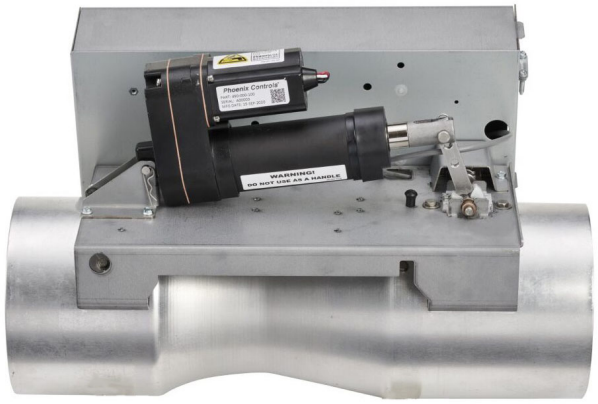
6-INCH VENTURI AIR VALVE

Venturi air valves are commonly used for a variety of applications including fume hoods, general exhaust, room supply air, snorkels, toilet exhaust, and general ventilation. The Phoenix Controls 6-inch venturi air valve is specifically designed to be used in locations where precision airflow control is required and space is of a premium. The 6-inch venturi valve can be ordered with options for control system platforms and valve coatings available from Phoenix Controls.

When space is a minimum yet there is still a need for an accurate, repeatable airflow control device, choose the 6-inch venturi air valve from Phoenix Controls.



FEATURES

- Compact design
- Constant Volume or Variable Air Volume digital controls
- Standard speed and high-speed actuation
- Mechanically Pressure Independent
- Accurate to +/- 5% of setpoint across entire flow range
- No straight duct run requirements
- High turndown ratio
- No required maintenance

HCAI Certified
This device is certified for HCAI (previously called OSHPD) Preapproval Seismic Certification Preapproval per 2013 CBC, 2012 IBC, ASCE 7-10, and IEC-ES-AC-156. HCAI Special Certification number OSP-0290.

NVLAP Accreditation
All venturi valves are characterized on NVLAP Accredited Airstations, Lab Code 200992-0. NVLAP is administered by the National Institute of Standards and Technology (NIST).

ISO
Phoenix Controls Designs, Develops, Manufactures, and sells products , systems, and service to control the environment and airflow of critical spaces. Phoenix Controls is registered to ISO 9001:2015.

Warranty
Phoenix Controls Warrants all venturi valves against defects in material and workmanship for a period of 5 years. In addition, all other equipment manufactured by Phoenix Controls, such as sash sensors, fume hood monitors, and equipment supplied but not manufacturered by Phoenix Controls is covered by a 3 year warranty.

75 Discovery Way ▪ Acton, MA 01720 USA ▪ Tel (978) 795-1285 ▪ Fax (978) 795-1111 ▪ www.phoenixcontrols.com

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SPECIFICATIONS

Construction
- 16 ga. spun aluminum valve body with continuous welded seam
- Valve bodies available as uncoated aluminum (Class A) or with corrosion-resistant baked phenolic (Class B and C)
- Valve Cone made from a composite industrial grade material (PPS) with shaft bearings integrated into the cone
- Spring grade stainless steel spring and PPS slider assembly
- Supply valves insulated with 3/8" (9.5 mm) flexible closed-cell polymer-based foam. Flame/smoke rating 25/50. Density is 1.5 lb/ft^3 (24.0 kg/m^3)

Operating Range
- 32-122 °F (0-50 °C) ambient
  Available for 32-250 °F (0-121 °C) internal airflow temperature with special insulation (ask your Applications Engineer for more details)
- 10-90% non-condensing RH

Performance
- Minimum differential pressure required: 0.6" WC
- Mechanically pressure independent
- Volume control accurate to ±5% of airflow command signal
- No additional straight duct runs needed before or after valve
- Available flow range 30-350 CFM (51-595 m^3/hr)
- Actuator drive time after change in command signal to the command signal change:
  - < 1 second: Control Type M and T
  - < 40 seconds: Control Type L
  - < 1 minute: Control Type H (with 60 Hz power)
- Response time to change in duct static pressure: <1 second

Sound
Designed for low sound power levels to meet or exceed ASHRAE noise guidelines.

Power
24 Vac (±15%) @ 50/60 Hz

Power Consumption
All power consumption VA ratings listed here are based on power-up inrush current and fully- loaded I/O.
Per valve:
- Low-speed Electric (Control Type H): 10 VA
- Low-speed Electric (Control Type L): 12.5 VA
- High-speed Electric: (Control type M, H, T): 70 VA

Regulatory Compliance

- RoHS
- FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

- EU Contact Address:
  Pittway Tecnologica Srl
  Via Caboto 19/3
  34147 Trieste TS
  Italy

ORDERING GUIDE

EXV A 1 06 M - A M E H C - PSL - ____

VALVE FAMILY
BEV = Base Upgradeable Exhaust Valve
BSV = Base Upgradeable Supply Valve

CEV = Constant Volume Exhaust Valve
CSV = Constant Volume Supply Valve

EXV = Celeris Exhaust Valve
MAV = Celeris Supply Valve

FEV = Flex Exhaust Valve
FSV = Flex Supply Valve

HEV = Theris Exhaust Valve
HSV = Theris Supply Valve

TEV = Traccel Exhaust Valve
TSV = Traccel Supply Valve

VALVE CONSTRUCTION
A = Body and cone uncoated aluminum; *for supply and general exhaust applications*
B = Body and cone - baked Phenolic coating; internal components - stainless steel; *for fume hood applications*
C = Body, cone, and internal components - baked phenolic coating; *for more corrosive fume hood applications*

NUMBER OF VALVE BODIES
1 = One valve body
F = Round flanges on both ends of single valve

VALVE SIZE
06 = 6" valve (5.83"/148mm actual diamater)
30-350 cfm (51-595 m^3/hr)

FLOW/PRESSURE OPERATING RANGE
M = Medium pressure, 0.6 in wc (150 Pa) minimum pressure

VALVE DESIGN
A = Standard Conical Shaped Diffuser, Accel II

CONTROL TYPE
C = Constant Volume (field adjustable with 7/16" hex driver or wrench); *BxV only*
F = Fixed Constant Volume (field adjustable with knob and Increase/decrease label); *BxV only*
H = Rotary, low-speed (90 sec) actuator; NEMA 1
L = Linear, medium speed (45 sec) actuator; IP56
M = Linear, medium speed (1 sec) actuator; IP56
T = SMART, Linear Actuator, high-speed (1 sec) proportional 2-10vdc electric motor; IP56; *BxV only, no REI, Controller Designation N only*

VALVE OPTIONS
As required, list alphabetically separated by dashes.
EVI = Exhaust valve with insulation blocks and insulation
IBO = Insulation blocks only, no insulation; *supply and exhaust valves*
PSL = Pressure switch, low limit
REI = Remote Electronics indoors: 100 ft or 30.4 meters for high-speed actuators, 150 feet or 45.7 meters with low-speed actuators
SFB = Square flanges on both ends of the valve; cannot be ordered with Number of Valve Bodies = F
SFD = Square flange on discharge side of valve; cannot be ordered with Number of Valve Bodies = F
SFI = Square flange on inlet side of valve; cannot be ordered with Number of Valve Bodies = F

FAIL-SAFE POSITION
C = Closed
O = Opened
Z = Fails to last position/no fail-safe

VALVE ORIENTATION
H = Horizontal
U = Vertical upflow

VALVE CONTROLLER DESIGNATION
A = BACnet Traccel, Theris, or Flex TP Supply (controlling valve of tracking pair); *TSV/HSV/FSV only*
B = BACnet Traccel or Theris TX Supply (controlling valve of tracking pair with expanded features); *TSV/HSV only*
C = BACnet Traccel, Theris, or Flex SO Supply only (no tracking pair ability); *TSV, TEV, HSV, HEV, or FSV only*
D = BACnet Traccel, Theris, or Flex EO Exhaust only (no tracking pair ability); *TSV, TEV, HSV, HEV, or FEV only*
E = LON Traccel TP Supply (controlling valve of tracking pair); *TSV only*
E = LON Theris TP Supply (controlling valve of tracking pair); *HSV only*
E = Electronic controller; *MAV and EXV only*
F = Flow feedback in a small black plastic enclosure; *BxV only*
H = Hood controller; *EXV only*
N = No electronics; *BxV only, tracking valve - TEV, HEV, or FEV*
N = No electronics; *tracking exhaust/return valve for TEV or HEV*
O = Traccel SO Supply only, no tracking pair ability; *TSV only*
O = Theris SO Supply only, no tracking pair ability; *HSV only*
P = Programmable Traccel BACnet controller (open programmability with valve position control)
V = BACnet Linearization module, 2-10vdc or BACnet command/feedback signals; *FxV and HxV only*
X = LON Traccel TX Supply, controlling valve of tracking pair with expanded features; *TSV only*
X = LON Theris TX Supply, controlling valve of tracking pair with expanded features; *HSV only*
Y = Traccel or Theris TX-RTN, supply controlling primary exhaust and return valves; *TSV or HSV only*
Z = Traccel or Theris TX-EXH, supply controlling primary exhaust and locally controlled exhaust; *TSV or HSV only*

FLOW/PRESSURE OPERATING RANGE

Designation	Size	Operating Range CFM (m^3/hr)	Pressure Drop Across Valve
M = Medium Pressure	**06"**	30-350 (51-595)	0.6" WC (150 Pa)

PHOENIX CONTROLS WIRING RECOMMENDATIONS

- Use cables recommended by Phoenix Controls.
- Stranded wire is strongly recommended for ease of installation.
- Follow good wiring practices:
  - Do not run the communications cable in the same conduit or wire way as the power cables.
  - If the communications cables must cross power cables, it is best to do so at a 90-degree angle.
  - Shield or drain wires, if present, should be wrapped with insulating tape to prevent contact with exposed conductors or contacts.
  - Maintain a consistent color code or polarity all the way through the wiring system.
  - All connections must meet the requirements of an NEC Class 2 circuit.
- Local and national electrical codes take precedence.
- Consult the project specific wiring diagrams for exact details.

TRANSFORMERS

Valve controller requires the use of a step-down transformer (either 120/24 volt or 240/24 volt). Any transformer used to power valve controllers must meet the requirements of an NEC Class 2 circuit.

- The secondary transformer must be limited to a maximum of 30 Vac.
- Secondary power shall be current limited with either internal circuit breaker protection or with a four-amps slow-blow fuse, in accordance with NEC Class 2 power requirements.

Phoenix Controls offers the following recommendations; however, designers, installers and owners should always consult their national and local electrical codes before selecting transformers for their systems.

- Transformers should not exceed 100 VA. Use multiple transformers, rather than larger transformers, when more than 100 VA is required.
- Each pressurization zone should have either a dedicated single-phase primary circuit or a secondary circuit disconnect.
- If an earth ground is provided, it should not be connected to the Celeris valve controller, even though there is a three- terminal connector on the controller board.

NOTE: AC line voltage polarity must be maintained on all Celeris valve controllers and AC powered ancillary devices.

Power Conductor Sizing

Low-Speed Electric Valves

- Can be powered in a BUS configuration.
- For loads up to 96 VA, use 18 AWG cable with a maximum length of 110 feet (33 meters) between the transformer and the last daisy-chained device.

Medium-Speed and High-Speed Electric Valves in a HOME-RUN Configuration

- MUST be powered in a HOME-RUN configuration.
- For loads up to 96 VA, use a dedicated 14 AWG cable with a maximum length of 110 feet (33 meters) home-run between the transformer and the valve.
  - No other valves can be daisy-chained from this power.
  - Bus power configurations are NOT allowed between high-speed valves.

MAINTENANCE

Phoenix Controls Venturi Valves require no ongoing preventive maintenance. Once the field engineer has completed the field startup, the valves will provide years of continuous operation.

