

Micro Switch

MH-S220

Introduction

Micro Switch is a Z-Wave enabled module that can be set in existing in-wall switches. It supports basic command class, and also can act as a repeater in 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

Power supply: 85~260VAC, 50/60Hz

Z-Wave frequency: 868.42MHz (EU), 908.42MHz (US) or other frequency customized

*Max output: 1*10A (Resistive)

Dimension: 44 *38 *17mm (L *W *H)

**Note: For non-resistive load, a derating output is highly suggested.*

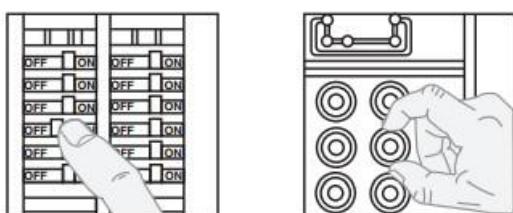
Installation Instructions

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

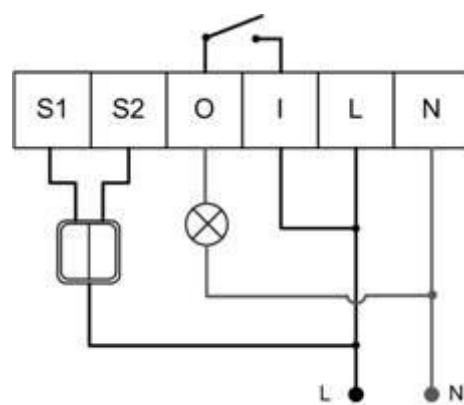
CAUTION: Cut off power supply at circuit breaker or fuse before installation to avoid fire, shock or death!



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

Step2 Wiring (standard strip length: 6-7mm)

1. Connect Hot Line to "L".
2. Connect Neutral Line to "N".
3. Connect "I" with "L".
4. Connect "O" with load and then with "N".
5. Connect "S1", "S2" with external switch separately, and then with "L".



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 device into Z-Wave network:**

1. Set controller into INCLUSION mode. Follow the instructions provided by the controller/gateway manufacturer.
1. Press the momentary button on the device, or the connected external button S1 3 times in quick succession.

Note: If the inclusion is successful, the INDICATION LED will blink slowly 6 times, If not, INDICATION LED will be solid on or off depending on switch's state.

EXCLUDING device from Z-Wave network:

2. Set controller into EXCLUSION mode. Follow the instructions provided by the controller/gateway manufacturer.
3. Press the momentary button on the device, or the connected external button S1 3 times in quick succession.

Note: If the exclusion is successful, the INDICATION LED will blink slowly 6 times. If not, INDICATION LED will be solid on or off depending on switch's state.

Turning on/off the device:

The device can be controlled by:

- Toggling/pressing external panel Switch/Button.
- Sending commands through controller/gateway.

(the command classes which support this function are Basic_Command_Class, Binary_Switch_Command_Class, and Multi_Channel_Command_Class)

Multi Channel control:

The device can be controlled by command "MULTI_CHANNEL_ENCAP" in the command class "COMMAND_CLASS_MULTI_CHANNEL": (This device supports one End Point.)

Byte	Content
1	Command Class = COMMAND_CLASS_MULTI_CHANNEL
2	Command = MULTI_CHANNEL_CMD_ENCAP
3	Source End Point
4	Destination End Point
5	Command Class = COMMAND_CLASS_SWITCH_BASIC or COMMAND_CLASS_SWITCH_BINARY
6	Command = BASIC_SET or BASIC_GET or BINARY_SET or BINARY_GET
7	Value(0xFF -- ON 0x0 -- OFF)

Multi Channel Association:

To set association groups by “COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION”. Refer to “Z-Wave Command Class Specification” for detail information, or consult the information provided by controller/gateway manufacturer.

The device supports 3 association groups(AG):

1st AG: reports device’s state. It supports only one Node ID (with/without End Point). A controller/gateway SHOULD be associated to this AG.

2nd AG: to control the associated devices synchronously. When S1’s state changes, it will send “Basic Set Command” to these devices. It supports upto 5 Node IDs.

3rd AG: to control the associated devices synchronously. When S2’s state changes, it will send “Basic Set Command” to these devices. It supports upto 5 Node IDs.

Note: Please refer to table “Parameters Setting” for the detail configurations for AG 2&3.

Scene Function:

As a Scene device, it supports “Scene Activation CC” and “Scene Actuator Conf CC”, which make the device can be added into any scene , and supports 255 Scene ID.

Meanwhile, It can work as a scene controller to activate Scenes. By configuring the parameters of S2, 3 different scenarios can be realized. The “Scene Activation CC” can be sent to AG1 (gateway) by “one click”, “double click” or “hold” external button S2. Pls refer to the following table items 11,12&13 for more details in configuration.

Parameters Setting:

Add	Function	Byte	Options	Default	Remark
1	Switch state saved or not when power failure	1	0x00 not saved, switch will be off when powered again 0x01 saved, switch will keep the same state when powered again	0x01	
2	External switch type	1	0x00 Button (Momentary buttons) 0x01 Toggle (2-state switches)	0x00	
3	2-state switches	1	0x00 for the toggle switch without specified on/off position 0x01 for the toggle switch with specified on/off position	0x01	
4	OFF timer	1	0x00 forbid manually operation 0x01 allow manually operation	0x01	
5	Timing function	2	0x00 function disabled 0x0001~0xFFFF 1s~65535s	0x00	
6	ALL ON/ALL OFF	1	0x00 forbid ALL ON, forbid ALL OFF 0x01 forbid ALL ON, allow ALL OFF 0x02 allow ALL ON, forbid ALL OFF 0xFF allow ALL ON, allow ALL OFF	0xFF	
7	RESERVE				

8	Operation report from Switch1 to Association Group2	1	0x00 report ON/OFF state of S1 to AG2 0x01 only report ON state of S1 to AG2 0x02 only report OFF state of S1 to AG2 0xFF no report to AG 2	0x00	
9	Switch 2 function	1	0x01 enable Scene Activation & send Basic ON/OFF to associated devices 0x02 Scene Activation only 0x03 send Basic ON/OFF only 0xFF disable S2 Function	0x01	
10	Operation report from Switch2 to Association Group3	1	0x00 send Basic ON or Basic OFF to AG3 when turn on/off S2 0x01 only send Basic ON when turn on S2 0x02 only send Basic OFF when turn off S2 0xFF no report to AG 3	0x01	
11	Scene ID sent to AG1 when one click of S2	1	0 Scene Activation disabled 1~255 send Activation CC to AG1 with specified Scene ID	0x00	
12	Scene ID sent to AG1 when double click of S2	1	0 Scene Activation disabled 1~255 send Activation CC to AG1 with specified Scene ID	0x00	For momentary button only
13	Scene ID sent to AG1 when hold S2	1	0 Scene Activation disabled 1~255 send Activation CC to AG1 with specified Scene ID	0x00	For momentary button only
255	Factory setting	1	0x55 restore factory setting (write only)		

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 momentary button on device for 15s.

Note: If the Factory Settings is restored successfully, INDICATION LED will blink 6 times.

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 180cm³.
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.

1-year Limited Warranty

We warrant 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. We 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.

FCC Warning

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.

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

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 or more 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.