



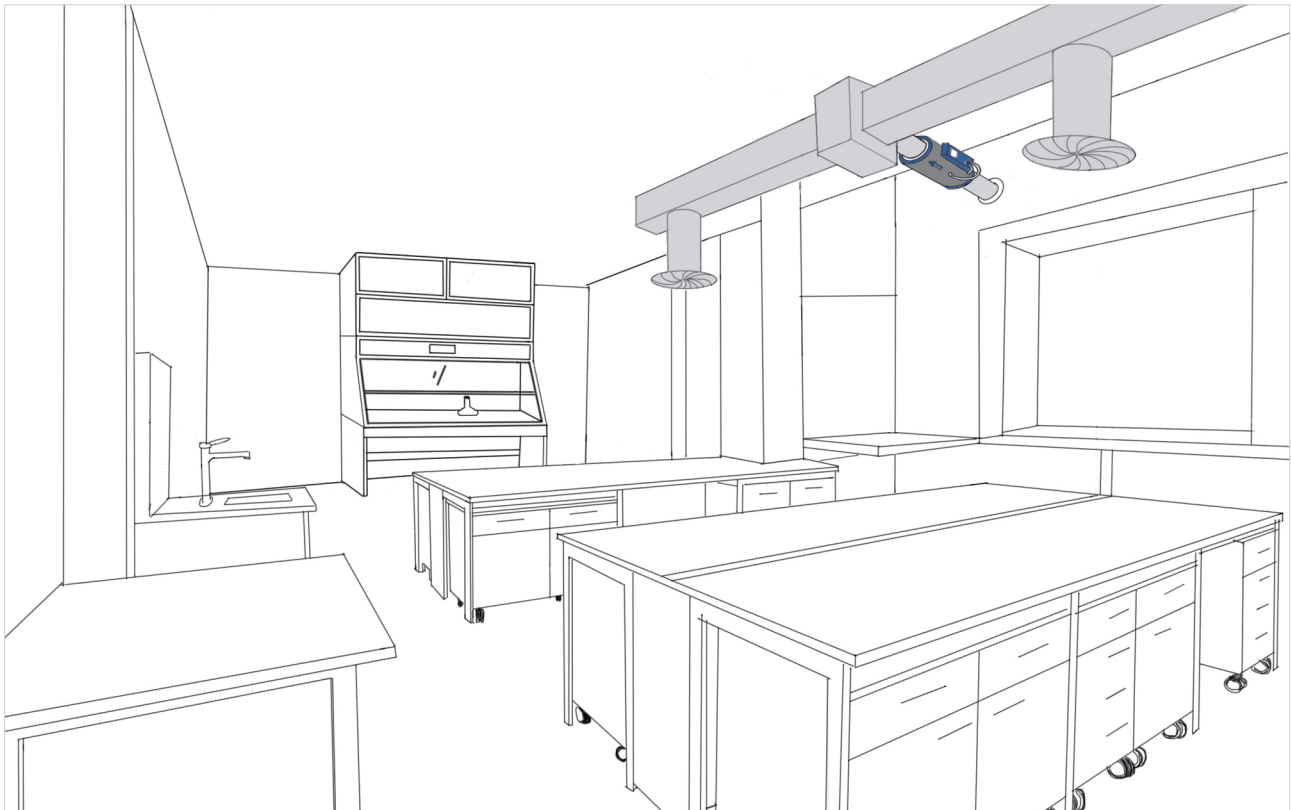
VAV Terminal Units for Highly Sensitive Area

Type HVR

Contents

Applications -----	2	Materials·Construction -----	5
Differential Air Volume Control -----	3	Aerodynamic Data -----	6
Room Pressure Control -----	3	Installation Requirements -----	7
Product Introduction -----	4	Order Code -----	7

Applications



■ Type HVR 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.

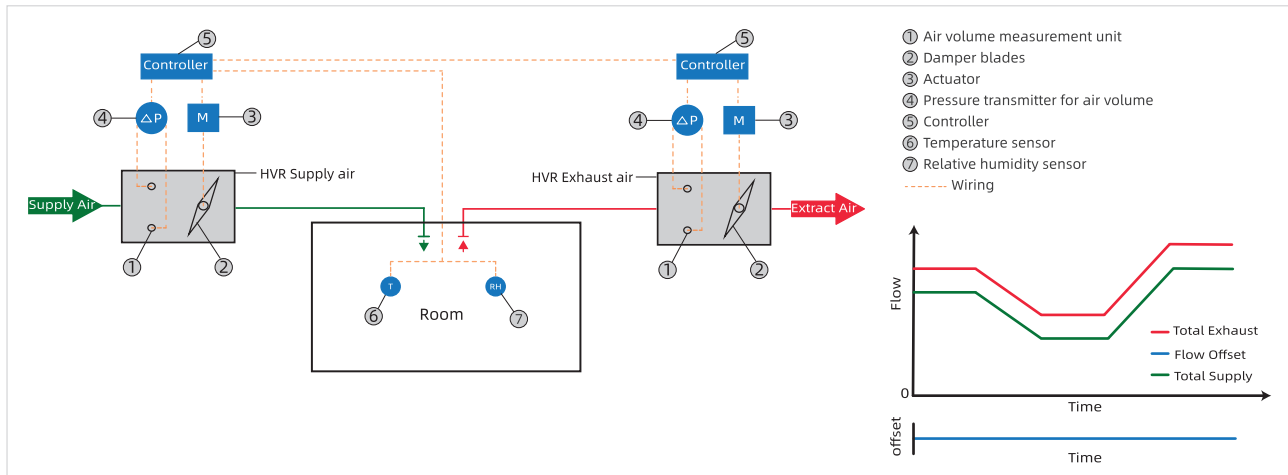
■ According to the user specifications, the circular VAV units can be configured with different components, such as controller, actuator and room pressure sensors, to meet the various requirements determined by different processes.

■ Each VAV unit 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 units, which is easy for on-site wiring and maintenance.

■ HVR type pressure-independent VAV units are low resistance and high acoustic performance. Attenuators can be added to areas where noise levels must be kept low.

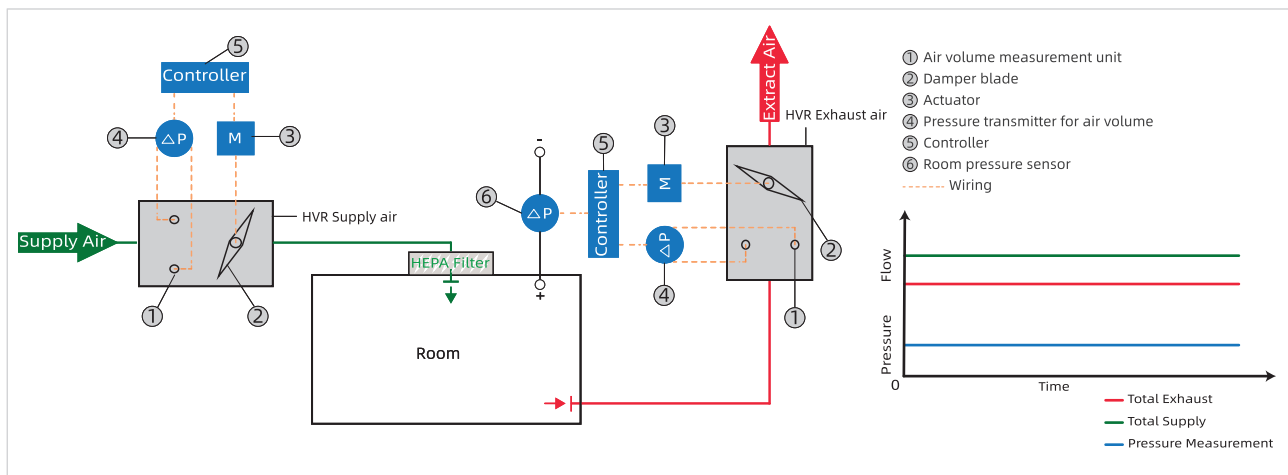
Differential Air Volume Control



■ 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

HVR: Circular pressure independent air volume control damper



- Type HVR is the circular pressure-independent VAV units designed for supply and extract air in variable air volume systems for industrial HVAC system.
- The airflow measuring unit and the air inlet end compares the actual airflow rate with the demand value. The damper blades are adjusted until these two values are consistent, 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.

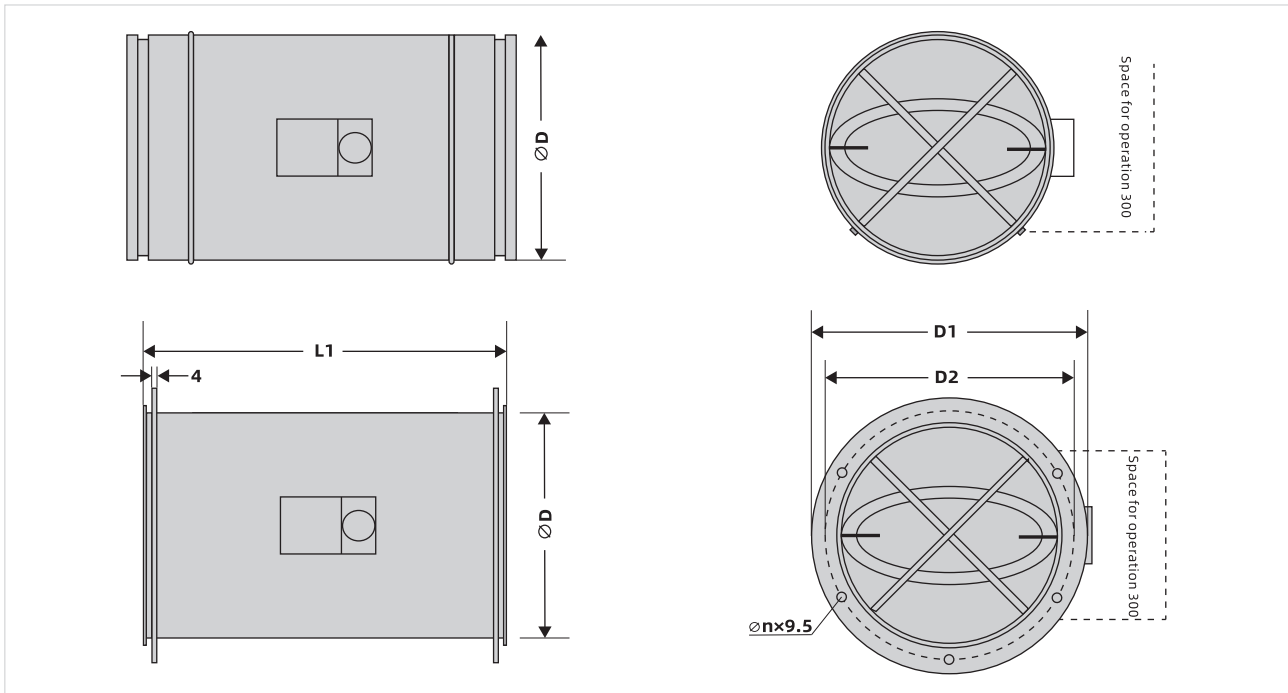
- Controllers, actuators, and sensors should be selected appropriately according to process requirements.
- Configuration and air volume calibration can be set based on project control requirements before delivery, reducing on-site installation and commissioning time.
- All control components are fixed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

HVR Quick Selection Chart

Size D(mm)	Airflow range(m ³ /h)													
	40	60	90	150	200	350	360	560	600	950	1480	2400	3800	6200
100														
125														
160														
200														
250														
315														
400														

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. 10:1;
- Configuration and aerodynamic test at factory.

Material·Construction

- HVR is suitable for round ducts. Spigots with grooves can plug into ducts securely.
- Damper frame, shaft and connecting parts are made of galvanized steel. SS304 is optional.
- Aluminum measuring tubes.
- Blades are made of galvanized steel with TPE thermoplastic seals. SS 304 is optional.

HVR Size-Weight Table

Size	D	L	L	L1	L1	D1	D2	n	Weight
φ(mm)		(Controller FA, FB)	(Controller P, PF)	(Controller FA, FB)	(Controller P, PF)				kg
100	99	310	600	300	600	132	152	4	3.5
125	124	310	600	300	600	157	177	4	4
160	159	400	600	400	600	192	212	6	5
200	199	400	600	400	600	233	253	6	6
250	249	400	600	400	600	283	303	6	7.5
315	314	600	600	600	600	352	378	8	10
400	399	600	600	600	600	438	464	8	13

Aerodynamic data

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

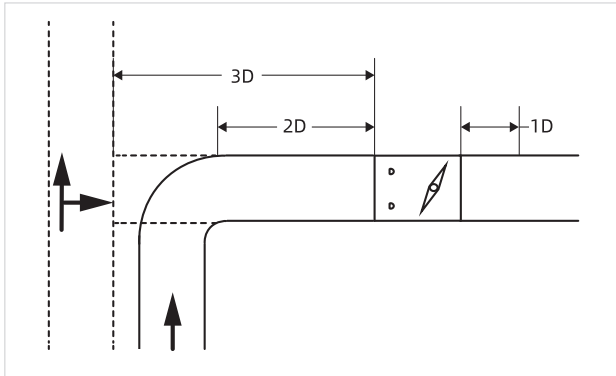
Size φ (mm)	Airflow volume (m ³ /h)	150Pa L _f (dB)	500Pa L _f (dB)	150Pa L _c (dB)	500Pa L _c (dB)
100	40	33	43	16	28
	140	42	51	33	42
	250	50	59	38	48
	360	58	67	41	50
125	60	35	46	17	29
	230	40	50	33	43
	390	44	55	35	47
	560	48	59	39	49
160	90	39	51	22	33
	380	44	55	30	44
	660	49	59	36	46
	950	53	63	38	48
200	150	42	51	22	32
	600	46	55	35	44
	1050	50	59	36	48
	1480	53	63	40	50
250	200	42	52	27	35
	950	45	55	35	46
	1680	47	58	40	48
	2400	49	59	41	52
315	350	44	55	33	40
	1500	47	57	41	51
	2700	49	60	44	54
	3800	52	63	46	57
400	600	46	59	35	45
	2500	48	60	39	52
	4400	49	61	43	55
	6200	51	62	45	58

Airflow range, Minimum static pressure difference & Accuracy

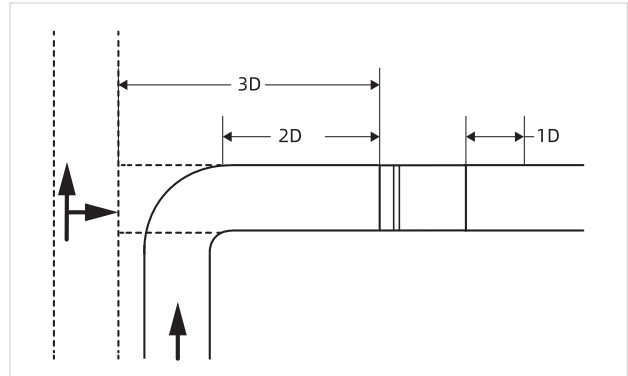
Size φ (mm)	Airflow volume (m ³ /h)	Min pressure drop (Pa)	Control accuracy (±%)	Size φ (mm)	Airflow volume (m ³ /h)	Min pressure drop (Pa)	Control accuracy (±%)
100	40	3	16	200	1050	36	3
	140	13	5		1480	74	5
	250	36	4	250	200	2	15
	360	78	5		950	10	4
125	60	3	15		1680	30	3
	230	13	5		2400	55	4
	390	37	4	315	350	3	16
	560	81	4		1500	12	4
160	90	3	15		2700	25	5
	380	13	5		3800	45	5
	660	36	4	400	600	3	15
	950	79	5		2500	10	4
200	150	2	14		4400	22	3
	600	12	4		6200	43	5

Installation Requirements

Vertical layout



Horizontal layout

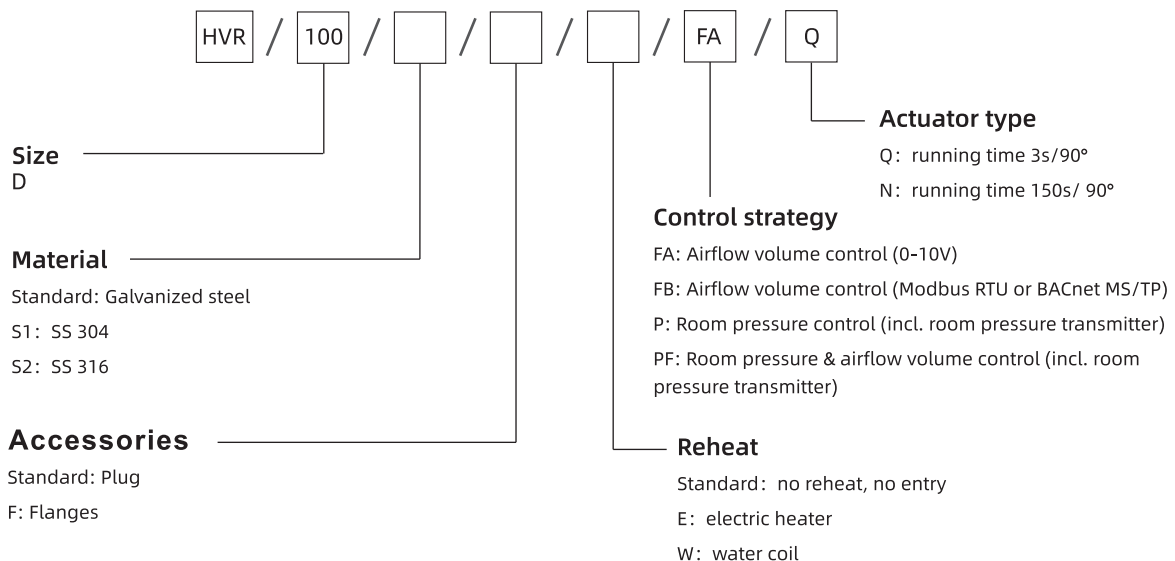


Notes:

- 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 HVR unit should be installed away from other accessories, e.g. elbows, attenuators and regulating dampers, at a distance. The diagram above shows the instructions.

- HVR can be plug into the ducts or flange connection. The weight is supported by the adjacent ducts.

Order Code





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