



## PPM-3 / Part Per Million CO<sub>2</sub> Monitor

*CAP offers a full range of equipment for the growing enthusiasts. The PPM-3 is the simplest and most affordable CO<sub>2</sub> 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 CO<sub>2</sub> monitoring device... it is a CO<sub>2</sub> PPM controller.
- Controls the Carbon Dioxide level in your area with Part Per Million accuracy.
- Simple to use and easy to understand.
- Least expensive CO<sub>2</sub> / 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 CO<sub>2</sub> generator.



### 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: 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 CO<sub>2</sub> level should stabilize between 250-550 PPM outdoors and as much as 1500 PPM indoors.

### CONNECTING POWER TO THE CO<sub>2</sub> VALVE OR GENERATOR

The large power cable connected to the PPM-3 is a 120-volt AC piggy-back cable. Normally, CO<sub>2</sub> 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 CO<sub>2</sub> will be activated.

Your CO<sub>2</sub> valve or generator is plugged into the front of the piggy-back cable. Your CO<sub>2</sub> device will be turned ON whenever the CO<sub>2</sub> level is below the set point that you selected. (See “To change set point” below)

### 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 CO<sub>2</sub> outlet. Adjusting the CO<sub>2</sub> 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. (**CO<sub>2</sub> \_\_\_ 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 CO<sub>2</sub> level.  
**\*Important: Do not breathe while checking the calibration the unit. As you exhale, large concentrations of CO<sub>2</sub> are expelled from your lungs. This higher level of CO<sub>2</sub> 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 CO<sub>2</sub> level.  
**\*Important: Do not breathe while checking the calibration the unit. As you exhale, large concentrations of CO<sub>2</sub> are expelled from your lungs. This higher level of CO<sub>2</sub> will affect the calibration of the unit.**
- 6) Press and hold the (clear) and (enter) buttons for 5 seconds.
- 7) Now press the (mode) button nine times. (AMBIENT is displayed)
- 8) Use the (up) and (down) arrow buttons to change to 400.
- 9) Press (enter) to accept the change.
- 10) Press (clear) to return the unit to RUN mode. (CO<sub>2</sub> \_\_\_ PPM is displayed)

**NOTE: Be sure to take the unit out of calibration mode before putting it back into operation.**

### 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 CO<sub>2</sub> sensor is warming up and stabilizing. When the LED is ON, it means that the CO<sub>2</sub> level is being measured.

### PRECAUTIONS

- 1) DO NOT expose the PPM-3 to water. It utilizes a ventilated enclosure to properly “sample” the CO<sub>2</sub>.
- 2) DO plug the PPM-3 into a source of CONSTANT 120-vac power.

### 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 <sub>2</sub>
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
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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