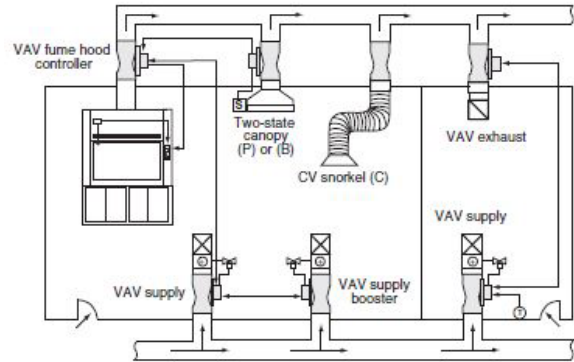


Variable air volume (VAV) control schemes are commonly used for fume hoods, general exhaust, and room supply air. For typical fume hood applications, high-speed (< 1 second speed of response) actuation is required. The Celeris® valve controller interfaces with our Sentry fume hood displays for control and monitoring. Celeris controllers also provide room-level control functions in either standalone or integrated systems.

For Tracking Pair control (non-VAV applications where make-up air control and an interface with the fume hood display are not required) Celeris controllers with low-speed electric actuation offers an economical solution for room-level ventilation, pressurization, temperature and humidity control in either standalone or integrated systems.



FEATURES

FEATURE	Control Type				
	H	I	L	M	N
Actuator type	Low-speed electric	Low-speed electric	Low-speed electric	High-speed electric	Pneumatic*
Response Time	< 1 min	< 1 min**	< 40 sec	< 1 sec	< 1 sec
Flow feedback signal	✓	✓	✓	✓	✓
Fail-Safe	Last Position	Last Position	Last Position	NO/NC/Last Position	NO/NC
Factory-insulated valve body (supply)	✓	✓	✓	✓	✓
Field-adjustable flow	✓	✓	✓	✓	✓
Flow alarm via feedback circuit	✓	✓	✓	✓	✓
Flow alarm via pressure switch	Option	Option	Option	Option***	Option***
Low noise diffuser construction†	†✓	†✓	†✓	†✓	†✓

All valves include a pressure-independent assembly and factory-calibrated position controller.

†Phoenix Controls venturi valves are designed to reduce sound over all frequencies, but significantly target the lower bands (125-500 Hz) to help eliminate the need for silencers.

*Pneumatic actuators are not available on 14-inch valves.

**Except dual 14": 120 seconds.

*** Mandatory for fume hood applications.

OSHPD Certified

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

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 displays, and equipment supplied but not manufactured by Phoenix Controls is covered by a 3 year warranty.

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SPECIFICATIONS

Construction

- 16 ga. spun aluminum valve body with continuous welded seam
- Valve bodies available as uncoated aluminum (Class A) with corrosion-resistant baked phenolic (Class B and C) or with PVDF coatings for more chemical intense applications (Class D)
- Composite Teflon® shaft bearings
- Spring grade stainless steel spring and polyester or 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/ft³ (24.0 kg/m³)

Operating Range

- 32-122 °F (0-50 °C) ambient
- 10-90% non-condensing RH

Performance

- Pressure independent over 0.3"-3.0" WC (75-750 Pa) drop across valve
- Volume control accurate to ±5% of airflow command signal
- No additional straight duct runs needed before or after valve
- Available in flows from 35-5600 CFM (60-9514 m³/hr)
- Response time to change in command signal:
 - < 1 second: Control Type M and N
 - < 40 seconds: Control Type L
 - < 1 minute: Control Type H (*with 60 Hz power*) and I (*except dual 14"*)
 - <= 2 minutes: Control Type I on dual 14"
- Response time to change in duct static pressure: <1 second

Pneumatic Actuation

(Not available with the 14-inch valve)

- 20 psi (-0/+2 psi) with a 20 micron filter main air required
- Compressor sizing: Phoenix Controls Venturi Valves are not continuous air-consuming devices. For compressor sizing, use:
 - single and dual valves: 10 scim
 - triple and quad valves: 20 scim

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 fully-loaded I/O.

Singles/Duals *per valve*

- Low-speed Electric (Control Type H, I, and L): 10 VA
- High-speed Electric: 70 VA
- Pneumatic: 10 VA

I/O

Available for connecting field devices:

- 3 universal inputs. Accepts volt, mA, ohms or NTC 2 or 3 thermistor signals.
- 1 digital input
- 2 analog outputs. Provides volt or mA signals.
- 1 digital output (Type C, 1 amp @ 24 Vac/Vdc)
- Input accuracy: Voltage, current, resistance: ±1% full scale
- Output accuracy
 - 0 to 10 Vdc: ±1% full scale into 10 kΩ minimum
 - 4 to 20 mA: ±1% full scale into 500 Ω +0/-50 Ω

Room-level Communications

FTT-10, 78 KB, bus topology, LonTalk™ network

Building-level Communications

TP-1250, 1.2 MB, bus topology, LonTalk™ network

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

Teflon is a registered trademark of DuPont Company.
LonWorks is a registered trademark of Echelon Corporation.

ORDERING GUIDE

MAVA 1 12 M - A ME H O - SFB REI

VALVE FAMILY

EXV = Celeris exhaust valve
 MAV = Celeris supply valve (comes standard with insulation)

VALVE CONSTRUCTION

A = Body and cone uncoated aluminum; uncoated 316 stainless steel shaft
 B = Body and cone with baked-on phenolic coating; PFA-coated 316 stainless steel shaft
 C = Body and cone with baked-on phenolic coating; hardware with titanium or baked-on epoxy phenolic coating; PFA-coated 316 stainless steel shaft
 D = Body and cone with PVDF coating; hardware with PVDF or baked-on epoxy phenolic coating; PFA-coated 316 stainless steel shaft; *see Note 1*

NUMBER OF VALVE BODIES

F = Single valve body with welded circular flanges
 1 = One valve body no flange
 2 = Two valve bodies as one unit (dual); 10", 12", and 14" valves only

VALVE SIZE

08 = 8" valve (7.88"/200 mm actual diameter),
 10 = 10" valve (9.67"/246 mm actual diameter)
 12 = 12" valve (11.84"/301 mm actual diameter)
 14 = 14" valve (13.88"/353 mm actual diameter)

FLOW/PRESSURE OPERATING RANGE

See *Flow/Pressure Operating Range* table below.
 L = Low pressure operation; pressure independent over a range of 0.3 to 3.0" WC (75 to 750 Pa), associated pressure switch trips at 0.2" WC

VALVE DESIGN

A = Conical-shaped diffuser

VALVE OPTIONS

EVI = Exhaust valve with insulation blocks and insulation
 IBO = Insulation blocks only, no insulation
 PSL = Pressure switch, low limit
 REI = Remote electronics - indoor applications only; *see Note 3*
 REO = Remote electronics - outdoor applications only, for pneumatic actuation only; *see Note 4*
 WRE = Weather resistant electronics - outdoor applications, for electric actuation only; *see Note 5*
 SFB = Square flanges on both ends of bodies = 1
 SFD = Single square flange on discharge of bodies = 1 (supply or exhaust)
 SFI = Single square flange on inlet of bodies = 1 (supply or exhaust)

FAIL-SAFE POSITION

C = Normally closed
 O = Normally opened
 Z = Fails to last position

VALVE ORIENTATION

H = Horizontal
 U = Vertical upflow
 D = Vertical downflow

VALVE CONTROLLER DESIGNATION

E = Electronic controller
 H = Hood exhaust valve with pressure switch; *see Note 2*

CONTROL TYPE

H = Rotary, low-speed electric actuator; NEMA 1; on single 8", 10", and 12" only
 I = Rotary, low-speed electric actuator; IP54
 L = Linear, low-speed electric actuator; IP56
 M = Linear, high-speed electric actuator; IP56
 N = Linear, pneumatic actuator

FLOW/PRESSURE OPERATING RANGE FOR STANDARD VALVE DESIGNS

Designation	Size	Operating Range in CFM (m ³ /hr)		Pressure Drop Across Valve
		Single	Dual	
L = Low Pressure	08"	35-500 (60-845)	—	0.3-3.0" WC (75-750 Pa)
	10"	50-550 (85-930)	100-1100 (170-1860)	
	12"	90-1050 (155-1780)	180-2100 (310-3560)	
	14"	200-1400 (340-2375)	400-2800 (680-4750)	

NOTES:

- Construction D is ONLY available in single-body valves (Number of Bodies = F or 1) WITHOUT square flanges (Options SFB, SFD, or SFI). Rectangular plates can be purchased as special products to field assemble two, three or four single-body round-flanged valves into multi-body configurations. For sizes 08, 10, and 12 only.
- Celeris Hood valves cannot have Low Speed actuators (Control Type = H, I, and L).
- Option REI: Remote Electronics, Indoor installations ONLY. The distance to the valve controller is limited to:
 - 75 feet (22.8 meters) of pneumatic tubing for pneumatic actuators (Control Type = N).
 - 100 feet (30.48 meters) of 18 gauge cable for high-speed electric actuators (Control Type = M).
 - 150 feet (45.7 meters) of 22 gauge cable for low-speed electric actuators (Control Type = H, I, and L).
- Option REO: Remote Electronics, Outdoor installations ONLY. Limited to PNEUMATICALLY actuated valves ONLY (Control Type = N). HORIZONTAL orientation ONLY.
 - Includes sealed Vpot, small weather-resistant NEMA 3R box mounted on base channel for others to connect Vpot cables, and a valve controller in an enclosure that has been disconnected from the base channel and shipped in the same box as the valve.
 - Maximum distance between remote mounted enclosure and valve is 75 feet (22.8 meters) (maximum allowable length of pneumatic tubing).
 - REQUIRES use of a dog house enclosure, provided by others, to protect valve from the elements and maintain temperature and humidity conditions within Phoenix specifications.
- Option WRE: Weather Resistant Electronics, outdoor installations. Applies to ELECTRICALLY actuated valves with sufficient IP ratings only. HORIZONTAL orientation ONLY.
 - Must be ordered with IP54 or IP56 rated actuators: Control Types I or M, or L, respectively.
 - Includes: sealed Vpot and large weather-resistant IP65 box mounted on base channel that houses the controller and all electric connections to/from it.
 - REQUIRES use of a dog house enclosure, provided by others, to protect valve from the elements and maintain temperature and humidity conditions within Phoenix's specifications.