

RECTANGULAR VRF-SAV (SMART AIR VALVE)

SUBMITTAL



SAV

Rectangular Supply Damper used in VRF or pressure independent applications

DESCRIPTION

The SAV, (Smart Air Valve) is a pressure independent, self-balancing rectangular damper utilized in VRF applications to deliver specific CFM to each zone in a ducted system. The Smart Air Valve has a built-in pitot tube measuring section that controls adjustable air velocities, that are measured by differential pressure sensors. The SAV velocity setting potentiometers will assign a target air velocity at each SAV. The SAV air delivery will adjust itself to locate the target velocity. Then the SAV will hold this assigned air delivery regardless of static pressure changes in the system.

The VRF-STAT used with a Smart Air Valve can request various preset air volume targets and send specific target request to the SAV. As the room temperature or zone approaches set point the thermostat will reduce the CFM or cooling to the space to the vent mode to limit on/off compressor operation.

The Smart Air Valve is a new concept in air delivery. This operation emulates the way an indoor VRF unit operates allowing the addition of VAV or variable air volume control in a VRF system controlling up to 20 Smart Air Valves per indoor unit or fan coil.

Zonex VRF-VAV supplies a predictable CFM from each damper in the system.

Rectangular Smart Air Valves feature parallel blade construction for height dimensions to 14".

The damper assembly is enclosed in a 26" long, 20-gauge galvanized steel sleeve, with standard slip and drive connections. Damper blades are bolted to a hexagonal damper shaft.

Damper blades close against steel blade stops. The damper linkage is non-adjustable and fully enclosed within the damper.

Dampers feature 24VAC, full stall motors, which do not require use of end switches to terminate travel. Each SAV is powered and controlled from its respective VRF-STAT.

Damper motors are easily removed for damper shaft and motor inspection. Each actuator hat section is insulated to prevent condensation. The actuator provides minimum open and close stops for air balance.

TECHNICAL DATA

Electrical:

Supply Voltage: 24vac

Power consumption: 2 VA maximum (1.5W)

Environmental:

Operating temperature: 20 to 125° F (-7 to 52° C)

Operating humidity: 10-95% non-condensing

Storage temperature: -20 to 130° F (-29 to 54° C)

General:

Shell: 20-gauge cold rolled galvanized steel

Shaft: 1/2" dia. plated steel, hexagonal

Blades: 16 gauge galvanized

Bushings: Stainless steel oilite

Actuator: Power Open / Power Close

Stroke: 90°

Rev 7/10/2020

RECTANGULAR VRF-SAV (SMART AIR VALVE)

TYPICAL CAPACITIES

Designing a Rectangular Smart Air Valve (SAV)

CFM x .205 = Area in Square Inches

Divide Square Inches by desired duct Height to find the duct Width

| BTU | *CFM | SQ inches | SAV WxH | | SAV WxH | | SAV WxH | | SAV WxH |
|--------|------|-----------|---------|----|---------|----|---------|----|---------|
| 13,710 | 457 | 102 | 13x8 | or | 10x10 | or | 9x12 | or | 7x14 |
| 14,400 | 480 | 108 | 13x8 | or | 11x10 | or | 9x12 | or | 8x14 |
| 15,090 | 503 | 113 | 14x8 | or | 11x10 | or | 9x12 | or | 8x14 |
| 15,780 | 526 | 118 | 15x8 | or | 12x10 | or | 10x12 | or | 8x14 |
| 16,470 | 549 | 123 | 15x8 | or | 12x10 | or | 10x12 | or | 9x14 |
| 17,130 | 571 | 128 | 16x8 | or | 13x10 | or | 11x12 | or | 9x14 |
| 17,820 | 594 | 133 | 17x8 | or | 13x10 | or | 11x12 | or | 10x14 |
| 18,510 | 617 | 138 | 17x8 | or | 14x10 | or | 12x12 | or | 10x14 |
| 19,200 | 640 | 143 | 18x8 | or | 14x10 | or | 12x12 | or | 10x14 |
| 19,890 | 663 | 148 | 19x8 | or | 15x10 | or | 12x12 | or | 11x14 |
| 20,580 | 686 | 154 | 19x8 | or | 15x10 | or | 13x12 | or | 11x14 |
| 21,270 | 709 | 159 | 20x8 | or | 16x10 | or | 13x12 | or | 11x14 |
| 21,960 | 732 | 164 | 20x8 | or | 16x10 | or | 14x12 | or | 12x14 |
| 22,620 | 754 | 169 | 21x8 | or | 17x10 | or | 14x12 | or | 12x14 |
| 23,310 | 777 | 174 | 22x8 | or | 17x10 | or | 15x12 | or | 12x14 |
| 24,000 | 800 | 179 | 22x8 | or | 18x10 | or | 15x12 | or | 13x14 |
| 24,690 | 823 | 184 | 23x8 | or | 18x10 | or | 15x12 | or | 13x14 |
| 25,380 | 846 | 189 | 24x8 | or | 19x10 | or | 16x12 | or | 14x14 |
| 26,070 | 869 | 195 | 24x8 | or | 19x10 | or | 16x12 | or | 14x14 |
| 26,760 | 892 | 200 | 25x8 | or | 20x10 | or | 17x12 | or | 14x14 |
| 27,420 | 914 | 205 | 26x8 | or | 20x10 | or | 17x12 | or | 15x14 |
| 28,110 | 937 | 210 | 26x8 | or | 21x10 | or | 17x12 | or | 15x14 |
| 28,800 | 960 | 215 | 27x8 | or | 22x10 | or | 18x12 | or | 15x14 |
| 29,490 | 983 | 220 | 28x8 | or | 22x10 | or | 18x12 | or | 16x14 |
| 30,180 | 1006 | 225 | 28x8 | or | 23x10 | or | 19x12 | or | 16x14 |
| 30,870 | 1029 | 230 | 29x8 | or | 23x10 | or | 19x12 | or | 16x14 |
| 31,560 | 1052 | 236 | 29x8 | or | 24x10 | or | 20x12 | or | 17x14 |
| 32,220 | 1074 | 241 | 30x8 | or | 24x10 | or | 20x12 | or | 17x14 |
| 32,910 | 1097 | 246 | 31x8 | or | 25x10 | or | 20x12 | or | 18x14 |
| 33,600 | 1120 | 251 | 31x8 | or | 25x10 | or | 21x12 | or | 18x14 |
| 34,290 | 1143 | 256 | 32x8 | or | 26x10 | or | 21x12 | or | 18x14 |

*Air delivery may vary +/- 10% based on altitude, air density or installation. These air quantities were derived from duct sizing chart .1" friction loss per 100' of duct. All CFMs listed are approximate. The pressure drop for these dampers is .2"

RECTANGULAR VRF-SAV (SMART AIR VALVE)

ORDERING INFORMATION

Part No. SAV WxH Smart Air Valve, Width x Height – Actuator located on the Height dimension

DIMENSIONAL DATA

