



VAV
Diffuser
UNI2-VAV

Increase comfort by adding control

 **Nailor**[®]

nailor.com

ADDITIONAL CONTROL WITH UNI2-VAV

An office that over-cools in summer and overheats in winter will affect the occupant's comfort and productivity. There are several solutions to this issue:

- Rebalance the system
- Add a terminal unit
- Move the thermostat to the space at issue

The simplest way to alleviate this issue is by adding a **UNI2-VAV diffuser** to the room.

DIFFUSER

To the occupant the UNI2-VAV looks exactly like our most popular diffuser, the UNI2.

ACTUATOR

24V actuator responds to the thermostat to control airflow.



DAMPER

Plate damper on the face of the diffuser controls airflow, while maintaining throw from the diffuser.

OPERATIONS

A thermostat, supplied with the UNI2-VAV, is located in the room served by the diffuser. The diffuser utilizes 24V power to actuate the damper. In cooling mode, if the thermostat senses the room is colder than the setpoint, the damper will close. Too hot, the damper will open to satisfy the thermostat. During heating, the diffuser will respond in the opposite direction. Close for a cooler room and open for warmer.

One thermostat can control up to 20 UNI2-VAV. The system would require a thermostat, a master diffuser, and then 19 auxiliary diffusers.

CONTROL

Electronic or BACnet compatible thermostats available for control.



ACCESSORIES

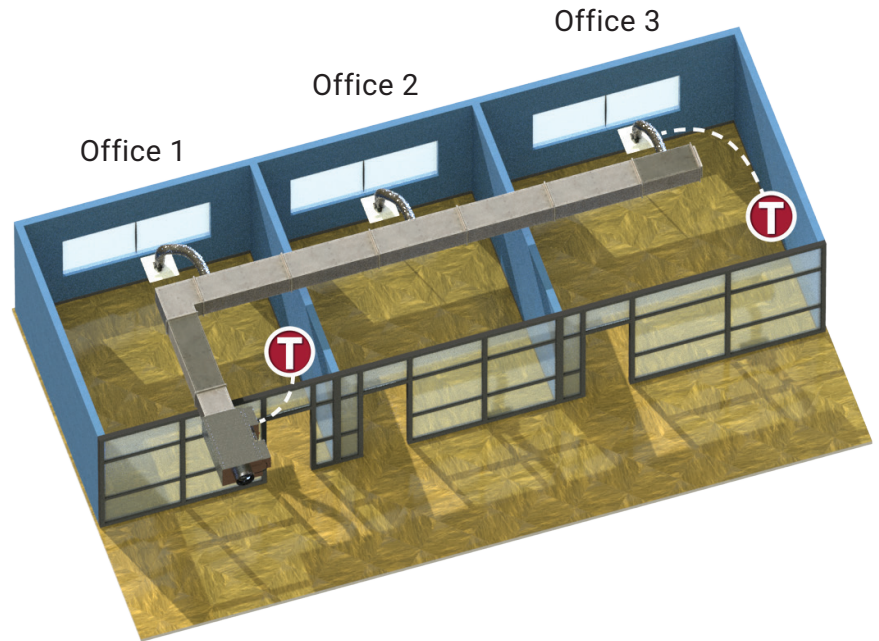
- Bypass relief collar to relieve any excess pressure.
- Multiple Voltage/VA step-down transformer options are available. Each diffuser requires 2VA.
- External foil back or molded insulation blanket available.
- Quadrant blanks to direct any combination of flow.

APPLICATION

Single Zone

This example shows a terminal unit that supplies three offices. The terminal unit only responds to the conditions in the office with the thermostat. If Office 3 is continually over-cooled or heated, adding a UNI2-VAV diffuser and thermostat will increase comfort.

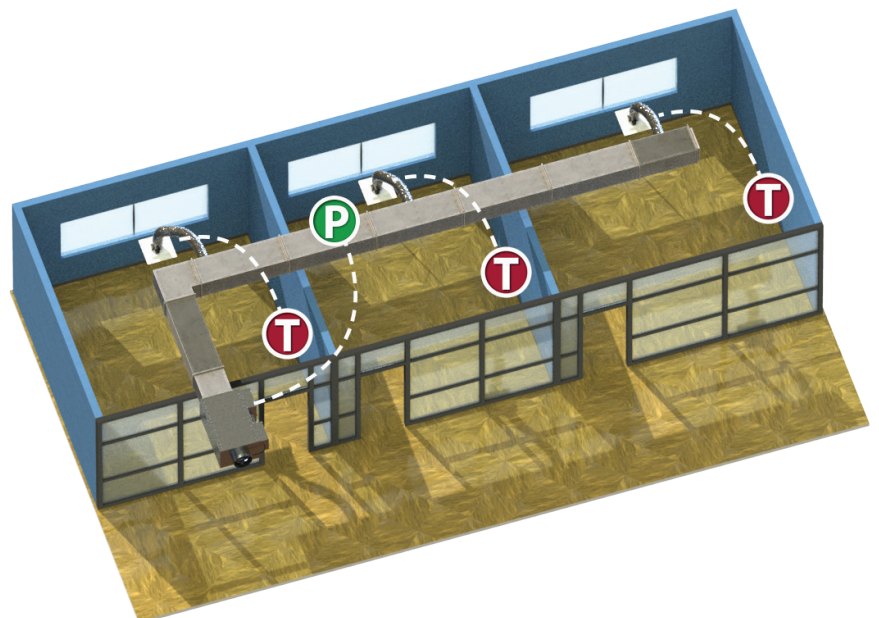
Though operating independently, the UNI2-VAV and terminal unit controls will respond to achieve the setpoints in each room. This response is portrayed in the table below.



SITUATION	Office 1 (CFM)	Office 2 (CFM)	Office 3 (CFM)
Starting Point	100	100	100
Office 3 is over cooled so the UNI2-VAV damper closes	105	105	90
Office 1 becomes overcooled so the Terminal Unit Damper closes	100	100	80
Office 3 now is undercooled so the UNI2-VAV damper opens	95	95	90
ETC, units Equilibrium is achieved	100	100	90

Multizone Zone

If in the example above, Office 2 wanted independent control as well, it could throw the control of the terminal units and UNI2-VAV diffusers into chaos. The multiple points of control would constantly "hunt" for the right set point. Alternatively, the terminal unit could be controlled by a pressure sensor in the ductwork and set to supply a constant pressure. And, each office would have a UNI2-VAV to control comfort.





Frequently Asked Questions

Can I use a UNI2-VAV on constant volume or DX HVAC systems?

However, the issues that can arise must be considered. If, in a constant volume system, The UNI2-VAV closes to satisfy the thermostat, the constant airflow must go somewhere. It will increase the airflow to the other diffusers in the system or the pressure in the ductwork. One option to alleviate this issue is the installation of a bypass relief collar on the UNI2-VAV.

If too many of these diffusers are used on a constant volume system it could reduce the airflow enough to affect the performance of the system, freeze the coil, or over pressurize the ductwork.

How many diffusers can you control from one master?

Each diffuser uses 5VA of power to operate. We offer a 100VA Transformer that would allow you to control up to 20 diffusers from a single thermostat.

How are the transformers provided? Where are they mounted?

The transformers are provided with a junction box that can be mounted above the ceiling near the UNI2-VAV.

If I install a UNI2-VAV, will it increase cooling or heating to the room?

Once the damper in the diffuser is fully opened, the UNI2-VAV can not increase cooling/heating. It has no control over the amount of air supplied by the terminal unit or air handling unit. If you need this amount of control, an additional terminal unit would have to be added.

Nailor has a full portfolio of terminal units for any application.

Is the low voltage and power wiring provided with the unit and thermostat?

No, it is not provided.