



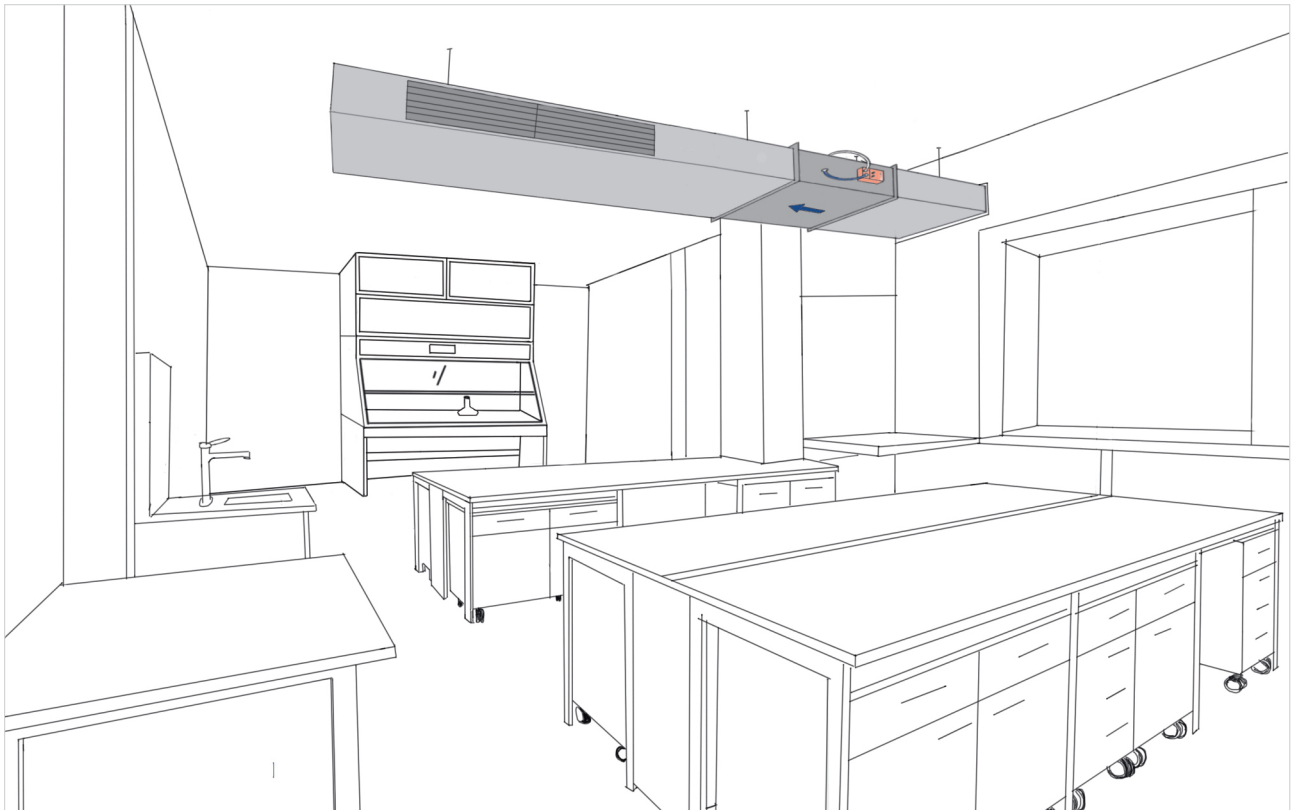
VAV Terminal Units for Highly Sensitive Area

Type HVS

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Applications



■ Type HVS pressure-independent VAV units are used in industrial ventilation systems with critical requirements to control the supply and exhaust air volume and maintain room pressure.

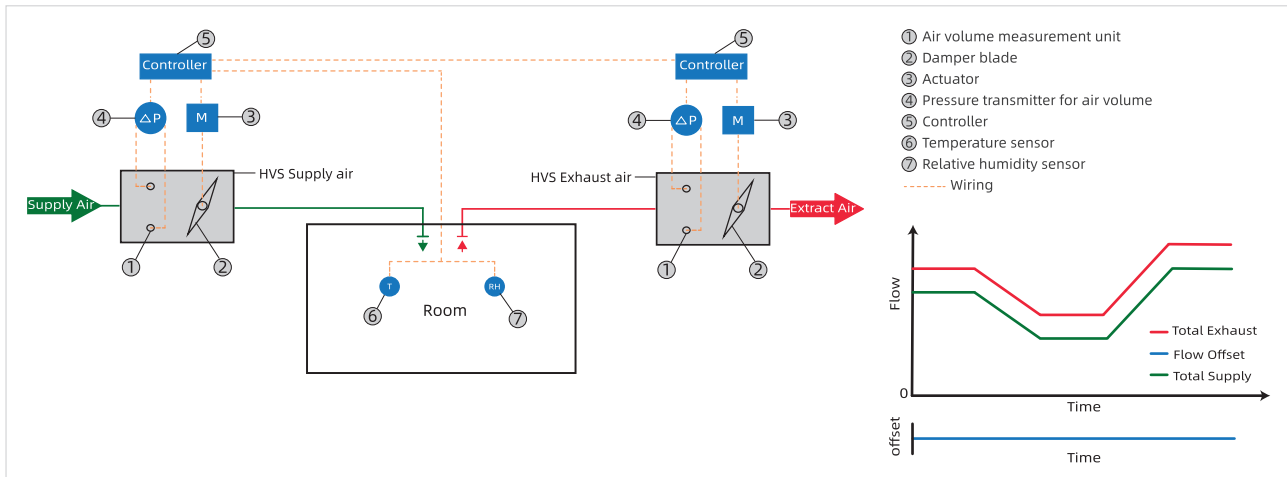
■ According to the user specifications, the rectangular VAV units can be configured with different components, such as controller, actuator and sensors, to meet the various requirements determined by different processes.

■ Each VAV unit undergoes will be pre-configuration and airflow calibration, and attach a label on the damper with installation locations, easy to install on-site and commission.

■ All control components are fixed on the unit, which is easy for on-site wiring and maintenance.

■ HVS type pressure-independent VAV units are low resistance and high acoustic performance. Attenuators are optional where noise levels must be kept low.

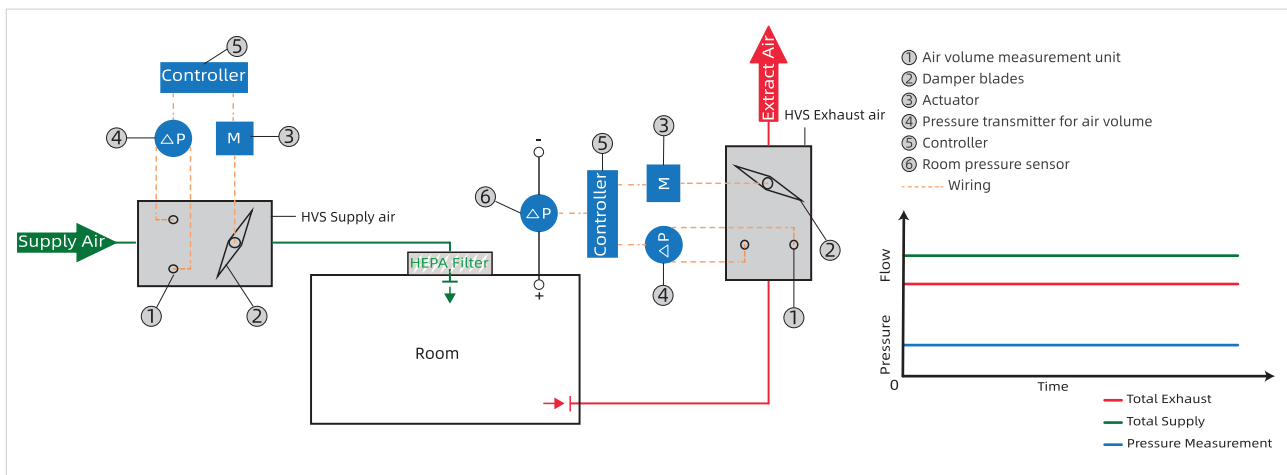
Differential Air Volume Control



■ In cleanrooms and laboratories, imbalance between the supply and extract air volumes will result in room pressure fluctuation. Therefore, the supply/extract air should operate at variable volumes.

■ The supply air volume is determined by air change rates or other variables, e.g., temperature setpoint, then the actual supply air volume is transmitted as a control signal to the extract air controller, which automatically tracks the supply air change and control the air volume difference.

Room Pressure Control

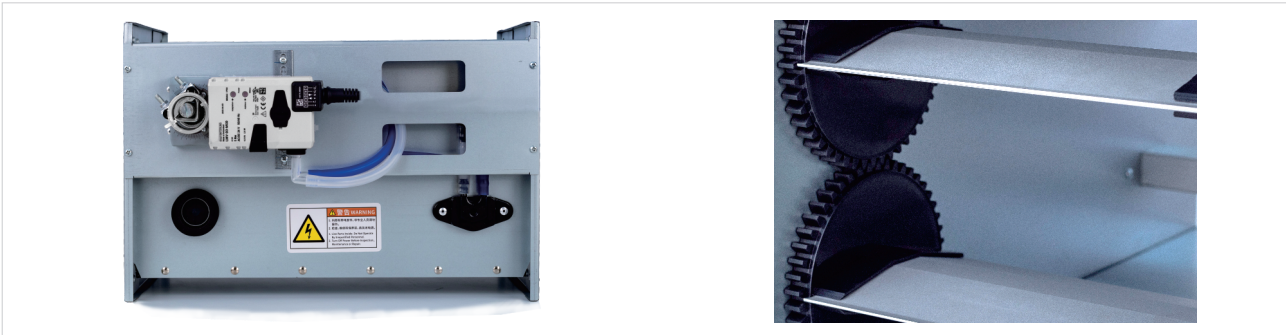


■ For rooms requiring precise pressure control, the room extract damper automatically tracks the room differential pressure setpoint to adjust the extract air volume on the condition that the supply air volume remains unchanged. The

extract damper is equipped with a room differential pressure sensor. The measured room differential pressure is compared with the demand value and the extract air volume is adjusted accordingly.

Product Introduction

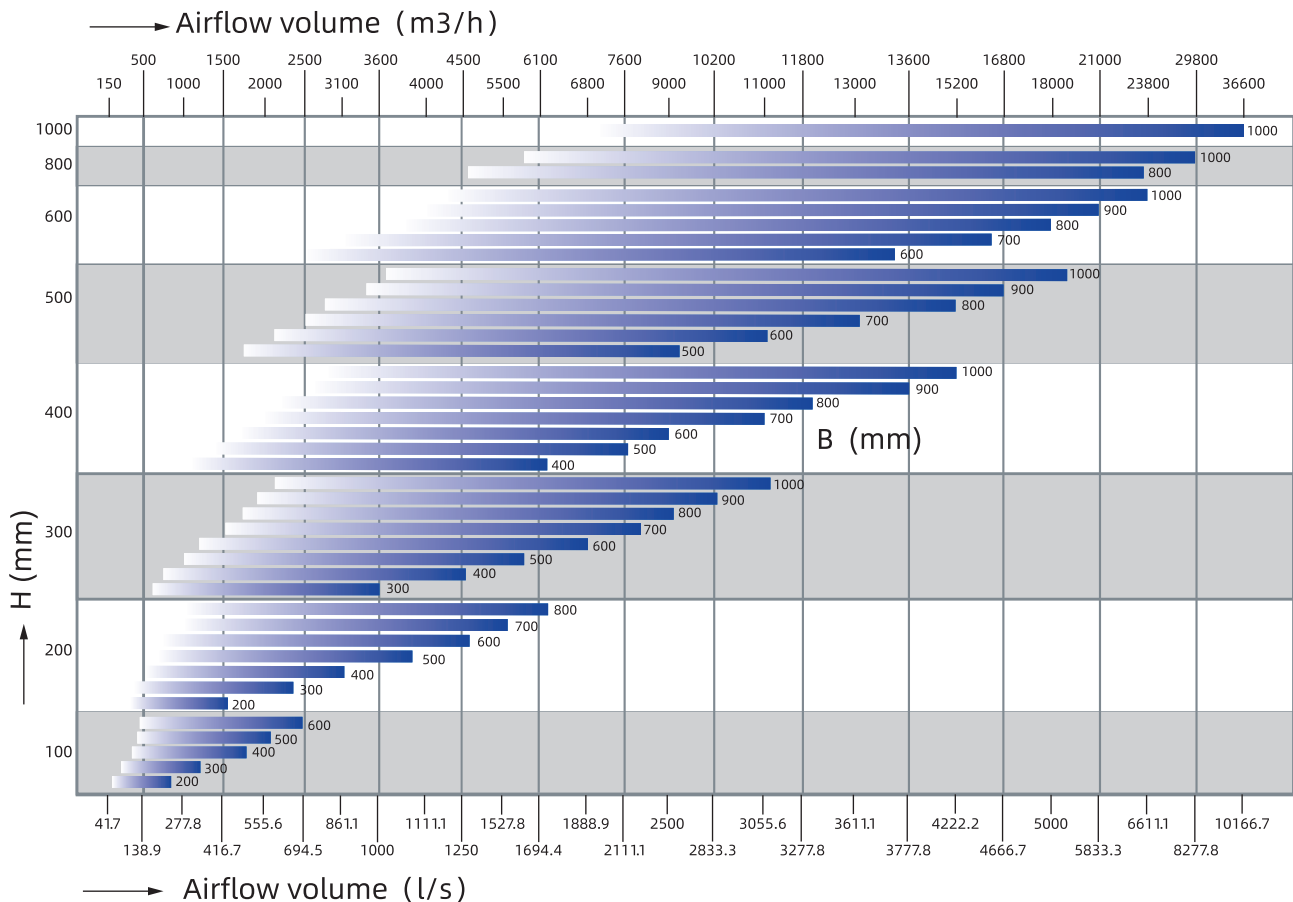
HVS: Rectangular pressure independent air volume control damper



- Type HVS is the rectangular pressure-independent VAV units designed for supply and extract air in variable air volume systems for industrial HVAC system.
- The airflow measuring unit at the air inlet and compares the actual airflow rate with the demand value. The damper blades are adjusted until these two values are the same, achieving closed-loop control. Differential air volume and room pressure control can be achieved based on demand using different actuators to fulfill specific application requirements.

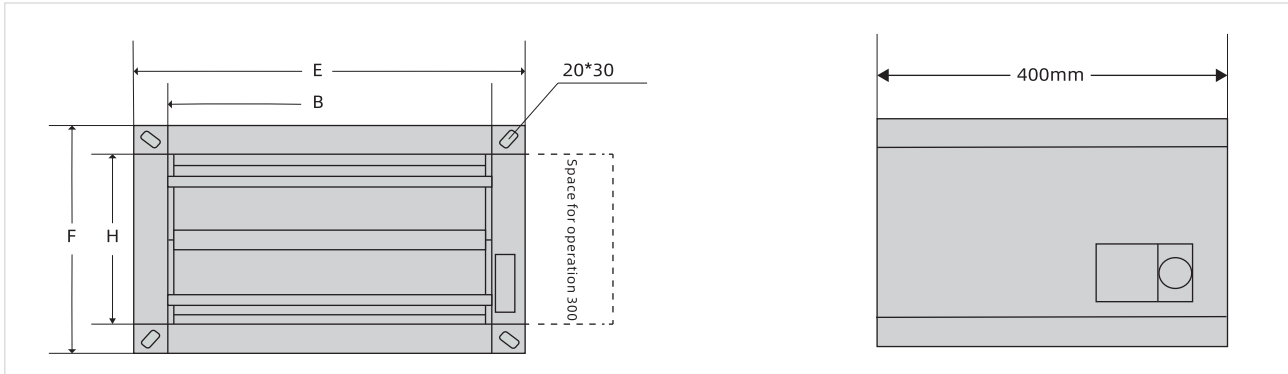
- Controllers, actuators, and sensors should be selected appropriately according to process requirements.
- Configuration and air volume calibration can be set based on project control requirements before delivery, reducing on-site installation and commissioning time.
- All control components are fixed on the unit for easy on-site wiring and maintenance.
- To avoid measurement inaccuracies caused by turbulence, upstream and downstream straight duct sections are required.

HVS Quick Selection Chart



Materials·Construction

Materials·Construction



Characteristics

- Mechanical construction, no maintenance required;
- Operating temperature: 10 to 50°C;
- Motorized airflow control, 220 VAC or 24 VDC/AC voltage supply;
- Differential pressure range: 30 to 1000 Pa;
- Airflow range approx. 6:1;
- Configuration and aerodynamic test test at factory.

Material·Construction

- Applicable to rectangular duct structures, featuring outer frames fixed on both ends with flanges, aerofoil-shaped double-layer blades, optimized for airflow resistance.
- Damper frame, shaft and connecting parts are made of galvanized steel. Ss304 is optional.
- Aluminum measuring tubes.
- Blades are made of aluminum.
- Antistatic plastic (ABS) gear can withstand 50°C environment.

HVS Size-Weight Table

Size	H (mm)																							
B (mm)	100			200			300			400			500			600			800			1000		
	E	F	Weight (kg)	E	F	Weight (kg)	E	F	Weight (kg)	E	F	Weight (kg)	E	F	Weight (kg)	E	F	Weight (kg)	E	F	Weight (kg)	E	F	Weight (kg)
200	276	176	5.5	276	276	8.5																		
300	276	176	6.5	376	276	9.5	376	376	9.5															
400	476	176	7.5	376	276	11	476	376	11	476	476	14												
500	576	176	8.5	476	276	12	576	376	12	576	476	15	576	576	19									
600	676	176	9.5	576	276	13	676	376	13	676	476	16	676	576	20	676	676	19						
700				767	276	14	776	376	15	776	476	17	776	576	22	776	676	22	878	876	28			
800				876	276	15	878	376	16	878	476	18	878	576	23	878	676	23						
900							976	376	18	976	476	20	976	576	25	976	676	26						
1000							1076	376	19	1076	476	21	1076	576	26	1076	676	27	1076	876	32	1076	1076	38

Aerodynamic data

Airflow volume flow & regenerated noise L_f (dB) and radiated noise L_c (dB) at 150/ 500 Pa static pressure difference

B (mm)	H (mm)	Airflow volume	150Pa	500Pa	150Pa	500Pa
		(m ³ /h)	L _r (dB)	L _r (dB)	L _c (dB)	L _c (dB)
200	100	150	45	56	31	42
		360	46	58	36	48
		580	47	59	38	49
		800	48	61	39	51
300		200	45	57	32	45
		550	46	58	36	48
		880	47	59	39	41
		1200	48	60	40	52
400		280	46	58	32	44
		750	46	58	38	49
		1250	47	59	39	52
		1750	47	60	41	53
500		330	47	59	32	45
		900	47	59	38	50
		1450	48	60	40	52
		2020	48	60	41	54
600		400	47	59	35	46
		1100	47	59	39	51
		1700	48	60	40	53
		2400	48	60	43	54
200	200	280	46	58	32	46
		700	46	59	38	49
		1100	47	60	39	52
		1550	47	60	41	53
300		400	47	46	35	46
		1100	47	47	38	52
		1700	48	48	41	53
		2350	48	49	42	54
400		550	48	59	34	48
		1400	48	59	39	53
		2200	49	60	41	54
		3050	49	60	44	55
500		700	47	51	36	48
		1800	47	51	40	52
		2900	48	52	42	54
		3850	48	52	44	56
600		850	47	59	36	49
		2100	47	59	42	53
		3300	48	60	43	55
		4550	48	60	45	57
700		1000	47	59	38	48
		2500	47	59	41	55
		4000	48	60	43	56
		5500	48	60	45	57
800		1050	47	59	38	51
		2800	47	59	42	54
		4500	48	60	45	56
		6100	48	60	46	57
300	300	630	47	59	36	48
		1600	47	59	41	53
		2600	48	60	43	54
		3500	48	60	45	56

B (mm)	H (mm)	Airflow volume	150Pa	500Pa	150Pa	500Pa
		(m ³ /h)	L _r (dB)	L _r (dB)	L _c (dB)	L _c (dB)
400	300	850	47	59	37	48
		2100	47	59	41	53
		3300	48	60	43	55
		4500	48	60	46	57
500		1000	46	59	36	49
		2600	46	59	42	54
		4100	47	60	44	57
		5700	47	60	46	58
600		1200	46	59	38	51
		3100	46	59	44	55
		5000	47	60	45	57
		6800	47	60	46	58
700		1500	47	58	39	52
		3700	47	59	43	55
		5800	48	60	45	57
		7900	48	60	48	59
800		1700	46	58	38	52
		4100	46	58	45	56
		6600	47	59	46	58
		9050	47	59	48	59
900	400	1900	47	59	40	52
		4600	47	59	45	56
		7400	48	60	46	58
		10200	48	60	48	60
1000		2180	45	58	41	53
		5300	45	58	44	57
		8500	46	59	46	59
		11600	46	59	48	60
400		1100	47	59	38	50
		2800	47	59	42	55
		4500	48	60	45	57
		6100	48	60	47	58
500		1400	46	58	38	52
		3500	46	58	43	56
		4500	47	59	45	58
		7600	47	59	47	59
600		1700	45	58	39	52
		4200	45	58	45	56
		6700	47	59	46	58
		9000	47	59	47	59
700		2000	46	58	41	53
		5000	46	58	44	57
		8000	47	59	46	59
		11000	47	59	49	60
800		2200	46	58	41	53
		4500	46	58	46	58
		7700	47	59	47	59
		11800	47	59	48	60
900		2580	46	58	42	53
		6300	46	58	45	58
		10000	47	59	48	59
		13600	47	59	49	61
1000		2850	45	58	42	54
		7000	46	58	47	59
		11000	47	59	48	60
		15200	47	59	49	61

B (mm)	H (mm)	Airflow volume	150Pa	500Pa	150Pa	500Pa
		(m ³ /h)	L _f (dB)	L _f (dB)	L _c (dB)	L _c (dB)
500	500	1750	47	58	38	51
		4300	47	58	44	56
		6800	48	59	46	58
		9300	48	59	47	59
600		2100	46	58	39	53
		5200	46	58	44	56
		8200	47	59	46	59
		11200	47	59	48	60
700		2500	46	58	40	54
		6000	46	58	45	58
		9500	47	59	47	59
		13000	47	59	48	60
800		2850	46	58	41	54
		7000	46	58	45	57
		11000	47	59	47	60
		15200	47	59	49	61
900		3200	45	57	41	54
		7700	46	57	47	59
		12200	47	58	48	60
		16800	47	58	49	61
1000	600	3600	46	57	42	55
		8700	47	58	46	58
		13800	48	59	48	61
		19000	48	59	49	62
600		2550	46	58	42	54
		6200	46	58	46	58
		9900	47	59	47	59
		13500	47	59	48	61
700		3100	46	58	42	54
		7300	46	58	46	58
		11600	47	59	48	60
		15800	47	59	49	61
800		3400	46	58	42	54
		8300	46	58	46	58
		13100	47	59	48	61
		18000	47	59	49	62
900		4000	45	57	42	54
		9700	45	57	46	59
		15400	46	58	48	61
		21000	46	58	51	62
1000		4300	45	57	43	55
		10800	45	57	48	59
		17300	46	58	49	61
		23800	46	58	51	62
800		4600	46	58	43	57
		10900	46	58	48	59
		17300	47	59	49	61
		23600	47	59	51	63
1000	800	5800	44	57	44	56
		13800	44	57	49	61
		21800	45	58	50	63
		29800	45	58	51	64
1000	1000	7200	44	56	45	57
		17000	44	57	49	62
		26800	45	58	52	64
		36600	45	58	53	65

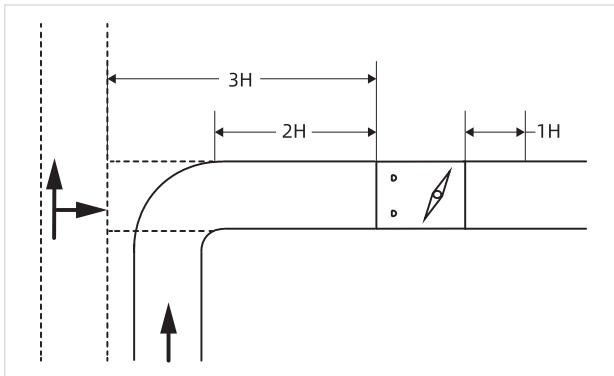
Airflow range, Minimum static pressure difference & Accuracy

B (mm)	H (mm)	Airflow volume (m ³ /h)	Min pressure drop (Pa)	Control accuracy (±%)	B (mm)	H (mm)	Airflow volume (m ³ /h)	Min pressure drop (Pa)	Control accuracy (±%)
200	100	150	3	14	300	300	630	3	13
		360	10	5			1600	12	5
		580	20	4			2600	21	3
		800	32	5			3500	32	4
300		200	3	14	400		850	3	13
		550	11	5			2100	12	4
		880	20	4			3300	21	4
		1200	33	5			4500	36	4
400		280	4	14	500		1000	3	13
		750	10	5			2600	12	4
		1250	19	4			4100	21	4
		1750	31	4			5700	37	4
500		330	3	13	600		1200	4	13
		900	11	5			3100	11	4
		1450	20	4			5000	21	4
		2020	33	4			6800	37	4
600		400	3	13	700		1500	4	13
		1100	12	5			3700	12	4
		1700	21	4			5800	20	4
		2400	32	4			7900	37	4
200		280	4	14	800		1700	4	14
		700	12	5			4100	12	4
		1100	22	4			6600	20	4
		1550	32	5			9050	36	4
300		400	4	13	900		1900	4	14
		1100	11	5			4600	11	4
		1700	22	4			7400	21	5
		2350	33	4			10200	36	4
400	550	3	13	1000	2180	4	14		
	1400	11	4		5300	12	4		
	2200	20	3		8500	21	5		
	3050	33	4		11600	37	4		
500	700	4	13	400	1100	4	13		
	1800	12	4		2800	13	4		
	2900	20	3		4500	22	3		
	3850	32	4		6100	39	4		
600	850	3	13	500	1400	4	13		
	2100	12	4		3500	12	4		
	3300	21	3		4500	22	3		
	4550	32	4		7600	40	4		
700	1000	4	13	600	1700	4	13		
	2500	11	5		4200	11	4		
	4000	20	3		6700	21	3		
	5500	33	4		9000	40	4		
800	1050	3	13	700	2000	3	14		
	2800	12	4		5000	11	4		
	4500	21	3		8000	21	3		
	6100	32	4		11000	39	4		

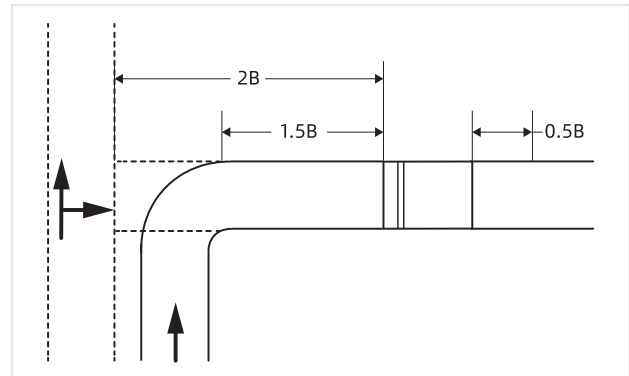
B (mm)	H (mm)	Airflow volume (m³/h)	Min pressure drop (Pa)	Control accuracy (±%)	B (mm)	H (mm)	Airflow volume (m³/h)	Min pressure drop (Pa)	Control accuracy (±%)	
800		2200	3	14	1000	500	13800	20	4	
		4500	12	4			19000	39	5	
		7700	20	4	600		2550	3	14	
		11800	39	4			6200	12	4	
900		2580	4	14			9900	21	3	
		6300	12	4			13500	36	4	
		10000	21	4	3100		3	14		
		13600	39	4	7300		11	4		
1000		2850	4	14	700		11600	20	4	
		7000	12	4			15800	36	5	
		11000	21	4			3400	3	14	
		15200	39	5			8300	11	4	
500		1750	4	13	800			13100	21	4
		4300	11	4				18000	37	5
		6800	22	3				4000	3	14
		9300	39	4				9700	11	4
600	2100	5	14	900	15400			20	4	
	5200	12	4		21000			37	5	
	8200	22	3		4300	3		14		
	11200	39	4		10800	12		4		
700	2500	4	14	1000	17300	21		4		
	6000	11	4		23800	36		5		
	9500	21	3		4600	4		14		
	13000	39	4		10900	12		5		
800	2850	4	14	800		17300		21	4	
	7000	12	4			23600		39	5	
	11000	21	4			5800		4	14	
	15200	39	4			13800		11	5	
900	3200	4	14	1000		21800	22	4		
	7700	12	4			29800	39	5		
	12200	21	4			7200	4	14		
	16800	40	4			17000	11	5		
1000	3600	4	14	1000		26800	23	4		
	8700	11	4			36600	40	5		

Installation Requirements

Vertical layout



Horizontal layout

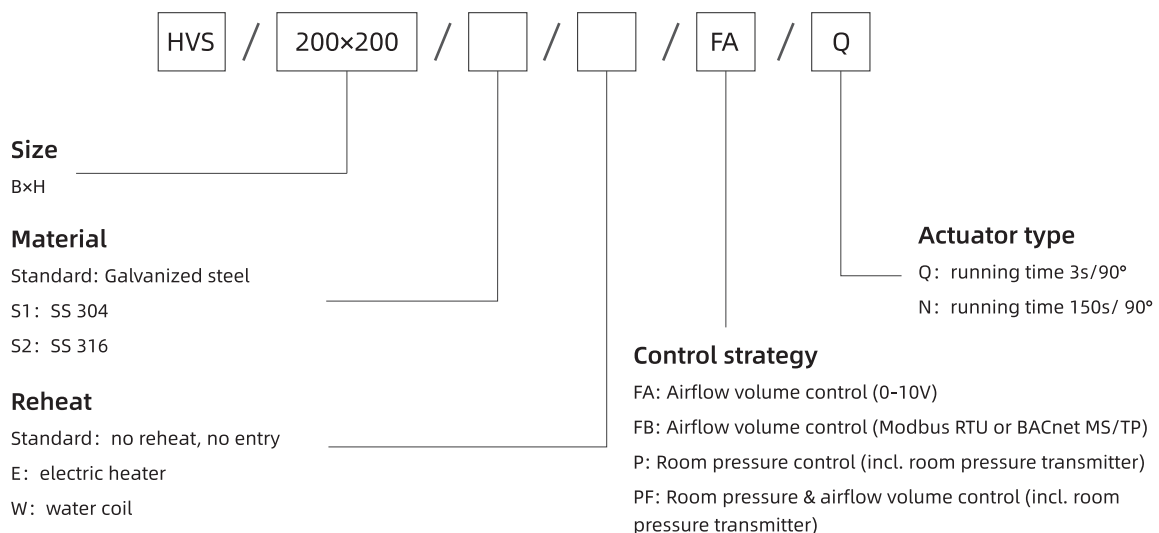


Notes:

- Please check the goods first after they arrived at the site. If there is any missing or damaged, please contact us.
- Do not place outdoors, even if well packaged. Stored in place away from humidity, direct sunlight and dirt.
- Do not store in atmosphere higher than 50°C.
- Do not remove package before installation and protect the finished product.
- Do not carry the airflow measuring tubes or control components during transportation.
- To ensure accurate measurement, the HVS damper should be installed away from other accessories, e.g. elbows, attenuators and regulating dampers, at a distance. The diagram above shows the instructions.

- Flange connection with slender 20x13 mm holes at each flange corner at both ends. No additional support bracket is required. The weight is supported by the adjacent ducts which must be hanged according to the standard.

Order Code





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