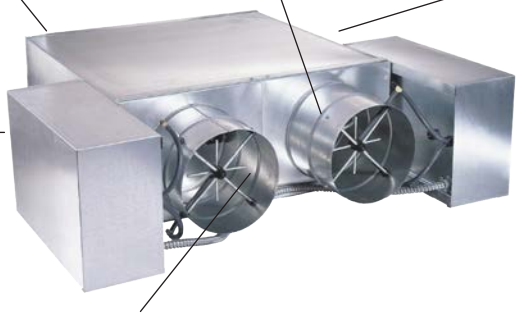
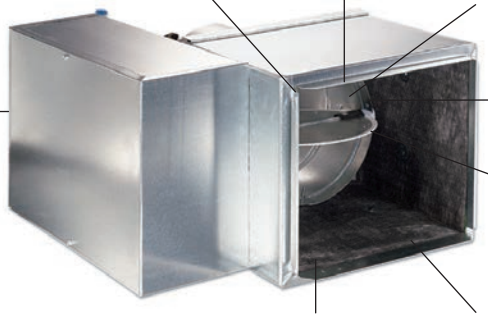
DDR Dual-Duct VAV Terminals

ENVIRO-TEC®

Model DDR construction features

Standard Construction



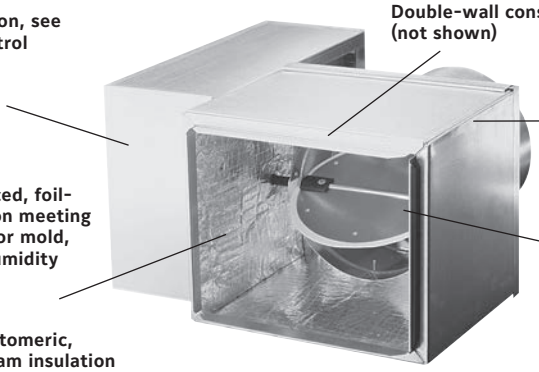


SINGLE-DUCT UNIT PICTURED. ALL FEATURES SHOWN ALSO APPLY TO DUAL-DUCT.

Optional Construction

Factory-control options:
- Pneumatic Controls
- Factory mounted consignment DDC

For more information, see corresponding Control Selection Guides



DDR VAV Terminals: Quiet performance with dual-duct simplicity

Owners

DDR terminals offer the typical benefits provided by dual-duct units, while performing at extremely low sound levels. This is critical in today's buildings where occupants are placing more emphasis on indoor acoustics.

In addition to quiet and accurate temperature control, the building owner will benefit from lower operating costs. The highly amplified, velocity-pressure signal from the FlowStar™ inlet sensor allows precise airflow control at low air velocities. The FlowStar™ sensor's airfoil shape provides minimal pressure drop across the terminals. This allows the central fan to run at a lower pressure and with less brake horsepower, while maintaining occupant comfort.

The DDR terminal is manufactured and assembled with multi-point, center-averaging, airflow sensors, which provide a signal to the controller, enabling it to quietly and precisely measure airflow. Superior flow measuring allows control at lower minimum cubic-feet-per-minute (CFM) values, which reduces energy costs and sound levels.

Designers

DDR terminals provide variable-air-volume (VAV) control beyond the typical dual-duct box. The compact cabinet design and quiet operation give the system designer the option to place units directly above occupied spaces. It is not necessary to locate the unit in the crowded space above a hall or corridor. This reduces lengthy and expensive discharge-duct runs.

The DDR terminal provides the ultimate in airflow control with the patented FlowStar™ airflow sensor. No other sensor in the industry can match the FlowStar's ability to quietly and precisely measure airflow. The FlowStar™ sensor ensures accurate control, even when space constraints do not permit long, straight, inlet-duct runs to the terminal.

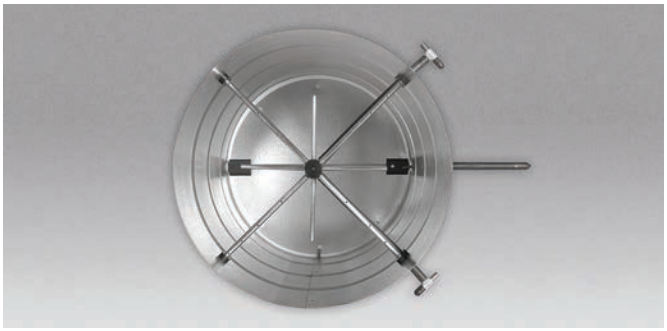
All metal components are fabricated from galvanized steel. Unlike most manufacturers' terminals, DDR terminals are capable of withstanding a 125-hour, salt-spray test without showing any evidence of red rust.

DDR terminals are available in eight unit sizes to handle airflow capacities between 45 and 4100 CFM.

Contractors

Physical installation is simple, due to a compact design and standard metal hanging straps. And control-installation time is minimized with the availability of factory-mounted and calibrated controls. Controls are located on the outside of the unit casing for easy access by maintenance personnel.

A standard, single-point, main-power connection is provided with all electronic controls and electrical components located on the same side of the casing, for quick access, adjustment, and troubleshooting.



FlowStar™ airflow sensor

The FlowStar™ sensor ensures accurate airflow measurement, regardless of the field-installation conditions. A calibration label and wiring diagram is located on the terminal for quick reference during start-up.

DDR terminals require no periodic maintenance and provide trouble-free operation.

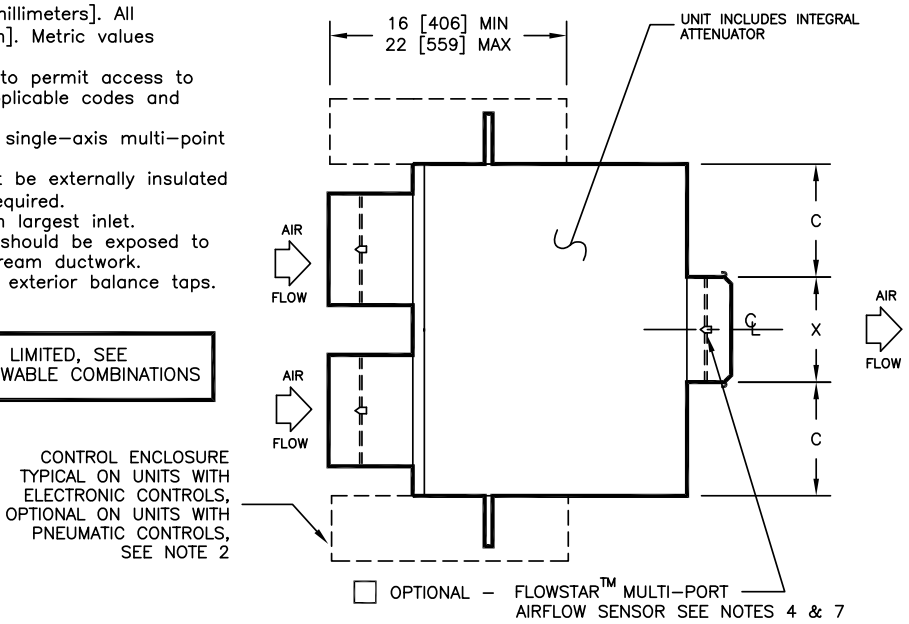
DDR terminals with electronic controls are listed with ETL as an assembly, and bear the ETL label. DDR terminals and accessories are wired in compliance with all applicable NEC requirements and tested in accordance with AHRI Standard 880.

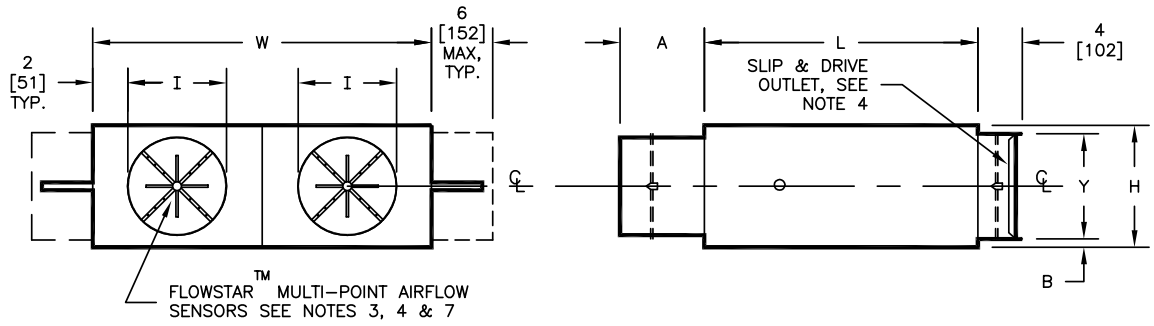
Model DDR

NOTES:

1. All dimensions are Inches [millimeters]. All dimensions are ±1/4" [6mm]. Metric values are soft conversion.
2. Provide sufficient clearance to permit access to controls and comply with applicable codes and ordinances.
3. Sizes 4 and 5 inlets use a single–axis multi–point averaging airflow sensor.
4. Inlet and outlet collars must be externally insulated in the field "by others" if required.
5. All unit dimensions based on largest inlet.
6. No raw edges of insulation should be exposed to the airstream in the downstream ductwork.
7. All FlowStar™ probes include exterior balance taps.

INLET SIZE COMBINATIONS ARE LIMITED, SEE DRAWING 25–80001 FOR ALLOWABLE COMBINATIONS

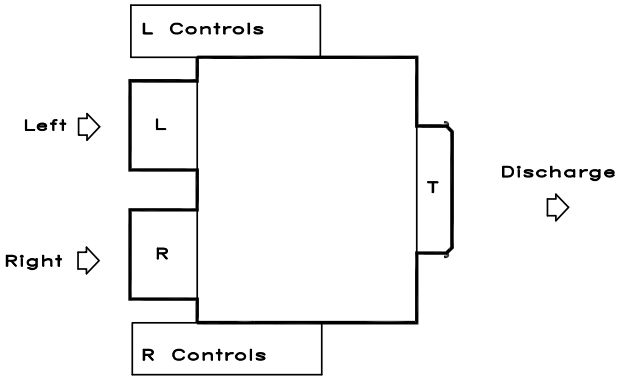




DIMENSIONS – In [mm]

NOM MAX INLET SIZE	W	H	L	A	B	C	I	X	Y
4	20–1/2 [521]	10 [254]	24 [610]	10–1/2 [267]	2–1/16 [52]	7–5/16 [186]	3–7/8 [98]	5–7/8 [149]	5–7/8 [149]
5	20–1/2 [521]	10 [254]	24 [610]	10–1/2 [267]	2–1/16 [52]	7–5/16 [186]	4–7/8 [124]	5–7/8 [149]	5–7/8 [149]
6	20–1/2 [521]	10 [254]	24 [610]	6–1/2 [165]	2–1/16 [52]	7–5/16 [186]	5–7/8 [149]	5–7/8 [149]	5–7/8 [149]
8	24–1/2 [622]	10 [254]	24 [610]	6–1/2 [165]	1–1/16 [27]	8–5/16 [211]	7–7/8 [200]	7–7/8 [200]	7–7/8 [200]
10	28–1/2 [724]	12–1/2 [318]	30 [762]	6–1/2 [165]	1–5/16 [33]	9–5/16 [237]	9–7/8 [251]	9–7/8 [251]	9–7/8 [251]
12	32–1/2 [826]	15 [381]	30 [762]	6–1/2 [165]	1–9/16 [40]	10–5/16 [262]	11–7/8 [302]	11–7/8 [302]	11–7/8 [302]
14	38–1/2 [978]	17–1/2 [445]	36 [914]	6–1/2 [165]	1–13/16 [46]	12–5/16 [338]	13–7/8 [352]	13–7/8 [352]	13–7/8 [352]
16	38–1/2 [978]	17–1/2 [445]	36 [914]	6–1/2 [165]	13/16 [21]	11–5/16 [414]	15–7/8 [403]	15–7/8 [403]	15–7/8 [403]

Model DDR



Plan View

Model			Size	
DDR	T	L	08	10

Right Side Primary Inlet

Left Side Primary Inlet

See note 4

Select	Cold Deck Locations
	L = Left
	R = Right

Probe Locations/ Controller Connections
0 = Standard – Probes provided in both Left and Right Primary Inlet
T = Totalizing (Discharge) Probe Installed, includes standard R and L Probes.

Allowable Configurations– Cold/ Hot Deck Control Connections		
Select	Config.	Probe Connections
	0	If Cold Deck = L, Hot Deck Connected R Controller If Cold Deck = R, Hot Deck Connected L Controller
	T	If Cold Deck = L; R not used; T Connected R Controller If Cold Deck = R, L not used; T Connected L Controller

Size– Allowable Configuration

Select	Left	Right	Select	Left	Right
	04	04		10	04
	04	05		10	05
	04	06		10	06
	04	08		10	08
	04	10		10	10
	04	12		10	12
	04	14		10	14
	04	16		10	16
	05	04		12	04
	05	05		12	05
	05	06		12	06
	05	08		12	08
	05	10		12	10
	05	12		12	12
	05	14		12	14
	05	16		12	16
	06	04		14	04
	06	05		14	05
	06	06		14	06
	06	08		14	08
	06	10		14	10
	06	12		14	12
	06	14		14	14
	06	16		14	16
	08	04		16	04
	08	05		16	05
	08	06		16	06
	08	08		16	08
	08	10		16	10
	08	12		16	12
	08	14		16	14
	08	16		16	16

Notes:

1. Cold Deck Probes always connected to adjacent controller.
2. For OSA applications, connect OSA as if a hot deck.
3. OSA applications must be supplied with pretreated air.
4. See 25–80000 for Unit size and height dimensions.
   Unit dimensions dictated by largest inlet size.

DDR Terminal Features

STANDARD FEATURES:

Construction
- AHRI Standard 880-certified and labeled
- 22-gauge, galvanized-steel casing and valve
- 1/2" thick, fiberglass insulation, mechanically fastened for added security

Primary Air Valve
- Embossed rigidity rings
- Low-thermal-conductance damper shafts with position indicators
- Mechanical stops for open and closed position
- Multi-point, center-averaging, airflow sensors
- Balancing tees
- Plenum-rated sensor tubing

Electrical Components
- cETL listed for safety compliance with UL 1996
- National Electrical Manufacturers Association (NEMA) Type 1 wiring enclosure

OPTIONAL FEATURES:

Construction
- 20-gauge, galvanized-steel construction
- 3/4" or 1" fiberglass insulation
- Scrim-reinforced, foil-faced insulation meeting American Society for Testing and Materials (ASTM) C1136 for mold, mildew, and humidity resistance
- 1/2" elastomeric, closed-cell-foam insulation
- Double-wall construction with 22-gauge liner
- Mounting brackets to accept all threaded hanging rods or wire hangers
- Low-temperature construction for use in thermal-storage applications.

Electrical Components
- Toggle-disconnect switch
- Primary and secondary transformer fusing

Controls
- Pneumatic Controls
- Consignment DDC controls (factory-mount and wire controls provided by others)

PUBL-5529 (819)

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