

PRICE®

LDV / LDVQ 5000

AIR VOLUME CONTROL VALVE

INSTALLATION MANUAL

Date: 02/10
Reference #: F-36

www.price-hvac.com

General Description

The LDV/LDVQ 5000 is supplied with the duct, damper, and sensor constructed of Type 316 stainless steel. The LDV/LDVQ 5000 assembly is designed to accept direct digital controls (DDC) for VAV pressure independent operation.

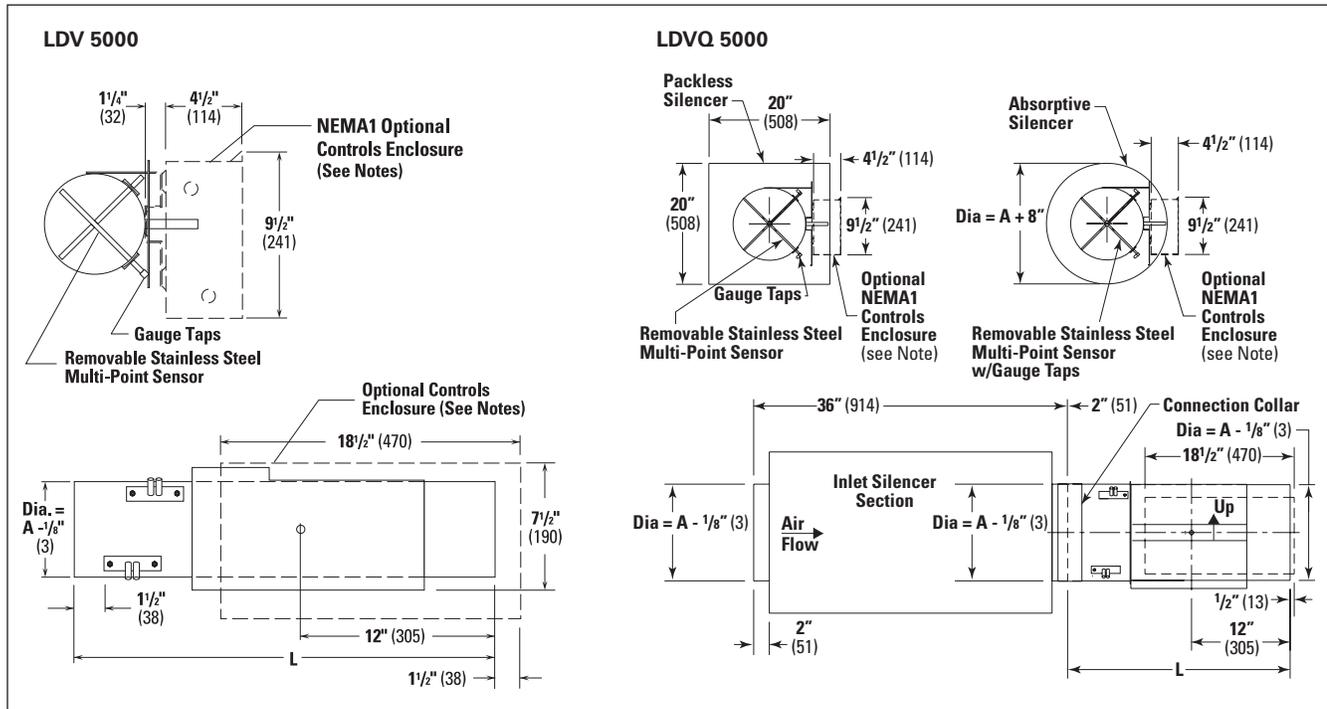
The terminal unit controls are supplied by the controls contractor and either factory or field mounted and wired. For information concerning controls, components, sequence of operation, etc., please refer to the documentation provided by the controls contractor.

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.

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.



Installing the LDV/LDVQ 5000 Terminal Unit

The basic LDV/LDVQ 5000 is light enough that it can be supported by the ductwork in which it is installed. Use the support method prescribed for the round duct in the job specifications.

Important: 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.

The LDV/LDVQ 5000 can be welded directly to the inlet and discharge duct work. If the LDV/LDVQ 5000 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. Capped "T"s are provided in the sensing lines from the amplifying sensor. These allow field connection of a differential pressure gauge for accurate air flow measurement.

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.

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 supplied.

Air Volume Ranges

Unit Size	CFM	L/S
	Min. - Max	Min. - Max
6	95 - 450	45 - 212
7	135 - 650	64 - 307
8	170 - 800	80 - 378
9	220 - 1050	104 - 496
10	270 - 1350	127 - 637
12	380 - 2100	179 - 991
14	500 - 3000	236 - 1416
16	650 - 4000	307 - 1888

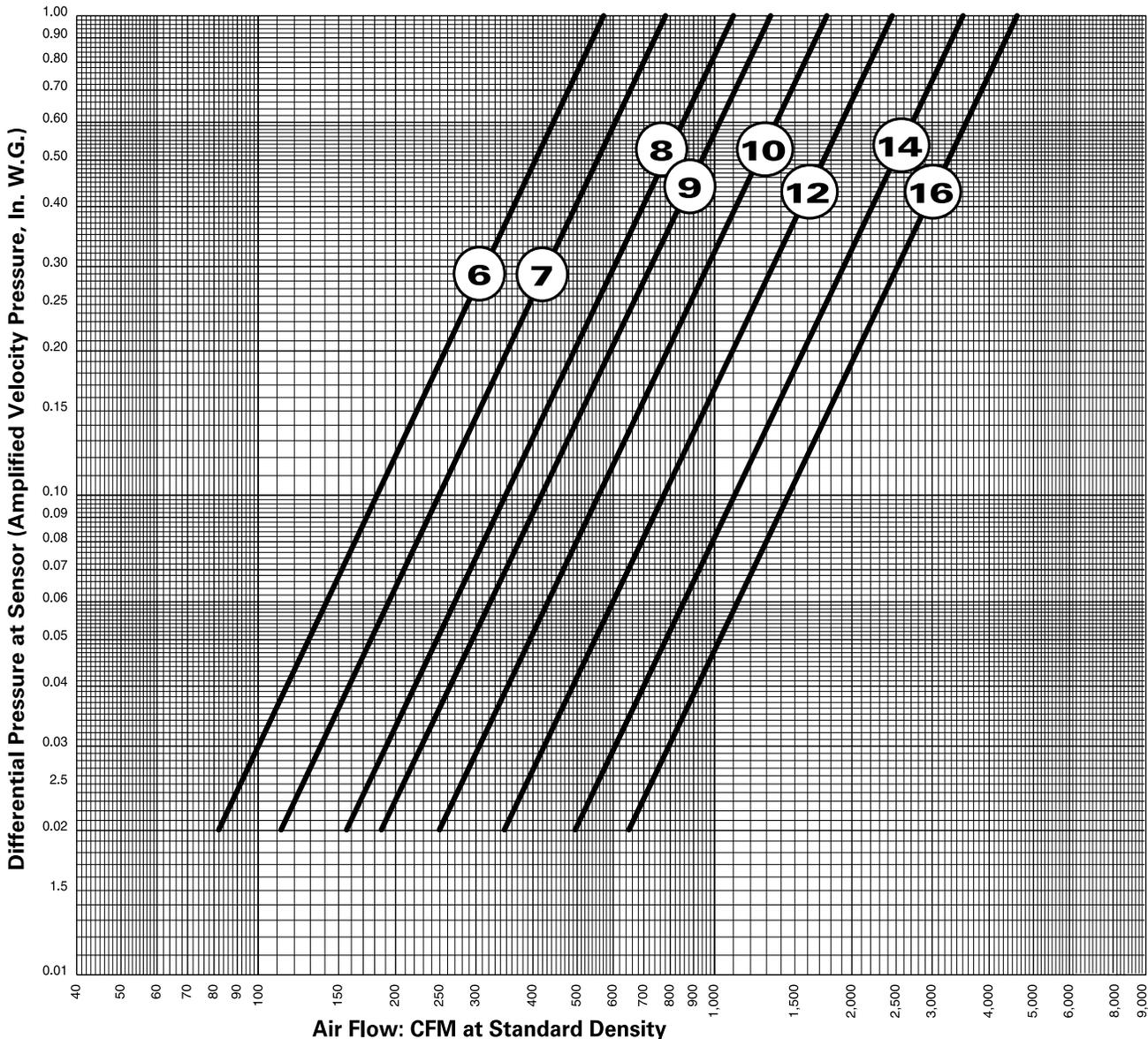
Notes:

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.

LDV Calibration Curves



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	661
7	950
8	1180
9	1540
10	1880
12	2700
14	3660
16	4650

NOTES

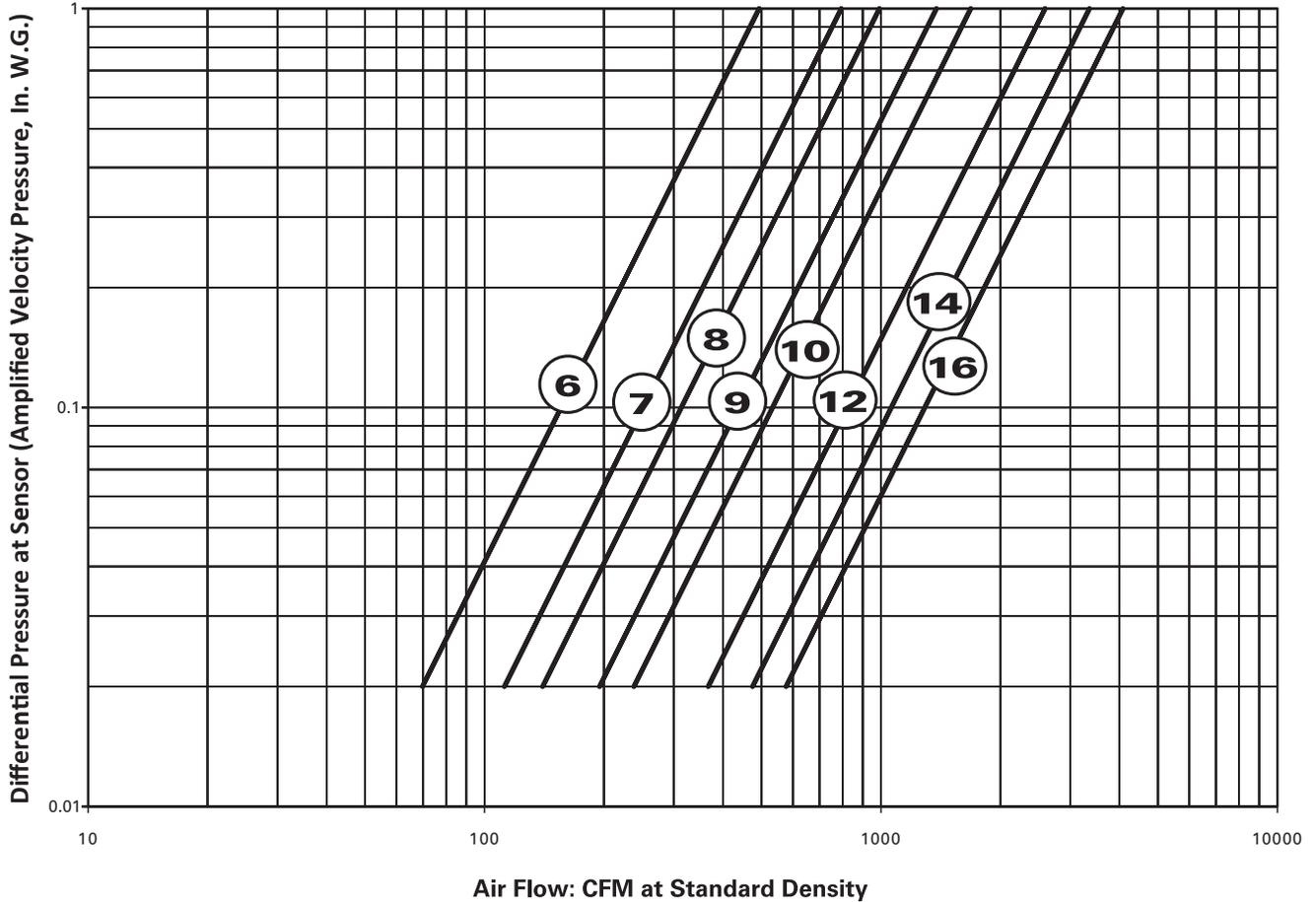
- Gauge taps are normally supplied with the terminal unit to allow field measurement of the differential pressure at the sensor with a manometer, magnahelic or other measuring device.

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.

- Setting flow limits for a differential pressure of less than 0.02 inches is 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.
- For field calibration of air flow limits refer to the control contractors documentation.

LDVQ Calibration Curves



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	495
7	795
8	991
9	1382
10	1685
12	2594
14	3350
16	4075

NOTES

- Gauge taps are normally supplied with the terminal unit 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.

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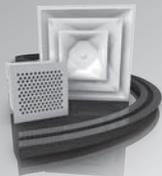
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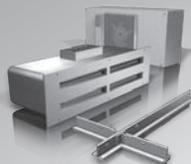
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