

## Mini Energy Switch

MH-S210-US



### Introduction

MCOHome Mini Energy Switch MH-S210-US is a Z-Wave enabled module that can be set in existing in-wall switches. It supports basic command class, which can report immediate voltage, current, watt, and energy consumption. It also can act as a repeater in the Z-Wave network. This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from any other manufacturers.

### Specifications

US: 120V 60Hz input, 3A max output

Size: 51mm (L)\*50mm (W)\*20.3mm (H)

Load type: Incandescent

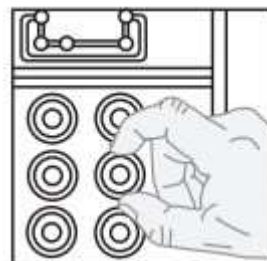
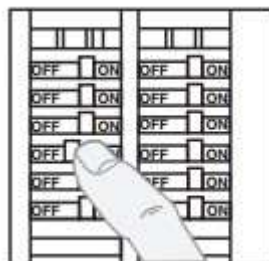
### Installation Instructions

**IMPORTANT:**

- A qualified electrician with the understanding of wiring diagrams and knowledge of electrical safety should complete the installation inside the main circuit box (normally outside your house)
- Read all instructions and documentation and save for future reference

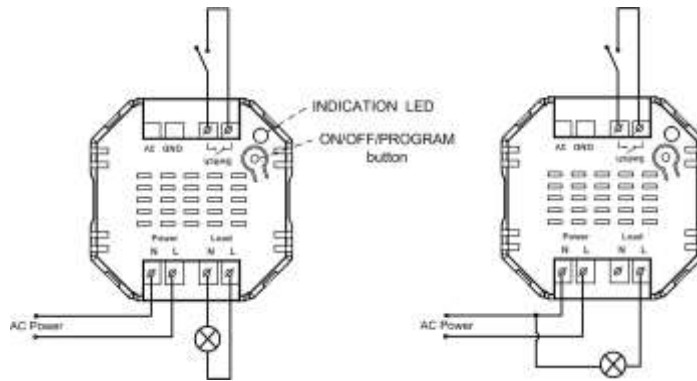
**Step1 Preparing**

**CAUTION:** Cut off power supply at circuit breaker or fuse before installation to avoid fire, shock or death!



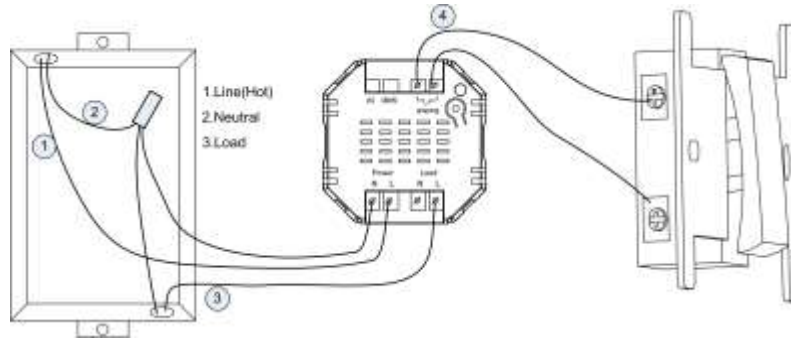
1. Remove the wall switch cover plate.
2. Disconnect both wires from the wall switch.

## Step2 Wiring



1. Connect Hot Line to "Power L".
2. Connect Neutral Line to "Power N".
3. Connect Load wire to "Load L".
4. External switch connection: Connect both wires with two terminals of "Switch".

Note: "3V" and "GND" will **only** be used with MCOHome touch panel.



## Step3 Mounting In-Wall Box

Mount wall switch and cover plate back to the in-wall box.

## Step4 Restoring Power

Restore power at circuit breaker or fuse.

Installation is complete.

## Operation

### INCLUDING the Mini Energy Switch into your network:

1. Set the controller into INCLUSION mode. Follow the instructions provided by the controller manufacturer.
2. Press the ON/OFF/PROGRAM button on the Mini Energy Switch, or toggle the external switch/button 6 times in quick succession (within approx 2sec).

Note: If the inclusion is successful, the Mini Energy Switch INDICATION LED will be solid on or off depending on switch's state. If not, INDICATION LED will blink slowly.

### EXCLUDING the Mini Energy Switch from your network:

1. Set the controller into EXCLUSION mode. Follow the instructions provided by the controller manufacturer.
2. Press the ON/OFF/PROGRAM button on the Mini Energy Switch, or toggle the external switch/button 6 times in quick succession (within approx 2sec).

Note: If the exclusion is successful, the Mini Energy Switch INDICATION LED will blink slowly. If not, INDICATION LED will be solid on or off depending on switch's state.

### Turning on/off the Mini Energy Switch

The Mini Energy Switch can be controlled by:

- Toggling external switch/Button.
- Pressing the ON/OFF/PROGRAM button on the Mini Energy Switch.
- Sending commands through controller or gateway. (the command classes which support this function are Basic Command Class, Binary Switch Command Class, and Scene Activation Command Class)

### Changing External Control Mode

The external control mode can be configured by: (the default control mode of this module is external switch)

- Sending commands through controller or gateway (the command class which supports this function is Configuration Command Class):

Parameter Number	0x01
Size	1 BYTE
Default value	0x00
Configuration value	0x00: Switch(2 state switch mode) 0x01: Button( Momentary button mode)

- Pressing the ON/OFF/PROGRAM button 6 times in quick succession (within approx 2sec).

### Setting Association Group

The module supports 2 association groups. The 1st group can support 5 association nodes. When set unsolicited report, the 1st group will send data to its associated devices initiatively. See details in "Monitoring Energy Consumption"

The 2<sup>nd</sup> group is used for reporting devices' state to the controller if any changes happen. This group supports one node, which defaults to controller node.

The "ASSOCIATION\_SET" in "COMMAND\_CLASS\_ASSOCIATION" command class is used to set Grouping identifier and Node ID of association devices. Using "ASSOCIATION\_GET" to get the association device's Node ID, and "ASSOCIATION\_REMOVE" to remove the association device.

Command Classes	COMMAND_CLASS_ASSOCIATION_V1
Command Name	ASSOCIATION_SET
Grouping identifier	0x01 / 0x02
Node ID	Node ID that need to be included

### Monitoring Energy Consumption

When requested by controller or gateway, the Mini Energy Switch will report immediate voltage, current, power, and energy consumption (the command classes which support this function is Meter Command Class). When set unsolicited report, the module will send data to association group 1 at regular time.

Parameter Number	0x02
Size	1 BYTE
Default value	0x00
Configuration value	Bit 0: KWH Report Bit 1: Voltage Report Bit 2: Current Report Bit 3: Watt Report (Bit Set to 1: enable 0:disable)

The interval time can be set as follows:

Parameter Number	0x03
Size	2 BYTE
Default value	0x0258 (10 minute)
Configuration value	0~65535 sec

### Setting & Activating Scene

The module can set and activate 255 scene IDs by using gateway and scene controller. The "SCENE\_ACTUATOR\_CONF\_SET" in "COMMAND\_CLASS\_SCENE\_ACTUATOR\_CONF" is used to set scene, and "SCENE\_ACTIVATION\_SET" in "COMMAND\_CLASS\_SCENE\_ACTIVATION" is used to activate scene. Please refer to instructions provided by controller manufacturer for details.

### Restoring Factory Settings

The default configuration can be restored by:

- Sending commands through controller or gateway (the command classes which support this function is Configuration Command Class). The parameter are as follows:

Parameter Number	0xFF
Size	1 BYTE
Default value	N/A
Configuration value	0x55

Set 0xFF as 0x55 will restore Factory Settings.

- Pressing and Holding the ON/OFF/PROGRAM button for 15s.

Note: If the Factory Settings is restored successfully, INDICATION LED will blink quickly and then become slower.

**SAFETY NOTICE**

1. Flush-mount only into a UL/ETL/CE certified plastic junction box and switch panel cover. The minimum size should be 65\*65\*42mm, minimum Volume is 180cm<sup>3</sup>.
2. Use Copper Conductors Only.
3. CAUTION - Risk of Electric Shock - More than one disconnect switch may be required to de-energize the equipment before servicing.
4. WARNING-This device shall not be used in combination with a wall switch controlling a receptacle.

**FCC Compliance Statement (Part 15.19) (USA only)**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference, and
- 2) This device must accept any interference received, including interference that may cause undesired operation.

**FCC Warning (Part 15.21) (USA only)**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**FCC Interference Statement (Part 15.105 (b)) (USA only)**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**1-year Limited Warranty**

MCOHome warrants this product to be free from defects in material and workmanship under normal and proper use for one year from purchase date of the original purchaser. MCOHome will, at its option, either repair or replace any part of its products that prove defective by reason of improper workmanship or materials. THIS LIMITED WARRANTY DOES NOT COVER ANY DAMAGE TO THIS PRODUCT THAT RESULTS FROM IMPROPER INSTALLATION, ACCIDENT, ABUSE, MISUSE,

NATURAL DISASTER, INSUFFICIENT OR EXCESSIVE ELECTRICAL SUPPLY, ABNORMAL MECHANICAL OR ENVIRONMENTAL CONDITIONS, OR ANY UNAUTHORIZED DISASSEMBLY, REPAIR OR MODIFICATION. This limited warranty shall not apply if: (i) the product was not used in accordance with any accompanying instructions, or (ii) the product was not used for its intended function. This limited warranty also does not apply to any product on which the original identification information has been altered, obliterated or removed, that has not been handled or packaged correctly, that has been sold as second-hand or that has been resold contrary to Country and other applicable export regulations.