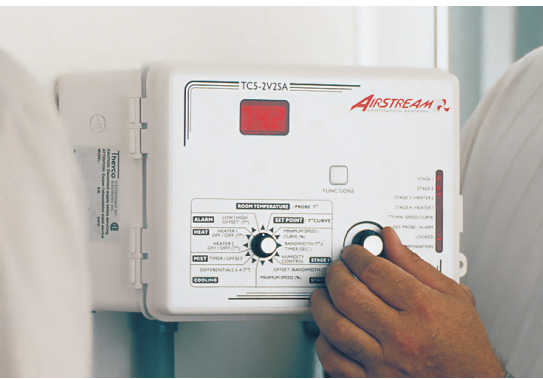




# MONITORING AND MANAGEMENT CONTROL SYSTEMS



## Precision Control

AP offers the professional producer precise control and monitoring of environment, feeding and watering. Choose among several controllers built to save you time and money.

### EXPERT™ SERIES CONTROLS

When it comes to dependable management of your swine production operation, trust the Experts.

#### Standard Features

- Zoning of heaters, inlets and circulation fans with up to eight inside temperature sensors
- Power save feature allows smaller less efficient fans to be switched off as the temperature rises
- Air inlet, chimney and curtain outputs use timer logic based staging
- Set point and minimum ventilation curves
- Flash drive is used to duplicate programming of multiple controls (Series II is not USB, it uses Config 300)
- Seamless ventilation steps between stages when using variable speed fans
- Separate day/night set points and minimum ventilation settings
- Up to two timed outputs for feed systems, water or lights
- Cooling stage with cycle timer
- Alarm that monitors up to ten functions; 16 are monitored in the Series II and 11 in VT110
- Clean mode with soaking stage
- Removable relays with individual indicator lights and on/off/auto switches
- Overload and over voltage protection
- Full speed start-up on variable fan stages
- Records heater run-time up to 75 days
- Records run-time of up to four feed systems for up to 75 days
- Records high and low temperature history for up to seven days
- Records animal count, age and mortality



#### Optional Features

- Humidity sensor input - Compensates heaters, min. ventilation rate based on humidity. Records 7 day humidity history
- Static Pressure input - Compensates inlets according to static pressure. Records 7 day static pressure history
- Outside temperature sensor with compensation
- Water meter inputs - Gives alarm in event of water spill. Records 75 day water consumption history
- Up to two additional variable speed fan or electric heat stages using 0-10 volt outputs
- Backup safety relay system available for added protection



*AP's selection of controllers give you the power to monitor and manage your environmental systems with greater efficiency and performance*



**Expert VT110**



**Expert PN110**



**Expert Natural**



**Expert VP18**

### **PROVEN AND DEPENDABLE**

Precision control and monitoring of your environmental systems require equipment you can rely on. AP offers many proven and dependable controls designed to accommodate a variety of needs to help you achieve the maximum return on your investment.

### **SPECIALTY CONTROLS**

In addition to complete system controls, AP offers specialty controls designed for simple and efficient operation. Your AP dealer will provide you with the best solution that fits your particular requirements.



**TC5-ITA  
Inlet Controller**

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### **WEATHER STATION ASSISTED CONTROL**

The weather station gives you the ability to maximize the energy efficient natural ventilation stage of the Expert Series II controller. It works by monitoring wind direction, wind speed, and rain to inform the control of the outside environment.

- "Skip power" and start the natural stage when proper pig age and outside environmental conditions are met
- "Skip tunnel" and hold the barn in the natural stage longer when proper pig age and outside environmental conditions are met
- "Skip natural" and go back to power or the tunnel ventilation modes when pig age and outside environment are not optimal for the natural stage (rain, wind gusts, etc.)
- Optionally run natural curtains using a position based logic or the historic cycle timed logic (at X temperature curtains start to open and Y temperature curtains fully open)







HML-40



HML-80

## HML SERIES VARIABLE CONTROLLERS

**The HML Series power module is capable of varying the intensity of lights, heat lamps, heat mats or fans.**

HML series controllers feature a rugged construction with plenty of capacity. Available in three models, the HML controller is compatible with most dimmable CFL's (compact fluorescent lights) including CCFL (cold cathode).

The HML features adjustable output intensity curves. Seven light curves adjust electronic (CFL) and incandescent lamps. In addition, ten fan curves are available to optimize variable fan speed range.

Available in automatic or manual control, the HML series controllers are easy to use, easy to install, and easy to service.

## Other HML Features:

- Sunset/Sunrise built in (with clock input)
- True by-pass on Manual
- Available In 1200, 2400 and 4800 Watt capacities
- 0-10 or trig signal can be used as inputs to the module
- Mini-Experts and Experts can control the module
- Module can be used on variable fans, heat mats, or heat lamps

## OPTIONAL EQUIPMENT

Optional equipment may vary by country. Please consult with your AP dealer for details.



Humidity Sensors



Water Meters



Static Pressure Transmitter

# Control Specifications

<b>MPV</b>	10 amp slave module (for controls with 1 var. output or controls with independent variables)
<b>MPVV</b>	20 amp slave module — 10 amp per variable output (for TC5-2V2SA and TC5-2V4SA only)
<b>MPV-010</b>	10 amp slave module for expert controls
<b>PF-6</b>	Potentiometer feedback control with display (must be used with a TC-4 or TC5 series control)
<b>HM-10</b>	10 amp variable control for heat mats or lamps with display
<b>TC1-C</b>	Variable speed control without display
<b>6607-8046</b>	Var-O-Matic manual variable speed control
<b>TC1-1SD</b>	Single stage on-off control with display
<b>TC4-4SD</b>	4 stage on-off control with display
<b>TC4-1V2S</b>	1 variable, 2 on-off stages with display
<b>TC1-NV</b>	Natural ventilation control, with 1 on-off stage
<b>TC4-NVS</b>	Natural ventilation control, with display and 2 on-off stages
<b>TC5-3N3SA</b>	Natural ventilation control, 1 chimney, 2 natural curtain, 1 mist, 2 heat, alarm, display
<b>TC5-8SDA*</b>	8 stage on-off, alarm stage, display, humidity probe optional
<b>TC5-12SDA*</b>	12 on-off stages, alarm stage, display, humidity probe optional
<b>TC5-1V6SA*</b>	1 var., 6 on-off stages, alarm stage, display, humidity probe optional
<b>TC5-1V10SA</b>	1 var., 10 on-off stages, alarm stage, display, humidity probe optional
<b>TC5-2V2SA*</b>	2 var., 2 on-off stages, alarm stage, display, humidity probe optional
<b>TC5-2V4SA*</b>	2 var., 4 on-off stages, alarm stage, display, humidity probe optional
<b>TC5-2V8SA*</b>	2 var., 8 on-off stages, alarm stage, display, humidity probe optional
<b>TC5-1N4FIA</b>	Power natural ventilation control, 1 var., 1 on-off, 1 curtain, 1 mist, 1 heat, alarm stage, display, humidity probe optional
<b>TC5-1N5FIAB</b>	Power natural ventilation control, 1 var., 1 or 2 on-off stages, 1 curtain, 1 mist, 2 heat zones or cascade, alarm stage, display, humidity probe optional
<b>TC5-1N8FA</b>	Power natural ventilation control, 1 var., 1 on-off, 1 curtain, 1 mist, 1 heat, alarm stage, display, humidity probe optional
<b>TC5-2N6FA</b>	Power natural ventilation control, 2 var., 2 on-off stages, 2 curtain, 1 mist/heat, 2 heat-zones or cascade, alarm, display, humidity probe optional
<b>TC5-T1A</b>	11 stage power/natural/tunnel control, 1 var. alarm stage, display, humidity probe optional
<b>TC5-T6A*</b>	11 stage power/natural/tunnel control, alarm stage, display, humidity probe optional
<b>TC5-ITA</b>	Timed inlet control with alarm

\* 50 Hz Model Available



	EXPERT II	EXPERT WW	EXPERT VP-18	EXPERT VT110	EXPERT PN110	EXPERT NATURAL	EXP-2V2SA	EXP-2V3SA	EXP-2V4SA
Total Relays	20 or 36	20 or 36	10	14	14	24	N/A	N/A	N/A
On/Off Relays	12 or 24	12 or 24	8	10	10	12	2	3	4
Actuator Outputs (Open & Close)	4 or 6	4 or 6	1	2	2	6	1	1	1
Heat Stages	6	8	2	2	3	4	2	2	2
Brooder Stages	1	N/A	1	1	1	1	N/A	N/A	N/A
Fan Stages	12	12	8	8	8	N/A	4	5	6
Variable Stages	2	0	2	2	2	N/A	2	2	2
Tunnel Stages	2	2	N/A	1	N/A	N/A	N/A	N/A	N/A
Natural Stages	2	2	N/A	N/A	2	6	N/A	N/A	N/A
Inlet Stages	2	2	1	1	1	N/A	1	1	1
Chimney Stages	N/A	N/A	N/A	N/A	N/A	2	N/A	N/A	N/A
Stir Fan Stages	1	N/A	1	1	1	2	N/A	N/A	N/A
Clock Outputs	2	2	2	2	2	2	N/A	N/A	N/A
Mist Stages	1	1	N/A	N/A	N/A	N/A	1	1	1
Cooling Stages	1	1	1	1	1	1	N/A	N/A	N/A
Soaking Stages	1	N/A	1	1	1	1	1	1	1
Light Outputs	1	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feeder Outputs	2	4	N/A	N/A	N/A	4	N/A	N/A	N/A
Back Up Relay Output	1	1	1	1	1	N/A	N/A	N/A	N/A
0-10 Volt Outputs**	2	2	2	2	2	2	1	1	1
Alarm Output	1	1	1	1	1	1	1	1	1
Weather Station Capable	Yes								
Variable Heat	Yes								

## Inputs

Inside Probes	8	8	6	6	6	8	4	4	4
Outdoor Probes	2	2	1	1	1	1	1	1	1
Inside Humidity Probes	1	1	1	1	1	1	1	1	1
Outdoor Humidity Probes	1	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Static Pressure Probes	1	1	1	1	1	N/A	1	1	1
Water Meter Inputs	9	9	1	1	1	1	1	1	1
Feeder Inputs	2	4	4	4	4	4	N/A	N/A	N/A
Whisker Switch Inputs	2	2	N/A	N/A	1	N/A	N/A	N/A	N/A

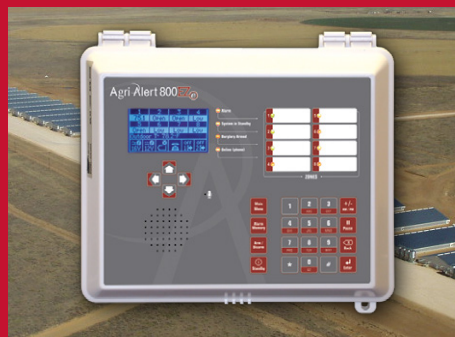
\*\*0-10 Volt outputs can be used for variable fans, heat lamps & inlets. See manual for specific details. Specifications are subject to change without notice.

# PROVEN & DEPENDABLE™

In today's competitive market place, it is essential to maximize the efficiency and performance of your swine production facilities. AP is the industry leader in the manufacture of proven and dependable swine production equipment designed to help you meet these goals.

## EDGE® Controller

For complete monitoring and multi-location control over all feed and environmental systems, EDGE is the total package solution. EDGE is built on a modular architecture allowing the system to be designed to, and grow with, your specific needs. EDGE features integrated diagnostics and a triple layer of protection making it the most reliable controller in the industry.



## Save time and money with Agri-Alert™

Alarm systems for monitoring feed and watering systems, temperature, power, burglary, and bio-security can be tremendous time and money savers. AP's Agri-Alert™ alarm system constantly monitors your operation and quickly notifies you upon the detection of common site problems or failures. Ask your AP dealer how an Agri-Alert alarm system can help you.



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