



The AV-11 Variable Speed Fan Control is designed for maximum versatility and durability. For both the ventilation design engineer and the user, the AV-11 makes total ventilation control convenient and easy. To enjoy all the unique benefits of the AV-11, please read the following Instructions carefully. Call your Osborne dealer or Osborne Engineering before attempting installation if all your questions are not answered below. **FAILURE TO PROPERLY INSTALL THE AV-11 COULD RESULT IN NON-WARRANTED DAMAGE TO THE CONTROL AND FAN MOTORS OR IN POOR OR UNRELIABLE VENTILATION PERFORMANCE.**

1. LOCATING THE CONTROL.

- A. Install the AV-11 in an area of moving air for convection cooling of the aluminum heat fins on the front of the enclosure. Keep the heat fins clean and unobstructed for best operation.
- B. Locate the sensor bulb on the 6-foot cable where room temperature is to be controlled. Up to 250 feet of additional sensor cable can be used to extend the sensor to remote locations using the KE-AV1104 (Extension Cable Splice Kit) and KE-AV1101 (AV-11 Sensor Extension Cable).

CAUTION:
Do not mount sensor bulb on or near a metal surface. Do not route sensor cable parallel to current-carrying wires.

- C. Secure the AV-11 enclosure with #8 fasteners to a wall or post through the four corner mounting holes found by removing the front of the enclosure. **DO NOT DRILL THROUGH THE WATER-RESISTANT CASE.**

2. ELECTRICAL CONNECTIONS

WARNING:
DISCONNECT ALL ELECTRICAL POWER BEFORE MAKING OR CHANGING ELECTRICAL POWER CONNECTIONS TO THE AV-11 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 120 or 240 volt, single phase, 60 Hertz.
- B. Follow the wiring scheme, DIAGRAM 1, to connect the AV-11. For motor connections, see the diagram on each motor.

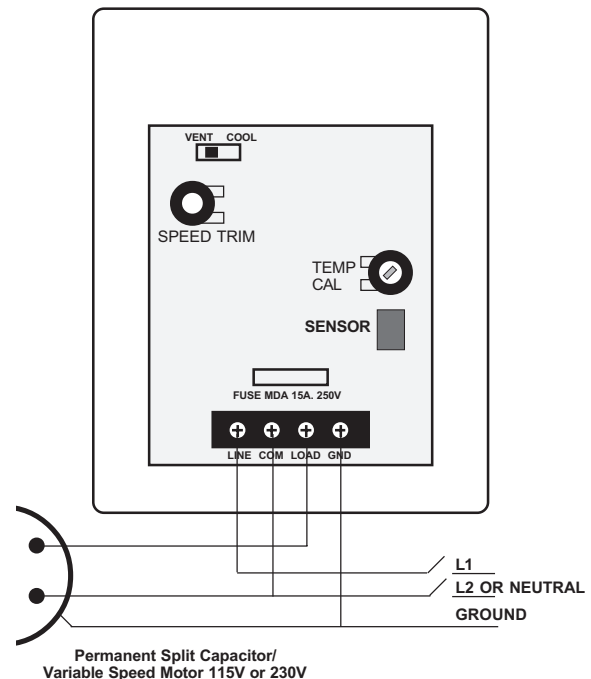
CAUTION:
CAREFULLY CHECK FOR SHORT CIRCUIT ERRORS. Short circuits can damage the AV-11 and motor and could create an electrical shock hazard. Currents could be life threatening.

- C. Always install an approved fused disconnect switch between the power source and AV-11. More than one disconnect may be required.
- D. Prevent the entry of water and corrosive gases into the AV-11. Keep enclosure sealed. All wiring shall enter through the bottom end of the water-resistant enclosure. Use water-tight connectors and drainable water traps on conduit to prevent water drainage or condensation from entry into AV-11. **ENTRY OF WATER AND CORROSIVE GASES AND THEIR EFFECTS ON CIRCUITRY ARE NOT COVERED BY WARRANTY.**
- E. Only permanent split-capacitor motors designed for solid-state speed control are controlled by the AV-11. Check with motor manufacturer if motor type is unknown. If multiple motors are controlled, only motors of the same size should be connected to the AV-11.
- F. All wiring to the AV-11 and motor must conform to national and/or local electrical codes.

3. CONTROL SPECIFICATIONS

- A. 105 to 125 or 220 to 240 volts AC, single phase, 60 Hertz input.
- B. Maximum output is 11 amps.
- C. Water-resistant NEMA 4X enclosure.
- D. TEMPERATURE control range: 35°F. to 95°F. TEMPERATURE adjustment dial at top on control front.
- E. MINIMUM SPEED adjustment: About 20% to 100% of fan full speed. Adjustment dial at bottom on control front. For fine adjustment, see section 5.

Diagram 1



MAXIMUM NUMBER OF MOTORS CONTROLLED*

HP	120V	240V
1/25	7	14
1/6	3	7
1/4	2	4
1/2	1	2

*Subject to derating table below.

AV-11 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	

4. FACTORY PRESET OPERATION

- Temperature below set point: Fan(s) are OFF.
- Temperature rises to set point: Fan(s) come on at **full speed** for four seconds, then slow to MINIMUM SPEED setting. Adjust MINIMUM SPEED as needed.
- Temperature rises beyond set point: Fan(s) speed increases proportionally with temperature to maximum speed at 5°F. above set point.
- Temperature falls: Reverse of A, B and C.

5. FIELD CONTROL ADJUSTMENTS

The AV-11 is factory preset to shut off fan(s) at temperatures below the set point.

- If the ventilation design requires the fan(s) to remain ON at MINIMUM SPEED, at and below the set point, then proceed as follows:

- DISCONNECT ELECTRIC POWER TO AV-11.**
- Remove the AV-11 cover and locate the circuit board on the interior.
- Locate the small switch at the top left of the circuit board (See Diagram 1). Slide the switch to the "VENT" position.
- Replace the cover. When the temperature drops below the set point, the AV-11 will now operate the fan(s) CONTINUOUSLY at the chosen MINIMUM SPEED value.

- Each fan motor (or set of fan motors of equivalent horsepower) to be controlled must be "matched" to the AV-11 control for best operation after system installation is completed. **CAUTION: ONLY A LICENSED ELECTRICIAN SHOULD COMPLETE THE FOLLOWING STEPS.**

- DISCONNECT AC POWER to the AV-11 at the safety switch or junction box.
- Open the AV-11 to reveal the control circuit board. Move the slide switch on the circuit board to the VENT mode.
- Turn the set point (top) knob on the front panel to a setting above 95°F.
- Set the MINIMUM speed (bottom) knob on the front panel to the "0" setting.

- VERY CAREFULLY reconnect AC power to the AV-11 with the circuit board exposed. **CAUTION: DO NOT TOUCH** the back of the circuit board or allow any contact between open wiring! **POSSIBLE SHOCK AND PERSONAL INJURY** may result and/or the control circuit can be seriously damaged by accidental contact to ground from careless handling during this procedure!

- VERY CAREFULLY adjust the white shaft that extends from the back of the circuit board (SPEED TRIM) until the fan motor(s) slows down, but maintains enough speed to keep the shutters open and air moving. Motor RPM should be between 550 and 700 RPM at this setting, but an exact RPM setting is not necessary. Pause for the motor speed to stabilize after each adjustment.

- DISCONNECT AC POWER as in Step 1.

- Move the slide switch on the circuit board to the COOL position if the fan(s) are intended to stop below the set-point temperature. If the fan(s) are intended to run at minimum speed below the set-point temperature, the slide switch should remain in the VENT position.

- Replace the AV-11 cover onto the enclosure. Reconnect AC power.

- Set the MINIMUM SPEED knob to zero if in COOL mode or to desired speed if in VENT mode.

- Adjust desired TEMPERATURE setting for the building. In COOL mode, the AV-11 should now run at desired minimum speed before shutting off at the chosen set-point. In VENT mode, an acceptable, non-stalling minimum fan speed should be maintained even at the lowest MINIMUM SPEED setting. Adjust MINIMUM SPEED to higher speeds as needed to relieve temporary increases in humidity in the building.

- If the AV-11 fails to power the fans, check the control circuit fuse AFTER AC POWER HAS BEEN DISCONNECTED before returning the control for service. An extra fuse has been included for your convenience.

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.



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