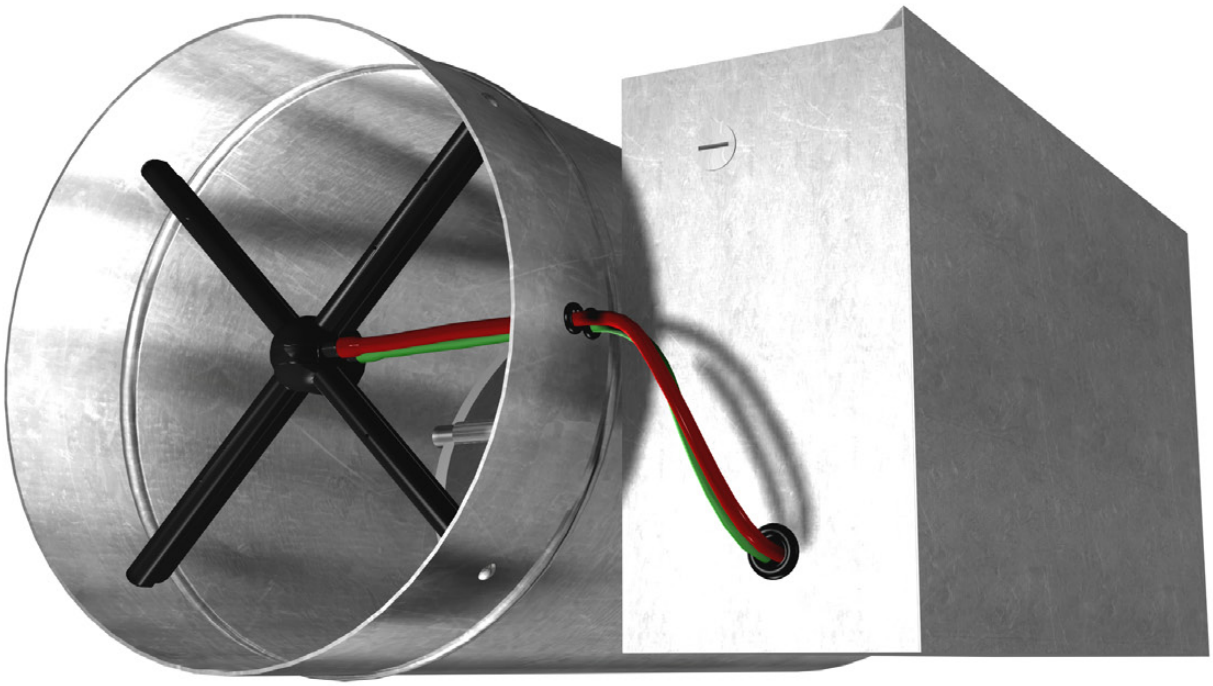

MANUAL – INSTALLATION, OPERATION, AND MAINTENANCE

Air Volume Control Valve

RDV / RDVQ Series

v004 – Issue Date: 07/14/16

AIR VOLUME CONTROL VALVE

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AIR VOLUME CONTROL VALVE

PRODUCT OVERVIEW

General

The RDV/RDVQ is supplied with the duct, damper, and airflow sensor. The RDV/RDVQ assembly is designed to accept Direct Digital Controls (DDC) for VAV pressure independent operation.

The terminal unit controls are supplied by the controls contractor and either factory or field mounted and wired. For information concerning controls, components, sequence of operation, etc., please refer to the documentation provided by the controls contractor.

Receiving Inspection

After unpacking the assembly, check it for shipping damage. If any shipping damage is found, report it immediately to the delivering carrier. During unpacking and installation do not handle by the inlet velocity sensor, damper shaft, or tubing. Damage may result.

Wiring

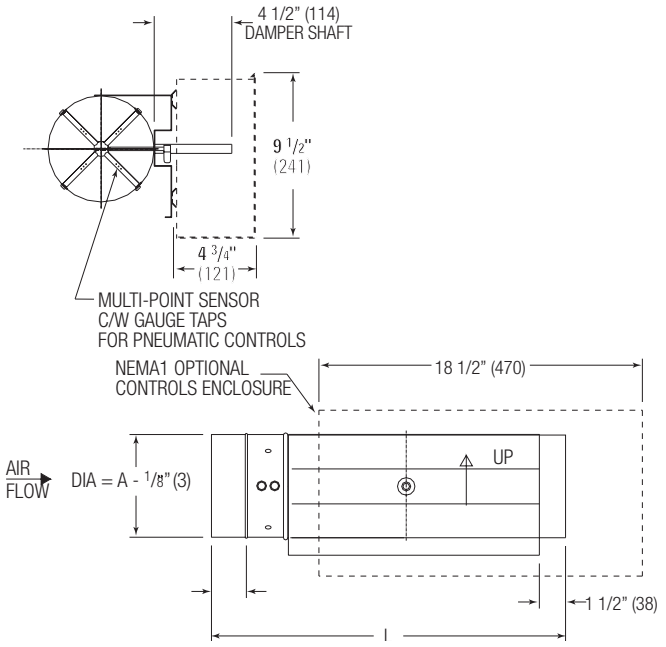
If controls have been factory mounted, a wiring diagram will be included with the unit indicating the factory mounted components. For field wiring of room sensors and other accessories, refer to the controls contractor's documentation. If the controls have been field mounted, refer to the controls contractor's documentation for all wiring information.

Damper rotation is always clockwise to the open position. An identification mark on the end of the shaft indicates the damper position.

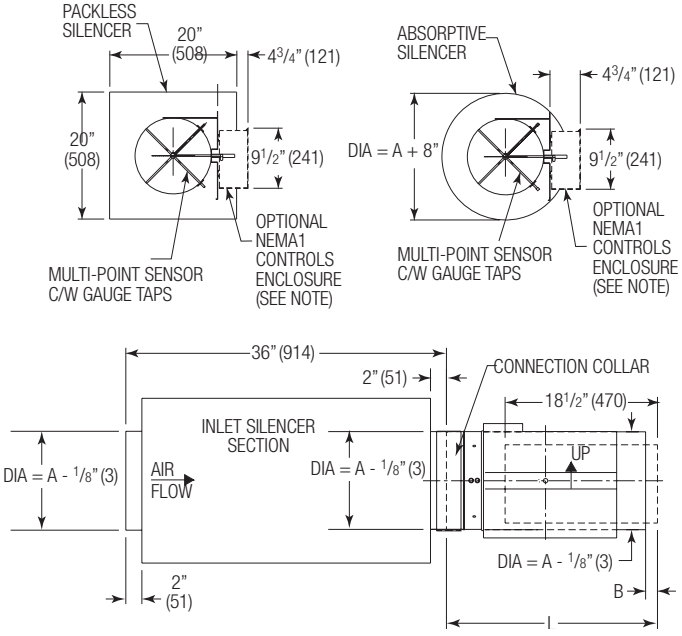
The factory supplied sensing lines are color coded. Red indicates the total pressure or "HI" line which should be located on the upstream side. Green indicates the static pressure or "LO" line which should be located on the downstream side.

An optional protective enclosure may be provided to house the terminal unit control components. The enclosure cover is removable with two sheet metal screws.

RDV ▼



RDVQ ▼



AIR VOLUME CONTROL VALVE

INSTALLATION INSTRUCTIONS

Installing the RDV/RDVQ Terminal Unit

The basic RDV is light enough that it can be supported by the ductwork in which it is installed. The RDVQ is supplied with silencers and should be supported directly. Use the support method prescribed for the round duct in the job specifications.

NOTE: For optimum performance there should be a minimum of three duct diameters of straight inlet duct, same size as the inlet, between the inlet and any transition, take off or fitting.

The assembly should be mounted right side up. It should be level within ±10 degrees of horizontal, both parallel to the air flow and at right angles to the air flow. The side of the assembly is labelled with an arrow indicating UP. Do not mount the control side of the assembly tight to a wall, pipe or other obstruction. Allow sufficient room for access to the controls

If the RDV/RDVQ is mechanically fastened to the duct work an approved duct sealer should be used to seal all connections.

Damper rotation is always clockwise to the open position. An identification mark on the end of the shaft indicates the damper position.

The air volume ranges listed are recommended for optimum performance. A minimum value of zero is also acceptable if no heating coils are attached.

Selection of air flow limits below the listed values is not recommended. Stability and accuracy may not be acceptable at lower than recommended air flow limits. The actual performance will vary depending on the terminal unit controls supply.

Air Volume Ranges

RDV Basic

Size	CFM		L/S	
	MIN	MAX	MIN	MAX
4	45	225	21	106
5	60	350	28	165
6	65	450	31	212
7	95	650	45	307
8	125	800	59	378
9	160	1050	76	496
10	210	1350	99	637
12	300	2100	142	991
14	430	3000	203	1416
16	575	4000	271	1888

RDVQ - Absorptive

Size	CFM		L/S	
	MIN	MAX	MIN	MAX
4	--	--	--	--
5	--	--	--	--
6	80	450	38	212
7	110	650	52	307
8	160	800	76	378
9	200	1050	94	496
10	270	1350	127	637
12	350	2100	165	991
14	500	3000	236	1416
16	650	4000	307	1888

RDVQ - Packless

Size	CFM		L/S	
	MIN	MAX	MIN	MAX
4	--	--	--	--
5	--	--	--	--
6	65	380	31	179
7	95	650	45	307
8	125	790	59	373
9	160	1050	76	496
10	210	1350	99	637
12	300	2025	142	956
14	430	2400	203	1133
16	575	3425	271	1616

NOTE: Factory calibrated controls must be selected within the above flow range limits. A minimum value of zero is also available. When an auxiliary flow setting is specified, the value must be greater than the minimum setting and within the range limits.

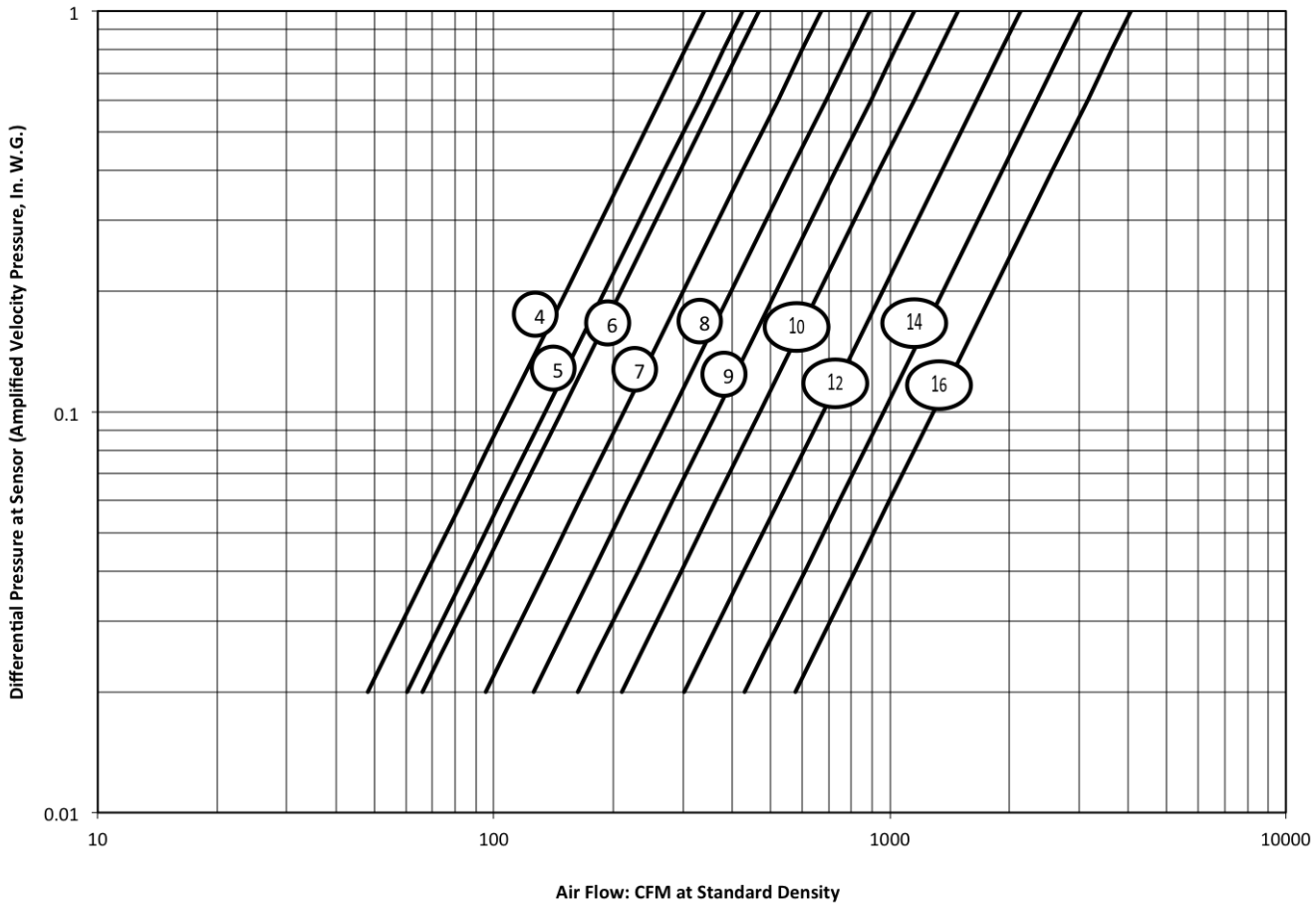
On controls mounted by Price but supplied by others, the air volume ranges are guidelines only.

Selection of air flow limits below the listed values is not recommended. Stability and accuracy may not be acceptable at lower than recommended air flow limits. The actual performance will vary depending on the terminal unit controls supplied.

AIR VOLUME CONTROL VALVE

INSTALLATION INSTRUCTIONS

SP300 Calibration Curves - RDV



Calibration Equation

$$VP = \left(\frac{Q}{K}\right)^2$$

VP - differential pressure at sensor, inches w.g.

Q - air flow rate, cfm at standard density.

K - calibration constant

Unit Size	K
4	340
5	426
6	468
7	673
8	890
9	1155
10	1487
12	2141
14	3045
16	4074

Notes:

1. Gauge taps are normally supplied with the pneumatic controls to allow field measurement of the differential pressure at the sensor with a manometer, magnahelic or other measuring device.

   If the terminal velocity controls utilize a flow-through transducer, a proper velocity pressure reading will NOT be read at the gauge taps and the calibration curves CANNOT be used for field measurement. The flow-through transducer operates on the principle of mass flow rather than pressure differential.

   Controls utilizing a dead-ended pressure transducer will allow field measurement with the gauge taps and calibration curves provided.

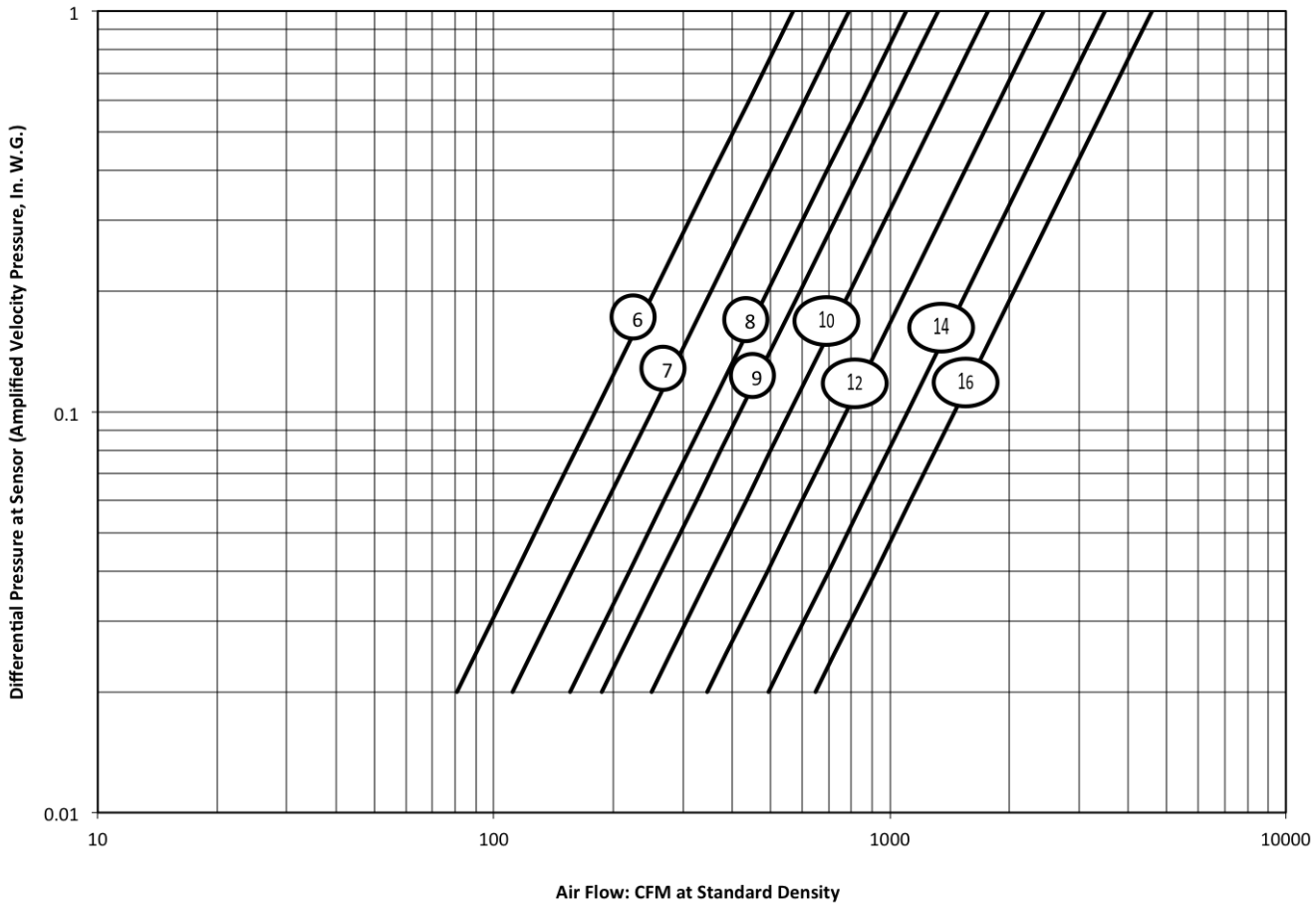
2. Setting flow limits for a differential pressure of less than 0.02 inches in NOT recommended. Stability and accuracy of flow limits may not be acceptable due to low velocity pressure signal. Performance will vary depending on the terminal unit controls provided.

3. For field calibration of air flow limits refer to the control contractors documentation.

AIR VOLUME CONTROL VALVE

INSTALLATION INSTRUCTIONS

SP300 Calibration Curves - RDVQ w/Absorptive Silencer



Calibration Equation

$$VP = \left(\frac{Q}{K}\right)^2$$

VP - differential pressure at sensor, inches w.g.

Q - air flow rate, cfm at standard density.

K - calibration constant

Unit Size	K
6	570
7	790
8	1100
9	1325
10	1770
12	2450
14	3500
16	4600

Notes:

1. Gauge taps are normally supplied with the pneumatic controls to allow field measurement of the differential pressure at the sensor with a manometer, magnahelic or other measuring device.

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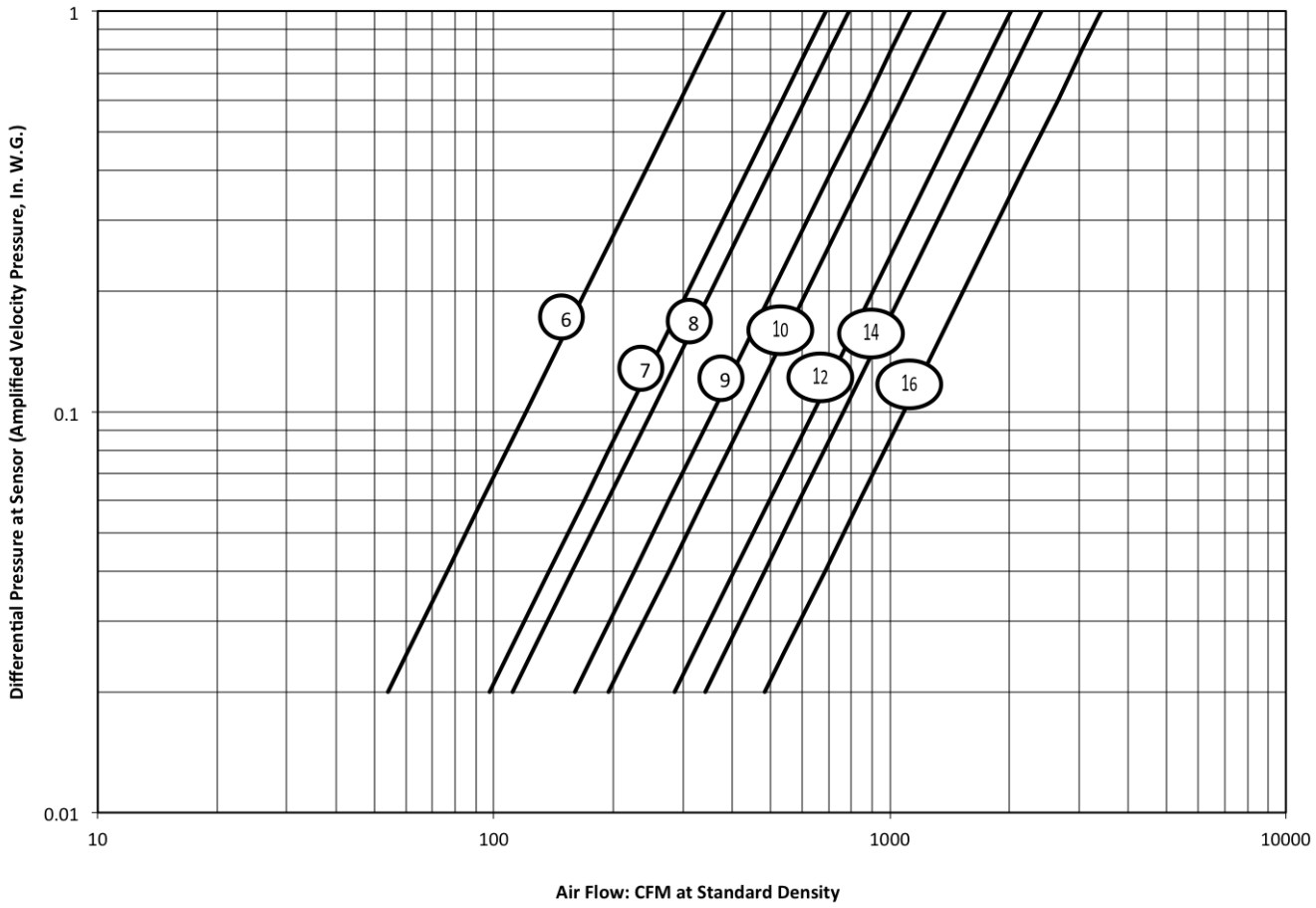
AIR VOLUME CONTROL VALVE

INSTALLATION INSTRUCTIONS

SP300 Calibration Curves - RDVQ w/Packless Silencer



Calibration Equation

$$VP = \left(\frac{Q}{K}\right)^2$$

VP - differential pressure at sensor, inches w.g.

Q - air flow rate, cfm at standard density.

K - calibration constant

Unit Size	K
6	382
7	690
8	790
9	1130
10	1380
12	2025
14	2415
16	3425

Notes:

1. Gauge taps are normally supplied with the pneumatic controls to allow field measurement of the differential pressure at the sensor with a manometer, magnahelic or other measuring device.

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