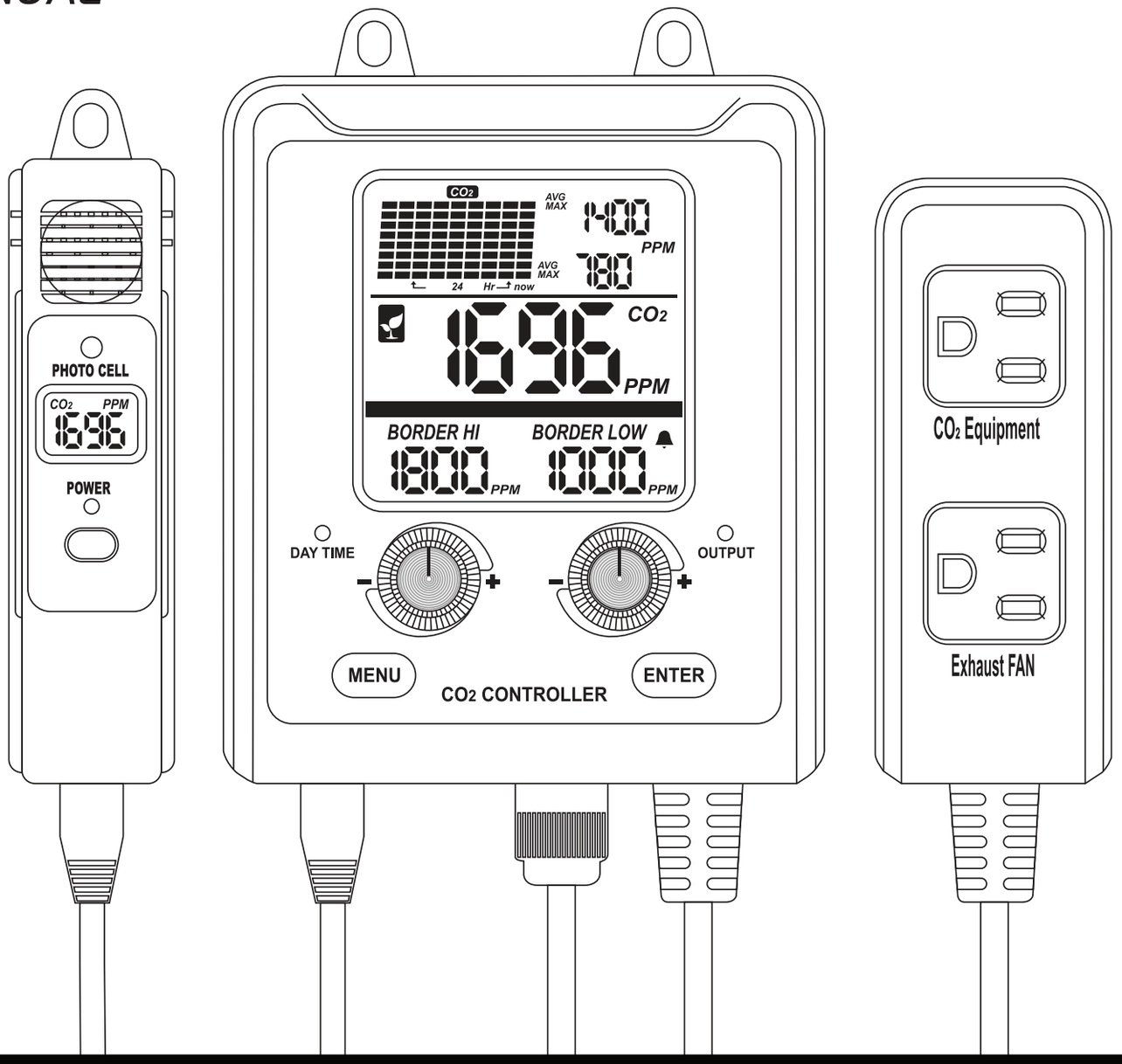
CO_2 MONITOR AND CONTROLLER

USER MANUAL



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Software & User Manual

TUTORIAL VIDEO ON HOW TO USE

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INTRODUCTION

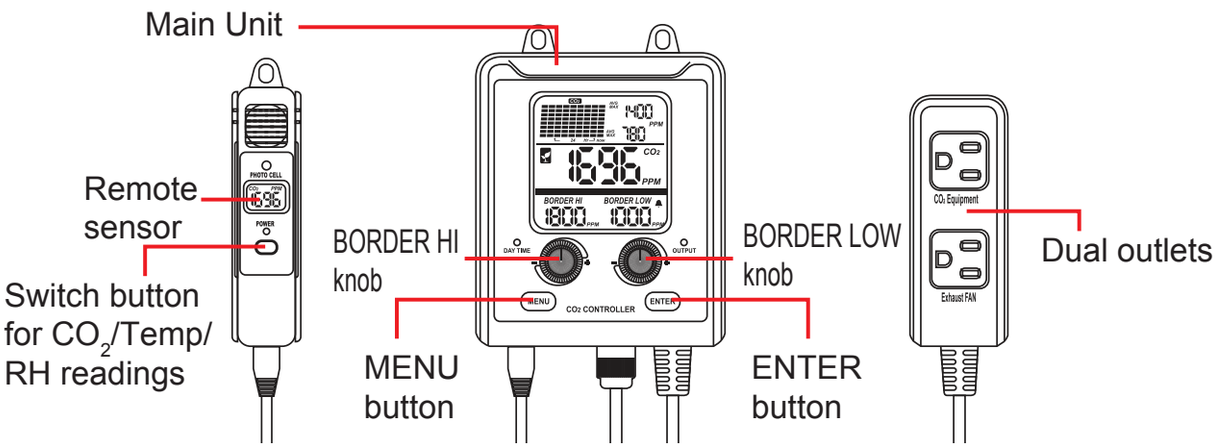
Hello there! Thank you for your purchase. Our products are packaged and shipped with the utmost care. In the unlikely event that your item is incorrect, incomplete, or unsatisfactory, please contact us, and we will promptly rectify the situation.

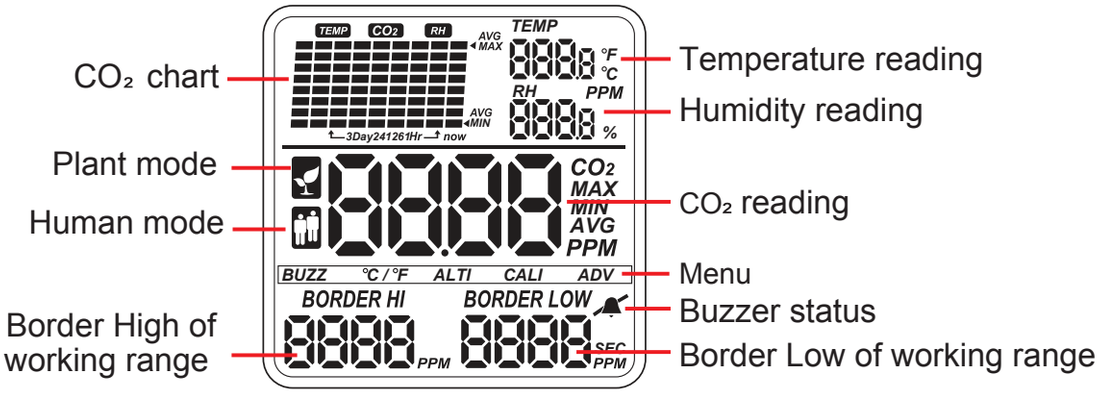
- To ensure safety, please read this manual carefully before installation and follow the instructions herein.
- Store this manual in a secure place for future reference.
- **WARNING: CHOKING HAZARD - Accessories contain small parts.**
- This manual is printed with color ink; water will cause smudging.

KEY FEATURES

- Automatic day/night detection feature
- Traceable chart with adjustable time scales
- Dual-channel, low-drift NDIR CO_2 sensor
- Green backlight for enhanced visibility
- Simple calibration process for CO_2, temperature, and humidity
- Audible alarm for high CO_2 levels
- Temperature and humidity monitoring
- Dual-control function for fan and CO_2 device in Plant Mode

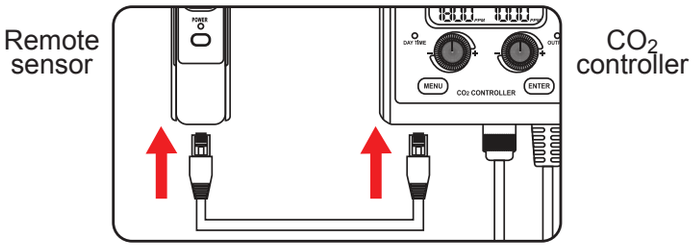
DEVICE INTRODUCTION





OPERATING INSTRUCTIONS

1. Power on the device

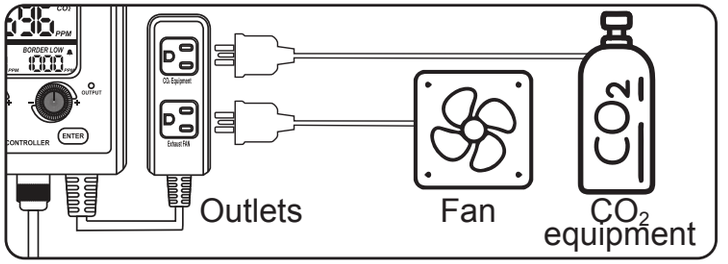


Step 1: Connect the cable to both ends of the CO_2 controller and the remote sensor.

Step 2: Plug the power plug into a wall outlet to activate the device. Once the device is powered on, the following will occur:

- The buzzer will emit a single beep.
- The CO_2 Sensor LCD will initiate a countdown from 15.
- The CO_2 Controller will initiate a countdown from 15.

Step 3: Plug your fan and/or CO_2 Equipment into the outlets to power it with your controller.



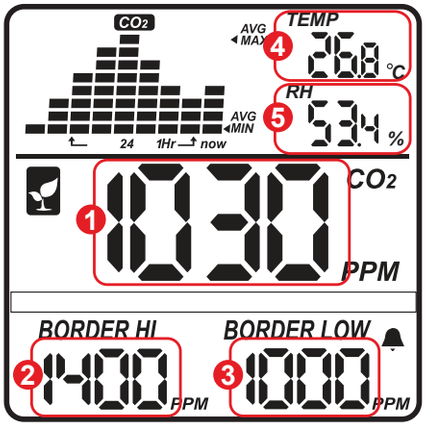
Fan and CO_2 generator are not included in the set

2. Taking measurement

The device takes measurements and updates readings every four seconds after powering on. Avoid holding the CO_2 sensor close to your face to prevent exhalation from affecting readings.

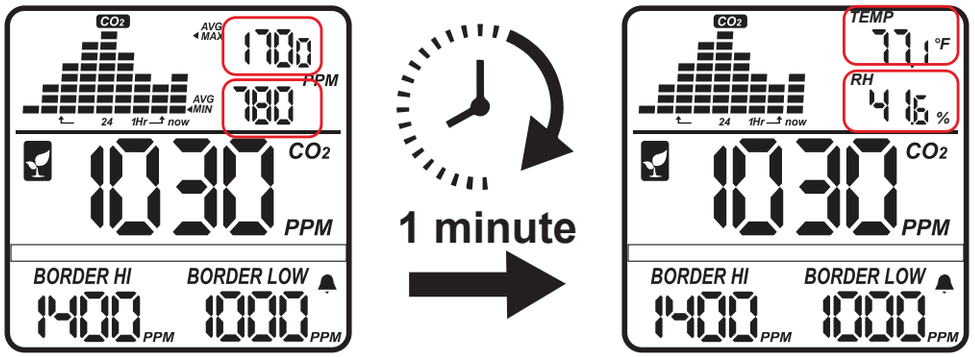
The device constantly displays the current ambient

1. CO_2 level
2. BORDER HI value
3. BORDER LOW value
4. Temperature
5. Humidity



3. Check MAX/MIN value of displayed chart

Under normal measurement, press the ENTER button, the MAX and MIN value will appear in the upper right corner of the screen. The device is default to display temperature and humidity value again after 1 minute.



Please refer to the following table for the Max/Min Value Update Time for Each Zoom Level:

Zoom Level (Time Span)	Max/Min Value Update Time
1H (1 hour)	10 minutes after initial startup
6H (6 hours)	1 hour after initial startup
12H (12 hours)	2 hours after initial startup
24H (24 hours)	4 hours after initial startup
3Day (3 days)	12 hours after initial startup

Note: The maximum and minimum values maintain consistency with real-time values until reaching these specific time intervals.

4. CO_2 Chart Setting

Under normal measurement, press the ENTER button to show the MAX/MIN values, and then press the ENTER button again to cycle through the following time scales. Each scale adjusts the chart to the selected duration (e.g., 1H = 1-hour spread).

Zoom Level (Time Span)	Time Per Division	LCD scale
1H (1 hour)	10m/div	
6H (6 hours)	1hr/div	
12H (12 hours)	2hr/div	
24H (24 hours)	4hr/div	
3Day (3 days)	12hr/div	

This chart allows the user to better understand the historical CO_2 levels at the site and assists the user in evaluating subsequent arrangements, such as exhaust air or increasing CO_2 levels.

5. Display Backlight

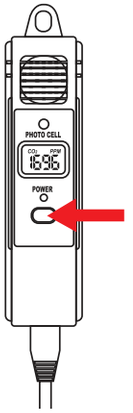
Press any key to activate the backlight and it will automatically turn off after 1 minute.

6. Auto Detect Day/Night

In Plant mode, the built-in photo-cell sensor of the CO_2 sensor can automatically detect day or night, it can override the CO_2 control and shut off the CO_2 generator by turning off the output power during the night.

NOTE: The above auto-detect day/night function will be ignored when users select “Human mode” in the ADV settings, since the relay output control is determined solely by the CO_2 value, day or night condition will not affect it.

7. Measuring Probe LCD

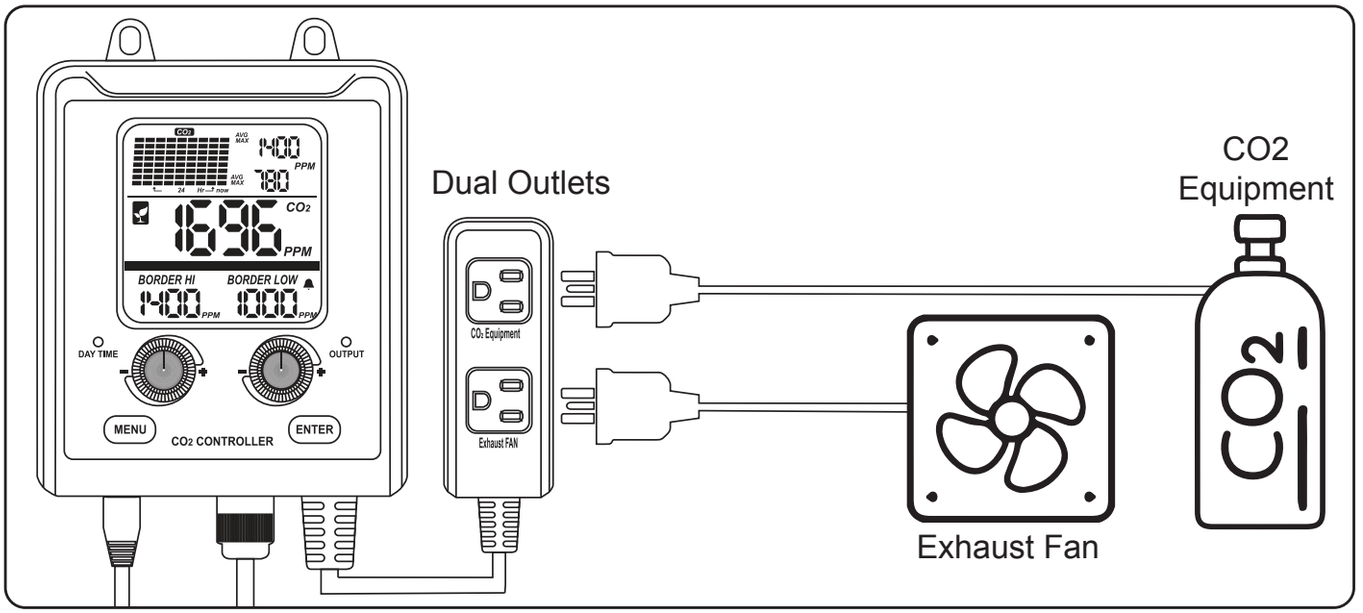


The user can check the CO_2 level, temperature, and humidity readings by pressing the switch button on the CO_2 sensor. If there is no button operation within 1 minute, the LCD of the sensor will automatically switch to display the CO_2 reading.

8. Dual Outlets Control

• **Plant Mode:**

Dual outlets are independently programmed and control, it will turn on CO_2 Equipment or Fan automatically according to the preset values.



The **CO_2 Equipment** output will turn on when the CO_2 level is lower than the BORDER LOW value, and it will turn off when the CO_2 level exceeds the BORDER HI value.

The **Exhaust Fan** output will turn on when the CO_2 level exceeds the LIMIT HI (L1 H) value and it will turn off when the CO_2 level is lower than the LIMIT LOW (L1 L) value.

e.g.

CO_2 Equipment

BORDER LOW
1000ppm

CO_2 Tank ON
(below 1000ppm)

BORDER HI
1400ppm

CO_2 Tank OFF
(above 1400ppm)

Exhaust Fan

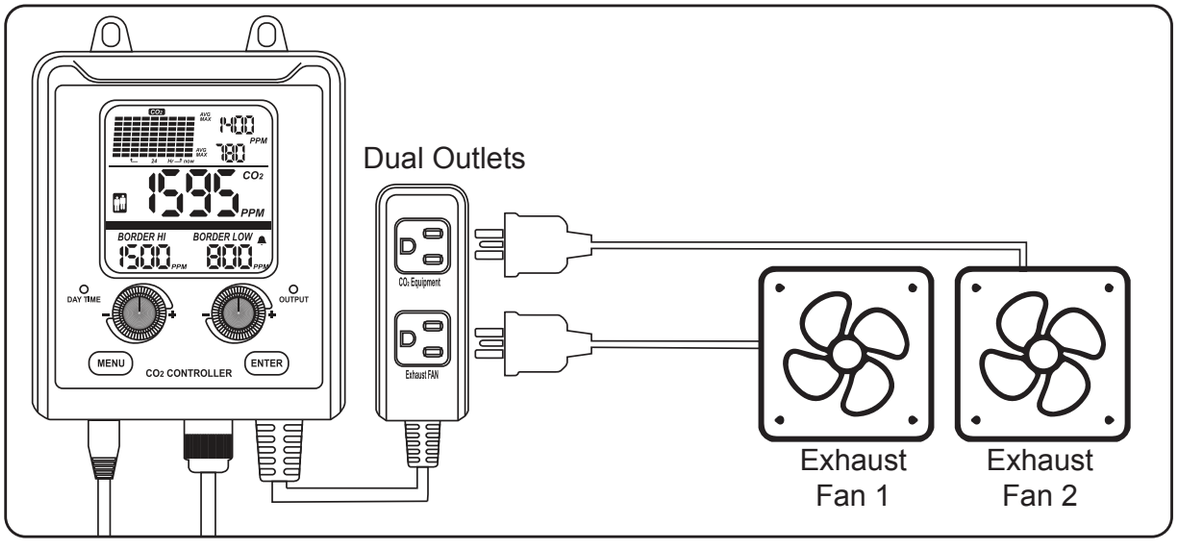
LIMIT LOW
1500ppm

FAN OFF
(below 1500ppm)

LIMIT HI
1800ppm

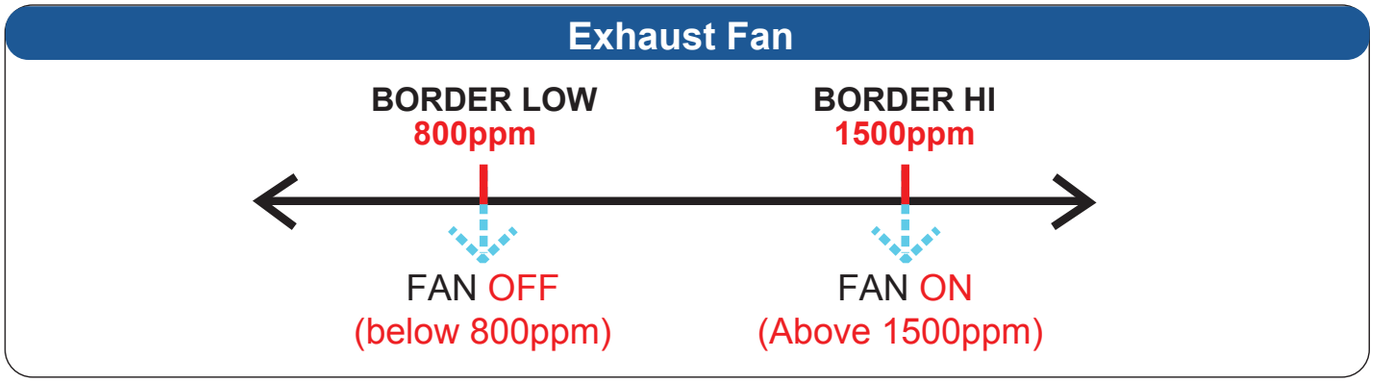
FAN ON
(above 1800ppm)

• **Human Mode:**



Under Human Mode, both dual outlets will automatically turn on when the CO_2 level exceeds the BORDER HI value and it will turn off when the CO_2 level is lower than the BORDER LOW value.

e.g.



SETUP

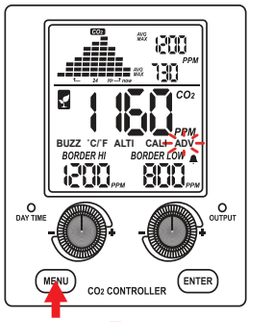
1. Advance setting (ADV)

1). Press the (MENU) button five times, then the symbol **ADV** will start blinking on the screen.

2). Press the (ENTER) button to enter the **ADV** mode.

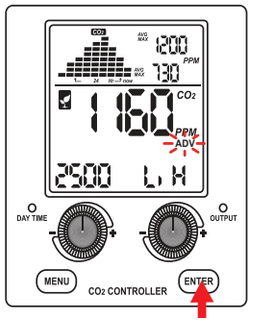
When the device is set to **(PLANT Mode)**, it offers 5 advance settings:

① L1 H (LIMIT HI setting)
② L1 L (LIMIT LOW setting)
③ PL (Plant mode)
④ HU (Human mode)
⑤ rES (Restore to factory default)



When set to **(HUMAN mode)**, it offers only 3 advanced settings:

③ PL (Plant mode)
④ HU (Human mode)
⑤ rES (Restore to factory default)

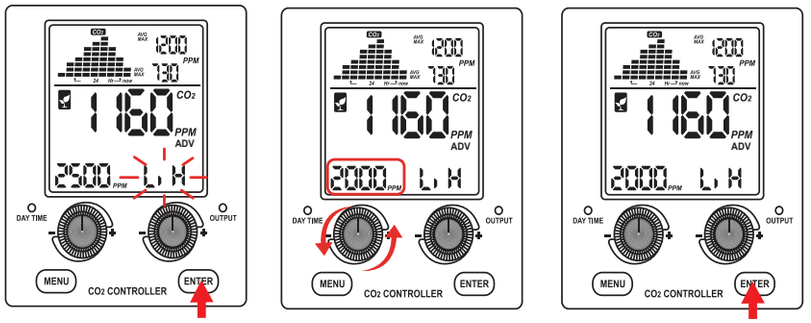


3). ① L1 H (LIMIT HI setting)

a. Press the ENTER button when the symbol L1 H is blinking in the screen to access the LIMIT HI setting.

b. Rotate the BORDER Hi knob to the left or right to adjust it to the desired value.

c. Press the ENTER button to confirm the setting.



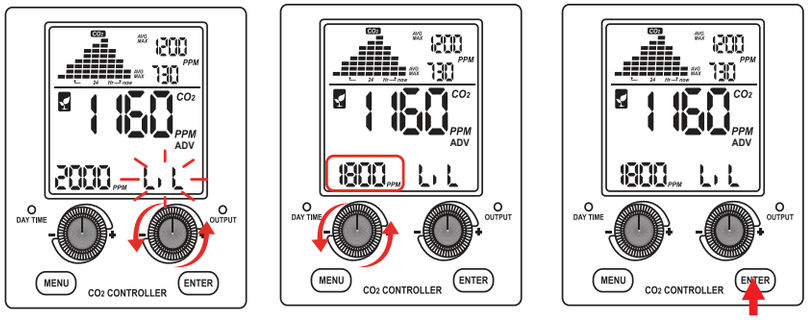
4). ② L1 L (LIMIT LOW setting)

a. Under **ADV** mode, rotate the BORDER LOW knob until the L1 L is blinking in the screen.

b. Press the ENTER button when the symbol L1 L is blinking in the screen to access the LIMIT LOW setting.

c. Rotate the BORDER Hi knob to the left or right to adjust it to the desired value.

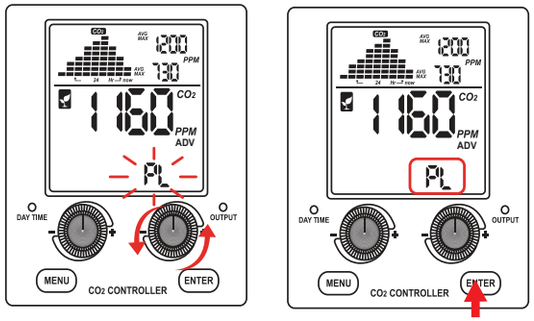
d. Press the ENTER button to confirm the setting.



5). ③ PL (Plant Mode)

a. Under **ADV** mode, rotate the BORDER LOW knob until the symbol PL is blinking in the screen.

b. Press and hold the ENTER button for 3 seconds to select Plant Mode.

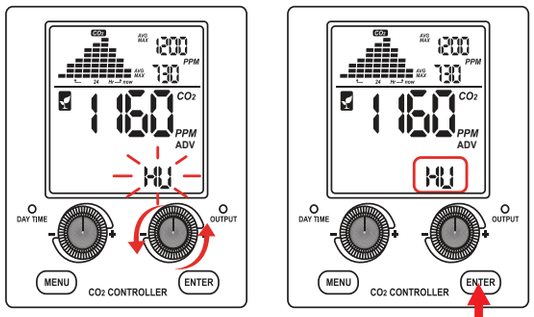


Hold 3 seconds

6). ④ HU (Human Mode)

a. Under **ADV** mode, rotate the BORDER LOW knob until the symbol HU is blinking in the screen.

b. Press and hold the ENTER button for 3 seconds to select Human Mode.

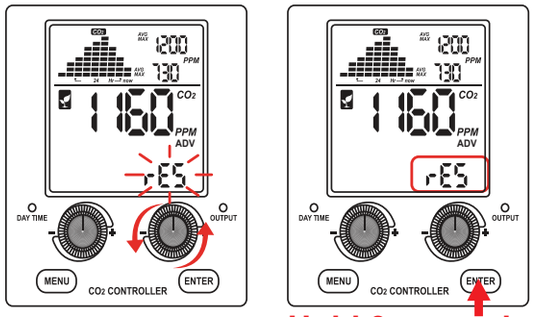


Hold 3 seconds

7). ⑤ rES (Restore to factory default)

a. Under **ADV** mode, rotate the BORDER LOW knob until the symbol rES is blinking in the screen.

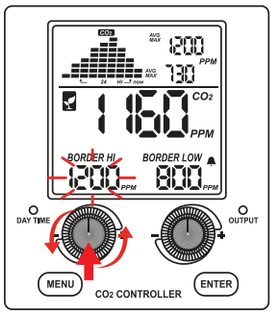
b. Press and hold the ENTER button for 3 seconds to restore to factory default, the device will clear all data stored in the chart.



Hold 3 seconds

2. Setting the BORDER HI value

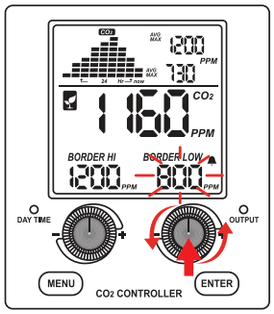
1). Press the BORDER HI knob to make the BORDER HI value flash.
2). Adjust the BORDER HI value by rotating the BORDER HI knob to the left or right.
3). Press the BORDER HI knob again to save the setting and exit.



Note: The adjustable range is 450~3000ppm with steps of 10 ppm. If the BORDER HI value is set lower than the BORDER LOW value, the device will automatically adjust the BORDER LOW value accordingly.

3. Setting the BORDER LOW Value

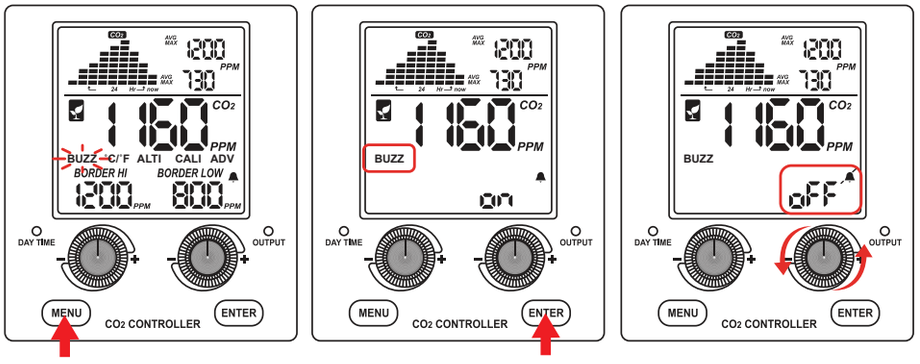
1). Press the BORDER LOW knob to make the BORDER LOW value flash.
2). Adjust the BORDER LOW value by rotating the BORDER LOW knob to the left or right.
3). Press the BORDER LOW knob again to save the setting and exit.



Note: The adjustable range is 400~2950ppm with steps of 10 ppm. If the BORDER LOW value is set higher than the BORDER HI value, the device will automatically adjust the BORDER HI value accordingly.

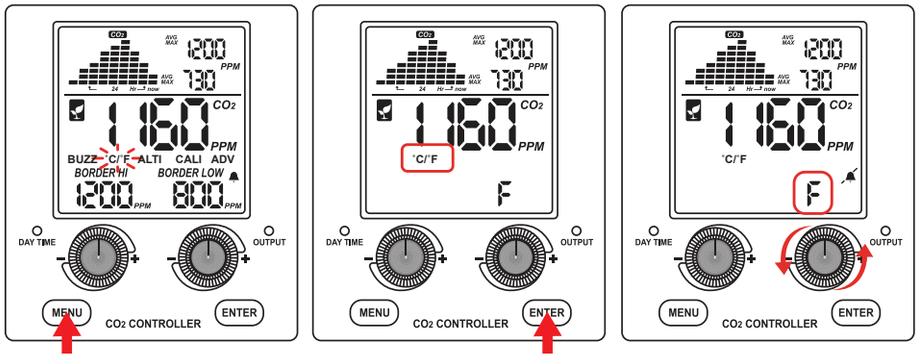
4. Buzzer alarm (BUZZ)

1). Press the MENU button once, then the symbol “BUZZ” will start blinking in the screen.
2). Press the ENTER button to enter the buzzer alarm setting mode.
3). Rotate the BORDER LOW knob to the left or right to select “ON” or “OFF”.
4). Press the ENTER button again to save the setting and exit.



5. Temperature unit setting (°C/°F)

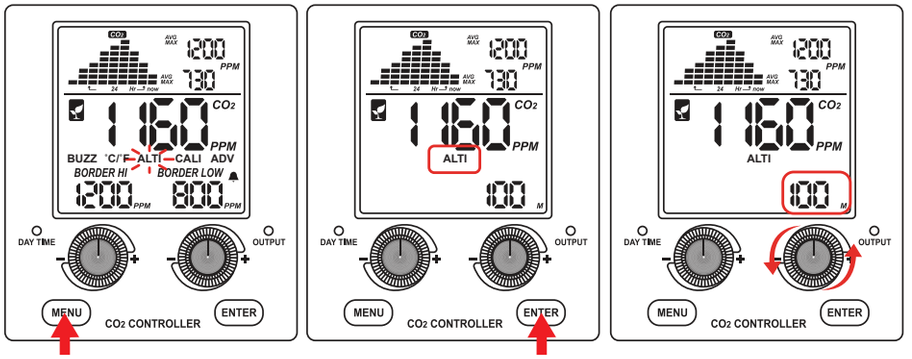
1). Press the MENU button twice, then the symbol “°C/°F” will start blinking in the screen.
2). Press the ENTER button to enter the temperature unit setting mode.
3). Rotate the BORDER LOW knob to the left or right to select °C or °F.
4). Press the ENTER button again to save the setting and exit.



Press x2

6. Altitude Setting(ALTI)

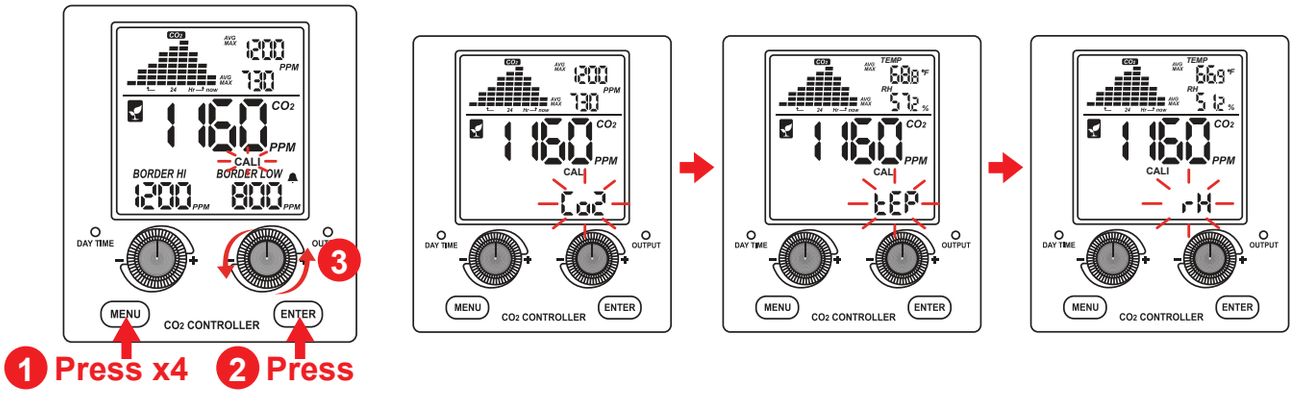
1). Press the MENU button three times, then the symbol “ALTI” will start blinking in the screen.
2). Press the ENTER button to enter the altitude setting mode.
3). Rotate the BORDER LOW knob to the left or right to increase or decrease the value.
4). Press the ENTER button again to save the setting and exit.



7. Calibration (CALI)

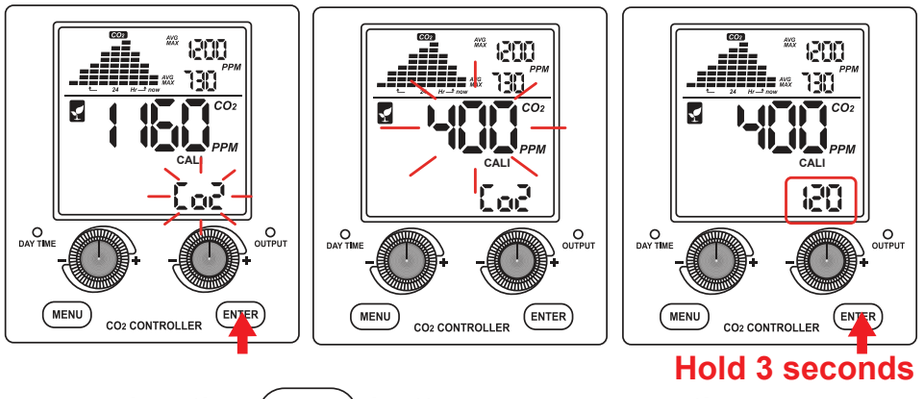
While the accuracy of this device is a concern after long term use, the user can use this function to calibrate it. Before calibrating it, please put the device at outdoors fresh air with an approximate concentration of 400 ppm for 20 mins. It is recommended to conduct the calibration on a sunny day to ensure that the ambient air is close to 400 ppm.

1). Press the MENU button four times, then the symbol “CALI” will start blinking in the screen.
2). Press the ENTER button to enter the calibration mode.
3). Rotate the BORDER LOW knob to the left or right to select the calibration of CO_2, Temperature or Humidity.



Calibrate CO_2 Reading:

a. When the Co2 icon is flashing, press the ENTER button to confirm the selection,
b. Hold the ENTER button for more than 3 seconds to perform CO_2 calibration,
c. After 120 seconds, the device will finish the calibration and show the calibration result “PASS”.

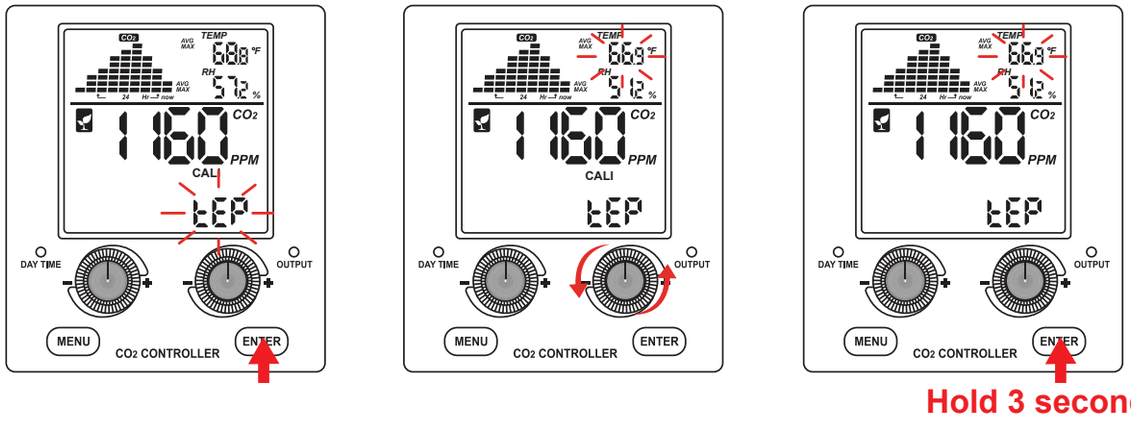


Note: If the user wants to interrupt the calibration, pressing the MENU button can escape the calibration function.

Calibrate Temperature Reading:

a. When the tEP icon is flashing, press the ENTER button to confirm the selection.
b. Rotate the BORDER LOW knob to the right or left to adjust it to the desired value.
c. Hold the ENTER button for more than 3 seconds to perform temperature calibration.
d. After 6 seconds, the device will finish the calibration and show the calibration result “PAS(PASS)” or “FAL(FAIL)”.

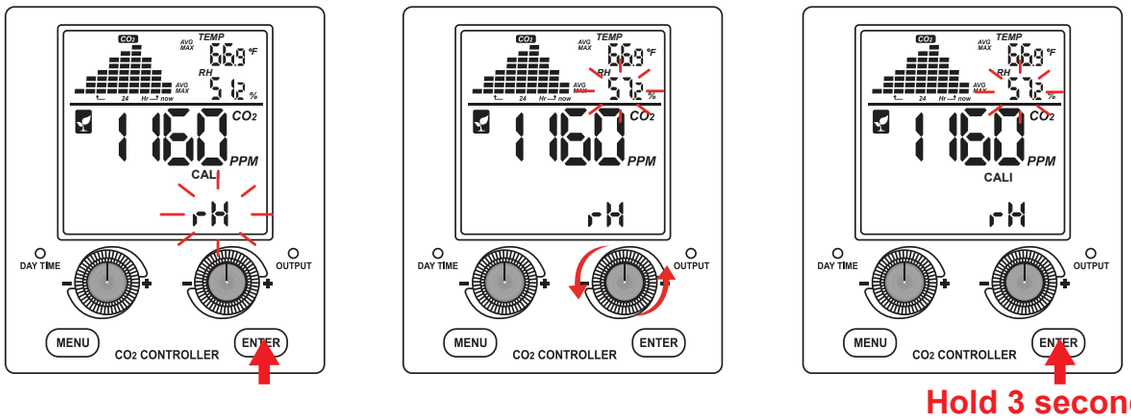
Note: If the user wants to interrupt the calibration, pressing the MENU button can escape the calibration function.



Calibrate Humidity Reading:

a. When the rH icon is flashing, press the ENTER button to confirm the selection,
b. Rotate the BORDER LOW knob to the right or left to adjust it to the desired value,
c. Hold the ENTER button for more than 3 seconds to perform humidity calibration,
d. After 6 seconds, the device will finish the calibration and show the calibration result “PAS (PASS)” or “FAL(FAIL)”.

Note: If the user wants to interrupt the calibration, pressing the MENU button can escape the calibration function.



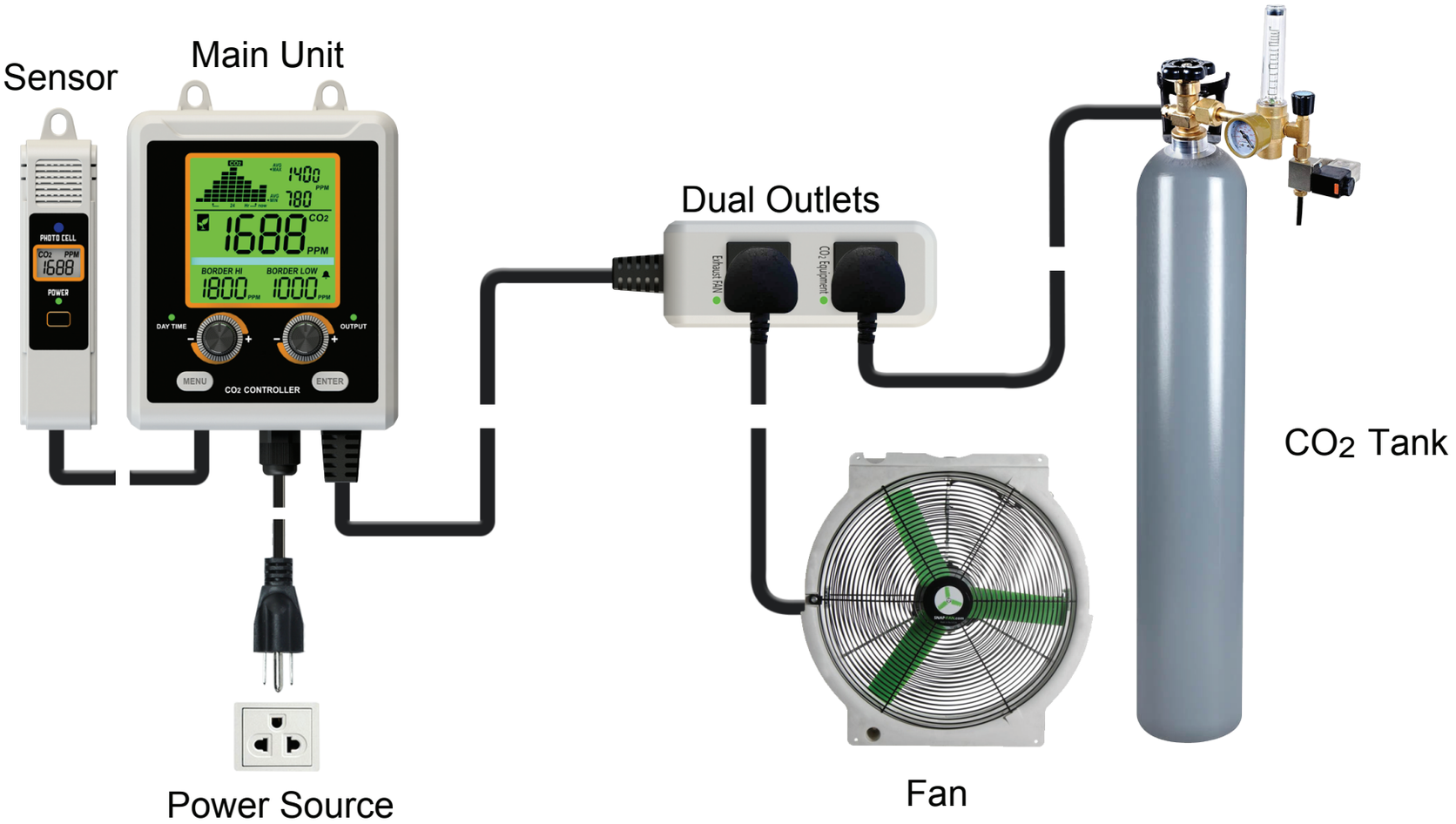
SPECIFICATION

Typical test conditions, unless otherwise specified: Ambient Temp =73±3°F (23±3°C)
RH = 50%~70%, Altitude = 0~100 meter

Measurement	**Specification**
Operating Temperature	32°F to 122°F (0°C to 50°C)
Storage Temperature	-4°F to 140°F (-20°C to 60°C)
Design Application	Indoor Use
Operating & Storage RH	0~95%, non-condensing
CO_2 Measurement	
Accuracy 0~3000ppm	±50ppm or ±5% of reading, whichever is greater
Accuracy over 3000ppm	±7%
Repeatability	20ppm at 400pp (standard: of 10 reading in 1 minute)
Measurement Range	0~5000ppm
Display Resolution	1ppm (0~1000); 5ppm (1000~2000); 10ppm (>2000)
Temperature Dependence	±0.2% of reading per °C or ±2ppm, whichever is greater referenced to 25°C
Pressure Dependence	0.13% of reading per mmHg (corrected by user's altitude input)
Response Time	<2min for 63% of step change or <4.6min for 90% step change
Warm-up Time	<30 sec
Power input	AC 100~240 VAC
Dimension	Sensor Unit: 153*33*27mm (6.0*1.3*1.1inch) Controller Unit: 195*145*44mm (7.7*5.7*1.7inch)
Weight	700g (24.7oz)

EXAMPLE DIAGRAM FOR DUAL OUTLET CONTROL

PLANT MODE

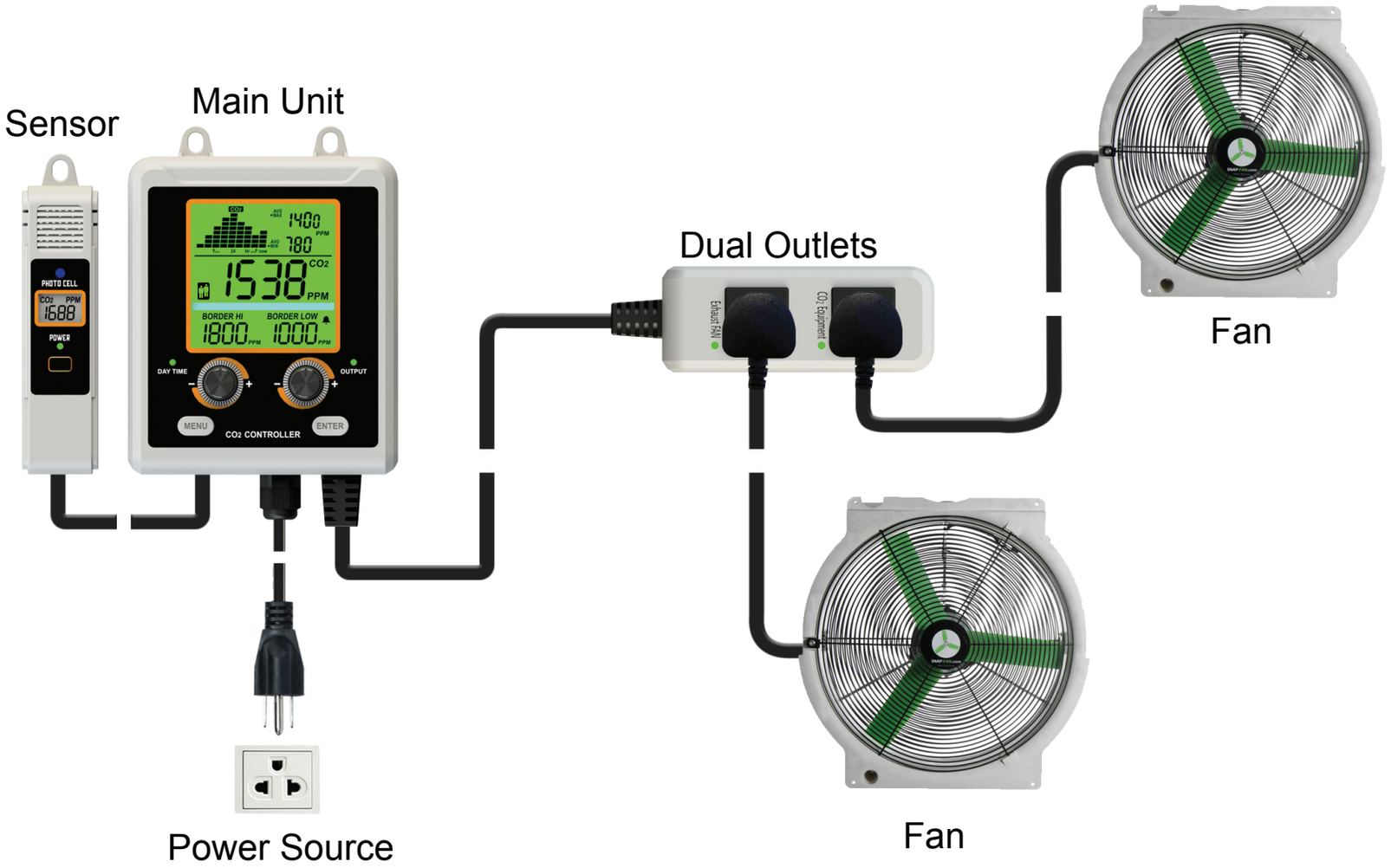


Disclaimer:

Please note that this product package does **not** include a Fan or a CO_2 Tank. The diagram provided is for illustrative purposes only and is intended to demonstrate how the product can be used when connected to a CO_2 tank and fan, which are essential components for the optimal operation of this product, particularly in plant mode operation.

EXAMPLE DIAGRAM FOR DUAL OUTLET CONTROL

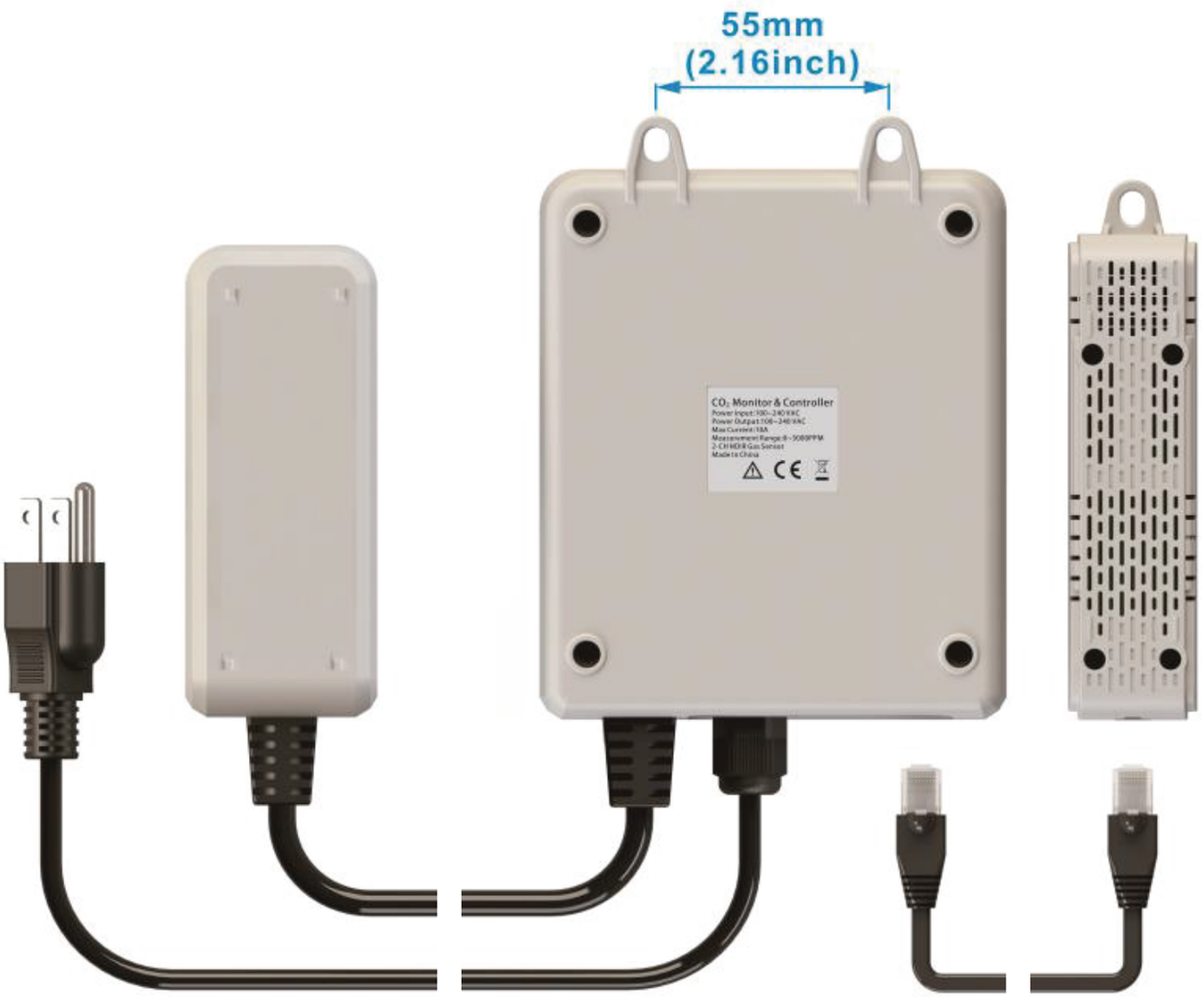
HUMAN MODE



Disclaimer:

Please note that this product package does **not** include a Fans. The diagram provided is for illustrative purposes only and is intended to demonstrate how the product can be used when connected to a fans, which are essential components for the optimal operation of this product, particularly in human mode operation.

REAR VIEW



Disclaimer:

This device is not intended for workplace hazard CO_2 monitoring, nor is it intended as a definitive monitor for human or animal health institutions, life sustenance, or any medical-related situation. Our company assumes no responsibility for any damage or loss suffered by the user or any third party arising from the use of this product or its malfunction. Our company reserves the right to change the specifications without notice.