MCOHOME MCOEA8-9 9 in 1 Home Multi Sensor User Guide

MCO Home
9 in 1 MULTI-SENSOR
SKU: MCOEA8-9

Quickstart
This is a **secure Alarm Sensor** for **Europe**. To run this device please connect it to your mains power supply. To add this device to your network execute the following action:

1. Hold F1 to choose interface for Add or Remove Z-Wave network.
2. Click F2 five times until arrows icon turns blue
3. Hold F2 and the device enters into learning mode, the radio icon turns blue and the device is added into the Z-Wave network.

Contents

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 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

MCOHome A8-9 is a Z-Wave enabled multiple environmental monitoring sensor, with a 3.5 inches TFT clear display and compliant to Z-Wave Plus standard. It is built-in with Temperature, Humidity, PM2.5, CO2, VOC, PIR, illumination, Noise, Smoke sensor. Device can be added into any Z-Wave network and is compatible with any other Z-Wave certified devices.

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

1. Press & hold F1 to enter the Z-Wave setting interface, then press & hold F1 again to enter the parameters setting interface
2. Press & hold F2 to enter the setting interface and select default
3. Click F2 3 times and displays OFF–>ON–>OK–>OFF, factory setting is restored.

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.

Installation

Device is suggested to be installed indoors, a place with around 1.5m height above the floor where represents the average CO2 concentration. It should be away from direct sunlight, any cover, or any heat source, to avoid false

signals for temperature control.

Notice!

1. Device must be wall-mounted vertically. Do not lay it flat or upside down while working.
2. Do not mount it in a wind gap, or cover its bottom, which may affect the detected data.

Step 1: Remove the steel frame from the backside of the device, and then fix it onto the installation box with 2 screws.
Step 2: Wire the adaptor.
Step 3: Put the device back onto the steel frame, it will attach with the frame firmly by built-in magnets.
Step 4: Check the installation and power, the device is ready for work.

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

1. Hold F1 to choose interface for Add or Remove Z-Wave network.
2. Click F2 five times until arrows icon turns blue
3. Hold F2 and the device enters into learning mode, then radio icon turns blue and the device is added into the Z-Wave network.

Exclusion

1. Hold F1 to choose interface for Add or Remove Z-Wave network.
2. Click F2 five times until arrows icon turns blue
3. Hold F2 and the device enters into learning mode, then radio icon turns blue and the device is removed into the Z-Wave network.

Product Usage
Power on/off
Wire the adaptor and the device is powered on. It will display all detected information by the sensors.
Display interface
Hold Key F1 can switch among the following 4 display interfaces:

1. Data detecting: display all sensors data
2. Network: Z-Wave Add/Remove
3. Data calibration: to calibrate the detected data manually
4. Local time setting

Data Calibration

1. Hold F1 to choose interface for data calibration.
2. Then hold F2 to switch among the sensors.

3. Choose one and click F2, F1 to change the data.
4. After finished, hold F1 can return data detecting interface.

Local time setting

1. Hold F1 to choose interface for local time setting.
2. Then hold F2 to switch among Hour-Minute-Second-Year-Month-Date.
3. Click F2, F1 can change the data of the flashing item.
4. After finished, hold F1 can return data detecting interface.

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

1. Make sure a device is in a 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. Don't poll FLIRS devices.
6. Make sure to have enough mains powered devices to benefit from the meshing

Association – one device controls another 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
1	1	Lifeline group

Configuration Parameters
Z-Wave products are supposed to work out of the box after inclusion, however, certain configurations 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 200it may be needed to set a value of 200 minus 256 = minus 56. In the case of a two-byte value, the same logic applies: Values greater than 32768 may need to be given as negative values too.
Parameter 1: PM2.5 Delta Level
This is the PM2.5 Delta Level which determines when to report the current PM2.5 value. Size: 1 Byte, Default Value: 0

Setting	Description
0	Indicates Turn off report
1 – 127	Indicates to report current PM2.5 value when change >n * 1ug/m3

Parameter 2: CO2 Delta Level
This is the CO2 Delta Level which determines when to report the current CO2 value.
Size: 1 Byte, Default Value: 0

Setting	Description
0	Indicates Turn off report
1 – 127	Indicates to report current CO2 value when change > n * 5ppm

Parameter 3: Temperature Delta Level
This is the temperature Delta Level which determines when to report the current temperature value.
Size: 1 Byte, Default Value: 0

Setting	**Description**
0	Indicates Turn off report
1 – 127	Indicates to report current temperature value when change > n * 0.5

Parameter 4: Humidity Delta Level
This is the humidity Delta Level which determines when to report the current humidity value.
Size: 1 Byte, Default Value: 0

Setting	**Description**
0	Indicates Turn off report
1 – 127	Indicates to report current humidity value when change >n%

Parameter 5: VOC Delta Level
This is the VOC Delta Level which determines when to report the current VOC value.
Size: 1 Byte, Default Value: 0

Setting	**Description**
0	Indicates Turn off report
1 – 127	n*5ppb Report change

Parameter 6: Lux Delta Level
This is the brightness Delta Level which determines when to report the current brightness value.
Size: 2 Byte, Default Value: 0

Setting	Description
0	Indicates Turn off report
1 – 32767	Indicates to report current Illumination value when change >n*1 Lux

Parameter 7: dB Delta Level
This is the noise Delta Level which determines when to report the current noise value.
Size: 1 Byte, Default Value: 0

Setting	Description
0	Indicates Turn off report
1 – 127	Indicates to report current Noise value when change >n*1 dB

Parameter 8: PIR Delta Level
This is the temperature Delta Level which determines when to report the current temperature value. Size: 1 Byte, Default Value: 0

Setting	Description
0	Indicates Turn off report
1	Indicates report change

Parameter 9: SMOKE Delta Level
Size: 1 Byte, Default Value: 1

Setting	Description
0	Indicates Turn off report
1	Indicates report change

Parameter 10: Smoke Timer
Size: 2 Byte, Default Value: 60

Setting	Description
0	Turn off report
35 – 32767	Report every n*1s

Parameter 11: PIR Timer
Size: 2 Byte, Default Value: 60

Setting	Description
0	Turn off report
35 – 32767	Report every n*1s

Parameter 12: PM2.5 Timer
Size: 2 Byte, Default Value: 120

Setting	Description
0	Turn off report
35 – 32767	Report every n*1s

Parameter 13: CO2 Timer
Size: 2 Byte, Default Value: 120

Setting	Description
0	Turn off report
35 – 32767	Report every n*1s

Parameter 14: Temperature Timer
Size: 2 Byte, Default Value: 180

Setting	Description
0	Turn off report
35 – 32767	Report every n*1s

Parameter 15: Humidity Timer
Size: 2 Byte, Default Value: 180

Setting	Description
0	Turn off report
35 – 32767	Report every n*1s

Parameter 16: VOC Timer
Size: 2 Byte, Default Value: 180

Setting	Description
0	Turn off report
35 – 32767	Report every n*1s

Parameter 17: LUX Timer

Size: 2 Byte, Default Value: 300

Setting	Description
0	Turn off report
35 – 32767	Report every n*1s

Parameter 18: db Timer
Size: 2 Byte, Default Value: 300

Setting	Description
0	Turn off report
35 – 32767	Report every n*1s

Parameter 47: Temperature unit
Size: 1 Byte, Default Value: 0

Setting	Description
0	°C
1	°F

Parameter 50: Temperature Offset
Size: 1 Byte, Default Value: 100

Setting	Description
0 – 127	((n-100)/10)=(-10~2.7)℃
-128 (255) – -1 (128)	((156+n)/10)=(2.8~15.5)℃

Parameter 51: Humidity Offset
Size: 2 Byte, Default Value: 20

Setting	Description
0 – 40	n-20=(-20~20)%

Parameter 52: CO2 OffSet
Size: 2 Byte, Default Value: 500

Setting	Description
0 – 1000	(n-500)=(-500~500)ppm

Parameter 53: PM2.5 Offset
Size: 1 Byte, Default Value: 100

Setting	Description
0 – 127	n-100=(-100~27)ug/m3
-128 (255) – -1 (128)	156+n=(28~155)ug/m3

Parameter 54: Lux_OffSet
Size: 2 Byte, Default Value: 5000

Setting	Description
0 – 10000	n-5000=(-5000~5000)lux

Parameter 55: VOC Correct
Size: 1 Byte, Default Value: 100

Setting	Description
0 – 127	n-100=(-100~27)ppb
-128 (255) – -1 (128)	156+n=(28~155)ppb

Parameter 65: dB Correct
Size: 1 Byte, Default Value: 50

Setting	Description
0 – 100	(n-50)=-50~50

Parameter 255: Factory Reset (set only)

Size: 1 Byte, Default Value: 0

Setting	Description
85	Factory Reset
170	Restore default Parameter

Technical Data

Dimensions	0.1090000×0.1090000×0.0420000 mm
Weight	404 gr
Hardware Platform	ZM5202
EAN	4.25E+12
IP Class	IP 20
Voltage	12 V
Device Type	Notification Sensor
Network Operation	Always On Slave
Z-Wave Version	6.71.03
Certification ID	ZC10-20096971
Z-Wave Product Id	0x015F.0xA803.0x135A
Color	White
Frequency	Europe – 868,4 Mhz
Maximum transmission power	5 mW

Supported Command Classes

- Association Grp Info
- Association V2
- Configuration
- Device Reset Locally
- Firmware Update Md V4
- Manufacturer Specific V2
- Powerlevel
- Security 2
- Sensor Multilevel V10
- Supervision
- 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 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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Documents / Resources

	MCOHOME MCOEA8-9 9 in 1 Home Multi Sensor [pdf] User Guide MCOEA8-9, 9 in 1 Home Multi Sensor, Home Multi Sensor, Multi Sensor

References

- Z-Wave Europe - The leading european distributor for Smart Home products.
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Manuals+,