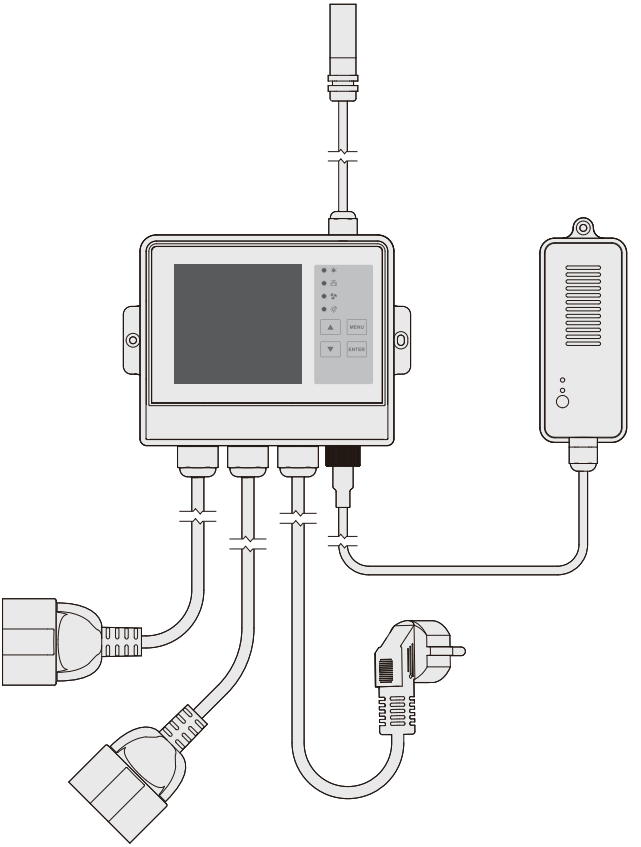
SA1600PRO User Manual

CO2/Temperature/Humidity
Monitor & Controller with Remote Sensors



This manual and its contents are only for the operation and use of this product and cannot be used for other purposes.

This manual and its content inevitably contain errors or discrepancies from reality, and are for reference only. If there are discrepancies or doubts, please contact our company.

The functions and specifications are subject to change without prior notice.

Contact Us

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OVERVIEW

Thank you for purchasing this CO2, Temperature, Humidity Monitor & Controller with remote sensors. It is designed for mushroom growth. And It provides two channels of outputs: it controls ventilation facility according to CO2 level and humidifier/dehumidifier according to moisture level. This product is available with US/EU/UK/AU/JP standards power plug.

NOTE

- Please read this manual carefully before use and keep it safe for future use.
- Please strictly follow the instructions and precautions in this manual.
- Our company does not assume any compensation or responsibility for personal injury, product damage, or other losses caused by incorrect or improper use.
- Please do not disassemble, modify, or repair this product.
- This product is only used for detecting carbon dioxide concentration, temperature, and humidity. Please do not use it for other purposes.
- The measurement values, display information, and data records of this product are for reference only. Our company does not guarantee the measurement values of this equipment or the research and results using this value.
- Our company does not bear any losses caused by users or any third party during the use of the product or when the product is damaged.

⚠ WARN

Please strictly follow the warning items, otherwise there is a risk of death or serious injury.

- Keep it out of reach of children and use it when adults can manage it regularly.
- Do not store, install, or use in or near places with flammable, explosive, or flammable gases.
- Do not use in high temperature and humidity environments, please use indoors.
- Do not touch the device, cables, and device connections with wet hands to avoid electric shock or device malfunction.

⚠ NOTICE

Please strictly follow the precautions, otherwise injury, product damage, or property damage may occur.

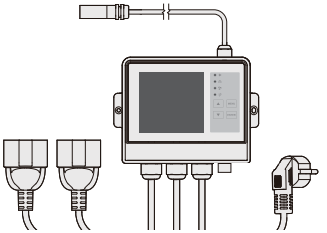
- Do not use, install, or store this product in the following places.

  Places with direct sunlight, high temperatures, areas with rapid temperature changes (near condensation), areas that generate static electricity, devices that generate magnetism and electromagnetic waves in nearby areas, and dusty areas.
- This product is not waterproof and should not be used around water or in areas prone to liquid contamination. Do not wet instruments and accessories with liquid.
- Do not strike or drop the instrument, as it may cause malfunction.
- Do not apply pesticides or wipe with diluents or detergents on this product, as it may cause fire, deformation, or malfunction.
- Do not block or block the ventilation port to avoid affecting measurement accuracy.
- Please use this product within the temperature and humidity usage range.
- The USB interface and USB power cable are only used for power supply and data export of this device and are not used for other purposes.
- Do not frequently restore factory settings as it may damage the program.
- Do not disassemble, modify, or repair this product.

MAIN FEATURES

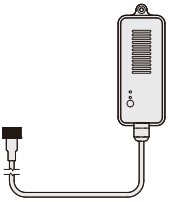
- Built-in photocell sensor
- HD large display
- Touch button operation
- 2-Chanel Low Drift NDIR CO2 Sensor
- Remote/external co2 sensor for co2 monitoring in confined spaces
- Real-time displays co2 concentration, temperature and humidity
- Easy-to-use zone value setting, and controlling on/off for output power supply
- Simple working-time setting
- CO2 controller unit with backlight
- Designed especially for mushroom growth

PACKING LIST



1. CO2 Controller Unit

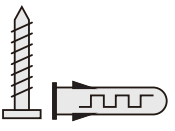
Including one 1.5m power input cable, two 0.75m power output cables, and one 1.5m temperature & humidity sensor



2. Sensor Kit

External CO2 sensor, including 5 meters four-core shielded signal cable, waterproof aviation plug

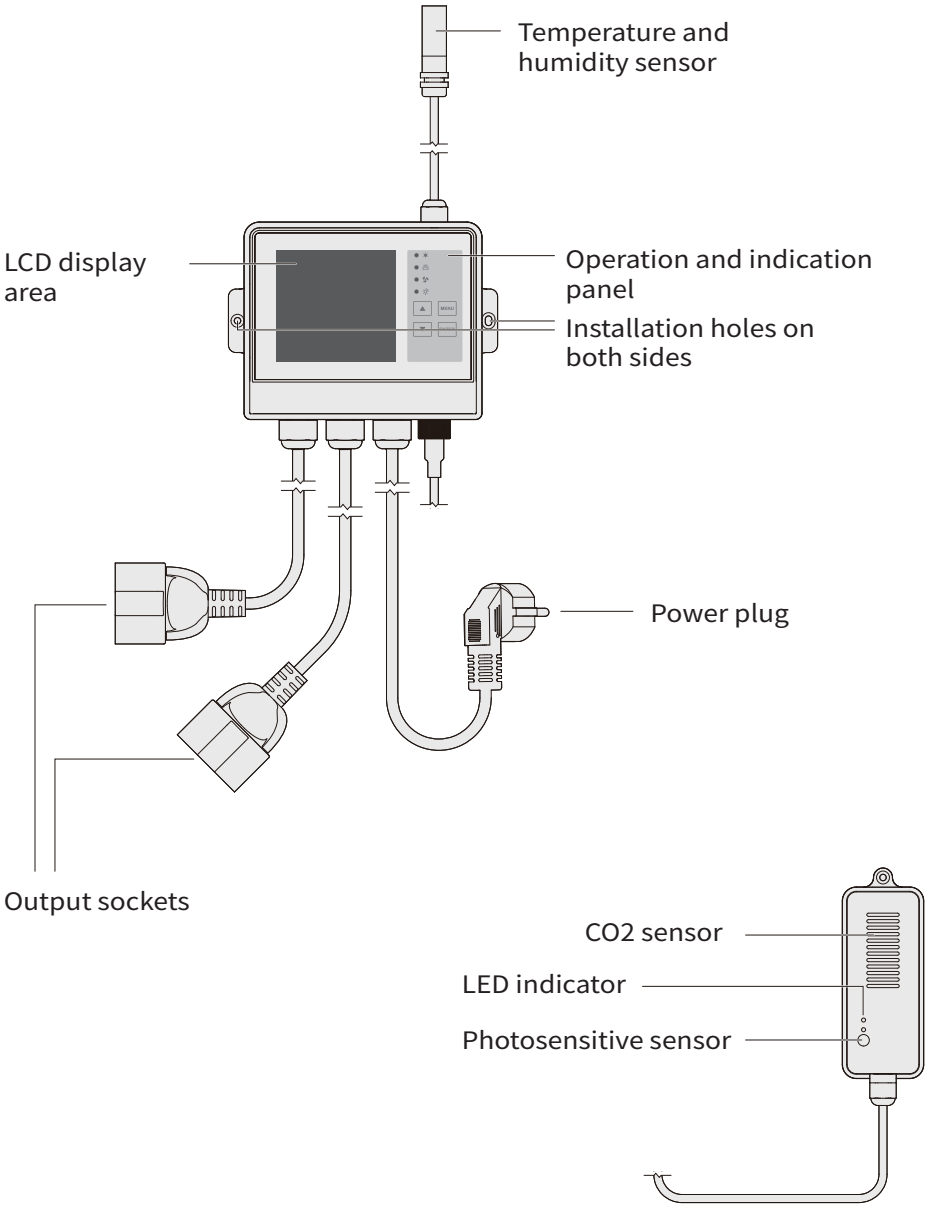
3. Instruction Manual



4. Installation Screws

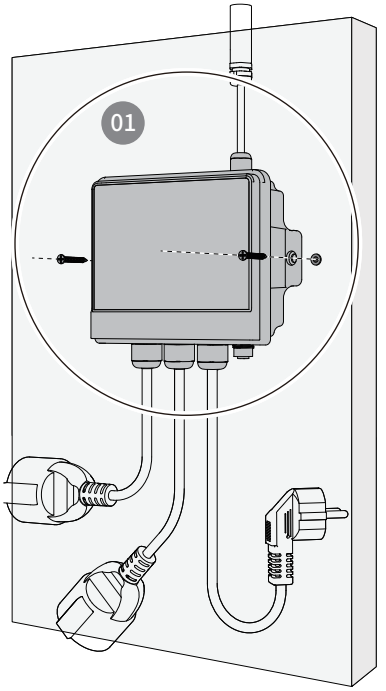
3 copies

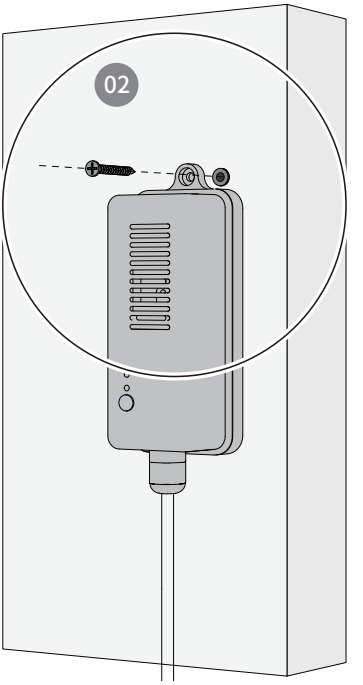
COMPONENT INTRODUCTION



INSTALL

1. Fix the equipment in place with the screws provided.





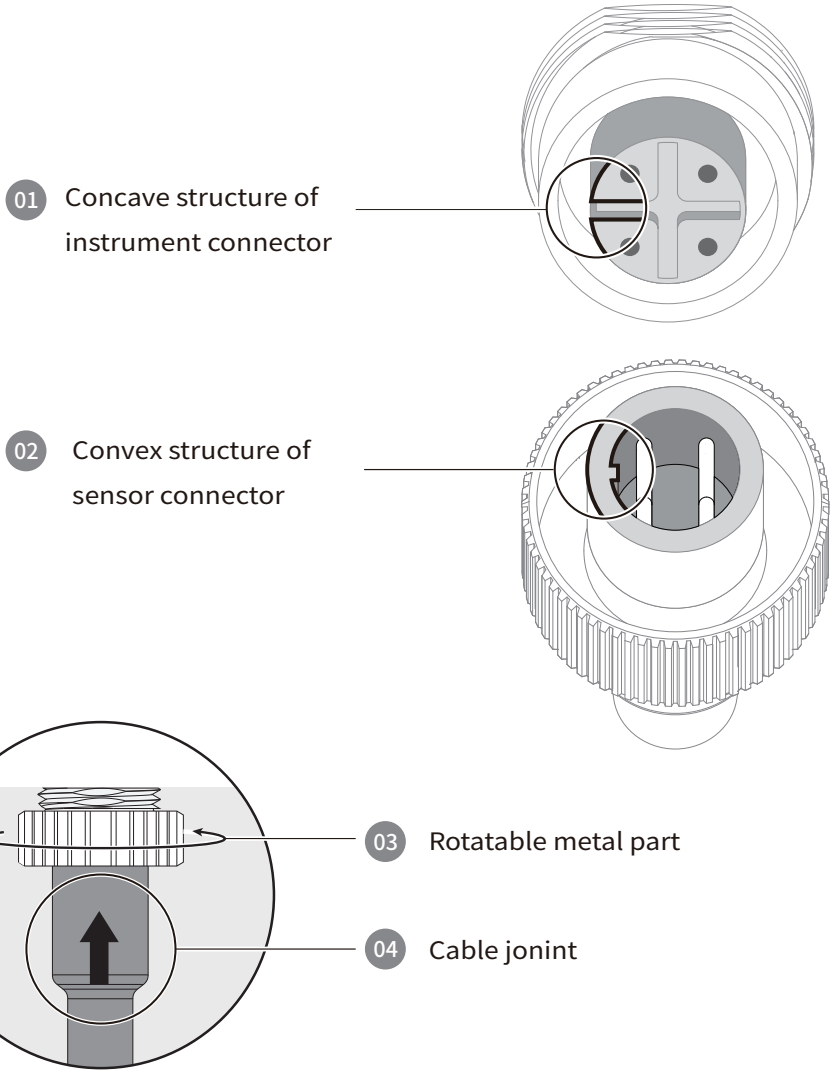
CAUTION

- It’ s recommended to keep and install the controller unit in a dry environment.
- Use the provided screws to install the controller unit and remote sensor kit on the wall, make sure them firmly installed.
- Before powering on, make sure the controller and sensor kit are firmly installed on the wall.

2. Connect the instrument and CO2 sensor.

Step 1. Align 01 and 02, then push 04 to connect the two connectors.

Step 2. Rotate 03 while pushing 04 to tighten the two connectors.



USE

1. Power on

To run the device, plug the power supply into the wall socket. Once it' s booted, the full screen will be displayed after a ten-second countdown.

If E1 is displayed, it indicates that the sensor is not connected correctly. Please check and reconnect according to page 9.

(Detection interface)

- Once the countdown is complete, your product is ready to use. No additional setup or calibration is needed. The measured CO2 readings will be refreshed every 6 seconds.
- If the working environment suddenly changes (from high to low temperature, or opposites), it needs 30 seconds for responding.
- Do not put your face in front of the remote sensor unit, your breathing will affect the CO2 readings and its accuracy.

2. LCD display

01 **Date/time**

02 **CO2 reading**

03 **CO2 center value**

04 **CO2 zone value**

05 **Temperature reading**

06 **Humidity reading**

07 **Menu bar**

Setup menu

CO2/temperature/humidity center value and interval value settings.

Calibration menu

CO2 400ppm one-key calibration. (Use with caution)

Time menu

Setting date and time.

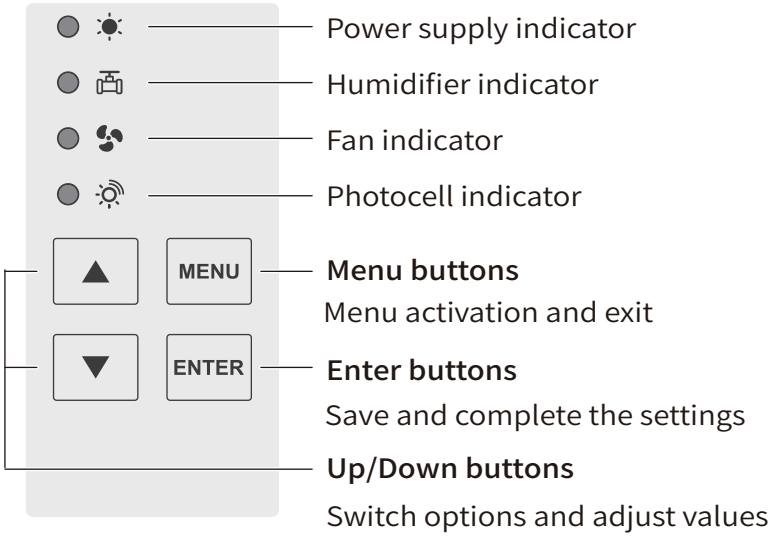
Humidifier control status

Fan control status

Photosensitive mode on

Photosensitive mode off

3. Indicator lights and buttons



4. Backlit display

Pressing any button will turn on the backlight and it lasts about 30 seconds.

5. Photocell sensor

This built-in photocell sensor can automatically detect whether it is Day or Night. It can override the CO2 control and shut off the CO2 generator or regulator by turning off the output power during the night. Conversely, if the photocell detects light and the CO2 level is low for more than 30 seconds, the device will start the CO2 generator by turning on output power.

If you choose to turn off this function, the relay output power will only be controller by the CO2 level, no matter day or night.

6. CO2 Control

Output power is on when the CO2 concentration is over

Set Center+(1/2) Set zone, and off when CO2 concentration is below Set Center-(1/2) Set zone.

For example

If the Set Center is 1200ppm, and the Set zone is 200ppm, the fan will power on when CO2 over 1200+(1/2)*200=1300ppm, and shut off when CO2 below 1200- (1/2)*200=1100ppm.

7. Humidifier Control

Output power is on when the humidity is below Set Center-(1/2) Set zone, and off when humidity is over Set Center+(1/2) Set zone.

For example

if the Set Center is 80%, and the Set zone is 10%, the humidifier will power on when humidity below 80-(1/2)*10=75%, and shut off when humidity over 80+(1/2)*10=85%.

SETTINGS

For convenience of the demonstration, we change and explain as follows.

a. **Interface simplification**

b. **Symbol Description**

Black: unselected sate Grey: selected state

Restore factory settings

Restore factory setting will reset the device to factory setting. To do this, in normal state, press and hold ENTER for 3 seconds until an audible beep is heard.

1. Menu bar activation and exit

In the detection interface (Figure 4), press [MENU] to activate the menu bar, and press [▲] / [▼] to cycle through various functional items. (Flashing indicates selection status).

When or flashing, press [MENU] to exit the menu bar.

※ The menu bar automatically exits after no operation is performed for a period of time.

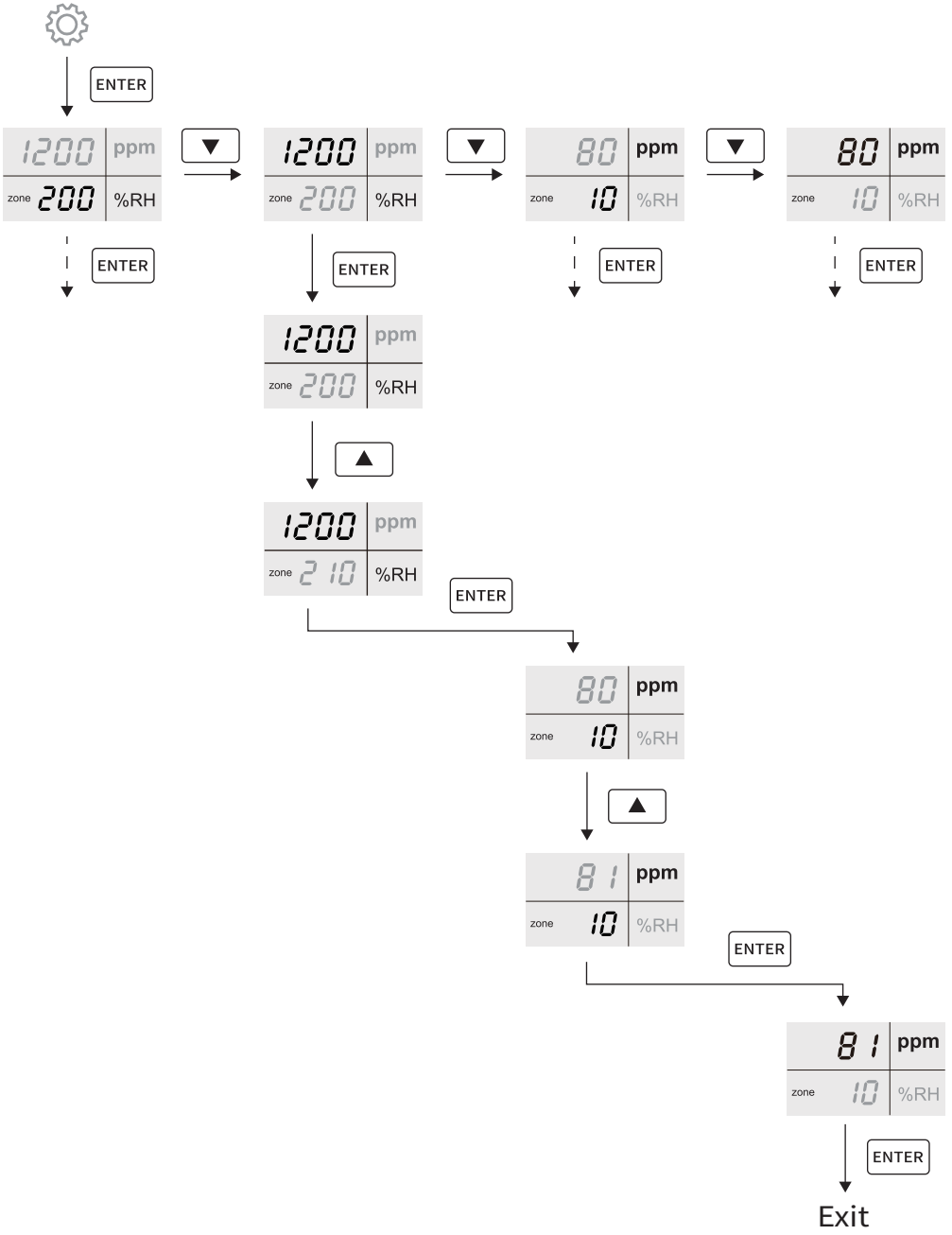
2. CO2/temperature/humidity center value and interval value settings.

a. When flashes, press [ENTER] to enter the settings, and press [▲] / [▼] to switch options.

b. When an option flashes, press [ENTER] to enter the option, press [▲] / [▼] to adjust the value, press [ENTER] to save and switch to the next item, continue to press [▲] / [▼] to adjust the value, and press [ENTER] to save.

※ During the setting process, press [MENU] to exit directly.

For example

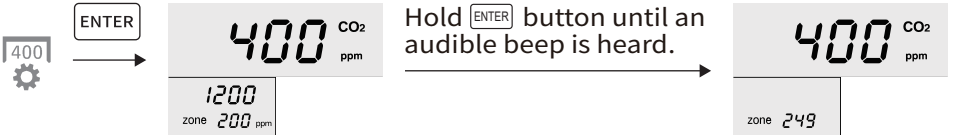


3. Calibration of CO2 Sensor (Use with caution)

400

a. Before calibration, put the CO2 sensor outside with fresh and clean air for 20 minutes to reach an atmosphere with 400ppm CO2.

b. When 400 flashes, press ENTER to enter calibration. At this point, the CO2 reading area becomes 400ppm. Long press and hold ENTER to hear a "beep" sound, and calibration begins. At this point, the zone will display a 250 second countdown. The calibration is completed after the countdown ends.



CAUTION

- Keep the device away from CO2 sources, direct sunlight, and water.
- This device is well calibrated with standard 400ppm CO2 gas before shipment.
- Do not calibrate this device in unknown atmospheric CO2 level, or it will be inaccurately calibrated into 400ppm.

4. Set the time

a. When 🕒 blinks, press [ENTER] to enter the settings, press [▲] / [▼] to switch Options.

b. When an option flashes, press [ENTER] to enter the option, press [▲] / [▼] to adjust the value, press [ENTER] to save and switch to the next item, continue to press [▲] / [▼] to adjust the value, and press [ENTER] to save.

※ During the setting process, press [MENU] to exit directly.

For example

5. Photocell sensor on/off

When  or  flashes, press ENTER to enter settings, press ▲ / ▼ to switch Options, and press ENTER to save.

For example

SPECIFICATIONS

Model	SA1600PRO
Measurement Range	(0-10000ppm)
Accuracy	0~3000ppm ±50ppm +5%reading ⩾3000ppm ±50ppm +7%reading
Warm-up Time	30 seconds (cold start) @ 25°C
Response Time	63% step change<2 min, or 90% step change<4.6 min
Operating Temperature	32°F to 122°F (0°C to 50°C)
Storage Temperature	14°F to 140°F (-10°C to 60°C)
Operating & Storage RH	5-95%(non-condensing)
Dimension	Control unit: 166 x 45.5 x 122 (mm) Sensor unit: 50 x 34.5 x 130 (mm)
Weight	1.7kg
Power Input	AC100-240VAC
Output Socket Load	5A/AC MAX for Humidifier 15A/AC MAX for Fan