

SERIES AP 74 B

FLOW SWITCH FOR HIGH FLOW

Excess Flow Switch (EFS) for Bulk Specialty Gas Systems (BSGS)

- Bypass design utilizing standard AP 74 flow switch. Switch resides in bypass leg with a mainline orifice between the legs to create a pressure drop for tripping.
- Available with horizontal or vertical main line.
- Main line 1/2" or 3/4" size, tube stub or face seal.
- Seven reference trip points:
 - 225, 350, 500 & 950 slpm N₂ for 1/2 inch main line
 - 1100, 1650 & 2600 slpm N₂ for 3/4 inch main line (trip points nominal at 100 psig [7 bar])
- Minimal pressure drop through device.
- Sizing formula based upon simple calculations (see reverse side).
- Pressure rating:
 - 1/2 inch – vac to 3500 psig (241 bar)
 - 3/4 inch – vac to 2400 psig (163 bar)

Operating Parameters

Source pressure	1/2 inch	vacuum to 3,500 psig (241 bar)
	3/4 inch	vacuum to 2,400 psig (163 bar)
Flow trip reference points*	1/2 inch	225, 350, 500 & 950 slpm N ₂
	3/4 inch	1100, 1650 & 2600 slpm N ₂
Accuracy	± 20% of trip point	
Pressure drop at trip point	1/2 psi (0.035 bar) differential	
Proof pressure	1.5 times source pressure rating	
Burst pressure	4 times source pressure rating	

* @ 100 psig (7 bar)

Other Parameters

Inlet/outlet connectors	1/2 or 3/4 inch face seal or tube weld
Operating temperature	-10° to +175°F (-23° to +80°C)
Surface finish	10 µin. (0.25 µm) Ra max standard
Inboard/outboard leakage	2 x 10 ⁻¹⁰ sccs

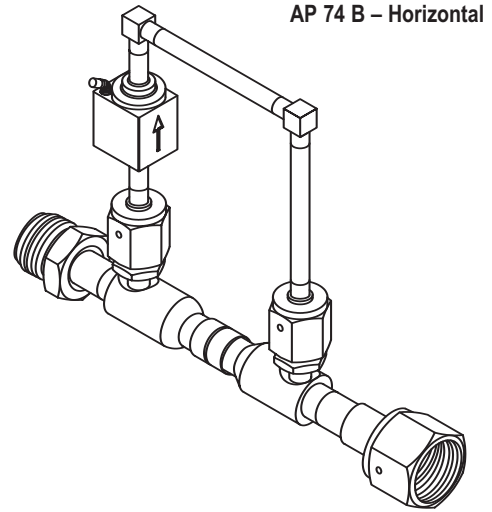
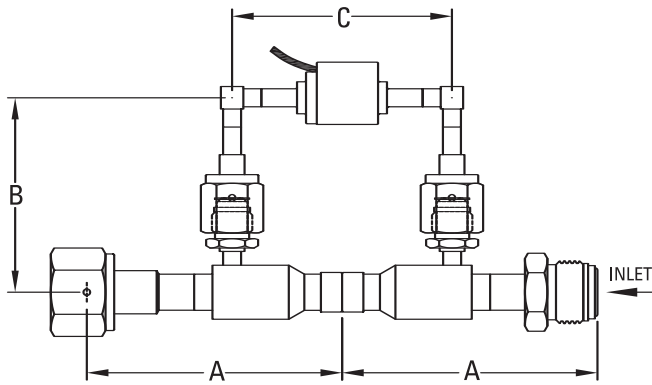
Materials

Wetted Parts	
Body and Float	SS 316L
Face seal gaskets	nickel 200
Finish	electropolished and passivated
Reed Switch	
Type	SPDT, 3 wire / 2 position
Power	30 VDC / 3 W max
Switching current	0.2 A max
Carrying current	0.5 A max
Initial contact resistance	0.1 Ohm max
Cable	
Wire gauge	Stranded #24 awg, PVC jacket
Cable length	10 ft (3 meters)
Lead Color	Blue: common Brown: normally closed Black: normally open

All specifications subject to change without notice.

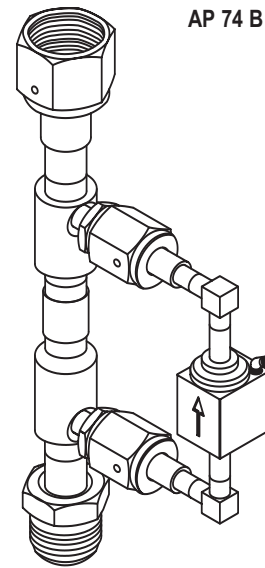
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DIMENSIONAL INFORMATION



AP 74 B – Horizontal

Connection Type	Dimension							
	A		B				C	
	inch	mm	Horizontal		Vertical		inch	mm
FV8, MV8	3.55	90.1	4.55	115.6	2.70	68.9	3.05	77.5
TW8	2.59	65.8	4.55	115.6	2.70	68.9	3.05	77.5
FV12, MV12	5.51	140.0	5.44	138.2	3.59	91.2	3.05	77.5
TW12	3.53	89.6	5.44	138.2	3.59	91.2	3.05	77.5



AP 74 B – Vertical

SIZING FORMULA

Correcting Trip Point for Other Pressures

To obtain the nominal trip point for operating pressures other than 100 psig, multiply the nominal trip point by the pressure correction factor (F_p).

$$F_p = \sqrt{\frac{OP}{114.7}}$$

Where OP is the operating pressure in psia.

Correcting Trip Point for Other Gases

To obtain the nominal trip point in process gases other than nitrogen, multiply the nominal trip point in nitrogen by the gas correction factor (F_G).

$$F_G = \sqrt{\frac{28}{MW}}$$

Where MW is the molecular weight of the process gas.

All dimensions in inches (mm).

ORDERING INFORMATION

Sample Order Number		AP 74 B V 500 SM FV8 MV8		
AP 74 B Series	AP 74 B		S Material	S = Stainless steel (SS)
V Position	H = Horizontal V = Vertical		M Surface Finish	M = 10 µin. Ra max standard
500 Switch Size	1/2 inch size only 225 = 225 slpm 350 = 350 slpm 500 = 500 slpm 950 = 950 slpm 3/4 inch size only 1100 = 1100 slpm 1650 = 1650 slpm 2600 = 2600 slpm		FV8 MV8 Connections Inlet / Outlet	1/2 inch connections for 1/2 inch switch sizes FV8 = 1/2 inch face seal female MV8 = 1/2 inch face seal male TW8 = 1/2 inch tube stub weld 3/4 inch connections for 3/4 inch switch sizes FV12 = 3/4 inch face seal female MV12 = 3/4 inch face seal male TW12 = 3/4 inch tube stub weld