

MANUAL – INSTALLATION

Dual Duct Terminal Unit - Direct Digital Controls

DDS5 Series

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DUAL DUCT VARIABLE VOLUME CONTROL ASSEMBLIES

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DUAL DUCT VARIABLE VOLUME CONTROL ASSEMBLIES

PRODUCT OVERVIEW

General

The DDS5 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.

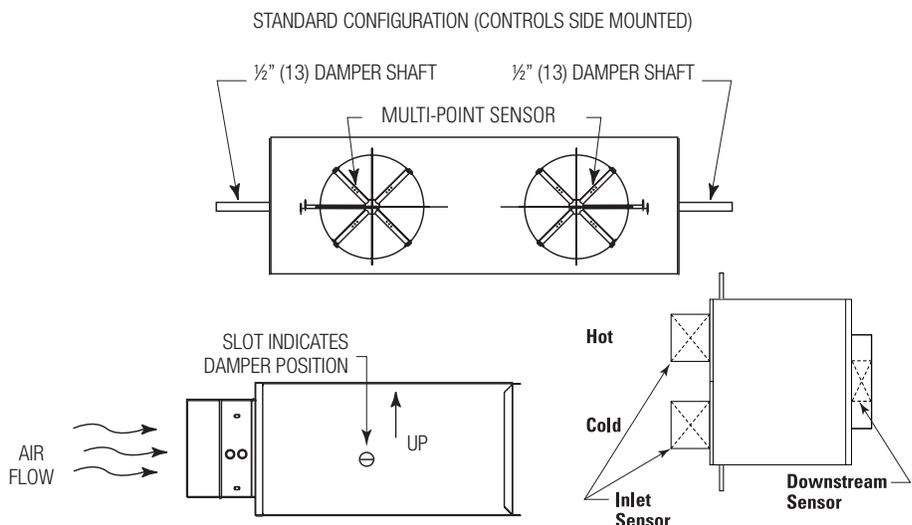
An optional protective enclosure may be provided to house the terminal unit control components. The enclosure cover is removable with two sheet metal screws.

The velocity sensor is normally supplied as standard with the terminal unit. However, in some cases a flow sensing device supplied by the controls contractor may be factory or field mounted. Refer to the submittal drawing for illustration.

The air volume ranges listed are recommended for optimum performance. A minimum value of zero is also acceptable for either the hot deck or the cold deck.

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.

DDS5 ▼



DUAL DUCT VARIABLE VOLUME CONTROL ASSEMBLIES

INSTALLATION INSTRUCTIONS

Installing the DDS5 Terminal Unit

Where accessory modules, such as attenuators or silencers are included, the assembly should be supported directly. Use the support method prescribed for the rectangular 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.

To control radiated noise in critical applications it is recommended that the inlet ducts be fabricated of a minimum gauge of 24 in place of flexible duct.

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.

To prevent excess air leakage, all joints should be sealed with an approved duct sealer. This would apply to all accessory module connections as well as the basic assembly.

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.

Air Volume Chart

Inlet Size	Adjustment Range CFM		Adjustment Range L/s	
	Max.	Min.	Max.	Min.
4	75-225	45-225	35-106	21-106
5	115-350	63-350	54-165	30-165
6	135-400	66-400	64-189	31-189
7	185-550	99-550	87-260	47-260
8	245-750	132-750	116-354	62-354
9	320-1000	167-1000	151-472	79-472
10	425-1300	221-1300	201-613	104-613
12	605-1900	304-1900	285-897	143-897
14	930-2900	439-2900	439-1369	205-1369
16	1190-3500	568-3500	562-1652	268-1652

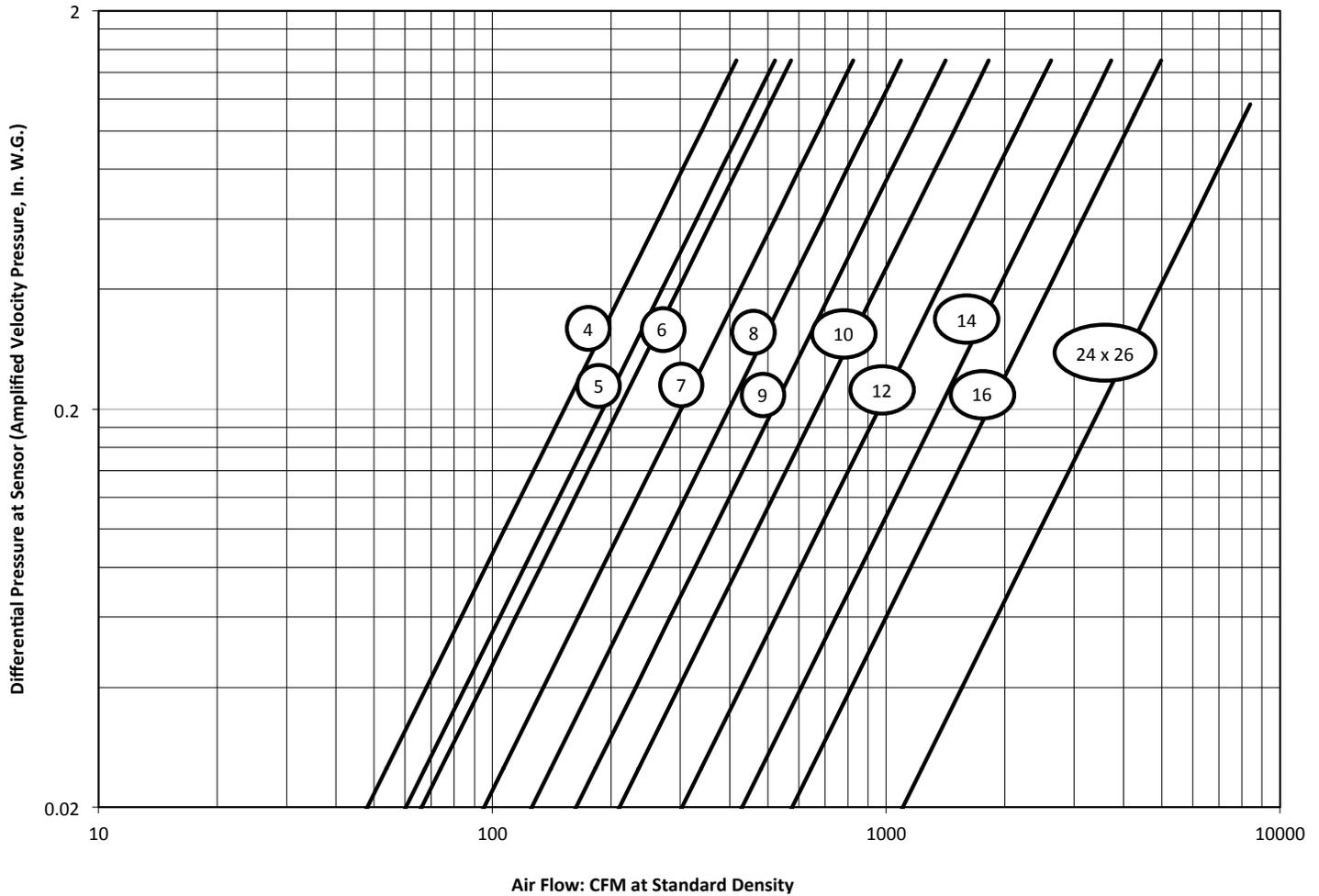
On controls mounted by Price but supplied by others, the air volume ranges are guidelines only.

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.

DUAL DUCT VARIABLE VOLUME CONTROL ASSEMBLIES

INSTALLATION INSTRUCTIONS

Inlet Airflow Sensor SP300 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

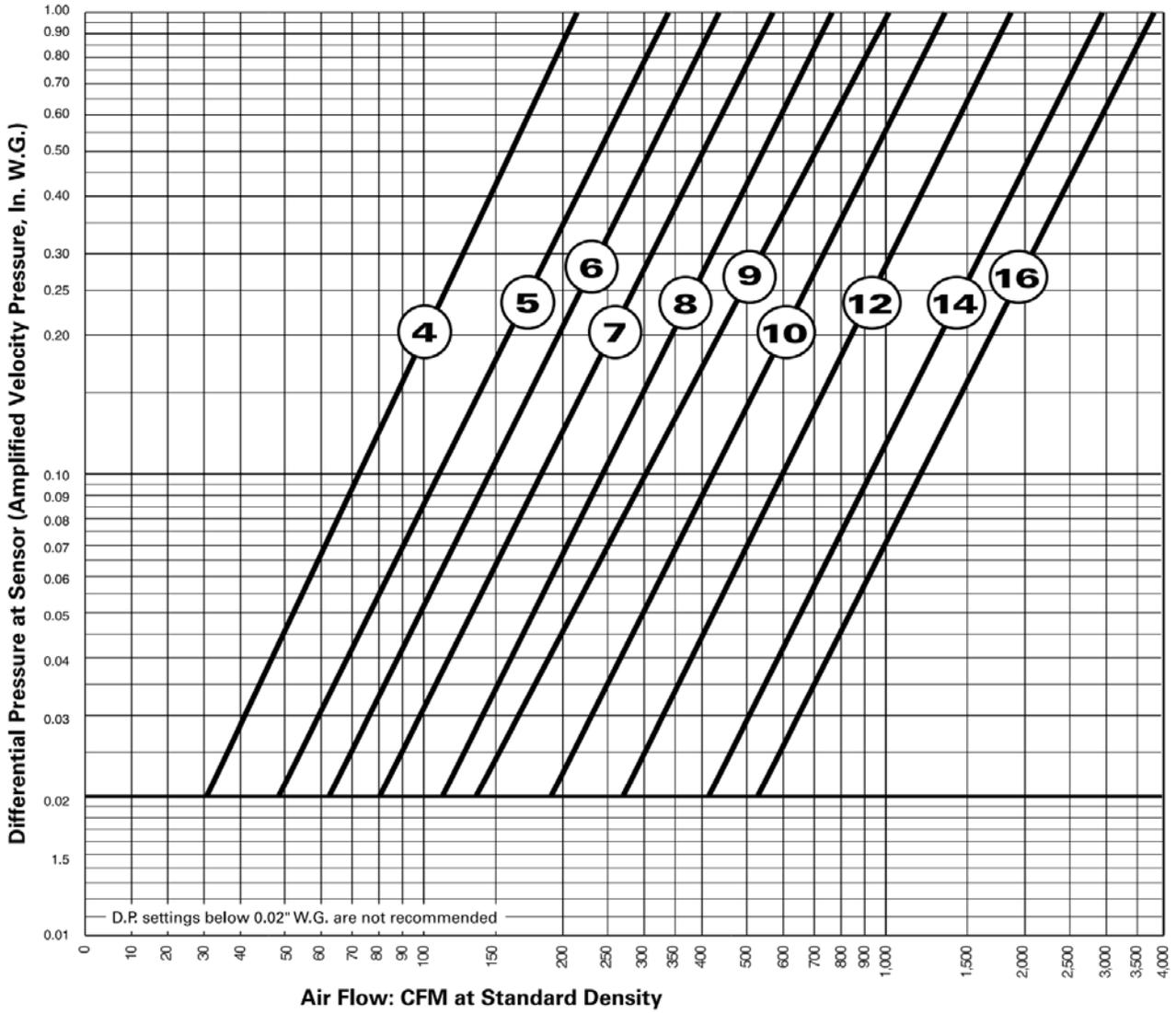
Inlet Sensor		Downstream Sensor	
Unit Size	K	Unit Size	K
4	340	4	215
5	426	5	340
6	468	6	442
7	673	7	588
8	890	8	769
9	1155	9	1004
10	1487	10	1300
12	2141	12	1890
14	3050	14	2980
16	4074	16	3679

1. 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.
2. For field calibration of air flow limits refer to the control contractor's documentation.

DUAL DUCT VARIABLE VOLUME CONTROL ASSEMBLIES

INSTALLATION INSTRUCTIONS

Downstream Calibration Curves



DUAL DUCT VARIABLE VOLUME CONTROL ASSEMBLIES

MAINTENANCE

Replacement Parts

Component	Part#	Description
Removable SP300 Sensor	041688-001	Sensor SP300, Sizes 4,5 & 6
	041688-002	Sensor SP300, Size 7
	041688-003	Sensor SP300, Size 8, Size 24x16 (qty. 4 required)
	041688-004	Sensor SP300, Size 9
	041688-005	Sensor SP300, Size 10
	041688-006	Sensor SP300, Size 12
	041688-007	Sensor SP300, Size 14
	041688-008	Sensor SP300, Size 16
	203132-999	.250" Green Tubing, Low Signal
	203136-999	.250" Red Tubing, High Signal
	041510-001	Rubber Grommet RB-215
	041683-001	Tee, Brass, .250" x .250" x .250"

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