

Pneumatic Actuation Pressure Regulator

Low flow
(Tied-diaphragm)

AP15PA Series

- Actuation control pressure isolated from process gas by two seals
- Body material: 316L SS secondary remelt
- High inlet pressure type: Max. 3500 psig (24.1 MPa)
- Flow capacity Standard: to 30 slpm
- Ni-Cr-Mo alloy internals available for corrosion resistance
- 100 psig (0.69 MPa) outlet pressure achievable with 800 psig (0.55 MPa) control pressure or less



ROHS

How to Order

Port Number
① ② ③ ④

AP15 PA S **2PW** **FV4** **FV4**

Delivery pressure

Code	Delivery pressure
PA	7 to 150 psig (0.05 to 1.0MPa)

Material

Code	Body	Poppet	Diaphragm	Nozzle
S	316L SS	316L SS	316L SS	316L SS
SHP	secondary remelt			
SH	remelt	Ni-Cr-Mo alloy	Ni-Cr-Mo alloy	Ni-Cr-Mo alloy
H	Ni-Cr-Mo alloy			

Surface finish

Code	Surface finish Ra max
No code	15 μin. (0.4 μm) Standard
M	10 μin. (0.25 μm)
V	7 μin. (0.18 μm)
X	5 μin. (0.13 μm)

Ports

Code	Ports
2PW	2 ports
3PW	3 ports
4PW	4 ports

Connections (Inlet ①, Outlet ②)

Code	Connections
FV4	1/4 inch face seal (Female)
MV4	1/4 inch face seal (Male)
TW4	1/4 inch tube weld
FV6	3/8 inch face seal (Female)
MV6	3/8 inch face seal (Male)
TW6	3/8 inch tube weld

Gauge port (Inlet ③, Outlet ④)

Code	Pressure gauge *1)
No code	No gauge port
0	No pressure gauge (Connections: 1/4 inch face seal male)
V3	-30 in.Hg to 30 psig -0.1 to 0.2 MPa
L	-30 in.Hg to 60 psig -0.1 to 0.4 MPa
1	-30 in.Hg to 100 psig -0.1 to 0.7 MPa
2	0 to 200 psig 0 to 1.4 MPa
40	0 to 4000 psig 0 to 28 MPa

Seat material

Code	Material
No code	PTFE (Standard)
VS	Polyimide *3)

*3) Not available with SHP, SH, H materials.

Pressure gauge unit *2)

Code	Unit
No code	psig/bar
MPA	MPa

*2) Pressure gauge unit MPa or psig/bar selectable. However under Japanese regulation, only MPa is available in Japan.

Porting Configuration (Top view)

① IN ② OUT ③ Gauge port (Inlet) ④ Gauge port (Outlet)

Specifications

Operating Parameters		AP15PA
Delivery pressure		7 to 150 psig (0.05 to 1.0 MPa)
Gas		Select compatible materials of construction for the gas
Source pressure		Vacuum to 3500 psig (24.1 MPa)
Proof pressure	Inlet	1.5 times the maximum source pressure
	Outlet	1.5 times the maximum delivery pressure
Burst pressure	Inlet	3 times the maximum source pressure
	Outlet	3 times the maximum delivery pressure
Maximum control pressure		150 psig (1.0 MPa)
Ambient and operating temperature		-40 to 71°C (No freezing) *1)
Cv		0.09
Leak rate	Inboard leakage	2 x 10 ⁻¹¹ Pa·m ³ /s
	Outboard leakage	2 x 10 ⁻¹⁰ Pa·m ³ /s *2)
Across the seat leak		4 x 10 ⁻⁹ Pa·m ³ /s *3)
Surface finish		Ra max 15 μin. (0.4 μm) Option: 10 μin. (0.25 μm), 7 μin. (0.18 μm), 5 μin. (0.13 μm)
Connections		Face seal, Tube weld
Control pressure port		NPT 1/8 inch
Bonnet port		NPT 1/8 inch
Supply pressure effect		0.41 psig (0.0028 MPa) rise in delivery pressure per 100 psig (0.7 MPa) source pressure drop
Installation		Bottom mount
Internal volume		0.51 in ³ (8.4 cm ³)

*1) Max. 90°C for Polyimide seat.

*2) Tested with Helium gas inlet pressure 1500 psig (10.5 MPa).

*3) Tested with Helium gas inlet pressure 1000 psig (7 MPa).

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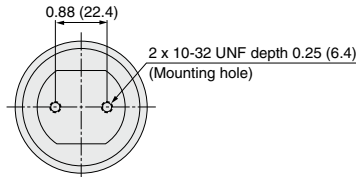
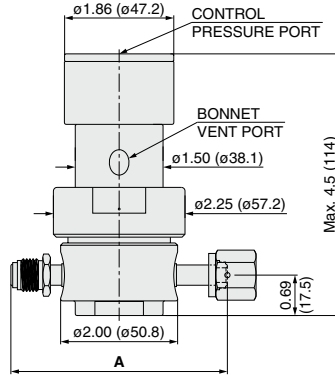
Wetted Parts Material

Wetted Parts	S	SHP	SH	H
Body		316L SS secondary remelt		Ni-Cr-Mo alloy
Surface finish		Electropolish + Passivation		Electropolish
Poppet	316L SS		Ni-Cr-Mo alloy	
Diaphragm	316L SS		Ni-Cr-Mo alloy	
Nozzle		316L SS		Ni-Cr-Mo alloy
Seat	PTFE (Option: Polyimide)		PTFE	

Dimensions

inch (mm)

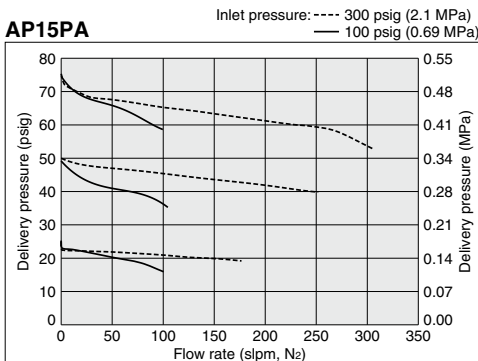
AP15PA



Connections	A	
	inch	(mm)
FV4	3.70	(94.0)
MV4	3.70	(94.0)
TW4	2.96	(75.2)
FV6	4.70	(119.4)
MV6	4.70	(119.4)
TW6	2.96	(75.2)

AP
SL
AZ
AK
BP

Flow Rate Characteristics



Note) slpm, N₂: The volumetric flow rate under normal conditions (0°C, 1 atm) when N₂ gas is flowing.

Input / Output Characteristics

