VAViH-SD

Installation Instructions

Overview

The Alerton BACtalk VAViH-SD is intended for use with variable air volume (VAV) boxes. It is a single-duct VAV controller with a differential pressure transducer, six binary outputs, and five analog inputs. Four of the binary outputs are hot-switched 24 VAC @ 0.5A triac outputs. The other two binary outputs are ground switched and are reserved for the integrated actuator. Four analog inputs are permanently configured to operate as open contact/thermistor and the fifth analog input is user selectable: open contact/thermistor, 0-5VDC, or 0-10VDC. All analog inputs are capable of 10-bit resolution.

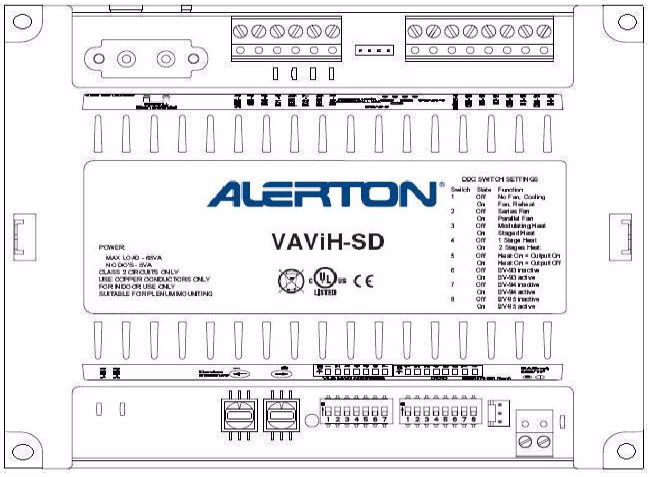

Fig. 1 VAViH-SD.

Mounting

Caution! Thoroughly read all instructions before mounting and wiring. See the *VLC Installation and Operations Guide* (LTBT-TM-GEN4VLC) for more information. Always install equipment in accordance with the National Electric Code, the instructions, and in a manner acceptable to the local authority having jurisdiction.

The VAViH-SD is suitable for indoor mounting only. If the unit must be installed in a location exposed to weather, use a water-tight, metallic, electrically-grounded, weatherproof enclosure. Make sure the location selected is dry and free from electrical interference. Also ensure that technicians can access the unit. The VAViH-SD can be mounted in any vertical or horizontal orientation.

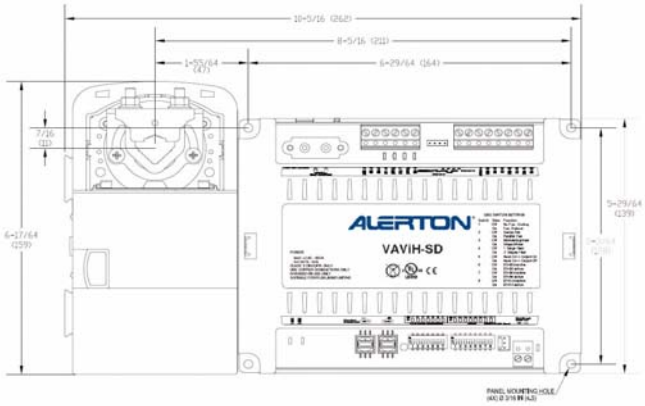

Fig. 2 Dimensions for VAViH-SD.

Power supply

The VAViH-SD requires 24 VAC @ 65VA min. from a fused UL Listed Class 2 transformer (not provided). The VAViH-SD uses a half-wave rectifier to convert the AC power supply to onboard power. This enables multiple controllers with half-wave power supplies to be powered from a single, grounded transformer. Refer to Figure 3, "VAViH-SD output wiring diagram," on p. 2 for details.

Warning! Half-wave devices and full-wave devices can't use the same AC transformer. If a VAViH-SD shares power with another device, make sure that the other device uses a half-wave rectifier and that polarity of wiring is maintained.

Input wiring and configuration

Shielded, 18 AWG wire is required for all inputs and analog outputs to reduce electrical interference (noise). A single-point grounding scheme that utilizes the transformer or panel ground is recommended. Ground only one side of the shield drain wire.

For more information, see "Input wiring and configuration tips" in the *VLC Installation and Operations Guide* (LTBT-TM-GEN4VLC).

Warning! Do not ground shields to any terminal on the VAViH-SD because any noise on the shield will be routed through the VAViH-SD circuit board, potentially disrupting operation or damaging the unit.

Binary outputs (BOs)

See Figure 3, "VAViH-SD output wiring diagram," on p. 2 for details. For further information on ideal wiring, see "Binary outputs (BOs)" in the *VLC Installation and Operations Guide* (LTBT-TM-GEN4VLC).

MS/TP LAN configuration

VAViH-SDs communicate on the site-wide BACnet system over a twisted-pair MS/TP LAN, which uses the RS–485 signaling standard. VAViH-SDs are master devices on the MS/TP LAN and can initiate communications with other devices. Each VAViH-SD employs a high-quality RS–485 tranceiver and exerts ¼ unit load on the MS/TP LAN. For details, refer to "MS/TP LAN configuration" in the *VLC Installation and Operations Guide* (LTBT-TM-GEN4VLC).

Switch-selectable BACnet Device ID

The VAViH-SD has two rotary switches that allows the user to set the BACnet device ID manually. For details, see the Alerton Support Network.

Switch-selectable DDC Operation

The VAViH-SD has a bank of 8 DIP switches labeled for DDC operation. This allows you to load standard DDC and use the DDC switches to define the equipment to be used. For details, see the Alerton Support Network.

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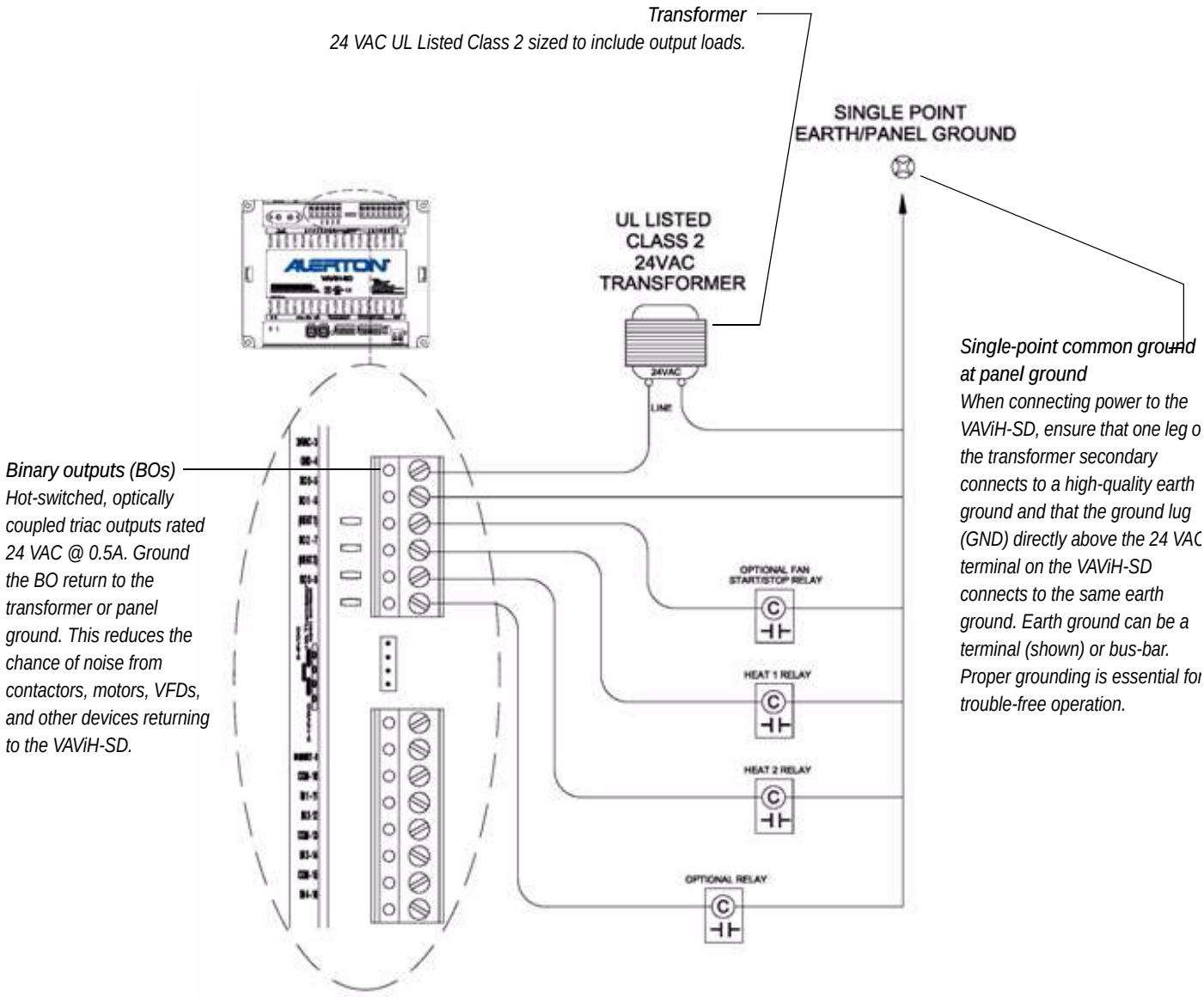

Warning! Do not ground shields to any terminal on the VAViH-SD because any noise or transient voltages on the shield will be routed through the VAViH-SD circuit board, potentially disrupting operation or damaging the VAViH-SD.

Fig. 3 VAViH-SD output wiring diagram.