Agri Ventilation Systems, INC.

Simply Smart

AVS-500-TSP
TOUCH SCREEN

VENTILATION CONTROL SYSTEM

The AVS-500TSP Touch Screen Ventilation Controller is one of the most user friendly systems in the industry

Note: This controller is capable of a wide variety of configurations. Some sections in this manual may not match what is available on your controller, or may discuss items that are not pertinent to your particular system.

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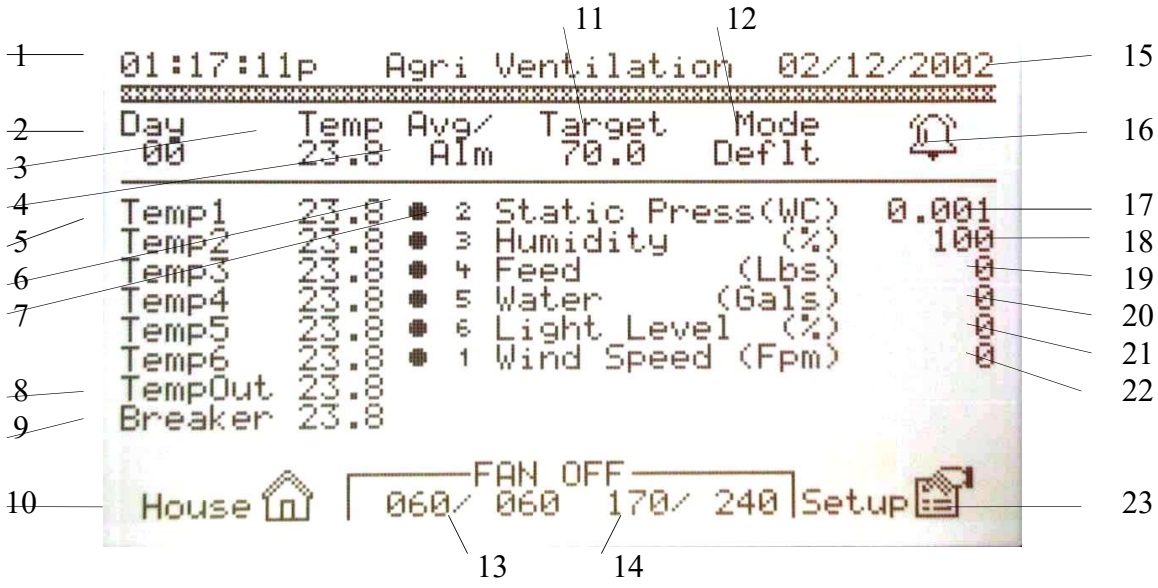
Welcome to the AVS 500TSP Touch Screen Ventilation Controller. This Manual is an orientation to the Power Panel functions and capabilities of your controller. It will not describe the particular operation of the switch array and relay panel for your system configuration, which will vary system to system.

Table of Contents

I. MAIN SCREEN

The Main Screen is the default screen. This screen comes up when the control is first started. The control will also return to this screen from most of the other screens after a period of inactivity. The description of this screen will direct you many times to the **Setup Screen 1** and **Setup Screen 2**, which are accessed by the **Setup** Touch Point (23 below) or through the **House Screen** described on page 5. Most of the other Setup Screens are directly accessible using the buttons below and on either side of the Touch Screen.



1 Time — Current time. Note *a* or *p* to indicate AM and PM. This is needed for all controller time settings. The time may be changed by going to **Setup Screen 2** and pressing **Time** (p.29).

2 Day — This is the Growth Day, a quick reference to the day or age of the flock. Growth Day can be changed by going to **Setup Screen 1** and pressing **Target Sp Main** (p.7)**.**

3 Temp — This is the Average Current Temperature. This is determined by averaging the temperatures of the sensors selected for this reading. The dots in the third column (see #5) indicate which sensors have been selected to determine the average temperature. This can be changed by going to **Setup Screen 1** and pressing **Target Sp Main** (p.7) or going to **Setup Screen 2**, **Probe Config** (p.28).

4 Avg/Alm — Column heading for Average and Alarm. See #6 and #7 below.

5 Temp*X* — This line is the current temperature reading for a particular sensor, *X* is the number of the sensor.

6 Average — This column shows which sensors have been selected to determine the current Average Temperature. A dot in the column indicates that that

sensor is included in determining the average temperature. See #3 above for directions on changing the sensor selections.

7 Alarm — Dots in this column indicate that a backup sensor has been designated for this temperature sensor. If the sensor fails, this column shows which sensor is used for backup. In this figure, sensor 1 would have sensor 2 for backup, and so on. To change, go to **Setup Screen 2**, **Probe Config** (p.28).

8 TempOut — This displays the current outside temperature, if such a sensor has been installed in the system.

9 Breaker — This displays the current surface temperature of the main breaker, if such a sensor is installed.

10 House — Pressing this Touch Point will take you to a house diagram showing the current status of items in the system configuration. This is detailed in the section **House Screen** described on page 5.

11 Target — This is the Target Temperature (Main Set Point) determining the operation of the ventilation units in the controller system. The Target Temperature can be change by going to **Setup Screen 1**, **Target Sp Main** (p.7).

12 Mode — This shows which Ventilation Mode is currently being used.

13 Fan ON — This is a Counter indicating the Minimum Ventilation Fan Timer ON Cycle. When the **Fan ON** heading is on, the first number is the amount of time the minimum ventilation fan has currently been running. The second number is the Total Run Time for minimum ventilation. Touching the **Fan ON/OFF** Touch Point will take you to the **MIN VENT TIMER & RAMPING** Screen (p.14) to view and adjust the fan timer settings.

14 Fan OFF — This is a second Counter indicating the OFF Cycle of the Minimum Ventilation Fan(s). When the **Fan OFF** heading is on, the first number is the amount of time that the minimum ventilation fan has been off. The second number indicates the total OFF time.

15 Date — Current Date. This can be changed by going to **Setup Screen 2**, **Time** (p.29).

16 Alarm — This is an animated Touch Point that shows the status of the alarm. If this button flashes, there is a current alarm condition in the house. Pressing the Touch Point will take you to the **Alarm List** Screen (p.33).

17 Static Press(WC) — This shows the current Static Pressure in inches Water Column in the house.

18 Humidity(%) — This is the current Relative Humidity in the house.

19 Feed (Lbs) — This is the amount of feed dispensed since midnight of the current day.

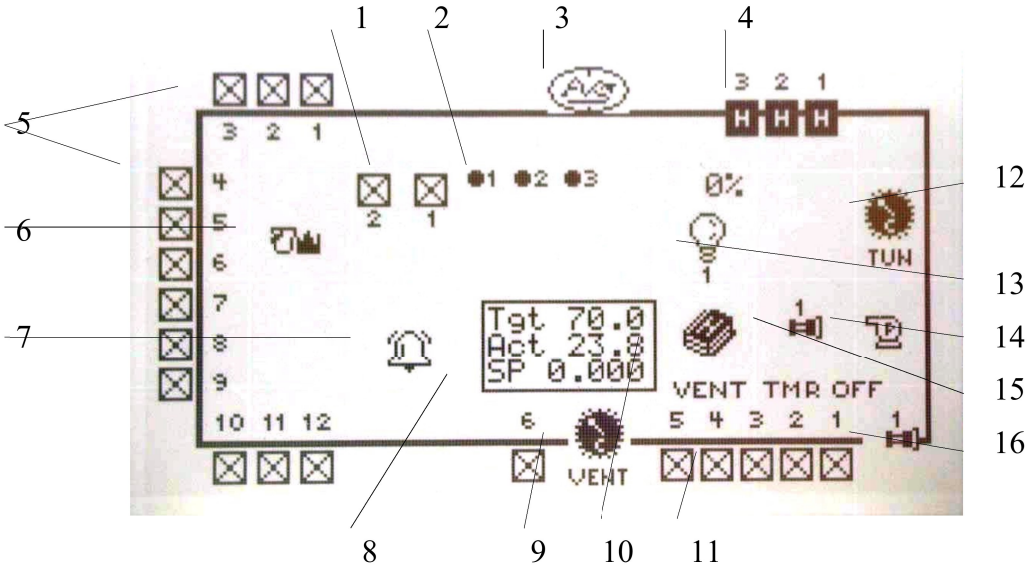
20 Water(Gals) — Shows the Gallons of water used since midnight of the current day.

21 Light Level (%) — This shows the current intensity of internal lighting. If the lights are off, the level will be 0.

22 Wind Speed (Fpm) Indicates the speed of the air in feet per minute moving through the house.

23 Setup Pressing this Touch Point will take you to **Setup Screen 1** (p.6).

II. HOUSE SCREEN



The House Screen is a visual representation of the elements and functions monitored and controlled by the 500TSP System. This screen can be accessed directly from many of the other screens of this controller by pressing the **HOUSE** Touch Point usually located at the bottom of the Touch Screen panel, or by pressing the **House** button to the left of the Touch Screen panel. The icons, or images, on this **HOUSE** screen are also Touch Points. Pressing any of the icon Touch Points will take you to the Setup Screen for that particular function. See **SETUP SCREENS**, p.6.

NOTE: Your screen may not show exactly like this. This Illustration shows most options available for the 500TSP controller system. Your particular screen should show only those items that are part of your system configuration.

1 Stir Fans Icon shows when off and when running.

2 Brooders Icon shows when off and when on.

3 Home Pressing this Touch Point returns to the **Main Screen** (see p.3).

4 Heaters Heaters show when off and when on.

5 Tunnel Fans Show when off and when running.

6 Feed Shows when off and when running.

7 Alarm Shows when there are no problems and alternates , during an Alarm Condition.

8 Status Box This shows the current status of the house. **Tgt** is the **T**ar**g**e**t** Temperature, **Act** is the Average **Act**ual Temperature, and **SP** is the current **S**tatic **P**ressure.

9 Vent Unit Shows when the Unit is closing, when opening, and when static pressure conditions are satisfied according to the **Static Pressure** settings.

10 History Pressing this Touch Point takes you to the **History Screen Select** screen to access various ventilation records maintained in the Power Panel. This is detailed on p.24.

11 Sidewall Fans Show when off and when running.

12 Tunnel Inlet Unit Shows when the Unit is closing, when opening, and when the Power Panel is not calling for the Unit to run.

13 Lights Shows when off and when on. The number above the icon show the current light intensity as a percentage.

14 Pump Shows when off and when on.

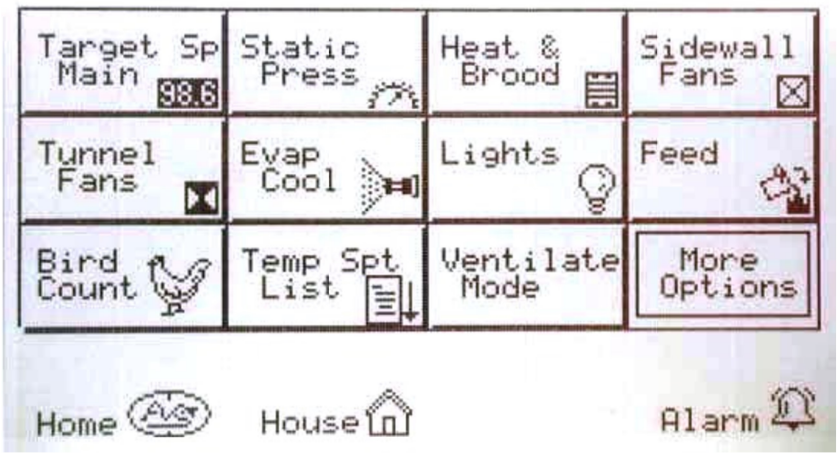
15 Fogger Shows when off and when running.

16 Evap/Cool Shows when off and when running.

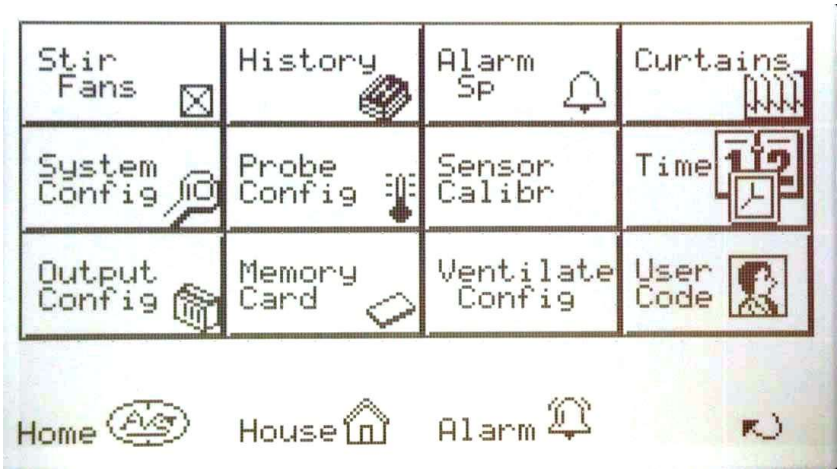
III. SETUP SCREENS

These two screens group the functions, configuration lists, histories and so on, that the Power Panel uses to control and monitor the various components of the 500TSP Controller System. The particular sections are described on the indicated page later in the manual. Pressing **More Options** Touch Point on **Screen 1** will take you to **Screen 2**.

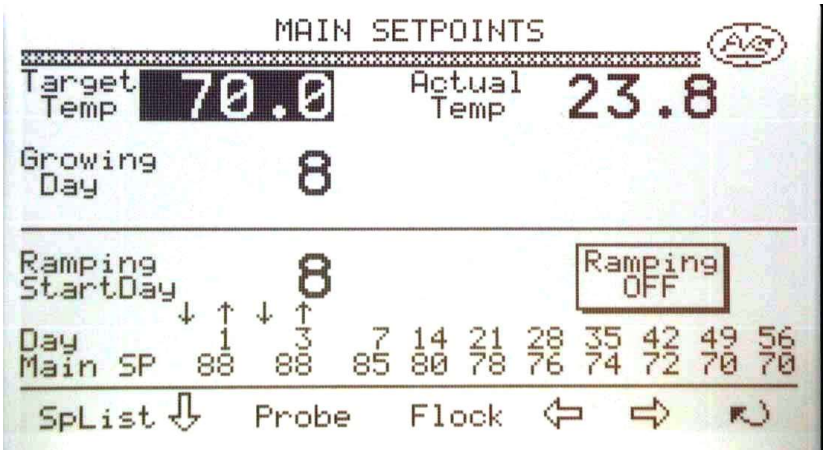
Setup Screen 1



Setup Screen 2



A. MAIN SETPOINTS



This Screen is accessed in 3 ways: On **Setup Screen 1**, press **Target Sp Main**; on the **House Screen**, press the **Status Box** in the center of the screen; or press the **Main Setpoint** button on the left side of the Touch Screen. Moving around, or navigating, on the two main portions of this screen requires the use of the arrow keys located below the Touch Screen. You will notice that the + and - buttons below the Touch Screen are lit; this indicates that they can be used to vary the values on particular portions of the screen. When an item on the Touch Screen is highlighted, that is, it has a dark background, this is an item or value that can be changed.

Target Temp — This is the first item that is highlighted when this Screen is opened, *unless* the **Ramping ON** section is highlighted (see below). This number is the Target Temperature which the Controller uses to determine which ventilation activity is required to maintain that temperature. This value can be changed by using the + and - buttons below the Touch Screen.

Growing Day — This is the current day of the flock. Use the **Down** arrow button to highlight this section. This value should be set to **0** the day that the birds

arrive. Adjust it by using the + and - buttons. This value automatically advances one day at midnight.

Actual Temp — This is the current house temperature as measured by the temperature sensors. This value can not be changed.

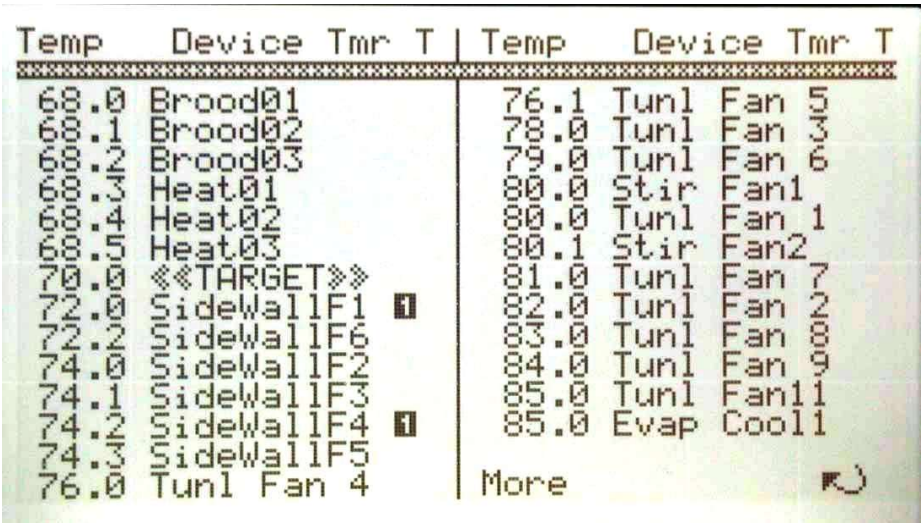
Ramping Start Day — This should match the **Growing Day**, and must be set to **0** when the birds arrive. The Power Panel will ramp the Target Setpoint according to the chart below the **Ramping Start Day**.

Day Main Sp — This section is where the Ramping Schedule is set up. Use the arrow keys to move to the different points, and use the + and - keys to change the values. The Power Panel will then adjust the Target Temperature according to this schedule, *if* the **Ramping ON** section is highlighted. All values on this screen can be adjusted *only when* **Ramping OFF** is indicated. **Ramping OFF/ON** can be changed by pressing that portion of the Touch Screen.

If the Ramping Schedule has been set up as in the above Screen, the Target Temperature on Day 3 will be 88°. The Power Panel will gradually lower the Target Temperature on the following days so that on Day 7 the Target Setpoint will be 85 °.

The bottom section of the Touch Screen are Touch Points to access other Screens:

SpList — This is a list of all the HEATING and VENTILATION DEVICES in the house in relationship to the Target Temperature. The list indicates the temperature at which the particular item will come on. These settings cannot be changed on this Screen.



Temp — This column shows the ON temperature for the particular heating or ventilation Device (column 2).

Tmr — This indicates if a particular device (fan) is on Timer 1 or Timer 2.

T — This column indicates if a particular device is used in transition to Tunnel Ventilation. See **TUNNEL FANS,** page 15, for description.

Pressing the **More** Touch Point will take you to the remainder of the list, if applicable. The **Reversing Arrow** is the **To Previous Screen** Touch Point. This will return you to the **MAIN SETPOINTS** Screen.

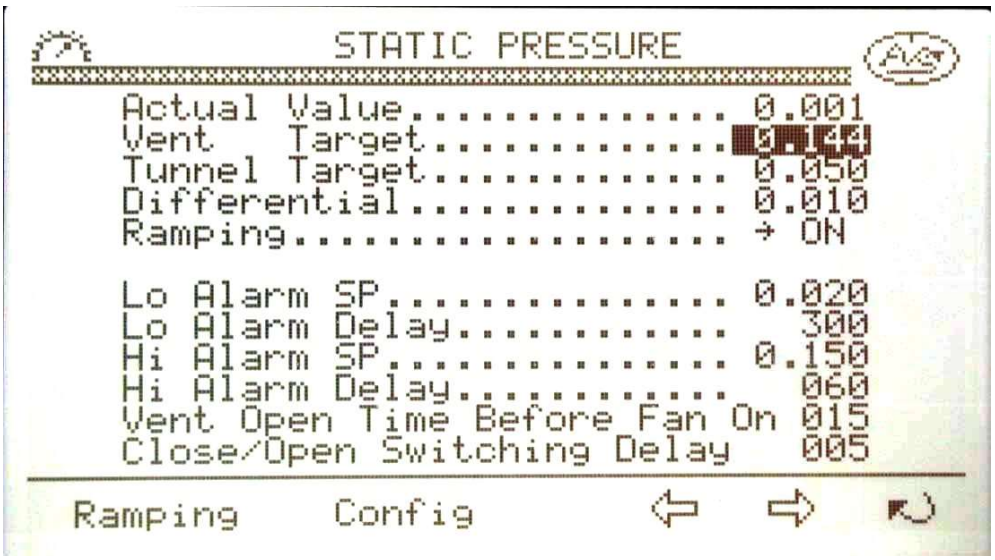
Probe — This Touch Point accesses the **PROBE CONFIGURATION** screen (p.28).

Flock — This accesses the **New Flock Setup** screen (p.33).

The Left and Right arrow Touch Points access the following screens: **STATIC PRESSURE, HEATERS & BROODERS, SIDEWALL FANS, TUNNEL FANS, Stir Fans, EVAP COOL/FOG, LIGHT SCHEDULE, FEED SCHEDULE,** and back to **MAIN SETPOINTS.** Not all of these screens may be accessible for your configuration. These screens will be discussed in their own sections.

B. STATIC PRESSURE

Access this screen by pressing **Setup Screen 1, Static Press**, pressing either Vent Unit or Tunnel Unit symbols on the **HOUSE** Screen, or pressing the **Static Press** button on the Power Panel Keypad. Use the arrow keys to navigate through this screen, and use the + and - keys to change the settings.



Actual Value — The current static pressure as monitored by the Static Pressure Sensor. This is a reading and cannot be changed.

Vent Target — This is the Target Static Pressure when in the minimum ventilation mode. This is used in conjunction with the **Differential** to determine when vents will open and close. **Note:** If **Ramping** is **ON**, this value cannot be changed.

Tunnel Target — This is the Target Static Pressure during Tunnel Ventilation. The **Differential** is also used with this value to determine when the tunnel unit will open and close. This value can be changed with **Ramping ON**.

Differential This value is subtracted from and added to the Target Setpoints, both Vent and Tunnel, to create a **deadband** which minimizes instantaneous direction changes by the Vent and Tunnel Units. When the Actual Static Pressure is within the **deadband**, the unit will not run. When the Pressure rises or falls outside of the **deadband**, the Vent or Tunnel unit will adjust accordingly.

Example: Vent Target: 0.090, Differential: 0.015; Deadband = 0.075 to 0.105. Unit will run Open at 0.106 or above, Close at 0.074 or below.

Ramping This feature is accessible only if an outside temperature sensor is installed. Use the **Yes/No** button to turn it **ON** or **OFF**. Press the **Ramping** Touch Point at the bottom of the screen to set up this feature (see below).

LO Alarm SP This is the Alarm SetPoint for low static pressure. If the static pressure remains below this value for longer than the **LO Alarm Delay**, the Alarm will turn on. A SetPoint of 0.000 will deactivate this Alarm.

LO Alarm Delay This is the length of time in seconds that the actual static pressure may be below the **LO Alarm SP** before the Alarm will activate. This value *must* be larger than the **Offtime** of the minimum ventilation timer to avoid false Alarms.

HI Alarm SP This is the Alarm SetPoint for high static pressure. If the static pressure remains above this value for longer than the **HI Alarm Delay**, the Alarm will turn on.

HI Alarm Delay This is the length of time in seconds that the actual static pressure may be above the **HI Alarm SP** before the Alarm will activate. This must be long enough to allow the Vent or Tunnel units to adjust when extra fans come on.

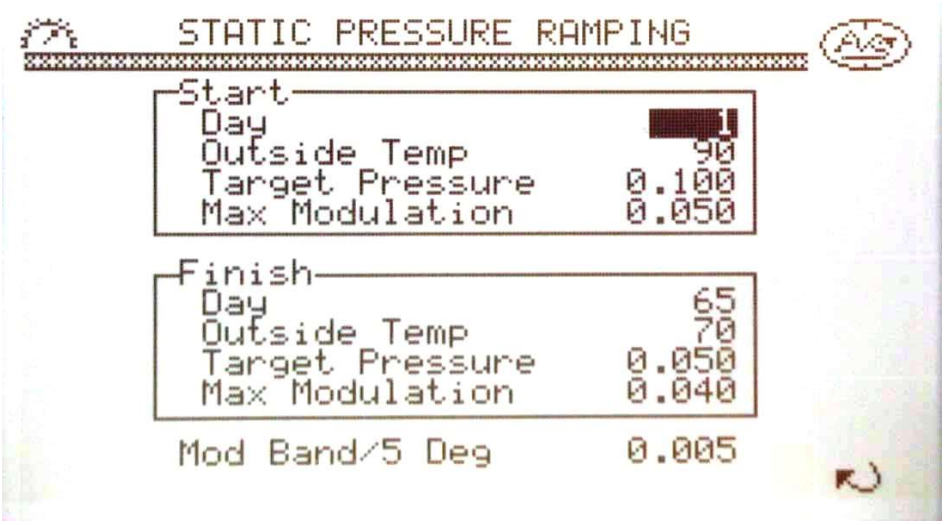
Vent Open Time Before Fan ON This is the time in seconds that the vents will open before a **Fan ON Time** cycle starts. This will occur in minimum ventilation mode only. This allows vents to be open before the timer fans start. When ventilation fans begin to come on by temperature, this feature will stop.

Close/Open Switching Delay This is the amount of time in seconds that the Vent or Tunnel Unit stop after running before reversing and starting again.

The Touch Points at the bottom of this Screen access other screens.

Ramping Touch Point

Static Pressure Ramping



This Screen has two sections. The **Start** section contains the settings at which the Power Panel will start ramping when the Growth Day reaches the value set for **Day**. The **Finish** section contains the final settings that the Power Panel will ramp to when the Growth Day reaches the value for **Day** in the **Finish** section.

When **Static Pressure Ramping** is **ON**, the Static Pressure Setpoint will change based on two requirements. First, the Setpoint will "ramp" from the Target Pressure on the Start Day to the Target Pressure on the Finish Day. Second, the Setpoint will modulate up or down based on the actual outside temperature difference from the Target Outside Temp. If the outside temperature is 5 degrees below the Outside Temp Setpoint, the Static Pressure Setpoint will increase according to the value of the Mod Band/5 Deg setting.

Example(based on settings in the **Static Pressure Ramping** illustration): On Day 1 the outside temperature is 85°, 5° below the Target Outside Temp of 90°. The Target Pressure would then increase by 0.005, the setting in Mod Band/5 Deg, to 0.105. For every 5° that the outside temperature is below the Target temperature, the Target Pressure would increase according to the value in the Mod Band/5 Deg to the maximum setting in Max Modulation.

Similarly, if the outside temperature was above the Target Temp by 5°, the Static Pressure Setpoint would automatically decrease according to the Mod Band/5 Deg setting.

Start

Day The Growth Day when Static Pressure Ramping starts.

Outside Temp This is the Target Temperature that determines what direction the Static Pressure will be modulated (see above).

Target Pressure This is the Static Pressure SetPoint that the Power Panel will use when the Growth Day reaches the Start Day.

Max Modulation This is the maximum increase or decrease in the Static Pressure modulation due to the outside temperature.

Finish

Day This is the Growth Day when Static Pressure Ramping will stop. If there are further Growth Days, the Power Panel will operate according to the settings in this section.

Outside Temp This is the **final** Target Temperature for Static Pressure Modulation.

Target Pressure This is the **final** Static Pressure Setpoint for the Finish Day. The Power Panel automatically ramps the Static Pressure setting from the Start Day value to the Finish Day value. The current Static Pressure Target can be viewed on the **STATIC PRESSURE** Screen **Vent Target** line.

Max Modulation This is the maximum increase or decrease in the Static Pressure modulation due to the outside temperature.

Mod Band/5 Deg This is the amount of increase or decrease of the Static Pressure Setpoint for every 5 degrees below or above the **Outside Temp** Target Setpoint.

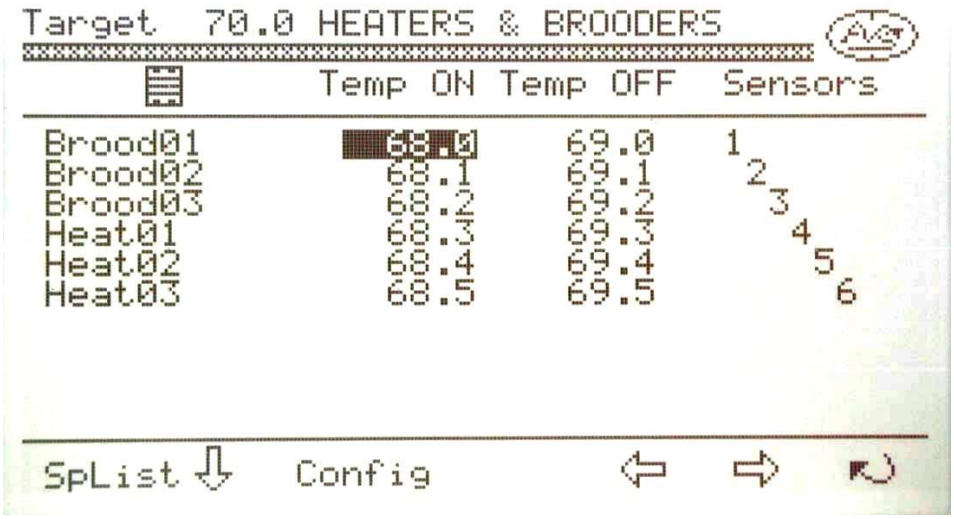
(Return to **STATIC PRESSURE** Screen)

Config Touch Point

Pressing this Touch Point accesses the **OUTPUT SETUP** Screens. These screens show the Setup Tables that identify the points on the Power Panel modules that connect to the various relays and devices that control the heating and ventilation system and other devices. These settings are made by the manufacturer and installer. **They are not user changeable.**

C. BROODERS & HEATERS

This screen shows the **ON** and **OFF** temperatures for the Brooders and Heaters set up in your house to be controlled by the Power Panel. The illustration below shows 3 Brooders and 3 Heaters. The list on your screen should show those items that are installed in your house. Use the arrow keys below the Touch Screen to move through the main portion of this screen, and use the + and - keys to change the settings.



Target — This is the Target temperature that the Power Panel is currently using to determine which control items to activate. This value cannot be changed on this screen, but can be changed on the **MAIN Setpoints** Screen.

Temp ON — This is the Actual Temperature that the control item, whether Brooder or Heater, will be turned on. Changing the value in this column will automatically change the value in the Temp OFF column by the same amount.

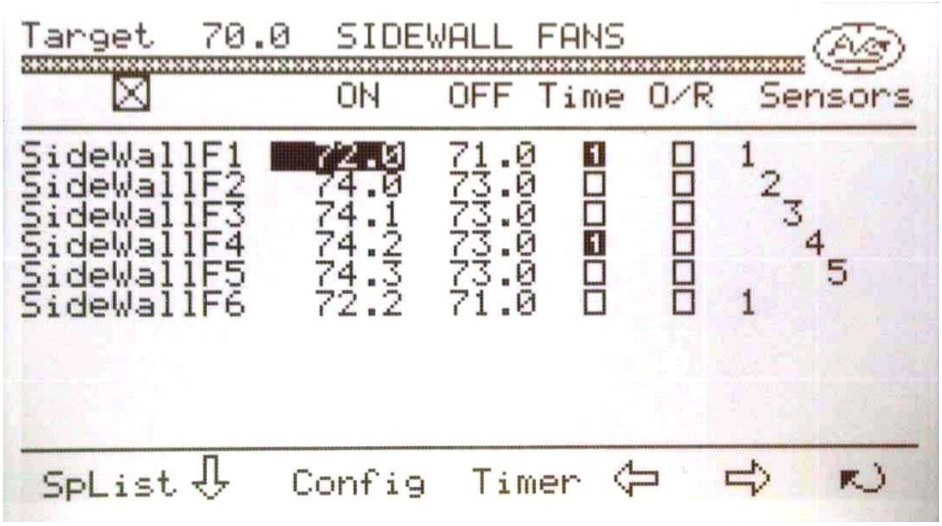
Temp OFF — This is the Actual Temperature that the control item will be turned off. The values in this column can be changed independent of the values in the Temp ON column.

Sensors — These are user selected sensors that monitor the temperature for that heating item. When a row is highlighted you may use the numeric keypad to activate (or deactivate)the sensors desired to monitor the temperature. More than one sensor may be selected. The Power Panel will average the temperature based on the number of sensors selected.

At the bottom of this screen are Touch Points. SpList is described on page 8, Config is described briefly on page 12. The Left and Right Arrow Touch Points take you to other SETUP screens.

D. SIDEWALL FANS

Use the arrow buttons to move through this screen, and the + and - keys to change the temperature values. The **Yes/No** and **Trans** buttons are also used with this screen.



Target — This is the Target temperature that the Power Panel is currently using to determine which control items to activate. This value cannot be changed on this screen, but can be changed on the **MAIN Setpoints** Screen.

ON — This column lists the temperatures at which the Sidewall Fans will come on. These values can be changed using the + and - keys below the Touch Screen. Changing this value will also change the corresponding value in the OFF column by the same amount.

OFF — This column shows the temperature at which the Sidewall Fans will turn off. These values can be changed without a corresponding change in the ON column.

NOTE: If Temperature Ramping is activated (see **Main SetPoints**, page 5) these ON and OFF temperatures will automatically change with the Target Temperature.

Time — This column shows whether a fan is on a Timer, and whether it is on Timer 1 or Timer 2. This can be changed for that Sidewall Fan by pressing the **Yes/No** button below the Touch Screen several times for the desired option.

There are two timer options: If only **1** is displayed for all desired Timer Fans, these fans will run every Timer Cycle. If **2** is displayed for some of the Timer Fans, the fans marked with **1** will run the first cycle, those marked with **2** will run the second cycle. Using **1** and **2** for the Timer Fans will prompt the **Min Vent Timer** to alternate between fans in successive cycles instead of running all fans in each Timer Cycle.

O/R — This column indicates whether the Sidewall Fans are on high temperature override. If a fan is selected for high temperature override, it will come on whenever the house temperature rises above the value set in **High Temp Override** section on the **Fan Stop Override** screen (page XXX). When

the box in this column is filled in, that fan is set for Override. The Override function is turned on using the **Trans** button located below the Touch Screen.

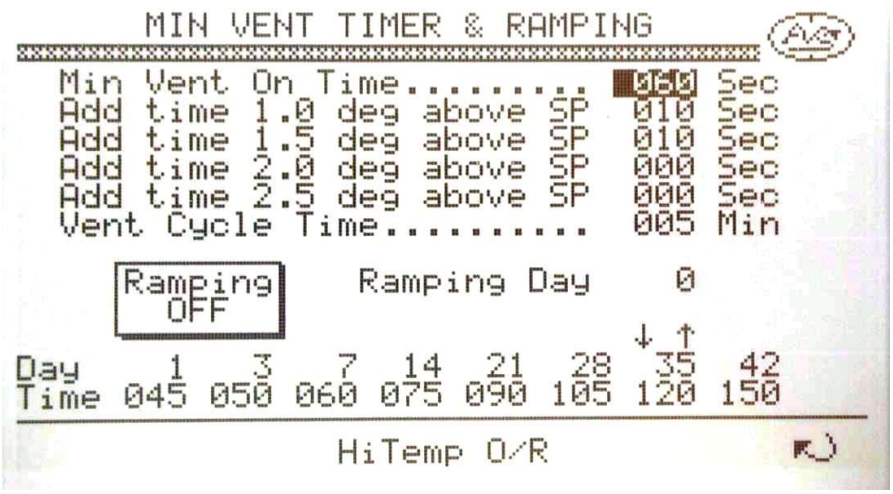
Sensors — This column indicates which sensors are selected to monitor the temperature for that particular fan. More than one sensor may be selected for each fan; the Power Panel will average multiple sensors if so selected. To turn a sensor on or off for a particular fan, press the corresponding number on the numeric keypad located below the Touch Screen.

SpList Touch Point — Described on page 8.

Config Touch Point — Described on page 12.

Timer Touch Point — This accesses the following screen:

MIN VENT TIMER & RAMPING



Min Vent On Time — This is the time in seconds that the Fans selected to run on Timer will run. This value can be changed if **Ramping OFF** is indicated. If the **Ramping ON** Touch Point is activated, the Min Vent On Time will change automatically according to the **Ramping Day**.

Add time 1.0 deg above SP — If the house temperature rises 1.0 degrees above the Target Temperature, the Power Panel will add this amount of time to the Min Vent On Time. This value can be changed using the + and - buttons below the Touch Screen.

Add time 1.5 deg above SP — Along with the previous Add time above, this adds additional time to the Min Vent On Time if the house temperature rises 1.5 degrees above the Target Temperature.

Each additional 0.5 degree rise in the house temperature will increase the Min Vent On Time additional time according to the corresponding settings on this screen.

Vent Cycle Time The Time in minutes for the Timer cycle. This includes the ON and OFF times. For the screen above, 60 second ON time and 4 minute OFF time would equal 5 minute Vent Cycle Time.

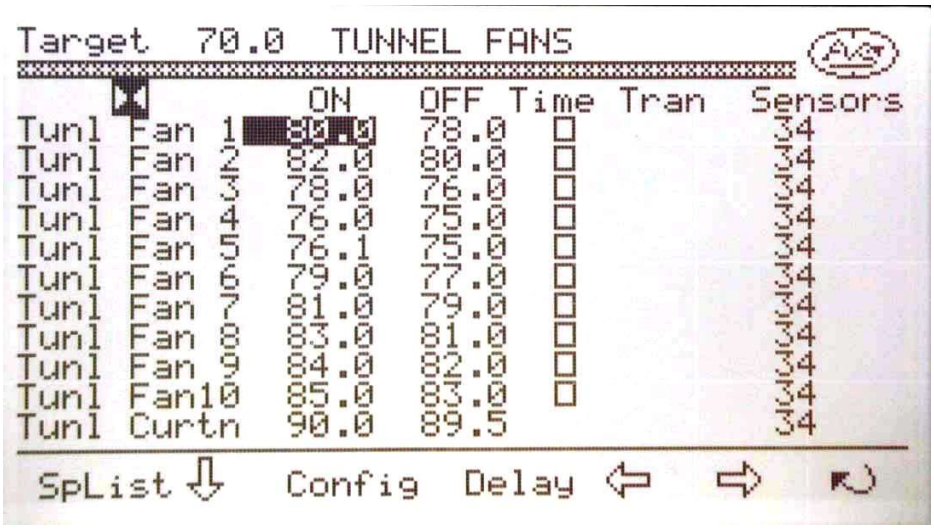
Ramping Day This displays the current ramping day. This must be changed on the **Main SetPoint** screen (page 7).

Ramping OFF/ON Pressing this Touch Point will turn the Timer Ramping function ON or OFF.

Day/Time This table shows the values desired for fan Timer Ramping. Day is the ramping day which is the same as that on the **Main SetPoint** screen (page 7). Time is the amount of time ON in seconds that the timer will use for the corresponding ramping day. The Power Panel will automatically adjust the Time between the ramping Days.

Hi Temp O/R Touch Point This accesses the **Fan Stop Override** screen. The value set on this screen is the temperature at which the Power Panel will turn on continuously the timer fans selected on the **SIDEWALL FANS** screen.

E. TUNNEL FANS



This screen shows the ON and OFF temperatures for the Tunnel Fans. Specific Tunnel Fans can be selected to run on timer, and to start Transition and Tunnel Ventilation.

Target This is the Target Temperature the Power Panel is currently using.

Tunl Fan 1 to Tunl Fan10 These are the individual Tunnel Fans.

Tunl Curtn This setting is used if you want Tunnel Ventilation to start based on temperature rather than based on a specific fan. Use the DOWN arrow to highlight this line and press the **Trans** button below the Touch Screen to change the Trans value to TUN. NOTE: The Tunnel Curtain cannot be set to TUN if a Tunnel Fan has the TUN selection. If a Tunnel Fan is starting Tunnel Ventilation, The Tunnel Curtain ON and OFF temperature settings

will match the ON and OFF settings for that Fan. If no Tunnel Fan is selected for TUN, the ON and OFF settings for the Tunnel Curtain can be independently set.

ON — This column shows the temperature settings at which the Tunnel Fans will turn ON. Increasing or decreasing these settings will change the OFF settings by the same amount.

OFF — This column shows the temperature settings at which the Tunnel Fans will turn OFF. When highlighted, these values can be changed independently of the ON settings.

Time — This column shows which, if any, of the Tunnel Fans are Timer fans. Pressing the **Yes/No** button below the Touch Screen will change the specific fan from a non-timer fan to a Timer 1 or Timer 2 fan.

There are two timer options: If only **1** is displayed for all desired Timer Fans, these fans will run every Timer Cycle. If **2** is displayed for some of the Timer Fans, the fans marked with **1** will run the first cycle, those marked with **2** will run the second cycle. Using **1** and **2** for the Timer Fans will prompt the **Min Vent Timer** to alternate between fans in successive Timer Cycles instead of running all selected fans in each Timer Cycle.

Trans — This column shows several different functions that can take place when a fan starts. The value of this column is changed by pressing the **Trans** button below the Touch Screen. Besides no setting, there are three possible settings which are described below. Only *one* Tunnel Fan can have one of these functions.

- HELP — When the Trans column displays HELP, this indicates that when this Tunnel Fan turns on the Vents will lock in place regardless of current position, and that Static Pressure will then be regulated by the Tunnel Inlet. The vents will resume normal operation when this fan turns off unless the system in in Tunnel Ventilation.
- STOP — When STOP is displayed, this indicates that the Sidewall Fans will stop when this Tunnel Fan turns on. Sidewall Fans will resume operation when this fan turns off unless the system is in Tunnel Ventilation.
- TUN — When TUN is displayed for a Tunnel Fan or the TUNL CURTN, this indicates that the system will go into Tunnel Ventilation when this Fan or Tunnel Curtain turns on.

The current mode of ventilation can be viewed on the HOUSE screen. The word TUN, STOP or HELP will be displayed beside the Tunnel Fans if that function is active.

Sensors — This column indicates which temperature sensors are selected for each fan for temperature monitoring. In the example screen Sensors 3 and 4 are selected for each Tunnel Fan. Sensors can be selected by pressing the corresponding number on the numeric keypad below the Touch Screen. If multiple sensors are selected, the Power Panel will use the average.

SpList Touch Point This accesses the list of all Heating and Ventilation settings in relation to the Main Set Point. This is an overview only; no setting can be changed on this screen. (see page 8.)

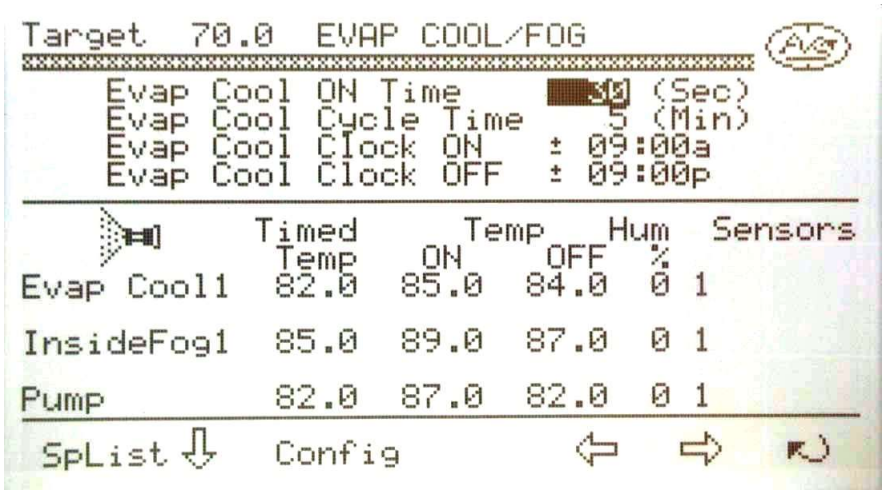
Config Touch Point See page 12.

Delay Touch Point This Touch Point accesses the **TUNNEL MODE TRANSITION DELAYS** Screen. The delays before and after Tunnel Ventilation are set, keeping fans off while vents and tunnel curtains adjust without being impeded by fan operation.

The Left & Right Arrow Touch Points access the previous or next Set Point screens.

F. EVAP COOL/FOG

This screen shows the ON and OFF temperatures and Times for the EVAP COOL devices.



Evap Cool ON Time Amount of time that the pads, foggers or pump will operate if they are on the Timer cycle.

Evap Cool Cycle Time Total amount of Evap Cool Timer cycle.

Evap Cool Clock ON Time of the day when the Evap Cool cycle can begin operation.

Evap Cool Clock OFF Time of the day when the Evap Cool cycle will stop.

NOTE: The Evap Cool devices will **not** operate outside on the Time parameters set for Evap Cool Clock ON and Evap Cool Clock OFF.

The items below the Evap Cool icon are the devices installed in your house.

Timed Temp The temperature at which the Evap Cool device will start operating on Timer. This setting cannot be raised to a higher value than the Temp ON for that device.

Temp ON The temperature at which the Evap Cool device will no longer run on Timer, but run continuously.

Temp OFF — The temperature at which the Evap Cool device will stop operating continuously and return to the Timer cycle. The device will continue running on the Timer cycle until the temperature is below the Timed Temp minus the differential between Temp ON and Temp OFF. In the above example, the device Evap Cool1 will start on the Timer cycle at 82.0 °, then run continuously above 85.0°, return to Timer cycle at 84.0 °, and come off of the Timer when the temperature is below 82.0 ° minus the differential of 1.0° (between Temp ON and OFF), which is 81.0 °.

NOTE: These temperature settings will automatically ramp if the Ramping function is on (see **MAIN SET POINTS**, page 7).

Hum % — This shows the percent Relative Humidity, if a Humidity Sensor is installed.

Sensors — This column shows the temperature sensors selected to control the Evap Cool device. Any or all of the sensors can activated or deactivated by pressing the corresponding number on the numeric keypad below the Touch Screen.

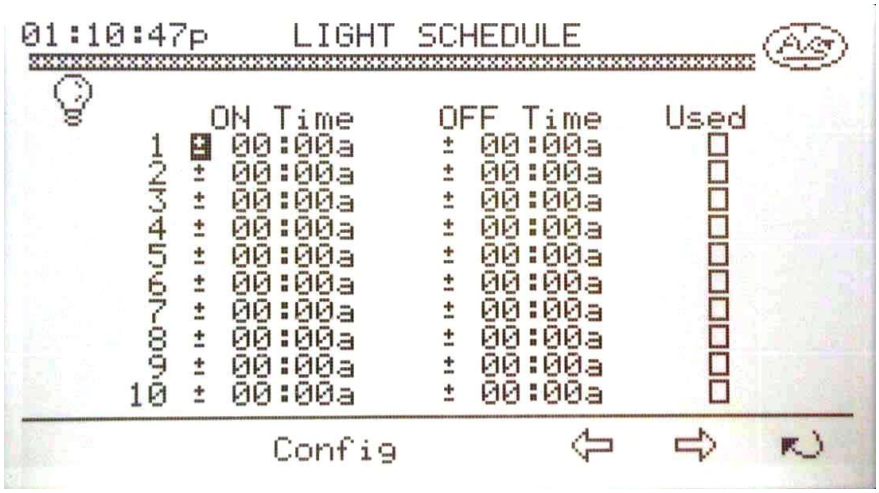
SpList Touch Point — Accesses the list of all device settings in relation to the Set Point (see page 8).

Config Touch Point — Accesses the **OUTPUT SETUP** screen used by the manufacturer.

Left and Right Arrow Touch Points — Access other setup screens.

G. LIGHT SCHEDULE

This screen shows the daily lighting schedule for your house. Up to 10 lighting periods are available.



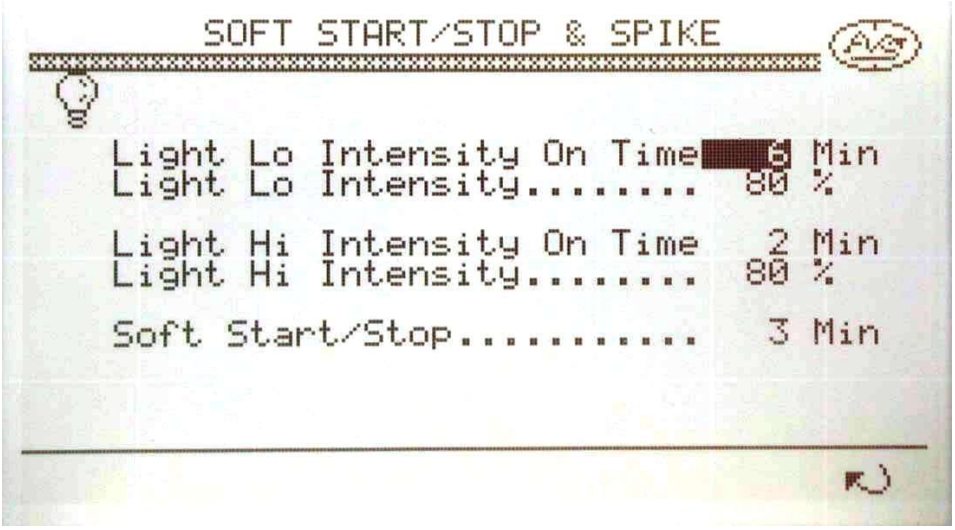
ON Time — Time lights will turn on. These settings are changed using the + and - keys below the Touch Screen.

OFF Time — Time lights will turn off.

Used A highlighted box indicates that this light period will be active during the day. It can be changed by using the **Yes/No** button below the Touch Screen. If the lighting schedule changes several times in the flock, you can set all the daily lighting periods at the beginning and then select the ones currently needed without resetting all the time periods for each change.

NOTE: If two active time periods have overlapping times, the Power Panel will operate the lights using the time period with the greater amount of time.

Soft Start Touch Point This will access the following screen if a Light Dimmer is installed.



Light Lo Intensity On Time Amount of time that the lights will operate on Low Intensity during the light period.

Light Lo Intensity The Light Intensity that the lights will operate during the Light Lo Intensity On Time.

Light Hi Intensity On Time Amount of time that the lights will operate at High Intensity during the light period.

Light Hi Intensity The Light Intensity that the lights will operate during the Light Hi Intensity On Time.

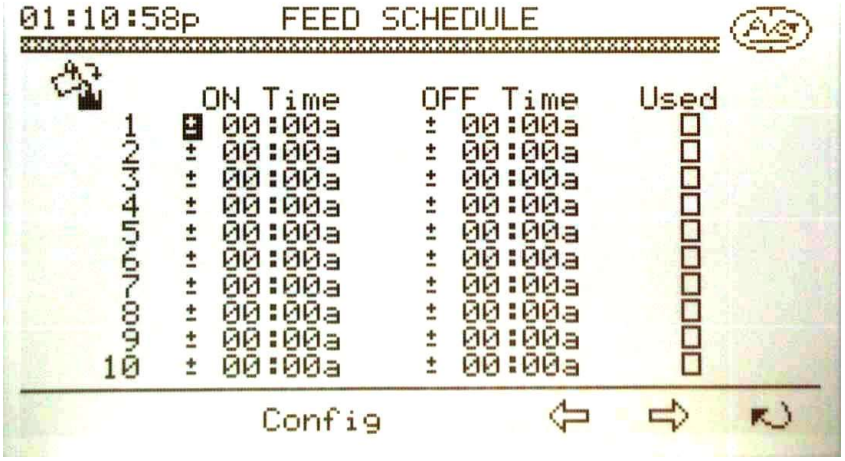
Soft Start/Stop The amount of time from the start of the light period that the Power Panel will use to increase the Light Intensity from 0% to the setting of the Light Lo Intensity.

OVERVIEW OF LIGHT CYCLE. The Light Cycle begins when the Main Clock reaches the ON Time for a lighting period (see LIGHT SCHEDULE, page 19). The Light Intensity will gradually increase from 0% to the setting of the Light Lo Intensity over the Soft Start/Stop time setting. The lights will then remain at the Light Lo Intensity level for the duration of the Light Lo Intensity On Time. Then the lights will be raised to the Light Hi Intensity setting, and remain at that level for the duration of the Light Hi Intensity On Time. Following that, the lights will return to the Light

Lo Intensity level for the remainder of the Light Period. The length of the Light Period takes priority over the Low Intensity time and the High Intensity Time.

H. FEED SCHEDULE

This screen can be accessed using the Left and Right Arrow Touch Points from other setup screens, as well as by the Feed indicator on the HOUSE screen, of the Feed Touch Point on Setup Screen 1. Up to 10 different Feed Time Periods can be used during the day.



ON Time — Time of the day when the Feed will turn on. Use the + and - keys below the Touch Screen to change the setting.

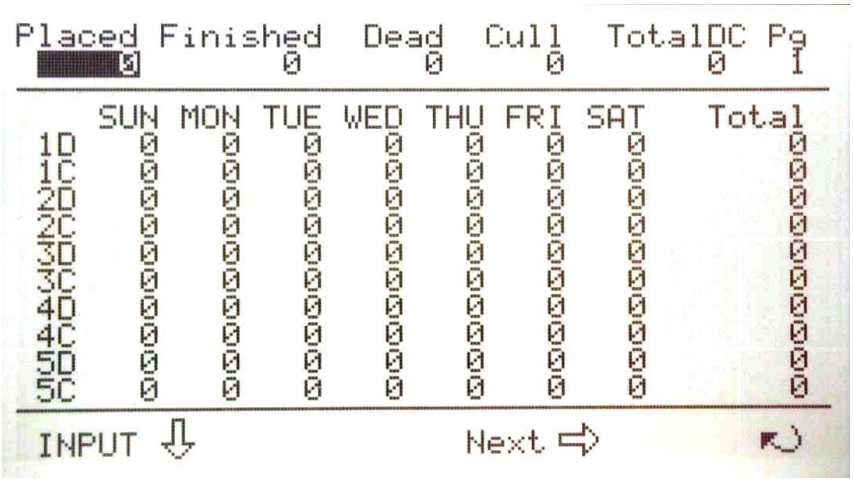
OFF Time — Time when the Feed will turn off.

Used — When the box in this column is highlighted, this indicates that this time period will be used during the day. If several different feed schedules are used during the course of the flock, these can be changed using the **Yes/No** button below the Touch Screen.

Config Touch Point — Accesses the OUTPUT SETUP settings made by the manufacturer.

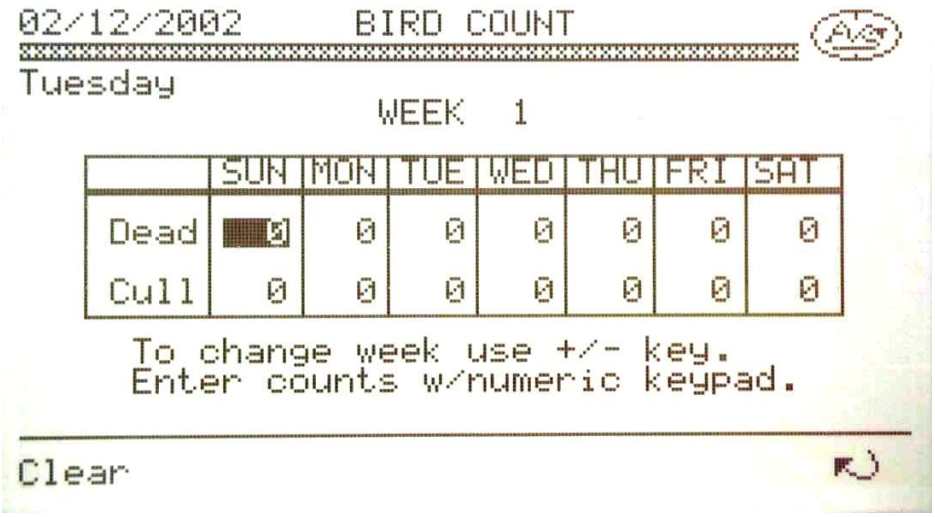
I. BIRD COUNT

To access this screen press the **Bird Count** button on the right of the Touch Screen, or on Setup Screen 1, press the **Bird Count** Touch Point.



The top portion of this screen shows the starting number of birds and the number of dead and culled birds in the flock. Placed is the starting number of birds. Enter this value by using the numeric keypad below the Touch Screen. After putting in the number, press the **Enter** button to highlight the Placed number. The other values in this portion (Finished, Dead, Cull, and TotalDC) are computed automatically by the Power Panel as you daily enter data. Finished is the number of living birds determined by subtracting the total dead and culled birds from the number Placed. Dead and Cull are the accumulated dead and culled birds from the flock, and TotalDC is the sum of these two. Pg indicates what page you are on. Pressing the Next Arrow on the bottom of the Touch Screen will scroll through other pages. Each screen shows a 5 week period.

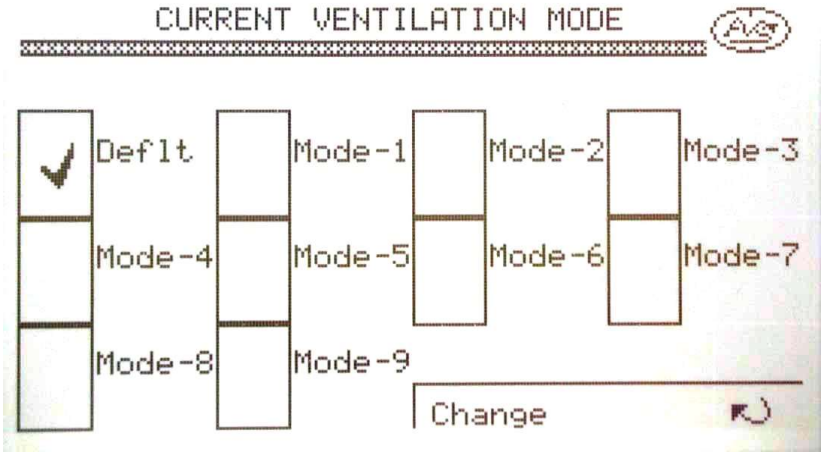
Input Arrow Touch Point accesses the **BIRD COUNT** screen where the daily data is entered.



The current date and day are displayed in the upper left of the Touch Screen. The **WEEK** number is counted from the day that new birds came into the house; it can be changed using the + and - buttons below the Touch Screen. Use the **Arrow** buttons to move thought the screen table, and enter the number of **Dead** and **Cull** using the numeric keypad below the Touch Screen. Press the **Enter** button after entering each count.

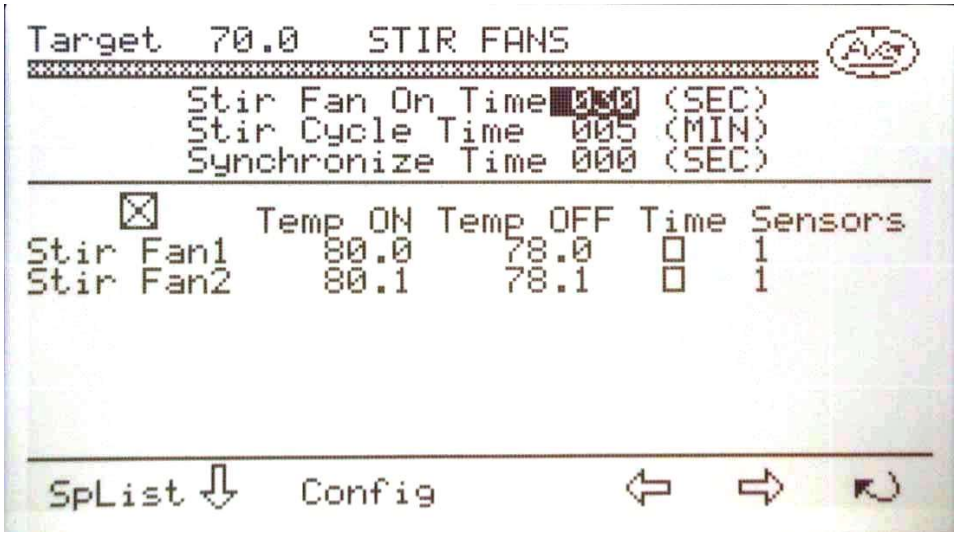
Clear Touch Point accesses the screen that asks **Do you want to CLEAR ALL Bird Count values?** Pressing **Yes** will clear the Bird Count information, including the starting number Placed, Dead, and Cull from the Power Panel memory, but not other histories.

K. VENTILATION MODE



The Ventilation Mode can be changed to another pre-saved Ventilation Configuration by this screen. Simply press the corresponding Touch Point to change to the desired Ventilation Mode. The Power Panel will respond by asking **Do you want to CHANGE** or note that the parameters for the selected **MODE** do not exist. Refer to **VENTILATION CONFIG** (p.31) for details regarding setting the different Ventilation Modes. Note that **Ramping ON** will override the Set Points for the particular Ventilation Mode.

K. STIR FANS



Target — The current Target temperature according to Growth Day and Ramping. This value can not be changed on this screen.

Stir Fan On Time — The amount of time that the selected Stir Fans are on during the Stir Cycle Time. Use the + and - buttons to change the setting.

Stir Cycle Time — This is the total Timer Cycle for selected Stir Fans; the OFF time is the Stir Cycle Time minus the Stir Fan On Time.

The center portion of this screen will show the number of Stir Fan groups (if any) in your house.

Temp ON — The temperature at which the fan group Stir Fan1 will turn on. If Time is selected (see below), they will run on Timer.

Temp OFF — The temperature at which the fan group will turn off.

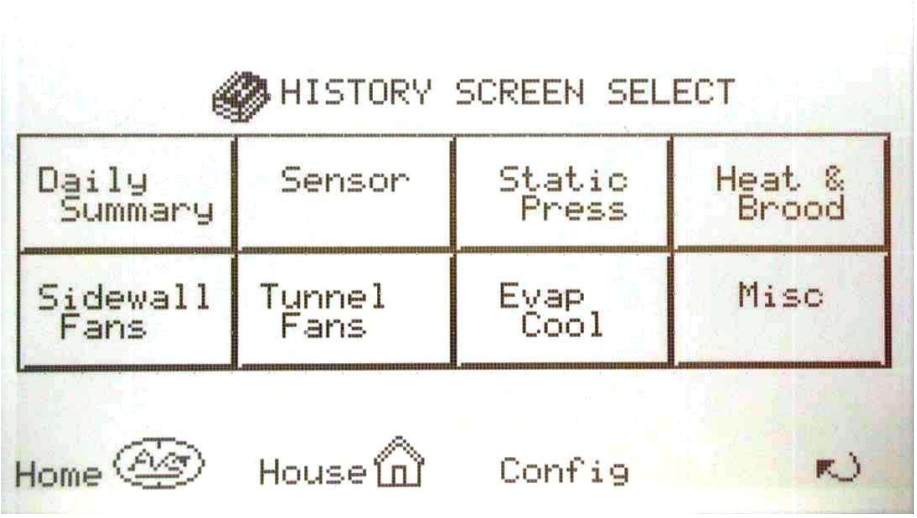
Time — If highlighted this indicates if the Stir Fan will operate on Timer when the Temp ON is reached. If the square is blank, the Stir Fan will run continuously. Use the **Yes/No** button below the Touch Screen to change the value.

Sensors — This indicates which temperature sensors are used to determine the temperature at which the Stir Fans will operate.

The bottom line of the screen are Touch Points to access other screens. SpList is described on page 8, Config accesses the OUTPUT SETUP settings made by the manufacturer and is described briefly on page 12. The Left and Right Arrow Touch Points take you to other SETUP screens.

L. HISTORY

Pressing this button on the right of the Touch Screen, or pressing the **History** Touch Point on **Setup Screen 2** accesses the **History Screen Select**, which shows a list of history screens that may be viewed. These are accessed by touching the particular Touch Point.



The **Config** Touch Point at the bottom of the Touch Screen accesses the **HISTORY DATA PARAMETERS** Screen, which is similar to the **NEW FLOCK SETUP**, p.33. This shows the current **Sampling Rate** that the Power Panel uses to store Temperature data and Device operational times. The **Sampling Rate** is the time interval between data records. The **Total Period** is the approximate number of days that the Power Panel will record data for the **Sampling Rate**. The Rates and corresponding Periods are:

Sampling Rate:	Total Period:
1 Minute	2 Days
2 Minutes	4 Days
3 Minutes	6 Days
4 Minutes	9 Days
5 Minutes	11 Days
10 Minutes	22 Days
15 Minutes	33 Days
20 Minutes	45 Days
25 Minutes	56 Days
30 Minutes	67 Days
40 Minutes	90 Days

Thus for a Sampling Rate of 5 minutes, the Power Panel will keep 11 days of history. When the Power Panel memory is full, it will indicate that the HISTORY is full and will no longer store further data. The HISTORY needs to be cleared before more data can be stored. This can be done by resetting the **Sampling Rate**. Note that when this is done the **Growing Day** will also reset to 0(zero). To change the **Growing Day** to correspond to the actual day of the flock, refer to the **MAIN SETPOINTS** screen on p.7. It is recommended that the **Sampling Rate** be set so that the **Total Period** corresponds to the life of the flock.

1. Daily Summary

This screen shows the daily average temperatures and operating times for the various devices. Up to 4 days can be viewed on the screen. Press the **Left** and **Right** Arrow buttons below the Touch Screen to view the next or the previous 4 day period. **Temp** shows the Lo and Hi temperatures in the house for that day. **Out** is the outside Lo and Hi temperatures (as recorded by the outside sensor). The other lines show the total run time for all the controlled devices on that day.

You can highlight a particular line using the **Up** and **Down** Arrow buttons below the Touch Screen. Note the small arrows on the extreme left of the Touch Screen. When a desired line is highlighted, you can press the **Trend** Touch Point on the bottom of the screen to view a bar graph for the item.

Pressing the **Heaters** Touch Point on the bottom of the screen will access the **Daily Heat Data** Screen. This screen shows the daily total run time for each heating device. Up to 5 days can be viewed on the screen. You can advance the time using the **Left** and **Right** Arrow buttons located below the Touch Screen. Pressing the **Up** and **Down** Arrows will highlight a particular heating device. Press the **Trend** Touch Point to show a bar graph of the daily run time for the highlighted device. (Return to the **Daily Summary** Screen using the reversing arrow at the bottom of the Touch Screen.)

Pressing the **Left** and **Right** Touch Points on the bottom of the **Daily Summary** Screen will access other history screens.

2. Sensor History

This screen shows the data of the temperature and humidity sensors for the sampling rate determined on the **HISTORY SELECT SCREEN**, **Config** Touch Point (p.24). Each sensor has its own line, and up to 5 time periods can be viewed. You can chose a particular sensor using the **Up** and **Down** buttons below the Touch Screen. The time periods can be advanced with the **Left** and **Right** buttons located below the Touch Screen. There are 2 sets of **Left** and **Right** Arrow Touch Points on the bottom of the Touch Screen. The black pair with the bar at the point of the arrow will take you to the extreme ends of the accumulated data; the **Left** Touch Point to the beginning of the data, and the **Right** Touch Point to the end of the data. The other pair (outline only) access other history screens.

Pressing the **Trend** Touch Point at the bottom of the screen takes you to a bar graph of the highlighted sensor for the displayed time period. Using the **Left** and **Right** Arrow buttons will retreat or advance the graph to show the previous or succeeding time periods.

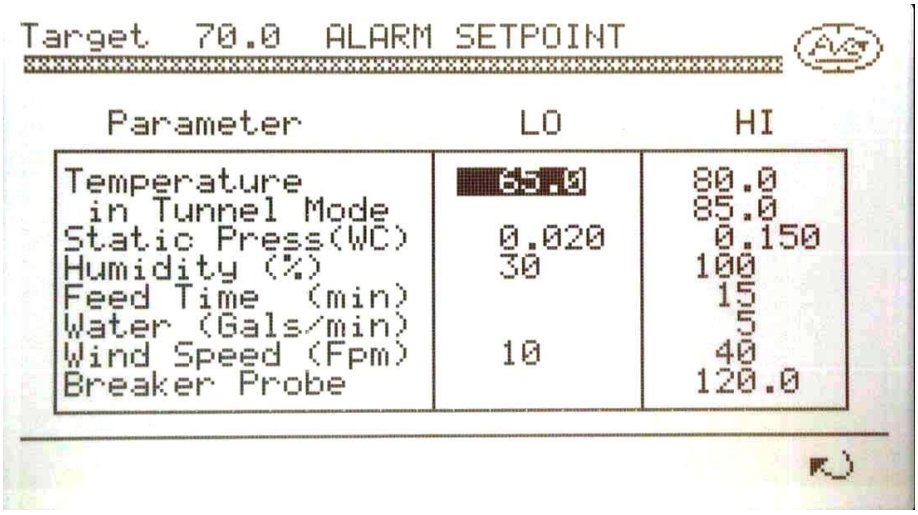
3. Static and Trans

This table shows the Static Pressure and the accumulated run times of the devices controlled by static pressure for the sampling rate. You can highlight a particular line using the **Up** and **Down** Arrow buttons and incrementally decrease or increase the time periods using the **Left** and **Right** Arrow buttons below the Touch Screen. You can move to the extreme ends of the data using the **Black Arrow** Touch Points, and view a bar graph of a selected line item using the **Trend** Touch Point.

Similarly the data records for the other History Screens can be viewed. The remaining screens are:

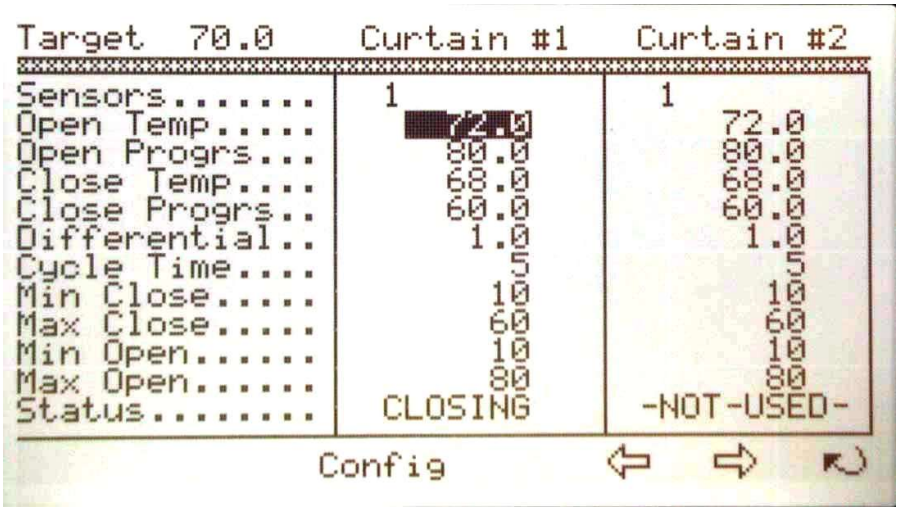
4. **Heat & Brood**
5. **Sidewall Fans**
6. **Tunnel Fans**
7. **Evap Cool**
8. **Misc**ellaneous

M. ALARM SETPOINT



This screen shows the settings that the Power Panel uses to determine when to activate the house alarm. Use the Arrow buttons to move around this screen, and the + and - buttons to change values. The parameters that appear on your screen will match the configuration of your house system.

N. CURTAINS



This screen shows the operational characteristics of the curtain systems, if they are installed for your house.

Sensors — Indicates the combination of temperature sensors the Power Panel uses to control the curtain operation. If more than 1 sensor is selected, the Power Panel will use the average of the sensors. The combination of sensors can be changed by pressing the corresponding number for the sensor on the numeric keypad below the Touch Screen.

Open Temp — The temperature at which the Power Panel will begin to open curtains according to the Min Open Run time and Cycle Time settings.

Open Progrs — The temperature at which the Power Panel will open curtains according to the Max Open Run time. Between Open Temp and Open Progrs the Power Panel will gradually increase the Run Time.

Close Temp — The temperature at which the Power Panel will begin to close curtains according to the Min Close and Cycle Time settings.

Close Progrs — The temperature at which the Power Panel will close curtains according to the Max Close Run time.

Cycle Time — The total Run Time and Off Time that the curtain operation will cycle (in minutes).

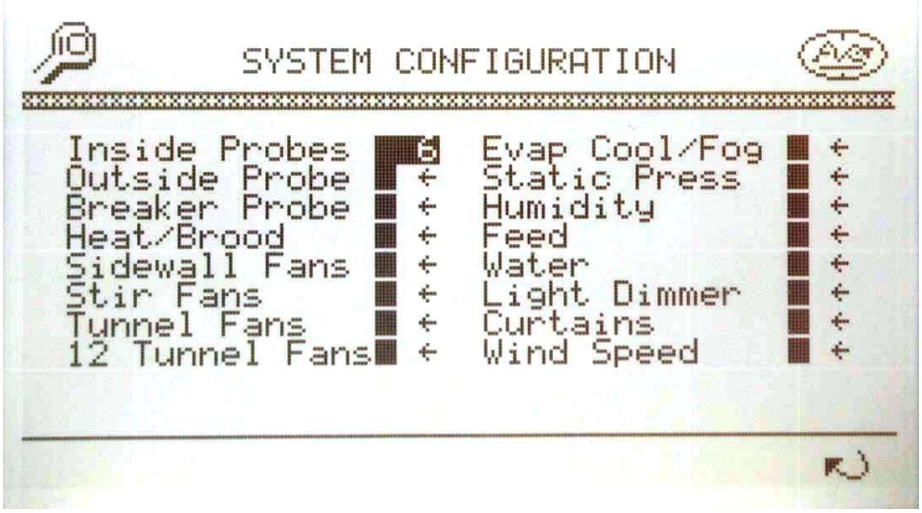
Min Close — The portion of the Cycle Time in seconds that the Power Panel will close curtains. The Power Panel will then pause for the remainder of the Cycle Time before continuing to run close, if the temperature still requires it.

Max Close — The maximum portion of the Cycle Time will use to close curtains.

Min Open and Max Open correspond to the Min Close and Max Close for open operation.

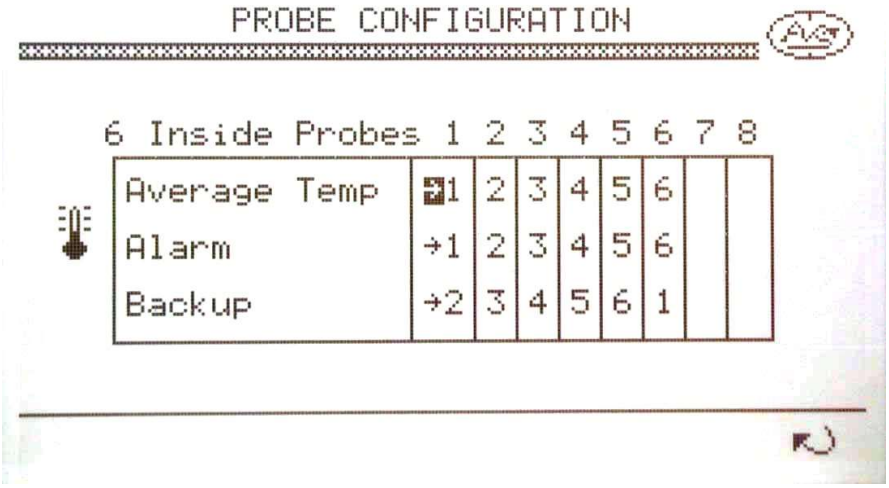
Status — Indicates the current operation of the curtain, whether CLOSING, OPENING, or HOLDING.

O. SYSTEM CONFIGURATION



This screen shows those items (probes) and devices that are installed in your system. A blackened box indicates whether that item is installed.

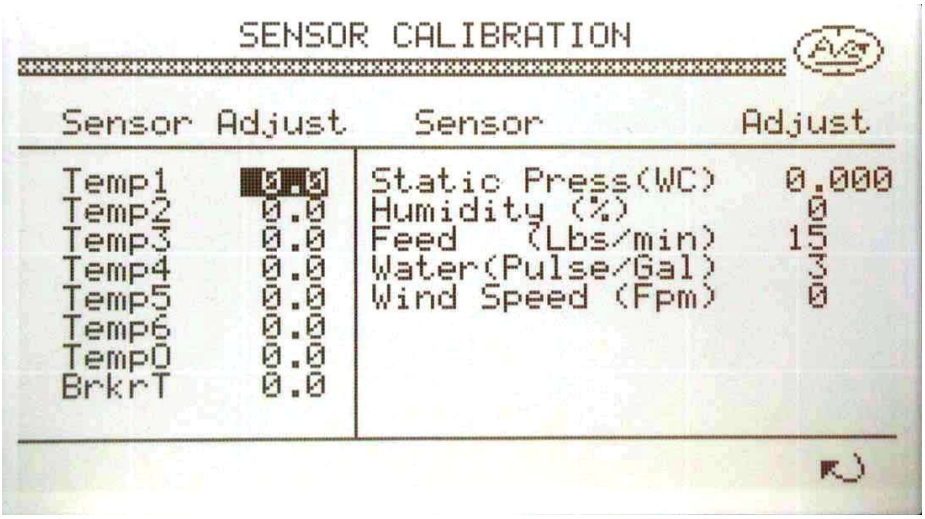
P. PROBE CONFIGURATION



This screen shows which temperature sensors are selected to determine the average House temperature for Heating or Ventilation, and Alarm conditions. The desired Sensor for Average Temp and Alarm can be selected by pressing the corresponding number on the numeric keypad below the Touch Screen.

If there is a sensor failure, the Power Panel will use the temperature reading of the Backup Probe to determine the Average Temp and Alarm condition. To change the Backup probe, move the cursor (using the Arrow buttons) to the column for the desired Probe, and press the + or - button to change the Backup probe number.

Q. SENSOR CALIBRATION

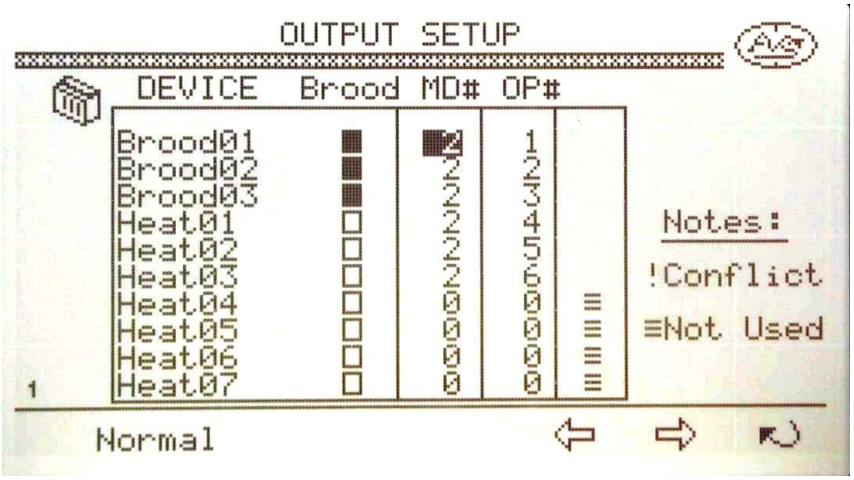


This screen is where adjustments can be made to readings of the probes and devices. Use the + and - buttons to change the adjustment. The Temperature Sensors can be adjusted from -9.9° to +9.9°, Static Pressure from 0.0 to 0.200"WC, Humidity from 0 to 100%, Feed can be adjusted from 0 to 1000, Water from 0 to 100.

R. TIME

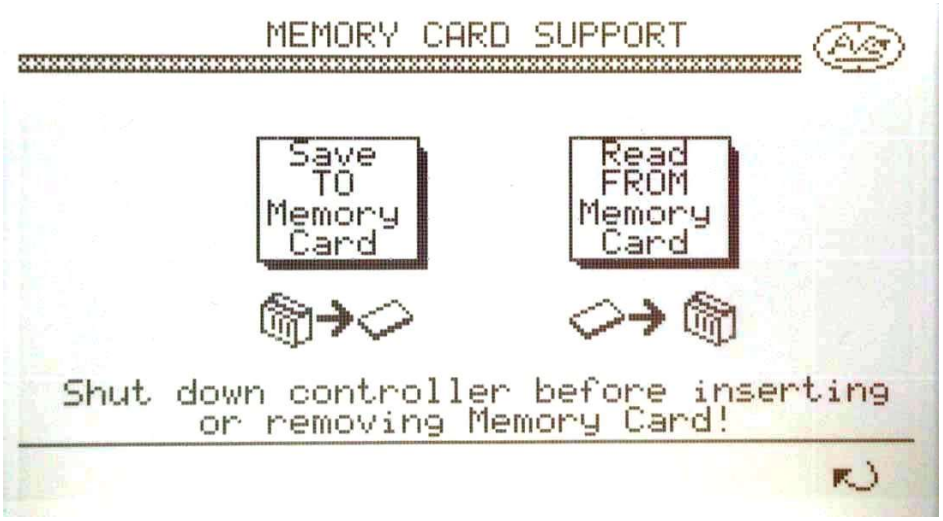
This screen is where the Date and Time can be adjusted. Use the Arrow buttons to move around the screen, and the + and - buttons to change the settings.

OUTPUT CONFIGURATION



These screens show the Output Settings that the Power Panel uses to activate the various devices that are controlled by the Power Panel. Up to seven screens can be viewed. The OUTPUT SETUP is configured by the manufacturer to correspond with your House setup. These settings **MUST NOT** be changed.

T. MEMORY CARD



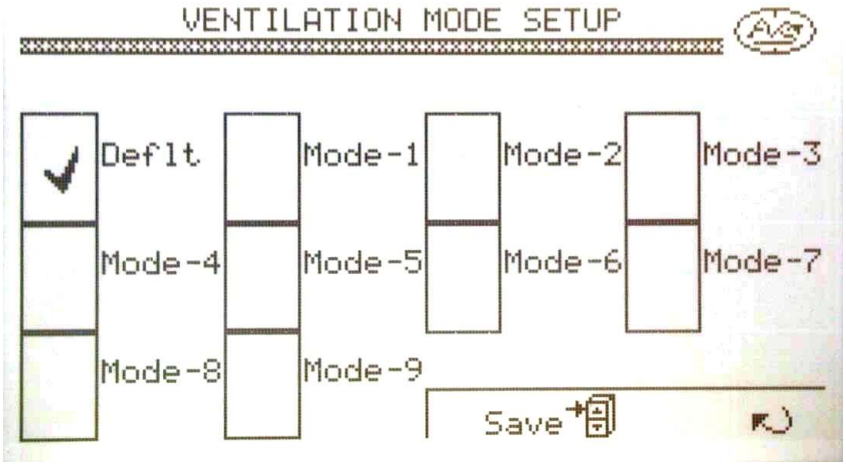
It is possible to save your settings on to a Memory Card as a backup, or to transfer to another system. It is important that your settings are first saved to a Ventilation Mode (see Ventilation Configuration, p. 31). Otherwise your settings will be lost when you shut down the controller.

The Memory Card slot is located inside the controller panel and is on the right side of the Power Panel. Shut down the Controller, insert the Memory Card, restart the controller; this forces the Power Panel to recognize the presence of the Memory Card. You can then save your settings to the Card, or read from the Card new values for your controller system.

U. VENTILATION MODE

This screen show where Ventilation Modes can be saved for access at later times. This will be discussed by means of an illustration.

Access the **MAIN SETPOINTS** Screen (p.7) using the button on the left side of the Touch Screen. Turn **Ramping OFF**, if it is **ON**, by pressing that Touch Point. The Target Temp can now be changed. For example, the Target Temp can be set to 90 ° for Brooding. Press the Right Arrow Touch Point at the bottom of the Touch Screen to access the **STATIC PRESSURE** Screen (p.9). The Vent Target and other settings can now be modified to accommodate Brood Ventilation, for example Vent Target = 0.10. Again press the Right Arrow Touch Point for the **HEATERS & BROODERS** Screen (p.12). Change the Temp ON and Temp OFF settings for Heat01 (or Brood01) to 89 ° and 91°, respectively, for Brooding. Similarly, the ON and OFF settings for the other heating devices. Continue to the **SIDEWALL FANS** Screen (p.13) using the Right Arrow Touch Point, and change the ON and OFF and Timer settings for the Sidewall Fans. You can continue through the other setpoint screens, **TUNNEL FANS**, **EVAP/COOL**, **LIGHTING**, etc., until you have set all the necessary values for Brood Ventilation. At that point you can then go to the **VENTILATE CONFIG** Screen: Press the **Home** button on the right of the Touch Screen, Press the **Setup** Touch Point on the lower right corner of the Touch Screen, press the **More Options** Touch Point on **Setup Screen 1**, and then press the **Ventilate Config** Touch Point to access the **CURRENT VENTILATION MODE** Screen.



Deflt are the SetPoint values installed in the Power Panel by the manufacturer. You can save the settings you have made for Brood Ventilation under one of the other **Modes**. Press the box Touch Point for the particular Mode number that you want to save those settings under. When an checkmark appears in the appropriate box, press the **Save** Touch Point. The Power Panel will then ask **Do you want to SAVE parameters as MODE-*x* mode?** Press **Save** to confirm, or **Cancel** to stop the save process. If the settings are saved, the Power Panel will then ventilate the house according to the settings for that Mode. You may go through the same process to set up values for different ventilation modes, such as Half-House Brooding, Full House Ventilation, Tunnel Ventilation, etc., up to 9 different ventilation modes. The current ventilation mode can then be changed by

pressing the **Ventilate Mode** Touch Point on **Setup Screen 1.** This screen is similar to the **Ventilate Config** screen except for the **Change** Touch Point on the bottom of the Touch Screen. Press the Touch Point for the ventilation mode desired. When the Checkmark appears, press the **Change** Touch Point at the bottom of the screen. The Power Panel will ask **Do you want to CHANGE to Mode-*x* mode?** Press the **Yes** Touch Point to confirm, or **No** to stop the change. The Power Panel also reminds you to **Please check Target Temperature and Timer Settings afterward.**

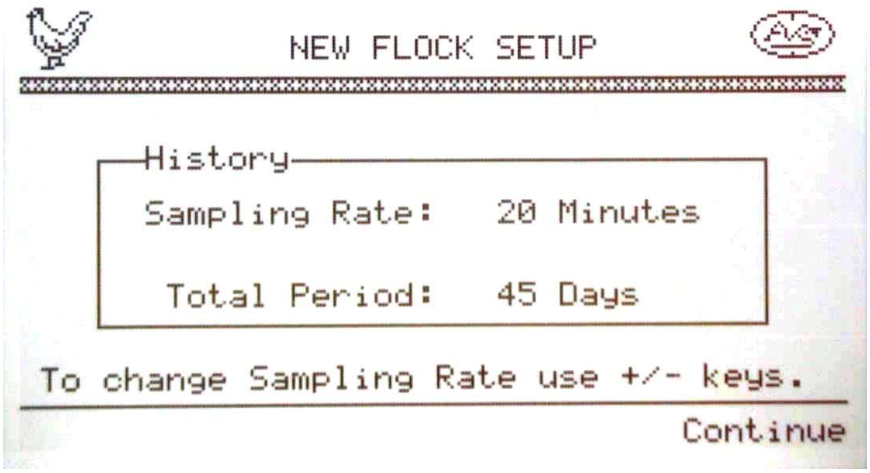
NOTE: If **Ramping** is ON (**MAIN SETPOINTS** Screen, p. 7), the Target Temperature will correspond to the Ramping settings. Turn OFF the Ramping function to change or reset the Ventilation Mode, which will change the Target Temperatures for the various devices accordingly.

V. USER CODE

This screen enables the user to put in codes that will limit access to the output configuration, and the system settings.

W. NEW FLOCK SETUP

Access this screen by pressing the **Flock** Touch Point at the bottom of the **Main** Screen. You should go through this process **only** at the start of a new flock of birds. **During this process, the history logs will be erased and the Growth Day will reset to 0.**

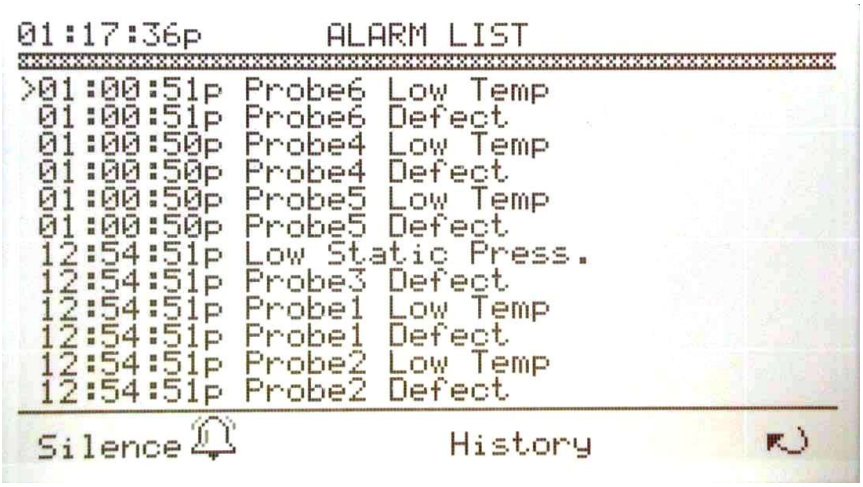


Sampling Rate Determines how often the Power Panel will record data. Changing this value will automatically change the Total Period.

Total Period The number of days that the Power Panel will record data before the memory is full.

Continue When the desired Sampling Rate and Total Period are set, press this Touch Point. The Power Panel will respond with a Confirmation/Warning screen: **This is a NEW FLOCK setup. Do you want to continue?** Pressing **Yes** will reset the **Growth Day** (p.7), and erase all histories. Press **No** to cancel the process.

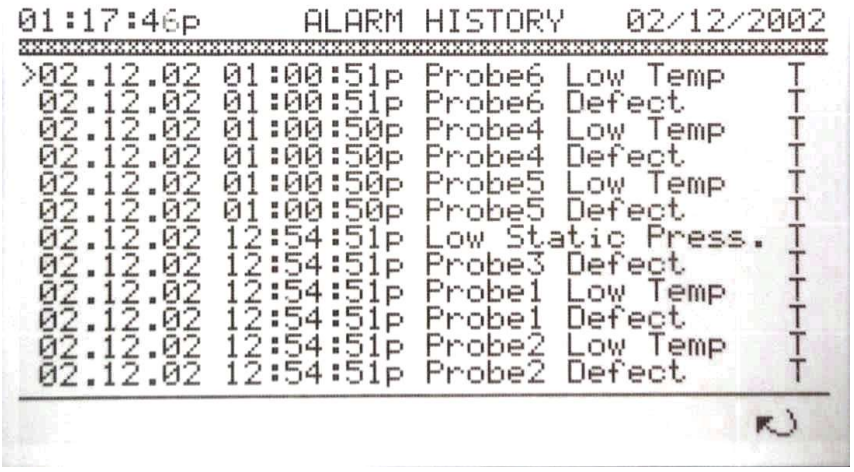
X. ALARM



Pressing the Alarm Image 🔔 Touch Point on various screens will access the ALARM LIST. The first screen shows problems that have activated the Alarm. These may be cleared by pressing the **Ack** (for Acknowledge) button below the Touch Screen. However, if a condition that triggered the Alarm has not been rectified, the particular line will not clear. For example, if a **Low Temp** condition triggered the Alarm, and the system returned to normal operating temperature, pressing **Ack** will clear the line from the **ALARM LIST**. If a **Probe Defect** triggered the Alarm, but was not rectified, pressing **Ack** will not clear the line, but an **A** will appear at the end of the line to indicate that the Alarm has been acknowledged.

Pressing the Silence Touch Point at the bottom of the screen will deactivate the Alarm for 5 minutes. If the Alarm condition is not corrected before the end of the 5 minute period the Alarm will retrigger. A new Alarm condition will also trigger the Alarm.

History This Touch Point accesses the **ALARM HISTORY**. This screen shows **all** Alarm conditions of the system, the date and time of the Alarm, and the operator response to that condition. Use the Up and Down Arrows below the Touch Screen to scroll through the Alarm conditions. An **A** at the end of the line indicates that the operator acknowledged the Alarm, **C** indicates that the Alarm was cleared (it no longer shows on the Alarm List), **T** indicates that the Alarm was triggered, but not acknowledged or cleared.



The Alarm History will remain in the Power Panel memory. It will not clear with other histories when **NEW FLOCK SETUP** is run.

LIMITED WARRANTY

If it appears within one year from the date of invoice between the Purchaser and Agri Ventilation Systems, LLC, that any products or component parts do not conform to the specifications and physical descriptions given to the Purchaser, or that such products or component parts do not perform the function for which they were intended, the Purchaser, at their expense, shall return the products or component parts to the Seller, as prescribed in the AVS Return Materials Policy, with a RGA number, and a written report of defects or failed performance. The Seller shall review the report and inspect the items, and shall determine warranty status, and shall authorize, where applicable, either the repair or replacement of any non-conforming, or non-functioning product or component parts. The liability of the Seller to the Purchaser arising out of the supply of, or use of the product or component parts, whether such liability shall arise during the warranty period, shall in no case exceed the amount paid by the Seller in the repair or replacement of non-conforming, or non-functioning product or component parts. Upon the expiration of the warranty period, all liability of the Seller shall terminate.

Any warranty will be terminated if any product or component parts are installed improperly, misused, misapplied, tampered with, abused, modified, or altered without authorization from Agri Ventilation Systems, LLC. Warranty will not apply to defects of failures caused by, or due to Acts of God, or nature.

WARNING: WHEN THE PRODUCT OR COMPONENT PARTS ARE USED IN A LIFE SUPPORT VENTILATION SYSTEM, WHERE FAILURE COULD RESULT IN LOSS OR INJURY, THE USER SHALL PROVIDE ADEQUATE PERSONAL ATTENTION, BACK-UP VENTILATION, SUPPLEMENTARY NATURAL VENTILATION, OR FAILURE SYSTEMS, ETC., NECESSARY TO CONTROL THE OPERATION, OR ACKNOWLEDGE WILLINGNESS TO ACCEPT THE ASSOCIATED RISKS OF SUCH LOSS OR INJURY.

This equipment is offered for sale specifically on the Purchaser's acceptance of the above condition and the manufacturer's warranty for this equipment. Acceptance, retention, installation, or operation of this equipment by the Purchaser shall be considered as acknowledgment and acceptance of the above conditions.

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