


# Micro Dimmer

## MH-P220

V1.1

### Preparing

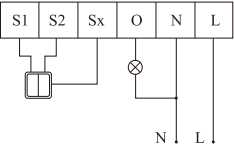


**CAUTION:**  
Cut off power supply at circuit breaker or fuse before installation to avoid fire, shock or death!

### Wiring

(standard strip length: 6-7mm)

1. Connect Live 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).



### Mounting In-Wall Box

Mount wall switch and cover plate back to the in-wall box.

### Restoring Power




Restore power at circuit breaker or fuse. Installation is complete.

## Introduction

Micro Dimmer is a smart wall dimmer that can control light source via Z-Wave network, you can install it with traditional switch for both local and remote control. 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:** 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
- **Dimension :** 44 \*38 \*17mm (L \*W \*H)

Supported Load Type		Output
	<b>Resistive loads</b> Conventional incandescent And halogen light sources	500W Max
	<b>Resistive-capacitive loads</b> Fluorescent tube lamp (compact/ with electronic ballast), electronic transformer, LED	350VA Max(power factor>0.5)
	<b>Resistive-inductive loads</b> Ferromagnetic transformers	350VA Max(power factor>0.5)

***Note:** Some types of the Led bulbs and compact fluorescent lamps are designed to work in trailing edge operating mode, in this case, please choose MH-D220 dimmer module.*

## Operation

### INCLUDING/EXCLUSION From Z-Wave Network:

- 1.** Set controller into Add/Remove mode. Follow the instructions provided by the controller/gateway manufacturer.
- 2.** 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.

### 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)



#### Declaration of Conformity



Hereby, we declare 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



The 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!

### Association Group:

The device supports 4 association groups (AG):

AG Identifier	Max Node ID	Command Class	Trigger situation
1	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
2	10	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.
3	10	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.
4	10	COMMAND_CLASS_BASIC, BASIC_SET	Press external button S2

### 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. Please refer to the following table items 19, 20&21 for more details in configuration.

### Command Class Supported By The Device: (support 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,	




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\*42mm, minimum Volume is 180cm³. Use Copper Conductors Only.



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



**CAUTIONS!**  
This device shall not be used in combination with a wall dimmer controlling a receptacle.

## 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

Command Class Supported By The Device: (not support S2)

COMMAND\_CLASS\_ZWAVEPLUS\_INFO                      COMMAND\_CLASS\_TRANSPORT\_SERVICE                      COMMAND\_CLASS\_SECURITY\_2

Parameters Setting:

Number	Function	Size	Description	Default	Possible Values
1	Dimmer State Saved Or Not When Power Failure	1	<b>0:</b> Not saved , Dimmer will be off when powered again <b>1:</b> Saved , Dimmer will keep thesame state when powered again	1	0-1
2	External Switch Type	1	<b>0:</b> Button (Momentary buttons ) <b>1:</b> Toggle (2-state Switches ) <b>2:</b> Roller blinds switch:S1 Dim up , S2 Dim down	0	0-2
3	2-State Switches	1	<b>0:</b> For the toggle Dimmer without specified on/off position <b>1:</b> For the toggle Dimmer with specified on/off position	1	0-1
4	ALL ON/ALL OFF	1	<b>0:</b> Forbid ALL ON, forbid ALL OFF <b>1:</b> Forbid ALL ON, allow ALL OFF <b>2:</b> Allow ALL ON, forbid ALL OFF <b>255:</b> Allow ALL ON, allow ALL OFF	255	0-2,255
5	Minimum Brightness Level	1	<b>1~98</b> Percentage brightness level The max level should always higher than min level	1	1-98
6	Maximum brightness level	1	<b>2~99</b> percentage brightness level The max level should always higher than min level	99	2-99
7	Single Dimming Step    Time(Manual)	2	Max 2.55s, in 10ms steps Manual control realized by: holding button	3	1-255
8	Single Dimming Step    Size(Manual)	1	<b>1~99</b> Percentage value Manual control realized by: holding button	1	1-99
9	Single Dimming Step Time (Auto)	2	Max 2.55s, in 10ms steps Auto control realized by: -one click; -double click of external button; -send Z-Wave CC	3	1-255
10	Single Dimming Step Size (Auto)	1	<b>1~99</b> Percentage value Auto control realized by: - one click; - double click of external button; - send Z-Wave CC	1	1-99
11	Timer Function (Auto-off)	2	<b>0:</b> Function disabled <b>1~255:</b> 1s~255s	0	0-255
13	One Click Of S1	1	<b>0:</b> Switch between Off and last saved brightness level <b>1~99:</b> Percentage value switch between Off and the set value	99	0-99
14	Double Click Of S1	1	<b>0:</b> Function disabled <b>1:</b> Reach max brightness level	1	0-1
15	Operation Report From Switch1 to Association Group 2 & 3	1	<b>0:</b> Report all operation to AG2&3; report Change Dimming Level <b>1:</b> Only report Basic Set ON; report Change Dimming Level <b>2:</b> Only report Basic Set OFF; report Change Dimming Level <b>128:</b> Report all operation to AG2&3;not report Change Dimming Level <b>129:</b> Only report Basic Set ON; not report Change Dimming Level <b>130:</b> Only report Basic Set OFF; not report Change Dimming Level	0	0-2; 128-130
16	Operation Report From Switch1 To Association Group 2	1	<b>0:</b> When sent Basic Set On, carried Value is 0xFF <b>1:</b> When sent Basic Set On, carried Value is Current Dimmer Value	1	0-1
17	Switch 2 Function	1	<b>0:</b> Wire with roller blinds switch <b>1:</b> Enable Scene Activation, and send Basic Set ON/OFF to AG4 <b>2:</b> Scene Activation only <b>3:</b> Send Basic ON/OFF only <b>255:</b> Disable S2 Function	1	0-3,255
18	Operation Report From Switch2 To Association Group 4	1	<b>0:</b> Send Basic ON or Basic OFF to AG4 when turn on/off S2 <b>1:</b> Only send Basic ON <b>2:</b> Only send Basic OFF <b>255:</b> No report to AG 4	0	0-2,255
19	Scene ID Send To AG1 When One Click of S2	1	<b>0:</b> Scene Activation disabled <b>1~255</b> send Activation CC to AG1 with specified Scene ID	0	0-255
20	Scene ID Send To AG1 When Double Click of S2	1	<b>0:</b> Scene Activation disabled <b>1~255</b> send Activation CC to AG1 with specified Scene ID	0	0-255
21	Scene ID Send To AG1 When Hold S2	1	<b>0:</b> Scene Activation disabled <b>1~255</b> send Activation CC to AG1 with specified Scene ID	0	0-255
255	Factory Reset	1	<b>85:</b> Restore factory setting		85

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.

- Pressing and Holding the momentary button on device for 15s.

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

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.