



TITAN[®]
CONTROLS

HYPERION[®] 2

Product #702880

Wireless Environmental / Lighting
Master Controller

Instruction Manual



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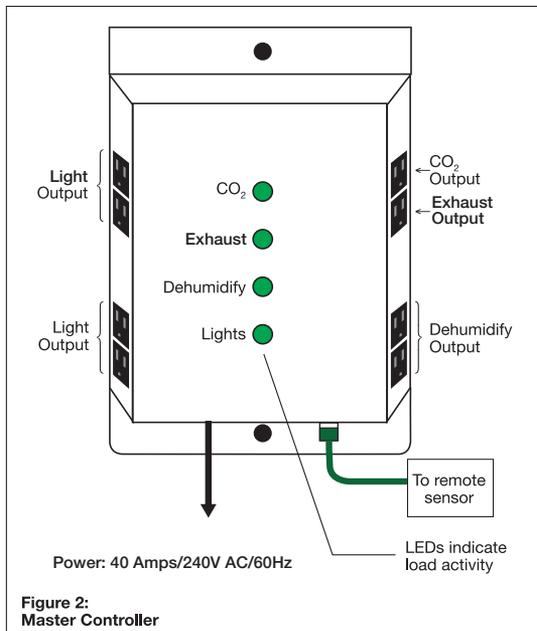
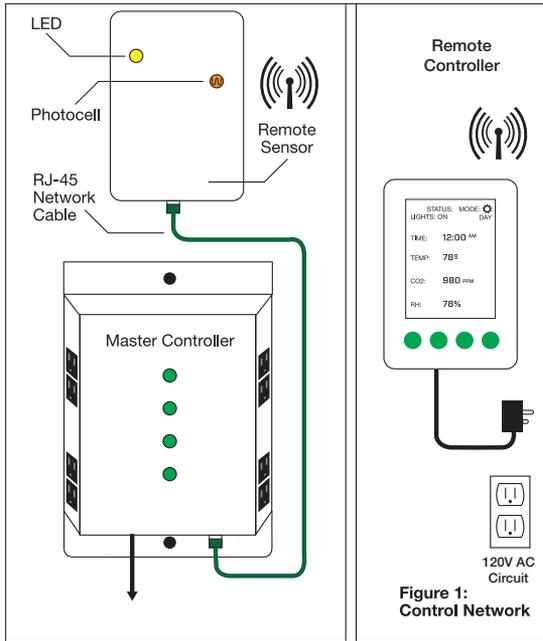
Overview

Titan Controls® brings to you the most complete grow room controller available in the industry today! The Hyperion® 2 features 4 – 240V AC outlets for a garden lighting systems as well as a complete wireless environmental controller. The Hyperion® 2 Controller uses three modules: the remote sensor, master controller, and remote controller, to form a wireless control network (refer to Figure 1). The Hyperion® 2 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 monitoring and control of a room's environment. All control parameters are changed over the wireless network via the user interface.

The Hyperion® 2 remote sensor is equipped with CO₂, relative humidity, temperature, and light sensors. The room's environment is controlled by relay outputs located on the master controller. These outputs are used to control ventilation fans, a dehumidification unit, a CO₂ generator or CO₂ regulator & tank system, and a 240V AC four light system.

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

The Hyperion 2 is the complete solution to your indoor gardening requirements!



Quick Set up Guide

The Hyperion® 2 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® 2, follow these instructions (use Figures 1 and 2 for reference):

NOTE: For best results have Hyperion® 2 installed by a certified Electrician.

1. Mount the remote sensor in the desired location; be sure the photo cell is directly exposed to the grow lights.
2. Mount the master controller in the desired location. Verify that the breaker controlling this Hyperion® 2 is in the OFF position.
3. Plug the RJ-45 network cable into the master controller and remote sensor.
4. Plug equipment into the appropriate outputs of the master controller (refer to Figure 2): - Ventilation fan to the output labeled 'Exhaust Output'. - Dehumidification gear into the output labeled 'Dehumidify Output'. - CO₂ Generator or CO₂ Regulator into the 'CO₂ Output'. Finally, plug 240V AC ballasts into '240 Volt Power Output' receptacles.
5. Provide power to 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 Module 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 in Figure 1) are visible. Plug in the power supply to 120V AC power; 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 in the grow room^A.
7. Unplug the remote controller and move it to the desired location. The Hyperion® 2 will continue to control the room's environment even when the remote controller is unplugged^B (refer to the Hyperion® 2 Wireless Control Network section of this document for further information). To test the signal strength of the Hyperion® 2's control network refer to Range Testing in the Hyperion® 2 - Wireless Control Network section of this document.

A. If the modules are unable to link-up and form the control network, follow the Rebuilding the Wireless Network procedure in the Hyperion® 2 Wireless Control Network section.

B. A list of the Hyperion® 2 default control parameters is listed in the Factory Defaults and Control Limits section of this document. To make adjustments to the Hyperion® 2 settings, refer to the Checking and Adjusting the Hyperion® 2 Settings section of this document.

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® 2 Control.

The Hyperion® 2 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® 2 uses a wireless control network to communicate between the sensor and remote controllers (shown in Figure 1). The Hyperion® 2 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® 2 Control Network section of this document for further information).

Daytime Control:

The Hyperion® 2 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® 2 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 setpoint by the amount of the hysteresis setting (the setpoint plus 2%), the Dehumidification output will activate. This output will remain on until the room's RH drops below the setpoint setting (the setpoint minus 2%).

Controlling Temperature:

If the temperature climbs above the desired setpoint by the amount of the hysteresis setting (the setpoint plus 3° F), the controller will defeat the CO₂ output and activate the Exhaust output. The exhaust fan will remain on and the CO₂ will remain off until the temperature falls below the setpoint by the hysteresis setting amount (setpoint minus 3° F); at this point the controller will then turn off the Exhaust output and allow the CO₂ output to control as described in the following Controlling CO₂ section.

Controlling CO₂:

During the Daytime, when the CO₂ reading drops below the setpoint minus the hysteresis (the setpoint minus 100 ppm), the CO₂ output will be activated. The CO₂ output will remain on until the reading rises to the desired setpoint. When the CO₂ reading reaches the setpoint the output will then turn off. Each time the Exhaust output is activated, the CO₂ output will automatically be turned off to prevent wasteful venting of CO₂.

Nighttime Control:

During the Nighttime, the Hyperion® 2 uses the Nighttime control setpoints 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® 2 remote controller will show the night symbol for MODE in the upper right-hand corner.

Controlling Relative Humidity (RH):

The Hyperion® 2 maintains its environment's RH as described in the Daytime Control section; however, it will use a separate Nighttime setpoint. This allows the user to tightly control the RH to provide an ideal growing environment.

Controlling Temperature:

The Hyperion® 2 maintains its environment's temperature as described in the Daytime Control section; however, it will use a separate Nighttime setpoint. This allows the user to accurately control the temperature to provide an ideal growing environment during day and night conditions.

Controlling CO₂:

During Nighttime, the CO₂ output is never active: the environment's CO₂ levels are controlled by ventilation (instead of enrichment). If the CO₂ levels climb above the Nighttime setpoint, the Exhaust output will activate to lower CO₂ levels below Nighttime CO₂ setpoint.

Lighting Control:

The Hyperion® 2 lighting controller is specifically designed for operation of an indoor garden lighting system. The controller will operate your lights for any sequence over a 24-hour period. The controller can handle up to a maximum of four (4) 1000 watt HID metal halide, high pressure sodium (HPS), ceramic (LEC) or LED grow lights. The Hyperion® 2 lighting controller provides up to 20 amps of capacity on a standard 240 Volt circuit.

Light Odometer Feature (Change Bulbs Icon):

The Hyperion® 2 monitors the total time the lights output has been enabled. After 4,000 hours the remote controller will show the change bulbs icon. This is used to indicate that the grow lights may be approaching the end of their useful life.

Alternate Exhaust Daytime/Nighttime Control:

The Hyperion® 2 has an Alternate Exhaust mode: this mode changes how the Hyperion® 2 controls humidity inside the room. While the Hyperion® 2 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® 2 Settings section of this document.

Controlling RH with Alternate Exhaust Feature Enabled:

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

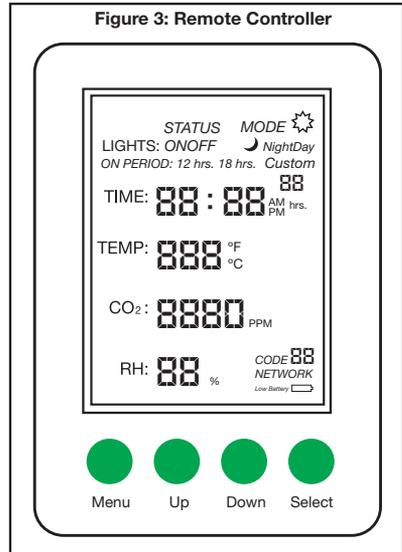
The Exhaust output is also activated by the temperature and CO₂ Nighttime settings as described in Normal Daytime/Nighttime Control.

NOTE: The CO₂ output is always defeated when the Exhaust output is activated.

Checking and Adjusting the Hyperion® 2 Settings

Checking the Hyperion® 2 Control Parameters:

1. Press and hold 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 CO₂
 - f. NIGHT CO₂
 - g. DAY RH
 - h. NIGHT RH
 - i. ALTERNATE EXHAUST
MODE ENABLE/DISABLE



NOTE: After 5 seconds with no buttons pressed the display will stop blinking and the system will return to normal function.

Light Timing Adjustment:

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

1. Follow steps in the 'Checking The Hyperion® 2 Control Parameters' and select LIGHTS. Press the Select 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 Select button. Refer to Table 1 for a description of the ON PERIOD settings.

NOTE:

*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® 2 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 Select 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 Select 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 Select 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.

Resetting the Light Odometer (Change bulbs Icon):

The Hyperion® 2 monitors the total time the lights output has been enabled. After 4,000 hours the remote controller will show the Change bulbs icon. This is used to indicate that the light bulbs 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 buttons pressed, 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 11) to display the current number of hours logged on the light odometer.
2. Press and hold the Select 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:

*It's recommended you reset the light Odometer every time you replace your lamps.

*The remote controller will not show the current time if the Low Battery icon is displayed: this will also prevent the Hyperion® 2 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 buttons pressed at any time 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® 2 Control Parameters' section and select TIME.
2. Press the Select 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 Select button and minutes will begin to flash.
4. Use the Up and Down buttons to adjust the minutes to the correct value. Press the Select 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 buttons pressed at any time 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® 2 Control Parameters section and select either the Daytime or Nighttime TEMP parameter.
2. Press the Select 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 Select button and the temperature setting will blink.
4. Use the Up and Down buttons to adjust the setpoint to the desired temperature.
5. Press the Select 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.

CO₂ and RH Settings:

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

1. Follow steps in the Checking The Hyperion® 2 Control Parameters section and select Daytime or Nighttime setting of either the CO₂ or RH parameter.
2. Press the Select button and the current setting will begin to blink.
3. Use the Up and Down buttons to adjust the setpoint to the desired level.
4. Press the Select 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® 2 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. A number (1 or 2) will also be flashing: this number indicates the current mode.
3. To change from normal mode to alternate exhaust mode while TEMP & RH are flashing: Press Select, then press Down button to display “2”. Now the Hyperion® 2 is in Alternate Exhaust mode. To change back to Normal mode press select, then press Up button to display “1”. Now the Hyperion® 2 is in Normal Exhaust mode.

<p>1 = Normal Mode (separate designated outputs used to control temperature and RH).</p>	<p>2 = Alternate Exhaust Mode (both temperature and RH are controlled with the Exhaust output).</p>
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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 Select 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 on page 18, is a complete list of the codes reported by the Hyperion® 2's remote controller.

The Hyperion® 2's remote sensor is equipped with the tricolor LED that can also be used to determine the Hyperion® 2's current status: a description of the LED's behavior is given in Table 3, located on page 19.

Over Temperature Shutoff:

The Hyperion® 2 constantly monitors the room's temperature. If the room's temperature climbs to 95° F and the Hyperion® 2 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 Exhaust 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 3, page 19 for more information). Once 15 minutes has passed, and if the temperature has dropped to 86° F or less (Exhaust output will remain on until the temperature setpoint 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 the same.

If the Over Temperature feature was activated, the Hyperion® 2 will display CODE 10 (see Table 2, page 18) 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 Exhaust output is enabled and will remain on until the temperature as dropped to the desired setpoint.

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® 2 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® 2 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 CO₂ Concentration Condition:

If the CO₂ levels of the room rise above 5000 ppm, the Hyperion® 2 will display CODE 6. This condition is cleared when the CO₂ levels drop below 5000 ppm.

Empty CO₂ Tank Condition:

This feature informs the user when the CO₂ tank used to enrich the room is empty. During the Daytime, if the CO₂ level is below the desired setpoint (minus hysteresis) for 30 minutes or more, the Hyperion® 2 will display CODE 7. This condition is cleared when the CO₂ levels rise to the desired setpoint.

No Measured Light Condition:

When the Hyperion® 2 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 remote sensor is not placed properly. This code is automatically cleared when the photo sensor detects light during daylight period.

No Measured Darkness Condition:

When the Hyperion® 2 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® 2 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® 2'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® 2'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® 2'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.

CO₂ Sensor Error:

If the Hyperion® 2 is unable to get CO₂ readings from the CO₂ sensor, it will turn off all load outputs. The remote sensors LED will flash **red** three times periodically and the remote controller will show CODE 23. If the problem is resolved, the controller will return to normal functionality.

Real Time Clock Error:

If the Hyperion® 2'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 Control Remote Control Codes

Code #	Code Type	Description
Code 1	Over Temperature	Temperature is greater than or equal to 95° F while the Lights Output is enabled.
Code 2	High Temperature	Temperature is greater than or equal to 95° F for an excess of 30 minutes while the Lights 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 ₂	CO ₂ is greater than or equal to 5000 ppm.
Code 7	Empty CO ₂ Tank	Injecting CO ₂ for an excess of 30 minutes and CO ₂ levels have not reached setpoint (daytime 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	Sensor module is unable to get temperature reading from temperature detector.
Code 21	RH Sensor Error	Sensor module is unable to get RH reading from detector.
Code 22	RH Sensor Saturated	Sensor module has detected that RH detector is saturated.
Code 23	CO ₂ Sensor Error	Sensor module is unable to get CO ₂ readings from CO ₂ detector.
Code 24	RTC Error	Remote Control is unable to get time from the real time clock.

Remote Sensor LED:

The tri-colored LED on the remote sensor is used to display the status of the Hyperion® 2 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 Table 3 for further details.

Table 3: Remote Sensor Module LED Codes

LED Code	Meaning
Green: Solid on (no flashes). (see CO ₂ Calibration section)	Calibration of CO ₂ 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 REBUILDING THE WIRELESS NETWORK in the Hyperion® 2 Control Network section of this document for more information.
Yellow: Normally on, flashes off twice.	Daytime mode: unable to communicate with Hyperion® 2 Remote Control.
Yellow: Normally off with two yellow flashes.	Nighttime mode: unable to communicate with Hyperion® 2 Remote Control.
Yellow: Continuous blinking.	High Temperature Shutoff feature is active: unable to communicate with the Hyperion® 2 Remote Control.
Red: Solid on (no flashes). (see CO ₂ Calibration section)	Unable to calibrate CO ₂ sensor.
Red: 1 flash.	RH sensor not functioning.
Red: 2 flashes.	Temperature sensor not functioning.
Red: 3 flashes.	CO ₂ sensor not functioning.
Alternating: LED color changes green, yellow, red.	CO ₂ sensor is being calibrated (takes about 15 minutes).

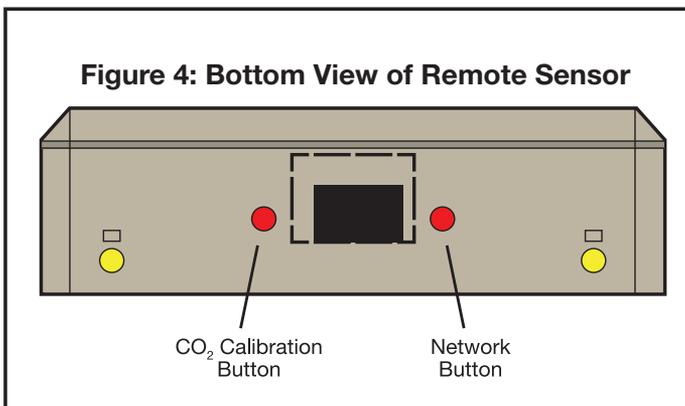
Calibration

CO₂ Calibration:

The Hyperion® 2 remote sensor is equipped with two buttons located on the bottom of the unit. It normally requires **calibration approximately every 3 years**. The button on the left (Figure 4) is used to place the controller into CO₂ Calibration mode: the Hyperion® 2's CO₂ sensor will automatically calibrate to normal outside air CO₂ concentration. To properly calibrate the CO₂ sensor, simply follow these steps:

1. Move the remote sensor to an outside area where CO₂ pollution is at a minimum: Do not attempt to calibrate the CO₂ sensor indoors, while breathing directly on the unit, next to a running vehicle, near animals, etc.
2. Power up the remote sensor: attach the remote sensor to the master controller, then plug the master controller into a 120V AC power source.
3. Insert a small, **non-metallic** item, such as a toothpick, through the CO₂ 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 CO₂ 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 CO₂ calibration was successful or solid **red** if it was unable to calibrate properly. Upon completion of the calibration sequence, the Hyperion® 2 will not resume controlling the room's environment until it has received acknowledgment of the calibration results.

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 CO₂ sensor is exposed to during this process.



Hyperion® 2 Wireless Control Network

The Hyperion® 2 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 Sensor Module.	Remote Control is unable to communicate with the sensor module via wireless control network.
Network -1	No Wireless Control Network.	Remote Control needs to be paired with the sensor module. Refer to REBUILDING THE WIRELESS NETWORK in the Hyperion® 2 Wireless Control Network section of this document for more information.

The Hyperion® 2 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.

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 3 of the Codes and Errors 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 Errors section of this document.

Range Testing:

Under ideal conditions (i.e. line of sight, no metallic interference, low humidity, etc), the Hyperion[®] 2 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 Select 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 on the next page): 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.

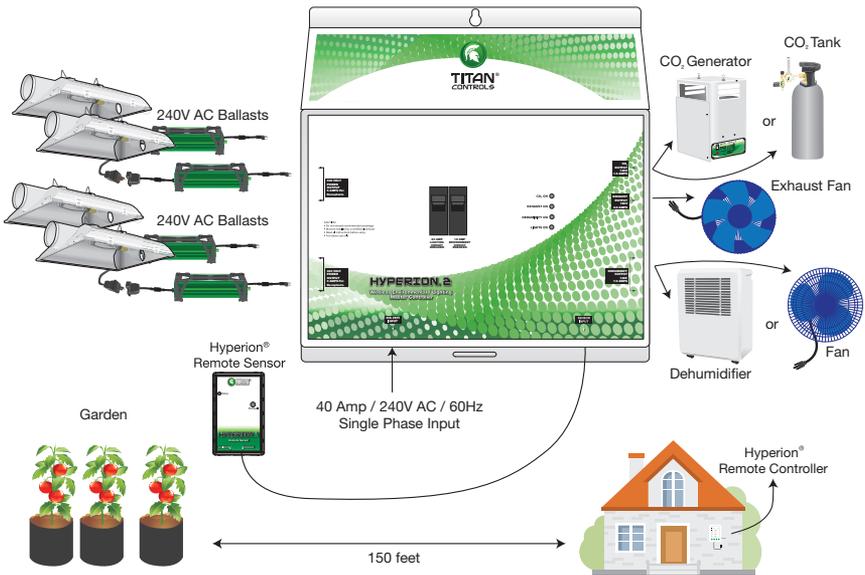
3. After 10 seconds with no buttons pressed, the remote controller will return to showing the current room's environment.

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 4) until the LED illuminates solid **yellow** (Table 3): this will place the remote sensor into a searching mode. While in this mode the Hyperion® 2 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 Select button and the remote controller will begin searching for the remote sensor. The remote controller will reset and begin to function normally. If the Select button is not pressed within 5 seconds, the remote controller will exit this mode return to normal operation.

Installation Diagram



Factory Defaults and Control Limits

Temperature:

Default Unit of Measurement: ° F

Default Daytime Setpoint: 75° F (24° C)

Default Nighttime Setpoint: 65° F (18° C)

Default Hysteresis: ± 3° F (or 6° F centered)

Measurement Range: 32° F (0° C) to 120° F (49° C)

Setpoint Range: 45° F (7° C) to 85° F (29° C)

Humidity:

Default Daytime Setpoint: 55%

Default Nighttime Setpoint: 50%

Default Hysteresis: ± 2% (or 4% centered)

Measurement Range: 5% to 95%

Setpoint Range 20% to 90%

CO₂:

Default Daytime Setpoint: 1000 ppm

Default Nighttime Setpoint: 600 ppm

Default Hysteresis: - 100 ppm (or 100 ppm below setpoint)

Measurement Range: 0 ppm – 5100 ppm

Setpoint Range: 500 ppm – 2500 ppm

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 (888-808-4826) 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.
- 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 during shipping 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.

Troubleshooting Tips

If the Hyperion® 2 is not performing as expected, try the following:

- Confirm that your power input is active from your breaker panel and providing 240 Volts / 40 Amps / 60Hz to the controller.
- Check the voltage input of your incoming cord set using a voltage test meter to verify power is flowing to the controller.
- Make sure all of your connections are tight. Loose connections can cause “arcing”. Retighten every 90 days.
- Then confirm that power is active and proper at your 240V AC & 120V AC outlets using a voltage test meter.
- Verify that your power cords and ballasts are functioning properly and that there are no shorts or arcing occurring.
- Should you find your circuit breaker keeps tripping, check your breakers and equipment to verify that they are the right amperage for your application.
- If you turn ‘OFF’ the power switch and your lights remain on, contact us immediately for resolution.
- Still having problems with your Hyperion® 2? Please contact our Technical Service Representative at 888-808-4826 to assist you further.

Controller Specifications:

Size	14" H x 17" W x 4" D
Weight	9.5 lbs.
Maximum Amperage	40 Amps
Voltage Input	240V AC
Voltage Output	240V AC for lighting outputs
Maximum Lighting Amperage	20 amps (1000 watts per outlet)
Voltage Output	120V AC for dehumidifier, CO ₂ and fan outputs
Maximum Environmental Control Amperage	15 Amps
Hertz	60Hz
Storage Temperature	32° F (0° C) to 135° F (57° C)
Operating Temperature	40° F (4° C) to 125° F (52° C)

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: _____

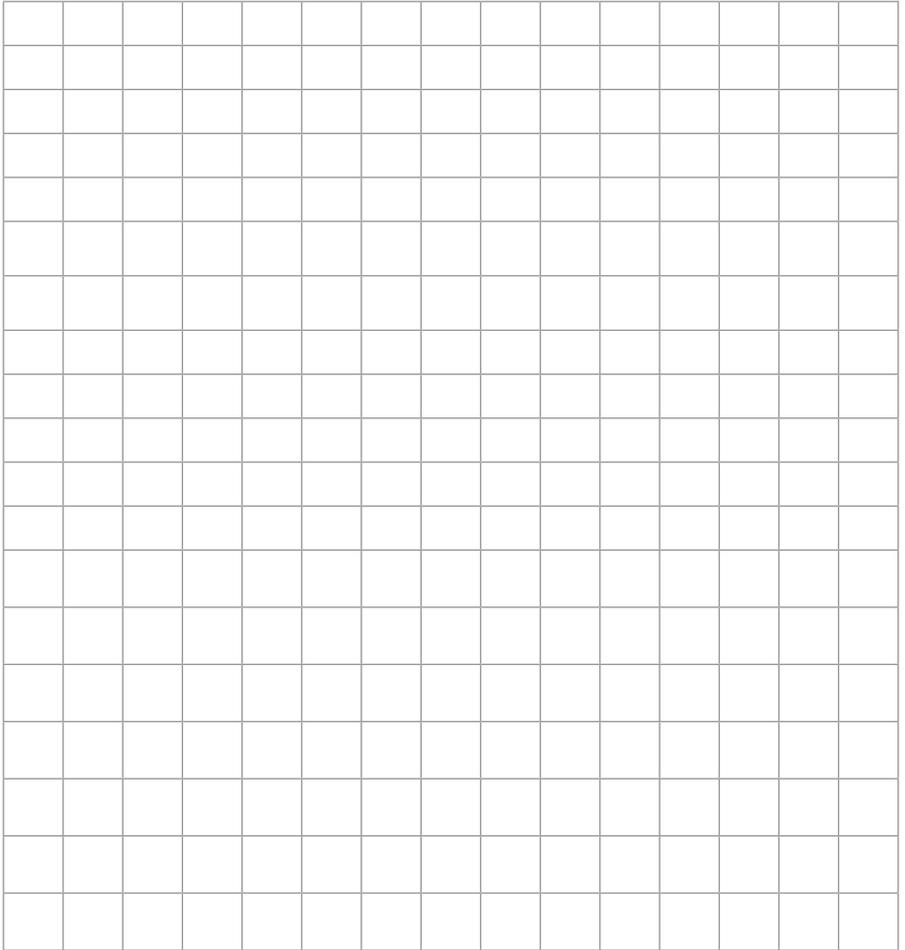
What is the nature of the problem? _____

Send to your nearest location – shipping address will be given when the RMA # is issued:

 **TITAN**
CONTROLS

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

1 Square = ____ Foot/Feet



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