



sinapsi SIN.EQRPT868XM Smart Gateway User Guide

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SIN.EQRPT868XM
Smart Gateway
W. M-Bus 868 MHz
OMS EN13757
User Guide
Rev 1.11'



This manual refers to the version Firmware from 1.8

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INTRODUCTION

1.1 Purpose of the document

This document is the complete guide for the installation, the configuration and the commissioning of the wireless Smart Gateway for meters with W. M-Bus (EN13757-4) / OMS protocol. The SIN.EQRPT868XM code, also called Smart Gateway, is able to acquire the signal from one or more communicating meters according to the W. M-Bus 868 MHz standard and to retransmit the received data to the SGH cloud platform (Sinapsi Global Hub) using the modem with m2m SIM. Each SIN.EQRPT868XM can manage up to 500 W. M-Bus transmitters, depending on the chosen profile. The plastic case and the electrical connections are totally concealed. The antennas integrated in the device itself make the gateway suitable for wall installations even in view. The commissioning of the Smart Gateways is facilitated by the use of the Smart Gateway web application of the SGH cloud platform as well as by the on-board LEDs that indicate the GSM signal strength and various other states of the device. The search for the best installation point is facilitated by the possibility of powering the device via USB (5V – 1000 mA), thus making it possible to move during the search for the best compromise between GSM signal and distance from W. M-Bus devices.

NOTE: The SIM used by the Smart Gateway cannot be used for any other purpose. The Smart Gateway does not work with any other SIM card.

1.2 Package contents



Figure 1 – Smart gateway



Figure 2 – Nylon bag content

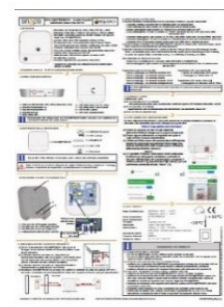









Figure 3 – Package leaflet (QSG)

The packaging of SIN.EQRPT868XM contains:

	Smart Gateway SIN.RPT868XM
	2 x Tassels 5x25
	2 x Screws 5x30
	2 x Cable Glands
	2 x Screws 2,2x9,5
	1 x Fixed Cable Headband
	Installation QuickStart Guide

HARDWARE

2.1 SIN.EQRPT868XM TECHNICAL DATA

SIN.EQRPT868XM is a gateway for W. M-Bus devices.

The main technical characteristics of the device are shown below:

- Operating Temperature: [-20...+55°C]
- Storage Temperature: [-25...+85°C]
- Ingress Protection: IP40 (EN60529)
- Protection Class: II
- Fixing: Wall mounted, with screws
- Dimensions: LxHxP (160x160x35)
- Power Supply: 100...240Vac 50-60Hz
USB (5Vdc, 1000 mA) for commissioning and/or operating mode
- Power Consumption: Max 4.5 W
- Working frequency: 868 MHz
- W. M-Bus modes: S / T / C+T / S & C+T
- Coverage W. M-Bus area: 250 mt in free field – 25 mt in building

2.2 SIN.EQRPT868XM ASPECT

2.2.1 Description

The main functional characteristics are summarised below:

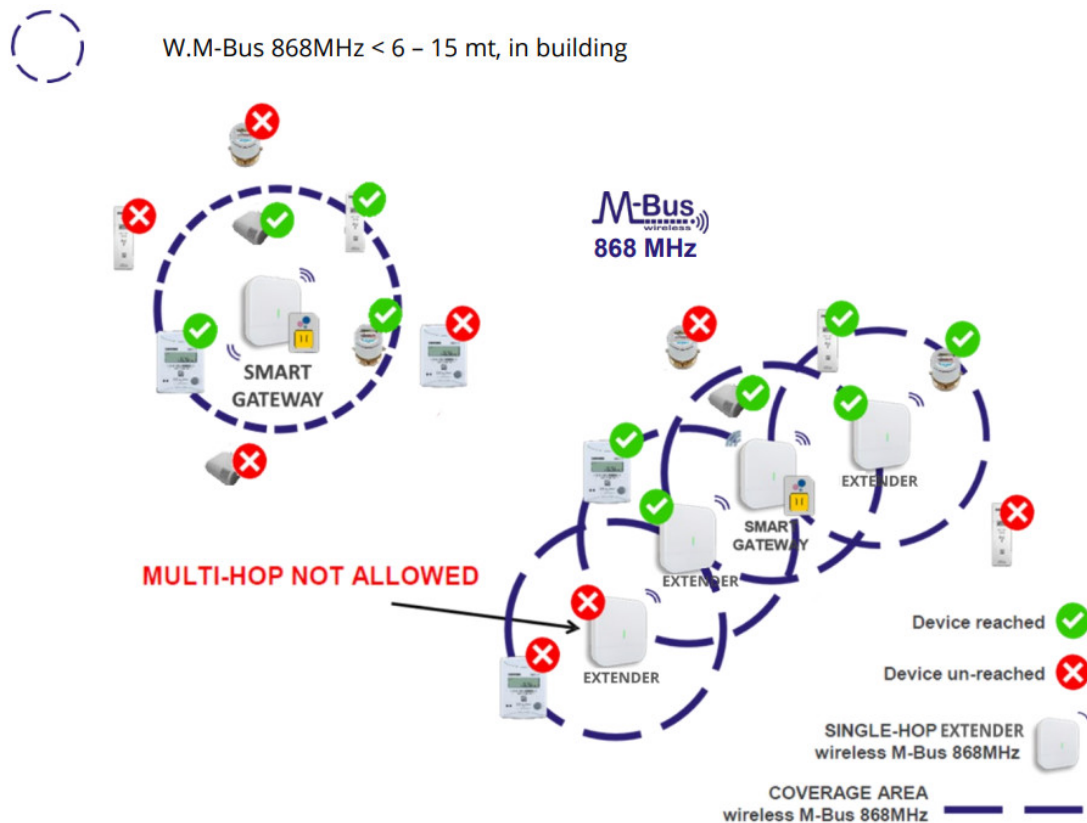


Figure 4 – SIN.EQRPT868XM installation example

- Receiver for W. M-Bus (EN13757-4) + OMS devices
- Radio coverage up to 250m in open air and 25m in building
- Possibility of extending coverage through the use of single hop extender SIN.EQRPT868X (*)
- Manages up to 500 M-Bus wireless devices
- Data transmission to cloud platform Sinapsi Global Hub (SGH) (minimum weekly frequency, maximum 15min)
- Memory of the last acquired non-volatile data
- Easy commissioning with the SGH cloud platform
- GPRS modem integrated with IoT SIM card
- Power supply 100...240Vac or via micro USB (**)
- Wall installation
- Plant management with SGH cloud platform

* Signal repetition is only possible if supported by the meter transmission telegram.

** Make sure that the USB port to which the cable is connected is capable of delivering at least 1A of current.

2.2.2 Device

Below is an image of the SIN.EQRPT868XM device with indications on its functional parts:

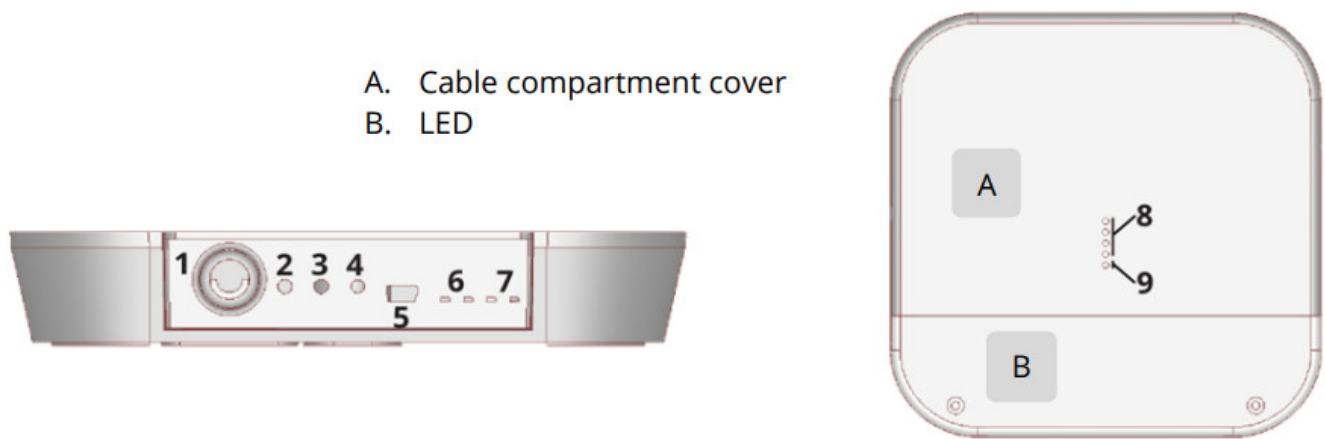


Figure 4 – Connections/push buttons/leds

1. Power supply input 100...240Vac (screw terminals)
2. “Multi-function” button S1
3. “Multi-function” button S2
4. Reset button
5. USB port
6. Modem status indication LED
7. LED network indication W. M-Bus
8. GSM signal level LED
9. LED status (RGB colors)

2.3 STATUS INDICATIONS LEDs

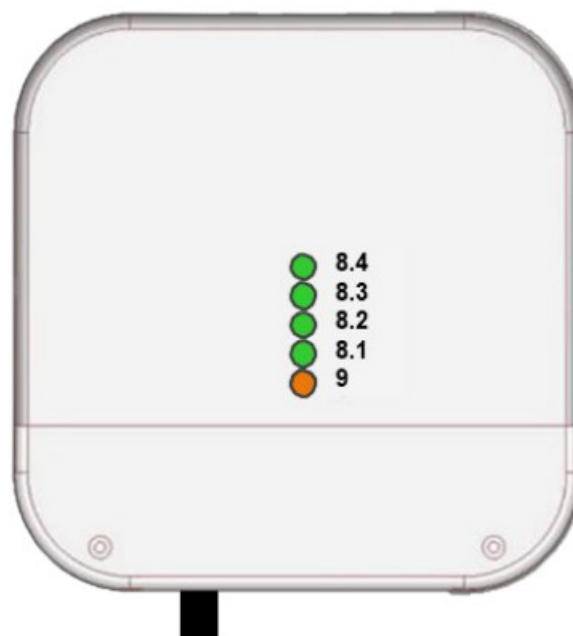


Figure 5 – Front LEDs

During normal operation the status led (9) can give the following signals:

- Continuous variation in RGB colours → Initialization of the gateway (it is necessary to wait)
- Flashing green every second → Modem in the initialization state (must wait)
- Sky-blue flashing every second → Modem in the GSM network search phase

- Fuchsia flashing 10 times per second → Modem connected to GSM network and waiting for data connection
- Fixed orange → Device ready, active GPRS data connection and operating modem
- Orange blinking 10 times per second → Communication in progress with the SGH cloud platform

The orange LED of the SIN.EQRPT868XM signals the connection to the SGH cloud platform and the correct functioning of the gateway.

When the gateway modem is connected to the GSM network, the status LED (9) flashes fuchsia and the frontal green signal level LEDs (8) also light up, showing the GSM signal quality (CSQ) for about 5 minutes:

8.1 = poor reception, 8.2 = sufficient, 8.3 = good, 8.4 = very good

At the end of the 5 minutes it is possible to visualize again the quality of the signal, using the function of the buttons (paragraph 2.4).

Other indications of the LEDs, status LEDs (9):

- Fixed White → Bootloader running
- Red blinking every second → Temporary status of a few minutes waiting to be reconnected to the GSM network
- Status LED error indication (9):
 - Red 1 blink → RAM memory fault
 - Red 2 blinks → Wireless M-Bus fault
 - Red 3 blinks → Modem failure
 - Red 4 blinks → FLASH memory fault
 - Red 5 blinks → Internal clock fault
 - Red 6 blinks → invalid SIM
- Modem status LED indication (6)
 - Off → No service
 - 1 blink every 2 seconds → 2G connection
 - Permanently on → Data transmission in progress
- LED Wireless M-Bus LED indication (7)
- Flashing → Receiving W. M-Bus data

2.4 GATEWAY CONFIGURATION VIA BUTTON FUNCTIONALITY

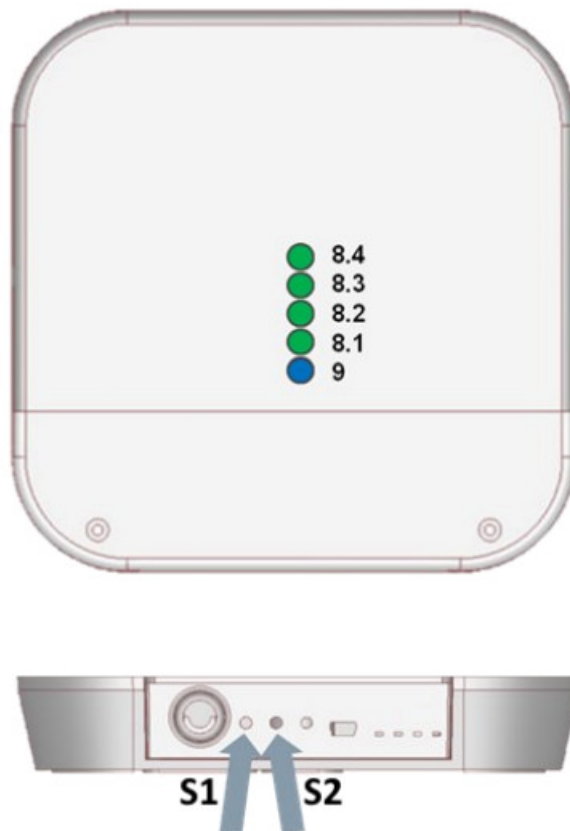


Figure 6 – Use of buttons/LEDs

BUTTONS	CURRENT LED STATUS	LENGTH	LED STATUS	FUNCTIONALITY
S2 closed	LED_IDLE	Time 2 to 6 seconds	LED_GSM	Activation of the LED display mode from 1 to 4 related to the GSM signal level.
S2 closed	LED_GSM	Time 2 to 6 seconds	LED_IDLE	Deactivation of the LED display mode from 1 to 4 relative to the GSM signal level.
S2 closed	LED_IDLE	Time > 6 seconds	Not modified	Communication test with SGH (You will see the status LED flashing rapidly in orange)
RESET closed	LED_IDLE	Simple press	Not modified	Reboot the device (See previous chapter for the various phases)

2.5 CABLE PASSAGE, WALL POSITIONING AND COMMISSIONING

2.5.1 Cable passage



Before making any connection, remove the power supply, complete the wiring, close the cover of the device and then power the gateway.

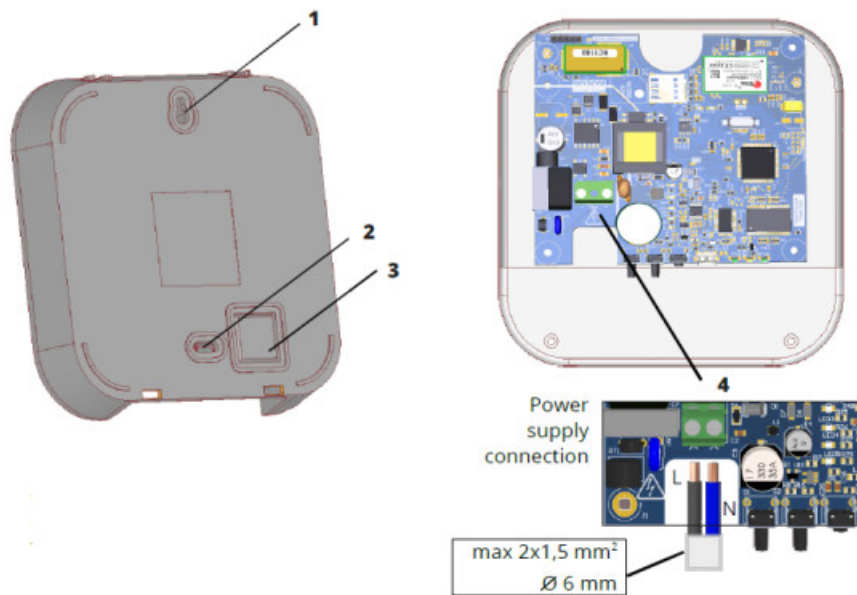


Figure 7 - Cable routing

1. Hole for upper fixing screw
2. Pre-hole for lower fixing screw
3. Pre-hole for cable entry
4. Power supply connection

2.5.2 Wall positioning and commissioning

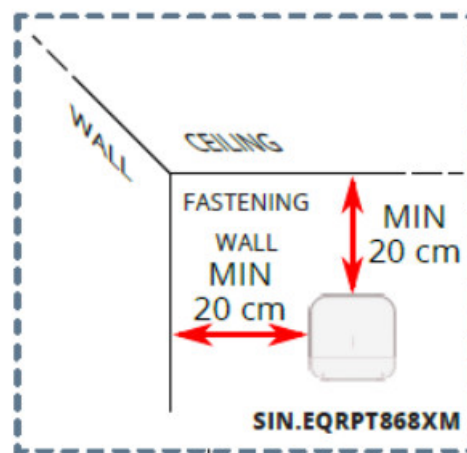


Figure 8 - Wall fixing



Figure 9 – Positioning and distances to be respected

1. Fix the SIN.EQRPT868XM gateway on the fixing wall at a minimum distance of 20 cm from the ceiling and the adjacent wall.
2. Install the Smart Gateway on the wall using the installation accessories included in the package.
LED 9 should face down.
3. The maximum operating distance between W. M-Bus devices and SIN.EQRPT868XM devices installed on the same floor is approximately 15 meters, evaluated in the absence of major obstacles such as: walls, columns or beams made of reinforced concrete, metal or other metal structures.

The maximum operating distance between W. M-Bus devices and SIN.EQRPT868XM devices installed on different floors is about 6 meters.

2.5.3 Expand the coverage range of the Smart Gateway, single-hop extenders In case the Smart Gateway cannot cover the whole building by itself, it is possible to use SIN.EQRPT868X single-hop extenders (*) to extend the range, which are always powered by 230 VAC 50Hz.

Single-hop extenders can only work if there is only one in between the meter and the smart gateway.

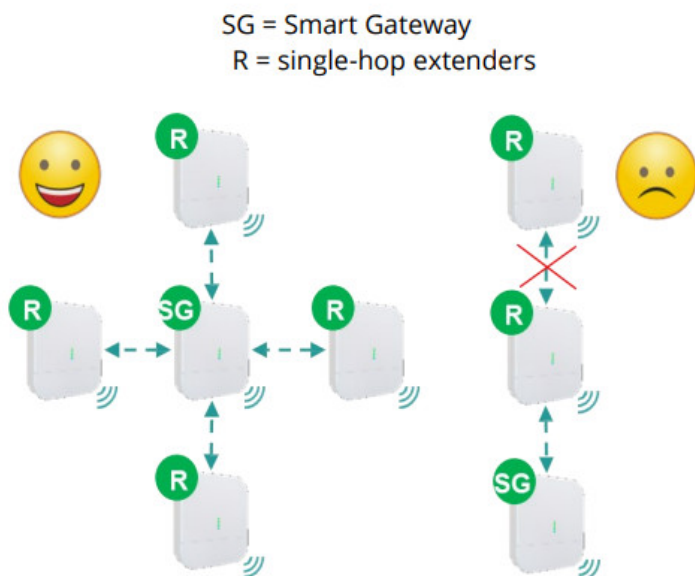


Figure 10 – Connection with extender SIN.EQRPT868X

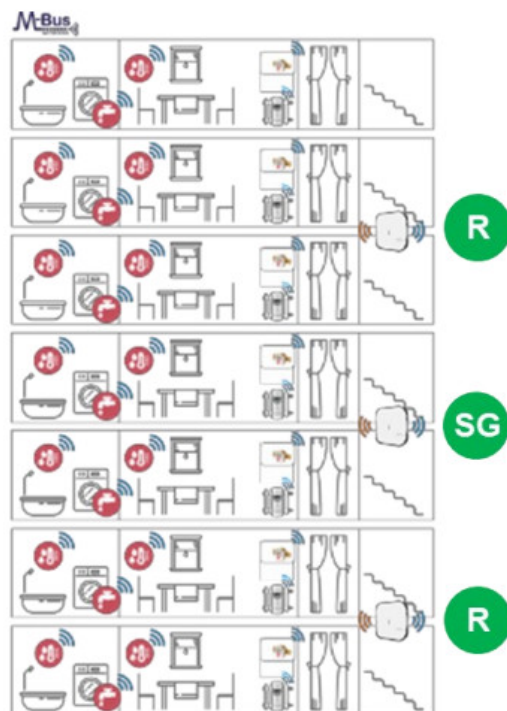


Figure 11

For more information about the operation of the single-hop extender:

<https://www.sinapsitech.it/en/wpcproduct/sin-eqrpt868x/>

* Signal repetition is only possible if supported by the meter transmission telegram.

SOFTWARE

3.1 USER ACCESS

With a PC / Tablet / Smartphone connected to the internet, navigate through any browser at the address:

<https://app.sghiot.com/smartgw/>

a) Create an account if you are not already registered, otherwise log in with your credentials.

– During registration as a new user, enter the required data, accept the required permissions and proceed with the registration.

b) Then enter your credentials and click on “Login”.





3.1.1 User profile

To view and edit your profile, click on the email at the top right and select Profile. In the section that appears you can:

- Update your password
 - Enter the user's personal and business data.
 - Select the application language.
 - Enable or disable subscription to SINAPSI newsletter lists.
- Press Refresh to end the operation.

3.2 MAIN MENU

- Drop-down menu for the selection of existing installations
- In Plants you can create and/or see the characteristics of all plants.
- In Communication Errors we can view all the devices of all the plants that have communication problems
- User Account, user profile to access account management

-  link to existing notifications
-  link to notifications of SIM connectivity service expiring and/or carried out
-  download the user guide
-  With a selected plan we find more:

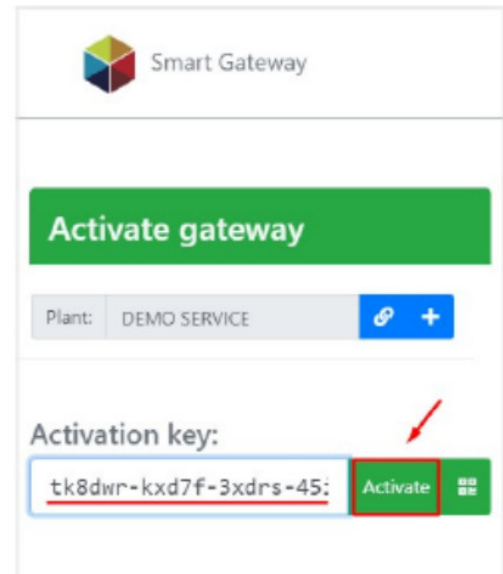
- Meters: you can create, see the characteristics, access and operate on all your selectable meters for each plant and/or gateway.
 - Reports: you can create a new report (with the latest available data), configure automatic sending via e-mail or FTP and consult all the reports sent up to that moment.

3.3 GATEWAY ACTIVATION VIA SMARTPHONE OR PC

In order to be able to use the gateway it is necessary to certify its ownership through the activation procedure in the SGH cloud platform. Therefore:

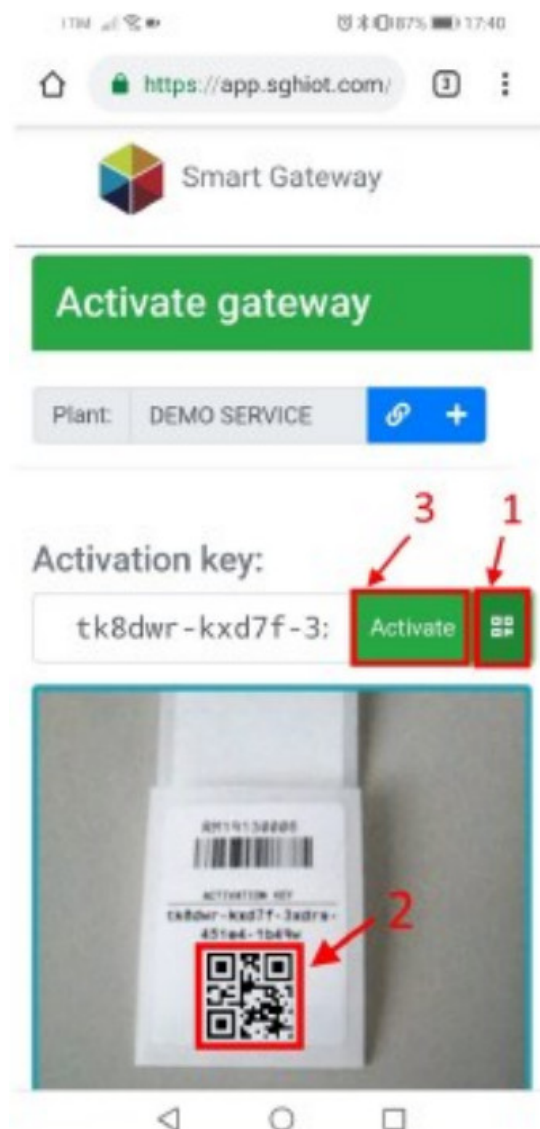
- Open the Plants
- Create or open an existing plant. This is because the gateway only be activated in an existing plantActivate the gateway in the desired plant. You can do this in 2 ways:
- Mode 1:

Manually insert the Activation Key indicated on the box label or inside the cable compartment. Then press "Activate".



- **Mode 2:**

Activate using the camera of your smartphone by pointing to the QR code of the gateway label: by pressing the relevant button (1), framing the QR code (2) and then confirming the “Activate gateway” button (3).



It is now possible to operate with the gateway.

3.4 PLANTS

With the Smart Gateway application, multiple users can share the same system. The levels of access to the system are 3, that is:

- **OWNER:** it is the owner of the plant and has all rights to view and modify it.
 - **EDITOR:** it can modify many settings, for example it can customize the plant, add new gateways, change the list of meters, add other users to send the report to.
 - **READER:** it can only display the plant and its characteristics; it has no way to make changes to the plant.
- In the PLANTS section you have an overview of all proprietary plants (OWNER) or that you have the “sharing” (*) of visualization (READER) or management (EDITOR).

In fact, for each of the plants it is possible to visualize:

- the name of the plant
 - the owner (the registration email of the OWNER account)
 - custom description (editable only by OWNER and EDITOR)
 - the number of gateways managed by the plant
 - the total meters of the plant
 - the number of times the system has been shared with other users
- It is also possible:
- delete a plant of which you are the owner
 - exclude the possibility of viewing a system that you share as a reader.
 - exclude the possibility of managing a system that you share as an editor.

Click on to create a new plant.

By clicking on one of the plants in the list you can access the functions and all the relative data available.

(*) This functionality is better described in paragraph 3.4.3.

3.4.1 Plant Data

In this section you can customize the features and information related to the plant. In fact, you can enter the following data:



- **Plant name** → Mandatory information, as it is useful to identify your plant, therefore it will be displayed in the planned reports.
- **Description** → You can add a description of the characteristics
- **Address 1**
- **Address 2**
- **ZIP**
- **City**
- **Country**
- **Province/State**
- **Timezone** → Mandatory information, as the data received and/or sent will always refer to that time zone.

By ticking the appropriate flag at the bottom of the page it is possible, as soon as a plant has been created, to request a report after 24 hours. This could be useful to have a reference of the initial data of the plant without having to wait for the next scheduled sending.

3.4.2 Global AES keys

The cryptographic key is a set of 32 alphanumeric characters useful for decrypting data from W. M-Bus devices when encrypted.

In this section you can add AES keys valid for all W. M-Bus devices in the plant. Then more than one key can be added. For each W. M-Bus device in the plant, the system checks if the data is not encrypted, then if necessary, tries to decrypt it using the global encryption keys.

Then after adding the global encryption keys by clicking the button , save the settings by pressing the button .

To delete existing cryptographic keys, press on the X above each key entered and confirm on the popup that appears.

3.4.3 Plant sharing

NOTE: This section is visible only if you are owner of the plant.

With the Smart Gateway application, you can share a plant with other SGH users. This means that users with whom you share the plant can see (READER), edit (EDITOR) or become the new owner (OWNER) of the plant you choose to share. Permissions are decided exclusively by the owner of the installation.

In the section there is a summary list of the status of plant sharing with other users.

The first line displays your account as the plant owner.

Following this, all the users with whom you have chosen to share the plant and the access level for each of them are displayed.

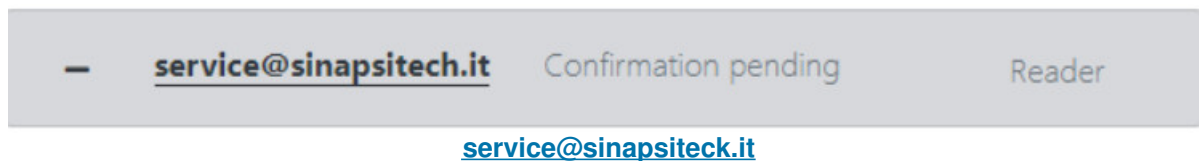
3.4.3.1 Share to new user

To share the selected plant, press the button  at the top right and in the popup write the email of the user with whom you want to share the plant.

The latter will receive an email with some details of the plant such as name, description and installation address as well as an invitation to accept the sharing.

The account that forwarded the invitation will see a notification that displays the status of the share.


The access permissions to the installation for the new user will be read-only and can only be changed after the invitation has been accepted.



You can revoke the sharing invitation at any time by clicking on the – button in the notification.

3.4.3.2 Acceptance of “plant sharing” invitation

To accept the share simply click on the email link and log in to your account in the Smart Gateway web application (if you already have one, otherwise you need to register your own account with the same email address to which you received the sharing invitation).

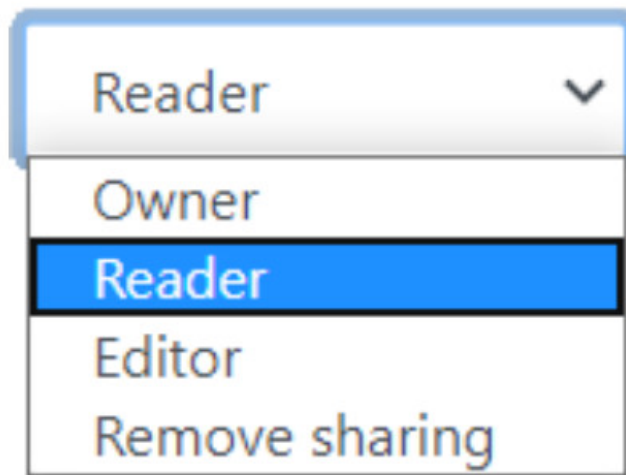
Then within the app in the notifications section of the application  confirm the invitation.

3.4.3.3 Assigning access permissions to a shared plant

You can assign 3 types of access to the accounts with which you share the plant:

- It is the OWNER: with this option you choose to give up the ownership of the plant in favour of the selected user! Once the option is saved, you switch to have access level as EDITOR.

WARNING: This operation is irreversible. The new owner has all rights to the plant, including the right to remove the plant sharing from the previous owner!





- It can see (READER): You assign a type of read-only access to the system, i.e. the new user will not be able to change anything in the system customizations! This is the default option.
- It can edit (EDITOR): The user who has this right of access to the system can make any changes to the system, except to add other shared users.
- Remove sharing: This option removes the permission to view and edit the plant.

3.5 GATEWAY



By clicking on Gateways all the gateways related to that system will appear in tabular form. For each of them you can view:

- Fabrication number,
- Description,
- Activation key used,
- SIM State within the Smart Gateway, that is:
 - > Activated/Test ready: Means that the SIM is operational.
 - > Deactivated: Means that the SIM is deactivated i.e. it no longer transmits data so it needs a new renewal subscription (contact Sinapsi to renew).
 - > Retired: SIM no longer usable.
- In session, it indicates whether the gateway is connected to the telephone operator's network.
- Expiration date, indicates the expiration date of sending data from the gateway to the SGH cloud. Therefore, it is suggested to renew some time before this expiration date.
- Communication state, is the state of communication to the SGH cloud platform.
 - > Online:  the smart gateway communicates correctly
 - > Offline:  The smart gateway does not communicate. Hover the mouse over the image to verify the last communication.
- Signal, Indicates the signal strength of the GSM network.
- Meter list, with green tick, meter list inserted

You can also perform some operations from this screen:

By clicking on the suitcase, it is possible to assign the gateway to another plant other than the current one. This operation can only be carried out by the OWNER.



WARNING: The list of meters previously assigned is not deleted but, if not replaced manually, it will continue to be displayed in the new plant.



By clicking on the pencil, you can view and modify the gateway settings.
Clicking on the trash bin deletes the gateway from the plant.



WARNING: Once the gateway has been eliminated from the plant, it is possible to reactivate it again to other plants, even those of other users (par. 3.3). This means that the device is not bound and not assigned to any system or owner! Instead, the list is maintained.

3.5.1 Information

From the previous main screen of the gateways, click on the fabrication number or the edit button to access sub-sections. The first is the gateway information. Here you can view in detail the main information about the gateway as:

- The days when the connectivity service expires
- Serial numberz
- Name of the plant
- Date of first activation
- Most recent activation date
- Activation key
- Fabrication number
- Serial number
- IMEI
- IMSI
- ICCID
- Number of meters supported

3.5.2 Gateway Configuration

In this section you can configure the gateway. In fact, here we can assign a personalized name of the gateway, set the W. M-Bus mode and, above all, set the list of meters to receive and create the report with the desired W. M-Bus devices. You can also download or delete the list currently in use.

3.5.2.1 Setting “Plant Name” and ” Wireless M-Bus Mode”

After assigning a name to the gateway press Save to save the desired configuration. This field can also remain empty if desired. It is advisable to assign a name that can give an indication of the installation position of the device.

The gateway can work in different combinations of the W. M-Bus mode, that is:

S-Mode

Stationary mode: the devices send their data a few times a day.

T-Mode

Frequent transmission mode: the meters send data from every few seconds to every few minutes to the gateways within range. The interval is configurable: seconds or minutes.

C|T-Mode Compact transmission mode (C-Mode): is similar to T-Mode, but sends more information with the same energy.

Since the frequency and modes C and T are similar, they can be operated simultaneously by the gateway.

S+C|T Mode This mode is a combination. Basically, the gateway stays in S-Mode for a few hours, then switches to C|T-Mode.

So, make sure the communication mode of the devices you want to monitor and then set it in the same way. Press Save to save the configuration.

3.5.2.2 Upload the list into the device

In order to be able to view and operate with the desired W. M-Bus devices, it is necessary to upload a list compiled according to the template.

- Press Download list template, in order to download a template to be filled in with all the devices you want to monitor.
- Once compiled the template, click on Upload meters list to choose your file and then press Upload to upload it to the SGH cloud platform.
- As soon as you press “Upload”, the required operations are initialized immediately. Depending on the length of the list, it may take a few seconds to process.
- If the list is not correct, the error type is displayed and the error line is highlighted. Therefore, it is necessary to correct the error and reload the list. – Press Enter list to load the list.

NOTE: Of all the fields in the list, the only mandatory field for operation is the Serial Number field if the -Bus devices transmit without encryption.

NOTE: If the plot of 3.5.3 Gateway connectivity service profile and renewal This section shows the profile in use of the device, SIM information and you can renew the connectivity service.

3.5.3.1 Profile in use

The profile currently active in the Smart Gateway is displayed.

For example, with the 2W profile, we mean “maximum 200 devices” managed by the gateway and send data weekly (Weekly).

The other available profiles are indicated in the PRODUCT IDENTIFICATION paragraph.

3.5.3.2 SIM


In this subsection is shown:

- SIM State:
 - > Activated/Test ready: Means that the SIM is operational.
 - > Deactivated: Means that the SIM is deactivated i.e. it no longer transmits data so it needs a new renewal subscription (contact Sinapsi to renew).
 - > Retired: SIM no longer usable.
- SIM expiration date: Means the expiration date of sending data from the gateway to the SGH cloud. That is the last expiration date of the connectivity service. Therefore, it is suggested to make the renewal before this expiration date.
- SIM activation date: indicates the date of the last activation/renewal of the connectivity service performed. the devices should be encrypted, it is necessary to insert in the appropriate field of the list or as global AES keys (par. 3.4.2) the relevant cryptographic keys for each M-Bus device, otherwise the devices will result in communication error.

3.5.3.3 Renew

In this subsection you can renew the Smart Gateway connectivity service for an additional year or for another 5 years.

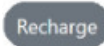
When at least one of the gateways is expiring with the connectivity service, this section can also be reached by

clicking on the button  at the top right and then on “Renew now” for the expiring gateway.
It is displayed:

- User currently connected
- Your credits: your credits at your disposal. You can buy them in sinapsi.store.it
- Renew for: drop-down menu that allows renewal for 1 year or 5 years.

So, to renew the connectivity service is sufficient:

- Click on the Renew drop-down menu and select one of the 2 available options:
 - Years 1 – credits 350 – (SIN.APPSGW2W1) → Renew for another year
 - Years 5 – credits 1500 – (SIN.APPSGW2W5) → Renewal for further 5 years
- Then press Confirm.

If your credits are insufficient to activate the desired option you can click on  to access the [sinapsi.store](https://sinapsi.store.it) and top up your credits.

NOTE: All users can renew the connectivity service, regardless of the type of access permission. So not only the owner (OWNER) but also the reader and editor have the possibility to renew the connectivity service!

3.6 METERS



This section displays an overview of the system communication status of all W. M-Bus meters and devices compatible with the Smart Gateway.

All gateways

Gateway: RM00000001

Found: 73/88

44

Report type: All data report

Download

Serial Number

Cryptography

Description

Last communication

Notes

Address

Apartment number

Surname

Name

City

RSSI

07672101

List_Stairs A - Floor Nr. 2 (SIMFONY)

2020-07-11 18:35:25

Ripostiglio

Via Giuseppe Garibaldi 8/A

Appartamento 7

Volpini

Romeo

Bastia Umbra

A – Display:

- All Gateways: Displays the meters of all gateways in the plant.
- Gateway: Selector to display the meters of the individual gateway

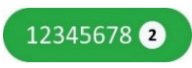
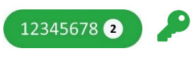
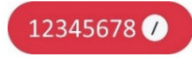
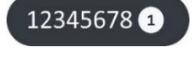
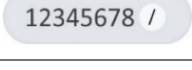
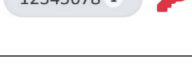
B – Counting the meters found on the number of totals searched. This count refers to the type of display, If I have selected All gateways, then it indicates all the meters in the plant (of all gateways). If I have selected Gateway it displays all the meters of the single selected gateway. Highlighted green is the number instead of all the meters found and communicating regularly. This number also refers to the display mode. During the commissioning phase the update of the meter data takes place almost in real time and at the most within one hour from the transmission of the W. M-Bus device.

C – Button to update the communication status of W. M-Bus devices and button to activate the search filters under each information field in the meter table.

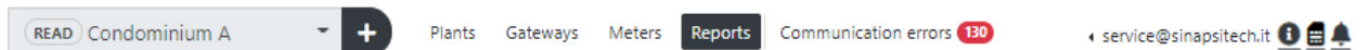
D – Selection of the type of report you want to download manually. The data of the report refer to those of the last available send.

Through the use of colours and symbols, intuitive information about the search status is quickly provided. In fact,

we have:b

	The W. M-Bus device has been found. The number in the white circle (2) indicates the number of gateways that received it.
	Meter found and read using an encryption key The number in the white circle (2) indicates the number of gateways that received it.
	Last correct communication before the report interval.
	Meter with communication protocol not compatible with the Smart Gateway. The number in the white circle (1) indicates the number of gateways that received it.
	Device not found.
	Decryption error, due to missing or wrong encryption key. The number in the white circle (1) indicates the number of gateways that received it.

3.7 REPORTS



In this section you can generate, configure and consult the archive of all the reports created.

3.7.1 Generate report


Select the report type and then press the Download button. Wait for the report generation and download.

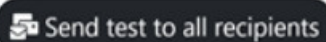
3.7.2 Configuration

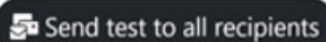
3.7.2.1 Email recipients

When creating a plant, the email address used for login is automatically added as the first of the recipients of the report email.

However, it is possible to add new recipients to whom you can send the email with the plant report attached:

- Add the new recipient's email address in the appropriate box and press .



By pressing the  button, you can send a test email to all recipients added to check the correctness of the addresses.

3.7.2.2 Frequency, type of report and planning

- Depending on the profile used by the gateway, the frequency and day of sending the report is displayed.
- Select the type of report you want to receive as an attachment to the email or as a file to a remote server.
- Under Report timing you can set a different time at which you want to receive the report. By default it is set to 8:00 am.

3.7.2.3 Sending to a remote server

- Check "Send the report to a remote server".
- Select "Connection Type" between FTP or SFTP.
- Write the address of the remote server you want to send the report file to in the "Hostname" box, – Write the server Port to which to forward the request: by convention an FTP connection is associated with port 21, while

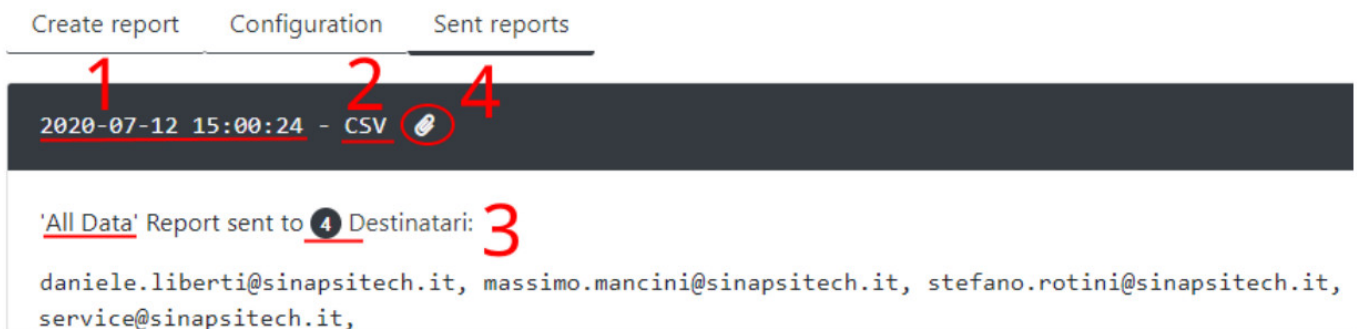
in SFTP port 22 is associated.

- Specify the Remote file path where to save the report file.
- Specify the access credentials to the remote server: Username, Password.
- Press Save to save the settings.

Press “Test connection” button, you can send a test email to all added recipients to validate the entered settings.

3.7.3 Sent Reports

In this section you can consult the archive of all the reports that have been sent via email and/or FTP.



For each of them, it shows the date and time of sending (1), the type of file sent (2), the number and recipients of the mail (3).

You can also download the sent report file again, just click in the header bar on the attached file symbol (4). The sent attachment is only available for the last 4 reports sent.

3.8 COMMUNICATION ERRORS



This section shows all communication errors, of all plants A communication error is the non-availability of a correct data in time.

Serial number	Last communication	Notes	Address	Apartment number	Surname	Name	City
00000078	2019-06-26 16:36:33	SIN.EQPR02X	Fifth Avenue	5-E	Apartment E	Floor 5	New York
05635610	2020-07-11 19:20:40	Caleffi OMS	Fifth Avenue	3-C	Apartment C	Floor 3	New York

Since a plant can handle more than one gateway, communication errors have been split to facilitate problem analysis:


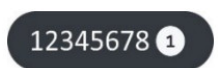
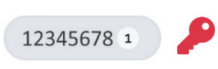
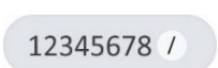
a – Communication errors throughout the plant.

1. Total number of W. M-Bus devices in communication error of the whole plant.

b – Communication errors of the gateway.

2. Total number of W. M-Bus devices in communication error of the gateway with reference to the whole plant.

c – The list of W. M-Bus devices that have communication errors. These errors are classified:

	Last correct communication before the report interval.
	Meter with non-standard communication protocol. The circled number is that of the gateways that detected it.
	Decryption error, due to missing or wrong encryption key. The circled number indicates the gateways that detected it.
	Device not found.

SMART GATEWAY CONFIGURATION IN PILLS

1. Create an Account and log in to the portal.
2. Create a plant within the Smart Gateway web application.
3. Position the SIN.EQRPT868XM Smart Gateways following the instructions in section 2.5 in order to guarantee radio coverage of the various installed W. M-Bus transmitters you intend to receive.
4. Power up the Smart Gateway, wait for the start up, the status led on the front panel lights up and changes different colours. Wait a few moments and verify that it is steady orange or blinking.
5. Connect to the WEB application and after authentication, activate the Smart Gateway in your system.
6. Enter the list of W. M-Bus devices. Also make sure that the W. M-Bus mode (C / T / S) set is consistent with the devices you want to receive.



Each SIN.EQRPT868XM supports a maximum of 500 W. M-Bus devices (depending on configuration). If it is placed in an area where more than this number can be received, then only the devices in the list will be filtered.

PRODUCT IDENTIFICATION

- The product code is composed:

CODE	PRODUCT	MODEL		PROFILE	
SIN.EQRPT868XM2 D	SIN.EQRPT868 XM	–	Sinapsi	2D	200 wM-Bus devices, Daily data
SIN.EQRPT868XM2 W	SIN.EQRPT868 XM	–	Sinapsi	2W	200 wM-Bus devices, Weekly data
SIN.EQRPT868XM5 D	SIN.EQRPT868 XM	–	Sinapsi	5D	500 wM-Bus devices, Daily data
SIN.EQRPT868XM5 W	SIN.EQRPT868 XM	–	Sinapsi	5W	500 wM-Bus devices, Weekly data

- Each device is identified by:

Fabrication Number	Serial (Universal Unique ID)	Activation Key
Example: RM12345678	Example: abcd7t-agt7n-e3b15-ft6hf-copzw	Example: 38nkff-nmqbf-wzppu-ft6hf-copzw

TROUBLESHOOTING

The device does not turn on:

- In case of mains power supply, check that the voltage is present.
- When using the USB port, check the quality of the USB cable and that the PC (or any other power source such as a power bank) is capable of delivering 1000mA of current.

The status LED never turns fixed orange:

- Verify that the SIN.EQRPT868XM device is positioned in a place where GSM reception is favourable (do not close it in electrical panels or particularly shielded environments).
- Check the GSM signal level by activating the LED indications

Not all M-Bus wireless devices are detected:

- Check that the status LED of the SIN.EQRPT868XM is on and orange (chapter 2.3).
- Check that the undetected meters are not too far from the SIN.EQRPT868XM or that the radio signal from reinforced concrete/metal walls is not too attenuated. In this case, evaluate the possibility of extending coverage with SIN.EQRPT868X single hop extenders.
- Verify that the devices not reached are in the list uploaded to SIN.EQRPT868XM through the SGH cloud platform.
- Caution: some W. M-Bus devices transmit even several hours periodically.
- With the help of the SGH portal, check that the “mode of operation” (S, T, C+T, S & C+T) of the gateway is set as the “mode of operation” of the M-Bus wireless devices.

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Documents / Resources

<div data-bbox="137 91 181 136">sinapsi</div> <div data-bbox="225 91 288 170">  </div> <div data-bbox="137 188 229 250"> SIN.EQRPT868XM Smart Gateway W. M-Bus 868 MHz OMS EN13757 </div> <div data-bbox="137 264 194 282"> User Guide </div> <div data-bbox="225 315 277 322">  </div>	<div data-bbox="316 174 1323 244"> sinapsi SIN.EQRPT868XM Smart Gateway [pdf] User Guide SIN.EQRPT868XM Smart Gateway, SIN.EQRPT868XM, Smart Gateway, Gateway </div>
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References

- 
[Smart Gateway](#)
- 
[Metering - Extender W.M-Bus SIN.EQRPT868X by Sinapsi](#)

Manuals+.