



Model P1

Single Stage Pressure Reducing Regulator 1/4"-3/8" (DN8-DN10) NPT

The Model P1 is designed for gases and liquids with inlet pressures up to 3600 psig (248 Barg). Standard adjustable outlet ranges from 1-10 psig (.07-.69 Barg) thru 10-750 psig (.69-51.7 Barg). Flow coefficient of 0.02, 0.06, and 0.20 available. This versatile point of use regulator can be ordered with a variety of options to meet your system demands. Standard construction includes 40 micron integral filter and diffusion resistant stainless steel diaphragm.

TYPICAL APPLICATIONS

- Instrumentation
- Analyzer Systems
- Gas Cabinets
- Inline Point of Use

FEATURES

- Accurate Adjustment
- Low Internal Volume
- Low Operating Torque
- Suitable for corrosive applications

FUNCTIONAL PERFORMANCE

Supply Pressure Effect	0.5/100 psig (.03/6.89 Barg)
Temperature Coefficient	0.16 psig/°F (.01Barg/ °C)
Design Proof Pressure	7,200 psig (496.4 Barg)
Design Burst Pressure	14,440 psig (995.6 Barg)
Internal Volume	6.9 cc
Design Leakage Outboard	1x10 ⁻⁹ scc/sec He
Inboard	1x10 ⁻⁹ scc/sec He

GENERAL SPECIFICATIONS

Inlet & Outlet Port Size:	1/4" and 3/8" (DN8 and DN10)
Cv Capability:	0.02, 0.06 and 0.20
Maximum Inlet Pressure:	3,600 psig (248.2 Barg)
Outlet Pressure:	1-10 psig (.07-.69 Barg) 2-25 psig (.14-1.7 Barg) 2-50 psig (.14-3.4 Barg) 2-100 psig (.14-6.9 Barg) 3-250 psig (.21-17.2 Barg) 5-500 psig (.34-34.5 Barg) 10-750 psig (.69-51.7 Barg)
Body End Connections:	FNPT Tube End
Body and Spring Chamber Material:	316L SST/316L SST Brass/6061 AL
Wetted Trim Material:	See Table 3
Max Temperature	
PCTFE	-45 to 185°F (-42.7 to 85° C)
Polyimide	-45 to 575°F (-42.7 to 301° C)
TFE	-45 to 275°F (-42.7 to 135° C)

OPTION DEFINITION FOR TABLE 6

Dome Loaded - (0)

The dome loaded option allows for regulators to be loaded from remote location to change pressure settings. **NOTES:** Diaphragm failure will result in loading fluid to mix with the process being controlled. Maximum Loading Pressure is 125 psig (8.6 Barg).

OPTION DEFINITION FOR TABLE 9

Captured Vent - (6)

The captured vent feature can only be installed on regulators with 316L SST body and spring chamber material. The design is for maximum safety for the user when handling toxic or hazardous media. The user can easily pipe this vent to a safe location. It features a 1/8" FNPT port located on the spring housing. This feature can be incorporated into a self-relieving regulator that provides an additional port to permit the piping away of the expelled media.

Cleaned for Oxygen Service - (M)

This is a requirement for gaseous oxygen environments. All regulators requiring advanced cleaning shall be processed according to strict guidelines. **NOTE:** Design Pressure Rating shall not exceed 290 psig (20.0 Barg) when body/topworks are constructed of SST.

Mounting Bracket - (5)

The mounting bracket is a base, or step type. The material is 303 stainless steel. The bracket mounts to the back of the single stage, and back pressure regulators, via 10/32 screws.

Panel Mount - (C)

The panel mount feature requires a panel cut out of 1-3/8", complete with a threaded spring housing, and a panel mount ring to secure the regulator.

Relief Valve - (H, J, K, or L)

The relief valve main function is to relieve excess downstream pressure due to system malfunctions. This feature prevents over pressurization by automatically venting of gas or liquid. The valve is fully adjustable, is 1/4" male x 1/4" male.

Self-Relieving - (S)

The self-relieving option can features an integral mechanism allowing downstream pressure to be vented to atmosphere as the outlet pressure setting is decreased. This allows the user to easily and rapidly decrease the pressure in a closed, or low volume system without an auxiliary bleed valve. In addition, this option also functions as a sensitive relief valve. The pressure at which it relieves is automatically determined by the outlet pressure setting of the regulator.

Self-Relieving & Mechanical Stop - (T)

Same as self-relieving except construction includes mechanical stop to limit maximum outlet setting.

Tamper Proof - (1)

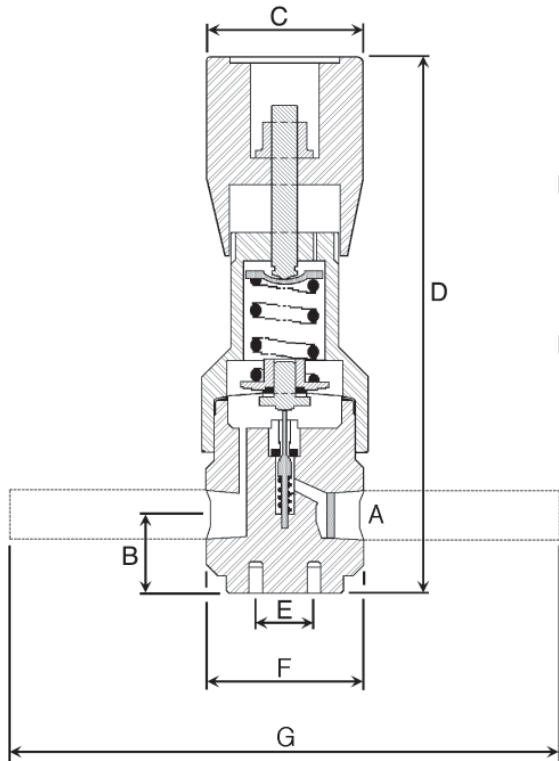
In this feature the control knob is removed and replaced with an acorn nut. The user can set the outlet pressure and securely tighten the nut, preventing any unwanted adjustments on the regulator.

Colored Knobs - (2, 8, 9 and W)

In this feature the control knob is anodized aluminum either in black, blue, green or red, compared to the standard red composite knob. This allows for color coding of processes.

Vacuum Assist Spring - (V)

In this feature a vacuum assist spring is placed under the diaphragm. This spring prevents the diaphragm from collapsing during a vacuum purge.



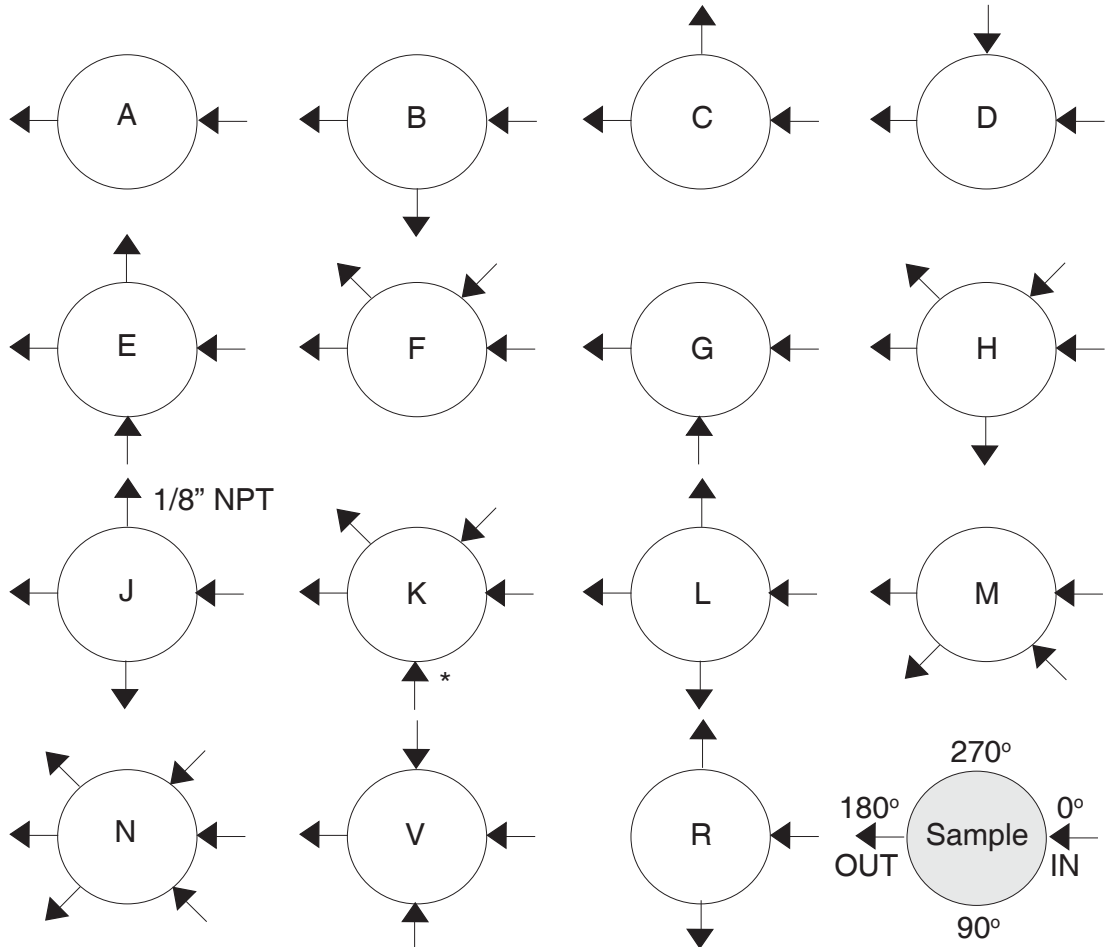
**Dimensions and Weights
English Units (Inches & lbs)**

Body Size (A)	B	C	D	E	F	G	Weight
1/4"	.75"	1.99"	5.125"	.75"	2.00"	6.94"	2.2 lbs
3/8"	.75"	1.99"	5.125"	.75"	2.00"	6.94"	2.2 lbs

Metric Units (mm & kg)

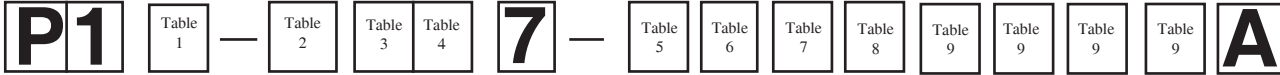
Body Size (A)	B	C	D	E	F	G	Weight
DN8	19.1	50.5	130.2	22.2	50.8	176.3	.99 kg
DN10	19.1	50.5	130.2	22.2	50.8	176.3	.99 kg

Porting Configuration Guide



* Used as a purge port.

MODEL P1 PRODUCT CODE 01/19/09
(COMPOSITE RED KNOB STANDARD)



Size	Cv	CODE
3/8" FNPT (DN10 FNPT)	0.20	6
	0.06	5
	0.02	4
1/4" FNPT (DN8 FNPT)	0.20	3
	0.06	2
	0.02	1

Body/Spring Chamber Mat'l.	CODE
316L SST/316L SST	S
Brass/6061 AL	B

Diaphragm , Seat Retainer, Poppet & Poppet Spring	Seat Material	CODE
302 SST w/Tefzel ring, 316L SST, 316L SST, Inconel X-750	PCTFE	1
	Polyimide	2
	TFE	3
Inconel w/TFE liner, monel R-405, Monel R-405 Inconel X-750	PCTFE	4
	Polyimide	5
	TFE	6
Hastelloy C-276 w/TFE liner, Hastelloy C-276, Hastelloy C-276, Hastelloy C-276	PCTFE	A
	Polyimide	B
	TFE	C

Description	CODE	Description	CODE
See Porting Chart	**** A	See Porting Chart	*** N
	** B		** J
	** C		*** K
	* D		** L
	*** E		*** M
	*** F		** R
	* G		*** V
	*** H		-

End Connection(s)	CODE
FNPT	1
Tube End *	T

* Not available on Brass body material. Must select Porting Configuration "A".

Psig (Barg)	CODE
Pneumatic Dome Loaded 0 - 125 (0 - 8.6)	0
1 - 10 (.07 - .69)	1
2 - 25 (.14 - 1.7)	2
2 - 50 (.14 - 3.4)	3
2 - 100 (.14 - 6.9)	4
3 - 250 (.21 - 17.2)	5
5 - 500 (.34 - 34.5)	6
10 - 750 (.69 - 51.7)	7

NOTE: When specifying Tables 7 & 8, review asterisks in Table 4:

- * Inlet gauge port only
- ** Outlet gauge port only
- *** Inlet & outlet gauge ports
- **** No gauge ports available

When ordering a valve per one of Cashco's special drawings, the code "X" and the 5-digit number following override all other options. Otherwise, proceed with Tables 7 thru 9.

Psig (Barg)	CODE
0 - 15 (0 - 1.0)	A
0 - 30 (0 - 2.1)	B
0 - 60 (0 - 4.1)	C
0 - 100 (0 - 6.9)	D
0 - 160 (0 - 11.0)	E
0 - 300 (0 - 20.7)	F
0 - 600 (0 - 41.4)	G
0 - 1000 (0 - 69.0)	H
No Outlet Gauge	0

Psig (Barg)	CODE
0 - 15 (0 - 1.0)	A
0 - 30 (0 - 2.1)	B
0 - 60 (0 - 4.1)	C
0 - 100 (0 - 6.9)	D
0 - 160 (0 - 11.0)	E
0 - 300 (0 - 20.7)	F
0 - 600 (0 - 41.4)	G
0 - 1000 (0 - 69.0)	H
0 - 2000 (0 - 137.9)	I
0 - 3000 (0 - 206.9)	J
0 - 5000 (0 - 344.9)	K
No Inlet Gauge	0

OPTIONS	CODE	OPTIONS	CODE
No Option	0	Panel Mount	C
Tamper Proof	1	Oxygen Cleaned Per Spec #S-1134	M
Mounting Bracket	5	Relief Valve: 3-50 psig *	H
Captured Vent **	6	Relief Valve: 50-150 psig *	J
Black Knob	2	Relief Valve: 150-350 psig *	K
Blue Knob	8	Relief Valve: 350-600 psig *	L
Green Knob	9	Self-Relieving	S
Red Knob	W	Self-Relieving & Mechanical Stop	T
		Vacuum Assist Spring	V

* When selecting Relief Valve indicate SET POINT PRESSURE in Special Instructions on order.
 ** 316L SST body & spring chamber ONLY
 For Special Construction Other Than Above Contact Cashco for Special Product Code

1. NUMERIC digits assigned first in "ascending" order.
2. ALPHA designations are assigned second in "alphabetical" order.
3. Left justify.
4. Add "0" to all unused squares.
5. If insufficient quantity of squares, consult factory for proper code.