By-Pass VAV Boxes

By-pass VAV boxes

VA 200

TWISTED + VAV = Your Best Comfort Solution

Advantages

- Provides airflow to induvidual zone while by-passing the unneeded air to ceiling plenum for recirculation.
- Delivers relatively constant air flow over the full range of by-pass damper positions.

DESCRIPTION

- Combination of the advantages of proven air handling concepts to give complete flexibility from a single zone source.
- Provides excellent temperature control and central air distribution with unlimited zoning.
- Simple solution to distribute and control airflow from constant speed FCUs or AHVs
- Multi-zone systems: supplying centralized air distribution from unwanted zones to demand related zones.
- Extensive range of 8 sizes covering volume flow range from up to 5440 m³/h.

CONSTRUCTION

- Manufactured from 20 ga. galvanized mild steel casing.
- Incorporate a 1/2" insulation of sound liner.
- Blades composed of 20 ga. galvanized mild steel with a flexible gasket to assure low leakage.
- Equipped with modulating actuator, which accepts 0-10 or 2-10 V signals from thermostats.
- Electronic thermostat provides accurate modulating - ON/OFF. Standard supply is modulating 0-10 V.
- In case lower noise levels are required, VAV units can be provided with integral sound attenuators to achieve lower noise level.

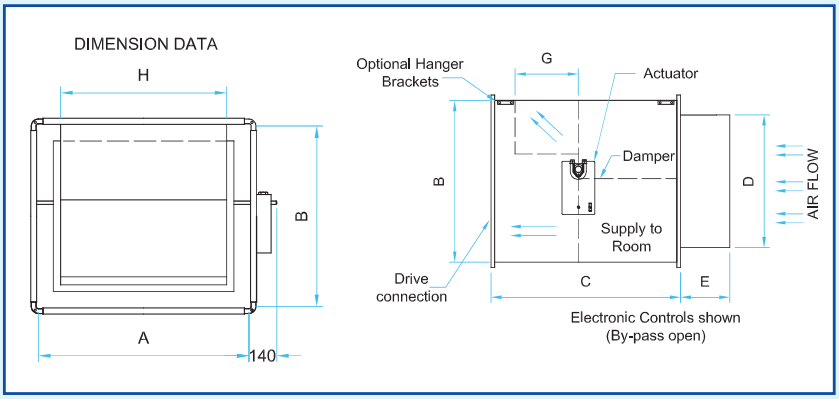
OPERATION PRINCIPLE

- A variable air volume, by-pass system consists of VAV units connected to the supply air duct of a constant air volume source. A constant air volume of conditioned air is supplied to each VAV unit. The primary damper modulates in response to a zone thermostat demand, to vary the amount of combined air delivered to the occupied to the zone. Damper modulation will range from full shut off to full open position by supplying variable air volume or to a minimum air volume to the conditioned zone.
- As the primary damper modulates in response to room thermostat demand and once it is satisfied to reduce the air to occupied zone, the excess air is diverted through the secondary by-pass damper into ceiling plenum or ducted return.

RANGE

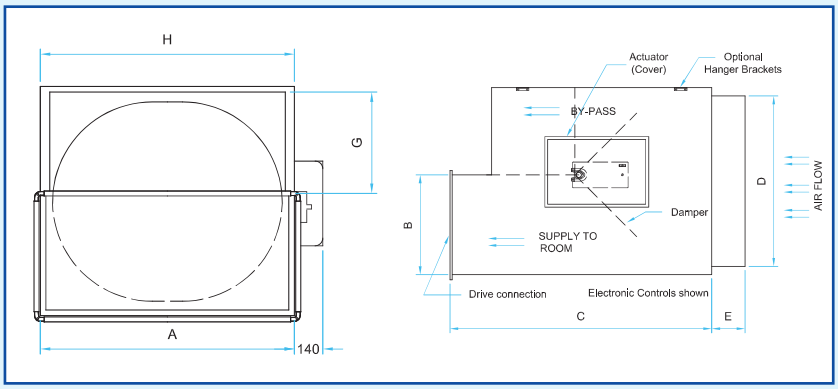
Description	Code
By-Pass VAV	
VA 200 - 02	
VA 200 - 04	
VA 200 - 06	
VA 200 - 08	
VA 200 - 12	
VA 200 - 16	
VA 200 - 24	
VA 200 - 32	

DIMENSIONS (mm)



Unit size	Discharge		Basic assembly			By-pass opening		Airflow
	A	B	C	D	E	G	H	Q_{nom}
02	254	203	400	127	60	111	178	340
04	305	254	400	203	60	137	229	680
06	356	305	552	254	60	238	279	1020
08	406	356	552	305	60	238	330	1360
12	457	406	603	356	60	264	381	2040

- Q_{max} is the airflow rate in m³/h.



Unit size	Discharge		Basic assembly			By-pass opening		Airflow
	A	B	C	D	E	G	H	Q_{nom}
16	508	254	622	406	67	165	432	2550
24	610	254	622	406 x 457	86	165	533	4080
32	813	254	622	406 x 610	92	165	737	5440

- Q_{nom} is the nominal airflow rate in m³/h.

By-Pass VAV Boxes

Perfomance Data

SOUND DATA

CFM	ΔP_s	Sound Power db Octave Band (2) 125	(3) 250	(4) 500	(5) 1000	(6) 2000	(7) 4000	Max. Disc. NC	Radiated NC
SIZE 02									
80	.07	40	31	24	17	15	15	--	10
120	.14	47	41	34	28	24	23	12	12
160	.24	51	49	42	36	30	26	14	14
200	.35	55	54	48	42	35	28	19	20
SIZE 04									
160	.05	44	30	22	19	17	20	--	--
240	.12	49	41	33	29	25	25	12	13
320	.21	52	48	41	36	31	28	13	19
400	.33	54	53	47	42	36	31	15	25
SIZE 06									
240	.04	42	31	22	20	18	21	--	--
360	.09	56	39	32	28	25	24	--	11
480	.16	50	45	40	34	30	27	12	14
600	.25	52	49	46	39	34	29	13	22
SIZE 08									
320	.03	41	28	19	18	18	21	--	--
480	.07	46	38	30	26	24	23	--	12
640	.12	49	45	37	31	28	25	11	15
800	.20	52	50	43	35	31	27	13	22

NOTES:

1. ΔP_s static pressure difference from inlet to discharge.
2. Dash (----) indicates sound power db or NC level less than 10.
3. ΔP_s is the minimum pressure drop required to deliver CFM shown with the primary damper in wide open position (Bypass Closed).

Discharge NC levels are based on --

a) 5 foot rectangular 12" x 12" duct lined with 1" fiberglass insulation.

b) Rectangular tee attenuation entering branch duct.

c) 6 foot lined flex duct (8" diameter).

d) Maximum of 300 CFM per outlet.

e) Space effect factor (5000 ft^3) at 5 feet from outlet.

f). End reflection.

g) Environmental adjustment factor.

SOUND DATA

CFM	ΔP_s	Sound Power db Octave Band (2) 125	(3) 250	(4) 500	(5) 1000	(6) 2000	(7) 4000	Max. Disc. NC	Radiated NC
SIZE 12									
480	.03	42	30	21	21	20	21	--	--
720	.06	47	39	31	29	26	24	--	12
960	.11	50	46	39	34	30	26	12	16
1200	.17	53	51	44	38	33	28	13	21
SIZE 16									
840	.03	42	30	22	19	19	18	--	--
960	.06	48	40	33	28	25	22	--	13
1280	.12	52	47	40	35	30	25	11	16
1500	.18	55	53	46	40	34	28	13	23
SIZE 24									
960	.04	41	32	27	18	15	16	--	11
1440	.10	49	42	38	31	27	26	--	15
1920	.18	54	50	46	39	35	33	12	23
2400	.29	58	56	52	46	41	38	14	30
SIZE 32									
1280	.04	44	37	33	27	23	22	--	11
1920	.09	51	47	42	36	32	29	11	15
2560	.15	57	54	48	43	39	34	12	23
3200	.23	61	59	53	48	44	37	14	31

Radiated NC levels are based on --

a) Plenum / ceiling effect - 5/8" mineral fiber tile, 35 lb / ft^3
- 3 foot plenum

b) Space effect factor (5000 ft^3) at 10 feet from source

c) Environmental adjustment factor.