



ADVANCED PRESSURE TECHNOLOGY

SERIES AK 14PAT TIED DIAPHRAGM REGULATOR PNEUMATIC ACTUATION



- ◆ **Flow capacity***
200 sccm to 400 slpm
- ◆ **Actuation control pressure isolated from process gas**
- ◆ **Vacuum to 2,300 psig (159 bar) inlet, 7 (0.5 bar) to 150 psig (10 bar) outlet**
- ◆ **Stainless Steel or Brass construction**
- ◆ **Poppet attached to diaphragm (tied diaphragm) improves positive shut off across the seat**
- ◆ **Machined from bar stock**
- ◆ **100 psig outlet achieved with 80 psig control pressure or less**
- ◆ **Hastelloy® C-22 Internals, 'SH' option, for added corrosion resistance**
- ◆ **Cleaned for O2 service**
- ◆ **Field repairable**
- ◆ **Actuation 'fail safe' normally closed (NC)**
- ◆ **Installation and operating instructions available at www.aptech-online.com in the Tech Briefs section**

ENGINEERING DATA

Operating Parameters

Source pressure	vacuum to 2,300 psig (159 bar) HR option vacuum to 3,000 psig (207 bar)***
Delivery pressure	7 to 150 psig (0.5 to 10 bar)
Proof pressure	4,000 psig (276 bar); HR 4,500 psig (310 bar)
Burst pressure	8,000 psig (552 bar); HR 9,000 psig (620 bar)
Control pressure	150 psig (10 bar) maximum

Other Parameters

Inlet /outlet ports	1/4", 3/8" and 1/2" NPT and compression (optional porting available)
Control pressure port	1/8 inch NPT
Bonnet vent port	1/8 inch NPT
Flow coefficient, Cv	0.45
Internal volume	1.14 in ³ (18.7 cm ³)
Operating temperature	-40 to +160F (-40 to +71C)
Leak rate	1 x 10 ⁻⁹ sccs
Delivery pressure rise	1.6 psig per 100 psig source pressure drop

MATERIALS OF CONSTRUCTION

	AK 14PATB
Body	brass
Diaphragm	Hastelloy C-22
Nozzle	SS 316
Poppet	Hastelloy C-22
Seat	PCTFE**

	AK 14PATS
	SS 316
	Hastelloy C-22
	SS 316
	Hastelloy C-22
	PCTFE**

	AK 14PATSH
	SS 316
	Hastelloy C-22
	Hastelloy C-22
	Hastelloy C-22
	PCTFE

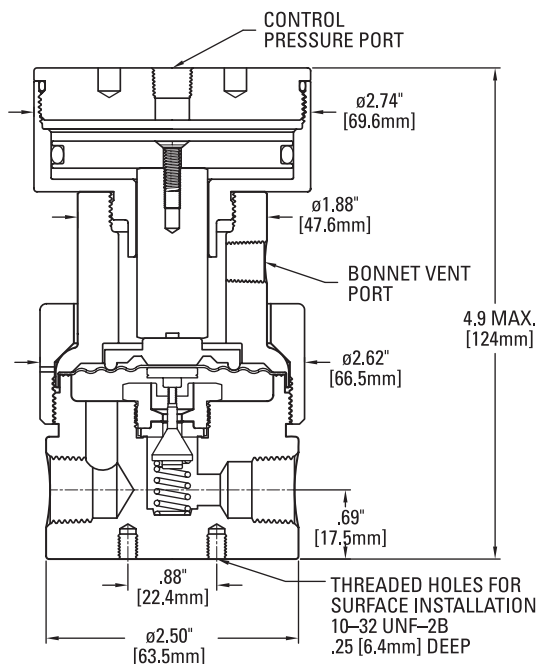
* Flow rating based upon N2 @ 100 psig inlet, varying gas type and, or inlet/outlet pressures may effect rating.

** Optional seat materials available, Vespel®.

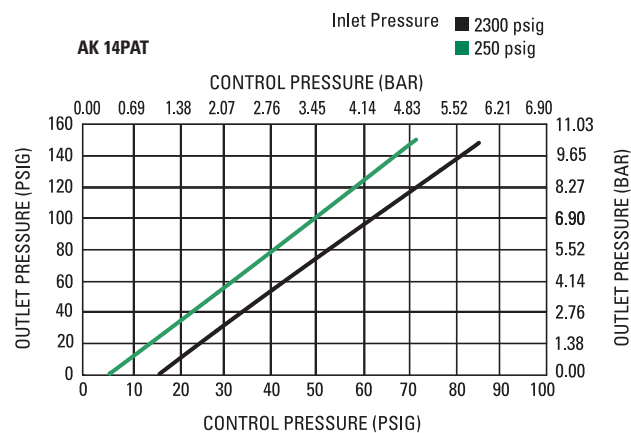
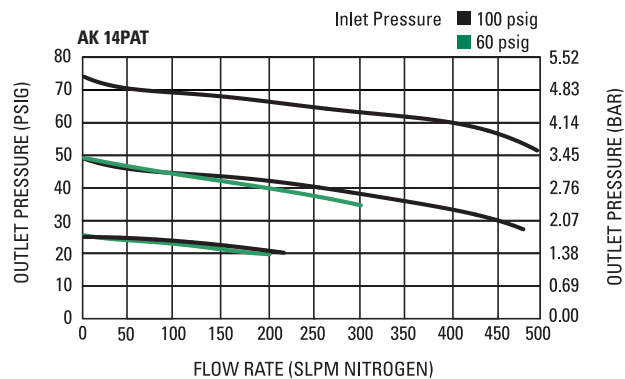
*** HR option may not achieve rated outlet pressure at all inlet pressures.

All specifications subject to change without notice.
Hastelloy C-22® Haynes
Vespel® DuPont

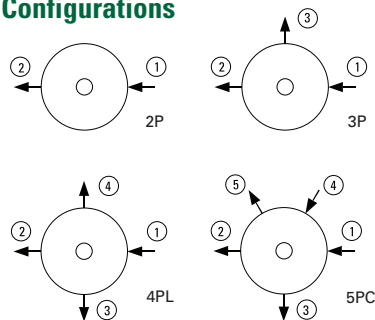
UNCOMPROMISING QUALITY, RELIABILITY & PERFORMANCE FROM A COMPANY KNOWN FOR SERVICE



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



Porting Configurations



NOTE: Not all porting configurations available in brass or every connection size.
Ports, other than 1 & 2, are only available 1/4 inch NPT.

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

AK 14PAT Series	S Material	3P Ports	6 6 ① ② Connections Inlet / Outlet	1 ③ ④ ⑤ Ports (Gauge/Accessory)	Options
AK 14PAT = 7-150 psig (0.5 to 10 bar)		2P = 2 Ports 3P = 3 Ports 4PL = 4 Ports 5PC = 5 Ports	4 = 1/4 inch NPT 6 = 3/8 inch NPT 8 = 1/2 inch NPT 4T = 1/4 inch comp. 6T = 3/8 inch comp. 8T = 1/2 inch comp.	0 = No gauge V3 = 30-0-30 psig/bar 1 = 30-0-100 psig/bar 2 = 0-200 psig/bar 10 = 0-1000 psig/bar 40 = 0-4000 psig/bar	VS = Vespel seat HR = High inlet pressure*
S = Stainless steel (SS) SH = SS with Hastelloy internals B = Brass					*Full rated outlet pressure may not be achieved at all inlet pressures.

NOTE: Designators required for all ports, but "0" not required if there isn't a port. A 2P has designators only for 1 & 2 ports, as example AK 14PAT S 2P 44 not AK 14PAT S 2P 44 000.