

DIGWM

SENTERA WI-FI INTERNET
GATEWAY FOR DIN RAIL
MOUNTING

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

DIGWM is an internet gateway to connect a stand-alone Sentera device or a network of devices to the Internet in order to configure or monitor them via SenteraWeb. The DIGWM allows wireless connection to an existing Wi-Fi network. The unit has 2 Modbus RTU channels - a Master channel to communicate with the connected Slave devices, and a Slave channel to make the unit accessible for a Master controller or a BMS.

ARTICLE CODES

Code	Supply voltage	I _{max}
DIGWM	24 VDC (PoM)	35 mA


INTENDED AREA OF USE

- Connect your HVAC installation to the online SenteraWeb portal
- Gateway for application dedicated firmware and/or standard firmware updates via SenteraWeb
- Update setpoints, ranges and other parameters in the connected Sentera slave devices
- Data monitoring and data logging via SenteraWeb
- Receive warnings and notifications (e.g. clogged filter notification, motor failure alarm, etc.)

TECHNICAL DATA

- 24 VDC supply voltage, via Power over Modbus (PoM)
- Sentera devices and different non-Sentera devices can be connected via Modbus RTU communication
- Gateway for data transmission to and from the Internet via Wi-Fi
- Internal backup memory for firmware updates
- Backup battery for real time clock, in case the power supply is interrupted
- Enclosure: DIN rail mounted, plastic ABS, UL94-V0, grey RAL 7035
- Protection class: IP30
- Operating ambient conditions:
 - ▶ Temperature: -10—60 °C
 - ▶ Rel. humidity: 5—95 % rH (non-condensing)

STANDARDS

- Electromagnetic compatibility (EMC) directive 2014/30/EU: 
 - ▶ EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
 - ▶ EN 55011:2009 Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement Amendment A1:2010 to EN 55011
 - ▶ EN 55024:2010 Information technology equipment - Immunity characteristics - Limits and methods of measurement
 - ▶ EN 50561-1:2013 Power line communication apparatus used in low-voltage installations - Radio disturbance characteristics - Limits and methods of measurement - Part 1: Apparatus for in-home use
- Low voltage (LVD) directive 2014/35/EU:
 - ▶ EN 60950-1:2006 Information technology equipment - Safety - Part 1: General requirements Amendments AC:2011, A11:2009, A12:2011, A1:2010 and A2:2013 to EN 60950-1

- ▶ EN 62311:2008 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz–300 GHz)
- Radio equipment directive 2014/53/EU:
 - ▶ EN 300 328 V2.1.1 Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU
- ETSI EN 301 489-1 V2.1.1 (2017-02) Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU
- ETSI EN 301 489-17 V3.1.1 (2017-02) Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU
- WEEE 2012/19/EC
- RoHS Directive 2011/65/EC:
 - ▶ EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

WIRING AND CONNECTIONS

RJ45 sockets (Power over Modbus)		
Pin 1	24 VDC	Supply voltage
Pin 2		
Pin 3	A	Modbus RTU communication, signal A
Pin 4		
Pin 5	/B	Modbus RTU communication, signal /B
Pin 6		
Pin 7	GND	Ground, supply voltage
Pin 8		

MOUNTING INSTRUCTIONS IN STEPS

Before you start mounting the unit, read carefully ***"Safety and Precautions"*** and follow these steps:

1. Slide the unit along the guides of a standard 35 mm DIN rail and fix it to the rail by means of the black locking clip on the enclosure. Mind the correct position and mounting dimensions shown in **Fig. 1 Mounting dimensions** and **Fig. 2 Mounting position**.

Fig. 1 Mounting dimensions

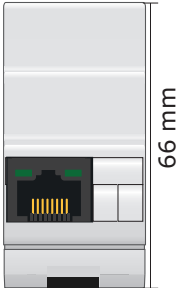

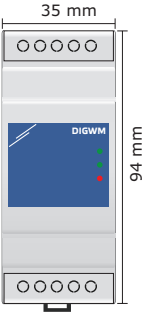
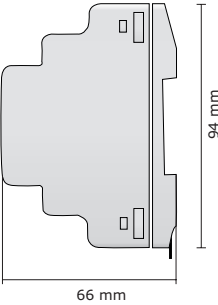
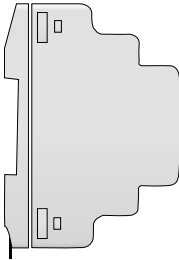
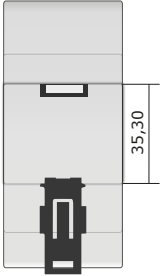
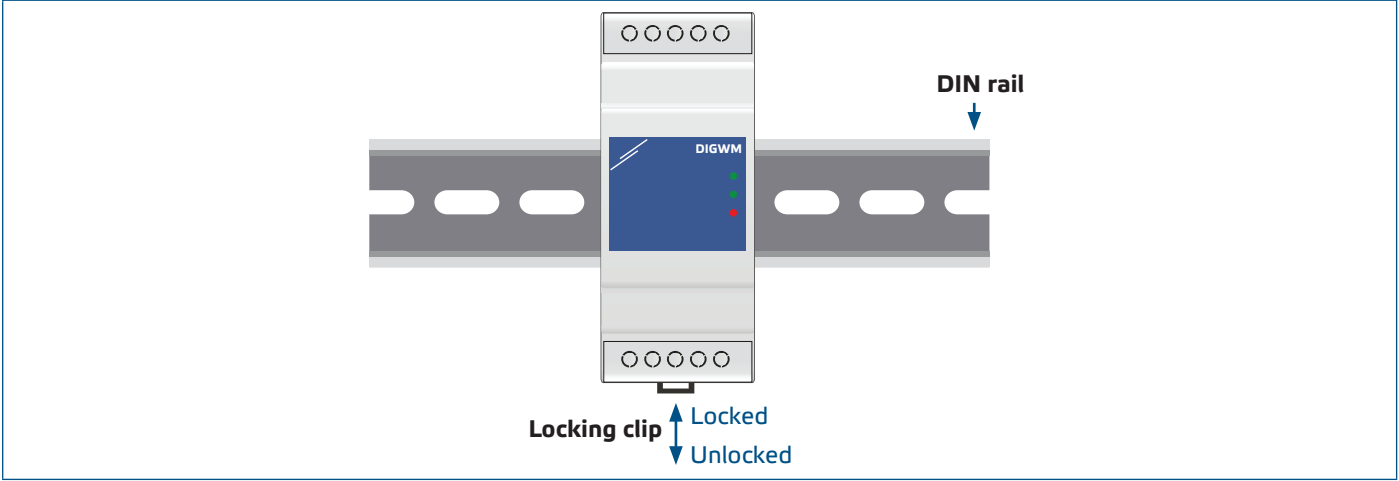
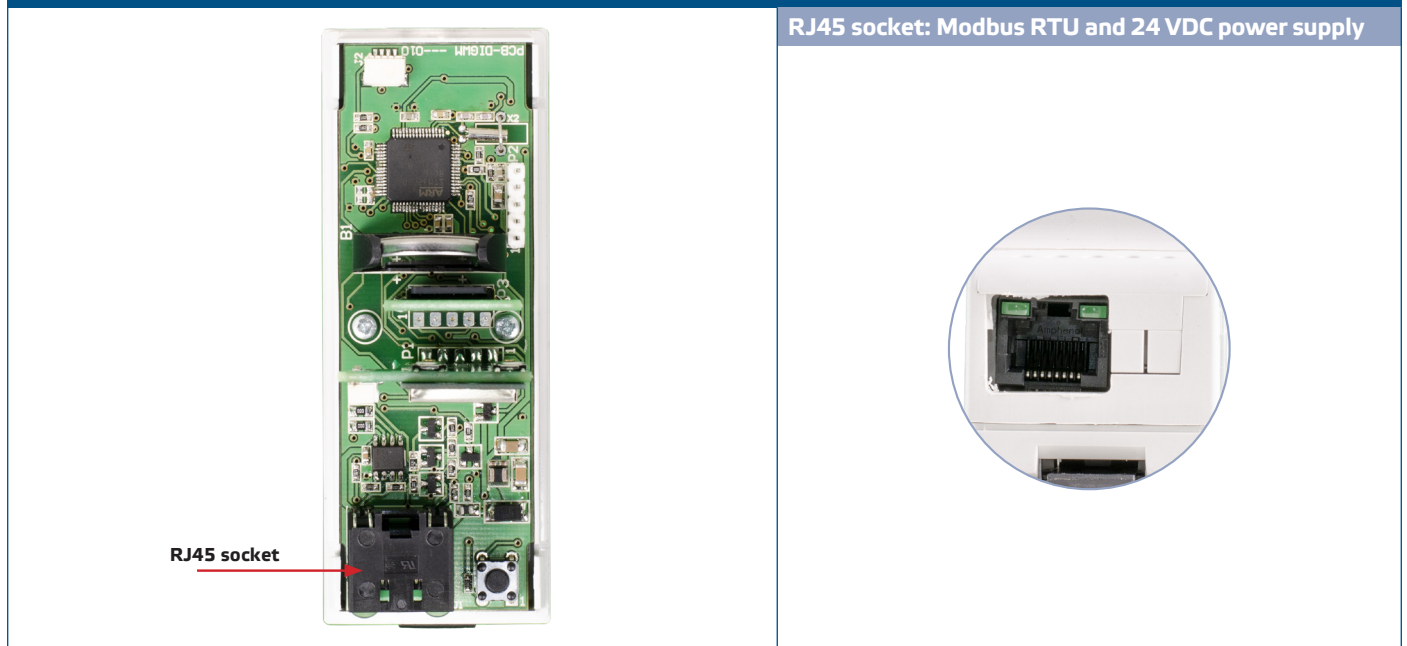
Bottom view	Top view	Front view
		
Side view	Side view	Rear view
		

Fig. 2 Mounting position



2. Connect the (Sentera) slave devices and 24 VDC via Power over Modbus to the RJ45 socket (see "**Wiring and connections**").

Fig. 3 Wiring and connections

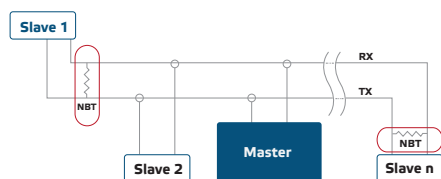


3. The red LED indicates that the unit is supplied, but that there is no Wi-Fi connection available.
4. Consult the User Guide, available on the Sentera website to connect the unit to the Wi-Fi network and to SenteraWeb.

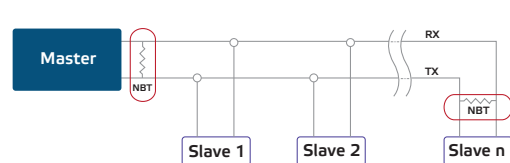
Optional settings

If your unit starts or terminates the network (see **Example 1** and **Example 2**), enable the NBT resistor via 3SModbus. If your device is not an end device, leave the NBT disabled (default Modbus setting).

Example 1



Example 2



NOTE

Connect the NBT terminator only in the two most distant units on the network line!

Firmware update

New functionalities and bug fixes are made available via a firmware update. In case your device does not have the latest firmware installed, it can be updated. SenteraWeb is the easiest way to update the firmware of the unit. In case no internet connection is available, a new firmware can also be installed via the RJ45 socket. To initiate this procedure, put a jumper on pins 3 and 4 of the P1 PROG header and restart the power supply. The unit is now ready to receive a firmware update from a computer, using the 3SM Boot application (part of the 3SM Center software suite, available on the Sentera website).



NOTE

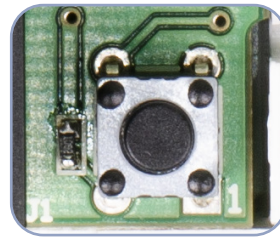
Make sure the power supply does not get interrupted during "bootload" procedure, otherwise you risk losing unsaved data.

Tact switch

Press and hold the tact switch for at least 5 seconds to reset the unit to its default values:

- default Connection mode: DHCP
- default Modbus communication parameters: 19200 Bps, 8 bits, even parity, 1 stop bit (8,E,1)
- default gateway host page: 192.168.1.123

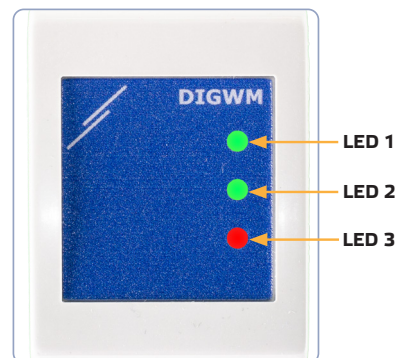
Fig. 4 Tact switch



VERIFICATION OF THE INSTALLATION INSTRUCTIONS

- Green LED1 indicates that the unit is supplied and connected to SenteraWeb via the internet.
- Green LED2 blinking indicates active communication with the Internet, i.e. the unit successfully communicates with SenteraWeb sending/receiving parameters to/from the Cloud.
- Green LED2 slowly blinking indicates that bootloader mode has been entered
- Slowly blinking red LED3 indicates system error (connection to the Cloud has been lost).
- Blinking LEDs on the RJ45 sockets indicate that packages are transmitted via Modbus RTU.
- If this is not the case, check the connections.

Fig. 5 LED indications





ATTENTION

The status of the LEDs can be checked only when the unit is energised. Take the relevant safety measures!

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 this product is 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 supply. Pay attention that no fluids enter the unit. Only reconnect it to the supply when it is completely dry.