ADVANCING
ALTERNATIVES

41-AEGIS*TEC*

Touchscreen Environmental Controller

For further technical support visit :
advancingalternatives.com

INTRODUCTION

Thank you for purchasing the AegisTEC touchscreen environmental controller. The AegisTEC is designed for ease of installation and operation, while still addressing the unique challenges of greenhouse environmental control. The system can coordinate and control ventilation curtains, light deprivation curtains, heaters, and fans.

Freestanding Greenhouse Application

The AegisTEC touchscreen environmental controller is ideal for the greenhouse grower that desires many of the features and sophistication of more expensive environmental controllers. Designed for a single zone or freestanding greenhouse, the AegisTEC can coordinate a variety of growing techniques and system overrides. This manual's purpose is to assist you in utilizing the controller to its fullest potential for your specific purpose.

Main Features

- Two timed setpoint overrides
- DIF growing TEChnique capable
- Light deprivation capable
- Friendly touchscreen interface
- Staged ventilation
- Wind speed override option
- Humidity override option
- Rain override option
- Battery backed clock
- 6 relay outputs (three vent motor capability as standard)
- Dry contact control for heaters or fans
- Manual overrides

WARNINGS

Read instructions completely before beginning your installation. Familiarize yourself with this unit and compare what you received with these instructions.

Always wear eye and ear protection. Always use gloves and other necessary safety equipment. Metal can be sharp, handle with care to avoid injury.

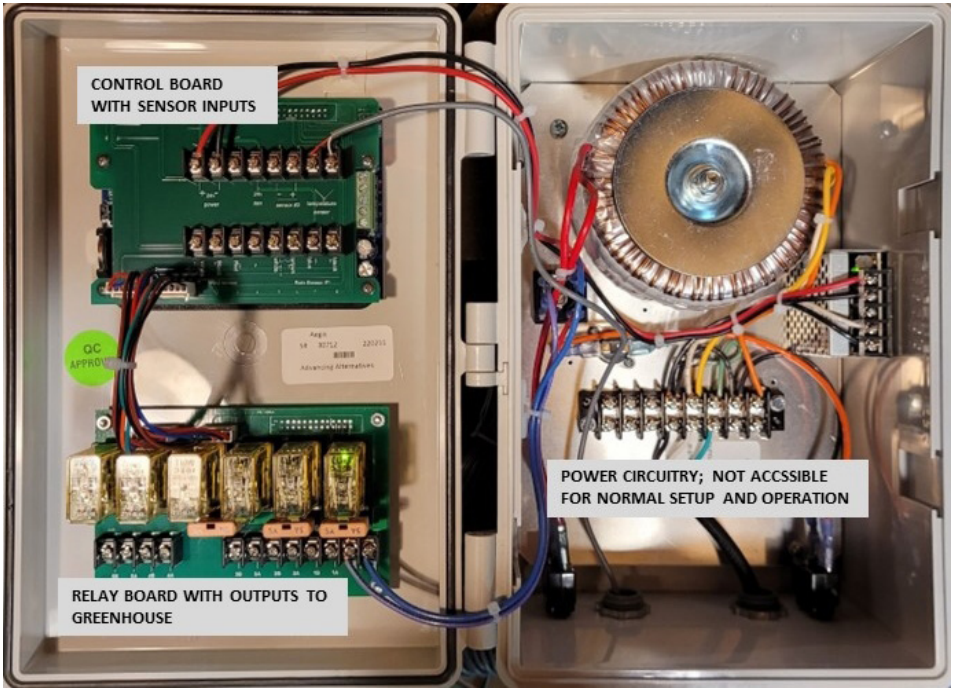
All electrical connections must be made by a qualified, licensed electrician. All connections must be made in accordance with all state and local codes.

CONTENTS

OVERVIEW

Theory of Operation

The key to easily and successfully setting up your AegisTEC environmental controller is understanding how the control outputs are assigned by the controller and how they are used to control your greenhouse. The control circuitry is contained on two boards. The first one is the microcontroller which includes the touchscreen, and the second is the relay board. Sensor inputs (temperature, wind, rain, humidity, etc.) connect to the microcontroller board, which is clearly labeled to identify the correct terminals for each sensor. Controller outputs to control your greenhouse are connected to the relay board (the lower board), with the method described on the following pages. The circuitry contained inside the housing, to the right, is the power circuitry, which contains potentially hazardous AC power. There is no reason to access this side of the controller for normal setup or operation.

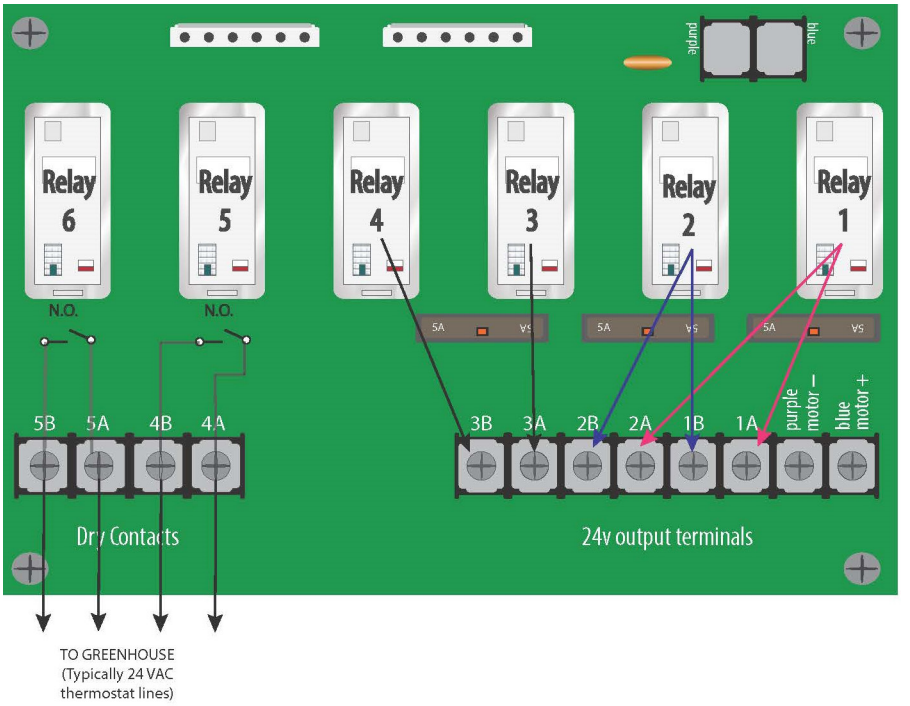


OVERVIEW

The relay board pictured on the next page contains ten output terminals configured in three basic ways.

- Terminals 1, 2, and 3 are configured in pairs, with a 24 volt DC output to drive motors or actuators toggled between the A and B terminals. This is done because the motors are run in both the forward and reverse direction to open and close curtains or vents. When 24 volt DC is applied to the A terminals, the devices will run in one direction, and when it is applied to the B terminals, they will run in the other direction. Terminal pairs 1 and 2 are controlled together for two separately fused motors performing the same function, such as the rolling up and down of two side curtains. Terminal pair 3 is controlled separately for a second motor function, such as a ridge vent.
- Terminal pairs 4 and 5 are two sets of normally open dry relay contacts to provide contact closure for functions such as a heater, fan, or light control. Alternatively, each pair can be wired by the installer to provide a 24 volt DC output to drive a relay or a contactor.
- If only one motor control channel (terminal sets 1 and 2 operate as one control channel but drive two separate motors simultaneously) is needed, the A and B terminals in pair 3 can be designated by the controller to provide 24 volt DC output to drive relays in a contactor for controlling fans or other accessories. Likewise, if no motor controls are needed, terminals 1A and 2A (operating simultaneously) and 1B and 2B (operating simultaneously) can be designated by the controller to provide 24 volt DC to drive relays in a contactor for controlling fans or other accessories.

OVERVIEW


purple
blue
Relay 6
Relay 5
Relay 4
Relay 3
Relay 2
Relay 1
N.O.
N.O.
5A
5A
5A
5B
5A
4B
4A
3B
3A
2B
2A
1B
1A
purple motor –
blue motor +
Dry Contacts
24v output terminals
TO GREENHOUSE
(Typically 24 VAC
thermostat lines)

OVERVIEW

Relays 1 and 2 operate terminals 1A through 2B. When either relay is active (green light appears on relay), it is applying 24 volt DC to its pair of terminals. When either relay is not active (no green light), it is holding its terminals at 0 volts.

- If a vent is assigned (using the configuration menu), the relays will alternately place 24 volt DC on the A and B terminals, to provide forward and reverse motor or actuator action to open and close vents. Terminals 1A/B and 2A/B operate simultaneously and identically but are separately fused to control two separate devices, such as two side curtains.
- If no vents are assigned, relays 1 and 2 use their corresponding terminals to provide a 24 volt DC output signal to control external relays such as are found in Advancing Alternatives contactor box 42-CB4.

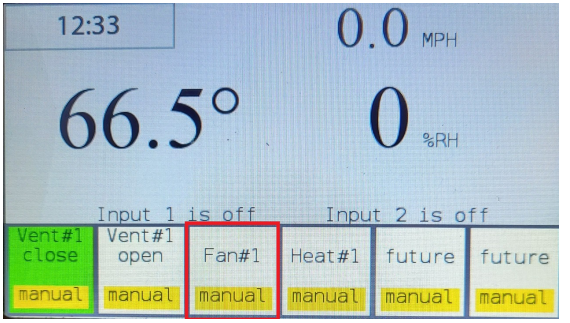
Relays 3 and 4 apply 24 volt DC to their respective terminals when activated (green light on relay) and hold them at 0 volts when not activated (no green light). If two vent channels are assigned (using the configuration menu), terminals 3A and 3B become the connection point for vent #2. In this case the relays will switch 24 volt DC alternately to terminals 3A and 3B to provide forward and reverse operation of a motor or actuator. If fewer than two vent channels are assigned, terminals 3A and 3B are independently operated by their relays, providing a 24 volt DC output to control external relays such as are found in Advancing Alternatives contactor box 42-CB4.

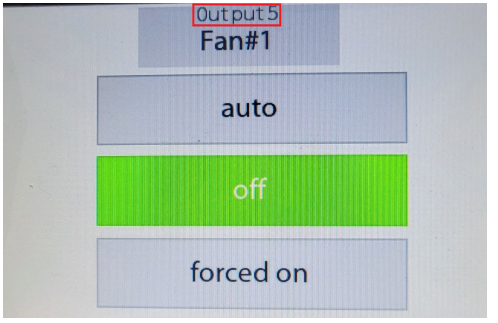
It can be seen that terminals 1A through 3B can be used, through proper settings in the configuration menu, to control up to three motors/actuators (two independently) or three independent 24 volt DC relay output signals, or a combination of these.

Relays 5 and 6 provide dry contact closures, normally open, to terminal pairs 4 and 5. The green light in the relay signals that the contacts are closed. These contacts are for low voltage signals, typically a 24 volt AC thermostat signal, and are neither intended not sufficient for AC power. AC power should never be connected to these or any terminals inside the controller.

OVERVIEW

Contact locations are assigned by the controller during user configuration. Vent assignments are for motors or actuators. The first assigned device(s) is assigned to terminals 1A/1B and 2A/2B and will have the designation “Vent #1”, or, if no vents are assigned, “Fan #1”. This is where devices that work in pairs should be connected since there are two sets of terminals operating together, each with its own circuit breaker. If two vent functions are assigned (such as side curtains and a ridge vent or vents in two different temperature zones), the second one, designated as “Vent #2”, is assigned to terminals 3A/3B. To view the location of further device assignments, pressing the device’s function key on the screen will display the location as shown in the figures below. Note that the output designation refers to the relay utilized, not the terminal number. Refer to the previous figure for terminal designation.





OVERVIEW

The table below shows the capacity of the controller for various combinations of assets.

Motor Controls (Forward and Reverse)	24 Volt DC Outputs to Drive Relays	Dry Contacts (Can Also Be Wired to Provide 24 Volt DC Output to Drive Relay)
1	2	2
2	0	2
0	3	2

INSTALLATION

The following section will guide installation. Visit our website at www.advancingalternatives.com or the appendix of this manual for further help if needed in the installation or troubleshooting of your system.

Locating the AegisTEC

Consider the following before installing the AegisTEC:

- Protect the enclosure from moisture. Mount it in a secure and dry place.
- Use watertight cable glands and only drill holes in the bottom of enclosure.
- Drilling holes into the top or sides of the enclosure voids the warranty.
- Secure using the included mounting brackets and properly sized screws or bolts.
- Place in a location where sensor and motor wires can be easily connected.

Locating the Temperature Sensor

Place the temperature sensor in the middle of the structure and at a height that best represents the average temperature at crop level. Secure temperature sensor wire to purlins or trusses using cable ties.

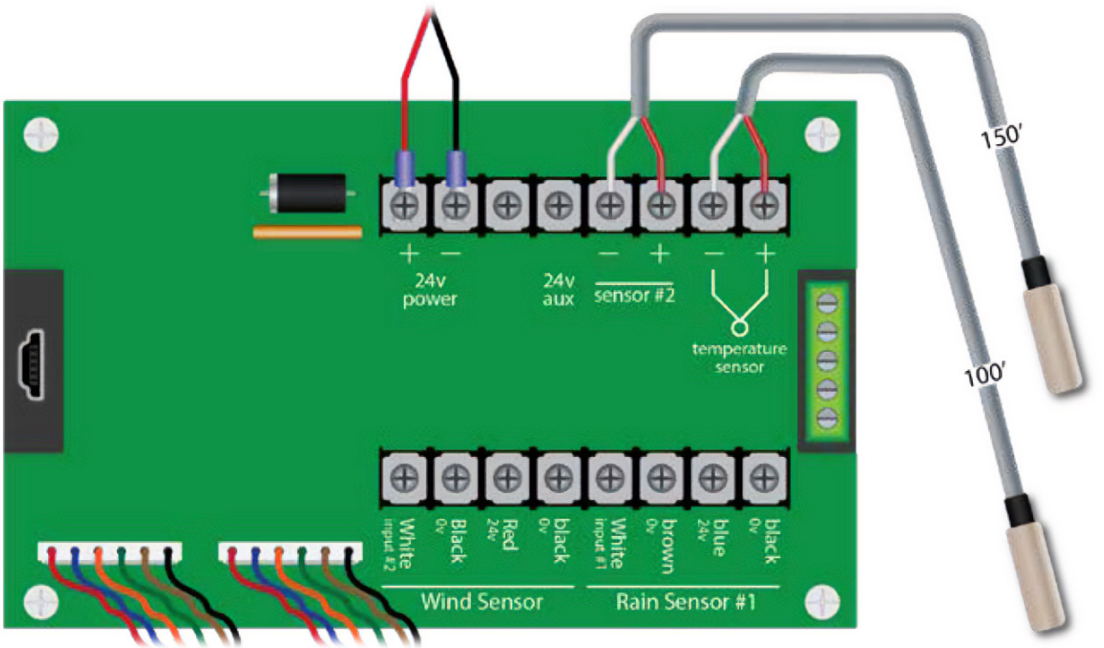
Do not splice temperature sensor wires! 150’ temperature sensor wires are available. Improperly extending the temperature sensor wire will void the warranty.

Keep the temperature sensor wire away from high voltage wires by at least one foot.

INSTALLATION

Connecting the Temperature Sensor

Connect the sensor wires to the terminals labeled “temperature sensor”. The temperature sensor has two wires. Connect the red wire to the positive terminal and the white wire to the negative terminal. Secure but do not overtighten (3 in-lb max). If the optional second temperature sensor is used, attach the wires in the same manner as above but connected to the sensor #2 terminals.

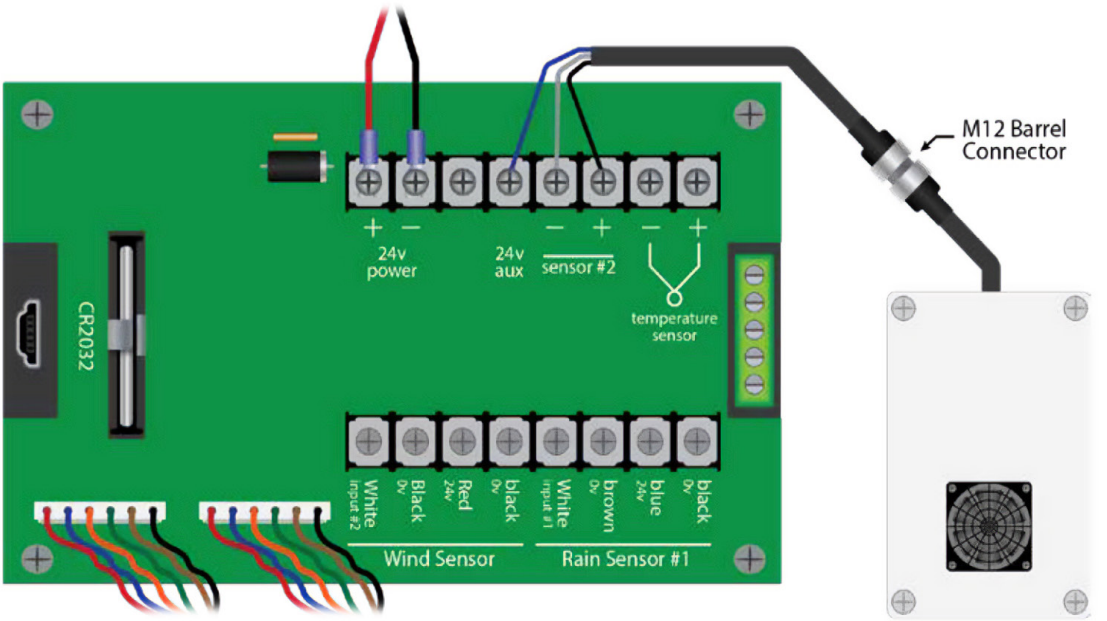


INSTALLATION

Connecting the Humidity Sensor

Place the humidity sensor in the middle of the structure and at a height that best represents the average humidity at crop level. If you have the optional second temperature sensor installed, you must remove it before installing the humidity sensor wires. Do not reconnect the optional second temperature sensor; it cannot be used in conjunction with the humidity sensor. The humidity sensor has three wires. Connect the blue wire to the 24 volt aux terminal, the gray wire to the sensor #2 negative terminal, and the black wire to the sensor #2 positive terminal.

Do not install the humidity sensor below or beside misters or drip lines. Keep the sensor away from hight voltage wire by at least one foot.



INSTALLATION

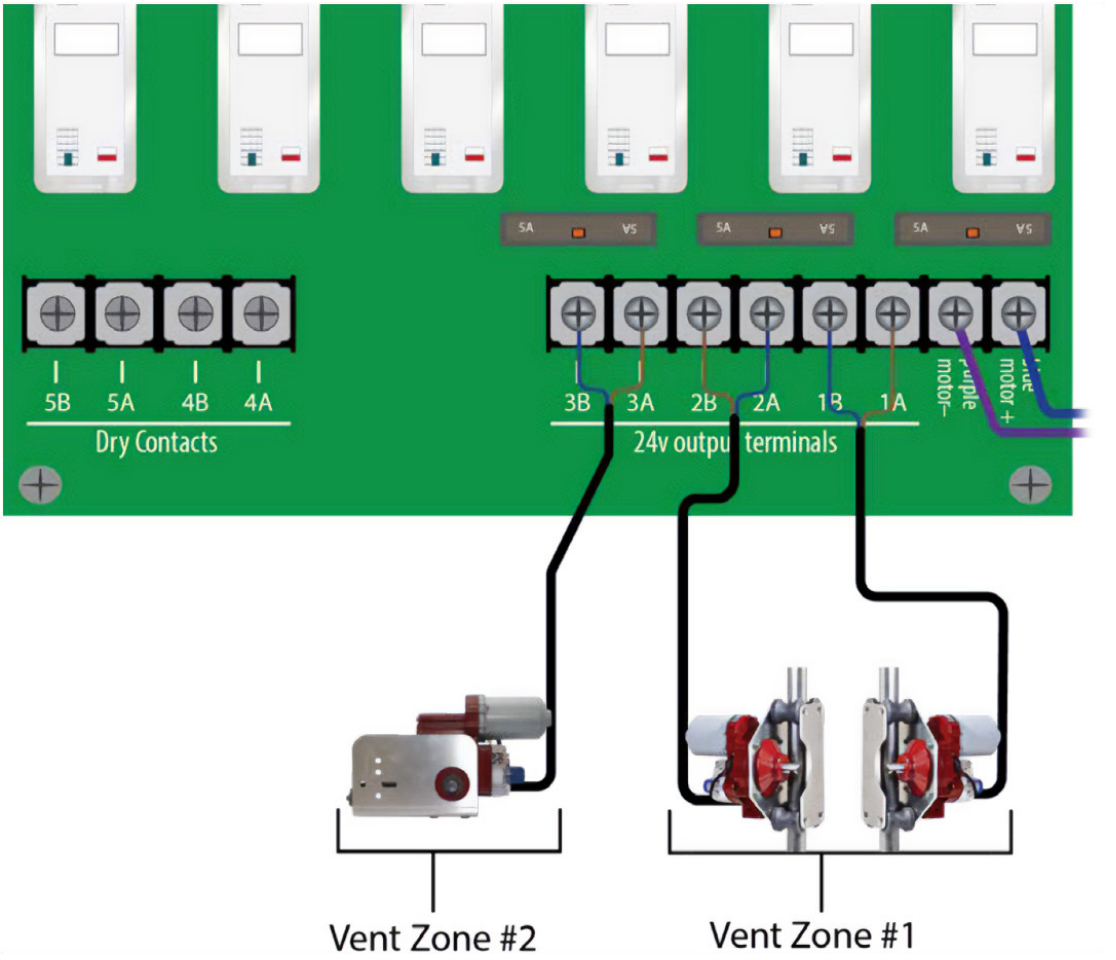
Connecting the Low Voltage Ventilation Motors

The AegisTEC includes a 350 watt, 14.5 amp, 24 volt DC power supply. It is prewired to operate three 24 volt DC ventilation motors. Vent zone #1 will operate motors #1 and #2 (terminals 1 and 2) simultaneously. Vent zone #2 will operate motor #3 (terminal 3). A 5 amp circuit breaker protects each motor. Replacing the 5 amp circuit breakers with those of a larger amp rating can damage your structure and will void the motor warranty.

Connect motors directly to the control board as shown. A diagram has been included to show the correct wire connection to obtain the proper rotation of the motor.

Looking from the gable end of your greenhouse, determine which wires correspond to the right motor and which correspond to the left one. Rotation direction to open the curtain is opposite on each side. The right side motor, when looking directly at the limit switches, requires a counterclockwise rotation to open the curtain. Connecting the right motor's blue wire to terminal 1b and the brown wire to terminal 1a achieves the counterclockwise rotation needed to open the curtain. Proper motor wire connections ensure that the motor operates in the correct direction when the manual open mode is active or when in auto mode. See motor instructions for information to set limit switches.

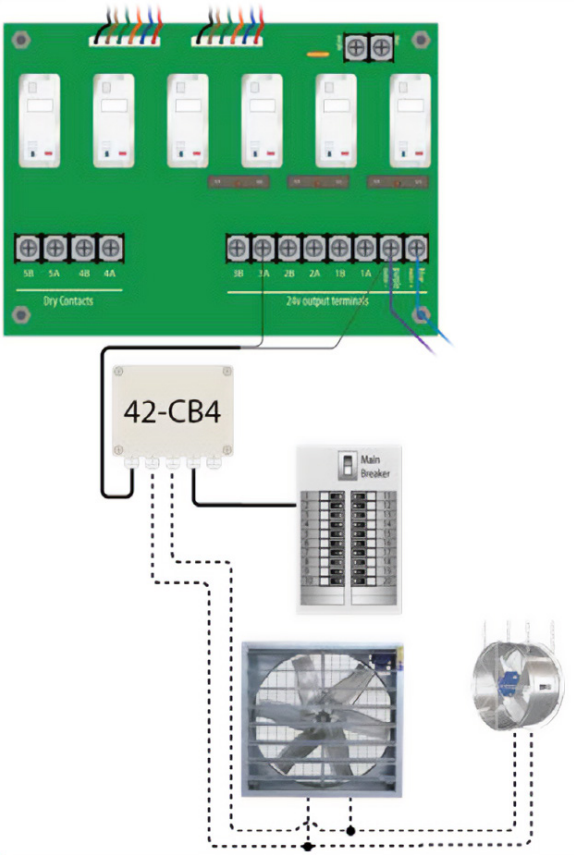
INSTALLATION



INSTALLATION

Connecting the Fans

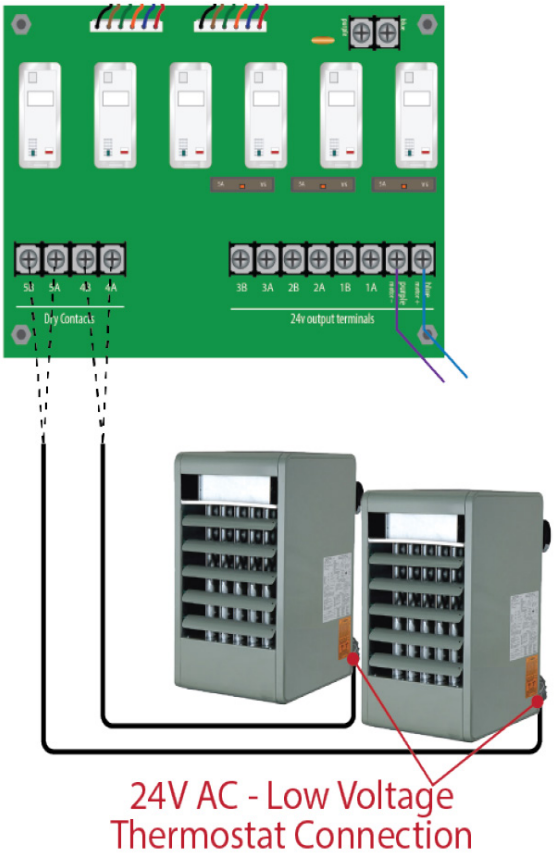
The AegisTEC thermostatically and humidistatically controls horizontal air flow and exhaust fans. Do not directly connect the 110/220 volt AC fan wires to the control board. A high voltage connection can cause a fire risk and void the warranty. The connection is made using our contactor box (e.g., 42-CB2, 42-CB4). Terminals 3a and 3b are 24 volt DC output terminals. Terminals 4a - 5b are dry contacts and require additional wiring to provide a signal to activate the contactors. The drawing below illustrates the layout of the fan circuit. Connect your fans using the wiring diagram included in the 42-CB4 instruction sheet.



INSTALLATION

Connecting the Heaters

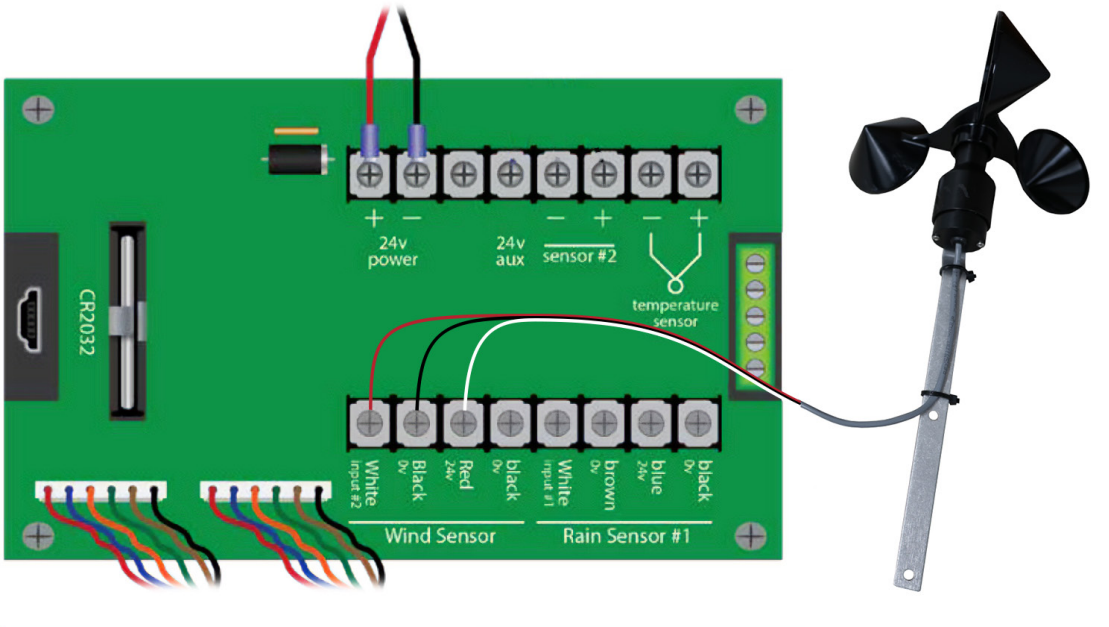
The AegisTEC thermostatically controls heaters. Do not directly connect the 110/220 volt AC heater wires to the control board. A high voltage connection can cause a fire risk and void the warranty. Heaters produce their own 24 volt AC signal using an internal transformer. Heater thermostat wires must connect to dry contact terminals 4a-5b. Do not connect heater thermostat wires to 24 volt DC powered terminals 1a-3b, as doing so permanently damages the controller and voids the warranty. The drawing below illustrates the connection of the heater thermostat wires to dry contact terminals 4 and 5.



INSTALLATION

Connecting the Anemometer

The anemometer is used to close curtains in high wind conditions. It has three 18-24 gauge AWG wires that connect to the wind sensor terminals. Connect the red wire to the 24 volt positive terminal, the white wire to the input #2 terminal, and the black wire to the 0 volt negative terminal.

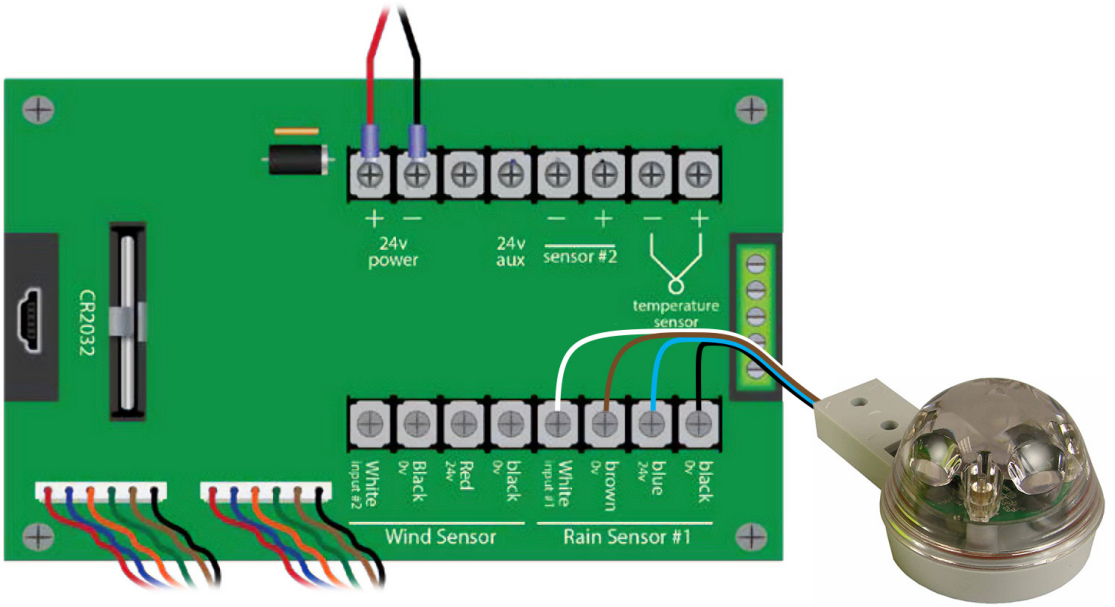


INSTALLATION

Connecting the Rain Sensor

The rain sensor detects water droplets on the lens. Mount the sensor on the structure at a height relative to the desired sensitivity, with a higher sensor less sensitive than a lower one. Match the rain sensor wire to the corresponding terminal by color.

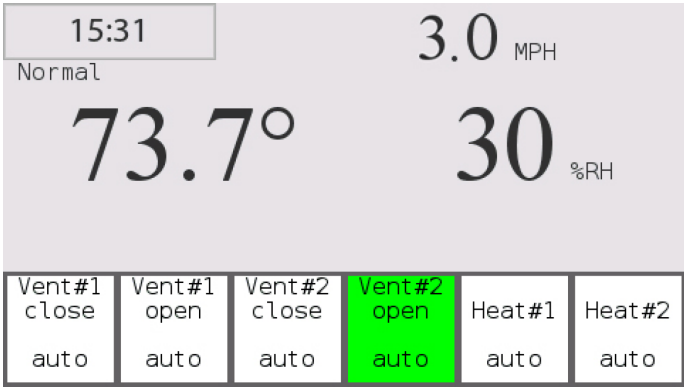
Keep the sensor wire away from high voltage wires by at least one foot.



SYSTEM SETUP

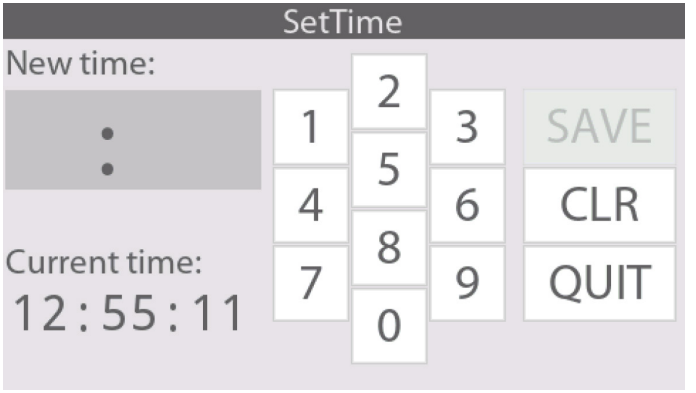
Main Screen

The main screen shows the status of the controlled zone. You can see the temperature and the status of the relays. Touch the center of the screen to access the settings menu. Touch the bottom row of buttons for manual overrides.



Setting the Clock

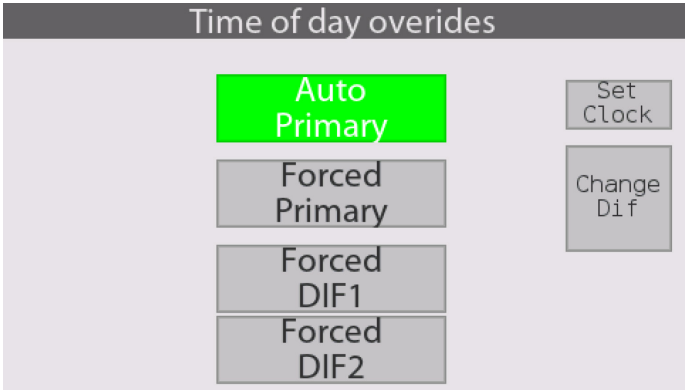
In the settings menu, touch the Clock button to enter the Set Time function. Set the current time using the input keyboard.



SYSTEM SETUP

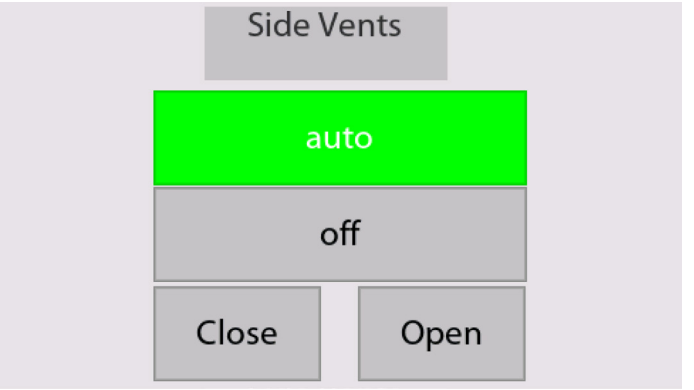
Overrides

The general override buttons allow you to override any timed setting.



Relay Overrides

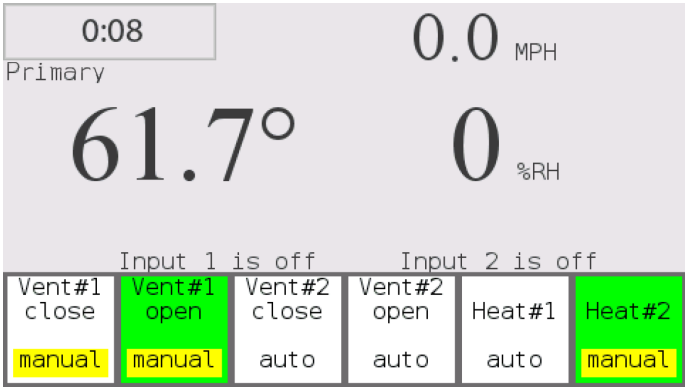
By touching the relay buttons on the main screen, you can access individual manual control, where you can select the relay status you want. In auto mode, the controller will perform as configured. Selecting the off button or one of the forced buttons allows you to manually override the auto settings. To exit, touch the area on either side of the buttons.



SYSTEM SETUP

DIF Overrides

DIF allows you to create alternate temperature setpoints during a 24 hour period. A typical DIF technique drops the temperature in the morning hours. A second DIF period could be used to amass solar energy before sunset. The control status is displayed under the clock as either Primary, DIF, or LiDep. Touch the clock in the top left corner of the display to change the DIF/LiDep or clock settings.



Configuring the Controller

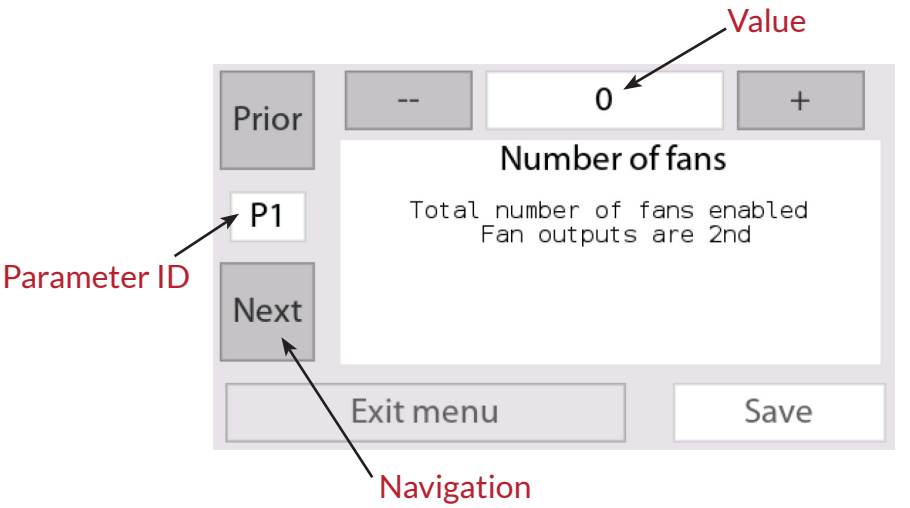
The configuration menu is where outputs and inputs are entered. Before attempting to establish the configuration settings, you should have a clear knowledge of your installed accessories. It may be helpful if you write out a list of everything that you have connected, considering the following:

- Number of vents, heaters, fans, lights, and light deprivation curtains.
- Roll-ups and ridge vents are considered “vents”; other cooling devices are considered “fans”.
- Number of temperature sensors, which may be used to establish separate temperature zones if desired.
- Other sensors that are connected (wind, rain, humidity).

SYSTEM SETUP

Read through the manual to familiarize yourself with the available functions and have a plan that you will enable through the configuration menu and system settings. It is important, when setting parameters or making changes in the menu, to always touch “Save” before moving to the next parameter.

By touching the center of the main screen, you will access the settings screen. To enter configuration settings, touch the “Config” key, step through the menu with the navigation keys, and enter settings with the “+” and “-” keys, remembering to enter “Save” after each setting is correct. You can navigate forward and backward through the steps to make changes if you make an error. When you have entered all the parameters, touch “Exit menu”, which will restart the controller with your saved settings. If you have made errors, you can re-enter the menu, step to the incorrect parameter(s), change it, enter “Save”, and “Exit menu”. The controller will restart with your corrections in place.



SETTINGS

Configuration Setup

ID	Description	
P0	Vent channels each operate a 24 volt DC motor and use two output terminals per channel in order to run the motors in both directions. Low voltage rotary gear motors for curtain vents and low voltage linear actuators to lift hinged vents are controlled as vent channels. Louvers are controlled as fans, not vents, unless they are operated by a low voltage linear actuator.	Min - Max 0 - 3
		Default 2
P1	Set for the total number of cooling devices. Cooling devices include fans, louvers (except for louvers operated by a low voltage DC actuator, which are configured as vents), and other cooling accessories such as evaporative curtains.	Min - Max 0 - 6
		Default 0
P2	Enable grow lights	0
P3	The controller is set up to allow separate control of up to two heaters. Heaters are normally controlled through a thermostat line connected to dry relay contacts. Outputs 4 and 5 are provided as dry contacts for heaters.	Min - Max 0 - 4
		Default 2
P6	This sets the time period over which wind speed is averaged to avoid initiating actions due to short gusts. This varies depending on local climate and greenhouse characteristics. 1-3 minutes is a good starting point that can be adjusted based on observation.	Min - Max 1 - 5
		Default 3

SETTINGS

ID	Description	
P7	This sets the number of rotations needed for the wind sensor to calculate the wind speed. Set to 25 for miles per hour or 17 for kilometers per hour.	Default 25
P10	Use this to set the type of sensor you have connected as a second sensor. 0 = none | 1 = humidity | 2 = amps | 3 = temperature	Default 0
P18	This establishes which curtains respond to the second temperature sensor if it is being used. The designated curtain and all subsequently numbered curtains will respond to the second temperature sensor. Set to 0 to control no curtains with the second sensor. (Second sensor must be enabled)	Default 0
P19	This sets the maximum seconds the vent motors will close for rain or high wind.	Default 250
P20	Used to enable DIF growing technique.	0
P21	Enable Light Dep.	0
P25	Is the anemometer connected to input #2?	Default 0
P26	This enables a high temperature setting to turn the fans off. This is to avoid running fans when the temperature is beyond their ability to provide cooling. For instance you may have smaller fans that need to turn off when larger fans turn on.	Default 0

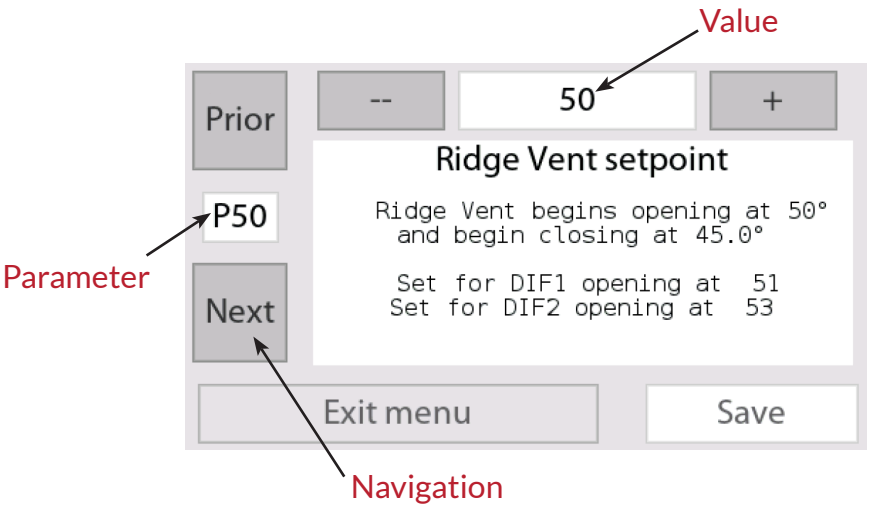
SETTINGS

ID	Description	
P28	The controller factory default is set to Fahrenheit. Set this to 1 if Celsius is desired.	Default 0
P29	Temperature alarm enabled (external alarm required)	0
P30	Use this screen ONLY if you suspect a problem with the configuration and want to start over. This will erase all your settings and revert to the factory settings when the unit was new. Set to 0 and reboot to initiate the reset.	
P34 - P39	This determines whether the specific fan (1-6) should turn off if a certain input is on. Set to 0 if you do not want the fan to turn off for any input. 1 = off if input #1 is on | 2 = off if input #2 is on	Default 0
P40 - P42	Choose which rain sensor input number the specific curtain (1-3) is controlled by.	Default 0
P43	In addition to the humidity output terminal, one vent can be set to respond to humidity. Select the vent that should respond. Set to 0 if you do not want any vent to respond to humidity.	Default 0

SETTINGS

Zone Parameter Setup

By touching the center of the main screen, you will access the settings screen. The system settings menu is where input values are assigned to the environmental systems to be controlled. What is visible in this menu is based on the information entered into the configuration menu. In system settings, you will enter values of time, temperature, humidity, wind speed, etc. When making changes in the menu, touch “Save” before moving to the next parameter. Following is a table of the system settings parameters and their default values.



SETTINGS

Curtain Settings

ID	Description	
P47	Rain or Wind Override Event	2
P49 - P51	When the greenhouse temperature reaches the setting entered here, the specific vent (1-3) will open. The closing temperature is related to the opening temperature by the ventilation temperature gap entered in P60.	Min - Max 1° - 99°
		Default 60°
P52 - P53	This is the setpoint temperature for the specific vent (1-2) during the differential time period in P126 and P127. (P20 must be enabled)	Default 61° - 62°
P55 - P56	This is the setpoint temperature for the specific vent (1-2) during the differential time period in P130 and P131. (P20 must be enabled)	Default 62° - 72°
P58 - P61 - P62	The vents will open in stages. The vent will open for the number of seconds entered here, stop, and wait for the number of minutes entered in P59. At that point, if the desired temperature has been reached, the vent will remain in its position. If the desired temperature has not been reached, the vent will open further for the number of specified seconds. It will repeat this cycle until the desired temperature is reached or the vent has fully opened. The same cycle will be repeated when closing.	Default 15

SETTINGS

ID	Description	
P59	This is how long the vent will wait in minutes as described in P58.	Default 2.0
P60	This is the difference in between the temperature that causes the vent to open and the temperature that causes it to close. Setting this too low causes the vents to open and close unnecessarily. 5° is a good starting point. It can be adjusted after observing the greenhouse performance and operation.	Default 5°
P69	This is the humidity at which the curtain will open to dry things.	
P70	This is the number of seconds the curtain will open for the humidity event. (Humidity sensor must be enabled).	
P71	The humidity event will be ignored if the temperature is below this setpoint. (Humidity sensor must be enabled).	
P75 - P76	Use this to determine whether the specific vent (1-2) should wait to close for rain or high wind until another has activated.	
P83	Select which vents will close from high wind speeds. 0 = none | 1 = #1 | 2 = #1 and #2 | 3 = all three (P25 must be enabled)	Default 0

SETTINGS

ID	Description	
P84	Set this to the wind speed that should cause vent closure. There is a separate setting (P85) for the wind speed that allows the vents to reopen. This assumes the connection of an anemometer.	Default 20
P85	Set this to the speed to which the wind must reduce for the vents to reopen. The difference between close and open speeds should be great enough to avoid unnecessary cycling of the vents. This varies according to greenhouse characteristics and local climate.(P25 must be enabled)	Default 12
P126	This sets the time at which the first time differential begins. Note that the 24 hour time format is used, i.e. 3:00 PM = 15:00. Greenhouse settings will switch to those specified for the DIF1 time period.(P20 must be enabled).	Max 23:56
P127	This is the time that ends the first differential time period. Settings will revert to the normal daily settings.(P20 must be enabled).	Max 23:56
P130	This sets the time at which the second time differential begins. Note that the 24 hour time format is used. Greenhouse settings will switch to those specified for the DIF2 time period.	Max 23:56
P131	This is the time that ends the second differential time period. Settings will revert to the normal daily settings.	Max 23:56

SETTINGS

Fan Settings

The fan temperature parameters control the starting temperature. The fans are used for cooling. They will turn on above the temperature setpoint. If humidity is connected, fan #1 can be set to clear out the high humidity.

ID	Description	
P89 - P94	This sets the temperature at which the specific fan (1-6) will turn on. The shut off temperature is determined by P107. If a differential time is set, this screen also displays the settings during the differential period.	Min - Max 1° - 99°
		Default 60° - 66°
P95 - P100	This sets the specific fan's (1-6) start temperature during the first differential time period. The shut off temperature is determined by P107. This screen also displays the temperatures that are set for the normal daily setting and the second time differential time period if there is one.	Min - Max 1° - 99°
		Default 60° - 75°
P101 - P106	This sets the specific fan's (1-6) start temperature during the second differential time period. The shut off temperature is determined by P107. This screen also displays the temperatures that are set for the normal daily setting and the first time differential time period.	Min - Max 1° - 99°
		Default 70° - 71°

SETTINGS

ID	Description	
P107	This sets the difference between the temperature that the fans turn on and the temperature at which they turn off. If this is set too low, the fans will cycle on and off unnecessarily. 6° is a good starting point. The best setting varies based on greenhouse characteristics and local climate and can be adjusted based on observation and experience.	Default 0.5
P111	Fan #1 can be set to run to reduce humidity. Set this to the humidity level that causes the fan to turn on. This assumes the connection of a humidity sensor. Set to 101% to deactivate.	Default 99% RH
P112	This sets how much the humidity must decrease for the fan to turn off. 5% is a good starting point which can be adjusted based on observation. This assumes the connection of a humidity sensor. Set to 101% to disable humidity function.	Max 101%
		Default 5%
P113	Set to the temperature below which there is no need for the fan to reduce humidity. This assumes the connection of a humidity sensor.	Default 32°

SETTINGS

Heater Settings

These parameters control the starting temperature for the heaters. The heaters can be controlled by the DIF function.

ID	Description	
P161 - P164	This sets the temperature at which the specific heater (1-4) will turn on. The shut off temperature is determined by P178. If a differential time is set, this screen also displays the settings during the differential period.	Min - Max 1° - 100°
		Default 60° - 61°
P166 - P169	This sets the specific heater's (1-4) start temperature during the first differential time period. The shut off temperature is determined by P178. This screen also displays the temperatures that are set for the normal daily setting and the second time differential time period if there is one.	Min - Max 1° - 100°
		Default 60° - 61°
P172 - P175	This sets the specific heater's (1-4) start temperature during the second differential time period. The shut off temperature is determined by P178. This screen also displays the temperatures that are set for the normal daily setting and the first time differential time period.	Min - Max 1° - 100°
		Default 70° - 71°
P178	This sets the gap between the temperature that the heaters turn on and the temperature that they turn off. Setting this too low will cause the heaters to cycle unnecessarily. 4-5 degrees is a good starting point that can be adjusted after observation.	Default 2.0°

APPENDIX

Connecting Accessories to a Greenhouse Controller

There are various types of accessories connected to a greenhouse controller. This is a summary of the basic connection types for different accessories.

Fans, AC Powered Louvers, and Other AC Powered Accessories

Most greenhouse controllers do not switch AC power. The switching of power is handled by a separate box referred to as an “interface box” or “contactor box”. The greenhouse controller is programmed to send a signal to the interface box when it wants a certain accessory to be activated. The contactor box responds by switching the power on to the appropriate unit, such as a fan or AC controlled louver. For a more detailed explanation, see “Understanding Interface Boxes”, as well as relevant product manuals.

Low Voltage DC Accessories

Roll-up curtains and roof vents are typically operated by 24 volt DC motors, or “linear actuators”, which are essentially DC motors that drive a piston/shaft forward and backward to push open a vent. These 24 volt accessories can be operated directly from most controllers. They require two terminal connections, since the polarity of the DC voltage must be reversed to cause the drives to operate in the forward and reverse (open and close for vents) directions. There are also interface boxes with special capability to drive DC motors for expanded capability. These are also explained in “Understanding Interface Boxes”, as well as relevant product manuals.

APPENDIX

Heaters

Heaters are not typically controlled by switching AC power, which is not a capability of the controller in any case. Instead, heaters typically have a thermostat line. The heater is turned on by completing a connection between the two thermostat wires. Therefor, the controller has “dry contacts” to accomplish this. A set of dry contacts is simply a pair of terminals that are connected through a relay contact. When the relay is operated, contact is made between the two terminals to which the thermostat line is connected, turning on the heater.

Understanding Interface Boxes

Advancing Alternatives provides a range of interface boxes to allow a controller to operate virtually any greenhouse accessory. Interface boxes are used to control accessories that are beyond the capacity or capability of an environmental controller. They receive a signal from the controller and respond by activating various accessories consistent with the design of the particular interface box being used.

- Some interface boxes are designed to control accessories that operate from 120 volt AC or 240 volt AC. This is because the environmental controllers are not designed of intended to handle AC power. The controller is configured to send a 24 volt DC signal to the interface box, containing relays or contactors which, when energized by the 24 volt signal, apply AC power to the accessory designated when setting up the controller configuration. The line of “CIBAC” units are designed for various combinations of AC powered accessories, and the simple 42-CB2 and 42-CB4 are inexpensive options for applications with the need to control only one or a few AC accessories.
- Interface boxes designed to control low voltage ventilation motors contain a built-in DC power supply. Some of these units have controls on the front panel to allow manual control of motors when desired or can be set in the “AUTO” position, which reverts control to the environmental controller.

Innovate. Grow. Advance.

ADVANCING ALTERNATIVES

Always wear appropriate protective equipment in accordance with OSHA regulations and follow common sense practices at all times.

READ THROUGH ALL INSTRUCTIONS BEFORE ATTEMPTING TO INSTALL

ALWAYS WEAR PROPER PROTECTION

ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED, LICENSED ELECTRICIAN. ALL CONNECTIONS MUST BE MADE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES

Technical support

info@advancingalternatives.com • advancingalternatives.com