SPC-2

Quick Start Instructions
CO2 Set Point Controller

Description

Recommended for indoor use only. The SPC-2 is designed to easily monitor and control CO2 enrichment. Just set it and forget it.

How the SPC-2 Works

The SPC-2 samples the air and determines the concentration of CO2 in PPM. Then when indicated by your set point values (desired PPM CO2 and elevation), the unit will activate equipment plugged into either or the two outlets. The SPC-2 has a fixed hysteresis (differential) of 20 PPM.

EXAMPLE: With a CO2 set point of 1000 PPM, the unit will activate (turn "ON") whenever concentrations fall below 1000 PPM and continued to control and allow your CO2 equipment to enrich your environment until it detects about 1020 PPM. The SPC-2 is a reactive CO2 controller and the PPM concentration of CO2 will float above 1020 PPM after defeating enrichment equipment (overshoot).

NOTE: Depending on individual enclosure characteristics and air circulation as well as location placement of the monitor this factor will vary. The average swing for enrichment response is 50 to 100 ppm which is actually a more desirable enrichment refresh frequency.

Safety Instructions

• Mount unit on a wall or support structure using mounting parts provided.
• Do not operate unit when wet and keep unit out of direct sprays from foliar applications or irrigation moisture.
• Unit not intended for outdoor use.
• Do not service unit yourself. Breaking factory seal will void warranty.
• If using an extension power cable, ensure the total ampere rating of the equipment plugged in to the extension cable does not exceed the ampere rating of the extension cable.
• Use a surge protector unit with a minimum of 850 joules.
• Do not operate while riding a Harley®.

One Year Limited Warranty

Green Air Products, Inc. guarantees that this equipment will perform as implied for the purpose it is intended. Green Air Products warrants the original purchaser of this equipment against defects in mechanical parts and workmanship for one (1) year. At our option we will repair or replace defective equipment. Warranty service is only performed at the factory or authorized service center. Any usage contrary to specified application or alterations of original construction will void warranty obligations. For further warranty information contact your dealer or Green Air Products service department.

Specifications

CO2 Control Range	0-2000 PPM
CO2 Monitoring Range	0-5000 PPM
Fixed Hysteresis (Differential)	20 PPM
Elevation Range	0-10,000 Feet
Accuracy	+5% (100 PPM)
Gas Sampling Method	Diffusion
Response Time	~2 Minutes
Operating Temperature	32-120 °F (0-49°C)
Operating Humidity	Non-Condensing Environment (0-95%)
Operating Voltage	120 VAC
Max Load Contact Voltage	120 VAC
Max Load Contact Amperage Rating	12 AMPS
Frequency	60 Hz
Calibration Interval	12 months
Weight	2 Lbs (0.9 Kg)
Dimensions: W x H x D	4in x 5⁷⁄₈in x 2⅜in (10cm x 15cm x 6cm)
Power Cord	6-ft piggy-back, 14 awg, SJTW rated

Parts List

1 - SPC-2
1 - Quick Start Instructions
2 - #6x1" Pan Phillips-head Tapping Screw for mounting the unit
2 - E-Z Anchors for dry-wall mounting

Features

• Set and Forget; Easy to install and operate
• Factory calibrated and inspected for precision performance
• Preset hysteresis (differential) of 20 PPM
• Photo Sensor to defeat CO2 enrichment at night (dark)
• Large LED display offers real-time CO2 PPM
• Orange LED to indicate when CO2 enrichment is active
• Elevation adjustment feature for improved accuracy
• Fully integrable with other atmospheric controllers or timers
• Aluminum chassis resists rusting, corrosion and scratching
• Red illuminated resettable breaker power switch
• 14 AWG, SJTW rated power cord
• Two output outlets
• Operates on 120 VAC at 60 Hz, 12 Amp switching capacity
• Manufactured in Oregon, USA

Use in an Indoor Garden

The SPC-2 is perfect for monitoring and controlling CO2 enrichment in indoor gardens and greenhouses. This unit was specifically designed so the light emitted from **the LED display and 'ACTIVE' indicator is not enough nor in the appropriate spectrum to affect plant growth and/or plant development** in any way. You do **not** need to cover these light sources.

Installation

1. Mount your SPC-2 eye level 4 to 6 feet from any CO2 enrichment equipment or bottled CO2. With adequate air circulation this location should respond quickly and represent the average environment for your area.
2. Plug the power cord into the CO2 outlet of your atmospheric controller or desired electrical outlet (see diagram below).
3. Plug your CO2 generator or bottled CO2 solenoid into the SPC-2 outlet using an extension cord if necessary.
4. Flip the power (red) switch to the 'ON' position. Allow a minimum of 1 minute of reading to stabilize.

Please Note: The SPC-2 may take up to one minute to activate after any adjustments, or after an exhaust function, or after being defeated or turned .

Note: You should see a lit decimal point in the bottom right hand corner of the LED during any adjustments. 5-10 seconds after adjustments are complete the SPC-2 will return to normal operating mode and the decimal point will disappear.

Adjust Set Point

1. To select your desired set point value, hold both the ⇧ and ⇩ buttons simultaneously for 5-7 seconds. The LED should read '**r.SEL**'.
2. Press either the ⇧ or ⇩ button once to display current set point value. Use the ⇧ and ⇩ buttons to set your target (desired) CO2 concentration (PPM). Maximum set point is 2000 PPM. See****Note****above.

Adjust Elevation

1. Press and hold the ⇩ button for 5-7 seconds. The LED should read '**ELE**'.
2. Using the ⇧ and ⇩ buttons, set the SPC-2 to your local elevation using 100 foot increments (0-10,000 ft). If your local elevation is above 10,000 ft, adjust SPC-2 to minimum elevation of 0. See ****Note**** above.
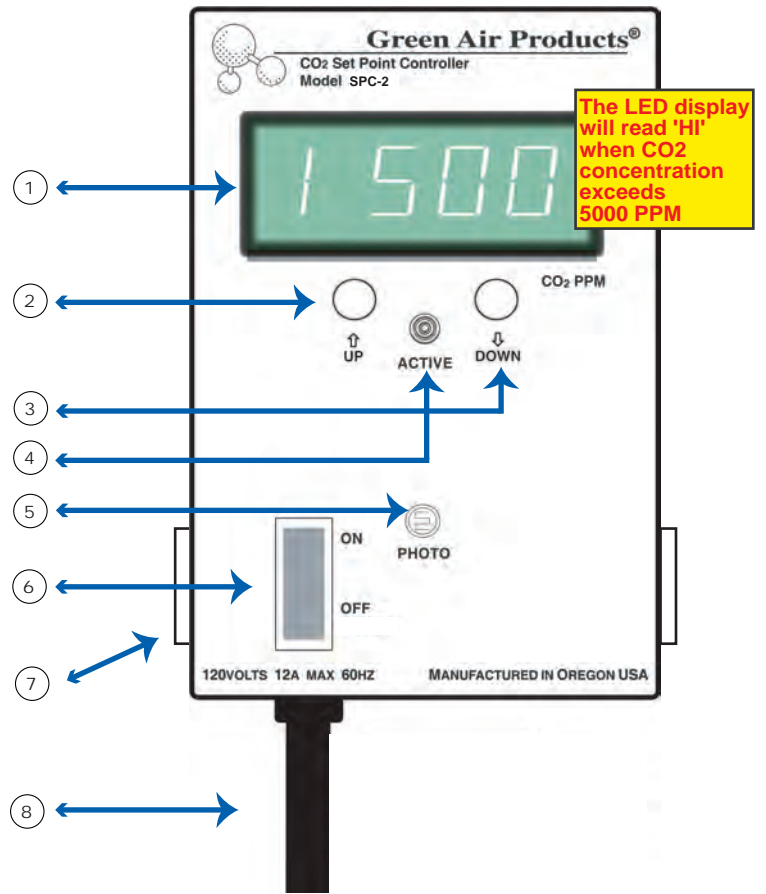
Adjust Calibration

Please note that this unit has been factory calibrated and inspected before leaving the Green Air Products manufacturing facility. You do not need to calibrate a new unit out of the box **unless the unit will operate above 10,000 ft.** Most units will not need to be recalibrated for about 4 or 5 years. ONLY if you are located above 10,000 ft, will need to recalibrate before use.

1. If your SPC-2 does need calibration, adjust the set point to 0 PPM (see 'Adjust Set Point' above).
2. Take the unit outside and plug it into a standard 110 Volt power outlet.
3. Make sure the unit is in the 'ON' position and allow it to stabilize for 1-2 minutes.
4. Hold down the ⇧ button for about 5-7 seconds. The LED display should read '**U.CAL**'. (To abort Calibration, turn the SPC-2 'OFF'.)
5. Press and hold both the ⇧ and ⇩ buttons simultaneously for 3 seconds. The current CO2 value will be displayed.
6. Use the ⇧ and ⇩ buttons to adjust the PPM value to 350-450. After 5-10 seconds the unit will automatically return to normal enrichment mode.
7. Reset your desired 'Set Point' (See 'Adjust Set Point').
8. In some cases, the calibration may need to be repeated.

DO NOT BREATHE DIRECTLY ON THE SPC-2 DURING CALIBRATION

This diagram demonstrates the optimum installation scenario for coordinating CO2 enrichment with ventilation. CO2 is produced or metered upon demand and defeated during exhaust cycles, or when light is not available. Shown above is the IR-42 CO2 generator and CT-DH-3 atmospheric controller.

The LED display will read 'HI' when CO2 concentration exceeds 5000 PPM

(1) Display LED - This display indicates real-time CO2 PPM concentration in your controlled space or the adjustment in progress.

(2) '⇧ UP' Button - This button is used to adjust the "set point" (desired CO2 PPM concentration), the elevation, and for calibration.

(3) '⇩ Down' Button - This button is used to adjust the "set point" (desired CO2 PPM concentration), the elevation, and for calibration.

(4) 'ACTIVE' Indicator Light - The orange LED light is lit when the SPC-2 is active and CO2 enrichment is in progress.

(5) 'PHOTO SENSOR' - This sensor deactivates the SPC-2 functions under its control during periods of darkness.

(6) 'ON-OFF/RESET' Power Switch - This switch will turn the power to the SPC-2 "ON" or "OFF". The SPC-2 has a circuit breaker ON/OFF switch in the event a surge, short or current overdraw occurs. Wait a couple minutes and reset breaker switch.

(7) Outlets - Plug equipment to be operated into these two outlets. CO2 generator or emitter and air cooling duct fans.

(8) Power Cord - Plug the male end of this cord into a surge protector plugged into a wall outlet or power strip.