



DUCT VENTILATION AIR CONDITIONING Co. (W.L.L.)

VAV Bypass Catalogue





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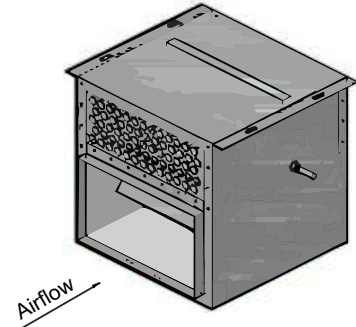
VAV Bypass Terminal Units

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1- DESCRIPTION

BYPASS TERMINAL UNITS

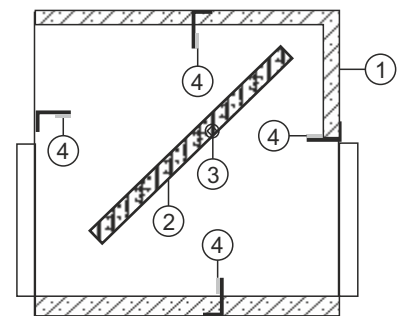
The VAV Bypass is a Single Duct Air Terminal Unit, designed for use with popular constant volume Low and Medium Pressure packaged Air Handling systems or Roof Top Air Conditioning Units. Temperature Control is achieved by only supplying enough conditioned air to the space to meet room thermostat demand. Excess air is diverted (Bypass) directly to the return air ceiling plenum for free or ducted return. Airflow to each occupied zone varies on thermostat demand, from full flow to shut-off, or to a mechanically set minimum Air Volume.



A Bypass box handles a constant supply of primary air through its Inlet and uses a diverting damper, to Bypass part of the supply air into the plenum return. The damper is directly controlled by the room thermostat in the occupied space to provide the volume of air required to meet the thermal demand. The pressure requirement, through the supply air path to the conditioned space, is set with an Inlet balancing damper.

2- CONSTRUCTION

- **Casing:** Shall be made of 22 Gauge, L.F.Q Galvanized Steel, Complying with ASTM A653, having G90 Coating Designation, with Rectangular Inlet & Outlet. (Connection Optional)
- **Blade:** Shall be made of 22 Gauge Galvanized Steel which is Designed for Reliable Long Term Operation and 90° Rotation.
- **Axles & Shaft:** Shall be 10x10mm Square, GI Shaft.
- **Linkage:** Side Linkage Concealed in Frame for the Blade Operation.

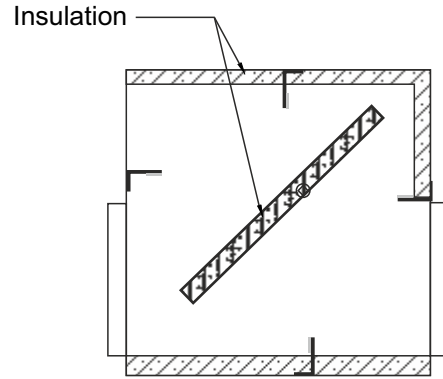


- ① Casing
- ② Blade
- ③ Axle
- ④ Seal (Gasketing)

- Insulation
- Performance

1- INSULATION

Clean Linear is produced from strong resilient glass fibers firmly bounded together with thermosetting resin which provides efficient sound insulation.



2- PERFORMANCE

THERMAL PERFORMANCE

KCL 48 kg/m ³						
Thermal conductivity W/m.k	0.03	0.031	0.032	0.036	0.038	0.042
Mean temperature °C	0	10	25	50	75	100

Tested in accordance with ASTM C518

ACOUSTICAL PERFORMANCE

KCL 48 kg/m ³ Thickness 25mm	Absorption coefficient at one third octave band center frequencies (Hz)						
	125	250	500	1000	2000	4000	NRS
	0.22	0.52	0.73	0.98	1.02	1	0.8

Tested in accordance with ASTM C423

PHYSICAL PERFORMANCE

Properties	Performance	Test Method
Operation Temperature Limits	Maximum 230°C	ASTM C 411
Water Vapor Absorption	Not Greater than 1% by Volume	ASTM C 1104
Fungi Resistance Bacteria Resistance	Does not Breed or Promote Growth	ASTM C 1071
Air Velocity Rating	25.4m/s	UL 181
Air Eroding Rating	Nil at 63.5m/s	UL 181

1- PNEUMATIC ACTUATOR

A Bypass Terminal Unit “DVAC” handles a constant supply of primary air through its Inlet.

The unit By-passes primary Air to the ceiling plenum to meet the needs of the conditioned space.

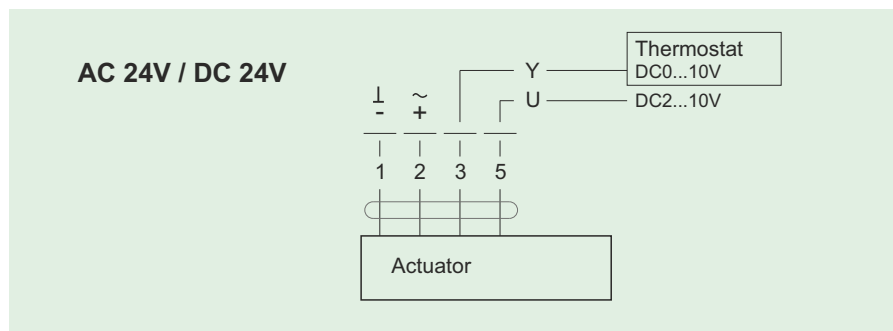
Primary air diverted into the ceiling plenum-by means, of modulating control signal from Electric Actuator returns to the central air handler.

2- ELECTRIC ACTUATOR

An electric signal from a proportional “Room Controller” thermostat is transmitted to the actuator.

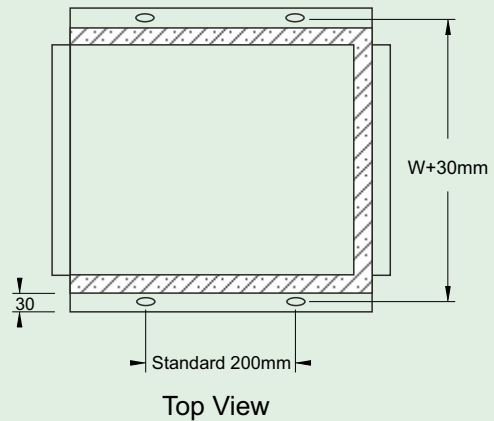
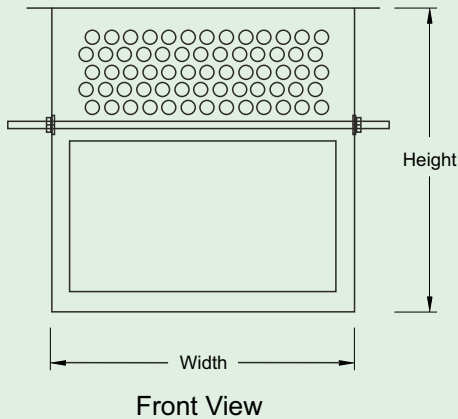
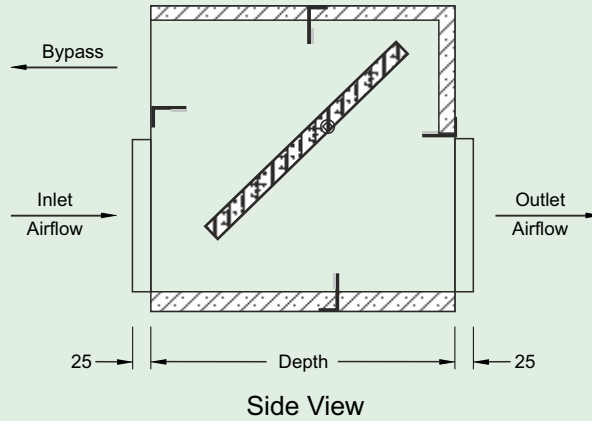
The Electric Actuator activates the proportional stage of the Bypass VAV plate position, by increasing primary airflow or reducing primary

airflow, subject to temperature set-point in room controller “Thermostat”. Besides wiring of the power supply, you must connect the appropriate wires to the Thermostat (See Wiring Diagram Figure).



Important: Do not back-drive actuator with setscrew, damage may occurs. Rotate actuators to minimum position using the manual declutch. Accurately set minimum flow by backing-off setscrew as required using airflow measurement. Using locknut secures against actuator housing to lock setscrew in place.

SELECTION



BYPASS TERMINAL UNITS MODEL 2300

Dimensional Data

Item Code	Flow Rate		Width (mm)	Height (mm)	Depth (mm)	Duct Connection (mm)	
	Max. CFM	Max. L/S				Inlet	Outlet
VAV-BTU2035	400	189	400	400	400	350x200	350x200
VAV-BTU2045	700	330	500	400	400	450x200	450x200
VAV-BTU2055	1100	519	600	400	400	550x200	550x200
VAV-BTU2550	1600	755	550	500	500	500x250	500x250
VAV-BTU2565	2100	991	700	500	500	650x250	650x250
VAV-BTU2575	2800	1322	800	500	500	750x250	750x250
VAV-BTU2585	3500	1652	900	500	500	850x250	850x250

