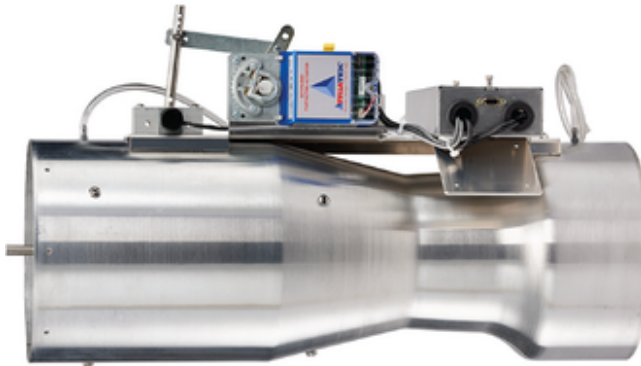


Description

Figure 1: Venturi Air Valve



Venturi Air Valves play a critical role in room pressure containment applications to ensure safety, reliability, and efficiency. Venturi Air Valves are a position-based flow control device that relies on factory calibration instead of real-time flow measurement by a flow sensor. Venturi Air Valves have no sensors in the air stream, which allows for safe and reliable operation in various caustic environments where flow sensors need to be cleaned and maintained regularly. This robust design gives Venturi Air Valves an advantage in critical environments with many years of reliable service.

Venturi Air Valves are mechanically pressure independent due to a spring-loaded cone design. As the duct pressure fluctuates, the spring-loaded cone assembly rides these pressure waves to maintain a consistent volumetric flow regardless of the duct static pressure variances. This mechanism provides immediate speed of response to duct pressure changes and does not require actuator movement.

Venturi Air Valves use fast-acting electric actuators that provide a rapid response to changes in conditions and dynamic air flow requirements. This rapid response ensures that room pressure containment is maintained to protect people from airborne threats such as viruses, chemicals, and particulates.

Features and benefits

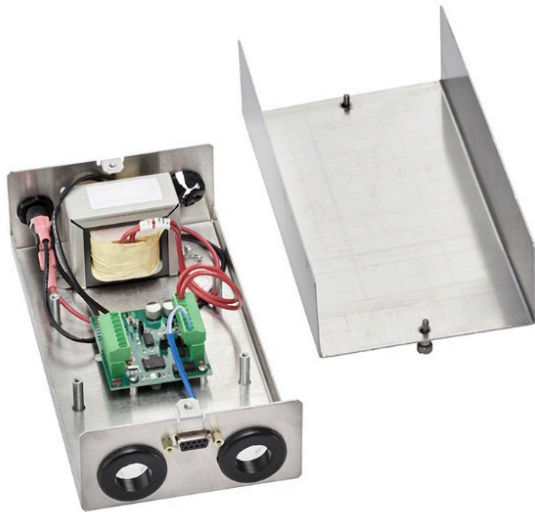
- Medium or low pressure ratings
- Partially closed or full shut-off design
- Valves available in 8 in., 10 in., 12 in., and 14 in. diameters
- Available with Heresite® coatings
- Kynar® coated valve options is available for special requirements
- Dependable design, with no sensors in the air stream, which results in years of reliable maintenance free service
- Easy to install
- Available as a constant volume or with a fast acting smart actuator
- Mechanically pressure independent in low and medium pressure applications
- Factory calibrated airflow
- Field adjustable Universal Valve Module configuration tool
- Low pressure drop
- Can be ganged for increased flow
- Maintenance-free link with no sensors due to position based cfm
- Can calibrate for vertical or horizontal positioning

Venturi Air Valve options

Universal valve module

Figure 2: Universal valve module



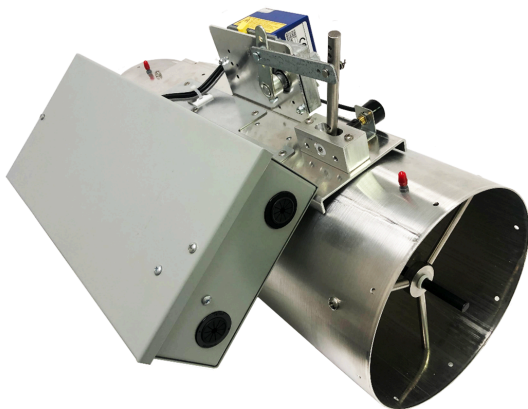


Each Venturi Air Valve comes with a UVM-1000 linearization module that provides fast and simple control of the air valve. You can command with a 0-10 VDC control signal which is scaled to represent 0% - 100% of the air valve's minimum to maximum cfm range. The UVM-1000 provides a 0-10 VDC position feedback signal as confirmation the actuator has been repositioned to meet the target cfm set point. For example, if 0-10 VDC is equal to 0-1000cfm, a 750cfm set point could require a 7.5 VDC command signal to be sent to the UVM-1000, which drives the valve to the 750cfm position and return a 7.5 VDC position feedback signal as confirmation.

For more information, refer to the UVM-1000 Product Bulletin (LIT-12013292) and the UVM-1000 Installation Guide (LIT-12013155).

Valve mounted room level controller

Figure 3: Valve mounted room level controller



For authorized facility explorer dealers, the Venturi Air Valves can be ordered with a factory mounted FX CCM09090 room level controller on the valve body. This reduces the need for an additional wall mounted panel in the critical space and makes installation easier. The

valve mounted controller becomes the central node in the room for connection to all other devices. It is best practice to designate the location of the controller onto the valve with the easiest access, or the general supply.

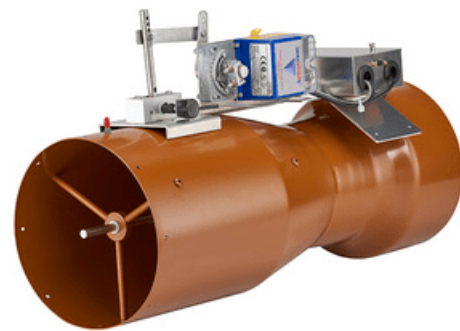
For more information, refer to the Venturi Air Valve Installation Guide (LIT-12013219) and the CCM09090 product documentation.

Aluminum or stainless steel

Venturi Valves are made of aluminum for general exhaust or supply applications. A 316 stainless steel option is also available for environments with highly corrosive or dangerous chemicals in the air stream.

Heresite

Figure 4: Heresite coated valve



Heresite is a brown phenolic coating baked on exposed aluminum to minimize corrosion. Heresite coatings provide resistance to a wide range of corrosives.

Kynar

Figure 5: Kynar coated valve



Kynar provides excellent chemical resistance. It is often used as a protective coating in applications where phenolic coating is not sufficient.

Thermal insulation

You can use thermal insulation for supply valves. Thermal insulation decreases energy costs by reducing thermal losses and prevents duct condensation.

Constant volume

Figure 6: Constant volume lateral front Venturi valve



Constant volume (CV) Venturi Air Valves provide a single cfm set point for applications that require only one air flow set point. CV valves do not come with a controller or actuator.

Medium or low pressure

Medium pressure Venturi Valves (0.6 in. to 3 in. W.C.) allow for higher flows for a given valve size, while low pressure Venturi Valves (0.3 in. to 3 in. W.C.) require a smaller pressure drop across the valve to maintain a constant flow.

Partially closed or full shut-off

Partially closed Venturi Valves allow for higher flows for a given valve size, while full shut-off Venturi Valves allow the valve to close completely for zero flow application requirements.

Horizontal or vertical

You can specify how the valve is situated in the duct work; horizontal, vertical up flow, or vertical down flow. Each orientation is calibrated differently to account for the effects of gravity on the spring-loaded cone assembly to ensure mechanical pressure independence is maintained.

Size

Triatek offers 8 in., 10 in., 12 in., and 14 in. diameter valves for a variety of applications

Figure 7: Venturi Valve sizes



Ganged valves

To increase flow, gang valves together.

Figure 8: Dual Venturi Valve

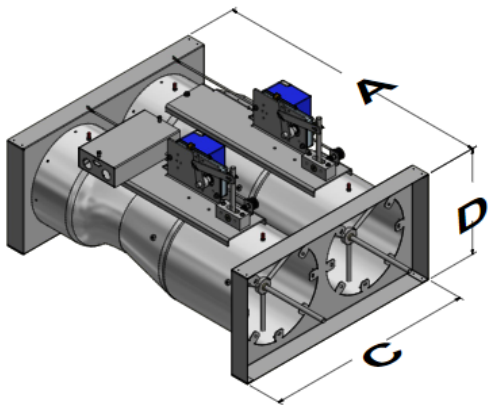


Figure 9: Triple Venturi Valve

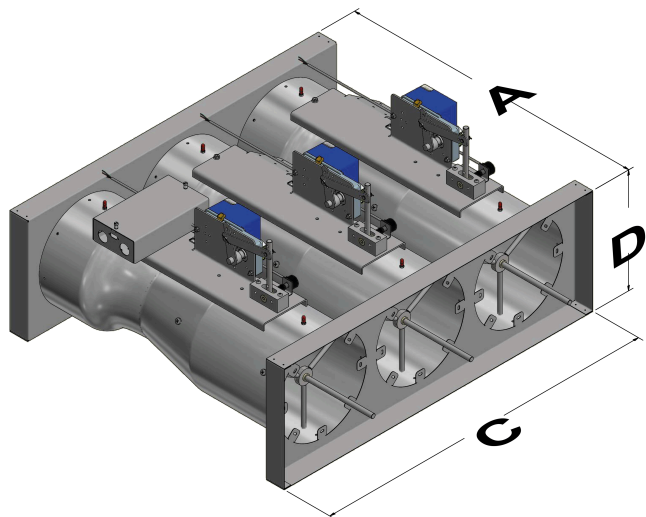


Figure 10: Quad Venturi Valve

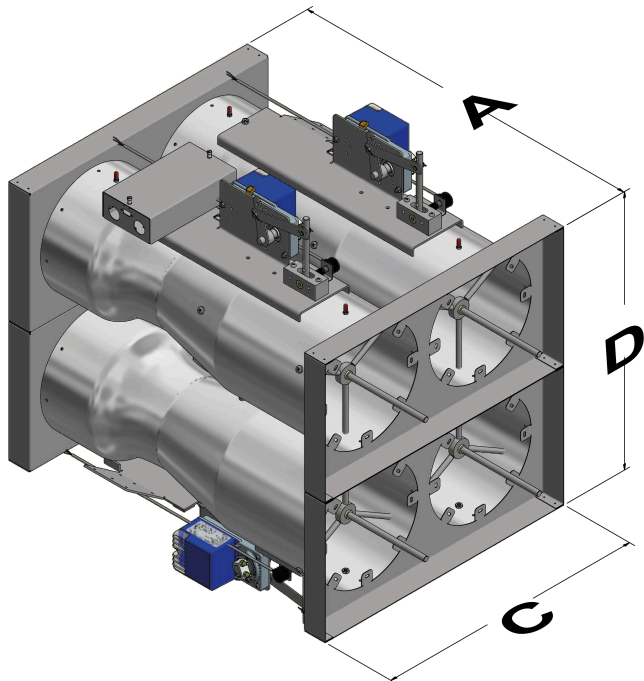


Figure 11: Hex Venturi Valve

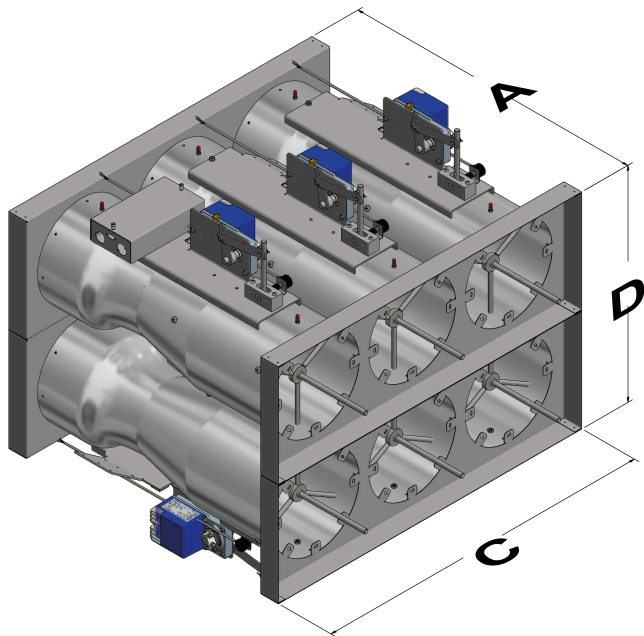


Table 1: Dimensions

Callout	Description
A	Valve length
C	Collar width
D	Collar height

Selection charts

Table 2: Dimensions and weights

Unit size		Weight				Valve diameter		Valve length (A)		Valve height (B)		Collar width (C)		Collar width (D)	
		Aluminium		SS316											
		lb	kg	lb	kg	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
8 in.	1	15	7	20	9	7.75	197	23	584	14	356	n/a			
10 in.	1	20	9	27	12	9.74	247	26	660	16	406	n/a			
	2	40	18	54	24	n/a	n/a	30	762	17	432	22.63	575	11.44	291
	3	60	27	81	37	n/a	n/a	30	762	17	432	33.75	857	11.44	291
	4	100	45	135	61	n/a	n/a	30	762	35	889	22.63	575	22.88	581
	6	140	64	189	86	n/a	n/a	30	762	35	889	33.75	857	22.88	581
12 in.	1	20	9	27	12	11.68	297	26.8	681	18	457	n/a			
	2	60	27	81	37	n/a	n/a	30.8	782	19	483	26.75	679	13.5	343
	3	80	36	108	49	n/a	n/a	30.8	782	19	483	40	1016	13.5	343
	4	100	45	135	61	n/a	n/a	30.8	782	38	965	26.75	679	27	686
	6	150	68	203	92	n/a	n/a	30.8	782	38	965	40	1016	27	686
14 in.	1	25	11	n/a		13.62	346	30	762	22	559	n/a			
	2	50	23			n/a	n/a	34	864	24	610	32.15	817	16	406
	3	75	34			n/a	n/a	34	864	24	610	48.3	1227	16	406
	4	120	54			n/a	n/a	34	864	48	1219	32.15	817	32	813
	6	160	73			n/a	n/a	34	864	48	1219	48.3	1227	32	813

Table 3: Partially closed (PC) Venturi valve flow rates

Unit size		Low pressure - 0.3 inches of water column (inWC)				Medium pressure - 0.6 inWC			
		Minimum flow		Maximum flow		Minimum flow		Maximum flow	
		cfm	cmh	cfm	cmh	cfm	cmh	cfm	cmh
8 in.	1	35	59	500	850	35	59	700	1189
10 in.	1	50	85	550	934	50	85	1000	1699
	2	100	170	1100	1869	100	170	2000	3398
	3	150	255	1650	2803	150	255	3000	5097
	4	200	340	2200	3738	200	340	4000	6796
	6	300	510	3300	5607	300	510	6000	10194
12 in.	1	90	153	1050	1784	90	153	1500	2549
	2	180	306	2100	3568	180	306	3000	5097
	3	270	459	3150	5352	270	459	4500	7646
	4	360	612	4200	7136	360	612	6000	10194
	6	540	917	6300	10704	540	917	9000	15291
14 in.	1	175	297	1400	2379	175	297	2100	3568
	2	350	595	2800	4757	350	595	4200	7136
	3	525	892	4200	7136	525	892	6300	10704
	4	700	1189	5600	9514	700	1189	8400	14272
	6	1050	1784	8400	14272	1050	1784	12600	21408

① **Note:** Minimum flow for SS316 8in PC valve is 50 CFM.

① **Note:** Minimum flow for SS316 12in PC valve is 110 CFM

Table 4: Full shut-off (FS) Venturi valve flow rates

Unit size		Low pressure - 0.3 inWC				Medium pressure 0.6 inWC			
		Minimum flow		Maximum flow		Minimum flow		Maximum flow	
		cfm	cmh	cfm	cmh	cfm	cmh	cfm	cmh
8 in.	1	0	0	400	680	0	0	600	1019
10 in.	1	0	0	450	765	0	0	850	1444
	2	0	0	900	1529	0	0	1700	2888
	3	0	0	1350	2294	0	0	2550	4332
	4	0	0	1800	3058	0	0	3400	5777
	6	0	0	2700	4587	0	0	5100	8665
12 in.	1	0	0	750	1274	0	0	1100	1869
	2	0	0	1500	2549	0	0	2200	3738
	3	0	0	2250	3823	0	0	4400	7476
	4	0	0	3000	5097	0	0	8800	14951
	6	0	0	4500	7646	0	0	17600	29903

Ordering information

Table 5: Ordering guide

Feature	Code letter or number and description	Product code number example: VVN10HNFAFULU
Brand	VV = Triatek	VV
Ganged	N = Not ganged 2 = Dual 3 = Triple 4 = Quad 6 = Hexa F = Flanged	N
Size	08 = 8 in. 10 = 10 in. 12 = 12 in. 14 = 14 in.	10
Material	A = Aluminium H = Heresite S = SS316 K = Kynar	H
Insulation	N = No insulation I = Insulated	N
Actuator	CV = Constant volume FA = Fast acting	FA
Type	P = Partially closed F = Full shut-off	F
Airflow	H = Horizontal U = Upflow D = Downflow	U

Table 5: Ordering guide

Feature	Code letter or number and description	Product code number example: VVN10HNFAFULU
Pressure	L = Low pressure 0.3 to 3 inches of water column (in. W.C.) M = Medium pressure 0.6 to 3 in. W.C.	L
Linearization module	U = Universal Valve Module (UVM) N = None (CV valves only) C = Valve mounted CCM09090 room level controller	U

Note:

- Flanged valves cannot be ganged together.
- Contact Triatek Sales for Kynar valve requirements.
- Constant volume (CV) valves need to be ordered with the required flow volume. Specify cfm for this purpose.
- Constant Volume valves do not come with a UVM or any electronic components.
- 14 in. valves are not available in full shut-off (Type = F) or SS316 (Material = S) at this time.
- *Refer to the UVM-1000 Installation Instructions, LIT-12013155, and UVM-1000 Product Bulletin, LIT-12013292, for more information.*
- Low pressure (Pressure = L), full shutoff (Type = F) valves are not available in vertical upflow orientation (Airflow = U).
- Vertical up flow (Airflow = U) low pressure (Pressure = L) valves maintain flow from 0.4 in. W.C. to 3 in. W.C.

Technical specifications

Table 6: Technical specifications

Specification	Description
Aluminum shell thickness	14 gauge (0.0641 in)
Stainless steel shell thickness	18 gauge (0.05 in)
Accuracy	± 5% or 10% cfm; whichever is greater
Internal assembly construction materials	Stainless steel shaft and struts with Teflon® PTFE bearings
Operating range	32 °F to 150 °F (0 °C to 65 °C) 10% to 90% non-condensing RH
Flame/smoke rating	25/50
Density	2 lb/3 ft (32 kg/m3)
Performance	<ul style="list-style-type: none"> • Pressure independent over a 0.3 in.W.C. to 3 in.W.C. for low pressure and 0.6 in. W. C. to 3 in. W.C. for medium pressure applications. • Volume control accurate to ±5% of airflow command signal. • No additional straight duct runs needed before or after valve. • Response time to change in command signal: <1 second. • Response time to change in duct static pressure: <1 second.

The performance specifications are nominal and conform to acceptable industry standard. For application at conditions beyond these specifications, consult your local Triatek representative. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.

Patents

Patents: <https://jciapat.com>

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information, and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Contact information

Contact your local branch office: www.johnsoncontrols.com/locations

Contact Johnson Controls: www.johnsoncontrols.com/contact-us