



The AV-9 Variable-Speed Fan Control is designed for maximum versatility and durability. For both the ventilation design engineer and the livestock producer, the AV-9 makes ventilation control convenient and easy.

To enjoy the benefits of the AV-9, please read the following Instructions carefully. Call your Osborne Dealer or Osborne Customer Service before attempting installation if your questions are not answered below.

FAILURE TO PROPERLY INSTALL THE AV-9 COULD RESULT IN NON-WARRANTED DAMAGE TO THE CONTROL AND FAN MOTORS, OR IN POOR OR UNRELIABLE VENTILATION PERFORMANCE.

1. APPLICATIONS.

- A. Farm and industrial building ventilation.
- B. Maintain desired temperature range and minimum ventilation rates in ventilated area.

2. DESCRIPTION.

The AV-9 Fan Control changes fan speed by adjusting average applied voltage to the motor in response to changes in room temperature. An electronic sensor detects room temperature changes.

As room temperature rises above set-point temperature (set with the lower TEMPERATURE knob on the front face of the control), the AV-9 increases applied voltage which causes the motor RPM to increase. The ventilation rate increases until temperature rise is balanced and halted, or until the maximum rate is achieved, about 5 deg F above the set-point temperature.

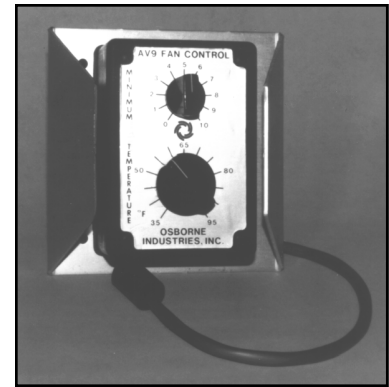
As room temperature drops, motor RPM decreases until the set-point temperature is reached. Below this temperature, motor RPM and ventilation rate is constant at the minimum speed RPM which is set with the MINIMUM knob, located above the TEMPERATURE knob on the front face of the control. Adjust the MINIMUM knob to control odors and low-speed ventilation rate.

The AV-9 will control only permanent split-capacitor or shaded pole motors, designed for electronic phase angle speed control.

3. LOCATING THE CONTROL.

- A. Install the AV-9 on a standard watertight 4x4 junction box (order separately CAT. NO. REE-1030) in a dry area with moving air for convection cooling of the aluminum heat fins. Keep the heat fins clean and unobstructed for best operation.
- B. Locate the AV-9 and sensor bulb where the air temperature is to be controlled. Using 18/2 shielded cable (order separately CAT. NO. KE-AV9001), the sensor can be remotely lo-

**AV-9
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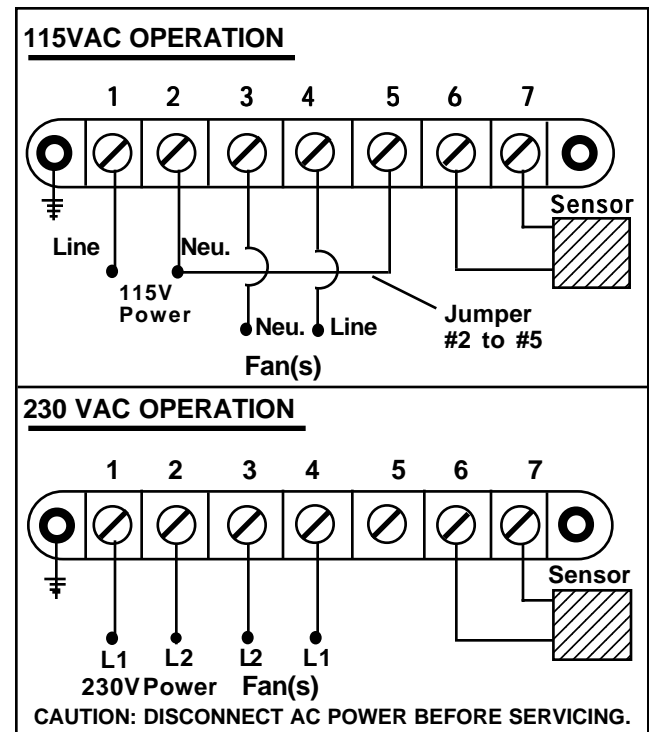


cated up to 250 ft away from the AV-9, however a long sensor cable may increase radio frequency interference.

CAUTION:
THE SENSOR CABLE OPERATES AT LINE VOLTAGE. Do not mount sensor bulb on or near a metal surface. Do not route sensor cable parallel to current-carrying wires or in the same conduit with current-carrying wires. Protect the sensor and sensor cable from the animals and physical damage.

4. ELECTRICAL CONNECTIONS.

Diagram 1



MAXIMUM NUMBER OF MOTORS CONTROLLED*

HP	115V	240V
1/25	6	12
1/6	3	6
1/4	1	3
1/2	1	2

*Subject to derating table below.

AV-9 CURRENT CAPACITY DERATING FOR OPERATION ABOVE 80°F

Temp. - Derate	Temp. - Derate
85°F - 5% less	100°F - 25% less
90°F - 10% less	105°F - 35% less
95°F - 20% less	

WARNING:

DISCONNECT ALL ELECTRICAL POWER BEFORE MAKING OR CHANGING ELECTRICAL POWER CONNECTIONS TO THE AV9 CONTROLLER. Failure to disconnect electrical power creates an electrical shock hazard. Currents could be life threatening. Only a licensed electrician should make or change electrical power connections.

- A. Power supply may be either 115 or 230 volt, single phase, 60 Hz. All wiring to the AV-9 and motor(s) must conform to national and/or local electrical codes.
- B. Follow the wiring scheme, DIAGRAM 1, which is also on the back of each AV-9, to make connections. Notice that for 115 VAC operation, a jumper wire must be installed between the #2 or LO side of the Line voltage and the #5 terminal. For 230 VAC operation, no jumper is required and terminal #5 is unused. Extension wires are provided in case direct connection to the terminal strip is not convenient. For motor connections, see the diagram on each motor.
- C. Always install an approved fused disconnect switch between the power source and the AV-9. More than one disconnect may be required.
- D. All interconnect wiring should occur within a watertight junction box, such as Osborne's 4x4 box, Cat. No. REE-1030 or equivalent. Always provide conduit with watertight connectors and drainable water traps to prevent water drainage or condensation entry into AV-9.
- E. If multiple motors are controlled, only motors of the same size should be connected to a single AV-9.
- F.

CAUTION:

DO NOT SHORT AV-9 TERMINALS OR SENSOR TO AV-9 CASE OR GROUND. Short circuits can damage the AV-9 and motor and could create an electrical shock hazard. Currents could be life threatening.

5. CONTROL SPECIFICATIONS.

- A. 105 to 125 volts or 220 to 240 volts AC, single phase, 60 Hz input.
- B. Maximum full-load output is 9 amps.
- C. Water-resistant construction.
- D. Temperature control range: 35 to 95 deg F (1.7 to 35 C) with TEMPERATURE knob.
- E. Minimum speed adjustment: About 20 to 100% of fan full speed, set with MINIMUM knob.

6. OPERATION CHECK.

- A. DISCONNECT POWER TO AV-9.
- B. Remove control from junction box.
- C. Disconnect AV-9 sensor. DO NOT SHORT SENSOR LEADS TO AV-9 CASE OR GROUND.
- D. Reconnect power. Fan(s) should run at minimum speed set by MINIMUM knob.
- E. Disconnect power. Install a jumper across the sensor terminals.
- F. Reconnect power. Fan(s) should run at maximum RPM.
- G. Disconnect power. Remove jumper, rein-stall sensor and reinstall AV-9 on junction box.
- H. Reconnect power. If all tests pass, AV-9 is operational. If AV-9 fails tests, then return to Osborne Dealer or Osborne Customer Service for service with complete return address information and description of the problem.

7. LOW-TEMPERATURE LIMIT THERMOSTAT.

The AV-9 may be wired in series with a thermostat so that fan operation is interrupted below a low-limit temperature selected on the thermostat.

WARRANTY

OSBORNE INDUSTRIES, INC. warrants to the original purchaser that its *AGRI AIDE* ventilation products which prove to be defective in material or workmanship within one year of the date of purchase (10 years on fiberglass parts, limited to normal use) will be repaired or replaced at OSBORNE's option free of charge F.O.B., OSBORNE's nearest Sales Office. Exceptions to this warranty are electric motors which are covered by the warranty of the motor manufacturer.

WHAT IS NOT COVERED BY THIS WARRANTY

The Warranty does not cover: (1) Installations not made in accordance with installation instructions; (2) Operation of the product which varies substantially from our operating instructions; (3) Malfunctions resulting from misuse, negligence, alteration, accident or failure to perform normal required maintenance; (4) Loss of time, inconvenience, loss of use of the product, or other consequential damages; (5) Products not purchased from OSBORNE or one of its authorized dealers.

The above constitutes our sole warranty for *AGRI AIDE* ventilation products. THERE IS NO WARRANTY OF MERCHANTABILITY AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. OSBORNE reserves the right to change models, designs, and specifications at any time without notice or obligation to improve previous products in use.

