



the easy solution for Smart Metering

sinapsi
i n v e n t t o d a y

www.sinapsitech.it

EQUOBOX

WHAT IT IS

EQUOBOX is a system for metering energy and other resources in a building allowing the allocation of running costs in compliance with UNI 10200.



water



renewable



gas



garbage



heat/cool



electricity



RESIDENTIAL



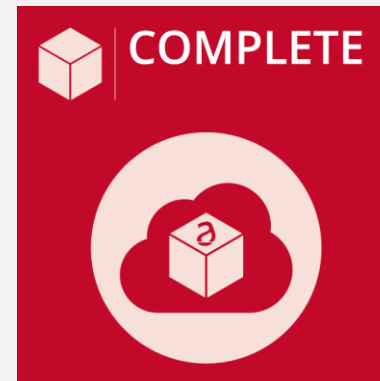
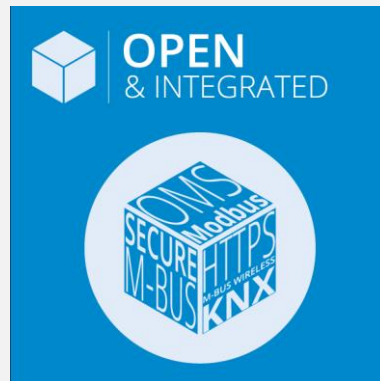
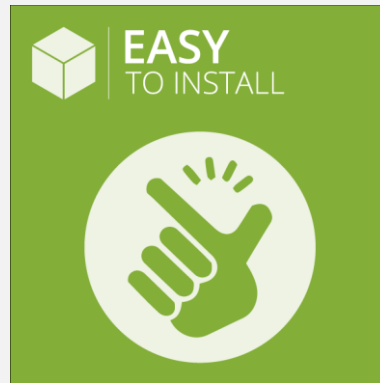
COMMERCIAL



INDUSTRIAL



EQUOBOX STRATEGY



EQUOBOX

TO WHOM IT IS DIRECTED



EQUOBOX

WHAT IT IS COMPOSED OF



LEVEL CONVERTER M-Bus

- ⌚ Master function for M-BUS cable networks with 60 physical devices modularity*
- ⌚ Stand-alone operating mode combined with SW EQUOBOX TOOLKIT for data consultation coming from meters
- ⌚ Operating slave mode for M-Bus / W.M-Bus RTU and RTU EVO



RTUs

- ⌚ Web server with LCD display for acquisition and datalogging from the meters in the field
- ⌚ Specific model for each type of installation (M-Bus wired / RF, RS485 wired)
- ⌚ Acquisition of data directly or via LEVEL CONVERTER



GAMMA EVO

- ⌚ Web server compliant with the highest security standards (https, SSL, ftps)
- ⌚ Color graphic display
- ⌚ Communication with the field via RS232 / RS485 / M-Bus / sinapsitech® / ethernet / wi-fi *
- ⌚ I / O support for energy efficiency scenarios
- ⌚ Integrated Wi-fi (access point / client) & mobile-compatible web application
- ⌚ Compatible with Sinapsi Global Hub IoT Platform



SMART REPEATERS

- ⌚ Gateway for data acquisition from W. M-Bus 868 / 169MHz meters / heat cost allocators / sensors *
- ⌚ Supports T / S / C communication mode
- ⌚ Led for real-time display of sinapsitech® backbone signal level *
- ⌚ GPRS modem with integrated SIM for Sinapsi Global Hub IoT Platform communication *
- ⌚ Working in stand-alone mode using TOOLKIT software

M-BUS 60 LEVEL CONVERTER

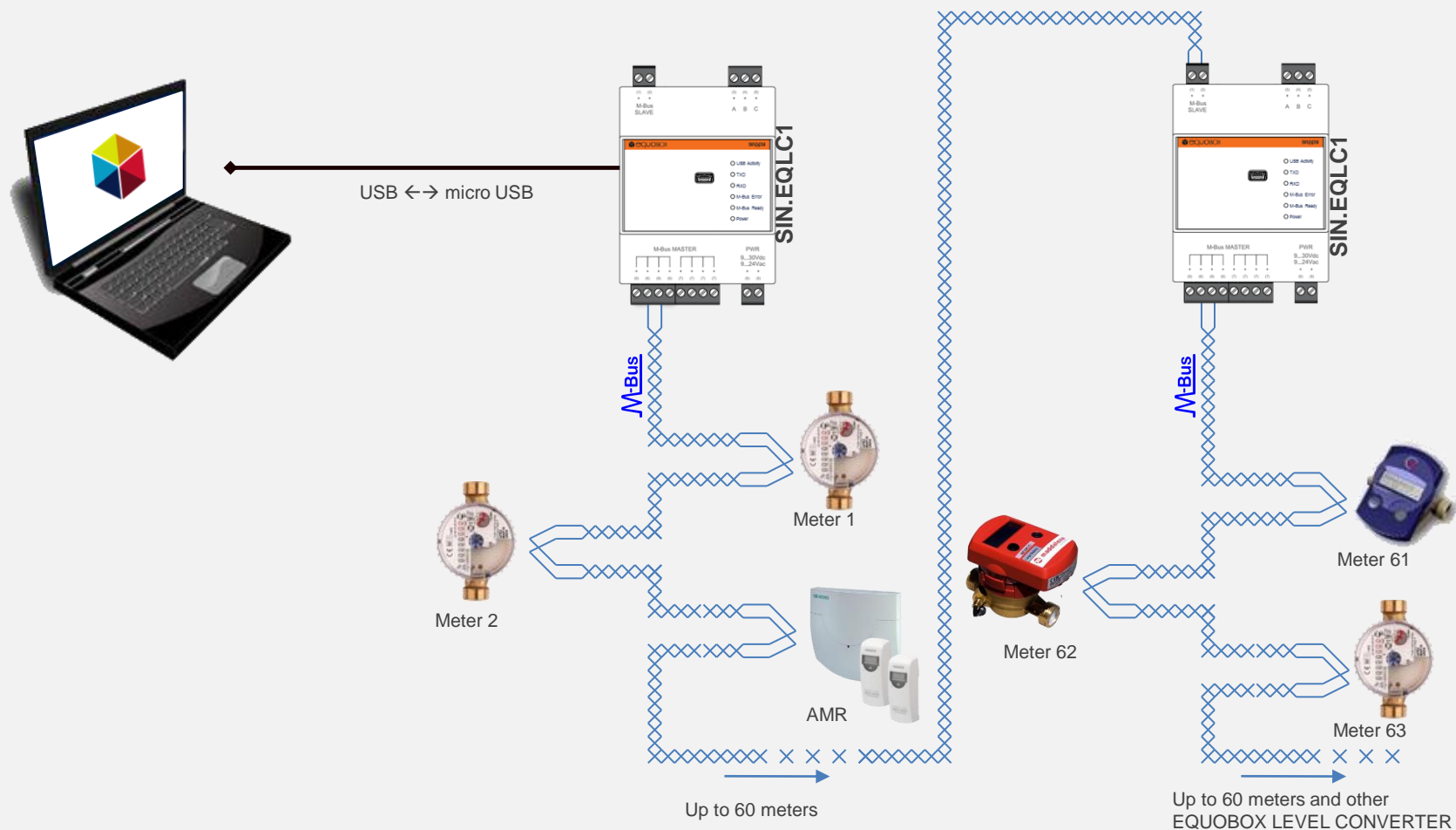
GENERAL FEATURES

- ⌚ Master function for M-Bus wired networks with modularity of 60 physical devices
- ⌚ Expandable without limitation serial connection modules twins
- ⌚ No local memory
- ⌚ 24Vac / dc power supply
- ⌚ Interrogation via PC with USB cable and software EQUOBOX downloadable free of charge from www.sinapsitech.it for exporting data in csv, xls



M-BUS 60 LEVEL CONVERTER

EXAMPLE SCHEMA



M-BUS 250 LEVEL CONVERTER

GENERAL FEATURES

- ⌚ Master function for M-Bus cable networks with 250 physical devices
- ⌚ Booster / repeater function via M-Bus slave port
- ⌚ No local memory
- ⌚ 230Vac power supply via included power pack
- ⌚ RS232 / RS485 port (selectable by dedicated selector) for slave operation

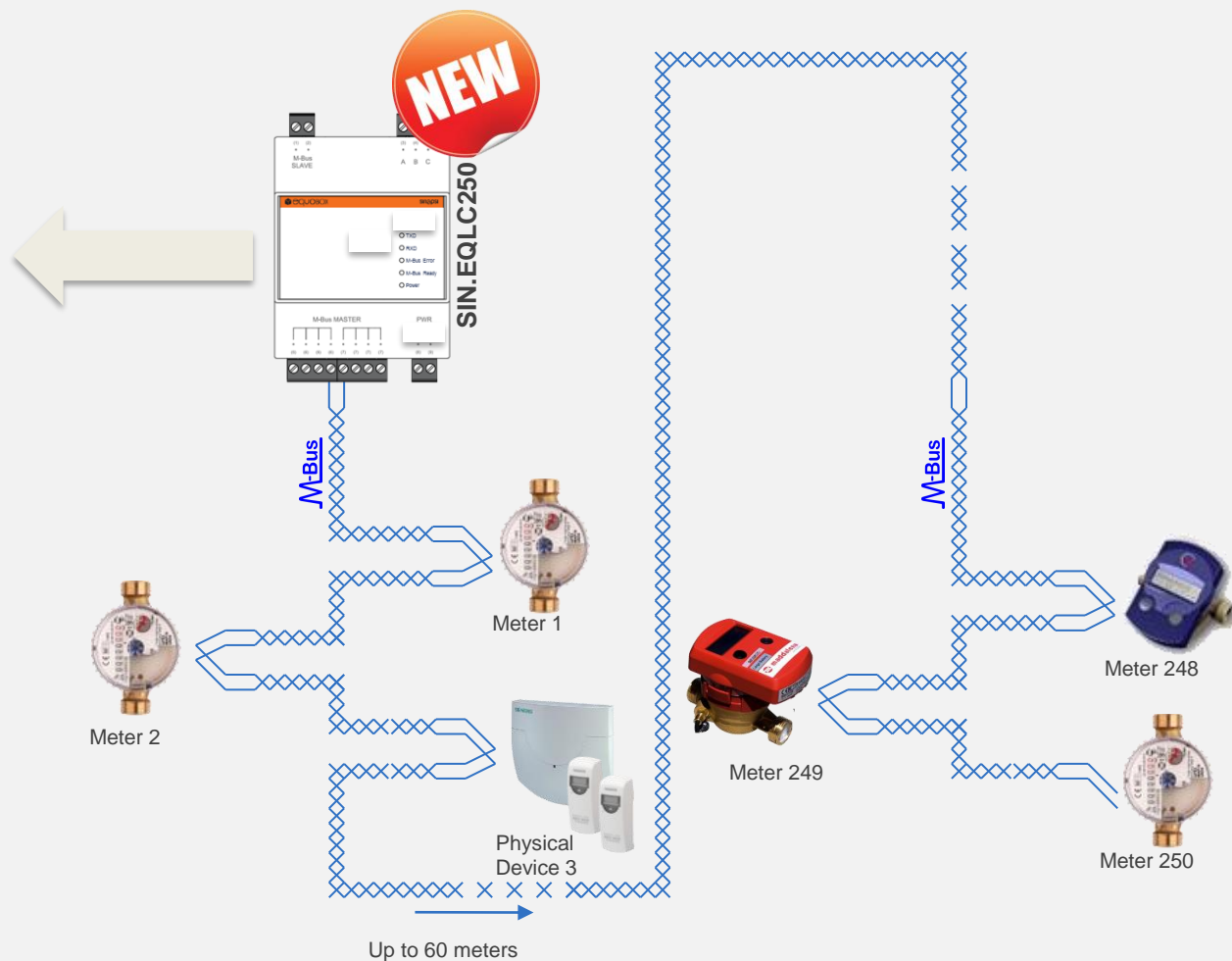


M-BUS 250 LEVEL CONVERTER

EXAMPLE SCHEMA

Communication via:

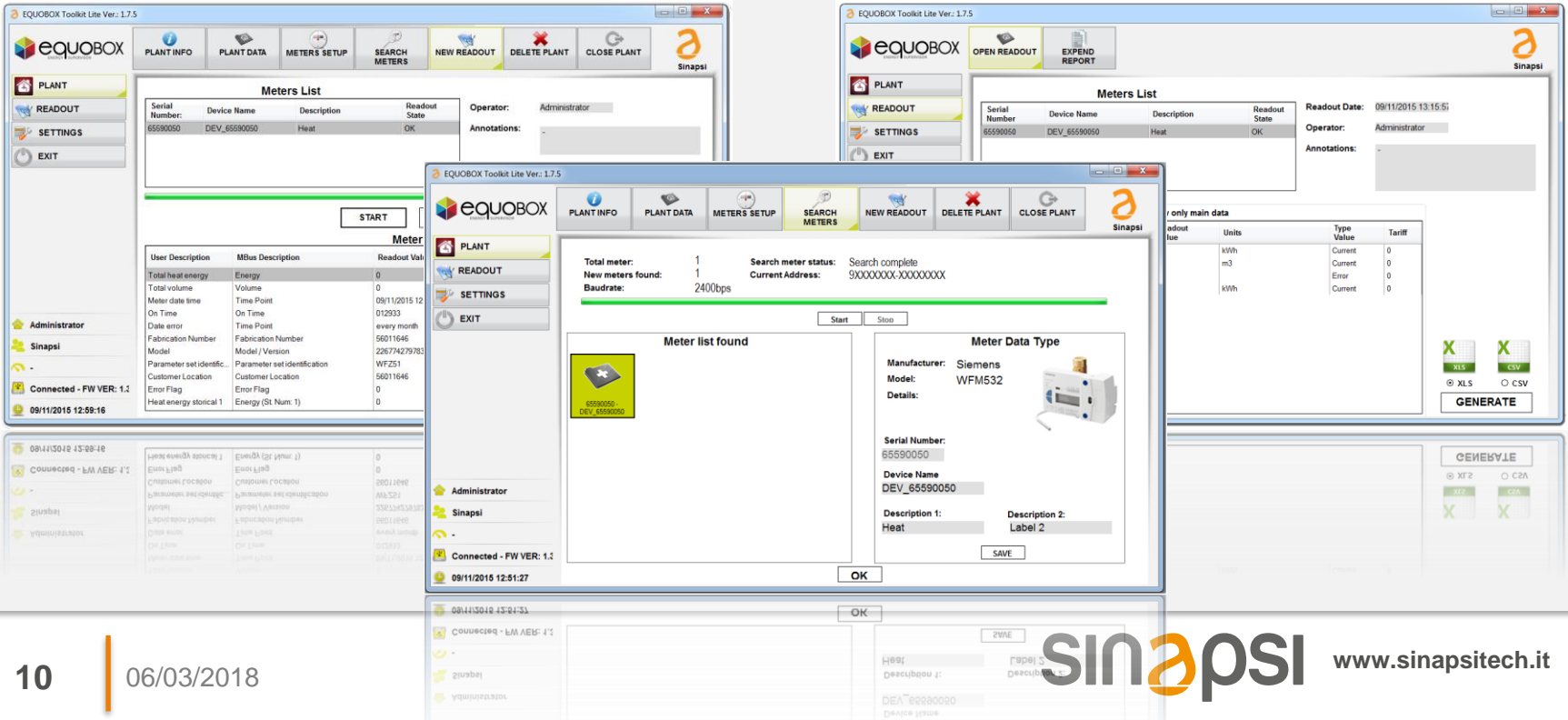
- M-Bus slave
- RS232
- RS485



TOOLKIT LITE SOFTWARE

SOFTWARE INTERFACE

- ⌘ Multi-plant anagraphic management
- ⌘ Schedule meter reading
- ⌘ Download current data read from meters
- ⌘ Automatic research of meters
- ⌘ .xls / .csv reading reports
- ⌘ Reading analysis filter research
- ⌘ Smart Repeaters Sinapsitech[®] configuration



The screenshot displays the EQUOBOX Toolkit Lite Ver. 1.7.5 software interface. The main window shows a 'Meters List' table with columns for Serial Number, Device Name, Description, and Readout State. Below this, there is a 'Meter' section with a table of user and meter data. A 'Search Meters' dialog box is open, showing search results for a specific meter (Serial Number: 65590050, Device Name: DEV_65590050, Manufacturer: Siemens, Model: WFM532). The interface includes a menu bar with options like PLANT INFO, PLANT DATA, METERS SETUP, SEARCH METERS, NEW READOUT, DELETE PLANT, and CLOSE PLANT. There are also buttons for PLANT, READOUT, SETTINGS, and EXIT. The bottom of the screen shows a taskbar with the date 06/03/2018 and the time 10:00.

M-BUS WIRED RTU

GENERAL FEATURES

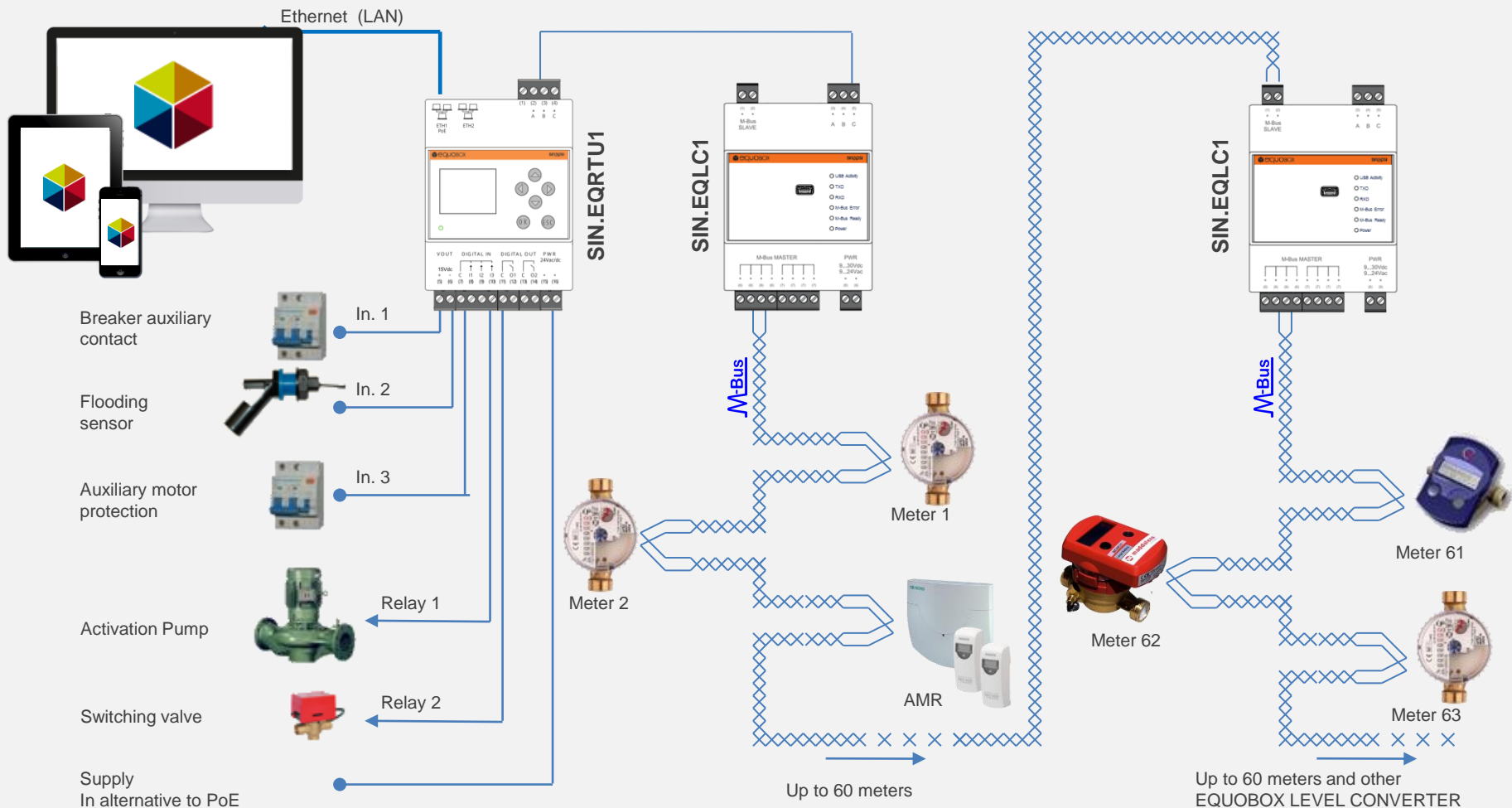
- ⌚ Master function for M-Bus wired networks *
- ⌚ Available with 20 device M-Bus on-board support
- ⌚ Expandable up to 250 devices by adding level converter modules (modularity of 60 devices)
- ⌚ Local memory up to 2 years
- ⌚ Graphic display
- ⌚ 3 digital inputs and 2 relay outputs (5A)
- ⌚ Power supply 24Vdc / ac or Power Over Ethernet
- ⌚ Meters query and data consultation via WEB interface
- ⌚ Ability to download reports on data acquired in csv and xls format
- ⌚ Email notification of events generated by digital inputs, status of meters, over thresholds
- ⌚ Implementation of on-board relay outputs from web interface, based on logic or alarm
- ⌚ Remotely via LAN, ADSL or UMTS / GPRS router



* in relation to the chosen version

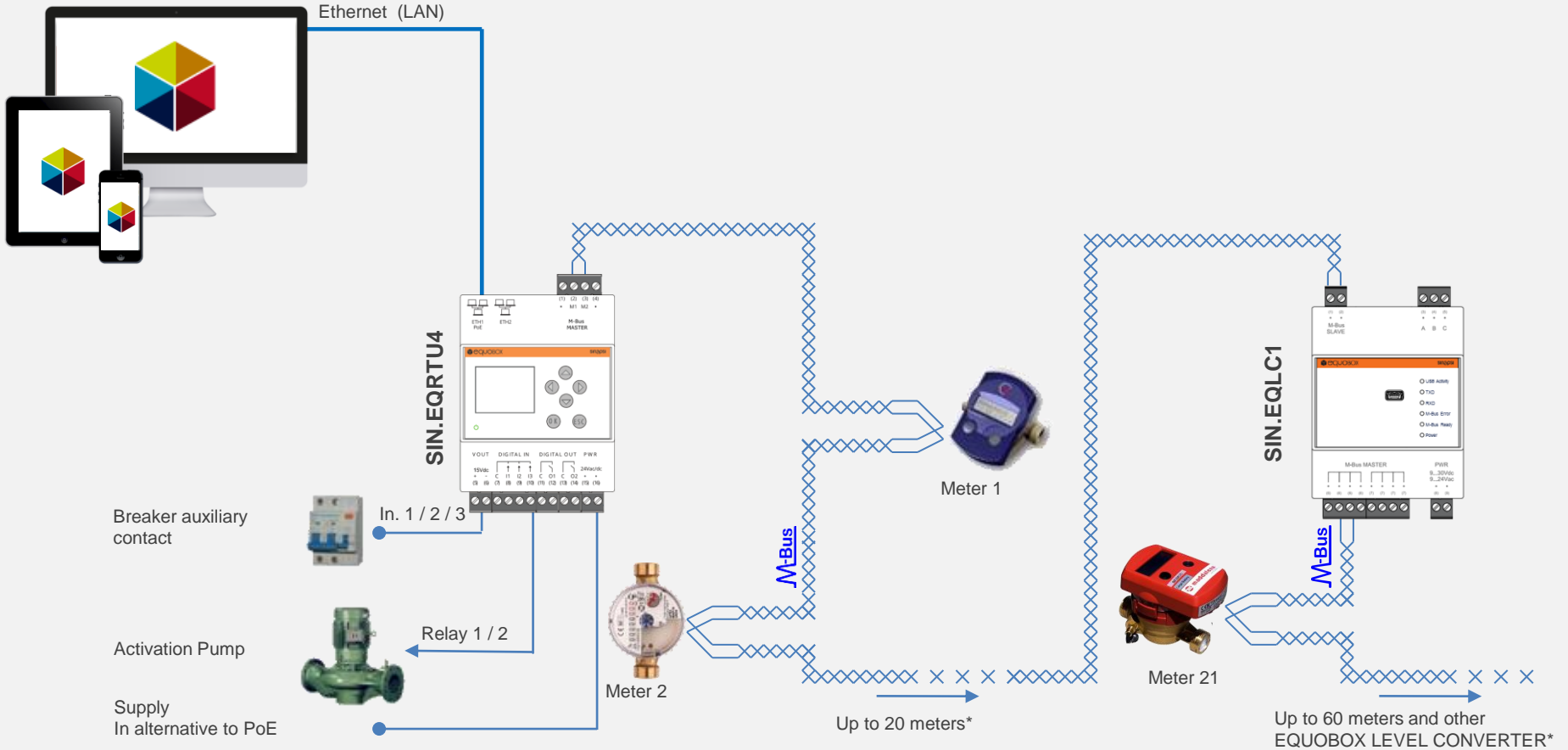
M-Bus WIRED RTU

EXAMPLE SCHEMA



M-BUS WIRED 20 DEV. RTU

EXAMPLE SCHEMA



M-BUS / WIRELESS M-BUS RTU

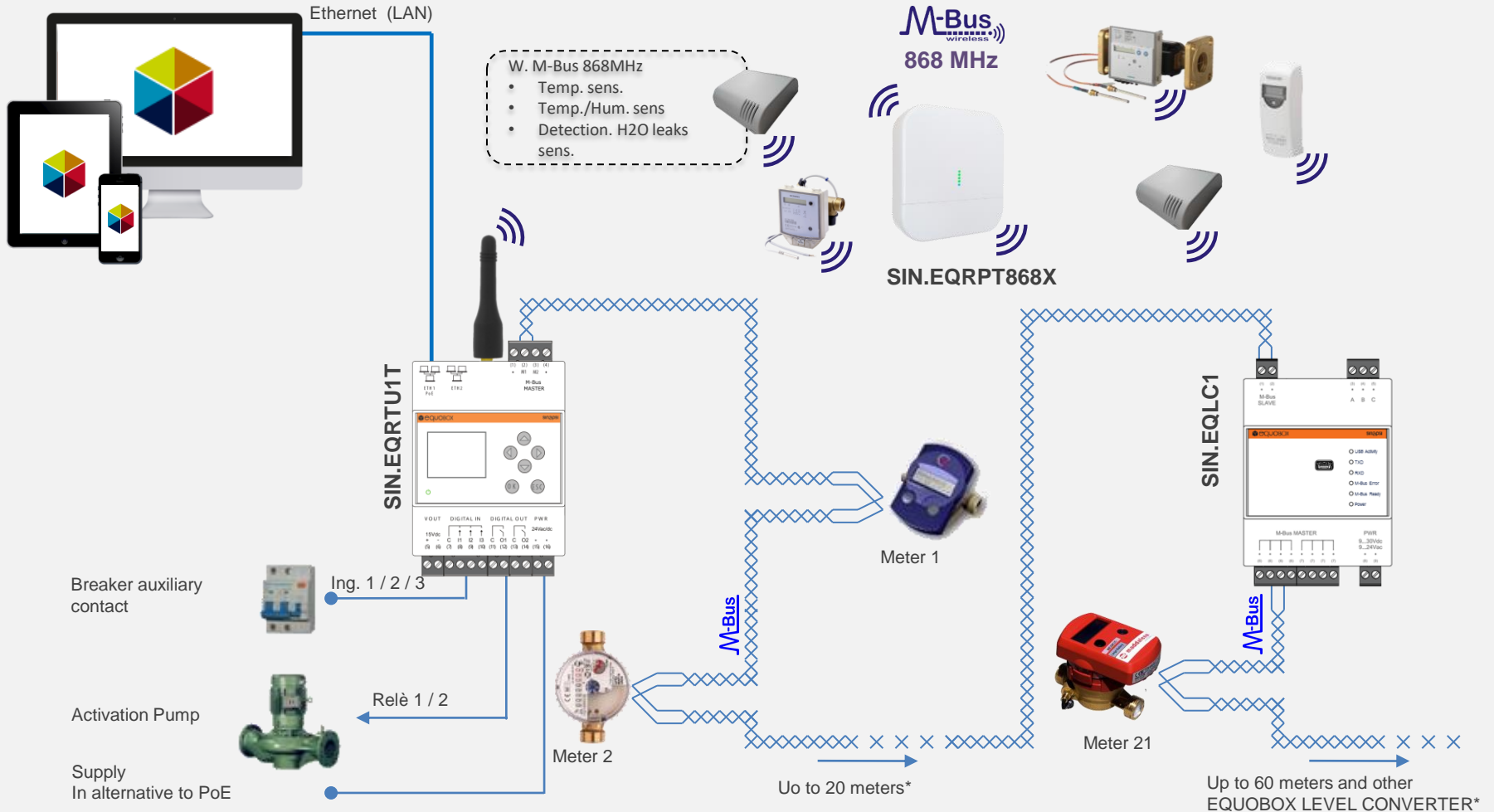
GENERAL FEATURES

- ⌚ Master function for wired/ wireless M-Bus networks
- ⌚ Support up to 500 meters (max 250 wired)
- ⌚ Support 20 wired M-Bus physical devices through integrated port (expandable via Level Converter)
- ⌚ SMART REPEATERS sinapsitech® support *
- ⌚ Antenna Connector repositioned
- ⌚ Graphic display / Local memory up to 2 years
- ⌚ 3 digital inputs, 2 relay outputs
- ⌚ 24V ac/dc Power supply or Power Over Ethernet
- ⌚ Meters/ heat cost allocators interrogation and data consultation through WEB interface
- ⌚ Possibility to download the report of the acquired data in csv and xls format
- ⌚ E-mail notification for alarms generated by the digital inputs, the state of the meters, thresholds excess
- ⌚ Implementation of on-board relay outputs from web interface, based on logic or alarm
- ⌚ Remote via LAN, ADSL or UMTS / GPRS router



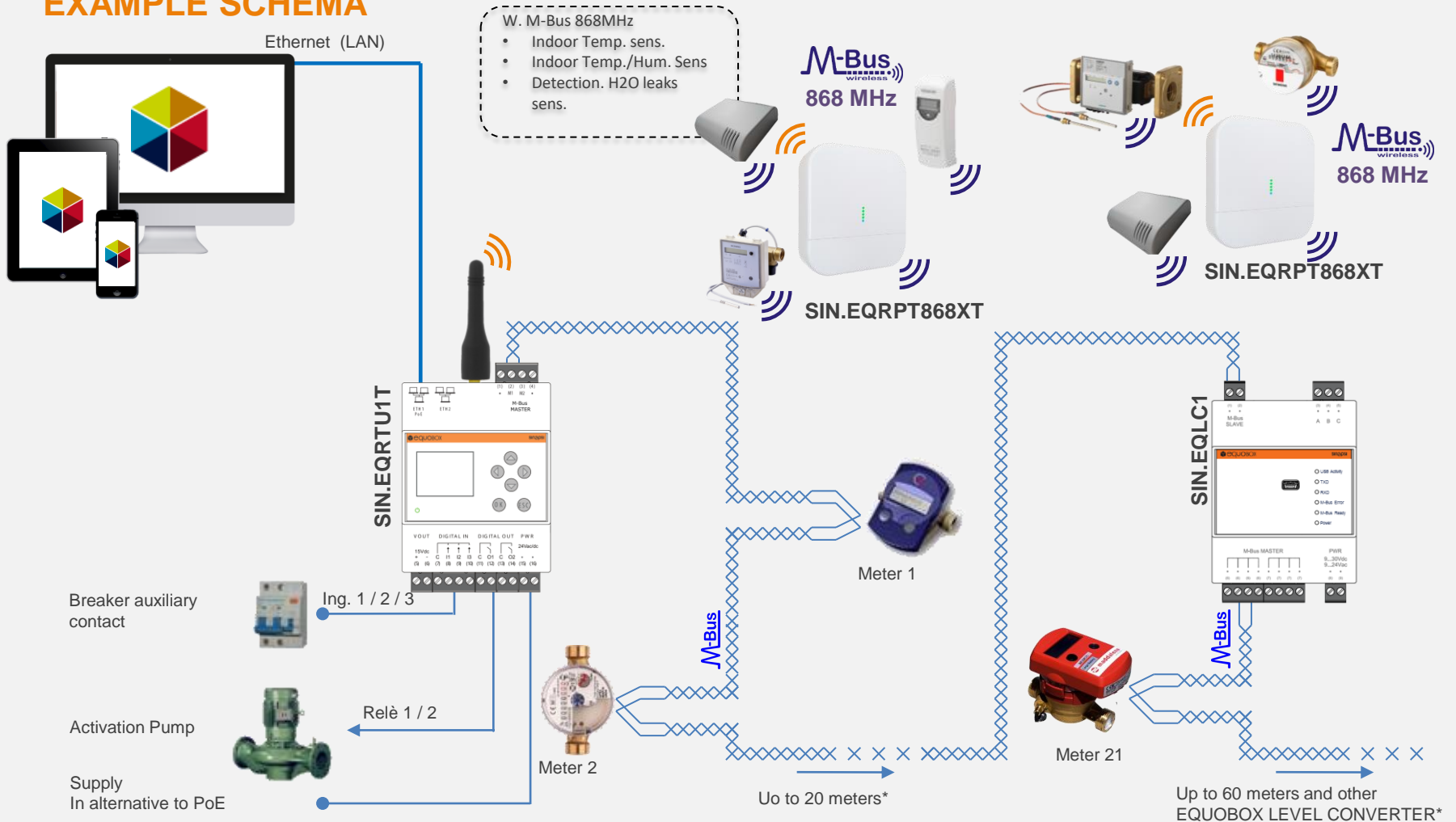
* in relation to the chosen version

M-BUS / WIRELESS M-BUS RTU EXAMPLE SCHEMA



M-BUS / WIRELESS SINAPSITECH® RTU

EXAMPLE SCHEMA



RS485 RTU

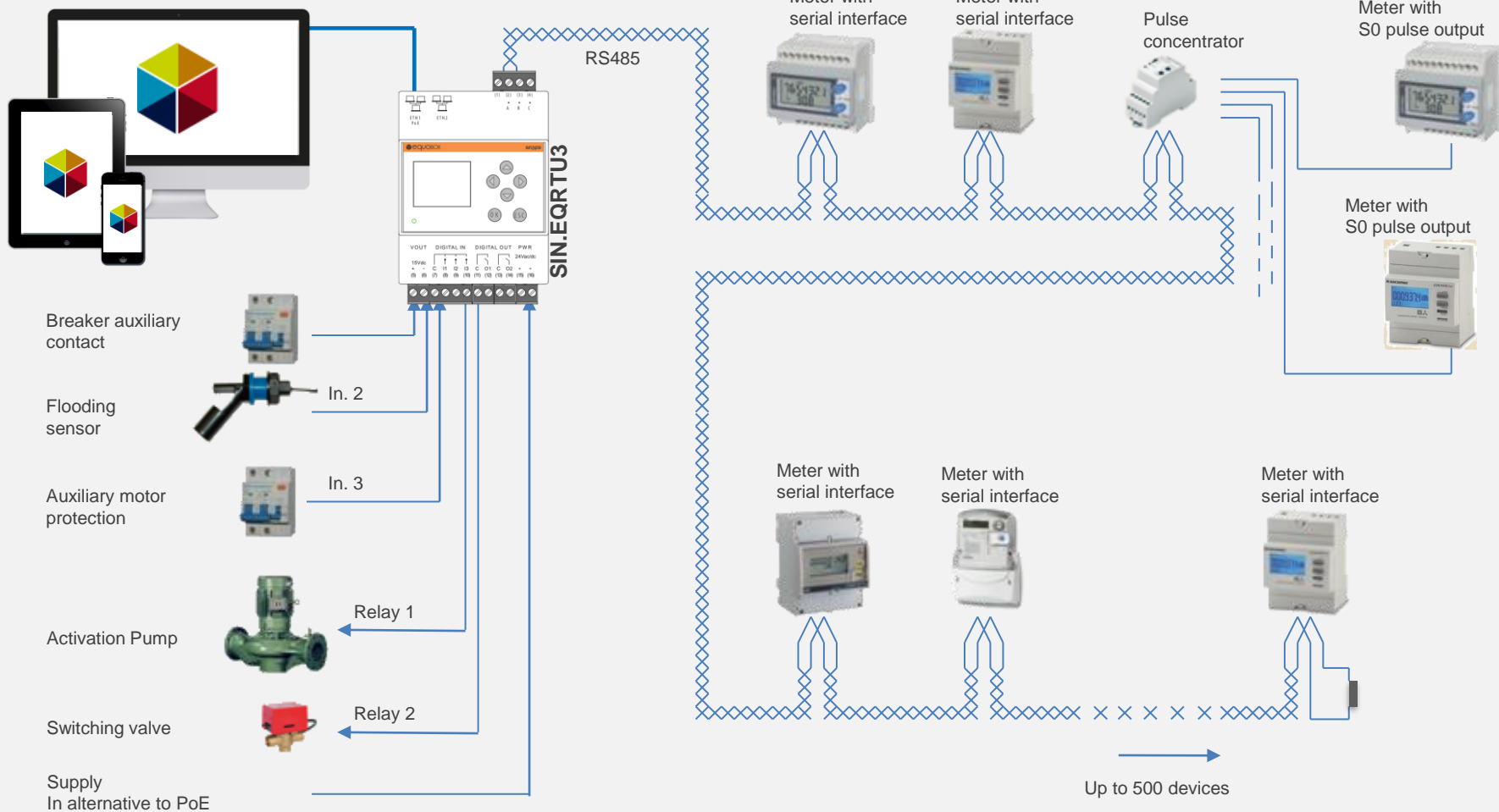
GENERAL FEATURES

- ⌚ Modbus meters/controllers interrogation and data consultation through WEB interface variables
- ⌚ Compatible with most popular energy meters and autonomy to implement modbus meters mapping
- ⌚ Supports up to 500 variables
- ⌚ Local memory up to 2 years
- ⌚ Backlit graphic display
- ⌚ 3 digital inputs and 2 relay outputs
- ⌚ 24Vdc/ac Power supply or Power Over Ethernet
- ⌚ Possibility to download the report of the acquired data in csv and xls format
- ⌚ E-mail notification of alarms generated by the digital inputs, by meters states and thresholds excess
- ⌚ Ability to command the relay outputs on-board (or external I/O) via web interface based on programmable logics or in case of alarm
- ⌚ Remotly via LAN, ADSL or UMTS / GPRS router



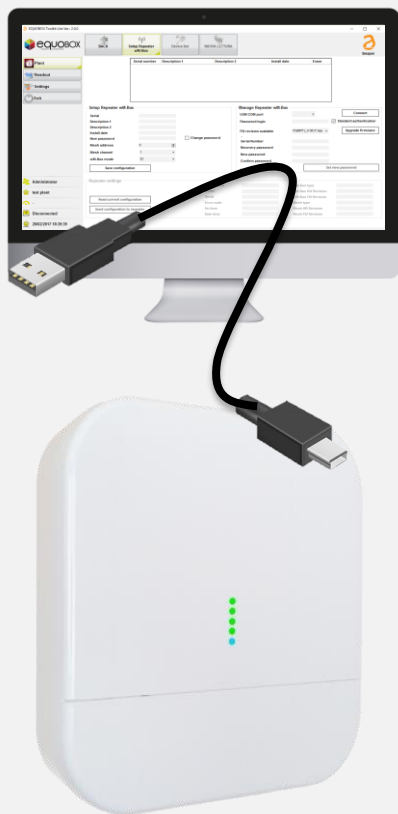
RS485 RTU

EXAMPLE SCHEMA



SINAPSITECH® SMART REPEATER

GENERAL FEATURES



- Configurable with EQUOBOX TOOLKIT LITE software
- S / T / C mode support
- Powered via mini-USB
- Fixed power supply via 220V AC network which guarantees:
 - large coverage area
 - decreasing the network update time (in the order of the minutes) with corresponding decrease in commissioning times
 - cancel performance decreasing performance depending on battery charge status and thus performance constancy over time
 - reset maintenance activities

SMART GATEWAY W.M-BUS 868MHZ

GENERAL FEATURES



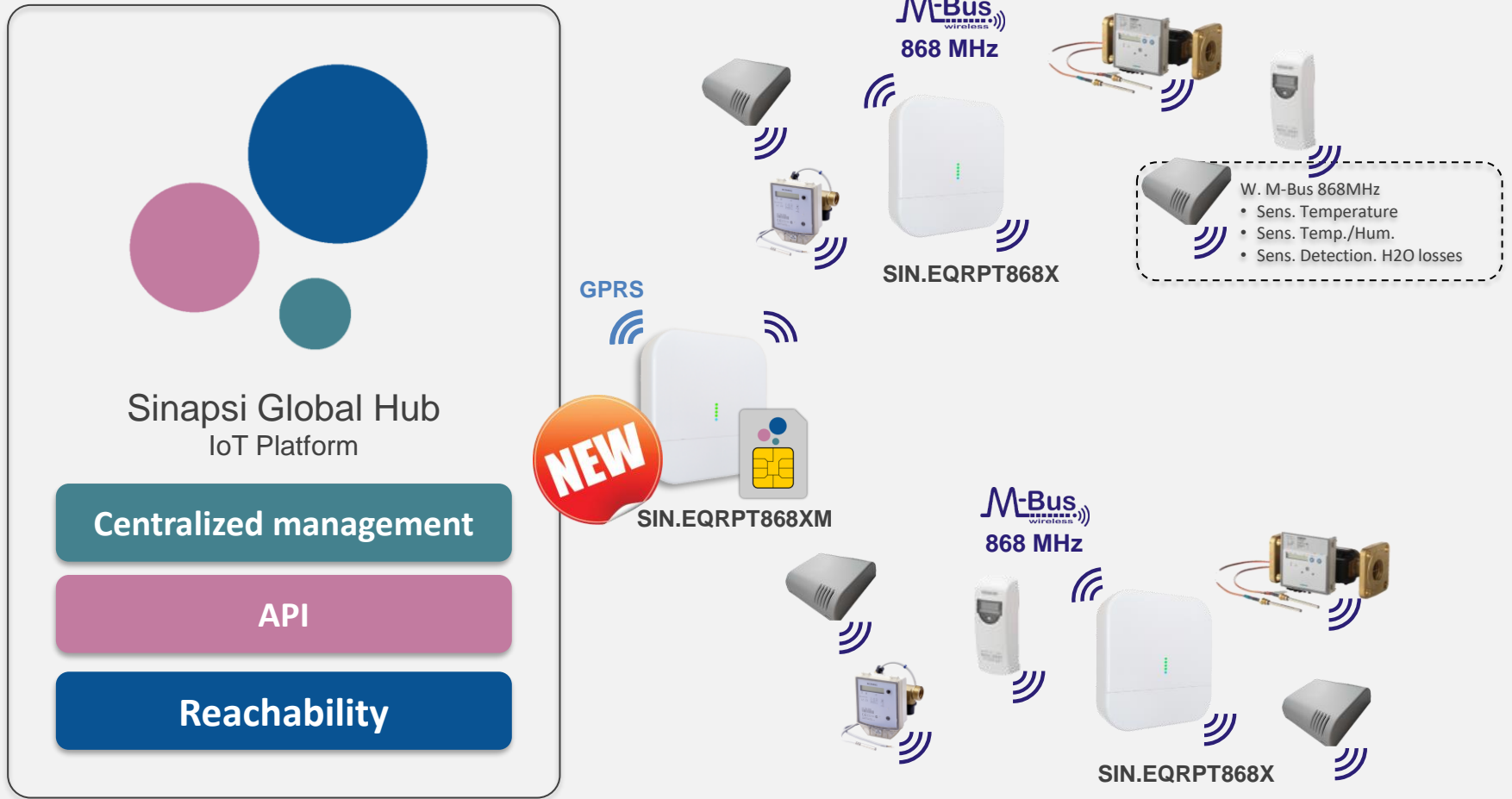
Sinapsi Global Hub
IoT Platform



- RF solution for small systems: up to 200 devices
- W.M-Bus Gateway with integrated GPRS modem
- Integrated SIM
- Remote management via Sinapsi Global Hub IoT Platform
- Local management via EQUOBOX TOOLKIT LITE software and LEDs
- Support S / T / C mode
- Possibility to extend the coverage range via SIN.EQRPT868X
- Fixed power supply via 220V AC network which guarantees:
 - no limitation of the device's life time
 - large coverage area
 - cancellation effect decrease performance depending on the state of charge of the battery and therefore constant performance over time
 - reset of maintenance activities

SMART GATEWAY W.M-BUS 868MHZ

EXAMPLE SCHEMA



M-BUS / WIRELESS SINAPSITECH® RTU EVO

GENERAL FEATURES

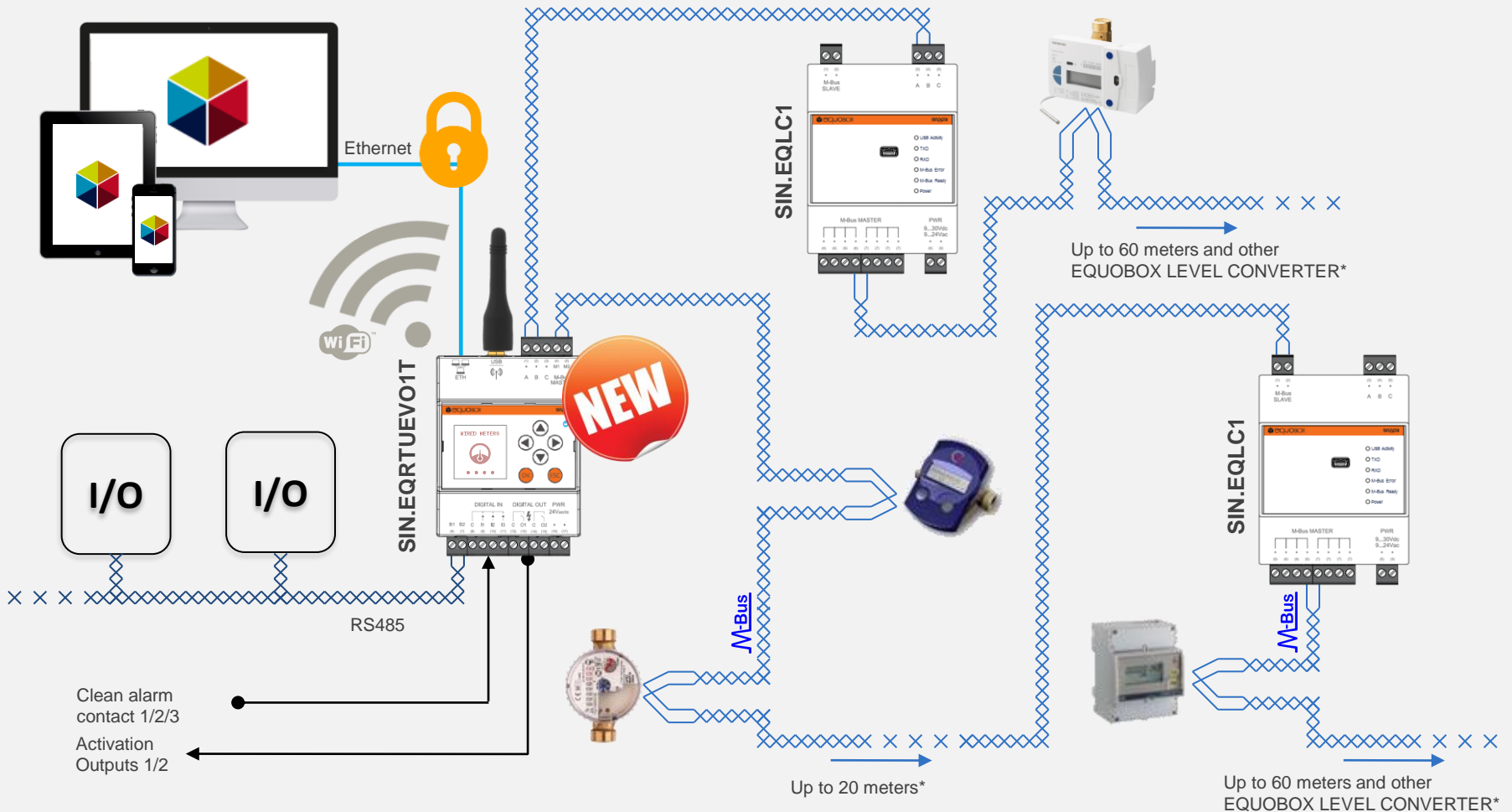
- ⌘ Wired M-Bus support on two separate lines of communication
- ⌘ Support 868 MHz M-Bus wireless multi-hop functionality via smart repeater sinapsitech®
- ⌘ Up to 2500 wireless devices and 500 cable devices
- ⌘ Reachability of the "0-configuration" web interface via Sinapsi Global Hub
- ⌘ integrated wi-fi (access point / client) & mobile-compatible web application, for commissioning in the field via tablet / smartphone
- ⌘ Graphic color display
- ⌘ Compatibility with the highest standards of IT security through encrypted protocols (https, SSL use for transfer and data transmission)
- ⌘ Remote I / O support on a dedicated bus for energy efficiency implementations
- ⌘ Sinapsi Global Hub IoT Platform Compliant



*in relation to the chosen version

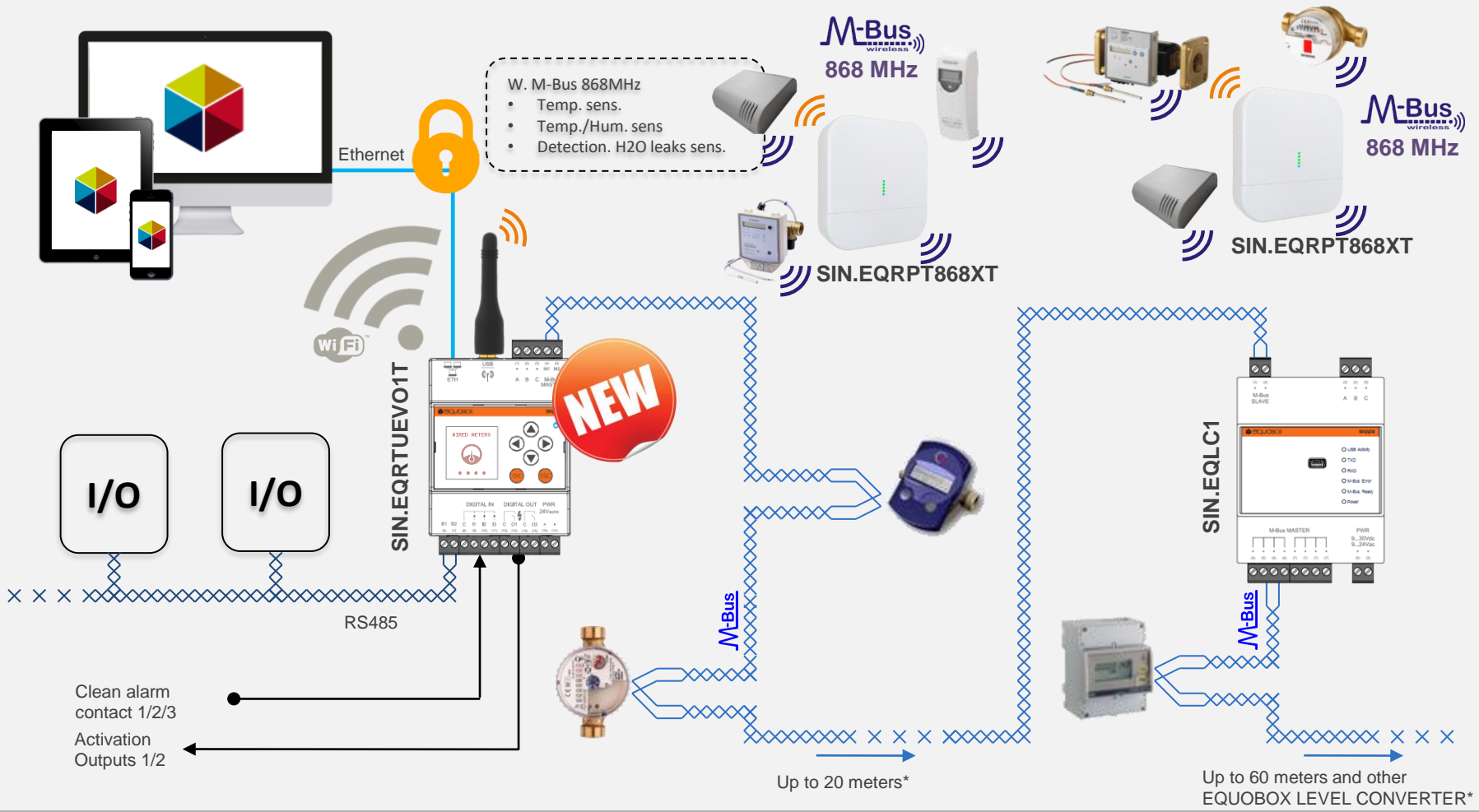
M-BUS / WIRELESS SINAPSITECH® RTU EVO

WIRED M-BUS SUPPORT ON TWO DETAILED COMMUNICATION LINES



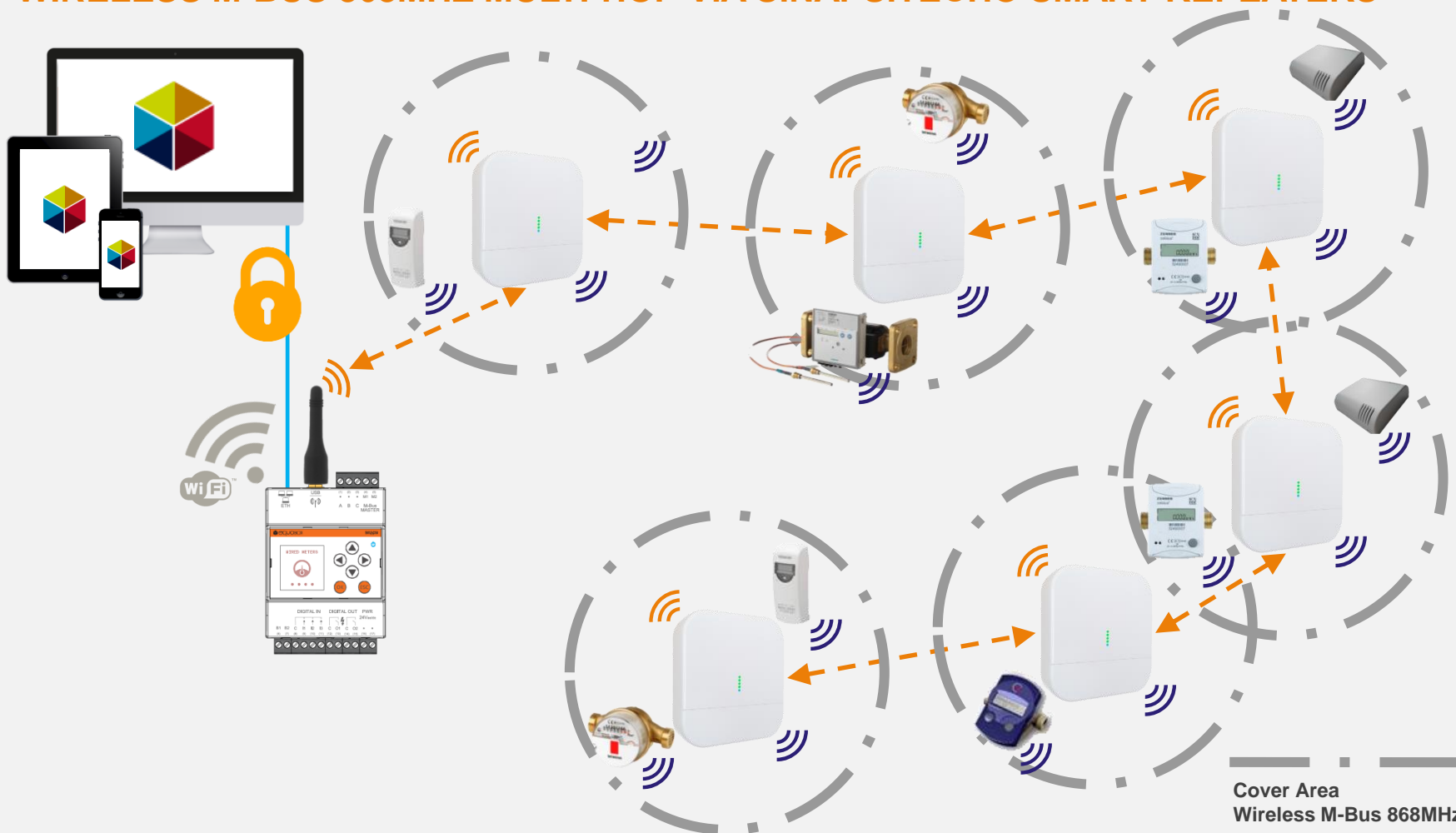
SINAPSITECH® M-BUS / WIRELESS RTU EVO

M-BUS CAVO E WIRELESS M-BUS SINAPSITECH



SINAPSITECH® M-BUS / WIRELESS RTU EVO

WIRELESS M-BUS 868MHZ MULTI-HOP VIA SINAPSITECH® SMART REPEATERS



Cover Area
Wireless M-Bus 868MHz

SINAPSITECH® M-BUS / WIRELESS RTU EVO

INTEGRATED WI-FI & WEB APPLICATION MOBILE-COMPATIBLE

ACCESS
POINT
MODE

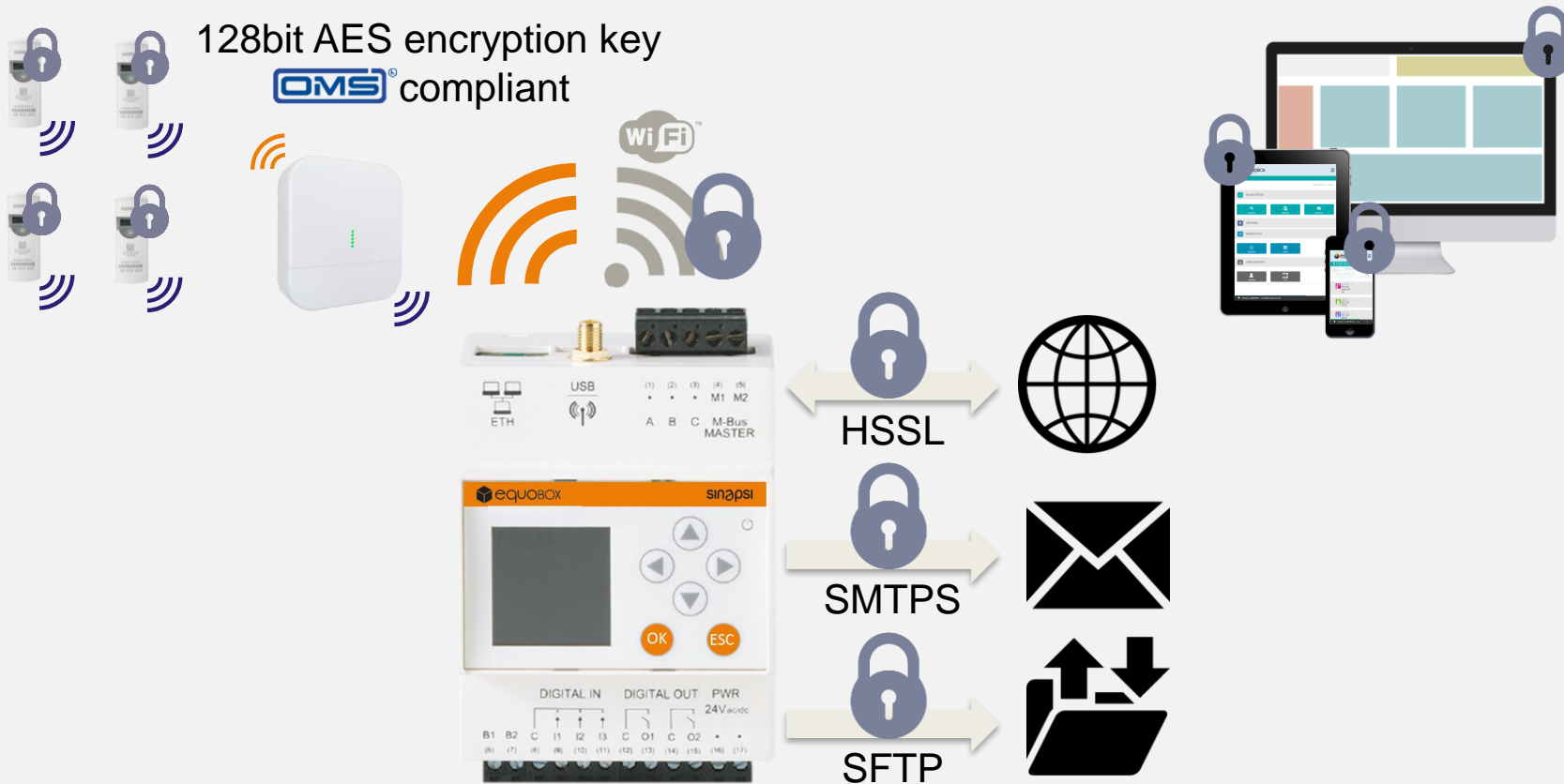


CLIENT
MODE



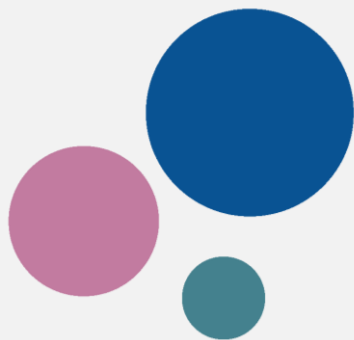
SINAPSITECH® M-BUS / WIRELESS RTU EVO

SSL FOR TRANSFER AND SEND DATA



SINAPSITECH® M-BUS / WIRELESS RTU EVO

CENTRALIZED MANAGEMENT VIA SINAPSI GLOBAL HUB



Sinapsi Global Hub
IoT Platform

Centralized Management

API

Reachability

☰
Sinapsi Global Hub Console
NEW

Plant name	Serial	Model number	SGH firmware	Status	Date / time	
--	ev17314023	--	--	ONLINE	--	♥ 🔗
--	ev17314024	--	--	ONLINE	--	♥ 🔗
--	ev17314025	--	--	ONLINE	--	♥ 🔗
--	ev17314026	--	--	ONLINE	--	♥ 🔗
--	ev17314027	--	--	ONLINE	--	🔔 ♥ 🔗

Nome impianto: Villa Fiorita Modello: SIN.EQRTUEVO1T Serial Number: EV2345678 Ultima Connessione: 17.02.2018 @16:32:00

Stato M-Bus: Scan Stato Wireless M-Bus: Scan Utenti Connessi: 2

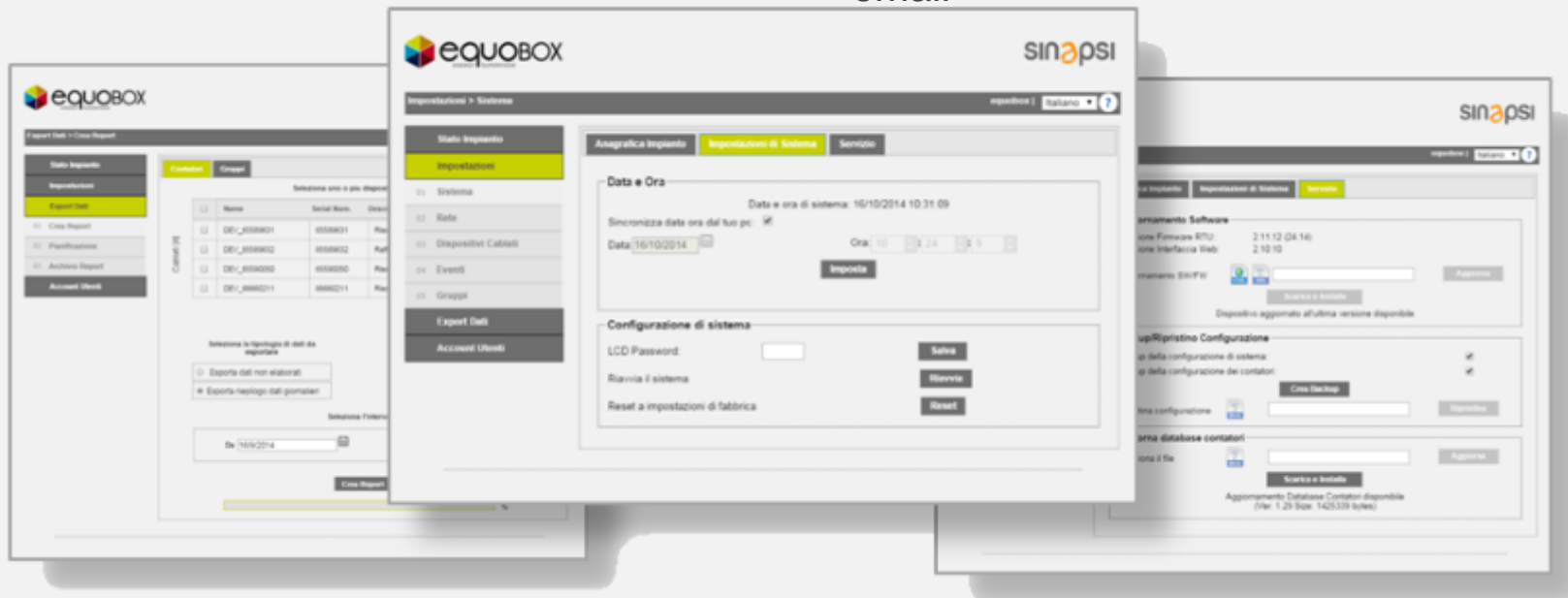
Versione Firmware: 2.15 Versione Web Interface: 1.02 Numero SIN.EQRPT868XT: 5 Dispositivi Cavo: 12 Dispositivi Radio: 894

🔍 45 📶 34 📡 67 📱 894 🔔 8 →

EQUOBOX RTUs

WEBSERVER INTERFACE

- ⌚ Easy and immediate consumption
- ⌚ data reading
- ⌚ Automatic generation and report sending
- ⌚ Useful and smart functions, as management of relay outputs in case of logic, thresholds or remote commands with notification via email



Thank you for your attention



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