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1 Square = \_\_\_\_ Foot/Feet



TITAN<sup>®</sup>  
CONTROLS

# ATLAS<sup>®</sup> 8

## Digital CO<sub>2</sub> Controller with Fuzzy Logic Instruction Manual



VANCOUVER, WASHINGTON U.S.A. 

[www.titancontrols.net](http://www.titancontrols.net)

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Sunlight Supply, Inc.  
National Garden Wholesale.

VANCOUVER, WASHINGTON U.S.A.



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# Atlas® 8

- Warnings & Cautions
- Atlas® 8 – Digital CO<sub>2</sub> Controller with Fuzzy Logic
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- Troubleshooting Tips
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## Warnings & Cautions

- Read all instructions before operating controller.
- Do not put your controller in an area where it can get wet or sprayed.
- Mount your controller securely to the wall.
- When using “bug bombs” in area, cover controller and sensor completely to avoid corrosion.
- There are no serviceable parts in controller. Do not attempt to repair the unit.
- Breaking tamper proof seal will void your warranty.
- Do not put paper clips, tools, etc. into unit. Possible electrocution may occur.
- Plug controller into surge protector to avoid potential damage to the unit.
- Confirm that your power source is 120 Volts/15 Amps prior to plugging controller into outlet.
- Check that all equipment that will be activated by this controller is the proper voltage.
- Verify that the equipment you are controlling does not exceed a total of 14.5 Amps.
- This controller is designed for “inside use” only.
- Avoid placing the controller near heat generating sources such as a CO<sub>2</sub> generator or heater.
- Use caution if operating controller in extremely humid environments (90% and above).
- Do not use controller for purposes other than the unit was designed to function.
- Use controller within defined environmental specifications.
- Ask your Dealer for tips and techniques regarding the use of this controller.
- Be conscientious when disposing of any products.
- Enjoy your Titan Controls® environmental controller for years to come.

### WARRANTY SERVICE: Please read warranty information first

If after reviewing the troubleshooting tips the unit will still not work, you should return it to the Dealer where you purchased it. They may be able to further evaluate the unit and test its various components and quite possibly will be able to identify and/or fix any problems. If the Dealer is unable to fix the unit, they will return it to us for factory repair.

If there are no Dealers in your area, you may contact us directly for technical support. If we cannot help you resolve the problem over the phone, we will issue you a Return Merchandise Authorization (RMA) number authorizing you to return the unit to us for factory reconditioning (if the controller is currently under warranty). Contact the number below for a RMA number and shipping address. Please complete the form below and include it with your unit, and write the RMA number clearly on the outside of the box.

Please package the unit in its original packaging. If it is damaged in shipment we cannot be held responsible. Insuring the parcel is recommended.

Once we receive the unit back, we will repair it within 48 hours (business) and return it to you freight prepaid via UPS ground shipment.

Include the following if returning directly to Titan Controls®

- Proof of purchase copy
- This completed form
- RMA # on the outside of the box

Return Merchandise Authorization Number (Required)

Dealer/Customer's Name: \_\_\_\_\_

Dealer/Customer's Contact Name: \_\_\_\_\_

Shipping Address: \_\_\_\_\_

Phone #: \_\_\_\_\_

Email address: \_\_\_\_\_

What is the nature of the problem? Please provide as much information as possible \_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

Shipping address will be given when the RMA # is issued:



[www.titancontrols.net](http://www.titancontrols.net)

For technical assistance call us at 1-888-80-Titan or 1-888-808-4826.

## Warranty Information

- Titan Controls® warrants the original purchase of this product against defects in material and workmanship under normal use for three (3) years from the date of purchase.
- During the warranty period, Titan Controls® will, at our option, and without charge, repair or replace this product if the controller or any of its components fail or malfunction.
- All returns or repairs must be accompanied by a Return Merchandise Authorization (RMA) number prior to any service of the product.
- This warranty is in lieu of all other warranties, expressed or implied, including the warranties of merchantability and fitness for use, and of all other obligations or liabilities on the part of the seller.
- This warranty shall not apply to this product or any part thereof which had been damaged by accident, abuse, misuse, modification, negligence, alteration or misapplication.
- Controllers with serial numbers or date tags that have been removed, altered or obliterated; broken seals that show evidence of tampering; or nonconforming parts, are excluded from coverage.
- Titan Controls® makes no warranty whatsoever in respect to accessories or parts not supplied by Titan Controls®.
- Monetary refunds of the warranty will not be given.
- The Buyer assumes all responsibility regarding the proper use & installation of this controller.
- All warranty service is provided through the Titan Controls® factory.
- This warranty shall apply only to the United States, including Alaska, Hawaii and territories of the United States & Canada.
- Defective controllers are required to be returned with the “**proof of purchase/receipt**” for warranty coverage.
- For additional warranty information, contact the Titan Controls® Technical Service Representative at 1-888-808-4826 or your place of purchase.
- **NOTE:** Titan Controls® is a Manufacturer of environmental, timing, lighting, ventilation and CO<sub>2</sub> controls. All sales offerings to the public are done through a nationwide group of Dealers. No sales offerings will be made directly to the general public.

## Service & Repair Program

- For all service and repairs, please contact by our Technical Service Representative at 1-888-808-4826 for troubleshooting your gear and attaining a Return Merchandise Authorization (RMA) number, if applicable.
- All factory service & repairs will be completed within 48 hours of receipt of controller at the factory.
- Titan Controls® will, at its discretion, repair or replace the controller.
- Factory calibration services are available for all Titan Controls®.
- **Returning Units:** Please contact your retail store for information regarding returns.

## Atlas® 8 – Digital CO<sub>2</sub> Controller with Fuzzy Logic

The Atlas® 8 is a digital CO<sub>2</sub> monitor and controller. Once the CO<sub>2</sub> level has reached your desired set point it will disable the CO<sub>2</sub> device. It features a photocell to ensure ‘daytime only’ dosing of CO<sub>2</sub> via a generator or CO<sub>2</sub> regulator. This controller comes with a 15’ remote sensor that houses the photocell and CO<sub>2</sub> sniffer. Besides having traditional injection capabilities, the Atlas® 8 also features ‘Fuzzy Logic’ programming which is used with bottled gas only. Fuzzy Logic applies constant calculations to the output controlling your CO<sub>2</sub> device to ensure that you do not undershoot or overshoot your predetermined set point. The CO<sub>2</sub> min/max can also be viewed on the LCD screen. The Atlas® 8 is the solution for your CO<sub>2</sub> enrichment requirements.

## Safety Notes

1. If the instructions as provided by the manufacturer are not followed, damage to the product may result.
2. **IMPORTANT:** Install your controller and sensor at least 8 ft away from any devices that produce large amounts of electronic noise, such as electronic/digital ballasts or ozone generators.
3. The ⚡ symbol on the enclosure indicates that the receptacle beside it may have on output voltage, which can be dangerous. The output voltages are the same as the input voltage.
4. The product is equipped with a circuit breaker for short circuit or over current situations. The circuit breaker will automatically shut down the unit.
5. This product is a Safety Class 1 Controller. The plug should be installed in a power socket outlet only if provided with a protective earth/ground.

## Operation Instructions

- Secure the controller to a wall.
- Place the external sensor in an area with good air movement, preferably at plant canopy height. Avoid placing the sensor in direct sunlight or under direct HID Lighting. **NOTE:** Do not place sensor anywhere it might get wet. **SENSOR IS NOT WATER PROOF.**
- The sensor has a quick connect cord to easily remove or connect the sensor to the controller. Secure the quick connect cord to the unit by securing the QD screw to the unit.
- Plug the power cable into a standard NEMA 5-15 120 Volt wall outlet.
- Allow the controller to warm up. This takes approximately 5 minutes and

during this time the display will read CO<sub>2</sub> levels.

- Program the desired settings on the controller prior to connecting any devices. Continue reading instructions for programming instructions.
- Ensure that all of the devices being connected to the controller are the proper voltage and do not exceed the maximum amperage rating.

#### PHOTOCELL SENSITIVITY:

The sensitivity of the photocell can be adjusted. Press and hold the '**DOWN**' button for 3 seconds. The current photocell setting will be displayed on the screen. Press '**UP**' to increase the sensitivity (requires less light to activate the photocell), or press '**DOWN**' to decrease the sensitivity (requires more light to activate the photocell). Press the '**Enter/Reset**' button to lock in the new setting.

#### BUTTON FUNCTIONS:

The 10 buttons on the front of the Atlas® 8 control all its functions. Pressing each button will display a function and/or current setting in the **green** LED window. Some buttons perform more than one function. Several small **green** LED lights function as status indicators and are located on the front panel. The indicator lights will illuminate to show the selected function when certain buttons are pressed.

**Up Arrow** - Increases the selected setting.

**Down Arrow**- Decreases the selected setting.

**Enter/Reset** - Locks in desired settings and can be used to reset certain settings.

**CO<sub>2</sub> Function** - Use this button to select when you want CO<sub>2</sub> to be produced. Available options are: DAY (Daytime only), NIGHT (Nighttime only) or 24 HOURS (Always on).

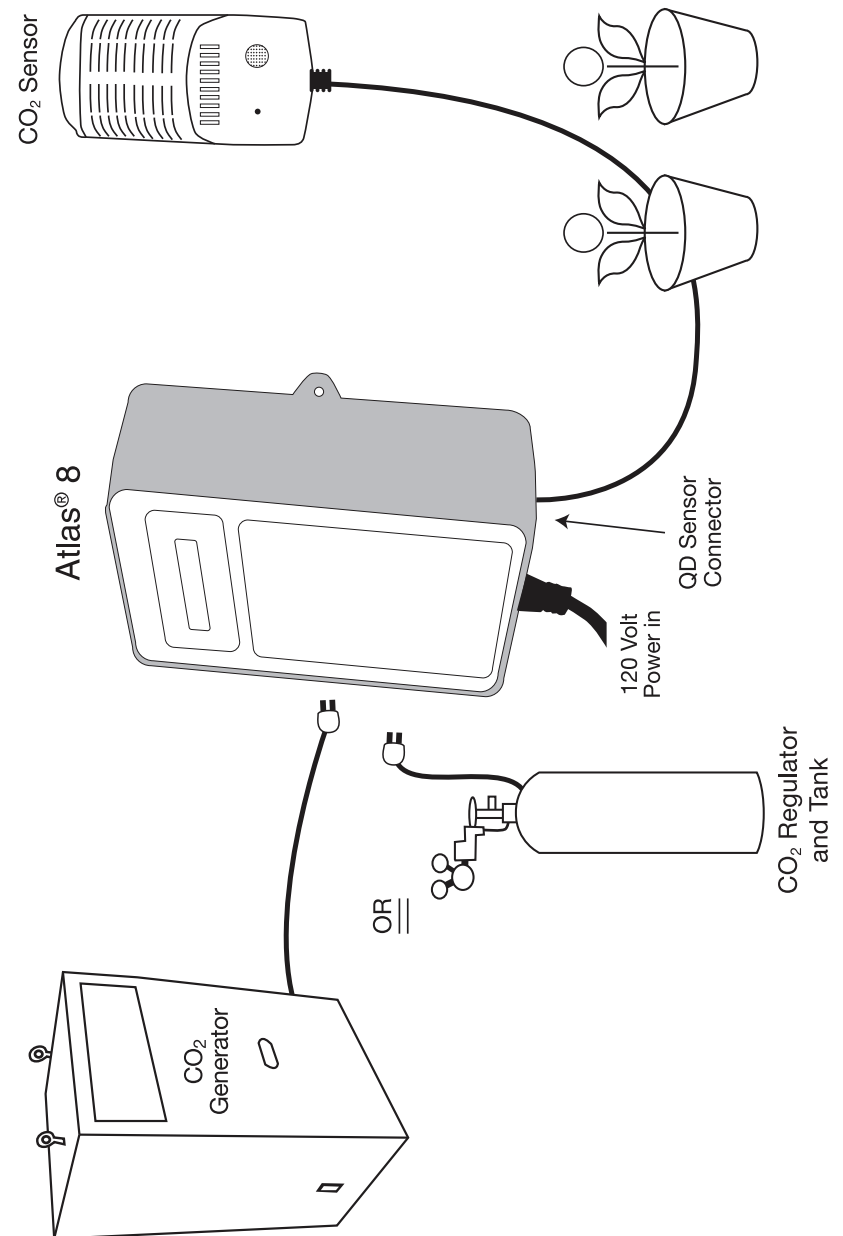
**CO<sub>2</sub> Mode** - Use this button to select either the 'Increase' or 'Decrease' mode. Only select 'Decrease' mode if you are attempting to remove excess CO<sub>2</sub> from the area, and are connecting an exhaust fan to the controller instead of a CO<sub>2</sub> device.

**CO<sub>2</sub> Min/Max** - Press this button repeatedly to display the recorded minimum and maximum CO<sub>2</sub> levels. To reset these levels press and hold the '**Enter/Reset**' button while the recorded value is displayed.

**Calibrate CO<sub>2</sub> Sensor** – This button is used to re-calibrate the CO<sub>2</sub> sensor. Refer to '**Calibrating the CO<sub>2</sub> Sensor**' Instructions (page 6) for more information. Calibration should be performed every 12 months.

**CO<sub>2</sub> PPM Setting**- Use this button to display/program the desired CO<sub>2</sub> PPM (Parts Per Million) setting.

## Installation Example



- **Display screen reads *Err SEn*?** The external sensor is not connected to the controller. Verify the quick connect cable is properly connected. Verify that the CO<sub>2</sub> sensor is clean and dry.
- **An Error LED is on?** The CO<sub>2</sub> device is not functioning properly. Refer to the 'CO<sub>2</sub> Error LED' information (pg. 6) for more information.
- **The CO<sub>2</sub> outlet is not turning on?** Make sure the correct CO<sub>2</sub> mode is selected (Fuzzy Logic or Generator) and confirm the 'Day/Night/24 Hour' setting is correct. For example, if you select Daytime mode and it is night time, the CO<sub>2</sub> device will not activate. If you've selected Daytime and it is day time, make sure the external sensor is receiving adequate light to the photocell.
- **The controller is not receiving power?** Verify that you've got 120 Volts coming from the power output. Then reset your power switch/circuit breaker by turning off the unit and then power the unit on again.

## Controller Specifications

**Input Voltage:** 120VAC

**Output Voltage:** 120VAC

**Maximum Amperage:** 14.5 Amps @ 120V AC

**Sensor Cord Length:** 15ft

**CO<sub>2</sub> Range:** 380- 2500 PPM

**CO<sub>2</sub> Accuracy:** +/-50 PPM

**Re-Calibration:** Once per year

**CO<sub>2</sub> Dead-band**-The CO<sub>2</sub> dead-band is the number of PPMs above the CO<sub>2</sub> PPM setting at which the controller will deactivate the CO<sub>2</sub> device. For example, if the CO<sub>2</sub> PPM setting is 1250 PPM and the dead-band is 50 PPM, once the CO<sub>2</sub> level dips below 1250 PPM the CO<sub>2</sub> device will activate and it will remain on until the CO<sub>2</sub> level reaches 1300.

**Fuzzy Logic**- Use this button to activate/deactivate Fuzzy Logic mode. Fuzzy Logic mode is only used with compressed CO<sub>2</sub> tank and allows for quick changes to the solenoid valve for accurate CO<sub>2</sub> regulation. If you're using CO<sub>2</sub> Generator, use this button to switch to Generator Mode.

**IMPORTANT: DO NOT operate in Fuzzy Logic mode if you are using a CO<sub>2</sub> Generator.**

### CHANGING THE SETTINGS:

For all buttons: pressing the button once will display the current setting for that function. To change the setting, use the '**UP**' and '**DOWN**' buttons, then lock in your setting by pressing the '**Enter/Reset**' button after completing each selection.

**CO<sub>2</sub> Function** – Press this button to select the photocell mode, either Day-Night or 24 hours. The setting will be displayed, Day-Night OR 24 hours. Use the '**UP**' and '**DOWN**' buttons to adjust this setting, and press '**Enter/Reset**' to accept the new setting.

**CO<sub>2</sub> Mode** – Press the '**CO<sub>2</sub> Mode**' button and the current setting will be displayed (Increase or Decrease). To change the setting, use the '**UP**' or '**DOWN**' buttons, and then press '**Enter/Reset**' to lock in the new setting.

**CO<sub>2</sub> Min/Max** – To reset these levels, press and hold the '**Enter/Reset**' button while the recorded value is displayed

**CO<sub>2</sub> PPM Setting** – Press the '**CO<sub>2</sub> PPM Setting**' button to display the current PPM setting. To change this setting, use the '**UP**' or '**DOWN**' buttons, and then press '**Enter/Reset**' to lock in the new setting.

**CO<sub>2</sub> Dead-band** – Press the '**CO<sub>2</sub> Dead-band**' button to display the current dead-band setting. Use the '**UP**' and '**DOWN**' buttons to adjust this setting, and press '**Enter/Reset**' to accept the new setting.

**Fuzzy Logic** – Press the '**Fuzzy Logic**' button to display the current setting (**gEnErAt** or **LogIcon**). Use the '**UP**' and '**DOWN**' buttons to adjust the setting.

Use **gEnErAt** mode if you are using a CO<sub>2</sub> Generator and use **Loglcon** (Fuzzy Logic) if you are using compressed/bottled CO<sub>2</sub>. Press the '**Enter/Reset**' button to accept the new setting.

**IMPORTANT: DO NOT operate in Fuzzy Logic mode if you are using a CO<sub>2</sub> Generator.**

**Override Signal** – If you are using a separate controller/thermostat/temperature controlling device, you may use the Atlas® 8's included low voltage power supply and plug it into the same power source as the exhaust fan being used by the other controller (requires a power splitter). The Atlas® 8 will then detect when the fan is being powered on, and will disable CO<sub>2</sub> output in order to avoid CO<sub>2</sub> waste. The Override Signal LED light on the bottom of the Atlas® 8 will illuminate to verify the function is activated.

**CO<sub>2</sub> Error LED Light** – As the controller functions normally, CO<sub>2</sub> levels will naturally and gradually fluctuate. These small changes are detected by the Atlas® 8. If the controller does not detect a slight change within a 1 hour period, the unit will deactivate the output and the **green** CO<sub>2</sub> Error LED will flash to indicate the device may have a problem. This safety feature is extremely important and useful to eliminate "runaway" conditions which could result in crop damage or other more serious problems. If the CO<sub>2</sub> Error LED is flashing you should check the CO<sub>2</sub> device for proper operation and also check that the external sensor is operating properly. To reset the CO<sub>2</sub> Error LED, press the '**Enter/Reset**' button.

FACTORY RESET PROCESS:

If at any time you wish to reset the Atlas® 8 to its original factory settings, simply press and hold the '**Enter/Reset**' and '**DOWN**' buttons simultaneously until the display reads **f.Set**. Press the '**Enter/Reset**' button again to restore the controller to factory settings. Once the reset is complete the screen will display **doNE**.

**Factory Settings**

CO<sub>2</sub> PPM Setting: 1250 PPM  
CO<sub>2</sub> Dead-band: 50 PPM  
Calibrate CO<sub>2</sub> PPM: 380 PPM  
CO<sub>2</sub> Function: Daytime  
CO<sub>2</sub> Mode: Increase  
Fuzzy Logic: Off (Generator Mode)

CALIBRATING THE CO<sub>2</sub> SENSOR:

Place the Atlas® 8 outdoors in a shaded area (not in direct sunlight). Position the controller so that it is away from people, animals, cars or anything else that may emit CO<sub>2</sub>.

**Note:** If calibration of the controller will be in areas with elevated CO<sub>2</sub> levels (i.e. heavy traffic, animals, and other CO<sub>2</sub> creating things) increasing the calibration level to 400- 450 PPM is recommended.

Plug in the controller and allow it to "warm up" for at least 30 minutes before starting the calibration process. The longer the warm up time, the more accurate the calibration will be.

Note: After calibration process begins **DO NOT** exhale or breathe heavily on the controller and leave the area.

Press the '**Calibrate CO<sub>2</sub> Sensor**' button and the screen will display the current calibration level (default is 380 PPM). If you need to change the calibration level, use the '**UP**' and '**DOWN**' buttons. Press the '**Enter/Reset**' button to start the calibration cycle and the screen will display **Co2\_CAL** and the '**CO<sub>2</sub> Calibrate (PPM)**' LED will start blinking.

Leave the Atlas® 8 controller alone for approximately 10 minutes. Once the calibration is complete the display screen will return to normal display and the '**CO<sub>2</sub> Calibrate (PPM)**' LED will no longer be blinking. You may now move the controller back into the growing area (unplugging it will not disrupt the calibration).

## Sulfur Vaporizer Warning

If you plan to use a Sulfur Vaporizer in your growing area, you must protect the Atlas® 8's external sensor. Failure to do so will result in damage to the infrared CO<sub>2</sub> sensor and will void any and all warranties.

To protect the sensor you must unplug it from the controller and store it in another location until the Sulfur treatment is complete, or you can turn off the controller and tightly cover the sensor with a plastic bag. Once the Sulfur treatment is complete, remove the plastic bag or plug the sensor back in before powering the controller back on.

## Troubleshooting Tips

- **Display screen reads Co2 heat?** This is normal. It takes the controller approximately 5 minutes to warm up when first powered on, during which time the screen will display this message.
- **Not sure if CO<sub>2</sub> sensor needs to be calibrated?** Move the controller outside in a shaded, open area. The CO<sub>2</sub> PPM reading should be around 380-410 PPM. If not, calibration may be needed.