HASEMAN ELECTRIC

RS-10PM2 ZIGBEE USER MANUAL



Haseman **RS-10PM2** is a 10-channel, DIN Rail, Relay module with true RMS energy meter, designed for operation with Zigbee 3.0 wireless communication protocol. RS-10PM2 is optically isolated and protected against voltage surges, caused by switching of inductive and capacitive loads as power contactors, motors, EM valves and switching power supplies.

WHAT IS ZIGBEE?

Zigbee is an international standard protocol for wireless communication in smart homes and building automation systems. It enables devices to communicate with each other and forms the backbone of modern smart installations.

Zigbee-based systems allow control via smartphone, tablet or automation platforms such as Home Assistant, Zigbee2MQTT and Smart Things.These systems enable automation scenarios for energy saving, security and comfort.

Zigbee uses a mesh network topology where each mains-powered device acts as a router, extending network coverage. The more devices installed, the more stable and reliable the network becomes.

Zigbee operates in the 2.4 GHz frequency band and is optimized for low power consumption and reliable communication.

SAFETY INFORMATION

Read this manual before attempting to install the device! Failure to observe recommendations included in this manual may be dangerous or cause a violation of the law.

The manufacturer will not be held responsible for any loss or damage resulting from not following the instructions of operating manual.

DANGER OF ELECTROCUTION!

All works on the device may be performed only by a qualified and licensed electrician. Observe national regulations.

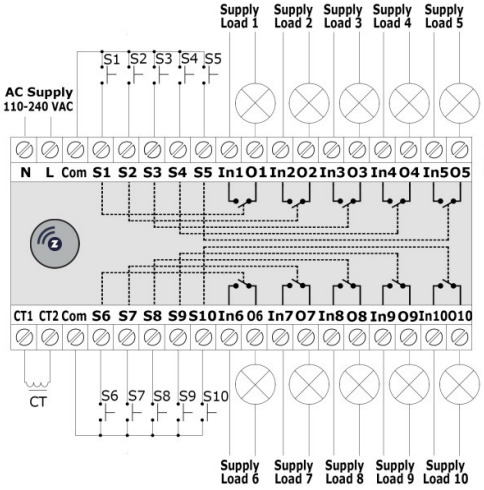
The device is designed to operate in electrical home installation. Faulty connection or use may result in fire or electric shock.

Even when the device is turned off, voltage may be present at its terminals.

Any maintenance introducing changes into the configuration of connections or the load must be always performed with disabled fuse.

CONNECTION DIAGRAMS

When connecting the module, observe the proper Neutral (**N**) and Line (**L**) terminals.



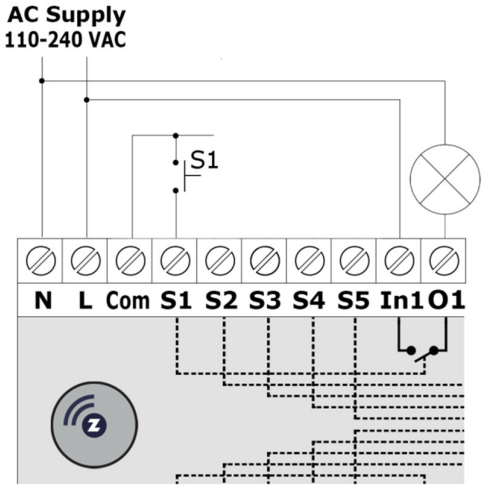
Only the provided current clamp can be connected to Input terminals **CT1** and **CT2**.

Each relay channel has its own Input (**In**) and Output (**O**), which allows controlling of devices, supplied by different voltages (12, 24, 48VDC / VAC, 110-240 VAC, etc.)

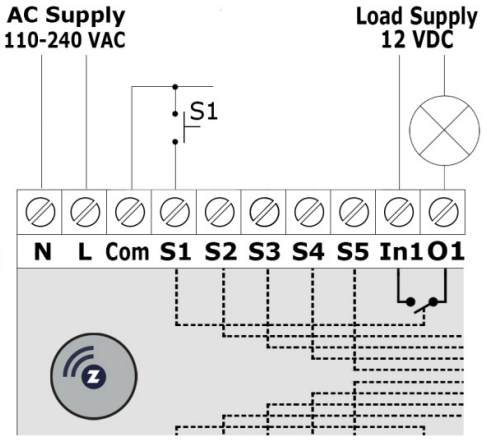
INSTALLATION

- Mount the module on standard DIN Rail.
- Connect the controlled lines. Depending on the load supply voltage, use one of the following connection diagrams:

For 230 VAC Loads:

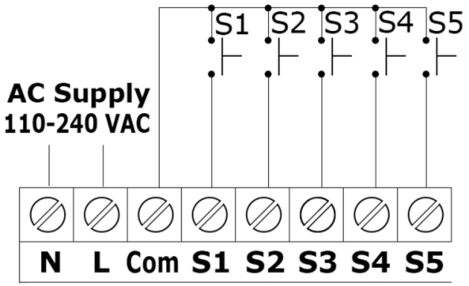


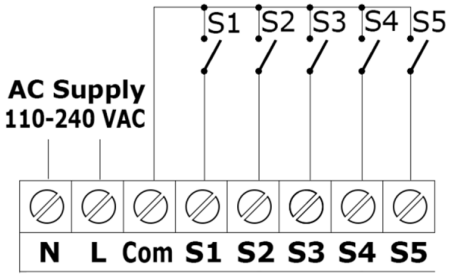
For low voltage AC/DC Loads:



During operation, each channel status is indicated by panel indication LED.

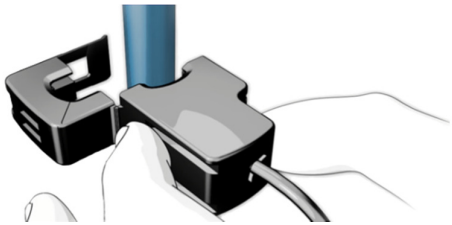
- Connect the local control lines S1 to S10 (if local control is used). Depending on the BUTTON TYPE Parameter (separate for each Channel), Push Buttons or Toggle Switches can be connected:





Only Voltage Free contacts must be connected between terminal **Com** and terminals **S1** to **S10**.

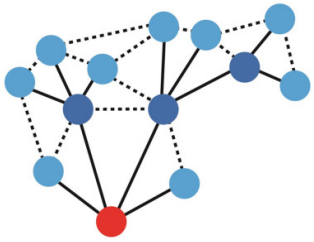
- Connect the Current clamp to inputs CT1-CT2 and fix it on the monitored power line. Check and place in right direction (K ---> L mark on the clamp)



- Connect the supply to Neutral and Line terminals and wait for 30 second until the module initialization process is completed.

ZIGBEE NETWORK

Zigbee uses a mesh network topology where any mains powered device acts as a signal repeater, enabling reliable communication between nodes. Battery powered devices do not act as routers in order to preserve battery life.



The mesh network allows automatic routing of messages through multiple paths, improving coverage and stability even in complex installations.

Typical indoor range between Zigbee devices is 10–20 meters depending on building structure.

Installing additional devices improves network reliability.

Zigbee networks consist of the following device types:

Coordinator:

The central device responsible for creating and managing the network.

Router:

Mains-powered devices (such as RS -10PM2) that extend network coverage and route messages.

End Device:

Typically battery-powered devices that communicate via routers or coordinator.

ADD/REMOVE PROCEDURE

On factory default, the device does not belong to any Zigbee network. It must be paired to a Zigbee coordinator to communicate with other devices.

ADD DEVICE /PAIRING/

- Module should be within range of the Zigbee coordinator.
- Enable pairing mode on the Zigbee coordinator.
- Connect the module to power supply. After startup of the device, it enters in Pairing mode for 60s period.
- If device was not joined and period expire you could reset via service button (one click) to start 60sec join period.

⚠ Be patient until the inclusion process is completely finished. Multichannel devices usually need a bit more time for complete configuration.

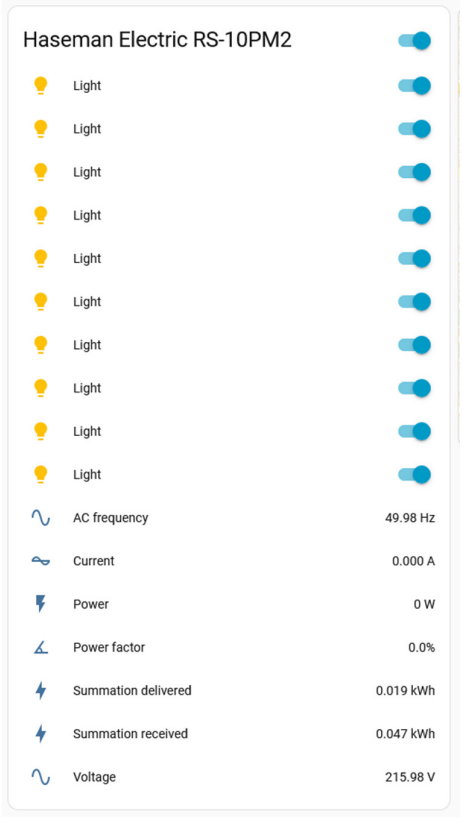
After pairing, the device will expose separate endpoints for each relay channel and measurement data such as Voltage, Current, Power, Power Factor, Frequency and Energy Consumed (Imported) and Energy Returned (Exported).

REMOVE DEVICE /UN-PAIRING/

- Module should be within range of the Zigbee coordinator.
- Directly remove device from the Zigbee coordinator menu.
- After device was removed from the network, it will goes to factory default. In order to include again you should reset using service button (one click) to start 60sec join period.
- If device was not joined and period expire you could reset via service button(one click) to start new 60sec join period

⚠ After removing from network, all user configuration parameters of the module will be automatically set to their defaults.

Sample of device screen in Home Assistant:



CONFIGURATION

Device is designed to work out of the box after inclusion. However certain configuration can customize its functionality and fit it to your specific project needs.

Configuration parameters are accessible only from the Web User Interface.

You should activate WIFI AP mode by 3x click on Service Button. Then find device open SSID and connect to it via PC or Mobile. Once connected go to following address in browser http://192.168.4.1 Please note that device will return back to Zigbee mode after 30 min, if left in WIFI AP mode.

PARAMETERS DESCRIPTION

METER - Reporting Time /sec/ - Minimum time interval between power meter data reports.

- Default value: 30 seconds

⚠ Decreasing the reporting time could flood your Zigbee network, strongly impacting the network communication.

METER - Reset Counters - Clears stored import and export accumulated energy totals in device memory.

CHx - Power Up Memory

- Default value: **Disable**
- Available Settings:

Enable – When restoring power supply of the device, the output will be switched to its previously saved status, prior power break.

Disable – When restoring power supply of the device, the output will be stay in OFF state regardless of its status, prior power break.

CHx - Switch Type

- Default value: Toggle Switch
- Available Settings:

Momentary (Push Button) - Each push is changing the output status from ON to OFF, or vice versa.

Toggle Switch - Each changing the switch position will change the Output between ON and OFF statuses.

Follower Switch - The output is following the status of the switch: open switch – inactive output, *closed switch* – active output.

CHx -Timer

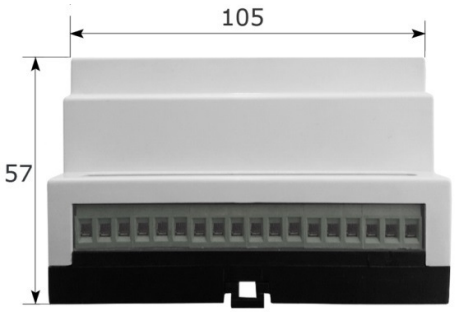
- Default value: Disable
- Available Settings:

Disable – Normal operation of the output

Auto Off - Once output is ON, it will switched OFF automatically after preset time.

CHx – Time/ms/ - Delay in milliseconds after the output will be turned OFF automatically

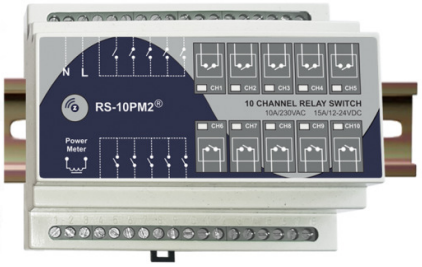
ENCLOSURE DIMENSIONS (mm)



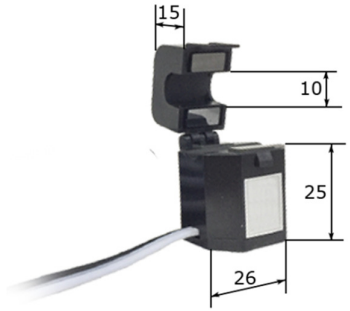




DIN RAIL MOUNTING

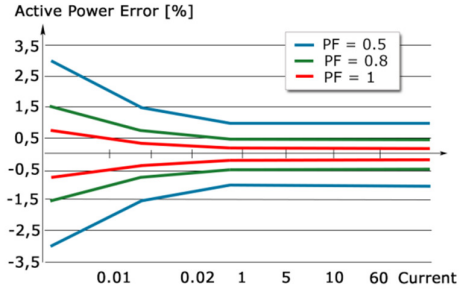


CLAMP DIMENSIONS (mm)



ACCURACY

Power network parameters are measured out by the most advanced True RMS measuring technology assuring maximum accuracy and precision (±1% for loads greater than 4.8W).



Power measurement takes into account all actual fluctuations of the Mains voltage.

Energy Usage data is saved into nonvolatile memory of the module and will be automatically restored in case of power breaks.

ZIGBEE CLUSTERS

- On/Off (0x0006)
- Electrical Measurement (0x0B04)
- Smart Energy Metering (0x0702)
- Basic
- Identify
- Groups
- Scenes

WARRANTY

We warrant that the device is free from defects in parts and workmanship under normal use for 24 months from date of purchase. The original purchase invoice or sales receipt is the proof of date of purchase by the Customer.

If the Device has manufacturing defects or in any case of alleged lack of conformity, the Customer shall send a claim. Once we receive the Warranty Claim, we must inform the Customer if the Warranty is applicable and the address where the Device shall be sent in order to verify the defects (if any). The Device shall be sent by the Customer at its own costs and expenses, and with the original packaging, the supplied accessories and documents proving date of purchase. We must then inform the Customer about the defects and on its repair or replacement (where applicable). The Warranty Period of the replaced or repaired Device shall not be extended. We will ship the repaired or a replaced Device to Customer freight prepaid. We will not be liable for damages to property caused by faulty device. We will not be liable for indirect, incidental, special, consequential or punitive damages, or for any damage, including, inter alia, loss of profits, savings, data, loss of benefits, claims by third parties and any property damage or personal injuries arising from or related to the use of the Device. If the Device cannot be replaced with another of the same type (e.g. the Device is no longer in production or no longer available for selling in the Customer's country), it may be replaced with a different one having similar technical specifications to the faulty one. Such replacement shall be considered as a total fulfillment of our obligations.

Warranty exclusion:

- Defects caused by normal wear of parts or especially subject to wear, such as parts that require periodic replacement during the normal operation of the system;

- Splits, cracks, scratches, dents, scratched or discolored surfaces and parts, breakage of plastic parts and any other cosmetic damage;

- Damages resulting from use of the system other than that provided, including but not limited to the failure to follow instructions contained in the operating manual;

- Damages caused by accident, abuse, misuse, dirt, viruses, liquid contact, fire, earthquake, improper or inadequate maintenance or calibration, negligence or other external causes;

- Environmental damage and / or defects caused by smoke, dust, dirt, soot, or other external influences;

- Damages caused by modifications and alterations in the functionality or features;

- Damages resulting from transportation or inadequate packaging when returning the product to an authorize service center;

- Damages resulting from surges in the power and/or telecommunication network, improper connection to the grid in a manner inconsistent with the operating manual, or from connecting other devices not recommended by the maker;

- Damages caused by operating or storing the device in extremely adverse conditions, i.e. high humidity, dust, too low (freezing) or too high ambient temperature;

- Products whose warranty sticker has been removed, damaged or rendered illegible;

- Expiration of the Warranty Period.

If a defect is not covered by the Warranty, we will inform the Customer about the extra expenses for the repair or replacement.

TECHNICAL SPECIFICATIONS

- 10 Independent Relay Outputs
- Optically-isolated, surge protected
- Zero Cross relay switching
- Capable to control AC and/or DC loads
- Wide Power Supply range: 110-240VAC, 50/60Hz
- Max. AC output: 10A / 110-230V (resistive load)
- Max. DC output: 12A / 12-30VDC
- Durable relays with long life contact system
- 16A rated PCB power tracks and terminals
- Front panel LED indication of active outputs
- User configurable Power Up Memory function
- User configurable parameters for button type – push button, toggle switch or follower switch (individual setting for each channel)
- True RMS Power meter with 60A current clamp (included), reporting all power data to the Zigbee coordinator (True RMS Voltage, Frequency, Current, Instant Active Power, Power Factor, Energy Consumed and Energy Returned).
- ABS enclosure for standard DIN Rail mounting
- Dimensions: 105 x 86 x 57mm
- Durable tactile buttons on the front panel
- Conforms to EU regulations: EN55022 EN610006
- Radio protocol: Zigbee 3.0, 2.4GHz
- Antenna range: up to 50m outdoor / 30m indoor

DISPOSAL GUIDELINES

The product does not contain hazardous chemicals.

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available.