

CO2 PPM Controller (BETA-8)

User Manual



BETA-8 BETA Series -Single Controller

OVERVIEW

Thank you for purchasing our BETA-8 CO2 Controller, which is a simple and affordable way to control your CO2 injection device. Choose your desired CO2 level and the Controller will maintain that specified value. A built-in photocell on the sensor will deactivate CO2 injection at night. A remote sensor with 16ft long cable allows close placement to plant canopy.

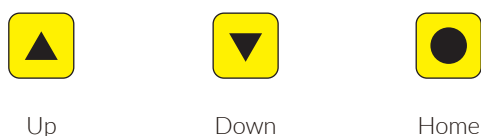
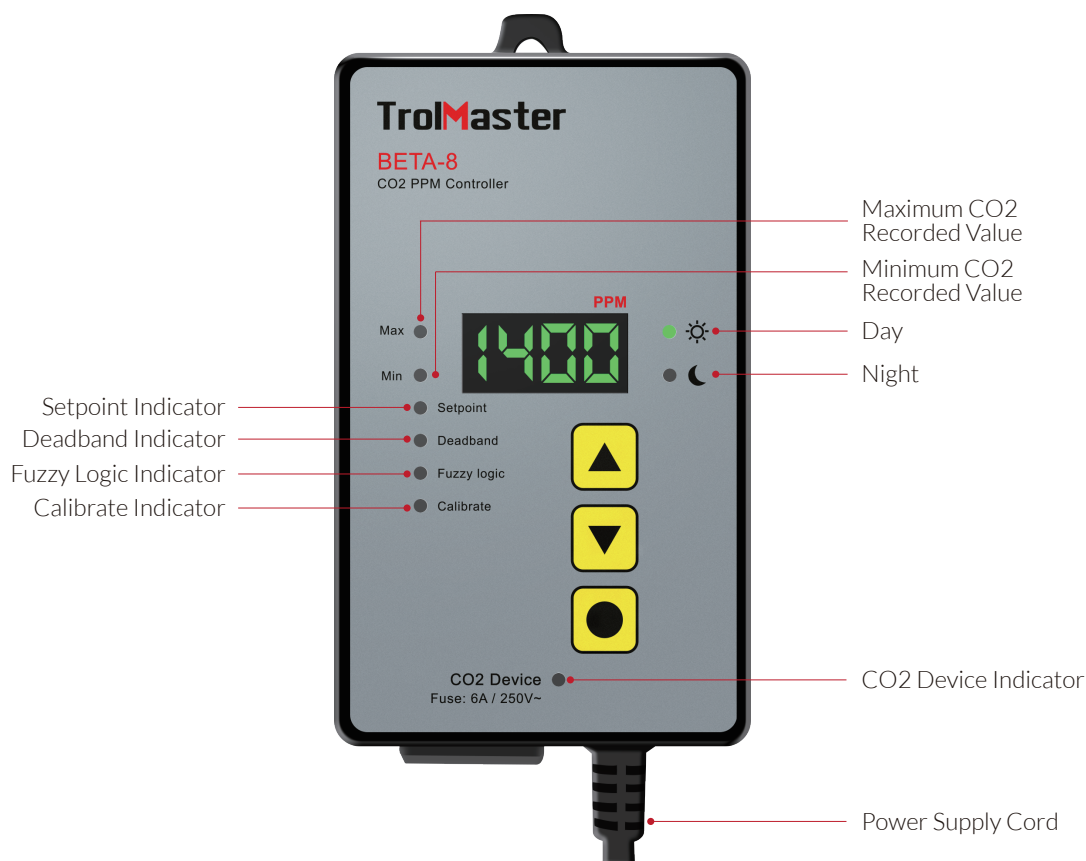
Night Mode: the Controller will turn off the output of CO2 device.

Day Mode:

- If the Fuzzy Logic function is disabled, the unit will OPEN the output of the CO2 device when the current CO2 level is below setpoint, and CLOSE the output when the current CO2 level is above the CO2 setpoint plus deadband value.
- If the FuzzyLogic function is enabled, the unit will fully OPEN the output of CO2 device when the current CO2 level is much lower than the setpoint. When the CO2 level is close to the setpoint, the unit will calculate and send PWM signal to control the output of CO2 device, The PWM cycle is 5 seconds.

INSTALLATION

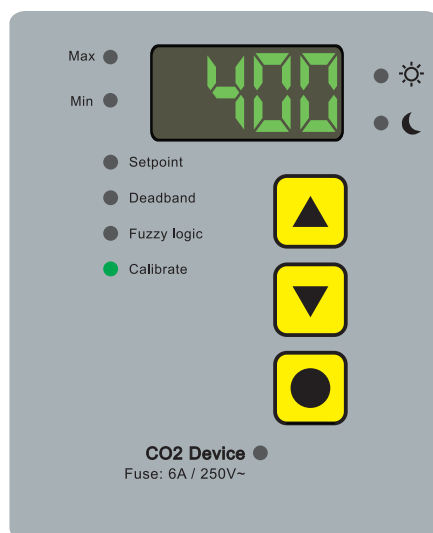
- Mount the Controller on wall, place the sensor in a well ventilated area.
- Connect the CO2 sensor to the Controller.
- Plug the Controller into a 120V NEMA 5-15 wall outlet.
- Program the desired setting before connecting to CO2 generator or regulator.
- Plug a CO2 device into the power outlet of the unit. Ensure that the CO2 device has a proper voltage (120 V) and is not exceeding its max amperage rating.



OPERATION INSTRUCTIONS

1. Reading CO2 Level

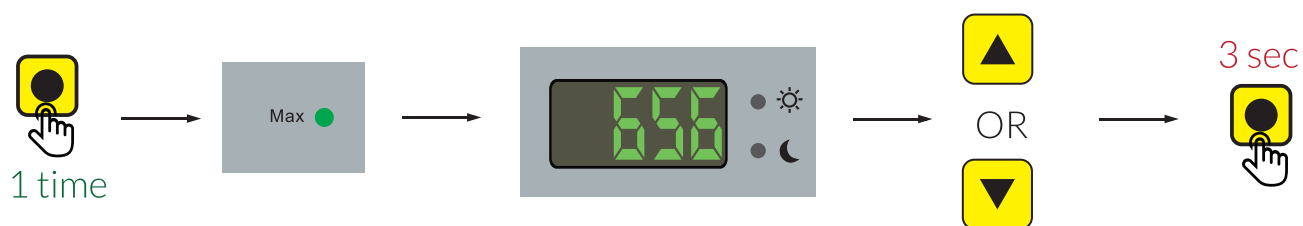
- Warm up the unit for approximately 1 minute.
- After warm-up, the LED will display the current CO2 level (as PPM).
- The CO2 Device LED CO2 Device will turn green when connected with CO2 generator or CO2 regulator.








2. Maximum CO2 Recorded Value Recall

Press **HOME** button ■ one time, the LED will display the maximum CO2 recorded value and the Max LED indicator Max will be blinking. To clear the record, press **UP** button ▲ or **DOWN** button ▼, all digits on LED display will be blinking, press and hold **HOME** button ■ for 3 second to clear the record.











3. Minimum CO2 Recorded Value Recall

Press **HOME** button  twice, the LED will display the minimum CO2 recorded value and the Min LED indicator  will be blinking. To clear the record, press **UP** button  or **DOWN** button , all digits on LED will be blinking, press and hold **HOME** button  for 3 second to clear the record.









4. CO2 PPM Level Setpoint Adjustment

The factory setpoint of the CO2 PPM level is 1200 PPM. If the CO2 level is lower than 1200 PPM, the controller will turn on output relay to drive the CO2 device to enrich the CO2 in the grow area. When the CO2 PPM level exceeds setpoint plus deadband (50PPM), the controller will cut off the output. To adjust the setpoint, press **HOME** button  3 times, the Setpoint LED indicator  will be blinking, the LED will display the current setpoint. Press **UP**  or **DOWN** , all digits on the LED will be blinking and then press **UP**  or **DOWN**  button to increase or decrease the setpoint.



5. CO2 PPM Deadband Adjustment

Factory deadband setting is 50 PPM. To adjust the deadband, press **HOME**  4 times, the Deadband LED  will be blinking and the LED will display the current deadband setting. Press **UP**  or **DOWN** , the digits on the LED will be blinking and then press  or  to increase or decrease the deadband.


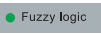





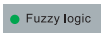


6. Fuzzy Logic Mode

a). Fuzzy Logic mode counters rising or falling CO2 levels by quickly activating the CO2 solenoid valve, allowing CO2 levels to be controlled more precisely.

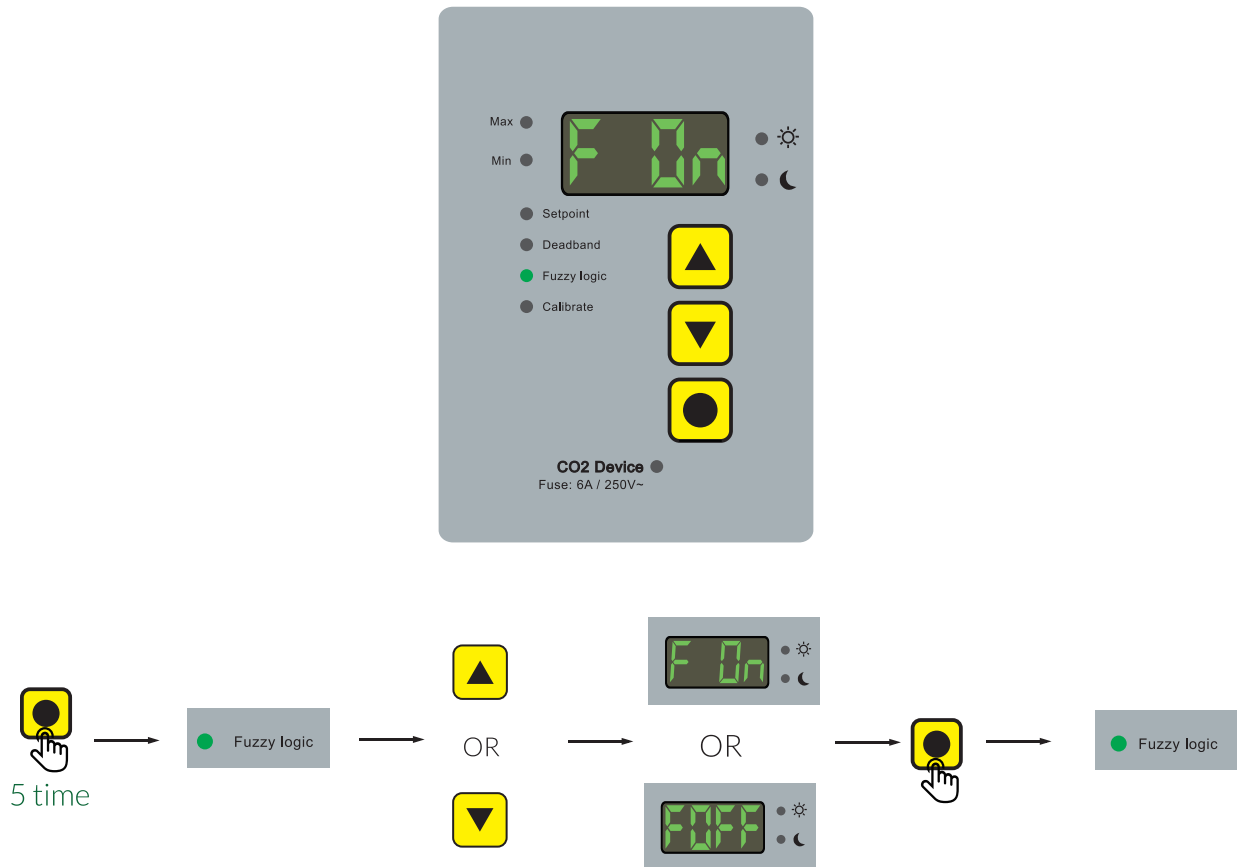
b). The Fuzzy Logic function is active if the Fuzzy Logic LED indicator  illuminates.

c). Factory default setting of fuzzy logic is off.

To activate the fuzzy logic, press **HOME** button  5 times, the Fuzzy Logic LED indicator  will be blinking. Press **UP**  or **DOWN** , the LED displays OFF. Press  or , the LED displays ON. Press **HOME** button  to confirm and activate the fuzzy logic and the Fuzzy Logic LED indicator  will illuminate.

d). This function can be used ONLY with compressed CO2.

e). Do not use Fuzzy Logic with a CO2 generator!!!








7. Calibrating the CO2 Sensor

a). Place the sensor outdoors in a shaded area. Do not place in direct sunlight. Keep away from people, animals and other CO2 emitting units.

Note: If calibration will be in a high-traffic area or highly populated area, a slightly higher calibration value of 400-475 ppm is recommended.

b). Plug in the Controller and allow it to warm up for a minimum of 30 minutes but 1 hour is recommended.

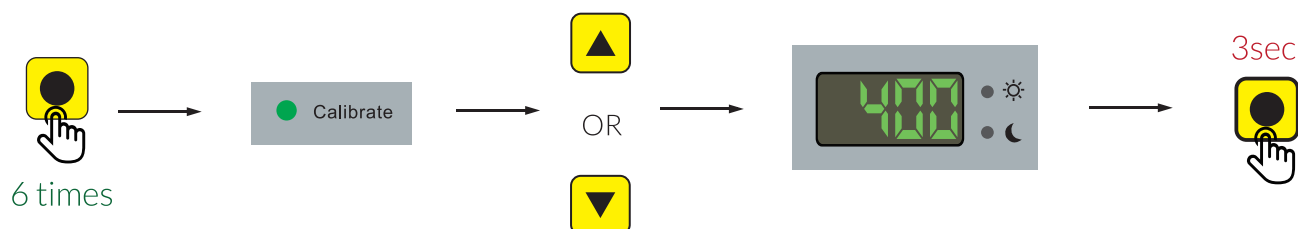
c). Press **HOME** button  6 times to activate the automatic calibration, the [Calibrate] LED indicator  will be blinking. Press **UP**  or **DOWN** , the CO2 level (400 ppm) will be displayed on the LED and blinking. Press **UP** or **DOWN** to adjust the calibration level if you have an accurate reference. Otherwise, the recommended level will be 400 ppm. Press and hold **HOME** button  3 seconds to activate the calibration.

Note: DO NOT exhale or breathe near the sensor while activating the calibration function.

d). The LED will display the countdown timing.

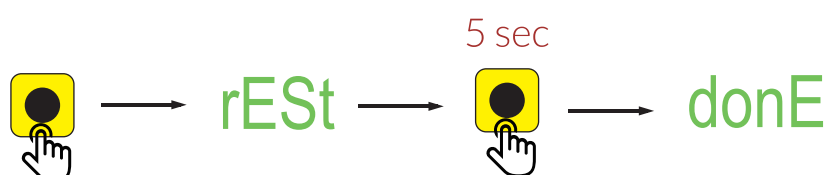
e). When it is complete, the screen will display functions normally. Calibration will not affect any other settings.

Note: It may take up to 90 seconds to complete the calibration process.



8. Restore the Factory Settings

Press and hold **HOME** button  before plugging controller into wall outlet. Power the controller, the LED will display "rEST" and blink. Keep holding the **HOME** button  for 5 seconds until the LED displays "donE".



FACTORY DEFAULT SETTINGS

CO2 Set-point:	1200 PPM
Photocell Mode:	Day
CO2 Sensor Calibration Point:	400 PPM
CO2 Deadband Value:	50 PPM

SPECIFICATIONS

Input Voltage:	120 Volts AC
Output Relay Rating:	10A
Fuse Rating:	6A/250V~
AC Power Cord Length:	1.8m
CO2 Control Range:	400-2000 PPM
CO2 Deadband Range:	20-200 PPM
CO2 Accuracy:	+/-50 PPM
CO2 Sensor Type:	NDIR (Nondispersive Infrared)
Package Weight:	0.56Kg
Packaging Dimensions:	275mm(L) x 87mm(W) x 94mm(H)

For any issues or concerns with our products, DO NOT return them to the store. Please contact our tech support department at support@trolmaster.com or call **877-420-9876**.