



ADVANCED PRESSURE TECHNOLOGY

# PRESSURE REGULATORS FOR BIOTECH & PHARMACEUTICAL

Sanitary flange and tube stub connections

## TECHNICAL BULLETIN 209

TABLE 1. REGULATOR SELECTION MATRIX

Regulator Series	Inlet Pressure Sanitary* / Tube Stub	Outlet Pressure	Port Size	Cv** Flow Capacity
AZ 1000	300 psig* / 3,500 psig (21 bar / 241 bar)	30, 100, 150 & 300 psig (2, 7, 10 & 21 bar)	1/4 & 3/8 inch	0.09** 30 slpm (0.15 Cv & 120 slpm HF opt)
AZ 1200	300 psig* / 1,700 psig (21 bar / 117 bar)	30, 100 & 150*** psig (2, 7 & 10 bar)	1/4, 3/8 & 1/2 inch	0.9** 800 slpm (1.1 Cv & 1,000 slpm HF opt)
AP 9100	300 psig* / 800 psig (21 bar / 55 bar)	100 & 150*** psig (7 & 10 bar)	3/4 & 1 inch	4.0** 5,000 slpm

\* Pressure rating for sanitary fitting is dependent upon fitting and seal selection. The rated pressures are only a general guideline.  
 \*\* Flow curves are the preferred means of regulator sizing as not all manufacturers calculate Cv in the same way which makes comparison impossible. Please refer to individual data sheets or the Tech Brief section of [www.aptech-online.com](http://www.aptech-online.com) to review flow curves.  
 \*\*\* Inlet pressure reduced at this outlet pressure option.

TABLE 2. SANITARY FITTING DIMENSIONS

**AZ 1000**

Dimensions:  $\phi 1.50$  [38mm],  $\phi 2.25$  [57mm],  $\phi 3.7$  [9mm], 5.00 MAX. [127mm],  $\phi 2.00$  [51mm],  $\phi 1.00$  [25mm], 4.13±.08 [105mm], .69 [18mm], .88 [22mm].  
 10-32 UNF-2B 2 MOUNTING HOLES

**AZ 1200**

Dimensions:  $\phi 1.50$  [38mm],  $\phi 2.62$  [66mm], 6.00 MAX. [152mm], .69 [18mm],  $\phi 2.50$  [64mm], B, .88 [22mm].  
 10-32 UNF-2B 2 MOUNTING HOLES

Sanitary Ferrule Size	D1	D2	B	
	in	in	in[±.08]	mm*
SF8	0.50	1.0	4.57	116
SF12	0.75	1.0	4.51	115
SF16	0.75	2.0	4.51	115

**AP 9100**

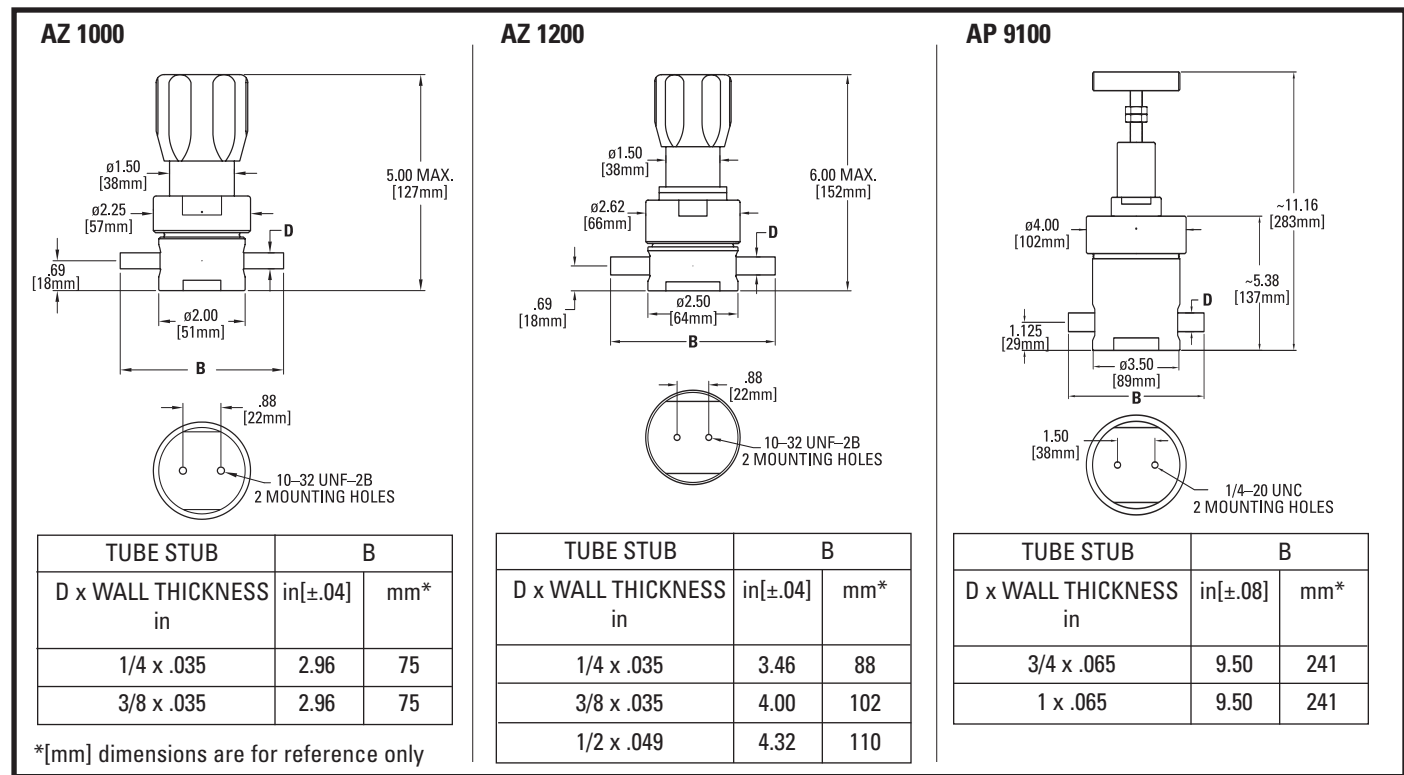
Dimensions:  $\phi 4.00$  [102mm], ~11.16 [283mm], ~5.38 [137mm], 1.125 [29mm],  $\phi 3.50$  [89mm], B, 1.50 [38mm].  
 10-32 UNF-2B 2 MOUNTING HOLES

Sanitary Ferrule Size	D1	D2	B	
	in	in	in[±.08]	mm*
SF12	0.75	1.0	5.53	140
SF16	1.0	2.0	5.45	138

\*[mm] dimensions are for reference only

All specifications subject to change without notice.

**TABLE 3. TUBE WELD STUB DIMENSIONS**



**TABLE 4. MATERIAL**

Body and Nozzle	316L stainless steel
Diaphragm, AZ 1000	316L stainless steel
AZ 1200	Hastelloy® C-22®
Bellows, AP 9000	Hastelloy C-22
Seat	PCTFE (Vespel® optional)
Surface Finish	10 $\mu$ in. (0.25 $\mu$ m) Ra avg
Surface Treatment	Electropolished and passivated
Surface Cleaning	Cleaned for O <sub>2</sub> service

**TABLE 5. ORDERING INFORMATION**

AZ 1010 Series	S Material	2PW Ports	SF6 SF6 Connections Inlet / Outlet	VS Options
<b>Series AZ 1010</b> AZ 1002 = 1 to 30 psig (.07 to 2 bar) AZ 1010 = 2 to 100 psig (.14 to 7 bar) AZ 1015 = 5 to 150 psig (.3 to 10 bar) AZ 1030 = 5 to 300 psig (.3 to 21 bar)	S = Stainless steel 316L	2PW = 2 ports	SF6 = Sanitary 3/8 in. TW4 = 1/4 in. tube stub TW6 = 3/8 in. tube stub	VS = Vespel seat HF = High flow WT = White knob
<b>Series AZ 1210</b> AZ 1202 = 1 to 30 psig (.07 to 2 bar) AZ 1210 = 2 to 100 psig (.14 to 7 bar) AZ 1215 = 5 to 150 psig (.3 to 10 bar)	S = Stainless steel 316L	2PW = 2 ports	SF8 = Sanitary 1/2 in. SF12 = Sanitary 3/4 in. SF16 = Sanitary 3/4 in. TW4 = 1/4 in. tube stub TW6 = 3/8 in. tube stub TW8 = 1/2 in. tube stub	VS = Vespel seat HF = High flow WT = White knob
<b>Series AP 9110</b> AP 9110 = 2 to 100 psig (.14 to 7 bar) AP 9115 = 5 to 150 psig (.3 to 10 bar)	S = Stainless steel 316L	2PW = 2 ports	SF12 = Sanitary 3/4 in. SF16 = Sanitary 1 in. TW12 = 3/4 in. tube stub TW16 = 1 in. tube stub	VS = Vespel seat

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