



# SERIES AP 14PAT

## TIED DIAPHRAGM REGULATOR

### PNEUMATIC ACTUATION

Intermediate to high flow applications

- Actuation control pressure isolated from process gas
- Single stage
- Stainless steel 316L VAR secondary remelt construction
- 100 psig outlet achieved with 80 psig control pressure or less
- Cylinder or point of use specialty and bulk gases
- Flow rates to 400 slpm
- Vacuum to 2,300 psig (159 bar) inlet  
HR option to 3,000 psig (207 bar)
- Actuator 'fail safe' normally closed (NC)
- Installation and operating instructions available at [www.aptech-online.com](http://www.aptech-online.com) in the Tech Briefs section

### Operating Parameters

Source pressure	AP 14PAT	vacuum to 2,300 psig (159 bar)
	AP 14PATA	vacuum to 300 psig (21 bar)
	AP 14PAT HR	vacuum to 3,000 psig (207 bar)*
Delivery pressure	AP 14PAT	7 to 150 psig (0.5 to 10 bar)
	AP 14PATA	100 mm Hg to 30 psig (2 bar)
Proof pressure		150% of operating pressures
Burst pressure		300% of operating pressures
Control pressure		150 psig (10 bar) maximum

\*HR option will not achieve rated outlet pressure at all inlet pressures.

### Other Parameters

Inlet/outlet connectors	1/4, 3/8 or 1/2 inch face seal or tube weld
Bonnet vent port	1/8 inch NPT
Control pressure port	1/8 inch NPT
Flow coefficient (Cv)***	0.45
Internal volume	1.06 in <sup>3</sup> (17.4 cm <sup>3</sup> )
Operating temperature	-40° to +160°F (-40° to +71°C)**
Surface finish	15 µin Ra max / 10 µin. Ra avg. (0.4/0.25 µm) standard; 10 µin (0.25 µm); 7 µin (0.18 µm); and 5 µin (0.13 µm) Ra max optional Optional surface finishes meet or exceed 5 µin Ra average
Inboard leakage	2 x 10 <sup>-10</sup> sccs
Outboard leakage	2 x 10 <sup>-9</sup> sccs He at 1,500 psig inlet pressure
Leakage across seat	4 x 10 <sup>-8</sup> sccs He at 1,000 psig inlet pressure
Installation	surface
Supply pressure effect	1.6 psig per 100 psig source pressure change

\*\*VS option 14° to 194°F (-10° to + 90°C).

\*\*\*A pressure regulator Cv is a nominal value which indicates the point of choked flow. Please refer to a flow curve or a recommendation guide for usable flow range.

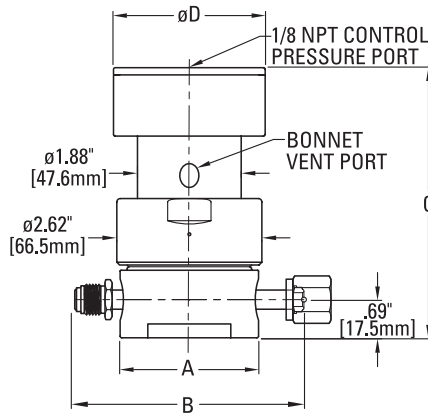
### Materials

Type of Service	Series AP 14PAT S Corrosive	Series AP 14PAT SH Corrosive
Wetted Parts		
Body	SS 316L secondary remelt	SS 316L secondary remelt
Poppet and diaphragm	Ni-Cr-Mo alloy / UNS N06022	Ni-Cr-Mo alloy / UNS N06022
Nozzle	SS 316L	Ni-Cr-Mo alloy / UNS N06022
Finish	electropolished and passivated	electropolished and passivated
Seat	PCTFE (Polyimide optional)	PCTFE

All specifications subject to change without notice.

# ULTRACLEAN BY DESIGN

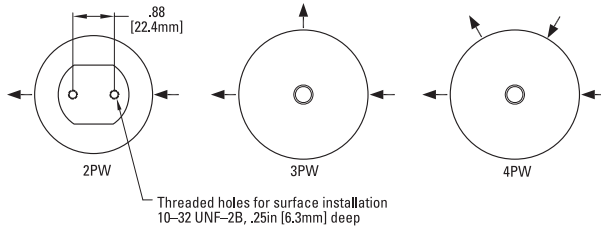
## DIMENSIONAL INFORMATION



FACE SEAL	A		B	
	inch	mm	inch	mm
1/4" Male	2.00	51	4.00±.02	102
1/4" Female	2.00	51	3.70±.02	94
3/8", 1/2"	2.50	64	5.22±.04	133
	C		D	
14PA	4.9MAX	124	2.74	69.6
14PATA	4.7MAX	119	1.87	47.5

All dimensions in inches (mm). Metric dimensions are for reference only.  
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## PORTING CONFIGURATIONS

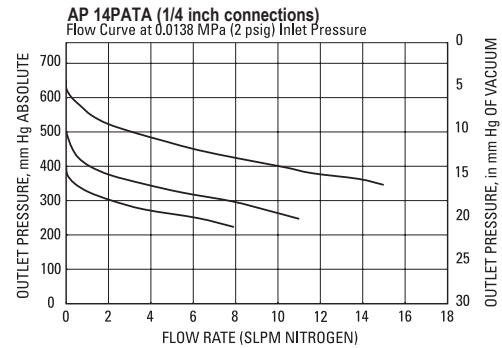
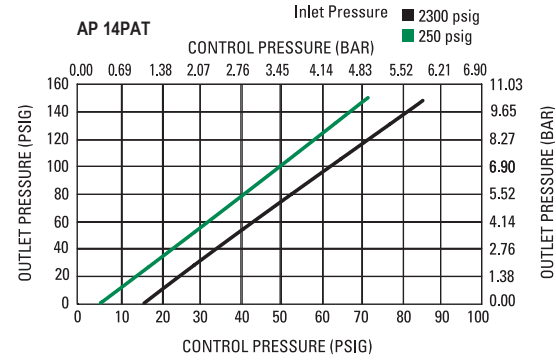
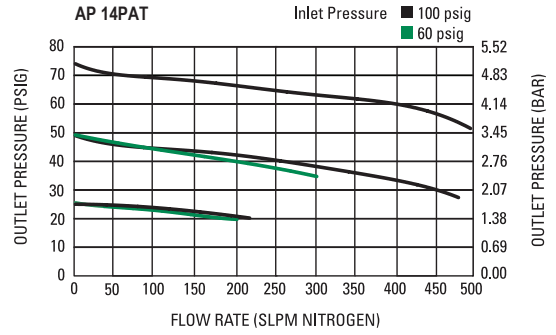


**CAUTION:** Product selection is the sole responsibility of the user, regardless of any recommendations or suggestions made by the factory. The user shall make selections based upon their own analysis and testing with regard to function, material compatibility and product ratings. Proper installation, operation and maintenance are also required to assure safe, trouble free performance.

## ORDERING INFORMATION

Sample Order Number	AP 14PATSM 3PW FV4 FV4 V3
<b>AP 14PAT   Series</b>	AP 14PAT = 5-150 psig (.5 to 10 bar)
<b>S   Material</b>	S = Stainless steel (SHP)* SH = SS/Ni-Cr-Mo alloy internals
<small>*S equivalent to SHP – stainless steel with Ni-Cr-Mo alloy poppet and diaphragm</small>	
<b>M   Surface Finish Options</b>	M = 10 µin. Ra max V = 7 µin. Ra max X = 5 µin. Ra max
<b>A   Range Options</b>	A = 100mm Hg absolute to 30 psig (2 bar)
<b>3PW   Ports</b>	2PW = 2 ports butt weld face seal 3PW = 3 ports butt weld face seal 4PW = 4 ports butt weld face seal

AP Tech has product options and variations which are not documented in data sheets. If you have a model number that is not defined by the ordering information, please consult the factory or your local representative.



### V3 | Gauges Source / Delivery

Standard gauge ports are 1/4 inch face seal male.

(1/4 inch face seal female are available).

### Options

\*\*Full rated outlet pressure may not be achieved at all inlet pressures.

- FV4 = 1/4 inch face seal female
- MV4 = 1/4 inch face seal male
- FV6 = 3/8 inch face seal female
- MV6 = 3/8 inch face seal male
- FV8 = 1/2 inch face seal female
- MV8 = 1/2 inch face seal male

Tube weld stub available

- 0 = No gauge
- V3 = 30-0-30 psig/bar
- L = 30-0-60 psig/bar
- 1 = 30-0-100 psig/bar
- 2 = 0-200 psig/bar
- 4 = 0-400 psig/bar
- 10 = 0-1000 psig/bar
- 40 = 0-4000 psig/bar

- VS = Polyimide seat
- HR = High inlet pressure\*\*
- SC = Short bonnet