Model P2

Single Stage Cylinder Gas Pressure Reducing Regulator

The Model P2 is designed for gases 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 cylinder gas 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. Gauges and CGA fitting is optional.

TYPICAL APPLICATIONS

- Cylinder Gas
- Calibration Gas
- Laser Gas
- Medical Gas

FUNCTIONAL PERFORMANCE

Supply Pressure Effect	0.5/100 psig (0.03/6.9 Barg)
Temperature Coefficient	0.2 psig/ °F (0.01 Barg/ °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
Cv Capability:	0.02, 0.06 and 0.20

GENERAL SPECIFICATIONS

Inlet/Outlet Port Size:	1/4” (DN8)
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 CGA End Connection
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 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.

Diaphragm Valve - (F)
The diaphragm valve is a shut off valve. The resolution is course. The extended leg allows easy access to the knob when it is attached to a regulator. The valve is 1/4" male x 1/4" female outlet. This type of valve is sold about 90% of the time.

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.

Packed Valve - (G)
The packed valve is a metering valve. The resolution is very fine. The packing around the stem is Teflon. The valve is 1/4" male x 1/4" male outlet.

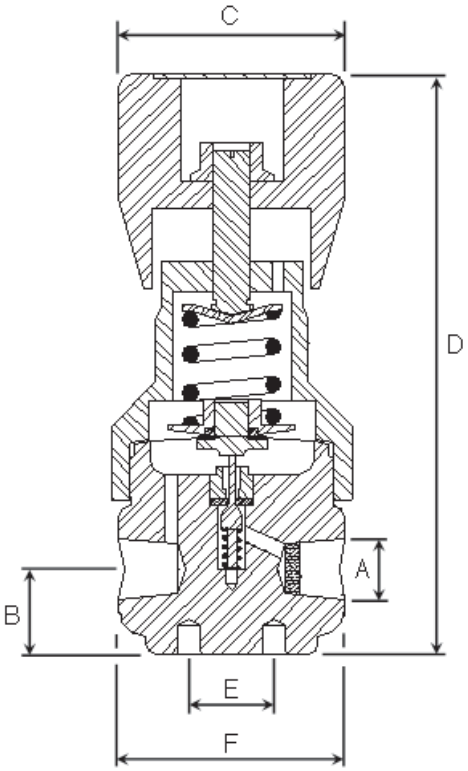
Panel Mount - (C)
The panel mount feature requires a panel cut out of 1–3/8", complete with a threaded spring housing, and a panel mount ring to secure the regulator.

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 the gas or liquid. The valve is fully adjustable, and is 1/4" male x 1/4" male.

Self Relieving - (S)
The self relieving option 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.

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.



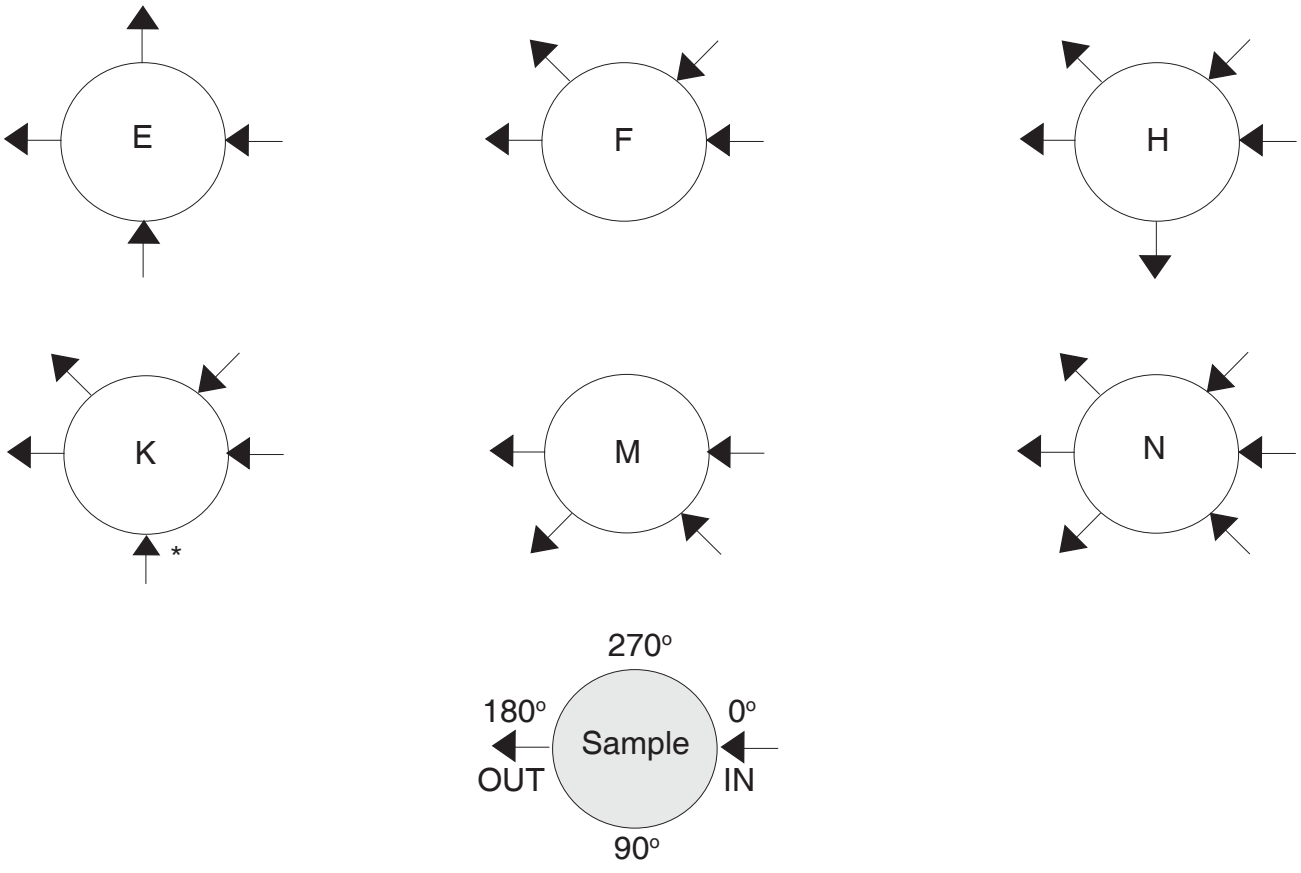
Dimensions and Weights
English Units (Inches & lbs)

Body Size (A)	B	C	D	E	F	Weight
1/4”	.75”	1.99”	5.125”	.75”	2.00”	3 lbs

Metric Units (mm & kg)

Body Size (A)	B	C	D	E	F	Weight
DN8	19.1	50.5	130.2	22.2	50.8	1.37 kg

Porting Configuration Guide



* Used as a purge port.

MODEL P2 PRODUCT CODE 01/19/09
(COMPOSITE RED KNOB STANDARD)

P2	Table 1	—	Table 2	Table 3	Table 4	7	—	Table 5	Table 6	Table 7	Table 8	Table 9	Table 9	Table 9	Table 9	A

TABLE 1 - BODY SIZE/Cv

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

TABLE 2 - BODY/SPRING CHAMBER

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

TABLE 3 - TRIM MATERIALS

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

TABLE 4 - PORTING CONFIGURATION

Description	CODE
See Porting Chart	E
	F
	H
	K
	M
	N

TABLE 5 - END CONNECTIONS

End Connection(s)	CODE
FNPT	1
CGA End Connection #330	5
CGA End Connection #346	2
CGA End Connection #350	3
CGA End Connection #540	A
CGA End Connection #580	H
CGA End Connection #590	L
CGA End Connection #660	R
Consult factory for other CGA connections.	

TABLE 6 - RANGE SPRING/OUTLET PRESSURE

Psig (Barg)	CODE
Pheumatic 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

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.

TABLE 7 - OUTLET GAUGE

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

TABLE 8 - INLET GAUGE

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

TABLE 9 - OPTIONS

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

* 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.

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