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EQUOBOX RTUEVO1T Datalogger for meters with M-Bus wired and wireless protocol connected via repeater

User Guide

Rev 1.3



 This manual refers to the Firmware starting from:

 WI: 3.05

 FW: 4.4_2.0_2.9

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Acronyms

Dynamic DNS	Dynamic Domain Name System
LAN	Local Area Network
M-Bus	Meter Bus
W.M-Bus	Wireless Meter Bus
USB	Universal Serial Bus
VPN	Virtual Private Network
SGH NET	Sinapsi Global Hub Net

1. OVERVIEW

1.1. Device functions

The RTUEVO1T reads M-Bus devices connected directly to the RTUEVO1T as well as M-Bus devices connected to the RTUEVO1T via level converters as well as W.M-Bus devices connected to the RTUEVO1T via repeater.

It can be used:

- Alone with up to 20 directly connected (*), wired M-Bus devices
- As a master on an M-Bus network with up to six connected level converters and a total of 250 logical M-Bus devices and/or
- As a master on the M-Bus network with up to 23 level converters and 500 wireless devices per converter

* Device means an M-Bus load unit (≤ 1.5 mA)

1.2. M-Bus properties

1.2.1 Wired M-Bus

The M-Bus system (Meter Bus) is a communications protocol per EN13757-2.

It has the following benefits:

- Highly secure data transmission
- Low wiring costs
- Can be greatly expanded without additional amplifiers
- High number of connectable devices
- Recognizes both battery-powered as well as mains powered devices
- Automated device recognition
- A very large number of systems and devices available
- Various bus topologies can be used (line, bus, star, or tree topology)

1.2.2 Wireless M-Bus

The wireless M-Bus system communicates using the communications protocol per EN13757-4.

The system also has the following benefits:

- Various network topologies available for radio read out
- The system can be extended over a large area using additional Smart repeater sinapsitech®
- Optimum connection by the repeater to the RTUEVO1T (mesh network)

2. MOUNTING

It is designed for mounting on 35 mm rails.

It takes up the equivalent of four standard modules on the rails.

Additional information on mounting is available in the mounting instructions for the RTUEVO1T.

3. CONNECTIONS

3.1. **RTUEVO1T**

The RTUEVO1T has the following connection terminals / LEDs.





Terminals (1) and (2) on the level converter are connected to line M1M2 on the M-Bus datalogger. In addition, a maximum of 20 M-Bus devices can be connected directly to terminals M1 and M2.

To connect the level converter to the M-Bus datalogger on ABC, connect the terminals A (3), B (4) and C (5) of the SIN.LC1 or A (5), B (6) and C (7) SIN.LC250 to terminals A (1), B (2), C (3) of the M-Bus datalogger.

Important: M-Bus devices cannot be connected directly to terminals A, B, C.



- 1 Datalogger as master for 20 devices
- 2 Level converter as slave for additional M-Bus devices

4. ENGINEERING

4.1. Topology

4.1.1 Wired M-Bus devices

The M-Bus permits various network topologies. The devices can be connected to the level converter or the RTUEVO1T in a line, bus, star, or tree topology, or a combination thereof.

Ring topology is not permitted. Bus cable polarity is not relevant, simplifying installation.







4.1.2 Wireless devices

The RTUEVO1T permits read out using various network topologies. The repeaters are self-organizing and search for the optimum connection to the datalogger.



4.2. Operation modes

The RTUEVO1T is used to read up to 20 directly connected devices (20 units M-Bus loads (*)). A PC / Internet browser reads the data either locally over Ethernet or from anywhere over the Internet.



(*) 1 M-Bus load ≤ 1,5 mA

4.2.1 RTUEVO1T with level converters

The datalogger is equipped with additional level converters over two lines to extend the system by up to 500 logical M-Bus devices (max. 250 per line).

The datalogger is operated as the master. Up to 20 M-Bus devices (20 units M-Bus loads) can be directly connected (Line M1M2).

The level converters are connected as slaves to the datalogger RTUEVO1T. Up to 60 M-Bus devices (60 units M-Bus loads) can be connected to the level converter SIN.EQLC1 and up to 250 M-Bus devices can be connected to the level converter SIN.EQLC250 (250 simple M-Bus loads).

A maximum of six level converters (SIN.EQLC1, SIN.EQLC250) can be connected to each line with a maximum of 250 M-Bus devices per line.

Moreover, up to 20 M-Bus devices can be connected directly to terminals M1 and M2.



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4.2.2 RTUEVO1T with repeaters

The RTUEVO1T can be equipped with additional repeaters to extend the system up to 2.500 wireless devices. Communication between the RTUEVO1T and repeaters takes place over a mesh RF protocol (backbone network). A minimum of one M-Bus RTUEVO1T and one repeater is required to read out wireless devices. The backbone RF network can consist of a maximum of 23 repeater. Communication between the repeaters and wireless devices takes place over the W. M-Bus protocol. The repeaters save the consumption data from the devices in its environment, while forwarding the data to other repeaters, up to the RTUEVO1T (the other repeaters act as repeaters in this case).



4.2.3 Combined plants

One RTUEVO1T can read out up to 500 wired and 2.500 wireless devices.



- A RTUEVO1T as master
- **B** Lever converter as slave (on ABC bus or M-Bus)
- **C** W. M-Bus repeater as participant

4.2.4 Readout data

A PC/Internet browser reads the data on all operation modes either locally over Ethernet or from anywhere over the Internet using a PC/Internet browser.

4.3. Power supply

Select an AC/DC 24 V power supply with at least 14.5 / 15 VA and voltage tolerances as described in the technical data.

4.4. M-Bus

4.4.1 M-Bus addressing

M-Bus uses two addressing types to recognize and communicate with wired M-Bus devices:

- Primary addressing: Up to 250 primary addresses can be assigned to an M-Bus primary. The primary address is normally assigned during M-Bus device commissioning.
- Secondary addressing:

Secondary addressing consists of 8 bytes and permits the assignment of any number. In the default setting, the secondary address for a M-Bus device matches the serial number issued by the device manufacturer. The assignment prevents address conflicts on the M-Bus and permits addressing of more than 250 M-Bus devices on a plant.

4.4.2 Sizing the wired M-Bus plant

Allowable cable types:

- Shielded telephone cable 0.5 mm2 (4 x 0.8 mm)
- NYM cable (1.5 mm2)
- Maximum capacitive cable load of 152 nF/km

4.4.3 Bus expansion

If using cable with a cross-section of 0.6 mm2, you must cut the information in half on "Maximum distance" and "Number of devices" from the following table.

Plant type	Maximum distance	Total cable length	Cable diameter	Number of devices (slaves)	Max. transmission rate
Small residential buildings	350 m	1000 m	0.8 mm ²	250	9600 Baud
Large residential	250 m	4000 m	0.9 mm^2	250	2400 Baud
buildings	350 11	4000 111	0.8 mm²	64	9600 Baud
Small developments	1000 m	4000 m	0.8 mm ²	64	2400 Baud
Large developments	3000 m*	5000 m	1.5 mm ²	64	2400 Baud
Direct vicinity	5000 m*	7000 m	1.5 mm ²	16	300 Baud
Point-to-point connection	10000 m*	10000 m	1.5 mm ²	1	300 Baud

*Shielded cabling required at a distance in excess of 1000 m (see EN13757-2 appendix E).

4.4.4 Signal specifications

M-Bus	Condition	Minimum	Typical	Maximum	Unit of measure
Transfer rate	$C_{segment} \leq 382nF$	300	2400	9600	Baud
Bus current	SIN.EQRTUEVO1T	0		30	mA

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5. INSTALLATION

Prerequisite

Connections between devices are based on the selected operating mode as illustrated in the sections below.

Important: Do not connect power to the devices prior to installation!

5.1. Connect RTUEVO1T and level converter

Terminals (1) and (2) on the level converter are connected to terminals M1 (4) and M2 (5) on the M-Bus RTUEVO1T.

Terminals A (3), B (4) and C (5) on the level converter are connected to terminals A (1), B (2) and C (3) on the M-Bus RTUEVO1T.



- 1 RTUEVO1T as master for 20 devices (see paragraph 5.4)
- 2 Level converter as slave for an additional 60 (using LC1) or 250 (using LC250) devices
- **3** Level converter connected via ABC as slave for an additional 60 (using LC1) or 250 (using LC250) devices

5.2. Connect RTUEVO1T and repeater

Install the supplied antenna to access the repeater. By setting identical mesh network parameters both in the RTUEVO1T and in the repeater, W.M-Bus devices can be received. See paragraph 8.4.4.1 Device settings.

5.3. Connect RTUEVO1T to PC

A network cable is used to connect the RTUEVO1T and PC/LAN. See Connect RTUEVO1T to PC or LAN

5.4. Connect M-Bus devices to RTUEVO1T

Up to 20 devices can be connected directly to the RTUEVO1T. They are connected to terminals M1 (4) and M2 (5).



5.5. Digital inputs on RTUEVO1T

RTUEVO1T provides 3 digital inputs I1, I2, and I3 to connect potential-free contacts (e.g. switches, relays). The contacts are connected as follows:



- Input I1: Connect the external contact with terminals C (8) and I1 (9).
- Input I2: Connect the external contact with terminals C (8) and I2 (10).
- Input I3: Connect the external contact with terminals C (8) and I3 (11).

5.6. Digital outputs on RTUEVO1T

The RTUEVO1T has two relays that can be used as digital outputs. They can connect a load or be used as contacts to activate other systems. Terminals O1 (13) and O2 (15) can be controlled locally on the RTUEVO1T or remotely via the Internet (see section **8.3.4 Inputs/Outputs**).

Connect as follows to control, for example, a load:



6. COMMISSIONING

Prerequisites

Ensure the following prior to commissioning the RTUEVO1T:

- The electrical connection must be fused (fuse or circuit breaker) The power supply must be at the device's rated voltage.
 - The power supply must be sufficient to operate the device.
- The router (if available) must be configured as per the description.
- The network plug must be wired correctly to exchange data and connected to the ETH connection on the RTUEVO1T
- In the event a level converter is connected to the RTUEVO1T, connect it as a slave on the RTUEVO1T's master output.

6.1. Connect RTUEVO1T to PC or LAN

RTUEVO1T has an Ethernet connection to directly connect to a local PC or connection to a PC over LAN.



Default settings for connecting to the RTUEVO1T:

IP address:	192.168.1.110
Network mask:	255.255.255.0
IP address assignment:	Static

Proceed as follows to connect a PC to RTUEVO1T:

- Use an Ethernet cable per standard T568A or T568B (1:1 or crossover) to connect RTUEVO1T with a PC (directly) or LAN. If using the LAN, also connect the PC to the LAN.
- Check whether an IP address is displayed on RTUEVO1T in menu **System info**, under **LAN Status**.



Connection over LAN	Use a DHCP server for dynamic IP address or a fixed IP address if the PC and RTUEVO1T are integrated on an existing LAN. Contact your network administrator about the fixed or dynamic IP address to be used. You can change the LAN settings via the local operation of the RTUEVO1T.			
Direct PC connection	Configure the IP address on the PC network settings or RTUEVO1T so that the PC and RTUEVO1T are on the same network. In the example above, the PC must have a static IP address 192.168.1.xxx (with xxx of 1 and 254, but NOT 110) and the network mask must be set to 255.255.255.0.			
IP address ranges	 The following IP addresses are reserved for private networks: Class A: 10.0.0-10.255.255.255. Class B: 172.16.0.0-172.31.255.255. Class C: 192.168.0.0-192.168.255.255 (typical for home networks). 			
Access to RTUEVO1T	To access RTUEVO1T, enter the RTUEVO1T IP address (e.g. <u>https://192.168.1.110</u>) in the browser (Chrome, Safari, Firefox, Edge). Additional information on router configuration is available in the Appendix.			

6.2. M-Bus commissioning on RTUEVO1T

After installation and after all connections are established, the M-Bus is commissioned as per the following steps:

Check M-BusOn the level converter LC1, check that the "M-Bus Ready" LED is on and the "M-
Bus Error" LED is off.

On the level converter LC250, check that the "**Run**" LED is on and the "**M-Bus Error**" LED is off.

First time log in You must set the RTUEVO1T language the first time RTUEVO1T is activated. The following languages are currently available:

Sys LAN RF Net	
Select language	1
English 🔻	
Reset code	
Reset	

- German
- English
- Italian
- French
- Dutch
- **Notes** The language selected during the initial login applies to both the display as well as the software user interface of RTUEVO1T. You can change the language after initial login for the display and user interface of RTUEVO1T anytime and independently.

See section "**7.4.5 Settings menu**" (display). You can change the language for the RTUEVO1T at any time in the software user interface. See section "**8.2.1** Select the datalogger language" (software interface).

Access code

Define an 8-digit access code. Use the \bigcirc and \bigtriangledown navigation buttons to set a number from 0...9. Press OK to go to the next digit. You must re-enter the 8-digit access code to confirm it.



Change access code The access code can be changed at any time to protect against unauthorized access. See paragraph "**Operating**" section "Change access code".

Start meter search In the **Meter search** main menu, start the search for connected M-Bus devices. Detailed information on the meter search workflow is available in section "**7.4.3 Wired search menu**".

- Continue settingsAt the conclusion of the meter search, we recommend accessing the
RTUEVO1Tvia the Internet browser to conclude the configuration. You can enter
plant data and other settings via the Internet browser. For access to RTUEVO1T,
see section "Connect RTUEVO1T to PC or LAN.
- Enter meter name Assign each device a unique name, e.g. "Apartment 1, "Warehouse", "Hot water" to simplify evaluation of reports with consumption data or device information. Display menu selection Settings → Wired devices → Device settings. See paragraph 8.4.3.1 Devices settings
- Enter plant data Plant data includes information on user, address, etc. The data is displayed in the report header and permits clear assignment of the measured data to a plant. Display menu selection **Settings → System → Plant data**, see paragraph "**8.4.1.1 Plant data**".

Email settingsRTUEVO1T can email you reports, events, messages, anomalies, and errors.See "8.4.2.2 Email configuration".

6.3. Commission repeater on RTUEVO1T

To simplify the evaluation of reports on consumption data or device information on the RTUEVO1T assign each device a clear and unique name to each meter, for example, "Apartment 1", "Basement", "Hot water". See Section **Settings /Wireless Devices/ Device settings**.

6.4. RTUEVO1T troubleshooting

The datalogger does not switch on. The green LED is off.

• Using a multimeter, check whether the required operating voltage AC/DC 24 V +/- 10 % is available between terminals (15) and (16).

The display is switched off.

• The display switches off automatically after 10 minutes. Press any button to switch on the display.

The RTUEVO1T does not recognize any devices.

- Check to ensure the wiring is correct between the RTUEVO1T and connected M-Bus devices.
- Check to ensure the wiring is correct between the RTUEVO1T and the level converters.
- Check M-Bus wiring for short circuits.

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The RTUEVO1T does not recognize all M-Bus devices.

- Check to ensure the wiring is correct between the RTUEVO1T and unrecognized devices.
- Using a multimeter, check whether the bus voltage on the unrecognized devices is between DC 24 V and 42 V.
- Ensure that the communication settings on the RTUEVO1T are compatible with the M-Bus devices (transmission rate, addressing)
- Check to ensure that the number of connected M-Bus devices does not exceed the maximum permitted amount.

The RTUEVO1T does not recognize all radio devices.

- Ensure that the unrecognized devices are not located too far from the RTUEVO1T and that the radio signal is not too weakened by cement or metal walls
- Ensure that the unrecognized devices are loaded to the RTUEVO1T list and that contact to the wireless M-Bus devices, recognized by the RTUEVO1T, is not interrupted.
- Please note that some wireless M-Bus devices only transmit their data at intervals of multiple hours
- Use the web interface or the SIN.EQSW1 software to ensure that the mesh network is operational.

No connection with the RTUEVO1T.

- Check the PC network address. The RTUEVO1T uses an IP address 192.168.1.110 as the default. As a result, the PC must have an IP address of 192.168.1.xxx (with xxx not equal to 110).
- Ensure that a firewall is not blocking TCP/IP Port 80 or 443.
- Please contact your local IT administrator for excluding network problems.

7. RTUEVO1T: OPERATION ON THE DEVICE

7.1. Select default operating language

The language set on the display is the default language.

You can set the default operating language directly on the display. After entering the password, you can select the language on the main menu at **Settings** \rightarrow **System** \rightarrow **Select language** by pressing the \bigcirc and \bigcirc buttons.

The following languages are available:

- English
- German
- Italian
- French
- Dutch

Each time the language is set or changed on the display; it remains the default language until the next change. The default language is used on the following:

- Display functions
- RTUEVO1T default language for the login
- Automatic reports on all RTUEVO1T

Important! The language set locally on the RTUEVO1T is also used for sending emails and to generate reports and alarm notifications. It is very important that the language is set correctly locally on RTUEVO1T during commissioning.

7.2. Buttons

RTUEVO1T has six buttons to navigate menus on the display. The button functions are based on the displayed menu.

ОК	Confirm a field or a set valueAccess to the main or sub-menu
ESC	Cancel a field selection or valueReturn from a sub-menu to a main menu
	Go to previous main menu or sub-menuMove cursor to the left
	Go to next main menu or sub-menuMove cursor to the right
	 Scroll up one page Select / switch from letters AZ and digits 09
	 Scroll down one page Select / switch from letters AZ and digits 09

7.3. Operating

Measured data and basic settings are displayed on a colour display. The display switches off automatically to save energy after 10 minutes.

Access code entry

Press a navigation button to switch on the display. The display to enter the access code opens.



Enter the access code. The cursor flashes at the current position. Select individual numbers using the arrow keys \bigcirc and \bigcirc and confirm with the OK button. The cursor goes to the next position on the 8-digit access code.

Change access code

The access code on RTUEVO1T can be changed as follows:



Select **Settings / System / Reset code** and press the **OK** button to reset the access code.

The current access code must be entered before you can enter and confirm the new code.



The display changes automatically to the System info main menu once the access code is changed.

The code must be entered again if an incorrect access code is entered or the new access code does not match the confirmation. There is no limit to the number of attempts.

Note You can reset the access code for local access on RTUEVO1T using web access.

Important! For security reasons, define a new access code locally on the RTUEVO1T as soon as possible after a reset.

7.4. Main menu

The main menu displays after correctly entering the access code. It consists of five pages: **System info**, **Wired meters, Wired search, Search RF** and **Settings.**

	System info	Wired meters	Wired search	Search RF	
	í		R		
	• • • • •	• • • • •	• • • • •	• • • • •	
	Settings				
	00				
System info	Includes ii	nformation on RTU	EVO1T and connec	tion status.	
Wired meters	Displays t the data.	he list of connecte	d M-Bus devices a	nd makes it possi	ble to display
Wired search	Starts the	search for connect	ted device as per th	e last saved chan	ges.
Search RF	Starts the	Starts the search for RF devices using the last saved settings.			
Settings	Includes some RTUEVO1T settings.				

7.4.1 System info menu

Select the System info main menu and press the OK button to go to the submenu



- Plant name
- Serial number (required for support calls).
- LCD UI Version (local UI version)
- M-Bus firmware version
- LAN connection status and IP address (if connection is available).
- Internet connection status and public IP address for external access (if connection is available).
- Input status (indicates the status of the three inputs)
- Output status (indicates the status of the two relay outputs)

7.4.2 Wired meters menu

Select the wired meters main menu and press **OK** to go to the sub menus.



(1)

List of saved meters. Each meter is identified by the first 8 digits of the serial number (e.g. 5434563).

The following symbols are displayed in the first column:

- OK: The last readout was successful.
- ▲ Device error: An error was reported to the RTUEVO1T via M-Bus.
- **△** Communications error: No communications with the device.

You can navigate through the list with the \bigcirc and \bigcirc navigation buttons. Press **OK** to go to the data for the selected meter.

- The first panel provides general information on the selected meter:
 - SN: Serial Number: fabrication number
- PA: Primary Address
- D1: Description, designation
- LN: Line (connection): M1M2 or via serial bus ABC
- MM: Medium
- TI: Time Interval: readout frequency

Displays the values from the last meter readout, if available.

The \bigcirc and \bigcirc navigation buttons take you to additional meter fields for this readout time.

The following image explains in detail the meter configuration fields shown on the display.



The setting is selected over web operation in the menu **Settings** \rightarrow **Wired** Device name devices \rightarrow Device settings \rightarrow Select the device \rightarrow Data point settings Readout date Displays the date of the meter readout Readout time Displays the time of the meter readout M-Bus description Displays the field description as per the M-Bus protocol M-Bus storage: Displays the storage number of the displayed M-Bus data point. See the meter documentation for additional information M-Bus tariff Displays the tariff number of the displayed M-Bus data point. See the meter documentation for additional information M-Bus subunit Displays the number of the subunit for the M-Bus data point. See the meter documentation for additional information Readout value Displays the value with unit at the time of the meter readout

ImportantThe display only displays meter fields where the option **Display data** is
selected. The setting is selected over web operation in the menu **Settings** \rightarrow
Wired devices \rightarrow **Device settings** \rightarrow Select the device \rightarrow **Data point settings**

7.4.3 Wired search menu

In the Wired search menu, press **OK** to start a scan for connected meters. The default search criteria:

- M-Bus line: M1M2
- Scan speed: 2400 bp
- Scan type: Secondary address



Scan speedSelect the baud rate used by RTUEVO1T to scan for meters: 300 bps and 2,400bps / 300 bps / 600 bps / 1,200 bps / 2,400 bps / 4,800 bps /9,600 bps

Scan type Select the M-Bus addressing type used in the scan: Primary + secondary address / Primary address / Secondary address



Check meters and save A list of devices found is displayed after the meter scan is finished. Press **OK** to save all newly found meters and add them to the device list. The **ESC** button does not add the newly found meters to the device list. To edit meter settings over web operation, see menu **Settings / Wired devices/Device settings**.

7.4.4 RF search menu

Select the RF search main menu and press **OK** to start the search for RF devices.



Operation mode Select the operation mode. Ensure that the operation mode for M-Bus is the same for both the repeater as well as the devices on the RF network. The following values are available: **S**, **T**, **C**+**T**, **C**+**T** & **S**. RF search duration Select the duration of the search.

Values 1 to 24 are available.

Installation mode You can limit the search and only display devices in installation mode by selecting **SND_IR**: Function.

7.4.5 Settings menu

The **Settings** menu has three sub-menus:

- System
- LAN
- RF network
- You can navigate the submenus with the $^{\textcircled{0}}$ and $\overset{\textcircled{0}}{\overset{}}$ navigation buttons.
- You can navigate within the submenus with the $\, \widehat{>} \,$ and $\, \widehat{=} \,$ navigation buttons.
- The OK button selects a field for editing and then confirms the entered value.



7.4.5.1 System

The **System** sub-menu has the following settings:

System date	Enter the current date of the RTUEVO1T.
System time	Enter the current time of the RTUEVO1T.
Select language	Select the language on the RTUEVO1T display.
Important!	The language set locally on the RTUEVO1T is also used for sending emails and to generate reports and alarm notifications. As a result, it is important to select the correct language during RTUEVO1T commissioning.
Reset code	To change the current access code. You are requested to enter a new access code.
User Account	Reset all previously created users. New users can be created. Leave all other settings unchanged.

7.4.5.2 LAN

The **LAN** sub-menu has the following settings:

DHCP Enable or disable the DHCP client on the RTUEVO1T. The RTUEVO1T draws its IP address automatically from the DHCP server (router) if the DHCP client is enabled.

The following parameters must be entered manually if the DHCP client is disabled:

- IP address IP address of the RTUEVO1T. It cannot be set with DHCP enabled. Default value: 192.168.0.110
- Default gateway The standard gateway represents the interface between the local and public network. You typically enter the IP address for the router here. Need not be set if the DHCP is enabled.

Default value: 192.168.1.1

Network mask The IP subnet mask sets the size of the network. Need not be set if the DHCP is enabled.

Default value: 255.255.255.0

Primary DNS The DNS name server (domain name system) on the Internet connects a globally valid name to a domain with an IP address (e.g. domain www.xxxxxx.com with IP address 146.254.191.150). The setting corresponds to the IP address for the next router or DNS name server that recognizes for its part a queried name (domain) or another DNS name server. The setting is typically identical to the setting for the standard Gateway. Need not be set for "DHCP = Enabled" If the DHCP settings are deactivated, please contact your local administrator for the specification of the parameters.

Default value DNS1: 8.8.8.8

Secondary DNS A secondary DNS name server is only defined for redundant systems. Settings are typically empty. Need not be set if the DHCP is enabled.

Default value DNS2: 8.8.4.4

Save The current network settings are saved and RTUEVO1T restarts.

7.4.5.1 RF network

You can set the following In the RF network submenu:

- Mesh ID Enter the mesh ID. Ensure that all Smart repeater sinapsitech[®] are on the same mesh network.
- Channel Mesh network channel: You can change the channel ID here in the event of faults.

8. RTUEVO1T BROWSER OPERATION

8.1. Registration & login

8.1.1 Prerequisite

The datalogger and the PC are connected to the same network and the network access is configured. See section **6.1.1** Connect RTUEVO1T to PC or LAN.

8.1.2 Initial registration

To access datalogger, enter the datalogger IP address (e.g. https://192.168.1.110) in the browser (Chrome, Edge, Safari, Firefox).

sin <mark>o</mark> ps	I			
	Login			
		Primo Accesso		
	Sinapsi web serv data collection v Sinapsi srl Via delle Querce, 11/13 36083 Bastia Umbra (PC	ver with integra via M-Bus	ted datalogger fo	r
	www.sinapsitech.it		Corporate information	

Complete the mandatory fields to register and receive access to the datalogger:

- Email
- Username
- Password
- Confirm password

Back to login
lsername:
assword:
onfirm password:

The password must meet the following conditions:

- At least 8 characters
- Three of the following 4 criteria must be fulfilled:
 - Lowercase letters
 - o Uppercase letters
 - o A digit
 - o A special character

Important The register button is only enabled after meeting the password conditions.

Sign in

You are notified if you enter an incorrect login or password. The login is locked on the datalogger for five minutes (300 s) after a maximum of six attempts.

singos	
	Login
	You exceeded the maximum allowed number of login attempts It will be possible to log back in 297 sec.
	Sinapsi web server with integrated datalogger for data collection via M-Bus lineps vi Molti Shait Minter (FC) Molti Shait Minter (FC) www.inspistech.it Carporate Information

Contact the administrator if the user or maintainer forgets the access data. The administrator can delete the current account and set up a new one.

Very important Loss of administrator password:

For security reasons if the administrator losses the access data, he need to contact the customer service of Sinapsi via email at <u>service@sinapsitech.it</u> to restore the password!

Sign in Datalogger goes to the Login page after successful registration. You can now log in using the new username and password.

sı∩ <mark>∂</mark> ps		
	Login	
	Username:	
	Sinapsi web server with integrated datalogger for data collection via M-Bus Sinapsi srl Via delle Querce, 11/13 06083 Basia Umbra (PG) taly www.sinapsitech.it Corporate information	

8.2. Home SIN20SI (1) Mario Rossi 4 ▼ General status 2 Plant name : Sinapsi RTUEVO Demo 170 Address : Via delle Querce 11/13 Model : SIN.EQRTUEVO1T Export data Connected devices : Wired devices + Wireless devices System clock : 2020-07-02 11:30:49 Firmware version : 4.3_2.0_2.8 5 Web interface version : 3.18 Serial number : EV16000193 Internet connection : OK Current IP address : 185.20.64.226 🖾 Idle (•) Idle 3 1 2 ③ 02/07/2020 11:42

The following information is displayed on the title line:

- Name of the logged in user.
- Language selection.

😰 Information on "Open source software" packets and licenses.

Primary navigation using the main menus:

- Plant status
- Settings
- Export data
- User account

Status Information:

- M-Bus status
- Status M-Bus radio
- Number of logged on users
- Date and time.

4 S

Secondary navigation using sub-menus

Information on menu and sub-menu page

5

1

2

3

8.2.1 Select the datalogger language

You can set the operating language for the software interface in the title line to the right. The following languages are available:

- English
- German
- Italian
- French
- Dutch

Important!The default language used on the login is selected and displayed on the display
of the datalogger. The language setting in the login window applies exclusively to
the current session. The language setting on the datalogger software interface
apply exclusively for the current session after login.

All automatic reports use the default language. Select **default operating language**.

All manual reports created on the datalogger use the language for the current session.

8.3. Plant status

The Plant status main menu displays all important information on the datalogger, connected devices, and events occurring on the bus.

8.3.1 System status

System status displays system information, the event log and status information of SGH NET.

|--|

		SIN <mark>3</mark> psi
(1) Mario Rossi		🇱 English 🖌 🏈
Plant status System info Event log We	Web access	
01 System status V General status		
02 Wired devices		
04 Input#/Dutputz	Plant name : S	sinapsi RTUEVO Demo 170
Settings	Address : V	/ia delle Querce 11/13
Export data	Model : S	SIN.EQRTUEV01T
User account Connec	ected devices : V	Wired devices + Wireless devices
s	System clock : 2	2020-07-02 11:30:49
Firmv	ware version : 4	4.3_2.0_2.8
Web inter	erface version : 3	3.18
Se	Serial number : E	2V16000193
Internet	et connection : C	ОК
Curren	ent IP address : 1	185.20.64.226
(••) Idle		
X 2		
© 02/07/2020 11:42		

The following information is available under System status:

- Plant name: name of the plant.
- Address: plant location.
- Model: displays the datalogger type designation.
- Connected devices: displays the type of connected devices (wired devices and/or wireless).
- System clock: current datalogger date and time.
- Firmware version: displays the firmware version installed on the datalogger.
- Web interface version: displays the installed version of the web user interface.
- Serial number: display the datalogger serial number.
- Internet connection: displays the current status of the datalogger Internet connection.
- Current IP address: displays datalogger's last public IP address.

8.3.1.2 Event log

еquoвох									sinops
1 Mario Rossi	-	-	-		-			_	🕮 English 👻 👔
Plant status	System info	Event log	Neb access						
01 System status									
	Cup	date 🗆 Show o	nly active ever	nts				If Selected	
04 Inputs/Outputs	If Type	If Start date		IF End date		# Category	# Reference	# Description	Select
Settings	Q •	V No Filter		♥ No Filter		V No Filter	V No Filter	♥ No Filter	0
Export data	٠	2020-06-16	13:11:44			Meter	RF DEV_05635610	meter_alarm_map[power_low	
- User account	٠	2020-05-18	00:00:30	×	22	Meter	RF DEV_61006100	meter_alarm_map[power_low	
	0	2020-05-15	12:33:18	2020-05-18	11:03:53	Meter	RF DEV_00012197	Generic error	
	0	2020-05-15	12:33:18	2020-05-18	11:03:53	Meter	RF DEV_00012197	Alarm intern magnet	
	0	2020-01-28	09:46:16	2020-01-28	11:45:25	Meter	RF DEV_00012197	Generic error	
	0	2020-01-28	09:46:16	2020-01-28	11:45:25	Meter	RF DEV_00012197	Alarm intern magnet	
		2020-01-20	12:55:15	-	22	Meter	RF DEV_00012197	Fraud error	
		2020-01-20	12:55:15	e	8	Meter	RF DEV_00012197	Fraud	
		2020-01-20	12:54:55	*	8	Meter	RF DEV_68262279	Temporary error	
	0	2020-01-20	12:54:24	2020-04-08	12:46:00	Meter	RF DEV_61006100	meter_alarm_map[power_low	
		2020-01-20	12:54:24			Meter	RF DEV_68431626	Flag bit 4	
	0	2020-01-20	12:54:16	2020-01-31	12:04:59	Meter	RF DEV_00011882	meter_alarm_map[power_low	
		2020-01-20	12:53:25			Meter	RF DEV_64113135	Permanent error	
⊖ Idle		2020-01-01	00:01:29			Meter.	NA DEV_66660211	Communication error	
4 2		2019-12-19	12:01:00	2		Meter	NA DEV_10485501	Communication error	
© 02/07/2020 12:40		2019-12-19	12:00:46			Meter	NA DEV_10485502	Communication error	n

The event log records the following events:

- Alarms and warnings
- Change of state of inputs/outputs
- Send status of emails
- Send status of information via FTP

The following information can be read by event:

- Type
- Start date/time
- End date/time
- Category
- Reference
- Description

The following event status can be displayed:

- Oevice OK: Reported alarms or warnings are correct.
- A Device fault: A device fault reported via M-Bus.
- **A** Communications error: Communication with M-Bus device not possible.
- Email successfully sent.
- The email could not be sent (over 3 days at 15 minutes intervals, not successful).
- The readout file was successfully transmitted to an FTP server.
- The readout file was unable to be transmitted to an FTP server (over 3 days at 15 minute intervals, unsuccessful).
- Change of state registered at an input.
- <u>or</u> Change of state registered at an output.

Simply set filters for each column to limit search results by specific events.

The event log registers up to 1000 events. The oldest event is removed after 1000 events. Individual lines on the event log or the entire list can be deleted. Proceed as follows:

- Delete individual rows: Select the event check box to be deleted and then click **Delete event** in the upper end of the list. The **Delete event** is enabled if at least one line is selected.
- Delete complete list: Select the check box on the title line and then **Delete event** to irretrievably delete the entire event log.

Note **Display only active events** to list only currently pending alarms and input/output status.

Click a line to display event details, e.g. the sent email including appendix and the last readout data just prior to the fault.

equobox						SINO
Mario Rossi				_		🚟 English 🗸
Plant status System status Wired devices	System into Event log Web acce	ive events				If Selected:
Wireless devices	If Type If Start date	If End date	If Category	If Reference	If Description	Select
Settings	♥ • ♥ No Filter	𝔍 No Filter	♥ No Filter	𝔍 No Filter	🖤 No Filter	D
Export data	£ 2020-07-02 12:	47:36	Meter	RF1DEV_00012199	Fraud error	0
User account	2020-06-16 13:	:11:44	Meter	RF DEV_05635610	meter_alarm_map[power_low	0
	A 2020-05-18 00:		Meter	RF DEV_61006100	meter_alarm_map[power_low	0
	2020-05-15 12:	33:18 2020-05-18 11:03:53	Meter	RELDEV 00012197	Generic error	
	Device name Description 1 Description 2 ID Device Medium	DEV_00012197 00012197-30331D06 Sensor		Scan interval 75 min Install date 2020 01 /2 Primary address Manufacturer code LAS	01	Sinapsi SIN EQPROX
	▼ Last readout timestamp ≤ 202	20-05-15				
	2020-05-15 12:	33:18 2020-05-18 11:03:53	Meter	RF DEV_00012197	Alarm intern magnet	D
Idle	2020-01-28 09:	46:16 2020-01-28 11:45:25	Meter	RF DEV_00012197	Generic error	
ldle	2020-01-28 09:	46:16 2020-01-28 11:45:25	Meter	RF DEV_00012197	Alarm intern magnet	0
2	1 2020-01-20 12:		Meter	RF1 DEV_00012197	Fraud error	0
02/07/2020 14:27		12.02			10110	

8.3.1.3 SGH NET

Sinapsi Global Hub Net is a service that allows all users to reach the RTUEVO1T wherever it is in the world as if it were connected via LAN.

Important

To use this service, it is necessary to check whether the incoming and outgoing communication to port 1194 with UDP protocol is allowed.

	<	sin <mark>o</mark> ps
 Mario Rossi 	_	🧱 English 🗸 😧
Plant status 01 System status	System info Event log Web access	
02 Wired devices	▼ General status	
	Internet address :	https://ev16000193.net.sghiot.com
04 Inputs/Outputs Settings	Service firmware version :	SGH V: 2.3.25.1912111816
Export data	Service :	Active
User account	Status :	Online
Jdle		
(••) Idle		
1 2		
③ 02/07/2020 14:24		

The following information is available under SGH NET status:

Internet address: The host name of the internet address to reach the RTUEVO1T. Click on the address or type on the address bar of the browser to connect to the RTUEVO1T

8.3.2 Wired devices

The Wired devices overview lists all M-Bus devices located on the network in an abbreviated form.

						SINSOS
1 Mario Rossi	_			_	_	🗰 English 🗸 😯
Plant status 01 System status 03 Wired devices	M-Bus	Wired devic	ces	Read now		- Connected devices 😰
02 Wireless devices 03 Wireless devices 04 Inputs/Outputs	► Heat	23282974	۵	DEV_23282974	ABC PA_011	0 kWh < /iear energy @ 20200/02/14.5.cs
Settings Export data	► Heat	47821116		DEV_47821116	ABC PA_013	0 MWh ◄ Energy # 20200702 14:52:28
User account	► Heat	65589631	۵	DEV_65589631	M1M2 PA_002	0 kWh < //eat energy @ 20200702 145/58
	► Heat	66071928	۵	DEV_66071928	ABC PA_014	0 kWh ≤ Heat energy # 20200702 HS2.31
	► Heat	66336640	۵	DEV_66336640	ABC PA_015	0 kWh ≤ total energy consumption # 20200702 H52-25
	► Heat	66660211	۵	DEV_66660211	M1M2 PA_001	0 kWh ≤ total energy consumption # 20200702 H57:31
	► Heat	68431626		DEV_68431626	M1M2 PA_001	0 MWh ◄ Energy # 20200702 H5/H3
	► Heat	69418035	۵	DEV_69418035	M1M2 PA_001	1287563 kWh ◀ Heat energy # 20200702 H:5:48
	► Warm Water	00000280	۵	DEV_00000280	ABC PA_181	103.81 m3 ≤ <i>Total volume</i> <i>⊕ 20000700 H52:38</i>
	► Warm Water	10485502	۵	DEV_10485502	ABC PA_002	0 m3 ◀ <i>lotal volume</i> # 2000/02/1452-42
⊖ Idle	► Water	00000180	۵	DEV_00000180	ABC PA_180	10.055 m3 < Iotal volume # 202007021 H52-H5
1 1	► Water	10485501	۵	DEV_10485501	ABC PA_001	0 m3 ≺ <i>total volume</i> #20000/201452-48

The following information can be read out per line (per M-Bus device):

- Medium
- Serial number (secondary address) •
- Availability of device image
- Device Name (By default it's DEV_serial) •
- Description: the bus where the meter is connected (M1M2 or ABC) and description
- Main value (=> Can be selected, see Section • "Settings→Wired devices")
- Last readout timestamp
- Device state

The following device status can be displayed:

- Device ok
- Device fault •
- A Communication error

Click a line to list additional device information

								SINOp
Mario Rossi	_	_	_	_				🗰 English 🗸
Mant status O1 System status O2 Wired devices	M-Bus Wired dev	iCES Read now						Connected devices 😈
03 Wireless devices	► Heat 23282974	DEV_23282974	ABC PA_011		0 kWh ·	 ✓ Heat energy 02 14:53:05 		②
Settings	Communication status	ок		Last readout timestamp	2020/07/02 14	:53:05		
User account	Device name	DEV_23282974		Scan interva	10			Engelmann
	Description 1	PA_011		Install date	02/07/2020			Anne A
	Description 2			Primary address	11			• •
	ID Device	23282974-14C50400		Manufacturer code	EFE			
	Medium	Heat						SensoStar2
	▼ Last readout timestamp							
	User description	M-bus description	2020/07/02 14:53:05	2019/12/19 00:00:07	2019/12/18 12:00:06	2019/12/18 00:00:06	2019/12/17 12:00:07	2019/12/17 00:00:06
	Serial number	Fabrication Number	23282974	23282974	23282974	23282974	23282974	23282974
	Total volume	Volume	0 m3	0 m3	0 m3	0 m3	0 m3	0 m3
	Total volume last readout	Volume	0 m3	0 m3	0 m3	0 m3	0 m3	0 m3
	Total volume last month	Volume	0 m3	0 m3	0 m3	0 m3	0 m3	0 m3
	습 Heat energy	Energy	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
	Heat energy storage 1	Energy	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Idle	Heat energy last month	Energy	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Idle	Cooling energy	Energy	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
1	Cooling energy storage 1	Energy	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
02/07/2020 15:10								

SINAPSI S.r.I. |Via delle Querce 11/13 - 06083 BASTIA UMBRA (PG) - Italy

T.+39 075 8011604 - F.+39 075 8014602|www.sinapsitech.it-info@sinapsitech.it

The information is grouped into three categories:

- Device information: General device data (name, description, ID, medium, etc.)
- Last readout timestamp: Displays the values of the last 6 readouts.
- Alarm status: Shows the faults on the device and which ones are registered, sent via email, the • event type and the status.

The data points for display in detail, can be predefined in the menu Settings / Wired devices / Device settings.

Click **Read now** to manually trigger a complete readout of the data from all devices.

8.3.3 Wireless devices

The Wireless devices overview lists all the M-Bus Wireless devices on the network in a compact form.

				SI∩ <mark>∂</mark> pSI
(1) Mario Rossi				🧱 English 🔻 😥
Plant status 01 System status	► HCA	32500781 🖸	DEV_32500781	000000 < Total HCA @ 201911220 12:10:16
wirel devices Wireless devices A Inputs/Outputs	► Heat/Cooling	34584901	DEV_34584901	Not available
Settings Export data	► Water	35026217	DEV_35026217	0.001 m3 ◀ 70tal volume @ 201911220 12:12:06
User account	► HCA	51110341 🖸	DEV_51110341	0 ◄ Total HCA @ 2019/12/20 12:09:59 ■■■70.5 dBm ► RP17227067 ▲ 1° @ 2019-12:20 15:56:02 1 ♥
	► HCA	51110369	DEV_51110369	Not available
	► HCA	52211207	DEV_52211207	0 < Units for H.C.A @ 201912/2012:10:21
	► HCA	52211210	DEV_52211210	 ✓ Units for H.C.A @ 2019/12/20 12:12:02
idle	► HCA	52211212	DEV_52211212	0 < Units for H.C.A @ 2019/12/2012/2015/6 ▲
20/12/2019 16:06	► HCA	52211218	DEV_52211218	0 ◄ Units for H.C.A @ 2019/12/20 12:11:59

The following information can be read per line (i.e. per M-Bus wireless devices):

- Medium
- Serial number
- Availability of device image
- Device Name (By default it's DEV serial)
- Description: Customized by the user (e.g. installation point)
- Main value (=> Can be selected, see Section **"Settings→Wireless devices**")
- Last readout timestamp

The following device status can be displayed:

- Ø Device is OK
- Device fault •
- ▲ Communication error

- Device state: active alarm signalling •
- Reception signal strength •
- Serial of the RPT868XT repeater that last sent the device data.
- Date and time of last transmission of the data •
- Number of repeaters that receive data from the wireless M-Bus device
- Cryptographic key required to read the meter data: green \rightarrow correct key, red \rightarrow incorrect or not inserted key.

							SINS	psi
(Mario Rossi							🧱 English 🔻	2
Plant status	DEV 69399801			13850 kV	Vh ◀ Total ener	gy consumption @	2019/12/20	•
01 System status			■■□□□ -80.5 dBm ► 89172270		67 ▲ 1° @ 2019-12-20 1	5:56:03 🚺 🥑 ۹	k	
Wireless devices Communication status	ок		Last readout timestamp	2019/12/20	12:10:01			
04 Inputs/Outputs								
Settings Device name	DEV_69399801		Scan interval	12 hrs		Sie	mens	
User account Description 1			Install date	2018-03-02 1				
Description 2			Manufacturer code	LUG				
ID Device	69399801		Wireless M-Bus mode	C+T		II		
Medium	Heat		Encryption	Mode 5		T230	T230-A21C	
Encryption key	••••• Correct key							
▼ Last readout timestamp								
Idle	M-bus description	2019/12/20 12:10:01	2019/12/20 20 06:13:32 12	019/12/19 2:01:15	2019/12/19 00:01:57	2019/12/18 17:33:09	2018/06/21 14:09:13	
(m) Idle Total energy consumption	Energy	13850 kWh	13850 kWh 13	1850 kWh	13850 kWh	13850 kWh	13850 kWh	
© 20/12/2019 16:10 Total volume	Volume	404.47 m3	404.47 m3 40	94.47 m3	404.47 m3	404.47 m3	404.47 m3	-

The information is grouped into three categories:

- Device information: General device information (Name, description, ID, medium, polling interval, installation date, manufacturer code, RF mode, encryption, etc.)
- Last read out timestamp: Displays the values of the last 6 read outs.
- Alarm state: Shows the faults on the device and which ones are registered, sent via email, the event type and the status.

8.3.4 Inputs/Outputs

Displays the current status (open/closed) of inputs/outputs on datalogger.

		sin <mark>3</mark> psi
(1) Mario Rossi		🧱 English 🔹 😰
Plant status		
01 System status	▼ Digital Inputs (Contact status)	
02 Wired devices		
03 Wireless devices		
(04) Inputs/Outputs	C 11 12 13 (8) (8) (10) (11) Open	
Settings		
Export data		
User account	C 12 3 2 3 2 0 0 1 0 0 0 0 0 0 0	
	(n) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	
	▼ Digital Outputs (Contact status)	
	C 01 Corr Corr	
idle	Switch C 01 C 02 02 Open 4 02	
(••) Idle		
A 1		
20/12/2019 16:11		

The following information can be read by input/output:

- Image of connection terminals on datalogger
- Short description: I = Input, O = Output
- Status: Open/closed
- Designation

Click **Switch** to manually switch the digital outputs (available for the user type "Administrator").

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8.4. Settings

8.4.1 System

8.4.1.1 Plant data

The following plant data can be assigned to datalogger:

- Plant name
- Address
- Installer name
- Customer name
- Install date (the current date by default)

			sinopsi
(1) Mario Rossi	_		🗮 English 🔹 😥
Plant status	Plant data Alarms	System settings Maintenance Backup / Restore	
Contract of Contract			
02 Network	Plant name	Sinapsi Demo 193	
03 Wired devices	Address	Via Delle Querce 11/13	
05 Inputs/Outputs	Installer name	Stefano Rotini	
Export data			
User account	Customer name	Sinapsi srl	
	Install date	2017-07-28	
	Save		
ldle			
(••) Idle			
A 1			
20/12/2019 16:12			

Note The edited data must be confirmed with **Save**.

The plant name and address are displayed on the home page in the lower section to easily ID the datalogger, even before logging in.

sı∩ <mark>∂</mark> ps	I 📦 едиовох
	Login
	Username:
	Password:
	Sign in
:	Sinapsi web server with integrated datalogger for data collection via M-Bus
	Sinapsi srl Via delle Querce, 11/13 G6083 Bastia Umbra (PG) Taly
	www.sinapsitech.it Corporate information
	Sinapsi Demo 193 Via Delle Querce 11/13

8.4.1.2 Alarms

As soon as datalogger detects an alarm, it sends an alarm notification to the designated email address:

\$				singosi
٩	Mario Rossi			🧱 English 🔻 ᡗ
	Plant status	Plant data Alarm	s System settings Maintenance Backup / Restore	
	<u>Settings</u>			
01	System			
02	Network		Enable alarm notifications via email	
03	Wired devices	To:	Enter recipient's email address (e.g. info1@email.com;info2@email.com)	
04	Wireless devices			
05	Inputs/Outputs	Cc:	Enter recipient's email address (e.g. info1@email.com;info2@email.com)	
	Export data	Perci	Enter recipient's amail address (o.g. info1@amail.com/info2@amail.com)	
	User account	BCC.	Enter recipient's email address (e.g. into reeman.com, into zeeman.com)	
		Subject	Enter subject	
		Save		
0.5	Idle			
(**)	Idle			
-	1			
0	07/01/2020 10:29			

Emails are only sent if **Enable alarm notifications via email** is selected.

The alarm notification can be simultaneously sent to multiple recipients. Multiple email addresses must be separated by a semi-colon (;). The email subject line can be individually set to simplify classification in the event of multiple plants. Confirm it with **Save**.

8.4.1.3 System settings

System settings has 4 areas:

		singosi
(1) Mario Rossi		English 🔹 😥
Plant status Settings	Plant data Alarms System settings Maintenance Backup / Restore	
(i) System	▼ System clock 1	
02 Network 03 Wired devices 04 Wireless devices	Set System clock : 07/01/2020 10:40:48 Synchronize date and time from your PC € 2020-01-07 10 ▼ 4	0 *: 55 *
os InputsiOutputs Export data User account	• Report Settings	
	Save Decimal separator 10.0 10,0 10,0	
	▼ System restart 3	
	Reboot	
	▼ Reset Access Code local display ④	
ldle		
(*) Idle	Reset	
0 07/01/2020 10:40		

- **1. System clock**: You can automatically sync the system clock with the PC or enter it manually.
- 2. **Report Settings**: You can select whether to use a period or a comma as the decimal separator.
- 3. System restart: You can remotely restart the datalogger pushing Restart button.
- **4. Reset access code local display:** You can reset the access code for local access on datalogger. For security reasons, immediately change the password locally on the datalogger after a reset.

Important! The local access code cannot be entered remotely. You must visit the plant.

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8.4.1.4 Maintenance

The page is used to update the datalogger firmware.

					SINO	OSI
(1) Mario Rossi					🎇 English 🔻	3
Plant status Settings	Plant data Alarms	System settings Maintenance	Backup / Restore			
System	 Firmware update 	e (online)				
02 Network 03 Wired devices 04 Wireless devices 05 Inputs/Outputs	E Latest	Version installed Version available on the server	Firmware version: 3.8_1.9_2.7	Web interface version: 3.05	Meters list: 1.75	
Export data User account	► Firmware updat	e (offline)				
	۲	Version installed 🕨	Firmware version: 3.8_1.9_2.7	Web interface version: 3.05	Meters list: 1.75	
idle	Select	file		0%		
▲ 1 ● 07/01/2020 11:00						

The firmware can be updated online or offline. The appropriate firmware can be installed directly from the Internet on the datalogger (online) or via PC (offline).

Datalogger restarts after updating. Install progress as well as restart is displayed.

- **Important!** After a firmware update all data are available again. It is recommended to do a backup and to save the data on a PC before the actualization.
 - 8.4.1.5 Backup / restore

All datalogger data is backed up and / or restored on this page.

				SINZ	psi
(1) Mario Rossi				🧱 English	• 🔅
Plant status Settings	Plant data Alarms System settings Maintenance	Backup / Restore			
02 System 02 Network 03 Wired devices	▼ Data backup				
04 Wireless devices 05 Inputs/Outputs	File name	Size	Last modified	Backup file status	
Export data User account	1. 🛓 backupdb EV16444161 20171109.dat	513k	2017-11-09 11:26	<u>OK</u>	
	▼ Data restore				
	Select file		0%		
ldle					
(♥) Idle ▲ 1 ● 07/01/2020 11:03					

Important! We recommend regularly backing up datalogger data.

Data backup

The following information is displayed on each data backup:

- File name
- Size
- Last modified
- Backup file status

The backup file can be downloaded on a PC by clicking ^{*} or the file name and then uploaded to the same or another datalogger.

\$							SIN	psi
2	Mario Rossi						English	•
	Plant status	Plant data A	larms System settings	Maintenance	Backup / Restore			
	<u>Settings</u>							
01	System	▼ Data back	up					
	Network							
	Wired devices							
	Wireless devices	anta			<i>e</i> 1	1	De des Els status	
05	Inputs/Outputs	File name			Size	Last modified	Backup file status	
	Export data	0						
	User account	Q	Backup in progress					
		1.	backupdb_EV16000193	_20200728.dat	Ok	2020-07-28 15:46		
		▼ Data resto	re					
								_
		Select file	2			0%		
63	Idle							
((•))	Idle							
*	1							
0	28/07/2020 15:46							

Important! Always copy backup files to your PC. This is the only way to load the backup file from a defective datalogger to a new datalogger.

Important! The backup file is encrypted. The device data cannot be altered.

Data restore

To transmit a backup file to datalogger, select the appropriate file (**Select file**) and install (**Load file**). Datalogger restarts after updating. Install progress as well as restart is displayed.

Important! This workflow irretrievably removes all data and settings on the current datalogger. As a result, we recommend conducting a backup of the current data prior tore storing.

8.4.2 Network

8.4.2.1 Network setting	S		
			sinopsi
(1) Mario Rossi			🧱 English 🔻 😥
Plant status Settings	Network settings Email setup Dynamic D	NS	
01 System	▼ Network <i>ETH</i> Type: <i>LAN</i>		
 02 Network 03 Wired devices 	MAC address	FC:C2:3D:0D:F2:90	
04 Wireless devices	External port for web server	443	
05 Inputs/Outputs Export data			
User account	Enable DHCP		
	IP address	192.168.1.193	
	Netmask	255.255.255.0	
	Gateway IP address	192.168.1.1	
	Primary DNS	8.8.8.8	
ldle	Secondary DNS	8.8.4.4	
(••) Idle			
A 1	Save		
07/01/2020 11:13			

The following information and settings are available:

- Datalogger MAC address.
- External port for datalogger: This is only an information of the external port used by the RTUEVO1T. This external port number must be the same in the port forwarding settings of the router.
- Enable DHCP for the DHCP server (router) to automatically assign the IP address.
- Datalogger IP address if a fixed IP address is assigned.
- Network mask.
- Gateway IP address: IP address for the standard gateway (e.g. Router).
- Primary DNS: The primary DNS name server (Domain Name System) address
- Secondary DNS: Secondary DNS name server address

Click **Save** to confirm changes to the above parameters.

Important! Be careful when changing these settings! Ask your local network administrator for the required data on network configuration.

Datalogger is not suitable for connecting directly to the Internet; it must be connected via a modem. This type of router typically has a firewall.

8.4.2.2 Email configuration

The following data of your mail server must be entered for forwarding emails:

			SI∩∂psi
(1) Mario Rossi			🚟 English 🔻 😧
Plant status Settings	Network settings Email setup Dynamic D	NS	
01 System	 Email server settings 		
03 Wired devices	SMTP server name	smtp_sinapsitech.it	
04 Wireless devices 05 Inputs/Outputs	SMTP port	25	
Export data	SMTP security	NO T	
User account	SMTP authentication	8	
	SMTP user name	Test	
	SMTP password	*****	
	Sender name	Test PROVA sender	
	Sender email address	prova@test.it	
	Save Save Server connection test		
Idle Idle Idle	Enter recipient's email address for testing	(e.g. info1@email.com;info2@email.com) Server connection 1	et .
 07/01/2020 12:10 			•

Email server settings

The following email server settings are available:

- SMTP server name: the address for the SMTP server.
- SMTP port: the port number used by the SMTP server.
- SMTP security: selection of either SSL or TLS security. The setting NO sends the emails without encryption; do not use this setting for security reasons.
- SMTP authentication: enter whether the SMPT server requires authentication.
- SMTP username: username for accessing the SMTP server.
- SMTP password: password for accessing the SMTP server.
- Sender name: sender's name that appears in the email address (if your SMTP server allows it).
- Sender email address: the sender's personalized email address (if your SMTP server allows it).
- **Important!** Be careful when changing these settings! Check with your email provider for the required email server settings.

Click **Save** to confirm changes to the above parameters.

Email server connection test

Clicking **Server connection test**, you can check the connection to the e-mail server by sending a report to an e-mail address of your choice.

The results are displayed as soon as the message is sent:



8.4.2.3 Dynamic DNS

Dynamic DNS or DDNS is a service that allows you to always associate a DNS name with the same public IP address as a host.

				singosi
(1) Mario Rossi				🇮 English 🔹 🍞
Plant status Settings	Network settings Email setup Dynamic	DNS		Î
01 System (i) Network 03 Wired devices	Dynamic DNS settings Enable dynamic DNS settings	imic DNS		_
04 Wireless devices 05 Inputs/Outputs	Server DynDNS No-IP.com	•		
Export data	Domain name e.g customtes	t.dyndns.org		
User account	Username			
	Password			
	Save			
	 Server connection test 			
 Idle Idle 1 07/01/2020 11:24 	Last server response ► nohost @202/	0-01-07 11:15:11	Server connection test	

Important! You must first set up an account at the provider to use the DynDNS or No-IP server.

Dynamic DNS settings

The datalogger must inform the service of changes to the dynamic IP address for the datalogger to communicate via the setup DynDNS service. The Dynamic DNS must be set on the datalogger as follows:

- Enable Dynamic DNS settings: Allows datalogger to use a dynamic DNS service
- Server DynDNS: The following two Dynamic DNS providers are available:
 - No-IP.com
 - DynDNS.com
- Domain name: Name provided to you by your dynamic DNS supplier.
- Username: Username for accessing the dynamic DNS server
- Password: Password for accessing the dynamic DNS server
- **Important!** Be careful when changing these settings! Ask your network administrator for the required data on network configuration.

Click **Save** to confirm changes to the above parameters.

Server connection test

You can test the connection to the DynDNS server.

The results are displayed

▼ Server connection test	
Last server response ► nochg 185.20.64.226 @2020-07-29 00:07:34	Server connection test
Server No-IP.com response nochg 185.20.64.226	

8.4.3 Wired devices

8.4.3.1 Devices settings

In this panel, you have access to the device list and can change settings.

Note The list is empty if no device search has been run. The devices that are found and saved are displayed on the list after a device search.

						sin <mark>o</mark> psi
(1) Mario Rossi		_			_	🗮 English 🔹 😥
Plant status	Warm Water	M1M2 10485502	DEV_10485502	PA_002	🙆 REL	•
Settings	Water	M1M2 15550082	DEV_15550082	PA_000	MAD MAD	
01 System	Heat	M1M2 23282974	DEV_23282974	PA_000	🖸 EFE	
Wired devices	Heat	M1M2 66091674	DEV_66091674	PA_157	LUG	8
04 Wireless devices	Heat	M1M2 66336640	DEV_66336640	PA_003	🖸 LUG	
05 Inputs/Outputs						
Export data						
User account	Device name		(**) Scan interval	1 month 💌	/ Siemens	
	Description 1	/ PA_003	Instali date	05/03/2018		
	Description 2	1	2 Primary address	3		
	ID Device	66336640-32A70403	Baudrate	2400		
	Read by	Secondary address	Manufacturer code	LUG	2WR6	
	Medium	Heat	Version (HEX)	03		
	▼ Data Points settings (**)	3				
ldle	 Meter alarm settings (**) 	4				
(**) idie	Save		Select this option	n to apply the settings marked with (**)	to all devices of the same bran	id and model
07/01/2020 11:40						

The display is structured as follow:

- 1. List of all the saved meters found on the M-Bus lines connected in ABC or on the M1M2 line
- **2.** Selected counter settings
- 3. Data points settings
- 4. Meter alarm settings

1. Saved meters list

Heat	66336640	DEV_66336640	PA_003	🙆 LUG	m
Warm Water	06129251	DEV_06129251	PA_000	SMC	1 I I I I I I I I I I I I I I I I I I I
Warm Water	10485502	DEV_10485502	PA_002	REL	till and a second secon
Water	06129250	DEV_06129250	PA_000	SMC	m

- Medium: Display the medium
- M-Bus line: Displays from which line between ABC or M1M2 the saved meter was detected
- Serial number: Displays the meter serial number
- Device name: Displays the meter name as entered under device name
- Description: Displays the text entered under Description 1
- ¹ Indicates that a product image is available for the device
- Manufacturer code: Displays the 3-letter code of the device manufacturer
- Delete: Click the trash can to delete the device from the list.

The list of wired devices can be exported as an .xls or .csv file. Click the corresponding symbol:

_	
	<u> </u>
SV	XLS
_	

Serial number	Device name (X)	Description (X)	Manufacturer code	Medium	M-Bus line
6129250	DEV_06129250	PA_000	SMC	Water	M1M2
6129251	DEV_06129251	PA_000	SMC	Warm Water	M1M2
7964864	DEV_07964864	PA_000	LSE	Heat/Cooling	M1M2
10485501	DEV_10485501	PA_001	REL	Water	M1M2
10485502	DEV_10485502	PA_002	REL	Warm Water	M1M2
15550082	DEV_15550082	PA_000	MAD	Water	M1M2
23282974	DEV_23282974	PA_000	EFE	Heat	M1M2
66091674	DEV_66091674	PA_157	LUG	Heat	M1M2
66336640	DEV_66336640	PA_003	LUG	Heat	M1M2

2. Device settings

Click the device line to view the setting for the device

Device name	/ DEV_66336640	(**) Scan interval	1 month 🔻	Siemens
Description 1	/ PA_003	Install date	07/07/2017	
Description 2	/ (2)	Primary address	3	
ID Device	66336640	Baudrate	2400	
Read by	Secondary address	Manufacturer code	LUG	
Medium	Heat	Version (HEX)	03	2WR6

Free text settings:

- Device name: You can assign a name to the device (e.g. Apartment 123).
- Description 1: Device description as indicated in the device list.
- Description 2: Additional description
- Scan interval: 15 min. / 60 min., 6 h, 12 h, 1 day, 7 days, 1 month
- Install date: You can add an installation date
- The device image can be set by clicking the san needed. You can select the appropriate image from the datalogger device database.

Click **Save** to save the edited values.

Settings that cannot be changed:

- ID Device: Displays the device serial number
- Read by: Displays whether the meter is read via the primary or secondary address.
- Medium: Displays the medium measured by the device.
- Primary address: Displays the device's primary address (1...250)
- Baud rate: Displays the transmission rate between the device and datalogger.
- Manufacturer code: Displays the manufacturer's code.
- Version (HEX): Displays the device version.

3. Data Points settings

ропо вох										SIN	<mark>3</mark> psi
(1) Mario Rossi	_		_	_	_	_	_	_		🗰 English	• 🕫
Plant status Settings		Description 1	/ PA_015			Install date	02/07/2020				*
01 System		Description 2	/			Primary address	15				
03 Wired devices		ID Device	66336640-32A70	403		Baudrate	2400				
04 Wireless devices 05 Inputs/Outputs		Read by	Secondary addres	s		Manufacturer code	LUG		2WR6		
Export data		Medium	Heat			Version (HEX)	03				
User account	▼ Data Points setting	ąs (**)	3								- 1
	Main Value U	lser description	•	M-bus descriptio	n	Standard Report - Day	ta point mapping	Custom Report -	Data point to be included		- 1
	0	/ Flow measure	e interval	Actually Duration		none	~		0		
	0	/ Flow measure	e interval	Averaging Duration	n	none	~		0		
	٠	/ Total energy	consumption	Energy		heat_energy	~				
	0	/ Total volume		Volume		none	*				
	0	Current powe	w	Power		none	*		8		
	0	/ Flowrate		Volume Flow		none	*				
	0	/ Flow tempera	sture	Flow Temperature		none	~				
	0	/ Return tempe	wature	Return Temperati	ire	none	~				
	0	/ Temperature	difference	Temperature Diff	arence	none	~				
	0	/ Total volume	last year	Volume		none	~				
	0	/ Total energy i	last year	Energy		none	~				
	0	/ Serial numbe	٢	Fabrication Numb	er	fabrication_number	*				
	0	 Operating tin 	ne	On Time		none	~				
	0	<i>Error on time</i>		On Time		none	~				
	0	/ Error on time	last year	On Time		none	~		8		
ldle	0	Due date and	(time	Time Point		none	*		8		
00 Idle	0	/ Energy 1 hist	orical 1	Energy		none	*				
AK 1	0	/ Energy 2 pres	vious month	Energy		none	~		2		
© 29/07/2020 10:46	0	/ Energy 3 pres	vious month	Energy		none	~				*

- Main Value: You can select the value for display on the **Plant status**->Wired devices overview
- User description: The data point designation can be edited
- M-Bus description: Designation of the data point according to the M-Bus specification

- Standard report Data point mapping: Assigns data points to predefined columns on the standard report. Only one data point can be assigned to a specific column for each device. Data points with the "none" settings are not displayed in the standard report
- Custom Report Data point to be included: Select the data points to be included in the custom report
- "...": Click the "..." column to display additional details (Multiplier, Storage, Subunit, Tariff, Type value und Units) on the selected data point. The details can help you come up with a meaningful user description.

۲	/ Total energy consumption	Energy	heat_energy	•	
Multiplier	1				
Storage	0				
Subunit	0				
Tariff	0				
Type value	Instantaneus Value				
Units	kWh				

Click **Save** to save the edited settings.

4. Alarm settings meters

For each device it is possible to display a series of error messages which are available via M-Bus.

Cooling analyy		a maz	63389632	000 (000000		PL OLD		9 LSE	
Preat	,		66071928	DEV_66071928		MO14			
Heat		VBC	66336640	DEV_66336640		PA_015		a LUG	
Heat	N	J1M2	66660211	DEV_666660211		PA_001	1	a LUG	
	Davice eares	1 001 6622	6640		(**) Scop internal	I month M			
	Device name	/ 00000	0040		() scan mervan	T MONOT		_	Siemens
	Description 1	/ PA_015			Install date	02/07/2020			
	Description 2	1			Primary address	15			
	Perciption 2				r mary sources	15			· · · · · · · · · · · · · · · · · · ·
	ID Device	66336640-32A	70403		Baudrate	2400		-	C.
	Read by	Secondary add	ress		Manufacturer code	LUG			
	,								2WR6
	Medium	Heat			Version (HEX)	03			
V Data Points	s settings (**)								
T Manual and		~							
• Meder alari	ni serungs ()	(4)							
LOG	Email	Event name				Event type		Status	
4	1	/ Battery low	v			M-bus status	notification	Not active	
4	1	/ Error F3 F7	168			M-bus status	notification	Not active	
-	1	1 Erme ED E1	125560			M.bus status	natification	Artise	_
		/ Negative p	ower			M-bus status	notification	Not active	
		/ Negative fi	low			M-bus status	notification	Not active	-
1									
4		/ Nogative to	emperature differenc	ce.		M-bus status	nomcaudi	ALLING	

The following information and settings are available.

- LOG: When an error occurs, displays whether the message is logged in the event log.
- Email: When an error occurs, displays whether an email is sent with the error message.
- Event name: The event name is predefined. It can, however, be changed as needed.
- Event type: Displays the event type received from the device.
- Status: Displays whether the alarm is active or not active.

 Meter alarm 	settings (**)											
LOG	Email	Event name								Event type	Status	
1	1	/ Battery low								M-bus status notification	Not active	
		Actions	🖾 Add to	o log			Send	email				
		Input condition	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit O		
		input condition										

Click "..." to open a new panel with the following settings:

- Actions:
 - Add to log: Select if it is added to the event log when this alarm occurs.

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- Send email: Select whether notification is sent by email when this alarm occurs.
- Input conditions: You can select the bit from the M-Bus status byte for the device that represents the corresponding alarm notification.

Click **Save** to apply the alarm settings. You must confirm to apply the settings!

By selecting the check box, if multiple devices of the same type are installed on the plant, settings identified by (**) can be transfer the settings to all devices of the same type.



 \blacksquare Select this option to apply the settings marked with (**) to all devices of the same brand and model

8.4.3.2 Device search: M-Bus line M1M2 / M-Bus line ABC

You can either perform the device search individually on line M1M2 or line ABC respectively, or search both lines in parallel.

For device searches, you can select whether to use the default settings or to search by specific criteria.

						SI∩∂psi
(1) Mario Rossi						🚟 English 🔻 📝
Plant status	Device setting	Device search - M-Bus line	M1M2 Device search - M-Bus lin	e ABC		A
<u>Settings</u>	befree sectarily					
01 System						
02 Network		Vise default settings 🤗	Stop			0
(03) Wired devices						
04 Wireless devices						
05 Inputs/Outputs	?		Seconda	ry address search in progres	s	
Export data			Current address: 6X	OCOCOCX • Current baudra	te: 2400 bps	
User account	609	6				
			Total devic	es found 🕕 New devi	ces found: 6	
		Serial number	Primary address	Medium	Manufacturer code	Device name
		47821116	13	Heat	HON	DEV_47821116
		42550093	12	Heat/Cooling	🙆 EFE	DEV_42550093
		05421535	4	Electricity	🙆 LSE	DEV_05421535
		05421534	3	Electricity	LSE	DEV_05421534
		00000280	9	Warm Water	🙆 LSE	DEV_00000280
		00000180	47	Water	LSE	DEV_00000180
Q Read in progress		23282974	11	Heat	🙆 EFE	DEV_23282974
(••) Idle		15550082	10	Water	MAD	DEV_15550082
X 1		10485502	2	Warm Water	O REL	DEV_10485502
• 07/01/2020 12:52		10485501	1	Water	REL	DEV_10485501

The entire bus is scanned for connected M-Bus devices if **Use default settings** is selected and you click **Start scan**.

Note: Start by scanning with **Use default settings**. Only use the customized device search if the search by default settings fails to recognize one or more devices. This can be the case if a data collision occurs on the bus during the automatic search or if the device does not operate at the standard baud rate. Refer to the device documentation for the data.

Using default setting the datalogger searches for devices by the secondary address at a baud rate of 2400 bps.

Customized search: M-Bus line M1M2 / M-Bus line ABC

Unchecking **Use default settings**, you can customize the type of search for devices on the bus.

equobox					SINSPSI							
(1) Mario Rossi					🗮 English 🔻 😥							
Plant status Settings OI System	Device search - M-Bus line I	M1M2 Device search - M-Bus line ABC			<u>^</u>							
02 Network	▼ Use default settings	Start scan										
Wired devices Wireless devices Inputs/Outputs	Search by primary address	Search by primary address a 1 Print address 250 Print address and 250 Print address address and 250 Print address										
Export data User account												
	Search baudrate	 300 bps 600 bps 1200 2400 bps 4800 bps 9600 	bps bps									
	⑦ 100%		• Search finished •									
	Total devices found 📧 New devices found: 8											
💬 Idle	Serial number	Primary address	Medium	Manufacturer code	Device name							
(H) Idle	66660211	16	Heat	D LUG	DEV_66660211							
A 1	66071928	14	Heat	LSE	DEV_66071928							
07/01/2020 13:00	47821116	13	Heat	HON	DEV_47821116							

You can customize a search to search by the following criteria:

- Primary address
- Secondary address
- Baud rate

Search by primary address:

You can select or clear a search by primary address.

- First address: You can define the start address for the search
- Last address: You can define the end address for the search
- Single address: You can scan by a specific primary address.

Search by secondary address:

You can select or clear a search by secondary address (serial number).

					sinopsi
(1) Mario Rossi					🚟 English 🔻 😧
Plant status Settings	Device settings Device search - M-Bus line	M1M2 Device search - M-Bus line ABC			Î
02 Network	▼ Use default settings □	Start scan			
Wirel devices Wireless devices Inputs/Outputs	Search by primary address	1 First address 250 Last address Sing	le address to scan		
User account	Search by secondary address 闭	Digit 1 Digit 2 Digit 3 Digit 4 Digit 5 X V X V X V X V 2	Digit 6 Digit 7 Digit 8		
	Search baudrate	300 bps 600 ℓ 3 2400 bps 4800 5 9600 6 7	bps bps		
		8 9 0	* Search finished *		
	100%	×			
			Total devices found 🔞 New de	vices found: 8	
	Serial number	Primary address	Medium	Manufacturer code	Device name
	66660211	16	Heat	🖸 LUG	DEV_66660211
	66071928	14	Heat	O LSE	DEV_66071928
🗐 Idle	47821116	13	Heat	HON	DEV_47821116
(••) Idle	42550093	12	Heat/Cooling	EFE	DEV_42550093

To shorten the search time, you can limit the search range for secondary addresses using the settings for Digit 1 through Digit 8.

Search baud rate:

You can enter the corresponding baud rate for the device search if devices deviate from the default baud rate (refer to the device documentation for the baud rate). You can search for devices by a specific baud rate (300 / 600 / 1200 / 2400 / 4800 / 9600 bps). Multiple baud rates can be selected as well. The device search is longer, if multiple baud rates are selected at the same time.

Click Start scan.

Progress is indicated by the progress bar.

equosox	(SINO	psi
(1) Mario Rossi	_	_	_	_	English	· 🔉
Plant status	Device settings Device search	M-Bus line M1M2 Device search - M-Bus line ABC				
Settings						
01 System					0	
02 Network	▼ Use default s	Stop			U	
Wired devices						
04 Wireless devices						
05 Inputs/Outputs	?		Secondary address search in p	progress		
Export data			Current address: 6XXXXXXXX • Current	baudrate: 2400 bps		
User account	60%					
			Total devices found 🧿 Ne	w devices found: 0		
	Serial number	Primary address	Medium	Manufacturer code	Device name	

Search results

All found devices are listed at the conclusion of the device search. Select one or more devices and Add, to add the new devices to the device list.

Important! Devices that are not saved are rejected.

The following must be listed at a minimum for any found device:

- Serial number
- Primary address
- Medium
- Manufacturer code with optional device image
- Automatically generated device name.

8.4.4 Wireless devices

8.4.4.1 Device settings

In this panel, you have access to the list of wireless devices and can change settings. List is empty if no device search has been run. The meters that are found and saved are displayed on the list after a device search.

EQUOBOX										SIN	9
ario Rossi										English	,
unt status							-			•	
tings 🗸	Water	11079490	DEV_11079490					BMT		Ê	
tom 🗢 🔍	Water	14070008	DEV_14070008					200		Ē.	
work 📀	Water	15027636	DEV_15027636				۵	BMT		Ê	
d devices	Water	15027637	DEV_15027637				۵	BMT		Ê	
ts/Cutputs	Water	16255119	DEV_16255119	1			٥	MAD		İ	
rt deta	Water	35026217	DEV_35026217	0			۵	QDS		8	
account	HCA	00231218	DEV_00231218					TCH		Ċ.	
	117.8	00710111	001 007 0010					1011		•	
	Description 1 Description 2 ID Device Medium (HEQ)	 DEV_16255119 16255119-34240750 Water (07) 		2	(**) scan interval Install date Manufacturer code Wireless M-Bus mode Encryption	12 hes 07/01/2020 MAD C+T Disabled			Maddalena		
Data Points settings Meter alarm setting	s(**) 3								Radio£VO		
Save	•	Select this option to a	oply the settings mar	ked with (***) to all devices of the same brand and mode	Select this option t	o apply the settings marks	d with (**) to	all devices of the same brand and mode	4 0	

The display is structured as follows:

- **1.** List of all devices found on M-Bus
- **2.** Device settings
- **3.** Data points settings
- 4. Meter alarm settings

Also, it is possible:

Devi	ice settings	Device search						
	What are ye	u looking for?		c	Display faulty devices	or devices in acquisition	Wireless devices 🕫	· 📾 🗈 📼 📼
	▼ Log 🔾	▼ Encryption	▼ Medium	▼ Serial number	▼ Device name	▼ Description	▼ Manufacturer code	Î
	0	۹	Gas	12361009	DEV_12361009		MAD	1
	•	٩	Heat	45045502	DEV 45045502		781	
			т.	مام مامیر ما				

- To search a device
- To display only faulty devices or devices in acquisition
- Display all the saved meters
- To export the list of wireless devices as an .xls or .csv file clicking the corresponding symbol:



Serial number	Device name	Description	Manufacturer code	Medium	AES Key	Current status
14012862	DEV_14012862		BMT	Heat	NO	ОК
16340213	DEV_16340213		ITW	Heat	NO	ОК
15027636	DEV_15027636		BMT	Water	NO	ОК
15027637	DEV_15027637		BMT	Water	NO	ОК
16255119	DEV_16255119		MAD	Water	NO	ОК

Device list

▼ Log	▼ Encryption ▼ Medium	▼ Serial number	▼ Device name	▼ Description	▼ Manufacturer code	1
Ø	Heat	14012862	DEV_14012862		🖸 BMT	Ŵ
Ø	Heat	16340213	DEV_16340213		ITW	ŵ
0	Water	15027636	DEV_15027636		BMT	ŵ
0	Water	15027637	DEV_15027637		BMT	Ŵ
0	Water	16255119	DEV_16255119		MAD MAD	î

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- First column: Indicates whether the device was accepted or not
- Encryption: Indicates whether the device is encrypted
- Medium: Displays the medium
- Serial number: Displays the meter serial number
- Device name: Displays the meter name as entered under device name
- Description: Displays the text entered under Description 1
- 🧧 Indicates that a product image is available for the device.
- Manufacturer code: Displays the 3-letter code of the device manufacturer.
- Delete: Click the trash can to delete the device from the list.

Device settings

Click the device line to view the settings for the device:

Device name	/ DEV_16255119	(**) Scan interval	12 hrs •	Maddalena
Description 1	/	Install date	26/07/2017	Automation (
Description 2	/	Manufacturer code	MAD	
ID Device	16255119-34240750	Wireless M-Bus mode	C+T	
Medium (HEX)	Water (07)	Encryption	Disabled	
				RadioEVO

Free text settings:

- Device name: You can assign a name to the device (e.g. Apartment 123).
- Description 1: Device description as indicated in the device list.
- Description 2: Additional description
- Scan interval: 15 min. / 60 min., 6 h, 12 h, 1 day, 7 days, 1 month
- Installation date.
- The device image can be set by clicking the 🖉 as needed. You can select the appropriate image from the datalogger device database.

Click **Save** to save the edited values.

Settings that cannot be changed:

- ID Device: Displays the device serial number
- Medium (HEX): Displays the medium measured by the device.
- Manufacturer code: Displays the manufacturer's code (if included in the database).
- Radio mode: Indicates the device's radio mode.
- Encryption: Indicates whether encryption is enabled or disabled.

Data Point settings

ерио вох										SI	n <mark>o</mark> psi
(1) Marto Rossi	_	_	-	_	_	_	_	_	_	🛲 Eng	yiah 🔹 🕐
Plant status Settings		Device name	/ DEV_162551	19		(**) Scan interval	12 hrs 🔻		/ Maddalana		•
01 System		Description 1	/			Install date	07/01/2020		historicity		
02 Network 03 Wired devices		Description 2	/			Manufacturer code	MAD			2	
Wireless devices United and the second sec		ID Device	16255119-34240	9750		Wireless M-Bus mode	Cel			<i>P</i>	
Export data		Medium (HEX)	Water (07)			Encryption	Disabled				
User account									RadioEVO		
	▼ Data Points sett	ings (**)									
	Main Value	User description		M-bus descrip	tion	Standard Report - Data po	oint mapping	Custom Report -	Data point to be included		
		/ Total volume		Volume		water_volume	•		8		
	0	/ Device date time		Time Point		device_date_time	•		×		
	0	/ Error Bag		Error Flag		error_flag_decimal	•		×	-	
	0	/ Tabrication numb	ber	Fabrication No	mber	fabrication_number	•		•		
	0	/ Volume historical	0	Volume		none	•		2		
	0	/ Monthly date 1		Time Point		none	•		×	-	
	0	/ Volume historical	12	Volume		none	•		2	-	
	0	/ Monthly date 2		Time Point		none	•		2	-	
	0	/ Flowrate max		Volume Flow		none	•		2	-	
	0	/ Timepoint peak f	low	Time Point		none	•		x		
😡 Idle	0	/ Storage interval		Storage interve	al months	none	•		0		
00 Idle	0	/ Monthly date 3		Time Point		none	*				
AL 1	0	/ Volume historical	13	Volume		none	•		×		
07/01/2020 16:01	0	2 Wolume historical	14	Valence		0002			2		-

- Main Value: You can select the value for display on the **Plant status/Wireless** overview
- User description: The data point designation can be edited.
- M-Bus description: Designation of the data point according to the M-Bus specification
- Standard report Data point mapping: Assigns data points to predefined columns on the standard report. Only one data point can be assigned to a specific column for each device. Data points with the "none" settings are not displayed in the standard report.
- Custom Report Data point to be included: Select the data points to be included in the custom report.
- "...": Click the "..." column to display additional details (Subunit, Storage, Tariff, Type value, Multiplier and Units) on the selected data point. The details can help you come up with a meaningful user description.

			mapping	Include	u	
۲	/ Total volume	Volume	water_volume	•		
Subunit	0					
Storage	0					
Tariff	0					
Type value	Instantaneus Value					
Multiplier	0.001					
Units	m3					

Alarms settings meters

Each device has a series of error messages available to it over M-Bus

			0				SINZOSI
Mario Rossi	_	_				_	🗮 English 🔹 😯
Plant status		Device name	/ DLV_16255119	(**) Scan interval	12 hrs 🔹	/	
System		Description 1	1	Install date	0//01/2020	Madda	lena
Network Wired devices		Description 2	/	Manufacturer code	MAD		-
Wireless devices		ID Device	16255119-34240750	Wireless M-Bus mode	C+T	and the second second	
Export data		Medium (HEX)	Water (07)	Encryption	Disabled		
User account						RadioEV	Ø
	 Data Points setting 	çs (**)					
	▼ Meter alarm settin	ngs (**)					
	LOG	Email	Event name		Event type	Status	
	~	~	/ Mechanical fraud currently detected		M bus status notification	Active	-
	1	1	/ Magnetic fraud currently detected		M bus status notification	Not active	-
	1	~	/ Leakage currently detected		M bus status notification	Not active	
	1	1	/ Backlow currently detected		M bus status notification	Not active	-
	~	~	/ Flow max error		M-bus status notification	Not active	
	~	1	/ Backflow currently detected		M bus status notification	Not active	-
	~	~	/ Mechanical fraud previously detected		M-bus status notification	Active	
idle	~	~	/ Magnetic fraud previously detected		M bus status notification	Not active	
Idle	~	~	/ Leakage previously detected		M-bus status notification	Not active	
·	4	*	/ BackBow previously detected		M bus status notification	Not active	-
37/01/2020 16:02							

The following information and settings are available.

• LOG: Displays whether the error message was registered in the event log.

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- Email: Displays whether an email was sent due to the error message.
- Event name: The event name is predefined. It can, however, be changed as needed.
- Event type: Displays the event type received from the device.
- Status: Displays whether the alarm is active or not active.

LOG	Email	Event name	Event name					Event type								Status		
1	~	/ Mech	anical fraud	d currently	detected						M-bus st	atus notifi	cation			Active		
~	~	/ Magn	netic fraud c	currently d	etected		M-bus status notification							Not acti				
		Actions S Add to log				₹ Sen	d email											
	Inp		Bit 16	Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1
																	×.	

Click "..." to open a new panel with the following settings:

- Actions:
 - Add to log: Select whether this alarm is added to the event log.
 - Send email: Select whether notification is sent by email when this alarm occurs.
- Input conditions:

You can select the bit from the M-Bus status byte for the device that represents the corresponding alarm notification.

Click **Save** to apply the alarm settings. You must confirm to apply the settings!

By selecting the check box, if multiple devices of the same type are installed on the plant, settings identified by (**) can be transfer the settings to all devices of the same type.



Select this option to apply the settings marked with (***) to all devices of the same brand and model $\ =$

8.4.4.2 Device Search

For device search, you can select whether to search for a repeater on a specific mesh network or for a wireless meter that communicates with a specific RF converter within an M-Bus radio network.

equosox												SIN	psi
(1) Mario Rossi												🗰 English	• 🔅
Flont status	Device settings C	levice search											Â
01 System	Use device I	Start	t search										- 1
02 Network	 Setup wireles 	s m-bus network											i 1
Wirel devices Wireless devices	 Setup mesh n 	etwork											11
05 Inputs/Outputs	 Device list ma 	inagement											11
Export data			_ 0										
User account			58										- 1
		Hop 0 🕨											- 1
			_	•									
	Select A	Total de	evices found: 58 • Ne	w devices foun	d: 31			Filter	life time (H:n	n:s) 0 🔻 :	30 • : 0 •		
	7m	00000000	(270) Wiator		[⊮] _{33m}	00000100	(WL7) Reom sansor		[⊗] ∥ _{4m}	00000840	(WEP) Room sensor		
	[⊗] _24m	00010952	(LAS) Room sensor		□ I 10m	00011877	(LAS) Room sensor	1	" _{9m}	00011882	(LAS) Room sensor	1	
	S 9m	00012197	(I.AS) 1D		9m	00018587	(APT) Heat Cost Allocator	1	□ _{4m}	00122235	(280) Smoke detector	1	
	9m	00122238	(/N) Smoke detector	٦	^፼ ∎ 10m	00231218	(TCH) Heat Cost Allocator		16m	00500006	0.AS) Smoke detector	٦	
	[∞] ∦ _{9m}	00618441	(1CII) Heat Cost Allocator		• _{5m}	01973424	(APA) Water	1	21m	05650842	(CAL) Heat Cost Allocator		
☑ Idle	10m	07672101	(DGC) Heat Cost Allocator	1	9m	07675281	(DGC) Heat Cost Allocator	1	" _{7m}	09705724	(278) Water	1	
4 1	2 B 7m	12361009	(MAD) Gas		0 8 17m	12505570	(QOS) Hot Water	1	[⊗] ∥ 3m	14070008	(ZRI) Water		
07/01/2020 16:09		14355400	67883			16060100	(m)		a .	Teresta	(MARY)		

Setup M-Bus radio network

The repeater and wireless devices communication over the M-Bus wireless network.

Settings that can be freely edited:

- Global encryption key: The global encryption is used during the automatic search.
- Global AES Key 1: The global encryption key is used during the automatic search.
- Global AES Key 2: The global encryption key is used during automatic search.
- M-Bus wireless operation mode: You can enter the M-Bus operation mode. The following values are available: S, T, C+ T, S & C + T.

You can further limit the search to devices in installation mode only (SND_IR) or/and the walk-by devices.

• Acquisition phase duration: You can enter the duration of the device search in hours (1 to 24).

Click **Save** to save the changed values.

▼ Setup wireless m-bus network	
Enable global encryption key	8
Global AES Key 1	/ D
Global AES Key 2	/ D
Operating Modes of Wireless M-Bus	C+7 • (2) 🔲 During the scan, accept only devices that transmit in Installation mode (SND_IR)
Acquisition phase duration	12 THOUSE
Save	

Configure mesh network

RTUEVO1T and smart repeater communicate over a mesh RF protocol (Backbone network). Settings that can be freely edited:

- Mesh ID: You can enter the mesh ID for the mesh network. Ensure that all smart repeaters sinapsi**tech**® are on the same mesh network.
- Channel: It is advisable to change this option only upon indication of the Sinapsi SRL operators in case of faults. Make sure all sinapsitech[®] repeaters are on the same mesh channel.

▼ Setup mesh network				
	Mesh ID	77	•	٢
	Channel	13	۲	Ø

Click **Save** to save the changed values.

Click **Start search** to start the search. The wireless symbol flashes while searching

Device settings Device search	
Use device list Stop search	Acquisition in progress

Device list management

This option simplifies the commissioning and management of the plant. In fact, by uploading a .csv or .rpt file where all the desired meters are listed, it is possible to view the meters already found and those still that are not. In addition, the list allows you to have a clear and simplified registry for each of them.

 Device 	Device list management								
	🖹 🔁 Devices found: 21/2500 👔 🧮								
Sł	how only devices not fou	nd					Devices in list 250	•	2
(‡) Id	(*) Serial number(*)	(‡) Notes 🗵	(*) Address 🕐	(*) Apartment number (*)	(‡) Surname 🔊	(2) Name (2)	(t) City 👔	(\$) AES Key	^
1	12345670	Bathroom	Via Roma, 32	Stair A Floor 1 Apt. 1	Rossi	Mario	Rome	1	
2	12345671	Kitchen	Via Roma, 32	Stair A Floor 1 Apt. 1	Rossi	Mario	Rome	√	
3	32500781	Bedroom	Via Roma, 32	Stair A Floor 1 Apt. 2	Rossi	Mario	Rome	1	
4	52345682	Room Temperature	Via Roma, 32	Stair A Floor 1 Apt. 2	Rossi	Mario	Rome		
5	12345674	Bedroom rx	Via Roma, 32	Stair A Floor 1 Apt. 2	Bianchi	Giorgio	Rome	1	

In fact, the following information of the meters explained with an example is displayed:

id	Serial Device	Note	Address	Internal	Surname	Name	City	AES Key
1	12345678	Bathroom	Fifth Avenue	1-A	Apartment A	Floor1	New York	\checkmark
2	11223344	Living room	Fifth Avenue	2-A	Apartment B	Floor2	New York	\checkmark

Important! Using the list also greatly simplifies the addition of the AES cryptographic keys of the meters that need it. In fact, in addition to being able to insert them individually by selecting them from the *Device Settings* section, these can be inserted simply by adding them on the corresponding row of the counter on the list to be loaded.



- 1. Click to upload a list on datalogger
- 2. Download a list template
- 3. Display the founded devices
- 4. Download the current list file

- 5. Delete the current list
- 6. Show only devices not found
- 7. Display the devices in list
- 8. Download the current list with current status

Search results

All devices found are listed under the image of the RTUEVO1T. Select one or more devices and click Add to add and then save and manage the desired new meters.



For any found device, are displayed the following information:

Serial number •

•

- Manufacturer code
- Medium
- Strength of signal Last communication

Number of repeaters that reached the wireless device

Important! Devices that are not saved are not managed by the system.

8.4.5 Inputs/Outputs

The SIN.EQRTUEVO1T has three digital inputs (I1, I2, I3) and 2 digital outputs (O1, O2).

Sequobox					sin <mark>o</mark> p	SI
(1) Mario Rossi					🗮 English 🔻	2
Plant status	Setup Input/Output					*
Settings 01 System	Digital Inputs					
02 Network			Description	× n		
04 Wireless devices	C H 12 13	11	Add to Log	◎ Never ◎ Open ◎ Closed ◎ Open / Closed	D	
Inputs/Outputs Export data	(a) (a) (iii (ii)		Email	© Never ◎ Open ◎ Closed ◎ Open / Closed	Ø	
User account			Description	/ 12		
	C 11 12 13	12	Add to Log	© Never ◎ Open ◎ Closed ◎ Open / Closed	Ø	
			Email	◎ Never ◎ Open ◎ Closed ◎ Open / Closed	Ø	
	· · · · · · · · · · · · · · · · · · ·		Description	/ B		
	C 11 12 13 60 01 01 01	13	Add to Log	◎ Never ◎ Open ◎ Closed ◎ Open / Closed	Ø	
			Email	◎ Never ◎ Open ◎ Closed ◎ Open / Closed	Ø	
	Digital Outputs					
			Description	/ 01		
		01	Add to Log	◎ Never ◎ Open ◎ Closed ◎ Open/Closed	Ø	
	(12) (13) (11) (11)		Email	◎ Never ◎ Open ◎ Closed ◎ Open/Closed	\mathfrak{D}	
		Ons	ystem power on	$\ensuremath{^\circ}$ Hold the last status of the digital output $\ensuremath{^\circ}$ Set t	o default status (Open)	
			Description	/ 02		
		02	Add to Log	© Never [©] Open [©] Closed [©] Open / Closed	0	
idle	(12) (13) (14) (15)		Email	© Never [©] Open [©] Closed [©] Open / Closed	0	
A 1		Ons	ystem power on	Hold the last status of the digital output	o default status (Open)	
07/01/2020 16:21	Save					*

The following settings are possible on each digital input and output:

- Description: Each input/output can be labelled with an individual name.
- Add to log: Select whether to log a change of state to an input/output in the event log:
 - Never
 - Open: Only if the state is open or changes to open.
 - Closed: Only if the state is closed or changes to closed.
 - Open/close: For any change of state.
- Email: Select whether to send an email (see Settings / System / Alarms), if the input/output registers a change of state:
 - Never
 - Open: Only if the state is open or changes to open.
 - Closed: Only if the state is closed or changes to closed.
 - Open/close: For any change of state.

You can also select the output state for an output after a loss of power:

- Hold the last output state.
- Set to default state "open".

Click **Save** to save the edited settings.

8.5. Export data

Data logged by datalogger can be exported as a report for further processing. There are two ways to create a report:

- Manual reports
- Automatic reports

8.5.1 Manual reports

8.5.1.1 Create report

The meters for which you want a report, must be selected. The wired ones must be read before creating a report, otherwise, as is the case for wireless meters, the latest saved data will be available with time interval as per setting (see paragraphs *8.4.3.1 Devices settings* and *8.4.4.1 Device settings* respectively for wired and wireless devices). Click Read Now to read the devices in the list.

								SIN	Sosi
(1) Mario Rossi								🗰 English	• 💬
Plant status De Settings Export data (1) Munual reports	Read no	ow						Connected devices	Ì
02 Automatic reports	ie 0+0	Room sensor	61006100	DEV_61006100				ELV	
User account	≥ (+0)	Room sensor	00012199	SIN.EQPRO9X		Sensore temperatura e umidità		LAS	
	≥ (H)	Sensor	00010949	DEV_00010949				LAS	
	≥ 0+0	Sensor	00012197	DEV_00012197				LAS	
	₩ 0+0	Sensor	00012198	DEV_00012198				LAS	
		Heat	23282974	DEV_23282974		PA_000	G	EFE	
		Heat	66226640	DEV_66091674		PA_157	0	LUG	
		Warm Water	06129251	DEV_06129251		PA_000	9	SMC	
		Warm Water	10485502	DEV 10485502		PA 802		REL	
	2	Water	06129250	DEV_06129250		PA_000	۵	SMC	
	2	Water	10485501	DEV_10485501		PA_001	۵	REL	
	2	Water	15550082	DEV_15550082		PA_000	۵	MAD	
	×	Heat/Cooling	07964864	DEV_07964864		PA_000		LSE	
⊖ Idle									- 1
(H) Idle	Report ty	ype Standard Report	rt 🔻	Select day 2020-01-07	File type x/s				- 1
A 1 1	Create	report							- 1
07/01/2020 16:26									

Select the devices to be included in the report.

Select the check box in the title line to select all the devices on the list.

Read	i now							Connected devices 18
(*)	Water	31001341	DEV_31001341				EFE	
•	Water	10485501	DEV_10485501		PA_001	¢.	REL	
•	Water	15550082	DEV_15550082		PA_000	6	MAD	
•	Heat/Cooling	07964864	DEV_07964864		PA_000		LSE	
Crea	te report	Report type	Standard Report	•	Select day 2017-07-26	File type xi	ls	•

Note To simplify the search for the desired device, sort the list alphabetically by clicking

The following selections need to be made before you can generate the report:

- Report type (select between):
 - Standard report: This report includes only the data points on devices that were assigned a standard column in the device settings (see Data points settings).
 - Customized report: This report includes only data points on devices selected in the Customized report column in device settings (see Data points settings).
 - Report all data: This report includes all data points from all devices.
- Select day: Select the read date of devices data used for the report. The current date is always the default date. You can also select a date in the past.
- File type: Select one of the following file formats:
 - .csv format: Exports the data as a .csv file.
 - .xls format: Exports the data as an .xls file.

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- .txt format: Exports the data as a .txt file.

Click **Create report** to generate the report and start the download. The filename is automatically generated. Additional information on the various report types is available in section "8.5.3 Creating reports".

8.5.2 Automatic reports

Read and post now, immediately reads all the devices on the overview list and sends the data per the settings below.

есновох									SI	1 <mark>2</mark> psi
(1) Mario Rossi				_					🔛 Englis	n • 🕐
Plant status Setur	p automatic reports									Â
Export.data	Read and post now							Connected	devices 🙆 🔸	
01 Manual reports (02) Automatic reports	00 Sensor	00010949	DEV_00010949			LAS	None		٠	1
User account	🙌 Sensor	00012197	DEV_00012197			LAS	None		•	
	👀 Sensor	00012198	DEV_00012198			LAS	None		٠	
	Heat	23282974	DEV_23282974	PA_000		EFE	None	1	٠	
	Heat	66091674	DEV_66091674	PA_157		LUG	None		•	
	Heat	66336640	DEV_66336640	PA_003		🖨 LUG	None		•	
	Warm Water	06129251	DEV_06129251	PA_000		i SMC	None		•	1.1
	Warm Water	10485502	DEV_10485502	PA_002		C REL	None		•	1.1
										·
	▼ FTP server settings	for automatic report t	ransmission 2					Enable automatic repo	rts via FTP 🗌	- 1
\varTheta Idle	 Email address setti 	ings for automatic rep	ort transmission	3				Enable automatic reports	s vla email 🗆	- 1
(*) Idle 1 1 07/01/2020 16:35	Save		Report type All Da	ta Report	٠	File type	C3V	Post time 12	: 45 •	

The following data is available on each device:

- Medium
- Serial number
- Device name
- Description
- Manufacturer code
- Report interval

8.5.2.1 Report interval

Select the interval for generating report.

▼ Set report interval	< Select and apply to all >	٠
None		•
None		
Daily		
Weekly		
Monthly		
Every two months		
Every three months		
Every four months		
Every six months		
Annualy		

The following options are available:

- None: No report is generated.
- Daily: The report is generated daily at "post time" for the previous 24 hours.
- Weekly: The report is generated on Monday at "post time" for the last week.

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- Monthly: The report is generated on the last day of the month at "post time".
- Every two months: The report is generated on the last day of the second month at "post time" for the last two months.
- Every three months: The report is generated on the last day of the third month at "post time" for the last three months.
- Every four months: The report is generated on the last day of the fourth month at "post time" for the last four months.
- Every 6 months: The report is generated on the last day of the sixth month at "post time" for the last six months.
- Annually: The report is generated on the last day of the year at midnight for the previous year.

Selecting a report interval in the title applies the setting to all devices on the list.

Click **Save** to save your entries.

8.5.2.2 Set up FTP server for automatic report transmission

Select **Enable automatic reports via FTP** if each report is sent to an FTP server and enter the FTP server information.

\bigcirc	▼ FTP server settings for automa	atic report transmission	Enable automatic reports via FTP
	FTP server name	e.g. www.example.com; 8.8.1.2	
	Remote path	e.g. tmp/repository/report	
	FTP server port	22	
	FTP protocol	SFTP - File Transfer Protocol (SSH)	Server connection test
	Username	bledion	
	Password		

- FTP server name: Enter the address for the FTP server
- Path (Remote): You can enter a path on the FTP server for saving reports.
- FTP server port: Enter the port for the FTP server
- FTP protocol: Select the FTP protocol. The following protocols are available:
 - SFTP File Transfer Protocol (SSH)
 - FTP File Transfer Protocol (TLS)
 - FTP Unencrypted (unsecured)
- We recommend against using "FTP- unencrypted" for security reasons.
- Username: Username to access the FTP server.
- Password: Password for FTP server access

Click **Server connection test** to test the connection to the FTP server. The file ftp_test_connection.txt is saved to the FTP server.

Click **Save** to save your entries.

8.5.2.3 Set up email address for automatic report transmission

Select **Enable automatic reports via email** to send a report to one or more email addresses and enter the corresponding email addresses including the subject line.

(3)	 Email adress settings for autor 	natic report transmission	Enable automatic reports via email $\ {\ensuremath{\mathscr C}}$
9	To:	live.com@live.com	
	Cc:	live.com@live.com	
	Bcc:	Enter recipient's email address (e.g. info1@email.com;info2@email.com)	
	Subject	Test report RTUEVO	

You can separate individual addresses with the semicolon (;) if a report is sent to multiple addresses. Click **Save** to save your entries.

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The following settings are required to generate automatic reports:

- Report type: Select between (for details, see "Manual reports):
 - Standard report:
 - Customized report
 - Report "All data"

Additional information on the various report types is available in Section "Creating reports".

• File type: Select one of the following file formats:

- .csv format: Exports the data as a .csv file.
- .xls format: Exports the data as an .xls file.
- .txt format: Exports the data as a .txt file.
- Post time: The time the readout of the selected devices is performed and the report file is generated and sent out.

Please note that this can take several minutes depending on the number of devices and the M-Bus baud rate.

Click **Save** to save your entries.

8.5.3 Creating reports

Reports can be sent via

- E-mail
- FTP server

8.5.3.1 Email

The email looks as follows

A SINAPSITECH			
ette Da fare	-		
02061			
n <mark>o</mark> psi			
7-07-26 16:39:39 T	his is a test of SIN.EQR	TUEVO1T Automatic Report.	
Plant name :			
Address :			
Model :	SIN.EQRTUEVO1T		
System clock :	2017-07-26 16:39:39		
Firmware version :	2.0_1.4_2.1		
Web interface version :	2.12		
Serial number :	EV16444161		
Current IP address :	https://185.20.64.226:443		

- Header: See settings in Section "Automatic reports".
- Plants: Displays the name of the read file including the datalogger serial number, creation date and time.
- Plant information: Displays information on the object and datalogger (see System Status)

The following report types are available:

• Standard report

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- Individual reports
- All data report

8.5.3.2 Standard report

The Standard report lists all read devices. A device corresponds to one line. Each column is the same for each device. The corresponding column is empty if a device does not have a certain value. The columns must be assigned to the corresponding data points in the device settings in the "**Standard Report - Data points mapping**" column, see Data points settings.

File Name	Report Date	Report Time	Plant Reference	Firmware version	Total devices cabled	Total devices wireless	Serial Number				
FC_report_EV12345678_AAAA-MM-DD.xls	DD/MM/AAAA	HH:mm:ss	Plant Address	x.yz x1.y1_x2.y2_x3.y3	k	0	EV12345678				
count	primary_address	device_serial_number	name_device	device_description	device_detail	device_measure_hex	0=wired 1=wireless	model_id	readout_date	readout_time	communication_status

8.5.3.3 Customized report

A Customized report displays each device with two lines: The first line describes the content and the second the corresponding values. The number of columns varies by device and selected data points. Only the data points selected in the "**Custom Report - Data point to be included**" column in the device settings are listed, , see *Data points settings*.

File Name	Report Date	Report Time	Plant Refere	Firmware ve	Total device	Total device	Serial Numbe	er								
CUST_repor	t DD/MM/AA	HH:mm:ss	Sinapsi_12	x.yz x1.y1_x	k	0	EV12345678									
count	primary_add	device_seria	name_device	device_desc	device_detai	device_mea	0=wired 1=w	model_id	readout_date	readout_tim	communicat	col 1	col 2	col 3	col 4	

8.5.3.4 Report "All data"

Report all data displays each device with two lines: The first line describes the content and the second the corresponding values. The numbers of columns vary for each device depending on device type. **All data points** are listed that can be read.

File Mame Report Date Report Time Plant Reference Firmware version Total devices cabled Total devices wireless Serial Number naw_report_EV12345678_AAAA-MM-DD.csv DD/MM/AAAA HH:mm:ss Sinapsi_12 | admin - Admin123 - Via delle querce 11/13 x.yz|x1.y1x2.y2.x3.y3 k 0 Ev12345678 count primary_address device_serial_number name_device device_description device_detail device_measure_hex 0-wired|1-wireless model_id readout_date readou

Note The number in the reports are depicted as follows:

Period as a decimal point separator

8.6. User account

The User account menu displays all registered users and creates a new user.

Moreover, all login attempts are registered (logbook).

Click Exit to log off datalogger.

8.6.1 User configuration

8.6.1.1 New User

The New user creates a new user account on datalogger.

At the same time, it provides information on all previously registered users, including access rights (user type).

					SINSPSI
(1) Mario Rossi					🧱 English 🗸 😥
Plant status Settings	New user Users Access Logging				
Export data	Username	First name Last name	User Type	Email	
User account	admin	Mario Rossi	Administrator	admin@admin.it	
01 User configuration					
02 Exit	First name		Last name		
	* Email		* Username	admin	
	* Password		* Confirm password		Good
	* User Type	Administrator 🗸			
	Add				
😔 Idle					
(m) Idle					
A 1					
③ 06/08/2020 01:41					

You must be logged in administrator to change user data or create a new user.

First name		Last name	
* Email		* Username	
* Password		* Confirm password	
* User Type	Administrator •		

Enter the new user data and click **Add**:

- First name
- Last name
- Email
- Username
- Password including
- Confirm password
- User type:
 - **User**: Users have a restricted view on datalogger and cannot change or enter settings.
 - **Maintainer**: Maintainers have a restricted view on datalogger. They can change or enter some settings compared to users.
 - **Administrator**: Administrators have access to all data and functions.

Menu	Administrator	Maintainer	User
Plant state	U	R	R
Settings	U	R	-
Export data	U	U	U
User account	U	-	-

U = Unrestricted access

R = Restricted access

- = no access

8.6.1.2 User access logging

All login actions are registered on datalogger.

					singps
(1) Mario Rossi					🚺 Italiano 🔻 😥
Stato Impianto	Nuovo Utente Users Access Logging				
Impostazioni		-			
Export Dati	Last Login	Logged	User	Tipo Utente	IP
Account Utenti	2020-01-08 10:18:39	Connected	Mario Rossi (admin)	Amministratore	192.168.1.77
(01) Contigurazione Account	2019-12-18 17:58:30	Not Connected	Mario Rossi (admin)	Amministratore	192.168.1.226

The following information is retained for each login:

- Last login: Date & time the user logged in.
- Logged: User status.
- User: First and last name of the user
- User type: Administrator / Maintainer / User
- IP address: IP address of the PC used by the user to access datalogger

User access data is registered for the last 28 days.

8.6.2 Log off

Click **Exit** to log off datalogger without further warning.

 \bigcirc

9. APPENDIX

9.1. Router configuration

9.1.1 Port forwarding

Normally is not necessary to set

Datalogger uses the following port:

- 443 (fixed port for HTTPS protocol) •
- 1194 (fixed port for VPN) .

To access the datalogger from the Internet, you must setup a port forwarding rule in the router to the IP address and port 443 of the datalogger. The external port number can be defined freely but has to be unique within the router.

The chosen external port number must also to be entered in the LAN settings.

9.2. Open Source Software

Open Source Software (OSS) is used on datalogger.

9.2.1 License information

The license texts of all Open Source Software packages can be viewed individually at

昌 Third-Party Software Information Warranty regarding further use of the Open Source Software: License name Size Last Modified 1 | ► <u>Apache-2.0</u> 11k December 19, 2004 2 | ► Artistic 6k December 16, 1996 31► BSD 1k August 26, 1999 4 | ► <u>GFDL-1.2</u> 20k March 24, 2010 5| ► <u>GFDL-1.3</u> 22k November 03, 2008 6 | ► GPL-1 12k March 24, 2010 7 | ► <u>GPL-2</u> 18k March 24, 2010 34k July 02, 2007 8| ► <u>GPL-3</u> 9|► <u>LGPL-2.1</u> 26k March 24, 2010 10 | ► LGPL-2 25k March 25, 2010 March 24, 2010 11 | ► LGPL-3 7k Package name Size Last Modified Update 1 | ► adduser 2k May 15, 2012 2 | 🕨 <u>apt</u> 1k October 23, 2014 3 | Ease-files 1k August 30, 2015 4 | E base-passwd 1k August 02, 2010 5∣► <u>bash</u> \bigcirc

19k

September 25, 2014

9.2.2 Tools for packages upgrading

All packages subject to a GPL-3 or LGPL-3 license must be made upgradable to experienced users for

legal licensing reasons. The packages are labelled on the list with

6 ► <u>binutils</u>	2k	January 05, 2015	٢
7 Esdutils	1k	December 11, 2012	
8 Eacertificates	18k	September 24, 2014	
9 ► coreutils	12k	January 26, 2013	٢
10 ► <u>cpio</u>	1k	December 22, 2014	٢
11 ► <u>cron</u>	4k	July 03, 2012	
12 ► <u>dash</u>	3k	March 01, 2012	٢
13 ► <u>dbus</u>	11k	February 05, 2015	
14 ► <u>debconf-i18n</u>	3k	September 11, 2012	
15 ► <u>debconf</u>	3k	September 11, 2012	
16 ► debian-archive-keyring	1k	November 21, 2006	٢
17 ► <u>debianutils</u>	8k	June 28, 2012	٢
18 ► dialog	1k	March 03, 2012	

Sinapsi regularly provides firmware updates to the datalogger. This occurs exclusively through firmware updates (online or offline). The tool for package upgrades is not required to operate and maintain the datalogger.

Important!

Caution: Datalogger can no longer be used as the M-Bus master as soon as a package is changed with this tool! Access to datalogger over web operation and local operation is no longer possible! All data is deleted on the datalogger for security reasons! This procedure can no longer be rescinded and a new datalogger must be purchased if the tool is accidentally used to update a package! Only the Linux base system remains on the device after completing a package update.

The device can then be accessed via an SSH connection through Ethernet port 192.168.1.110. Use username **root** and password **12345678**.