

# PM2.5 Monitor

## MH10-PM2.5-WA/WD

MCOHome PM2.5 Monitor is a Z-Wave Plus air quality detector mainly used to monitor PM2.5 concentration in industrial, agricultural, and residence environment, while monitoring the indoor temperature and humidity. Device can be included into any Z-Wave network, and is compatible with any other Z-Wave certified devices.

### Specification

- **Power Supply:** DC12V (WD); AC220V±10% 50/60Hz (WA)
- **Self Dissipation:** <3W
- **PM2.5 Detection Range:** 0-500 ug/m3
- **Temperature Range:** -9~50 C (15-122 F)
- **Humidity Range:** 0%~99%RH
- **Work Environment:** -10~50 C 0-90%RH (Non-condensation)
- **Housing:** Tempered glass+ PC Alloy
- **Dimension:** 85\*135\*33mm
- **Hole Pitch:** 60mm or 82mm
- **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
- **Installation:** Wall-mounted (Vertical)



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⚠ 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 90\*60\*50mm, minimum Volume is 270cm<sup>3</sup>. Use Copper Conductors Only.

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

### Installation & Wiring

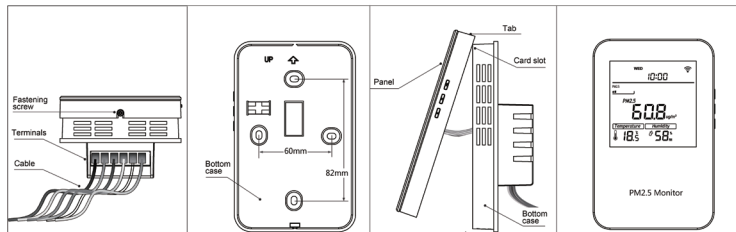
#### Location:

Device is suggested to be installed indoor, a place with around 1.5m height above the floor where represents the average PM2.5 concentration. It should be away from direct sunlight, any cover, or any heat source, to avoid false signal for temperature control.

⚠ **Important!**

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#### MH10-PM2.5-WA

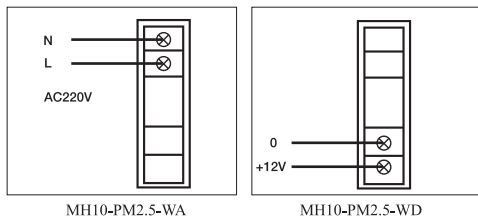


**Step 1:** Separate Panel and Bottom case by removing the screw at the bottom of device. Insert all wires into the right terminals and tighten screws. The wiring diagram is shown as below.

**Step 2:** Mount the Bottom case onto wall with two screws (M4\*25mm). The hole pitch 60mm is for 86/60mm box, and 82mm is for American 120mm box.

**Step 3:** Mount the Panel back by aligning its tabs and card slot onto the Bottom case.

**Step 4:** Tighten the fastening screw and the device is ready for normal work.



Pay attention to the current direction of positive and negative, otherwise device will easily be burn!

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#### Declaration of Conformity



Hereby, MCOHome declares 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



MCOHome sensor 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!

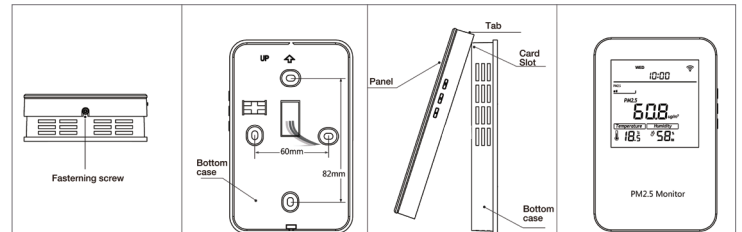
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- A qualified electrician with the understanding of wiring diagrams and knowledge of electrical safety should complete installation following the instructions.
- Before installation, please confirm the real voltage complying with the device's specification. Cut off any power supply to secure the safety of people and device.
- During installation, protect the device from any physical damage by dropping or bumping. If happens, please contact the supplier for maintenance.
- Keep the device away from acid-base and other corrosive solids, liquids, gases, to avoid damage.
- Avoid overexertion during operation, to protect device from mechanical damage.
- Read all instructions and documentation and save for future reference.

#### Notice!

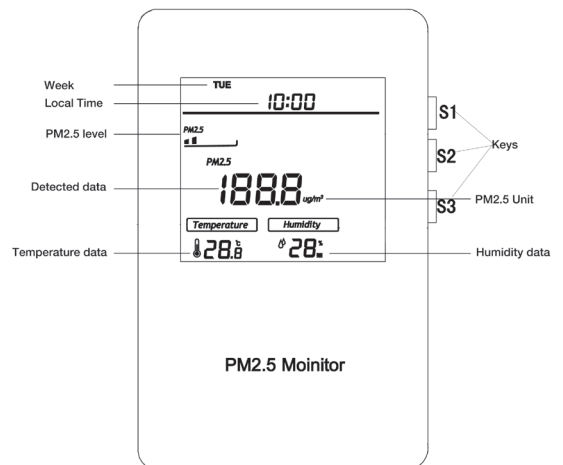
1. Device must be wall-mounted vertically. Do not lay it flat or upside down while working.
2. Do not mounted it in a wind gap, or cover its bottom, which may affect the detected data.

#### MH10-PM2.5-WD



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### Button & Display



### Operation

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## Local Time Setting

In normal display interface, long press S3 will enter the local time modification interface. Press S2 can switch among "Week, Hour & Minute", press S1 or S3 can change their values. After all parameters set, press S2 can save settings and return to normal display.

## Backlight

The backlight will be full bright when any keys pressed, and turn to half bright if no operation in 10 Sec.

## Fahrenheit/Celsius Switch

Long press K1+K2 button, enter into Secret Menu interface, press K2 button to input the value, press K1 to switch the value, and enter password 5166. Then press K1 to enter into Secret Menu. Temperature display area will flash "C".

1. Press K2 button can switch between "C" and "F"
2. After setting, press K1 button to confirm and quit.

## Calibration

Long press S1 button to enter in to the Calibration Setting interface. Press S2 button to choose the item, press S1 and S3 button to adjust the value; when finish the setting, press S2 button several times to save and return to the normal working interface.

Following is the information of each parameter:

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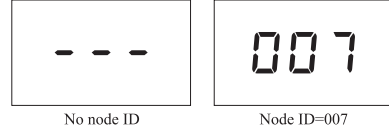
Item	Parameter	Range	Default Value
01	Temperature Calibration	-9.0~+9.0	0.0
02	Humidity Calibration	-9~+9	0
03	PM2.5 Calibration	-90~+90	00
04	Backlight Adjustment	00-10 (00: backlight normally open)	00

## Including & Excluding of Z-Wave Network

Activate Inclusion/Exclusion mode in the gateway. When device powered on, long press S1 & S3 synchronically to enter interface for inclusion or exclusion of Z-Wave network.

- If device has not been included into any Z-Wave network before, "--" will display on the screen.
- Then press S1 once, "--" flashing and device enters into learning mode to get a node ID. If inclusion is success, a node ID will display on the screen. If not, "--" will stop flashing in 20 sec.
- If a node ID displays, it means the device is already in a Z-Wave network. To press S1 once can remove it from the network. "--" displays and press S2 once can return to normal work.

**Note:** If display flashing, long press S1+S3 can quit the operation and back to normal work. If display stops flashing, press S2 once can return to normal work.



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## Association Group

G Identifier	Max Node ID	Command Class	Trigger Situation
0x01	1	COMMAND_CLASS_SENS OR_MULTILEVEL_V5, SENSOR_MULTILEVEL_REPORT_V5	<ol style="list-style-type: none"> <li>1. <b>PM2.5</b> The value difference between current value and previous reported value &gt; the setting value of parameter number 2, set value ≠ 0;</li> <li>2. <b>Temperature</b> The value difference between current value and previous reported value &gt; the setting value of parameter number 3, set value ≠ 0;</li> <li>3. <b>Humidity</b> The value difference between current value and previous reported value &gt; the setting value of parameter number 4, set value ≠ 0;</li> </ol>
		COMMAND_CLASS_DEVICE_RESET_LOCALLY, DEVICE_RESET_LOCALLY_NOTIFICATION	Restore the factory setting

## Parameter Setting

Number	Function	Size	Description	Default	Possible Values
2	PM2.5 Report Interval	1	=0 Report disabled 1~127: Report when change $\geq n * 0.1 \mu\text{g}/\text{m}^3$ -1~-127: Report when change $\geq (n+256) * 0.1 \mu\text{g}/\text{m}^3$	10	-127~127
3	Temperature Report Interval	1	=0 Report disabled 1~127: Report when change $\geq n * 0.5 \text{ C}$ -1~-127: Report when change $\geq (n+256) * 0.5 \text{ C}$	1	-127~127
4	Humidity Report Interval	1	=0 Report disabled $\geq 1$ Report when change $\geq n\%$	2	0-100
255	Factory Setting	1	85: Restore the factory setting(write only)		85

## Command Class supported by the device

COMMAND\_CLASS\_ZWAVEPLUS\_INFO, COMMAND\_CLASS\_VERSION, COMMAND\_CLASS\_MANUFACTURER\_SPECIFIC, COMMAND\_CLASS\_DEVICE\_RESET\_LOCALLY,  
 COMMAND\_CLASS\_ASSOCIATION, COMMAND\_CLASS\_ASSOCIATION\_GRP\_INFO, COMMAND\_CLASS\_POWERLEVEL, COMMAND\_CLASS\_BASIC,  
 COMMAND\_CLASS\_CONFIGURATION, COMMAND\_CLASS\_SENSOR\_MULTILEVEL, COMMAND\_CLASS\_SENSOR\_CONFIGURATION,  
 COMMAND\_CLASS\_FIRMWARE\_UPDATE\_MD,

## 1-Year Limited Warranty

MCOHome warrants 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. MCOHome 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.

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