SENTERAWEB INSTALLATION

The gateway is now powered and connected to SenteraWeb. Proceed with the following steps to create a new installation on SenteraWeb:

1. Register or log in at: https://www.senteraweb.eu/en/Account/Login - see **Fig. 9**.

Fig. 9 Register or log in

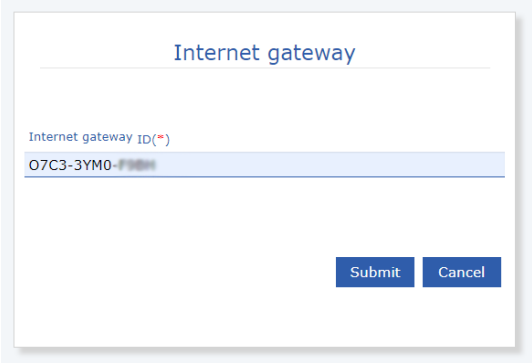


2. After logging in, select "Add installation" – see **Fig. 9.1**.

Fig. 9.1 Add installation

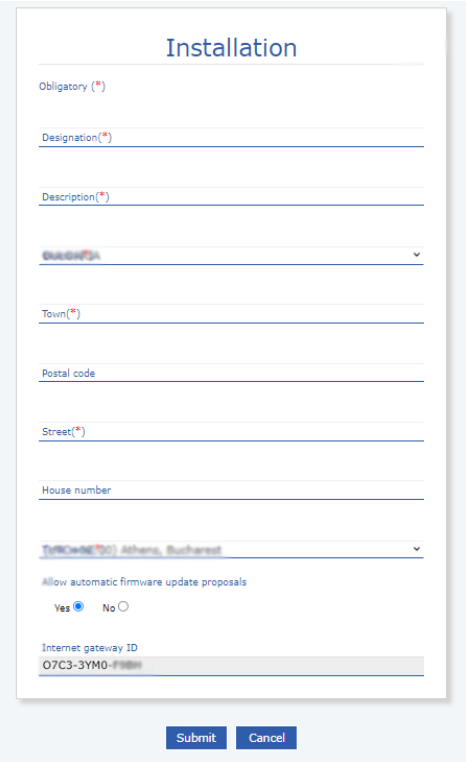
3. Enter the serial number of the gateway (see ch. 2.1) – see **Fig 9.2**.

Fig. 9.2 Serial number



4. Complete all of the obligatory (*) fields in the installation form – see **Fig 9.3**.

Fig. 9.3 Installation form



5. TROUBLESHOOTING

Common issues and their respective solutions:

- No LEDs are active
  - Verify if the power supply is on.
  - Verify if the cable is connected properly to the Master socket.
  - Verify if the cable pinout is correct (see ch. 3).
- Red led is flashing after power is supplied and the Ethernet cable is connected
  - Verify that the Ethernet cable is connected properly to both the device and to the internet.
  - Verify that the Ethernet cable has connection to the internet.
  - Verify that all firewall and router settings are configured properly (see ch. 2.2).
- If the above does not work, restore the factory default settings of the internet gateway by pressing the tact switch (reset) for 3 seconds - see **Fig. 10**.

Fig. 10 Tact switch