



PPM-3 / Part Per Million CO₂ Monitor

CAP offers a full range of equipment for the growing enthusiasts. The PPM-3 is the simplest and most affordable CO₂ controller available today... from any manufacturer. Perfect for economically controlling LP or natural gas generators with PPM accuracy.

- The PPM-3 is not just a CO₂ monitoring device, it is a CO₂ PPM controller.
- Controls the Carbon Dioxide level in your area with Part Per Million accuracy.
- Simple to use and easy to understand.
- Least expensive CO₂ / PPM controller available.
- On-board user selectable set point from 0-5000 PPM.
- On-board calibration program allows the user to easily verify the unit is working properly.
- Controls any 120vac valve or CO₂ generator with a simple “piggy-back” cord.



INSTALLATION

- 1) The base-plate must be mounted to a wall using the (4) screws provided with the unit. Find a location near a 120-volt receptacle for power. The PPM-3 will need to have a fair amount of airflow around the enclosure and be at “plant-level” to be most accurate.
- 2) Once the base-plate is mounted the sensor can be snapped onto the base-plate by hooking the two top tabs and then pivoting the unit down until it snaps into place.
**Note: Before releasing tabs, remove small Phillips screw from bottom edge of the unit. To release the tabs, press in on the two snap tabs located on the bottom of the unit near each edge.*
- 3) The PPM-3 comes pre-wired with a plug-in power supply. The power supply must be connected to a constant source of 120-vac power. Once powered up, the PPM-3 will enter a “Initial warm-up” and calibration mode. Slowly over a 10-20 minute period, the CO₂ level should stabilize between 250-550 PPM outdoors and as much as 1500 PPM indoors.

CONNECTING POWER TO THE CO₂ VALVE OR GENERATOR

The large power cable connected to the PPM-3 is a 120-volt AC piggy-back cable. Normally, CO₂ is only required during the daytime. The piggy-back cable should be plugged into a 120vac timer such as the timeclock which controls your HID lights. When the lights are turned on, the CO₂ will be activated.

Your CO₂ valve or generator is plugged into the front of the piggy-back cable. Your CO₂ device will be turned ON whenever the CO₂ level is below the set point that you selected. (See “To change set point” below)

*** Warning: Connect ONLY the CO₂ solenoid / generator to the PPM-3. Connecting higher loads will damage the unit and void the warranty. DO NOT EXCEED ½ AMPS. YOU WILL VOID YOUR WARRANTY IF YOU EXCEED ½ AMPS!**

MAKING ADJUSTMENTS

The PPM-3 has an adjustable setpoint from 0-5000 PPM. Once the desired setpoint is entered, the PPM-3 will disable the CO₂ outlet. Adjusting the CO₂ setpoint and re-calibrating the unit is easy using the front mounted push buttons. There are four buttons.

- a) **clear**: used with the mode button to enter the programming mode.
- b) **mode**: used with the clear button to enter the programming mode and to scroll through the different modes.
- c) **up/down**: The arrow up / down button is used to change the program set points.
- d) **enter**: accept the changes and stores the settings.

To change the set point:

- 1) Press and hold the (**clear**) and (**mode**) buttons for 5 seconds.
- 2) Now press the (**mode**) button nine times to display the current set point. (**RELAY** is displayed)
- 3) Use the (**up**) and (**down**) arrow buttons to change the set point.
- 4) Press (**enter**) to accept the change.
- 5) Press (**clear**) to return the unit to RUN mode. (**CO₂ ____PPM** is displayed)

CALIBRATION

The PPM-3 is factory calibrated. The sensor onboard the PPM-3 is capable of remaining in calibration for a minimum of three years. Extreme shock during shipping and other factors may affect the calibration. By bringing the unit outdoors, you

can do a quick check of the calibration. The reading outdoors should be between 250-550 PPM. If the display does not read 250-550 PPM, a simple calibration can be performed.

To check for correct calibration:

- 1) Bring the unit outside so that it will receive fresh air. Do not locate the unit in direct sunlight.
- 2) Plug the power supply and power cord into 120vac.
- 3) Move away from the controller to allow the reading to stabilize for approximately 20 minutes.
- 4) Check the CO₂ level.
***Important: Do not breathe while checking the calibration the unit. As you exhale, large concentrations of CO₂ are expelled from your lungs. This higher level of CO₂ will affect the calibration of the unit.**
- 5) If the level is between (250-550PPM) the unit is performing fine. If it is outside that range, the unit can be re-calibrated.

To re-calibrate the unit:

- 1) Bring the unit outside so that it will receive fresh air. Re-connect the power supply.
- 2) Move away from the controller to allow the reading to stabilize for approximately 20 minutes.
- 3) Check the CO₂ level. It should read around 350-450. If not, proceed with the calibration
***Important: Do not breathe near the PPM-3 while checking the calibration the unit. As you exhale, large concentrations of CO₂ are expelled from your lungs. This higher level of CO₂ will affect the calibration of the unit.**
- 4) Press and hold the **(clear)** and **(enter)** buttons for 5 seconds.
- 5) **(CAL AIR** is displayed) * If CAL NITROGEN is displayed, press MODE one time to bring up CAL AIR.
- 6) Press **(enter)** to enter the calibration mode. (AIR-CAL and the current calibration point is displayed)
- 7) Use the arrow UP / DOWN buttons to enter the new point to be calibrated to. *Normally 400-430 PPM
- 8) Press **(enter)** to start the self-calibrating process. The green LED will flash as long as it is self-calibrating.
- 9) Move away from the unit. After approximately 5 minutes the green LED will stop flashing and the display will return to the normal run mode.

STATUS INDICATOR

The PPM-3 has a green LED indicator light on the front of the cover. If the LED is blinking, it indicates that the CO₂ sensor is warming up and stabilizing. When the LED is ON, it means that the CO₂ level is being measured.

PRECAUTIONS

- 1) **DO NOT** expose the PPM-3 to water. It utilizes a ventilated enclosure to properly “sample” the CO₂.
- 2) **DO NOT** connect loads greater than ½ amp @ 120vac to this unit.

WARRANTY

The PPM-3 is warranted against defects in workmanship for THREE years.

SPECIFICATIONS

Operating principle	Single-beam Non-Dispersive Infrared (NDIR)
Measurement range	0 – 5000 PPM CO ₂
Warm-up time	Minimum 20 minutes (full accuracy)
Maximum drift per year	+/- 15 PPM
Accuracy @ 77°F	+/- 50 PPM
Recommended calibration interval	Three years
Operating voltages	18-24volt @ 250ma
Maximum amperage	½ amp @ 120vac
Operating temperature range	0-50° C
Operating humidity range	0-99% RH (non-condensing)
Operating life expectancy	15 years typical
Warranty	Three years, parts and labor through repair or exchange.

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