

# Shutter Panel Switch

## MH-C421

## Introduction

Shutter Panel Switch is a wall panel built-in with Z-Wave Plus module. With its stylish design and stable performance, the panel can be used to wire roller shutter which controlled by AC motor (with limit). It supports basic command class, multi channel command class and multi channel association command class, 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 devices from any other manufacturers.

## Specifications

- **Power Supply:** AC85~260V, 50/60Hz
- **Output:** 1\*Max 1.7A
- **Z-Wave Frequency:** Operating frequency range, defined by the regulatory bodies (for Z-wave in Europe: 868.0 - 868.6 MHz, 869.7 - 870.0 MHz)
- **Maximum Transmitting Power:** +3dBm Active Element: Relay switch  $\mu$
- **Over Current Protection:** Required external 10A circuit breaker



### Declaration of Conformity



Hereby, MCOHome declares that the device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

### WEEE Directive Compliance

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The device marked with this symbol should not be disposed of with household waste. It is the user's responsibility to deliver the used appliance to a designated recycling point.

### Z-Wave Compliance



MCOHome shutter switch is a fully compatible Z-Wave Plus device.

## Important Safety Instruction

- ⚠ **Read the instructions before starting up the unit!**
- ⚠ **This product is not a toy. Keep out of reach of children and animals!**
- ⚠ **Do not expose the device to moisture, water or other liquids. Do not place liquids near or on the device!**
- ⚠ **Do not attempt to disassemble, repair or modify the device yourself!**
- ⚠ **This product is for indoor use only. Do not use outdoors!**



### CAUTIONS!

Flush-mount only into a UL/ETL/CE certified plastic junction box. The minimum size should be 65\*65\*45mm, minimum Volume is 190cm<sup>3</sup>. Use Copper Conductors Only.

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### CAUTIONS!

**Risk of Electric Shock - More than one disconnect switch may be required to de-energize the equipment before servicing.**

## Installation



### 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.

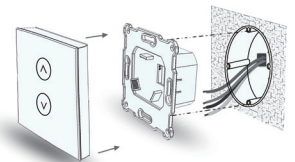


### CAUTIONS!

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

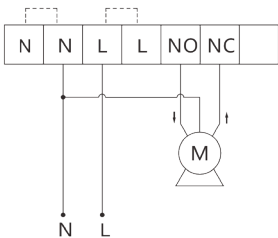
### Installation

- 1: Separate the device into two parts: the touch panel and the bottom.
- 2: Insert all wires into the terminals by following the wiring diagrams above, and tighten screws.
- 3: Secure the bottom part onto a junction box with screws, and then mount the touch panel back.
- 4: Confirm the device is well mounted, power on and it is ready to operate.



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### Wiring (standard strip length: 6-8mm)



## Operation

### INCLUDING/EXCLUDING the device into Z-Wave network:

1. Power the panel on, if LEDs flick 4 times, it shows the device is not in any Z-Wave network. If LEDs turns on orange directly, the panel is in a network already.
2. Set controller into Include/Exclude mode, and press 8 seconds or 3 clicks on "UP" or "DOWN" button to add/remove. If succeed, green LED flicks 4 times.

### Manual Operation:

1. When powered on, touch "UP/DOWN" button and release, the shutter starts to move up or down.
2. When shutter moves up, press UP button again can stop the moving.
3. When shutter moves down, press DOWN button again can stop the moving.

### 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.

Press 4 times on "UP" button, its green LED flicks; and then press 4 times on "DOWN" button, green LED flicks, to show the calibration starting automatically.

1. A demo trip which help to read motor data will start as follow:

- Shutter starts moving down.
- After a while the shutter stops, all LEDs turn off.
- Wait for 2 sec without any button touch; two green LEDs flick 4 times, the demo trip finished.

2. Then shutter moves up until upper limit.

3. Shutter moves down until bottom limit.

4. Then shutter moves up again until upper limit. At this time, two green LEDs flick 4 times to show calibration succeed.

### Calibration (on a controller):

Refer to parameter table for more details:

Write Parameter 07 with 0X01: activate demo trip only.

Write Parameter 09 with 0X01: activate demo trip and calibration together.

Write Parameter 0A with 0x01: activate calibration only.

### Shutter Open/Close Level Setting:

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

1. 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 0x00-0x62.

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2. 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 0x01-0x63.

### Energy Consumption Monitoring:

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

### Association Group:

The device supports 1 association groups (AG):

AG Identifier	Max Node ID	Command Class	Trigger Situation
1	1	COMMAND_CLASS_METER,METER_REPORT_V2	1.When the motor stops after running for a certain distance 2. The timing time of parameters 1 and 2 is up
		COMMAND_CLASS_SWITCH_MULTILEVEL, SWITCH_MULTILEVEL_REPORT	1. Click "up" or "down" and the curtain position changes 2. Received a command from the gateway to change the position of the curtain
		COMMAND_CLASS_ALARM, ALARM_REPORT	Abnormal operation of curtain motor
		COMMAND_CLASS_DEVICE_RESET_LOCALLY,DEVICE_RESET_LOCALLY_NOTIFICATION	Factory setting restored

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### Parameters Setting:

Number	Function	Size	Description	Default	Possible Values
1	Watt Meter Report period	2	Unit 5sec, power consumption interval reporting in N*5 sec	720	1-32767
2	KWH Meter Report period	2	Unit 10min, KWH interval reporting in N*10min	6	1-32767
5	Level Report Mode	1	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	2	1-2
7	Demo trip	1	1: activate demo trip only	0	0-1
8	LED Backlit brightness level	1	0 LED disabled 1~10 Min level-Max level	10	0-10
9	Demo trip and calibration	1	1:activate demo trip and calibration	0	0-1
10	Auto calibration	1	1:activate calibration	0	0-1
11	Min level of the shutter close	1	Min level of the shutter close	0	0-98
12	Max level of the shutter open	1	Max level of the shutter open	99	1-99
255	Factory setting	1	85 restore factory setting	0	0, 85

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### Z-Wave Supported Command Class:

COMMAND\_CLASS\_ZWAVEPLUS\_INFO,

COMMAND\_CLASS\_VERSION,

COMMAND\_CLASS\_POWERLEVEL,

COMMAND\_CLASS\_CONFIGURATION,

COMMAND\_CLASS\_ALARM,

COMMAND\_CLASS\_FIRMWARE\_UPDATE\_MD,

COMMAND\_CLASS\_ASSOCIATION,

COMMAND\_CLASS\_MANUFACTURER\_SPECIFIC,

COMMAND\_CLASS\_SWITCH\_BINARY,

COMMAND\_CLASS\_SCENE\_ACTUATOR\_CONF,

COMMAND\_CLASS\_METER,

COMMAND\_CLASS\_ASSOCIATION\_GRP\_INFO,

COMMAND\_CLASS\_DEVICE\_RESET\_LOCALLY,

COMMAND\_CLASS\_SWITCH\_MULTILEVEL,

COMMAND\_CLASS\_SCENE\_ACTIVATION,

COMMAND\_CLASS\_BASIC,

### Restore Factory Setting

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

## 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.