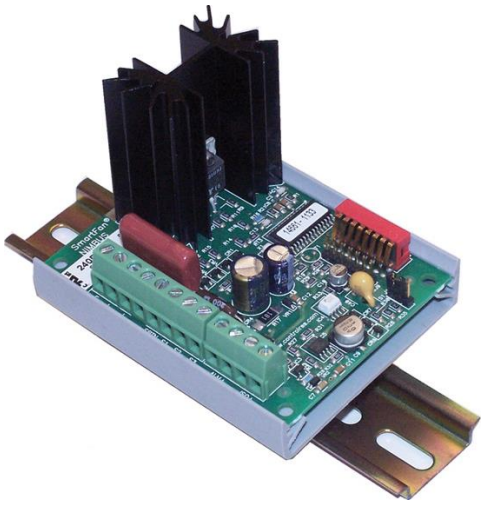
ZOO FANS™

Efficiency and Performance

Installation Guide

ZOO Fans AVS-7.5A-115v/230v Controller

Advanced Variable Speed Controller, 7.5 Amps



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REV 10042017


IMPORTANT SAFETY INFORMATION
READ AND SAVE THESE INSTRUCTIONS

WARNING – TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS: Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards.

CAUTION: The installation of a controller must be in accordance with the requirements specified in this installation manual and with any additional requirements set forth by the national electric code (NEC), ANSI/NFPA 70-1999, and all local codes. If you are unfamiliar with wiring, use a qualified electrician.

WARNING: To prevent electrical shock and/or injury disconnect controller from power source before you move or service the fan.

For use with fans marked suitable for use with solid-state speed controls.

WARNING: To reduce the risk of fire, electric shock, and injury to persons, this controller should only be installed with ZOO Fans. Not suitable for use with other motors.

CAUTION: When service or replacement of a component in the controller requires the removal or disconnection of a safety device, the safety device is to be reinstalled or remounted as previously installed.

WARNING: Risk of fire, electric shock, or injury to persons during maintenance. Disconnect the controller from the power supply before servicing.

WARNING – TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

a) Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
b) Before servicing or cleaning unit, switch power off at service panel and lock the service disconnect to prevent power from being switched on accidentally. When the service disconnect cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

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ZOO FANS AVS-7.5A CONTROLLER SPECIFICATIONS

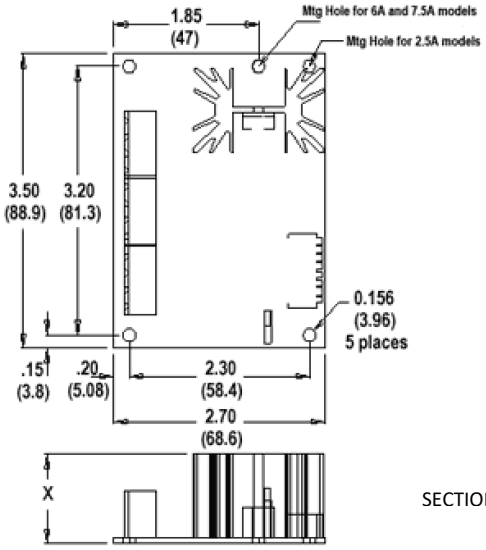
Model	Width/Length	Amps	Power Input/Output	Control Input	Description
AVS-7.5A	3.5” (8.9 cm)	7.5	115V/115V or 230V/230V	0-10VDC, 4-20mA, or 10KΩ Potentiometer	Advanced Variable Speed 7.5A Controller

What’s in the box:

- AVS-7.5A variable speed controller
- DIN Rail adapter

What you’ll need

- DIN Rail (for mounting purposes)
- Electrical panel or cabinet (to mount DIN Rail in)
- No. 24 AWG wire or greater to connect BMS (Building Management System) or Potentiometer
- 3.0 mm flat head screw drive



PLAN VIEW OF CONTROLLER

SECTION VIEW OF CONTROLLER

Measurements in inches and (mm)

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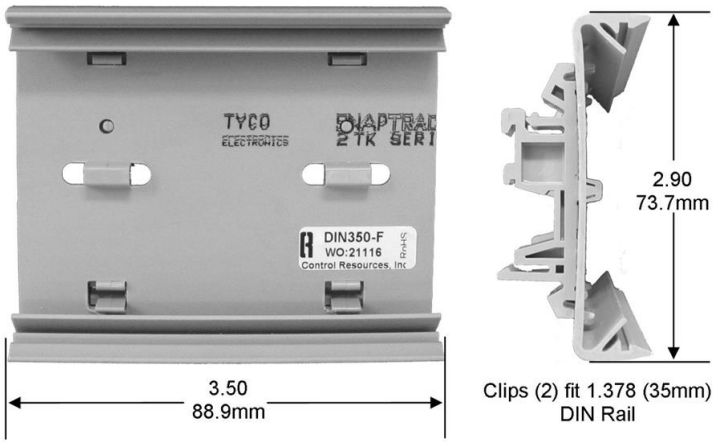


PERSPECTIVE VIEW OF DIN RAIL ADAPTER

STEP 1: INSTALLING THE CONTROLLER

- Attach controller directly to the DIN rail adapter by inserting the controller PCB (printed circuit board) lengthwise in the grooves of the adapter.
- With the controller mounted in the adapter, snap the adapter to the DIN rail and then proceed to secure DIN rail into electrical panel.
- Proper grounding of the controller is required for safety and proper operation. Secure ground (green) wire to a sufficient grounding lug in the mounting panel or consult local electrical codes.
- This controller is **NOT** compatible with Uninterruptible Power Supplies (UPS) that generate a square wave.
- It is recommended that an adequately sized circuit breaker be connected between the power service and the controller to permit fail-safe removal of power before making adjustments or connections.

STEP 2: WIRING THE CONTROLLER

The AVS-7.5A has two (2) wiring methods. The controller can be controlled via a signal from a BMS system or manually via a potentiometer. Select the proper wiring method for your installation below.

WIRING METHOD 1:

Do NOT combine "To Fans" (N)eutral lines. Each AVS-7.5A must have a dedicated neutral from the controller to the zone of fans it is controlling

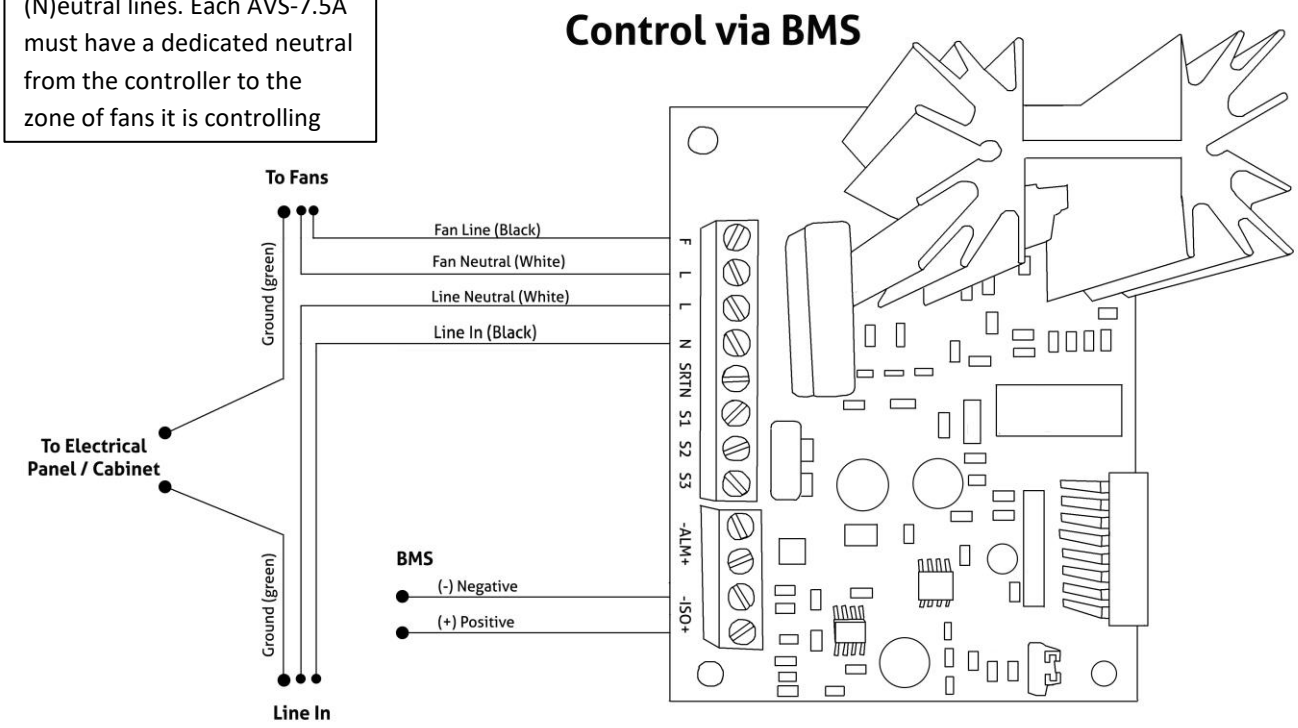


Figure 1

- Electrical connection should be made according to the wiring diagram (see *Figure 1)*
- To utilize the control signal from a Building Management System (BMS), connect No. 24 AWG wiring to the +/- ports on the controller labeled "ISO", respectively. **IMPORTANT: Correct polarization is imperative when connecting the BMS positive and negative leads to the AVS-7.5A.**
- For supply connections use No. 12 AWG or greater cable.
- Ground wire will typically be connected to a sufficient grounding lug in the panel in which the unit is installed in.

- If wiring multiple zones, an independent controller must be used for each zone. Each AVS-7.5A must have a dedicated neutral from the controller to the zone of fans it is controlling. Neutrals must NOT be shared across zones or AVS-7.5A controller outputs.

- To control multiple fans with one controller, please contact ZOO Fans.

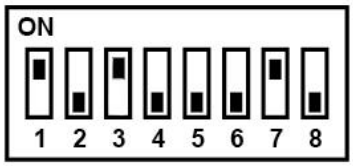
WARNING: Dangerous voltages are present on the circuit board when connected to the power line. Power must be removed before making any connections or adjustments to avoid electrical shock or damage to the unit.

CAUTION: An incorrectly installed controller can result in component damage or reduction of the fan's life. Wiring or application errors such as under-sizing the controller, incorrect or inadequate AC supply, or excessive ambient temperatures may result in a malfunction of the fan system. Verify correct voltage and phase before beginning installation!

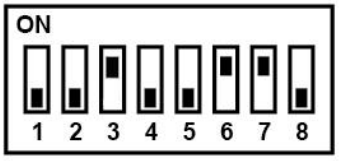
CONTROLLER CONFIGURATION FOR BMS INTERFACE

The AVS-7.5A has three (3) available configurations for a Loss of Signal (LOS) event. LOS will occur with a signal less than 4VDC or 4mA. In the event of LOS, the AVS-7.5A can default the fans to HIGH, LOW (idle), or OFF. The LOS configuration can be set with the dipswitches on the controller.

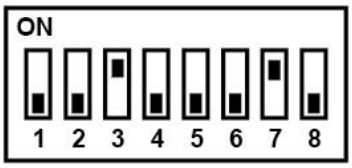
***** IMPORTANT TIP *****
Disconnect the power to the controller **PRIOR** to changing any dipswitch.
The controller will NOT accept changes while still connected to the power supply.



BMS
LOSS OF SIGNAL: OFF



BMS
LOSS OF SIGNAL: HIGH



BMS
LOSS OF SIGNAL: LOW

TESTING TIP: To test the AC power connection from the AVS-7.5A to the fans prior to connecting a BMS, change dipswitches #6 and #7 to the up (on) position.

WIRING METHOD 2:

Do NOT combine “To Fans” (N)eutral lines. Each AVS-7.5A must have a dedicated neutral from the controller to the zone of fans it is controlling

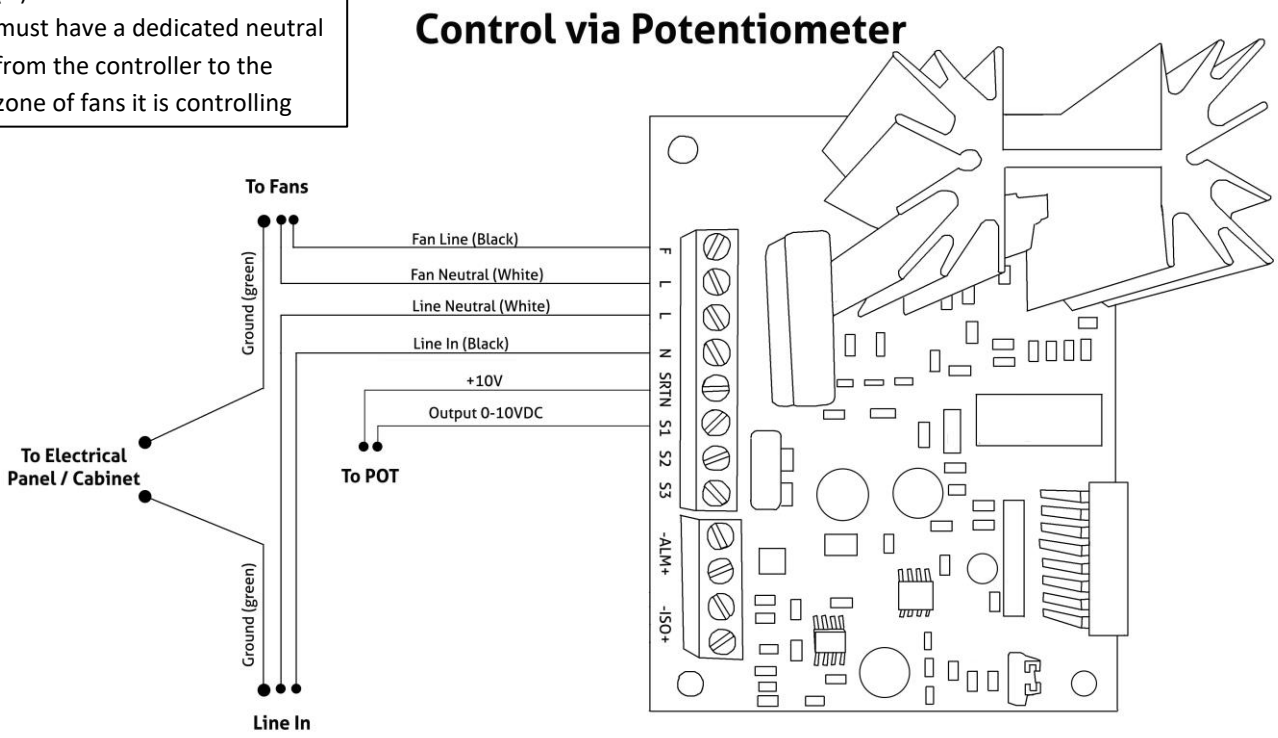


Figure 2

- Electrical connection should be made according to the wiring diagram. (see *Figure 2*)
- For manual control utilizing a 10k Ohm potentiometer, connect potentiometer leads to the ports on the controller labeled “SRTN” and “S1”. NOTE: The two leads for the potentiometer are not polarized so the input orientation can be connected either way.
- For supply connections use No. 12 AWG or greater cable.
- Ground wire will typically be connected to a sufficient grounding lug in the panel in which the unit is installed in.
- If wiring multiple zones, an independent controller must be used for each zone. Each AVS-7.5A must have a dedicated neutral from the controller to the zone of fans it is controlling. Neutrals must NOT be shared across zones or AVS-7.5A controller outputs.
- To control multiple fans with one controller, please contact ZOO Fans.

WARNING: Dangerous voltages are present on the circuit board when connected to the power line. Power must be removed before making any connections or adjustments to avoid electrical shock or damage to the unit.

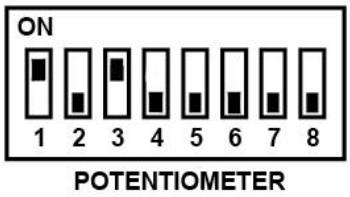
CAUTION: An incorrectly installed controller can result in component damage or reduction of the fan's life. Wiring or application errors such as under-sizing the controller, incorrect or inadequate AC supply, or excessive ambient temperatures may result in a malfunction of the fan system. Verify correct voltage and phase before beginning installation!

CONTROLLER CONFIGURATION FOR POTENTIOMETER INTERFACE

The AVS-7.5A can be set to accept a POTENTIOMETER input by selecting the correct dipswitches on the controller.

***** IMPORTANT TIP *****

Disconnect the power to the controller PRIOR to changing any dipswitch.
The controller will NOT accept changes while still connected to the power supply.



POTENTIOMETER

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