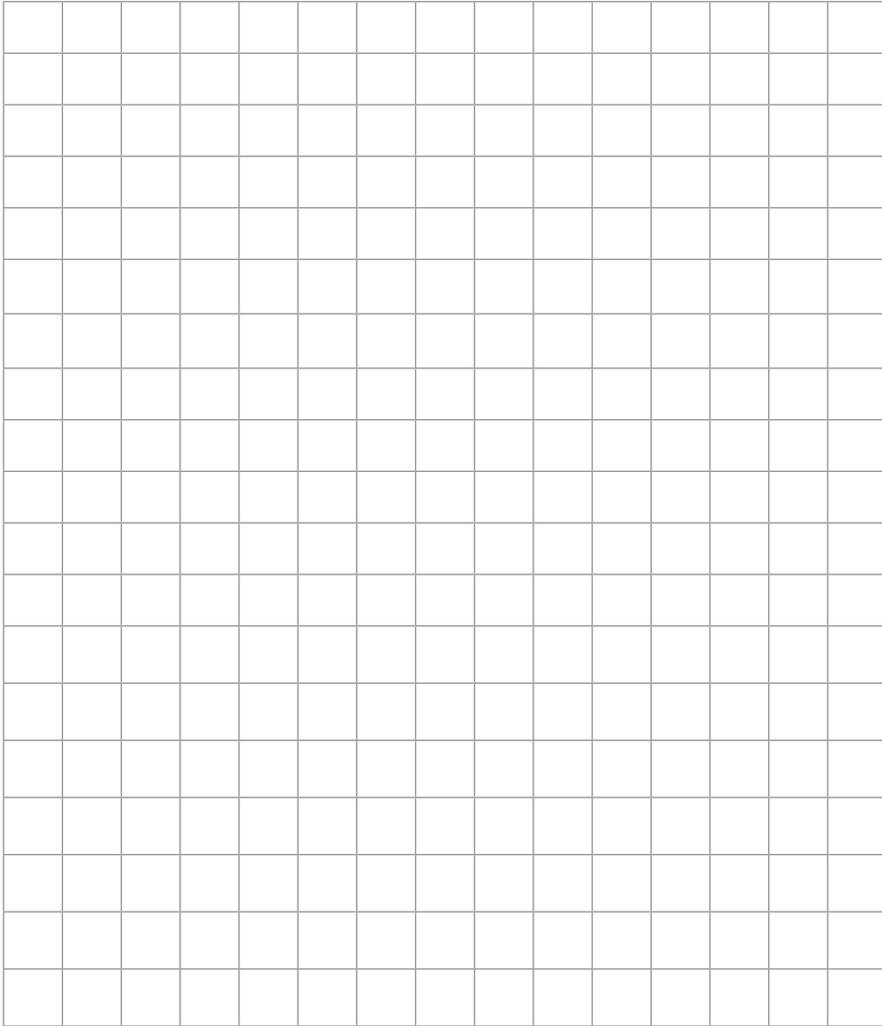


1 Square = \_\_\_\_ Foot/Feet



**TITAN**<sup>®</sup>  
CONTROLS

# HYPERION™ 1

## Wireless Environmental / Lighting Master Controller

### Instruction Manual



Sunlight Supply, Inc.

National Garden Wholesale.

VANCOUVER, WASHINGTON U.S.A. 

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

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**FOR 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 the controller. They will 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 RMA # (return merchandise authorization) authorizing you to return the unit to us for factory reconditioning (if the unit is under warranty). Contact the number below for a RMA and shipping address. Complete the form below and include it with your unit. Also please write the RMA # on the outside of the box.

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

Once we receive the unit back, we will repair the controller 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
- This completed form
- RMA # on the outside of the box

Return Merchandise Authorization Number (Required)

Company Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

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

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

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

*What is the nature of the problem?* \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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.  
 Representative available Monday – Friday, 8 a.m. – 5 p.m. PST.

# 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 expressly 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 or that show evidence of tampering; mismatched serial numbers 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 use & installation of this controller.
- All warranty service is provided through the factory or an authorized service representative.
- This warranty shall apply only to the United States, including Alaska, Hawaii and territories of the United States and Canada.
- Defective controllers need to be returned with the “proof of purchase/receipt”.
- For additional warranty information, contact a Titan Controls® Technical Service Representative or your Dealer. Our normal business hours are **Monday – Friday, 8 a.m. to 5 p.m. Pacific Standard Time. We are closed most major holidays.**
- **NOTE:** Titan Controls® is a manufacturer of environmental 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 and Repair Program

- For all service and repairs please contact one of our Technical Service Representatives for a Return Merchandise Authorization (RMA) number.
- All factory service & repairs will be completed within 48 hours of receipt of controller and after authorization by customer for repairs.
- 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 returns.

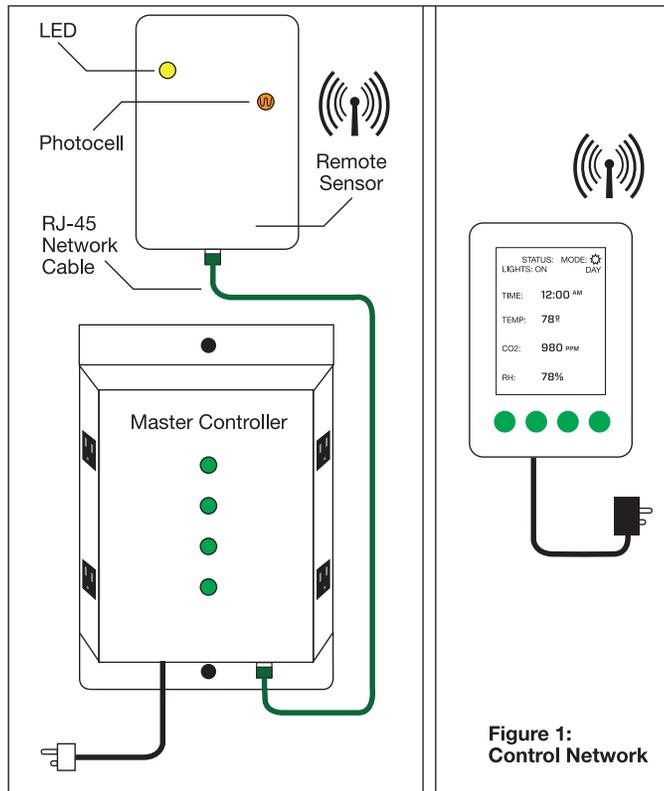
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## Overview

The Hyperion™ 1 Controller uses three modules: the *remote sensor*, *master controller*, and *remote controller*, to form a wireless control network (refer to **Figure 1**). The Hyperion™ 1 is equipped with transceivers that operate in the non-licensed 2.4 GHz frequency band and are FCC (USA), IC (Canada), and ETSI (Europe) compliant. The *remote sensor* and *remote controller* communicate wirelessly and allow remote viewing of a room's environment. All control parameters are changed over the wireless network via the user interface.

The Hyperion™ 1 *remote sensor* is equipped with CO<sub>2</sub>, relative humidity, temperature, and light sensors. The room's environment is controlled by four relay outputs located on the *master controller*. These outputs are used to control ventilation fans, a dehumidification unit, a CO<sub>2</sub> generator, and a lighting controller trigger for lighting.

Separate *Daytime* and *Nighttime* control parameters are used to keep the room's environment at optimum growing conditions throughout a 24-hour period.



**Figure 1:**  
Control Network

A detailed description of the controller's *Daytime/Nighttime* functions is included in the *Control Description* section of this document.

## Factory Defaults and Control Limits

### Temperature:

Default Unit of Measurement	°F
Default <i>Daytime</i> Set Point	75 °F (24 °C)
Default <i>Nighttime</i> Set Point	65 °F (18 °C)
Default Hysteresis	± 3 °F (or 6°F centered)

Measurement Range	32 °F (0 °C) to 120 °F (49 °C)
Set Point Range	45 °F (7 °C) to 85 °F (29 °C)

### Humidity:

Default <i>Daytime</i> Set Point	55 %
Default <i>Nighttime</i> Set Point	50 %
Default Hysteresis	± 2% (or 4% centered)

Measurement Range	5% to 95%
Set Point Range	20% to 90%

### CO<sub>2</sub>:

Default <i>Daytime</i> Set Point	1000 ppm
Default <i>Nighttime</i> Set Point	600 ppm
Default Hysteresis -	100 ppm (or 100 ppm below set point)

Measurement Range	0 ppm – 5100 ppm
Set Point Range	500 ppm – 2500 ppm

## Remote Sensor Behavior:

On power-up the *remote sensor* will search for the *remote controller* via wireless network; during this time the LED will illuminate **yellow**. The behavior of the LED will indicate its current function as described in Table 4 of the *Codes and Features* section of this document.

When wireless communication has been re-established and is functioning properly, the LED will illuminate **green** and behave as described in **Table 3** of the *Codes and Features* section of this document.

## Range Testing:

Under ideal conditions (i.e. line of sight, no metallic interference, low humidity, etc), the Hyperion™ 1 is capable of communication up to 150+ feet. Environmental changes and obstacles (particularly ones made of metal) will reduce maximum communication range. To test the signal strength between the modules, follow these steps:

1. Power-up both the *sensor* and *remote controllers*.
2. Press and hold the *Set* button of the *remote controller* until the screen goes blank and only the NETWORK icon and a number begin to blink in the lower right-hand corner of the display. The number shown indicates the signal strength between the two modules and is described below:
  - 1 = *remote controller* is attempting to rebuild network (refer to *Rebuilding The Wireless Network* section below); no signal strength information is available.
  - 0 = very low signal strength or no signal detected.
  - 1 = good to moderate signal strength.
  - 2 = strong signal strength.
3. After 10 seconds with no button presses, the *remote controller* will return to showing the current room's environment.

## Rebuilding The Wireless Network:

Under normal circumstances it will not be necessary to rebuild the wireless network as it is preset at the factory. However, if necessary, the wireless network can be rebuilt by follow these steps:

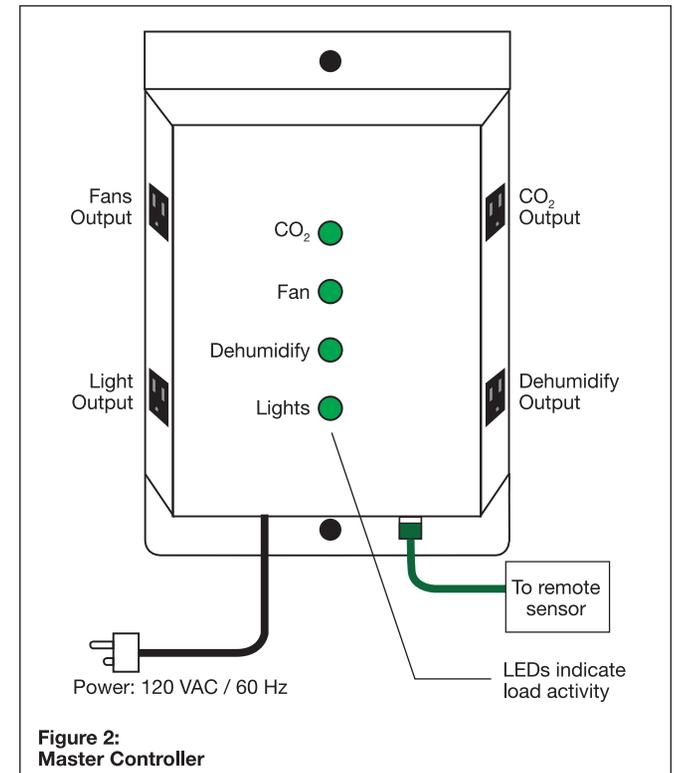
1. Press and hold the Network button on the *remote sensor* (refer to **Figure 3**) until the LED illuminates solid **yellow** (**Table 3**): this will place the *remote sensor* into a searching mode. While in this mode the Hyperion™ 1 will disable all outputs and will not attempt to control.
2. Bring the *remote controller* in close proximity to the *remote sensor* to be sure that they are within communication range.
3. Press and hold the *Up* and *Menu* buttons on the *remote controller* simultaneously until the display begins to blink NETWORK -1.
4. Press the *Set* button and the *remote controller* will begin searching for the *remote sensor*. The *remote controller* will reset and begin to function normally. If the *Set* button is not pressed within 5 seconds, the *remote controller* will exit this mode return to normal operation.

# Quick Set Up Guide

The Hyperion™ 1 Control is set up with default *Daytime* and *Nighttime* control parameters that enable it to be used immediately out of the box. To quickly set up the Hyperion™ 1, follow these instructions (use **Figures 1** and **2** for reference):

1. Mount the *remote sensor* in the desired location; be sure the photocell is directly exposed to the grow lights.
2. Mount the *master controller* in the desired location.
3. Plug the network cable into the *power* and *remote sensors*.
4. Plug equipment into the appropriate outputs of the *master controller* (refer to **Figure 2**):
  - Ventilation fan to the output labeled *Fans*.
  - Dehumidification unit into the output labeled *Dehumidifier*.
  - CO<sub>2</sub> generator or regulator into the CO<sub>2</sub> output.
  - Trigger cord from the lighting controller into the *Lights* output.
5. Plug in the *master controller*; this will also provide power to the *remote sensor* (via the network cable). The LED on the *remote sensor* will flash **yellow** and begin controlling the room's environment. The **yellow** LED indicates that the *remote sensor* is searching for the *remote controller* over the wireless network (refer to Table 3 in the *Remote sensor LED* section of this document for more information).

6. Bring the *remote controller* in close proximity to the *remote sensor* so that both the display and the *remote sensor's* LED (shown



**Figure 2:**  
**Master Controller**

in **Figure 1**) are visible. Plug in the *remote controller*; the display will flash while it initializes and searches for the *remote sensor* over the wireless network.

- When the *remote sensor* and *remote controller* have successfully established wireless communication, the *remote sensor*'s LED will change from flashing **yellow** to flashing **green** as described in **Table 3**. The *remote controller* will then stop flashing and begin showing the current readings\*.

7. Unplug the *remote controller* and move it to the desired location. The Hyperion™ 1 will continue to control the room's environment even when the *remote controller* is unplugged\*\* (refer to the *Hyperion™ 1 Wireless Control Network* section of this document for further information). To test the signal strength of the Hyperion™ 1's control network refer to *Range Testing* in the *Hyperion™ 1 Wireless Control Network* section of this document.

\* If the modules are unable to link-up and form the control network, follow the *Rebuilding The Wireless Network* procedure in the *Hyperion™ 1 Wireless Control Network* section.

\*\* A list of the Hyperion™ 1 default control parameters is listed in the *Factory Defaults and Control Limits* section of this document. To make adjustments to the Hyperion™ 1 settings, refer to the *Checking and Adjusting the Hyperion™ 1 Settings* section of this document.

## Hyperion™ 1 Wireless Control Network

The Hyperion™ 1 is equipped with transceivers that operate in the non-licensed 2.4 GHz frequency band and are FCC (USA), IC (Canada), and ETSI (Europe) compliant. The *remote sensor* and *remote controller* communicate wirelessly and allow remote viewing of the controlled space's conditions. All control parameters are changed over the wireless network via the *remote controller*.

### Normal Operation:

Under normal conditions, the *remote controller* and *remote sensor* communicate via this wireless control network. During normal operation the *remote sensor*'s LED will illuminate **green** and behave as described in the *remote sensor* LED section of this document.

### Wireless Control Network Error:

Network codes on the *remote controller* and a **yellow** LED on the *remote sensor* indicate problems with the wireless control network. All network codes are described below in **Table 4**. The behavior of the *remote sensor*'s LED is described in **Table 3** of the *Codes and Errors* section of this document.

**Table 4: Remote Controller Network Messages**

	Network Code Type	Description
Network 0	No Remote Sensor	Remote controller is unable to communicate with the <i>remote sensor</i> via wireless control network.
Network -1	No Wireless Control Network	Remote controller needs to be paired with the <i>remote sensor</i> . Refer to <i>Rebuilding The Wireless Network</i> in the <i>Hyperion™ 1 Wireless Control Network</i> section of this document for more information.

The Hyperion™ 1 will control the room's environment even if wireless communication is interrupted; however, it will not be able to run the lighting schedule unless the wireless control network is functioning properly.

### Remote Controller Behavior:

If the *remote controller* is unable to communicate with the *remote sensor* after the control network has already been formed, it will show dashes for all readings and NETWORK 0 in the lower right-hand corner.

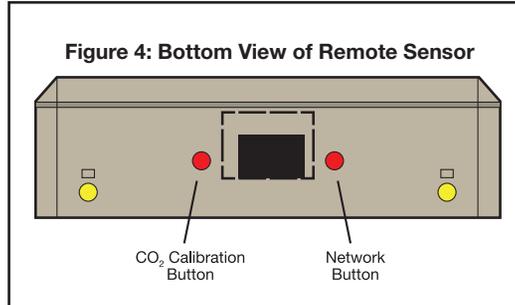
When wireless communication has been re-established and is functioning properly, the network code will be cleared and the display will function normally.

# Calibration

## CO<sub>2</sub> Calibration:

The Hyperion™ 1 *remote sensor* is equipped with two buttons located on the bottom of the unit. The button on the left (**Figure 4**) is used to place the controller into *CO<sub>2</sub> Calibration* mode: the Hyperion™ 1's CO<sub>2</sub> sensor will automatically calibrate to normal outside air CO<sub>2</sub> concentration. To properly calibrate the CO<sub>2</sub> sensor, simply follow these steps:

1. Move the *remote sensor* to an outside area where CO<sub>2</sub> pollution is at a minimum: Do not attempt to calibrate the CO<sub>2</sub> sensor indoors, while breathing directly on the unit, next to a running vehicle, etc.
2. Power up the *remote sensor*: attach the *remote sensor* to the *master controller*, then plug the *master controller* into the wall.
3. Insert a small, non metallic item, such as a toothpick, through the CO<sub>2</sub> calibration buttonhole (shown in **Figure 4**) and press the calibration button for approximately three seconds. The LED will begin alternating **green**, **yellow**, and **red** to indicate the CO<sub>2</sub> sensor is being calibrated.
4. Allow time for the calibration sequence to complete; this usually takes approximately 15 minutes. Upon completion, the LED will illuminate solid green if the CO<sub>2</sub> calibration was successful or solid red if it was unable to calibrate properly. Upon completion of the calibration sequence, the Hyperion™ 1 will not resume controlling the room's environment until it has received acknowledgment of the calibration results.
5. Acknowledge the calibration results by pressing and holding the *Calibration* button until the LED turns off. At this point the Hyperion™ 1 will resume normal operation.



### NOTE:

Calibrating to outside air provides a good approximate calibration. The accuracy of the calibration will be determined by the quality of the air that the CO<sub>2</sub> sensor is exposed to during this process.

# Control Description

## Daytime and Nighttime Defined:

The *remote sensor* has a photocell that it is used to determine if the controller will operate in *Daytime* or *Nighttime* mode. For the purpose of this document, *Daytime* is defined as the time when the *remote sensor* senses light and *Nighttime* is when it does not sense light in the room: the actual time-of-day does not contribute to *Daytime* or *Nighttime* modes of the Hyperion™ 1 Control.

The Hyperion™ 1 is preset with default *Daytime* and *Nighttime* control parameters (shown in *Factory Defaults* and *Control Limits* section of this document) that enable it to be used immediately out of the box.

## Wireless Communication:

The Hyperion™ 1 uses a wireless control network to communicate between the *sensor* and *remote controllers* (**Figure 1**). The Hyperion™ 1 will control the room's environment even if the wireless communication between the two modules is interrupted (more details on the *Wireless Control Network* are given in the *Wireless Control Network* section of this document). Issues with the *Wireless Control Network* are reported by both *remote controller* and *remote sensor* (refer to the *Wireless Control Network Issues* description in the *Hyperion™ 1 Control Network* section of this document for further information).



## Daytime Control:

The Hyperion™ 1 uses the *Daytime* control parameters to keep its environment at the desired levels. During the *Daytime*, the LED on the *remote sensor* will be illuminated but will flash momentarily every three-seconds and the Hyperion™ 1 *remote controller* will show the day symbol for MODE in the upper right-hand corner.

- Controlling Relative Humidity (RH):  
If the room's RH rises above the RH set point by the amount of the hysteresis setting (or by default, the set point plus 2%), the *Dehumidification* output will activate. This output will remain on until the room's RH drops below the set point by the hysteresis setting (or by default, the set point minus 2%).
- Controlling Temperature:  
If the temperature climbs above the desired set point by the amount of the hysteresis setting (or by default, the set point plus 3°F), the controller will defeat the CO<sub>2</sub> output and activate the *Fan* output. The fans will remain on and the CO<sub>2</sub> will remain off until the temperature falls below the set point by the hysteresis setting amount (or by default set point minus 3°F): at this point the controller will then turn off the *Fans* output and allow the CO<sub>2</sub> output to control as described in the following *Controlling CO<sub>2</sub>* section.
- Controlling CO<sub>2</sub> :  
During the *Daytime*, when the CO<sub>2</sub> reading drops below the set point minus

the hysteresis (or by default, the set point minus 100ppm), the CO<sub>2</sub> output will be activated. The CO<sub>2</sub> output will remain on until the reading rises to the desired set point. When the CO<sub>2</sub> reading reaches the set point the output will then turn off.

Each time the Fans output is activated, the CO<sub>2</sub> output will automatically be turned off to prevent wasteful venting of CO<sub>2</sub>.



### Nighttime Control:

During the *Nighttime*, the Hyperion™ 1 uses the *Nighttime* control set points to keep its environment at the desired levels. During *Nighttime* mode, the LED on the *remote sensor* will be off but quickly flash every three seconds, and the Hyperion™ 1 *remote controller* will show the night symbol for MODE in the upper right-hand corner.

- Controlling Relative Humidity (RH):**  
The Hyperion™ 1 maintains its environment's RH as described in the *Daytime Control* section; however, it will use a separate *Nighttime* set point. This allows the user to tightly control the RH to provide an ideal growing environment.
- Controlling Temperature:**  
The Hyperion™ 1 maintains its environment's temperature as described in the *Daytime Control* section; however, it will use a separate *Nighttime* set point. This allows the user to tightly control the temperature to provide an ideal growing environment.
- Controlling CO<sub>2</sub>:**  
During *Nighttime*, the CO<sub>2</sub> output is never active: the environment's CO<sub>2</sub> levels are controlled by ventilation (instead of enrichment). If the CO<sub>2</sub> levels climb above the *Nighttime* set point, the Fans output will activate to bring in fresh air.

### Lighting Control:

The Hyperion™ 1 has an output designed to activate a lighting controller via a trigger cordset. The *Lights* output is activated once in a 24-hour period at the time specified by the user; the *Lights* output will remain on for the duration specified by ON PERIOD: refer to **Table 2** in the *Checking and Adjusting the Hyperion™ 1 Settings* section of this document for more details about the on period.

If power is lost while a lighting schedule is active, the Hyperion™ 1 will resume the schedule when power is restored (if appropriate); however, the overall ON PERIOD will be shortened. The Hyperion™ 1 will keep the lights output off for 15 minutes after a power outage before allowing the lighting schedule to resume; this off time allows the lights to cool to help prevent damage to the lights. The Hyperion™ 1 will display CODE 10 in the event of a power failure (refer to the Codes and Errors section of this document for more information).

The *remote controller* enables the *Lights* output at the designated time; therefore, if wireless communication is not functioning properly at the time when the lights are scheduled to come on, the *Lights* output will not be activated (refer to the *Wireless Control Network* section of this document for more information).

### Remote Sensor LED:

The tri-colored LED on the *remote sensor* is used to display the status of the Hyperion™ 1 by: color, flashes, and blinking frequency. In general, a green LED indicates the controller is functioning normally. When the LED is yellow, it indicates that there is a problem with the wireless communication. A red LED is used to indicate an error with the controller or one of its sensors. Refer to the following table for further details.

**Table 3: Remote Sensor LED Codes**

Green: Solid on (no flashes) (see CO <sub>2</sub> Calibration section)	Calibration of CO <sub>2</sub> sensor was successful.
Green: Normally on, flashes off twice.	Daytime mode and functioning normally.
Green: Normally off with two green flashes.	Nighttime mode and functioning normally.
Green: Continuous blinking.	High Temperature Shutoff Feature is active.
Yellow: Solid on (no flashes).	Rebuilding Wireless Network: see <i>Rebuilding The Wireless Network in the Hyperion™ 1 Control Network</i> section of this document for more information.
Yellow: Normally on, flashes off twice.	Daytime mode: unable to communicate with Hyperion™ 1 <i>remote controller</i> .
Yellow: Normally off with two yellow flashes.	Nighttime mode: unable to communicate with Hyperion™ 1 <i>remote controller</i> .
Yellow: Continuous blinking.	High Temperature Shutoff Feature is active: unable to communicate with the Hyperion™ 1 <i>remote controller</i> .
Red: Solid on (no flashes). (see CO <sub>2</sub> Calibration section)	Unable to calibrate CO <sub>2</sub> sensor.
Red: 1 flash.	RH sensor not functioning.
Red: 2 flashes.	Temperature sensor not functioning.
Red: 3 flashes.	CO <sub>2</sub> sensor not functioning.
Alternating: Color changes green, yellow, red	CO <sub>2</sub> sensor is being calibrated (takes about 15 minutes).

## Real Time Clock Error:

If the Hyperion™ 1's *remote sensor* is unable to communicate with the on-board *real time clock* (RTC), the load outputs will be disabled. The *remote sensor's* LED will flash **red** four times periodically and the *remote controller* will show CODE 24. If the issue is resolved, the controller will resume normal operation.

**Table 2: Remote Controller Codes**

Code #	Code Type	Description
Code 1	Over Temperature	Temperature is greater than or equal to 95°F while the <i>Lights</i> output is enabled.
Code 2	High Temperature	Temperature is greater than or equal to 95°F for an excess of 30 minutes while the <i>Lights</i> output is disabled.
Code 3	Low Temperature	Temperature is less than or equal to 45°F for an excess of 30 minutes.
Code 4	High Humidity	Humidity above 80% for an excess of 30 minutes.
Code 5	Low Humidity	Humidity below 30% for an excess of 30 minutes.
Code 6	High CO <sub>2</sub>	CO <sub>2</sub> is greater than or equal to 5000 ppm.
Code 7	Empty CO <sub>2</sub> Tank	Injecting CO <sub>2</sub> for an excess of 30 minutes and CO <sub>2</sub> levels have not reached set point ( <i>Daytime</i> mode only).
Code 8	No Measured Light	Light output has been enabled for a minimum of 15 minutes and no light is detected.
Code 9	No Measured Darkness	Light output has been disabled for a minimum of 15 minutes and light is detected.
Code 10	Power Interrupted	Unable to complete lighting schedule (power outage likely).
Code 20	Temperature Sensor Error	<i>Remote sensor</i> is unable to get temperature reading from temperature detector.
Code 21	RH Sensor Error	<i>Remote sensor</i> is unable to get RH reading from detector.
Code 22	RH Sensor Saturated	<i>Remote sensor</i> has detected that RH detector is saturated.
Code 23	CO <sub>2</sub> Sensor Error	<i>Remote sensor</i> is unable to get CO <sub>2</sub> readings from CO <sub>2</sub> detector.
Code 24	RTC Error	<i>Remote controller</i> is unable to get time from the real time clock.

## Light Odometer Feature (*Change Bulbs* Icon):

The Hyperion™ 1 monitors the total time the *Lights* output has been enabled. After 4,000 hrs the *remote controller* will show the *Change bulbs* icon. This is used to indicate that the lights may be approaching the end of their useful life.

## Alternate Exhaust Daytime/Nighttime Control:

The Hyperion™ 1 has an *Alternate Exhaust* mode: this mode changes how the Hyperion™ 1 controls humidity inside the room. While the Hyperion™ 1 is in the *Alternate Exhaust* mode, the *Dehumidification* output is deactivated completely. Details on how to enable/disable this feature are given in *Alternate Exhaust Mode* in the *Checking and Adjusting the Hyperion™ 1 Settings* section of this document.

### Controlling RH with Alternate Exhaust Feature Enabled:

If the room's RH rises above the RH set point by the amount of the hysteresis setting (or the set point plus 2%), the *Fans* output will activate. This output will remain on until the room's RH drops below the set point by the hysteresis setting (or by default, the set point minus 2%). There is still a separate *Daytime* and *Nighttime* set point.

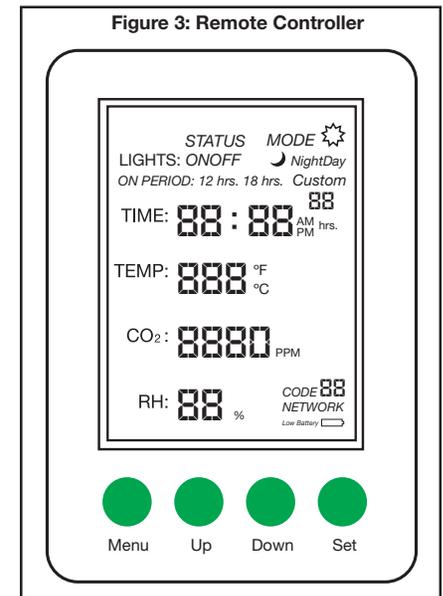
The *Fans* output is also activated by the temperature and CO<sub>2</sub> *Nighttime* settings as described in *Normal Daytime/Nighttime Control*. The CO<sub>2</sub> output is always defeated when the *Fans* output is activated.

# Checking and Adjusting the Hyperion™ 1 Settings

Refer to **Figure 3** and follow the instructions below to check and/or change the Hyperion™ 1 settings.

## Checking The Hyperion™ 1 Control Parameters:

1. Press the *Menu* button until the first parameter (LIGHTS;) begins to blink.
2. Use the *Menu* button to cycle through each of the parameters. The current setting for each parameter will be displayed as the setting is selected. The settings available are:
  - a. LIGHTS
  - b. TIME
  - c. Day TEMP
  - d. Night TEMP
  - e. Day CO<sub>2</sub>
  - f. Night CO<sub>2</sub>
  - g. Day RH



h. Night RH

i. Alternate Exhaust Mode  
Enable/Disable.

After 5 seconds with no button presses the display will stop blinking and the system will return to normal function.

#### Adjustment For Light Timing:

To avoid making any changes, allow 5 seconds with no button presses at anytime during this procedure: the display will stop blinking and the system will return to normal operation.

1. Follow steps in the *Checking The Hyperion™ 1 Control Parameters* and select *LIGHTS*. Press the *SET* button and *ON PERIOD* will begin to blink.
2. Use the *Up* and *Down* buttons to cycle through and select the desired on period then press the *Set* button. Refer to **Table 1** for a description of the *ON PERIOD* settings.
  - If *ON* or *OFF* is selected for the *ON PERIOD* the display will go blank before returning to normal operation and the lights will be set to the chosen state indefinitely.
  - If *Custom* is selected for the *ON PERIOD* proceed to step 3.
  - If either 12 hrs or 18 hrs is selected for the *ON PERIOD* skip to step 4.

**Table 1: On Period Settings for Hyperion™ 1 Lighting Control**

ON PERIOD	DESCRIPTION
12 hrs.	Flowering: lights stay on for 12 hours in a 24-hour period.
18 hrs.	Vegetative: lights stay on for 18 hours in a 24-hour period.
Custom	Duration can be changed from 1 to 23 hours in a 24-hour period.
ON	Lights will remain on indefinitely.
OFF	Lights will remain off indefinitely.

3. Use the *Up* and *Down* buttons to adjust the desired custom *ON PERIOD*. This setting can be adjusted from 1 to 23 hours in increments of 1 hour. Press the *Set* button and the hours of the time will begin to blink.
4. Use the *Up* and *Down* buttons to adjust the hour of the scheduled time for the lights to be activated. Note that adjustments to the hours will also change the *AM/PM* icons. Press the *Set* button and the minute portion of the time begins to blink.
5. Use the *Up* and *Down* buttons to adjust the minutes of the scheduled time for lights to be activated. Press the *Set* button and the screen will go blank. The lighting schedule is now saved and the display will resume normal operation. No changes are saved until this step has been completed.

#### No Measured Darkness Condition:

When the Hyperion™ 1 is set to have the *Lights* output off the *remote sensor* should NOT detect light and use the *Nighttime* control parameters. If the light output has been off for at least 15 minutes and the *remote sensor* measures light, it will display CODE 9 in the lower right-hand corner of the screen. This is a useful feature that can inform the user that unwanted light is present inside the room. This code is automatically cleared when no light is detected.

#### Lighting Schedule Interrupted Condition:

If the Hyperion™ 1 has been set to run a lighting schedule and the schedule was interrupted for any reason (including a power failure), the remote controller will show a CODE 10. This indicates that the lights were not on for the entire scheduled time. The condition will automatically be cleared when the next lighting schedule begins; this condition is also cleared if a new lighting schedule is set.

#### Temperature Sensor Error:

If the Hyperion™ 1's *remote sensor* is unable to get readings from its temperature sensor it will turn off all load outputs. The *remote sensor's* LED will flash **red** twice periodically and the *remote controller* will show CODE 20. If the problem is resolved, the controller will return to normal functionality

#### RH Sensor Errors:

If the Hyperion™ 1's *remote sensor* is unable to get readings from its RH sensor it will turn off all load outputs. The *remote sensor's* LED will flash **red** once periodically and the *remote controller* will show CODE 21. If the problem is resolved, the controller will return to normal functionality.

If the RH detector of the Hyperion™ 1's *remote sensor* becomes saturated with water accurate readings are not possible. If this happens, all load outputs will be disabled. The *remote sensor's* LED will flash once periodically and the *remote controller* will show CODE 22. Once the *remote sensor* has dried out and accurate readings are possible this error condition will automatically be cleared and the controller will return to normal functionality.

#### CO<sub>2</sub> Sensor Error:

If the Hyperion™ 1 is unable to get CO<sub>2</sub> readings from the CO<sub>2</sub> sensor, it will turn off all load outputs. The *remote sensors* LED will flash three times periodically and the *remote controller* will show CODE 23. If the problem is resolved, the controller will return to normal functionality.

If the Over Temperature feature was activated, the Hyperion 1 will display *CODE 10* after the lighting schedule is completed. Refer to the *Lighting Schedule Interrupted Condition* section for more information.

#### High Temperature Condition:

The *High Temperature* warning is shown if the room's temperature climbs to 95°F and remains there for 30 minutes while the *Light* output is off. The *remote controller* will show *CODE 2* to indicate this condition has occurred. This condition will automatically be cleared when the room's temperature drops below 86°F. The *Fans* output is enabled and will remain on until the temperature is dropped to the desired set point.

#### Low Temperature Condition:

The *Low Temperature* warning is enabled when the room's temperature drops below 45°F and remains there for 30 minutes. The *remote controller* will show *CODE 3* until the temperature rises above 45°F.

#### High Humidity Condition:

The Hyperion™ 1 displays a *High Humidity* warning by showing *CODE 4*: this occurs when the room's RH rises above 80% and remains there for 30 minutes. This condition is automatically cleared when the RH drops below 80%.

#### Low Humidity Condition:

The Hyperion™ 1 displays a *Low Humidity* warning by showing *CODE 5*: this occurs when the room's RH drops below 30% and remains there for 30 minutes. This condition is automatically cleared when the RH rises above 30%.

#### High CO<sub>2</sub> Concentration Condition:

If the CO<sub>2</sub> levels of the room rise above 5000ppm, the Hyperion™ 1 will display *CODE 6*. This condition is cleared when the CO<sub>2</sub> levels drop below 5000ppm.

#### Empty CO<sub>2</sub> Tank Condition:

This useful feature informs the user when the CO<sub>2</sub> tank used to enrich the room is empty. During the *Daytime*, if the CO<sub>2</sub> level is below the desired set point (minus hysteresis) for 30 minutes or more, the Hyperion™ 1 will display *CODE 7*. This condition is cleared when the CO<sub>2</sub> levels rise to the desired set point.

#### No Measured Light Condition:

When the Hyperion™ 1 is set to have the *Lights* output active, the *remote sensor* should detect light and begin using the *Daytime* control parameters. If the light output has been active for 15 minutes and the *remote sensor* does not measure light, it will display *CODE 8* in the lower right- hand corner of the screen. This is a useful feature that can inform the user that there may be something wrong with the lights or that the sensor is not placed properly. This code is automatically cleared when the photo sensor detects light during daylight period.

#### Resetting the Light Odometer (*Change bulbs* Icon):

The Hyperion™ 1 monitors the total time the *Lights* output has been enabled. After 4,000 hrs the *remote controller* will show the *Change bulbs* icon. This is used to indicate that the lights may be approaching the end of their useful life.

To check the current amount of time logged on the light odometer, follow these steps:

1. Press the *Menu* button until the *LIGHTS* setting begins to blink.
2. Press and hold the *Up* and *Down* buttons for 3 seconds: the display will go blank.
3. Release the *Up* and *Down* buttons: the display will show the current number of hours of the *Light Odometer* where the time is normally displayed.
4. After 5 seconds with no button presses, the display will go back to showing the room's current readings.

To reset the *Light Odometer* and clear the *Change bulbs* Icon:

1. Follows steps 1 through 3 (on page 7) to display the current number of hours logged on the light odometer.
2. Press and hold the *Set* button for 5 seconds while the display is showing the current odometer reading. The displayed reading will be reset to 0 and the *Change bulbs* icon will be cleared.

Note: The remote controller will not show the current time if the *Low Battery* icon is displayed: this will also prevent the Hyperion™ 1 from running the lighting schedule. Refer to the *SETTING THE CURRENT TIME* section below for instruction on how to replace the battery and reset the *remote controller's* time.

#### Setting The Current Time:

To avoid making any changes, allow 5 seconds with no button presses at anytime during this procedure: the display will stop blinking and the system will return to normal operation.

1. Follow the steps in the *Checking The Hyperion™ 1 Control Parameters* section and select *TIME*.
2. Press the *Set* button and the hours will begin to flash.
3. Use the *Up* and *Down* buttons to adjust the hours to the correct value. The AM/PM icons will change with adjustments to the hours. When the correct hour has been selected, press the *Set* button and minutes will begin to flash.
4. Use the *Up* and *Down* buttons to adjust the minutes to the correct value. Press the *Set* button and the display will go blank momentarily to indicate the time adjustment has been completed.

#### Battery Replacement:

The *remote controller* uses a standard BR2325 lithium coin cell battery to keep time while it is unplugged: this battery typically last 10+ years before replacement is necessary. When the battery's charge had been depleted, the *Low Battery* icon will appear on the display and the time will show dashes. To replace the battery follow these steps:

1. Unplug the *remote controller* and open the enclosure to access the battery. The battery will be visible on the back of the circuit board. **DO NOT CHANGE THE BATTERY WHILE THE Remote controller IS CONNECTED TO POWER!**
2. Carefully remove the battery and insert a new BR2325 battery in the correct orientation: the positive side (+) of the battery should be facing up.
3. Reassemble the enclosure and plug in the *remote controller*. The time will continue to display dashes and the *Low Battery* icon until the time has been reset.
4. Set the correct time by following *Setting The Current Time* instructions listed above. Once the time has been set the *Low Battery* icon will be cleared.

Note that the lighting schedule will not run until the time has been set and the *Low Battery* icon has been cleared.

### Temperature Setting:

To avoid making any changes, allow 5 seconds with no button presses at anytime during this procedure: the display will stop blinking and the system will return to normal operation.

1. Follow the steps in the *Checking The Hyperion™ 1 Control Parameters* section and select either the *Daytime* or *Nighttime TEMP* parameter.
2. Press the *Set* button and the temperature units will begin to flash.
3. Press the *Up* or *Down* button to toggle between °F and °C. When the desired unit is selected, press the *Set* button and the temperature setting will blink.
4. Use the *Up* and *Down* buttons to adjust the set point to the desired temperature.
5. Press the *Set* button and the screen will go blank. The temperature setting is now saved and the display will resume normal operation. No changes are stored until this step is complete.

### CO<sub>2</sub> and RH Settings:

To avoid making any changes, allow 5 seconds with no button presses at anytime during this procedure: the display will stop blinking and the system will return to normal operation.

1. Follow steps in the *Checking The Hyperion™ 1 Control Parameters* section and select *Daytime* or *Nighttime* setting of either the *CO<sub>2</sub>* or *RH* parameter.
2. Press the *Set* button and the current setting will begin to blink.
3. Use the *Up* and *Down* buttons to adjust the set point to the desired level.
4. Press the *Set* button and the screen will go blank. The setting has now been saved and the display will resume normal operation. No changes are stored until this step has been completed.

### Alternate Exhaust Mode:

It is possible to change how the Hyperion™ 1 controls the dehumidification of a

room by enabling the *Alternate Exhaust* mode. Please refer to *Alternate Exhaust Daytime/Nighttime Control* in the *Control Description* section of this document for more information.

To enable/disable this feature follow the steps below:

1. Enter the adjustment menu on the *remote controller* by pressing and holding the *Menu* button until the *LIGHTS* setting begins to flash.
2. Cycle through the settings by pressing the *Menu* button until both *TEMP* and *RH* begin flashing (this is (i) *Alternate Exhaust Mode Enable/Disable* option shown in *Checking The Hyperion™ 1 Control Parameters* section). A number will also be flashing; this number indicates the current mode.
  - 1 = Normal Mode (separate designated outputs used to control temperature and RH).
  - 2 = Alternate Exhaust Mode (both temperature and RH are controlled with the Fans output).

### Restoring Factory Default Settings:

To restore all factory default settings (shown in the *Factory Defaults and Control Limits* section of this document), press and hold both the *Menu* and *Set* buttons simultaneously for 5 seconds. The display will go blank, the controller will reset and all the factory default settings will be restored.

## Codes and Errors

Each of the conditions or errors described below has a code that is shown on the *remote controller* and can be used to identify the condition. **Table 2**, located at the end of this section, is a complete list of the codes reported by the Hyperion™ 1's *remote controller*.

The Hyperion™ 1's *remote sensor* is equipped with the tricolor LED that can also be used to determine the Hyperion™ 1's current status: a description of the LED's behavior is given in **Table 3**, located at the end of this section.

### Over Temperature Shutoff:

The Hyperion™ 1 constantly monitors the room's temperature. If the room's temperature climbs to 95°F and the Hyperion™ 1 has the *Light* output active, it will enable the *Over Temperature* feature.

The *Over Temperature* feature will automatically turn off the *Lights* output and activate the *Fans* output. The *Lights* output will remain off for a minimum of 15 minutes. The display will show CODE 1 while this feature is active and the *remote sensor*'s LED will rapidly flash **green** or **yellow** (see **Table 4** for more information). Once 15 minutes has passed, and if the temperature has dropped to 86°F or less (fans will remain on until the temperature set point has been reached), the *Lights* output will turn on and the controller will resume normal operation. The actual on time of the lights will be shortened slightly by this feature because time will continue to be kept while this is in effect: the overall lighting "on" time duration always remains that same.