

[Skip to content](#)

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MCO Home Micro Dimmer MH-P220 Manual

[Home](#) » [MCO HOME](#) » MCO Home Micro Dimmer MH-P220 Manual



Contents [hide](#)

[1 MCO Home](#)

[2 Micro Dimmer](#)

[2.1 SKU: MH-P220](#)

[2.2 Quickstart](#)

[2.3 Important safety information](#)

[2.4 What is Z-Wave?](#)

[2.5 Product Description](#)

[2.6 Prepare for Installation / Reset](#)

[2.6.1 Reset to factory default](#)

[2.6.2 Safety Warning for Mains Powered Devices](#)

[2.7 Inclusion/Exclusion](#)

[2.7.1 Inclusion](#)

[2.7.2 Exclusion](#)

[2.8 Quick trouble shooting](#)

[2.9 Association – one device controls an other device](#)

[2.9.1 Association Groups:](#)

[2.10 Configuration Parameters](#)

[2.10.1 Parameter 1: Dimmer state saved or not when power down](#)

[2.10.2 Parameter 10: Single dimmingstep size \(Auto\)](#)

[2.10.3 Parameter 13: One click of S1](#)

[2.10.4 Parameter 2: External switch type](#)

[2.10.5 Parameter 255: Factory setting](#)

[2.10.6 Parameter 3: 2-state Switches](#)

[2.10.7 Parameter 5: Minimum brightness level](#)

[2.10.8 Parameter 6: Maximum brightness level](#)

[2.10.9 Parameter 7: Single dimmingstep time\(Manual\)](#)

[2.10.10 Parameter 8: Single dimmingstep size\(Manual\)](#)

[2.10.11 Parameter 9: Single dimmingstep time \(Auto\)](#)

[2.11 Technical Data](#)

[2.12 Supported Command Classes](#)

[2.13 Explanation of Z-Wave specific terms](#)

[2.14 Related Posts](#)

MCO Home

Micro Dimmer

SKU: MH-P220



Quickstart

This is a
secure

Light Dimmer

for

U.S. / Canada / Mexico.

To run this device please connect it to your mains power supply.

To add this device to your network execute the following action:

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 switches state.

Please refer to the

[Manufacturers Manual](#) for more information.

Important safety information

Please read this manual carefully. Failure to follow the recommendations in this manual may be dangerous or may violate the law.

The manufacturer, importer, distributor and seller shall not be liable for any loss or damage resulting from failure to comply with the instructions in this manual or any other material.

Use this equipment only for its intended purpose. Follow the disposal instructions.

Do not dispose of electronic equipment or batteries in a fire or near open heat sources.

What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section.

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.



This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to www.z-wave.info.

Product Description

This in-wall module is with compact design as well as stable performance, which can suit for any of the installation box and various operation situation. It supports basic command class, and also can act as repeater regardless of vendor to increase reliability of the network.

Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state**. Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

Reset to factory default

This device also allows to be reset without any involvement of a Z-Wave controller. This procedure should only be used when the primary controller is inoperable.

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 Warning for Mains Powered Devices

ATTENTION: only authorized technicians under consideration of the country-specific installation guidelines/norms may do works with mains power. Prior to the assembly of the product, the voltage network has to be switched off and ensured against re-switching.

Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

Inclusion

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 state.

Exclusion

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 state.

Quick trouble shooting

Here are a few hints for network installation if things don't work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.

3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

Association – one device controls an other device

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed, sensor triggers, ...). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a 'Basic Set' Command.

Association Groups:

Group Number Maximum Nodes Description

- The Command Classes will be sent in this Group are :1. COMMAND_CLASS_SWITCH_MULTILEVEL,2. SWITCH_MULTILEVEL_REPORT3. COMMAND_CLASS_DEVICE_RESET_LOCALLY, 4.
- 1 1 DEVICE_RESET_LOCALLY_NOTIFICATION And the trigger situation for the first 2 CCs are:1 Press or hold momentary button on the device. 2 Or Press or hold external button S13 Or Get dimming request from the gateway and complete dimming. For the rest 2 CCs is: When Factory setting restored
- The Command Classes will be sent in this Group is :COMMAND_CLASS_BASIC, BASIC_SET And the trigger situation are:1 Press or hold momentary button on the device. 2 Or Press or hold external button S13 Or Get dimming request from the gateway and complete dimming.
- The Command Classes will be sent in this Group is :COMMAND_CLASS_SWITCH_MULTILEVEL, SWITCH_MULTILEVEL_SET And the trigger situation are:1 Press or hold momentary button on the device. 2 Or Press or hold external button S13 Or Get dimming request from the gateway and complete dimming.

Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however certain configuration can adapt the function better to user needs or unlock further enhanced features.

IMPORTANT: Controllers may only allow configuring signed values. In order to set values in the range 128 ... 255 the value sent in the application shall be the desired value minus 256. For example: To set a parameter to 200 it may be needed to set a value of 200 minus 256 = minus 56. In case of a two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

Parameter 1: Dimmer state saved or not when power down

0x00 not saved Dimmer will be off when powered again 0x01 saved Dimmer will keep the same state when powered again

Size: 1 Byte, Default Value: 1

Setting Description

0 – 0: not saved Dimmer will be off when powered again; 1: saved Dimmer will keep the same state when powered again

Parameter 10: Single dimming step size (Auto)

1~99 percentage value (modification isn't recommended)

Size: 1 Byte, Default Value: 1

SettingDescription

1 – 99 1~99 percentage value

Parameter 13: One click of S1

0x00 switch between Off and last saved brightness level 1~99 percentage value switch between Off and the set value

Size: 1 Byte, Default Value: 0

SettingDescription

0 – 0 :switch between Off and last saved brightness level; 1~99: percentage value switch between Off and the set
99 value

Parameter 2: External switch type

0x00 Button (Momentary buttons) 0x01 Toggle (2-state Switches) 0x02 Roller blinds switch:S1 Dim up S2 Dim down

Size: 1 Byte, Default Value: 0

SettingDescription

0 – 0: Button (Momentary buttons) ; 1: Toggle (2-state Switches) ; 2: Roller blinds switch:S1 Dim up S2 Dim down
2

Parameter 255: Factory setting

0x55 restore factory setting (Write only)

Size: 1 Byte, Default Value: 0

SettingDescription

0 – 85 0-84: no operation: 85: factory setting restoring

Parameter 3: 2-state Switches

0x00 for the toggle Dimmer without specified on/off position 0x01 for the toggle Dimmer with specified on/off position

Size: 1 Byte, Default Value: 0

SettingDescription

0 – 0: for the toggle Dimmer without specified on/off position; 1: for the toggle Dimmer with specified on/off position
1

Parameter 5: Minimum brightness level

1~98 percentage brightness level

Size: 1 Byte, Default Value: 5

SettingDescription

1 – 98 1~98 percentage brightness level

Parameter 6: Maximum brightness level

2~99 percentage brightness level

Size: 1 Byte, Default Value: 99

SettingDescription

2 – 99 2~99 percentage brightness level

Parameter 7: Single dimmingstep time(Manual)

Max 5.11s, in 10ms steps

Size: 2 Byte, Default Value: 3

SettingDescription

0 – 511 Max 5.11s, in 10ms steps

Parameter 8: Single dimmingstep size(Manual)

1~99 percentage value (modification isnt recommended)

Size: 1 Byte, Default Value: 1

SettingDescription

1 – 99 1~99 percentage value

Parameter 9: Single dimmingstep time (Auto)

Max 5.11s, in 10ms steps

Size: 2 Byte, Default Value: 1

SettingDescription

0 – 511 Max 5.11s, in 10ms steps

Technical Data

Hardware Platform	ZM5202
Device Type	Light Dimmer Switch
Network Operation	Always On Slave
Firmware Version	HW: 255 FW: 3.02
Z-Wave Version	6.71.03
Certification ID	ZC10-18086201
Z-Wave Product Id	0x015F.0x220A.0x5101
Neutral Wire Required	ok
Firmware Updatable	Updatable by Professional/Technician
Color	Dark Gray
Security V2	S2_UNAUTHENTICATED
Frequency	XXfrequency
Maximum transmission power XXantenna	

Supported Command Classes

- Association Grp Info
- Association V2
- Basic
- Configuration
- Device Reset Locally

- Firmware Update Md V4
- Manufacturer Specific V2
- Powerlevel
- Scene Activation
- Scene Actuator Conf
- Security 2
- Supervision
- Switch Multilevel V2
- Transport Service V2
- Version V2
- Zwaveplus Info V2

Explanation of Z-Wave specific terms

- **Controller** — is a Z-Wave device with capabilities to manage the network. Controllers are typically Gateways, Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **WakeUp Notification** — is a special wireless message issued by a Z-Wave device to announce that it is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.

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