Dimmer Switch

MH-DT411

- **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**

  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 dimmer 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!

Installation

Step 1: Separate the device into two parts: the touch panel and the bottom.

Step 2: Insert all wires into the right terminals by following the wiring diagrams as below, and tighten screws.

Step 3: Secure the bottom part onto a junction box with screws, and then mount the touch panel back.

Step 4: Confirm the device is well mounted, power on and it is ready to operate.

Wiring (standard strip length: 6-8mm)

Notes: S1, S2, Sx are optional terminals for an external dimmer panel input.
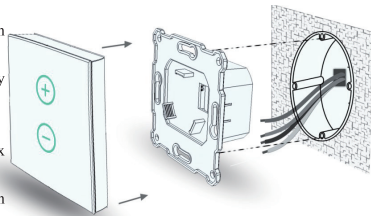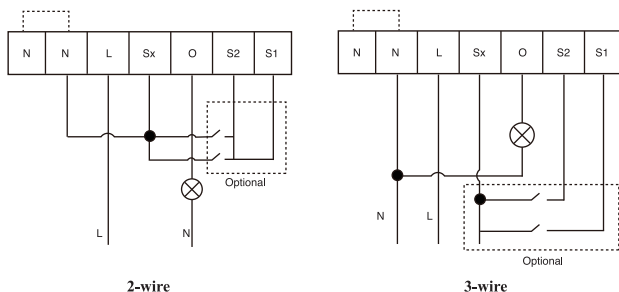

| 2-wire | 3-wire |

Introduction

Dimmer 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 control the light level. 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. The device 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
- **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

Supported Load Type		Output
	Resistive loads Conventional incandescent And halogen light sources	20-200W
	Resistive-capacitive loads Fluorescent tube lamp (compact/ with electronic ballast), electronic transformer, LED	30-160VA
	Resistive-inductive loads Ferromagnetic transformers	30-160VA

Note: Some types of the Led bulbs and compact fluorescent lamps are designed to work in leading edge operating mode.

⚠ **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 190cm³. Use Copper Conductors Only.

⚠ **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.

Preparing

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

Operation

INCLUSION /EXCLUSION From Z-Wave Network：

1. Set controller into Add/Remove mode, and press 3 clicks on "+" or "-" button to add/remove. If succeed, green LED flicks 4 times.

2. If an external switch panel wired, press/toggle the button on that panel 3 times also can add /remove the network (To make the external panel work, set the parameter 0X0E with value 1, 2, 3 or 4).

Manual Operation：

1. When powered on, hold "+/-" button will dimming the light level up or down.(Not valid when the dimming mode is "on/off only")

2. Double click of "+" will turn on the light to the brightness level, and double click of "-" will turn off the light.

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).

The Dimming percentage when single touch of button "+" or "-"

1. Parameter 0x0B is used to set the value. For instance: The current light level is 0, and the set value is 0x10. When first single touch "+", the light level will reach 0x10, and the second single touch of "+" will make the level reach 0x20, single touch "- " will make it back to 0x10 again.

2. Hold the "+" or "-" and release, the changed light level percentage during the holding will be saved and performed in the next single touch dimming.

Notification:

1. Parameter 32 and 33 are used to set the notification threshold.
2. When enabled, device will send unsolicited notification frame to gateway.

Association Group:

The device supports 4 association groups (AG):

AG Identifier	Max Node ID	Command Class	Trigger Situation
1	1	COMMAND_CLASS_METER, METER_REPORT_V2	The load instant power changes after dimming.
		COMMAND_CLASS_SWITCH_MULTILEVEL, SWITCH_MULTILEVEL_REPORT	1. Press or hold momentary button on the device. 2. Press or hold external button S1 3. Get dimming request from the gateway and complete dimming.
		COMMAND_CLASS_NOTIFICATION,NOTIFICATION_REPORT	Load exceeds the threshold set by parameter 32~34
		COMMAND_CLASS_DEVICE_RESET_LOCALLY,DEVICE_RESET_LOCALLY_NOTIFICATION	Factory setting restored
2	5	COMMAND_CLASS_SWITCH_MULTILEVEL, SWITCH_MULTILEVEL_REPORT	1. Long or short press internal button; 2. Long or short press external button S1; 3. Get dimming request from the gateway and complete dimming.
3	5	COMMAND_CLASS_BASIC_V2, BASIC_SET_V2	1. Short press internal button to open load; 2. Short press external button S1 to open load.
4	5	COMMAND_CLASS_BASIC_V2, BASIC_SET_V2	1. Short press internal button to close load; 2. Short press external button S1 to close load.

Parameter Setting:

Number	Function	Size	Description	Default	Possible Values
1	Dimmer State Saved Or Not When Power Failure	1	**0**: Not saved, Dimmer will be off when powered again **1**: Saved, Dimmer will keep the same state when powered again	0	0-1
2	Dimming Mode	1	**0** : Leading edge　　　**1**: Trailing edge　　　**2** : On/off only	1	0-2
3	Auto Detection Of Dimming Mode When Powered On	1	**0**:Auto detection disabled　　　**1**:Auto detection enabled　　　**2**:Automatically detects the load type once	1	0-2
4	LED Backlit Brightness Level	1	**0**: LED disabled　　　**1~10**: Min level-Max level	10	0-10
5	Minimum Brightness Level	1	**1~98**: Percentage brightness level	1	1-98
6	Maximum Brightness Level	1	**2~99**: Percentage brightness level	99	2-99
7	Single Dimming Step Time (Manual)	2	**0-255**: (Max 2.55s, in 10ms steps)This parameter defines the time of single dimming step set in parameter 8 during the manual control. Manual control is performed through holding the push-button.	3	0-255
8	Single Dimming Step Size (Manual)	1	**1~99**: Dimming step percentage value(modification isn't recommended)This parameter defines the percentage value of dimming step during the manual control. Manual control is performed through holding the push-button.	1	1-99
9	Single Dimming Step Time (Auto)	2	**0~255**: (Max 2.55s, in 10ms steps)This parameter defines the time of single dimming step set in parameter A during the automatic control. Automatic control is performed through:- single push-button click - double push-button click - Z-Wave control frames	3	0-255
10	Single Dimming Step Size (Auto)	1	**1~99**: Dimming step percentage value (modification isn't recommended) This parameter defines the percentage value of dimming step during the automatic control. Automatic control is performed through: - single push-button click - double push-button click - Z-Wave control frames	1	1-99
11	The Dimming Percentage When Single Touch Of Button "+" Or "-"	1	**0**: The percentage get by the last button-holding touch **1~99**: Percentage value With this parameter you can set the light level the lamp will reach when you turn on the lamp of single touch "+"	0	1-99
12	Reporting Interval For Dimming Level	1	**0**: No report during dimming send report in **1-255**:N*10ms interval	10	0-255
13	External Switch Type	1	**0** :Button (Momentary buttons) **1**: Toggle (2-state Switches)	0	0-1
14	External Switch Input	1	**0**: Function disabled　　　　　　**1**: Wire 1 ex.switch key to S1 only **2**: Wire 1 ex.switch key to S2 only **3**: Wire 2 ex.switch keys to S1 and S2, each key can control both dimming directions **4**: Wire 2 ex.switch keys to S1 and S2, each key control one dimming direction	1	0-4
15	Energy Meter Reporting	1	**0**: Disabled　　　　　**1**: Only report Watt　　　**2**: Only report KWH **3**: Only report Watt & KWH　　　**4**: Only report Ampere　　　**5**: Only report Ampere & Watt **6**: Only report Ampere & KWH　　　**7**: Only report Ampere & KWH & Watt **8**: Only report Voltage　　　**9**: Only report Voltage & Watt **10**: Only report Voltage & KWH　　　**11**: Only report Voltage & KWH & Watt **12**: Only report Voltage & Ampere　　　**13**: Only report Voltage & Ampere & Watt **14**: Only report Voltage & Ampere & KWH **15**: Only report Voltage & Ampere & KWH &Watt	0	
16	Energy Meter Reporting Interval	2	**1-32768**:n*1sec	16	1-32768
17	Beep	1	**0**: Beep disabled　　　**1**: Beep enabled	1	0-1
32	Ampere Alarm Threshold	2	**0**: Alarm disabled　　　**1-5000**:N*0.01 A alarm enabled	0	0-5000
34	Instantaneous Consumption　Alarm Threshold	2	**0**: Alarm disabled　　　**1-3000**:N*0.1 W alarm enabled	2000	0-3000
35	Overload Time Before Load Off	1	**0**: Disabled **1-255**: sec To protect the device not overload burned, it will be load off automatically after load time detection Device will send Notification Command to gateway)	20	0-255
36	Auto Load Off When Overload	1	**0**: Auto load off disabled　　　**1**: Auto load off enabled	0	0-1
64	Detection Ampere Of Overload	2	Read only		
65	Detection Voltage Of Overload	2	Read only		
66	Detection Power Of Overload	2	Read only		
67	Overload Time	1	Read only		
255	Factory Setting	1	85: Restore factory setting		85

Z-Wave Supported Command Class:

COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_ASSOCIATION_V2,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_VERSION,
COMMAND_CLASS_MANUFACTURER_SPECIFIC,
COMMAND_CLASS_DEVICE_RESET_LOCALLY,
COMMAND_CLASS_POWERLEVEL,
COMMAND_CLASS_SWITCH_MULTILEVEL,
COMMAND_CLASS_CONFIGURATION,
COMMAND_CLASS_SCENE_ACTUATOR_CONF,
COMMAND_CLASS_SCENE_ACTIVATION,
COMMAND_CLASS_NOTIFICATION_V4,
COMMAND_CLASS_METER,
COMMAND_CLASS_BASIC,
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2,

Restore Factory Setting

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