

STANDARD CONTROLLER MANUAL

The standard controller has many features that may or may not be required for all applications. The standard controller has been programmed at the factory with default settings for immediate system operation.

Note: The instructions listed below are for the latest software version: 1. 5. 2

Please review the following default settings:

- | | |
|--------------------------------------|---------------------------------|
| 1. Cooling system on temperature | 80°F (27°C) |
| 2. Heating system on temperature | 50°F (10°C); (Optional) |
| 3. High enclosure temperature alarm | 131°F (55°C) |
| 4. Low enclosure temperature alarm | -20°F (-28.8°C) |
| 5. Audible and Visual alarm | ON |
| 6. Power off alarm (POA) | OFF |
| 7. Digital display in degrees | Fahrenheit |
| 8. Filter maintenance alarm | 0 days |
| 9. Heat installed | On/Off; (Optional) |
| 10. Power on relay (Por) | On |
| 11. High condenser temperature alarm | 170°F (76°C) (No adjustability) |



Figure 1: Standard Controller

PROGRAMMING

To change the factory default settings, enter the programming code sequence below:

"1" arrow
 "2" arrow
 "3 NEXT"
 "4 EXIT"

- After pressing the above sequence the "PROGRAM" LED illuminates and the display scrolls "ProG", indicating the code was accepted. If no selection is made within 3 minutes, the controller returns to normal operating mode.

Note: Pressing the "4 EXIT" button at any time while in the programming mode saves the changes and returns to normal operating mode.

- Press the "3 NEXT" button to continue programming. The set temperature "HIGH" LED illuminates and the "COOL" LED will flash indicating the 'cooling on' setpoint. The compressor and condenser blower/fan will begin operation at this temperature and will remain operating until the enclosure temperature decreases approximately 7°F (4°C). Press the "1" or "2" arrow until the desired setpoint is displayed. The range for this adjustment is 77°F to 124°F (25°C to 51°C).

3. If the unit does not have heat, go to step 4 (heat is not applicable to all units). Press the **"3 NEXT"** button to continue. The set temperature "LOW" LED illuminates and the "HEAT" LED will flash indicating the 'heating on' setpoint. The heating system will begin operation at this temperature and remain operating until the enclosure temperature increases approximately 7°F (4°C). Press **"1"** or **"2"** arrow until the desired setpoint is displayed within a range of -4°F to 63°F (-20°C to 17°C).
4. Press the **"3 NEXT"** button to continue. The set alarm "HIGH" LED illuminates and the "COOL" and "ALARM" LED will flash with the display indicating the high temperature alarm setpoint, which is factory set to 131°F (55°C). The alarm will activate at this temperature and will automatically reset at 2°F (1°C) below this temperature. Press **"1"** or **"2"** arrow to change the high temperature alarm setpoint, which should be at least 20°F (11°C) above the 'cooling on' setpoint when applicable. The range of adjustability is 87°F -131°F (31°C to 55°C).
5. Press the **"3 NEXT"** button to continue. The set alarm "LOW" LED illuminates and the "HEAT" and "ALARM" LED will flash with the display indicating the low temperature alarm setpoint, which is factory set to -20°F (-29°C). The alarm will activate at this temperature and will automatically reset at 2°F (1°C) above this temperature. Press **"1"** or **"2"** arrow to change the low temperature alarm setpoint, if heat is installed the low temperature alarm setpoint should be at least 10°F (5°C) less than the 'heating on' setpoint. The range of adjustability is -20°F to 43°F (-29°C to 6°C).
6. Press the **"3 NEXT"** button to continue. The "ALARM" LED will flash, and the display will show "ALL" indicating the "ALL" alarm on/off status. Press **"3 NEXT"** button and the display will show either "ON" or "OFF", indicating current alarm status. Press **"1"** or **"2"** arrow to toggle to the mode desired. If the "OFF" mode is selected, no alarms will activate and the audible on/off select and POA (Power Off Alarm) functions are disabled, move to step 9.
7. Press the **"3 NEXT"** button to continue. The display will scroll **"Audible"**, indicating the audible alarm on/off status. Press **"3 NEXT"** button and the display shows "ON" or "OFF" indicating the current audible alarm status. Press **"1"** or **"2"** arrow to toggle to the mode desired.
8. Press the **"3 NEXT"** button to continue. The "ALARM" LED will flash, and the display will show "POA", indicating the Power Off Alarm status. This alarm is activated when the power on relay (Por), which serves as a manual shutoff, is turned off. Press **"3 NEXT"** button and the display shows "ON" or "OFF" indicating the current alarm status. Press **"1"** or **"2"** arrow to toggle to the mode desired.
9. Press **"3 NEXT"** button to continue. The "°C" LED will flash, and the display will show either "-F-" for degrees Fahrenheit or "-C-" for degrees Celsius. Press **"1"** or **"2"** arrow to toggle to the mode desired.
10. Press the **"3 NEXT"** button to continue. The display will show "Pin". To set a new user PIN code, press the **"1"** arrow. The display will flash "-4-", prompting an entry of a four button/arrow sequence using the **"1"**, **"2"**, **"3 NEXT"**, and/or **"4 EXIT"**. Any sequence of the four buttons/arrows may be programmed as the code. As the buttons/arrows are pressed, the display will show the number that was pressed then flashes "-4-". After the fourth button/arrow is pressed the code will save and the next setting will be displayed, see the next step.

To program the no PIN code mode, press **"2"** arrow and the display will show "0", indicating no PIN code. With no PIN code, pressing any button will permit access to the program. Press **"3 NEXT"** button to move to the next step.

CAUTION: Always record the selection sequence (pin code) and store in a secure place.

11. The "FILTER" LED flashes and the display will scroll "FILTEr daYS", indicating the filter alarm day quantity selection. Press **"3 NEXT"** button and the display will show the number of days that the alarm is set to which are in half day increments. (Example: 10.5 indicates that the alarm will activate every ten and a half days or 252 hours.) Press the **"1"** or **"2"** arrow to vary the desired number of days. Programming "0" days will disable the alarm.

Note: The required number of days to set this alarm will be determined by the ambient conditions. If rain or wash down hoods are installed on the system, no filter is supplied, and the filter alarm should be set to "0". This will disable the filter alarm.

12. Press the **"3 NEXT"** button to continue. The "HEAT" LED will flash, and the display will scroll "HEAt", indicating the optional heating function. Press the **"3 NEXT"** button and the display shows "ON" or "OFF", indicating the current on/off status. Press **"1"** or **"2"** arrow to toggle the mode desired.

13. Press the **"3 NEXT"** button to continue. The "COOL", "HEAT", "ALARM", and "FILTER" LEDs will flash, and the display will show "Por", indicating the power on relay status, which serves as a manual shutoff. Press the **"3 NEXT"** button and the display shows "ON" or "OFF", indicating the current power on relay status. Press **"1"** or **"2"** arrow to toggle the mode desired. This should almost always be set to "ON".

Note: Some fans may remain functioning for some time after this setting is off and the crankcase heater can remain operational (if equipped).

CAUTION: In this mode certain parts of the system may still be energized. This does not replace disconnecting the unit from power during service. If servicing the unit, de-energize the power supply and lock out.

14. Programming of the controller is now complete. Press the **"3 NEXT"** button to review all the settings. The display will scroll "ProG". Press the **"3 NEXT"** button to review each setting. Press **"4 EXIT"** button to use the selected settings and return to the normal operating mode. The "PROGRAM" LED will now turn off.

ALARM OPERATION

1. The enclosure temperature is above or below the alarm setpoint:

The "ALARM" and either the set alarm "LOW" or "HIGH" LED illuminate, the display flashes the temperature, and the audible alarm sounds (if activated). The enclosure temperature must rise or fall 2°F (1°C) before the alarm resets.

2. The condenser temperature is above the condenser alarm setpoint:

The "ALARM" LED illuminates, the display flashes the condenser temperature, and the audible alarm sounds (if activated). The condenser temperature must fall 4°F (2°C) before the alarm resets.

3. The filter day timer has expired:

The "ALARM" and "FILTER" LED illuminate, the display alternates between scrolling "FILtEr daYS" and the enclosure temperature, and the audible alarm sounds (if enabled). The **"4 EXIT"** button clears the alarm and restarts the timer.

4. The power on relay (Por) is turned off:

The "ALARM" LED flashes, the display flashes "OFF", and the audible alarm sounds (if enabled), indicating interrupted power to the unit's electrical circuits. This alarm will be reset when the power on relay (Por) has been programmed to "ON", see step 13 above.

5. Sensor malfunctions ("ALARM" LED flashes and the audible alarm sounds (if enabled)):

E-O:	Evaporator sensor open
E-C:	Evaporator sensor shorted
C-O:	Condenser sensor open
C-C:	Condenser sensor shorted
Alternating E-O and C-O:	Sensor connector disconnected