

Temperature Controller

EXPERT-VT212

USER'S MANUAL

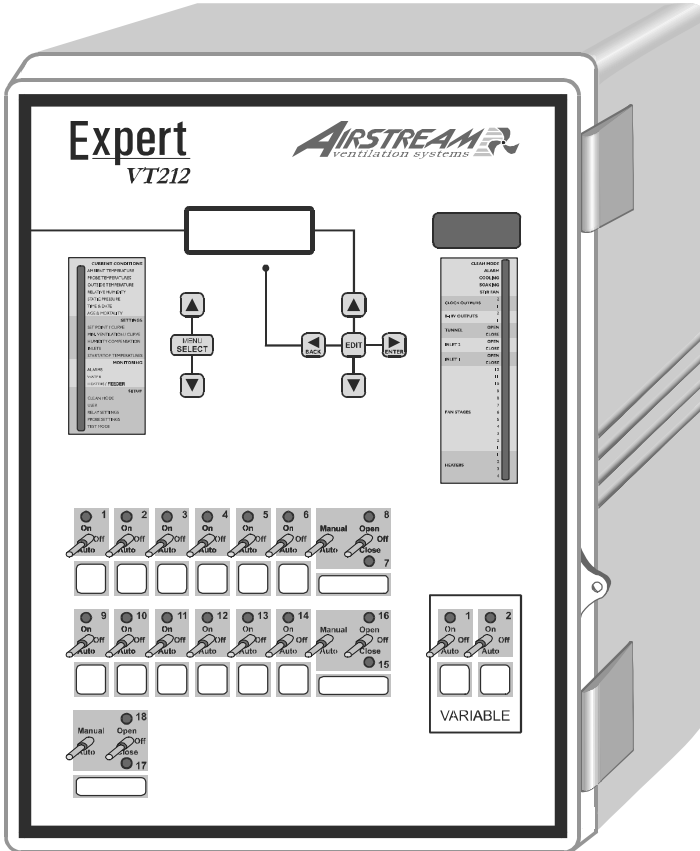


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1. PRECAUTIONS

We strongly recommend installing supplementary natural ventilation as well as a backup thermostat on at least one cooling stage (refer to the wiring diagram enclosed with this user's manual to connect the thermostat).

Although fuses at the input and outputs of the controller protect its circuits in case of an overload or overvoltage, we recommend installing an additional protection device on the controller's supply circuit.

The room temperature where the controller is located **MUST ALWAYS REMAIN BETWEEN 32° F AND 104° F (0° C TO 40° C).**

To avoid exposing the controller to harmful gases or excessive humidity, it is preferable to install it in a corridor.

DO NOT SPRAY WATER ON THE CONTROLLER

FOR CUSTOMER USE

Enter the serial number located on the side of the controller below for future reference.

Model number: **EXPERT-VT212**

Serial number: _____

2. FEATURES

The EXPERT-VT212 is an electronic device used for environmental control in livestock buildings. It allows the user to maintain a specified target temperature by controlling the operation of ventilation and heating equipment. Four heater stages, 12 fan stages, 1 cooling stage, 1 stir fan stage, 1 soaking stage, 2 0-10V outputs, 2 air inlet outputs, 1 tunnel output and 2 clock outputs can be controlled. Fan stages can be configured to activate cooling systems in timer mode. In all, the EXPERT-VT212 provides up to 16 on/off and 2 variable relay outputs.

The main features of the EXPERT-VT212 are as follows:

LCD DISPLAY

An LCD display provides an efficient interface for displaying, monitoring and adjusting parameter values.

MINIMUM VENTILATION CYCLE

When ventilation is not required for reducing room temperature, variable-speed outputs or on-off outputs can be operated either continuously or intermittently to reduce the level of humidity and supply oxygen to the room.

TEMPERATURE AND MINIMUM VENTILATION CURVES

The controller can be set to automatically change the temperature set point and the minimum ventilation fan speed over a given period of time in accordance with the user's requirements by specifying a temperature curve and a minimum ventilation speed curve with ten different points each.

PROBE READINGS RECORDED FOR PAST DAYS

Minimum and maximum readings from temperature and humidity probes are recorded for the current day and the previous 7 days.

WATER MONITORING

A pulse input is provided for monitoring water consumption for the current days and the previous 7 days.

FEEDER AND HEATER RUN TIME MONITORING

Feeder and heater run times are kept in memory for the current day and for the previous 75 days.

ALARM MANAGEMENT

Alarms are provided for high-low temperatures, defective probes and other system functions. Alarm states are kept in memory until they are acknowledged even if alarm situation has been rectified.

HUMIDITY COMPENSATION

The minimum ventilation speed can be adjusted automatically as a function of relative humidity. Cooling units can be shut off when humidity levels are too

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high. In addition, heater outputs can be activated when humidity levels are too high.

SIX INDEPENDENT TEMPERATURE PROBES INPUTS

Up to six temperature probes can be connected to the controller in order to obtain a more accurate reading of the average room temperature and a faster reaction time. Probes can be configured to use zoned heaters.

STATIC PRESSURE CONTROL

A static pressure input is provided to control static pressure by opening and closing the inlets.

CONTROL OF AIR INLET MOVEMENT

Two inlet outputs used to control the air inlet movement are included in the EXPERT-VT212. The movement of air inlets can be coordinated with the operation of the fans using a potentiometer located on the panel drive. This allows the air inlets to be adjusted correctly, without the influence of uncontrollable factors such as wind or air from adjoining rooms.

TUNNEL VENTILATION

The controller has one output to operate curtains for tunnel ventilation.

TWO PROBE SETS

The probe selection for calculating room temperature can be changed in tunnel ventilation to compensate for changes in airflow patterns that can distort the room temperature calculation.

PASSWORD PROTECTION

A password feature is used to restrict access to the controller setup functions.

BACKUP BATTERY

A backup battery allows the unit to keep time in case of a power failure.

OVERLOAD AND OVERVOLTAGE PROTECTION

Resettable fuses are provided at low-voltage inputs and outputs of the controller to protect its circuitry in the case of an overload or overvoltage.

COMPUTER CONTROL

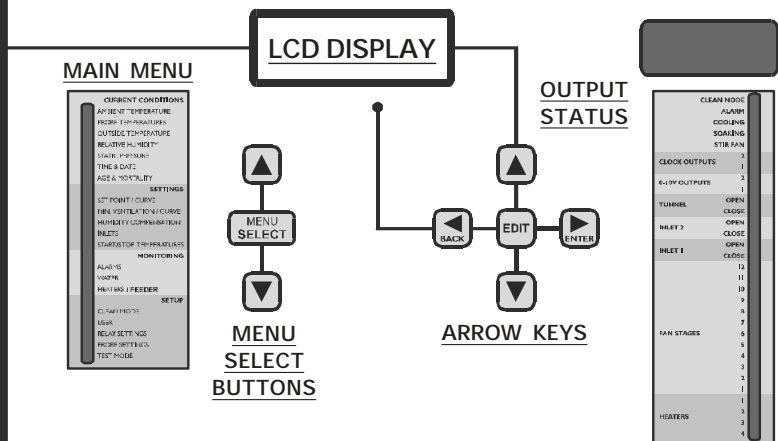
The controller can be connected to a computer, thus making it possible to centralize the management of information and diversify control strategies.

TEST MODE

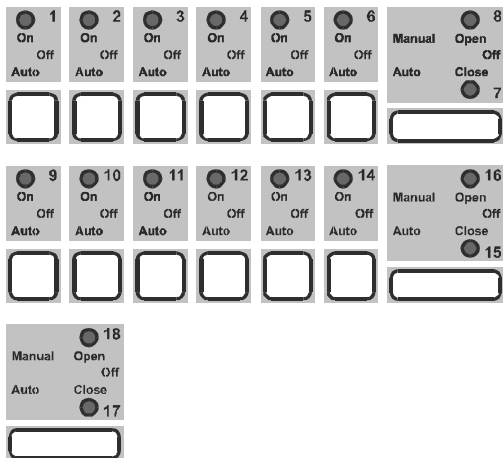
A test mode allows you to simulate temperature changes and verify controller performance, as well as manually activate each output sequentially.

3. LOCATION OF THE CONTROLS

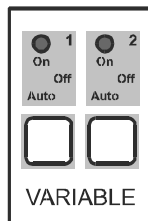
Expert VT212



18 ON/OFF RELAYS



2 VARIABLE RELAYS



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LCD Display: The LCD display gives the current readings and displays the parameters when you select a function. When the parameters for a given function cannot all be presented at once on the display, arrows are displayed on the right handside to indicate that additional parameters can be displayed using the arrow keys.

After 5 minutes of inactivity, the display returns to the **AMBIENT TEMPERATURE** display.

Menu Select buttons: The up and down-arrow keys are used to scroll into the main menu located on the left side of the controller.

Arrow Keys: The up and down-arrow keys are used to scroll within a function menu. The right-arrow key is used to select a menu option. The left-arrow key is used to return to the previous menu display.

Edit Button: The Edit key is used to modify a parameter value. Once the edit key has been pressed, the selected parameter flashes quicker on the display. Use the up and down-arrow keys to adjust the parameter.

Adjusting a Parameter: A parameter can be adjusted when it is flashing on the LCD display. Press the Edit key once. The parameter flashes quicker on the display. Use the arrow keys to change the value of a parameter. Press the Edit key once again to validate the value.

CONTROLLER STATUS LEDS

LED		MEANING
CLEAN MODE		URNS ON WHEN THE CONTROLLER OPERATES IN CLEAN MODE.
ALARM		URNS ON WHEN AN ALARM IS DETECTED FLASHES WHEN AN ALARM CONDITION HAS OCCURED AND HAS BEEN RE-ESTABLISHED ALL BY ITSELF.
COOLING		URNS ON WHEN THE COOLING UNITS ARE OPERATING.
SOAKING		URNS ON WHEN THE CONTROLLER OPERATES IN SOAKING MODE
STIR FAN		URNS ON WHEN STIR FAN IS OPERATING.
CLOCK OUTPUT 2		URNS ON WHEN CLOCK OUTPUT 2 UNIT IS OPERATING.
CLOCK OUTPUT 1		URNS ON WHEN CLOCK OUTPUT 1 UNIT IS OPERATING.
0-10V OUTPUT 2		URNS ON WHEN 0-10V OUTPUT 2 OPERATES.
0-10V OUTPUT 1		URNS ON WHEN 0-10V OUTPUT 1 OPERATES.
TUNNEL	OPEN	URNS ON WHEN THE TUNNEL IS OPENING.
	CLOSE	URNS ON WHEN THE TUNNEL IS CLOSING.
INLET 2	OPEN	URNS ON WHEN INLET 2 IS OPENING.
	CLOSE	URNS ON WHEN INLET 2 IS CLOSING.
INLET 1	OPEN	URNS ON WHEN INLET 1 IS OPENING.
	CLOSE	URNS ON WHEN INLET 1 IS CLOSING.
FAN STAGE 12		URNS ON WHEN FAN STAGE 12 IS OPERATING
FAN STAGE 11		URNS ON WHEN FAN STAGE 11 IS OPERATING
FAN STAGE 10		URNS ON WHEN FAN STAGE 10 IS OPERATING
FAN STAGE 9		URNS ON WHEN FAN STAGE 9 IS OPERATING
FAN STAGE 8		URNS ON WHEN FAN STAGE 8 IS OPERATING
FAN STAGE 7		URNS ON WHEN FAN STAGE 7 IS OPERATING
FAN STAGE 6		URNS ON WHEN FAN STAGE 6 IS OPERATING
FAN STAGE 5		URNS ON WHEN FAN STAGE 5 IS OPERATING
FAN STAGE 4		URNS ON WHEN FAN STAGE 4 IS OPERATING
FAN STAGE 3		URNS ON WHEN FAN STAGE 3 IS OPERATING
FAN STAGE 2		URNS ON WHEN FAN STAGE 2 IS OPERATING
FAN STAGE 1		URNS ON WHEN FAN STAGE 1 IS OPERATING
HEATER 1		URNS ON WHEN HEATER 1 UNITS ARE ON.
HEATER 2		URNS ON WHEN HEATER 2 UNITS ARE ON.
HEATER 3		URNS ON WHEN HEATER 3 UNITS ARE ON.
HEATER 4		URNS ON WHEN HEATER 4 UNITS ARE ON.

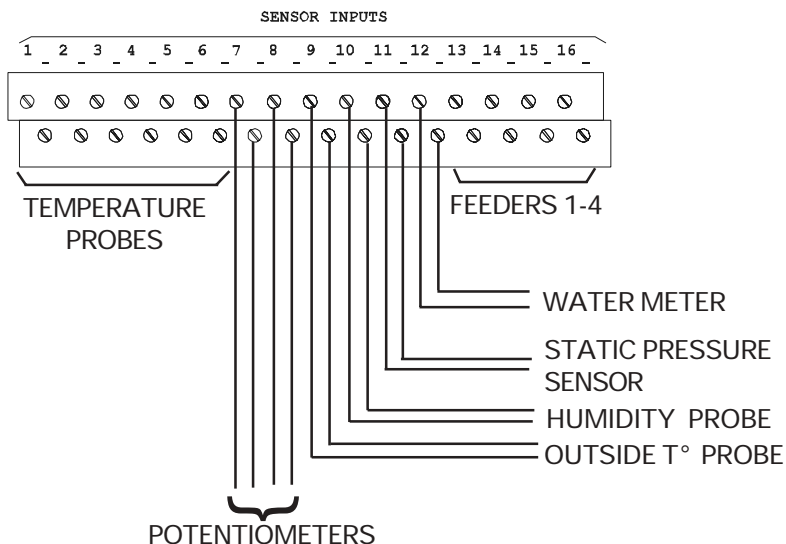
4. MOUNTING INSTRUCTIONS

Fasten the four metal brackets on the mounting holes located behind the controller using the four screws included with the controller. Mount the enclosure on the wall using four other screws. Be sure the electrical knockouts are at the bottom of the enclosure in order to prevent water from entering the controller. The enclosure must be mounted in a location that will allow the cover to be completely opened right up against the wall.

4.1 CONNECTIONS

To connect the controller, refer to the wiring diagram enclosed with this user's manual. Use the electrical knockouts provided at the bottom of the enclosure. Do not make additional holes in the enclosure, particularly on the side of the enclosure when using a computer communications module.

1. PROBE INPUTS



ALL WIRING MUST BE DONE BY AN AUTHORIZED ELECTRICIAN AND MUST COMPLY WITH APPLICABLE CODES, LAWS AND REGULATIONS. BE SURE POWER IS OFF BEFORE DOING ANY WIRING TO AVOID ELECTRICAL SHOCKS AND EQUIPMENT DAMAGE.



Probes operate at low voltage and are isolated from the supply. Be sure that probe cables remain isolated from all high voltage sources. In particular, do not route the probe cables through the same electrical knockout as other cables. Do not connect the shield from the probe cable to a terminal or a ground.

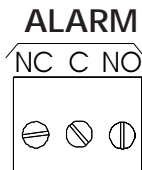
Extending a probe: Each probe can be extended up to 500 feet (150 meters). To extend a probe:

- Use a shielded cable of outside diameter between 0.245 and 0.260 in (6.22 and 6.60 mm) (the cable dimensions should not be under 18 AWG) to ensure the cable entry is liquid tight. **Do not ground the shielding.**
- It is preferable to solder the cable joint to ensure a proper contact between the two cables.

CAUTION: Do not run probe cables next to other power cables. When crossing over other cables, cross at 90°.

Defective temperature probes: An alarm is generated when a defective probe is detected. The defective temperature probes are identified in the "Alarm" menu.

2. ALARM



There are two types of alarms on the market. One type activates when current is cut off at its input, whereas the other activates when current is supplied at its input. For an alarm of the first type, use the NC terminal as shown on the wiring diagram. For an alarm of the second type, use the NO terminal.

5. CONTROLLER SETUP

5.1 CURRENT CONDITIONS

The following menus give a quick view of the actual conditions in the barn as described below:

Ambient Temperature:

Set the function to **AMBIENT** main menu using the menu select buttons. The average room temperature of the activated probe is displayed.

Room Temperature			
Average:		76.9°F	
Pb1	On	Pb2	On
Pb3	On	Pb4	On

Probe Temperature:

Set the function to **PROBE TEMPERATURE** using the menu select buttons. The current readings of each temperature probe is displayed.

Probe Temperatures			
Pb1	75.4	Pb2	78.1
Pb3	75.4	Pb4	78.4
Pb5	75.5	Pb6	78.6

Outside Temperature:

Set the function to **OUTSIDE TEMPERATURE** using the menu select buttons. The current outside temperature is displayed. Note that this menu is only accessible if an outside temperature probe has been installed (see sec. 5.16.4.2).

Outside Temperature			
Read Out:		72.3°F	
Today's Min / Max			
Min	71.3	Max	74.2

Relative Humidity:

Set the function to **RELATIVE HUMIDITY** using the menu select buttons. The current humidity level in the room is displayed. Note that this menu is only accessible if a humidity probe has been installed (see sec. 5.16.4.2).

Relative humidity			
Read Out:		85%	
Today's Min / Max			
Min	60	Max	80

Static Pressure:

Set the function to **STATIC PRESSURE** using the menu select buttons. The current static pressure is displayed. This menu is only accessible if a static pressure probe has been installed (see sec. 5.16.4.2).

Static Pressure			
Read Out:		.193"WC	
Today's Min / Max			
Min	.190	Max	.196

Time & Date:

Set the function to **TIME & DATE** using the menu select buttons. The actual time and date are displayed.

Time & Date		Y / M / D ◀▶
Date	2001/03/29	
Time	11:21:15	

Age & Mortality:

Set the function to **AGE & MORTALITY** using the menu select buttons. The current animal age and animal mortality are displayed.

Age & Mortality		▲
Age:	15days ▼	
New Mortality	0	
Today	0	

Viewing Current Set Point:

Select the **SET POINT / CURVE** menu using the menu select buttons. Press the right-arrow key once in order to select "**1. Set Points**" menu. The current set point is displayed.

Set Point		▲
Current	71.0°F	
Day	70.0°F	
Night	77.0°F	

Adjusting LCD Contrast

The LCD Contrast can be adjusted from 10 to 100%.

- Select the **USER** main menu using the menu select buttons.

- Press the right-arrow key once in order to access the "**1. LCD Contrast**" menu. The LCD contrast value is displayed.

LCD Contrast		
Value	100%	
Min	10	Max 100

- Press the Edit key then use the arrow keys to adjust the LCD contrast to the desired value. Press the Edit key once again to validate the value.

5.2 ADJUSTING THE ROOM SET POINT

The temperature set point is the target room temperature. It can be adjusted between -40.0°F and 120°F (-40.0°C and 48.9°C). The controller can operate with three set points: a day set point, a night set point and an empty room set point. Refer to section 5.16.6 to activate the night set point.

5.2.1 Adjusting the Day Set Point



The temperature curve must be turned off to adjust the set point.

Turning the Temperature Curve Off:

- Select the **SET POINT/CURVE** function from the main menu using the menu select buttons.
- Press the down-arrow key once to select the curve option. Press the right-arrow key to access the menu. The curve status is displayed.

Temperature Curve ▼
Set point: 70.0°F
Curve Stat On
- If the temperature curve is ON, the set point determined by the temperature curve is displayed. Press the down-arrow key and scroll the menus until "**Curve Stat**" status flashes on the display. Press the Edit key then press the down-arrow key to turn off the curve. Press the Edit key once again to validate the new curve status. Now that the curve is off, follow the instructions below.
- If the temperature curve is OFF, follow the instructions below.

Adjusting the Day Set Point :

- Set the function to **SET POINT / CURVE** using the menu select buttons. Press the right-arrow key once to select the "**1. Set Point**" menu. The current set point is displayed.

- Press the down-arrow key to select the day set point. The day set point flashes on the display. Note that the day set point will not flash if the curve is still on.

Set Point		▲
Curent	71.0°F	
Day	70.0°F	
Night	77.0°F	

- Press the Edit key then use the arrow keys to adjust the set point to the desired value. Press the Edit key once again to validate.

5.2.2 Adjusting the Night Set Point

- Select the **SET POINT / CURVE** function from the main menu using the menu select buttons. Press the right-arrow key once to select the "1. Set Point" menu. The night set point is displayed. Note that the night set point is only shown if the night set point has been enabled (see sec. 5.16.6).
- Press the down arrow-key to select the night set point.
- Press the Edit key then use the up and down-arrow key to adjust the night set point to the desired value. Press the Edit key once again to validate.

5.2.3 Adjusting the Empty Zone Set Point

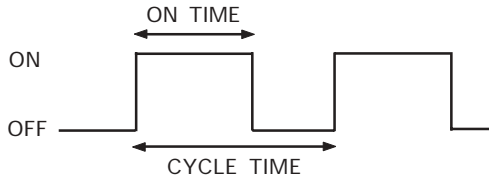
- Select the **SET POINT / CURVE** function from the main menu using the menu select buttons. Press the right-arrow key once to select "1. Set Point" menu.
- Press the down arrow-key to select the empty zone set point.
- Press the Edit key then use the up or down-arrow key to adjust the empty zone set point to the desired value. Press the Edit key once again to validate the value.

Current	71.0°F
Day	70.0°F
Night	77.0°F
Empty Zone	35.0°F

5.3 MINIMUM VENTILATION

PRINCIPLE OF OPERATION

When the room temperature is below the set point, the fans can operate according to a minimum ventilation cycle. Running the fans even though ventilation is not required for reducing room temperature is useful to reduce humidity level and supply oxygen to the room. It also prevents the fans from freezing in winter.



The minimum ventilation operates using the variable fan outputs. The minimum fan speed can be controlled over time using a curve (see sec. 5.17.3). The controller can also use specific settings adapted for night-time minimum ventilation.



Note that the minimum ventilation curve must be turned off to adjust the minimum ventilation settings.

5.3.1 Adjusting Minimum Ventilation

5.3.1.1 Adjusting Minimum Ventilation Speed

- Select the **MINIMUM VENTILATION / CURVE** menu using the menu select buttons.
- Press the right-arrow key to select "**1. Variable 1**" menu.

- Use the arrow keys to select the "**2. Minimum Curve**" menu. The minimum speed of variable output 1 is displayed.

Min Vent Settings	▲
Variable Output 1	▼
1. Timer / Status	
2. Minimum Curve	

- **If the curve is ON**, press the down-arrow key to scroll all points of the curve then, the "**Curve Stat**" menu flashes on the display. Press the Edit key and use the down-arrow key to turn it off. Press the Edit key once again to validate the new curve status then follow the instructions below.

- If the curve is OFF, the minimum speed of variable output 1 flashes on the display. Press the Edit key then use the arrow keys to adjust the minimum speed to the desired value. Press the Edit key once again to validate.

Min Ventilation	
Variable Output 1	▼
Speed:	20%
Curve stat	Off

- Proceed in similar fashion to adjust minimum speed of variable output 2.

5.3.1.2 Adjusting Minimum Ventilation Timer

The CYCLE TIME ranges from 0 to 900 seconds and must be set at a greater value than the ON TIME. The following steps show how to activate the variable outputs for minimum ventilation and how to set the minimum ventilation timer properly.

- Select the **MINIMUM VENTILATION / CURVE** menu using the menu select buttons.
- Press the right-arrow key to select the first variable output.

- Press the right-arrow key once again to select "1. Timer/Status" menu. The current speed of variable 1 fans is displayed. Press the down-arrow key to select "Status" display.

Variable 1 Settings	◆
Current	20%
Status:	On
On Time	15sec

- If the status is set to OFF, press the Edit key then use the up-arrow key to activate the first variable output for minimum ventilation.
- Press the down-arrow key once. The ON TIME value for variable output 1 flashes on the display.
- Press the Edit key then use the arrow keys to adjust the ON TIME to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once again to select the CYCLE TIME display.
- Press the Edit key then use the arrow keys to adjust the CYCLE TIME to the desired value.

- If variable output 2 fans are also used for minimum ventilation, proceed in similar fashion to adjust their ON TIME, CYCLE TIME and STATUS.

5.3.2 Adjusting Night Time Minimum Ventilation

The controller allows to modify the minimum speed of variable fans during night time, in minimum ventilation. If the controller uses a curve to automatically adjust the minimum ventilation speed over time, the nighttime minimum ventilation will also operate using that same curve (see sec. 5.17.3).

- Set the function to **USER** from the main menu using the menu select buttons.

- Select the "**6. Day / Night**" menu using the arrow keys. Press the down-arrow key once. The night's minimum ventilation status flashes on the display.

Day/Night Settings	▲▼
Night SetPoint?	No
Night Min.Vent?	Yes
DayTime	6:00

- Press the Edit key then press the up-arrow key to enable the night's minimum ventilation. Press the Edit key once again to validate.

- Press the down-arrow key in order to select "**Min. V1**" display. This value represents the minimum speed of variable output 1 fans during nighttime, in minimum ventilation.

DayTime	6:00
NightTime	18:00
Min. V1	10%
Min. V2	25%

- If variable output 1 is used for minimum ventilation, press the Edit key and use the arrow keys to adjust the minimum speed of variable output 1 to the desired value.

- Press the down-arrow key once again to select "**Min. V2**" display.

- If variable output 2 is used for minimum ventilation, press the Edit key and use the arrow keys to adjust the minimum speed of variable output 2 to the desired value.

5.4 INLET SETTINGS

The controller adjusts the air inlet opening according to ventilation stages. As the temperature increases and new stages are activated, the inlet is opened or closed accordingly : variations in the room temperature activate or deactivate ventilation stages. The air inlet position is directly related to these ventilation stages.

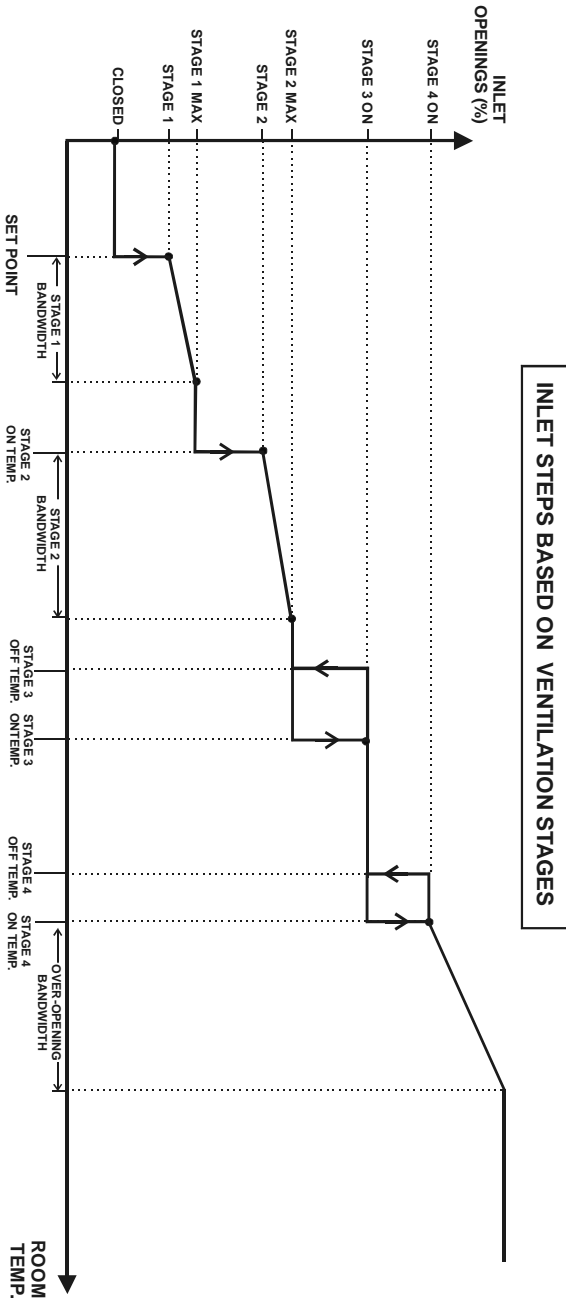
A compensation can be activated to ensure an uniformity in room temperature: air inlet positions are automatically adjusted when the reading of probes that are associated with the air inlet differs from the average temperature read by the controller. Refer to section 5.16.9.3 to assign temperature probes to the air inlet.

If variable stages are used, two inlet openings must be set: an inlet opening corresponding to the beginning of the fan stage (stage on temp) and an inlet opening that will be reached when the variable fan stage reaches maximum speed.

A supplementary stage can be calibrated in order to continue opening the air inlet beyond the last temperature controller ventilation stage. This over-opening stage is optional. It is used to direct the airflow more efficiently during periods of warm weather. When all the reference points of the temperature controller ventilation stages have been defined, the controller allows you to specify a temperature bandwidth as well as a percentage of air inlet opening for the over-opening stage.

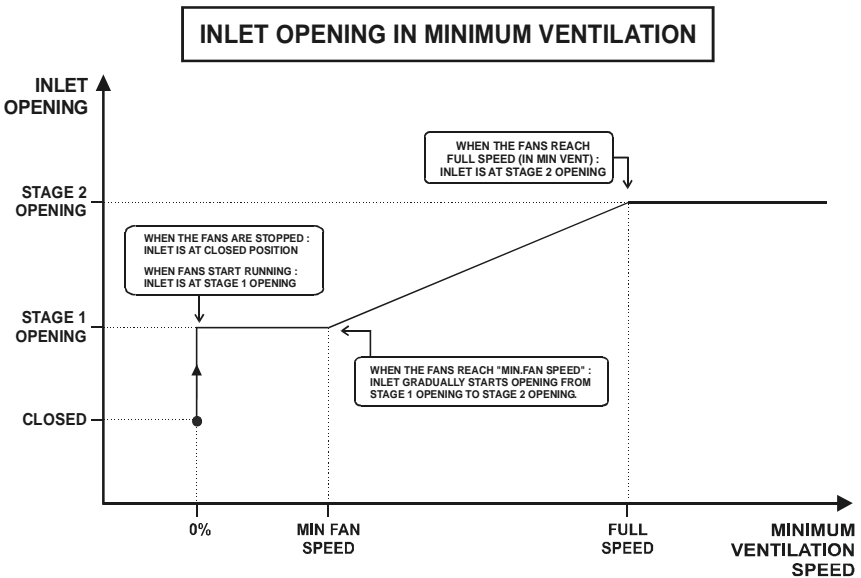
When the actuator isn't moving, a minimum opening or closing percentage is necessary so that the actuator can start to move. This user-defined value is called HYSTERESIS and can be adjusted from 2 to 10%. The hysteresis value prevents the actuator from moving constantly.

The graphic below shows the inlet operation during 2 variable stages (stages 1-2), two ON/OFF stages (stages 3-4) and an over-opening stage.



INLET OPERATION IN MINIMUM VENTILATION

During minimum ventilation, when the fans are not running, the inlet is at its CLOSED position. The inlet CLOSED position is determined by the user, it is not necessarily set to 0%. When the fans start running, below the MIN. FAN SPEED value, the inlet is at stage 1 opening. When the fans speed increases and exceeds the MIN. FAN SPEED value, the inlet gradually opens from stage 1 and reaches stage 2 opening when the fans are at full speed.



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If the potentiometer is defective, the controller will operate in security mode: when the room temperature is 2° F (1.1° C) above the set point, the inlet opens according to the following cycle: 5 seconds ON, 120 seconds OFF. When the room temperature is 2° F (1.1° C) below the set point, the inlet closes according to the same cycle.

5.4.1 Air Inlet Calibration

The user must determine the maximum and minimum positions of each air inlet. The controller considers the maximum value entered as 100% of the air inlet opening and considers the minimum value as 0% of the air inlet opening. The controller refers to those values to determine the exact air inlet positions during ventilation stages.



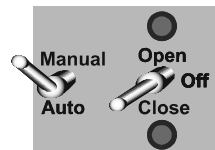
Note that the inlet calibration can only be done in installer mode (see sec. 5.16.2).

- Select **INLETS** from the main menu using the menu select buttons. Press the right-arrow key to select "**1. Inlet 1**" menu. Note that this menu is only available if air inlets have been activated during the installation (see sec. 5.16.3).

- Press the right-arrow key once again to select "**1. Stage Opening**" option. The current status of the selected air inlet is displayed.

```
Inlet 1
Status :      Auto  ▲▼
Position      0%
Calibration?  Yes
```

- Press the down-arrow key to select the "**Calibration?**" display. Note that this menu is only visible on the installer mode (see sec. 5.16.2).
- Press the Edit key and activate the calibration mode by pressing the up-arrow key. Press the Edit key once again to validate.
- Press the down-arrow key once again to set the minimum opening of the air inlet.
- **Inlet's minimum opening** : position the proper relay switch on the manual mode and close the inlet to its minimum position by using the "**Close**" switch (see sec 5.16.7.7). Once the inlet reaches its minimum

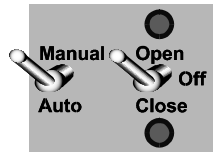


opening, set the switch back to Off, press the Edit key once and then press the up-arrow key. The word SAVE is displayed for a 5 second delay and then the display shows "SET" again. The minimum opening of the air inlet is now saved. Press the Edit key once again to validate.

Position	0%
Calibration	Yes \blacktriangle
Minimum	Save
Maximum	Set

- Press the down-arrow key to select the "**Maximum**" menu on the display.

- **Inlet's maximum opening** : position the proper relay switch on the manual mode and open the inlet to its maximum position using the "Open" switch (see sec 5.16.7.7). Once the inlet reaches its maximum opening, set the switch back to Off, press the Edit key once and then press the up-arrow key. The word "SAVE" is displayed for a 5 second delay and then the display shows "SET" again. The maximum opening of the air inlet is now saved. Press the Edit key once again to validate.



- Position the inlet relay switch back to the automatic mode and turn off the calibration mode in the "**Calibration**" menu.
- Proceed in similar fashion to calibrate inlet 2.

5.4.2 Adjusting the Hysteresis

When the actuator isn't moving, a minimum opening or closing percentage is necessary so that the actuator can start to move. This user-defined value is called HYSTERESIS and can be adjusted from 2 to 10%. The hysteresis value prevents the actuator from moving constantly.

- Select **INLETS** from the main menu using the menu select buttons. Press the right-arrow key to select "**1. Inlet 1**" menu. Note that this menu is only available if air inlets have been activated during the installation (see sec. 5.16.3).
- Press the right-arrow key once again to select "**1. Stage Opening**" option. The current status of the selected air inlet is displayed.

- Press the down-arrow key in order to select "**Hysteresis**" display.
- Press the Edit key once, then use the arrow keys to set the hysteresis to the desired value. Press the Edit key once again to validate.

Test Mode	70.0
Hysteresis	3%
MinFan Spd	20%

- Proceed in similar fashion to adjust the hysteresis of inlet 2.

5.4.3 Adjusting Min. Fan Speed for Inlet Opening

The MINIMUM FAN SPEED parameter is the fans' minimum speed, during minimum ventilation, at which the inlet starts opening gradually from stage 1 to stage 2 opening. Refer to the previous graphic "INLET OPERATION".

- Set the function to **INLETS** from the main menu using the menu select buttons. Select the "**1. Inlet 1**" menu using the arrow keys. Note that this menu is only available if the air inlet has been activated during the installation (see sec. 5.16.3).
- Select "**1. Stage Opening**" menu using the arrow keys. The current inlet status is displayed.

- Press the down-arrow key in order to select "**Min Fan Spd**" display.
- Press the Edit key once, then use the arrow keys to set the minimum fan speed to the desired value. Press the Edit key once again to validate.

Test Mode	70.0
Hysteresis	3%
MinFan Spd	20%

- Proceed the same way to adjust the minimum fan speed of inlet 2.

5.4.4 Adjusting Air Inlet Minimum Position

This value is the minimum opening of the air inlet when the fans are not running. This ensures a minimum level of ventilation when the fans are stopped.

- Set the function to **INLETS** from the main menu using the menu select buttons. Select "**1. Inlet 1**" menu using the arrow keys. Note that this menu is only available if the air inlet has been activated during the installation (see sec. 5.16.3).

- Select the "**1.Stage Opening**" menu using the arrow keys. The current inlet status is displayed.

- Press the down-arrow key to select "**Closed**" display. This value represents the minimum opening of the inlet.

Closed	5%
Stage 1	20%
Stage 1 Max	25%
Stage 2	30%

- Press the Edit key once then use the arrow keys to set the minimum opening of the air inlet to the desired position.
- Proceed in similar fashion to adjust the minimum position of inlet 2.

5.4.5 Adjusting Air Inlet Opening

The controller adjusts the air inlet opening according to the operation of ventilation stages. As the temperature increases and new stages are activated, the inlet is opened or closed accordingly. The user must program a new air inlet position for each stage. If variable stages are used, set the inlet position reached when the variable fan stage reaches maximum speed.

- Set the function to **INLETS** from the main menu using the arrow keys. Select the "**1. Inlet 1**" menu using the arrow keys. Note that this menu is only available if an inlet has been activated during the installation (see sec. 5.16.3).
- Select the "**1.Stage Opening**" menu using the arrow keys. The current inlet status is displayed.

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- Press the down-arrow key to select "Stage 1" display.
- Press the Edit key then use the up and down-arrow keys to set the inlet opening during stage 1.
- Press the down-arrow key to select "Stage 1 Max" if stage 1 is a variable. If it is not a variable stage, select the next stage opening.
- Press the Edit key then use the arrow keys to adjust the inlet opening during the selected stage. Press the Edit key once again to validate.
- Repeat these steps to set the inlet opening for each of the ventilation stages.
- Follow the same procedure to set the inlet openings for inlet 2.

Closed	5%
Stage 1	20%
Stage 1 Max	25%
Stage 2	30%

5.4.6 Adjusting Air Inlet Over-Opening

A supplementary stage can be calibrated in order to continue opening the air inlet beyond the last temperature controller ventilation stage. This over-opening stage is optional. It is used to direct the airflow more efficiently during periods of warm weather. When all reference points of ventilation stages have been defined, the controller allows you to specify a temperature bandwidth as well as a percentage of air inlet opening for the over-opening stage.

- Set the function to **INLETS** from the main menu using menu select buttons. Select the "1. Inlet 1" menu using the arrow keys. Note that this menu is only available if the air inlet has been activated during the installation (see sec. 5.16.3).
- Select the "1.Stage Opening" menu using the arrow keys. The current inlet status is displayed.

- Press the down-arrow key and scroll the display in order to select "Opening" display.

Stage 8	60%
Over Opening Settings	
Opening	100%
Bandwidth	5.0°F

- Press the Edit key then use the up and down-arrow keys to set the inlet over-opening position to the desired value. Press the Edit key once again to validate the value.
- Press the down-arrow key to select "**Bandwidth**" menu.
- Press the Edit key then use the arrow keys to set the bandwidth to the desired value. Press the Edit key once again to validate.
- Proceed the same way to set the over-opening and the bandwidth of inlet 2.

5.4.7 Adjusting Inlet Temperature Compensation

The inlet temperature compensation is expressed as a percentage per degree difference between the average controller temperature and the average reading of the probes assigned to the inlet. It determines by how much the inlet must open or close to help reduce the temperature differences in the building. For each degree above or below the average temperature, the inlet will open or close using the compensation value assigned by the user. For example, if the compensation value is set to 2%/° F and the inlet's probes read 3° F above the average controller temperature, the inlet will open 6% to help decrease the temperature in that zone. The maximum temperature compensation value is 10%.

- Set the function to **INLETS** from the main menu using the menu select buttons. Select the "**1. Inlet 1**" using the arrow keys. Note that this menu is only available if the inlet has been activated during the installation (see sec. 5.16.3).

- Select the "**2. Compensation**" menu using the arrow keys.

- Select "**1. Temp & Static**" menu using the arrow keys. The current temperature compensation flashes on the display.

Inlet 1 Compensation	
Temp Comp	5%/ °F
Stat Press	Off%/WC

- Press the Edit key then use the arrow keys to adjust the temperature compensation to the desired value. Press the Edit key once again to validate.
- Proceed the same way to adjust the temperature compensation of inlet 2.

5.4.8 Adjusting Static Pressure Set Points

When the high pressure set point is reached, the controller opens the inlets according to a timer cycle. The inlets are also closed according to the timer when the low pressure set point is reached. The static pressure high and low set points can be adjusted from 0 to 0.2 inches of water.

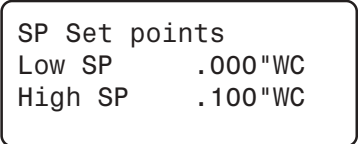
- Set the function to **INLETS** using the menu select buttons. Note that this menu is only available if the inlets have been activated during the installation (see sec. 5.16.3).

- Select "**3. Stat pressure**" menu using the arrow keys. The low static pressure set point flashes on the display. Note that this menu is only available if a static pressure sensor has been activated during the installation (see sec 5.16.4.2).



```
Inlets
1. Inlet 1
2. Inlet 2
3. Stat pressure
```

- Press the Edit key then use the up and down-arrow keys to set the low static pressure set point to the desired value. Press the Edit key once again to validate.



```
SP Set points
Low SP .000\"WC
High SP .100\"WC
```

- Press the down-arrow key. The high static pressure set point flashes on the display.
- Press the Edit key then use the up and down-arrow keys to set the high static pressure set point to the desired value. Press the Edit key once again to validate.
- Proceed in similar fashion to adjust the static pressure high and low set points of inlet 2.

5.4.9 Adjusting Static Pressure Compensation

The static pressure compensation is expressed as a percentage per 0.01inch of water (%/0.01"WC). It determines by how much the inlet must open or close to help reduce or enhance the static pressure in the building according to set points. For each .01"WC above the high static pressure set point or below the low static pressure set point, the inlet will open or close using the compensation value assigned by the user. For example, if the compensation value is set to 1%/WC and the static pressure is 0.05"WC above the high static pressure set point, the inlet will open of 5% to help decrease the static pressure in the building. The maximum static pressure compensation value is 10%.

- Set the function to **INLETS** from the main menu using the menu select buttons. Note that this menu is only available if inlets have been activated during the installation (see sec. 5.15.3).
- Select the first inlet using the arrow keys. then select the "2. Compensation" menu.

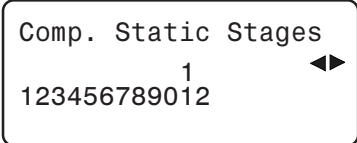
- Select "1. Temp & Static" menu using the arrow keys. The current temperature compensation flashes on the display.

Inlet1 Compensation	
Temp Comp	5%/ °F
Stat Press	3%/WC

- Press the down-arrow key once to select "Stat Press" display using the arrow keys. Note that this menu is accessible if a static pressure probe has been installed (see sec. 5.16.4.2).
- Press the Edit key then use the up and down-arrow keys to adjust the static pressure compensation to the desired value.
- Proceed in similar fashion to adjust the static pressure compensation of inlet 2.

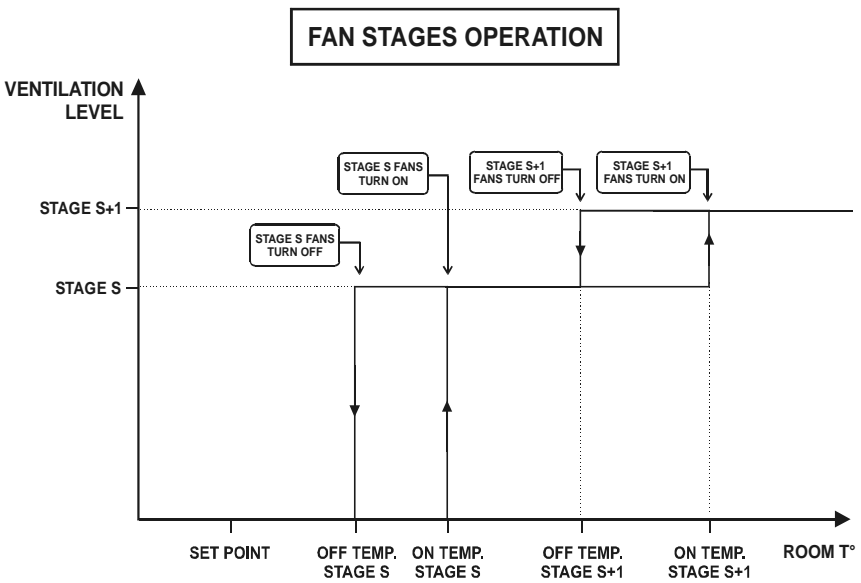
5.4.10 Selecting Stages for Static Pressure Compensation

The stages on which the static pressure compensation will operate must be selected by the user.

- Set the function to **INLETS** from the main menu using the menu select buttons. Note that this menu is only available if inlets have been activated during the installation (see sec. 5.16.3).
- Select the first inlet using the arrow keys. then select the "**2. Compensation**" menu.
- Select "**2. Static Stages**" menu using the arrow keys. The current fan stages are displayed.
- Select the stage(s) on which you want the static pressure compensation to operate. Press the Edit key then press the up-arrow key to activate or the down-arrow key to deactivate the compensation on the selected stage. The compensation is activated on stages that have a mark below.
- Proceed in similar fashion for the second inlet.

5.5 FAN SETTINGS

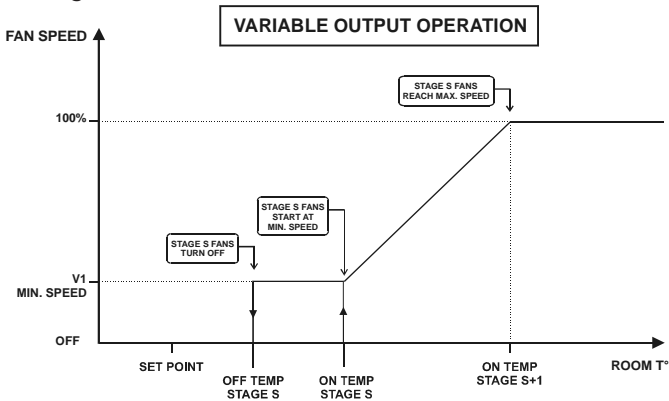
The EXPERT-VT212 can control up to 12 ON-OFF fan stages. These stages operate in a sequence to increase the level of ventilation as the room temperature rises. Each stage can also activate two variable outputs and operate a combination of relays in timer mode for cooling. The user defines a start and a stop temperature for each stage. When the room temperature reaches this value, the stage is activated. Fan stages can also be configured to operate in timer mode. The following diagram shows how fan stages operate.



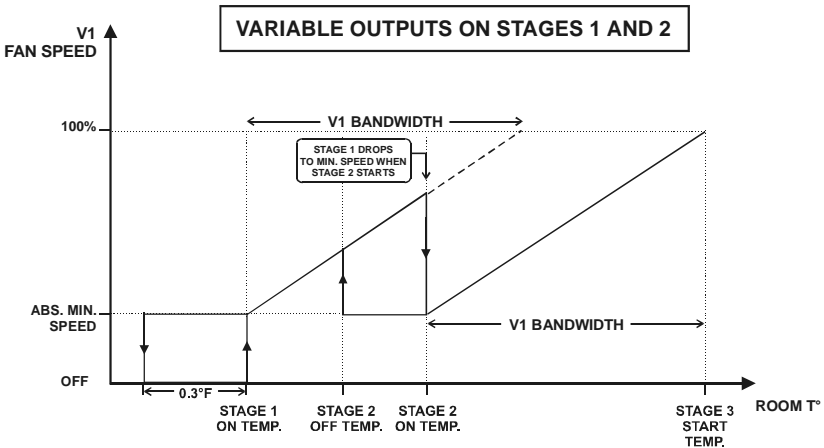
Start temperatures (ON TEMPS) are defined with respect to the set point and with respect to each other. This means that when one of these values is adjusted, all the consecutive values are adjusted by the same amount. For example, if the set point is increased by 1° F, the start temperatures for all fan stages will be increased by the same amount.

Variable Outputs

A variable output is activated when the ON temperature of the stage that uses the variable output is reached. The variable output is activated at the absolute minimum speed (see sec. 5.16.3) and its speed increases up to full speed when room temperature reaches the ON temperature of the next stage.



If the next stage is an ON/OFF fan stage, the variable output is deactivated when the new stage starts. If the next stage is another VARIABLE fan stage, the speed of the first variable stage is reduced to its minimum speed when the second variable stage starts. The graphic below illustrates this situation.



If the last fan stage uses variable outputs, it must be configured in ON-OFF mode (see sec. 5.16.7.2).

The bandwidth defines the interval over which the variable output goes from minimum to full speed. This is true even if full speed is never reached as in the example above. When the Stage 2 start temperature is reached, the variable output drops to its minimum speed value. The V1 bandwidth is then used to increase the speed as the temperature of stage 2 increases. When the temperature returns to the stage start temperature, the minimum speed is maintained until the stage stop temperature is reached.



If an outdoor temperature probe is used, it is possible to automatically adjust stages 1 and 2 bandwidths according to the outdoor temperature. Refer to section 5.17.5 in the advanced settings to use this feature.

5.5.1 Adjusting Fan Stages On / Off Temperatures

Note that the minimum temperature difference between two consecutive start temperatures is 0.5° F (0.3° C). The on and off temperatures are related to the set point they are automatically adjusted when a change in the set point occurs.



Off temperatures must be set for all fan stages except for stage 1. The first stage automatically stops when when the room temperature drops 3° F (1.7° C) below the set point.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.

- Select "**2. Fan Stages**" option using the arrow keys. The stage 1 On Temperature flashes on the display.

Ventilation	
Stage 1 On	70.0
Var1 bandwidth	2.0
Var2 bandwidth	2.0

- Press the Edit key then use the arrow keys to adjust the On Temperature to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key in order to select the stage 2 On Temperature. Proceed in similar fashion to set On and Off Temperatures of each fan stages.

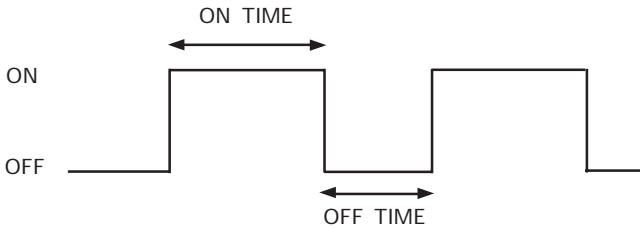
5.5.2 Adjusting Bandwidth on Variable Outputs

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "**2. Fan Stages**" option using the arrow keys. The stage 1 ON temperature flashes on the display.
- Select the Var 1 Bandwidth using the arrow keys.
- Press the Edit key then use the up and down-arrow keys to adjust the variable 1 bandwidth to the desired value. Press the Edit key once again to validate the value.
- Proceed in similar fashion to adjust the bandwidth of variable output 2.

- Press the down-arrow key in order to select the variable 1 output of stage 2. Follow the same procedure to adjust Var1 and Var2 bandwidths of stage 2.

5.5.3 Adjusting Fan Stages Timer Settings

A fan stage can include certain relays configured to operate in timer mode. Refer to section 5.16.7.2 to activate a fan stage in timer mode. The user can adjust the timer settings as follows:



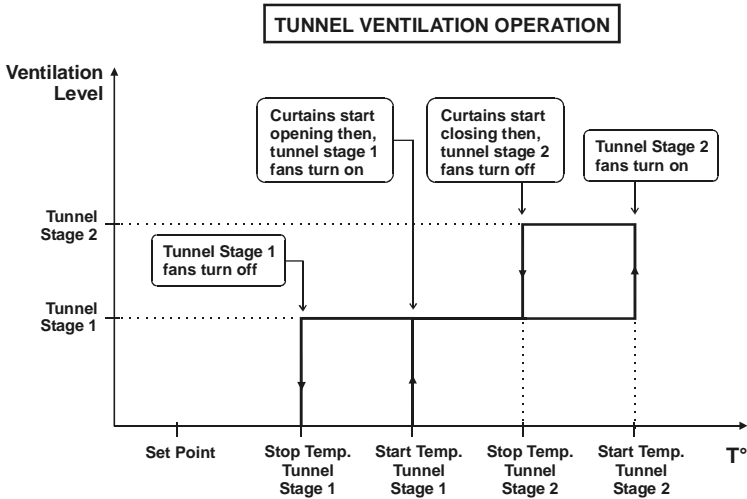
- Set the function to **RELAY SETTINGS** from the main menu using the menu select buttons. Note that this menu is only available in installer mode (see sec. 5.16.2).
- Select the "2. Fan Stages" then select the proper stage using the arrow keys.
- Press the down-arrow key and scroll the display until the ON and OFF times are displayed.
- Press the Edit key the Edit key then use the arrow keys to adjust the ON and OFF times of the selected fan stage to the desired value.

Stage 1 Relays: ▲▼	
Variable 1	Var(1)
Variable 2	Var(1)
Relay 1	Off(1)

Relay 15	Off	(1)
Relay 16	Off	(1)
On Time	15sec	
Off Time	0sec	

5.6 TUNNEL VENTILATION

The controller allows you to control endwall curtains for tunnel ventilation. The user determines when to start tunnel ventilation by defining the starting fan stage and the stage at which the curtain is fully opened. When the first tunnel stage is reached, the curtains are opened according to the opening time defined for the first stage. When half of the opening time has elapsed, the fans for the stage are activated. When the next tunnel stage is reached, the curtains continue to open according to the opening time defined for that stage, etc. When the temperature drops, the same sequence is executed in reverse order. The following diagram sums up the operation of the first two tunnel stages.



A minimum animal age is defined to avoid starting the tunnel ventilation when the animals are too young. The user must also define a minimum outside temperature: the tunnel ventilation is never activated unless the outside temperature is sufficiently warm.

Probe Sets: The controller uses two probe sets to determine the average room temperature for fan stage activation. Probe set 1 is used for regular fan stages and probe set 2 can be used for tunnel ventilation. The user determines at which stage probe set 2 is used as the reference. When that stage is reached, the controller will switch to probe set 2 as long as the average temperature of set 2 probes is greater or equal to the average of set 1 probes.

5.6.1 Adjusting First and Fully Opened Tunnel Stages

Fan stages 1 and 2 cannot be tunnel stages. The first and fully opened tunnel stages must be equal or in increasing order. Note all fan stages above the first tunnel stage are considered tunnel stages.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "**3. Tunnel**" option using the arrow keys. The fan stage at which tunnel ventilation starts flashes on the display. Note that this menu only appears if tunnel ventilation has been enabled during the installation (see sec. 5.16.3).

- Press the Edit key then use the arrow keys to adjust the first tunnel stage to the desired value. Press the Edit key once again to validate.

Tunnel Settings	▲
First Stage:	8
100% Opened:	10
Pr.Set 2 at Stg	9

- Press the down-arrow key, the fully opened tunnel stage flashes. Use the arrow keys to adjust the fully opened tunnel stage to the desired value.

5.6.2 Probe Set 2 Start Stage

Probe Set 2 can be activated during tunnel ventilation. The probe selection changes when the start stage of probe set is reached. Probe set 2 can only be activated during a tunnel stage.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "**3. Tunnel**" option using the arrow keys. Note that this menu only appears if tunnel ventilation has been enabled during the installation (see sec. 5.16.3).
- Press the down-arrow key to display the "**Pr.Set 2 at Stg**" display.
- Press the Edit key then use the arrow keys to adjust the fan stage at which probe set 2 starts being used. Press the Edit key once again to validate.

5.6.3 Adjusting Minimum Outdoor Temperature

The minimum outside temperature is used to prevent tunnel ventilation from being used when the outside temperature is too cold.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "**3. Tunnel**" option using the arrow keys. Note that this menu only appears if tunnel ventilation has been enabled during the installation (see sec. 5.16.3).

- Press the down-arrow key to display the minimum outdoor temperature. This menu only appears if an outdoor temperature probe has been enabled in the installation (see sec. 5.16.4).

100% Opened:	10
Pr.Set 2 at Stg	9
Min. Outdoor T.	50.0
Minimum Age:	20

- Press the Edit key then use the arrow keys to adjust the minimum temperature to the desired value.

5.6.4 Adjusting Minimum Age

The minimum age is used to prevent tunnel ventilation from being used when the animals are too young. The value ranges from 1 to 250 days. The tunnel stages do not operate until the animal age reaches this value.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "**3. Tunnel**" option using the arrow keys. Note that this menu only appears if tunnel ventilation has been enabled during the installation (see sec. 5.16.3).

- Press the down-arrow key to display the minimum age.

100% Opened:	10
Pr.Set 2 at Stg	9
Min. Outdoor T.	50.0
Minimum Age:	20

- Press the Edit key. The minimum age value flashes on the display. Use the arrow keys to adjust the minimum age to the desired value.

5.6.5 Adjusting Curtain Opening Times

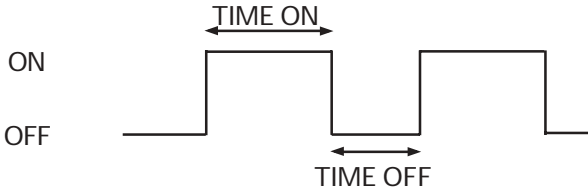
The curtain operating time is the time during which the curtain opens when a new tunnel stage is activated or closes when a tunnel stage is deactivated. This value is adjusted for each tunnel stage to control static pressure changes between tunnel stages. When the temperature reaches the first tunnel stage starting temperature, the tunnel stage is delayed until half of the curtain operating time has elapsed (up to 30 seconds). Operating times range from 0 seconds to 900 seconds (15 minutes).

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "**3. Tunnel**" option using the arrow keys. The fan stage at which tunnel ventilation starts flashes on the display. Note that this menu only appears if tunnel ventilation has been enabled during the installation (see sec. 5.16.3).
- Press the down-arrow key in order to display curtain opening times.

Opening Time	▲ ▼
Stage 8 :	30
Stage 9 :	40
Stage 10:	60
- Use the up- and down-arrow keys to display the opening time to be adjusted. Press the Edit key as required until the value of the opening time to be adjusted starts flashing. Use the arrow keys to adjust the opening time to the desired value. Press the Edit key once again to validate.
- Use the up- and down-arrow and Edit keys to display and adjust the other opening times desired.

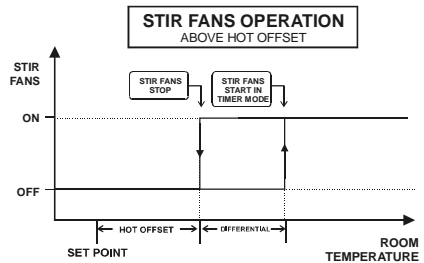
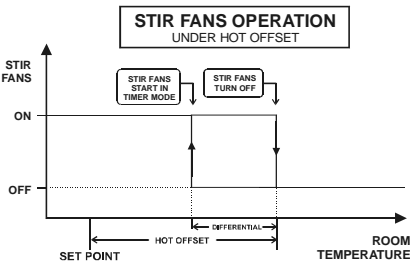
5.7 STIR FANS

The controller can operate fans to stir the air in the building. Those fans are used to make the temperature as uniform as possible into the room. They are also used to create air circulation during hot or cold days. The stir fans output operates on a timer cycle as follows:



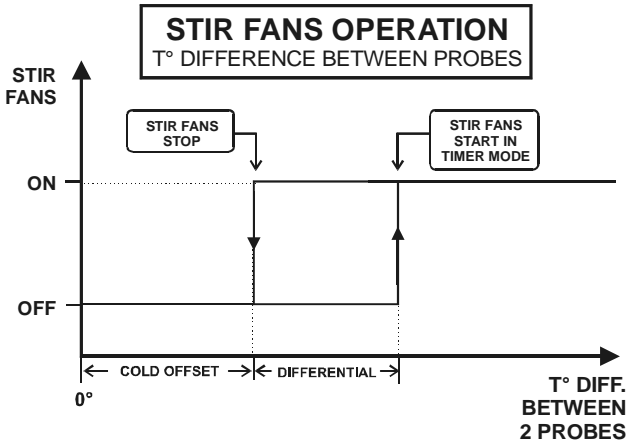
There are two ways to operate the stir fans to create air circulation in the building:

- The stir fans can be running all the time except during hot days. In this ventilation mode, the fans operate UNDER HOT OFFSET temperature. The HOT OFFSET is the temperature difference from the set point at which the stir fans come to a stop. Refer to the following graphic.
- The stir fans can be activated only during hot days to create an airstream. In this ventilation mode, the fans operate ABOVE HOT OFFSET temperature. Refer to the following graphic.



The controller also offers the possibility to mix the air if the temperature DIFFERENCE BETWEEN TWO PROBES is too high. The following graphic illustrates this.

An additional parameter called the COLD OFFSET is used to add an extra condition for activating the output. The COLD OFFSET is the **temperature difference** between two active probes at which stir fans come to a stop.



If the temperature difference between two active probes exceeds the cold offset + the stir fan differential, the stir fans are turned on. When the temperature difference returns to a value less than or equal to the cold offset, the stir fans are turned off.

5.7.1 Adjusting Stir Fans Hot and Cold Offsets

The HOT OFFSET is the temperature difference from the set point at which the stir fans come to a stop (see diagram above). The offset ranges from 0.5° F to 20.0° F (0.3° C to 11.1° C).

The COLD OFFSET is the temperature difference between two activated probes at which stir fans come to a stop (see diagram above). The offset ranges from 0.5° F to 20.0° F (0.3° C to 11.1° C).

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.

- Select "**5. Stir Fan**" menu using the arrow keys. The cold offset flashes on the display. Note that this menu is only accessible if the stir fans have been enabled during the installation (see sec 5.16.3).

Stir Fan	▲▼
Cold Offset	5.0
Hot Offset	5.0
On Above Hot Offset	

- Press the Edit key then use the arrow keys to adjust the cold offset to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key. The hot offset flashes on the display.
- Press the Edit key then use the arrow keys to set the hot offset to the desired value. Press the Edit key once again to validate.

5.7.2 Setting Stir Fans Operation Mode

Select "**UNDER HOT OFFSET**" to operate the stir fans all the time except during hot days. Select "**ABOVE HOT OFFSET**" to operate the stir fans only during hot days.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select the "**5. Stir Fan**" menu using the arrow keys. The cold offset flashes on the display. Note that this menu is only accessible if the stir fan feature has been enabled during the installation (see sec 5.16.3).

- Press the down-arrow key to select the "On Under/Above Hot Offset" the message "UNDER" or "ABOVE" flashes on the display.
- Press the Edit key then press the up-arrow key to select "ABOVE" or press the down-arrow key to select the "UNDER" hot offset. Press the Edit key once again to validate.

Stir Fan		▲▼
Cold Offset	5.0	
Hot Offset	5.0	
On Above Hot Offset		

5.7.3 Adjusting the Stir Fan Differential

The stir fan differential is the variation in room temperature between the moment the stir fans turn on and the moment they turn off. The differential can be adjusted between 0.5° F and 20.0° F (0.3° C and 11.1° C). Refer to previous diagrams.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "**5. Stir Fan**" menu using the arrow keys. The cold offset flashes on the display. Note that this menu is only accessible if the stir fans have been enabled during the installation (see sec 5.16.3).
- Press the down-arrow key in order to select "**Differential**" display.
- Press the Edit key then use the arrow keys to adjust the differential to the desired value.

On Above Hot Offset	
Differential	2.0
On Time	02:25 (m:s)
Off Time	10:00 (m:s)

5.7.4 Adjusting Stir Fan Timer Cycle

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "**5. Stir Fan**" menu using the arrow keys. The cold offset flashes on the display. Note that this menu is only accessible if the stir fans have been enabled during the installation (see sec 5.16.3).

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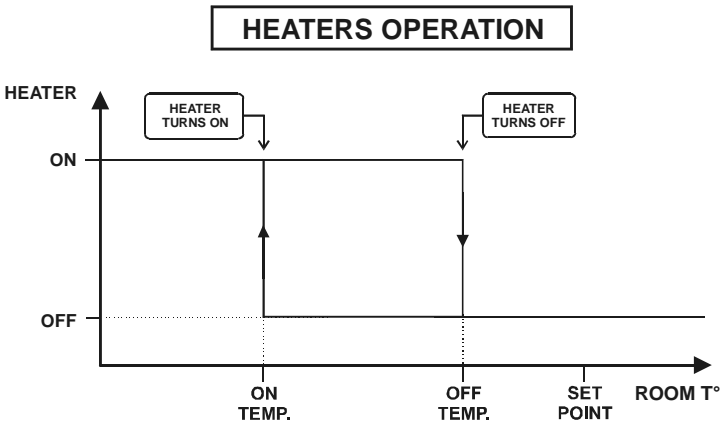
- Press the down-arrow key in order to select "On Time" display.
- Press the Edit key then use the arrow keys to adjust the stir fans ON TIME to the desired value. Press the Edit key once again to validate the value.

On Above Hot Offset	
Differential	2.0
On Time	02:25(m:s)
Off Time	10:00(m:s)

- Press the down-arrow key to select the "Off Time" menu.
- Press the Edit key then use the up and down-arrow keys to adjust the stir fans OFF TIME to the desired value. Press the Edit key once again to validate the value.

5.8 HEATER SETTINGS

The controller has two independent heater stages operating according to ON and OFF temperatures. The following diagram shows the operation of the heaters.



The stop temperature of an heater stage must be at least 0.5°F (0.3°C) higher than its start temperature. The start (On) temperature can be set from 0.5°F (0.3°C) below the set point to -40°F (-40°C). The number of heater stages and their probe assignment are defined during the installation (see sec.5.16.3 and 5.16.4).

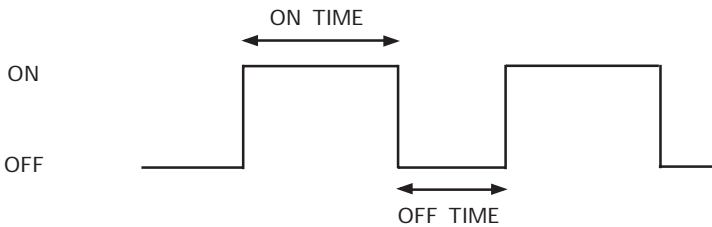
- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons. Press the right-arrow key to select "**1. Heaters**" menu.
- Select the desired heater ON or OFF Temperature.
- Press the Edit key then use the arrow keys to adjust the start or stop temperature of the selected heater to the desired value. Press the Edit key once again to validate the value.
- Proceed the same way to set all heaters ON and OFF temperatures.

Heaters	▲▼
Heater 2 On	67.0
Heater 2 Off	68.1
Heater 1 On	69.0

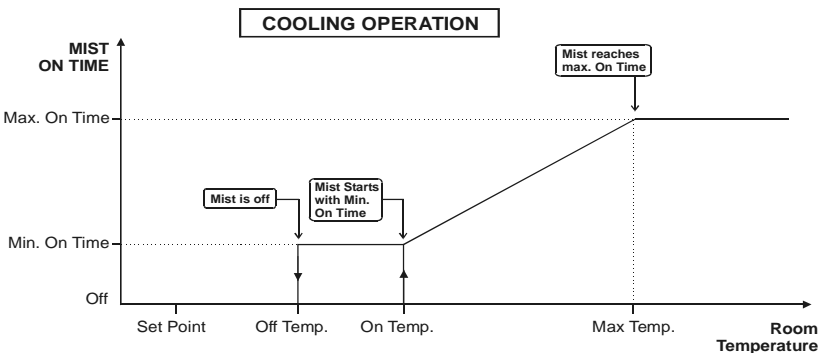
5.9 COOLING

The controller has one cooling stage used to control mist units. The cooling stage is independent from the fan and heater stages and can be activated at any temperature level above the set point.

The cooling stage is activated when the room temperature reaches the start temperature of the output. The cooling output is then activated according to a timer cycle, using ON and OFF times :



When the cooling cycle starts (**On Temp**), the output is activated using the **minimum ON time** that has been defined by the user. The ON time gradually increases as the room temperature increases. The **maximum ON time** is reached when the room temperature reaches the Max Temperature value (**T° Max**), this value is also defined by the user. The OFF time in a cooling cycle always remains the same. The following graphic illustrates the situation:



5.9.1 Adjusting Cooling Parameters

The ON TEMP. value must be greater than the set point. It can be adjusted from the set point to 120° F (48.9° C). The maximum temperature must be at least 0.5° F (0.3° C) greater than the ON TEMP.

- Set the function to **START / STOP TEMPERATURE** using the menu select buttons.

- Select "**6. Cooling**" menu using the arrow keys. The ON TEMP flashes on the display. Note that this menu is only accessible if the cooling feature has been enabled during the installation (see sec 5.16.3).

Cooling	▲ ▼
On Temp	85.0
Off Temp	83.0
Min.OnTime	15sec

- Press Edit key then use the arrow keys to adjust the ON TEMP. to the desired value. Press the Edit key once again to validate the value.

- Press the down-arrow key. The OFF TEMP. flashes on the display. Use the arrow keys to adjust the OFF temperature to the desired value. Press the Edit key once again to validate the value.

- Press the down-arrow key three times. The MAX TEMPERATURE flashes on the display. Use the arrow keys to adjust the maximum temperature at which the mist output timer reaches the maximum ON TIME. Press the Edit key once again to validate the value.

Min.OnTime	15sec
Off Time	900sec
Max.Temperature	87.0
Max.OnTime	180sec

5.9.2 Adjusting Cooling Timer Settings

Minimum and maximum ON TIMES can be adjusted from 0 to 900 seconds. The maximum ON TIME must be even or greater than the Minimum ON TIME. The OFF TIME can be adjusted from 0 to 3600 seconds (1 hour).

- Set the function to **START / STOP TEMPERATURE** using the menu select buttons.

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- Select "**6. Cooling**" menu using the arrow keys. The ON TEMP flashes on the display. Note that this menu is only accessible if the cooling feature has been enabled during the installation (see sec. 5.16.3).

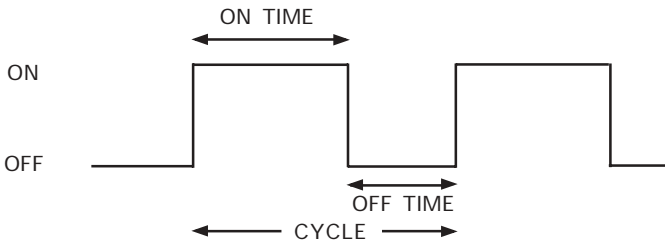
Cooling	▲
On Temp	85.0
Off Temp	83.0
Min.OnTime	15sec

- Press the down-arrow key twice to select "**Min On Time**" display.
- Press Edit key then use the arrow keys to adjust the minimum ON TIME to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once again. The OFF TIME flashes on the display. Press the Edit key then use the arrow keys to adjust the OFF TIME to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key twice. The maximum ON TIME flashes on the display. Press the Edit key then use the arrow keys to adjust the maximum ON TIME to the desired value. Press the Edit key once again to validate.

Min.OnTime	15sec
Off Time	900sec
Max.Temperature	87.0
Max.OnTime	180sec

5.10 SOAKING

The controller has one soaking stage used to control soaking units during clean mode. The soaking stage operates according to a timer cycle. The ON TIME can be adjusted from 0 to 3600 seconds (1hour), the OFF TIME can be adjusted from 0 to 240 minutes (4 hours) and the number of cycles can be set from 0 to 100. The cycles can also operate continuously.



The soaking feature can only be activated during clean mode (see sec. 5.17.6 to activate the clean mode).

- Set the function to **START / STOP TEMPERATURE** using the menu select buttons.
- Select "**7. Soaking**" menu using the arrow keys. The ON TIME flashes on the display. Note that this menu is only accessible if the soaking feature has been enabled during the installation (see sec. 5.16.3).

Soaking Timer	▲▼
On Time:	60sec
Off Time:	60min
#Soaking Cycle:	None
- Press Edit key then use the arrow keys to adjust the ON TIME to the desired value. Press the Edit key once again to validate the value.
- Press the down-arrow key. The OFF TIME flashes. Use the arrow keys to adjust the OFF TIME to the desired value. Press the Edit key once again to validate the value.
- Press the down-arrow key. The number of soaking cycles flashes on the display. Press the Edit key and use the arrow keys to set the number of soaking cycles to the desired value.

5.11 0-10V OUTPUTS

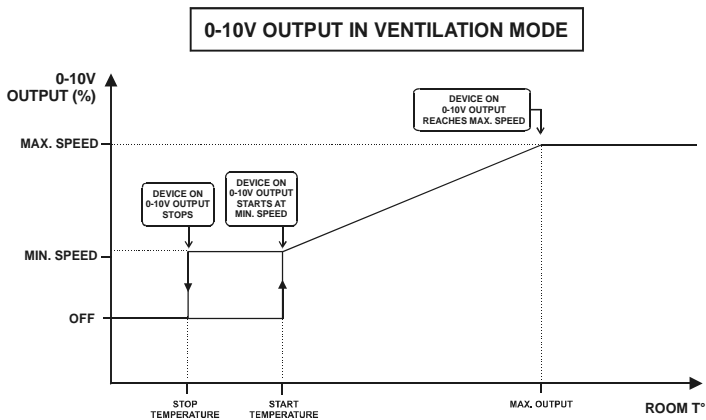
The controller can control up to two 0-10V outputs. These outputs are used as supplementary outputs for heating or for ventilation. Refer to section 5.16.3 to set the operation mode of 0-10V outputs (ventilation or heating). The 0-10V outputs operate independently of other stages. They may be connected to a Slave 0-10V to control heat lamps, heaters, variable ventilation, chimney damper, etc.

The controller can give a 10-0V signal instead of a 0-10V signal. This option is useful for safety reasons: if the main controller loses power and its 0-10V output falls to 0V, then the controller gives the maximum load to the module connected on the output.

The start temperature of 0-10V outputs is automatically adjusted when changes in controller's main set point occur. For example, if the set point is increased by 1 °F, the start temperature of the 0-10V output is then increased by the same amount.

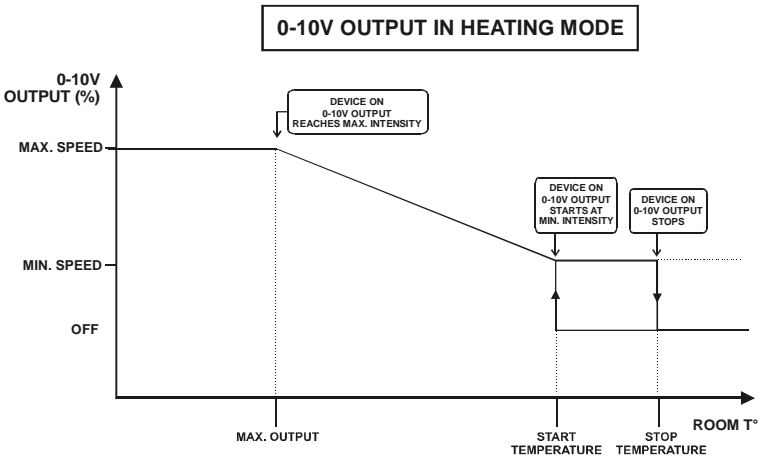
Operation of 0-10V Outputs Used for Ventilation

In ventilation mode, the fans connected to the 0-10V output are activated when the **Start Temperature** of the output is reached. The fan speed gradually increases as the room temperature increases. The user specifies at what temperature the fans reach their maximum speed (**Max Output**). The **Stop Temperature** is the temperature at which the 0-10V output is deactivated when the room temperature decreases.



Operation of 0-10V Outputs Used for Heating

In heating mode, heating units that are connected to the 0-10V output are activated when the **Start Temperature** is reached. The intensity of heating units gradually increases as the room temperature decreases. The user specifies at what temperature the heating units reach their maximum intensity (**Max Output**). The **Stop Temperature** is the temperature at which the 0-10V output is deactivated when the room temperature increases.



Refer to the installation section to set the 0-10V outputs operating mode : heating or ventilation (see sec 5.16.3).

Adjusting 0-10V Outputs Parameters

- Set the function to **START/STOP TEMPS** from the main menu, using the menu select buttons.
- Select the **"4. 0-10V Outputs"** menu using the arrow keys. Note that this menu will be only be accessible if a 0-10V output has been activated during the installation (see sec. 5.16.3).

Start / Stop Temps ⬆️

4. 0-10V Outputs

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- Select the "1. Output 1" using the arrow keys. The type of signal for the first 0-10V output is displayed (0-10V or 10-0V).

- Press the Edit key then use the up or down-arrow key to modify the signal used by the output. Press the Edit key once again to validate.

0-10V Outputs	◆
Output 1	0-10V
Start Temp	75.0°F
Min: 10	Max: 100

- Press the down-arrow key once. The start temperature of the selected output is displayed. Press the Edit key then use the up and down-arrow keys to adjust the start temperature to the desired value. Press the Edit key once again to validate the value.
- Press the down-arrow key. The minimum intensity of the device connected to the selected 0-10V output is displayed.
- Press the Edit key then use the up and down-arrow key to adjust the minimum intensity to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key. The maximum intensity of the device connected to the selected 0-10V output is displayed.
- Press the Edit key then use the arrow keys to adjust the maximum intensity to the desired value. Press the Edit key once again to validate.

- Press the down-arrow key. The "Max Output" value flashes on the display. This is the temperature at which the device connected to the 0-10V output reaches its maximum intensity. Press the Edit key then use the arrow keys to adjust the Max Output bandwidth to the desired value.

Start Temp	75.0°F
Min: 10	Max: 100
Max Output at:	72.5
Stop at:	70.0

- Press the down-arrow key. The stop temperature flashes on the display. Press the Edit key then use the arrow keys to adjust the stop temperature to the desired value.
- Proceed in similar fashion to adjust 0-10V output 2 parameters.

5.12 AGE AND MORTALITY

The animal age is used as the reference day number to determine the position in the different curves that are used by the controller (temperature curve, minimum opening curve). The animal age ranges from 1 to 450 days.

This function also allows the user to keep a tally of animal deaths. Every time a new mortality number is entered into the controller, the mortality number added to the total number of mortalities and is subtracted from the initial number of animals in the barn. The animal mortality data are reset when the animal age goes from OFF to 1 day.



Note that all histories will be cleared once the animal age is set from OFF to 1 day except for the Alarm Log history.

5.12.1 Adjusting Initial Number of Animals

The controller allows the user to monitor the number of animals in the barn. First, set the **initial number** of animals in the barn. Then, enter the number of mortality everytime **new mortality** occurs. This way, the controller can display the actual number of animal in the barn.

- Set the function to **AGE & MORTALITY** from the main menu using the menu select buttons. The current animal age is displayed.

Age & Mortality	▲▼
Age:	Off
New Mortality	3
Today:	0

- Press the down-arrow in order to select "**Initial Size**" menu. Note that this menu can only be modified if the "**Age**" menu above is set to OFF.

Today:	5
Total Mortality	25
Current Size	475
Initial Size	500

- Press the Edit key then use the up or down-arrow key to set the initial number of animals to the desired value. Press the Edit key once again to validate.

5.12.2 Setting the Animal Age

- Set the function to **AGE & MORTALITY** from the main menu using the menu select buttons. The current animal age is displayed.

Age & Mortality	▲▼
Age:	15days
New Mortality	3
Today:	0

- Press the Edit key then use the arrow keys to adjust the animal age to the desired value. Press the Edit key once again to validate.

5.12.3 Entering New Mortalities

- Set the function to **AGE & MORTALITY** from the main menu using the menu select buttons. The current animal age is displayed.

- Press the down-arrow key to select "**New Mortality**" menu.

Age & Mortality	▲▼
Age:	Off
New Mortality	3
Today:	0

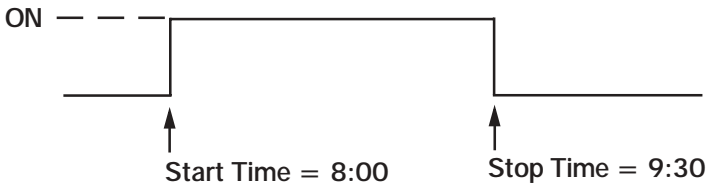
- Press the Edit key then use the up-arrow key to enter the number of new mortalities. Press the Edit key once again to validate the new mortality value : The **new mortality** menu then returns to 0 and the entered value is added to the **Total** and to **Today's mortality** menus. The total number of animals in the barn is also adjusted consequently.

Today:	5
Total Mortality	25
Current Size	475
Initial Size	500

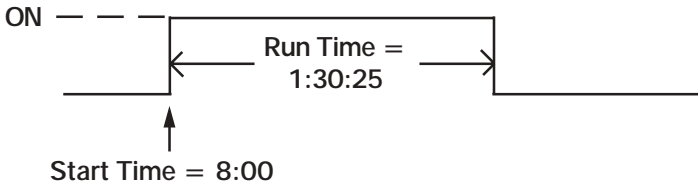
5.13 PROGRAMMING CLOCK OUTPUTS

The EXPERT-VT212 has two timers to control various devices using the real-time clock. Each timer has 24 cycles defined using start and stop times or a start and run time. The difference between the 2 operation modes is that it is possible to adjust the time in a more precise way using the start / run mode.

Start Time / Stop Time Definition:



Start Time / Run Time Definition:



5.13.1 Adjusting Clock Outputs in Start/Stop Time

Each clock output has up to 24 clock cycles. Start and stop times can be adjusted to any clock time.

- Set the function to **START/STOP TEMPS** from the main menu using the menu select buttons.
- Select the "**7. Clock Output**" menu using the arrow keys. Note that this menu is only available if clocks have been installed (see sec. 5.16.3).

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- Select the first clock using the arrow keys. The operation mode of clock 1 is displayed.

- Press the Edit key then press the up-arrow key to set the clock 1 in Start/Stop mode. Press the Edit key once again to validate the chosen mode.

Clock 1 Mode	S/Stop
On 1	13:50 (1)
Off 1	14:30 (1)
On 2	16:25 (1)

- Press the down-arrow key once. The first start time for clock 1 flashes on the display. Press the Edit key then use the arrow keys to adjust the first start time to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once again. The first stop time for clock 1 flashes on the display. Press the Edit key then use the up and down-arrow keys to adjust the first stop time to the desired value. Press the Edit key once again to validate.
- Proceed in similar fashion to adjust start and stop Times for all cycles.

5.13.2 Adjusting Clock Outputs in Start/Run Time

Each clock output has up to 24 clock cycles. Start and run times can be adjusted to any clock time. The hours are displayed in 24 hours format.

- Set the function to **START/STOP TEMPS** from the main menu using the menu select buttons.
- Select the "**7. Clock Output**" menu using the arrow keys. Note that this menu is only available if clocks have been installed (see sec. 5.16.3).

- Select the first clock using the arrow keys. The operation mode of clock 1 is displayed.

Clock 1 Mode	S/Run
On 1	6:00A (1)
Run Time Hour	0
Min	0 Sec 0

- Press the Edit key then press the down-arrow key to set clock 1 in Start/Run mode. Press the Edit key once again to validate the mode.

- Press the down-arrow key once. The first start time for clock 1 flashes on the display. Press the Edit key then use the arrow keys to adjust the first start time to the desired value. Press the Edit key once again to validate.

On 1	6:00A	(1)
Run Time Hour		0
Min	0	Sec 0
On 2	6:00A	(1)

- Press the down-arrow key once again. The run time hour flashes on the display. Press the Edit key then use the up-arrow key to adjust the hours to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once again. The run time minutes flash on the display. Press the Edit key then use the up-arrow key to adjust the minutes to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once again. The run time seconds flash on the display. Press the Edit key then use the up-arrow key to adjust the seconds to the desired value. Press the Edit key once again to validate.
- Proceed in similar fashion to adjust start and run times for other cycles.

5.14 HISTORY

5.14.1 Resetting Histories

The controller automatically resets all histories when the animal age goes from OFF to 1 day.

- Set the function to **AGE & MORTALITY** from the main menu using the menu select buttons. The animal age flashes on the display.

- Press the Edit key then use the down-arrow key to decrease the animal age until you reach the Off position. Press the Edit key once again to validate the Off status.

Age & Mortality	▲▼
Age:	Offdays
New Mortality	3
Today	3

- Repeat the procedure above and now set the age to 1 day. Press the Edit key to validate. All histories are now cleared. Except for the Alarm Log History.

5.14.2 Average Temperature History

The **AMBIENT TEMPERATURE** menu gives the minimum and maximum temperature values recorded by the probes, during the current day. These values are kept in memory for the past 7 days.

- Set the function to **AMBIENT TEMPERATURE** from the main menu using the menu select buttons. The current average room temperature is displayed.

- Press the down-arrow key to scroll the menu. The probes status is displayed then today's minimum and maximum temperature values are displayed. Keep scrolling, the history of minimum and maximum temperatures recorded for each day for the past 7 days is displayed.

Today's Min / Max	
Min 67.8	Max 72.2
Yesterday	
Min 65.3	Max 71.7

5.14.3 Individual Temperature Probes History

The EXPERT-VT212 keeps an history of the high and low temperature readings of each probe for the current day. The current day values are reset at 12h00AM everyday and are then stored into the history. The individual probes history is recorded for the past 7 days.

- Set the function to **PROBE TEMPERATURES** main menu using the menu select buttons. The current probe temperature reading is displayed.
- Use the down-arrow key to scroll the display. The High and Low temperatures of the current day are displayed. Keep scrolling to look at the Hi and Lo temperature's history recorded for each temperature probe for the past 7 days.

3 Days ago			
Pb1L	67.8	Pb1H	71.3
Pb2L	65.2	Pb2H	69.7
Pb3L	66.9	Pb3H	74.2

5.14.4 Outside Temperature History

The controller keeps an history of the Hi and Lo temperature readings of the outside temperature probe for the current day and for the past 7 days.

- Set the function to **OUTSIDE TEMPERATURE** main menu using the menu select buttons. The current temperature reading of the outside probe is displayed. Note that this menu is only accessible if an outside temperature probe has been installed (see sec 5.16.4.2).
- Use the down-arrow key to scroll the display. The minimum and maximum temperature values recorded for the current day are displayed. Keep scrolling to look at the minimum and maximum temperature's history recorded for the past 7 days.

Today's Min / Max			
Min	71.3	Max	74.2
Yesterday			
Min	64.2	Max	67.3

5.14.5 Relative Humidity History

The EXPERT-VT212 keeps an history of the minimum and maximum humidity level recorded for the current day and for the past 7 days.

- Set the function to **RELATIVE HUMIDITY** from the main menu using the menu select buttons. The current relative humidity level is displayed as well as the minimum and maximum humidity levels recorded for the current day. Note that this menu is only accessible if a humidity probe has been installed (see sec. 5.16.4.2).

Today's Min / Max	
Min 63	Max 67
Yesterday	
Min 60	Max 72

- Use the down-arrow key to scroll the display. The relative humidity history is displayed.

5.14.6 Static Pressure History

The controller keeps an history of the minimum and maximum static pressure values recorded for the current days and for the past 7 days.

- Set the function to **STATIC PRES-SURE** from the main menu using the menu select buttons. The current static pressure is displayed. Note that this menu is only accessible if a static pressure probe has been installed (see sec. 5.16.4.2).

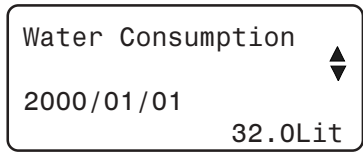
Today's Min / Max	
Min 0.02	Max 0.07
Yesterday	
Min 0.04	Max 0.08

- Use the down-arrow key to scroll the display. The static pressure Min/Max History is displayed.

5.14.7 Water Consumption History

The EXPERT-VT212 provides a pulse input to monitor water consumption. Those values are kept in memory for the past 75 days. The controller also displays the total water consumption value since the last reset.

- Set the function to **WATER** from the main menu using the menu select buttons. The water consumption for the current day is displayed.



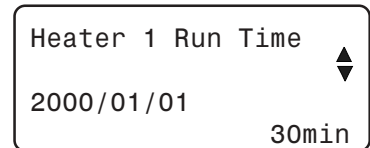
- Press the down-arrow key once. The total water consumption since the last reset is displayed.
- Press the down-arrow key once again. The water consumption history is displayed starting with the oldest recorded value.

5.14.8 Heater Run Time History

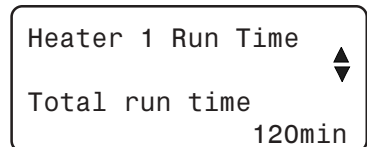
The EXPERT-VT212 keeps a daily history of the heater run time. These values are kept in memory for the past 75 days or since the last reset. The controller also calculates the total time the heaters have been running.

- Set the function to **HEATERS/FEEDERS** from the main menu using the menu select buttons. Note that this menu is only accessible if heaters have been activated during the installation (see sec.5.16.3).

- Select "1. Heaters" using the arrow keys, then select the desired heater. The current HEATER RUN TIME is displayed.



- Use the down-arrow key to scroll the display. The total heater run time is displayed then the heater run time values recorded for the last 75 days are displayed. Keep pressing the down-arrow key to scroll the display and look at all histories.



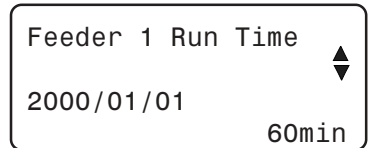
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5.14.9 Feeder Run Time History

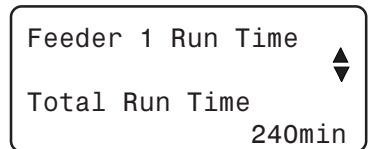
The EXPERT-VT212 keeps a daily history of the feeder run time. These values are kept in memory for the past 75 days or since the last reset. The controller also calculates the total time feeders have been running. It can monitor up to 4 feeders.

- Set the function to **HEATERS / FEEDERS** from the main menu using the menu select buttons. Note that this menu is only accessible if heaters or feeders have been activated during the installation (see sec.5.16.3).

- Select the "2. Feeders" menu using the arrow keys, then select the desired feeder. The current Run Time of the selected feeder is displayed.



- Use the down-arrow key to scroll the display. The total Feeder Run Time is displayed then the Feeder Run Time values recorded for the last 75 days are displayed. Keep pressing the down-arrow key to scroll the display and look at all histories.



5.15 ALARM SETTINGS

5.15.1 Alarm Log

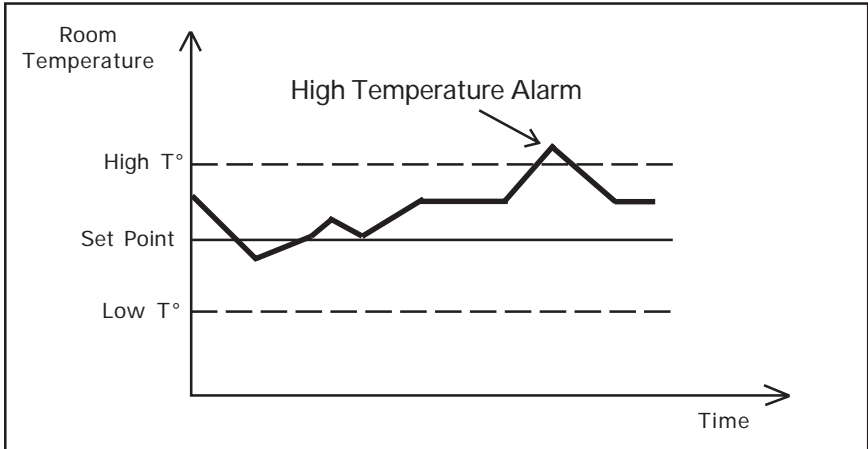
When an alarm occurs, the alarm led is turned on and the alarm is recorded in memory along with the time and date. To view the alarms in the alarm log, select the **ALARM** main menu using the menu select buttons and use the up and down-arrow keys to step through the recorded alarms. The alarm conditions are as follows:

Display	Meaning
Low Temp Alarm	Low temperature alarm
High Temp Alarm	High temperature alarm
Low Pressure Alarm	Low static pressure Alarm
High Pressure Alarm	High static pressure Alarm
Probe #1-6 Defect	A temperature probe is defective
Outdoor Probe Defect	The outdoor probe is defective
Pot. Inlet 1-2 Defect	The inlet 1 or 2 is defective
Water Spill High	Water consumption too high
SP Probe Defect	The static pressure sensor is defective
RH Probe Defect	The humidity probe is defective

Another alarm situation occurs when power to the EXPERT-VT212 fails. In this case, the alarm relay is activated. When the alarm relay is activated, the normally open contact (—●—●—) closes.

5.15.2 Setting Alarm Limits

The following diagram explains how temperature alarms are detected:



When the average room temperature exceeds the high temperature alarm setting, a high temperature alarm is generated. When the average room temperature drops below the low temperature alarm setting, a low temperature alarm is generated. Although these settings are entered by the user as absolute values, they are defined relative to the current set point and are automatically adjusted by the controller when the set point changes.

The situation is slightly different when the outside temperature is greater than the set point. In this case, the set point is replaced by the outside temperature as the reference point. This means an alarm is set off when the indoor temperature reaches Outside Temperature + High Alarm Offset (the offset being the difference between the high alarm temperature setting and the set point). A third parameter, called the critical temperature, is defined to continue monitoring the indoor temperature for high temperatures. When the indoor temperature reaches the critical high temperature (defined as an absolute value), an alarm is set off.

Other Alarms

High and low static pressures also generate alarms. A user-defined delay can be used to delay the alarm (see sec. 5.15.2.5). The controller also detects water spills by monitoring water consumption levels.

5.15.2.1 Adjusting Empty Zones Temperature Alarms

When zones are empty and the controller operates in clean mode, an alarm will be generated whenever the temperature drops below a user-defined value. Refer to section 5.17.6 for more information about the clean mode.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons. Select the "**10. Alarms**" menu using the menu select buttons. The empty zones minimum temperature flashes on the display.
- Press the Edit key then use the arrow keys to set the empty zones minimum temperature to the desired value. Press the Edit key once again to validate the temperature value.

Temperature Alarms	◆
Empty Zone	32.0
Low Alarm	60.0
High Alarm	90.0

5.15.2.2 Adjusting High / Low Temperature Alarms

The low alarm temperature can be adjusted from -20°F to 0.5°F (-11.1 to 0.3°C) below the set point. The high alarm temperature can be adjusted from 0.5°F to 20°F (0.3 to 11.1°C) above the set point. A change in the set point will change these values by the same amount.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons. Select the "**10. Alarms**" menu using the arrow keys. The empty zone, high and low temperature alarms are displayed.
- Press the down-arrow key to select the low temperature alarm.
- Press Edit key then use the up and down-arrow keys to adjust the Low temperature alarm. Press the Edit key once again to validate the value.
- Press the down-arrow key to select the high temperature alarm.
- Press Edit key then use the up and down-arrow keys to adjust the high temperature alarm. Press the Edit key once again to validate the value.

Temperature Alarms	◆
Empty Zone	32.0
Low Alarm	60.0
High Alarm	90.0

5.15.2.3 *Adjusting Critical Temperature*

The critical temperature is the absolute maximum temperature allowed in the room. The critical temperature can be adjusted from 0.5° F (0.3° C) above the set point to 120° F (48.9° C)

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons. Select the "**10. Alarms**" menu using the arrow keys. The empty zone , high and low temperature alarms are displayed.
- Press the down-arrow key three times. The critical temperature alarm flashes on the display. Note that this option is only available if an outside temperature is connected to the controller.
- Press the Edit key then use the arrow keys to adjust the critical temperature alarm to the desired value.

Empty Zone	32.0
Low Alarm	60.0
High Alarm	90.0
Critical Alarm	120.0

5.15.2.4 *Adjusting Water Spill Alarm*

A water spill alarm is set off when the water consumption monitored by the EXPERT-VT212 exceeds a user-defined maximum value. The water consumption for a water spill alarm can be adjusted from 0 to 10000 gallons. The alarm activated if the water consumption exceeds the water spill limit in a 5 minute delay.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons. Select "**10. Alarms**" menu using the arrow keys. The empty zone , high and low temperature alarms are displayed.
- Press the down-arrow key four times. The maximum water consumption flashes on the display. Note that this menu is only accessible if the water consumption has been enabled (see sec. 5.16.4.2).
- Press the Edit key then use the arrow keys to adjust the water spill limit to the desired value. Press the Edit key once again to validate.

Water Spill Limit
1000Lit

5.15.2.5 Adjusting Static Pressure Alarms

The controller can generate an alarm if the static pressure drops below the low pressure limit or if it exceeds the high pressure limit. The controller uses a user-defined delay before activating the alarm. The alarm is generated if the static pressure exceeds limits for a time period longer than this delay.

ADJUSTING HIGH/LOW STATIC PRESSURE ALARM LIMITS

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons. Select "**10. Alarms**" menu using the arrow keys. The empty zone , high and low temperature alarms are displayed.
- Press the down-arrow key to select the low static pressure alarm. Note that this menu is only available if a static pressure probe has been installed (see sec. 5.16.4.2).

Static Press Alarm	
Low Alarm	010"WC
High Alarm	.100"WC
Delay	300sec
- Press the Edit key then use the up and down-arrow keys to adjust the low static pressure alarm to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key to select high alarm. Press the Edit key then use the up and down-arrow keys to adjust the high static pressure alarm to the desired value. Press the Edit key once again to validate the value.

ADJUSTING DELAY

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons. Select "**10. Alarms**" menu using the arrow keys. The empty zone, high and low temperature alarms are displayed.
- Press the arrow key to select the static pressure delay. Note that this menu is only available if the static pressure feature has been enabled (see sec. 5.16.4.2).
- Press the Edit key then use the up and down-arrow keys to adjust the static pressure delay to the desired value. Press the Edit key once again to validate.

5.16 INSTALLATION

5.16.1 Step-by Step Guide for Controller Installation

These are the basic steps to start up your EXPERT-VT212 controller. Enter the Installer Password before starting the controller's installation this gives access to all menus.

- 1- Connect the controller according to the wiring diagram enclosed with this manual.
- 2- Turn the power ON.
- 3- Enter the installer password (see sec. 5.16.2).
- 4- Set the **Date and Time** (see sec. 5.16.5).
- 5- Step through the "**7. Installation**" menu from the **USER** main menu and answer all questions to customize the controller for your particular applications (see sec. 5.16.3).
- 6- Step through the "**3. Other Probes**" menu from the **USER** main menu and answer all questions to customize the controller for your needs (see sec. 5.16.4.2).
- 7- Assign relays for each output in use. The relay assignment can only be done on the installer mode (see sec. 5.16.2).
 - Relays must be assigned for each heater stages. Refer to section 5.16.7.1 to assign heater relays.
 - Relays must be assigned for each fan stages. Refer to section 5.16.7.2 to assign fan relays.
 - Relays must be assigned to open and close tunnel curtains. Refer to section 5.16.7.3 to assign relays for tunnel curtains.
 - Relays must be assigned to open and close inlets. Refer to section 5.16.7.4 to assign relays for inlets.
 - A relay must be assigned for the stir fan, if applicable. Refer to section 5.16.7.5 to assign the stir fan relay.

- A relay must be assigned for the cooling stage, if applicable. Refer to section 5.16.7.6 to assign the cooling stage relay.
- A relay must be assigned for the soaking stage, if applicable. Refer to section 5.16.7.7 to assign the soaking stage relay.
- If clock outputs are used, a relay must be assigned for each clock. Refer to section 5.16.7.8 to assign clock relays.

8. Temperature probe assignment:

- Probes must be assigned for heater stages. Heaters use the average temperature of their assigned probes to operate. Refer to section 5.16.9.1 to assign probes to heater stages.
 - Probes must be assigned for the inlet. The inlet will use the average temperature of its assigned probes for the compensation. Refer to section 5.16.9.3 to assign probes to the inlet.
 - Probes must be assigned to be part of the average ambient temperature. The controller uses the average temperature of all activated temperature probes to calculate the ambient temperature. All fan stages operate according to this temperature. Refer to section 5.16.4.1 to assign the temperature probes.
 - Probes must be assigned for the 0-10V outputs in use. Refer to section 5.16.9.2 to assign probes to the output.
9. Adjust the room temperature set point. The room temperature set point is the target temperature in the barn (see sec 5.2).
 10. Adjust the start/stop temperatures of fan and heater stages. Refer to section 5.5.1 to adjust fan start/stop temperatures and refer to section 5.8.1 to adjust heater start/stop temperatures.
 11. When the room temperature is below the set point, fans can operate according to a minimum ventilation cycle. Refer to section 5.3 to adjust the minimum ventilation cycle.
 12. Calibrate inlets. Refer to section 5.4.1 to make the air inlet calibration.

13. Adjust inlet openings for each of the ventilation stages. Refer to section 5.4.5.
14. Adjust the hot and cold offsets of stir fans, if applicable. Refer to section 5.7 to adjust offsets.
15. If the soaking feature is used, adjust the timer cycle used to operate soaking units. Refer to section 5.10.
16. If 0-10V outputs are used, adjust their start temperature. Refer to section 5.11.
17. Adjust start / stop times used by clock outputs. Refer to section 5.13.
18. Adjust the number and the age of animals in the barn. Refer to section 5.12.
19. If inlets are used, the user must adjust the inlet compensation to help reduce the temperature differences in the building. Refer to section 5.4.7 to set the inlet compensation.
20. The water counter must be calibrated to monitor the water consumption. Refer to section 5.16.8 to calibrate the water counter.
21. If a humidity probe is used, the user must adjust the humidity compensation to control the level of humidity in the building. Refer to section 5.17.4 to set the relative humidity options.
22. Setting the temperature curve (optional). The user may configure a temperature curve to automatically adjust the set point over a given time period. Refer to section 5.17.2 to adjust the temperature curve.
23. Setting the minimum ventilation curve (optional). The user may configure a minimum ventilation curve to automatically adjust the minimum ventilation over a given time period. Refer to section 5.17.3 to adjust the minimum ventilation curve.

5.16.2 Setting Password

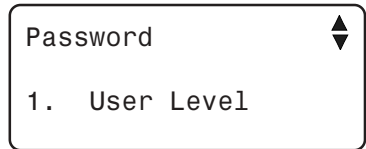
This function allows to identify 2 different user types. It is used to restrict access to certain parameter settings. The password is made up of three blocks of two digit numbers, for example: 13 44 21. When a correct password is entered, the current user is identified.

Installer Password: By default, the INSTALLER PASSWORD is set to "6-1-0". The installer mode gives the access to all functions of the EXPERT-VT212. By default, the controller returns to the user mode after 15 minutes of inactivity. The installer may return to user mode before that delay by entering the user password. The installer password can be modified.

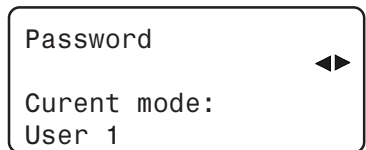
User Password: The user mode gives access to the basic functions of the EXPERT-VT212. By default this password is set to "1-2-3". Note that some menus will not be accessible on user mode. The user password cannot be modified. The control automatically returns to user mode after 15 minutes of inactivity.

Setting password:

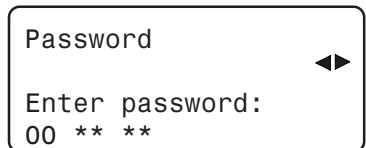
- Set the function to **USER** from the main menu using the menu select buttons. Use the arrow keys to select the "**8. Password**" menu. The current mode is displayed.



- Press the right-arrow key to access the "**1. User Level**" menu. The current mode is displayed.



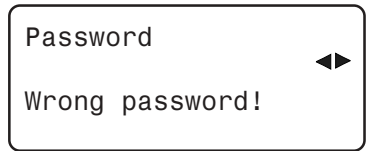
- Press the right-arrow key to enter a password. The first two-digit number flashes on the display. Press the Edit key once then use the arrow keys to set the first number. Press the right-arrow key once.



The second two-digit number flashes on the display. Press the Edit then use the up and down-arrow keys to set the second number. Proceed in similar fashion to set the third two-digit number. Press the right-arrow key one last time to validate the complete password.

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- If the password entered is incorrect, an error message "Wrong Password" is displayed.



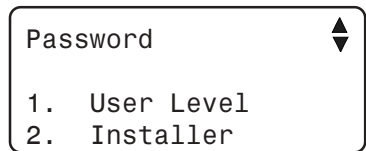
Modifying Installer Password

The installer password must be entered before modifying it. Proceed as explained above to enter the installer password (6-1-0 by default).

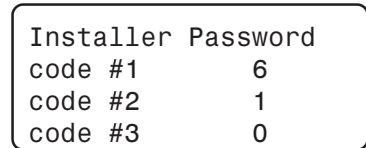
Note : The password "1-2-3" is reserved for the user mode. Do not use the same number sequence for the installer password.

- Set the function to **USER** from the main menu using the menu select buttons. Use the arrow keys to select "**8. Password**" menu. The current mode is displayed.

- Set the function to "**2. Installer**". using the arrow keys The first number of the installer password flashes on the display. Note that this option will only be available if the installer password has previously been entered.



- Press the Edit key then use the arrow keys to adjust the password's first number to the desired value. Press the Edit key once again to validate the first number of the code.



- Press the right-arrow key once. The password second number flashes on the display.
- Press the Edit key then use the arrow keys to adjust the password's second number to the desired value. Press the Edit key once again to validate the second number of the code.
- Proceed in similar fashion to modify the password third number.

5.16.3 Installation Options

The following section describes how to customize the controller for your particular applications. Normally, this setup needs to be done only once.

The parameters are presented below in the order they appear on the display. Press Edit key then use the arrow keys to adjust a parameter value. When the parameter is adjusted, press the Edit key to validate then press the down-arrow key to move to the next parameter. The user should step through all the parameters at least once. These parameters are located in the "7.Installation" menu from the **USER** main menu. Note that this menu is only accessible on installer mode (see sec. 5.16.2).

1. Number of Feeders:

Press the Edit key then use the arrow keys to adjust the number of feeders to the desired value. Press the Edit key once again to validate. Up to 4 feeders can be used.

Installation	▲▼
# Feeders	2
# Heater stages	2
# Fan stages	12

2. Number of Heater Stages:

Press the Edit key then use the arrow keys to adjust the number of heater stages to the desired value. Press the Edit key once again to validate. Up to 4 heater stages can be used.

3. Number of Fan Stages:

Press the Edit key then use the arrow keys to set the number of fan stages to the desired value. Press the Edit key once again to validate. Up to 12 fan stages can be used.

4. Number of Clocks:

Press the Edit key then use the arrow keys to set the number of clocks to the desired value. Press the Edit key once again to validate. Up to 2 clock timers can be used.

# Clocks	2
# Inlets	1
# 0-10V Outputs	2
Output 1	Vent.

5. Number of Inlets:

Press the Edit key then use the arrow keys to set the number of inlets to the desired value. Press the Edit key once again to validate. Up to 2 inlets can be selected.

6. 0-10V Outputs

Press the Edit key then use the up and down-arrow keys to set the number of 0-10V used. Up to two 0-10V outputs can be used. The user must define the operation mode used by the 0-10V outputs: They can be used either in ventilation or in heating mode. Set 0-10V outputs 1 and 2 to "Vent" or to "Heat."

# 0-10V Outputs	2
Output 1	Vent.
Output 2	Heat
Use Tunnel ?	Yes

7. Use Tunnel?

Press the Edit key then use the up or down-arrow key to activate or deactivate tunnel ventilation.

8. Use Cooling?

Press the Edit key then use the up or down-arrow key to activate or deactivate the cooling output.

Use Cooling ?	Yes
Use Stir Fan ?	Yes
Use Soaking ?	Yes
V1 Min Speed %	10

9. Use Stir Fan?

Press the Edit key then use the up or down-arrow key to activate or deactivate the stir fan.

10. Use Soaking?

Press the Edit key then use the up or down-arrow key to activate or deactivate soaking feature.

11. Variable-Speed Fan Minimum Speeds and Motor Curve

This minimum fan speed is associated with all fan stages that use variable fans. It does not apply to the minimum ventilation stage.

Press the Edit key then use the arrow keys to adjust the minimum speed for the first variable output to the desired value. Press the Edit key once again to validate the value. Press the down-arrow key once to select the motor curve for the first variable output. Press the Edit key then use the arrow keys to adjust the motor curve to the desired value. Repeat for the second variable output.

V2 Min Speed %	20
V2 Motor Curve	4
Outdoor on Var?	Yes
Digit Display	T°

12. Use Outdoor Temperature Compensation on Variable Stages 1 and 2?

Press the Edit key then use the up or down-arrow key to enable or disable the outside temperature compensation on the bandwidth of stages 1 and 2. This option is only available if the outdoor probe is used.

13. Digit Display

Press the Edit key then use the arrow keys to change the display mode on the LED display on the top right of the control panel. You can choose between the temperature (T°), the static pressure (SP) or an alternating display of both the temperature and the static pressure (T° / SP), the temperature and Inlet 2 or inlet 2 position (T° /I1 or T° /I2), the static pressure and inlet 1 or inlet 2 position (SP/I1 or SP/I2) or an alternating display of both inlet positions (I1/I2).

V2 Min Speed %	20
V2 Motor Curve	4
Outdoor on Var?	Yes
Digit Display	T°

5.16.3.1 Adjusting Parameter Units

- Set the function to **USER** from the main menu using the menu select buttons. Use the arrow keys to select the "**4. Units**" menu. The time display format flashes on the display.

- Press the Edit key then use the up or down-arrow keys to set the time format to 24H or to AM/PM mode. Press the Edit key once again to validate.

Unit Used For:	▲
Time Display	24H
Temperature	°F
Water	Lit

- Press the down-arrow key. The temperature unit flashes on the display.
- Press the Edit key then use the up or down-arrow keys to set the temperature to °C or °F units. Press the Edit key once again to validate the chosen unit.
- Press the down-arrow key. The water unit flashes on the display.
- Press the Edit key then use the up or down-arrow keys to set the water unit to litres or gallons. Press the Edit key once again to validate the chosen unit.

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- Press the down-arrow key. The static pressure unit flashes on the display.

Time Display	24H
Temperature	°F
Water	Lit
Static Pressure	"WC

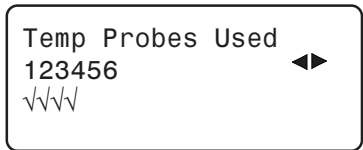
- Press the Edit key then use the up or down-arrow keys to set the static pressure unit to inches of water ("WC) or to Pascal unit (Pa). Press the Edit key once again to validate the chosen unit.

5.16.4 Activating/Deactivating Probes

5.16.4.1 Activating/Deactivating Temperature Probes

Select the temperature probes that are connected to the controller then, refer to section 5.16.9 to assign the activated probes to air inlets, to heating stages, to be part of the average room temperature etc. At least one temperature probe must be activated.

- Set the function to **USER** from the main menu using the menu select buttons. Use the arrow keys to select the "**2. Temp Probes**" menu. Temperature probes are displayed.
- Select the desired probe. Press the Edit key then use the up-arrow key to select the probe or the down-arrow key to deselect the probe. Press the Edit key once again to validate.

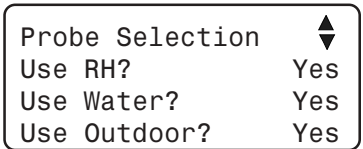


5.16.4.2 Activating/Deactivating Other Probes

- Set the function to **USER** from the main menu using the menu select buttons. Use the arrow keys to select the "**3. Other Probes**" menu.

1. Relative Humidity Probe

Press the Edit key then use the up or down-arrow keys to activate or deactivate the relative humidity (RH) probe. Press the Edit key once again to validate.



2. Water Meter

Press the Edit key then use the up or down-arrow keys to activate or deactivate the water meter. Press the Edit key once again to validate.

3. Outdoor Temperature Probe

Press the Edit key then use the up or down-arrow keys to activate or deactivate the outdoor temperature probe. Press the Edit key once again to validate.

4. Static Pressure

Press the Edit key then use the up or down-arrow keys to activate or deactivate the static pressure sensor. Press the Edit key once again to validate.

Use RH?	Yes
Use Water?	Yes
Use Outdoor?	Yes
Use Stat.Press?	Yes

5.16.5 Setting Time and Date

■ Set the function to **TIME & DATE** from the main menu using the menu select buttons. The current time and date are displayed.

■ Press the right-arrow key once. The year flashes. Press the Edit key then use the arrow keys to set the year. Press the right-arrow key once again, the month flashes.

Time & Date	
	Y / M / D ◀▶
Date	2001 / 03 / 29
Time	11 : 21 : 15

Press the Edit key then use the arrow keys to adjust the month. Press the right-arrow key. The day flashes. Press the Edit key then use the arrow keys to adjust the day to the appropriate value. Press the Edit key once again to validate the date.

■ Press the right-arrow key once again, the hours flash. Press the Edit key then use the arrow keys to adjust the hours. Press the right-arrow key. The minutes flash. Press the Edit key then use the arrow keys to set the minutes. Press the right-arrow key. The seconds flash. Press the Edit key then use the arrow keys to adjust the seconds. Press the Edit key once again to validate the time.

5.16.6 Adjusting Day and Night Times

The controller allows to use two separate set points and different minimum ventilation settings during night. The user must then determine at what time the night and day settings comes to effect. A transition delay between day and night must also be specified by the user.

■ Set the function to **USER** from the main menu using the menu select buttons.

■ Select the "**6. Day / Night**" menu using the arrow keys. The night set point status flashes on the display.

- Press the Edit key then press the up-arrow key to enable the night set point. Press the Edit key once again to validate. Refer to section 5.2.2 to set the night set point temperature.

Day/Night Settings	▲
Night SetPoint?	Yes
Night Min.Vent?	Yes
DayTime	6:00

- Press the down-arrow key. The night's minimum ventilation status is displayed.
- Press the Edit key then press the up-arrow key to enable the night's minimum ventilation. Press the Edit key once again to validate. Refer to section 5.3.2 to set the night's minimum ventilation settings.

- Press the down-arrow key. The day start time flashes on the display.

DayTime	6:00
NightTime	18:00
Transition	60min

- Press the Edit key then use the arrow keys to set the day start time to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once. The night start time flashes on the display.
- Press the Edit key then use the arrow keys to set the night start time to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once. The transition delay between day and night set points flashes on the display.
- Press the Edit key then use the arrow keys to set the transition time to the desired value. Press the Edit key once again to validate.

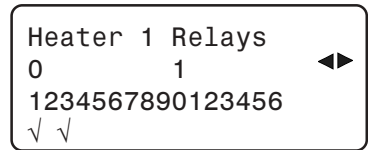
5.16.7 Relay Assignment

The EXPERT-VT212 can control up to 18 ON-OFF relay outputs and 2 variable relay outputs. The mapping between the stages and the relays must be determined by the user.



Note that relay assignment can only be made in installer mode (see sec 5.16.2).

The relays with a mark below are assigned to the selected output. Use the up and down-arrow keys to scroll the display. The first number above the relay numbers stands as the first number of the relay. In this example, the relay 1 and 3 are assigned to Heater 1 stage. This means that when heater 1 stage operates, the units connected on those two relay will be turned on.

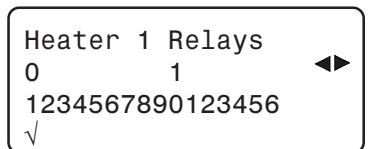


Pressing the down-arrow key directly goes to the last relay and pressing the up-arrow key returns to the first relay. This makes it easier to step through the relays.

Use the template at the end of this manual to map the relays before assigning them from the front panel. Use the + push-button to assign a relay to an output or the - push-button to unassign a relay to an output.

5.16.7.1 Assigning Heater Stages Relays

- Set the function to **RELAY SETTINGS** from the main menu using the menu select buttons. Remember that this menu is only available in installer mode.
- Select "Heater 1" menu from "1. Heaters" menu using the right-arrow key. Relays 1 to 16 are displayed.



- Use the arrow keys to scroll the display and to select the relay(s) assigned to heater 1.
- Press the Edit key then use the up or down-arrow key to assign or unassign the selected relay.
- Proceed in similar fashion to assign relays to all heater stages.

5.16.7.2 Assigning Fan Stages Relays

- Set the function to **RELAY SETTINGS** from the main menu using the menu select buttons. Remember that this menu is only available in installer mode (see sec. 5.16.2).
- Select "**1. Stage 1**" from the "**2. Fan Stages**" menu using the right-arrow key. The ON/OFF status for each fan stage relays is displayed.

Stage 1 Relays:		▲▼
Variable 1	On(1)	
Variable 2	Var(1)	
Relay 1	Off(1)	
- Assign the proper relay(s) for fan stage 1 using the arrow keys. Press the Edit key then use the up or down-arrow key to set the selected relay to ON or OFF. Press the Edit key once again to validate.
- Proceed in similar fashion to assign relays to all fan stages.

Variable Output Assignment:

The EXPERT-VT212 has two variable outputs to operate variable-speed fans. Each fan stage can use these outputs in variable or on-off mode. Press the up or down arrow key and set the mode to '**Var**' for variable, '**ON**' for ON-OFF or '**OFF**' to deactivate the output.

Stage 1 Relays:		▲▼
Variable 1	On(1)	
Variable 2	Var(1)	
Relay 1	Off(1)	



THE LAST FAN STAGE MUST NOT BE CONFIGURED IN VARIABLE MODE. IF THE LAST FAN STAGE USES THE VARIABLE OUTPUT, THIS OUTPUT MUST BE CONFIGURED TO OPERATE IN ON/OFF MODE.

Relays with Timer on Fan Stages:

Relays can be configured in timer mode for cooling while other relays operate in on-off mode. For example, a mist unit can operate according to a timer cycle in a fan stage while the fans assigned to this stage run at the same time.

To assign relays in timer mode, proceed as described above and use the up-arrow key to set the relay to "Timer".

Stage 4 Relays:	▲
Relay 1	On (4)
Relay 2	Off (4)
Relay 3	Timer (4)

5.16.7.3 Assigning Tunnel Fan Relays

Relays 7-8, 15-16 or 17-18 have specially been designed for the tunnel curtain. It is strongly recommend using those relays to connect the tunnel curtains: this prevents activating the OPEN and CLOSE relays, by inadvertence, at the same time.

- Set the function to **RELAY SETTINGS** from the main menu using the menu select buttons. Remember that this menu is only available in installer mode (see sec. 5.16.2).
- Select "**1. Tunnel Open**" from the "**3. Tunnel**" menu using the arrow keys. The relays for the opening of the tunnel are displayed. Note that this menu is only accessible if the tunnel has been enabled during the installation (see sec. 5.16.3).
- Use the arrow keys to select the desired relay used to OPEN the tunnel (it is recommend to use relay 8, 16 or 18 for the opening of the tunnel curtain). Press the Edit key then use the up or down-arrow key to assign or unassign relays.
- Return to the previous menu by pressing the left-arrow key. Select "**2. Tunnel Close**" menu.
- Use the arrow keys to select the desired relay used to CLOSE the tunnel (it is recommend to use relay 7, 15 or 17 to close the tunnel curtain. Press the Edit key then use the up or down-arrow key to assign or unassign the relay. Press the Edit key once again to validate.

Tunnel Open Relay	◀▶
0	1
1234567890123456	√

5.16.7.4 Assigning Open and Close Relays for Air Inlets

Relays 7-8, 15-16 and 17-18 have specially been designed for inlets. It is strongly recommend using those relays to connect the inlets: this prevents activating the OPEN and CLOSE relays, by inadvertence, at the same time.

- Set the function to **RELAY SETTINGS** from the main menu using the menu select buttons. Remember that this menu is only available in installer mode (see sec. 5.16.2).
- Select "**1 Inlet 1 Open**" menu from the "**3. Inlets**" menu, using the arrow keys. Note that this is only available if inlets have been installed (see sec. 5.16.3).

- Use the arrow keys to select the desired relay used to OPEN the first inlet (it is recommend to use relay 8, 16 or 18 the opening of inlets. Press the Edit key then use the up or down-arrow key to assign or unassign the relay. Press the Edit key once again to validate.

```

Inlet 1 Open Relay
0           1           ◀▶
1234567890123456
                √
```

- Go back to the previous menu by pressing the left-arrow key. Select "**2. Inlet 1 Close**" menu.

- Use the arrow keys to select the desired relay used to CLOSE the first inlet (it is recommend to use relay 7, 15 or 17 to close inlets). Press the Edit key then use the up or down-arrow key to assign or unassign the relay.

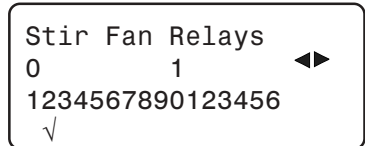
```

Inlet 1 Close Relay
0           1           ◀▶
1234567890123456
                √
```

- Follow the same procedure to set inlet 2 OPEN and CLOSE relays.

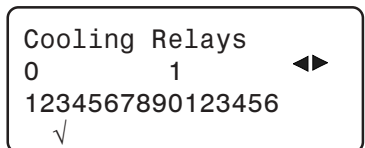
5.16.7.5 Assigning Stir Fan Relays

- Set the function to **RELAY SETTINGS** from the main menu using the menu select buttons. Remember that this menu is only available in installer mode (see sec. 5.16.2).
- Select "**5. Stir Fan**" menu using the arrow keys. The stir fan relays are displayed. Note that this menu is only accessible if the stir fan has been enabled during the installation (see sec. 5.16.3).
- Select the desired relay using the arrow keys. Press the Edit key then use the up or down-arrow key to assign or unassign the relay. Press the Edit key once again to validate.



5.16.7.6 Assigning Cooling Stage Relays

- Set the function to **RELAY SETTINGS** from the main menu using the menu select buttons. Remember that this menu is only available in installer mode (see sec. 5.16.2).
- Select "**6. Cooling**" menu using the arrow keys. The cooling relays are displayed. Note that this menu is only accessible if the cooling feature has been enabled (see sec. 5.16.3).
- Select the desired relay using the arrow keys. Press the Edit key then use the arrow keys to assign or unassign the relay. Press the Edit key once again to validate.



5.16.7.7 Assigning Soaking Stage Relays

- Set the function to **RELAY SETTINGS** from the main menu using the menu select buttons. Remember that this menu is only available in installer mode (see sec. 5.16.2).
- Select "**7. Soaking**" menu using the arrow keys. The Soaking Relays are displayed. Note that this menu is only accessible if the soaking feature has been enabled (see sec. 5.16.3).

Soaking Relays ◀▶

0 1

1234567890123456

√
- Select the desired relay using the arrow key. Press the Edit key then use the up or down-arrow key to assign or unassign the relay. Press the Edit key once again to validate.

5.16.7.8 Assigning Clock Output Relays

- Set the function to **RELAY SETTINGS** from the main menu using the menu select buttons. Remember that this menu is only available in installer mode (see sec. 5.16.2).
- Select "**8. Clock Output**" menu using the arrow keys, then select "**1. Clock 1**". The relays of the first clock are displayed. Note that this menu is only accessible if clocks have been installed (see sec 5.16.3).

Clock 1 Relay ◀▶

0 1

1234567890123456

√
- Select the desired relay using the arrow keys. Press the Edit key then use the up or down-arrow key to assign or unassign the relay. Press the Edit key once again to validate.
- Proceed in similar fashion to assign relays for each clock.

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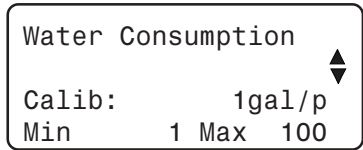
Relay Assignment Example : Relays 1-18

Relay	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	V1	V2
Heater 1	ON																			
Heater 2		ON																		
Heater 3	ON	ON																		
Heater 4	ON	ON	ON																	
Fan 1																				Var
Fan 2																			ON	Var
Fan 3																			ON	ON
Fan 4				ON																
Fan 5					ON															
Fan 6						ON														
Fan 7																				
Fan 8									ON											
Fan 9				ON	ON															
Fan 10				ON	ON	ON														
Fan 11				ON	ON	ON			ON											
Fan 12												Timer								
Inlet 1 Open								ON												
Inlet 1 Close							ON													
Inlet 2 Open																ON				
Inlet 2 Close															ON					
Tunnel Open																			ON	
Tunnel Close																		ON		
Cool 1												ON								
Soaking													ON							
Stir Fan														ON						
Clock 1										ON										
Clock 2											ON									

5.16.8 Calibrating the Water Counter

The EXPERT-VT212 provides a pulse input for monitoring water consumption. The user can modify the water flow per pulse. This value can be adjusted from 1 to 100 litres or gallons per pulse.

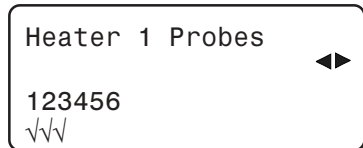
- Set the function to **WATER** from the main menu using the menu select buttons. The current day water consumption is displayed.
- Press the UP-arrow key. The water flow per pulse is displayed.
- Press the Edit key then use the arrow keys to set the water flow per pulse to the desired value. Press the Edit key once again to validate.



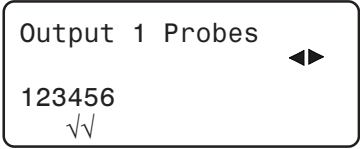
5.16.9 Probe Settings

5.16.9.1 Assigning Probes to Heater Stages

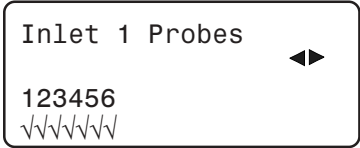
- Set the function to **PROBE SETTINGS** from the main menu using the menu select buttons. Note that this menu is only accessible on installer mode (see sec. 5.13.2).
- Select "**1. Heater 1**" using the arrow keys. The probes that have been activated in section 5.16.4 are displayed.
- Use the arrow keys to select the desired probe. Press the Edit key then use the up-arrow key to assign the probe or the down-arrow key to unassign the probe. Press the Edit key once again to validate.
- Proceed in similar fashion to modify the probe assignments of each heater.



5.16.9.2 Assigning Probes to 0-10V Outputs

- Select **PROBE SETTINGS** display from the main menu. Note that this menu is only accessible on installer mode (see sec. 5.13.2).
- Select **"5. 0-10V Output #1"** using the arrow keys. The probes used by the first 0-10V output are displayed. Note that this menu is only available if 0-10V outputs have been activated (see sec. 5.16.3).
- Use the arrow keys to select the desired probe. Press the Edit key then use the up-arrow key to assign the probe or the down-arrow key to unassign the probe. Press the Edit key once again to validate.
- Follow the same procedure to assign probes for the second 0-10V output, if applicable.


5.16.9.3 Assigning Probes for Inlet Control

- Select **PROBE SETTINGS** display from the main menu. Note that this menu is only accessible on installer mode (see sec. 5.13.2).
- Press the down-arrow key in order to select **"7. Inlet 1"** menu. The probe assignment for the first inlet is displayed. The probes with a mark below are assigned to control the first inlet.
- Use the right and left-arrow keys to select the desired probe. Press the Edit key, the probe digit flashes on the display. Use the up arrow key to assign the probe or the down-arrow key to unassign the probe to control the first inlet.
- Follow the same procedure to assign or unassign probes for the second inlet, if applicable.

5.16.9.4 Assigning Average Temperature Probes

Probes that have been enabled in the installation (sec. 5.16.4) must now be assigned to be part of the average temperature reading in the barn.

- Select **AMBIENT TEMPERATURE** display from the main menu. The average temperature in the barn is displayed.


Ambient Temperature 			
Average: 74.4°F			
Pb1	On	Pb2	On
Pb3	Off	Pb4	On

- Press the down-arrow key in order to select the desired probe. The probes displayed here are the ones that have been activated in section 5.16.4.
- Press the Edit key then use the arrow keys to select or deselect a probe to be part of the average room temperature. Press the Edit key once again to validate.

5.16.9.5 Adjusting Probe Set 2


If tunnel ventilation is used, it is possible to make a second probe set. This other probe set allows the user to use a different selection of probes during tunnel ventilation. This option is only available if tunnel ventilation has been enabled in the installation (sec. 5.16.4) and if the second probe set has been activated in the tunnel ventilation options (see sec. 5.6.2).

- Select **AMBIENT TEMPERATURE** display from the main menu. The average temperature and the current probe set in use are displayed.

Ambient Temperature 			
Average: 74.4°F			
Current Probe: Set 1			
Probes Set 1			

- Press the down-arrow key in order to select the desired probe of probe set 2. The probes displayed here are the ones that have been activated in section 5.16.4.

- Press the Edit key then use the arrow keys to select or deselect a probe to be part of probe set 2. Press the Edit key once again to validate.

Probes Set 2 			
Pb1	On	Pb2	On
Pb3	On	Pb4	Off
Pb5	Off	Pb6	On

5.17 ADVANCED SETTINGS

5.17.1 Motor Curve

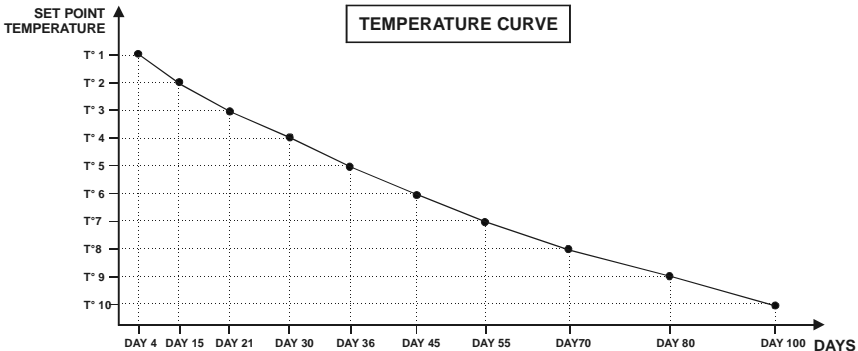
The relationship between the voltage supplied to a motor and its operating speed is described by a motor curve. This curve varies with the make and capacity of the motor. The various motors available in the industry have been divided into ten categories and the controller has been programmed with a different motor curve for each of these categories. To ensure that the controller supplies the correct voltages, an appropriate curve must be selected according to the type of fan motors used.



Refer to section 5.16.3 to set the proper motor curve.

5.17.2 Setting the Temperature Curve

The user can define a temperature curve to automatically adjust the set point over a given time period.



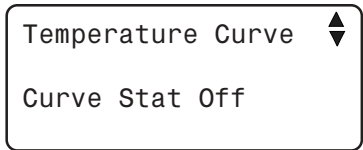
A curve is defined using up to 10 points. Each point specifies a day number and a set point for that day. The animal age defines the current day number used by the curve. Once the points of the curve are defined, the curve must be activated. The controller will change the temperature set point every hour in a linear fashion between consecutive points of the curve. When the last point of the curve is reached, the temperature set point for that day is maintained until the animal age is set to Off or if the set point is adjusted manually.

NOTES:

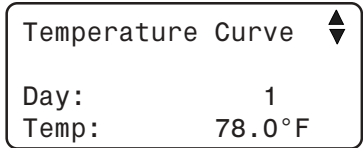
- i) All ten points of the curve must be specified. If ten points are not needed, repeat the last temperature value for each unnecessary point.
- ii) Certain restrictions apply to reduce the risk of errors:
 - The highest possible day number is 450.
 - Decreasing day numbers are not allowed.
 - Increasing temperatures are not allowed.



Note that the temperature curve must be turned off to adjust the points and days of the temperature curve. Use the down-arrow key to scroll each point of the curve. The curve status flashes on the display. Press the Edit key then press the down-arrow key to turn it Off.

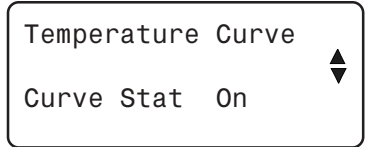


- Set the function to **SET POINT / CURVE** from the main menu using the menu select buttons.
- Select "**2. Curve**" menu using the arrow keys. The current set point and the curve status are displayed.
- Press the down-arrow key once. The first day, corresponding to the first point of the curve flashes on the display.
- Press the Edit key then use the up and down-arrow keys to adjust the first day of the curve to the desired value. Press the Edit key once again to validate the first day of the curve.
- Press the down-arrow key. The temperature for the first point of the curve flashes on the display.



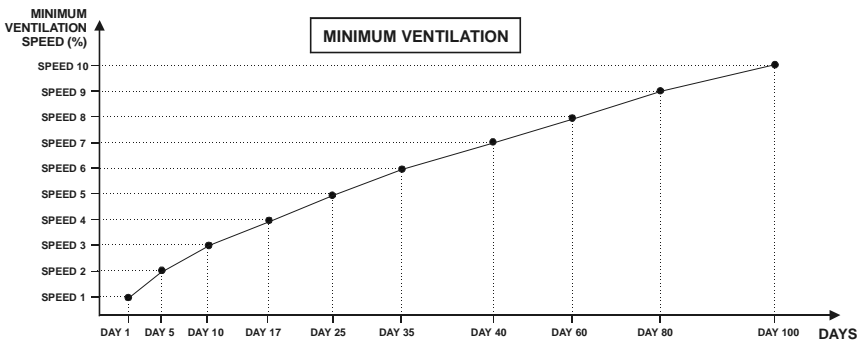
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- Press the Edit key then use the up and down-arrow keys to adjust the temperature for the first point of the curve to the desired value. Press the Edit key once again to validate the temperature value.
- Press the down-arrow key then proceed in similar fashion to modify the days and temperatures for each 10 points of the curve.
- Once all curve points have been defined, press the down-arrow key. The On/Off status of the curve now flashes on the display. Press the Edit key then press the up-arrow key to turn it on. Press the Edit key once again to validate.



5.17.3 Setting the Minimum Ventilation Curve

The user can define a minimum ventilation curve to adjust the minimum speed on both variable outputs automatically over a given time period. Each curve is defined by ten points. Each point specifies the day number and minimum speed for that day. The animal age defines the current day number used by the curve. Once the points are defined, the minimum ventilation curve must be activated. When the minimum ventilation curve is activated, the controller adjusts the minimum speed every hour in a linear fashion between two consecutive points.



Note that the minimum ventilation curve must be turned off in order to adjust the days and min. speeds of the curve. Use the down-arrow key to scroll each point of the curve. The curve state flashes on the display. Press the Edit key then use the down-arrow key to turn it Off.

NOTES:

- i) All ten points of the curve must be specified. If ten points are not needed, repeat the last speed value for each unnecessary point.
- ii) Certain restrictions apply to reduce the risk of errors:
 - The highest possible day number is 450.
 - Decreasing day numbers are not allowed.
 - Decreasing minimum speeds are not allowed.

Specifying Minimum Ventilation Curve:

- Set the function to **MINIMUM VENTILATION / CURVE** from the main menu using the menu select buttons.
- Press the right-arrow key once to select "**1. Variable 1**" then select "**2. Minimum Curve**" menu using the arrow keys. The minimum speed for variable output 1 and the curve status are displayed.

Min Vent Settings
Variable Output 1 ▼
Speed: 20%
Curve stat Off
- Press the down-arrow key once again. The first day corresponding to the first point of the curve flashes on the display.
- Press the Edit key then use the arrow keys to adjust the first day of the curve to the desired value. Press the Edit key once again to validate the day number.
- Press the down-arrow key once again. The variable fan speed of the first point of the curve flashes on the display.
- Press the Edit key then use the arrow keys to adjust the speed to the desired value. Press the Edit key once again to validate the speed.
- Proceed the same way to adjust each points of the curve.
- Once all the curve points are set, press the down-arrow key. The curve status flashes on the display. Press the Edit key then press the up-arrow key to turn it on. Press the Edit key once again to validate the curve status.

Min Ventilation
Variable Output 1 ◆
Curve Stat On
- Follow the same procedure to adjust the minimum ventilation curve of the second variable output.

5.17.4 Relative Humidity (RH) Control

If a humidity probe is being used, the EXPERT-VT212 has different mechanisms to control the humidity level in the barn.

If relative humidity is too high:

- The humidity level can be decreased by increasing the fan speed in minimum ventilation;
- Mist units are shut off whenever the relative humidity exceeds a user-defined maximum limit (this applies to cooling stage and to fan stage 3-12 relays that are configured in timer mode);
- Heater outputs can be activated in timer mode whenever the relative humidity exceeds a user-defined limit.

If relative humidity is too low:

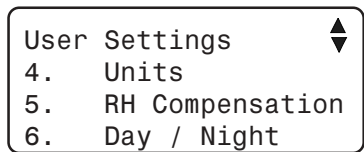
- Mist units can operate according to an independent cycle to increase the humidity level in the barn.

All these mechanisms must be enabled separately as explained below.

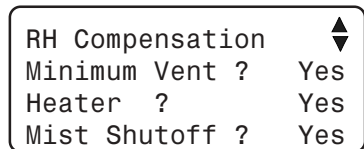
5.17.4.1 Activating RH Compensation Options

Following steps explain how to activate mechanisms used to compensate for high or low humidity levels.

Go to the "**5. RH Compensation**" menu from the **USER** main menu. Note that this menu only appears only if the relative humidity probe has been activated during the installation (see sec. 5.16.4.2).



Minimum ventilation speed : Press the Edit key and set to Yes to use the minimum ventilation compensation option to decrease the humidity level whenever it is too high.



Heater Timer: Press the Edit key and set to Yes to use the heaters in timer mode in order to decrease the humidity level when it is too high.

Mist Shutoff: Press the Edit key and set to Yes to use the mist shutoff feature to decrease the humidity level whenever it is too high.

Mist on Low RH: Press the Edit key and set to Yes to use the mist on an independent timer to increase the humidity level whenever it is too low.

Minimum Vent ?	Yes
Heater ?	Yes
Mist Shutoff?	Yes
Mist on Lo %RH?	Yes

5.17.4.2 *Adjusting Relative Humidity Set Point*

■ Set the function to **HUMIDITY COMPENSATION** from the main menu using the menu select buttons. Note that this menu is only available if at least one of the mechanisms described above has been enabled and if a humidity probe has been installed (see sec. 5.16.4.2).

■ Select "RH set point" display using the arrow keys.

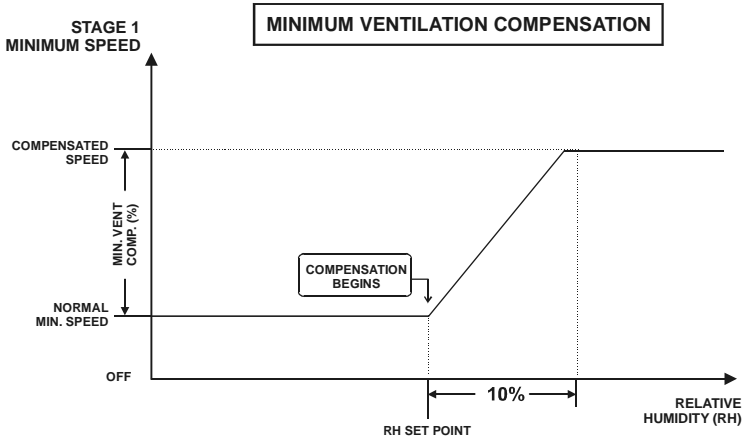
RH Compensation	▲▼
Min vent comp %	30
RH set point %	65
Heat On Time(s)	15

■ Press the Edit key then use the up and down-arrow keys to adjust the relative humidity set point to the desired value. Press the Edit key once again to validate.

5.17.4.3 *Adjusting Minimum Ventilation Compensation*

The stage 1 minimum speed can be adjusted automatically as a function of relative humidity. As humidity increases, the stage 1 minimum speed increases proportionally to compensate for the change. At or below the humidity set point, stage 1 minimum speed is equal to the normal uncompensated speed. The user specifies the increase in minimum speed (%) for a relative humidity equal to the humidity set point + 10%. For example, if the minimum speed is 40% and the compensation adjustment is 30%, the minimum speed will be adjusted to 70% of full speed when the humidity rises 10% above the humidity set point. In addition to adjusting the minimum speed, the humidity compensation feature also changes the operation of the minimum ventilation cycle: if the controller

is operating in minimum ventilation mode when the relative humidity exceeds the humidity set point, the minimum ventilation fans are operated continuously rather than cycled.



- Set the function to **HUMIDITY COMPENSATION** from the main menu using the menu select buttons. The compensation value, expressed in %, added to the minimum speed flashes on the display. Note that this menu is only available if at least one of the mechanisms described at section 5.17.4 has been enabled and if a humidity probe has been installed (see sec. 5.16.4.2)

RH Compensation	▲▼
Min vent comp %	30
RH set point	65
Heater Compensation	

- Press the Edit key then use the up and down-arrow keys to adjust the minimum ventilation compensation to the desired value. Note that this menu only appears if the minimum ventilation compensation has been enabled on section 5.17.4.2. Press the Edit key once again to validate.

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5.17.4.4 Adjusting Mist Shutoff

When the humidity level is too high, the mist units are shut off to avoid increasing the humidity level any further. This means that the cooling stage stops operating whenever the humidity level exceeds the mist shutoff limit. The mist shutoff limit ranges from 20% to 100% (Off) of humidity.

- Set the function to **HUMIDITY COMPENSATION** from the main menu using the menu select buttons. Note that this menu is only available if at least one of the mechanisms described at section 5.17.4 has been enabled and if a humidity probe has been installed (see sec. 5.16.4.2)

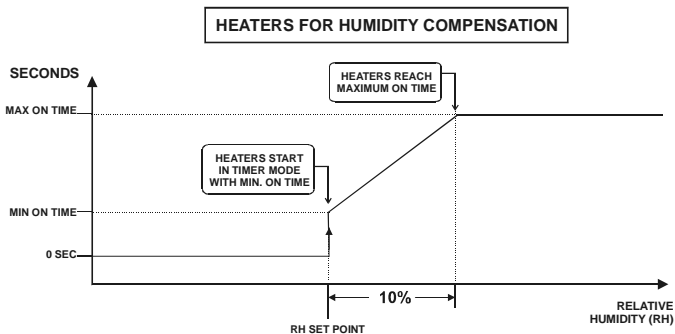
- Press the down-arrow key in order to select the "**Mist Shutoff**" display. Note that this menu only appears if the mist shutoff option has been enabled (see sec. 5.17.4.2).

Heater Compensation	
On Time	15sec
Cycle Time	300sec
Mist Shutoff	85

- Press the Edit key then use the arrow keys to set the humidity level above which the mist units will always be shut off. Press the Edit key once again to validate the value.

5.17.4.5 Adjusting Heater Timer Cycle

Heaters are used in timer mode to compensate for a too high level of humidity. As the humidity increases, the heaters' ON TIME increases proportionally to compensate for the change. The heaters reach their full ON TIME when the humidity is at or above RH Set Point + 10% as shown below. The cycle time can be adjusted from 0 to 900 seconds.



- Set the function to **HUMIDITY COMPENSATION** from the main menu using the menu select buttons. Note that this menu is only available if at least one of the mechanisms described at section 5.17.4 has been enabled and if a humidity probe has been installed (see sec. 5.16.4.2).

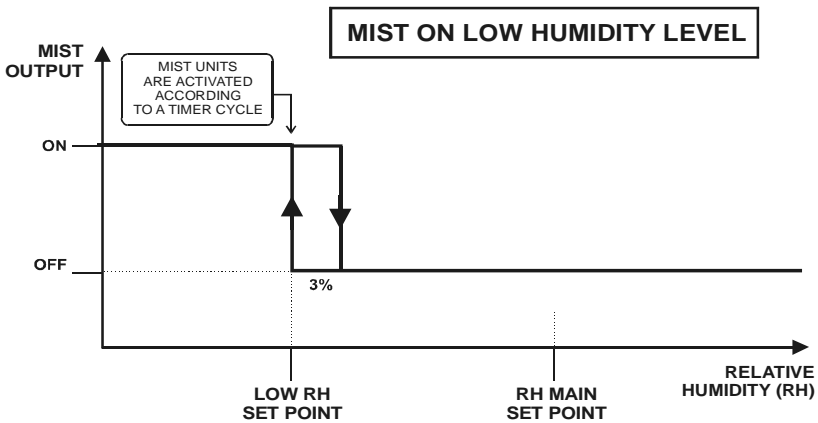
- Select the "**Min OnTime**" display using the arrow keys. Note that this menu only appears if the heater compensation feature has been enabled (see sec. 5.17.4.2).

Heater Compensation	
Min OnTime	15sec
Max OnTime	60sec
Cycle Time	300sec

- Press the Edit key then use the arrow keys to set the minimum ON TIME to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once. The heater maximum ON TIME flashes on the display.
- Press the Edit key then use the arrow keys to set the maximum ON TIME to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once again. The heater CYCLE TIME flashes on the display.
- Press the Edit key then use the arrow keys to set the heater CYCLE TIME to the desired value.

5.17.4.6 Adjusting Mist on Low RH Parameters

An independent timer cycle is used to operate mist units whenever the humidity level in the barn is too low. The user sets the humidity level below which the mist units start operating with this cycle. The Low Humidity Set Point can be adjusted from 0 to 60% of humidity level. The on and off times of the independent mist timer can be adjusted from 0 to 900 seconds.



- Set the function to **HUMIDITY COMPENSATION** from the main menu using the menu select buttons. Note that this menu is only available if at least one of the mechanisms described at section 5.17.4 has been enabled and if a humidity probe has been installed (see sec. 5.16.4.2).

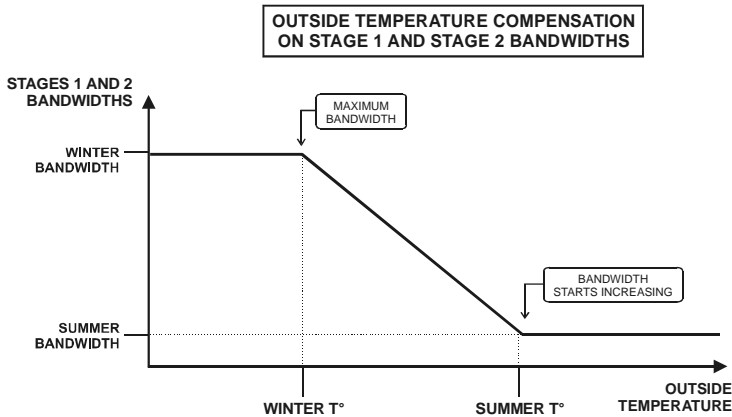
- Select the "Lo Set Point" menu using the arrow keys. Note that this menu only appears if the "mist on low RH" feature has been enabled (see sec. 5.17.4.2).

Mist on Lo %RH	▲▼
Lo SetPoint	10
On Time	30sec
Off Time	240sec

- Press the Edit key and adjust the low humidity set point to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key. The ON TIME of the independent mist timer is displayed.
- Press the Edit key and use the arrow keys to adjust the ON TIME to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key. The OFF TIME of the independent mist timer is displayed.
- Press the Edit key and adjust the OFF TIME of the independent mist timer to the desired value. Press the Edit key once again to validate.

5.17.5 Outdoor Compensation on Stages 1-2 bandwidths

Stages 1 and 2 bandwidths can be adjusted automatically as a function of outdoor temperature compensation. As the outside temperature decreases, stages 1 and 2 bandwidths increase gradually to compensate for the change. The user specifies the bandwidth used in summer as well as the bandwidth used in winter for both variable outputs of stages 1 and 2. The bandwidths can be adjusted from 1 to 10° F (0.6 to 5.6° C). The winter's bandwidth must be even or greater than the summer's bandwidth.



5.17.5.1 Setting Summer and Winter Bandwidths

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "**2. Fan Stages**" option using the arrow keys. The stage 1 start temperature flashes on the display.
- Press the down-arrow key once. The summer bandwidth for the first variable output of stage 1 flashes on the display. Note that this menu only appears if the outside compensation feature has been enabled on variable Stages 1-2 (see sec. 5.16.3).

Ventilation	▲▼
Stage 1 On	70.0
Var 1 Summer BD	0.5
Var 1 Winter BD	4.0

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- Press the Edit key then use the arrow keys to set the summer bandwidth for the first variable output of stage 1 to the desired value. Press the Edit key once again to validate.
- Press the down-arrow key once. The winter bandwidth for the first variable output of stage 1 flashes on the display.
- Press the Edit key then use the arrow keys to set the winter bandwidth for the first variable output of stage 1 to the desired value.
- Proceed in similar fashion to set summer and winter bandwidths for the second variable output of stage 1 as well as for the two variable outputs of stage 2.

5.17.5.2 *Setting Summer & Winter Temperatures*

When the temperature reaches the summer reference point, stages 1 and 2 bandwidths are at their minimum values. The bandwidths reach their maximum value when the temperature drops to the winter reference point.

- Set the function to **START / STOP TEMPS** from the main menu using the menu select buttons.
- Select "9. Outdoor Comp." option using the arrow keys. The summer and winter reference temperatures are displayed. Note that this menu only appears if the outside compensation feature has been enabled on variable stages 1-2 (see sec. 5.16.3).

Outdoor Compensation	
Summer Temp.	60.0
Winter Temp.	50.0

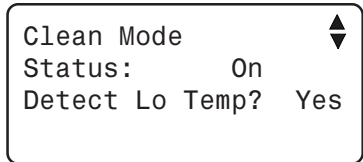
- Press the Edit key then use the arrow keys to set the summer's reference temperature to the desired value.
- Press the down-arrow key. The winter's reference temperature flashes on the display.
- Press the Edit key then use the arrow keys to set the winter's reference temperature to the desired value.

5.17.6 Clean Mode

The clean mode is used to operate heaters at low levels in empty rooms. A set point, defined by the user, determines the target temperature for these rooms (see sec. 5.2.3). When the temperature drops below the empty set point, an alarm can be generated. A soaking cycle can also be applied in clean mode (see sec. 5.10).

5.17.6.1 Activating Clean Mode

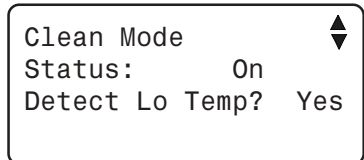
- Set the function to **CLEAN MODE** from the main menu using the menu select buttons. The clean mode status flashes on the display.



- Press the Edit key and set the clean mode to on. Press the Edit key once again to validate the clean mode status.

5.17.6.2 Activating Low Temp. Alarm on Empty Zones

- Set the function to **CLEAN MODE** from the main menu using the menu select buttons. The clean mode status flashes on the display.



- Press the down-arrow key to select "Detect Lo Temp?" display.
- Press the Edit key then press the up-arrow key to activate low temperature alarms in empty zones.

5.17.7 Test Mode

A test mode allows you to simulate temperature changes and verify controller performance. In test mode, the room temperature probe inputs are turned off, allowing the user to change the temperature used by the controller to operate the stages. The controller operates as before using the new temperature settings.

Adjusting Room Temperature


When the room temperature is adjusted, the controller bypasses the temperature probes inputs and uses the new value as a reference. The Test Mode is deactivated after 15 minutes of inactivity.

- Set the function to **TEST MODE** from the main menu using the menu select buttons. The on/off Test Mode state is displayed. Press the Edit key and set it to ON using the up-arrow key. Press the Edit key once again to validate the test mode status.

Test Mode	Off
Temp:	69.5 °F

- Press the down-arrow key to select the room temperature.
- Press the Edit key then use the arrow keys to set the room temperature to the desired value.

6. TECHNICAL SPECIFICATIONS

Type	EXPERT-VT212
Main supply fuse F1	 3A, fast-blow
Mains supply/frequency	85-250V, 50/60Hz
0-10V outputs 1-2	0-10Vdc, 30mA source max.
Precision on 0-10V outputs	± 1 %
14Vdc output max.	14 Vdc ± 10%, regulated, 250mA
Alarm contact	10mA to 2A, 24 Vac or dc max.
Housing	IP54, plastic casing
Operating temperature	32 to 104° F (0 to 40° C)
Storage temperature	5 to 122° F (-15 to 50° C)
Ambient relative humidity	max. 95%
Pot + output	3.0V, 20mA max.
Potentiometer inputs	1-20K pot., linear
RH input	4-20mA
Pressure input	4-20mA
Temperature inputs	1K @ 77° F (25° C), NTC
Outputs 1-18	Dry contact, 30A resistive Max Motor Load 1HP @ 120 VAC, 2HP @ 240VAC
Variable outputs 1-2	10A mot. max, 250VAC
Fuse on variable outputs	15A slow blow

The room temperature where the controller is located MUST ALWAYS REMAIN BETWEEN 32° AND 104°F (0° AND 40°C).

7. FACTORY SETTINGS

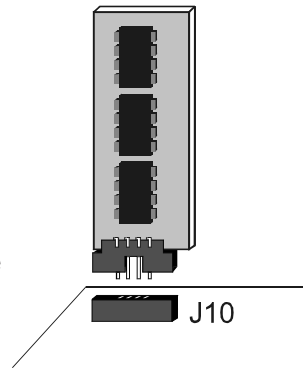
PARAMETER		FACTORY SETTING	RANGE OF VALUES
Temperature Set Point		70°F	-40 to 100°F (-40 to 37.8°C)
Herd Age		OFF	1 to 450 days
Minimum Ventilation	On Time	15s	0 to 900s
	Cycle Time	120s	0 to 900s
	Humidity Compensation	30	0 to 100%
Cooling	On Time	15s	0 to 900s
	Off Time	15s	0 to 3600s
	Humidity Shutoff	OFF	20 to 100%
Soaking	On Time	60s	0 to 900s
	Cycle Time	60m	0 to 240m
Stir Fan	Cold Offset	5.0°F	0.5 to 20.0°F (0.3 to 11.1 °C)
	Hot Offset	5.0°F	0.5 to 20.0°F (0.3 to 11.1 °C)
	Differential	2.0°F	0.5 to 20.0°F (0.3 to 11.1 °C)
Clock Outputs	Running Time	0	0 to 8h:59m:59s
Alarms	Critical Alarm Temperature	100.0°F	0.5 to 120°F (0.3 to 66.7°C) above the set point
	High Alarm Temperature	90°F	0.5 to 40°F (0.3 to 22.2°C) above the set point
	Low Alarm Temperature	60°F	0.5 to 40°F (0.3 to 22.2°C) below the set point
	Empty Zones Minimum Temperature	32°F	0.5 to 40°F (0.3 to 22.2°C) below the set point




8. USING THE CONFIGURATION MODULE



8.1 Loading a Configuration





Loading a Configuration from the Configuration Module into the EXPERT-VT212 Controller:

- 1- Position the configuration module on the J10 connector, at the top left corner of the board, with the components **FACING DOWN**.






- 2- Simultaneously press the **MENU SELECT** up and down-arrow keys   during a 5 second delay. The following message is displayed :
" Load Configuration Press  to start".








Load Configuration 
Press  to start

- 3- Simultaneously press the **ADJUSTMENT** up and down-arrow keys  . The configuration starts to load. Wait until it is completely loaded.
- 4- Once the configuration has reached 100%, press the **MENU SELECT** up and down-arrow keys   simultaneously to exit this menu.
- 5- The new configuration is now loaded. Remove the configuration module from the connector.

8.2 Saving a Configuration

Saving a Configuration from the EXPERT-VT212 Controller into the Configuration Module:

- 1- Place the configuration module on the J10 connector, at the top left corner of the board, with the components FACING DOWN.
- 2- Simultaneously press the **MENU SELECT** up and down-arrow keys   during a 5 second delay. The following message is displayed : " Load Configuration Press  to start".

Save Configuration 
Press  to start
- 3 - Press the up-arrow key once. The following message is displayed: "Save Configuration Press  to start".
- 4- Simultaneously press the **ADJUSTMENT** up and down-arrow keys  . The configuration starts to save. Wait until it is completely saved.
- 5- Once the configuration has reached 100%, press the **MENU SELECT** up and down-arrow keys   once again to exit this menu.
- 6- The new configuration is now saved on the configuration module. Remove the configuration module from the connector.

9. INSTALLATION REPORT

CLIENT	
NAME:	<input type="text"/>
ADDRESS:	<input type="text"/>
	<input type="text"/>
CITY:	<input type="text"/>
TEL.:	<input type="text"/>
FAX:	<input type="text"/>

INSTALLER	
NAME:	<input type="text"/>
ADDRESS:	<input type="text"/>
	<input type="text"/>
CITY:	<input type="text"/>
TEL.:	<input type="text"/>
FAX:	<input type="text"/>

PROBE ASSIGNMENT (sec. 5.16.9)

Heater 1 probes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
Heater 2 probes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
Heater 3 probes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
Heater 4 probes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
0-10V output 1 probes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
0-10V output 2 probes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
Inlet 1 probes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
Inlet 2 probes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
Activated probes for Set 1 (5.16.4)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
Activated probes for Set 2 (5.16.4)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6

USER SETUP	
1. LCD CONTRAST (SEC. 5.1)	
LCD Contrast value	_____ (10 to 100%)
2. TEMPERATURE PROBES (SEC. 5.16.4)	
Temperature probes used	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6
3. OTHER PROBES (SEC. 5.16.4)	
Use relative humidity sensor (RH) ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Use water meter ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Use outdoor temperature probe ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Use static pressure ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
4. UNITS (SEC. 5.16.3.1)	
Time display	<input type="checkbox"/> AM/PM <input type="checkbox"/> 24 HOURS
Temperature	<input type="checkbox"/> °F <input type="checkbox"/> °C
Water	<input type="checkbox"/> GALLONS <input type="checkbox"/> LITERS
Static pressure	<input type="checkbox"/> INCHES OF WATER ("WC) <input type="checkbox"/> PASCAL (Pa)
5. RELATIVE HUMIDITY (RH) COMPENSATION (SEC. 5.17.4)	
RH compensation on min. ventilation ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
RH compensated by heaters ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
RH compensated with mist shutoff ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Mist on low relative humidity level?	<input type="checkbox"/> YES <input type="checkbox"/> NO
6. DAY / NIGHT SETTINGS (SEC. 5.16.6)	
Use night set point ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Use night minimum ventilation ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Day time	_____ : _____
Night time	_____ : _____
Transition time	_____ (15-120 min)
Min. V1	_____ (0 to 100%)
Min. V2	_____ (0 to 100%)
7. INSTALLATION (SEC. 5.16.3)	
Number of feeders	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Number of heater stages	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Number of fan stages	_____ (1 to 12)
Number of clock outputs	<input type="checkbox"/> 1 <input type="checkbox"/> 2
Number of inlets	<input type="checkbox"/> 1 <input type="checkbox"/> 2
Number of 0-10V outputs	<input type="checkbox"/> 1 <input type="checkbox"/> 2
0-10V output 1 used for	<input type="checkbox"/> VENTILATION <input type="checkbox"/> HEATING
0-10V output 2 used for	<input type="checkbox"/> VENTILATION <input type="checkbox"/> HEATING
Use tunnel ?	<input type="checkbox"/> YES <input type="checkbox"/> NO

USER SETUP	
	7. INSTALLATION . . .
Use cooling ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Use stir fan ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Use soaking ?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Variable 1 min. speed	_____ (10 to 100%)
Variable 1 motor curve	_____ (1 to 10)
Variable 2 min. speed	_____ (10 to 100%)
Variable 2 motor curve	_____ (1 to 10)
Outdoor comp. on variables?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Digit display	<input type="checkbox"/> T° <input type="checkbox"/> STATIC PRESSURE (SP) <input type="checkbox"/> T°/SP <input type="checkbox"/> T°/INLET 1 (I1) <input type="checkbox"/> T°/I2 <input type="checkbox"/> SP/I1 <input type="checkbox"/> SP/I2 <input type="checkbox"/> I1/I2
	8. PASSWORD (SEC. 5.16.2)
Installer password	_____

EXPERT-VT212

Relay Assignment Template: Relays 1-18

Relay	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	V1	V2
Heater 1																				
Heater 2																				
Heater 3																				
Heater 4																				
Fan 1																				
Fan 2																				
Fan 3																				
Fan 4																				
Fan 5																				
Fan 6																				
Fan 7																				
Fan 8																				
Fan 9																				
Fan 10																				
Fan 11																				
Fan 12																				
Inlet 1 Open																				
Inlet 1 Close																				
Inlet 2 Open																				
Inlet 2 Close																				
Tunnel Open																				
Tunnel Close																				
Cool 1																				
Soaking																				
Stir Fan																				
Clock 1																				
Clock 2																				