9 in 1 Multi-Sensor

A8-9

MCOHome A8-9 is a Z-Wave enabled multiple environmental monitoring sensors, with 3.5 inch 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** sensors. Device can be added into any Z-Wave network, and is compatible with any other Z-Wave certified devices.

- Temperature: 0~50℃
- Humidity: 0%RH~99%RH
- PM2.5: 0~500ug/m3
- CO2: 0~5000ppm
- VOC: 0-64000ppb
- PIR: 0 or 1 Detection angle up to 120°
- Illumination: 0~40000Lux
- Noise: 30dB~100dB
- Smoke: 0 or 1

Specification

- Power Supply: DC12V
- Self-dissipation:<3W
- Work environment:-20~+60℃ <99%RH (Non-condensation)
- Dimension: 110* 110*32mm
- Hole Pitch: 60mm or 82mm
- Housing: Tempered glass+ PC Alloy
- Installation: Wall-mounted (Vertical)

Safety Information

To protect yourself and others from danger and to protect the device from damage, please read the safety information before using it.

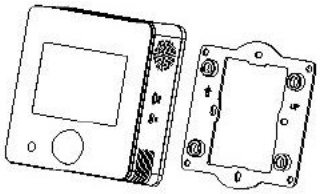
Important!

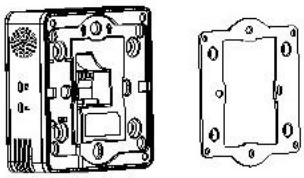
- A qualified electrician with the understanding of wiring diagrams and knowledge of electrical safety should complete installation following the instructions.
- Before installation, please confirm the real voltage complying with the device's specification. Cut off any power supply to secure the safety 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.

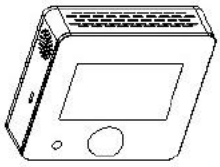
Installation &Wiring

Location:

Device is suggested to be installed indoor, 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 signal for temperature control.







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.**

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.

Operation

Power on/ power 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

Z-Wave Operation

Note: A Security Enabled Z-Wave Controller must be used in order to fully utilize the product.

- **Add &Remove Z-Wave network**

➢ Activate Add/Remove mode in the gateway. When device is powered on, hold F1 to choose interface for Add or Remove Z-Wave network.

➢ Click F2 five times until  turns blue.

- Hold F2 and the device enters into learning mode, then  turns blue and the device is added into Z-Wave network.
- Follow the same steps to remove the device from network.

- **Association Group**

  Device supports 1 association group:

AG identifier	Max Node ID	Command Classes	Trigger situation
0x01	1	COMMAND_CLASS_SENSOR_MULTILEVEL_V5, SENSOR_MULTILEVEL_REPORT_V5	**Detected value will be reported according to:** 1, **PM2.5** The value difference between current value and previous reported value >0x01 set value, set value ≠0; 2, **CO2** The value difference between current value and previous reported value> 0x02 set value, set value≠0; 3, **Temperature** The value difference between current value and previous reported value > 0x03 set value, set value≠0; 4, **Humidity** Thevalue difference between current value and previous reported value > 0x04 set value, set value≠0; 5, **VOC** The value difference between current value and previous reported value > 0x05 set value, set value≠0; 6, **Illumination** The value difference between current value and previous reported value > 0x06 set value, set value≠0; 7, **Noise** The value difference between current value and previous reported value > 0x07 set value, set value≠0; 8, **PIR** The current state is **different from** previous reported state, set value≠0; 9, **Smoke** The current state is **differentfrom** previous reported state, set value≠0; 10, **Smoke IntervalReport** Timer set value: 0x0A and set value≠0; 11, **PIR IntervalReport** Timer set value: 0x0B and set value≠0; 12, **PM2.5 IntervalReport** Timer set value: 0x0C and set value≠0; 13, **CO2 IntervalReport** Timer set value: 0x0D and set value≠0; 14, **Temperature IntervalReport** Timer set value:

			0x0E and set value≠0; 15, **Humidity IntervalReport** Timer set value: 0x0F and set value≠0; 16, **VOC IntervalReport** Timer set value: 0x10 and set value≠0; 17, **Illumination IntervalReport** Timer set value: 0x11 and set value≠0; 18, **Noise IntervalReport** Timer set value: 0x12 and set value≠0;
		COMMAND_CLASS_DEVICE_RESET_LOCALLY, DEVICE_RESET_LOCALLY_NOTIFICATION	Factory setting restored

Command Class supported by the device: (Supports S2 unauthenticated level)

COMMAND_CLASS_VERSION,
COMMAND_CLASS_MANUFACTURER_SPECIFIC,
COMMAND_CLASS_DEVICE_RESET_LOCALLY,
COMMAND_CLASS_POWERLEVEL,
COMMAND_CLASS_ASSOCIATION,
COMMAND_CLASS_ASSOCIATION_GRP_INFO,
COMMAND_CLASS_CONFIGURATION,
COMMAND_CLASS_SENSOR_MULTILEVEL,
COMMAND_CLASS_FIRMWARE_UPDATE_MD

Command Class supported by the device: (Not supports S2)

COMMAND_CLASS_ZWAVEPLUS_INFO,
COMMAND_CLASS_TRANSPORT_SERVICE_V2,
COMMAND_CLASS_SECURITY_2,
COMMAND_CLASS_SUPERVISION

Restore Factory Setting

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

Data Calibration

Hold F1 to choose interface for data calibration. Then hold F2 to switch among the sensors. Choose one and click F2, F1 to change the data. After finished, hold F1 can return data detecting interface.

Local time setting

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

Parameters table

Number	Name	Size	Description	Default	Possible value
0x01	PM25_Delta_Level	1	=0 Turn off report >=1 Report when change > n * 1ug/m3	0	0-127
0x02	CO2_Delta_Level	1	=0 Turn off report >=1 Report when change > n * 5ppm	0	0-127
0x03	Temp_Delta_Level	1	=0 Turn off report >=1 Report when change > n*0.5℃	0	0-127
0x04	Humidity_Delta_Level	1	=0 Turn off report >=1 Report when change >n%	0	0-127
0x05	VOC_Delta_Level	1	=0 Turn off report >=1-127*5ppb Reportchange	0	0-127
0x06	Lux_Delta_Level	2	=0 Turn off report >=1 Report when change > n*1 Lux	0	0-32767
0x07	dB_Delta_Level	1	=0 Turn off report >=1 Report when change > n*1dB	0	0-127
0x08	PIR_Delta_Level	1	=0 Turn off report =1 Report change	0	0-1
0x09	SMOKE_Delta_Level	1	=0 Turn off report =1 Report change	1	0-1
0x0A	Smoke_Timer	2	=0 Turn off report >=35 Report every n*1s interval	60	0,35-32767
0x0B	PIR_Timer	2	=0 Turn off report >=35 Report every n*1s interval	60	0,35-32767
0x0C	PM25_Timer	2	=0 Turn off report >=35Report every n*1s interval	120	0,35-32767
0x0D	CO2_Timer	2	=0 Turn off report >=35 Report every n*1s interval	120	0,35-32767

0x0E	Temp_Timer	2	=0 Turn off report >=35 Report every n*1s interval	180	0,35-32767
0x0F	Humidity_Timer	2	=0 Turn off report >=35 Report every n*1s interval	180	0,35-32767
0x10	VOC_Timer	2	=0 Turn off report >=35 Report every n*1s interval	180	0,35-32767
0x11	Lux_Timer	2	=0 Turn off report >=35 Report every n*1s interval	300	0,35-32767
0x12	dB_Timer	2	=0 Turn off report >=35 Report every n*1s interval	300	0,35-32767
0x2F	Temp. unit	1	=0 ℃ =1 °F	0	0-1
0x32	T_OffSet	1	0 ~ 127: ((n-100)/10)=(-10~2.7)℃ -128 ~ -1: ((156+n)/10)=(2.8~15.5)℃	100	-128-127
0x33	RH_OffSet	1	n-20=(-20~20)%	20	0~40
0x34	CO2_OffSet	2	(n-500)=(-500~500)ppm	500	0~1000
0x35	PM2.5_OffSet	1	0 ~ 127: n-100=(-100~27)ug/m3 -128 ~ -1: 156+n=(28~155)ug/m3	100	-128-127
0x36	Lux_OffSet	2	n-5000=(-5000~5000)lux	5000	0~10000
0x37	VOC_Correct	1	0 ~ 127: n-100=(-100~27)ppb -128 ~ -1: 156+n=(28~155)ppb	100	-128-127
0x38	dB_Correct	1	(n-50)=-50~50	50	0~100
0xFF	Write Only	1	==0x55 Restore factory setting ==0xAA Restore default para.		

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, ABNORMALMECHANICAL 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.