

Micro Shutter Switch

MH-C221

Introduction

Micro Shutter Switch is a Z-Wave Plus enabled module that can be set in existing in-wall switches. With its compact design and stable performance, the module can be used to wire roller shutter which controlled by AC motor (with limit). It also works as a repeater in a Z-Wave network. This product can be included and operated in any Z-Wave network with other Z-Wave certified modules from any other manufacturers.

Specifications

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

Output: 1*Max 1.7 A

Z-Wave frequency: 868.42MHz (EU), 908.42MHz (US) , 921.4MHz(AU) or other frequency customized.

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

Touch "UP/DOWN" button and release, the shutter starts to move up or down. When shutter is moving up/down, press UP/DOWN button again can stop the movement; press DOWN/UP button will stop its movement and then move to opposite direction.

- When module wired with a 2-state switch panel:

Parameter 0x0D set to be 1:

When switch at its ON position, the shutter will move up. And during its moving, change the switch to OFF position will make the shutter moving down. To stop its movement, one needs to switch the key to OFF and ON positions in quick succession.

Parameter 0x0D set to be 2:

When switch at its ON position, the shutter will move down. And during its moving, change the switch to OFF position will make the shutter moving up. To stop its movement, one needs to switch the key to OFF and ON positions in quick succession.

Shutter open/close level setting:

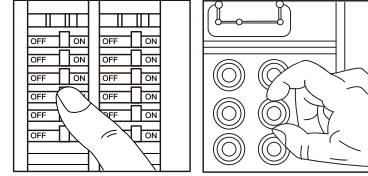
Note: To set the levels, please operate the calibration first.

- The min level of shutter close (down movement):

Manual: Make sure the shutter is not at its bottom limit. Press 6 times of the Down button, the shutter starts moving down. Then press the Down button once to stop the movement where you want. The shutter will stop here when close from now on.

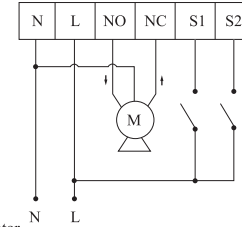
Parameter: Item 0x0B; Range 0-98.

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



- Remove the wall switch cover plate.
- Disconnect both wires from the wall switch.

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



- Connect Hot Line to "L".
- Connect Neutral Line to "N".
- Connect "NO, NC" with shutter motor.
- Connect "S1" or "S2" or both with external switch panel.

The wiring depends on the external switch type. Please review the operation details and parameters table below to choose a wiring way.

- The max level of shutter open (up movement):

Manual: Make sure the shutter is not at its upper limit. Press 6 times of the Up button, the shutter starts moving up. Then press the Up button once to stop the movement where you want. The shutter will stop here when open from now on.

Parameter: Item 0x0C; Range 1-99.

Energy Consumption Monitoring:

When requested by controller, the device will report voltage, current and power consumption (the command class which support this function is Meter Command Class).

Association Group:

The module supports 1 association group (AG), which is suggested to be associated with a controller. And it will report modules' state to the controller if any changes happen. The command "COMMAND_CLASS_ASSOCIATION" can be used to set the AG.

Step3 Mounting Wall Switch

Mount wall switch and cover plate back to the in-wall box. Restore power at circuit breaker or fuse. Installation is complete.

Operation

Adding/Removing:

- Set controller into ADD/REMOVE mode. Follow the instructions provided by the controller/gateway manufacturer.
- Press the momentary button on the module or on external panel 3 times in quick succession or hold the button 8s.
- Or toggle external 2-state switch 3 times in quick succession.

Note: If the ADD/REMOVE is successful, the INDICATION LED will blink 3 times.

Calibration (on the panel):

Important:

- Make sure the shutter is not reaching its bottom limit before calibration.
- During calibration, any touches on buttons will quit the calibration without success.
 - When module wired with a one-momentary-button panel, press the button 4 times in quick succession, the LED on the module will flash. And then press the button 4 times again, auto calibration starts.

Parameters Setting:

Add	Function	Byte	Options	Default	Remark
0x01	Watt Meter Report period	2	1-32767	720	Unit 5sec 5*720S= 3600S= 1 hour
0x02	KWH Meter Report period	2	1-32767	6	Unit 10min 6*10min =1 hour
0x03	Threshold of current for load Caution	2	10-500	500	Unit 0.01A 500* 0.01A= 5A
0x04	Threshold of KWH for load Caution	2	1-10000	10000	
0x05	Level Report Mode	1		2	1: Report destination level in 5s period when requested by the gateway; And then report current level after 5s. 2: Report every 10% level change while running
0x07	Demo trip	1		1	1: activate demo trip when first touch of the button Read motor data
0x09	Demo trip and calibration	1		0	1: activate demo trip and calibration

- When module wired with a two-momentary-button panel, press 4 times on "UP" button, the LED will flash; and then press 4 times on "DOWN" button, auto calibration starts.

- When module wired with a 2-state switch panel, toggle/switch 4 times in quick succession and LED will flash; then toggle/switch 4 times again and auto calibration starts.

During calibration, the Shutter movement is as below:

- Moving down for 3 seconds, then stop for 10 seconds (demo trip);
- Moving up to its upper limit;
- Moving down to its bottom limit;
- Moving up to upper limit again and the calibration completes.

Calibration (on a controller):

Refer to parameter table for more details:

Write Parameter 0x07 with 1: activate demo trip when first touch of the button. (A demo trip helps to read motor data.)

Write Parameter 0x09 with 1: activate demo trip and calibration together.

Write Parameter 0x0A with 1: activate calibration only.

Manual Operation:

- When module wired with a one-momentary-button panel:

The first press of the button will make the shutter moving up, and a second press will stop the shutter; the third press will make the shutter moving down, and a following press will stop its movement. The shutter will reach and stop at its upper/bottom limit if there is no following press during its movement.

- When module wired with a two-momentary-button panel:

Add	Function	Byte	Options	Default	Remark
0x0A	Auto calibration	1	1: activate calibration only	0	
0X0B	Min level of the shutter close	1	0-98	0	
0X0C	Max level of the shutter open	1	1-99	99	
0x0D	External switch type	1	0: Button (Momentary buttons) 1: Toggle (2-state Switches) On position—shutter open; Off position —shutter close 2: Toggle (2-state Switches) On position—shutter close; Off position—shutter open	0	
0X0E	External switch input	1	0: no external switch 1: wire 1 ex. momentary or toggle key to S1 only 2: wire 1 ex. momentary or toggle key to S2 only 3: wire 2 ex. momentary or toggle keys to S1 and S2, each key can control both directions 4: wire 2 ex. momentary keys to S1 and S2, each key control one direction.	1	
FF	Factory setting	1	85 restore factory setting		write only

Z-Wave Commands supported:

COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_ASSOCIATION_V2,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_VERSION,
COMMAND_CLASS_MANUFACTURER_SPECIFIC,
COMMAND_CLASS_MODULE_RESET_LOCALLY,
COMMAND_CLASS_POWERLEVEL,
COMMAND_CLASS_SWITCH_BINARY,

COMMAND_CLASS_SWITCH_MULTILEVEL,
COMMAND_CLASS_CONFIGURATION,
COMMAND_CLASS_SCENE_ACTUATOR_CONF,
COMMAND_CLASS_SCENE_ACTIVATION,
COMMAND_CLASS_ALARM,
COMMAND_CLASS_METER,
COMMAND_CLASS_BASIC,
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2,

Restore Factory setting

Press 10 times of external button or exclude the module from Z-Wave network, then cut off the main power. The factory setting will be restored.

SAFETY NOTICE

1. Flush-mount only into a UL/ETL/CE certified plastic junction box and Dimmer 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.

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.