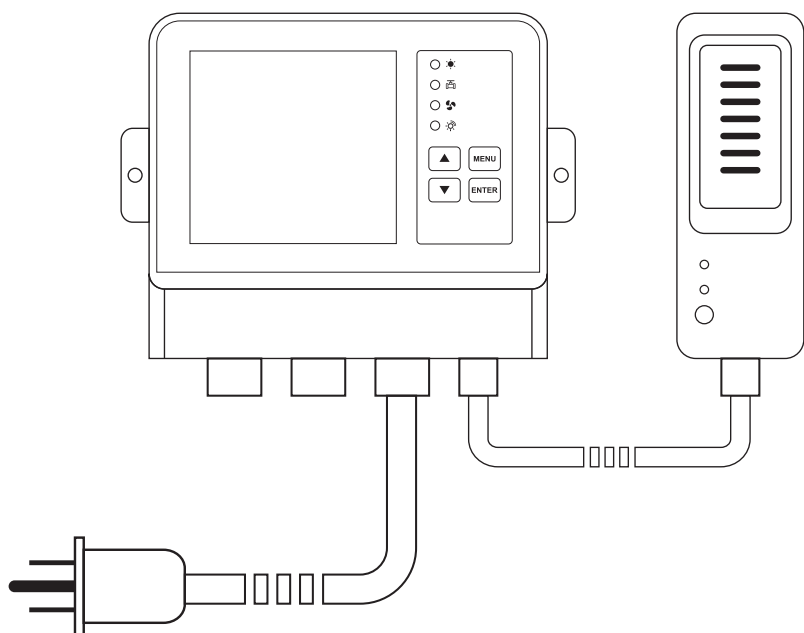


# CO2 MONITOR & CONTROLLER WITH REMOTE SENSOR

## USER' S MANUAL (VALVE)



RoHS 2.0

REACH

☐ 1600PRO-US

☐ 1600PRO- EU

## OVERVIEW

Thank you for purchasing the CO2 monitor & controller with remote sensor. Our product has remote co2 sensor with photo-cell. It is applied to be used in confined space and places.

This product can be used with American/European standard plug. Using AC power through wall socket board, it controls other connected equipments, co2 cylinder / generator / regulator or ventilation fans.

**This is a plug and play product.**

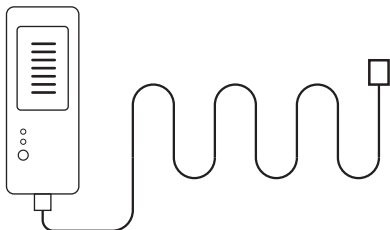
## MAIN FEATURES

- 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 display co2 concentration
- Easy-to-use co2 zone value setting, and controlling on/off for output power supply
- Simple working-time setting
- CO2 controller unit with backlit
- Applied for greenhouses/homes/buildings

# PACKING LIST

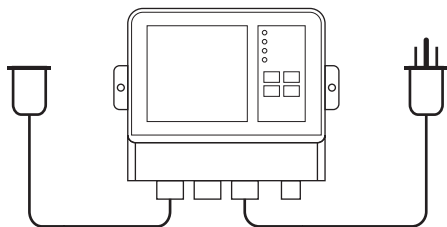
## Sensor Kit

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



## CO2 Controller Unit

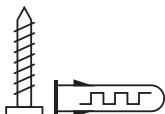
( Includes 1.5m power input cable and 0.75m power output cable )



## Instruction Manual



## Installation Screws



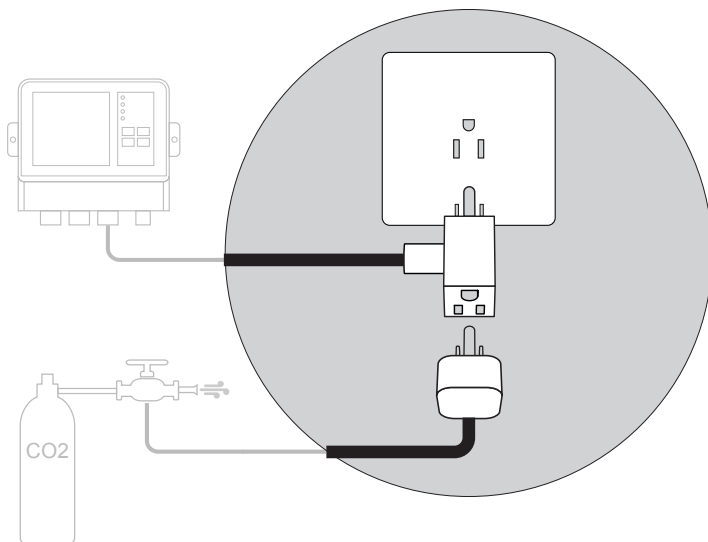


## CAUTION

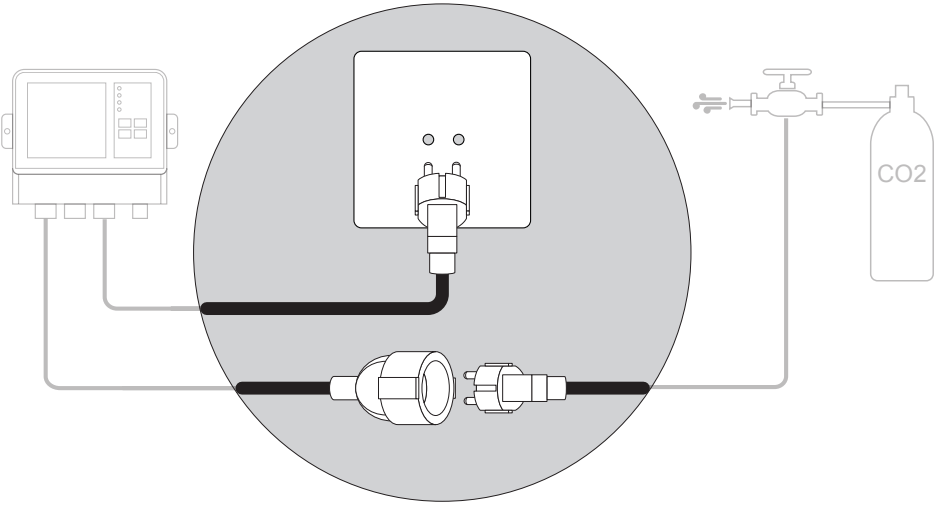
- Keep the controller unit and sensor kit away from water mist, in case it effects the accuracy and lifetime of the product.
- Use the provided screws to install the controller unit and remote sensor kit on the wall, make sure them firmly installed.
- Before power on, make sure the controller and sensor kit are firmly installed on the wall.
- If it displays E1, it means that the remote sensor kit is not connected properly.

## POWER SUPPLY

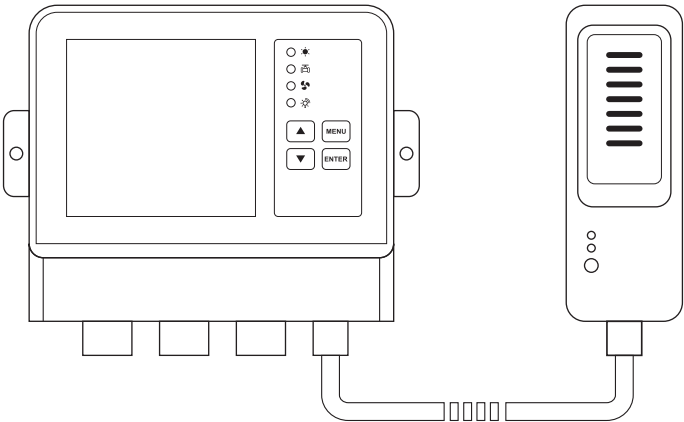
Use 100~240 volt alternating current for this product. Use American standard piggyback plug can directly connect AC100~240VAC to control the equipments (valves, or ventilation fans), no need other complicated wiring.



This product also offers spare power input and output lines, which can be used for European, British market, and other demands.



Remote sensor kit with 5 meters cable can be used to monitor co2 concentration in confined space.



# Controller Panel



Power supply indicator ( green light on)



Solenoid valve indicator (yellow light on)



Fan indicator  
(optional, this product does not have this function)



light-sensitive indicator



Increase the value in selection mode or settings



Decrease the value in selection mode or settings

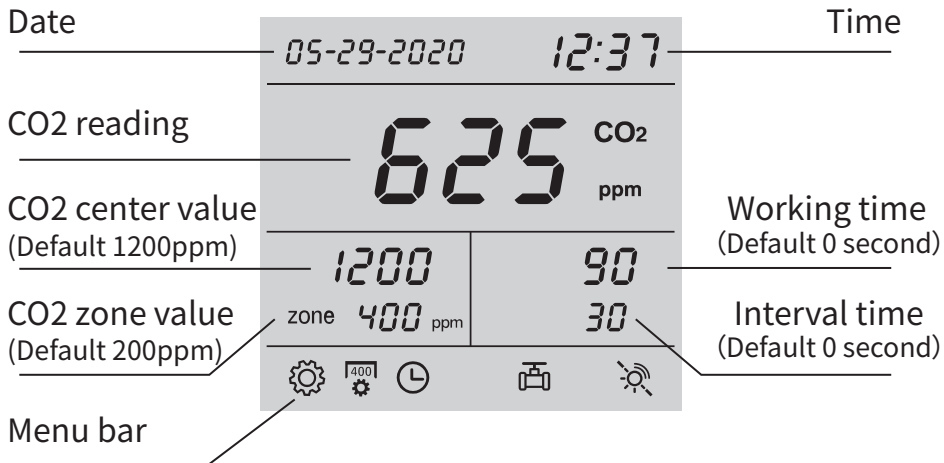


Enter settings



Save and complete the settings

# LCD DISPLAY



Setup menu

Setting co2 center value, co2 zone value, working time and interval time.



Calibration menu.

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



Time menu. Setting date and time.



Valve control status



Photosensitive mode on

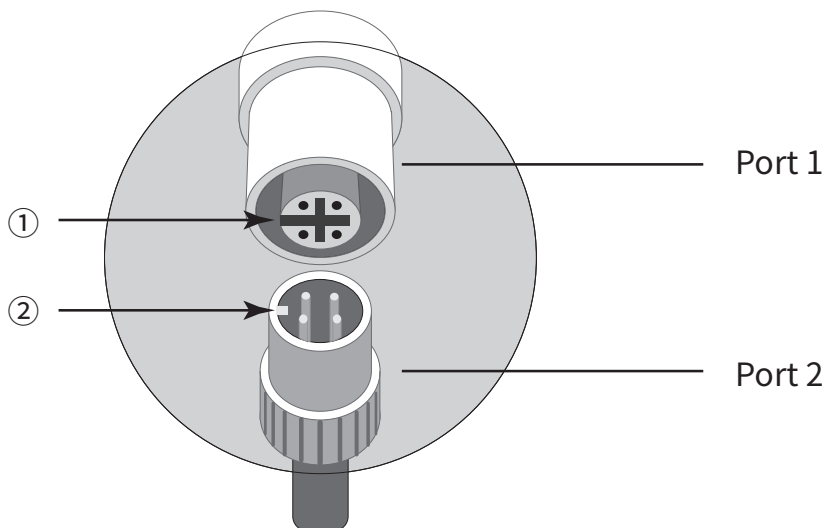


Photosensitive mode off

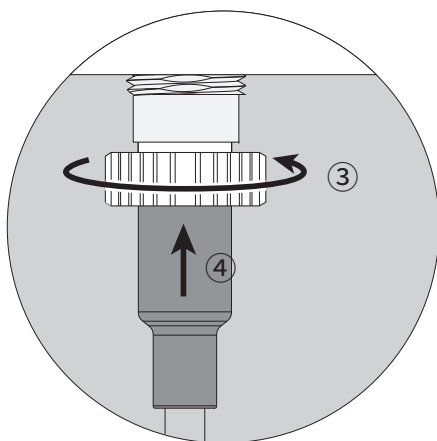
# OPERATING INSTRUCTIONS

## Installation

When first unboxing, plug the piggyback into the power socket.  
Follow the instruction as below.



## Connection for sensor and controller



Firmly connect the port ① into the port ②, then push ③ and rotate ④ the middle metal part in the direction shown.

**Notice:**

If not connected properly,  
the controller panel will  
display 'E1'.

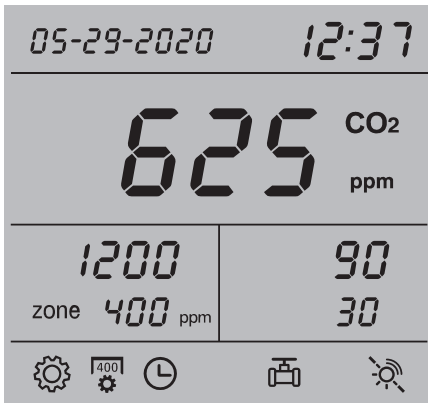
## POWER ON

To start the product, plug the power supply into the wall socket. Once successfully power it on, full screen will be displayed after 10 seconds countdown.

## READY TO USE

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.



Ambient CO2 Readings, Set Center value and Set Zone value will constantly displayed on the screen.

## BACKLIT DISPLAY

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

## 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.








## CO2 OUTPUT CONTROL

Output power is on when the CO2 concentration is below Set Center+(1/2) Set zone, and off when CO2 concentration is over Set Center-(1/2) Set zone.

**For example**, if the Set Center is 1200ppm, and the Set zone is 200ppm, the output power will shut off when CO2 over  $1200 + (1/2) * 200 = 1300\text{ppm}$ , and power on when CO2 below  $1200 - (1/2) * 200 = 1100\text{ppm}$ .

# SETTINGS

## MAIN MENU FUNCTIONS

Pressing  once will bring up the menu bar. The main menu functions can be toggled by pressing  /  / . When  /  flashes, press  will exit the menu functions bar.

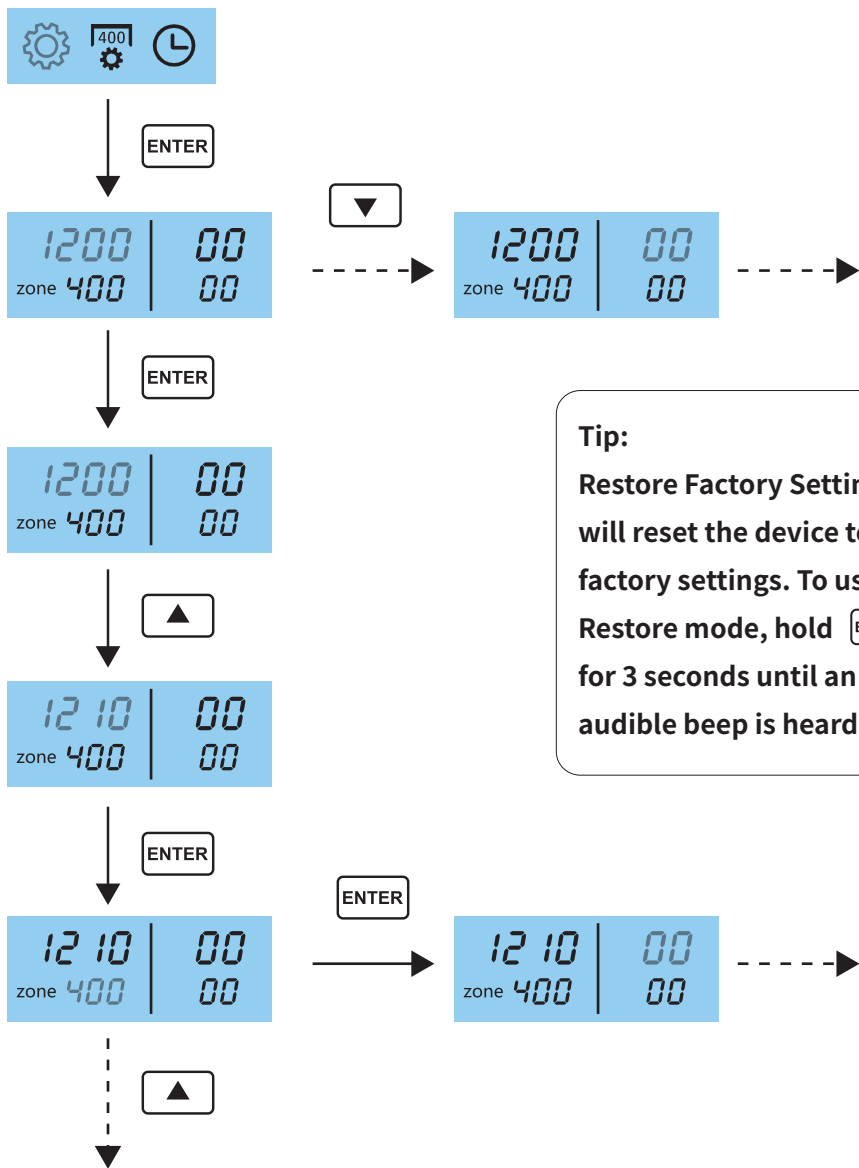
## MENU FUNCTION SETTINGS

To set a certain function, Press  when selected function icon is flashing. Press  /  to increase or decrease the value. Then press  one more time to confirm.

Note that after 1 minute if nothing is pressed, the Main Menu Bar will shut off and the device will revert to the normal state.

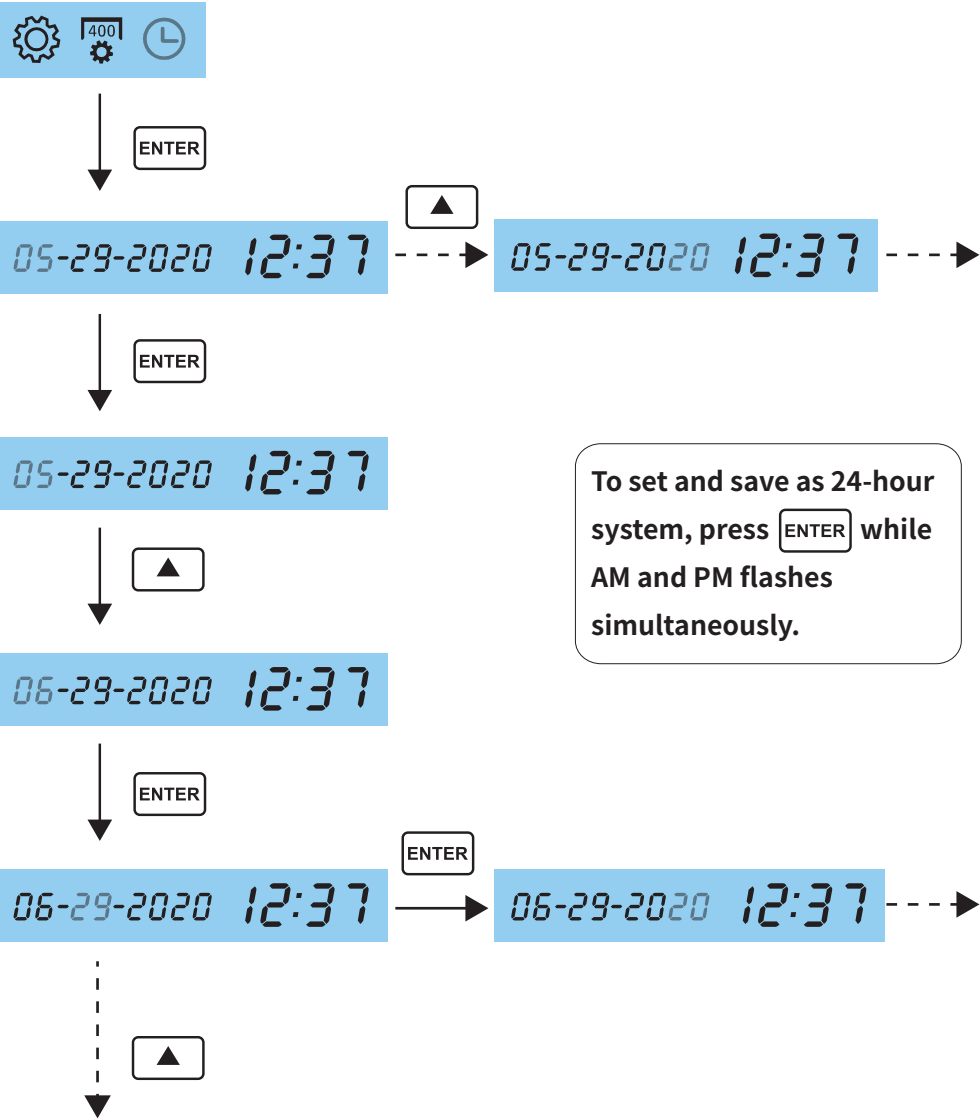
# CO2 CENTER VALUE, ZONE VALUE, WORKING TIME, AND INTERVAL TIME SETTINGS

## Demonstration









# DATE & TIME SETTING


## Demonstration



## Re-calibration (Use with caution)

Use this function to calibrate your device with outside atmospheric CO<sub>2</sub> level 400ppm. Press  to bring up the menu bar, select  by pressing  / . Press  for one more time to confirm. Then hold  for 3 seconds until a beep is heard. After 250 seconds countdown is finished on CO<sub>2</sub> Zone value, place the device outside for 20 minutes to complete the calibration.

## RESTORE FACTORY SETTING

In normal state, hold  for 3 seconds until a beep to reset the device to factory settings. Once selected, the Set Center value is 1200ppm, Set Zone value is 200ppm, Set working time is 0 second and Set interval time is 0 second.



### Notice

- Keep the device away from CO<sub>2</sub> sources, direct sunlight, and water.
- This device is well calibrated with standard 400ppm CO<sub>2</sub> gas.
- Do not calibrate this device in unknown atmospheric CO<sub>2</sub> level, or it will be inaccurately calibrated into 400ppm.

# SPECIFICATIONS

Model	1600PRO
Measurement Range	( 0-10000ppm ) optional
Accuracy	0~3000ppm $\pm 50\text{ppm} + 5\%\text{reading}$ $\geq 3000\text{ppm}$ $\pm 50\text{ppm} + 7\%\text{reading}$
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	1.50kgs (overall package)
Power Input	AC100~240VAC
Output Socket Load	5A@250VAC ( 10A@120VAC )

## **APPENDIX**

This product is powered by 100~240Volt AC, using special American standard Piggback or EU/UK plug to control the solenoid valve or fans. To avoid power overload, the 3kA @300Volt AC fuse is installed on the circuit board. If it's necessary, please contact the dealer, or buy a new fuse referring to the details in the appendix.

## **DISCLAIMERS**

This device is not intended for workplace hazard CO2 monitoring, nor intended as a definitive monitor for human or animal health institutions, life sustenance, or any medical-related situation.

The manufacturer assume no responsibility for any damage or loss suffered by the user or any third party arising through the use of this product or its malfunction.