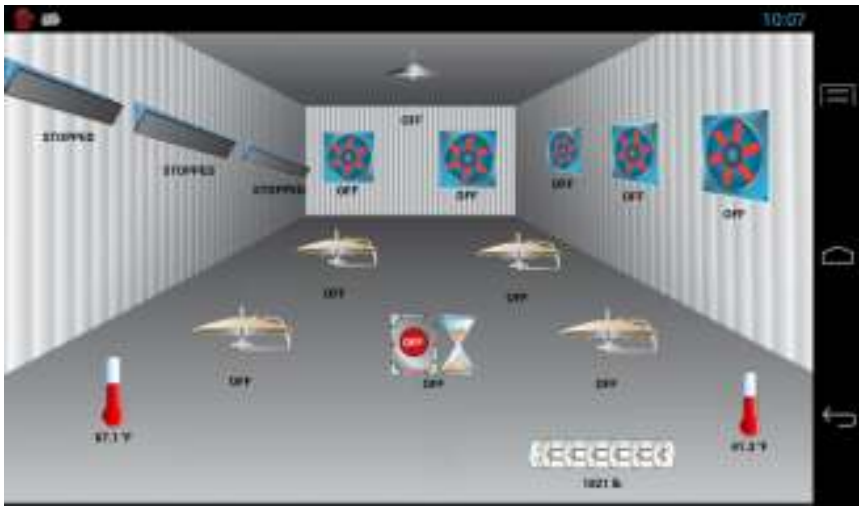
AVS



Installation / User's Guide

ATTENTION ELECTRICIAN
SEE WIRING DETAILS ON PAGES A-3 TO A-10 AND
ADDITIONAL INFORMATION IN SECTION B

WARNINGS AND PRECAUTIONS

Although the manufacturer has made every effort to ensure the accuracy of the information contained herein, this document is subject to change without notice due to ongoing product development.

WARNINGS AND PRECAUTIONS

Equipment, probe failure, blown fuses and/or tripped breakers may prove harmful to the contents of the building. Therefore it is strongly recommended to install backup devices and alarm or warning devices. Spare equipment should also be available at the owner's site. Equipment manufactured by the manufacturer is protected against normal line surges. High surges caused by thunderstorms or power supply equipment may damage this equipment. For added security against line voltage surges it is recommended that surge and noise suppression devices be installed at the electrical distribution panel. Use of shielded cable for probes is recommended for protection against lightning. These devices are available from most electrical supply distributors.

RECOMMENDATIONS

The manufacturer recommends that all installation procedures described herein be performed by a qualified electrician or installation technician. Furthermore the manufacturer recommends testing all the functions and equipment connected to the controller, including the alarm system and backup devices, after installation, after changes to the installation and every month after that.

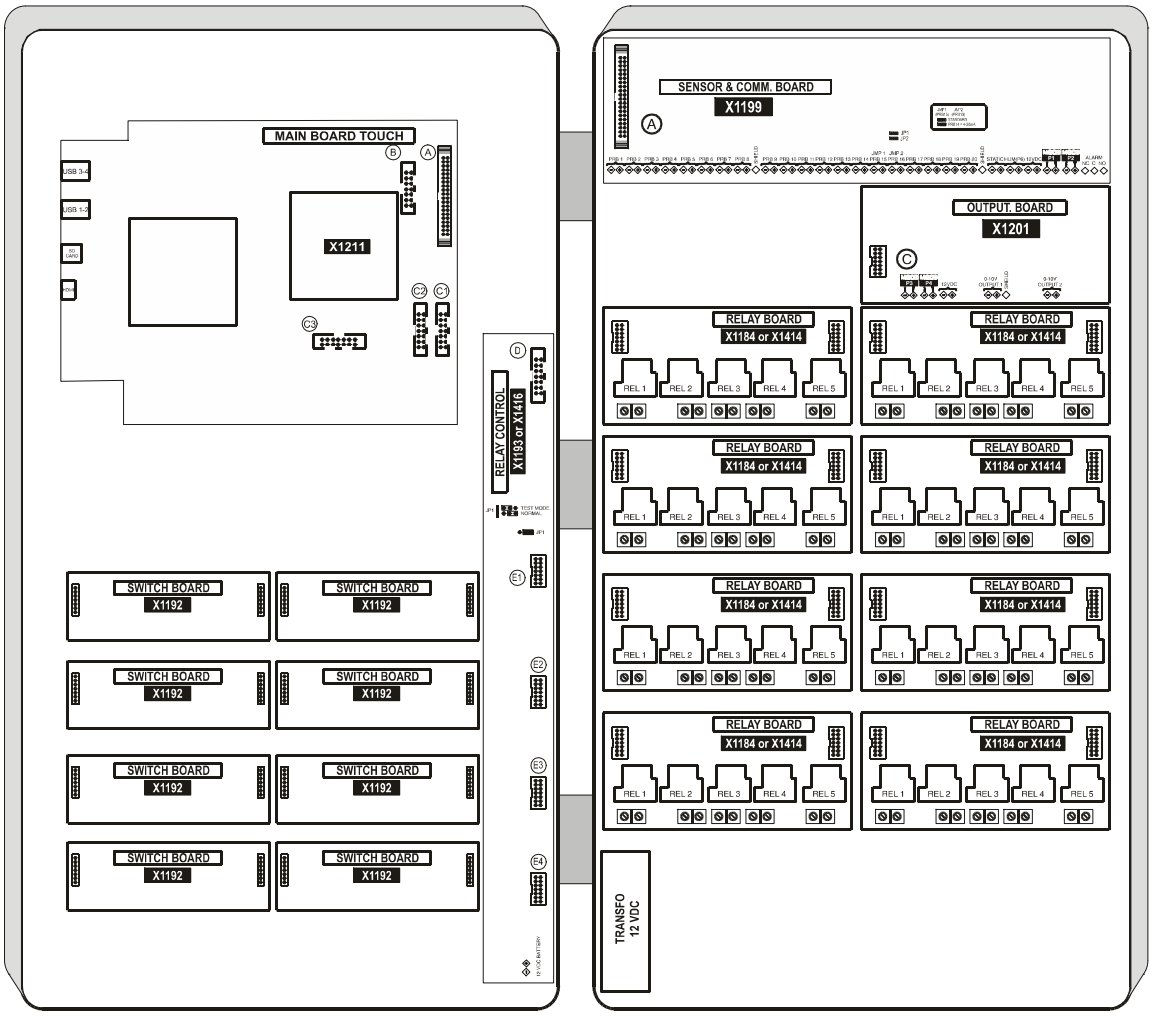
Fuse verification and replacement, as well as the proper setting of control values shall be the responsibility of the owner of this equipment.

WIRING DIAGRAM SECTION A

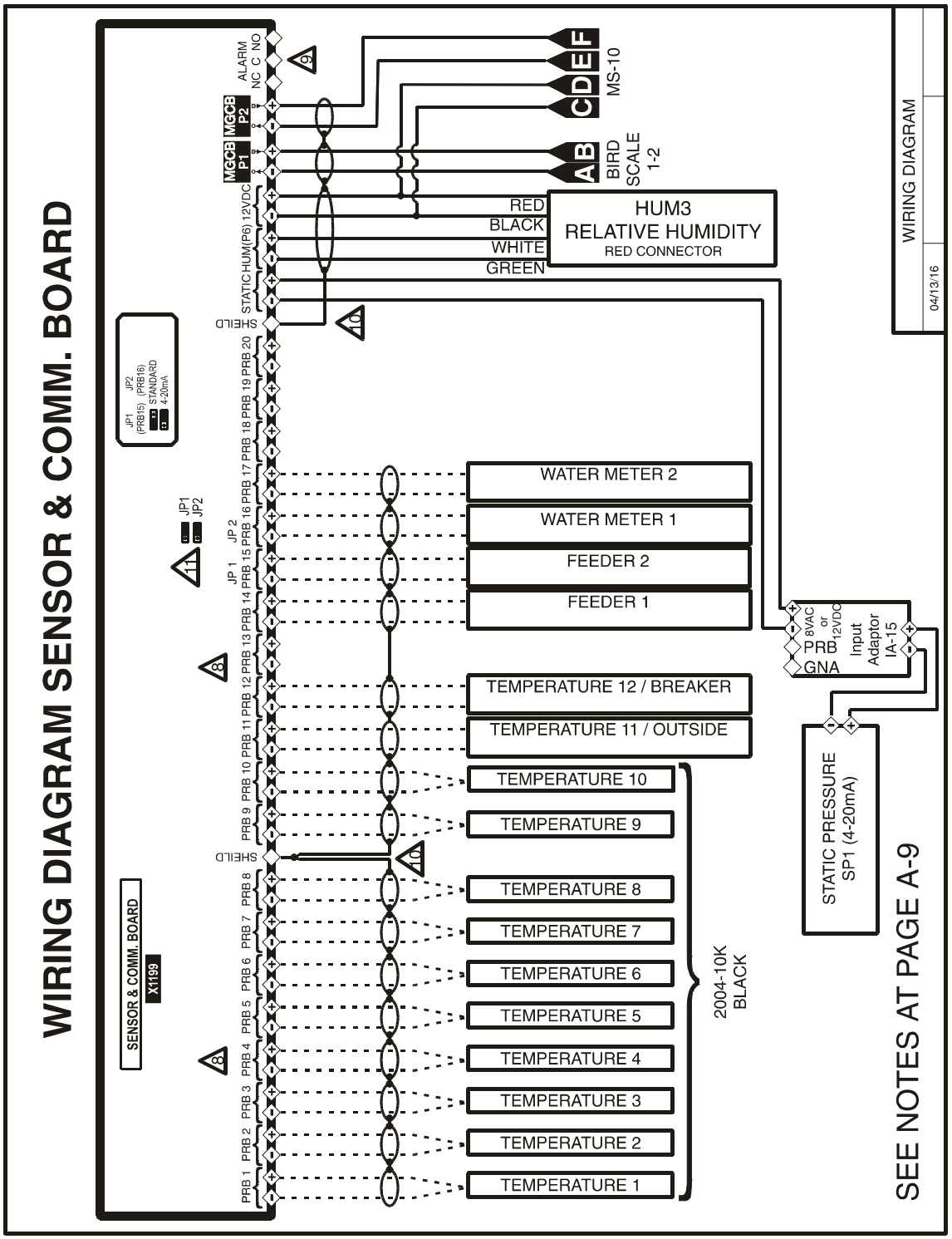
WIRING DIAGRAM

BOARD LAYOUT AND IDENTIFICATION*

MASTER CONTROL



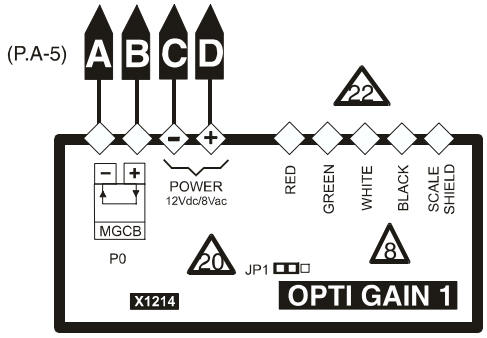
* Some board might not be present according to your setup.


WIRING DIAGRAM SENSOR & COMM. BOARD
SENSOR & COMM. BOARD
X1199
ALARM NC C NO
MC⊕B P1
MC⊕B P2
12VDC
STATIC HUM(P6)
SHIELD
PRB 1 PRB 2 PRB 3 PRB 4 PRB 5 PRB 6 PRB 7 PRB 8 PRB 9 PRB 10 PRB 11 PRB 12 PRB 13 PRB 14 PRB 15 PRB 16 PRB 17 PRB 18 PRB 19 PRB 20
JP1 (PRB15) JP2 (PRB16) STANDARD 4-20mA
JP1 JP2
JP 1 JP 2
MS-10
C D E F
BIRD SCALE 1-2
A B
RED
BLACK
WHITE
GREEN
HUM3
RELATIVE HUMIDITY
RED CONNECTOR
WATER METER 2
WATER METER 1
FEEDER 2
FEEDER 1
TEMPERATURE 12 / BREAKER
TEMPERATURE 11 / OUTSIDE
TEMPERATURE 10
TEMPERATURE 9
TEMPERATURE 8
TEMPERATURE 7
TEMPERATURE 6
TEMPERATURE 5
TEMPERATURE 4
TEMPERATURE 3
TEMPERATURE 2
TEMPERATURE 1
2004-10K BLACK
PRB
GNA
8VAC or 12VDC
Input Adaptor IA-15
STATIC PRESSURE SP1 (4-20mA)
SEE NOTES AT PAGE A-9
WIRING DIAGRAM
04/13/16

WIRING DIAGRAM

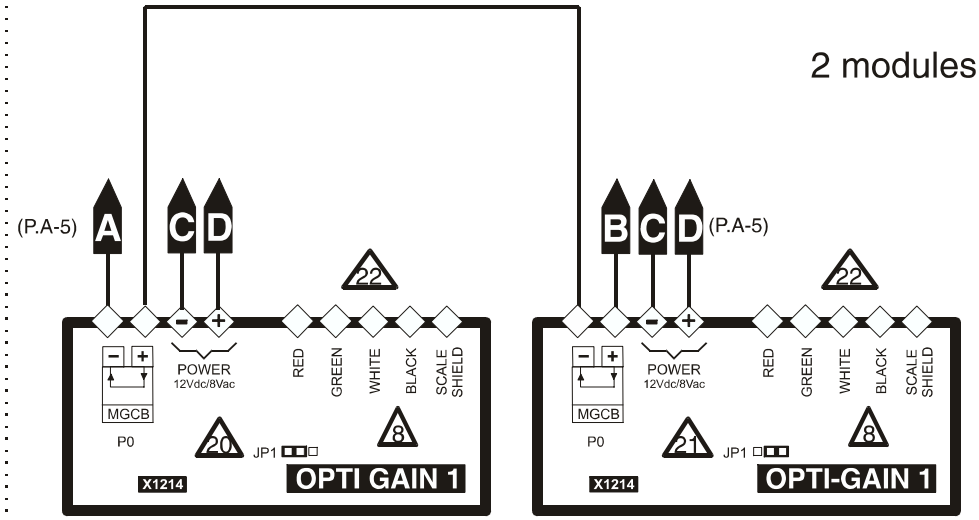
WIRING DIAGRAM
OPTI-GAIN 1

1 module



OR

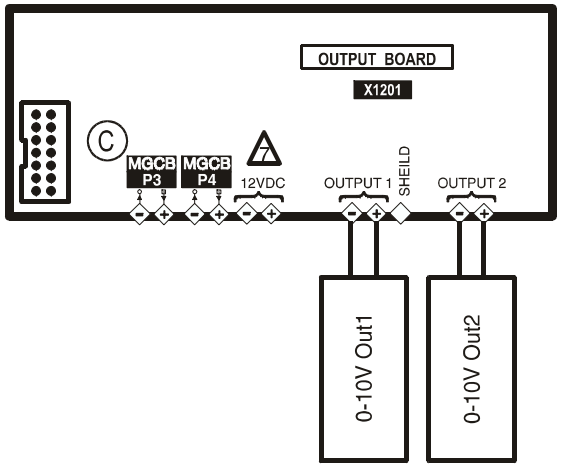
2 modules



SEE NOTES AT PAGE A-9

WIRING DIAGRAM		
04/13/16		

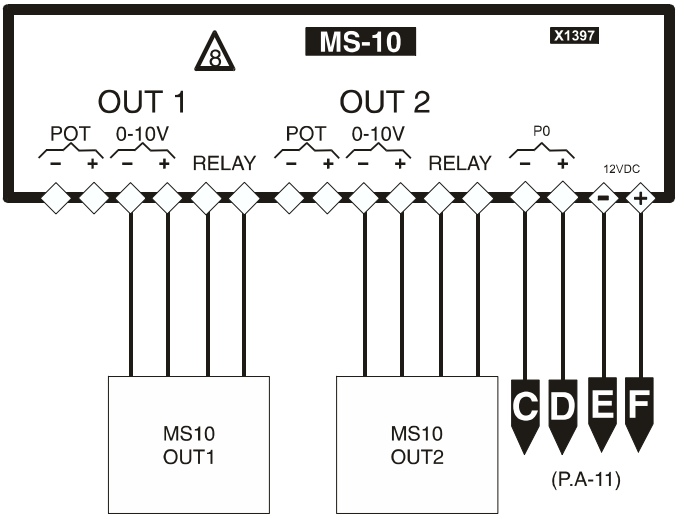
WIRING DIAGRAM OUTPUT BOARD



SEE NOTES AT PAGE A-9

WIRING DIAGRAM		
04/13/16		

WIRING DIAGRAM
MS10



SEE NOTES AT PAGE A-9

WIRING DIAGRAM		
04/13/16		

ELECTRICIAN'S NOTES

1 ..... (PROBE WIRING) SHIELDED WIRE AWG #22 WITH 16/30 STRANDING, 500ft (150m) MAXIMUM LENGTH (Ex.: DECA 73-310).
For other probe, refer to specific probe manual for appropriate maximum length and wire size or use AWG #22, 500ft (150m) MAXIMUM LENGTH.

2 ——— (COMMUNICATION WIRING) SHIELDED, TWISTED PAIR (8 TWIST/FT). MAX LENGTH FOR 350PF/M CABLE : 500FT (150M). MAX LENGTH FOR 89PF/M CABLE : 820FT (250M).

3 ▬▬▬ HIGH VOLTAGE WIRE INSTALLED ACCORDING TO LOCAL WIRING CODE.

4 INSTALL LOW VOLTAGE WIRES (PROBES, COMPUTER LINK OR POTENTIOMETER WIRES) AT LEAST 12 INCHES (30cm) AWAY FROM HIGH VOLTAGE WIRES (120/230VAC, 24VDC). ALWAYS CROSS HIGH AND LOW VOLTAGE WIRES AT A 90-DEGREE ANGLE.

△5 RELAYS : 20A @250 VAC RESISTIVE, MOTOR 2HP @250 VAC, 1HP 120 VAC AT EACH OUTPUT.

△6 TRIAC : THE CURRENT SHALL NOT EXCEED 8A AT EACH OUTPUT. SEE SPECIFICATIONS SECTION FOR DETAILS.

△7 MAXIMUM 2 WIRES OF SAME SIZE PER BLACK TERMINAL, NO BIGGER THAN AWG #12, NO SMALLER THAN AWG #22.

△8 1 WIRE ONLY PER GREEN TERMINAL. USE WIRE CONNECTOR IF YOU WANT TO CONNECT MORE THAN 1 WIRE, NO BIGGER THAN AWG #12, NO SMALLER THAN AWG #28.

△9 CHECK INSTALLATION SECTION FOR ALARM WIRING.

△10 USE SHIELD FOR SHIELDING PURPOSE ONLY. CONNECT 1 END AND 1 END ONLY OF THE SHIELD TO THE CONTROL CIRCUIT COMMON END ⏚. NEVER LEAVE BOTH ENDS OF THE SHIELD UNCONNECTED. NEVER CONNECT BOTH ENDS OF THE SHIELD TO COMMON ⏚. THE USE OF A SHIELD FOR ALL PROBES AND POTENTIOMETERS IS MANDATORY.

△11 JP1 - JUMPER MUST BE INSTALLED ON PIN 2-3 = STANDARD AND
JP2 - JUMPER MUST BE INSTALLED ON PIN 2-3 = STANDARD

△12 THE CURRENT SHALL NOT EXCEED 13.5A AT EACH OUTPUT (OUT 1-2) FOR A RESISTIVE LOAD (LIGHTS) AND FOR AN INDUCTIVE LOAD (FANS), THE CURRENT SHALL NOT EXCEED 12A AT EACH OUTPUT (OUT 1-2).

△13 VARIABLE BOARD (X1279) OF THE V4 MODULE REQUIRES THE SAME PHASE AND VOLTAGE AS THE MODULE MAIN BOARD (X1335).

△14 REFER TO FIGURE 14 FOR WIRING DETAILS.

WIRING DIAGRAM

15 JP1 - JUMPER MUST BE INSTALLED ON PIN 2-3 = 4-20mA AND
JP2 - JUMPER MUST BE INSTALLED ON PIN 1-2 = STANDARD

16 IF A STATIC PRESSURE PROBE IS USED, JUMPER JP1 MUST BE SET TO POSITION 2-3 (4-20mA). OTHERWISE, JUMPER JP1 MUST BE INSTALLED IN POSITION 1-2 (STANDARD).

17 JP3 - JUMPER MUST BE INSTALLED ON PIN 1-2 = ID1 AND
JP4 - JUMPER MUST BE INSTALLED ON PIN 2-3 = 19200bps

18 JP1 - JUMPER MUST BE INSTALLED ON PIN 1-2 = ID1 AND
JP2 - JUMPER MUST BE INSTALLED ON PIN 1-2 = 19200bps

19 JP1 - JUMPER MUST BE INSTALLED ON PIN 2-3 = ID2 AND
JP2 - JUMPER MUST BE INSTALLED ON PIN 1-2 = 19200bps

20 JP1 - JUMPER MUST BE INSTALLED ON PIN 1-2 = ID1

21 JP1 - JUMPER MUST BE INSTALLED ON PIN 2-3 = ID2

22 REFER TO OPTI-GAIN 1 MANUAL FOR WIRING DETAILS.

23 REFER TO THE FEED BIN SCALE INSTALLATION MANUAL FOR MORE DETAILS OF THE FEED BIN TRANSMITTER MODULE.

24 JP4 - JUMPER MUST BE INSTALLED ON PIN 1-2 = ID1 AND
JP4 - JUMPER MUST BE INSTALLED ON PIN 2-3 = ID2 FOR THE SECOND MODULE, IF 2 MODULE ARE USED ON THE SAME PORT.

25 JP3 - JUMPER MUST BE INSTALLED ON PIN 2-3 = ID2 AND
JP4 - JUMPER MUST BE INSTALLED ON PIN 2-3 = 19200bps

INSTALLATION
SECTION B

This section will inform the electrician on proper wiring and installation procedures for the controller.

The manufacturer recommends that the following installation instructions be followed to as closely as possible, and that all work be performed by a certified electrician. Failure to do so may void the warranty.

Unpacking

Unpack the controller and inspect contents for damage. Should the contents appear to be damaged, contact your local distributor to return the equipment.

The package should contain the following standard items:
1 Controller
4 Brackets / 4 Screws
1 Installation / User's Guide

Mounting hardware required

This is the list of the mounting hardware needed, which is not included with the product:

Shielded two-wire cable, AWG #22 (to extend probes)
Shielded two-wire twisted pair cable, AWG #22 (used for communication) see electrician note for capacitance selection.
4 screws (to hang the unit onto the wall)
Screwdrivers
Soldering iron kit or approved sealed connectors
Drill and hole saw kit

General installation guidelines

Controller

- It is recommended to install the unit in a hallway to limit the controller exposure to noxious gases.
- In order to avoid condensation problems inside the controller, it is recommended to install the controller on an inside wall. If it is not possible, use spacers to have an air gap between the wall and the controller.
- It is required to install the controller right side up with the cable entry holes facing down.
- The enclosure is watertight, but do not spray water or submerge the controller in water. Cover it carefully with plastic when cleaning the room.
- The controller should be installed in easy-access location but away from damaging elements (heat, cold, water, direct sunlight, …).
- Do not drill the face, the side, the top or the underside of the control.
- Do not install the controller near high-voltage equipment, power supply or transformer.

Electrical cables

- All electrical cables must be installed according to local wiring codes.
- All cable shields must be connected to the shield terminal on the cord to which the cable is connected, except for the cable connected to the optional PC interface. The shield is needed to protect the controller and the modules against any electromagnetic interference generated by lightning or nearby operating machinery.
- Never use the shield as a conductor.
- Connect only one end of the shield to the controller.
- Use separate conduits for the low voltage cables (communication and probes) and the high voltage cables. There must be at least 1 foot (30 cm) between low-voltage and high-voltage conduits.
- If a low voltage cable has to cross over a high voltage cable, make this crossing at 90°.
- All cable connections must be soldered or done with approved sealed connectors.
- Probe cables must be 500’ (150m) or less.
- Communication cables must be 820’ (250m) or less.
- It is prohibited to use overhead cables outside the building.

Electrical power

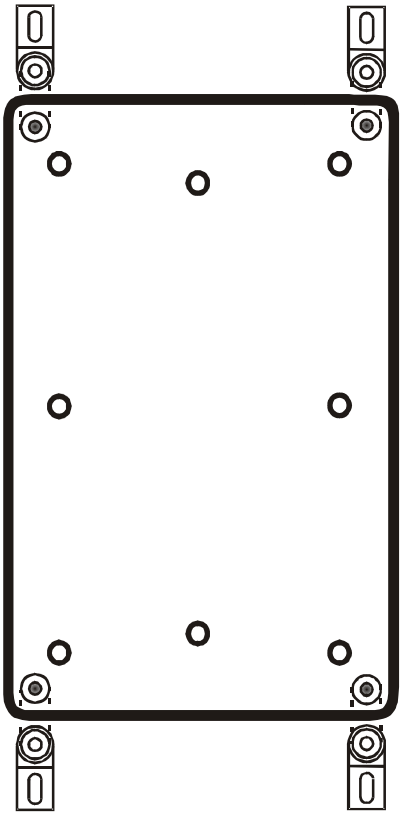
- Protection from electrical surges should be included in the planning of each installation.
- Every module should have a separate breaker to avoid unwanted consequences.
- The V2 and V1 modules require the same voltage and phase as the VAR BOARD (X1204 or X1418) power source.
- The OUT1 and OUT2 outputs require the same phase and same voltage as the controller to operate.
- It is strongly recommended to have a backup power source to ensure life-sustaining conditions in case of power failure (see figure 11).

- It is also strongly recommended to install a backup thermostat system parallel to the controller module output (see figures 12 and 13) to supply sufficient airflow and heating.
- The backup system and alarm must be thoroughly tested and verified as working properly before using the ventilation system.

Mounting

- The enclosure must be mounted in a location that will allow the cover to be completely opened.
- Fasten the four brackets to the four mounting holes on the back of the enclosure using the four screws provided with the brackets.
- Then mount the enclosure on the wall by inserting screws through the brackets' adjustment slots, into the wall. Make sure to position the enclosure so that all wires extend out of the bottom section of the enclosure.
- The bracket slots serve to adjust the position of the controller.
- Once you have adjusted the controller position, tighten the four mounting screws. (see figure 1).

FIGURE NO. 1 Mounting Position and Devices



Connection procedure

Detailed wiring diagrams

Typical Sensor Wiring for Probes

An inside temperature sensor should be located in the area which gives the most accurate temperature reading to achieve optimum ventilation. The sensor should be connected to the controller with a shielded two-wire cable. It should be located in an area protected from operating machinery, animal bites, personnel or anything that could damage the sensor.

The outside temperature sensor should be installed in a location which is not influenced by heat generated from inside the building or direct sunlight. It should also be protected from physical damage.

FIGURE NO. 2 Typical Temperature Probe Wiring

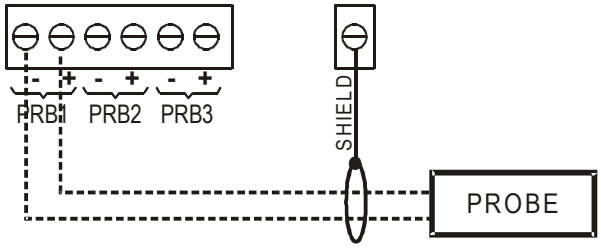


FIGURE NO. 3 Typical Humidity Probe Wiring

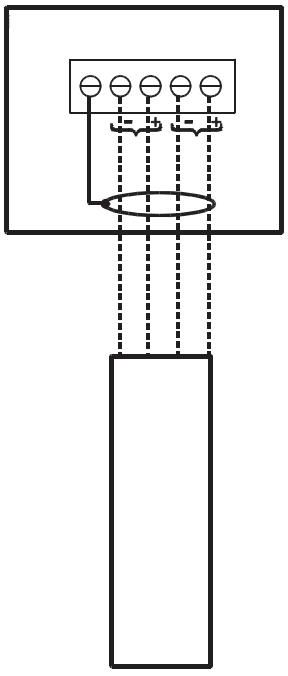
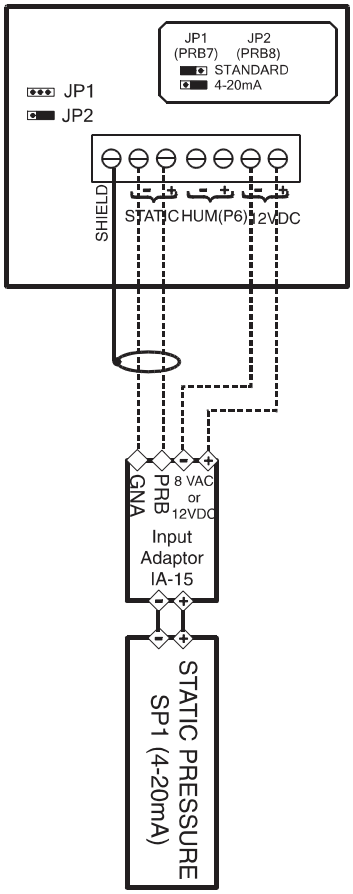


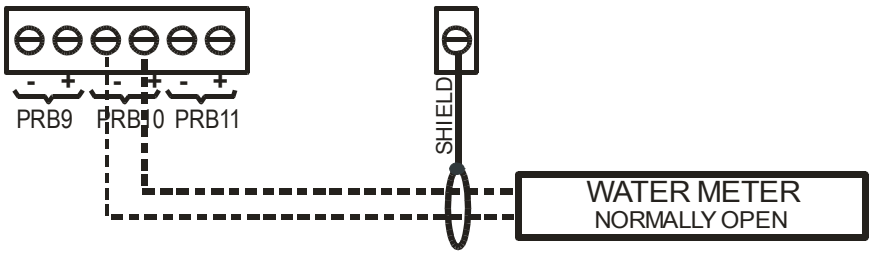
FIGURE NO. 4 Typical Static Pressure Probe Wiring



Typical Water Meter Wiring

This function allows the user to measure the amount of consumed water measured in pulses by the water meter (Example: Kent model C-700 water meter with B-Pulser interface). The water meter interface must have a N.O. contact.

FIGURE NO. 5 Typical Water Meter Wiring

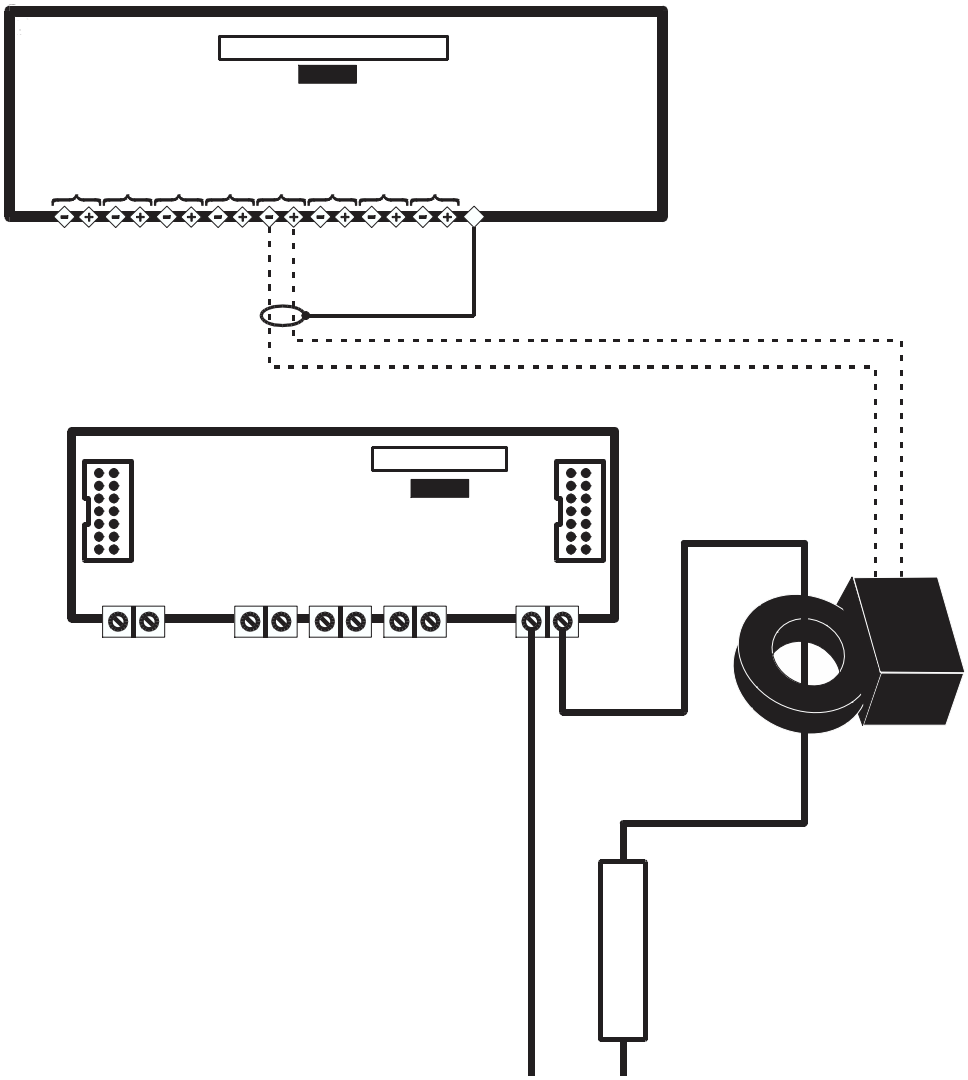


Typical Feed Sensor Wiring

Feed sensors (ex.: CSD-1 Current Switch Detector) should be mounted inside the controller enclosure with the feeder power wire running through the sensor loop. If a single sensor monitors multiple feeder circuit, run the wires from all feeder groups the same direction through the sensor loop.

The best use for a single feed sensor is monitoring your silo auger motor. This provides a clear indication of all feed entering the building and it provides an alarm when the feed silo is empty.

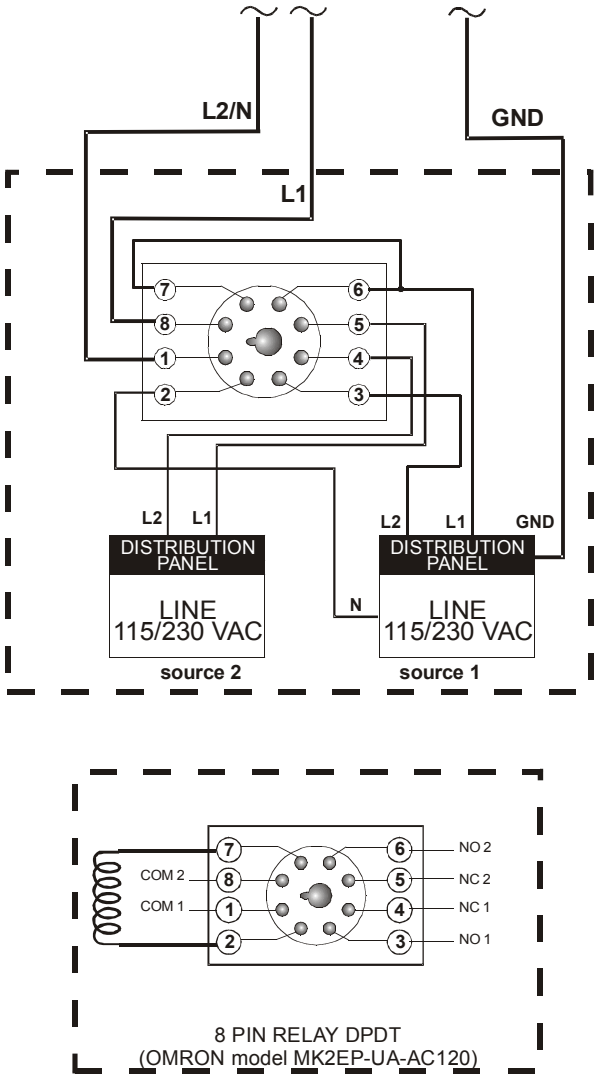
FIGURE NO. 6 Typical Feed Counter Wiring



Typical Power Backup Wiring

A backup relay (DPDT) is connected to the power source 1 in normal operation but will switch to the power source 2 if source 1 is disabled. The backup relay should be selected to ensure it is able to support the required power load.

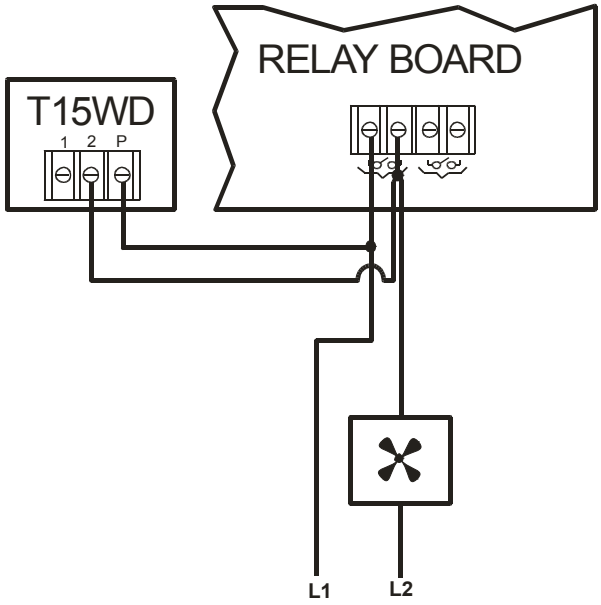
FIGURE NO. 7 Typical Power Backup Wiring



Typical Backup Thermostat Wiring

If the controller or a module fails, the backup thermostats will activate the dedicated fan or heater as soon as temperature reaches the set point of the thermostat. The thermostat must be accessible for adjustment and must be set at 3 to 5 degrees above the fan's set point or 3 to 5 degrees under the heater set point.

FIGURE NO. 8 Typical Backup Thermostat Wiring on ON/OFF Stage



Typical Alarm Connection Wiring

The controller provides a normally open and normally closed dry contact to set off an alarm in case low or high temperature condition occurs. Moreover, this same contact can be used to signal a power failure or other malfunctions. It may be connected to an alarm system or directly to a siren and/or auto-dialer.

Make the normally closed (NC) or normally open (NO) connections as indicated in figures 15 and 16.

The relay will activate about 30 seconds after an alarm is triggered.

FIGURE NO. 9 Typical Alarm Connection Wiring

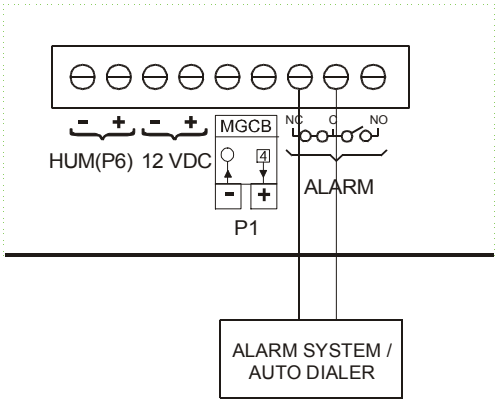
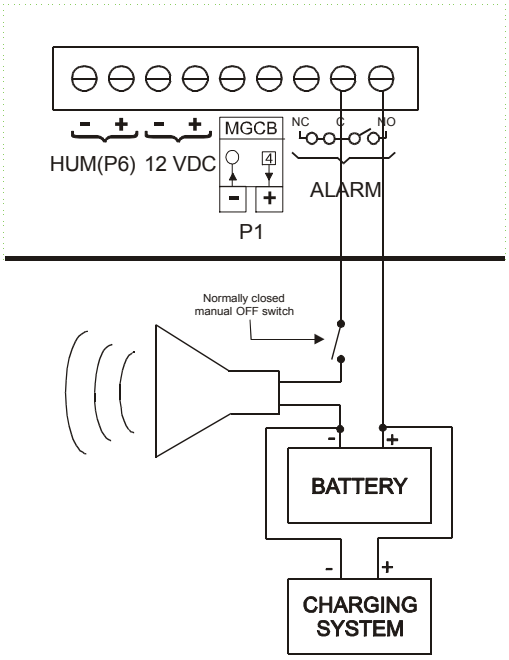


FIGURE NO. 10 Siren Connection Wiring



Powering up procedure

Once the controller is properly mounted on the wall and all modules and sensors are connected to the terminal block, perform the following steps:

Verify all connections

Seal all cable entry holes.

Hermetically close the controller

Close the front panel and the lower access cover.

Put the power on

Secure the front panel with a lock

Controller compatible probes

This is the list of all compatible probes that can be connected with the controller and a short description of their function.

- **Temperature probe 2004-10K (black cap)**

Temperature probe with a temperature range of -58.0 to 140.0 °F.

- **Relative humidity probe HUM 3**

Relative humidity probe with a measuring range of 0 to 100 RH% (red connector).

- **Static pressure probe**

Static pressure probe with a measuring range of -0.000”WC to 0.200”WC.

Controller compatible modules

This is the list of all the compatible modules that can be connected with the controller with a short description of their function.
Variable module

MS-10
Scale module

- **Opti-Gain 1** (Poultry Scale)

Computer interface

- **RF-IN2 Communication Module** (Module inserted into the controller for a wireless communication with the computer interface)

Specifications

CONTROLLER	
Storage temperature	-20°C to 55°C (-4°F to 131°F)
Operating temperature	0°C to 50°C (32°F to 122°F)
Humidity	90% maximum Non-condensing
NORMS	CSA (NRTL/C)
Weight (Small Enclosure)	12.4 kg (27.2 lb)
Size (Small Enclosure)	50cm x 40cm x 20cm (19.7in x 15.8in x 7.9in)
Protection index	IP 66
Warranty	2 years
POWER SUPPLY	
Operational voltage range	90 to 250 VAC
Operational frequency range	45 to 65 Hz
Power supply circuit consumption (CPU Board)	65 W maximum
INPUT BOARD (X1199)	
PROBE INPUTS	
Input measuring range	0 Ohm, open circuit 0-5000 mV 0-20 mA (PRB 15 and 16)
Maximum frequency for the water meter (50% cycle)	4 Hz
Maximum wire length	150 m (500 feet)
Recommended wires	2 strands, shielded, AWG #22
12 VDC SOURCE (12VDC)	
Maximum current allowed	100 mA
COMMUNICATIONS PORTS (P1, P2, HUM)	
Maximum wire length (2400 bps)	250 m (820 feet)
Maximum wire length (19200 bps)	2 m (6.5 feet)
Recommended wire	2 strands, twisted pair, low capacity, shielded, AWG #22
ALARM RELAY (ALARM)	
Maximum current	1 A at 30 VDC
Delay before switching	30 seconds (approximate)
Fuse	1A 250VAC

RELAY BOARD (X1184 or X1414)	
OUTPUT RELAYS	
Maximum Power	20A @ 240VAC
Maximum Current	2HP @ 240VAC, 1HP @ 120VAC
Caution Notice	These relays are rated by UL and CSA at 20A or 2HP. However, for outputs requiring frequent activation (ex : minimum ventilation fans working on a timer) it is recommended not to use more than 1 HP per relay (at 250 VAC)
OUTPUT BOARD (X1201)	
COMMUNICATIONS PORTS (P3 - P4)	
Maximum wire length (2400 bps)	250 m (820 feet)
Maximum wire length (19200 bps)	2 m (6.5 feet)
Recommended wire	2 strands, twisted pair, low capacity, shielded, AWG #22
SOURCE 12 VDC (12VDC)	
Maximum current allowed	100 mA
0-10V OUTPUT (0-10V OUTPUT 1 AND 0-10V OUTPUT 2)	
Output	0-10Volts, 2% precision
Maximum load	10mA
Maximum wire length	30 m (100 feet)
Recommended wire	2 strands, shielded, AWG #22

Important Notice:

- It is important to have a backup system in case of a system failure.
- Low-voltage and high-voltage wires must be passed through different conduits at least 1 foot (30 cm) apart. If low-voltage and high-voltage conduits must be crossed, the crossing must be at a 90-degree angle.
- All wiring must be made by a certified electrician and conform to local electrical regulations.

USER'S GUIDE SECTION C

Glossary

Throughout this document, the following terminology is used.

Main Set Point (MSP) — This is the temperature goal for the room and it is also the reference temperature for all relative settings. Note that the **Main Set Point** may be affected by the **Ramping Function** and the time of day.

Relative Set Point (RSP) — This is the difference between the temperature at which an event will occur and the **Main Set Point**.

Differential — Difference between an activation and a deactivation temperature. For example, with a **Differential** of 1.0°F, the control turns on a fan at 70.0°F when temperature increases, but it will shut it off only at 70.0°F - 1.0°F when temperature decreases. The **Differential** is necessary to avoid oscillations.

Modulation Band — Number of degrees a variable output takes to reach its full intensity.

Growth Day — This is the reference day used for **Ramping Function**. It may be set to OFF, deactivating all **Ramping Function**. If it is adjusted to a value other than OFF, it will be incremented each day.

Growth Curve — The **Growth Curve** is composed of value points and day points. It is used for the **Ramping Function**. When the **Growth Day** is equal to a given day point, the associated value point will be the value taken by the parameter affected by the **Ramping Function**.

Ramping Function — The **Ramping Function** is used to modify a parameter value automatically. When the **Ramping Function** is activated, the affected parameter will be updated each hour according to its **Growth Curve** and the **Growth Day**.

Outside Temperature — This is the temperature read by the outside temperature probe.

Input/Output Table

Inputs	Quantity	Outputs	Quantity
Inside Temperature	2 to 12	Vent Inlet	Up to 1
Outside Temperature	Up to 1	Tunnel Inlet	Up to 1
Breaker Probe	Up to 1	Attic Inlet	Up to 1
Humidity	Up to 1	Heating Unit	Up to 20
Feeder	Up to 2	Sidewall Fan	Up to 10
Static Pressure	Up to 1	Tunnel Fan	Up to 20
Water Meter	Up to 2	Stir Fan	Up to 4
Poultry Scale	Up to 4	Evap Cool	Up to 2
		Inside Fog	Up to 2
		Pump	Up to 1
		Feeder	Up to 1
		Lights	Up to 1
		Curtain	Up to 4
		Clock	Up to 10
		Egg Room Heater	Up to 2
		Egg Room Cooler	Up to 2
		Alarm	1

Required Equipment

Quantity	Description
1	Controller
Up to 8**	Relay Board (X1184) or Relay Board with Current Detector (X1414-X1417)
Up to 8**	Switch Board (X1192)
1	Sensor & Comm. Board (X1199)
1	Temperature Probe 2004-10k

** The quantity and necessary equipment depends on the various types of installations.

Optional Equipment

Quantity	Description
10	Temperature Probe 2004-10k
1	Humidity Probe
2	Water Meter
1	Feeder
2	Opti-Gain 1
1	RF-IN2
1	MS-10(X1397)
1	Static Pressure Probe
1	WebGate 3G

Configuration Version

Version	Date	Min. Proc. Version	Modification
CA2iT03V0	24/02/2014	2	- New.
CA2iT03V1	24/02/2014	2	- Correction on alarms history.
CA2iT03V2	19/01/2016	2	- Add 2 Clock (9-10) outputs - Add 3 Run Times for Clock (7-8) - Add Skip Day for Feeder. - Add 2 set points for variable outputs (0-10V). - Add override option for variable outputs (0-10V). - Add 1 egg room cooler output and 1 egg room heater output. - Add alarm 2-hour alarm on water meter consumption. - Add new logic on static pressure. - Add vent pre-open auto-adjust option for all inlets
CA2iT03V3	26/04/2016	2	- Add transition delay output. - Add individual probes alarm option. - Change order of parameters in probe configuration group.
CA2iT03V4	09/06/2016	2	- Correction on MSP drop rate. - Correction on fans' tunnel transition. - Correction on temperature acquisitions. - Add 2 curtains. - Add an option to deactivate water alarms on lights period activation.

Ventilation System Overview

The variables can be used as a ventilation fan or as a light dimmer. 0-10 Volt outputs can also be used as a variable fan or as a light dimmer.

The relays can be used as a ventilation stage, heater/brooder, sidewall fan, tunnel fan, evap cool/fog, stir fan, egg room cooler, egg room heater, feeder, lights or clock. The controller can also operate a vent inlet, tunnel inlet and attic inlet.

The controller can work with up to 12 inside temperature probes that it can use to compute an inside average. All outputs will follow the probes selected by the user. When one temperature probe is defective (short or open circuit), the controller does not consider it to compute the average and the alarm is triggered. An **Outside Temperature** can be used.

The controller can monitor up to 2 water meters, 2 feeders and trigger alarms in the case of abnormal readings.

The controller can also operate up to 1 light zone, 2 bird scales.

Other features, including night set point, **Ramping Function** and history for alarms, probes, heaters, feeders, water meter and main set point are included.

ACTUAL CONDITIONS

AVERAGE TEMPERATURE
This parameter displays the actual average temperature of the probes.

TEMPERATURE (1-12)[I]
These parameters display the sensor readings available in the control. There is a possibility of 12 inside sensors if no outside or breaker sensors are used. If there are only 4 inside probes selected, only the first 4 inside probes will be shown.

USED FOR AVERAGE[1]
This column indicates which sensor is used to calculate the actual average temperature. Each sensor used for the average will be marked with a "*".

BACKUP PROBE[1]
This parameter column indicates the backup sensor used for the respective inside sensor that is defective. The backup sensor will not be shown until this sensor is considered defective, otherwise a "*" will appear if the respective probe is included in the alarm.

BREAKER TEMPERATURE[1]
This parameter displays the breaker temperature.

OUTSIDE TEMPERATURE[1]
This parameter displays the outside temperature.

STATIC PRESSURE[1]
This parameter displays the actual reading of the static pressure sensor. The range of this sensor goes from 0.000"WC to 0.200"WC.

HUMIDITY[1]
These parameters display the actual humidity for the zone. ERROR will be displayed if the humidity probe has not communicated with the controller for 5 minutes. The humidity is displayed to the nearest 1RH% from 0RH% to 100RH%.

FEEDER QUANTITY[1]
This parameter displays the total amount of feed in pounds (lbs) distributed by the respective feeder since last midnight. This amount is incremented each time a pound of food is distributed depending on the *FEED (1-2) CALIBRATION (LBS/MIN)*.

WATER METER[1]
This parameter displays the number of gallons that have been accumulated since last midnight by the respective water counter. The number of gallons counted with each pulse can be set with the *WATER (1-2) (GAL/PULSE)*.

---

i

Some elements of this group must be activated in the **System Configuration** and **Outputs Configuration** screens to make them visible and effective.

ACTUAL CONDITIONS (CONTINUED…)

ACTUAL LIGHT INTENSITY[1]
This parameter displays the luminosity percentage of the light logic. If "ADJ." is displayed here, this means that light activity is suspended for adjustments by the *AUTO/ADJUST* parameter in **LIGHT RAMPING** screen. This parameter can also display an ON/OFF light status if only a light relay is used. This parameter is displayed to the nearest 1% from 0% to 100%.

LIGHT RELAY[1]
This parameter displays the light status if the relay is used. This parameter displays an ON/OFF light status if only a light relay is used.

SCALE ACTUAL AVERAGE WEIGHT[1]
These parameters display the average weight of the respective scale recorded for the actual day. If a scale has not recorded an average weight during the actual day, the respective parameter will display "0.000". The average weight values are displayed from 0.001 to 9.999 pounds.

GROWTH DAY
This parameter displays the growth day, which is incremented (if not set to OFF) each time the clock passes midnight. The value displayed can be OFF, day 0 to day 365.

ON TIME
This parameter displays the minimum ventilation timer ON time countdown. Minimum ventilation timer settings are updated at the end of an ON or OFF portion.

ON PERIOD
This parameter displays the minimum ventilation timer ON time period. Minimum ventilation timer settings are updated at the end of an ON or OFF portion.

OFF TIME
This parameter displays the minimum ventilation timer OFF time countdown. Minimum ventilation timer settings are updated at the end of an ON or OFF portion.

OFF PERIOD
This parameter displays the minimum ventilation timer OFF time period. Minimum ventilation timer settings are updated at the end of an ON or OFF portion.

SET POINTS

AVERAGE TEMPERATURE
This parameter displays the actual average temperature of the probes.

ACTUAL MAIN SETPOINT
This parameter displays the actual average temperature of the probes.

***MAIN SETPOINT* (Curve Available)**
This parameter is used to set the temperature goal and it is also the reference temperature for all relative settings. This parameter can follow a ramping curve function and cannot be modified if *MAIN SETPOINT CURVE* is set to ON and *RAMPING START DAY* is not set to OFF. The value of this parameter is adjusted in 0.1°F increments from 32.0°F to 120.0°F.

GROWTH DAY
This parameter displays the growth day, which is incremented (if not set to OFF) each time the clock passes midnight. The **Growth Day** may be adjusted to any value from OFF, day 0 to day 365 using 1-day increments.

RAMPING START DAY
This parameter is used to activate or deactivate the **MSP Ramping Function**. If this option is set to ON and the *GROWTH DAY* is not set to OFF, the *MAIN SETPOINT* will change according to its **Growth Curve** programmed in its curve.

MAIN SETPOINT CURVE
This parameter is used to set the ramping curve function ON or OFF. If this parameter is set to ON and *RAMPING STARTDAY* is not set to OFF, *MAIN SET POINT* will follow the curve function and user will not be able to modify it nor the *DAY* points and *MSP* points.

MSP DROP TIME ON
This parameter is used to set the time at which the *MSP* will start to drop. When the time of day reaches this value, the effective *MSP* will decrease by 1.0°F per minute until it has dropped by *MSP DROP TEMPERATURE*. The effective *MSP* will remain at *MSP* - *MSP DROP TEMPERATURE* until the time of day reaches *MSP DROP TIME OFF.*

MSP DROP TIME OFF
This parameter is used to set the time at which the *MSP* will start to rise after having dropped. When the time of day reaches this value, the effective MSP will start modulate towards *MSP* throughout the *MSP RAISE RATE*.

MSP DROP TEMPERATURE
This parameter is used to set the maximum value that will be subtracted from the adjusted *MSP* during the MSP drop period. When the time of day reaches *MSP DROP TIME ON*, the effective MSP will decrease by 1.0°F per minute until it has dropped by the value adjusted here. If this value is set to OFF, the MSP drop function will be deactivated. This parameter is adjusted in 0.1°F increments from OFF, 0.1°F to 10.0°F.

SET POINTS (CONTINUED…)

MSP DROP RATE

This parameter is used to set the time effective MSP will take to go from *MSP* to *MSP* - *MSP DROP TEMP*. When the time of day reaches *MSP DROP TIME ON*, the effective MSP will start modulate from *MSP* to *MSP* - *MSP DROP TEMP* throughout this amount of time. This parameter is adjusted in 1-minute increments from 1 minute to 300 minutes.

MSP RAISE RATE

This parameter is used to set the time effective MSP will take to go from MSP - *MSP DROP TEMP* to MSP. When the time of day reaches *MSP DROP TIME OFF*, the effective MSP will start modulate from MSP - *MSP DROP TEMP* to MSP throughout this amount of time. This parameter is adjusted in 1-minute increments from 1 minute to 300 minutes.

STATIC PRESSURE

ACTIVE INLET[II]

This parameter displays the actual active inlet. The active inlet changes according to ventilation mode, static pressure and the static pressure ramping. The active inlet can either be "Attic Inlet", "Vent Inlet", "Tunnel Inlet" or "Attic & Vent".

STATIC PRESSURE[2]

This parameter displays the actual reading of the static pressure sensor.

ACTUAL TARGET[2]

This parameter displays the actual static pressure target. This value changes according to ventilation mode, static pressure ramping and the active inlet.

MIN VENT TARGET[2]

This parameter is used to set the high and low static pressure set points when the control is in minimum ventilation mode and the attic inlet is not used or when the active inlet is the vent inlet. The *DIFFERENTIAL* will be added and subtracted to this parameter to have the high and low set points. If static pressure is below *MIN VENT TARGET − DIFFERENTIAL*, the ventilation and tunnel inlets will close. If static pressure is above *MIN VENT TARGET + DIFFERENTIAL*, the ventilation and attic inlets will open and the active inlet will become the tunnel inlet. This parameter is adjusted in 0.001"WC increments from 0.000"WC to 0.200"WC.

ATTIC TARGET[2]

This parameter is used to set the high and low static pressure set points when the control uses the attic inlet to maintain static pressure. The *DIFFERENTIAL* will be added and subtracted to this parameter to have the high and low set points. If static pressure is below *ATTIC TARGET − DIFFERENTIAL*, the ventilation, tunnel and/or attic inlets will close. If static pressure is above *ATTIC TARGET + DIFFERENTIAL*, the attic inlet will open and the active inlet will become the ventilation inlet. This parameter is adjusted in 0.001"WC increments from 0.000"WC to 0.200"WC.

TUNNEL TARGET[2]

This parameter is used to set the high and low static pressure set points when the control is in tunnel mode. The *DIFFERENTIAL* will be added and subtracted to this parameter to have the high and low set points. If static pressure is below *TUNNEL TARGET − DIFFERENTIAL*, the tunnel inlet will close. If static pressure is above *TUNNEL TARGET + DIFFERENTIAL*, the tunnel inlet will open and the transition delay output will be activated. This parameter is adjusted in 0.001"WC increments from 0.000"WC to 0.200"WC.

---

ii

Some elements of this group must be activated in the **System Configuration** and **Outputs Configuration** screens to make them visible and effective.

STATIC PRESSURE (CONTINUED…)

DIFFERENTIAL

This parameter establishes the differential for static pressure targets. This value will be added and subtracted from the actual static pressure target to get high and low static pressure set points. This parameter is adjusted in 0.001”WC increments from 0.005”WC to 0.200”WC.

RAMPING

This parameter indicates which pressure settings are used by the control. If *RAMPING* is set to OFF, *MIN VENT INLET TARGET* and *TUNNEL TARGET* will be used. If *RAMPING* is set to INSIDE, static pressure target will be determined by the average temperature and inside parameters. If an outside sensor is used, one more option (OUTSIDE) is available. If *RAMPING* is set to OUTSIDE, the control will use the outside settings and functions.

LOW STATIC PRESSURE RELAY[iii]

This parameter is used to set the alarm relay ON or OFF on a low-pressure alarm. Even if this option is set to “OFF”, the alarm is triggered in the alarm list except that the alarm relay is not activated.

LOW STATIC PRESSURE[3]

This parameter is used to establish the low-pressure alarm limit. When pressure is above *LOW STATIC PRESSURE*, the *LOW ALARM DELAY* is activated. This parameter can also be modified in the **ALARM** screen. The *LOW STATIC PRESSURE* is adjusted in 0.001“WC increments from 0.050“WC to 0.200“WC.

LOW STATIC PRESSURE DELAY[3]

This parameter is used to set a delay that allows the pressure to exceed the limit *LOW STATIC PRESSURE* without activating the alarm. There is an alarm satisfy time fixed at 5 seconds that allows the static pressure to return above *LOW STATIC PRESSURE* without reinitializing the delay *STATIC PRESSURE LOW DELAY.* The *LOW STATIC PRESSURE DELAY* is adjusted in 1-second increments from 10 seconds to 900 seconds.

Ex: *LOW STATIC PRESSURE* = 0.020“WC;
LOW STATIC PRESSURE DELAY = 300 seconds;
When static pressure is below 0.020“WC, the *LOW STATIC PRESSURE DELAY* is activated. If the static pressure stays below 0.020“WC throughout the *LOW STATIC PRESSURE DELAY*, the alarm will activate. If static pressure returns above *LOW STATIC PRESSURE* for more than 5 seconds, the low-pressure alarm (or *LOW STATIC PRESSURE DELAY*) will be reinitialized. Sidewall fans are affected by the low-pressure alarm. They will turn back on if previously forced to stop by tunnel transitions “STOP” (Min Fan Stop) or “START” (Tunnel Start). They will turn back off when the low static pressure alarm condition disappears.

---

iii Some elements of this group must be activated in the **System Configuration** screen to make them visible and effective.

STATIC PRESSURE (CONTINUED…)

HIGH STATIC PRESSURE[IV]

This parameter is used to establish the high-pressure alarm limit. When pressure is below *HIGH STATIC PRESSURE*, the *HIGH ALARM DELAY* is activated. This parameter can also be modified in the **ALARM** screen. The *HIGH STATIC PRESSURE* is adjusted in 0.001"WC increments from 0.050"WC to 0.200"WC.

HIGH STATIC PRESSURE DELAY[4]

This parameter is used to set a delay that allows the pressure to exceed the limit *HIGH STATIC PRESSURE* without activating the alarm. The *HIGH STATIC PRESSURE DELAY* is adjusted in 1-second increments from 10 seconds to 900 seconds.

Ex: *HIGH STATIC PRESSURE* = 0.100"WC;
HIGH STATIC PRESSURE DELAY = 60 seconds;
When static pressure is above 0.100"WC, the *HIGH STATIC PRESSURE DELAY* is activated. If the static pressure stays above 0.100"WC throughout *HIGH STATIC PRESSURE DELAY*, the alarm will activate.

DELAY BEFORE SWITCHING OPEN/CLOSE[4]

This parameter is used to set the delay the ventilation and tunnel inlets will wait before changing states from halt to open or close, open to close or close to open. This delay does not affect tunnel inlet when it follows a curtain. The *CLOSE/OPEN SWITCHING DELAY* is adjusted in 1-second increments from 0 seconds to 30 seconds.

ATTIC VENTILATION SELECT[4]

This parameter is used to adjust which mode the attic inlet will be using. If this parameter is set to "Attic First", the attic inlet will maintain static press according to the *ATTIC TARGET* and the ventilation inlet will close. In this mode, if attic ventilation inlet cannot maintain static pressure, it will transfer to the ventilation inlet. In this mode, if vent inlet cannot maintain static pressure, it will transfer to the tunnel inlet. If this parameter is set to "Attic & Vent", the attic inlet and the ventilation inlet will both react according to the *VENT TARGET*. If this parameter is set to "Vent Only", the attic ventilation inlet will close continuously and the ventilation inlet will react according to the *MIN VENT TARGET*.

AUTO-ADJUST OPTION[4]

This parameter is used to activate or deactivate the auto-adjust option for the active inlet when the static pressure is below or above the static pressure set point. When the static pressure is below or above the static pressure target, the temperature is below all fan's RSP and min vent timer is used on at least one fan and this parameter is set to ON, the active inlet will open according to the *CURRENT CALCULATED TIME* during the OFF period of the min vent timer. This parameter can either be set to ON or OFF.

---

iv Some elements of this group must be activated in the **System Configuration** and **Outputs Configuration** screens to make them visible and effective.

STATIC PRESSURE (CONTINUED…)

INITIAL OPEN TIME BEFORE FAN ON[5]

This parameter allows user to set the value for *VENT OPEN TIME BEFORE FAN ON* when *RESET/MAN OVERR VENT ON TIME* is set to CLEAR. This parameter is adjusted in 1-second increments from 1 to 120 seconds.

CURRENT CALCULATED TIME[V]

When the temperature is below all fans' RSPs and min vent timer is used on at least one fan, the vent inlet will follow static pressure sensor and the parameter *VENT OPEN TIME BEFORE FAN ON*. The min vent timer has an ON time and an OFF time. Depending on the value of *VENT OPEN TIME BEFORE FAN ON*, the vent inlet will start opening during the min vent OFF time and will stop once the OFF time has expired or fan has started. As the ON time begins, the fans will be activated and the vent inlet will operate according to the static pressure sensor. The *VENT OPEN TIME BEFORE FAN ON* value is modified by the control according to the static pressure samples taken as vent inlet returns to pressure mode after the transition from OFF to ON in a minimum ventilation cycle. If any fans are active on temperature demand, no sampling or adjustments will be done The *VENT OPEN TIME BEFORE FAN ON* is displayed to the nearest second from 1 to 120 seconds and will never be outside those limit.

AVERAGE FAN CYCLES[5]

This parameter allows user to choose the number of fan cycles for which static pressure will be sampled to adjust the *VENT OPEN TIME BEFORE FAN ON* time. The control will keep a number of static pressure samples equal to the number set in this parameter in memory to make adjustments until an adjustment is made or STATIC PRESSURE sample is within limits. The control will then make an average out of these samples to calculate the compensation necessary to maintain ideal static pressure. If one or more samples are within ACTUAL TARGET − *DIFFERENTIAL* OR ACTUAL TARGET + *DIFFERENTIAL*, no adjustments will be made. If all samples are outside those same points, *VENT OPEN TIME BEFORE FAN ON* will be adjusted. This parameter is adjusted in 1 cycle increments from 1 to 5 cycles.

STATIC PRESSURE RANGE[5]

This parameter represents the amount of static pressure that will add or subtract one second from the *VENT OPEN TIME BEFORE FAN ON*. When average of the static pressure samples exceeds ACTUAL TARGET + *DIFFERENTIAL*, the control will divide the difference between the SP and the average of the samples by *STATIC PRESSURE RANGE* and add that many seconds (+ 1 if there is a remainder) to *VENT OPEN TIME BEFORE FAN ON*. When STATIC PRESS is lower than ACTUAL TARGET − *DIFFERENTIAL*, the control will divide the difference between the SP and the sample by *STATIC PRESSURE* RANGE and subtract that many seconds (+ 1 if there is a remainder) to *VENT OPEN TIME BEFORE FAN ON*. This parameter is adjusted in 0.002"WC increments from 0.002"WC to 0.020"WC.

V Some elements of this group must be activated in the **System Configuration** and **Outputs Configuration** screens to make them visible and effective.

STATIC PRESSURE (CONTINUED…)

RESET/MANUAL OVERRIDE TIME ON[vi]

This parameter can be used to reset or manually override the current *VENT ON TIME BEFORE FAN ON* value. If set to CLEAR, *VENT OPEN TIME BEFORE FAN* ON is reset to the value set at *VENT ON TIME RESET VALUE*. This is necessary in case sensor becomes unplugged or defective and value of *VENT OPEN TIME BEFORE FAN ON* is modified by these incorrect readings Press on this parameter and a confirmation text and choice will appear.

ATTIC INLET TRANSITION DELAY[6]

This parameter establishes the delay for which the active tunnel will go from attic inlet to the next assigned inlet when the static pressure is above *ATTIC TARGET*. When the static target is above *ATTIC TARGET + DIFFERENTIAL* for an amount of time equals to this parameter, the active inlet will become the ventilation inlet if it used, otherwise will become the tunnel inlet if it used. If ventilation inlet and tunnel are not used, the active inlet will remain the same. This parameter is adjusted in 1-second increments from "OFF", 1 to 300 seconds.

MIN VENT INLET TRANSITION DELAY[6]

This parameter establishes the delay for which the active tunnel will go from ventilation inlet to the tunnel inlet when the static pressure is above *MIN VENT TARGET* or from ventilation inlet to attic inlet when the static pressure is below *MIN VENT TARGET*. When the static target is above *MIN VENT TARGET + DIFFERENTIAL* for an amount of time equals to this parameter, the active inlet will become the tunnel inlet if it used, otherwise will remain the same. If the static pressure is below *MIN VENT TARGET – DIFFERENTIAL* for an amount of time equals to this parameter, the active inlet will become the attic inlet if it used, otherwise will remain the same. This parameter is adjusted in 1-second increments from "OFF", 1 to 300 seconds.

vi Some elements of this group must be activated in the **System Configuration** and **Outputs Configuration** screens to make them visible and effective.

STATIC PRESSURE (CONTINUED…)

TUNNEL INLET TRANSITION DELAY[VII]

This parameter establishes the delay for which the active tunnel will go from tunnel inlet to ventilation inlet when the static pressure is below *MIN VENT TARGET − DIFFERENTIAL* when the tunnel mode is not active or *TUNNEL TARGET − DIFFERENTIAL* when the tunnel mode is active or will activate the transition delay output when the static pressure is above *TUNNEL TARGET + DIFFERENTIAL*. When the static target is above *TUNNEL TARGET + DIFFERENTIAL* for an amount of time equals to this parameter, the transition delay output will activate if it used. If the static pressure is below *MIN VENT TARGET − DIFFERENTIAL* when the tunnel mode is not active or *TUNNEL TARGET − DIFFERENTIAL* for an amount of time equals to this parameter, the transition delay will be deactivated, then the active inlet will become the vent inlet if it used when the static pressure is still below the *MIN VENT TARGET − DIFFERENTIAL* when the tunnel mode is not active or *TUNNEL TARGET − DIFFERENTIAL* when the tunnel mode is active for an amount of time equals to this parameter. If the vent inlet is not used, the active inlet will become the attic inlet if it used, otherwise the active inlet will remain the tunnel inlet. This parameter is adjusted in 1-second increments from "OFF", 1 to 300 seconds.

ATTIC INLET CLOSE TEMPERATURE[7]

This parameter is used to adjust the temperature at which the attic ventilation inlet will close continuously and the ventilation inlet will maintain static pressure. If the attic ventilation inlet's temperature is at or above this temperature, the attic ventilation inlet will close continuously and the ventilation inlet will react according to the *MIN VENT TARGET*. This parameter is adjusted in 0.1°F increments from *MAIN SETPOINT* + 0.0°F to *MAIN SETPOINT* + 40.0°F.

ATTIC INLET CLOSE TEMPERATURE[7]

This parameter is used to adjust the temperature at which the attic ventilation inlet will close continuously and the ventilation inlet will maintain static pressure. If the attic ventilation inlet's temperature is at or above this temperature, the attic ventilation inlet will close continuously and the ventilation inlet will react according to the *MIN VENT TARGET*. This parameter is adjusted in 0.1°F increments from *MAIN SETPOINT* + 0.0°F to *MAIN SETPOINT* + 40.0°F.

ATTIC INLET CLOSE DIFFERENTIAL[7]

This parameter is used to set the differential on the *ATTIC INLET CLOSE TEMPERATURE*. When the sensor(s) select average temperature decreases to *ATTIC VENT CLOSE TEMPERATURE − ATTIC INLET CLOSE DIFFERANTIAL* the attic inlet will close continuously and vent inlet will maintain static pressure. This parameter is adjusted in 0.1°F increments from 0.5°F to 10.0°F.

---

vii Some elements of this group must be activated in the **System Configuration** and **Outputs Configuration** screens to make them visible and effective.

STATIC PRESSURE (CONTINUED…)

ATTIC INLET PROBE SELECT[7]

This parameter is used to set an individual associated temperature to the attic inlet. The temperature associated to this output is a combination of the inside probes that are used.

INSIDE RAMPING TEMPERATURE (1-12)

These parameters are used to set the temperature at which the static pressure set point will be equal to the value of the same line. When the average temperature reaches this value, the static pressure set point will be equal to *STATIC* set point of the same line. A fixed differential of 0.3°F is used with each temperature setting. These settings are forced into ascending order. These parameters are affected by the *MAIN SETPOINT* parameter. These parameters are adjusted in 0.1°F increments from *MAIN SETPOINT* - 30.0°F to *MAIN SETPOINT* + 20.0°F.

INSIDE RAMPING SET POINT (1-12)

These parameters are used to set the static pressure set point that will be used when the average temperature reaches the temperature value of the same line. The *DIFFERENTIAL* parameter will be added and subtracted to the calculated static pressure set point to have the high and low static pressure set points. If static pressure is below the calculated set point − *DIFFERENTIAL*, the active inlet will close. If static pressure is above the calculated set point + *DIFFERENTIAL*, the active inlet will open. These parameters are adjusted in 0.001”WC from 0.020”WC to 0.150”WC.

INSIDE RAMPING (1-12) USED

These parameters are used to determine if the respective inside ramping step is used or unused. When one of these parameters is set to “N”, the corresponding step will be ignored. When the average temperature is below all TEMP values, the first step that has its option set to “Y” will be used. When the average temperature is above all TEMP values, the last step that has its option set to “Y” will be used. If all of these options are set to “N”, the STATIC TARGET screen will be used.

OUTSIDE RAMPING START DAY[VIII]

This parameter establishes the *START DAY* for the *OUTSIDE START TARGET. START DAY* is adjusted in 1-day increments from day 1 to day 365.

OUTSIDE RAMPING START TEMPERATURE[8]

This parameter establishes the outside temperature set point for the *OUTSIDE START TARGET PRESSURE*.

OUTSIDE RAMPING START TARGET[8]

This parameter establishes the target static pressure for the *OUTSIDE START DAY. START TARGET PRESSURE* is adjusted in 0.001“WC increments from 0.000“WC to 0.200“WC.

SECTION C

viii

Some elements of this group must be activated in the **System Configuration** screen to make them visible and effective

STATIC PRESSURE (CONTINUED…)

OUTSIDE RAMPING START MAXIMUM MODULATION[IX]

This parameter establishes the maximum inches of water column static pressure can modulate at the *OUTSIDE RAMPING START DAY* regardless of how high or low the outside temperature goes. *OUTSIDE RAMPING START MAX MODULATION* is adjusted in 0.001"WC increments from 0.000"WC to 0.150"WC.

OUTSIDE RAMPING END DAY[9]

This parameter establishes the *OUTSIDE RAMPING END DAY* for the *OUTSIDE RAMPING END TARGET*. The *OUTSIDE RAMPING END DAY* is adjusted in 1-day increments from day 1 to day 365.

OUTSIDE RAMPING END TEMPERATURE[9]

This parameter establishes the outside temperature set point for the *OUTSIDE RAMPING END TARGET PRESSURE*.

OUTSIDE RAMPING END TARGET[9]

This parameter establishes the target static pressure for the *FINISH DAY*. The *FINISH TARGET PRESSURE* is adjusted in 0.001"WC increments from 0.000"WC to 0.200"WC.

OUTSIDE RAMPING END MAXIMUM MODULATION[9]

This parameter establishes the maximum inches of water column static pressure can modulate at the *FINISH DAY* regardless of how high or low the outside temperature goes. The *FINISH MAX MODULATION* is adjusted in 0.001"WC increments from 0.000"WC to 0.150"WC.

OUTSIDE RAMPING MODULATION BAND / 5 DEGREES[9]

This parameter establishes number of "WC static pressure will modulate from the target for every 5 degrees the outside temperature changes. The *OUTISDE RAMPING MODULATION BAND / 5 DEGREES* is adjusted in 0.001"WC increments from 0.000"WC to 0.150"WC.

---

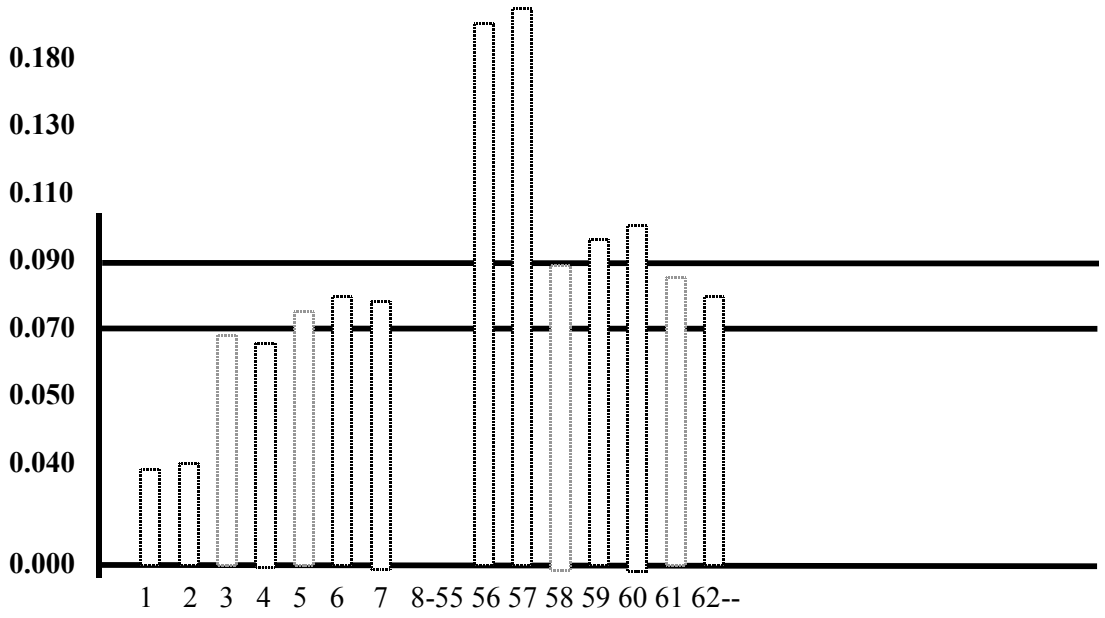
ix Some elements of this group must be activated in the **System Configuration** screen to make them visible and effective

STATIC PRESSURE (CONTINUED…)

Ex 1: VENT OPEN TIME BEFORE FAN ON auto-adjustment.

ACTUAL TARGET - DIFFERENTIAL = 0.070"WC
ACTUAL TARGET + DIFFERENTIAL = 0.090"WC
ON TIME = 30 sec
CYCLE TIME = 5 minutes
AVGERAGE FAN CYCLES = 2 cycles
STATIC PRESSURE RANGE = 1 SEC = 0.010" WC
VENT OPEN TIME BEFORE FAN ON preset at 15 sec

After any 2 consecutive low or high STATIC PRESSURE samples, control will make an adjustment to VENT OPEN BEFORE FAN ON to achieve desired STATIC PRESSURE in the next minimum ventilation cycle. The minimum ventilation cycles in gray are those where control made an adjustment, see chart below :



STATIC PRESSURE (CONTINUED…)

Ex 1: VENT OPEN TIME BEFORE FAN ON auto-adjustment. (Continued)

1 Min vent cycle 1: STATIC PRESSURE sample is 0.037”WC. (Lower than ACTUAL TARGET - *DIFFERENTIAL*)

2 Min vent cycle 2: STATIC PRESSURE sample is 0.039”WC. (Lower than ACTUAL TARGET - *DIFFERENTIAL*)

- After these 2 consecutive low STATIC PRESSURE cycles, control will decrease VENT ON TIME BEFORE FAN ON, by 4 sec, from 15 to 11 sec.
- This is calculated as follows:

Average STATIC PRESSURE: (0.037 + 0.039)/2 = 0.038”WC

Time subtracted: (0.070-0.038)/0.010 = 3,2 (4 seconds)

VENT OPEN TIME BEFORE FAN ON: 15 – 4 = 11 seconds

3 Min vent cycle 3: STATIC PRESSURE sample is 0.065”WC. (Lower than ACTUAL TARGET - *DIFFERENTIAL*)

4 Min vent cycle 4: STATIC PRESSURE sample is 0.063”WC. (Lower than ACTUAL TARGET - *DIFFERENTIAL*)

- After these 2 consecutive low STATIC PRESSURE cycles, control will decrease *VENT ON TIME BEFORE FAN* ON, by 1 sec, from 11 to 10 sec.
- This is calculated as follows:

Average STATIC PRESSURE: (0.070-0.064)/0.010 = 0,6 (1 second)

Time subtracted: 11 – 1 = 10 seconds

VENT OPEN TIME BEFORE FAN ON: (0.065 + 0.063)/2 = 0.064”WC

5-7 Min vent cycle 5-7: STATIC PRESSURE sample is within ACTUAL TARGET - *DIFFERENTIAL* and ACTUAL TARGET + *DIFFERENTIAL*.

8-55 Many more Min vent cycles where STATIC PRESSURE sample is within ACTUAL TARGET - *DIFFERENTIAL* and ACTUAL TARGET + *DIFFERENTIAL*. Then user adds another fan to timer.

56 Min vent cycle 56: STATIC PRESSURE sample is 0.184"WC. (Higher than ACTUAL TARGET + *DIFFERENTIAL*)

57 Min vent cycle 57: STATIC PRESSURE sample is 0.195"WC. (Higher ACTUAL TARGET + *DIFFERENTIAL*)

After these 2 consecutive high STATIC PRESSURE cycles, control will increase *VENT ON TIME BEFORE FAN ON*, by 10 sec, from 11 to 21 sec.

- This is calculated as follows

Average STATIC PRESSURE: (0.070-0.064)/0.010 = 0,6 (1 second)
Time subtracted: 11 – 1 = 10 seconds
VENT OPEN TIME BEFORE FAN ON: (0.065 + 0.063)/2 = 0.064"WC

58 Min vent cycle 58: STATIC PRESSURE sample is within ACTUAL TARGET - *DIFFERENTIAL* and ACTUAL TARGET + *DIFFERENTIAL*.

59 Min vent cycle 59: STATIC PRESSURE sample is 0.094"WC. (Higher than ACTUAL TARGET + *DIFFERENTIAL*)

60 Min vent cycle 60: STATIC PRESSURE sample is 0.098"WC. (Higher than *ACTUAL TARGET + DIFFERENTIAL*)

After these 2 consecutive high STATIC PRESSURE cycles, control will increase VENT ON TIME BEFORE FAN ON, by 1 sec, from 21 to 22 sec.

Ex 1: VENT OPEN TIME BEFORE FAN ON auto-adjustment. (Continued)

- This is calculated as follows:

Average STATIC PRESSURE: (0.94 + 0.98)/2 = 0.096"WC
Time subtracted: (0.096-0.090)/0.010 = 0,6 (1 second)
VENT OPEN TIME BEFORE FAN ON: 21 + 1 = 22 seconds61

60 Min vent cycle 61: STATIC PRESSURE sample is within *ACTUAL TARGET - DIFFERENTIAL* and ACTUAL TARGET + *DIFFERENTIAL*.

Ex 2: VENT OPEN TIME BEFORE FAN ON application.

All fans are below their respective RSP;
VENT OPEN TIME BEFORE FAN ON = 40 sec;
MIN VENT TIME ON = 120 sec;
MIN VENT CYCLE TIME = 5 min,

The active inlet will react as follows:

SECTION C

The fans are OFF for 3 min. and ON for 2 min. The active inlet follows static pressure sensor for all the time ON and for 2 min and 20 sec of time OFF. At 40 seconds of the end of min vent time OFF (3 min - 40 sec = 2 min and 20 sec), the active inlet will open for 40 seconds (until the beginning of time ON). Fans with timer option will then activate and static pressure sample will be taken shortly after. Active inlet will return to pressure mode and so on until a temperature demand.

STATIC PRESSURE (CONTINUED…)

Example:

System will function as follows:

Static pressure target will be controlled by RAMPING (if ramping is activated), *START&FINISH TARGET PRESSURE* and *START&FINISH OUTSIDE TEMP*. See example and chart below.

Day 1

START DAY = 1;
START OUTSIDE TEMP = 85.0°F;
START TARGET PRESSURE = 0.080"WC;
MOD BAND/5 DEG = 0.005"WC;
START MAX MODULATION = 0.005"WC;
If outside temperature is 85.0°F, static pressure target will be 0.080"WC.
If outside temperature increases to 90.0°F, static pressure target will decrease to 0.075"WC.
Static pressure target cannot decrease below 0.075"WC, even if outside temperature increases to 95.0°F or above.

Day 70

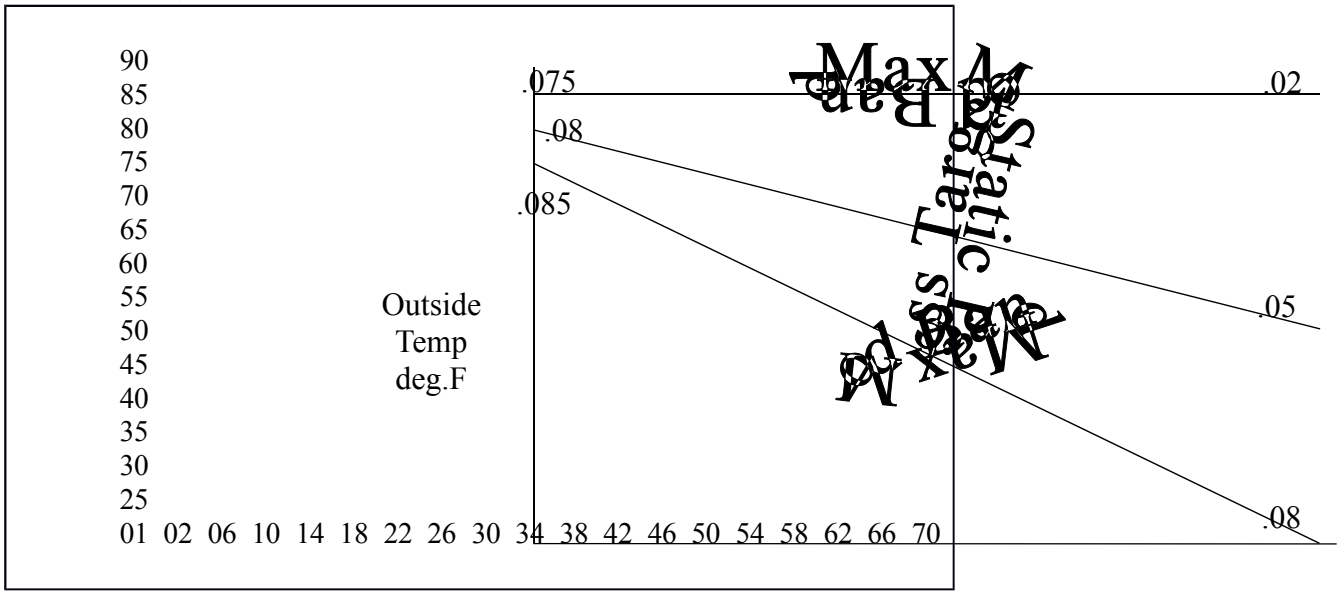
FINISH DAY = 70;
FINISH OUTSIDE TEMP = 60.0°F;
FINISH TARGET PRESSURE = 0.050"WC;
MOD BAND/5 DEG = 0.005"WC;
FINISH MAX MODULATION = 0.030"WC;
If outside temperature is 65.0°F, static pressure target will decrease to 0.045"WC.
If outside temperature increases to 70.0°F, static pressure target will decrease to 0.040"WC.
If outside temperature increases to 75.0°F, static pressure target will decrease to 0.035"WC.
If outside temperature increases to 80.0°F, static pressure target will decrease to 0.030"WC.
If outside temperature increases to 85.0°F, static pressure target will decrease to 0.025"WC.
If outside temperature increases to 90.0°F, static pressure target will decrease to 0.020"WC.
Static pressure target cannot decrease below 0.020"WC, even if outside temperature increases to 95.0°F or above.

If outside temperature decreases to 55.0°F, static pressure target will increase to 0.055"WC.
If outside temperature decreases to 50.0°F, static pressure target will increase to 0.060"WC.
If outside temperature decreases to 45.0°F, static pressure target will increase to 0.065"WC.
If outside temperature decreases to 40.0°F, static pressure target will increase to 0.070"WC.
If outside temperature decreases to 35.0°F, static pressure target will increase to 0.075"WC.
If outside temperature decreases to 30.0°F, static pressure target will increase to 0.080"WC.
Static pressure target cannot increase above 0.080"WC, even if outside temperature decreases to 25.0°F or below.

STATIC PRESSURE (CONTINUED…)

In between Day 1 & Day 70

Static pressure target will modulate by values selected in; *START&FINISH DAY*, *START&FINISH OUTSIDE TEMP*, *START&FINISH TARGET PRESSURE*, *MOD BAND/5 DEG*, *START&FINISH MAX MODULATION*.



Static pressure logic description

Attic First mode

When attic inlet is the active inlet:

- If the pressure is below the ATTIC TARGET – DIFFERENTIAL, all of the inlets will close continuously.

- If the pressure is above the ATTIC TARGET + DIFFERENTIAL for more than ATTIC TRANSITION DELAY, the attic inlet will open continuously and vent inlet will become the active inlet.

When vent inlet is the active inlet:

- If the pressure is below the MIN VENT TARGET – DIFFERENTIAL for more than MIN VENT TRANSITION DELAY, the vent inlet will close continuously and attic inlet will become the active inlet.

- If the pressure is above the MIN VENT TARGET + DIFFERENTIAL for more than MIN VENT TRANSITION DELAY, the vent inlet will open continuously and tunnel inlet will become the active inlet.

When tunnel inlet is the active inlet:

- If the pressure is above the MIN VENT TARGET + DIFFERENTIAL for more than TUNNEL TRANSITION DELAY, the tunnel inlet will open according to the static pressure target and transition delay output will be activated.

- If the pressure is below the MIN VENT TARGET – DIFFERENTIAL for more than TUNNEL TRANSITION DELAY and the transition output is activated, the transition output will be deactivated and the tunnel inlet open according to the static pressure target.

- If the pressure is below the MIN VENT TARGET – DIFFERENTIAL for more than TUNNEL TRANSITION DELAY and the transition delay output is deactivated, the tunnel inlet will close continuously and the vent inlet will become the active inlet.

During tunnel mode:

- During DELAY BEFORE TUNNEL, both attic inlet and vent inlet will stay in the same state and the tunnel inlet will open continuously.
- In tunnel mode, the attic inlet and ventilation inlet will close continuously. The active inlet will become the tunnel inlet and tunnel inlet and transition delay output will open according to the static pressure. The TUNNEL TARGET will also be used.
- During DELAY AFTER TUNNEL, both attic inlet and vent inlet will open continuously. The active inlet will remain the same.

Attic & Vent mode

- Attic inlet and ventilation inlet follow the vent target. The sequence described above occurs with the exception that tunnel inlet takes over as soon as the attic transition is maxed out.

Vent Only mode
- Ventilation and tunnel inlets will open and close according to the static pressure, but the attic inlet will close continuously.

Inlet behavior according to ventilation modes table:

	Attic First Mode	**Attic & Vent Mode**	**Vent Only Mode** or **Attic Vent Close Temp**
Minimum Ventilation	***Attic Inlet***, ***Vent Inlet*** and ***Tunnel Inlet*** follow static target.	***Attic Inlet*** and ***Vent Inlet*** follow vent target. ***Tunnel Inlet*** follows static target if other inlets are maxed out.	***Attic Inlet*** closes continuously. ***Vent Inlet & Tunnel Inlet*** follow static target.
Tunnel Mode	***Attic Inlet*** and ***Vent Inlet*** close continuously.		
	Tunnel Inlet follows Tunnel Target.		

Notes:
- When using Outside Ramping on static pressure, the calculated target will replace all Min Vent Targets and Tunnel Targets in this table.

When using Inside Ramping on static pressure, the calculated target will replace all Min Vent Targets in this table.

SIDEWALL FANS

ACTUAL STATUS

These parameters display the actual status of the sidewall fans. Each sidewall fan can display OFF or 100%.

OFF TEMPERATURE

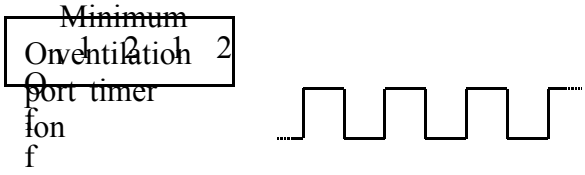
These parameters are used to set the sidewall fan differentials. The respective sidewall fan deactivates when its respective sensor(s) select average temperature decreases to *SIDEWALL FAN # OFF*. These parameters are affected by the respective *SIDEWALL FAN # ON* parameter. These parameters are adjusted in 0.1°F increments from its respective *SIDEWALL FAN # ON* - 20.0°F to its respective *SIDEWALL FAN # ON* - 0.5°F parameter.

ON TEMPERATURE

These parameters are used to set the sidewall fan set points. The respective sidewall fan is activated when its respective sensor(s) select average temperature increases to *SIDEWALL FAN # ON*. Changing one of these parameters will affect the respective *SIDEWALL FAN # OFF* parameter. These parameters are affected by the *MAIN SETPOINT* parameter. These parameters are adjusted in 0.1°F increments from *MAIN SETPOINT* to *MAIN SETPOINT* + 60.0°F.

TIMER

These parameters are used to establish on which portion of the minimum ventilation timer the respective sidewall fan will be activated. If a parameter is set to none of the portions of the timer, the respective sidewall fan will be activated only when it has a temperature demand. These parameters can be set to portion #1, #2 or none. If some fans (including tunnel fans) are set to portion #1 and none on portion #2 (or some fans are set on portion #2 and none on portion #1), fans on timer activate on portion #1 and #2. If none of the sidewall fans and tunnel fans run on the minimum ventilation timer, the timer will stop to restart on the off portion as soon as one of these fans needs to run on minimum ventilation timer.



PROBES

These parameters are used to set an individual associated temperature to the respective output. The temperatures associated to these sidewall fans are a combination of the inside probes that are used.

HIGH TEMPERATURE OVERRIDE OPTION

This parameter allows the user to have sidewall fans activate if *HIGH TEMPERATURE OVERRIDE* is reached, regardless of tunnel mode and timers. If the average temperature reaches the *HIGH TEMP OVERRIDE* set point, sidewall fans with the option "Y" will activate.

SIDEWALL FANS (CONTINUED…)

HIGH TEMPERATURE OVERRIDE

This parameter sets the temperature at which sidewall fans will activate, regardless of tunnel mode and timers. If the average temperature reaches this absolute temperature, sidewall fans with the *HIGH TEMPERATURE OVERRIDE OPTION* set to "Y" will activate. There is a fixed differential of 0.3°F. The *HIGH TEMPERATURE OVERRIDE* is adjusted in 0.1°F increments from *MAIN SETPOINT* to *MAIN SETPOINT* + 50.0°F.

LOAD DELAY

This parameter establishes the time between the activation of multiple fans. This delay allows the fans to activate with a delay between them to reduce the chance of a power shortage due to too many fans activating at the same time. This delay is not applied on timer activation. This parameter is adjusted 1-second increments from 2 seconds to 60 seconds.

TUNNEL FANS

ACTUAL STATUS

These parameters display the actual status of the tunnel fans. Each tunnel fan can display OFF or 100%.

ON TEMPERATURE

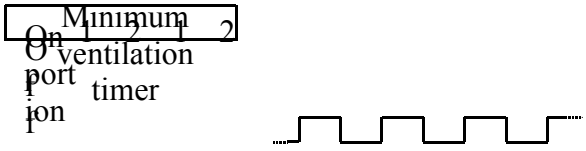
These parameters are used to set the tunnel fan set points. The respective tunnel fan is activated when its respective sensor(s) select average temperature increases to *ON TEMPERATURE*. Changing one of these parameters will affect the respective *OFF TEMPERATURE* parameter. These parameters are affected by the *MAIN SETPOINT* parameter and are adjusted in 0.1°F increments from *MAIN SETPOINT* to *MAIN SETPOINT* + 40.0°F.

OFF TEMPERATURE

These parameters are used to set the tunnel fan differentials. The respective tunnel fan deactivates when its respective sensor(s) select average temperature decreases to *OFF TEMPERATURE*. These parameters are affected by the respective *ON TEMPERATURE* parameter. These parameters are adjusted in 0.1°F increments from its respective *ON TEMPERATURE* - 10.0°F to its respective *ON TEMPERATURE* - 0.5°F.

TIMER

These parameters are used to establish on which portion of the minimum ventilation timer the respective tunnel fan will be activated. If a parameter is set to none of the portions of the timer, the respective tunnel fan will be activated only when it has a demand. These parameters can be set to portion #1, #2 or none. If some fans (including sidewall fans) are set to portion #1 and none on portion #2 (or some fans are set on portion #2 and none on portion #1), fans on timer activate on portion #1 and #2. If none of the sidewall fans and tunnel fans run on the minimum ventilation timer then the timer will stop to restart on the off portion as soon as one of these fans needs to run on minimum ventilation timer.



PROBES

These parameters are used to set an individual associated temperature to the respective output. The temperatures associated to these tunnel fans are a combination of the inside probes that are used.

SECTION C

TUNNEL FANS (CONTINUED…)

TRANSITION[x]

These parameters are used to set on which tunnel fan the transition functions will be activated. These parameters can be set to "STOP" or "TUN". If a *TRANSITION TUNNEL FAN 1* to *TRANSITION TUNNEL FAN 20* is set to "TUN", the tunnel curtain will take the same settings as that tunnel fan. If more than one tunnel fan transition is set to "TUN", only the last will be considered.

x Some elements of this group must be activated in the **Outputs Configuration** screen to make them visible and effective.

TUNNEL FANS (CONTINUED…)

DELAY BEFORE TUNNEL[xi]

This parameter establishes the delay that is used when entering the tunnel mode. When the tunnel fan that has the transition setting "TUN" is activated, tunnel inlet opens, sidewall fans are deactivated, tunnel fans except the tunnel fan that has the transition setting "TUN" are deactivated, and the ventilation inlet holds its present state and the curtains close. After the DELAY BEFORE has expired, respective tunnel fans are reset to the state they were before entering in tunnel mode, tunnel inlet follows static pressure sensor and ventilation inlet and curtains close continuously. If the DELAY BEFORE is set to "OFF", no delay will be applied. The DELAY BEFORE is adjusted in 1-second increments from OFF, 2 seconds to 900 seconds.

Ex: *TUNNEL FAN 1 TRANSITION* = "STOP";
TUNNEL FAN 2 TRANSITION = "TUN";
TUNNEL FAN 1 ON TEMPERATURE = 75.0°F;
TUNNEL FAN 2 ON TEMPERATURE = 78.0°F;
All *TUNNEL FAN # OFF TEMPERATURE* are set to respective *TUNNEL FAN # ON TEMPERATURE* - 1.0°F;

- At 75.0°F, all sidewall fans are deactivated.
- At 77.0°F, ventilation inlet opens continuously and tunnel inlet follows static pressure sensor if it is not already following the curtain 1 demand.
- At 78.0°F, *DELAY BEFORE TUNNEL* is activated; all tunnel fans are deactivated except tunnel fan 2. The ventilation inlet holds its present state, tunnel inlet opens and curtains close. After the *DELAY BEFORE TUNNEL* has expired, tunnel fans, evaporative cooling cells and foggers are allowed to function, ventilation inlet closes and tunnel inlet follows static pressure sensor. Control is now in tunnel mode.
- When temperature decreases to 77.0°F, the ventilation inlet opens, curtain 1 and tunnel inlet will open continuously until curtain 1 has a closing demand, curtain 2 will also open continuously until it reaches a closing demand. If curtain 1 is not used, tunnel inlet follows static pressure sensor.
- When temperature decreases to 76.0°F, ventilation inlet follows the static pressure sensor and tunnel inlet closes continuously if it is not following the curtain 1 demand.

- When temperature decreases to 74.0°F, sidewall fans are allowed to reactivate.

SECTION C

xi Some elements of this group must be activated in the **Outputs Configuration** screen to make them visible and effective.

TUNNEL FANS (CONTINUED…)

DELAY AFTER TUNNEL MODE[xii]

This parameter establishes the time delay for which the vent inlet will open continuously when the system exits the tunnel mode. When the temperature decreases and reaches the *TUNNEL FAN # OFF* of the tunnel fan that has the transition setting "TUN", *DELAY AFTER TUNNEL* is activated and ventilation inlet, tunnel inlet and curtains open continuously and sidewall ventilation fans are reactivated. Once the delay has expired, the ventilation inlet follows static pressure sensor. At this point, curtain 1 and tunnel inlet will open continuously until curtain 1 has a closing demand, curtain 2 will also open continuously until it reaches a closing demand. If the *DELAY AFTER TUNNEL* is set to "OFF", no delay will be applied. The *DELAY AFTER TUNNEL* is adjusted in 1-second increments from OFF, 2 seconds to 900 seconds.

Ex: - When the tunnel fan that has the transition setting "TUN" is turned off (exit tunnel mode), the ventilation inlet opens during the *DELAY AFTER TUNNEL*.

- Once *DELAY AFTER TUNNEL* is finished, the static pressure sensor will control the ventilation inlet.

- The time the ventilation inlet takes to open enough to prevent a static pressure surge must be set in *DELAY AFTER TUNNEL*.

LOAD DELAY

This parameter establishes the time between the activation of multiple fans. This delay allows the fans to activate with a delay between them to reduce the chance of a power shortage due to too many fans activating at the same time. This delay is not applied on timer activation. This parameter is adjusted 1-second increments from 2 seconds to 60 seconds.

xii Some elements of this group must be activated in the **Outputs Configuration** screen to make them visible and effective.

HEATERS

ACTUAL STATUS

These parameters display the actual status of the heaters/brooders. Each heater/brooder can display OFF or 100%.

ON TEMPERATURE

These parameters are used to set the heater/brooder set points. The respective heater/brooder is activated when its respective selected sensor(s) average temperature decreases to *ON TEMPERATURE*. Changing one of these parameters will affect the respective *OFF TEMPERATURE* parameter. These parameters are affected by the *MAIN SETPOINT* parameter. These parameters are adjusted in 0.1°F increments from *MAIN SETPOINT* - 50.0°F to *MAIN SETPOINT* + 10.0°F.

OFF TEMPERATURE

These parameters are used to set the heater/brooder differentials. The respective heater/brooder deactivates when its respective selected sensor(s) average temperature increases to *OFF TEMPERATURE*. These parameters are affected by the respective *ON TEMPERATURE* parameter. These parameters are adjusted in 0.1°F increments from its respective *ON TEMPERATURE* parameter + 0.5°F to its respective *ON TEMPERATURE* parameter +10.0°F.

PROBES

These parameters are used to set an individual associated temperature to the respective output. The temperatures associated to these heaters/brooders are a combination of the inside probes that are used.

EVAP COOL/FOG

TYPE
These parameters display the type for each output. They can either be "Evap Cool 1", "Evap Cool 2", "Inside Fog 1", "Inside Fog 2" or "Pump".

ACTUAL STATUS
These parameters display the actual status of the tunnel fans. Each output can display OFF or ON.

ON TEMPERATURE
These parameters are used to set the evaporative cooling cell, fogger and pump set points. The respective output is activated on timer when its respective sensor(s) select average temperature increases to its respective *ON TEMPERATURE*. Changing one of these parameters will affect the respective `OFF Temperature` parameter. These parameters are affected by *THE MAIN SETPOINT* parameter when *ALLOWED TO FOLLOW TEMP RAMPING* is set to Yes. These parameters are adjusted in 0.1°F increments from *MAIN SETPOINT* to *MAIN SETPOINT* + 40.0°F when *ALLOWED TO FOLLOW TEMP RAMPING* is set to Yes. These parameters are adjusted in 0.1°F increments from 32.0°F to 120.0°F when *ALLOWED TO FOLLOW TEMP RAMPING* is set to No.

OFF TEMPERATURE
These parameters are used to set the evaporative cooling cell, fogger and pump differentials. These parameters are affected by the respective *ON TEMPERATURE* parameter. These parameters are adjusted in 0.1°F increments from its respective *ON TEMPERATURE* - 30.0°F to its respective *ON TEMPERATURE* - 0.5°F.

MINIMUM ON TIME
These parameters are used to establish the respective minimum ON time of the output's timer. The *MINIMUM TIME ON* is adjusted in 1-second increments from 1 second to 600 seconds.

MAXIMUM ON TIME
These parameters are used to establish the respective maximum ON time of the output's timer. The *MAXAXIMUM TIME ON* is adjusted in 1-second increments from 1 second to 600 seconds.

CYCLE TIME
This parameter is used to establish the cycle time of the chosen output's timer. The OFF portion of a respective timer begins at *CYCLE TIME* - *MINIMUM TIME ON*. The *CYCLE TIME* is adjusted in 1-minute increments from 1 minute to 10 minutes.

EVAP COOL/FOG (CONTINUED…)

HUMIDITY OFF SETPOINT[xiii]

These parameters establish the high humidity for the cooling. The cooling will not start or will deactivate if actual humidity is equal to or greater than this parameter. A humidity differential of 3 RH% is set to avoid oscillations. To deactivate this option, adjust to OFF. If the humidity probe is defective or unplugged, the control will act as if the humidity was very low, so this will not affect this logic. These parameters are adjustable in 1 RH% increments from 0 RH% to 99 RH%, OFF**.**

TIME SET

These parameters are used to activate the respective output on its timer or continuously activate this respective output. If set to ON, respective output follows its own timer, otherwise this respective output will be continuously activated if its set point has been reached.

PROBES

These parameters are used to set an individual associated temperature to the respective output. The temperatures associated to these outputs are a combination of the inside probes that are used.

TIME CHANGE PER 0.1°

This parameter is used to set the adjustment that is made to actual ON time when respective temperature is above the *ON TEMPERATURE* set point. After every cycle, respective timer adds the *TIME CHANGE PER 0.1 DEG* to the ON time for every 0.1 degrees above the ON temperature until it reaches the *MAXIMUM TIME ON* or the *CYCLE TIME*. The same pattern is used to decrease the ON time when respective temperature is below *ON TEMPERATURE* until it decreases to or below the *MINIMUM TIME ON*, at this point the output will be activated one more cycle with *MINIMUM TIME ON* before it deactivates until temperature reaches *ON TEMPERATURE* again. This parameter is adjustable in 1-second increments from 1 second to 60 seconds.

ALLOWED TO WORK OUTSIDE TUNNEL[13]

This parameter allows the user to choose whether the outputs mentioned in this screen will be permitted to active all the time or only when in tunnel mode.

FILL TIME

This parameter is used to select the time it takes to fill water lines before cooling begins. For the first fill time activation, *FILL TIME* is not included in *CYCLE TIME*. After the first ON time, respective output will be activated at the end of its OFF time, for a period of time equal to *FILL TIME* before its OFF time finishes. Once this *FILL TIME* is elapsed, the output will be activated according to its respective timer. This parameter is adjustable in 1-second increments from 1 second to 300 seconds.

SECTION C

---

xiii Some elements of this group must be activated in the **System Configuration** and **Outputs Configuration** screens to make them visible and effective.

EVAP COOL/FOG (CONTINUED…)

CLOCK ON/OFF

These parameters are used to establish the time at which the cooling outputs (evaporative cooling, fogger and pump) may be activated. When the time of day is between *CLOCK ON* and *CLOCK OFF*, cooling outputs can be turned ON if there is a demand. Outside this time, cooling outputs will not be allowed to function. These parameters are adjusted in 1-minute increments from 12:00A to 11:59P.

LOAD DELAY

This parameter is used to adjust the amount of time all cooling outputs (evaporative cooling, fogger and pump) will wait before activating after a power failure. The *LOAD DELAY* is adjusted in 1-second increments from 1 to 120 seconds.

ALARMS

CLEAR ALARM HISTORY

This parameter is used to clear all alarms, warning conditions and reinitialize all delays.

ACKNOWLEDGE

This parameter is used to acknowledge and/or clear an alarm that has been triggered; this will reinitialize all alarm and warning conditions.

LOW TEMPERATURE

This parameter is used to establish the low temperature limit. Below *LOW LIMIT* limit, an alarm occurs. This parameter is relative to the target but is displayed as absolute set points and is adjusted in 0.1°F increments from 32.0°F to 120.0°F.

HIGH TEMPERATURE

This parameter is used to establish the high temperature limit. Above *HIGH LIMIT* limit, an alarm occurs. This parameter is relative to the target but is displayed as absolute set points and is adjusted in 0.1°F increments from 32.0°F to 120.0°F.

HIGH TUNNEL TEMPERATURE[XIV]

This parameter is used to establish the high temperature limit when in tunnel mode. Above this limit, an alarm occurs. This parameter is adjusted in 0.1°F from 32.0°F to 120.0°F.

LOW STATIC PRESSURE[14]

This parameter is used to set the alarm relay ON or OFF on a low-pressure alarm. Even if this option is set to "OFF", the alarm is triggered in the alarm list except that the alarm relay is not activated.

LOW STATIC PRESSURE[14]

This parameter is used to establish the low pressure alarm limits. When static pressure is below *LOW STATIC PRESSURE*, the *STATIC PRESSURE LOW DELAY* is activated. It is possible to deactivate the *LOW STATIC PRESSURE* by setting it to OFF. The *LOW STATIC PRESSURE* is adjusted in 0.001"WC increments from OFF, 0.000"WC to 0.100"WC. This parameter can also be modified in **STATIC PRESSURE** screen.

STATIC PRESSURE LOW DELAY[14]

This parameter is used to set a delay that allows the pressure to exceed the limit *LOW STATIC PRESSURE* without activating the alarm. There is an alarm satisfy time fixed at 5 seconds that allows the static pressure to return above *LOW STATIC PRESSURE* without reinitializing the delay *STATIC PRESSURE LOW DELAY*. The *LOW STATIC PRESSURE DELAY* is adjusted in 1-second increments from 10 seconds to 900 seconds.

SECTION C

---

xiv Some elements of this group must be activated in the **System Configuration** screen to make them visible and effective.

ALARMS (CONTINUED…)

HIGH STATIC PRESSURE[XV]

This parameter is used to establish the high pressure alarm limits. When static pressure is above *HIGH STATIC PRESSURE*, the *STATIC PRESSURE HIGH DELAY* is activated. It is possible to deactivate the *HIGH STATIC PRESSURE* by setting it to OFF. The *HIGH STATIC PRESSURE* is adjusted in 0.001"WC increments from OFF, 0.000"WC to 0.100"WC. This parameter can also be modified in **STATIC PRESSURE** screen.

STATIC PRESSURE HIGH DELAY[15]

This parameter is used to set a delay that allows the pressure to exceed the limit *HIGH STATIC PRESSURE* without activating the alarm. There is an alarm satisfy time fixed at 5 seconds that allows the static pressure to return above *HIGH STATIC PRESSURE* without reinitializing the delay *STATIC PRESSURE HIGH DELAY*. The *HIGH STATIC PRESSURE DELAY* is adjusted in 1-second increments from 10 seconds to 900 seconds.

LOW STATIC PRESSURE RELAY[15]

This parameter is used to set the alarm relay ON or OFF on a low-pressure alarm. Even if this option is set to "OFF", the alarm is triggered in the alarm list except that the alarm relay is not activated.

LOW HUMIDITY[15]

These parameters are used to establish the low humidity limit. When humidity sensor is below *LOW HUMIDITY* limit, an alarm occurs. This parameter is adjusted in 1%RH increments from 0%RH to 99%RH.

HIGH HUMIDITY[15]

These parameters are used to establish the high humidity limit. When humidity sensor is above *HIGH HUMIDITY* limit, an alarm occurs. This parameter is adjusted in 1%RH increments from 0%RH to 99%RH, OFF.

FEEDER 1-2 MAXIMUM LIMIT[15]

These parameters are used to set the delay that the respective feed system is allowed to run constantly before activating the alarm. The *FEEDER 1-2 MAXIMUM LIMIT* is adjusted in 1-minute increments from OFF, 1 minute to 120 minutes. When this alarm occurs, feeder output will deactivate until this alarm is cleared in the **ALARM LIST** screen.

WATER METER HIGH LIMIT[15]

This parameter establishes the water distribution limit in gallons per minute. Above this limit, an alarm occurs. The *WATER METER HIGH LIMIT* is adjusted in 1-gallon increments from OFF, 1 gallon to 1000 gallons.

XV Some elements of this group must be activated in the **System Configuration** screen to make them visible and effective.

ALARMS (CONTINUED…)

WATER METER 2-HOUR LIMIT[15]

This parameter establishes the water distribution limit in gallons for a 2-hour period. Above this limit, an alarm occurs. The *WATER METER 2-HOUR LIMIT* is adjusted in 1-gallon increments from OFF, 1 gallon to 1000 gallons.

HIGH BREAKER TEMPERATURE[XVI]

This parameter establishes the temperature limit for the breaker probe. Above this limit, an alarm occurs. The *HIGH BREAKER TEMPERATURE* is adjusted in 0.1°F from 32.0°F to 160.0°F.

INDIVIDUAL LOW TEMPERATURE[16]

These parameters are used to establish the low individual temperature limits. If a sensor selected to be individually alarmed (see the **PROBE CONFIGURATION** screen) exceeds this limit, the alarm will be activated. This parameter is adjusted in 0.1°F increments from 0.0°F to 120.0°F.

INDIVIDUAL HIGH TEMPERATURE[16]

These parameters are used to establish the low individual temperature limits. If a sensor selected to be individually alarmed (see the **PROBE CONFIGURATION** screen) exceeds this limit, the alarm will be activated. This parameter is adjusted in 0.1°F increments from 0.0°F to 120.0°F.

DEACTIVATE WATER ALARM WHEN LIGHTS START[16]

This parameter is used to set the delay before water meters alarms can be triggered when lights start. If this parameter is set to OFF, water alarms can be triggered anytime. If this parameter is set to another value, water alarms can only be triggered when an amount of time equals to this parameter has passed since the activation of a light period. This parameter is adjusted in 1-minute increments from OFF, 1 minute to 60 minutes.

SILENCE ALARM

This parameter shuts off of the alarm for 5 minutes. When this parameter is pressed, all alarms will be shut off for 5 minutes.

xvi Some elements of this group must be activated in the **System Configuration** and **Probe Configuration** screens to make them visible and effective.

CLOCKS

TYPE
These parameters display the actual type of the outputs. Clock relays 1-6 and 9-10 can be "Clock 1-6", "Hen Feed", "Water", "CC Light" or "Fill Sys", clock relay 7-8 can be "Clock 7-8", "Rooster D" or "Rooster R".

ACTUAL STATUS
These parameters display the actual status of the clock outputs. Each clock output can be ON or OFF.

CLOCK (1-4) START TIME CYCLE (1-12)
These parameters are used to establish the beginning of an activation period. These parameters can be adjusted to any value from 12:00A to 11:59P.

CLOCK (5-6, 9-10) START TIME CYCLE (1-7)
These parameters are used to establish the beginning of an activation period. These parameters can be adjusted to any value from 12:00A to 11:59P.

CLOCK (7-8) START TIME CYCLE (1-3)
These parameters are used to establish the beginning of an activation period. These parameters can be adjusted to any value from 12:00A to 11:59P.

CLOCK (1-4) STOP TIME CYCLE (1-12)
These parameters are used to establish the end of an activation period. These parameters can be adjusted to any value from 12:00A to 11:59P.

CLOCK (5-6, 9-10) STOP TIME CYCLE (1-7)
These parameters are used to establish the end of an activation period. These parameters can be adjusted to any value from 12:00A to 11:59P.

CLOCK (7-8) STOP TIME CYCLE (1-3)
These parameters are used to establish the end of an activation period. These parameters can be adjusted to any value from 12:00A to 11:59P.

CLOCK (1-4) OPTION CYCLE (1-12)
These parameters allow the user to set which periods will be active or not. When a parameter *OPTION* is set to "Y", the respective activation period will be active, otherwise the respective activation period will not be considered.

CLOCK (5-6, 9-10) OPTION CYCLE (1-7)
These parameters allow the user to set which periods will be active or not. When a parameter *OPTION* is set to "Y", the respective activation period will be active, otherwise the respective activation period will not be considered.

CLOCK (7-8) OPTION CYCLE (1-3)
These parameters allow the user to set which periods will be active or not. When a parameter *OPTION CYCLE* is set to "Y", the respective activation period will be active, otherwise the respective activation period will not be considered.

CLOCKS (CONTINUED…)

CLOCK (7-8) RUN TIME CYCLE (1-3)

These parameters are used to establish the run time of the activation period. These parameters are adjusted in 1-minute increments from 0:00 to 99:59 minutes.

ACTUAL WEEK

This parameter displays the actual week used with the skip day function.

CLOCK (5-10) SKIP DAY OPTION

This parameter is used to activate or deactivate the skip day option. If this parameter is set to ON, other skip day parameters will appear and an activation period will be used only if the corresponding `USED` option is set to the same number as the one set for the actual weekday of the actual week.

FEEDER

ACTUAL STATUS
This parameter displays the actual status of the feed output. The feed output can be ON or OFF.

START TIME CYCLE 1-12
These parameters are used to establish the beginning of an activation period. These parameters can be adjusted to any value from 12:00A to 11:59P.

STOP TIME CYCLE 1-12
These parameters are used to establish the end of an activation period. These parameters can be adjusted to any value from 12:00A to 11:59P.

OPTION CYCLE 1-2
These parameters allow the user to set which periods will be active or not. When a parameter *OPTION* is set to "Y", the respective activation period will be active, otherwise the respective activation period will not be considered.

LIGHT CYCLES

ACTUAL INTENSITY[17]
This parameter displays the luminosity percentage of the light logic. This parameter is displayed to the nearest 1% from 0% to 100%.

RELAY[xvii]
This parameter displays the actual status of the light relay. The light relay can be 0% or 100%.

ON TIME
These parameters are used to establish the beginning of a light cycle. When the time of day reaches the *ON TIME* of a cycle selected in *SCHEDULE* of the active period, lights will be activated. **Light cycles must not overlap for proper light behavior.** A light cycle will end when the time of day reaches its *OFF TIME*. These parameters are adjusted from 12:00A to 11:59P.

OFF TIME
These parameters are used to establish the end of an activation period. These parameters are adjusted in 1-minute increments from 12:00A to 11:59P. When the time of day reaches the *OFF TIME* of a cycle selected in *SCHEDULE* of the active period, lights have reduced their intensity from their actual intensity to 0% throughout the *SOFT START/STOP TIME* time. **Light cycles must not overlap for proper light behavior.** See **LIGHT RAMPING** screen for modulation and ramping adjustments.

SPIKING[17]
These parameters allow the user to set which light cycle will use spiking. When a parameter *SPIKE* is set to "Y", the respective cycle will use all light modulation parameters and spike throughout its activation time. In addition to this parameter, both *HIGH INTENSITY TIME* and *SOFT START/STOP TIME* of the active period must be set to a value other that "OFF" for light spiking to be effective. A cycle that does not spike will not use *HIGH INTENSITY*, *HIGH INTENSITY TIME* and *SOFT HIGH/LOW FIRST* parameters. See **LIGHT RAMPING** screen for modulation and ramping adjustments.

24H OPTION[17]
This parameter is used to set cycle 1 as a 24-hour cycle. If this parameter is set to "Y" and the active period uses cycle 1, lights will activate as soon as that period begins. Lights will remain active as long as the period is active. The 24-hour cycle will end at 11:59P of the last day of the period.

SECTION C

xvii Some elements of this group must be activated in the **Outputs Configuration** and **Variables Configuration** screens to make them visible and effective.

LIGHT PERIODS

ACTUAL INTENSITY[xviii]
This parameter displays the luminosity percentage of the light logic. This parameter is displayed to the nearest 1% from 0% to 100%.

RELAY[18]
This parameter displays the actual status of the light relay. The light relay can be 0% or 100%.

GROWTH DAY
This parameter is used to adjust the ramping day for lights. If this parameter is set to "OFF", light ramping will not be performed and period 1 will always be the active period. If this parameter is set to a value other than "OFF", it will determine the active period and will be incremented every time the time of day changes from 11:59P to 12:00A. When this parameter reaches the START DAY of a period, that period will become the active period. This parameter is adjusted in 1-day increments from "OFF", day 0 to day 365.

SYSTEM
This parameter displays the actual light activity state and is used to suspend light activity in order to perform adjustments. If this parameter is pressed when the cursor is on this parameter and "AUTO" is displayed, light will shut off and will no longer check activation settings. At this moment, the user may perform all adjustments without activating lights erratically. If this parameter is pressed when the cursor is on this parameter and "ADJUST" is displayed, light will activate according to user settings once again.

OPTION
These parameters are used to activate or deactivate the corresponding period. When one of these parameter is set to "ON", the corresponding period will be considered on the light ramping. When one of these parameters is set to "OFF", the corresponding period will not be considered. These parameters can be either set to "ON" or "OFF".

START DAY
These parameters are used to set the day at which the respective period will become the active period. When the *GROWTH DAY* reaches one of these parameters, the respective period will become the active period and all of its parameters will be used. A period may only change when no light cycles are active. If a light cycle is active when the period would change, that cycle will be completed before the period is changed. When the *GROWTH DAY* is less than all of these parameters, lights will be deactivated. When the *GROWTH DAY* is set to "OFF", period 1 will always be the active period. **All of these settings must be in chronological order for proper light behavior**. These parameters are adjusted in 1-day increments from day 0 to day 365.

---

xviii
Some elements of this group must be activated in the **Outputs Configuration** and **Variables Configuration** screen to make them visible and effective.

LIGHT PERIODS (CONTINUED…)

SCHEDULE

These parameters are used to select the light cycles that will be used for the respective period. When a given period becomes the active period, all cycles selected in these parameters will be verified. Every time the *ON TIME* of a selected cycle is reached, lights will activate and every time the *OFF TIME* of a selected cycle is reached, lights will deactivate. When less than five cycles are wanted, select a dash ("-") for all cycles that are not wanted. These parameters are adjusted in 1-cycle increments from "-", cycle 1 to cycle 10.

LOW INTENSITY[xix]

These parameters are used to establish the respective period's low intensity. When the time of day reaches the *ON TIME* of a cycle selected in *SCHEDULE* of the active period, light intensity will modulate from 0% to this value if *SOFT HIGH/LOW FIRST* is set to "Lo", if *SPIKE* is set to "N" or if *HIGH INTENSITY TIME* is set to "OFF". Light will go directly to this intensity when the time of day reaches the ON TIME of an active cycle and *SOFT START/STOP TIME* is set to "OFF". If light spiking is used, lights will modulate from *HIGH INTENSITY* to this intensity throughout the *SOFT START/STOP TIME* once the *HIGH INTENSITY TIME* is completed. These parameters are adjusted in 1% increments from 0% to 100%

LOW INTENSITY TIME[19]

These parameters are used to establish the amount of time the light intensity will stay at *LOW INTENSITY*. When light spiking is used, every time lights reach *LOW INTENSITY*, they will remain at that intensity for this amount of time. These parameters are adjusted in 1-minute increments from 1 minute to 900 minutes.

HIGH INTENSITY[19]

These parameters are used to establish the respective period's high intensity. When the time of day reaches the ON TIME of a cycle selected in *SCHEDULE* of the active period, light intensity will modulate from 0% to this value if *SOFT HIGH/LOW FIRST* is set to "Hi", if *SPIKE* is set to "Y" and if *HIGH INTENSITY TIME* is not set to "OFF". If light spiking is not used, this intensity will never be taken. If light spiking is used, lights will modulate from *LOW INTENSITY* to this intensity throughout the *SOFT START/STOP TIME* once the *LOW INTENSITY TIME* is completed. These parameters are adjusted in 1% increments from 0% to 100%.

LIGHT PERIODS (CONTINUED…)

HIGH INTENSITY TIME[19]

SECTION C

xix Some elements of this group must be activated in the **Variables Configuration** screen to make them visible and effective.

These parameters are used to establish the amount of time the light intensity will stay at *HIGH INTENSITY*. When light spiking is used, every time lights reach *HIGH INTENSITY*, they will remain at that intensity for this amount of time. If one of these parameters is set to "OFF", the respective period will not use light spiking, regardless of other settings. These parameters are adjusted in 1-minute increments from 1 minute to 900 minutes.

SOFT START/STOP TIME[xx]

These parameters are used to establish all the light-modulation times for the respective period. Every time the light intensity modulates either from the lower intensity (*LOW INTENSITY* or OFF) to the higher intensity (*LOW INTENSITY* or *HIGH INTENSITY*) or vice-versa, it will do so according to the time set here. If one of these parameters is set to "OFF", the respective period will not use light spiking. Instead, they and will go directly to *LOW INTENSITY* and remain there until the end of the cycle. These parameters are adjusted in 1-minute increments from "OFF", 1 minute to 20 minutes.

Ex: *SOFT START/STOP TIME* = 1 minute;
LOW INTENSITY = 25%;
LOW INTENSITY TIME = 10 minutes;
HIGH INTENSITY = 75%;
HIGH INTENSITY TIME = 3 minutes;
ON TIME = 3:00A;
OFF TIME = 5:00A;
At 2:59A, the light if OFF,

First step...

- Between 3:00A and 3:01, the light increases its intensity from 0% to 25%.

Others steps…

- The lights stay at 25% for 10 minutes and then the light increases their intensity from 25% to 75% for 1 minute to stay at 75% for 3 minutes. When 3 minutes are elapsed then light intensity decreases from 75% to 25% for 1 minute.

These steps continue cycling like a recycle timer until the clock reaches 4:59A, lights will then decreases their intensity from where it was at 4:59A to 0%.

SECTION C

xx Some elements of this group must be activated in the **Variables Configuration** screen to make them visible and effective.

LIGHT PERIODS (CONTINUED…)

Important Notes:

- All settings must be set outside all activation periods or when light activity is suspended and all activation periods can't overlap otherwise unwanted light conditions may happen.
- At the return of a power failure, the lights will restart at the beginning of the cycle and will stop at respective *OFF TIME*.
- If the light dimmer option is set to "N" in **SYSTEM CONFIGURATION** screen, lights will be ON/OFF lights and will not any spiking related parameters.

  If lights *SOFT START/STOP TIME* is set to "OFF" while the light dimmer option is set to "Y" in **SYSTEM CONFIGURATION** screen, when in an activation period, variable lights demand will equal to the *LOW INTENSITY* parameter.

MINIMUM VENTILATION

***ON TIME* (Curve Available)**
This parameter is used to establish the minimum ventilation ON time when the average temperature is not above the *MAIN SETPOINT* + 1.0°F. If *ON TIME* is longer than *CYCLE TIME* then timer will always be ON. The *ON TIME* is adjusted in 1-second increments from 2 seconds to 900 seconds.

ADD TIME 1,0/1,5/2,0/2,5 DEGREES ABOVE SVP
These parameters are used to increase the minimum ventilation ON time when the average temperature is more than the respective 1.0°F/1.5°F /2.0°F /2.5°F above the *MAIN SETPOINT*. The value set at these parameters will be added to the *ON TIME*. The *ADD TIME 1.0/1.5/2.0/2.5 DEG ABOVE SP* are adjusted in 1-second increments from OFF, 3 seconds to 60 seconds.

ADD TIME CLOCK
This parameter is used to increase the minimum ventilation ON time when the time of day is between *START ADD TIME* and *END ADD TIME CLOCK*. The value set at this parameter will be added to the ON TIME. The *ADD TIME CLOCK* is adjusted in 1-second increments from OFF, 3 seconds to 60 seconds.

CYCLE TIME
This parameter is used to establish the cycle time of the minimum ventilation timer. The *VENT CYCLE TIME* is adjusted in 1-minute increments from 1 to 15 minutes.

Ex: *ON TIME* = 30 seconds;
VENT CYCLE TIME = 5 minutes;
MAIN SETPOINT = 70.0°F;
ADD TIME 1.0 DEG ABOVE SP = 15 seconds;
ADD TIME 1.5 DEG ABOVE SP = 15 seconds;

The minimum ventilation timer follows these steps as the average temperature increases so, when average temperature is:

- Below 71.1°F, the minimum ventilation timer will be ON 30 seconds and OFF 4 minutes and 30 seconds.
- Between 71.1°F and 71.5°F, the minimum ventilation timer will be ON 45 seconds and OFF 4 minutes and 15 seconds.
- At and above 71.6°F, the minimum ventilation timer will be ON 60 seconds and OFF 4 minutes.

START ADD TIME CLOCK
This parameter is used to set the time at which the *ADD TIME CLOCK* will be added to the minimum ventilation ON time. When the time of day reaches this value, the minimum ventilation ON time will be increased by *ADD TIME CLOCK*. This increase will remain until the time of day reaches end *ADD TIME CLOCK*.

MINIMUM VENTILATION (CONTINUED…)

END ADD TIME CLOCK

This parameter is used to set the time at which the *ADD TIME CLOCK* will no longer be added to the minimum ventilation ON time. When the time of day reaches this value, the minimum ventilation ON time will no longer be increased by *ADD TIME CLOCK*. This increase will begin once again when the time of day reaches *ON TIME*.

CURVE

This parameter is used to set the ramping curve function ON or OFF for the minimum ventilation timer. If the parameter is set to ON and the *RAMPING START DAY* of the **SET POINTS** screen is not set to OFF, *ON TIME* will follow the curve function and user will not be able to manually modify this parameter nor the day points and time points.

STOPS ON TEMPERATURE DEMAN

This parameter is used to deactivate the minimum ventilation timer when a fan starts on a temperature demand. If set to YES, when a fan starts on a temperature demand, minimum ventilation logic will be deactivated. If set to NO, all fans that are selected to run with minimum ventilation timer will follow the timer even if a fan is running on a temperature demand.

MANUAL OVERRIDE

RELAY (1-40) **(Type)**

These parameters are used to manually override the calculated activation demand to activate the relay output at the value adjusted here. When the value is AUTO, the associated relay output will be activated according to the configuration's parameters and the temperature read. When the value is OFF, the relay output will be deactivated. When the value is ON, the relay output will be activated.

CHICKEN SCALES

STATUS
This parameter displays the actual status of the scale.

NUMBER WEIGHED
This parameter displays the amount of birds weighed recorded by the controller for the current day. A weight is only recorded if it is between respective SCALE (1-4) TARGET WEIGHT +/- *SCALE (1-4) HIGH/LOW TOLERANCE*. The amount of birds weighed is displayed to the nearest 1 birds weighed from 0 to 9999 birds weighed.

ACTUAL AVERAGE WEIGHT
These parameters display the average weight of the respective scale recorded for the actual day. If a scale has not recorded a weight during the actual day, the respective parameter will display ----. This value is displayed according to the *POULTRY WEIGHT UNIT* with a precision of 1 unit from 1 to 9998 units.

YESTERDAY AVERAGE WEIGHT
These parameters display the average weight of the respective scale recorded for the past day. If a scale has not recorded a weight during the past day, the respective parameter will display ----. This value is displayed according to the *POULTRY WEIGHT UNIT* with a precision of 1 unit from 1 to 9998 units.

ACTUAL GAIN
This parameter displays the gain calculated for the respective scale. The gained weight is the difference between today's average weight and yesterday's average weight. If a scale has not recorded an average weight during the actual day of the preceding one, the gain cannot be calculated and the respective parameter will display "---". Otherwise, the gain value is displayed to the nearest 0.001 pound from -9.998 to 9.999 pounds.

YESTERDAY GAIN
This parameter displays the gain calculated for the respective scale for the past day. The gained weight is the difference between yesterday's average weight and two days ago' average weight. If a scale has not recorded an average weight during the actual day of the preceding one, the gain cannot be calculated and the respective parameter will display "---". Otherwise, the gain value is displayed to the nearest 0.001 pound from -9.998 to 9.999 pounds.

UNIFORMITY
This parameter displays the uniformity calculated by the respective WSM-1 module for the current day. The uniformity represents the percentage of the birds that are within 10% of the target weight. If no birds have been weighed during the current day, this parameter displays "----". Otherwise, the uniformity is displayed to the nearest 1% from 0% to 100%.

CHICKEN SCALES (CONTINUED…)

STANDARD DEVIATION
This parameter displays the standard deviation calculated by the respective scale. The standard deviation is a measure of the uniformity of a screen of birds. For example, if a standard deviation of 3.000 pounds is calculated, this indicates that 68% of the birds have a weight within 3.000 pounds of the average weight. This value also indicates that 95% have a weight within 6.000 pounds (standard deviation x2) of the average weight. If less than 2 birds have been weighed during the current day, this parameter will display "---". Otherwise, the standard deviation is displayed to the nearest 0.0001 pound to 3.3000 pounds.

AGE
This parameter displays the flock's actual age. The age is incremented each time the date changes. The actual age is displayed from day 0 to 500.

ACTUAL WEIGHT
This parameter displays the actual weight read by the WSM-1 module. The scale must have been calibrated to obtain a significant value. The actual weight is displayed to the nearest 0.001 pound from -9.998 to 9.999 pounds.

TARGET WEIGHT
This parameter displays the target weight of the actual day. The target weight is determined by the growth curve if the "Target Weight Chart" method is used. If the "Evolution Of Weight" method is used, the target weight is equal to yesterday's average weight (or the target weight adjusted by the user when flock is started) plus the respective "Add Weight". If the flock of the respective scale has not been started, this parameter will display "---". Otherwise, the target weight is displayed to the nearest 0.001 pound to 9.999 pounds.

LAST WEIGHT
This parameter displays the last weight recorded by the WSM-1 module. For a weight to be recorded, it must be within the respective target weight +/- the corresponding tolerance. The weight recorded by the WSM-1 module is the difference between the last stable weight and the new actual weight. Ex: If two birds weighing 0.500 pound each are already on the scale and a third bird weighing 0.630 pound is added, the WSM-1 module will record a weight of 0.630 pound, but the actual weight displayed will be 1.630 pound. If no correct weight has been recorded, this parameter will display "---". Otherwise, the last weight will be displayed to the nearest 0.001 pound from 0.001 pound to 9.999 pounds.

START AGE
This parameter allows the user to set the birds' age when the flock is started. When a flock is started, its actual age will be set to this value. This parameter is adjusted in 1-day increments from day 0 to day 249.

CHICKEN SCALES (CONTINUED…)

START WEIGHT

This parameter allows the user to set the birds' weight when the flock is started. When a flock is started, its target weight will be set to this value if the "Evolution Of Weight" method is used. When the "Target Weight Chart" method is used, this parameter will not appear. The start weight is adjusted in 0.001-pound increments from 0.010 to 9.999 pounds.

LOW TOLERANCE

This parameter is used to set the valid low weight limits for the scale. To make sure all weights recorded are valid, the scale will only record weights that are within the actual target weight - *SCALE (1-2) TOLERANCE LOW* and the actual target weight + *SCALE (1-2) TOLERANCE HIGH*. This parameter is adjusted in 1% increments from 20% to 40%.

HIGH TOLERANCE

This parameter is used to set the valid high weight limits for the scale. To make sure all weights recorded are valid, the scale will only record weights that are within the actual target weight - *SCALE (1-2) TOLERANCE LOW* and the actual target weight + *SCALE (1-2) TOLERANCE HIGH*. This parameter is adjusted in 1% increments from 20% to 40%

CALIBRATION WEIGHT

This parameter allows the user to set the weight used for the calibration process. When calibrating the gain, the weight on the scale must be exactly the same as the one set here. The heavier the weight is, the better the precision will be. This parameter is adjusted according to the *POULTRY WEIGHT UNIT* in 1-unit increments from 1 to 22000 units.

ZERO CALIBRATION

This parameter allows the user to start a calibration process that will determine the weight at which the scale will consider the weight to be zero (grams or pounds). To correctly evaluate the weight on the scale, the exact weight read when nothing is on the scale must be known. The scale must be emptied of all matter and press on this parameter. At this moment, the message at this parameter will change to indicate the status of the zero calibration sequence.

GAIN CALIBRATION

This parameter allows the user to start a calibration process that will determine the gain of the scale. To correctly evaluate the gain of the scale, the variation of the electrical signal according to two known weights must be known; i.e. weight when the scale is empty and the *SCALE (1-2) CALIBRATION WEIGHT*. A weight precisely equal to the *SCALE (1-2) CALIBRATION WEIGHT* must be placed on the scale and press on this parameter to start a gain calibration sequence. At this moment, the message at this parameter will change to indicate the status of the gain calibration.

CHICKEN SCALES (CONTINUED…)

EVALUATION OF WEIGHT METHOD

This parameter is used to select the method used to determine the SCALE (1-4) TARGET WEIGHT. If the Evolution method is used, the target weight will be equal to yesterday's average weight (or the target weight adjusted by the user when flock is started) plus the respective *SCALE (1-4) ADD WEIGHT AGE (0-249)*. If the Chart method is used, the target weight for a given age will be determined by the corresponding weight adjusted in the growth curve of the respective scale. This parameter may only be adjusted when all scales are deactivated.

FLOCK GENDER

This parameter allows the user to choose the target weight chart that will be used. There are two pre-programmed charts with typical weights for male and female birds.

BATCH MANAGEMENT

This parameter is used to start or stop a flock for the respective scale. When this parameter is pressed and no flock is started, a confirmation message will appear, warning the user that all data and histories will be reinitialized. If a flock is running, pressing this parameter will stop the flock.

CURVE SCALE (1-2)

TARGET WEIGHT MALE/FEMALE AGE (0-249)

These parameters allow the user to adjust the target weights of a flock. Each weight can be individually adjusted to allow the user to create his customized target weight chart. If the "Evolution Of Weight" method is chosen, this chart will only be used as a reference if the user desires so. However, if the "Target Weight Chart" method is chosen, this chart will determine the target weight of a given age. Each target weight is adjusted in 0.001-pound increments from 0.000 to 9.999 pounds.

ADD WEIGHT DAY (0-249)

These parameters are used to calculate the target weight when the "Evolution Of Weight" method is chosen. If the "Target Weight Chart" method is used, these parameters will not be visible. These values will be added to the average of the corresponding day to define the new target weight for the actual day. Each value should represent the anticipated weight gain for the respective day. Each parameter is adjusted in 0.001-pound increments from 0.000 to 0.999 pounds.

PROBE CALIBRATION

TEMPERATURE (1-12) [21]
These parameters display the probe reading with its corresponding calibration. These temperatures are displayed to the nearest 0.1° from -58.0°F to 140.0°F.

TEMPERATURE (1-12) ADJUSTMENT [21]
These parameters are used to adjust the probe reading. These values are adjusted in 0.1° increments from -20.0° to 20.0°.

OUTSIDE TEMPERATURE[xxi]
This parameter displays the outside probe reading with its corresponding calibration. This temperature is displayed to the nearest 0.1° from -58.0°F to 140.0°F.

OUTSIDE TEMPERATURE ADJUSTMENT[21]
This parameter is used to adjust the outside probe reading. This value is adjusted in 0.1° increments from -20.0° to 20.0°.

BREAKER TEMPERATURE[21]
This parameter displays the breaker probe reading with its corresponding calibration. This temperature is displayed to the nearest 0.1° from -58.0°F to 140.0°F.

BREAKER TEMPERATURE ADJUSTMENT[21]
This parameter is used to adjust the outside probe reading. This value is adjusted in 0.1° increments from -20.0° to 20.0°.

HUMIDITY[21]
This parameter displays the actual humidity with its calibration. The humidity is displayed to the nearest 1RH% from 0RH% to 100RH%. The control may also display ERR if the humidity probe has not responded for five minutes.

HUMIDITY ADJUSTMENT[21]
This parameter is used to adjust the humidity reading. This value is adjusted in 1RH% increments from -20RH% to 20RH%.

STATIC PRESSURE[21]
This parameter displays the breaker probe reading with its corresponding calibration. This temperature is displayed to the nearest 0.001"WC from 0.000"WC to 0.200"WC.

STATIC PRESSURE ADJUSTMENT [21]
This parameter is used to adjust the static pressure reading. This value is adjusted in 0.001"WC increments from -0.150"WC to 0.150"WC.

1-PULSE CALIBRATION (1-2) [21]
These parameters are used to set the number of litres counted each time a pulse is read at the water counter input. This number is adjusted in 1-litre increments from 0.01 to 99.99 litres.

---

xxi Some elements of this group must be activated in the **System Configuration** screen to make them visible and effective.

PROBE CALIBRATION (CONTINUED…)

FEED 1-MINUTE CALIBRATION (1-2) [xxii]

These parameters are used to set the amount of feed counted for each minute of activation read by the feed input. This number is adjustment in 1-lbs increments from 1 to 100 lbs.

xxii Some elements of this group must be activated in the **System Configuration** screen to make them visible and effective

PROBE CONFIGURATION

AVERAGE PROBES

This sensor select is used to set which probes will be calculated in the average temperature.

PROBES CHECKED FOR HIGH/LOW ALARM

This parameter gives the opportunity to activate the alarm for the respective sensor that is selected or deactivate it for the sensors that are not selected. A sensor selected in this parameter will be considered defective if it is 20.0°F below the *MAIN SETPOINT*.

BACKUP PROBE

These parameters allow the selection of an available backup sensor for each inside temperature sensor. This means that if an inside sensor becomes defective or is malfunctioning, the system will use the backup sensor instead. In the case that a backup sensor is defective too, the system will use the *MAIN SETPOINT* setting to simulate a sensor reading.

INDIVIDUAL PROBE SELECTION

This parameter is used to activate or deactivate the individual alarm for the respective sensor. When a sensor selected in this parameter exceeds the individual probe limits, the alarm will activate.

SYSTEM CONFIGURATION

CONFIGURATION VERSION
These parameters display the configuration version currently used.

PROCESSOR VERSION
These parameters display the processor version currently used.

ACTIVE PROBES
This parameter establishes the number of inside probes that are available. This parameter affects all sensor selects. *OUTSIDE PROBE ACTIVE?* and *BREAKER PROBE ACTIVE?* affect this parameter, if `INSIDE PROBES` is set to 12 and *OUTSIDE PROBE ACTIVE?* and *BREAKER PROBE ACTIVE?* are both set to "N" and *OUTSIDE PROBE ACTIVE?* setting is changed to "Y" then `INSIDE PROBES` will automatically drop to 11 inside probes. This parameter is adjusted by 1-probe increments from 2 inside probes to 12 inside probes (if *OUTSIDE PROBE ACTIVE?* and *BREAKER PROBE ACTIVE?* are set to "N").

OUTSIDE PROBE ACTIVE?
This parameter is used to activate or deactivate the outside and all its associated logics. This parameter can affect the *ACTIVE PROBE* parameter. This parameter can be set to "Y" or "N".

BREAKER PROBE ACTIVE?
This parameter is used to activate or deactivate the breaker probe. This parameter can affect the *ACTIVE PROBES* parameter.

NUMBER OF WATER METERS
This parameter is used to adjust the number of water counters used. There may be up to 2 water counters in the configuration.

HUMIDITY PROBE ACTIVE?
This parameter is used to activate or deactivate the humidity sensor.

NUMBER OF FEEDERS
This parameter is used to adjust the number of feed counters used. At least one feed counter must be activated to use a feeder output. There may be up to 2 feed counters in the configuration.

STATIC PRESSURE PROBE ACTIVE?
This parameter is used to activate or deactivate the static pressure sensor. It will also activate or deactivate **STATIC PRESSURE**.

HEAT/BROOD ACTIVE?
This parameter is used to activate or deactivate the heater and brooder outputs. If this parameter is set to "Y", then **HEATERS** screen will be accessible (if at least one relay in **OUTPUT CONFIGURATION** screen is correctly associated to one of these respective outputs) and all these outputs can work normally. If this setting is set to "N", then **HEATERS** screen will not be accessible and all relays associated to these outputs in **OUTPUT CONFIGURATION** screen will be reinitialized and not available.

SYSTEM CONFIGURATION (CONTINUED…)

SIDEWALL FANS ACTIVE?

This parameter is used to activate or deactivate the sidewall fan outputs. If this parameter is set to "Y", then **SIDEWALL FANS** screen will be accessible (if at least one relay in **OUTPUT CONFIGURATION** screen is correctly associated to one of these respective outputs) and all these outputs can work normally. If this setting is set to "N", then **SIDEWALL FANS** screen will not be accessible and all relays associated to these outputs in **OUTPUT CONFIGURATION** screen will be reinitialized and not available.

TUNNEL FANS ACTIVE?

This parameter is used to activate or deactivate the tunnel fan outputs. If this parameter is set to "Y", then **TUNNEL FANS** screen will be accessible (if at least one relay in **OUTPUT CONFIGURATION** screen is correctly associated to one of these respective outputs) and all these outputs can work normally. If this setting is set to "N", then **TUNNEL FANS** screen will not be accessible and all relays associated to these outputs in **OUTPUT CONFIGURATION** screen will be reinitialized and not available.

EVAP COOL/FOG ACTIVE?

This parameter is used to activate or deactivate the evaporative cooling cell and fogger outputs. If this parameter is set to "Y", then **EVAP COOL/FOG** screen will be accessible (if at least one relay in **OUTPUT CONFIGURATION** screen is correctly associated to one of these respective outputs) and all these outputs can work normally. If this setting is set to "N", then **EVAP COOL/FOG** screen will not be accessible and all relays associated to these outputs in **OUTPUT CONFIGURATION** screen will be reinitialized and not available (the pump relay setting is also affected by this parameter).

STIR FANS ACTIVE?

This parameter is used to activate or deactivate the stir fan outputs. If this parameter is set to "Y", then **STIR FANS** screen will be accessible (if at least one relay in **OUTPUT CONFIGURATION** screen is correctly associated to one of these respective outputs) and all these outputs can work normally. If this setting is set to "N", then **STIR FANS** screen will not be accessible and all relays associated to these outputs in **OUTPUT CONFIGURATION** screen will be reinitialized and not available.

CURTAINS ACTIVE?

This parameter is used to activate or deactivate the curtain outputs. If this parameter is set to "Y", then **CURTAINS** screen will be accessible (if at least one relay in **OUTPUT CONFIGURATION** screen is correctly associated to one of these respective outputs) and all these outputs can work normally. If this setting is set to "N", then **CURTAINS** screen will not be accessible and all relays associated to these outputs in **OUTPUT CONFIGURATION** screen will be reinitialized and not available.

SYSTEM CONFIGURATION (CONTINUED…)

EGG ROOM ACTIVE?
This parameter is used to activate or deactivate the egg room. If this parameter is set to "Y", **EGG ROOM** screen will be accessible and the egg room heater and cooler outputs can work normally. If this setting is set to "N", then **EGG ROOM** screen will not be accessible and all relays associated to egg room outputs will be reinitialized and not available

POULTRY SCALE 1 ACTIVE?
This parameter is used to activate or not the scale 1 and its logics.

POULTRY SCALE 2 ACTIVE?
This parameter is used to activate or not the scale 1 and its logics.

INDIVIDUAL PROBES ALARMS?
This parameter is used to activate or deactivate the alarms on individual probes.

UNIT ID
This parameter is used to set the control ID. This number is used by the remote access software, to single out the control amongst the other ones.

RF CHANNEL
This parameter is used to select one of the 16 frequencies of the WiFarm network or deactivates wireless communication mode. If this parameter is set to OFF, other wireless communication parameters will disappear. This parameter can be adjusted to OFF, 1 to 16.

RF NETWORK
This parameter is used to identify a WiFarm network. A WiFarm network is formed when the *RF NETWORK* is set to the same value as the of the RF communication card of the controller designated as the network master (ex. WebGate in most installations). Other controllers can join the existing network by adjusting *RF NETWORK* to the RF ADDRESS of that same network. When *RF CHANNEL* is set to OFF, this parameter will disappear. This parameter can be adjusted to any value from 00000 to 39999.

RF ADDRESS
These parameters display the number (address) associated to the RF card inserted in the controller. A unique number is given to each RF card of the WiFarm network. The RF ADDRESS also appears on the sticker present on the RF card. When *RF CHANNEL* is set to OFF, this parameter will disappear. The address can be any value from 0 to 32767.

OUTPUTS CONFIGURATION

OUT #

This column is used to set the respective output on the desired relay. An output can be assigned to any relay from 1 to 40. Adjusting this parameter to 0 deactivates the associated output.

NO/NC

This column is used to set the respective output's relay on normally open (NO) or normally close (NC). The respective parameter reflects the corresponding output only if this output's status is "OK", otherwise the last normally open/close valid settings will be used.

STATUS

This column indicates the status of the output on the relay. If the relay is ok, message "OK" will be shown. If there are 2 outputs on the same relay, the message "CONFLICT" will appear beside the conflicting relays. If output relay is 0, the message "NOT USED" will appear meaning that this output has no relay attached to it. If message is "NOT AVAIL", it means the output or outputs are deactivated and no relay can be assigned to them. If message is "CHOOSE OP" or "CHOOSE CL", it means that another output linked to this output must be set to a valid relay.

TYPE[xxiii]

These parameters are used to select the name of the respective output. Each heating unit can have a unique numbered heat name (Heat 1, Heat 2, Brood 1, …). The tunnel Fan 20 output can be named "Tunl Fan20" or "Tunl Curt1". Each clock output can have a unique numbered clock name (Clock 1, Clock 2…) or one of the assigned names. The first six output names can be Hen Feed, Water, CC Light or Fill Sys. The last two output names can be Rooster D or Rooster.

SECTION C

xxiii Some elements of this group must be activated in the **System Configuration** screen to make them visible and effective

VARIABLES CONFIGURATION

0-10V OUT (1-2)

This parameter is used to assign a type and a zone to the variable output. The outputs that are not activated and their logics will be removed. The available outputs on this board are: Unused, Light Dimmer, Variable (1-2).

MS-10 OUT (1-2)

This parameter is used to assign a type and a zone to the variable output. The outputs that are not activated and their logics will be removed. The available outputs on this board are: Unused, Light Dimmer, Variable (1-2).

PASSWORD

CHANGE PARAMETER STATE

This parameter is used to change the parameter state from locked to unlocked or vice versa. When this parameter is pressed, *ENTER PASSWORD* will appear and the text displayed here will change to Validate Password. If the correct password is entered and this parameter is pressed, the parameter state will change from locked to unlocked or vice versa and the result of the operation will be displayed here. If an incorrect password is entered at *ENTER PASSWORD*, this parameter will display Wrong Password.

ENTER PASSWORD

This parameter is used to enter the password that is used to lock or unlock the parameters. When the user wants to change the parameter state, the password must be entered here and validated using CHANGE PARAMETER STATE. The default password is 0.

CHANGE PASSWORD

This parameter is used to change the password that is used to lock or unlock the parameters. When this parameter is pressed, *ENTER NEW PASSWORD*, *CONFIRM NEW PASSWORD* and *ENTER ACTUAL PASSWORD* will appear and the text displayed here will change to Validate Changes. If the passwords entered at *ENTER NEW PASSWORD* and *CONFIRM NEW PASSWORD* are identical and the value entered at *ENTER ACTUAL PASSWORD* corresponds to the actual password, the password will be changed when this parameter is pressed. If the passwords entered at *ENTER NEW PASSWORD* and *CONFIRM NEW PASSWORD* are different or the value entered at *ENTER ACTUAL PASSWORD* is not the actual password, this parameter will display Wrong Password.

ENTER NEW PASSWORD

This parameter is used to enter the new password that will be recorded if the change is correctly completed.

CONFIRM NEW PASSWORD

This parameter is used to confirm the new password that will be recorded if the change is correctly completed.

ENTER ACTUAL PASSWORD

This parameter is used to validate the password change by entering the actual password.

TECH PARAM

CODE 1-4

These parameters are reserved for the manufacturer's technical support personnel.

TECH PARAM

These parameters are reserved for the manufacturer's technical support personnel.

CURTAINS SETUP

MODE

These parameters are used to set the mode that will be used by the respective curtain. If this parameter is set to "Progressive", the curtain will use the progressive settings. If this parameter is set to "Run Time", the curtain will use the progressive settings.

PROBES

These parameters are used to set an individual associated temperature to the respective curtain. The temperature associated to the curtain are a combination of the inside probes that are used.

CURTAINS RUN TIME

ACTUAL RUN TIME (1-4)

These parameters are used to display the actual run time of the curtain. When the curtain closes, this time will decrease. When the curtain opens, this value will increase. When the curtain reaches 0 or its total run time, it will continue to close or open respectively, but the run time will retain its value. This is done in order to correct for any error it could have accumulated through time. This parameter is displayed from 0 to 999 seconds.

OPENING TEMPERATURE (1-4)

These parameters are used to set the temperature at which the respective curtain will open for the associated *% RUN TIME (1-4)*. When the curtain's temperature reaches the temperature set here, the curtain will add the associated run time to its requested opening. These parameters are relative to the MSP and are adjusted in 0.1°F increments from MSP - 40.0°F to MSP + 40.0°F.

CLOSING TEMPERATURE (1-4)

These parameters are used to set the temperature at which the respective curtain will no longer open for the associated *% RUN TIME (1-4)*. When the curtain's temperature drops to the temperature set here, the curtain will remove the associated run time to its requested opening. These parameters are relative to the associated *OPENING TEMPERATURE (1-4)* and are adjusted in 0.1°F increments from *OPENING TEMPERATURE (1-4)* - 20.0°F to *OPENING TEMPERATURE (1-4)* - 0.3°F.

% RUN TIME (1-4)

These parameters establish the opening for each temperature set point for the curtain. When the curtain's temperature reaches the associated *OPENING TEMPERATURE (1-4)*, the curtain will add the opening adjusted here to its requested opening. When the curtain's temperature drops to *CLOSING TEMPERATURE (1-4)*, the curtain will remove the opening adjusted here to its requested. The requested opening is adjusted in percentage then converted to a time value that the curtain opens to. These parameters are adjusted in 1% increments from 0% to 100%.

TOTAL RUN TIME (1-4)

This parameter is used to determine the total run time of the curtain. The total run time is the time the curtain takes to go from a completely closed position to a completely open position. Curtains will use this value to convert the requested position (in percentage) to a requested run time. This parameter is adjusted in 1-second increments from 0 second to 900 seconds.

PRECISION (1-4)

This parameter is used to adjust the precision of the curtain. If the curtain performs unnecessary small movements, increase this value until acceptable stability is obtained. When this value is increased, a greater difference between the actual position and the requested position will be required to make the curtain move. This parameter is adjusted in 1 second increments from 1 second to 20 seconds.

CURTAINS PROGRESSIVE

ACTUAL STATUS
These parameters indicate the respective status of the curtain; "OPENING ON", "OPENING OFF", "CLOSING ON", "CLOSING OFF", "STOPPED", "CONT OPENING" when exiting tunnel mode and "CONT CLOSING" while in tunnel mode.

OPENING TEMPERATURE
These parameters are used to set the temperature at which the respective curtain will start to open on a timer according to *MININIMUM OPENING TIME* and *CYCLE TIME* parameters. When respective sensor(s) select temperature is between *CLOSING TEMPERATURE* and *OPENING TEMPERATURE*, then respective curtain doesn't move. These parameters are relative to the *MAIN SETPOINT* and are adjusted in 0.1°F increments from *MAIN SETPOINT* - 40.0°F to *MAIN SETPOINT* + 40.0°F.

PROGRESSIVE OPENING
These parameters are used to set the temperature at which the respective curtain will open for *MAXIMUM OPENING*. The open time modulates from *MINIMUM OPENING TIME*, when respective sensor(s) select temperature reaches *OPENING TEMPERATURE*, to *MAXIMUM OPENING*, when respective sensor(s) select temperature reaches *PROGRESSIVE OPENING*. These parameters are relative to the *OPENING TEMPERATURE* and are adjusted in 0.1°F increments from *OPENING TEMPERATURE* to *OPENING TEMPERATURE* + 40.0°F.

CLOSING TEMPERATURE
These parameters are used to set the temperature at which the respective curtain will start to close on a timer according to *MINIMUM CLOSING TIME* and *CYCLE TIME* parameters. When respective sensor(s) select temperature is between *CLOSING TEMPERATURE* and *OPENING TEMPERATURE* then respective curtain doesn't move. These parameters are relative to the *MAIN SETPOINT* and are adjusted in 0.1°F increments from *MAIN SETPOINT* - 40.0°F to *MAIN SETPOINT* + 40.0°F.

PROGRESSIVE CLOSING
These parameters are used to set the temperature at which the respective curtain will close for *MAXIMUM CLOSING TIME*. The close time modulates from *MINIMUM CLOSING TIME*, when respective sensor(s) select temperature reaches *CLOSING TEMPERATURE*, to *MAXIMUM CLOSING* `time`, when respective sensor(s) select temperature reaches *PROGRESSIVE OPENING*. These parameters are relative to the *CLOSING TEMPERATURE* and are adjusted in 0.1°F increments from *CLOSING TEMPERATURE* to *CLOSING TEMPERATURE* + 40.0°F.

DIFFERENTIAL
These parameters establish the differential for the *OPENING TEMPERATURE* and *CLOSING TEMPERATURE*. This differential is adjusted in 0.1°F from 0.5°F to 10.0°F.

CURTAINS (CONTINUED…)

CYCLE TIME

These parameters are used to establish the OFF time of the respective curtain. During that time, the curtain will not move. The OFF time is equal to *CYCLE TIME – MININIMUM / MAXIMUM OPENING / CLOSING*. These *CYCLE TIME* parameters are adjusted in 1-minute increments from 1 minute to 15 minutes.

MINIMUM CLOSING TIME

These parameters establish the minimum closing time of the respective curtain when respective sensor(s) select temperature has reached *CLOSING TEMPERATURE*. These *MINIMUM CLOSING TIME* parameters are adjusted in 1-second increments from 2 seconds to 900 seconds.

MAXIMUM CLOSING TIME

These parameters establish the maximum closing time of the respective curtain when respective sensor(s) select temperature has reached *PROGRESSIVE CLOSING*. These *MAXIMUM CLOSING TIME* parameters are adjusted in 1-second increments from 2 seconds to 900 seconds.

MINIMUM OPENING TIME

These parameters establish the minimum opening time of the respective curtain when respective sensor(s) select temperature has reached *OPENING TEMPERATURE*. These *MINIMUM OPENING TIME* parameters are adjusted in 1-second increments from 2 seconds to 900 seconds.

MAXIMUM OPENING TIME

These parameters establish the maximum opening time of the respective curtain when respective sensor(s) select temperature has reached *PROGRESSIVE OPENING*. These *MAXIMUM OPENNING TIME* parameters are adjusted in 1-second increments from 2 seconds to 900 seconds.

PROBES

These parameters are used to set an individual associated temperature to the respective output. The temperatures associated to these curtains are a combination of the inside probes that are used.

EGG ROOM

HEATER ACTUAL STATUS[xxiv]

These parameters display the actual status of the egg room heater outputs. Each on/off stage output can be ON or OFF.

HEATER ON TEMPERATURE[24]

This parameter is used to set the temperature at which the corresponding egg room heater (1-2) will activate. When the temperature of the selected probes is at or below this value, the corresponding egg room heater (1-2) will turn on. This parameter is adjusted in 0.1°F increments from 0.0°F to 120.0°F.

HEATER OFF TEMPERATURE[24]

This parameter is used to set the temperature at which the egg room heater will deactivate. When the temperature of the selected probes is at or above this value, the egg room heater will turn off. This parameter is adjusted in 0.1°F increments from *HEATER ON TEMPERATURE* + 0.3°F to *HEATER ON TEMPERATURE* + 10.0°F.

HEATER PROBES[24]

These parameters are used to set an individual associated temperature to the egg room heater. The temperature associated to the egg room heater are a combination of the inside probes that are used.

COOLER ACTUAL STATUS[24]

These parameters display the actual status of the egg room cooler outputs. Each on/off stage output can be ON or OFF.

COOLER ON TEMPERATURE[24]

This parameter is used to set the temperature at which the corresponding egg room cooler (1-2) will activate. When the temperature of the selected probes is at or above this value, the corresponding egg room cooler (1-2) will turn on. This parameter is adjusted in 0.1°F increments from 0.0°F to 120.0°F.

COOLER OFF TEMPERATURE[24]

This parameter is used to set the temperature at which the egg room cooler will deactivate. When the temperature of the selected probes is at or below this value, the egg room cooler will turn off. This parameter is adjusted in 0.1°F increments from *COOLER ON TEMPERATURE* + 0.3°F to *COOLER ON TEMPERATURE* + 10.0°F.

COOLER PROBES[24]

These parameters are used to set an individual associated temperature to the egg room cooler. The temperature associated to the egg room cooler are a combination of the inside probes that are used.

---

xxiv Some elements of this group must be activated in the **System Configuration** and **Outputs Configuration** screen to make them visible and effective

EGG ROOM (CONTINUED…)

LOW ALARM TEMPERATURE

This parameter is used to set the temperature at which an egg room low temperature alarm will occur. When the temperature of the selected probes is below this value throughout the *LOW ALARM TEMPERATURE*, the egg room low temperature alarm will activate. This parameter is adjusted in 0.1°F increments from 0.0°F to 120.0°F.

HIGH ALARM TEMPERATURE

This parameter is used to set the temperature at which an egg room high temperature alarm will occur. When the temperature of the selected probes is above this value throughout the , the egg room high temperature alarm will activate. This parameter is adjusted in 0.1°F increments from 0.0°F to 120.0°F.

ALARM PROBES

These parameters are used to set an individual associated temperature to the egg room alarm. The temperature associated to the egg room cooler are a combination of the inside probes that are used.

ALARM DELAY

This parameter is used to set the amount of time for which the temperature selected for the egg room alarm must be outside the high and low limits before activating the alarm. This parameter is adjusted in 1-minute increments from 1 minute to 90 minutes.

VARIABLE OUTPUTS

ACTUAL STATUS

These parameters display the actual intensity of the respective variable fan, if used. Its state is displayed to the nearest 1% from OFF, 10-100%.

SET POINT (1-5)

These parameters are used to set the temperature at which the respective variable fan will be activated at its minimum speed. When the temperature of the selected probes is at this value, the respective variable fan will activate at 10%. As the temperature increases, the intensity of the variable fan will increase to reach 100% when its temperature is at or above *SET POINT (1-5) + BANDWIDTH (1-5)*. It will remain at 100% until the next *SET POINT (1-5)* is reached, at which point it will go back to 10% and start modulating again. When a *SET POINT (1-5)* is reached, the variable fan will remain at 10% until temperature reaches *SET POINT (1-5) – DIFFERENTIAL (1-5)* if temperature decreases. These parameters are adjusted in 0.1°F increments from *MAIN SETPOINT* to *MAIN SETPOINT* + 60.0°F.

DIFFERENTIAL (1-5)

These parameters are used to set the differential used with the respective *SET POINT (1-5)*. When a variable fan reaches one of its *SET POINT (1-5)*, it activates at 10%. If temperature decreases, the variable fan will remain at its minimum speed until temperature drops to *SET POINT (1-5) – DIFFERENTIAL (1-5)*, at which point the demand will be revaluated according the preceding *SET POINT (1-5)* or the variable fan will deactivate if its temperature is below all *SET POINT (1-5)*. These parameters are adjusted in 0.1°F increments from 0.5°F to 10.0°F.

MODULATION BAND (1-5)

These parameters are used to set the bandwidth used with the respective *SET POINT (1-5)*. The bandwidth is the range of temperature throughout which the variable fan will modulate from 10% to 100%. When a variable fan reaches one of its *SET POINT (1-5)*, it activates at its minimum speed. As the temperature increases, the intensity of the variable fan will increase to reach 100% when its temperature is at or above *SET POINT (1-5) + BANDWIDTH (1-5)*. It will remain at 100% until the next *SET POINT (1-5)* is reached, at which point it will go back to its minimum speed and start modulating again. These parameters are adjusted in 0.1°F increments from 0.5°F to 20.0°F.

TIMER

These parameters are used to establish on which portion of the minimum ventilation timer the respective variable fan will be activated. If a parameter is set to "-" of the portions of the timer, the respective variable fan will be activated only when it has a temperature demand. These parameters can be set to portion #1, #2 or "-" (none). If some fans (including tunnel and sidewall fans) are set to portion #1 and none on portion #2 (or some fans are set on portion #2 and none on portion #1), fans on timer activate on portion #1 and #2. If no run on the minimum ventilation timer, the timer will stop to restart on the off portion as soon as one fan needs to run on minimum ventilation timer.

VARIABLE OUTPUTS (CONTINUED…)

PROBES

These parameters are used to set an individual associated temperature to the respective output. The temperatures associated to these variable fans are a combination of the inside probes that are used.

MINIMUM SPEED

These parameters are used to adjust the minimum speed of the respective variable fan. This speed is the base value used to calculate the actual minimum speed. The minimum speed settings are adjusted in 1% increments from 10% to 100%.

OVERRIDE

These parameters are used to determine if the respective output may be reactivated by the *HIGH TEMPERATURE OVERRIDE* when it has been deactivated by the tunnel mode. If these parameters are set to Y, the respective fan will reactivate when average temperature reaches *HIGH TEMPERATURE OVERRIDE*. If these parameters are set to N, the respective fan will not be reactivated by the *HIGH TEMPERATURE OVERRIDE*.

HIGH TEMPERATURE OVERRIDE

This parameter sets the temperature at which variable fans will reactivate, regardless of tunnel transitions when *OVERRIDE (1-2)* is set to Yes. If the average temperature reaches this temperature, variable fans will reactivate. There is a fixed differential of 0.3°F. The *HIGH TEMPERATURE OVERRIDE* is adjusted in 0.1°F increments from *MAIN SETPOINT* to *MAIN SETPOINT* + 50.0°F.

FAN START BOOST TIME

These parameters are used to determine the duration of the fan start boost time upon activation. The variables fans will activate at 100% for an amount of time equal to this parameter, and then take the calculated intensity according to its settings. This parameter is adjusted in 1-second increments from OFF, 1 second to 60 seconds.

ALARM LIST

ALARM LIST (1-25)

This column shows the alarms that have previously occurred. These alarm messages are listed in order. The first alarm shown is the latest one.

TIME (1-25)

These parameters indicate the time at which the respective alarm occurred.

ACK/CLR (1-25)

These parameters are used to acknowledge or clear an alarm that has been triggered. An alarm that has been triggered will display "Ack" until the alarm is acknowledged. This is done by pressing on this parameter. When this is done, the display will change to "Clr". If the user presses the parameter again while on the parameter, the alarm entry will disappear and the alarm condition will be reinitialized. If a situational alarm is no longer in effect or if the entry is a warning, the display will be "Ack/Clr" and pressing this parameter will both acknowledge and clear the alarm situation.

There are five types of alarm entries:

1- **Continuous alarms.** These alarms will activate the alarm relay and the alarm message will appear when the condition is present and when the situation is corrected. The alarm entry must be acknowledged and cleared to deactivate the alarm relay and remove the alarm message.

2- **Situational alarms.** These alarms will activate the alarm relay and the alarm message will appear when the condition is present. When the situation is corrected, the alarm relay will deactivate and the alarm message will appear. The alarm entry must be acknowledged and cleared to remove the alarm message.

3- **Continuous warning.** These alarms will display the `WARNING` message when the condition is present and when the situation is corrected. The alarm entry must be acknowledged and cleared to deactivate the alarm relay and remove the `WARNING` message.

4- **Situational warning.** These alarms will display the `WARNING` message when the condition is present. The `WARNING` message will disappear when the situation is corrected.

5- **Event.** These entries are not alarms, but events that occurred at the given time and date.

Continuous Alarm Message List These alarms will activate the alarm relay and the alarm message will appear when the condition is present and when the situation is corrected. The alarm entry must be acknowledged and cleared to deactivate the alarm relay and remove the alarm message.	
Message	**Cause**
Static Press high	- Static pressure probe is above *HIGH STATIC PRESSURE* for more than the *HIGH STATIC PRESSURE DELAY.*
Static Press low	- Static pressure probe is below *LOW STATIC PRESSURE* for more than the *LOW STATIC PRESSURE DELAY.* If the `ALM.REL` parameter is set to OFF, the alarm relay will not be activated and the alarm message will be replaced by the `ALARM` message.
Temp Probe # Defect	- Temperature probe # is defective (open / short circuit). - Temperature probe # is missing/unplugged and the *ACTIVES PROBES* setting in **SYSTEM CONFIGURATION** screen is above this probe #. (Corresponding probe has to be alarmed to get this message)
Breaker Probe Defect	- Breaker probe is defective (open / short circuit). - Breaker probe is missing/unplugged and the *BREAKER PROBE ACTIVE?* in **SYSTEM CONFIGURATION** screen is set to "Y".
Water # Defect	- The number of gallons counted in 1 minute by the respective water counter is above *WATER HIGH LIMIT* or above *WATER METER 2-HOUR LIMIT.*
Feeder # Defect	- The respective feeder has been activated for more than *FEEDER (1-2) MAXIMUM LIMIT* without interruption.
Humidity PRB Not Resp	- Humidity probe is defective (open / short circuit). - Humidity probe is missing/unplugged and the *HUMIDITY PROBE ACTIVE?* in **SYSTEM CONFIGURATION** screen is set to "Y". - Communication board is defective (open / short circuit or unplugged).
0-10V Id#(1-2) Not Resp	- Respective 0-10V chip is missing or defective (open / short circuit). - Output Board is missing/unplugged.
MS-10 Not Resp	- MS-10 is missing/unplugged.
Error Code 2-5	- If one or more of these error codes appear, contact your distributor.

Situational Alarm Message List	
These alarms will activate the alarm relay and the alarm message will appear when the condition is present. When the situation is corrected, the alarm relay will deactivate and the alarm message will appear. The alarm entry must be acknowledged and cleared to remove the alarm message.	
Temperature High	- Average temperature is *ABOVE HIGH TEMPERATURE* while in ventilation mode. - Average temperature is above *HIGH TUNNEL TEMPERATURE* while in tunnel mode.
Temperature Low	- Average temperature is below *LOW TEMPERATURE*.
Temp Probe # High	- Temperature probe # is above *HIGH TEMPERATURE* while in ventilation mode. - Average temperature is above *HIGH TUNNEL TEMPERATURE* while in tunnel mode. (Corresponding probe has to be alarmed to get this message)
Temp Probe # Low	- Temperature probe # is below *LOW TEMPERATURE*. (Corresponding probe has to be alarmed to get this message)
Egg Room Temp High	- Egg room temperature is above *EGG ROOM LOW ALARM TEMPERATURE* for more than *EGG ROOM ALARM DELAY*.
Egg Room Temp Low	- Egg room temperature is below *EGG ROOM LOW ALARM TEMPERATURE* for more than *EGG ROOM ALARM DELAY*.
IndPrb # Excd Limits	- Temperature probe # is above *INDIVIDUAL HIGH TEMPERATURE*. - Temperature probe # is below *INDIVIDUAL LOW TEMPERATURE*.
Breaker Temp High	- Breaker probe is above *HIGH BREAKER TEMPERATURE*.
Humidity High	- Humidity is above the *LOW HUMIDITY*.
Humidity Low	- Humidity is below the *HIGH HUMIDITY*.
Error Code 1	- The system has rebooted 5 times within a 3-minute period or 10 times within a 15-minute period. This situation will be considered resolved if system does not reboot for 15 minutes. If this situation persists, contact your distributor.
Problem Assigned Prbs	- An activated output or the average temperature has no probes assigned, which means it will never operate properly according to temperature.
Error Code 6	- The MCHIP has remained in the socket for more than 5 minutes.

Continuous Warning Message List	
These alarms will display the WARNING message when the condition is present and when the situation is corrected. The alarm entry must be acknowledged and cleared to remove the WARNING message.	
Power Failure	- A power failure or a control reset has occurred.
PRB Not Alarmed	- Configuration uses a probe that is not included in *PROBE CHECKED FOR HIGH/LOW ALARM* in **PROBE CONFIGURATION** screen.
Situational Warning Message List	
These alarms will display the WARNING message when the condition is present. The WARNING message will disappear when the situation is corrected.	
Comm. Problem Scale #	- An activated WSM-1 module has not communicated with the AVS-2248 controller for a 5-minute period.

Motor curve table

TYPE OF MOTOR				
CURVE	**BRAND**	**MODEL**	**VOLTAGE**	**HEIGHT**
1	Multifan	4E40	230 V.	16
2	Multifan	2E20	230 V.	8
2	Multifan	4E35	230 V.	14
2	Multifan	4E50	230 V.	20
2	Multifan	AF24M'E	230 V.	24
2	Multifan	6E63	230 V.	24
2	Multifan	6E71	230 V.	28
2	Multifan	8E92	230 V.	36
2	Ziehl		230 V.	
2	Performa	V52-7105P	230 V.	18
3	Multifan	2E30	230 V.	12
3	Multifan	4E45	230 V.	18
3	Multifan	6E56	230 V.	22
3	Multifan/AF	AF36M	230 V.	36
3	Aerotech-F	AT242	230 V.	24
3	Performa	V52-7106P	230 V.	20
3	Performa	V52-7108P	230 V.	24
4	Multifan	2E25	230 V.	10
4	Marathon 1/4HP		230 V.	16
4	Marathon 1/3HP		230 V.	18
4	Performa	V52-7102P	230 V.	12
5	GE Motor	5KCP39…	230 V.	12
5	Leeson 1/4HP	AF12L	230 V.	12
5	GE Motor	5KCP39…	230 V.	14
5	Emerson	K55HXJ…	230 V.	14
6	Oversized motors			
7	Multifan	4E30	230 V.	12
7	Multifan	2E35	230 V.	14
7	Performa	V52-7104P	230 V.	16
8	Multifan	4E25	230 V.	10
8	Performa	V52-7103P	230 V.	14

INDEX / WARRANTY SECTION D

INDEX / WARRANTY

TABLE OF CONTENTS

Section A

TABLE OF CONTENTS

Section B

SECTION D

TABLE OF FIGURES

Section B

TABLE OF CONTENTS

Section C

TABLE OF CONTENTS

SECTION D

LIMITED WARRANTY

The manufactured equipment and supplied components have gone through rigorous inspection to assure optimal quality of product and reliability. Individual controls are factory tested under load, however the possibility of equipment failure and/or malfunction may still exist.

For service, contact your local retailer or supplier. The warranty period shall be for two years from manufacturing date. Proof of purchase is required for warranty validation.

In all cases, the warranty shall apply only to defects in workmanship and specifically exclude any damage caused by over-voltage, short circuit, misuse, acts of vandalism, lightning, fortuitous events, acts of God, flood, fire, hail or any other natural disaster. Any unauthorized work, modification or repair on this product automatically voids the warranty and disclaims the manufacturer from all responsibility.

The manufacturer assumes only those obligations set forth herein, excluding all other warranties or obligations. This warranty stipulates that in all cases the manufacturer shall be liable only for the supply of replacement parts or goods and shall not be liable for any personal injury, damages, loss of profits, interrupted operations, fines for infringement of the law or damages to the production of the PURCHASER and the PURCHASER shall take up the defence and hold the manufacturer faultless regarding any legal or extra legal proceedings, notice, or claim by the customer or by a third party, and regarding any legal and extra legal expenses and fees brought forward on by such damages.

VER: 3.4
August 23, 2016