SmartDHOME MyMB Interface Actuator for Modbus Systems User Manual

Contents

SmartDHOME MyMB Interface Actuator for Modbus Systems User Manual

MyMB interface/actuator for Modbus systems User manual

Thank you for choosing the interface / actuator for Modbus system, the latest generation device that allows you to monitor the performance of systems such as heat pumps or hybrid inverters that communicate via the Modbus

protocol. Z-Wave certified, it is compatible with any gateway that communicates through this protocol such as MyVirtuoso Home.

General Safety Rules

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

1. Read all instructions carefully and follow all precautions contained in this manual. All direct connections to the mains conductors must be made by trained and authorized technical personnel.
2. Pay attention to any danger indications placed on the device 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. Use only 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 people from walking on them.
8. Keep out of reach of children.
9. Do not carry out any maintenance on the device but always contact the assistance network.
10. Contact the service network if one or more of the following conditions occur on the product and / or an accessory (supplied or optional):
    a. If the product has come into contact with water or liquid substances.
    b. If the product has suffered obvious damage to the container.
    c. If the product does not provide performance conforming to its characteristics.
    d. If the product has undergone a noticeable degradation in performance.
    e. If the power cord is damaged.

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

operation.

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

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

This symbol found on the product or its packaging indicates that this product must not be treated as common household waste. All products marked with this symbol must be disposed of through appropriate collection centers. Improper disposal could have negative consequences for the environment and for the safety of human health. Recycling of materials helps to conserve natural resources. For more information, contact the Civic 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 in this document are correct. The product and its accessories are subject to constant checks aimed at improving them through careful research and development analyses. We reserve the right to modify components, accessories, technical data sheets and related product documentation at any time, without notice.
On the website www.myvirtuosohome.com the documentation will always be updated.

Intended use

This device has been designed for performance monitoring of system such as heat pumps or hybrid inverters that communicate via The Modbus protocol. Should it be improperly used and / or modifications not authorized by our technical department, the company reserves the right to cancel the two-year warranty and provide assistance upon payment of the service.

Description

The MyMB interface / actuator for Modbus systems is a fundamental tool for achieving the objectives of Predictive Maintenance, Adaptive Energy Management, qualitative data analysis and remote programming of parameters for proper operation of the systems. It has communication capabilities both through a Sigfox M2M network, 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.

Features

- Z-Wave protocol: Series 500
- Radio signal power: 1mW
- Radio frequency: 868.4 MHz EU, 908.4 MHz US, 921.4 MHz ANZ, 869.2 MHz RU.
- Range: Up to 30 meters in open field.
- Heat pump compatibility: Daikin, LG, Samsung, Panasonic, ATAG, Maxa, Hitachi, Unical, Ferroli, Argoclima, Baxi, Gree, Termal and Thermics-Energie. 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: Solax, Zucchetti and Solaredge: https://www.smartdhome.com/en/projects/iot-

devices/iot-connected-boilers.html

The parts of the MyMB interface / actuator for Modbus Systems

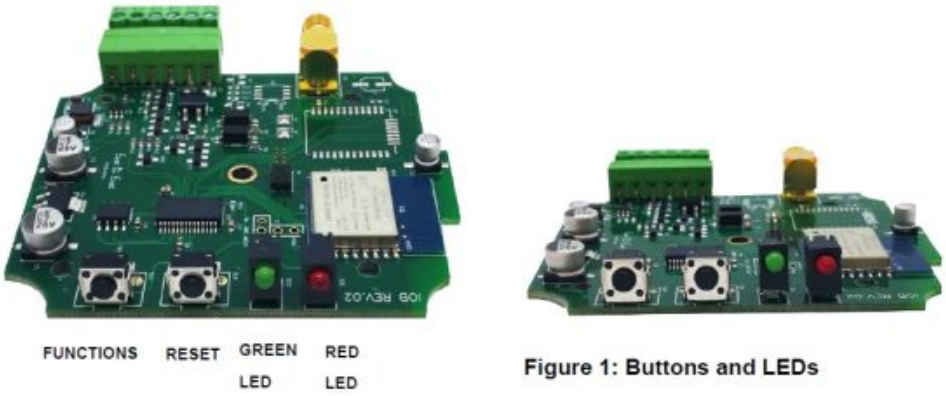


Figure 1: Buttons and LEDs

Functions Button: see Wi-Fi configuration and Z-Wave configuration sections. Reset Button: reboot the device.

Device Connections

To operate the device, you have to understand the utility of the green connector (see Tab. 1).

Tab. 1: green connector

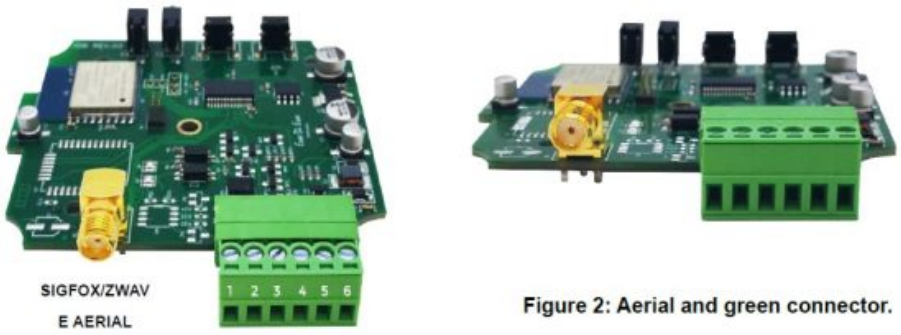


Figure 2: Aerial and green connector.

SIGFOX/ZWAVE AERIAL	**1** Modbus B-	**2** Modbus A+			**5** GND (-)	**6** +5V (+)

With this table you can connect the device to IoB cloud. A few tips that can aid you:

1. Pay close attention to the Modbus link. It has polarity.
2. Pay close attention to the 5V power supply respecting the + and – as in table 1.

3. Pay close attention to the SIGFOX antenna. It must be tightly screwed otherwise the data to the portal could fail and the radio module could be seriously damaged.

Warning LEDs

The IoB device has one green warning LED and one red warning LED.
The green LED indicates the state of OpenTherm Thermostat connection:

1 flashing every 3 seconds	MyMB device is connected with the Modbus device.
2 flashing every 3 seconds	MyMB device is working and there is no request for he ating.
LED on and with 2 shutdowns every 3 seconds	MyMB device is working and there is a request for heating.

The flashing red LED indicates anomalies:

2 flashes + pause	No communication on the Modbus bus.
3 flashes + pause	Radio transmission issues on the Sigfox module.
5 flashes + pause	No Wi-Fi connection and/or Internet communication.

Wi-Fi Error. Possible causes:

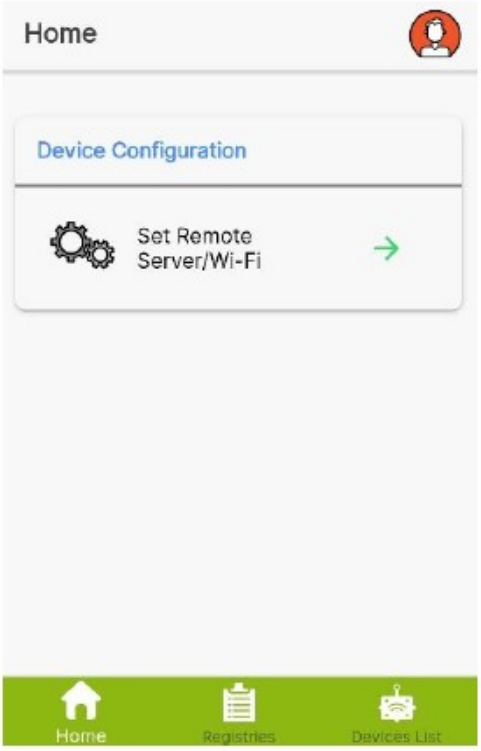
- No connection to the local network.
- No connection to the SmartDHOME server (no Internet connection, server temporarily unavailable, etc).

Wi-Fi Configuration

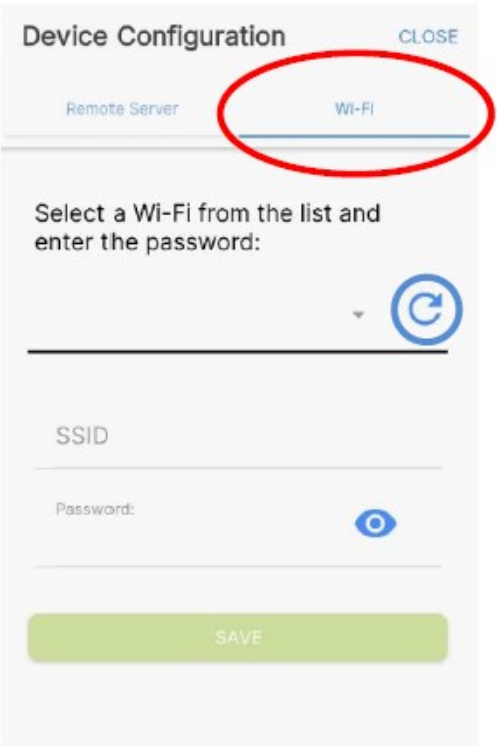
WARNING! The device has several communication modes that cannot be configured at the same time. Choose the one you prefer before proceeding with configuration.

WI-FI Configuration using application (recommended)

To configure the device, download and install the IoB application on your smartphone. After that, set the MyMB in programming mode, turn on the device and press the functions button for 3 seconds.



Upon release of the button, the device will enter configuration mode and the LEDs will flash alternately (red and green). In this way, you will can connect to a new Wi-Fi called “IoB” to begin the device configuration.
Open the IoB application and press the Set Remote Server/Wi-Fi button in the Home (see image). After that, click on CONTINUE on the pop-up that will appear.



Swipe on the Wi-Fi section (see image) and press on the symbol to see the complete list of detected Wi-Fi. Select the correct one and enter the password. Click on SAVE.
If Wi-Fi is not present or visible, press the reload button.
If the operation is successful, a configuration message will be visible at the bottom of the screen.
To end the process, press the CLOSE button on the top right. The LEDs on the MyMB device will stop flashing

alternately.
At the end of the Device Configuration, the IoB will be operational with the new configuration. In case of configuration failure, or to cancel it, press the RESET button and the device will restart.

WI-FI Configuration without using application (choice reserved for professionals and experts)

WARNING! Any type of intervention by our technicians, which will be caused by an incorrectly performed installation or by a failure caused by the customer, will be quoted and will be charged to those who purchased the system.
If you have a good experience with this type of device, you can configure the MyMB without using the application:

1. Switch on the device.
2. Press the FUNCTIONS button for 3 seconds.
3. Release the button and verify that the device is in configuration mode. The LEDs will flash alternately (red and green).
4. Connect your smartphone at the Wi-Fi network with SSID IoB (no password).
5. Establish the connection, open the browser 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 inscription OK will be displayed.
6. Open the browser and enter the following second link: http://192.168.4.1/setwifi?ssid=nomerete&pwd=passwordwifi Insert instead of nomerete the SSID of the network you want to connect to. Enter instead of passwordwifi the Key of the Wi-Fi chosen. A white screen with the inscription OK will be displayed.
7. Open the browser and enter the following third link: http://192.168.4.1/exit A white screen with the inscription EXIT will be displayed.

Z-Wave Configuration

WARNING! The device has several communication modes that cannot be configured at the same time. Choose the one you prefer before proceeding with configuration.

Inclusion/Exclusion in a Z-Wave network

If you have an MyMB Z-Wave version, you can include or exclude the MyMB device in a Z-Wave network. First of all, read the user manual of your Z-Wave Gateway to understand how to include or exclude a device. After this you can include/exclude the MyMB module into a z-wave network by pressing the link button for 8 seconds.

Data Mapping

MyMB device supports the following command class:

- COMMAND_CLASS_BASIC
- COMMAND_CLASS_SWITCH_BINARY
- COMMAND_CLASS_THERMOSTAT_SETPOINT
- COMMAND_CLASS_SENSOR_MULTILEVEL

These are described in the following sections.

COMMAND_CLASS_BASIC

This command class can be used to switch the boiler on/off (or to know the current status). However, the auto-report of this CC was not implemented for performance reason. Therefore, to perform the same operation is recommended to use the COMMAND_CLASS_SWITCH_BINARY.

COMMAND_CLASS_SWITCH_BINARY

This command class can be used to switch the boiler on/off (or to know the current status). Moreover if, for external reason, the boiler switch itself on/off an auto-report to node 1 of the network is triggered.

COMMAND_CLASS_THERMOSTAT_SETPOINT

This command class can be used to manage the setpoints of the boiler. Is important to known that the max and min value of these setpoints are not reported by this command class (the reported values are just a ‘small’ minimum and a ‘big’ maximum). These values are instead reported with the CONFIGURATION command class. This was done to support the write operation of these 2 values in some future developments. The map between the ‘mode’ and the setpoint is as below, while the unit of each measure is communicated correctly in the report message of the command class.

Mode (dec)	**Measure**	
1	Heating Setpoint	
2	Cooling Setpoint	
13	DHW Setpoint	

COMMAND_CLASS_SENSOR_MULTILEVEL

This command class maps a series of measures that are obtained from the boiler. The map between the ‘Sensor type’ and the provided measure is as below, while the unit of each measure is communicated correctly in the report message of the command class.

Sensor type (dec)	Measure
1	Refri. liquid temperature
9	Heating circuit pressure
23	Return water temperature
56	DHW Flow
61	Boiler heating modulation
62	Boiler water temperature
63	DHW Temperature

Sensor type (dec)	Measure	
65	Exhaust fumes temperature	

COMMAND_CLASS_CONFIGURATION

This command class maps a series of parameters that are obtained from the boiler. The map between the ‘Parameter number’ and the provided parameter is as below.

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 boiler setpoint	2	Read
2	Min boiler setpoint	2	Read
3	Max DHW setpoint	2	Read
4	Min DHW setpoint	2	Read

Parameter number (dec)	**Parameter**	**Bytes**	**Mode**
5	Max cool setpoint	2	Read
6	Min cool setpoint	2	Read
20	Pump state (0: deactive 1: active)	1	Read

21	Comp state (0: deactive 1: active)	1	Read
22	Operation mode	1	Read
50	The power of the load (inverter) W x100 (inverter)	4	Read
51	The voltage output of the battery V x100 (inverter)	2	Read
52	The current output of the battery A x100 (inverter)	2	Read
53	The power output of the battery W x100 (inverter)	4	Read
51	The voltage output of the PV V x100 (inverter)	2	Read

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 can open a ticket online, also attaching images. One of our technicians will answer you as soon as possible.

Read More About This Manual & Download PDF:

Documents / Resources

	SmartDHOME MyMB Interface Actuator for Modbus Systems [pdf] User Manual MyMB Interface Actuator for Modbus Systems

References

- info@smartdhome.com
- Home - MyVirtuoso Home
- Home - MyVirtuoso Home
- Home - SmartDHOME
- Home - SmartDHOME
- MyOT and MyMB for boilers and heat pumps - SmartDHOME