

THERMA-FUSER™

THERMALLY POWERED VAV DIFFUSER

SPECIFICATION



**Models: ST-HC Separate set points for VAV heating and VAV cooling
Complete with Remote Adjust Option**

GUIDE SPECIFICATION

(Suitable for Section 23 36 16 Variable-Air-Volume Units of the CSI Master Format)

2.2 Thermally Powered VAV Diffusers

- A. Thermally powered variable air volume diffusers shall be Therma-Fuser™ model ST manufactured by Acutherm, Hayward CA.
- B. Thermally powered VAV diffusers shall be a complete VAV terminal and thermostat self-contained in nominal 24"x24"/600mm square diffuser. They shall be thermally powered with one room thermostat/actuator and one changeover thermostat/actuator. External wiring or pneumatics shall not be allowed.
- C. The VAV diffusers shall have a thumbwheel and temperature scale to adjust the cooling set point and a separate thumbwheel and temperature scale for the heating set point. The adjustment shall be right above the hinged appearance panel and shall not require tools. Each set point shall be separately adjustable between 70°F/21°C and 78°F/26°C. The initial set point shall be factory set at 74°F/23°C.
- D. In the cooling mode the VAV diffusers shall open on a rise in room temperature and in the heating mode they shall close on a rise in room temperature. The changeover thermostat shall be factory installed and adjusted to engage the heating mode when the supply air temperature rises above 80°F/27°C and return to the cooling mode when the supply air temperature falls below 68°F/20°C. During changeover the diffuser shall close or, if a minimum flow is set, go to the minimum. Nothing including the changeover mechanism shall extend above the inlet of the diffuser.
- E. All VAV diffusers shall have a dial and scale to adjust minimum flow between 5 cfm/2.4 l/s and 50% of maximum flow without tools. Minimum flow shall be factory set at 10%. A fixed maximum flow stop shall be factory set for the full open air flow of the specified inlet size.
- F. All VAV diffusers shall have a lever which will open the damper for balancing without tools. The balancing lever shall be accessible from the outside of the diffuser without folding down the appearance panel or removing any part of the diffuser.
- G. All VAV diffusers shall have a solid (no holes or slots), hinged appearance panel that can be unlatched and folded down to hang allowing hands to be free for adjusting temperature set points. Instructions for the VAV diffuser shall be on the inside of the appearance panel.
- H. The VAV diffusers shall have positive induction of secondary room air over the room thermostat/actuator at all flows from fully closed to fully open.
- I. The manufacturer shall warrant that all VAV diffusers shall be free from defects in materials and workmanship for a period of ten years from date of shipment.
- J. Where letters DA follow the model and type designation (e.g. ST-HC-DA2) the Therma-Fuser VAV diffuser shall be equipped for adjustment of room temperature control level by a remote adjust unit. This shall include a resistance heater attached to the room thermostat. The heater shall be wired to a NEMA 1 terminal box mounted on the exterior of the Therma-Fuser diffuser housing. The thermostat in the Therma-Fuser diffuser shall be factory set at 76°F/24°C.
- K. The remote adjust unit shall also be supplied by Acutherm and shall be capable of adjusting the control level of 1 master and up to 4 secondary diffusers. The remote adjust unit shall be suitable for mounting directly onto the wall or onto a standard 2"x4" electrical box (by others). Two push buttons on the unit shall allow adjustment of the room temperature control level set point between 68°F/20°C and 76°F/24°C. Display shall be digital with 'warmer/cooler' indicators and optional numeric set point readout.
- L. A protocol independent analog 0-2 VDC signal shall be available for both input and output to a building management system.
- M. The remote adjust unit shall be supplied with 24 VAC ±2 VAC power. Wiring between the master diffuser and the remote adjust unit shall be supplied by Acutherm. All other wiring including power wiring to the

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24 volt transformer, the 24 volt transformer, wiring from the transformer to the master diffuser, wiring from the master diffuser to the building automation system (BAS), and wiring between the master diffuser and any secondary diffuser(s) shall be furnished and installed as part of the electrical specifications.

- N. The manufacturer shall warrant that remote adjust option shall be free from defects in materials and workmanship for a period of two years from date of shipment.
- O. Supply air to the VAV diffuser shall be constant temperature (may be reset to another constant temperature). Supply air shall be limited to no lower than 50°F/10°C on cooling and no higher than 120°F/49°C on heating. The heating high limit shall be as low as possible but no lower than 80°F/27°C.