

Micro Dimmer

MH-P220

Introduction

Micro Dimmer is a Z-Wave Plus enabled in-wall module which can be wired with a wall switch panel. It supports basic command class, and also can act as a repeater in Z-Wave network. This product can be added and operated in any Z-Wave network with other Z-Wave certified devices from any other manufacturers. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

Specifications

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

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

*Max output: 1*2A (Resistive)

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

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

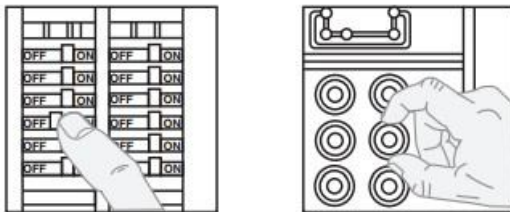
Installation Instructions

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

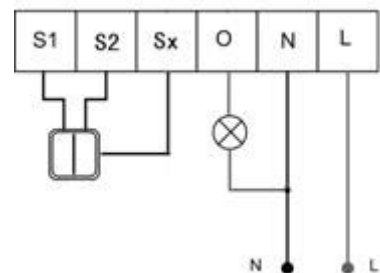
CAUTION: Cut off power supply at circuit breaker or fuse before installation to avoid fire, shock or death!



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 "O" with load and then with "N".
4. Connect "S1", "S2" & "Sx" with external switch panel (Optional).



Step3 Mounting Wall Switch

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

Add the device into Z-Wave network:

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

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

Remove the device from Z-Wave network:

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

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

Dimming:

The device can be controlled by:

- Pressing external button.
- Sending commands through controller or gateway. (the command classes which support this function are Basic_Command_Class, Multi_Level_Switch_Command_Class)

Note: The Basic_Set_CC supports Value 0-99, and value 0 — 0% dimming level; 99— 99% dimming level, FF— the most recent (non-zero) level.

Association Group:

The device supports 3 association groups (AG):

AG identifier	Max Node ID	Command Classes	Trigger situation
0x01	1	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_DEVICE_RESET_LOCALLY, DEVICE_RESET_LOCALLY_NOTIFICATION	Factory setting restored
0x02	1	COMMAND_CLASS_BASIC,BASIC_SET	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.
0x03	1	COMMAND_CLASS_SWITCH_MULTILEVEL,SWITCH_MULTILEVEL_SET	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.

And the Command Classes can be sent via Lifeline are as below:

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{COMMAND_CLASS_SWITCH_MULTILEVEL, SWITCH_MULTILEVEL_REPORT}, \
{COMMAND_CLASS_DEVICE_RESET_LOCALLY,DEVICE_RESET_LOCALLY_NOTIFICATION}
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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.

Parameters Setting:

Add	Function	Byte	Options	Default	Remark
1	Dimmer state saved or not when power down	1	0x00 not saved, Dimmer will be off when powered again 0x01 saved, Dimmer will keep the same state when powered again	0x01	
2	External switch type	1	0x00 Button (Momentary buttons) 0x01 Toggle (2-state Switches) 0x02 Roller blinds switch: S1 Dim up , S2 Dim down	0x00	
3	2-state Switches	1	0x00 for the toggle Dimmer without specified on/off position 0x01 for the toggle Dimmer with specified on/off position	0x00	
5	Minimum brightness level	1	1~98 percentage brightness level	0x05	The max level should always

6	Maximum brightness level	1	2~99 percentage brightness level	0x63	higher than min level
7	Single dimming step time(Manual)	2	Max 5.11s, in 10ms steps	0x0003 (30ms)	Manual control realized by holding external button
8	Single dimming step size(Manual)	1	1~99 percentage value (modification isn't recommended)	0x01	
9	Single dimming step time (Auto)	2	Max 5.11s, in 10ms steps	0x0001 (10ms)	Auto control realized by: - one click; - double click of external button; - send Z-Wave CC
10	Single dimming step size (Auto)	1	1~99 percentage value (modification isn't recommended)	0x01	
13	One click of S1	1	0x00 switch between Off and last saved brightness level 1~99 percentage value switch between Off and the set value	0x00	
255	Factory setting	1	0x55 restore factory setting		write only

● **Command Class supported by the device:** (supports S2 unauthenticated level)

- | | |
|--------------------------------------|------------------------------------|
| COMMAND_CLASS_VERSION, | COMMAND_CLASS_BASIC, |
| COMMAND_CLASS_MANUFACTURER_SPECIFIC, | COMMAND_CLASS_CONFIGURATION, |
| COMMAND_CLASS_DEVICE_RESET_LOCALLY, | COMMAND_CLASS_SCENE_ACTIVATION, |
| COMMAND_CLASS_POWERLEVEL, | COMMAND_CLASS_SUPERVISION, |
| COMMAND_CLASS_ASSOCIATION, | COMMAND_CLASS_SCENE_ACTUATOR_CONF, |
| COMMAND_CLASS_ASSOCIATION_GRP_INFO, | COMMAND_CLASS_FIRMWARE_UPDATE_MD, |
| COMMAND_CLASS_SWITCH_MULTILEVEL, | |

Command Class supported by the device: (Not supports S2)

- COMMAND_CLASS_ZWAVEPLUS_INFO
 COMMAND_CLASS_TRANSPORT_SERVICE
 COMMAND_CLASS_SECURITY_2

Restoring Factory Settings:

The default configuration can be restored by:

- Sending commands through controller/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.

- Or press the inner button on the module 10 times in quick succession. Please use this procedure only when the network primary controller is missing or otherwise inoperable.

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 Dimmer may be required to de-energize the equipment before servicing.
4. WARNING-This device shall not be used in combination with a wall Dimmer controlling a receptacle.

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

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.