HIRED-HAND®

Farm Manager

Software Manual

Hired-Hand, Inc.
1733 Co Rd 68
PO Box 99
Bremen, AL 35033

Table of Contents

1. Farm Manager Program Description

The Farm Manager software is a Windows based software program that provides an effective and convenient way of remotely monitoring the Farm Hand Evolution 3000, the Farm Hand Power Vent, Swine Finisher, Stage Master, Vent Master and Alert Alarm controllers. Farm Manager's "tree" view of the farm provides a quick way of navigating from house to house checking current temperatures and controller settings. The program can be used to:

(1) Provide near real time monitoring of the houses via the installed Farm Hand controllers.
(2) Remotely change controller settings.
(3) Log selected temperature sensors in any controller on the HH.Net.
(4) Display current temperature data from any sensor in any Farm Hand controller.
(5) Select options for notifying the farm operator in case of an alarm condition.
(6) Provide data entry screens to track financial and operating expenses.

Farm Manager "Splash" Screen

Farm Manager works in conjunction with an HH.Net that has been established in accordance with the Farm-Hand Network Diagram as described in Hired-Hand manual # 4802-0534.

2. Warnings

Warning!

When this equipment is used in a life support heating and ventilation system where failure could result in loss or injury, the user should provide adequate back-up, or accept the risk of such loss or injury!

3. Limited Warranty

All products are warranted to be free from defects in material and workmanship for a period of one year from the date of purchase if installed and used in strict accordance with the installation instructions. Liability is limited to the sale price of any products proved to be defective or, at manufacturer's option, to the replacement of such products upon their return. No products are to be returned to the manufacturer, until there is an inspection and/or a return-goods authorization (RGA) number is issued.

All complaints should be directed first to the authorized distributor who sold the product. If satisfaction is not obtained or the name of the distributor is not known, write the manufacturer that appears below, directed to the attention of Customer Service Manager.

This limited warranty is expressly in lieu of any and all representations and warranties expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose. The remedy set forth in this limited warranty shall be the exclusive remedy available to any person. No person has authority to bind the manufacturer to any representation or warranty other than this limited warranty. The manufacturer shall not be liable for any consequential damages resulting from the use of our products or caused by any defect, failure or malfunction of our products. (Some areas do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.)

This warranty gives you specific legal rights and you may also have other rights that vary from area to area.

Warrantor:

Hired-Hand, Inc., 1733 Co. Rd. 68, PO Box 99 Bremen, AL 35033

4. Farm Manager Computer System Requirements

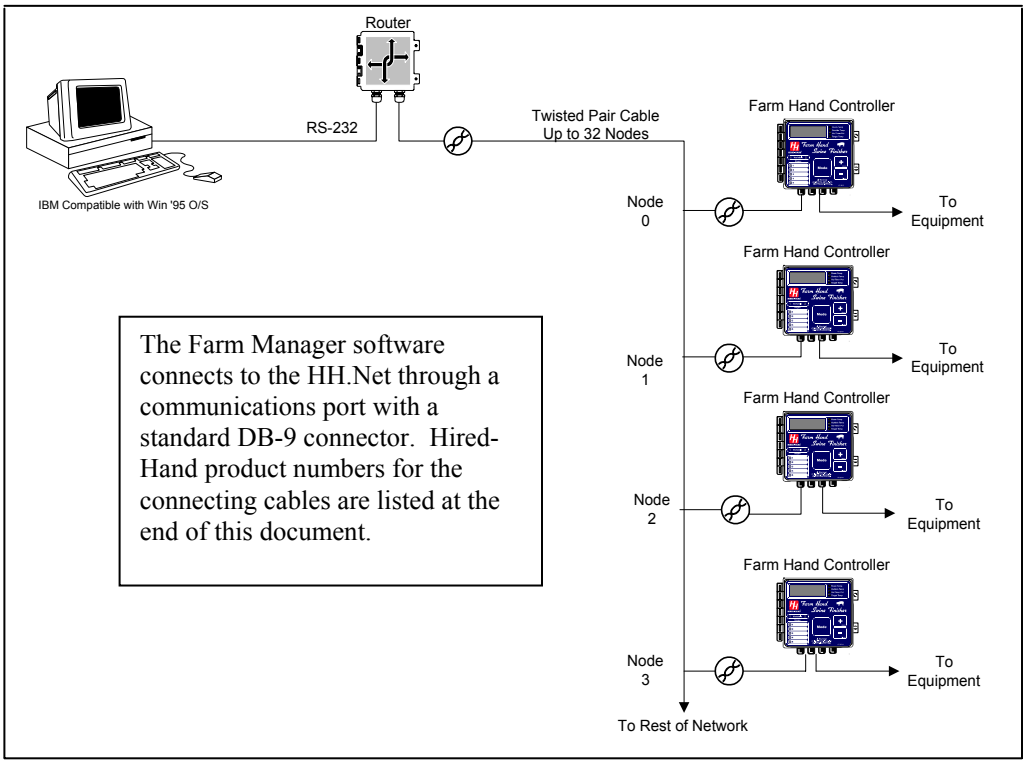
The computer system needed to run the Farm Manager requires:

(1) 200 MHz Pentium (Minimum), 300 MHz Pentium II (Recommended),
(2) Available hard drive space 40 MB (Minimum), 60 MB (Recommended),
(3) 32 MB RAM (Minimum), 64 MB RAM (Recommended),
(4) 256 Color Monitor (Minimum), Hi Color (Recommended),
(5) 1 available serial communications port,
(6) Voice Modem (for voice alarming)
(7) Any Modem (for paging functions)
(8) 800 X 600 video resolution,
(9) Windows 95/98/me, Windows 2000/xp, and
(10) A mouse or other pointing device.

5. HH.Net Farm Manager Network

A Farm Manager network consists of an IBM compatible computer running the HH.Net Explorer software connected to a router. The router then can connect up to 32 Farm Hand controllers in a "bus" configuration. Each controller is a node on the network. The Farm Manager software polls each of the controllers on the network and reports to the computer for display.

Farm Manager Network



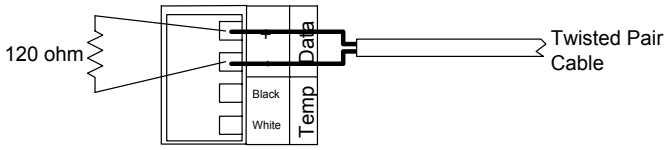
6. Installing Twisted Pair Wire to the Controllers on the Network

6.1 Controller Wiring

Inside the Farm Hand controller there are terminals labeled "Data Hi", and "Data Lo." Connect all of the controllers together with a twisted pair wire with one strand (Orange/White) connecting all of the "Hi" or "+" terminals, and the other wire (Brown) in the pair connecting the "Lo" or "-" terminals together. Run the wire back to a personal computer.

Note: The 120 ohm resistor included with the installation package must be connected between the "Hi" and "Lo" terminals of the most distant controller for proper operation of the network. See the following drawing.

Next, check each controller's address. Each controller must have a unique address on the network. The controller's address may be checked by pressing the "Mode" button on the controller for five seconds until "P1" flashes in the display. Then continuing to press and release the "Mode" button until "P40" is displayed. The number (1-32) that flashes is the controller's current address. There is a chart at the back of this document that can be used to keep track of each controller's address on the Network.



6.2 Signal Router

The signal router is a black box about 6 inches long with 25 pin connectors on each end. The router makes it possible for signals from the Personal Computer to be sent to the controllers over a long distance. Connect the sensor wire to the end of the converter marked RS-485. Plug the router into a nearby 110V power outlet.

6.3 PC Wiring

Connect the PC to the router using a serial communications cable. The cable's 9-pin end should plug into COM 1 on the computer. If COM 1 is being used for another device, then use COM 2. Note: There is an extra step to perform in the software setup if COM 1 is not available. The 25-pin end of the cable will plug into the RS-232 side of the router.

7. Farm Manager Quick Start

For those already familiar with Windows operation, the following Quick Start may be used.

(1) Load the Farm Manager software on your hard drive.
(2) Connect the Farm Manager Network to Communications Port #1 (default).
(3) Run Farm Manager
(4) Follow the on-screen instructions or use the Help screens

8. Installing Farm Manager on a Hard Drive

To install the Farm Manager software on a hard drive:

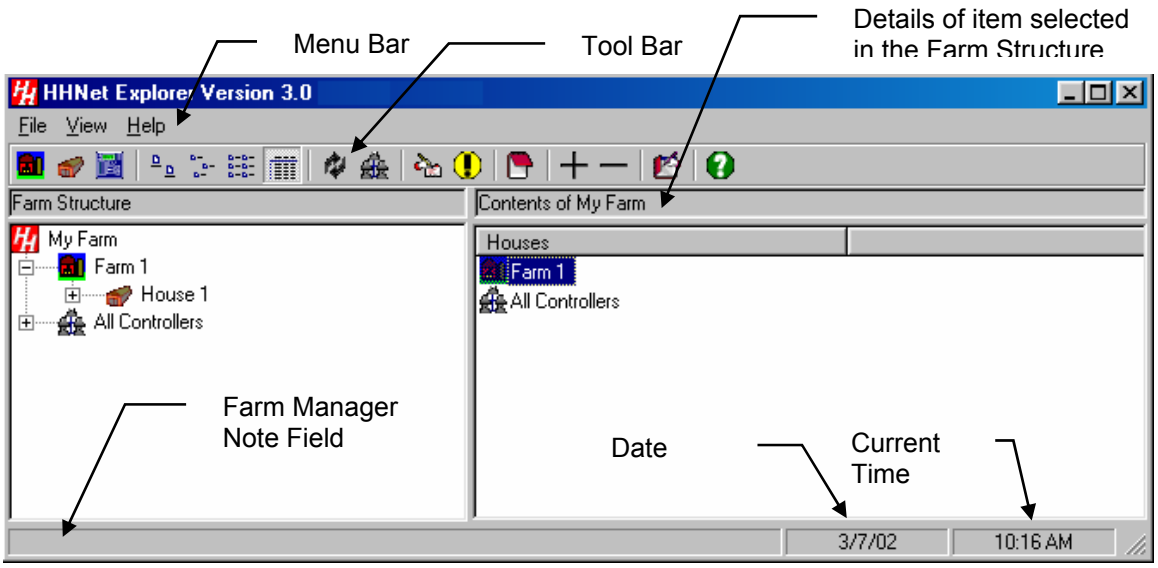
(1) Insert the Farm Manager CD into the CD ROM drive on your computer.
(2) In the Windows Program Manager, select the FILE menu.
(3) Choose RUN and type D:/setup. (Use the appropriate letter to designate your CD drive.) The install program will load the Farm Manager software and the associated help file in the "C:\My Farm\" directory. You may choose a different directory. If you do not have a CD ROM drive on your computer, the Farm Manager software is available from the manufacturer on 3.5" floppy disks.

NOTE: If the HH.Net is connected to COM 2 rather than COM 1, refer to Section 21 of this document to set the communications port to COM 2.

9. Starting the Farm Manager Software

The Install program places the Farm Manager Start Button into the Windows Start Menu. To start Farm Manager, click on the Farm Manager Start Button. When Farm Manager starts, the splash screen (See Section 1) is displayed indicating the Software version and the build number. Then Farm Manager polls the HH.Net looking for Farm Hand controllers that can communicate with Farm Manager. As polling occurs, the HH.Net Communication Status screen indicates which of the 32 addresses is being polled and the Port Status. This poling continues on a regularly scheduled basis as long as the Farm Manager program is running. HH.Net Communication Status provides other information as discussed in Section 11.

It is recommended that a first time user check the General Information screen as discussed in Section 17, and that all controllers in the network are responding correctly as discussed in Section 10. Also, verify the password as discussed in Section 14 under the Utilities option.



10. Farm Manager Main Window

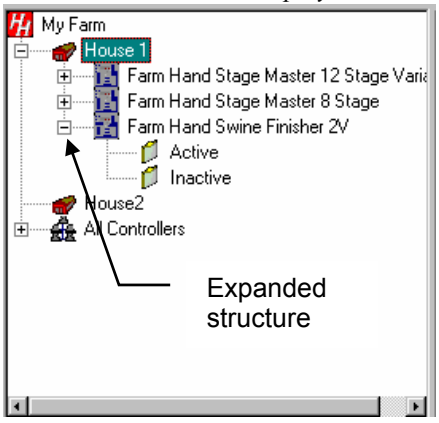
The HH.Net Farm Manager main window contains a menu bar, tool bar and displays a Hired-Hand network configuration in a "tree" view similar to the way Windows Explorer displays file and folder information. The left side of the screen is titled **Farm Structure** shows the name of the farm and can list:

(1) The buildings on the farm,
(2) The controllers within each building,
(3) The active and inactive files containing log data for each controller, and
(4) All of the controllers regardless of the building.

The right side of the screen is labeled **Contents 0f** and will list the contents of the item that is selected (highlighted) in the Farm Structure.

10.1 Farm Structure & Contents Screens

Note the Farm Structure in the example below. My Farm contains two buildings indicated by the building icons. An icon also represents all of the controllers on My Farm. Note also that House 1 is highlighted, thus the contents of House 1 are shown in the Contents side of the screen. *Highlighting any item in the Farm Structure displays the contents on the Contents side of the screen.*



All of the buildings, controllers and folders can be displayed in the Farm Structure by "expanding" the Farm Structure. A plus (+) sign on the Farm Structure indicates an item has not been "expanded", thus none of the contents of the building are shown in the Farm Structure. Clicking on the (+) sign expands the structure and shows the contents of the item in the Farm Structure and changes the "+" to a "-". In the example, House 1 has been expanded as well as the Swine Finisher controller. Since there are active and inactive folders in the Swine Finisher controller, these folders will be displayed in the Farm Structure.

From the Contents screen, a **Controller Properties** window is available for each controller showing the current settings and temperatures being read by the controller. Double clicking on the controller name will bring up the controller properties window as discussed in Section 22. Right clicking on any controller icon brings up a special drop-down menu as discussed in Section 12.

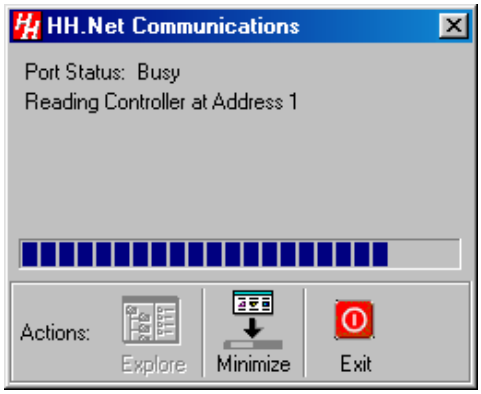
10.2 Active & Inactive Folders

Farm Manager allows temperature recording from any of the sensors available to a controller

on the Network. This data is contained in folders that are indicated as **Active** or **Inactive**. Files in the Active folder have End Dates that have not passed yet. Conversely, files in Inactive folders have recorded time periods that have passed the End Date. See Section 18.2 in this document for a discussion of the Start and End dates used for data recording. To view the contents of these folders highlight the folder type in the **Contents** screen. The folder name or Log is shown along with the start date of the temperature data, the end date and the sample interval of the data. Double clicking on the file name produces a plot of the data as discussed in Section 19.

11. Running Farm Manager in the Background

The HH.Net Communications Status screen provides a current count of good and bad packets received from a specific controller. This information provides an indication of the operation of the Farm Manager communications. To allow Farm Manager to run on your computer in the "background", close the Main window. The HH.Net Communications status will remain active and continue to poll the controllers, log and report errors as necessary. To re-activate the Farm Manager main screen click on **Explore** in the Status window.



The Communications Status window can be Minimized. Farm Manager will continue to poll the controllers, log and report errors as necessary. To re-activate the Communications Status, double click on the HH icon in the System Tree (located at the lower right of the screen near the clock). To completely exit Farm Manager and stop all polling, click on **Exit** in the Communications Status window.

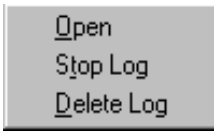
12. Drop-Down Menus

Additional menus are available from the Farm Manager main window by right clicking on a building, controller or a file folder.

BUILDING

CONTROLLER

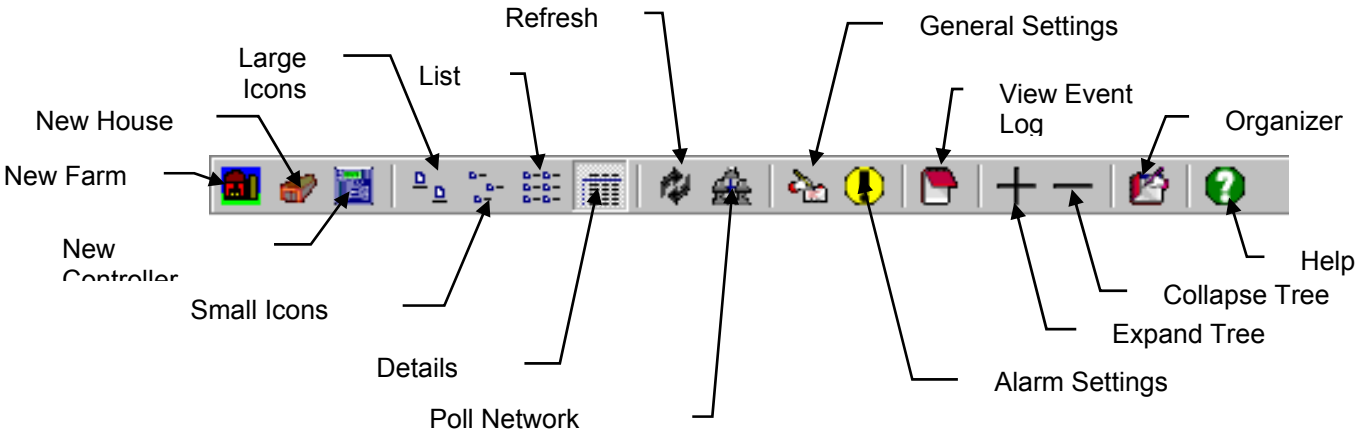
FILE FOLDER



The Network Statistics is similar to the communications status display, except the statistics presented are for a specific controller.

13. Farm Manager Tool Bar

The Farm Manager Tool Bar contains shortcuts for the following options. Some of these options are also available from the Menu Bar as discussed in Section 14.



Expand Tree - This option provides a quick way to expand the entire contents of the Farm Structure.

Collapse Tree - This option provides a quick way to collapse the entire contents of the Farm Structure tree.

Poll Network - Although Farm Manager continuously polls the network at specified intervals, this option will cause an immediate poll.

View Organizer - This option provides access to the Farm Manager Organizer. See Section 21 for a discussion of the use of the Organizer.

Help – Brings up the Help menu. See Section 16.

The other Tool Bar shortcuts are discussed in the File and View menus in Sections 14 and 15 respectively.

14. Farm Manager File Menu

The Farm Manager File drop-down menu includes options that control the addition and deletion of houses plus some helpful utilities.

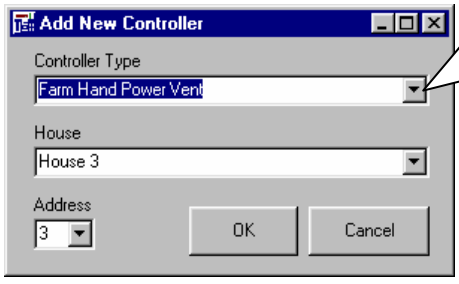
New Farm This option is also available from the Tool Bar by clicking on the New Farm Icon. Explorer will request a name for the new farm. The new Farm will then be added at the bottom of the farm structure. To change the farm name, click on the new farm label and type a name of your choice.

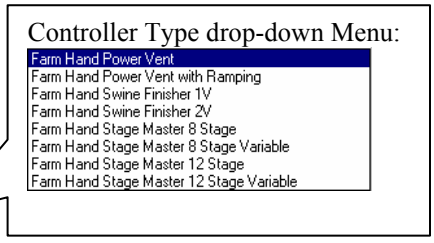
New House This option is also available from the Tool Bar by clicking on the House icon. A new house will be added at the bottom of the Farm Structure. To change the name, click on the new house name and type a name of your choice. The number of the house is assigned sequentially.

New Controller This option is also available from the Tool Bar by clicking on the New Controller icon. First, highlight the house in which the controller is to be added. The new controller will be added at the bottom of the controllers already shown in the house. To finish the addition of a controller, complete the information in the following screen. The following screen allows the choice of the available Farm Hand vent and stage controllers.

Controller Type - Use the pull-down arrows to select the new controller type.

House - To change the name for the house type the new name in the text boxes or select an existing house from the drop-down menu.





Address – The network address of the controller. Network addresses of each controller on the HH.Net must be unique. If Farm Manager determines there is an error in the address of the new controller, or can not communicate with the controller, an error message is placed in the Farm Manager note field.

OK – When completed click the OK button.

Cancel – Return to the previous screen and do not make any changes.

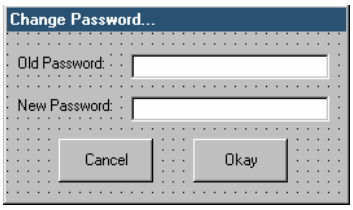
Delete - The delete option can be used to delete a house or a controller by first highlighting the item and then clicking on the Delete option.

Utilities - There are three utility options available:

Reset All – This option deletes the entire Farm Manager database including all controller information and all logging data files in the Active and Inactive file folders. ***NOTE: This option should only be used in extreme cases to re-initialize the entire Farm Manager database.***

Repair and Compact Data Base – Should unexplained results occur, this option can be used to call the data base repair functions to "clean-up" the data base. This option is not intended to erase any data. In the process, the data files may be reduced in size.

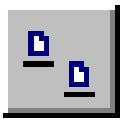
New Password –When Farm Manager is sent from the manufacturer the password is set to "PASSWORD". The password is only needed to access screens that program controller settings. To change an existing password, first enter the **Old Password** and then the **New Password**. Click **Okay** to proceed or **Cancel** to keep the current (old) password.



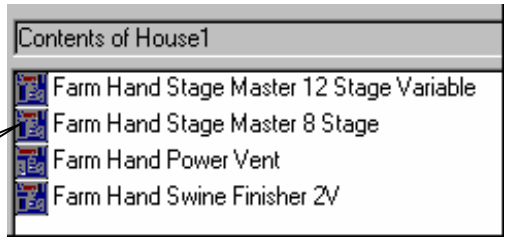
Close - Closes HH.Net Farm Manager.

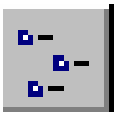
15. Farm Manager View Menu

This menu is obtained by clicking on the **View** icon in the menu bar or by right clicking on a blank area of the **Contents** (right) side of the main screen. The Farm Manager View menu contains the screen display and other options. **Options** sets information specific to this farm. **Start Log** provides methods to log temperature data from any sensor connected to the HH.Net. The **View** menu options are:

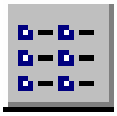


Large Icons – This option is also available from the Tool Bar and changes the view of the House and Controller icons as shown.





Small Icons – This option is also available from the Tool Bar and changes the view of the House and Controller icons as shown.



List – This option works only with small icons and is used to list the controller names in the Contents section of the screen in alphabetical order.

Details - Clicking on the Details option for a controller will add the controller **Address**, the **Target Temperature** and the temperature or the controller **display**.

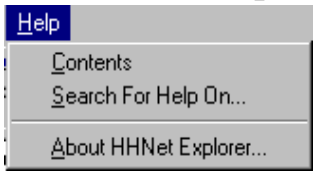
Controller	Address	Target	Display
Farm Hand Stage Master 12 Stage	32	75	65.2

Refresh - Although the Properties screen is updated automatically every few minutes, this option provides a manual trigger to refresh the properties screen**.**

General Settings – The details of this option are discussed in Section 17.

Alarm Settings – The details of this option are discussed in Section 17.3.

16. HH.Net Help Menu



Farm Manager Help is accessed from the Menu or the Tool bar. Context sensitive help is available by highlighting an item on the screen and pressing the F1 control key. Also, a Contents help file and an Index help file are available.
The following options are on this menu:

Contents – Provides a list of the HELP file features available.

Search For Help On – Provides a topic list of most HELP screens.

About HH.Net Farm Manager – Provides the Farm Manager software version number and the manufacturer's address. Also provides access to Microsoft's System Information.

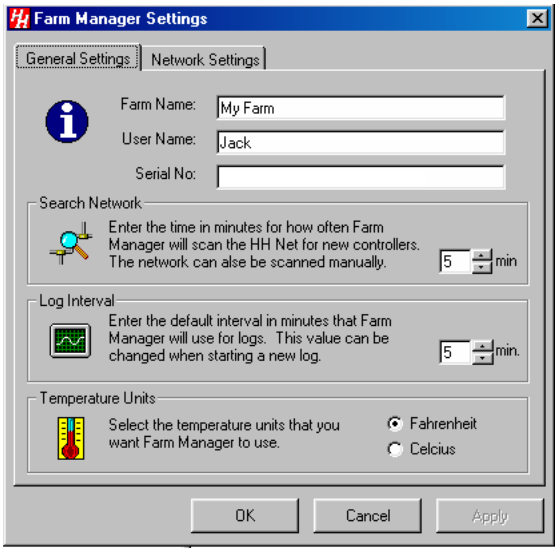
17. HH.Net Farm Manager General Settings

HH.Net Options is selected from the View menu. Three Options windows are available by clicking on the tabs at the top of the window. The information displayed in these windows is based on the controller that is highlighted (selected) in the Farm Structure. There are two windows in the HH.Net Options section, a General and Network. The following three control buttons located at the bottom of the screen are available on all three Farm Manager Option screens:

Apply – Implements any changes made from any Options screen but does not exit the screen.

OK – Implements any changes made from any Properties screen and exits the screen.

Cancel – Makes no changes and exits the screen.



17.1 Farm Manager General Settings Window

The General Settings are:

Farm Name – Any Name

User Name – Any Name

Serial Number - The serial number of the HH.Net Farm Manager software currently running. This can not be changed from this screen.

Search Network - Select the time interval that Farm Manager will use to poll the HH.Net and check the status of each controller.

Log Interval – Select the default Interval for logging controller data. This default value will be used each time a new Log file is established. The user can change this interval in the Data Logging screen for a specific Log.

Temperature Units - This option selects between the use of Fahrenheit or Celsius temperature units on selected screens in Farm Manager.

17.2 Network Settings Window

The Network Settings are:

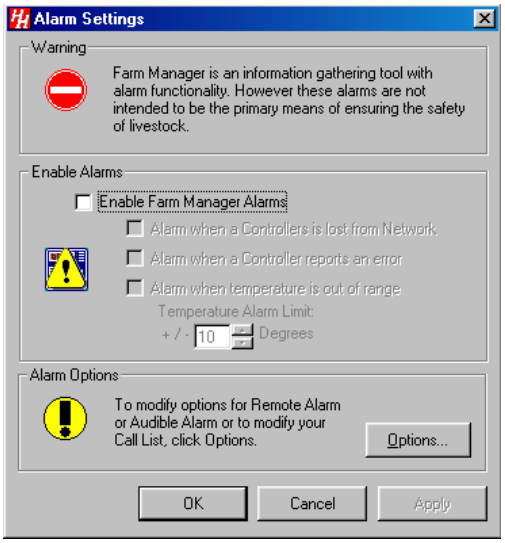
Serial Port - This option selects the default Communications Port. If this option is changed, Farm Manager will need to be re-started for the change to take effect.

Network – Check if using a hardwired communications network or wireless communications between the controller and the Farm Manager Computer.

Packet Timeout – Defaults to 25 milliseconds for a wired network and 125 milliseconds for a wireless network.

17.3 Alarm Settings Window

From this window the alarm reporting options are set. The following options are available:



Enable Farm Manager Alarms - This check box enables the sounding of alarms that are reported by the HH.Net controllers. When checked, the Dropped Controllers, Controller Errors and the High/Low Temperatures check boxes are enabled.

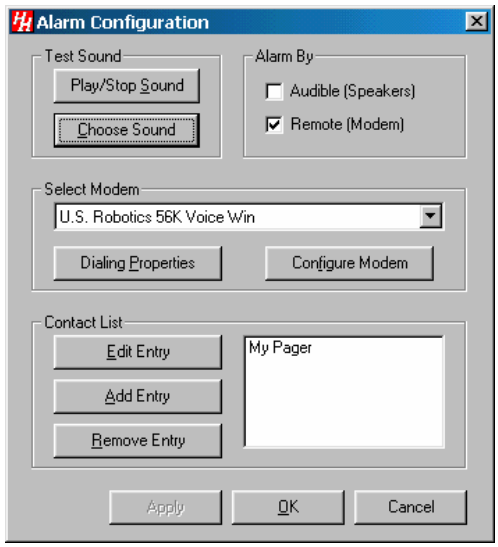
Alarm when a Controller is Lost from Network - If this box is checked, alarms will be sounded should any controller become disconnected from the HH.Net for longer than 2 minutes.

Alarm when a Controller Reports an Error - If this box is checked, alarms will be sounded should any controller errors be reported on the HH.Net.

Alarm when Temperature is out of Range -If this box is checked, alarms will be sounded should the temperature reported by any sensor exceed or fall below the Target Temperature for the building plus or minus the Temperature Alarm Limit.

Temperature Alarm Limit - Used in conjunction with the enabling of the High/Low Temperatures check box. The temperature differential in degrees is set in this box. Alarms will be sounded should the temperature reported by any sensor exceed or fall below the Target Temperature for the building plus or minus the Temperature Alarm Limit.

Options - Clicking on this button brings up the screen shown in the next section.



17.4 Alarm Configuration

Farm Manager Alarm Configuration provides for setting various alarm parameters for sounding and delivering alarm information to

the user. The Alarms window allows the alarms to be tested and provides a data list of telephone numbers that will be called if an alarm occurs and there is a modem available to the Farm Manager software. In addition, the computer can be used as a remote alarm if properly equipped.
The following data can be set:

Play/Stop Sound - This option is used for testing the operation and sound level of the alarm reporting when the soundcard in the computer is used. Clicking this control button will play the alarm sound selected in the Choose Sound window. The sound will keep repeating until the Play/Stop Sound control button is clicked again.

Choose Sound - This options allows the user to select, using a Windows common dialog box, a WAV file to be played to the computer sound card when an alarm occurs and the Alarm By Audible check box is checked.

Alarm By Audible - If Farm Manager detects a sound card in the computer, this button will be enabled. If checked, and an alarm occurs, the alarm sound is reported to the sound card. See your sound card manufacturer's instructions for playing a sound on your computer.

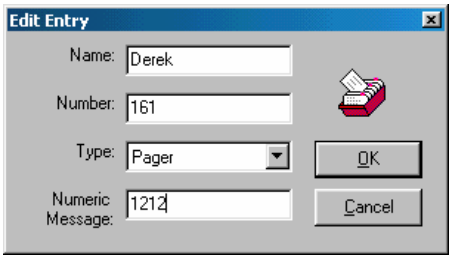
Alarm By Remote - If Farm Manager detects a telephone modem in the computer, this button will be enabled. If checked, and an alarm occurs, the telephone numbers as set up in the Contact List will be called.

Select Modem - This option is used for setting the parameters for the modem in your computer. Use the drop-down list to select a specific modem.

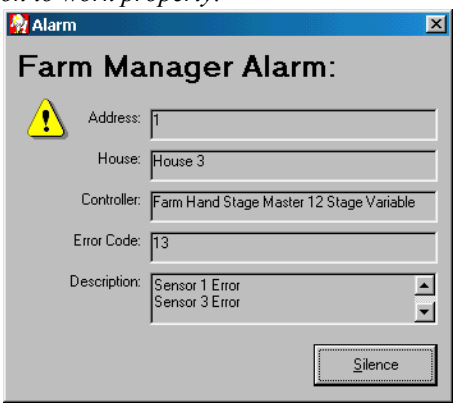
Contact List - Several telephone numbers can be stored and will be called in an alarm condition. These telephone records also contain a field for a message, useful when calling a pager. There are three command buttons used to add, modify and delete telephone numbers in the Contact List. The following buttons are available:

Edit Entry and Add Entry - The Edit and Add Entry buttons bring up the Edit or Add Entry screen in which the following data can be entered:

Name - The Name of the person or pager being called**.**



Number - The telephone number to be called in case of an alarm. Up to 16 digits can be entered in this field. Dashes may be included for clarity. A comma between any digit will cause a short delay in dialing. This is useful when calling out from a PBX that requires a 9 to be dialed to access an outside line. If long distance calls are desired, be sure to include an access code, usually a 1. *NOTE: At least one telephone number is required for the Remote Alarm option to work properly.*



Type - This can be **Voice** or **Pager**. If pager is set, a message can be forwarded to the pager. *NOTE: A voice capable modem must be installed in the Farm Manager computer*.

Message - The message delivered to a pager. Verify the capabilities of the pager provider to ensure the complete message can be received. *Note: This must be a numeric entry.*

Remove Entry -First select an entry in the Contact List and click the Remove Entry button. The entry is permanently deleted from the List.

17.5 When an Alarm Occurs

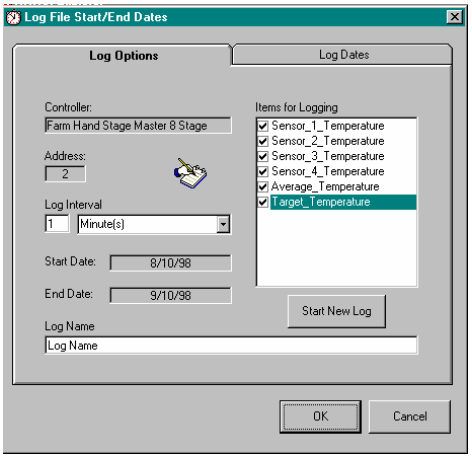
When an alarm occurs, Farm Manager displays the following screen and reports alarms as configured. The Farm Manager Alarm screen shows the Network address, the House name and the Error Code as reported by the controller or generated by Manager. If available from the controller, the setup number is also shown as well as a description of the error. The alarm can be silenced from this screen by clicking on the **Silence** button. This action also closes this screen.

If the telephone call generated by the alarm is a modem call, the message as described in the Contact List is sent to the Pager. If the telephone call is a voice call, the parameters of the error are reported by recorded voice to the called party. At the end of the recorded message, the called party has three options that can be sent using the telephone keypad. The following codes can be sent to Manager:

KeyPad	**Result**
1	Silence the Alarm.
Star (*)	Repeat the voice Message.
Pound (#)	Terminate the call.

18. HH.Net Logging Temperature Data

Farm Manager has the capability to record temperature data from any sensor in any Farm Hand controller. Logging is accomplished by having Farm Manager poll the specific controller and requesting the data. *Therefore, Farm Manager must be running at all times during the recording interval in order to get all the temperature samples.* To originate logging, first highlight the house containing the temperature sensors to be recorded from the main window. Then, from the View menu, click on **Start Log**. From the following two screens Farm Manager can be enabled to record temperature data. The **OK** and **Cancel** options are available from both screens:



OK – After all log information has been completed, click OK in order to begin setting up a new Log. Farm Manager will request a name for the file in which to put the temperature data as seen below. If a new log is created the Log will be placed in an Active folder.

Cancel – Makes no changes and exits the screen.

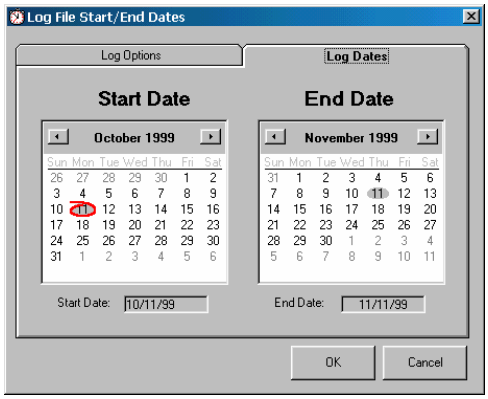
18.1 Log Options

Controller – From the drop-down menu select the controller that contains the desired sensor to be recorded. The address of the controller will also be displayed.

Address – The Network address of the controller. This can not be changed from this display.

Log Interval – From the drop-down menu select the units of the interval in hours, minutes and seconds between temperature samples. Then type in the desired value for the interval. The minimum log interval is two minutes.

Start and End Dates – The day, month and year that recording will begin and end respectively. This data is set from the Log Dates Screen.



18.2 Log File Start/End Dates

Start/End Date –To set the starting and ending dates for temperature recording use the drop-down menus to select the month and year. The calendar for the selected month and year will be shown on the screen. To select the Start or End Dates, click on the desired day on the calendar.

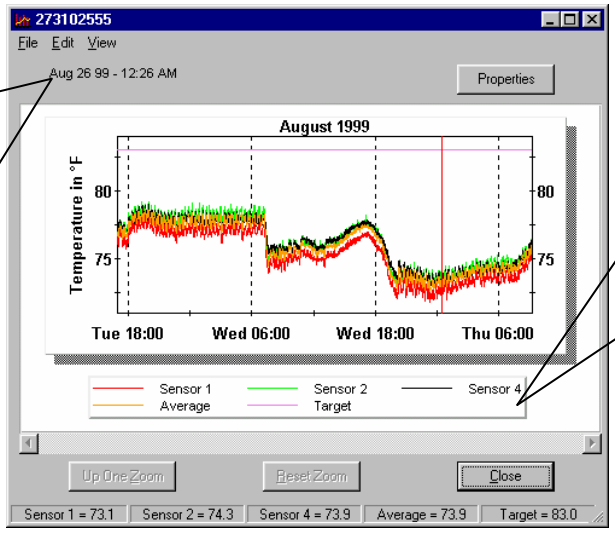
Data logs that have End Dates that have not passed are

placed in Active folders. Conversely, files that have End Dates that have passed are placed in Inactive folders. The user selection is shown in the Start/End Date text boxes. Selecting **OK** brings up the Enter Log Name window**.**

19. Viewing Temperature Data from the Log Files

Farm Manager contains many options for viewing and printing the recorded temperature and other sensor data. First locate the desired log file from the Farm Manager Main screen. Double click on the file icon. Farm Manager will plot all of the example below. The following plot is of the file **273102555** that contains sensor data taken over a day and a half period. the data as in

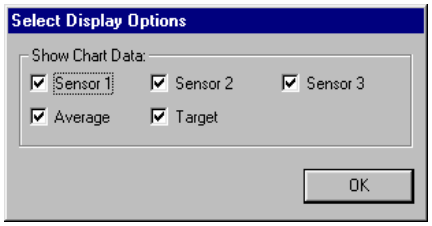
As the red cursor is moved across the plot, the time and temperature of a sensor is displayed here. The corresponding sensor values are displayed at the bottom of the chart.



Shows the current data plotted, based on the selections made from the Properties window

The temperature data is initially plotted from the first data point to the last recorded point. However, there are **zoom-in** and **zoom-out** options for viewing specific sections of the recorded data.

The **Properties Display Options** allow selection of specific sensor data to be displayed.
The temperature selection for this example was selected a Fahrenheit degrees. See Section 21 for changing this scale to Celsius.



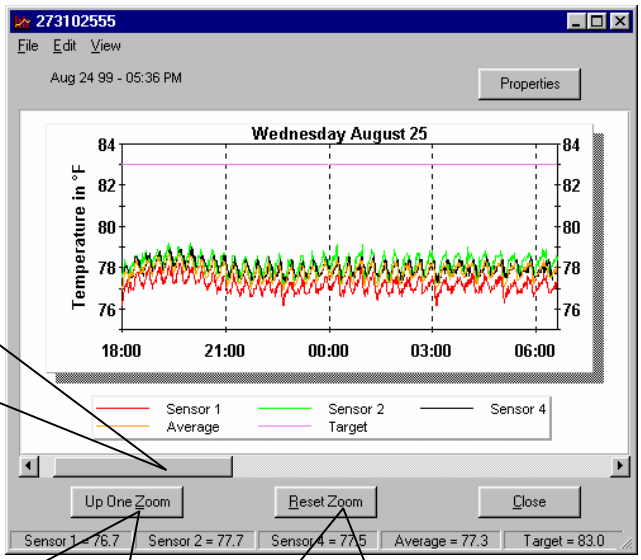
19.1 Properties - Select Display Options

Clicking on the Options control button brings up the **Select Display Options** window. From the **Show Chart Data,** any or all the data can be plotted at the same time. To implement any changes, click the **OK** button.

19.2 Expanding the View

In this view the plot of the file 273102555 has been expanded to start at 18:00 hours on Tuesday and end at 06:00 hours on Wednesday. Note that the **Up One Zoom Level,** the **Reset Zoom** control buttons and the **Horizontal Scroll bar** have been activated. Since multiple zoom levels can be developed, the **Up One Zoom Level** returns to the previous zoom level. **Reset Zoom** returns to the original plot. The horizontal scroll bar will move the chart to the right or left and display the same time period in the view.

The Horizontal Scroll bar becomes available in a Zoomed view.

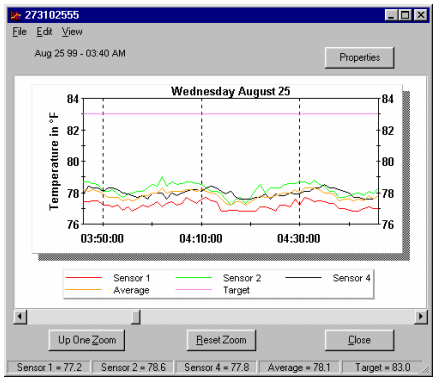


Returns to previous zoom level

Returns to Original plot

19.3 Further Expanding the View

The previous view can be further expanded by placing the cursor at the starting time at which the data should be expanded, then holding down the left mouse button and dragging the mouse to the stop time. In the above example, the start time was selected to be 03:50 and the stop time was 4:50. As the cursor is moved to the right, the area of interest is highlighted in black. Clicking the right mouse button expands the view as shown in the figure at the right.



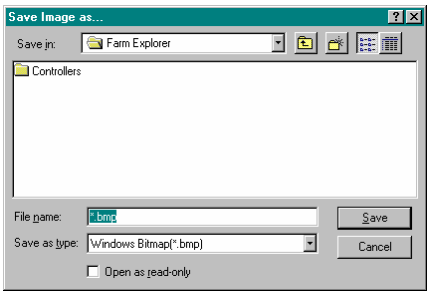
20. Display Menu Options

The following options control the display and storage of the temperature data.

20.1 File

The File options provide two ways to save a display file:

Save as Bitmap – This options saves the view as a bitmapped file that can be loaded into the Windows Clipboard or other graphics capable programs such as Microsoft's WORD.

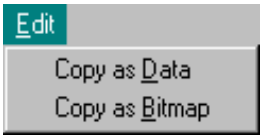


Save as Data – This option saves the view in a standard database format that can be read by database programs such as EXCEL.

Exit – Terminates the view of the temperature data.

Save Image - When either of the two **Save as** options are selected the **Save Image as...** window appears. Select the folder and type in a file name in the text box.

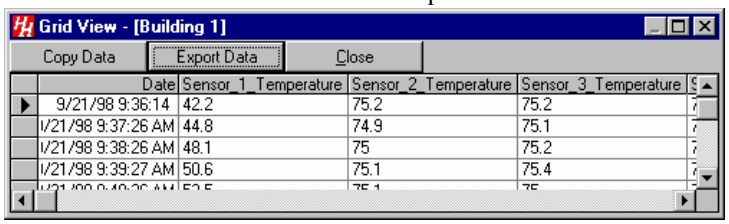
20.2 Edit



These Edit options are similar to the above File options except the data is copied to the Windows Clipboard.

20.3 View

View in Grid – This option from the View menu shows the temperature data in chart format listing the individual temperature data points from all the sensors and the time and date recorded.



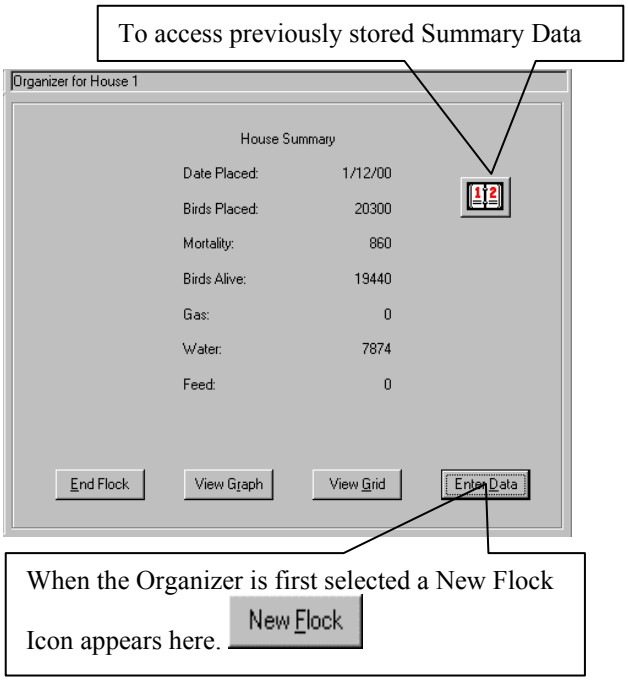
21. Farm Manager Organizer

The Farm Manager Organizer is accessed by clicking on the Organizer Icon. This is an icon switch which can also be used to remove the Organizer screens. The Organizer provides data entry screens to track the financial and operating performance of your farms. There are two sets of Organizer screens one for each farm that organizes financial data and one for each house that organizes operational data. To access the Organizer for a house, first highlight the desired house and then click on the Icon. An entry and House Summary screen similar to the one below appears on the right side of the Farm Manager screen. The data shown in the House Summary is discussed in Section 2. We will later discuss how to enter specific data and how the House Summary data is calculated.

To access the Organizer for a Farm, first highlight the desired farm and then click on the Icon.

21.1 Organizer Forms for a House (Operational)

The Organizer for a House keeps track of the operational information about a particular house. By entering the bird count, mortality, feed and utility usage, the farm operator can track the operational status of the flock over the growout period. To track the financial performance of the Farm including all of the houses, use the Organizer for the Farm.



By clicking on the Organizer icon for a house from the tool bar, the following House Summary Screen is accessed. This is the current summary data for the house as of the date shown. The data fields shown are:

Date Placed: The first day that a flock was placed in the house

Birds Placed: The total number of birds placed in this specific house since the Date Placed.

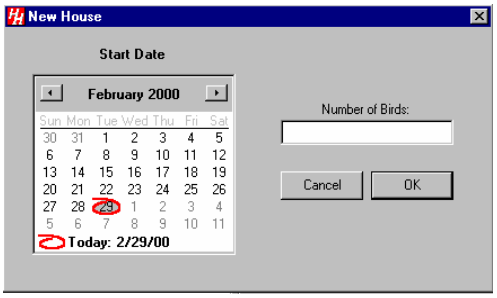
Mortality: The total mortality of the birds since the Date Placed.

Birds Alive: The current number of live birds in the house. (Calculated by the program)

Gas: The total quantity of gas used since the Date Placed.

Water: The total quantity of water used since the Date Placed.

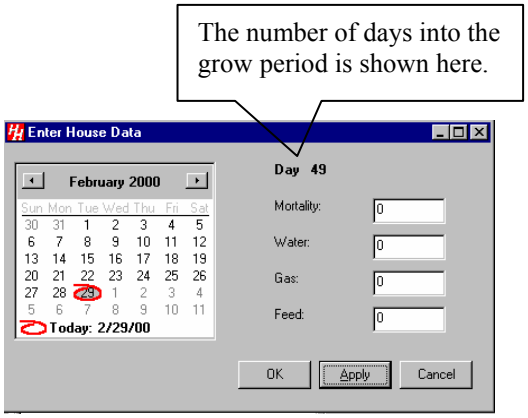
Feed: The total quantity of feed used since the Date Placed.



New Flock - When the Organizer is selected on a house that currently does not have any records, the New Flock icon will appear. To begin inputting data on a new flock click the icon to bring up the New House screen and select the date placed from the calendar. Then enter the number of birds placed and click OK.

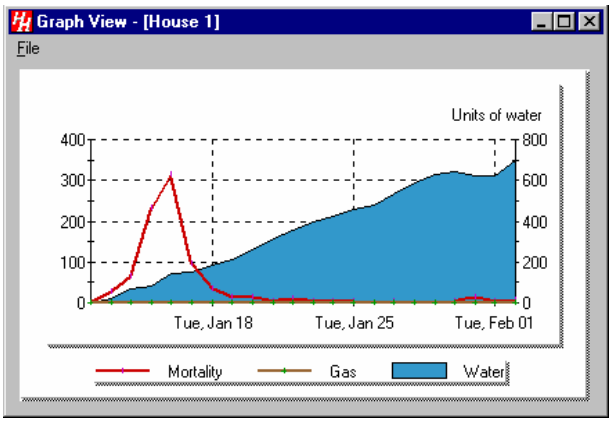
End Flock – Used to enter the date that the flock ended.

Enter Data – This screen provides for entering the bird Mortality or the Water, Gas or Feed usage for a single day. The units for water, gas and feed are not required to be entered, however they should be the same for each day throughout the grow period.

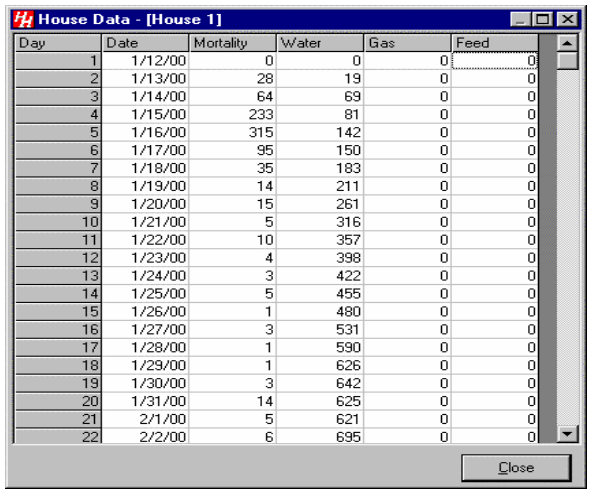


To enter the data, first select the day, then enter the necessary data. When finished entering the data, click on the Apply button in order to update the Organizer. To leave this screen, click on OK.

View Graph – This option plots the daily water, gas and feed usage from the beginning of the grow period to the current date. The plot shown below is for the first three weeks of a growout for the mortality and the water usage. The File menu provides options to view various ranges and data points in this chart.



View Grid – Shows a table of the day by day data that has been entered for this flock as shown in the above plot.

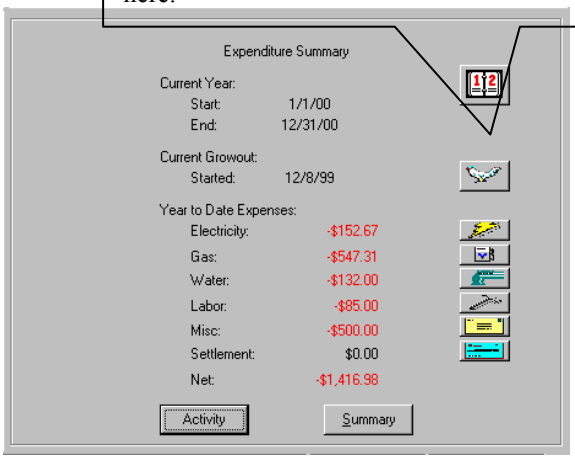


Day	Date	Mortality	Water	Gas	Feed
1	1/12/00	0	0	0	0
2	1/13/00	28	19	0	0
3	1/14/00	64	69	0	0
4	1/15/00	233	81	0	0
5	1/16/00	315	142	0	0
6	1/17/00	95	150	0	0
7	1/18/00	35	183	0	0
8	1/19/00	14	211	0	0
9	1/20/00	15	261	0	0
10	1/21/00	5	316	0	0
11	1/22/00	10	357	0	0
12	1/23/00	4	398	0	0
13	1/24/00	3	422	0	0
14	1/25/00	5	455	0	0
15	1/26/00	1	480	0	0
16	1/27/00	3	531	0	0
17	1/28/00	1	590	0	0
18	1/29/00	1	626	0	0
19	1/30/00	3	642	0	0
20	1/31/00	14	625	0	0
21	2/1/00	5	621	0	0
22	2/2/00	6	695	0	0

21.2 Organizer Forms for a Farm (Financial)

The Organizer for a Farm keeps track of the financial information about the farm, which of course may contain several houses. When the Organizer is selected for a farm, the Expenditure Summary appears. This information is intended to cover a one year period beginning on January 1 and ending on December 31. The data is entered by clicking on the appropriate icon. These are:

Click on the New Year  icon to start a new year. The icon will appear here.



End Growout - Click this icon to terminate a growout. Enter the appropriate date.

For all of the following entries an input screen is accessed similar to the data entry screen used for the Enter House Data as shown in the previous section.**Enter Electric Bill** – Click this icon to enter an electric bill and the date.

Enter Gas Bill - Click this icon to enter a gas bill and the date.

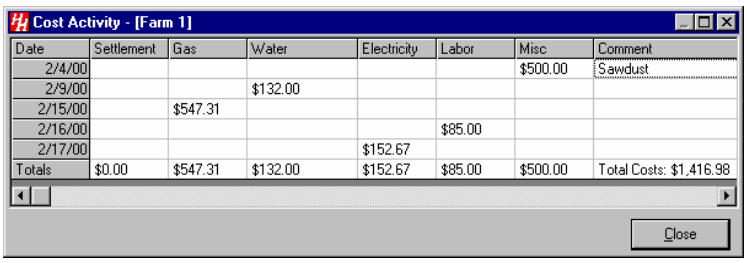
Enter Water Bill- Click this icon to enter a water bill and the date.

Enter Labor - Click this icon to enter labor costs and the date.

Enter Miscellaneous Costs - Click this icon to enter any miscellaneous costs to the growout and the date.

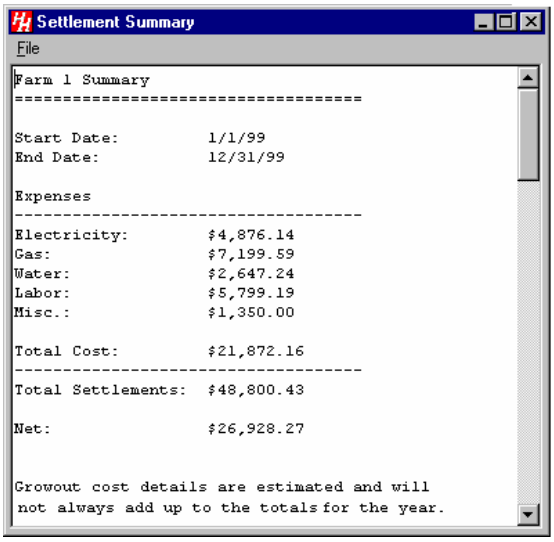
Enter Settlement - Click this icon to enter a Settlement amount and the date.

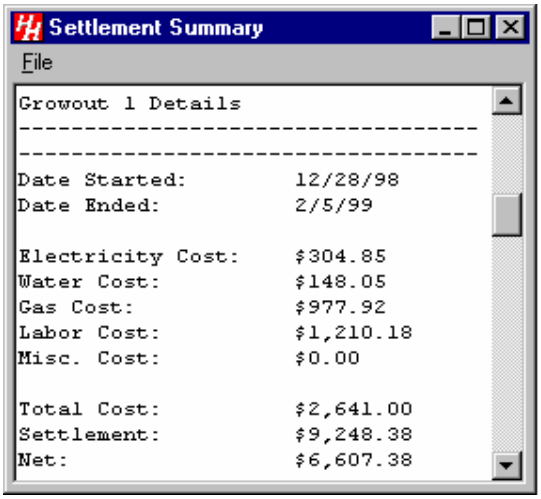
Cost Activity – The cost activity covers a one year period corresponding the data entered. Each of the entries can be verified from this screen.



Date	Settlement	Gas	Water	Electricity	Labor	Misc	Comment
2/4/00						$500.00	Sawdust
2/9/00			$132.00				
2/15/00		$547.31					
2/16/00					$85.00		
2/17/00				$152.67			
Totals	$0.00	$547.31	$132.00	$152.67	$85.00	$500.00	Total Costs: $1,416.98

Settlement Summary – The Settlement Summary covers the calendar year using the data entered from the Expenditure Summaries. The example shown at the right is for Farm 1 and includes the annual expenses as entered for a calendar year. The Settlement Summary also includes a summary of each growout that occurred during the calendar year.





An example of the Settlement Summary for Growout 1 is shown at the left for Farm 1. This contains the expenses and settlements for a single growout. Note however, that a growout may not begin exactly on January first. Therefore, the Growout Details will search the Expenditure records for the previous year and include these costs in the Growout 1 Details. The grower can easily compare the relative financial performance of each growout from the Growout Details.

22. Farm Manager Properties Windows

Any Farm Hand or Evolution controller connected to the HH.Net can be viewed in a Properties window. To access a specific controller connected to the HH.Net, first highlight the desired controller, then double click on the controller icon. If Farm Manager can communicate with the controller, the Properties screen will immediately be shown. If, however, Farm Manager can not locate the desired controller, a warning message will be displayed.

Information in the Properties screen is reported by the controller. The following windows are samples of the Properties screens available for the Hired Hand Evolution, Power Vent, Swine Finisher, Stage Master, Vent Master, Alert Alarm and Heat Zone controllers. *NOTE: the controllers can **not** be programmed from the Properties screens*. See Section 23 for a discussion of how to remotely program any Farm Hand controller connected to the HH.Net.

22.1 Farm Hand Evolution 3000

The following discusses the General Properties window for the Evolution 3000. The reader is referred to the Evolution 3000 Users Manual (Part No. 4801-5307) for a more detailed discussion of the parameters shown in the Properties screens.

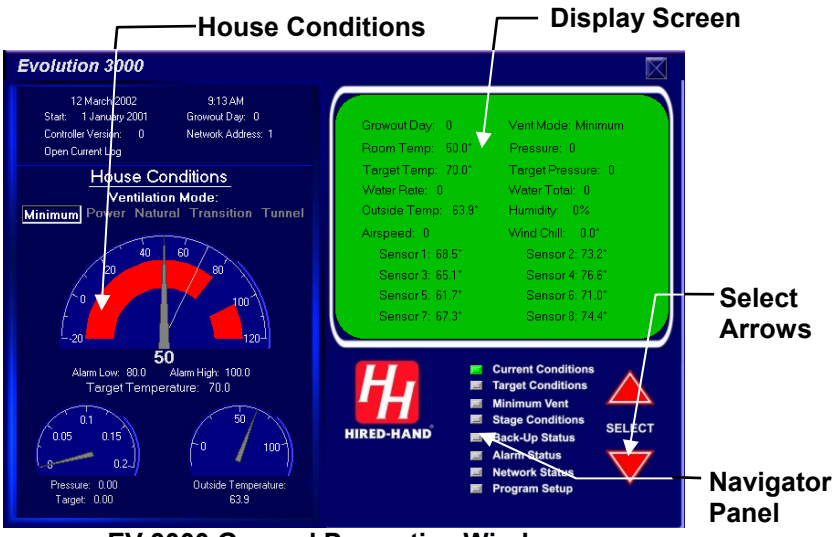
General Properties Window

Double clicking on the Evolution 3000 icon on the main screen will provide a screen similar to the one shown below. The left half of the screen shows the current General and House Conditions (See the next section.). The right half of the screen displays the following information:

Display Screen – This displays the information that is currently selected in the Navigator Panel.

Select Arrows – These two arrows move the green indicator in the Navigator Panel up and down. The label can also be selected by clicking with the mouse.

Navigator Panel – Selects the information to be displayed in the Display screen.

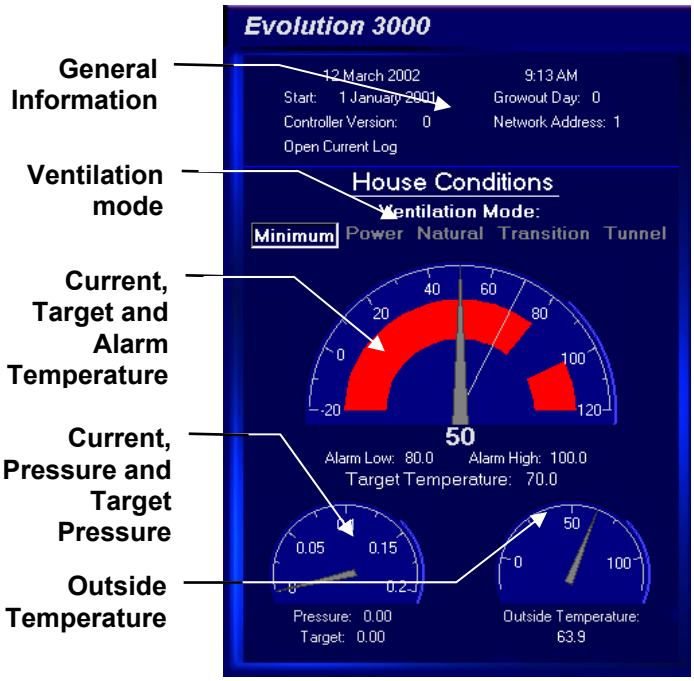


EV 3000 General Properties Window

General and House Conditions

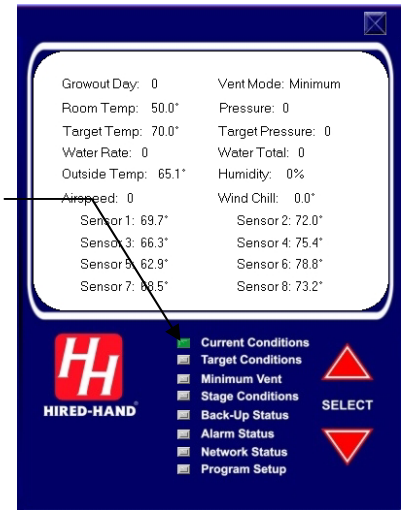
The General and House Conditions show the following:

The current time and date, the start day of the current Growout Period, the current Growout Day, The Controller Version, the Network Address, and a link to open the currently running data log.



Display Screen Area

The Display area contains the information selected in the Navigator List. For additional information the reader is referred to the Evolution 3000 Owners Manual (Part Number 4801-5307). There are eight screen options available in the Navigator list. To access these screens, either click on the arrow buttons or click the label. The screen shown at the right is the Current Conditions screen.



Current Conditions displays the following information.

Growout Day – The current day in the growout period.

Room Temp – The average temperature of the sensors for display.

Target Temp.– The desired temperature of the building.

Target Pressure– The desired target pressure internal to the building.

Water Rate – If an Alert Alarm is installed, this is the current Water Rate.

Water Total – If an Alert Alarm is installed this is the current Total water reading.

Pressure – The current atmospheric pressure internal to the building.

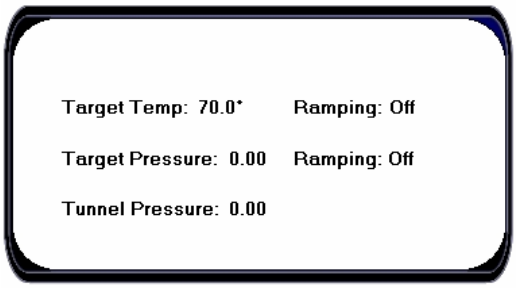
Outside (Temperature) – The outside temperature as indicated by the outside sensor.
Airspeed - The velocity of the air in the building in feet per minute**.**
Vent Mode – Indicates the current ventilation mode: either Minimum, Natural, Power, Transition or Tunnel.

MODE	Definition
Minimum	Heat stages or timer fans operating. None of the negative stages are on because of temperature.
Natural	The main curtains are open.
Power	The curtains are up and there are negative fans on because of temperature.
Transition	The control is between power and tunnel ventilation. The control is making the adjustments needed to go into tunnel.
Tunnel	The tunnel signal has been activated and the system has entered into tunnel.

Humidity – The percent of water vapor of the air inside the building.
Wind Chill (Factor)- The wind chill factor based upon the house temperature and the wind speed.
Sensor 1 through 8 – The current temperature read by each sensor.

Target Conditions displays the following information:

Target Temperature - This is the desired temperature of the building.
Ramping – Indicates if ramping of the Target Temperature is turned On or Off. You are also allowed to turn the temperature ramping on or off in the program set up screen. You use the Navigator to reach the Program Setup screen and then click on Temp Ramp.

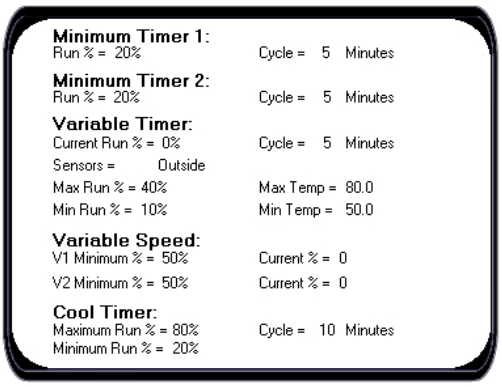


Target Pressure - This is the desired negative pressure in the building.
Ramping – Indicates if ramping for the Target Pressure is turned on: On or Off. You are also allowed to turn the pressure ramping on or off in the program setup screen.
Tunnel Pressure – Indicates the desired negative pressure in the building while in the Tunnel Mode.

Minimum Vent

Minimum Vent displays the following information:

Minimum Timer 1 - The Minimum timer one and two both share the same cycle time. Different timer percentages may be set for minimum 1 vs. minimum 2. If the vent anticipation is being used, both minimum 1 and 2 will start the vents open before a stage comes on.
Run % -The percentage of the Timer 1 cycle that the stage will run.
Cycle - The length of Timer 1 cycle. Cycle = 1 to 20 minutes.



Minimum Timer 2 - The Minimum timer one and two both share the same cycle time. Different timer percentages may be set for Minimum 1 and. Minimum 2. If the vent anticipation is being used, both Minimum 1 and 2 will start the vents open before a stage comes on.
Run % - The percentage of the Timer 2 cycle that the stages will run.
Cycle - The length of the Timer 2 cycle.
Variable Timer - The variable timer is similar to the expanded timer found in the System 2000 PC-8. The variable timer will vary the timer based on temperature.
Current Run % - The percentage of time a stage is currently running using the variable timer based off the temperature.
Cycle - The length of the Variable Timer cycle. The variable timer is allowed to have a different cycle time than the minimum timer.

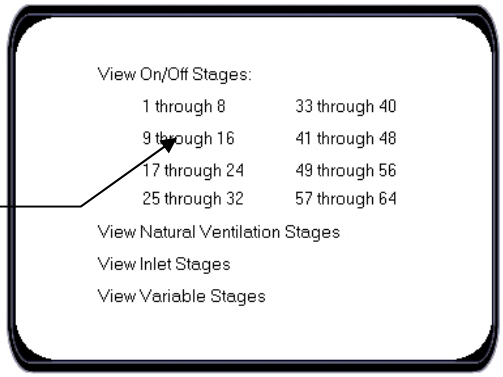
Sensors - The sensors used to determine the run time.
Max Run % - The maximum Run Time percentage.
Max Temp - The temperature at which the timer will run Maximum Run time %.
Min Run % - The minimum Run Time percentage.
Min Temp - The minimum temperature. The timer will be at minimum Run %

Variable Speed - These settings are used to set up variable speed fan operation.
V1 Minimum - The minimum speed or minimum percentage of light intensity for V1.
Current % - The current percentage of speed or light intensity of V1.
V2 Minimum -The minimum speed or minimum percentage of light intensity for V2.
Current % - The current percentage of speed or light intensity of V2.

Cool Timer - Cool timer is also allowed a different timer cycle if needed. This can be used for foggers or cool cell systems.
Max Run - The Cool Timer Maximum Run Time percentage.
Cycle - Cycle Time in Minutes. Cool timer is also allowed a different timer cycle if needed. This will be used for foggers or cool cell systems.
Min Run - The Cool Timer Minimum Run Time percentage.

Stage Conditions

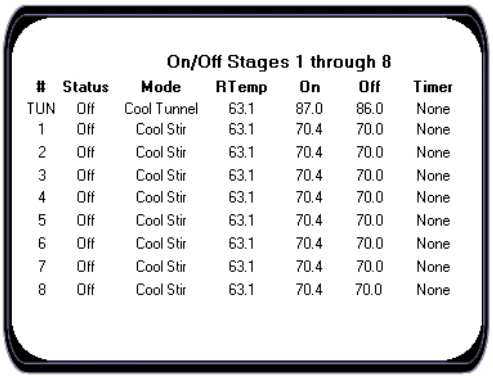
When Stage Conditions is selected by using the Navigator Select arrows, the menu screen is shown.



On/Off Stages

The On/Off stages are used for devices that do not need a variable speed capability. This screen shows you how your stages are set. You can view 8 stages at a time. Click on the Stages that you want to open..

To View these Screens, Click on the Labels



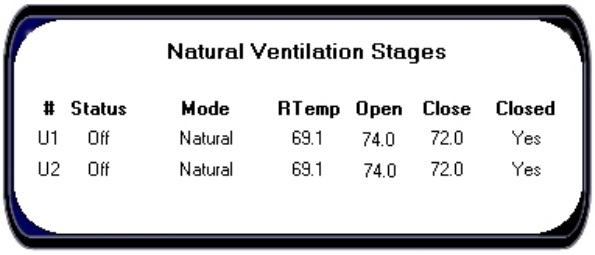
On/Off Stages 1 through 8

#	Status	Mode	RTemp	On	Off	Timer
TUN	Off	Cool Tunnel	63.1	87.0	86.0	None
1	Off	Cool Stir	63.1	70.4	70.0	None
2	Off	Cool Stir	63.1	70.4	70.0	None
3	Off	Cool Stir	63.1	70.4	70.0	None
4	Off	Cool Stir	63.1	70.4	70.0	None
5	Off	Cool Stir	63.1	70.4	70.0	None
6	Off	Cool Stir	63.1	70.4	70.0	None
7	Off	Cool Stir	63.1	70.4	70.0	None
8	Off	Cool Stir	63.1	70.4	70.0	None

 # - Identifies the On\Off stage number or Tunnel. Tunnel is not a stage like the Stage Master and Vent Master. This parameter is set in the tunnel setup of Program Setup screen. See Section 7.4, Tunnel Setup.
Status - Indicates if the stage is currently On or Off.
Mode - This column indicates how the stage is programmed. Any stage can be set to any of these modes. The available stage options are: Off, Heat, Cool Stir, Cool Negative, Cool Negative Tunnel, Cool Tunnel, Light, Feed or Cool Evaporative.
Rtemp - The Rtemp column will indicate the current temperature the stage is operating from.
On – The current temperature setting for the on point temperature of the stage.
Off - The current temperature setting for the off point temperature of the stage.
Timer - This column indicates if a stage is on a timer and shows the different timers you are allowed to put a stage on. The timer options are: None, Min1, Min2, Var or Cool.

Natural Ventilation Stages

Natural Ventilation stages are used to open and close side curtains to allow natural ventilation.



Natural Ventilation Stages

#	Status	Mode	RTemp	Open	Close	Closed
U1	Off	Natural	69.1	74.0	72.0	Yes
U2	Off	Natural	69.1	74.0	72.0	Yes

#- The stage bank either U1 or U2.
Status - This column will indicate whether the machine is Off, Opening or Closing.

Mode – The mode column indicates how the machine will be operating. It will be a "Natural" curtain or a "Natural and Tunnel" machine, (U2 only).

Rtemp –The Rtemp column will indicate the current temperature the curtain machine is operating from.

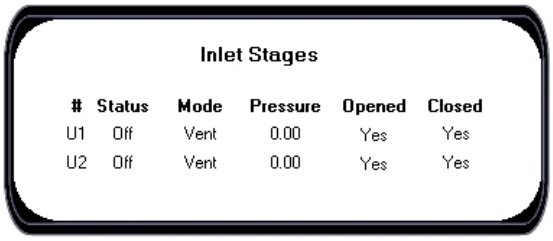
Open – The temperature at which the curtain opens.

Close – The temperature at which the curtain closes.

Closed - This column indicates if the machine is fully closed. When the machine is on the closed auxiliary switch, this column will display "Yes".

Inlet Stages

The Inlet Stages are used to control Power Trak operation for power ventilation. U1 is normally for baffle boards and U2 controls tunnel inlets.



#- The stage bank either U1 or U2.

Status - Indicates if the Stage is Off, Opening or Closing.

Mode – The mode column tells you how the machine will be operating. If it will be a vent machine "Vent" or a tunnel machine "Tunnel".

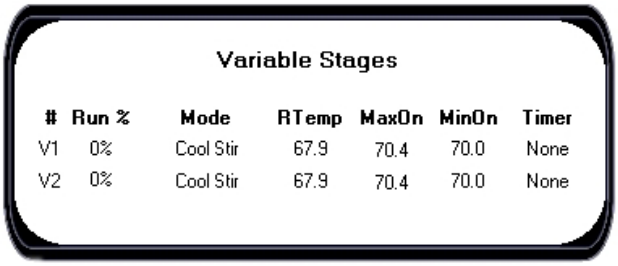
Pressure – Indicates the pressure in the building.

Opened – Indicates if the machine is fully open (Yes or No). When the machine is fully open on the open auxiliary switch, this column will indicate a "Yes".

Closed – Indicates if the machine is fully closed (Yes or No). When the machine is fully closed on the closed auxiliary switch, this column will indicate a "Yes".

Variable Stages

The Variable stages are used to control devices (i.e. fans, light, etc.) with a variable capability.



#- The Stage bank either U1 or U2.

Run %- This is the current percentage that the device is operating.

Mode – Indicates how the stage is programmed: Cool Stir, Cool Negative, Cool Negative Tunnel, Cool Tunnel or Light.

Rtemp –The Rtemp column will indicate the current temperature the stage is operating from.

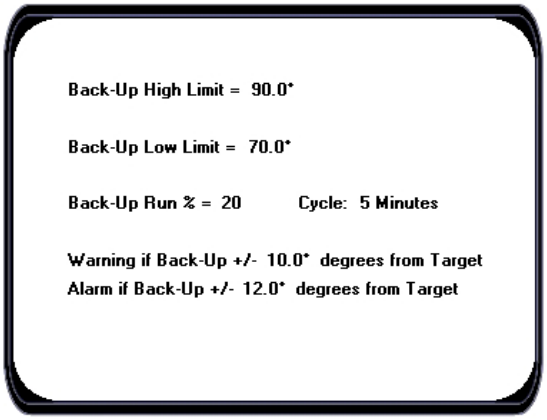
MaxON –This will be the temperature at which the variable speed fan will reach full speed.

MinON -The temperature at which the fan will run at minimum speed.

Time – None, Min1, Min2, Var or Always ON (ON). Always ON when Rtemp is below MIN ON.

Back-Up Status

NOTE: This is the high and low limit of the Evolution Back-Up system. These setting are set in the Back-Up system.



Back-up High Limit – The high temperature limit at which the Back-up stages will start turning on cool stages.

Back-Up Low Limit - The low temperature limit at which the Back-up will turn on the heat stage.

Back-Up Run %- The Back-up timer percentage. NOTE: This is the timer percentage of the Evolution Back-Up system. This setting is set in the Back-Up system. If the Back-Up fails to communicate with the Evolution 3000 control the Back-Up will display an LnE. At this point the Back-Up will take

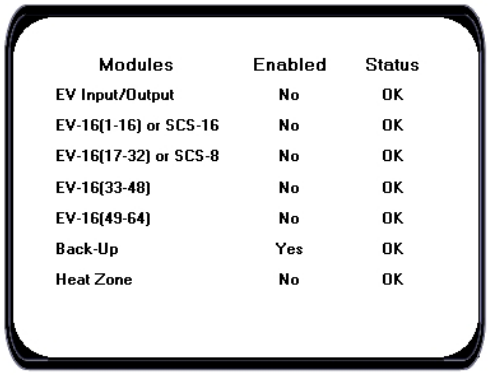
over minimum ventilation by running all Cool 1 circuits on this timer. This percentage is how long the fan will run out of five minutes.

Cycle - The cycle time of the back-up stages is 5 minutes.

Warning if Back-Up – If Backup settings are set that far away from target, Back-up status light will flash.

Alarm if Back-Up -Same as above but will also set off auxiliary alarm contact.

Network Status



Modules	Enabled	Status
EV Input/Output	No	OK
EV-16(1-16) or SCS-16	No	OK
EV-16(17-32) or SCS-8	No	OK
EV-16(33-48)	No	OK
EV-16(49-64)	No	OK
Back-Up	Yes	OK
Heat Zone	No	OK

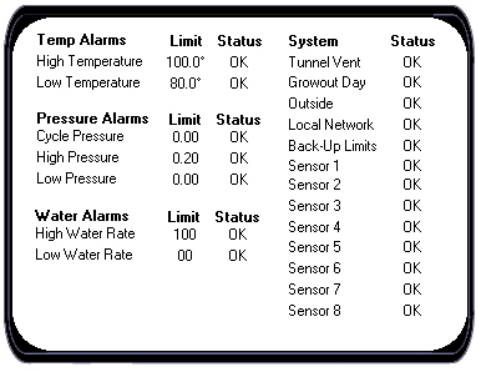
The Network Status shows the installed Evolution Stages, the Back-Up and the Heat Zone. The ENABLED indicator shows if the stage is enabled and the STATUS indicates OK or Failed.

Modules – The Evolution modules that can be installed will appear here. EV Input/Output+ - This is the back board of the Evolution 3000.

Enabled – Those modules that are enabled will be indicated by Yes. This column lets you know which modules are turned on for the Evolution control to communicate with. When adding expansion back-up modules, the ENABLED must be set to "Yes" for proper operation.

Status - OK or Failed. This column lets you know if you have lost communication with one of the modules.

Alarm Status



Temp Alarms	Limit	Status
High Temperature	100.0°	OK
Low Temperature	80.0°	OK
Pressure Alarms	**Limit**	**Status**
Cycle Pressure	0.00	OK
High Pressure	0.20	OK
Low Pressure	0.00	OK
Water Alarms	**Limit**	**Status**
High Water Rate	100	OK
Low Water Rate	00	OK

System	Status
Tunnel Vent	OK
Growout Day	OK
Outside	OK
Local Network	OK
Back-Up Limits	OK
Sensor 1	OK
Sensor 2	OK
Sensor 3	OK
Sensor 4	OK
Sensor 5	OK
Sensor 6	OK
Sensor 7	OK
Sensor 8	OK

The ALARM column lists the elements and sensors that are available. For the High and Low temperatures and High and Low pressure, the Cycle Pressure the current Alarm Limits are shown. For all entries the STATUS and the LAST REPORTED alarm are indicated. NOTE: The High and Low temperature reading is taken from the Sensors for Display in "Sensor Setup" of the Program Setup Screen.

High Temperature Limit & Status - The high temperature setting at which the alarm relay will activate.

Low Temperature Limit & Status - The low temperature setting at which the alarm relay will activate.

Cycle Pressure Limit & Status - The pressure setting at which the alarm relay will activate provided the pressure differential in not seen during the timer period.

High Pressure Limit & Status - The High Pressure alarm will send a signal to your existing alarm system when the pressure exceeds the High Pressure Setpoint for greater than 45 seconds. (High Negative Pressure) This alarm warns if the vents did not open for some reason.

Low Pressure Limit & Status - The Low Pressure alarm will send a signal when pressure drops below the Low Pressure setpoint for greater than 45 seconds. This alarm warns if the vents failed to close for some reason. Setting the Low Pressure alarm setpoint to "OFF" prevents the alarm from sounding.

Tunnel Vent - The Tunnel alarm will send a signal if for some reason the controller is unable to enter tunnel.

Growout Day - Status.

Outside - If the sensor is disabled, this field will show "off". If the sensor is enabled, this field will show "OK" if the sensor is functioning properly or "fail" if the sensor is not properly reporting the temperature. Check wiring for damage or bad connection.

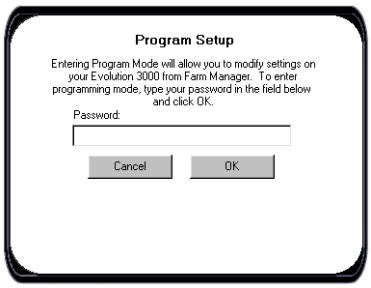
Local Network - Status.

Back-Up Limits - Status.

Sensor 1 through 8 Status - If the sensor is disabled, this field will show "off". If the sensor is enabled, this field will show "OK" if the sensor is functioning properly or "fail" if the sensor is not properly reporting the temperature. Check wiring for damage or bad connection.

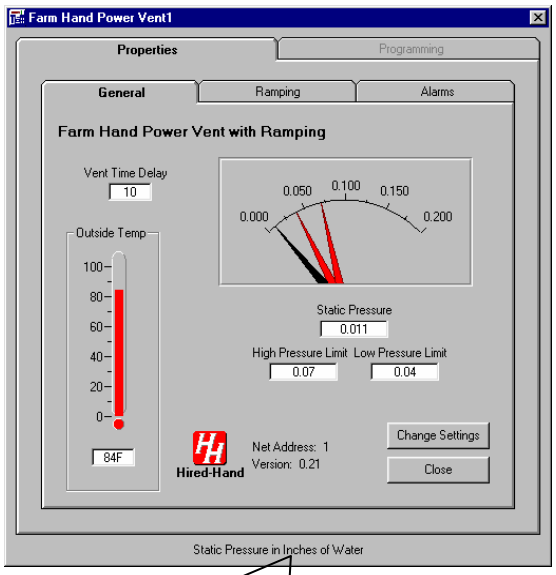
Program Setup

To enter the Programming mode, bring up the Program Setup screen shown at to right. Then enter your password and click OK. The programming window will appear. For a description of the programming screens see Section 23. To change your password, see Section 14 of this manual.



22.2 Farm Hand Power Vent

There is a **General** window available for all Power Vents. For a Power Vent with ramping, a **Ramping** and an **Alarms** window are also available.



Static Pressure units are selected from the General Programming window.

General Properties Window

Double clicking on the Power Vent icon on the main screen will provide a screen similar to the one shown here. The following data will be displayed.

Outside Temperature – The current outside temperature as reported by the controller.

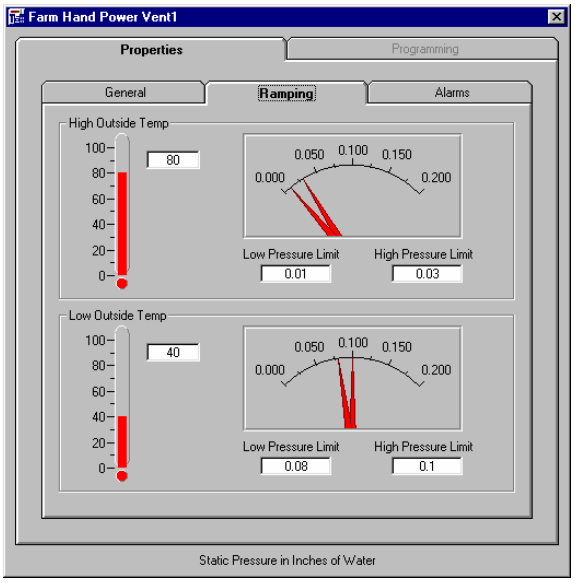
Static Pressure - The current pressure as reported from the controller. Shown by a black arrow.

High Pressure Limit - The current High Pressure Limit setting in the controller. Shown by a red arrow.

Low Pressure Limit - The current Low Pressure Limit setting in the controller. Shown by a red arrow.

Change Settings - This option allows the controller to be remotely programmed from Farm Manager. Clicking on this button brings up the screens for programming. See Section 23.2.

Close - Exits this screen.



Pressure Ramping Properties Window

Clicking on the Ramping Tab at the top of the window brings up this screen. To exit the Ramping screen, return to the General window. The following information is displayed on the Ramping screen:

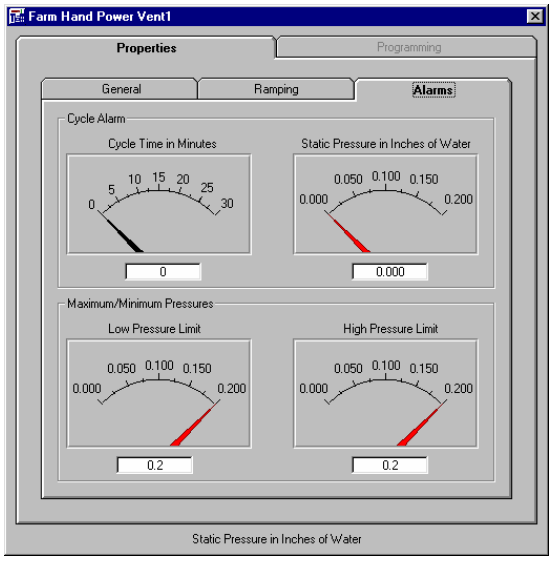
High Outside Temperature - The temperature the controller will use in setting the corresponding **High Pressure** and **Low Pressure**

Limits. The pressures corresponding to these limits are also displayed on the needle graph as well as in the text boxes.

Low Outside Temperature - The outside temperature the controller will use in setting the corresponding **High Pressure** and **Low Pressure** limits. The pressures corresponding to these limits are also displayed on the needle graph as well as in the text boxes.

Alarms Properties Window

Clicking on the Alarms Tab at the top of the window brings up this screen. To exit the Alarms screen, return to the General window. The following information is displayed on this screen:



Cycle Alarm - Cycle Time in Minutes - The cycle alarm will warn if the timer fans failed to operate.

Cycle Alarm - Static Pressure - Sets the static pressure that the cycle alarm uses to alarm.

Low Pressure Limit - The low pressure alarm will send a signal when pressure drops below the Low Pressure Limit (setpoint) for greater than 45 seconds.

High Pressure Limit - The high pressure alarm will send a signal to the alarm system when pressure exceeds the High Pressure Limit (setpoint) for greater than 45 seconds.

22.3 Farm Hand Stage Controllers

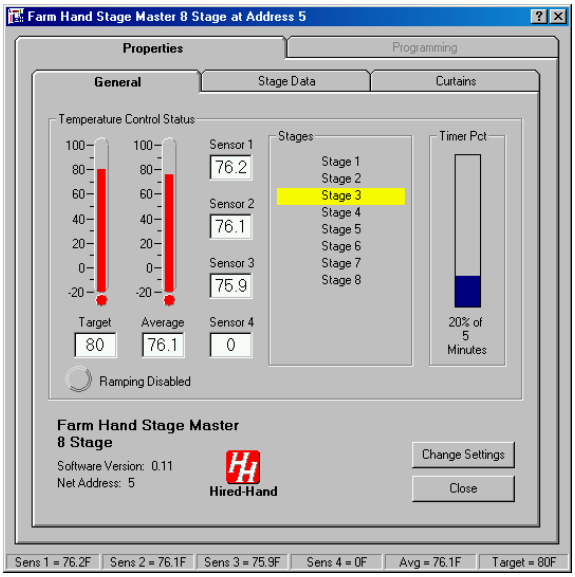
There is a **General**, **Stage Data** and **Curtain**s window available for all Stage Master and Swine Finishers. For a Stage Master controller with variable speed or a Swine Finisher variable speed stage there is an additional **Variable Speed** window.

At the bottom of all of the Properties and Programming windows the following information is displayed:

Sensor Temperatures – The current temperatures of the four temperature sensors.

Average Temperature – The average temperature of the three temperature sensors.

Target Temperature – The temperature the controller tries to maintain. This value is set in the Programming-General window.



General Properties Window

Double clicking on the label for a stage controller brings up a screen similar to the one shown at the right. The General Properties screen contains the following information:

Temperature Control Status – Displays the current temperature read by the sensors plus the Average and Target.

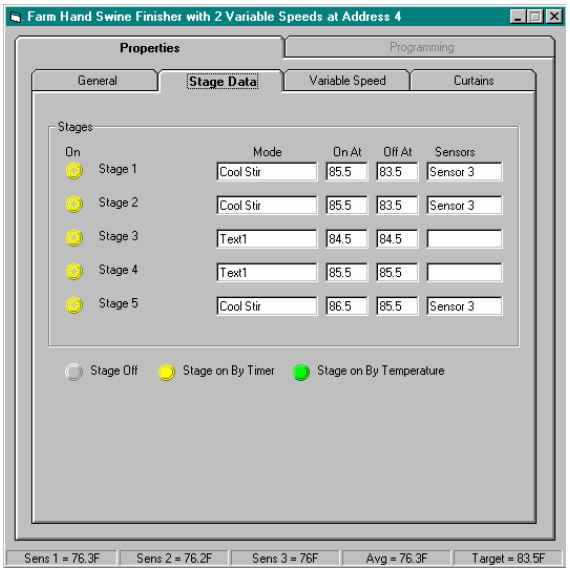
Fixed and Variable Speed Stages – The stages that are active are displayed. The color of the stage label indicates the reason why the stage is ON. See the Stage Data

screen for the colors used and the meanings.

Timer Percent - The percent of the timer cycle that a stage on a timer will run.

Change Settings - Allows the controller to be programmed. See Section 23.3.

Close – Exits this window.



Stage Data Properties Window

Double clicking on the Stage Data tab at the top of the window brings up a screen similar to the one shown below. The Stage Data Properties screen contains the following information:

Stages On - The color of the indicator indicates the reason the Stage is ON.

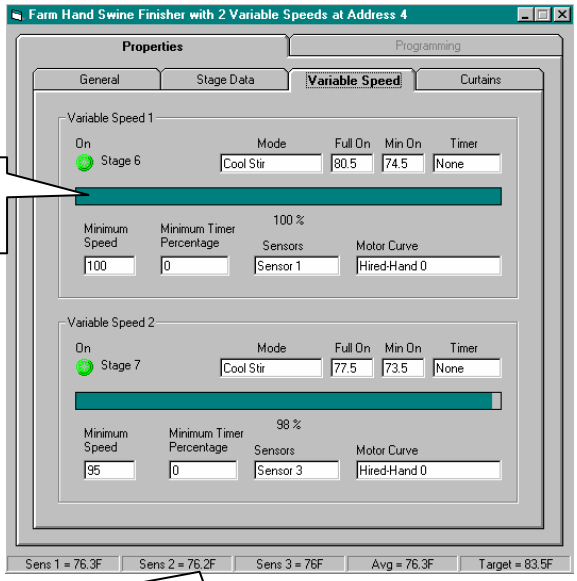
Mode - The current mode of the stage.

On At - The Temperature the stage turns on.

Off At - The temperature the stage turns off.

Sensors - The sensors controlling a particular stage.

Sensor Indicators - Displays the current run status of the stages, either Off (gray), On by a timer (yellow) or On by a temperature setting (green).



Speed Bar indicator

Current temperatures of all the individual sensors are shown here.

Variable Speed Properties Window

Double clicking on the Variable Speed tab at the top of the window brings up a screen similar to the one shown below. The Variable Speed Properties screen contains the following information:

Stage On/Off Indicator - The color of the indicator indicates the reason the Stage is ON.

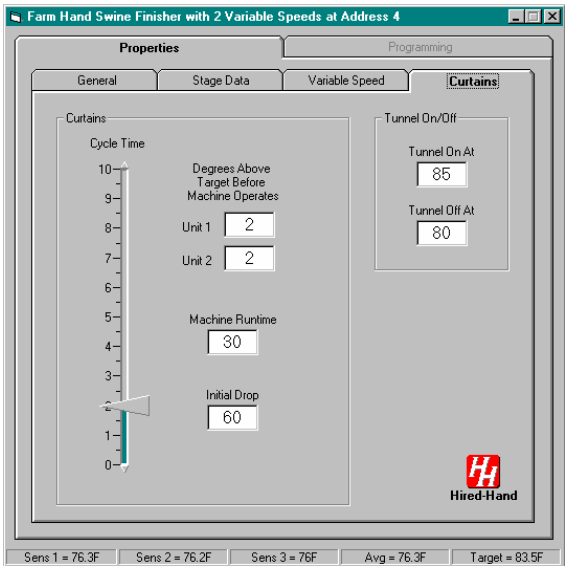
Also indicated is the current settings for the **Mode, Full On, Minimum On, Timer, Minimum Speed, Minimum Timer Percentage, Sensors,** and **Motor Curve**.

A Speed indicator bar indicates the current running speed of the variable speed stage fan.

Curtains Properties Window

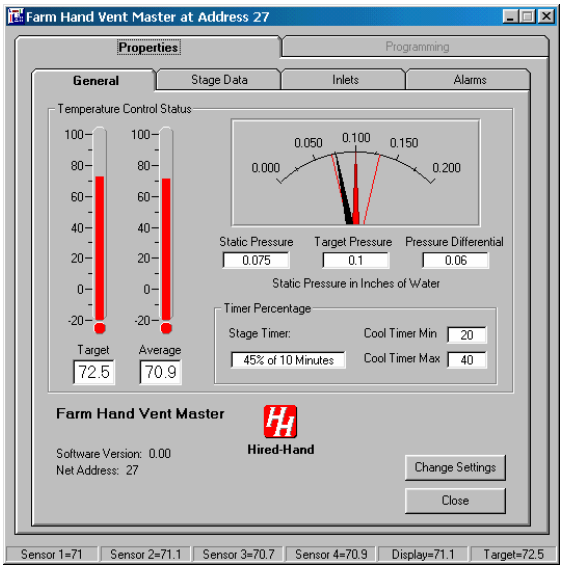
Double clicking on the Curtains tab at the top of the window brings up a screen similar to the one shown below. The Curtains Properties screen contains the **Curtains Cycle Time, Degrees Above Target, Machine Runtime, Initial Drop, Tunnel On At,** and **Tunnel Off At** temperatures.

To select another properties screen, click the tab at the top of the form. To exit the Properties display, first return to the General window.



22.4 *Farm Hand Vent Master*

There is a **General, Stage Data, Inlets** and an **Alarms** properties window for the Farm Hand Vent Master. If the vent Master is connected to a Farm Hand Heat Zone controller, there will be an additional tab for the Heat Zone similar to the one shown in Section 22.6 of this manual. At the bottom of all of the Vent Master Properties and Programming windows the following information is displayed:



Sensor Temperatures – The current temperatures of the four temperature sensors.

Display Temperature – The temperature displayed on the front panel of the Vent Master controller. This value is set in the Programming–General window as Room Temperature Display.

Target Temperature – The temperature the controller tries to maintain. This value is set in the Programming-General window.

General Properties Window

The General Window contains the following information:

Temperature Control Status – Displays the current Target and Average sensor temperature readings. The Average temperature is calculated by averaging sensors 1, 2 and 3.

Static Pressure – The current static pressure in the building.

Target Pressure and Pressure Differential – The Vent Master has two basic pressure settings, a Target Pressure, and a Pressure Differential. The Target Pressure is the static pressure that the system tries to maintain within the limits of the Pressure Differential. The Pressure Differential is the range around the Target Pressure that is considered satisfactory. From the Target Pressure and the Pressure Differential the High and Low Pressure limits are calculated. The High Pressure limit is the Target Pressure plus half of the Pressure Differential and the Low Pressure limit is the Target Pressure minus half of the Pressure Differential. The controller will open and close the vents as needed to maintain pressure between the high and low limits.

The remaining parameters on this screen are similar to the stage controllers and are described Section 23.3 of this manual. These parameters are:

Stage Timer Percentage
Cool Timer Minimum Percent
Cool Timer Maximum Percent

Change Settings – Click this button the go the Programming windows as discussed in Section 23.4 of this manual.

Close – Exits this window

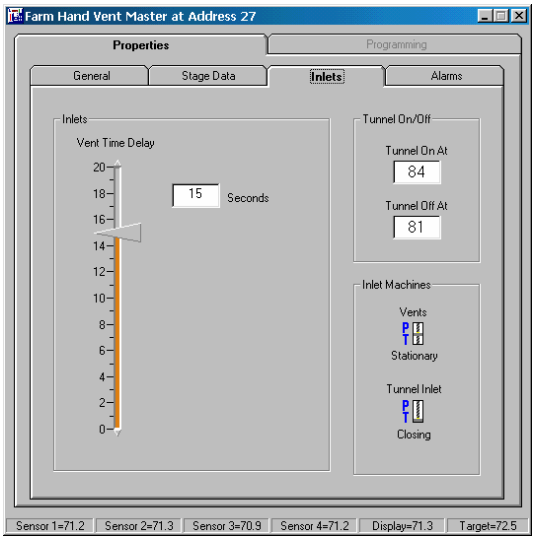
Stage Data Properties Window

Information in this window is similar to the Farm Hand Stage controllers as discussed in Section 23.3 of this manual.

Inlets Properties Window

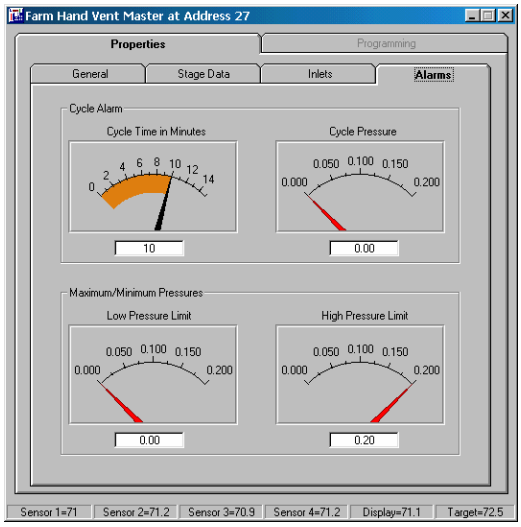
This window displays the current Vent Time Delay, Tunnel On At and Tunnel Off At temperatures. To change these settings go the Properties/General window and click on Change Settings.

The **Inlet Machines** display graphically shows the positions of the PowerTrak machines as either currently opening, closing or stationary.



Alarms Properties Window

This window displays the following:



Cycle time in Minutes – This is based on the setting of SWX3 in the controller.

Cycle Pressure – The pressure surge normally caused when the fans operate. If the pressure surge is not detected, an alarm will be sent.

Low Pressure Limit - The Low Pressure alarm will send a signal when pressure drops below the Low Pressure setpoint for greater than 45 seconds. This alarm warns if the vents failed to close.

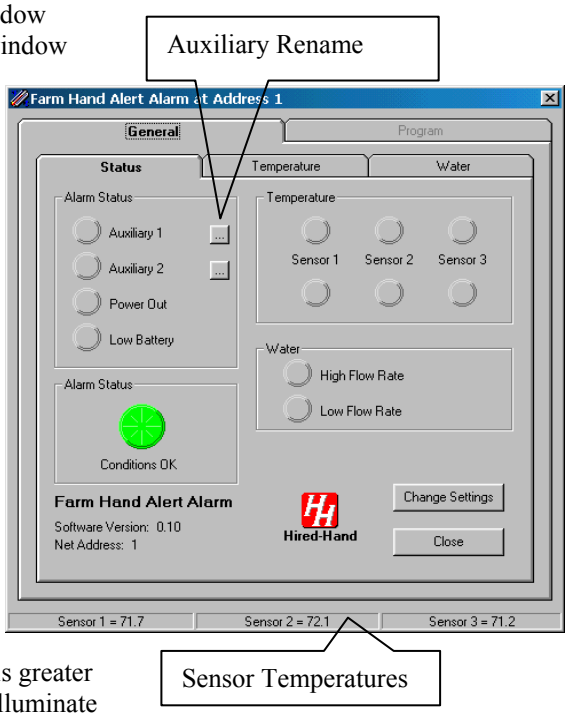
High Pressure Limit - The High Pressure alarm will send a signal to your existing alarm system in the same manner as the Low Pressure alarm, but only when pressure exceeds the High Pressure Setpoint for greater than 45 seconds. (High Negative Pressure.) This alarm warns if the vents did not open.

22.5 Farm Hand Alert Alarm

There is a **Status**, **Temperature** and **Water** properties window for the Farm Hand Alert Alarm. The **Sensor temperatures** are displayed on all three of the Properties windows. See the General window example below.

Status General Window

Double clicking on the Status tab at the top of the General window brings up a screen similar to the one at the right. The Status window contains the following information:



Alarm Status - These four buttons will illuminate red for an alarm condition:
Auxiliary 1 & 2 - The auxiliary alarm circuit has opened and caused an alarm.

Power Out - The main AC power to the controller is OFF.

Low Battery - The battery voltage has fallen to less than 10.6 volts.

Auxiliary Rename - This option allows a user to rename the Auxiliary 1 and 2 labels to reflect specific auxiliary equipment that is connected to the Auxiliary 1 & 2 alarm inputs.

Temperature Sensor 1, 2 and 3 - The upper button will illuminate Red if the current temperature is greater than the High Limit setpoint. The lower button will illuminate Red if the current temperature is less than the Low Limit setpoint.

Water Flow - The High Flow Rate will be illuminated Red if the current flow rate is greater that the High Flow Rate setpoint. The Low Flow Rate will be illuminated Red if the current flow rate is less than the Low Flow Rate setpoint.

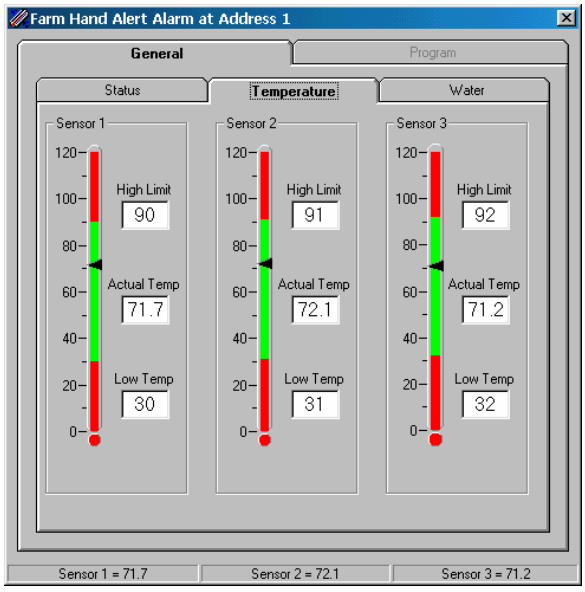
Alarm Status Conditions OK- This indicator will illuminate Green if there are no alarms being reported and Red if there is a reported alarm.

Change Settings - This control button opens the Programming screens for the Alert Alarm. See Section 28.

Close - Closes the window.

Temperature General Window

Double clicking on the Temperature tab at the top of the General window brings up a screen similar to the one at the right. The Temperature window contains the following information:



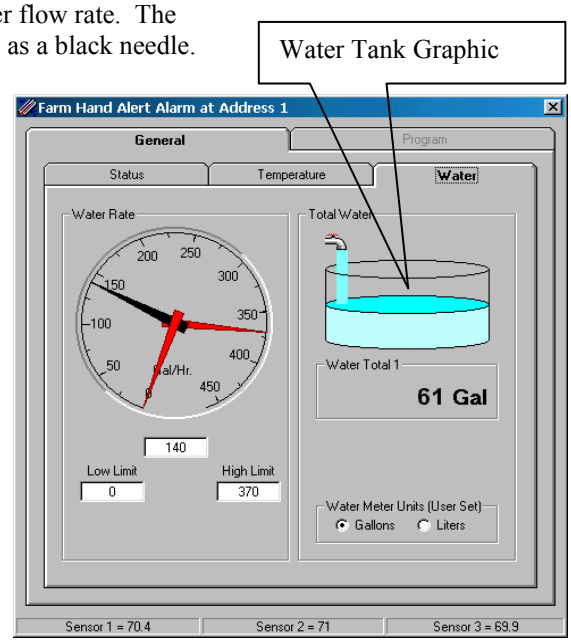
Thermometer Graphic - This graphic shows the out of limit temperatures in Red and the range between High and Low in Green. The actual temperature is shown by the black arrow.

Sensor 1, 2 and 3 High and Low Limits - The graphic of the thermometer shows the out of limit temperatures in Red and the range between the High and Low Limits in Green.

Sensor 1, 2 and 3 Actual - The actual temperatures are shown by the black arrows.

Water General Window

Double clicking on the Water tab at the top of the General window brings up a screen similar to the one at the right. The Water window contains the following information:



Water Rate Meter- This box displays the current water flow rate. The graphic of the water meter shows the current water rate as a black needle. The High and Low limit setpoints are shown by red needles.

Low Limit - The Low limit setpoint for the water rate.

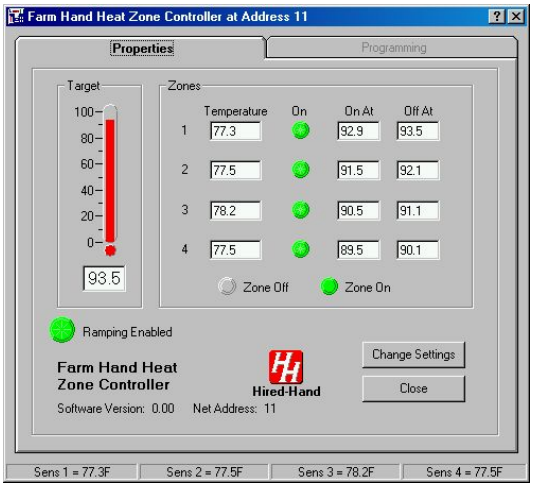
High Limit - The high limit setpoint for the water rate.

Total Water - Water Tank Graphic - This graphic representation of the water flow rate will show an empty tank when the water total 1 is reset to zero. Water flow rates above 0 will indicate water contents in the tank. (Note: the amount of water indicated in the tank does not relate to any external water supply facility.)

Water Total 1 - Water total as read from the Alert Alarm.

Water Meter Units - This button allows the user to change the water quantity units on the displays to either Gallons or Liters.

22.6 *Farm Hand Heat Zone*



The Farm Hand Heat Zone controller has one Properties window which shows the Target temperature of the heated area, the Zone temperatures and the On and Off points for each Zone. If heat is on, the green "On" indicator will be lighted. If the heat is off, the indicator will be gray.

The status of temperature ramping is indicated by a GREEN indicator by "Ramping Status". For a discussion of temperature ramping see Section 23.7.

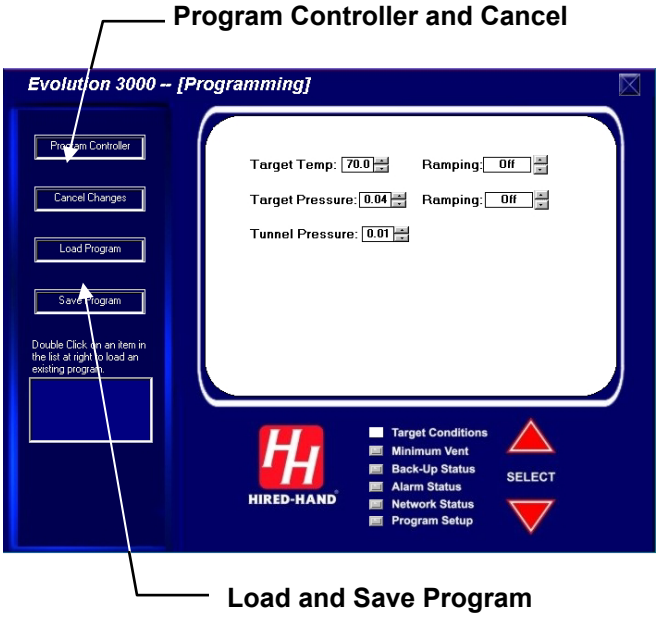
The current temperature for each zone sensor is shown at the bottom of the screen.

23. Farm Manager Programming Windows

Farm Hand controllers connected to the HH.Net can be remotely programmed by Farm Manager. From the Properties screen of the controller, click on the Change Settings button. If a password is required, Farm Manager will request the password before the programming windows can be accessed. Section 23.1 discusses programming the Evolution 3000. Section 23.2 discusses programming vent controllers, Section 23.3 discusses programming stage controllers, Section 23.4 discusses programming the Vent Master and Section 23.5 discusses programming the Alert Alarm.

23.1 Farm Hand Evolution 3000

To access the Evolution 300 Programming screen, see Section 22.1 of this manual. The following programming screen will appear. On the left side of the screen are the Program Controller and Cancel Buttons. Below these are the Load Program and Save Program buttons.



Program Controller – This button is used to transfer any programming changes you have made to the controller. *NOTE: If you exit the Farm Manager Program without clicking on the Program Controller button, any programming changes you have made will not be transferred to the Evolution 3000.*

Cancel Changes – This will leave the programming screens without transferring any programming changes you have made.

Load Program - This button will allow you to load an existing program file you have previously saved or transferred from another computer.

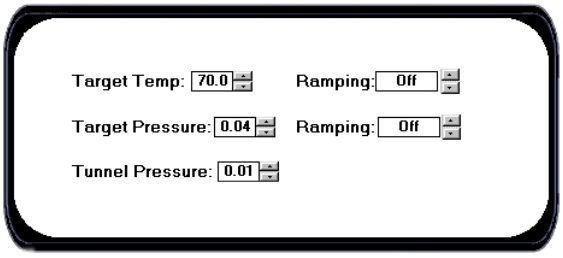
Save Program - If you want to save the programming parameters currently loaded in a controller and in Farm Manager, this button will bring up a screen so you can name the program and file location. These files are saved with an .fmp extension.

On the right side of the Programming Screen, the user can choose six screens available to program the Evolution 3000 controller from Farm Manager. These are:

- Target Conditions
- Minimum Vent
- Back-Up Status
- Alarm Status
- Network Status, and
- Program Setup

To select the various screens use the Navigator arrows (SELECT) or click on the Navigator screen label.

For additional information on the Programming Functions, the user is referred to the Evolution 3000 Owners manual.



Target Conditions

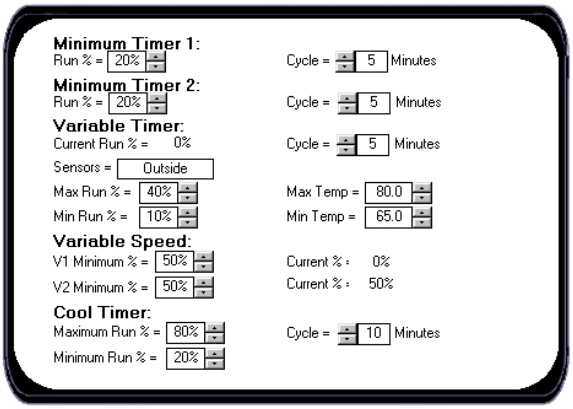
The following parameters can be adjusted from this screen:

Target Temp - This is the desired temperature of the building.
Ramping (Target Temperature)– Indicates if ramping of the Target Temperature is turned On or Off. You are also allowed to turn the temperature ramping on or off by clicking on the arrow buttons.
Target Press - This is the desired negative Target Pressure in the building.
Ramping (Target Pressure)– Indicates if ramping for the Target Pressure is turned on: On or Off.
Tunnel Pressure – Indicates the desired negative pressure in the building while in the Tunnel Mode.

Minimum Vent

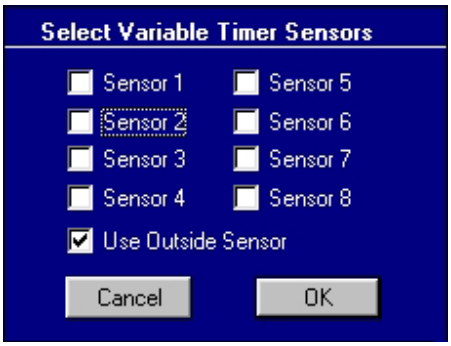
Minimum Timer 1 - The Minimum timer one and two both share the same cycle time. Different timer percentages may be set for minimum 1 vs. minimum 2. If the vent anticipation is being used, both minimum 1 and 2 will start the vents open before a stage comes on.
Run % -The percentage of the Timer 1 cycle that the stage will run.
Cycle - The length of Timer 1 cycle. Cycle = 1 to 20 minutes.

Minimum Timer 2 - The Minimum timer one and two both share the same cycle time. Different timer percentages may be set for Minimum 1 and. Minimum 2. If the vent anticipation is being used, both Minimum 1 and 2 will start the vents open before a stage comes on.
Run % - The percentage of the Timer 2 cycle that the stages will run.
Cycle - The length of the Timer 2 cycle.



Variable Timer: The variable timer is similar to the expanded timer found in the System 2000 PC-8. The variable timer will vary the timer based on temperature.
Run %: The percentage of time a stage is currently running using the variable timer based off the temperature.
Cycle - The length of the Variable Timer cycle. The variable timer is allowed to have a different cycle time than the minimum timer.

Sensors - The sensors used to determine the run time. Active sensors will be indicated by a number between 1 and 8. For example, If sensors 1,2 and 3 are being used, "123" will be displayed. When "outside" is displayed, the outside sensor is active. To change the sensor selection, click on the Sensor Label and the Sensor Selection Screen shown to the right will appear.



Max Run % - The maximum Run Time percentage.
Min Run % - The minimum Run Time percentage.
Max Temp - The temperature at which the timer will run Maximum Run time %.
Min Temp - The minimum temperature. The timer will be at minimum Run %

Variable Speed - These settings are used to set up variable speed fan operation.
V1 Minimum - The minimum speed or minimum percentage of light intensity for V1.
Current % - The current percentage of speed or light intensity of V1.
V2 Minimum -The minimum speed or minimum percentage of light intensity for V2.
Current % - The current percentage of speed or light intensity of V2.

Cool Timer - Cool timer is also allowed a different timer cycle if needed. This can be used for foggers or cool cell systems.

Max Run - The Cool Timer timer is also allowed a different timer Maximum Run Time percentage.

Min Run - The Cool Timer Minimum Run Time percentage.

Cycle - Cycle Time in Minutes. Cool timer is also allowed a different timer cycle.

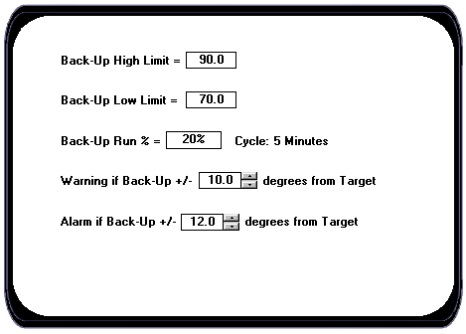
Back-Up Status

The Back-Up status shows the status information concerning back-up operation. NOTE: This is the high and low limit of the Evolution Back-Up system. These setting are set in the Back-Up system.

Back-up High Limit – The high temperature limit at which the Back-up stages will start turning on cool stages.

Back-Up Low Limit - The low temperature limit at which the Back-up will turn on the heat stage.

Back-Up Run % The Back-up timer percentage. NOTE: This is the timer percentage of the Evolution Back-Up system. This setting is set in the Back-Up system. If the Back-Up fails to communicate with the Evolution 3000 control the Back-Up will display an LnE. At this point the Back-Up will take over minimum ventilation by running all Cool 1 circuits on this timer. This percentage is how long the fan will run out of five minutes.



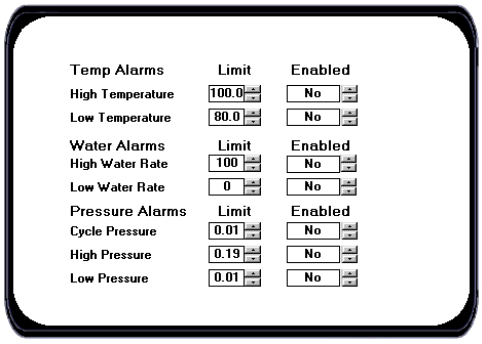
Cycle 5 Minutes –The cycle time of the back-up stages is 5 minutes.

Warning if Back-Up – If Backup settings are set that far away from target, Back-up status light will flash.

Alarm if Back-Up -Same as above but will also set off auxiliary alarm contact.

Alarm Status

The ALARM column lists the elements that are available. For the High and Low temperatures and High and Low pressure, the Cycle Pressure the current Alarm Limits are shown. To change the values click on the UP/DOWN arrows.



Temp Alarms

High Temperature Limit & Status - The high temperature setting at which the alarm relay will activate.

Low Temperature Limit & Status - The low temperature setting at which the alarm relay will activate.

Water Alarms

High Water Rate – High water usage rate. Alarm if units per hour exceeded.

Low Water Rate – Low water usage rate. Alarm if units hour drop below low water usage rate. NOTE: Low Alarm is disabled when lights are off.

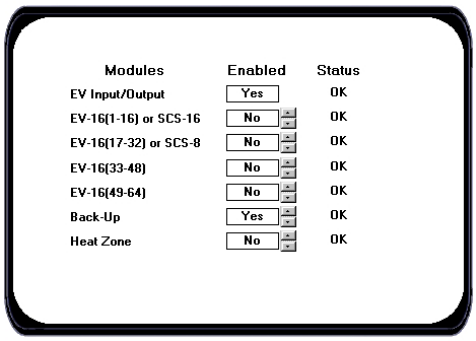
Pressure Alarms

Cycle Pressure Limit & Status - The pressure setting at which the alarm relay will activate provided the pressure differential in not seen during the timer period.

High Pressure Limit & Status - The High Pressure alarm will send a signal to your existing alarm system when the pressure exceeds the High Pressure Setpoint for greater than 45 seconds. (High Negative Pressure) This alarm warns if the vents did not open for some reason.
Low Pressure Limit & Status - The Low Pressure alarm will send a signal when pressure drops below the Low Pressure setpoint for greater than 45 seconds. This alarm warns if the vents failed to close for some reason. Setting the Low Pressure alarm setpoint to "OFF" prevents the alarm from sounding.

Network Status

The Network Status shows the installed Evolution Stages, the Back-Up and the Heat Zone. The ENABLED indicator shows if the stage is enabled and the STATUS indicates OK or Failed.



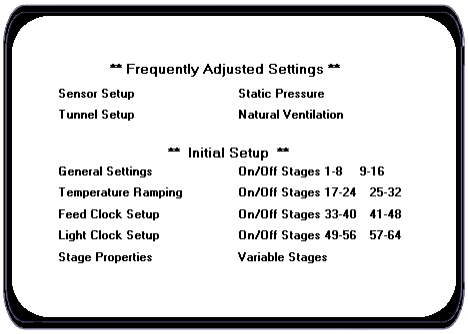
Modules – The Evolution modules that can be installed will appear here.

Enabled – Those modules that are enabled will be indicated by Yes. This column lets you know which modules are turned on for the Evolution control to communicate with. When adding expansion back-up modules, the ENABLED must be set to "Yes" for proper operation.

Status - OK or Failed. This column lets you know if you have lost communication with one of the modules.

Program Setup

Program Setup contains programming options for Frequently Adjusted settings and Initial Setup. The following options are discussed in the next section.



Frequently Adjusted Settings

Sensor Setup Static Pressure

Tunnel Setup Natural Ventilation

Initial Settings

General Settings On/Off Stages

Temperature Ramping Variable Stages

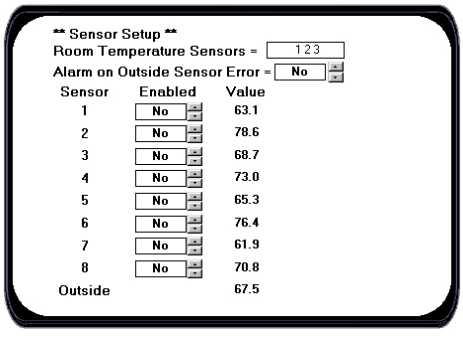
Feed Clock Setup

Light Clock Setup

Stage Properties

Sensor Set-Up

The Sensor Set-Up screen is used to set the temperature sensors that will be used to determine the internal temperature of the building.



Room Temperature Sensors - Select any or all of the internal sensors. Your alarm high and low limits will use these sensors that are displayed here. For example: If you wanted to display sensors 1,2,3,4,5 for your room temperature it would look like this: "12345". If you turn all the sensors off, the control would use the outside temperature and the display would look like this: "Outside".

Alarm on Outside Sensor Error – On or Off.

Sensor – Identifies up to eight inside and one outside sensor.

Enabled – Yes or No.

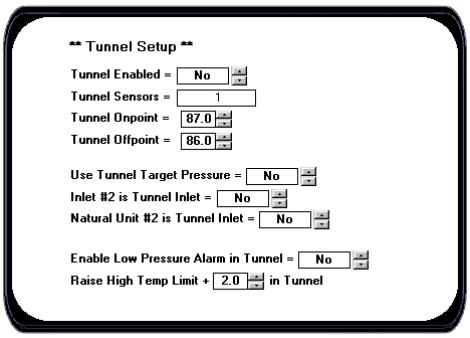
Value – The current temperature reading.

Tunnel Setup

The Tunnel Setup screen sets the parameters necessary to operate in the Tunnel mode.

Tunnel Enabled – Select either Yes or No to enable or disable going into the Tunnel mode.

Tunnel Sensors – The user is given the choice as to what sensors will be used to enter the Tunnel Mode, select any or all of the available sensors. To use the outside sensor when entering tunnel set the sensors to display the word "outside" by turning all the sensors off.



Tunnel Onpoint – The temperature at which the controller will go into tunnel mode.

Tunnel Offpoint - The temperature at which the controller will go out of tunnel mode.

Use Tunnel Target Pressure – This will allow a different Target Pressure to be used in the Tunnel mode.

Inlet #2 is Tunnel Inlet – This identifies the Inlet #2 as a tunnel inlet.

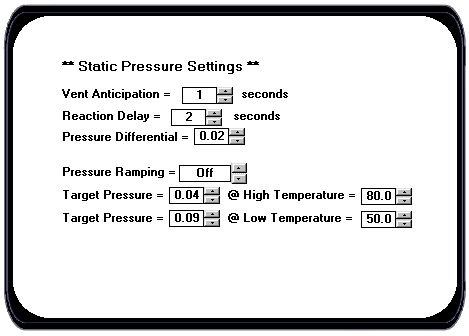
Natural Unit #2 is Tunnel Inlet – Yes or No. This indicates that PowerTrak Number 2 of the Natural Set is a Tunnel inlet and will open during Tunnel.

Enable Low Pressure Alarm in Tunnel – Set to Yes if it is desired to use a low pressure alarm while in the tunnel mode.

Raise High Temperature Limit +#° in Tunnel –While in the tunnel mode the Evolution 3000 can adjust the High Temperature Limit. Enter the number of degrees that the limit is to be increased while in the tunnel mode. This increase will only be used while in tunnel.

Static Pressure Settings

The Static Pressure setting sets the parameters necessary to operate the vents.



Vent Anticipation - Number of seconds before a timer stage comes on to start opening stages. When vent anticipation is being used, both minimum 1 and 2 will start the vents open before a stage comes on.

Reaction Delay – The amount of time delay before the vent machine operates.

Pressure Differential - The pressure difference from target pressure to start opening and closing vents.

Pressure Ramping – Select On or Off to enable or disable pressure ramping.

Target Press. @ High Temp - The target pressure when the outside temperature is at the high temperature limit. Set both pressure and temperature limit.

Target Press. @ Low Temp -The target pressure when the outside temperature is at the low temperature limit. Set both pressure and temperature limit.

Natural Ventilation

Time Override (Allow to Operate) - When set to Only While the Time Override will allow the Natural Curtain Stages to open while the time is between the times you set. Otherwise when set to Always the time will not affect the Natural Curtain Stages.

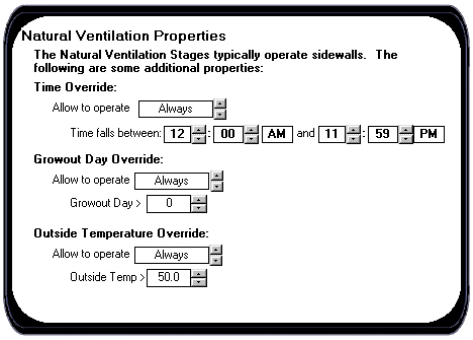
Time Override (Time Falls Between) – The Begin and End time for a allowed operation.

Growout Day Override (Allow to Operate) - When set to Only While the Growout Day Override will allow the Natural Curtain stages to operate only while the growout day is greater than the day you set. Otherwise when set to always the day of growout will not affect the stages.

Growout Day Override (Growout Day) – The Day setting for growout day override.

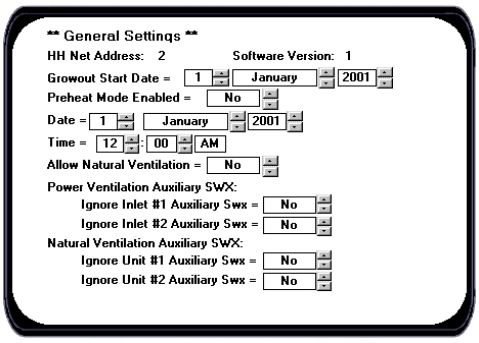
Outside Temperature Override (Allow to Operate)- When set to Only While the Outside Temperature Override will allow the stages to open only while the outside temperature is greater than the desired setting. Otherwise when set to always the outside temperature will not affect the stages.

Outside Temperature Override (Outside Temp) – Temperature setting for override.



General Settings

The General Settings contains parameters that usually only need to be set once when the system is installed.



HHNET Address - HH.Net permits up to 32 controllers to be addressed on a single communications port of a personal computer (PC). The network address can only be set at the controller.

Software Version - The version currently running.

Growout Start Date - Set the date desired for the growout to start. Evolution will use this date to control the feed, light clock and ramping functions. NOTE: This must be set to the first day of growout.

Preheat Mode Enabled – Choose Yes or No.

Date – The current date as Day/Month/Year.

Time – The current time.

Allow Natural Ventilation - Set this option to "Yes" to allow Natural Ventilation. NOTE: This must be set to yes before the control is allowed to enter into natural ventilation.

Power Ventilation Auxiliary SWX - Setting these options to Yes will ignore the indication from the curtain switch. This feature will totally ignore the auxiliary switches on the PT machines when answered yes.

Note: This must be answered 'No' and the open auxiliary switch of the vent machine must be connected in order to use the feature of running the tunnel curtain with the vents during Power ventilation when the pressure is to high and the vents are completely open.

Ignore Inlet #1 Auxiliary Switch - Yes or No

Ignore Inlet #2 Auxiliary Switch - Yes or No

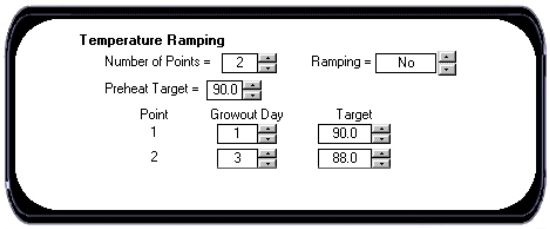
Natural Ventilation Auxiliary SWX - Setting these options to Yes will ignore the indication from the curtain switch. This feature will totally ignore the auxiliary switches on the PT machines when answered "Yes". Note: The auxiliary switches must be connected and this answered to no in order for the control to enter into natural ventilation.

Ignore Unit #1 Auxiliary Switch - Yes or No

Ignore Unit #2 Auxiliary Switch - Yes or No

Temperature Ramping

The Temperature Ramping is used to set the parameters to provide temperature ramping.



Number of Points –Select 2 through 10 points.

Ramping – Select On or Off to enable or disable ramping.

Preheat Target – The target temperature for pre-heating.

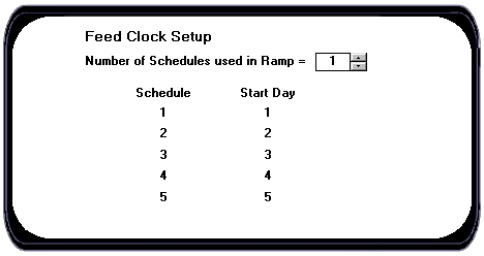
Point –This table identifies the specific points. Ramp will function as it does through Farm Manager Explorer. You are allowed up to 10 points at which you can change the target at these points. This allows you to keep the same target for a couple of days and then start ramping down. When the target temperature changes in the Target column, that target will start the day that is in the Growout day column.

Growout Day – The day of growout that starts the set Target Temp.

Target – Set the specific target temperature for each of the growout days.

Feed Clock Setup

The Feed Clock Setup establishes the parameters necessary to enable automatic feed control functions. First select the number (up to five) of Growout schedules and the start day of the schedule.



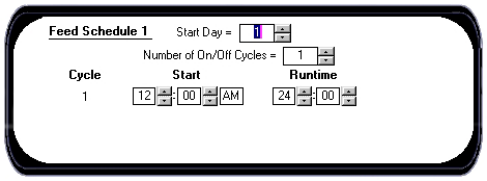
Number of Schedules used in Ramp - Set the number of schedules up to five.

Schedule – The schedule number will automatically be set by Evolution.

Start Day - Displays growout day that the selected schedule will start on.

Feed Clock Details

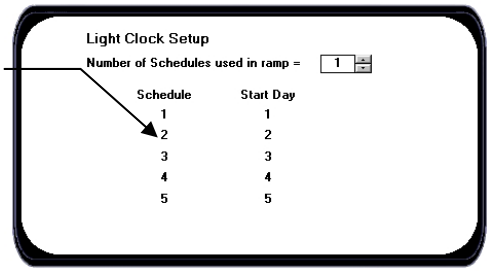
There is a Details screen for each Feed Schedule that allows the Start Day and the Number of On/Off Cycles to be changed. For the Cycle indicated the Start and Runtime can be adjusted.



Light Clock Setup

The Light Clock Setup establishes the parameters necessary to enable automatic control of the house lights. On each Schedule you will need to program a start day of when you want the control to start using this schedule. Then you will need to set the number of on/off cycles. This is how many times the light clock needs to come on in a 24-hour period. You are allowed 10 on/off cycles. Then you set the start time of each cycle and how long that cycle needs to run. When you are using a variable speed stage for the lights you are allowed to set the intensity and ramp. The intensity is the level you want the lights to be on when the cycle comes on. The ramp allows the light ramp up and down from off to the intensity you have set. The ramp applies at the beginning and the ending of the light cycle.

Click the Schedule Number to View the Details.



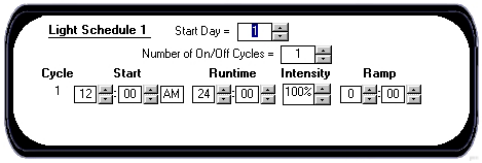
Number of Growout Schedules- Set the number of schedules from up to five. The next schedule will start after you have reached the growout day that your schedule starts on.

Schedule – The schedule number will automatically be set by Evolution. After the number of Schedules have been set you will need to setup each schedule.

Start Day –The starting day of each schedule.

Light Clock Details

Select the individual cycle in the Light Clock Details screen and enter the start day time that lighting is to begin and the length and intensity of the lighting period.



Light Schedule – The selected schedule number.

Start Day – Set to the growout day to start program.

Number of On/Off Cycles – Enter the number of On/Off cycles desired (up to ten).
Cycle –The selected cycle within the schedule.
Start – The start time of the lighting cycle.
Runtime- The runtime of the lighting cycle. (hours : minutes)
Intensity –Set the intensity of the lights from 0% to 100%. (For use with variable units only).
Ramp – If it is desired to ramp the lights, that is to slowly turn the lights on and off, enter the time period (hours :minutes) over which to turn the lights on and off.

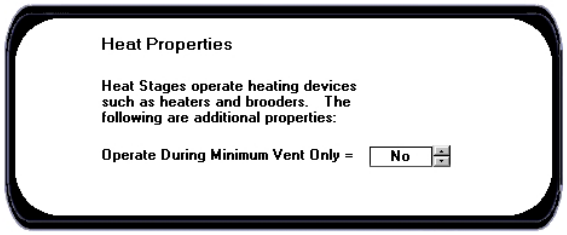
Stage Properties

The Stage Properties screen is where you link to set up specific parameters for the heating and cooling modes. Stage Properties gives you a definition of how a stage will operate and allows you to add additional variables to some of the properties.

Click the Properties Label to View that

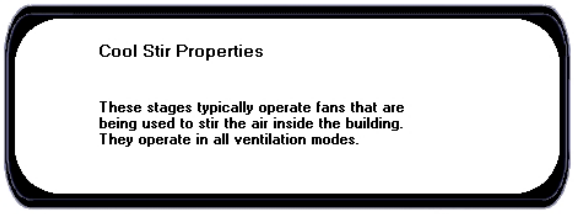
Heat Properties

There is one heat property to be setup. Set to "Yes" if it is desired to operate the heat stage only during minimum ventilation. Otherwise the control will allow a heat stage to operate at the same time a cool stage is operating if they are looking at different sensors.



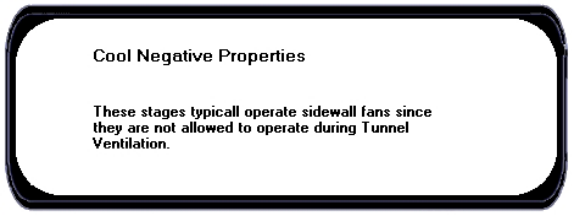
Cool Stir Properties

There are no additional parameters that can be set under this property display.



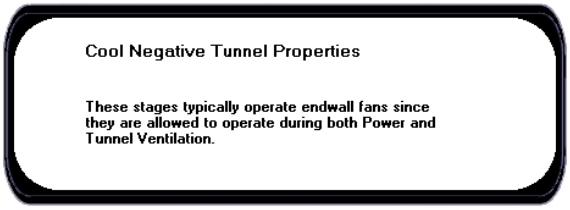
Cool Negative Properties

There are no additional parameters that can be set under this property display.



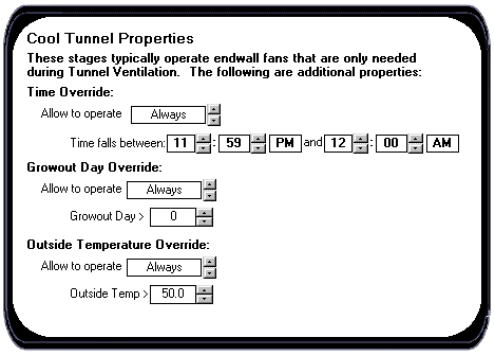
Cool Negative Tunnel Properties

There are no additional parameters that can be set under this property display.



Cool Tunnel Properties

The Cool Tunnel Properties provide for setting override functions. Take note when setting the properties. All options must be true before the stage is allowed to operate.
For example if all options are set to Only While, then all options will have to be true or in the range before the stage is allowed to operate. NOTE: Override parameter settings are "Only While" and "Always".



Time Override

Allow to Operate – When set to Only While the Time Override will allow the stages to operate only while the time is between the times you set. Otherwise when set to always the time will not affect the stages.

Time falls Between – The Begin and End time for Override.

Growout Day Override

Allow to Operate – During the first days of the growout period, especially during brooding, the Evolution 3000 can be set to only allow the cool tunnel stages to operate after a specified number of days in the growout period. When set to Only While the Growout Day Override will allow the stages to operate only while the growout day is greater than the day you set. Otherwise when set to always the day of growout will not affect the stages.

Growout Day – The day setting for Override.

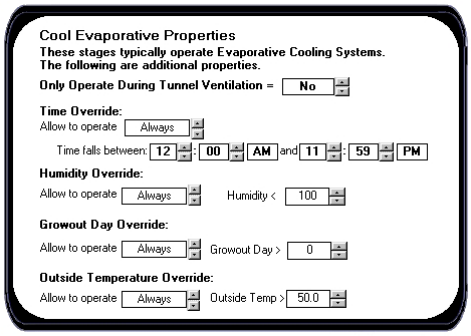
Outside Temperature Override

Allow to Operate - When set to Only While the Outside Temperature Override will allow the stages to operate only while the outside temperature is greater than the desired setting. Otherwise when set to always the outside temperature will not affect the stages.

Outside Temperature –The temperature used for Override.

Cool Evaporative Properties

Cool Evaporative Properties allow for setting several override functions. Take note when setting the properties. All options must be true before the stage is allowed to operate. For example if all options are set to Only While, then all options will have to be true or in the range before the stage is allowed to operate.



Only Operate During Tunnel Vent –Setting this to "Yes" will only allow the evaporative cooling stages to operate during tunnel. Otherwise on "No" will allow the stages to operate while not in tunnel. For example on misting Hogs during natural ventilation.

Time Override

Allow to Operate – When set to Only While the Time Override will allow the stages to operate only while the time is between the times you set. Otherwise when set to always the time will not affect the stages.

Time falls between – The Begin and End times for Override.

Humidity Override

Allow to Operate - Run while humidity less than the setting. When set to Only While the Humidity Override will allow the stages to operate only while the humidity is less than the humidity you set. Otherwise when set to always the humidity will not affect the stages.

Humidity – The humidity setting for Override.

Growout Day Override

Allow to Operate- When set to Only While the Growout Day Override will allow the stages to operate only while the growout day is greater than the day you set. Otherwise when set to always the day of growout will not affect the stages.

Growout Day – The Day setting for Override.

Outside Temperature Override

Allow to Operate - When set to Only While the Outside Temperature Override will allow the stages to operate only while the outside temperature is greater than the desired setting. Otherwise when set to always the outside temperature will not affect the stages.

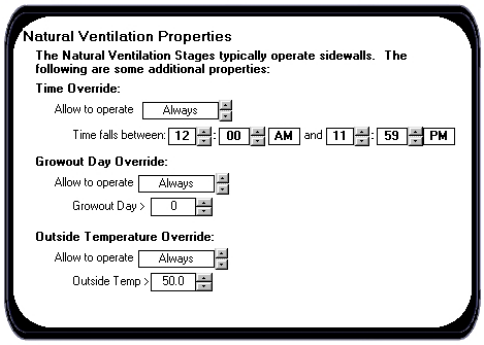
Outside Temperature – The temperature setting used for Override.

Natural Ventilation Properties

Time Override - When set to Only While the Time Override will allow the Natural Curtain Stages to open while the time is between the times you set. Otherwise when set to always the time will not affect the Natural Curtain Stages.

Growout Day Override - When set to Only While the Growout Day Override will allow the Natural Curtain stages to operate only while the growout day is greater than the day you set. Otherwise when set to always the day of growout will not affect the stages.

Outside Temperature Override - When set to Only While the Outside Temperature Override will allow the stages to open only while the outside temperature is greater than the desired setting. Otherwise when set to always the outside temperature will not affect the stages.



On/OFF Stages

You must select the set of stages you want to set or edit.
NOTE: When programming stages you are allowed to edit the settings from the main screen. To do this, have a stage number highlighted and then press enter.

Sensors – The sensors used to control ON or OFF point of the stage**.** This will be the sensor from which the stage will operate.

Mode – This mode column will indicate how the stage is programmed to operate.

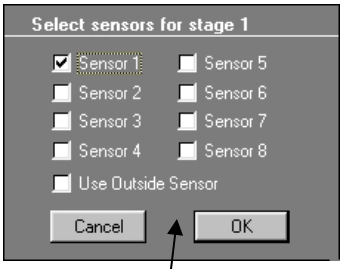
(Off) Disables stage from operating during automatic operation.

(Heat) This method of heating only operates when the curtains are in the closed position and the operating sensor is below the on temperature.

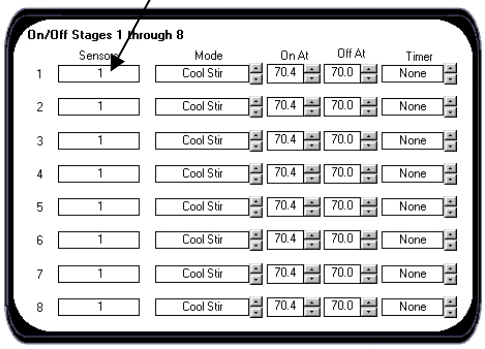
(Cool Stir) This mode setting allows the cool stage to run whether the main curtain is open or closed.

(Cool Negative) A method of ventilation where air is drawn out of the building by fans, creating a negative static pressure which draws air into the house from all openings at a even pace. Will not operate in Tunnel or Nat.

(Cool Negative Tunnel): A combination of the Cool Negative and the Cool Tunnel Modes.



Clicking here shows this form.



(Cool Tunnel) Only operate during Tunnel operation.
(Light) The LIGHT Mode:
(Cool Evaporative) The Cool Evaporative mode.

ON/OFF –The ON column will indicate the current setting for the on point temperature of the stage. Set this to the temperature you would like for the stage to come on at. The OFF column will indicate the current setting for the off point temperature of the stage. Set this to the temperature you would like for the stage to turn off at.

TIMER – None, Min1, Min2, Var, Cool. This Timer column will indicate what type of timer you want the stage to operate from. If the stage doesn't need a timer then you must have this setting to none.

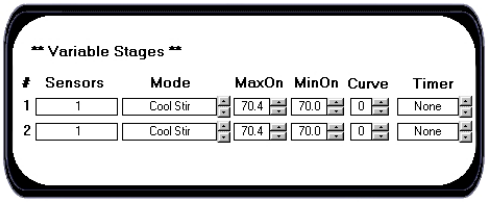
Variable Stages

- Identifies the Variable Stage unit below –

Sensors –The selected sensor(s) to operate.

Mode – Heat, Cool Stir, Cool Negative, Cool Negative Tunnel, Cool Tunnel, Light. NOTE: This mode column will indicate how the stage is Programmed. You are allowed to set any stage at any of these modes. When the stage is used to control lighting then you must set the mode and curve to Light.

MaxON –This MaxON column will indicate the current setting for the Maximum on point temperature of the stage. Set this to the temperature you would like for the stage to reach the desired maximum speed.



MinON – This MinON column will indicate the current setting for the Minimum on point temperature of the stage. Set this to the temperature you would like for the stage to start running its minimum speed setting. Minimum speed setting is set at the Minimum Vent screen of the Navigator.

Curve – This is the motor curve for the variable speed fans. If you are using the stage for lights then make sure the curve is set for light. Fan 1 is the same as curve 0 of the Swine Finisher.

(0) Light Run lights. Sets light intensity to vary linearly with time.

(1) Fan 1 For use with Hired Hand's line of Funnel Flow fans that are 24" or less. Also, line voltage must be single phase.

(2) Fan 2 For operation of 36" fans. The power distributed at each percentage is somewhat greater than that of Curve. Therefore, the speed will be a little greater than that of Curve.

(3) Fan 3 For 3-Phase systems. Its purpose is to shift the voltage curve to give a much higher power from the varied phase. Conditions that would warrant the use of this curve is a variable speed fan that varies a great deal form 100% speed to 95% speed.

(4) Fan 4 For 3-Phase systems. Its purpose is to shift the voltage curve to give much less power from the varied phase. Conditions that would warrant the use of this curve is a variable speed fan that varies very little from 100% speed to 5% speed.

Timer - None, Min1, Min2, Var, Always ON. This Timer column will indicate what type of timer you want the stage to operate from. If the stage doesn't need a timer then you must have this setting to none. Always ON sets the fan to always run at Minimum speed. When operating temperature is below the set Minimum ON temperature.

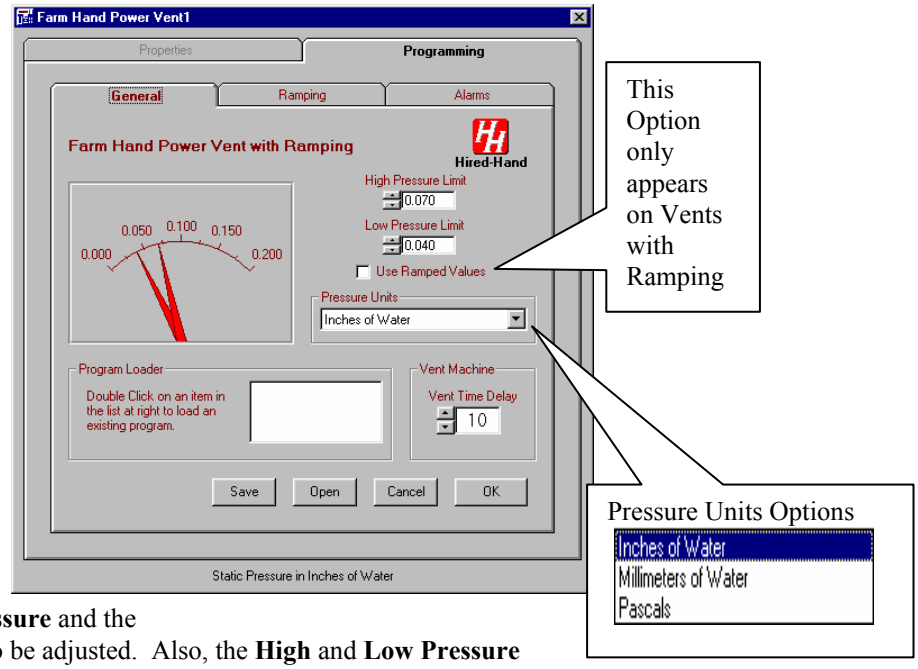
23.2 Farm Hand Power Vent

The following windows are available to remotely program Farm Hand vent controllers.

General Programming Window

This window applies to ➔ **Farm Hand Power Vent**
➔ **Farm Hand Power Vent with Ramping**

This window is selected by clicking on the **General** tab at the top of the Programming window.



This window allows the Power Vent **Static Pressure** and the units of measurement to be adjusted. Also, the **High** and **Low Pressure Limits** and **Vent Time Delay** can be set. A check box is provided to either enable or disable the use of Ramped Values, which are set in the Ramping window.

The **Program Loader** allows the reading and saving of Power Vent settings into files which can be recalled for later use. Vent settings that are frequently used can be easily retrieved, modified and transferred to the appropriate Farm Hand controller. To retrieve a file, double click on the file name.

The **Save** and **Open** options are used with this feature. In the example below, a file called Summer.dsp contains previously loaded power vent settings.

The **General** window sets the high and low static pressure that the power vent will use. The pressures can be adjusted by moving the pointers, by dragging the mouse, or by clicking on the up and down arrows next to the **Pressure Limit** text boxes. If the **Use Ramped Values** is checked, the parameters entered on the **Ramping** window will be used and the High and Low Pressure Limits set in the window are ignored.

Pressure Units – The units of pressure can be set to either Inches of Water, Millimeters of water or Pascals. Anytime pressure is displayed the selected units will be used.

High Pressure Limit - Exceeding the high (negative) pressure limit causes the controller to further open the vents.

Low Pressure Limit - Exceeding the Low Pressure limit causes the controller to further close the vents.

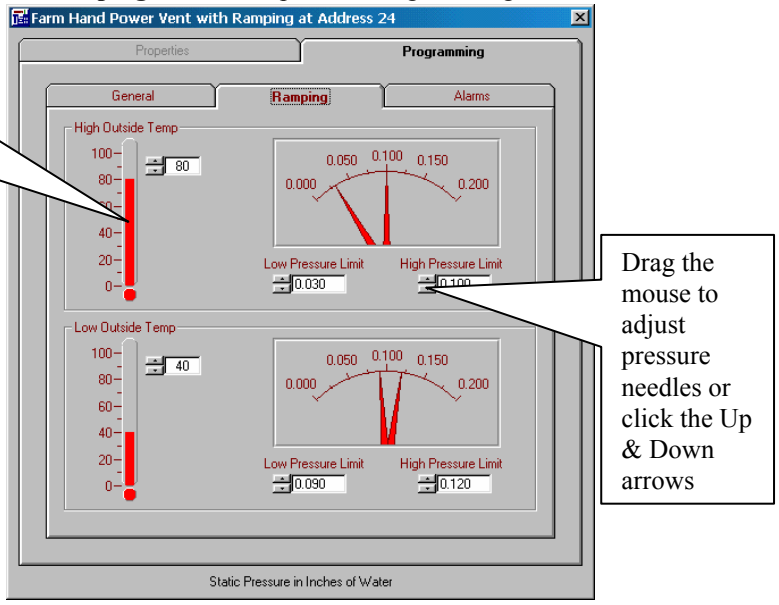
Vent Time Delay - The length of time a pressure reading must be out of range before the controller will operate the vents.

Ramping Programming Window

This window applies to**: ➔ Farm Hand Power Vent with Ramping**

This window is selected by clicking on the **Ramping** tab at the top of the Programming window.

The window is used to set the **High and Low Outside Temperature Limits** and adjust the **Low** and **High Pressure Limit** for each Low and High Outside temperature limit.



The following parameters can be set using this window:

High Outside Temperature - The temperature the controller will use in setting the corresponding high and low pressure limits.

Low Pressure Limit - The lower limit for pressure when outside temperature is at the high temperature limit.

High Pressure Limit - The upper limit for pressure when outside temperature is at the high temperature limit.

Low Outside Temperature - The outside temperature the controller will use in setting the corresponding high and low pressure limits.

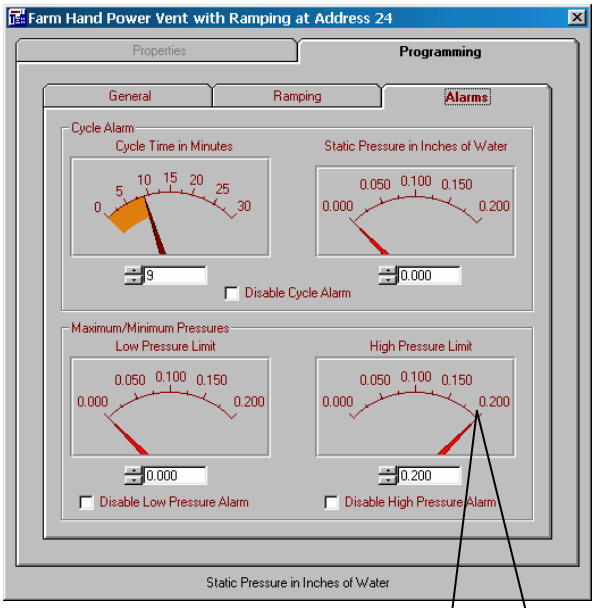
Low Pressure Limit - The lower limit for pressure when outside temperature is at the low temperature limit.

High Pressure Limit - The upper limit for pressure when outside temperature is at the low temperature limit.

Alarms Programming Window

This window applies to: **➔Farm Hand Power Vent with Rampping**

This window is selected by clicking on the **Alarms** tab at the top of the Programming window.



This window is used to adjust the **Alarm Cycle Time in Minute**s and the **Static Pressure in Inches of Water**. Also, the **Low Pressure Limit** and the **High Pressure Limit** can be set.

The following parameters can be set using this window:

Cycle Alarm - Cycle Time in Minutes - The cycle alarm will warn if the timer fans failed to operate. The controller will look for a pressure surge that would normally be caused when the timer fans turn on. If this pressure surge is not sensed within the Cycle Time specified, the controller will signal the alarm system. Setting the Cycle Time to 0 (zero) prevents the alarm from sounding.

Cycle Alarm - Static Pressure in Inches of Water - Sets the static pressure that the cycle alarm uses to alarm. In the above example, if the pressure is set to 0.10 inches of water (0.10" w.c.) and the controller never sees a pressure spike of at least this level, the alarm will sound.

Low Pressure Limit - The low pressure alarm will send a signal when pressure drops below the Low Pressure Limit (setpoint) for greater than 45 seconds. This alarm warns if the vents failed to close. Setting the Low Pressure Limit to 0 (zero) prevents the alarm from sounding.

High Pressure Limit - The high pressure alarm will send a signal to the alarm system in the same manner as the Low Pressure alarm, but only when pressure exceeds the High Pressure Limit (setpoint) for greater than 45 seconds. (High Negative Pressure.) This alarm warns if the vents did not open. Setting the High Pressure Limit to its maximum of 0.20 prevents the alarm from sounding.

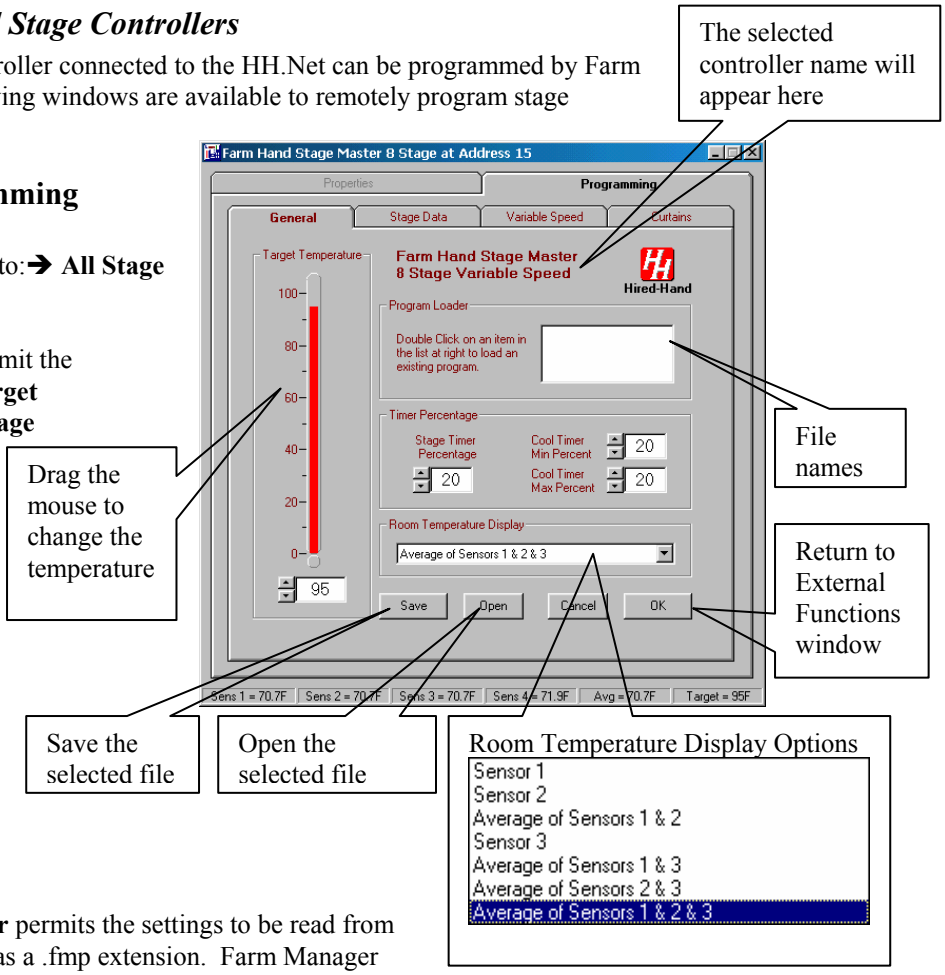
23.3 Farm Hand Stage Controllers

Any Farm Hand controller connected to the HH.Net can be programmed by Farm Manager. The following windows are available to remotely program stage controllers.

General Programming Window

This window applies to:➔ **All Stage Controllers**

This window will permit the adjustment of the **Target Temperature**, the **Stage Timer Percentage**, the **Cool Timer Percentage** and the **Room Temperature Display**.



The **Program Loader** permits the settings to be read from an existing file that has a .fmp extension. Farm Manager can not read files with a .dsp extension that have been prepared with Launch Pad software. The file names will be listed in the window and are selected with the mouse. The **OPEN** and **SAVE** buttons at the bottom of the window control access to the selected files.

The following parameters can be set using this window:

Target Temperature - The temperature that the controller tries to maintain.

Stage Timer Percentage - The percent of the timer cycle that a stage on a timer will run.

Cool Timer Maximum Percentage - The percent of the system timer that the fan will run when the temperature is at the maximum on-point. A stage is placed on the system timer when the temperature rises above the off-point for the stage. As temperature increases, the timer percentage also increases based on the difference between the stages' on and off points.

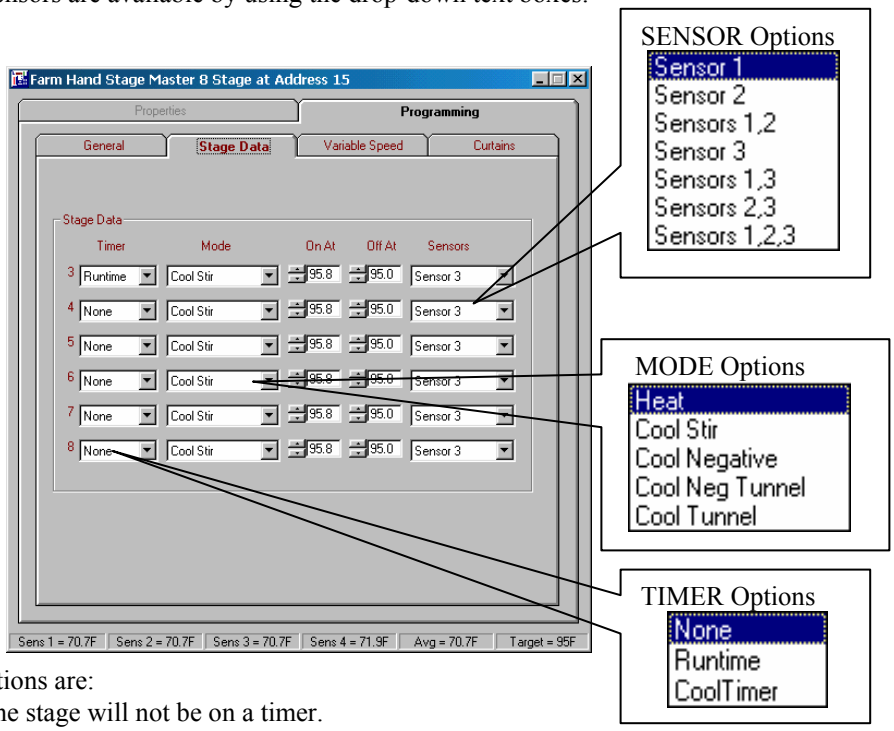
Cool Timer Minimum Percentage - The percent of the system timer that the fan will run when the temperature is at the minimum on-point.

Room Temperature Display - The source of temperature data for the controller front panel display.

Stage Data Programming Window

This window applies to:➔ **All Stage Controllers**

NOTE: The number of stages on this window varies with the controller type.
The **Timer, Mode, Sensors**, **On At** temperature and the **Off At** temperature can be set in this window. The options for Timer, Mode and Sensors are available by using the drop-down text boxes.



The following parameters can be set using this window:

The **Timer** options are:

None – The stage will not be on a timer.

Runtime – The stage will operate off the system timer while the temperature is below the stage's on-point. Once the temperature reaches the stage's on-point the stage will come on full time.

Cooltimer – The stage is placed on the system timer when the temperature rises above the off point for the stage. As temperature increases, the timer percentage also increases based on the difference the stage's on and off points.

The **Mode** option allows the cooling stages to be set to five types of operation:

Heat – Equipment operates only when the temperature is below the on-point for the stage and the curtains are closed.

Cool Stir – Equipment operates whether the main curtain is open or closed. This mode will not run during the tunnel mode.

Cool Negative – Cooling equipment will run only if the main curtain is closed. Equipment operates independent of curtain position. This stage will not run during the Cool Tunnel Mode.

Cool Negative Tunnel – Cooling equipment will run only if the main curtain is closed. This stage will run if the controller is in the Cool Tunnel Mode.

Cool Tunnel – This stage only runs when the controller is in the Cool Tunnel Mode.

The **Sensors** options for the stage are:

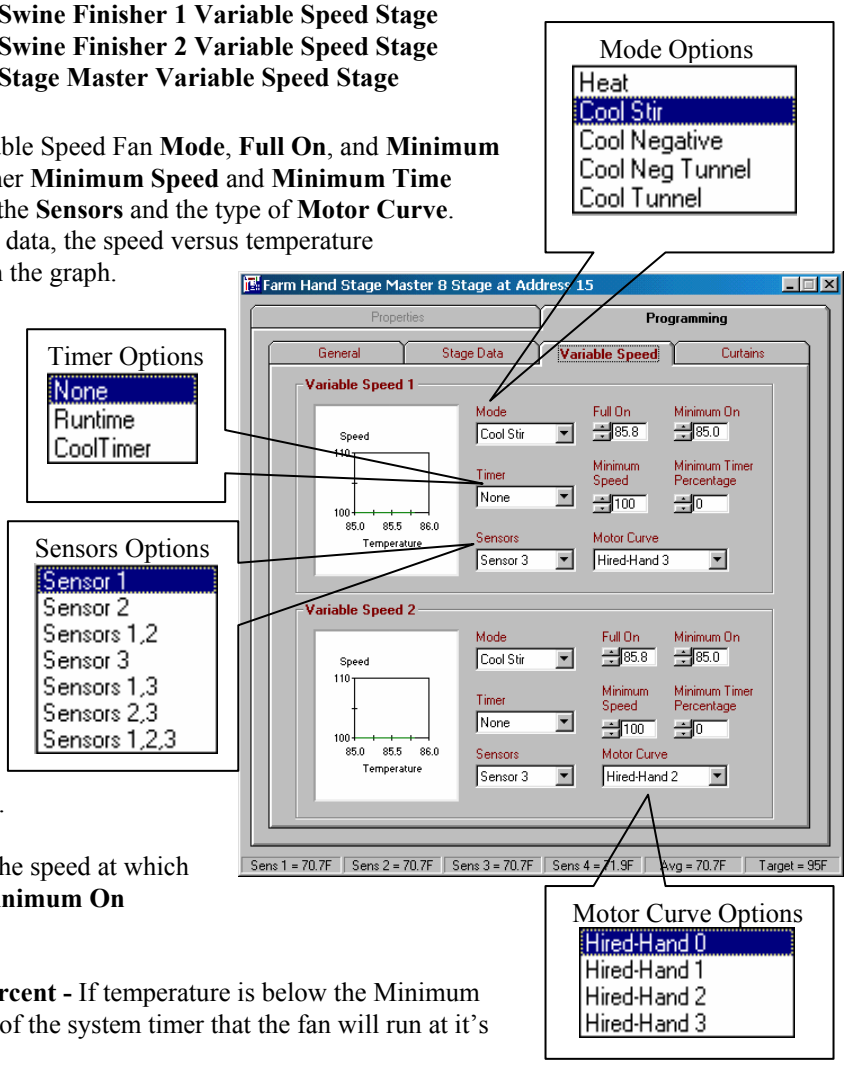
Sensor 1, 2, 3, 1 & 2, 2 & 3, 1 & 3 or 1 & 2 & 3.

The **On At** and **Off At** adjust the temperatures at which the stage turns on and off.

Variable Speed Programming Window

This window applies to:
- ➔ **Swine Finisher 1 Variable Speed Stage**
- ➔ **Swine Finisher 2 Variable Speed Stage**
- ➔ **Stage Master Variable Speed Stage**

This window adjusts the Variable Speed Fan **Mode**, **Full On**, and **Minimum On** temperatures, plus the Timer **Minimum Speed** and **Minimum Time Percent,** plus the selection of the **Sensors** and the type of **Motor Curve**. While the user is adjusting the data, the speed versus temperature data is automatically plotted in the graph.



The following parameters are set using this window:

Mode - See the previous section.

Full On -The temperature corresponding to the full on (100%) speed.

Minimum On - The temperature at which the fan runs at its minimum speed.

Minimum Speed - The speed at which the fan runs at the **Minimum On** temperature.

Minimum Timer Percent - If temperature is below the Minimum on-point, the percent of the system timer that the fan will run at it's minimum speed.

Timer and **Sensors** options - See the previous section.

Motor Curve	**Conditions**

0 For use with Hired Hand's line of Funnel Flow Fans that are 24" or less. Also, line voltage must be Single Phase.

1 For operation of 36" fans. The power distributed at each percentage is somewhat greater than that of **curve 0**. Therefore, the speed will be a little greater than that of **curve 0**.

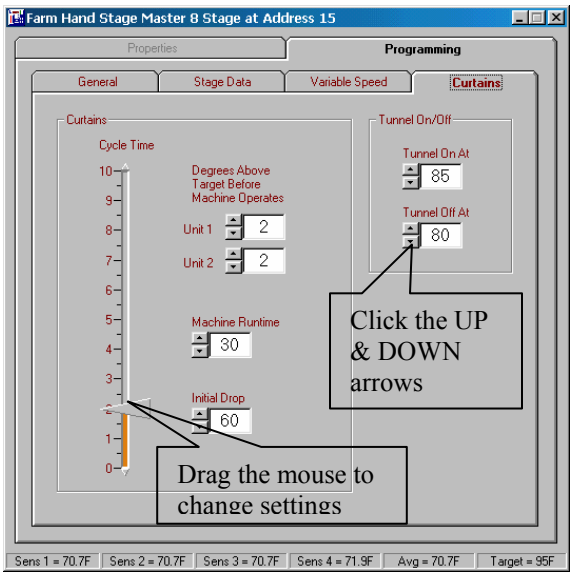
2 For 3-Phase systems. Its purpose is to shift the voltage curve to give a much higher power from the varied phase. Conditions that would warrant the use of this curve is a variable speed fan that varies a great deal from 100% speed to 95% speed.

3 For 3-Phase systems. Its purpose is to shift the voltage curve to give much less power from the varied phase. Conditions that would warrant the use of this curve is a variable speed fan that varies very little from 100% speed to 5% speed.

Curtains Programming Window

This window applies to: ➔ **All Stage Controllers**

The window allows the adjustment of the Curtain **Cycle Time** and the **Degrees Above Target Before Machine Operates,** the **Machine Runtime,** and the **Initial Drop.** Other options are the **Tunnel On At** and **Tunnel Off At** temperatures.



The following parameters are set using this window:

Cycle Time - The length of time in minutes between the start of one curtain position adjustment, and the start of the next curtain position adjustment. (For example, a cycle time of 3 means that the curtain will move up or down (or remain stationary) depending upon temperature for its machine runtime once every 3 minutes.)

Degrees Above Target Before Machine Operates - Many times it is more cost effective to bring a slightly high building temperature back into range with a fan before opening the curtains. This setting allows you to specify a number of degrees above the target temperature that the controller will allow before trying to open the curtains. Settings are available for Curtain Unit 1 and Curtain Unit 2.

Machine Runtime - The number of seconds that the curtain machine will run opening or closing at the beginning of each curtain cycle (See Cycle Time).

Initial Drop - The number of seconds to run on the first drop from closed. This is to ensure the curtains have cleared the top of the opening. This setting only applies when the controller senses that the curtain is closed.

Tunnel On At - The outside temperature at which the controller will go into tunnel mode.

Tunnel Off At - The outside temperature at which the controller will go out of tunnel mode.

The **Inlet Machines** display graphically shows the positions of the PowerTrak machines as either currently opening, closing or stationary.

The **Inlet Machines** display graphically shows the positions of the PowerTrak machines as either currently opening, closing or stationary.

23.4 Farm Hand Vent Master

The Vent Master has five programming windows: a **General, Stage Data, Inlets**, **Ramping** and an **Alarms**. If the Vent Master is connected to a Farm Hand Heat Zone controller, there will be an additional tab for the Heat Zone similar to the one shown in Section 23.6 of this manual. At the bottom of all of the Properties and Programming windows the following information is displayed:

Sensor Temperatures – The current temperatures of the four temperature sensors.

Average Temperature – The average temperature of the three internal temperature sensors.

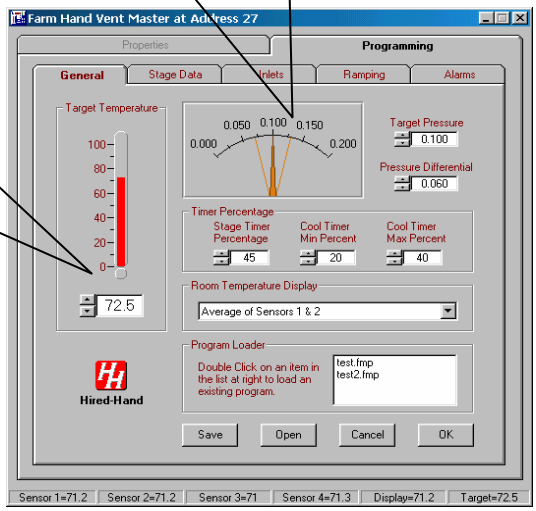
Target Temperature – The temperature the controller tries to maintain. This value is set in the Programming-General window.

The small red arrows around the pressure needle represent the pressure differential

General Programming Window

This window allows setting the Target Temperature Limits, Timer Percentages and provides access to the Program Loader. The following parameters can be set:

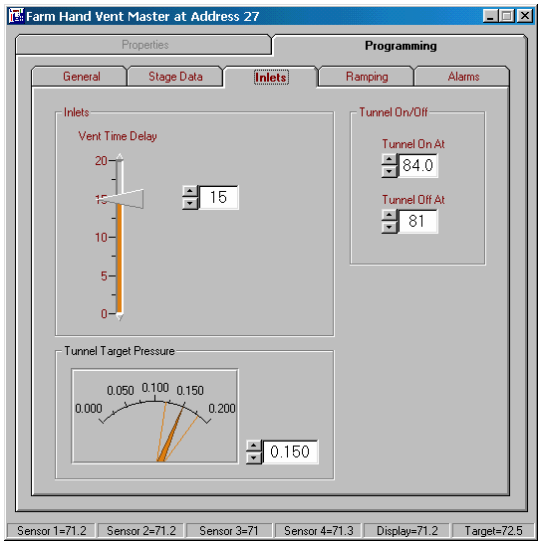
Use the mouse to adjust the temperature thermometer or the arrow buttons.



Target Pressure –The Vent Master has two basic pressure settings, a Target Pressure, and a Pressure Differential. The Target Pressure is the static pressure that the system tries to maintain within the limits of the Pressure Differential. The Pressure Differential is the range around the Target Pressure that is considered satisfactory. From the Target Pressure and the Pressure Differential the High and Low Pressure limits are calculated. The High Pressure limit is the Target Pressure plus half of the Pressure Differential and the Low Pressure limit is the Target Pressure minus half of the Pressure Differential. The controller will open and close the vents as needed to maintain pressure between the high and low limits.

Pressure Differential – The difference in pressure around the target that is used to establish the high and low temperature limits

The remaining parameters on this screen are similar to the stage controllers and are described in Section 23.3 of this manual.



Stage Data Programming Window

The Stage Data window for the Vent Master is similar to the Stage Data windows for the other stage controllers. See Section 23.3.

Inlets Programming Window

This window is used to adjust the inlet Vent Time Delay, the Tunnel Target Pressure and the Tunnel On At and Off At temperatures. The following parameters can be set with this window:

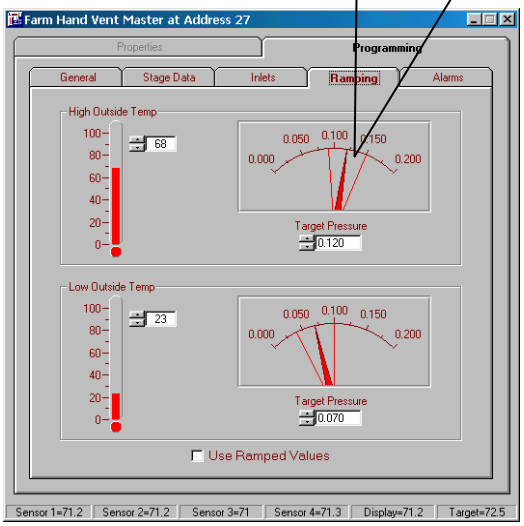
Vent Time Delay – This setting is the length of time a pressure reading must be out of range before the controller will operate the vents. This will keep the vents from constantly cycling open, then closed. If the vents cycle too much, increase this setting using the plus (+) button.

Tunnel On At – The temperature at which the controller will go into tunnel mode.

Tunnel Off At – The temperature at which the controller will go out of the tunnel mode.

Tunnel Target Pressure - In tunnel mode, this is the target pressure that will be maintained if and only if SWX 4 of the Tunnel Switches is ON. See the Vent Master Owners manual for instructions on setting this switch.

The small red arrows show the Pressure Differential used to calculate the High and Low Pressure Limits.

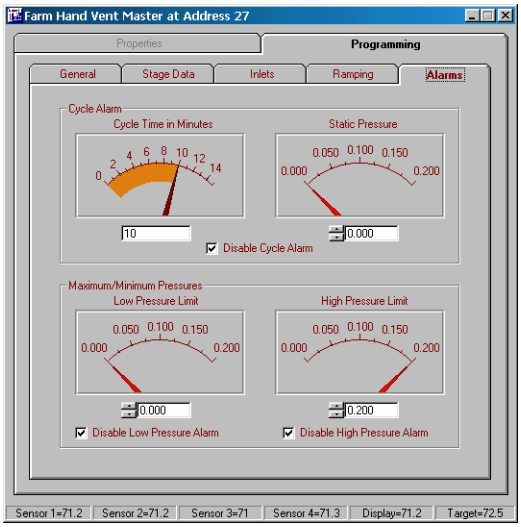


Pressure Ramping Programming Window

Ramping allows setting a band of pressure to be maintained, taking into account the ***OUTSIDE*** temperature. If the outside temperature is warm, it will allow taking in a large volume of slow moving warm air (low static pressure), but when outside air is cold, the Vent Master will adjust to allow a low volume of fast moving cold air (high static pressure). This window is used to set the **High and Low Outside Temperature Limits** and adjust the **Target Pressure** for each Low and High Outside temperature limit when ramping. The **Target Pressure** is the static pressure the system tries to maintain within the limits of the Pressure Differential. The Pressure Differential is the same as set in the General window. See Section 23.4 of this manual.

The High Pressure Limit is the Target Pressure plus half of the Pressure differential. The Low Pressure Limit is the Target Pressure minus half of the Pressure Differential

Use Ramped Values - A check box is provided to either enable or disable the use of Ramped Values.



Alarms Programming Window

The Alarms Window sets the Static Pressure for the Cycle Alarm and the limits for the High an Low pressure alarms. The following parameters can be read or adjusted with this window:

Cycle Time (in Minutes) – This information can not be changed by Farm Manager. The data is based on the setting of Status switch SWX3. See the Vent Master Owners manual for information on changing this switch.

Cycle Alarm Static Pressure - The cycle alarm is a very important alarm in that it will warn if the timer fans failed to operate. The controller will look for a pressure surge which would normally be caused when

the timer fans turn on. If this pressure surge is not sensed within the timer period specified, the controller will signal the alarm system, thus triggering an alarm.

Disable Cycle Alarm – Checking this box prevents the cycle alarm from sounding.

Low Pressure Alarm - The Low Pressure alarm will send a signal when pressure drops below the Low Pressure setpoint for greater than 45 seconds. This alarm warns if the vents failed to close.

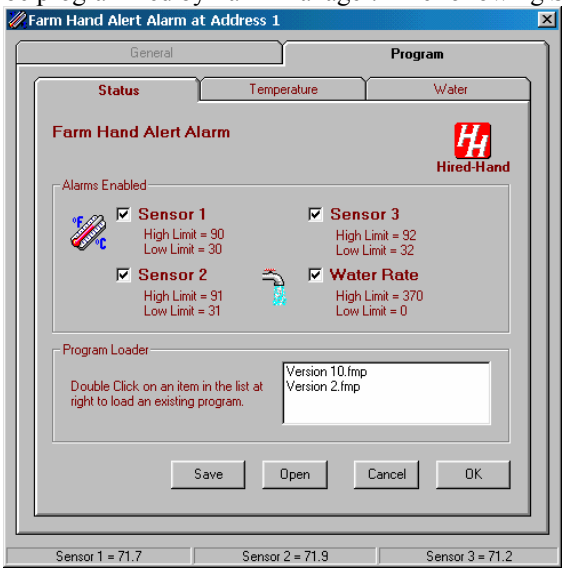
Disable Low Pressure Alarm – Checking this box prevents the Low Pressure alarm from sounding.

High Pressure Alarm - The High Pressure alarm will send a signal to your existing alarm system in the same manner as the Low Pressure alarm, but only when pressure exceeds the High Pressure Setpoint for greater than 45 seconds. (High Negative Pressure.) This alarm warns if the vents did not open.

Disable High Pressure Alarm – Checking this box prevents the High Pressure alarm from sounding.

23.5 Farm Hand Alert Alarm

Any Farm Hand controller connected to the HH.Net can be programmed by Farm Manager. The following **Status**, **Temperature** and **Water** windows are available to remotely program the Farm Hand Alert Alarm. The **Sensor Temperatures** are displayed at the bottom of all the programming screens.



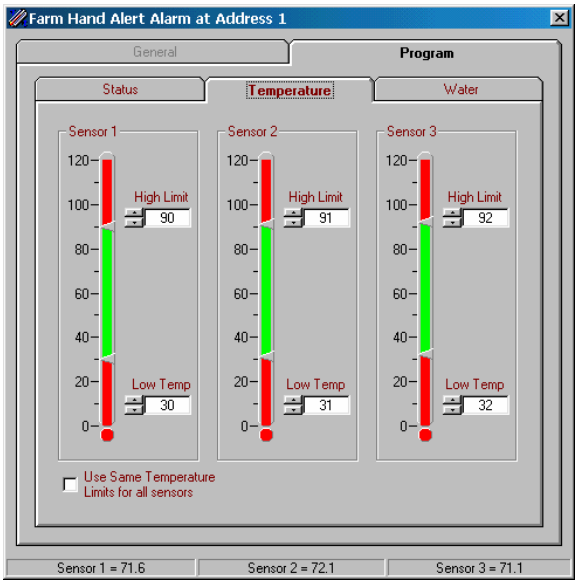
Status Program Window

Double clicking on the Status tab at the top of the Programming window brings up a screen similar to the one shown above. The Status window contains the following information:

Alarms Enabled Sensor 1, 2 & 3 - This check box enables Sensor 1, 2 and 3. Sensors that are not enabled will not generate an alarm, even though their high or low limits have been exceeded.

Alarms Enabled Water Rate - This check box enables the Water Rate sensor. Sensors that are not enabled will not generate an alarm, even though their high or low limits have been exceeded.

Program Loader - This option allows settings for Sensor 1, 2 and 3 and Water Rate to be saved in a file for later use. The enable status of each of these sensors is also saved. The data is stored and recalled by using the **Save**, **Open**, **Cancel** and **OK** commands.



Temperature Program Window

Double clicking on the Temperature tab at the top of the Programming window brings up a screen similar to the one at the right. The Temperature window contains the following information:

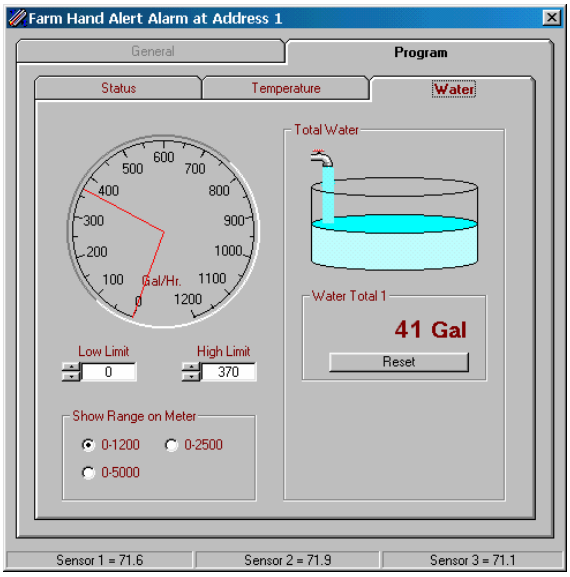
Sensor 1, 2 and 3 - The graphic of the thermometer shows the area between the high and low limits in green. Out of limit temperatures are shown in red.

High and Low Temperature Limits - These are displayed in the text boxes.

Use Same Temperature Limits for both sensors - Checking this box will use only Sensor 1 settings for both temperature sensors.

Water Program Window

Double clicking on the Water tab at the top of the Programming window brings up a screen similar to the one at the right. The Water window contains the following information:



Water Meter Graphic - The graphic of the water meter allows setting the high and low water rate limits. The High and Low limit setpoints are shown by red needles.

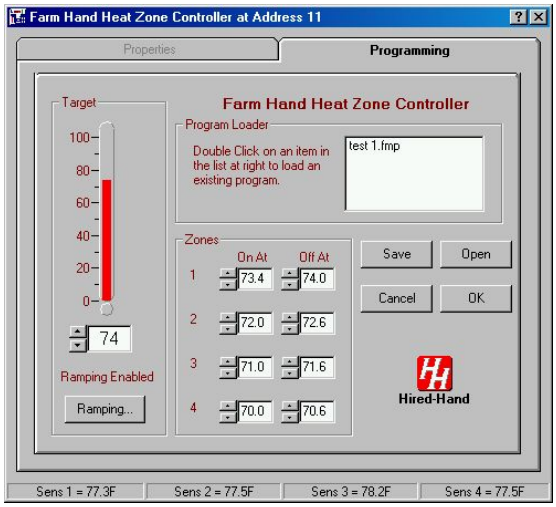
Low Limit - Set the Low Water Limit by clicking on the UP-DOWN arrows.

High Limit - Set the High Water Limit by clicking on the UP-DOWN arrows.

Show Range on Meter - Select the range to be displayed on the Meter.

Total Water Tank Graphic - This graphic representation of the water flow rate will show an empty tank when the Water Total 1 is reset to zero. Water flow rates above 0 will indicate water contents in the tank. (Note: the amount of water indicated in the tank does not relate to any external water supply facility.)

Water Total 1 Reset - This button resets the Water Total 1 reading to zero immediately.



23.6 *Farm Hand Heat Zone*

There is one Programming window for the Heat Zone controller. This will allow the setting of the Target Temperature and the On and Off points of each heat zone. Similar to other stage controllers, a Program Loader is available as well as the ability to implement Temperature Ramping. See Section 23.7 for a discussion of temperature ramping.

The current temperature for each zone sensor is shown at the bottom of the screen.

23.7 Program Temperature Ramping

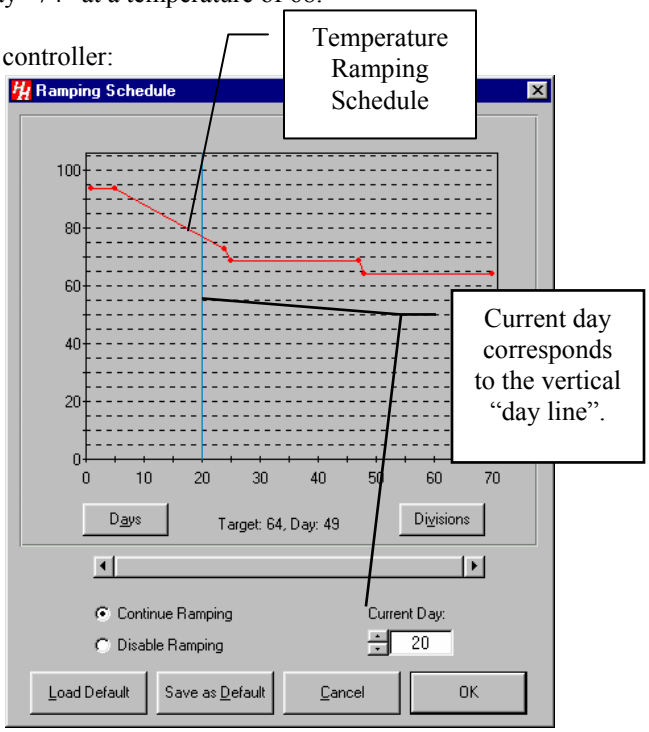
The Farm Hand Stage controllers and the Vent Master have the capability to provide temperature ramping. The following screen is used to set the ramping schedule and to enable/disable temperature ramping. The units of the

vertical temperature scale are not labeled in the chart below but can be either Fahrenheit or Centigrade as set in the Explorer Options – General window.

As seen in the example below, there are seven points in the schedule starting at a temperature of 94 at day "1" and holding this temperature until day "6" at which time the temperature begins to ramp to day "24" at a temperature of 68. The schedule ends at day "74" at a temperature of 68.

To set up temperature ramping for a specific controller:

(1) Set the number of days desired in the ramping schedule.
(2) Select the number of temperature divisions. These are points (days) at which the schedule changes ramping temperature.
(3) Move the points to the desired temperature and day.
(4) Enable temperature ramping.



A ramping schedule that is enabled can be changed at any time by moving the "day points" and adjusting the current "day line" and selecting Continue Ramping.

The control buttons on the ramping schedule are:

Days – This brings up a screen to select the number of days in the ramping schedule over which temperature ramping is to occur. If more that 80 days are selected in the schedule the slider bar is enabled.

Target, Day – As the mouse is moved over the ramping schedule this field shows the day and the temperature calculated in the ramping schedule corresponding to the mouse position.

Divisions – This control button brings up a window to set the number of points (up to 50) in the ramping schedule. Each point determines the day at which the schedule changes temperature. The points can be dragged with the mouse to the desired day and ramping temperature.

Enable/Continue Ramping – If ramping is disabled this button provides the option to Enable Ramping. If ramping is enabled this button provides the option to continue ramping.

Disable Ramping – If ramping is enabled this button provides the option to disable ramping.

Current Day: - This box is used to set the current day in the ramping schedule. The day corresponds to the position of the vertical "day line" in the ramping schedule.

Load as Default – A single schedule can be saved as a default schedule and recalled with this button.

Save as Default – A single schedule can be saved as a default schedule.

Cancel – Does not accept any changes that have been made to the temperature ramping schedule and exits this window.

OK – Accepts any changes that have been made top the temperature ramping schedule and exits this window.

24. Parts and Assemblies

Farm Hand Router…….	Product # 6407-5010
Farm Hand Router to Controller Cable Assembly……	Product # 1902-2882
Farm Hand Computer to Router Cable Assembly…….	Product # 1902-2883

25. Reference Manuals

Farm Hand HH.Net Assembly Manual…….	Document # 4802-0534
Farm Hand Power Vent Controller Manual……..	Document # 4801-0149
Farm Master Evolution 3000 Owners Manual……..	Document # 4801-5307
Farm Hand Stage Master Swine Finisher Controller Manual……...	Document # 4801-0150
Farm Hand Stage Master 12 Stage Controller Manual…….	Document # 4801-0151
Farm Hand Stage Master 8 Stage Controller Manual……...	Document # 4801-0155
Farm Hand Alert Alarm……	Document # 4801-5085
Farm Hand Heat Zone……...	Document # 4801-5129

26. Controller Name & Address Chart

For your personal records fill in the chart below with the name of the controller at the correct network address:

Address	Controller Name	Address	Controller Name
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16		32	