Chore-Logic™

H-VC5
User manual

Version HPS	11/11/2006	User manual 1.02

ST50737MA
3/07

Warranty

Chore-Time Hog Production Systems, a division of CTB, Inc., ("Chore-Time"), warrants each new Chore-Time® product manufactured by it to be free from defects in material or workmanship for one (1) year from and after the date of initial installation by or for the original purchaser. If such a defect is found by Chore-Time to exits within the one-year period, the Chore-Time will, at its option, (a) repair or replace such product free of charge, F.O.B. the factory of manufacture, or (b) refund to the original purchaser the original purchase price, in lieu of such repair or replacement. Labor cost associated with the replacement or repair of the product are not covered by the Manufacturer.

Conditions and Limitations

1. The product must be installed by and operated in accordance with the instructions published by the **Manufacturer or warranty will be void.**
2. Warranty is void if **all components** of the system are not original equipment supplied by the   **Manufacturer**.
3. This product must be purchased from and installed by authorized distributor or certified representative thereof or the Warranty will be void.
4. Malfunctions or failure resulting from misuse, abuse, negligence, alteration, accident, or lack of proper maintenance, or from lighting strikes, electrical power surge or interruption of electricity, shall not be considered defects under the Warranty.
5. This Warranty applies only to the system for the care of poultry and livestock. Other applications in industry or commerce are not covered by this Warranty.

Chore-time shall not be liable for any **Consequential or Special Damage** which any purchaser may suffer or claim to suffer as a result of any defect in the product. **"Consequential"** or **"Special Damages"** *as used herein included, but are not limited to, lost or damaged products or goods, costs of transportation, lost sales, lost orders, lost income, increased overhead, labor and incidental costs and operational inefficiencies.*

THIS WARRANTY CONSTITUTES THE MANUFACTURER'S ENTIRE AND SOLE WARRANTY AND THIS MANUFACTURER EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, EXPRESS AND IMPLIED WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSES SOLD AND DESCRIPTION OR QUILTY OF THE PRODUCT FURNISHED HEREUNDER.

Chore-Time Distributors are not authorized to modify or extend the terms and conditions of this Warranty in any manner or to offer or grant any other warranties for CHORE-TIME® products in addition to those terms expressly stated above. An officer of CTB, Inc. must authorize any exceptions to this Warranty in writing. Chore-Time reserves the rights to change models and specifications at any time without notice or obligation to improve previous models.

Effective 07/04

Chore-Time Hog Production Systems

A Division of CTB, Inc.

410 N. Higbee Street ⬩ Milford, Indiana 46542 ⬩ U.S.A.

Phone (574) 658-5433 ⬩ Fax (574) 658-5325

Email: hog@choretime.com ⬩ Internet: http//www.choretimehog.com

OPERATION MANUAL
Version HPS

The **H-VC5** is a stand-alone climate control unit. The unit has 5 outputs and two temperature sensors. The unit has a built variable output regulator. The unit has a built in alarm for low and high temperatures, variable output regulator failure and power failure.

1. Installation

Open the two screws on the front panel
1. Connect the **H-VC5** to the wall in a dry place at least 1 meter away from the electrical cabinet.
2. Connect the temperature sensors to the temperature sensor inputs <u>IN1</u> and <u>IN2</u>. See drawing 1. <u>TEMP jumper (J18) must be shorted out. See drawing 2</u>
The sensors can be placed up to 100 meter from the main unit with an ordinary two-wire cable. The sensor has no polarity.

<u>Drawing 1</u>
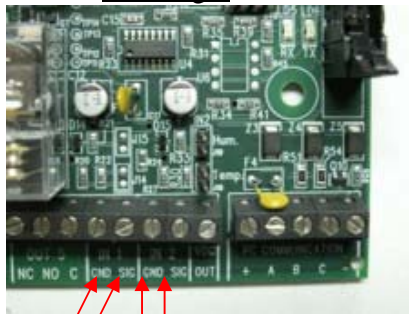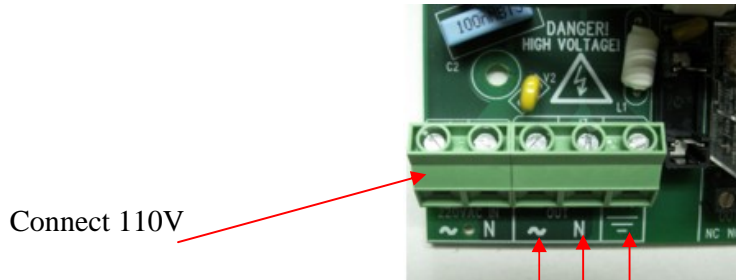

Sensor 1 Sensor 2

<u>Drawing 2</u>

J18 Temperature sensor jumper

If a temperature sensor or its cable is disconnected or shorted the sensor reading will display **OPEN**

3. Connect the OUT phase, neutral and ground to the Floor heat pad (see drawing 3). Maximum output 20 AMP. Be sure that the side heat sinks bars and fan are in an open area with proper ventilation.
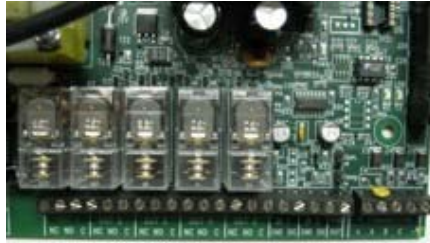
Drawing 3

Connect 110V

Connect the phase, neutral and ground wiring coming from the Floor heating pad here. Maximum output 20AMP

4. Connect the alarm relay output to the alarm system of your choice. The alarm relay is a dry contact 2 Amp/220V NO/NC (see drawing 4).

5. Connect a 110V cable to the unit.

6. Connect the PC communication wires (optional) (see drawing 5)

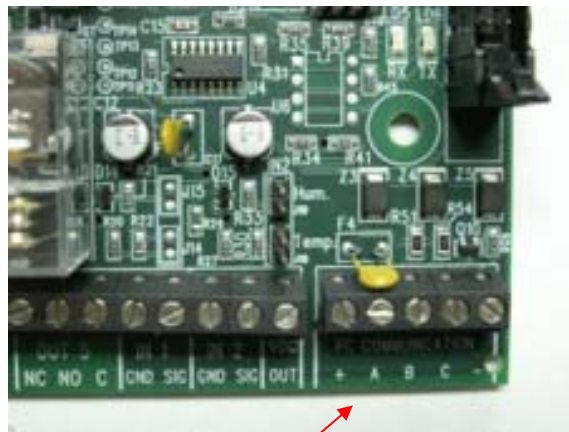7. Close the panel with the two screws.

Drawing 4

Heat Fan1 Fan2 Cool Alarm

Relay inputs. Maximum 2AMP

Drawing 5

Connect the 5 wires to the AG box (supplied separately, optional).
Connect A to A, B to B and so on for each of the 5 wires.

Operation
The **H-VC5** will display the current air temperature (sensor 1) and current floor temperature (sensor 2). The temperature reading can be displayed either in Celsius or Fahrenheit **(see Temperature setup, page 11)**.
If there is an alarm the unit will display the alarm number.

Turn on power.
Each time the power is connected to the unit the version number will briefly appear on the display (r321). After 5 Seconds the unit will display the current temperature for the two connected sensors. The sensor reading will alternate between sensor 1 (used for ventilation, heating and cooling) and sensor 2 which is used for the Floor pad heating system. Sensor 1 is shown on the display with a small line at the top of the readout.
Sensor 2 is shown on the display with a small line at the bottom of the readout.
Example: Sensor 1(air temperature) =   ⁻ 79.0° F
            Sensor 2 (floor temperature) =   — 73.0° F

2.   Recalling set points.

It is possible to recall the different set points programmed in the **H-VC5** and display them on the front display panel.
Press once on the "+" button. The top first led will light up. The set value for the corresponding function will appear on the display.
Each time the "+" button is pressed the next led will light up showing on the display the set value for the corresponding function. There are seven functions that are represented by one led only.
   1. Required temperature   *(led 1)*
   2. Heat set point   *(led 2)*
   3. Fan 1 set point   *(led 3)*
   4. Fan 2 set point   *(led 4)*
   5. Cool temperature setting *(led 5)*
   6. Cool on time   *(led 6)*
   7. Cool off time   *(led 7)*

The eighth time the "+" button is pressed, two led's will light up. The set value for the corresponding function will appear on the display. There are five functions that are represented by two led's
   8. Alarm low set point   *(led 1 and 2)*
   9. Alarm high set point   *(led 2 and 3)*
   10. Floor heat pad temperature *(led 3 and 4)*
   11. Fan 1 on time   *(led 4 and 5)*
   12. Fan 1 off time   *(led 5 and 6)*

3.   Changing set points

1. Go into the desired function as explained above.
2. Press on "PROG" button. The display will start to flash.
3. Use the "+" and "-" buttons to set to the desired values.

4. Check the display to see if the information is correct. If yes, press on the "Enter" button. The display will stop flashing to indicate that the new information has been stored into the unit's memory.

4. Functions

Required temperature (led 1 on)
This is the required house temperature. This temperature may be set either in Celsius or in Fahrenheit. **(See Temperature setup, page 11)**.   This is set as an absolute temperature.
Example: Required house temperature = 88.0°, enter 88.0°.

Heat (led 2 on)
Heat set point is the temperature differential <u>below</u> the requested room temperature that the heating system will turn on.
Example: Required temperature = 86°. Heat set point = 1.0.
If the room temperature should drop 1.0° below the **Required** temperature setting (85°) then the heating system will start to run.

Ventilation
The ventilation system will run according to the temperature reading of sensor 1.

Fan group 1 will run in a cycle mode (see Fan1 on time / Fan1 off time) as long as the average house temperature is **less** than the set Room Temperature plus the set point of Fan 1.
Once the house temperature is at the required room temperature plus fan 1 set point fan 1 will run nonstop. If the set point for "Fan2" is reached than fan group 2 will come into operation.

Fan 1 (led 3 on)
Fan 1 set point is the temperature differential <u>above</u> the required room temperature at which time fan 1 will come into operation.
Example: Room Temperature = 79° F
               Fan 1 = 1.0°
Up until 80° fan 1 will run in a cycle mode. From 80° fan 1 will run nonstop.

Fan 2 (led 4 on)
Fan 2 set point is the temperature differential <u>above</u> the required room temperature at which time fan 2 will come into operation.
Example: Room Temperature = 79° F
               Fan 2 = 2.0°
When the house temperature reaches 81° F fan 2 will come into operation.

Cool Temp (led 5 on)
Enter here the temperature that when reached in the house the cooling system will start to run in its cycle mode. This temperature is set as an absolute temperature.
Example: Cool = 82° F
If the house temperature rises to 82° F, the cooling system will turn on and work according the preset Cool on and off time.

Cool on time (led 6 on)
This is the ON time period, set in minutes, which the cooling system will be in the on cycle.
Example: Cool on time = 002
If the house average temperature rises to the set Cool temperature setting, the cooling system will turn on for two minute and then off for five minutes (see cool off time).

Cool off time (led 7 on)
This is the off time period, set in minutes, which the cooling system will be off cycle during the cooling system cycle.
Example: Cool off time = 005
If the house average temperature rises to the set Cool temperature setting then the cooling system will turn on for two minute (see cool on time) and then off for five minutes.

Cool system countdown timer
In order to see how much time is left in the current cooling mode follow these steps.
1. Enter the Cool temperature setting *(led 5)* function.
2. Press on "**Enter**". On the display will appear the the countdown timer for the cooling system. To exit press on any button.

Alarms
The **H-VC5** has three built in alarms.
1. Low temperature alarm (to cold in the house).
2. High temperature alarm (to hot in the house).
3. Floor heat pad (connection problem).
Alarms 1, 2 and 3 will appear on the display if activated.
Example: Required temperature = 79° F
        Low temperature alarm = 2°
If the average house temperature drops to 77° F the alarm relay will be activated and on the main display will flash the current temperature and the alarm number as shown here: **T77.0 →AL01**

Alarm Low (led 1 and 2 on)
Alarm low set point is the temperature differential below the requested room temperature.
Example: Alarm low = 5.0°
If the average temperature drops 5.0° below the required room temperature, the alarm relay will be activated. The corresponding alarm number will appear on the display

Alarm High

High alarm set point is the temperature differential <u>above</u> the requested room temperature.

Example: Alarm High = 5.0

If 5.0° is entered in the alarm high function, then if the temperature rises to 5.0° above the required room temperature, the alarm relay will be activated.

The corresponding alarm number will appear on the display

Floor Heat temperature

The floor heating pad system uses only the sensor 2 measurement. Enter here the desired temperature (Celsius or Fahrenheit) that is required for the floor heating system.

If the sensor 2 measurement is less than this setting, the control unit will increase the output power to the floor heating system until the desired temperature is reached. If the measured temperature reading is to high the unit will reduce the output power until the desired temperature is reached.

In order to see the output reading in percentage, follow these steps.

 1. Enter the Floor Heat setting *(led 3 and 4)* function.

 2. Press on "**Enter**". On the display will appear the output in percentage.

 To exit press on any button.

Fan 1 On Time

Fan 1 on time is set in minutes. This is the on time for fan 1 when it is running in the cycle mode (see ventilation).

Fan 1 Off Time

Fan 1 off time is set in minutes. This is the off time for fan 1 when it is running in the cycle mode (see ventilation).

In order to see the fan cycle countdown timer in seconds, follow these steps.

 1. Enter the Fan1 Off Time setting *(led 5 and 6)* function.

 2. Press on "**Enter**". On the display will appear the output in percentage.

 To exit press on any button.

Example of ventilation program

Example: Required temperature = 79° F

   Fan 1 = 1.0

   Fan 2 = 2.0

   Fan1 On Time = 005

   Fan 1 Off Time = 003

Room temperature up until 80° = Fan 1 running in a cycle mode of on 5 minutes, off 3 minutes.

Between 80° - 81° = Fan1 running nonstop.

81° = Fan group 1 and 2 running nonstop.

Temperature setup

It is possible to program the unit to display a temperature reading in Celsius of Fahrenheit.

Enter the Net name mode (Press at the same time buttons Enter, plus and minus).
Use the Net name **100** to set the temperature reading to **Celsius**.
Use the Net name **101** to set the temperature reading to **Fahrenheit**.

5. Wiring diagram