



ADVANCED PRESSURE TECHNOLOGY

## SERIES AK 1000

### SINGLE STAGE PRESSURE REGULATOR

QUALITY, RELIABILITY AND PERFORMANCE

- ◆ Vacuum to 3,500 psig (241 bar) inlet, 500 psig (35 bar) outlet
- ◆ Flow capacity\*  
0 to 100 slpm (0 to 3.5 scfm) HF Option
- ◆ Stainless Steel or Brass construction
- ◆ Hastelloy® C-22® Internals, 'SH' option, for added corrosion resistance
- ◆ High leak integrity
- ◆ Machined from bar stock
- ◆ Optional accessories
- ◆ Fine adjustment control  
(six turns of the knob from off to wide open)
- ◆ Cleaned for O2 service
- ◆ Field repairable
- ◆ Diffusion resistant Stainless Steel diaphragm
- ◆ Installation and operating instructions available at [www.aptech-online.com](http://www.aptech-online.com) in the Tech Briefs section



#### ENGINEERING DATA

##### Operating Parameters

Source pressure	vacuum to 3,500 psig (241 bar) (AK1001, 300 psig [21 bar] max)
Delivery pressure	0.5 to 10 psig (0.03 to 0.7 bar) AK 1001 1 to 30 psig (0.07 to 2 bar) AK 1002 2 to 100 psig (0.14 to 7 bar) AK 1010 5 to 200 psig (0.3 to 14 bar) AK 1020 5 to 300 psig (0.3 to 21 bar) AK 1030 **10 to 500 psig (0.7 to 35 bar) AK 1050
Proof pressure	4,500 psig (307 bar)
Burst pressure	10,000 psig (690 bar)

##### Other Parameters

Inlet /outlet ports	1/4" NPT; 1/4" & 3/8" compression (optional porting available)
Flow coefficient, Cv	0.09 (HF option 0.15)
Internal volume	0.49 in <sup>3</sup> (8 cm <sup>3</sup> )
Operating temperature	-40 to +160F (-40 to +71C)***
Leak rate	1 x 10 <sup>-9</sup> sccs
Delivery pressure rise	0.25 psig per 100 psig source pressure drop (HF 0.75 psi per 100 psig)

#### MATERIALS OF CONSTRUCTION

	AK 1000B	AK 1000S	AK 1000SH
Body	brass	SS 316	SS 316
Poppet and diaphragm	SS 316	SS 316	Hastelloy C-22
Seat	PCTFE (Vespel® and PEEK Opt)	PCTFE (Vespel and PEEK Opt)	PCTFE (PEEK Opt)
Bonnet	SS 303	SS 303	SS 303

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

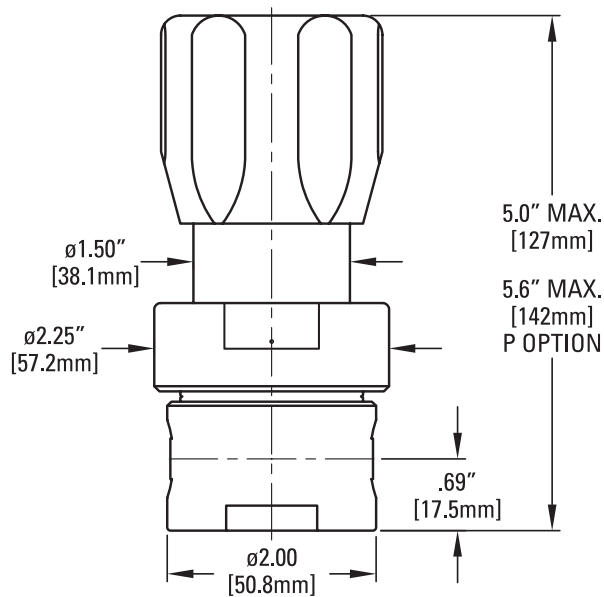
\*\* AK 1050 and panel mount height dimension different

\*\*\* Optional temperature ranges available. Please contact factory.

All specifications subject to change without notice.

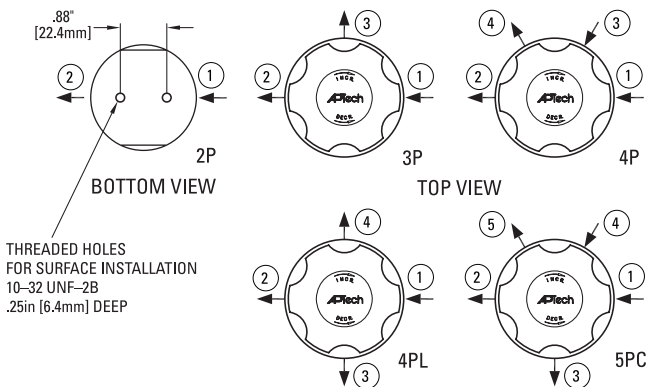
Hastelloy® C-22® Haynes Corporation

Vespel® DuPont



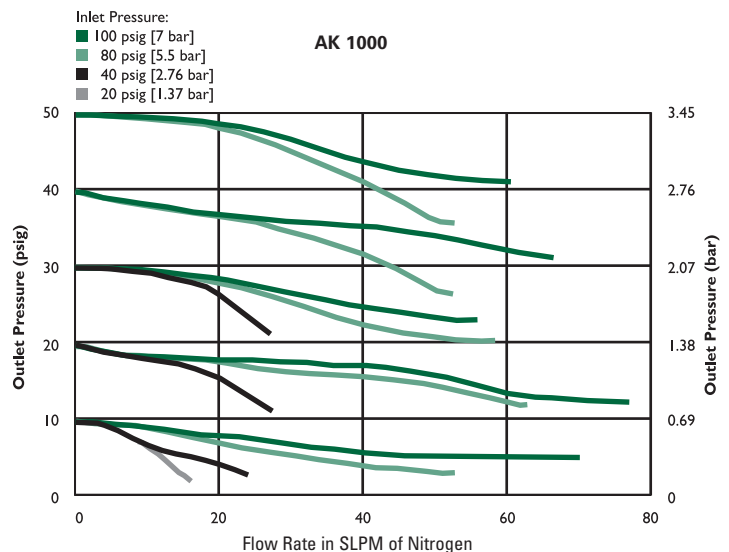
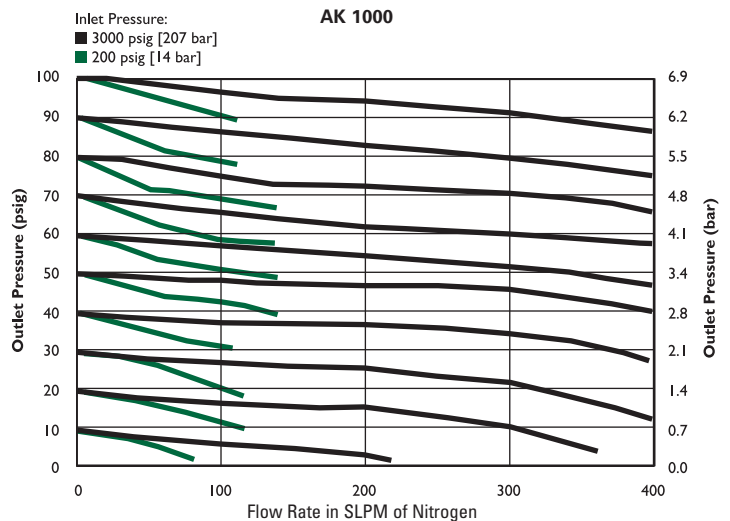
All dimensions in inches (mm).  
Metric dimensions are for reference only.

## Porting Configurations



**NOTE:** Not all porting configurations available in brass.

**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 1002 Series	S Material	3P Port Configuration	4 4 ① ② Ports	0 ③ ④ ⑤ Ports (Gauge/Accessory)	P Options
AK 1001= 0.5-10 psig (.03 to .7 bar) AK 1002= 1-30 psig (.07 to 2 bar) AK 1010= 2-100 psig (.14 to 7 bar) AK 1020= 5-200 psig (.3 to 14 bar) AK 1030= 5-300 psig (.3 to 21 bar) AK 1050= 10-500 psig (.7 to 35 bar)		2P = 2 Ports 3P = 3 Ports 4PL = 4 Ports 5PC = 5 Ports	4 = 1/4 inch NPT 4T = 1/4 inch compression 6T = 3/8 inch compression	0 = No gauge or device installed 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	P = Panel installation* CGA = Inlet fitting 320, 330, 350, 580, 660, 678 VS = Vespel seat PK = PEEK seat HF = High flow
S = Stainless steel (SS) SH = SS with Hastelloy internals B = Brass			<b>NOTE:</b> 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 1010 S 2P 44 not AK 1010 S 2P 44 000.		

\*Panel hole 1.42 diameter