

# VARIABLE AIR VOLUME SD-VAV SINGLE DUCT TERMINAL UNIT BY-VAV BYPASS TERMINAL UNIT



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*IGC* Aire

# SD-VAV DESIGN & CONSTRUCTION FEATURES



## Description

Model SD-VAV single duct terminal units are designed to be easily incorporated in the overall building HVAC design. Control packages allow the SD-VAV to be used in constant volume and variable volume applications. Although designed for compatibility with low pressure (<25 Pa), the SD-VAV unit performs reliably in high pressure systems as well (up to 1500 Pa). In variable volume pressure independent applications, the SD-VAV unit compensates for system pressure, while adjusting the airflow in response to room thermostat demand.

When used in a constant volume application, the SD-VAV can maintain a set flow requirement, compensating for fluctuations in system pressure. Interior zones are typically controlled by an SD-VAV with a cooling- only control package; exterior zones are often controlled by an SD-VAV with electric coils and a reheat control package. Depending on the layout of the ductwork, it is sometimes more practical to specify the SD-VAV with a factory-installed round discharge.

Unit Size	Damper Leakage, L/S			Casing Leakage, L/S		
	375 Pa	750 Pa	1500 Pa	63 Pa	125 Pa	250 Pa
100	2	2	3	1	1	2
125	2	2	3	1	1	2
150	2	2	3	1	1	2
175	2	2	3	1	2	2
200	2	2	3	1	2	2
225	2	2	3	2	2	3
250	2	2	3	2	2	3
300	2	2	3	2	3	4
350	2	3	4	3	4	6
400	2	3	4	3	5	7



Measure the leakage rate as a function of the measured upstream static pressure. Casing leakage is determined with the damper fully open and the discharge of the unit sealed. A precision low flow orifice is used upstream of the unit to measure the leakage rate as a function of the supplied static pressure.

## Construction

Casing:

- Constructed of 22 gauge galvanized steel with a 20 gauge option.

Inlet collars:

- All round 22 gauge inlet collars accommodate standard spiral and flex duct sizes.
- Left or right hand is determined by looking in the direction of airflow with the unit in the installed position.

Outlet connection:

- All standard outlet connections are rectangular and require a slip and drive duct connection.
- Round discharge option is available.

# SD-VAV DESIGN & CONSTRUCTION FEATURES



## Damper Assembly:

Damper assemblies utilize a solid 12 mm shaft that rotates in self lubricating bearings.

- Damper blade incorporates a flexible gasket for tight airflow shutoff and operates over a full 90° rotation.
- Damper position is marked by an arrow embossment on the end of the damper shaft.

## Casing liners:

Unit casing will be lined with 12 mm thick, 1/2 kg, dual density fiberglass insulation that meets UL 181, NFPA 90A, BS 4979 1986 and BS EN 12589 2001 .

## Unit Capacities

Inlet Size	Max. Primary	Min. Airflow, L/S	
	Airflow, L/S	Standard	Electric Heat
100	109	19	55
125	170	29	85
150	243	42	110
175	330	57	140
200	434	75	190
225	547	95	240
250	675	117	300
300	972	168	425
350	1321	229	580
400	1888	299	750
550	3776	472	944

*Standard L/S value is based on a signal of 7.5 Pa differential pressures of the inlet sensor. Minimum L/S may be 0. Electric heat based on L/S necessary to trip airflow proving safety switch*

## Features

22 Gauge Galvanized Steel Casing Construction with a 20 Gauge Casing Option that Provides Strength and Product Durability

1. Suitable for low, medium, or high pressure applications; able to operate throughout a wide range of HVAC systems
2. Available 150 mm x 225 mm access opening for easy accessibility during routine inspections and maintenance
3. Several casing liner options provide quiet and clean operation
4. Airflow capacities from 19 to 3304 L/S providing airflow control for most commercial applications
5. Round inlet sizes from 100 mm through 400 mm diameter which are slightly undersized to fit standard spiral and flex duct;
6. Rectangular discharge with slip and drive connections providing quick and easy connection to down stream duct work
7. Digital, analog, or pneumatic controls with pressure independent or dependent control packages allows tailoring to many building systems



8. Linear, multiple-point, averaging velocity sensor, or optional cross, multipoint center averaging sensor offers low resistance to airflow while providing amplified velocity pressure signal to the controller
9. Gasket round volume control damper operates over a full 90° range and provides a low leakage shutoff position
10. Compact unit casing sizes accommodates installation in reduced ceiling plenum space
11. Electric heat option

## Options

1. 25mm thick insulation
2. Zero-fiber insulation
3. Perforated double wall insulation
4. Duct board insulation
5. Non-perforated double wall

### Airflow sensor

- All units are equipped with a factory installed airflow measuring sensor.
- The standard sensor is a linear, multi-point, velocity averaging sensor with an amplified signal.
- An optional Cross four quadrants, multipoint centre averaging sensor is also available.
- Balancing taps are provided to allow for easy airflow verification.
- Both the linear and Cross sensors use the same flow constant.

### Controls

- Pneumatic, electric, analog electronic or factory mounted direct digital electronic control types are available. A "no control" unit is also available for field mounting of direct digital electronic controls where a metal enclosure will be provided by IGC.

### Access Panel

- An optional access panel in the terminal unit casing is available for viewing damper components and for upstream cleaning of the hot water coil fins.

### Control transformers

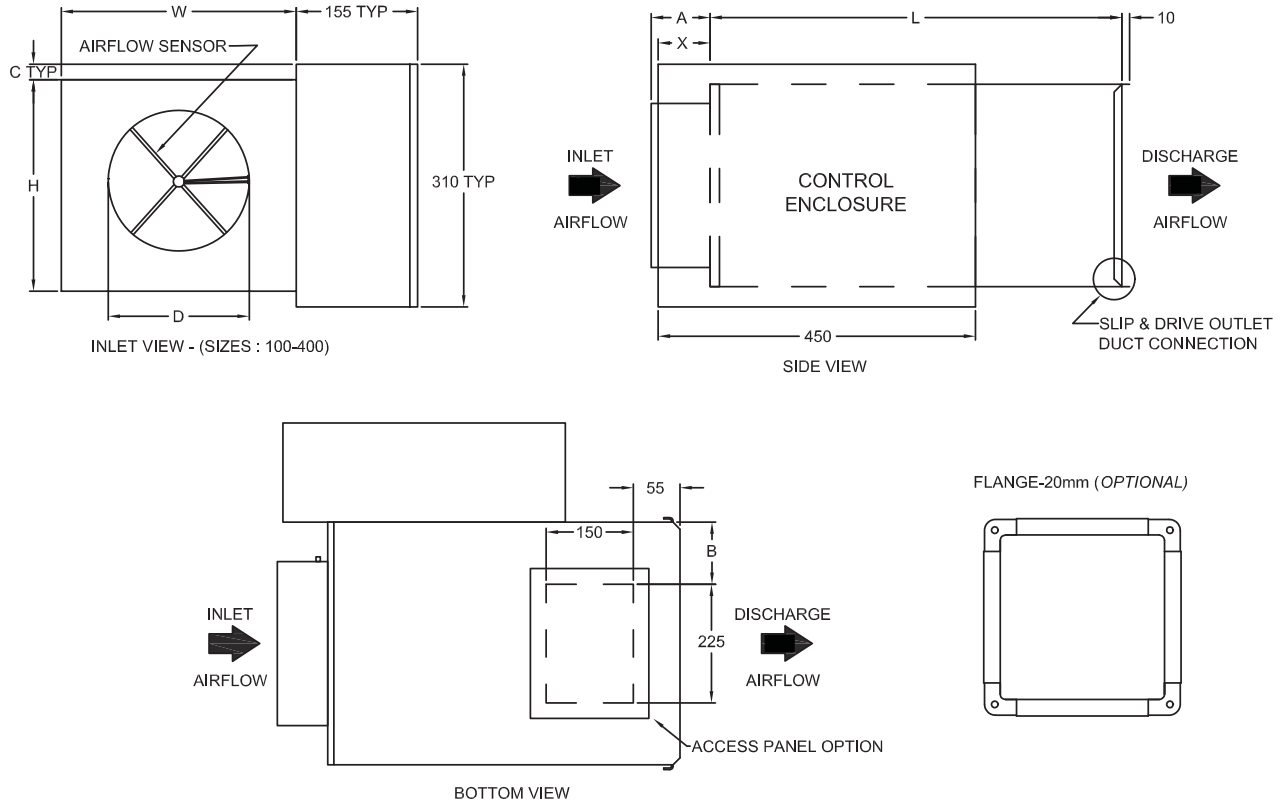
- Electric heat units include a factory supplied, mounted and wired 24 volt control transformer inside the electric heat enclosure for electronic control applications.
- Non-electric heat units, with electronic controls are available with an optional factory supplied and wired control transformer mounted inside the control enclosure.

# SD-VAV DIMENSIONAL INFORMATION



## Base Unit Dimensional Information

SD-VAV BASE UNIT, INLET, SIDE, & BOTTOM VIEWS



## SD-VAV BASE UNIT, DIMENSIONAL DETAILS

Inlet Size	Nominal Max. L/S	W	H	A	B	C	D	X	L
100	109	300	200	135	35	50	95	180	394
125	170	300	200	135	35	50	120	180	394
150	243	300	200	85	35	50	145	180	394
175	330	300	250	85	35	25	170	180	394
200	434	300	250	85	35	25	195	180	394
225	547	350	310	85	60	-	220	130	394
250	675	350	310	85	60	-	245	130	394
300	972	400	375	85	85	-	295	130	394
350	1321	500	425	85	135	-	345	80	394
400	1888	600	450	85	185	-	395	80	394
550	3776	966	458	85	360	25	606x403	137	394

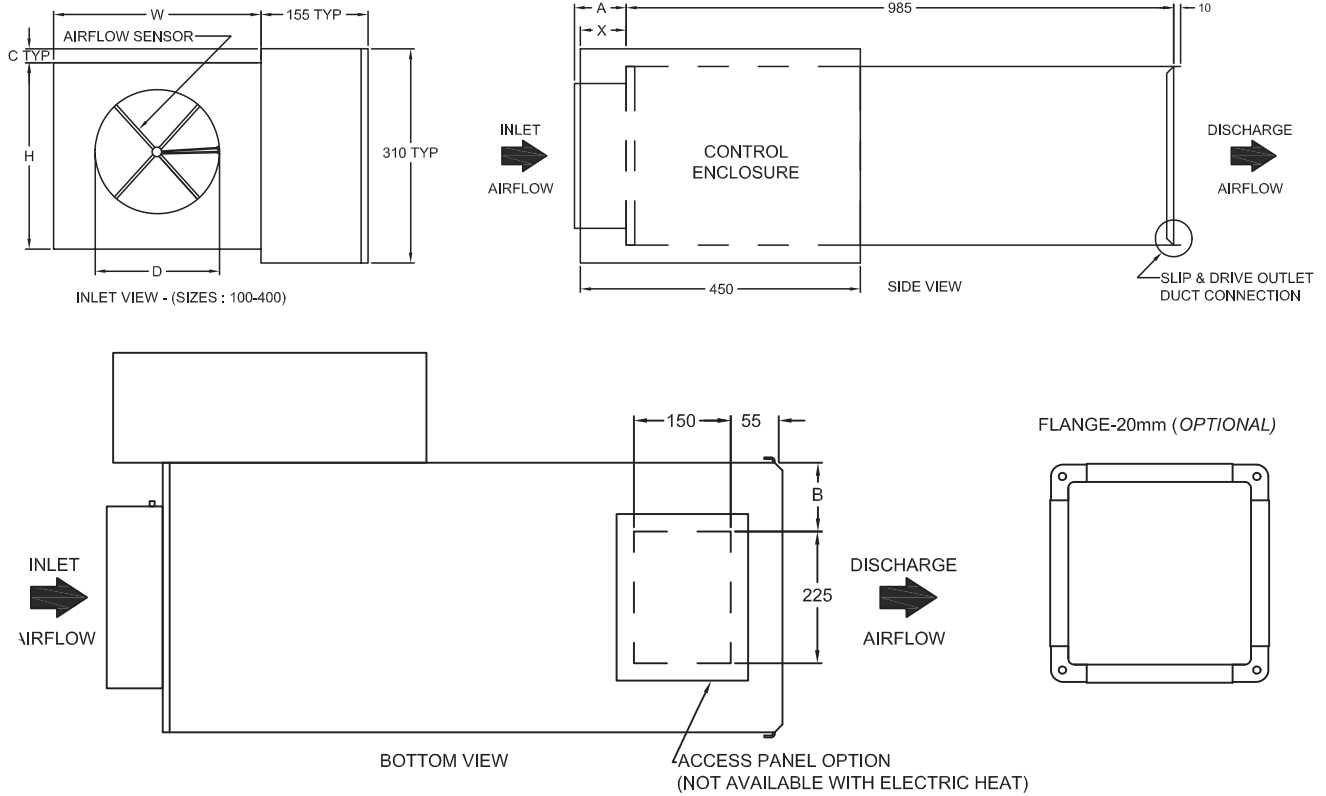
Right-hand base unit with electronic control enclosure shown; left-hand is available.

# SD-VAV DIMENSIONAL INFORMATION



## Unit with Attenuator Dimensional Information

SD-VAV Unit with Attenuator, Inlet, Side, & Bottom views



SD-VAV Unit with Attenuator, dimensional details

Inlet Size	Nominal Max. L/S	W	H	A	B	C	D	X
100	109	300	200	135	35	50	95	180
125	170	300	200	135	35	50	120	180
150	243	300	200	85	35	50	145	180
175	330	300	250	85	35	25	170	180
200	434	300	250	85	35	25	195	180
225	547	350	310	85	60	-	220	130
250	675	350	310	85	60	-	245	130
300	972	400	375	85	85	-	295	130
350	1321	500	425	85	135	-	345	80
400	1888	600	450	85	185	-	395	80
550	3776	950	450	105	360	25	606x403	130

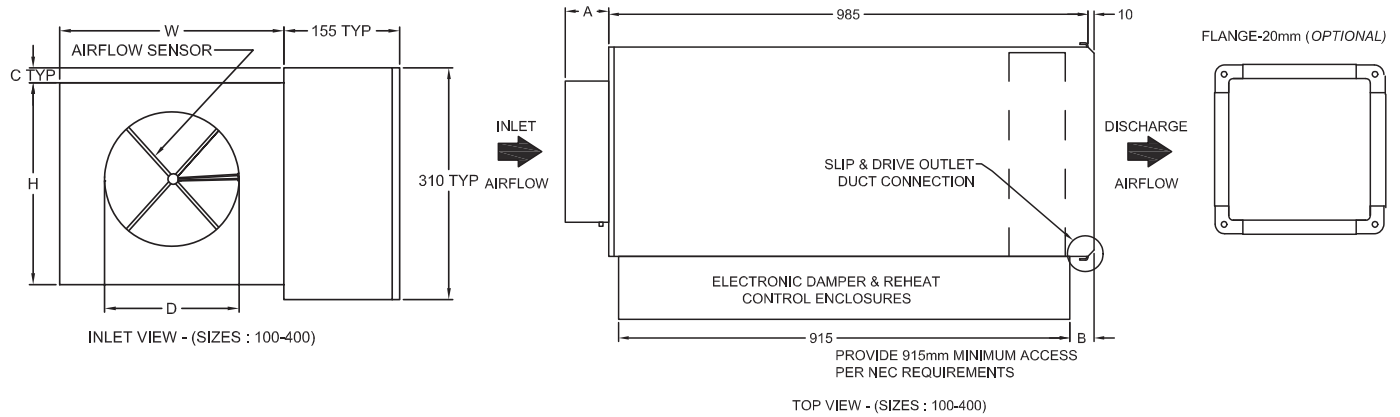
Right-hand base unit with electronic control enclosure shown; left-hand is available.

# SD-VAV DIMENSIONAL INFORMATION



## Unit with Electric heat Dimensional Information

SD-VAV Unit with Electric heat, Inlet, Side, & Top views



SD-VAV Unit with Electric heat, dimensional details

Inlet Size	Nominal Max. L/S	W	H	A	B	C	D
100	109	300	200	135	135	50	95
125	170	300	200	135	135	50	120
150	243	300	200	85	135	50	145
175	330	300	250	85	135	25	170
200	434	300	250	85	135	25	195
225	547	350	310	85	85	-	220
250	675	350	310	85	85	-	245
300	972	400	375	85	85	-	295
350	1321	500	425	85	35	-	345
400	1888	600	450	85	35	-	395
550	3776	950	450	105	-	25	606x403

*Right-hand base unit with electronic control enclosure shown; left-hand is available.*

# SD-VAV HEAT FEATURES, OPTIONAL & PHASE DATA



## Standard Heat Features & Capacities

1. 22 Gauge galvanized steel construction
2. Line voltage combinations:  
[120, 208/240, 277 Volt, Single-Phase]  
[208 Volt, Three-Phase, Three-Wire]  
[480 Volt, Three-Phase, Four-Wire]
3. Control transformer for analog and direct digital controls
4. NEMA 2 electric heat control enclosure
5. Slip and drive discharge for field duct connection
6. 80/20 Ni-Cr Heating Elements
7. Automatic Reset Thermal Cutout, secondary manual reset thermal cutouts
8. De-energizing magnetic contactors (Electronic Controls)
9. Positive Pressure Airflow Switch
10. PE Switch Step Controllers (Pneumatic Controls)

## Optional Electric Heat Features

1. Mercury contractors
2. Fuse block with fuses for primary overload protection
3. Door interlocking disconnect switches (Non-fused)
4. Door interlocking fused disconnect switches
5. Dust-tight construction
6. Fuse block

SD-VAV, Maximum kW

Unit Size	1 Phase			3 Phase		
	Heater V	Max. kW	Max. Steps	Heater V	Max. kW	Max. Steps
100	120	3.0	3	208	3.0	3
	208/240	3.0	3	480	3.0	3
	277	3.0	3	-	-	-
125	120	5.0	3	208	5.0	3
	208/240	5.0	3	480	5.0	3
	277	5.0	3	-	-	-
150	120	5.0	3	208	7.5	3
	208/240	7.5	3	480	7.5	3
	277	7.5	3	-	-	-
175-200	120	5.0	3	208	9.5/13.0	3
	208/240	9.5/11.0	3	480	9.5/13.1	3
	277	9.5/13.0	3	-	-	-
225-250	120	5.0	3	208	16.0	3
	208/240	9.5/11.0	3	480	16.0/21.0	3
	277	13.0	3	-	-	-
300-350	120	5.0	3	208	16.0	3
	208/240	9.5/11.0	3	480	30.0/36.0	3
	277	13.0	3	-	-	-
400	120	5.0	3	208	16.0	3
	208/240	9.5/11.0	3	480	36.0	3
	277	13.0	3	-	-	-
550	120	5.0	3	208	16.0	3
	208/240	9.5/11.0	3	480	30.0/36.0	3
	277	13.0	3	-	-	3



# SD-VAV HEAT FEATURES, OPTIONAL & PHASE DATA



## SD-VAV, Minimum kW – 1Phase

1 Phase									
Voltage	120 Volt		208 Volt		240 Volt		277 Volt		
Unit Sizes	100-300 500	350-550	100-300 500	350-550	100-300 500	350-550	100-300 500	350-400	550
Stage 1	0.5	1	0.5	1	1	1	1	1	1.5
Stage 2	1	2	1	2	1.5	2	1.5	2	3
Stage 3	1.5	3	1.5	3	2	3	2.5	3	4.5

*Electric heaters are provided as slip-in type integrally mounted to the terminal unit.  
Where possible, select heater so that power (kW) is a whole number. Often rounding to the nearest whole number has negligible impact on discharge temperature and power consumption.*

## SD-VAV, Minimum kW –3 Phase

3 Phase					
Voltage	208 Volt			480 Volt	
Unit Sizes	100-300 500	350-550	100-300 500	350-400	550
Stage 1	1.5	3	2.5	3	4
Stage 2	1.5	3	2.5	3	4
Stage 3	1.5	3	2.5	3	4

*Electric heaters are provided as slip-in type integrally mounted to the terminal unit.  
Where possible, select heater so that power (kW) is a whole number. Often rounding to the nearest whole number has negligible impact on discharge temperature and power consumption.*

# SD-VAV PERFORMANCE DATA



## Discharge Sound Performance Data

### SD-VAV, Discharge Sound Data

Inlet Size	Flow Rate	Min. Δ PS	175 Δ Pa							Lp	250 Δ Pa							Lp	500 Δ Pa							Lp			
			Octave Band Sound Power, Lw								N C	Octave Band Sound Power, Lw							N C	Octave Band Sound Power, Lw							N C		
			2	3	4	5	6	7	2			3	4	5	6	7	2			3	4	5	6	7	N C				
L/s	Pa	2	3	4	5	6	7	N C	2	3	4	5	6	7	N C	2	3	4	5	6	7	N C							
100	19	1.77	42	32	29	28	24	19	-	43	34	32	32	27	25	-	44	35	36	36	31	31	-						
	49	11.79	54	51	43	40	37	30	-	55	52	47	44	41	36	-	56	53	50	48	45	42	-						
	79	30.74	61	60	50	46	44	36	-	62	62	54	50	48	42	20	63	63	57	54	52	47	22						
	109	58.51	65	67	55	50	49	40	26	66	68	59	54	52	46	28	67	69	62	58	56	51	29						
125	29	1.53	42	31	30	27	26	21	-	45	35	34	31	31	27	-	49	38	39	35	36	32	-						
	76	10.35	55	49	44	40	37	31	-	58	53	48	44	42	37	-	61	56	53	48	46	43	-						
	123	27.07	61	58	51	46	42	37	-	64	62	55	50	47	43	21	68	65	60	54	52	49	25						
	170	51.60	65	64	56	50	46	41	23	68	68	60	54	51	47	27	72	71	65	59	55	52	31						
150	42	1.26	41	40	29	27	29	24	-	44	45	34	31	34	31	-	47	50	40	35	39	38	-						
	110	8.46	52	51	44	40	37	32	-	55	57	49	44	42	39	-	59	62	54	48	48	46	21						
	178	22.08	57	57	51	46	41	36	-	61	63	57	51	47	43	20	64	68	62	55	52	50	26						
	245	42.05	61	61	56	51	44	39	-	65	67	62	55	49	45	25	68	72	67	59	55	52	31						
175	57	1.18	46	47	29	26	28	25	-	51	54	35	29	35	32	-	55	60	40	33	41	40	-						
	156	8.96	55	55	44	42	38	33	-	59	61	50	46	44	41	-	64	68	55	49	50	48	26						
	248	22.67	60	58	51	50	42	37	-	64	65	57	53	49	45	23	68	71	62	57	55	52	30						
	330	40.31	62	60	55	54	45	40	-	66	67	61	58	51	47	24	70	73	66	61	57	55	32						
200	76	1.30	47	44	39	32	34	29	-	50	50	45	36	39	36	-	53	55	51	41	45	43	-						
	208	9.83	56	54	49	45	42	37	-	60	60	55	49	47	44	-	63	65	61	54	53	50	24						
	319	23.14	60	58	53	50	45	40	-	63	64	59	55	51	47	22	67	70	65	59	56	53	29						
	434	42.98	63	61	56	54	48	42	-	66	67	62	59	53	49	25	70	73	68	63	59	56	31						
225	94	1.23	43	41	32	30	32	32	-	45	46	36	33	37	38	-	48	50	41	37	42	44	-						
	260	9.29	55	52	46	44	41	39	-	58	57	51	47	47	45	-	61	62	55	51	52	51	-						
	413	23.52	61	58	53	50	46	42	-	64	63	57	54	51	48	-	67	67	62	58	56	54	25						
	547	41.34	64	61	57	54	49	44	-	67	66	61	58	54	50	23	70	71	66	61	59	56	29						
250	118	1.29	42	43	36	35	36	34	-	46	48	41	39	41	40	-	49	53	46	44	47	46	-						
	319	9.37	54	53	48	46	44	41	-	58	58	53	51	49	47	-	61	63	58	55	55	53	21						
	507	23.77	60	58	54	51	48	44	-	63	63	59	56	53	50	-	66	68	64	60	59	56	25						
	675	42.05	64	61	58	55	50	46	-	67	66	63	59	55	52	23	70	70	68	64	61	58	28						
300	170	1.26	43	42	34	36	37	37	-	47	47	38	40	42	43	-	50	52	42	45	47	49	-						
	472	9.72	57	53	49	47	46	44	-	60	58	54	51	51	50	-	64	63	58	56	56	56	20						
	731	23.35	63	58	56	52	50	47	-	66	63	60	56	55	53	20	70	68	65	61	60	59	26						
	972	41.25	67	61	60	55	53	48	-	70	67	64	59	57	54	24	74	72	69	64	62	60	30						
350	227	1.30	39	38	31	35	34	36	-	42	43	34	39	39	41	-	46	47	37	42	43	47	-						
	649	10.67	56	53	50	48	46	44	-	59	57	54	52	51	50	-	63	61	57	56	55	55	-						
	1003	25.48	63	59	58	53	51	48	-	66	63	61	57	55	53	-	70	67	65	61	60	59	25						
	1321	44.24	68	62	63	57	54	50	-	71	67	66	61	59	55	24	74	71	70	65	63	61	29						
400	297	1.26	33	27	18	27	28	26	-	36	31	21	31	32	31	-	40	35	25	35	37	37	-						
	838	10.00	54	48	44	45	44	41	-	57	52	48	49	48	46	-	61	57	51	53	53	52	-						
	1286	23.57	63	57	55	52	50	47	-	66	61	59	56	55	53	-	69	65	62	60	59	58	22						
	1727	42.52	69	63	63	57	55	52	-	72	67	66	61	59	57	24	75	71	70	65	64	62	30						
550	566	1.29	52	46	44	38	35	26	-	58	54	47	44	40	32	-	64	62	50	49	45	38	-						
	1557	9.74	63	58	59	53	50	44	-	69	66	62	59	55	50	23	75	74	65	64	61	57	32						
	2454	24.18	68	63	66	60	57	52	20	74	71	69	65	62	59	29	80	79	72	71	68	65	38						
	3304	43.81	71	67	71	64	61	58	24	77	75	74	70	67	64	33	83	83	77	75	72	70	43						

# SD-VAV PERFORMANCE DATA



## Radiated Sound Performance Data

### SD-VAV, Radiated Sound Data

Inlet Size	Flow Rate L/s	Min. $\Delta$ PS Pa	175 $\Delta$ Pa							250 $\Delta$ Pa							500 $\Delta$ Pa									
			Octave Band Sound Power, Lw							Lp	Octave Band Sound Power, Lw							Lp	Octave Band Sound Power, Lw							Lp
			2	3	4	5	6	7	N C	2	3	4	5	6	7	N C	2	3	4	5	6	7	N C			
100	19	1.77	33	23	18	18	12	4	-	34	24	22	21	14	8	-	35	26	25	23	16	13	-			
	49	11.79	48	40	32	31	28	20	-	49	41	35	33	30	24	-	50	43	38	35	32	29	-			
	79	30.74	56	48	38	37	36	28	-	57	50	42	40	38	32	-	58	52	45	42	40	37	-			
	109	58.51	61	54	43	42	41	33	24	62	56	46	44	43	38	25	63	57	50	46	45	42	26			
125	29	1.53	37	19	14	11	6	3	-	42	24	19	14	10	9	-	48	29	24	17	14	15	-			
	76	10.35	48	36	29	27	22	15	-	53	41	34	30	26	22	-	58	46	39	33	29	28	-			
	123	27.07	53	45	36	34	30	22	-	58	49	41	38	34	28	-	63	54	46	41	37	34	26			
	170	51.60	56	50	41	40	35	26	-	61	55	46	43	39	32	24	67	60	51	46	43	39	31			
150	42	1.26	40	31	20	19	15	8	-	43	35	24	22	18	14	-	46	40	28	25	22	20	-			
	110	8.46	50	43	35	32	28	22	-	53	47	39	35	32	27	-	56	52	43	39	36	33	-			
	178	22.08	55	49	43	39	35	28	-	58	53	47	42	39	34	22	61	58	51	45	43	40	27			
	245	42.05	58	53	48	44	40	33	22	61	57	52	47	43	39	26	64	62	56	50	47	44	32			
175	57	1.18	36	38	21	14	9	3	-	39	44	27	19	13	8	-	43	50	33	23	17	14	-			
	156	8.96	48	45	35	29	24	17	-	51	51	41	33	28	23	-	55	56	47	37	32	28	25			
	248	22.67	53	48	41	36	31	23	-	57	54	47	40	35	29	22	61	59	53	44	39	35	29			
	330	40.31	57	50	45	40	35	27	-	60	56	51	44	39	33	25	64	61	57	48	43	39	32			
200	76	1.30	40	34	26	22	20	12	-	43	39	33	27	25	19	-	46	45	40	32	30	26	-			
	208	9.83	50	43	37	33	30	22	-	53	49	44	38	35	29	-	56	54	51	43	40	36	25			
	319	23.14	54	47	41	38	34	27	-	57	52	48	42	39	34	22	60	58	55	47	44	40	30			
	434	42.98	57	49	44	41	37	30	-	60	55	51	46	42	37	26	63	61	58	51	47	44	33			
225	94	1.23	36	31	19	20	18	15	-	40	37	23	24	24	23	-	43	43	28	28	29	32	-			
	260	9.29	48	39	34	32	28	21	-	52	45	39	36	33	29	-	55	51	43	40	39	38	-			
	413	23.52	54	43	41	37	32	23	-	57	49	46	41	38	32	-	61	55	50	45	43	40	24			
	547	41.34	57	45	46	41	35	25	-	61	51	50	45	40	33	24	64	57	54	49	46	42	29			
250	118	1.29	29	29	16	14	8	-3	-	35	35	20	19	16	9	-	41	41	23	23	24	20	-			
	319	9.37	42	38	36	29	21	9	-	48	44	39	34	29	21	-	54	50	43	38	37	32	-			
	507	23.77	48	42	45	36	27	15	-	54	48	48	41	35	26	22	60	54	52	45	43	38	26			
	675	42.05	52	44	51	40	30	18	25	58	51	54	45	39	30	29	64	57	58	50	47	41	32			
300	170	1.26	36	41	26	21	19	12	-	40	45	30	25	23	18	-	45	50	35	29	28	24	-			
	472	9.72	47	46	39	35	32	24	-	51	50	43	39	36	30	-	56	55	48	43	41	35	23			
	731	23.35	52	48	44	40	37	29	-	56	52	49	44	42	35	23	60	57	54	48	47	40	28			
	972	41.25	55	49	48	44	41	32	22	59	54	53	48	46	38	27	63	59	57	52	50	44	32			
350	227	1.30	31	31	19	23	22	20	-	36	37	23	26	25	25	-	41	42	26	30	29	29	-			
	649	10.67	45	41	37	35	34	30	-	49	47	40	38	37	35	-	54	52	43	42	41	39	20			
	1003	25.48	50	45	44	40	39	34	-	55	51	48	43	43	39	22	59	56	51	47	46	43	25			
	1321	44.24	53	48	49	43	42	37	23	58	53	52	47	46	41	27	63	59	55	50	49	46	30			
400	297	1.26	35	33	26	26	23	17	-	39	38	31	31	30	25	-	44	44	36	36	37	33	-			
	838	10.00	48	43	40	37	32	25	-	52	49	45	42	39	33	-	57	54	50	47	46	41	24			
	1286	23.57	53	47	45	41	36	29	-	58	53	50	47	43	37	25	63	59	55	52	50	45	30			
	1727	42.52	57	50	49	45	38	31	23	62	56	54	50	46	39	29	66	62	59	55	53	47	34			
550	566	1.29	46	49	39	39	40	39	-	50	52	43	41	42	41	-	53	54	47	43	44	43	23			
	1557	9.74	55	55	50	48	49	48	24	59	58	54	50	51	50	28	63	61	58	52	53	52	32			
	2454	24.18	60	58	55	51	53	52	30	64	61	59	54	55	54	34	68	64	62	56	57	56	38			
	3304	43.81	63	60	58	54	56	55	33	67	63	62	56	58	57	37	70	66	66	58	60	59	41			

# BY-VAV DESIGN & CONSTRUCTION FEATURES



## Description

*Bypass Terminal Unit, Pressure dependent  
Compact Low Profile VAV Box*

BY-VAV Series - Bypass Terminal Unit is a Single duct pressure dependent air terminal unit designed for use with popular constant volume low and medium pressure packaged air handling systems or roof top air conditioning units at low prime cost.

Units may be used with cooling and heating/cooling systems.



Temperature control is achieved by supplying only enough conditioned air to the space to satisfy room thermostat demand. Excess air is diverted (bypassed) directly to the return air ceiling plenum for free or ducted return. Airflow to each occupied zone will vary on thermostat demand, from full flow to shut-off or to a mechanically set minimum air volume.

Bypass terminals can be added to a single- zone constant volume system to provide zoning without the energy penalty of a conventional reheat system, providing low first cost with minimum fan controls.

Although variable volume to the space in operation, total airflow of the fan remains constant, so the fan power and associated energy cost are not reduced. This method is therefore energy inefficient as compared to a VAV fan system. Its most frequent application is on small systems.

## Construction and Features

1. Casing – 22ga. Galvanized steel with round or flat oval Inlets. Outlets are rectangular with slip and drive connections.
2. Damper – 22ga. Galvanized steel damper blade with seals, 45° rotation. Eliminates any internal damper linkage. 90° rotation.
3. 1/2" (13 mm) dia. Plated steel driveshaft with brass sleeve bushing. An indicator mark on the end of the shaft shows damper position.
4. 1/2" (13 mm) 48 kg/m<sup>3</sup> density black facing insulation. Exposed edges are coated to prevent airflow erosion. Fiber glass insulation.
5. Sizes range from 6" (152 mm) to 16" (406 mm) with capacities from 47 to 1298 L/S.
6. Compact low profile design is ideally suited for installation in tight spaces.
7. Minimum air volume stop on electric actuator. It cannot be factory set and must be field adjusted as required for the application.

# BY-VAV DESIGN & CONSTRUCTION FEATURES

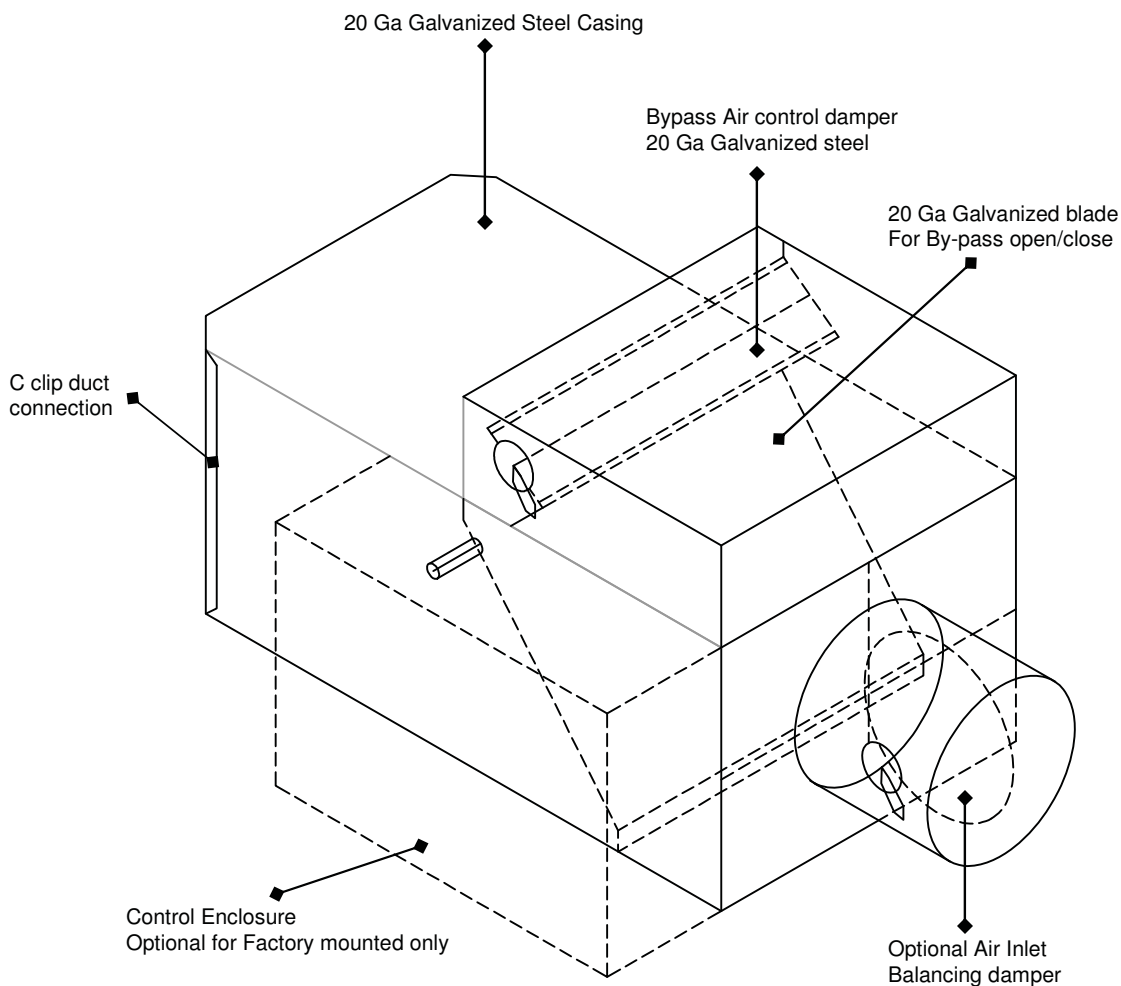


## Controls

- Belimo digital thermostat, LM24A-SR Control. Factory supplied and mounted.
- Variety of control options available, based on applications.
- Electronic thermostat and actuator provide accurate modulating control.

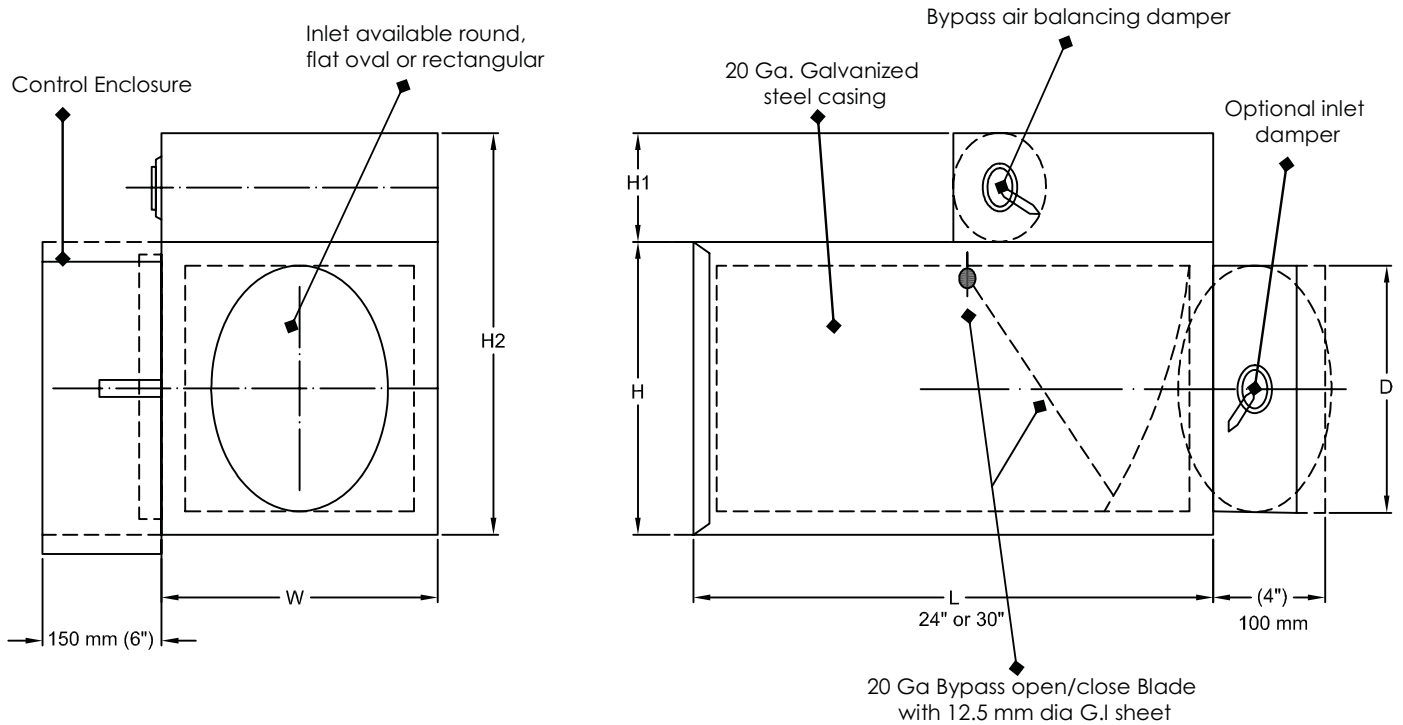
## Options

- Bypass dampers on inlet and outlets.
- Multi outlet plenum, round/oval discharge collar.
- 1" (25 mm) dual density insulation.





## Dimensions – Basic unit with controls



## Dimensional Data

Dimension Units (mm)				
Unit Size	L/S Range	W	H	Inlet Size
6	0 – 189	254	318	149 Round
8	0 – 330	305	318	200 Round
10	0 – 519	356	318	251 Round
12	0 – 755	457	318	329 x 249 Oval
14	0 – 991	610	318	408 x 249 Oval
16	0 – 1298	711	318	487 x 249 Oval

# BY-VAV PERFORMANCE DATA



## Performance Data – Sound Power Level

Inlet Size	Airflow L/S	Min. Discharge Δ Ps Pa	Min. Bypass Δ Ps Pa	Sound Power (dB) Octave Bands											
				Discharge						Radiated					
				2	3	4	5	6	7	2	3	4	5	6	7
6	189	2	35	45	44	41	33	29	26	42	37	33	24	20	20
	142	2	20	43	38	34	25	-	-	-	34	25	-	-	-
	94	2	10	-	31	24	-	-	-	-	-	-	-	-	-
	47	2	2	-	-	-	-	-	-	-	-	-	-	-	-
8	330	2	52	52	51	47	39	36	33	47	41	34	28	26	20
	236	2	27	45	43	38	29	24	-	43	34	27	-	-	-
	165	2	12	-	34	28	-	-	-	-	32	-	-	-	-
	94	2	5	-	-	-	-	-	-	-	-	-	-	-	-
10	519	2	107	50	50	46	43	37	34	52	49	46	37	32	23
	378	2	57	47	47	36	30	28	22	49	43	39	28	26	-
	236	2	22	44	40	34	28	-	-	43	35	29	-	-	-
	118	2	5	40	30	-	-	-	-	-	-	-	-	-	-
12	755	2	124	49	47	45	43	44	40	48	51	47	37	35	29
	566	2	70	44	40	38	36	36	29	43	41	38	29	25	-
	378	2	32	40	31	25	-	-	-	40	33	29	-	-	-
	189	2	7	-	-	26	-	-	-	-	-	25	-	-	-
14	991	12	124	60	57	54	48	45	36	54	58	56	49	49	41
	755	7	72	54	49	44	39	34	24	48	50	49	42	40	29
	495	2	30	47	37	31	24	-	-	44	40	38	29	-	-
	260	2	7	-	31	-	-	-	-	-	31	26	-	-	-
16	1298	15	124	66	64	61	56	52	46	64	63	59	49	46	37
	967	7	70	58	56	51	46	42	34	57	54	50	41	36	25
	649	2	32	50	45	39	33	27	-	45	41	38	27	-	-
	330	2	7	47	31	-	-	-	-	-	-	-	-	-	-

### Performance notes:

1. Discharge sound power is the noise emitted from the unit discharge into the downstream duct.
2. Radiated sound power is the breakout noise transmitted through the unit casing walls.
3. Sound power levels are in decibels, dB re 10-12 watts.
4. All sound data listed by octave bands is raw data without any corrections for room absorption or duct attenuation. Dash (-) in space indicates sound power level is less than 20 or equal to background.
5. Minimum discharge .Ps is the static pressure loss through the unit with 100% airflow through discharge outlet.
6. Minimum bypass .Ps is the static pressure loss through the unit with 100% airflow through the bypass outlet.

## IGC Aire Dampers

- Commercial Control
- Backdraft
- Manual Balancing
- Barometric Relief
- Fire, Smoke, & Combination Fire Smoke
- Pressure Relief Dampers
- Access Doors

## About Us

IGC Aire headquartered in USA manages a sophisticated, global network of independent distributors, sales agents, assembly programs, technology agreements and offshore manufacturing for each product division. All locations are staffed with expert engineers and sales professionals who understand the unique requirements of each market. Our products are on the cutting edge of technology. Research and development is a way of life. We are constantly looking for ways to improve current products and introducing new products to satisfy our ever-changing business environment. Quality is built into all of our products. Statistical process control systems incorporate state-of-the-art computerized data gathering technology to assure performance and measure dimensional accuracy of each component. The finished product, in many instances, exceeds accepted standards, local codes or customer specifications. The combination of an established global network, state-of-the-art products, constant research and development, and built-in quality has placed us ahead of our competition. We are committed to our customers \_ we are service, we are quality, we are price. A team dedicated to solving customer problems and providing satisfaction.

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