



Dimmer Module MH-DA221

V1.1


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

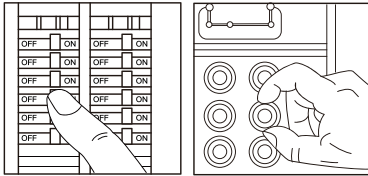
 The device marked with this symbol should not be disposed of with household waste. It is the user's responsibility to deliver the used appliance to a designated recycling point.

Z-Wave Compliance

 The dimmer module is a fully compatible Z-Wave Plus device.

Important Safety Instruction

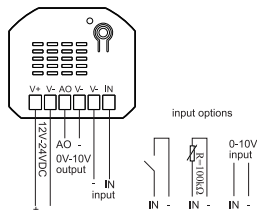
-  **Read the instructions before starting up the unit!**
-  **Do not expose the device to moisture, water or other liquids. Do not place liquids near or on the device!**
-  **Do not attempt to disassemble, repair or modify the device yourself!**
-  **This product is for indoor use only. Do not use outdoors!**



1. Remove the wall switch cover plate.
2. Disconnect both wires from the wall switch.

Wiring (standard strip length: 6-7mm)

V+/+	12-24VDC
V-/-	GND
AO	Analog Output 0-10VDC
IN	Input for push-button/switch/potentiometer or 0-10V
S	Service button (used to add or remove device from the Z-Wave network)



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

Dimmer Module 0-10V is a smart wall dimmer with a standard 0-10V output and a multi-function input, you can install it with traditional switch for both local and remote control. It supports push-button/momentary switches, toggle switches and 0-10V inputs (requires external source). 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:** 12-24VDC
- **Max. Sourcing Control Voltage:** 0-11VDC sourcing
- **Current:** 10mA Max
- **Accuracy:** <3% FS
- **Operation Temperature:** -10~+50 C
- **Electricity Consumption:** 0.5W
- **In-wall Switch Type:** push-button (momentary), on/off toggle switch, potentiometer, 0-10V temperature sensor, 0-10V illumination sensor, 0-10V general purpose sensor
- **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)



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

Preparing

CAUTION: 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. 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 above operation is succeeded, the device will send out learning frame and the LED blinks continually, until the LED stop blinking and the inclusion/exclusion completed.

Turning On/Off The Device:

The device can be controlled by:

- Toggling/pressing external panel switch/button.
- Sending commands through controller/gateway.(the command classes which support this function are Basic_Command_Class, Binary_Switch_Command_Class)

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 50 Scene ID.

Command Class Supported By The Device: (support S2 unauthenticated level)

COMMAND_CLASS_CONFIGURATION,
COMMAND_CLASS_SCENE_ACTUATOR_CONF,

COMMAND_CLASS_SCENE_ACTIVATION, COMMAND_CLASS_ASSOCIATION, COMMAND_CLASS_SWITCH_MULTILEVEL, COMMAND_CLASS_ASSOCIATION_GRP_INFO,
 COMMAND_CLASS_VERSION, COMMAND_CLASS_MANUFACTURER_SPECIFIC, COMMAND_CLASS_DEVICE_RESET_LOCALLY, COMMAND_CLASS_POWERLEVEL,
 COMMAND_CLASS_FIRMWARE_UPDATE_MD_V5

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

COMMAND_CLASS_TRANSPORT_SERVICE_V2, COMMAND_CLASS_SECURITY_2, COMMAND_CLASS_SUPERVISION, COMMAND_CLASS_ZWAVEPLUS_INFO

Association Group:

The device supports 2 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 S button on the device. 2. Press or hold external button; 3. Get dimming request from the gateway and complete dimming.
		COMMAND_CLASS_DEVICE_RESET_LOCALLY, DEVICE_RESET_LOCALLY_NOTIFICATION	Factory setting restored
2	5	COMMAND_CLASS_SWITCH_MULTILEVEL, SWITCH_MULTILEVEL_SET	1. Long or short press S button; 2. Long or short press external button ; 3. Get dimming request from the gateway and complete dimming.

Z-Wave Parameters Setting:

Number	Function	Size	Description	Default	Possible Values
1	Restore The Default Setting Or Not After The Device Remove From The Gateway	1	0: Not restore the default setting 1: Restore the default setting	1	0-1
2	External Switch Type	1	0: Push-button (Momentary buttons) 1: For the toggle dimmer without specified on/off position 2: For the toggle dimmer with specified on/off position 3: potentiometer(100K Ω) 4: 0-10V input Note: After changed the value from 0-2 to 3-4, or 3-4 to 0-2, the setting will be valid only after the device power on again	0	0-4
3	Minimum Brightness Level	1	1~98 Percentage brightness level The max level should always higher than min level	1	1-98
4	Maximum Brightness Level	1	2~99 Percentage brightness level The max level should always higher than min level	99	2-99
5	Single Dimming Step Time(Manual)	1	10ms*n Manual control realized by: holding button	3	1-255
6	Single Dimming Step Size(Manual)	1	1~99 Percentage value Manual control realized by: holding button	1	1-99
7	Single Dimming Step Time (Auto)	1	10ms*n Auto control realized by: -one click; -double click of external button; -send Z-Wave CC	3	1-255
8	Single Dimming Step Size (Auto)	1	1~99 Percentage value Auto control realized by: - one click; - double click of external button; - send Z-Wave CC	1	1-99
9	Dimming Value	1	0: Follow the state of the last dimming 1-99 dimming value	0	0-99
10	Dimming Value Interval Reporting During Dimming Process	1	0: Disabled Send a report once for 1-255 (0.1-25.5seconds, time(s)=0.1xValue	0	0-255
11	Input 0-10V Dimming Step	1	1-100: n*0.1V	3	1-100
255	Factory Setting	1	85 Restore factory setting	0	0, 85

Restoring Factory Settings

The default configuration can be restored by:

- Sending commands through controller or gateway (the command classes which support this function is Configuration Command Class). The parameter are as follows:

Parameter Number	255
Size	1 BYTE
Default value	N/A
Configuration value	85

Set 255 as 85 will restore Factory Settings.

- By manual: press S button on the device 20 times in quick succession.

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.