MyMB interface/actuator for ModBus systems
User manual and data sheet

Thank you for choosing the MyMB interface/actuator for ModBus systems, the latest generation device that allows you to monitor the performance of systems such as heat pumps or hybrid inverters that communicate via ModBus protocol, Z-Wave certified, it is compatible with any HUB that communicates through this protocol as MyVirtuoso Home.

www.myvirtuosohome.com/en/
www.smartdhome.com/en/

General Safety Rules

Before using this device, certain precautions should be taken to reduce the risk of fire and/or personal injury:

1. Read all instructions carefully and follow all precautions in this manual. All direct connections to the mains conductors must be carried out by trained and authorized technical personnel.

2. Pay attention to any danger indications shown on the device and/or contained in this manual, highlighted with the symbol ⚠ .

3. Disconnect the device from the power supply or battery charger before cleaning it. For cleaning, do not use detergents but only a damp cloth.

4. Do not use the device in gas saturated environments.

5. Do not place the device near heat sources.

6. Only use the original EcoDHOME accessories supplied by SmartDHOME.

7. Do not place the connection and/or power cables under heavy objects, avoid paths near sharp or abrasive objects, prevent them from being walked on.

8. Keep out of reach of children.

9. Do not carry out any maintenance work on the device but always contact the assistance network.

10. Contact the assistance network if one or more of the following conditions occurs on the product and/or an accessory (supplied or optional):

    a. If the product has come into contact with water or liquids.
    b. If the product has suffered obvious damage to the container.
    c. If the product does not perform in accordance with its characteristics.
    d. If the product has suffered an obvious degradation in performance.
    e. If the power cord is damaged.

Note: In one or more of these conditions, do not attempt to carry out repairs or adjustments not described in this manual. Improper interventions could damage the product, force additional work to regain the desired functioning and exclude the product from the warranty.

ATTENTION! Any type of intervention by our technicians, which will be caused by an incorrectly performed installation or by a failure caused by improper use, will be charged to the customer.

Disposal for Waste Electrical and Electronic Equipment. (Applicable in the European Union and in other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product must not be treated as ordinary household waste. All products marked with this symbol must be disposed of via appropriate collection centres. Improper disposal could have negative consequences for the environment and

human health safety. Recycling materials helps conserve natural resources. For further information, contact the municipal office in your area, the waste collection service or the center where you purchased the product.

Disclaimer

SmartDHOME Srl cannot guarantee that the information regarding the technical characteristics of the devices contained in this document are correct. The product and its accessories are subject to constant checks aimed at improving them through careful analyzes and research and development activities. We reserve the right to modify the components, accessories, data sheets and related product documentation at any time, without notice.

Sul sito www.myvirtuosohome.com/en/ le documentazioni saranno sempre aggiornate.

Intended use

This device has been designed for monitoring the performance of systems such as heat pumps or hybrid inverters that communicate via the ModBus protocol. In the event of improper use and/or modifications not authorized by our technical department, the company reserves the right to cancel the two-year guarantee and to provide assistance upon payment of the service.

Description

The MyMB interface/actuator for ModBus systems is a fundamental tool for achieving predictive maintenance, adaptive energy management, qualitative data analysis and remote parameter programming objectives for correct system operation. It has communication capabilities both through a gateway equipped with a transceiver with Z-Wave protocol and through Wi-Fi.

Through these protocols it will be possible to send the information received to a big data management cloud system to evaluate, through a predictive maintenance process, the implementation of automatic customer support processes.

Data Sheet

Power supply	12 Vdc
Z-Wave protocol	500 series
Protocol supported	ModBus
Radio signal strength	1 mW
Operating temperature	0°C ~ 40°C
Radio frequency	868.4 MHz EU, 908.4 MHz US, 921.4 MHz ANZ, 869.2 MHz RU.
Range	Up to 30 m in open field
Heat pump compatibility	**NOTE!** Every week we integrate new brands, to stay up to date visit the product page on the site: https://www.smartdhome.com/en/projects/iot-devices/iot-connected-boilers.html
Hybrid inverter compatibility	**NOTE!** Every week we integrate new brands, to stay up to date visit the product page on the site: https://www.smartdhome.com/en/projects/iot-devices/iot-connected-boilers.html
Dimensions	105 mm x 70 mm x 40 mm

Package contents

- MyMB interface/actuator for ModBus systems.
- 12 Vdc power supply.
- Z-Wave antenna.
- User Manual.

The parts of the MyMB interface/actuator for ModBus systems

FUNZIONI   RESET   LED VERDE   LED ROSSO

FIGURE 1: Buttons and LEDs

Functions button: see Wi-Fi configuration and Z-Wave configuration.

Reset button: restart the device.

Connections

To make the connections and operate the device, it is necessary to understand the usefulness of the green connector on the device (see Tab. 1).
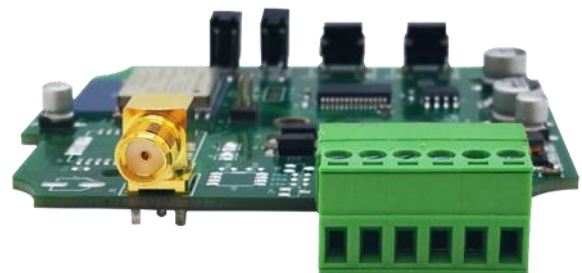

ANTENNA SIGFOX/ZWAVE

FIGURE 2: Antenna and green connector

Tab. 1: green connector

	RS-485 ModBus interface		Output for powering the ModBus device		MyMB power supply	
ANTENNA Z-WAVE	**1**	**2**	**3**	**4**	**5**	**6**
	ModBus B-	ModBus A+	24 Vdc (Output) (+)	GND (-)	GND (-)	12 Vdc (Input) (+)

Referring to this table, you can connect the device to the system in your home. Below are some useful tips for pre-installing the device.

1. Pay close attention to the polarity of the ModBus connection.
2. Pay close attention to the power connection, respecting the + and – as in Tab. 1.

   NOTE! For connection to the mains it is recommended to refer to the wiring diagram below.
3. Pay close attention to the Z-Wave antenna. It must be screwed in tightly otherwise the data to the portal could fail and the radio module could be seriously damaged.
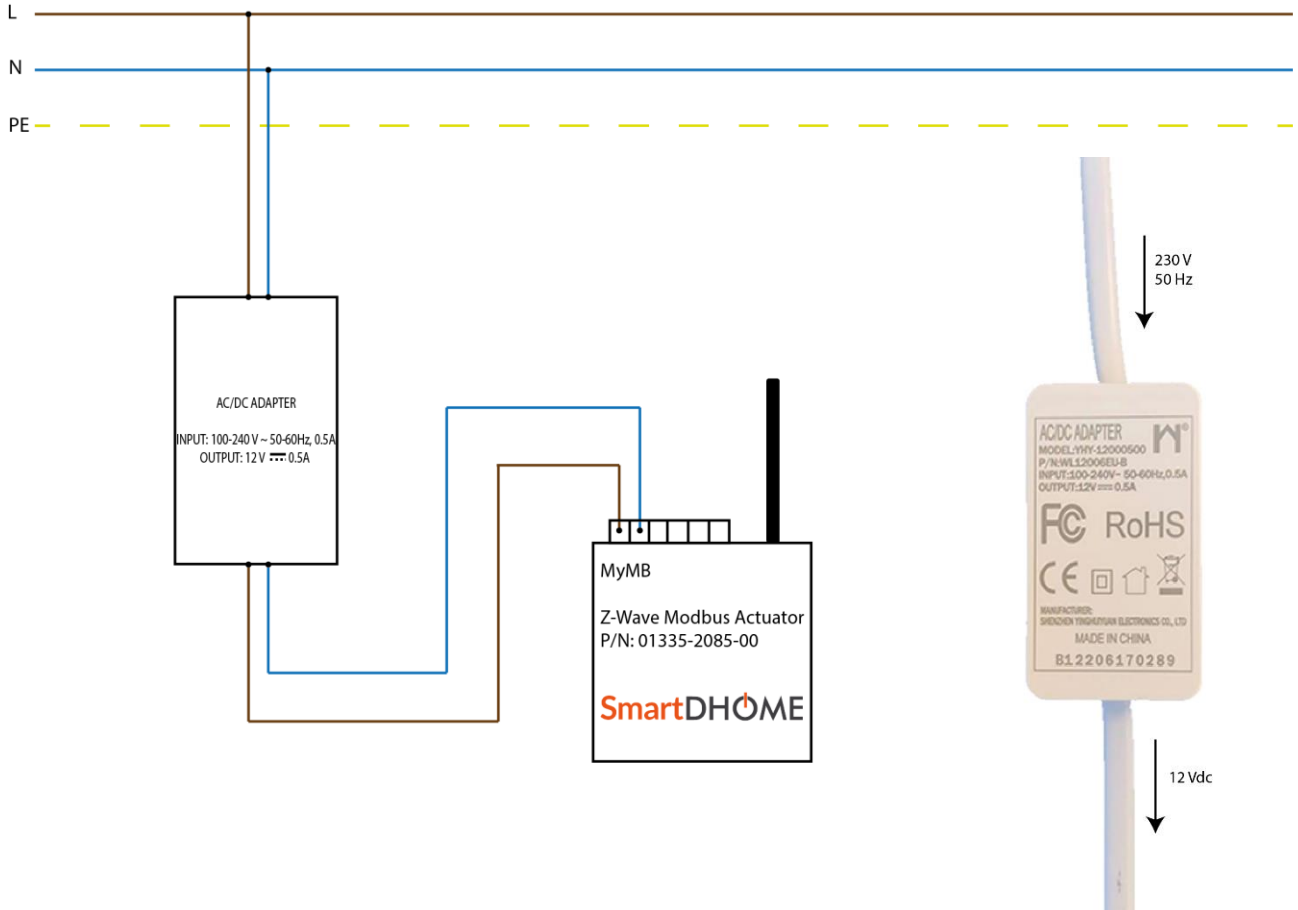
Circuit

Luminous signals

The IoB device has two signal LEDs, one green and one red.

The **green LED** signals the status of the ModBus connection to the thermostat:

1 flash every 3 seconds	MyMB successfully connected to the system.
2 flash every 3 seconds	MyMB is working as if it were connected to a thermostat with ON/OFF contact.
On and with two offs every 3 seconds	MyMB in thermostat ON/OFF mode with heating request in progress.

The **red LED**, if flashing, signals the following anomalies:

2 flashes + pause	ModBus communication is missing.
3 flashes + pause	The device works properly.
5 flashes + pause	Lack of Wi-Fi connection and/or internet communication.

The error signal on the Wi-Fi network can concern both a failed connection to the local network and a failed connection to the SmartDHOME server (internet failure, server temporarily unreachable, etc.).

Compatible devices (SmartDHOME)

The MyMB can be connected to multiple devices in our catalog; so that the latter can interface with the MyVirtuoso Home building automation system. All the devices compatible and manageable with this actuator are listed below.

NOTA! For more information on this, please consult the relative manuals and technical data sheets available on the site https://www.ecodhome.com/en/.

PRODUCT LINE HEAT/COOL METER

Code	Article
01336-5180-00	Ultrasonic Heat/Cool meter DN15 average flow rate 1.5 m3/h with ModBus interface.
01336-5185-00	Ultrasonic Heat/Cool meter DN20 average flow rate 2.5 m3/h with ModBus interface.
01336-5190-00	Ultrasonic Heat/Cool meter DN25 average flow rate 3.5 m3/h with ModBus interface.
01336-5195-00	Ultrasonic Heat/Cool meter DN32 average flow rate 6.0 m3/h with ModBus interface.
01336-5205-00	Ultrasonic Heat/Cool meter DN40 average flow rate 10.0 m3/h with ModBus interface.
01336-5210-00	Ultrasonic Heat/Cool meter DN50 average flow rate 15.0 m3/h with ModBus interface.
01336-5215-00	Ultrasonic Heat/Cool meter DN65 average flow rate 30.0 m3/h with ModBus interface.

PRODUCT LINE WATER METER

Code	Article
01336-6200-00	Ultrasonic water meter (hot and cold) DN15 average flow rate 1.5 m3/h with ModBus interface.
01336-6215-00	Ultrasonic water meter (hot and cold) DN20 average flow rate 2.5 m3/h with ModBus interface.
01335-6220-00	Ultrasonic water meter (hot and cold) DN25 average flow rate 3.5 m3/h with ModBus interface.
01336-6225-00	Ultrasonic water meter (hot and cold) DN32 average flow rate 6.0 m3/h with ModBus interface.
01336-6230-00	Ultrasonic water meter (hot and cold) DN40 average flow rate 10.0 m3/h with ModBus interface.

PRODUCT LINE GAS METER

Code	Article
01340-0010-00	MyGMS-G1.6 ultrasonic gas meter with slam-shut valve and ModBus interface.
01340-0015-00	MyGMS-G2.5 ultrasonic gas meter with slam-shut valve and ModBus interface.
01340-0020-00	MyGMS-G4.0 ultrasonic gas meter with slam-shut valve and ModBus interface.
01340-1010-00	MyGMSI-G6.0 membrane gas meter with slam-shut valve and ModBus interface.
01340-1015-00	MyGMSI-G10.0 membrane gas meter with slam-shut valve and ModBus interface.
01340-1020-00	MyGMSI-G16.0 membrane gas meter with slam-shut valve and ModBus interface.
01340-1025-00	MyGMSI-G25.0 membrane gas meter with slam-shut valve and ModBus interface.
01340-1030-00	MyGMSI-G40.0 membrane gas meter with slam-shut valve and ModBus interface.
01340-1035-00	MyGMSI-G65.0 membrane gas meter with slam-shut valve and ModBus interface.

Z-Wave configuration

ATTENTION! Although the device has multiple communication modes, they cannot be configured at the same time. Before configuring the device, carefully choose the desired type of communication.

Inclusion in a Z-Wave network
If you have the Z-Wave version, you can include the MyMB device in a Z-Wave network. To do this, first consult the manual for your HUB to learn how to include the devices.

Before starting the procedure for including the device in a Z-Wave network, check that it is turned on, then make sure that the HUB is in inclusion mode (if you have the MyVirtuoso Home system, refer to the relative manual available on the website https://www.myvirtuosohome.com/en/downloads).

1) Press and hold the *function* button for 8 seconds.

If the procedure was successful, the device will be displayed in the HUB App (MyVirtuoso Home).

Exclusion from a Z-Wave network

If you have the Z-Wave version, you can exclude the MyMB device in a Z-Wave network. To do this, first consult the manual of your HUB to learn how to exclude devices.

Before starting the procedure for excluding the device from a Z-Wave network, check that it is turned on, then make sure that the HUB is in exclusion mode (if you have the MyVirtuoso Home HUB, refer to the relative manual available on the website https://www.myvirtuosohome.com/en/downloads).

1) Press and hold the *function* button for 8 seconds.

If the procedure was successful, the device will no longer be displayed in the HUB App (MyVirtuoso Home).

Wi-Fi setup

ATTENTION! Although the device has multiple communication modes, they cannot be configured at the same time. Before configuring the device, carefully choose the desired type of communication.

ATTENTION!!! If you have an active license to use the Contact Pro IoT platform, you can carry out the following procedure (choice 1). If you do not have an active license and need to use the IoB app, you must contact your sales representative in order to proceed with the purchase of a new license. Otherwise you can proceed with the configuration by following the procedure below (choice 2).

### Wi-Fi configuration with App (choice 1)
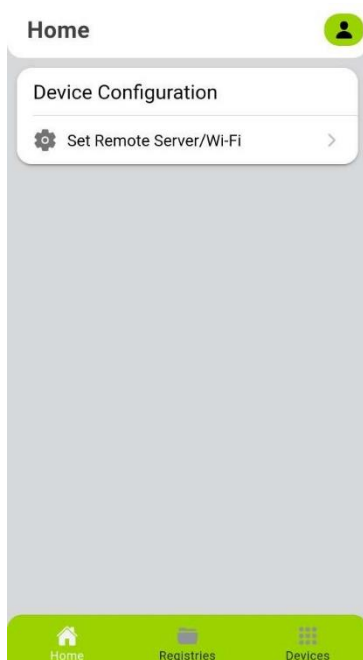
For a correct configuration of the device, it is necessary to download and install the IoB application on your smartphone. Then set the MyMB in programming mode, turning on the device and pressing the *function* key for about 3 seconds. When the button is released, the device will enter configuration signaling the status with an alternate flashing of the LEDs (red and green). This will create the "IoB" Wi-Fi to which you will need to connect to proceed with the configuration.

At this point it is necessary to open the application installed at the beginning. Once inside, press *Set up Remote Server/Wi-Fi* on the Home screen (see image on the left) and click on continue in the pop-up that will appear.

Device Configuration

| Remote Server | Wi-Fi |

Select a Wi-Fi from the list and enter the password:
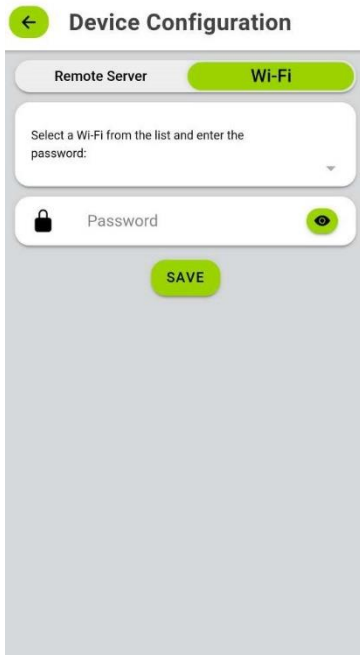
🔒 Password 👁

SAVE

On the page that will open, move to the Wi-Fi section (see image). Then press the key ▽ to view the list of Wi-Fi detected by the device. Select the correct one, enter the password and press *SAVE*. If the Wi-Fis are not present or visible, press the reload button on the list.

The operation was successful, a message of successful configuration will be visible at the bottom of the screen.

To end the process, press the Close button at the top right. The LEDs on the MyMB device will stop flashing alternately.

At the end of the programming procedure, the device will be operational again with the new configuration. In case of unsuccessful programming, or to cancel it, press the *RESET* key and the device will restart.

Wi-Fi setup without application (choice 2)

ATTENTION! Any type of intervention by our technicians, which will be caused by an incorrectly performed installation or by a fault caused by the customer, will be quoted and will be charged to whoever purchased the system.

If you have good experience with this type of device, you can configure the MyMB without using the application:

1. Turn on the device.
2. Press and hold the *function* key for 3 seconds.
3. Release the button and check that the device is in programming mode (alternating red and green flashing).
4. Connect your smartphone to the Wi-Fi network with SSID IOB (no passkey required).
5. Once the connection is established, open the navigation application and enter the following link and press enter:

   http://192.168.4.1/sethost?host=iobgw.contactproready.it&port=9577

   A white screen with the word OK will appear.

6. Continue entering the link:

   http://192.168.4.1/setwifi?ssid=nomerete&pwd=passwordwifi

   Instead of network name, enter the SSID of the network you want to connect to and instead of *wifi password*, enter the key of the chosen Wi-Fi network. A blank page with the wording OK will appear.

7. Insert the third and last link:

   http://192.168.4.1/exit

   A blank page will appear with the wording EXIT.

Electrical circuits

The MyMB actuator is compatible with all the devices listed in the previous section in order to make them interface with the MyVirtuoso Home building automation system.

The wiring diagram for each configuration is shown below.
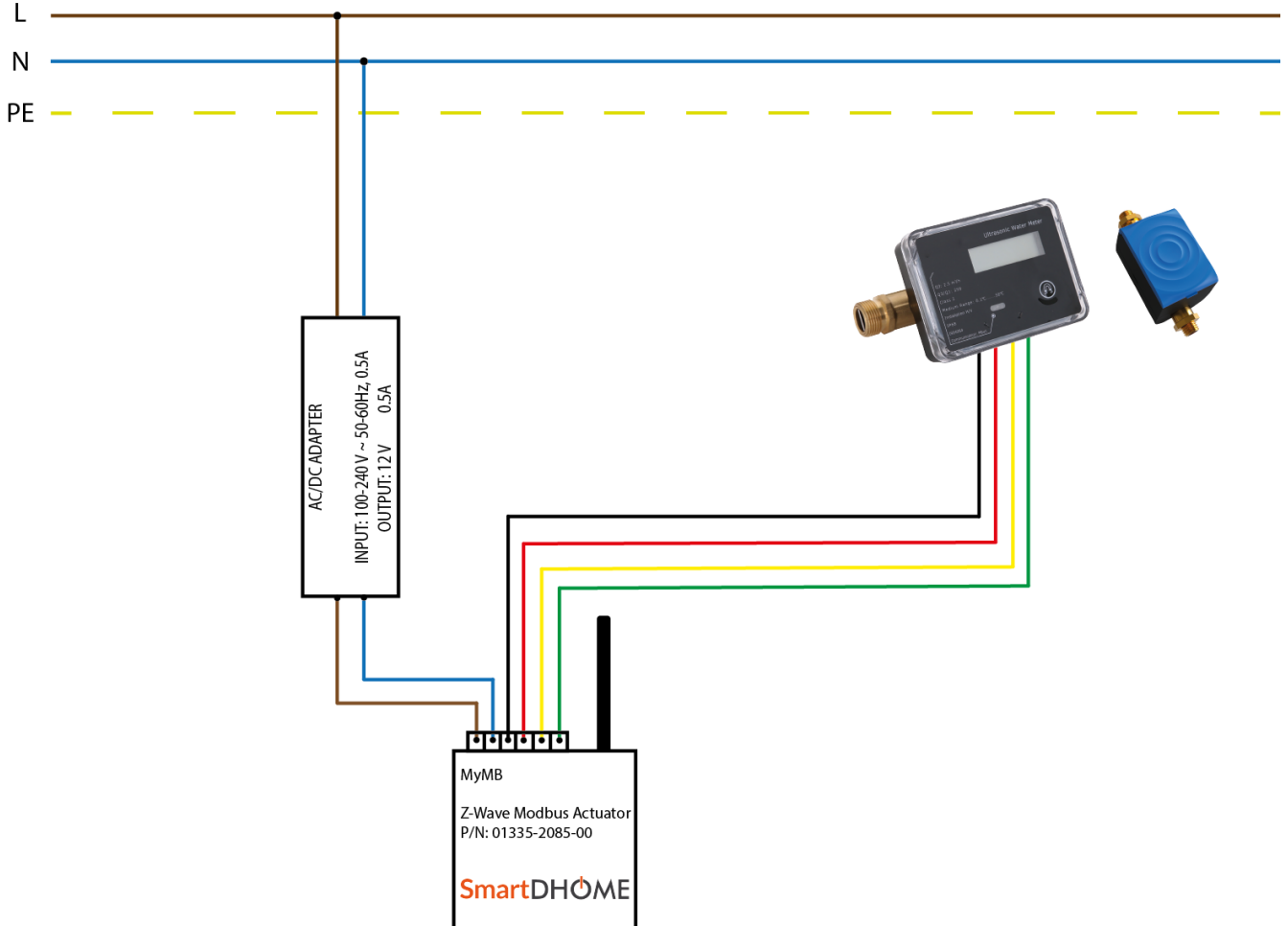
MyMB – HEAT/COOL METER
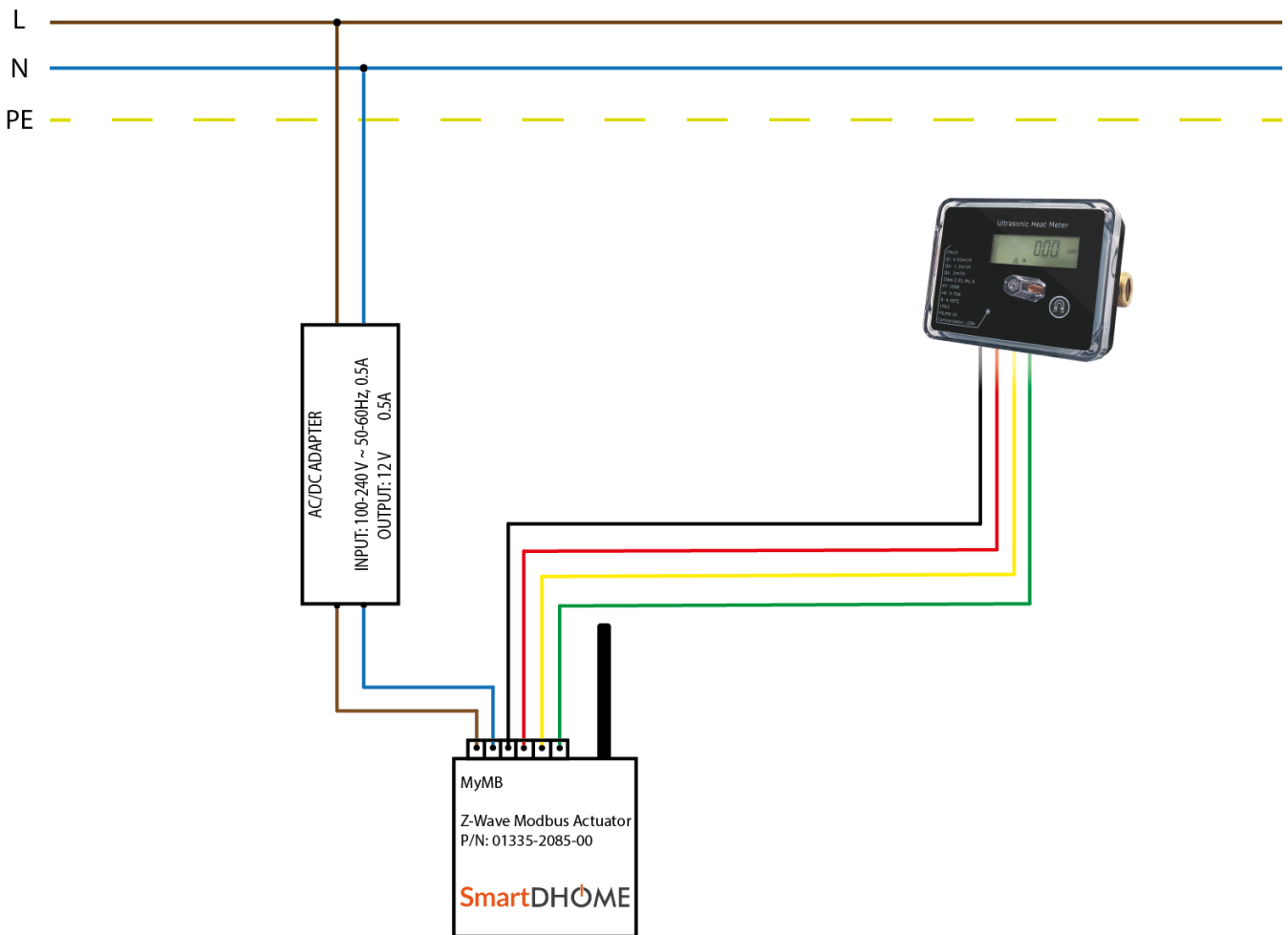
MyMB power supply		Output for powering the ModBus device		RS-485 interface ModBus		
Brown	**Blue**	**Black**	**Red**	**Yellow**	**Green**	ANTENNA
12 Vdc (Input) (+)	GND (-)	GND (-)	24 Vdc (Output) (+)	ModBus A+	ModBus B-	Z-WAVE

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NOTE: For further explanations regarding the connection of the cables to the green connector of the MyMB, follow the table shown in the previous paragraph (green connector).
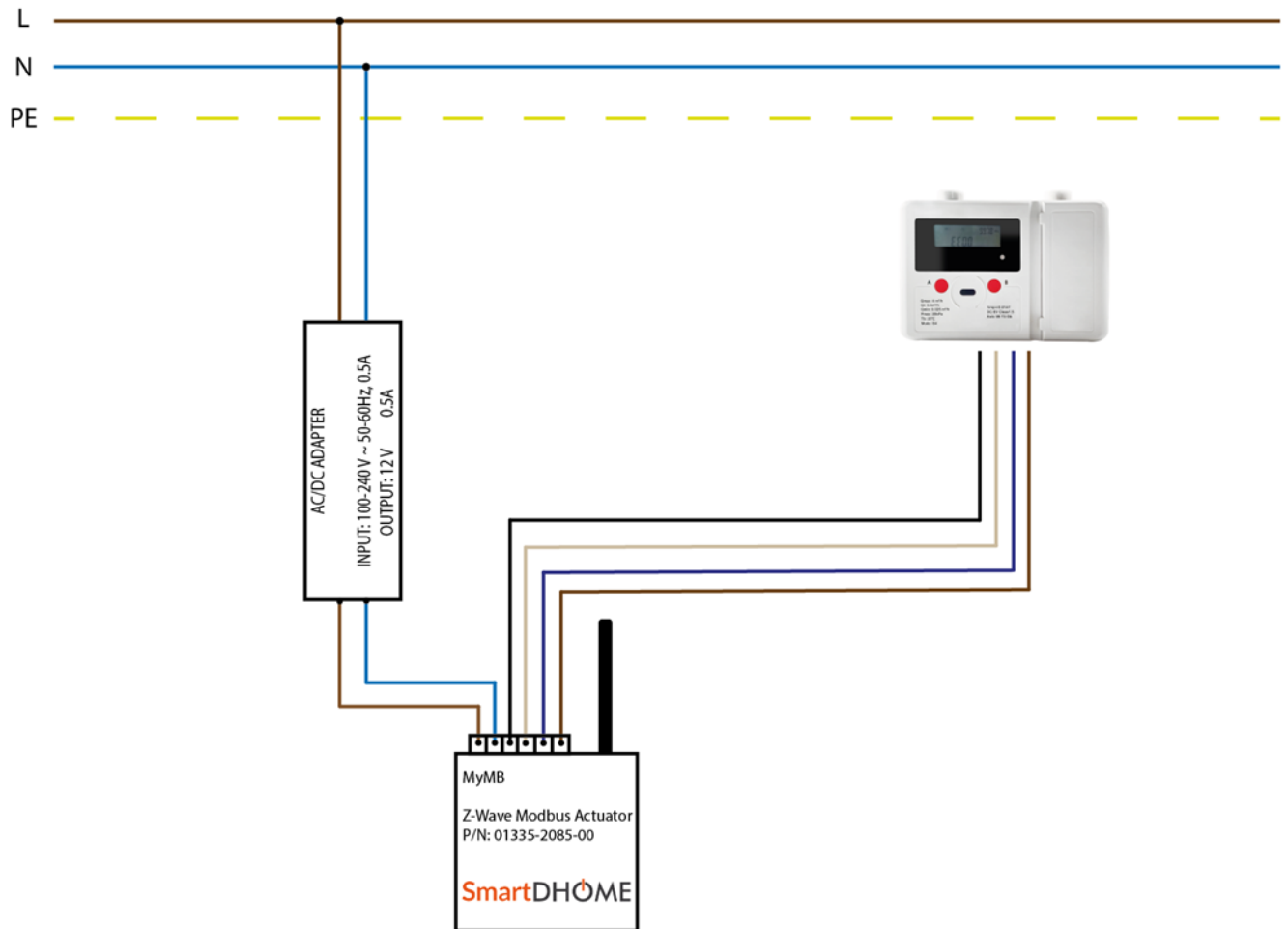
MyMB – WATER METER

MyMB power supply		Output for powering the ModBus device		RS-485 interface ModBus		
Brown	**Blue**	**Black**	**Red**	**Yellow**	**Green**	ANTENNA
12 Vdc (Input) (+)	GND (-)	GND (-)	24 Vdc (Input) (+)	ModBus A+	ModBus B-	Z-WAVE

NOTE: For further explanations regarding the connection of the cables to the green connector of the MyMB, follow the table shown in the previous paragraph (green connector).

MyMB − GAS METER

MyMB power supply		Output for powering the ModBus device		RS-485 interface ModBus		
Brown	**Blue**	**Black**	**White**	**Blue**	**Brown**	ANTENNA
12 Vdc (Input) (+)	GND (-)	GND (-)	24 Vdc (Input) (+)	ModBus A+	ModBus B-	Z-WAVE

NOTE: For further explanations regarding the connection of the cables to the green connector of the MyMB, follow the table shown in the previous paragraph (green connector).

My Virtuoso Home APP

ATTENTION! Before installing the MyMB actuator for ModBus systems, it must be included in the MyVirtuoso Home network.
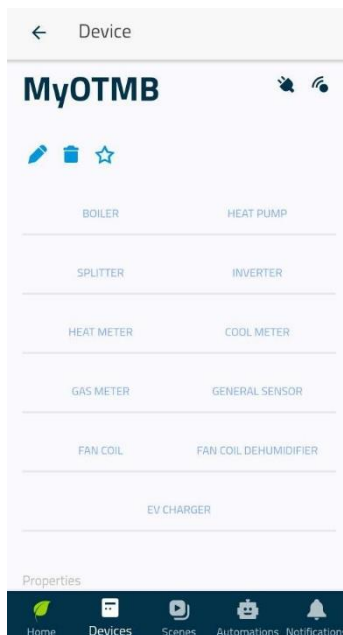
NOTE: For the **inclusion and exclusion** procedure, see the "**Z-Wave configuration**" paragraph above.

After completing the device inclusion procedure, follow the steps below to complete the configuration.

1. Access the device list in the MyVirtuoso Home app and select the "MyOTMB" device.
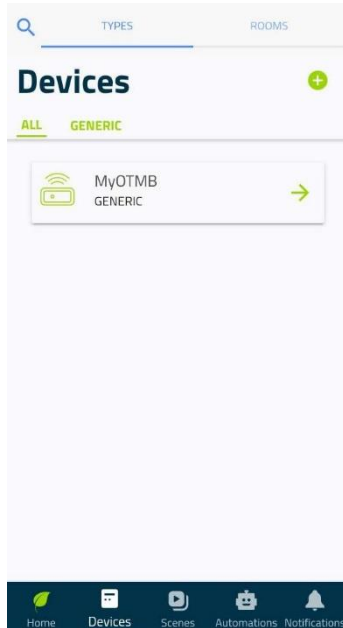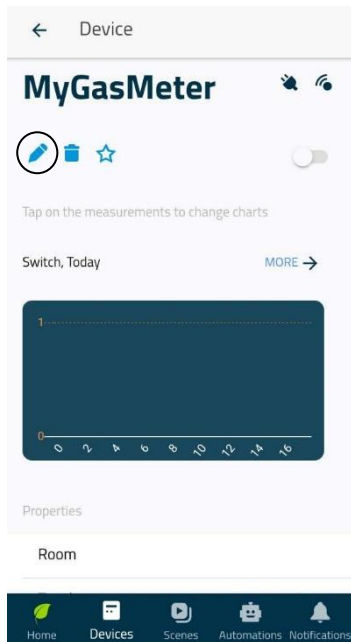

2. Select the device to which the MyMB was connected.

3. From the device list, select the configured device (see point 2) and then click on the icon ✏️ to be able to modify the library and, if present, also the ModBus address.

4. Select the desired ModBus library and, if present, also the ModBus address.
    NOTE: To retrieve the ModBus address, refer to the manual of the device that has been connected to the MyMB actuator.

5. Finally, press the "SAVE" button at the top right.

Data mapping

The MyMB device supports the following command classes:

1. COMMAND_CLASS_ASSOCIATION
2. COMMAND_CLASS_ASSOCIATION_GRP_INTO
3. COMMAND_CLASS_BASIC
4. COMMAND_CLASS_SWITCH_BINARY
5. COMMAND_CLASS_THERMOSTAT_SETPOINT
6. COMMAND_CLASS_SENSOR_MULTILEVEL
7. COMMAND_CLASS_METER
8. COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2
9. COMMAND_CLASS_SECURITY

The most important are described below.

COMMAND_CLASS_BASIC

This class can be used to turn on/off the boiler (or to know its Current status). However, it must be specified that the auto-report of this CC has not been implemented. It is therefore recommended to use the CC COMMAND_CLASS_SWITCH_BINARY.

COMMAND_CLASS_SWITCH_BINARY

This CC can be used to turn the boiler on/off (or to know its current status). It also periodically generates self-reports of the current status to node 1 of the network.

COMMAND_CLASS_THERMOSTAT_SETPOINT

This CC can be used to manage the boiler setpoints.

N.B. The maximum value and minimum value of the setpoints are displayed with the CONFIGURATION command class. This is to support a system hot swap without lock/unlock. It is also important to know that setting the setpoint value to 0 is equivalent to setting it to 40°C.

Below is the map between "mode" and the setpoint, while the unit of each measurement is communicated as per specifications in the CC report message.

Mode (dec)	Measure
1	Heating set point
2	Cooling setpoint
13	DHW setpoint

COMMAND_CLASS_SENSOR_MULTILEVEL

This CC provides a set of measurements which are obtained from the heat pump.

Below is the mapping between the "type of sensor" and the "measurement provided". The unit of each measurement is communicated as specified in the CC report message.

Sensor type (dec)	Measure
1	Coolant temperature
5	Humidity
6	Speed
9	Heating circuit pressure
23	Return water temperature
56	DHW flow
61	Boiler heating modulation
62	Boiler water temperature
63	DHW temperature
64	External temperature
65	Exhaust fume temperature

COMMAND_CLASS_METER

This CC provides a series of measurements which are obtained from the inverters.

Below is the mapping between the "type of sensor" and the "measurement supplied". The unit of each measurement is communicated as specified in the CC report message.

Sensor type (dec)	Measure
4	The voltage output
5	The current output
2	The power output
0	The energy generated from the start

COMMAND_CLASS_CONFIGURATION

This CC provides a set of measurements which are obtained from the heat pump.

Parameter number (dec)	Parameter	Bytes	Mode
90	ID	4	Read
91	Version	2	Read
92	Modbus address	2	Read/Write
93	Modbus library	2	Read/Write
1	Max setpoint of the boiler	2	Read
2	Min setpoint of the boiler	2	Read
13	Max DHW setpoint	2	Read

4	Min DHW setpoint	2	Read
5	Fresh Max Setpoint	2	Read
6	Min fresh setpoint	2	Read
20	Pump status (0: deactivated, 1: activated)	1	Read
21	Comp Status (0: Disabled, 1: Enabled)	1	Read
22	Operating mode	1	Read
50	Load power Wx100 (inverter)	4	Read
51	Battery output voltage Vx100 (inverter)	2	Read
52	Battery output current Ax100 (inverter)	2	Read
53	Battery output power Wx100 (inverter)	4	Read
30	Summer mode	1	Read/Write
31	DHW enable (0: no, 1: yes)	1	Read/Write
10	Error flag if present (0 otherwise)	2	Read
11	Error code if present (0 otherwise)	2	Read
12	Current error subcode if present (0 otherwise)	2	Read

Disposal

Do not dispose of electrical appliances in unsorted municipal waste, use separate collection services. Contact your municipality for information regarding the collection systems available.

If electrical appliances are disposed of in landfills or in inappropriate places, hazardous substances can leak into groundwater and enter the food chain, damaging our health and well-being.

When replacing old appliances, the dealer is legally obliged to take back the old appliance for free disposal.

Warranty and customer support

Visit our website at the link: http://www.ecodhome.com/acquista/garanzia-eriparazioni.html

If you encounter technical problems or malfunctions, visit the site:
http://helpdesk.smartdhome.com/users/register.aspx

After a short registration you will be able to open an **online ticket**, also attaching images. One of our technicians will answer you as soon as possible.