

DDV DUAL DUCT Terminal Unit



Inlet View

Basic Features

The DDV, dual duct air terminal unit, features two primary inlets, one for hot air and one for cold air, each having an integral independent damper. The cold air inlet is commonly known as the "cold deck" and the hot air inlet is known as the "hot deck". Low mixing applications require the use of the basic DDV and those applications requiring a higher level of temperature mixing benefit from the use of the optional mixing baffle. The DDV is lined with insulation to provide sound dampening and thermal resistance.

Operating Principle

The DDV is capable of delivering variable or constant volume air for the purpose of maintaining a constant space temperature, depending upon the control sequence. For a constant volume application, the cold deck primary damper modulates closed to restrict air flow to the space as conditions are satisfied, while at the same time the hot deck damper opens to maintain a constant flow of air. For variable volume applications, the cold deck primary damper modulates closed as conditions are satisfied and the hot deck does not begin to open until heating is required.

Sound

Constant volume applications result in steady sound generation, although the levels will be generally higher than the variable volume condition at reduced flows. The variable volume operation features lower sound levels at reduced air flows but the sound may become noticeable as flows change. The integral discharge attenuator allows for the DDV to be used in critical sound applications.

Applications

The DDV is very flexible because one terminal can be used for interior zones and exterior zones without the additional cost of reheat coils. The DDV is also excellent for improved space comfort and where indoor air quality is a concern. The designer will often pull cool outside air into the cold deck for an economizer cycle and warm plenum air into the hot deck to reduce energy consumption.

Standard features:

- Patented Flo-Cross® Sensor which features 24 point upstream and downstream sensing with center averaging chambers and exclusive amplification wings (Patent # 4,453,419)
- A wide variety of sizes results in a total flow range of 45 to 4200 CFM
- ARI certified performance data (refer to www.ari.org for a free copy of the ARI Applied Directory)
- Heavy duty 22 gauge casing construction
- Industry standard round inlet collars sized to accept either flexible or rigid duct
- Internally lined casing utilizing 1/2" thick dual density fiberglass insulation. Insulation meets or exceeds the safety and erosion requirements of standard UL 181 and NFPA 90A
- Round damper blade constructed of elastomeric gasket sandwiched between two heavy-duty 22 gauge galvanized steel plates, resulting in low air leakage
- Two-piece solid damper shaft that features a position indicator for easy identification of damper angle
- Discharge plenum
- Slip and Drive connection on the discharge plenum

Options:

- Optional 20 gauge construction
- DDV terminals can be furnished without controls, with electronic analog controls, with factory-mounted direct digital controls (supplied by others), or with four function pneumatic controls
- Tuttle & Bailey's Enviroseal™ engineered foam polymer insulation provides superior erosion resistance, making it an excellent option for fiber-free applications
- A variety of other insulations/facings are available depending on the level of erosion protection required
- Mixing baffle
- Total Air Sensing bulkhead featuring the patented Flo-Cross® Sensor
- Unequal inlet sizes (see submittal for available combinations). Casing determined by largest inlet size