

APPLICATIONS

Airflow Volume Control

Constant volume (CV)—Constant volume controllers (C) are typically used for snorkels, biosafety cabinets, CV fume hoods, ventilated cabinets and outside air regulation.

Two-position—Pneumatic controllers (P) are typically used for canopy hoods and two-position fume hoods. Base upgradable controllers (B) can be substituted when flow feedback is required or upgradability to VAV is desired.

SPECIFICATIONS

Construction

- 16 ga. spun aluminum valve body with continuous welded seam
- Valve bodies available as uncoated aluminum; or with corrosion-resistant baked-on phenolic coating, or with PVDF (Polyvinylidene fluoride) coating
- 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 polyethylene. Flame/smoke rating 25/50. Density is 2.0 lb/ft³ (32.0 kg/m³)

Operating Range

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

Sound

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

Performance

- Pressure independent over a 0.6"-3.0" WC (150-750 Pa) drop across valve
- Volume control accurate to ± 5% of airflow feedback signal
- No additional straight duct runs needed before or after valve
- Available in flows from 35-10,000 CFM (60-16,990 m³/hr)
- Response time to change in duct static pressure: <1 second

Pneumatic Actuation

- Only applicable to PEV, PSV and BEV/BSV
- 20 psi (-0/+2 psi) with a 20 micron filter main air required
- Compressor sizing: Accel II Valves are not continuous air-consuming devices. For compressor sizing, use:
 - single and dual valves: 10 scim
 - triple and quad valves: 20 scim

Flow Feedback Card

Mounting

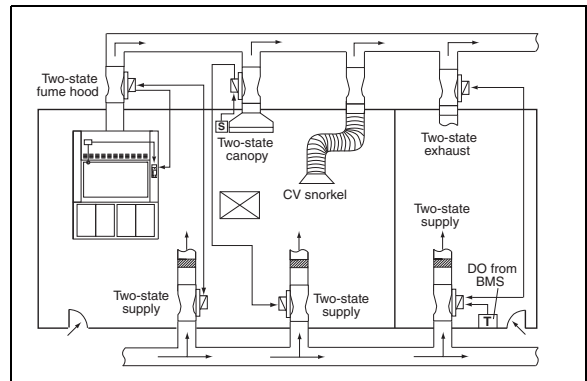
The flow feedback card is factory installed in a PPC flame retardant black box enclosure.

Enclosure

Dimensions: 6 x 3.2 x 1.9 inches
Color: Black

Power

±15 Vdc, ± 15%, 35 mA
Or
24 Vac, ± 15%, 50/60 Hz, 1.5 VA



FEATURES

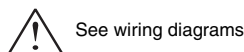
FEATURE/OPTION	CONSTANT VOLUME (CV)	TWO-POSITION (PEV/PSV)	UPGRADABLE (BEV/BSV)
Control type	C Constant Volume	P Pneumatic	B Base Upgradable
Actuator type	—	Pneumatic	Pneumatic or CV
Flow feedback signal	—	—	Option*
Failsafe	Fixed	NO/NC	NO/NC**
Factory-insulated valve body (supply)	Option	✓	✓
Field-adjustable flow	✓	✓	✓
Flow alarm via feedback circuit	—	—	—
Flow alarm via pressure switch	Option	Option	Option
Low noise diffuser construction†	✓	✓	✓

All valves include pressure-independent controller.

†Accel II 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.

* Not available with the 14-inch valve at this time.

** Fixed fail-safe for CV actuation.



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ORDERING GUIDE

BSV A 1 1 0 M - A B F H C - P - - - - -

VALVE FAMILY

CVV = Constant volume valve (see note 1)
 PEV = Pneumatic exhaust valve (see notes 6-7)
 PSV = Pneumatic supply valve (see notes 6-7)
 BEV = Basic electronic exhaust valve (see notes 6-7)
 BSV = Base electronic supply valve (see notes 6-7)

VALVE CONSTRUCTION

A = Body and cone—uncoated aluminum; Shaft—uncoated 316 stainless steel
 B = Body and cone with baked phenolic coating, Teflon coated stainless steel shaft (for standard fume hood applications)
 C = Body, cone and hardware with baked phenolic coating, PFA coated stainless steel shaft (for highly corrosive fume hood applications)
 D = Body, cone and hardware with PVDF coating, with PFA coated 316 stainless steel shaft (for highly corrosive fume hood applications) (see note 8)
 S = Special coating and/or components

NUMBER OF VALVE BODIES

F = One valve body with welded circular flange (single flanged)
 1 = One valve body (single, no flange)
 2 = Two valve bodies (dual)
 3 = Three valve bodies (triple)
 4 = Four valve bodies (quad)

VALVE SIZE

08 = 8" valve (7.88"/200 mm actual diameter)
 10 = 10" valve (9.88"/251 mm actual diameter)
 12 = 12" valve (11.88"/302 mm actual diameter)
 14 = 14" valve (13.88"/352 mm actual diameter) (see notes 6-7)

FLOW/PRESSURE OPERATING RANGE

Designation	Size	Operating Range in CFM (m ³ /hr)				Pressure Drop Across Valve
		Single	Dual	Triple	Quad	
M = Medium pressure	08"	35-700 (60-1175)	—	—	—	0.6-3.0" WC (150-750 Pa)
	10"	50-1000 (85-1700)	100-2000 (170-3350)	—	—	
	12"	90-1500 (153-2500)	180-3000 (300-5000)	270-4500 (450-7500)	360-6000 (600-10,000)	
	14"	200-2500 (339-4247)	400-5000 (680-8495)	600-7500 (1019-12,743)	800-10,000 (1359-16,990)	

VALVE OPTIONS
 (As required; list alphabetically, then numerically)

B = Two single square flanges mounted on both ends of single body valves
F = One single square flange mounted on inlet of single body exhaust valves or discharge of single body supply valves
H = High wattage 24 Vdc solenoid valve, controlled by FHMS30 monitor (BxV/PxV/"S" analog only)
I = High wattage 24 Vac solenoid valve, controlled by non-Phoenix device (BxV/PxV/"S" analog only)
L = Low wattage 24 Vdc solenoid valve (BxV/PxV only)
P = Pressure switch (see note 2)
O = Power supply, valve-mounted, 120 V (see notes 3-4)
R = Remote electronics
T = Power supply, valve-mounted, 230 V (see notes 3-4)
01-99 = Denotes factory-assigned special

FAIL-SAFE POSITION
Exhaust Valves
O = Normally open exhaust valve
E = Normally closed exhaust valve
X = Fixed flow exhaust valve
Supply Valves (provided with insulation)
C = Normally closed supply valve
S = Normally open supply valve
F = Fixed flow supply valve

VALVE ORIENTATION
H = Horizontal
U = Vertical upflow
D = Vertical downflow

VALVE CONTROLLER DESIGNATION
N = No electronics
F = Flow feedback (BEV, BSV only) (see notes 5, 7)
G = Two-state controller, flow feedback and high wattage 24 Vdc solenoid valve
T = Two-state controller and high wattage 24 Vdc solenoid valve

CONTROL TYPE
C = Constant volume
P = Pneumatic (see note 6)
B = Base upgradable/pneumatic (see note 6)
F = Fixed, field adjustable - BEV, BSV only (see note 6)

VALVE DESIGN
A = Conical shape diffuser (Accel II)

NOTES:

- Accel II upgrades (AUG) are available to convert a BEV/BSV into a fully electronic, analog or digital valve.
- Pressure switch set point = 0.3" WC (75 Pa).
- Valve-mounted power supplies not available with CVV valves.
- A pneumatic actuator is not supplied with the FF option (fixed field adjustable with flow feedback).
- Not available in the 14" valve size.
- 14" PxV and BxV are only available as a single valve with a pneumatic actuator.
- 14" Valves are not available with the flow feedback option at this time.
- Class D valves are only available in single body valves (F or 1) without square flanges and only offered in sizes 8, 10, 12 and 14-inch valve bodies.

VALVE CONTROLLERS AND DESIGNATIONS

Valve Controller Designation

Flow feedback (F)—Includes a circuit board installed on a Base series control valve to provide a 0-10 Vdc feedback signal scaled to indicate airflow. (NOTE: This option is not available for the 14-inch valve at this time.)

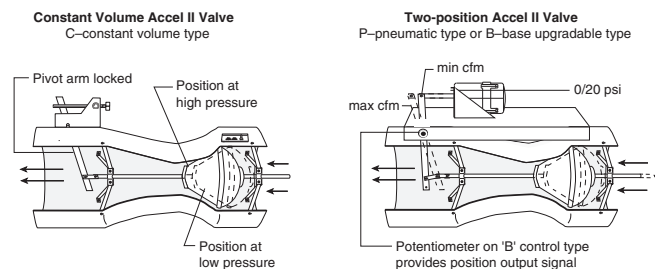
Valve Options (components added to enhance a valve's functions)

Single square flange (F)—Provides a single connection from a round single body valve to a square duct. On the inlet of single body exhaust valves; discharge of single body supply valves. Typically used in Neutralizer™ applications.

Solenoid valves (H, I, L)—Installed on a two-position valve to pneumatically switch the valve between maximum and minimum flows.

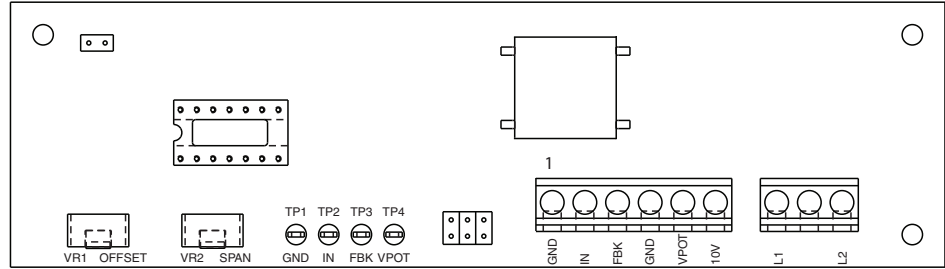
Pressure switch (P)—Detects low static pressure across the valve. Installed on non-hood exhaust valves to provide low static pressure alarm monitoring.

Power supply (O, T)—Valve-mounted power supply provides +15 Vdc, -15 Vdc power to Phoenix Controls base upgradable valves with flow feedback.



WIRING

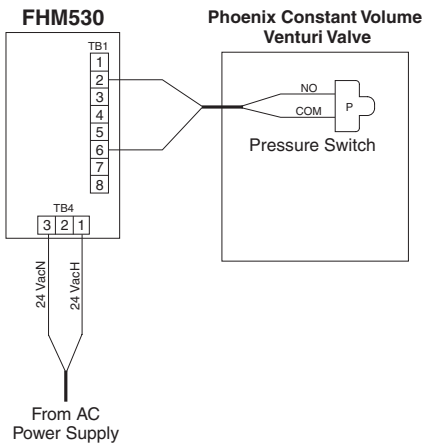
Flow Feedback Option



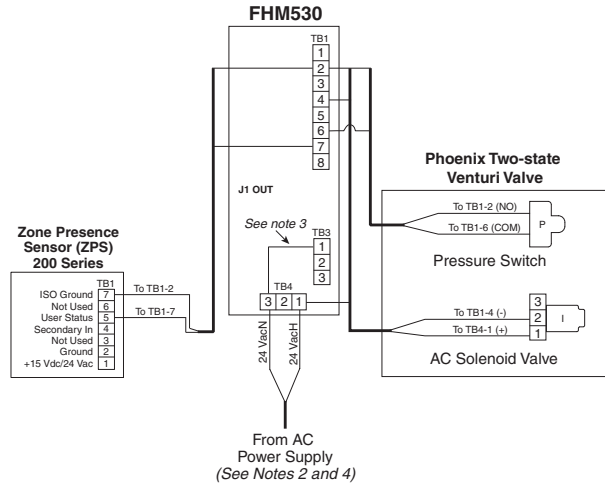
Typical Wiring Diagrams

(see Note 1.)

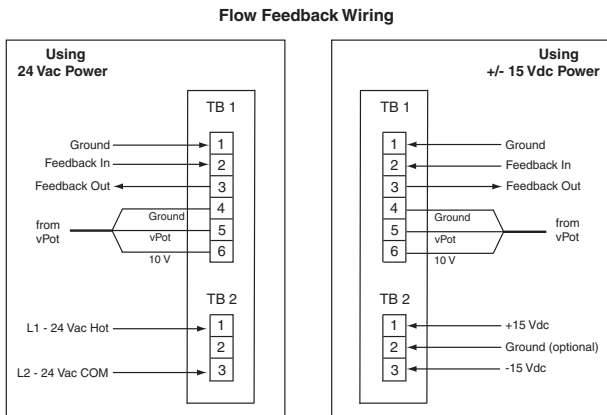
Hood Applications: Constant Volume



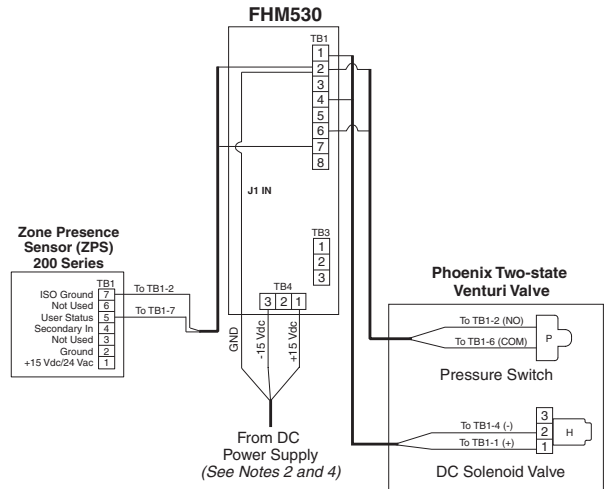
Hood Applications: Two-State with AC Solenoid



Flow Feedback Wiring (24 Vac and +/- 15 Vdc)



Hood Applications: Two-State with DC Solenoid



Notes:



1. See *Phoenix Recommend Cables* for more wiring information.
2. Fume hood monitor enclosure must be earth grounded via the mounting hole ground straps.
3. For AC-powered solenoid, two-position applications, you must install a field jumper between TB3-1 and TB4-3 (not required for DC-powered solenoids).
4. AC solenoids require the fume hood monitor to have AC power. DC solenoids require the fume hood monitor to have DC power.