



ISO Registered Company



MODEL PBE

### MODEL PBE PRESSURE BUILD ECONOMIZER REGULATOR

The Model PBE has a compact body and functions in a dual role as a pressure building regulator and as an economizer relief regulator in one model. The pressure build feature controls the outlet pressure while the economizer feature operates to relieve any excess pressure in the system above set point from atmospheric to 600 psig (41.4 Barg).

#### FEATURES

**Self-Aligning Plug/Seat:**

Seat ring floats within mechanically-contained zone.

#### APPLICATIONS

Widely used for pressure control of liquified gas in storage tank.



#### CAUTION

This is not a safety device and must not be substituted for a code approved pressure safety relief valve or a rupture disc.

#### STANDARD/GENERAL SPECIFICATIONS

<b>Body Size:</b>	1/4" (DN8) with FNPT connections. Inlet connection size is equal to outlet connection size.	<b>Temperature Range:</b>	-325 to +150°F (-198 to +66°C).
<b>Body Orientation:</b>	<u>Globe</u> : Side inlet, side outlet.	<b>Maximum Design Pressure:</b>	600 psig (41.4 Barg).
<b>Body Material:</b>	Brass - ASTM B16, Alloy 360.	<b>Range Spring:</b>	SST. See Table 3.
<b>Spring Chamber Material:</b>	Bronze - ASTM B283, C37700	<b>Cryogenic Construction:</b>	Cleaned for oxygen service per Cashco Spec. #S-1134. Mount in horizontal piping with adjusting screw oriented downwards.
<b>Body Cap:</b>	Brass - ASTM B16, Alloy 360.	<b>Flow Capacities:</b>	Max. Cv Comp. Diaph.: 0.49 Metal Diaph.: 0.36 For Capacities see Table 4.
<b>Diaphragm:</b>	Metal – 302 SST. Composition – Gylon. See Table 2.	<b>Option -31:</b>	<u>BSPT END CONNECTIONS.</u> British Standard Tapered Pipe threads per ISO 7/1; used as an alternate to NPT ends.
<b>Seat:</b>	TFE. See Table 2.		
<b>Gaskets:</b>	TFE used with Metal Diaphragm		

## TECHNICAL SPECIFICATIONS

<b>TABLE 1 BODY/SPRING CHAMBER/BODY CAP MAX. PRESSURE - TEMPERATURE</b>			
Pressure		Temperature	
psig	(barg)	°F	(°C)
600	(41.4)	-325 to +150	(-198 to +66)
Inlet & outlet have same Pressure vs. Temperature ratings.			

<b>TABLE 2 TRIM MATERIAL COMBINATIONS</b>		
Part	Trim Designation Number	
	B9S	B9G
Diaphragm	302 SST	Gylon
Diaphragm Gasket	TFE	--
Piston	Brass	
Seat Disc	TFE	
Piston Spring	17-7PH SST	
Piston Post	316 SST	
Pusher Plate	303 SST	
Pusher Plate Gasket	TFE	--

<b>TABLE 3 RANGE SPRINGS / MAX. PRESSURE DROP</b>			
Range Spring		Max Pressure Drop	
psig	barg	psid	bard
2-30	(.14-2.07)	150	(10.3)
10-50	(.69-3.45)	275	(19.0)
40-125	(2.76-8.62)	600	(41.4)
100-175	(6.89-12.1)	600	(41.4)
175-360	(12.1-24.8)	600	(41.4)
350-500	(24.1-34.5)	600	(41.4)
400-600	(27.6-41.4)	600	(41.4)

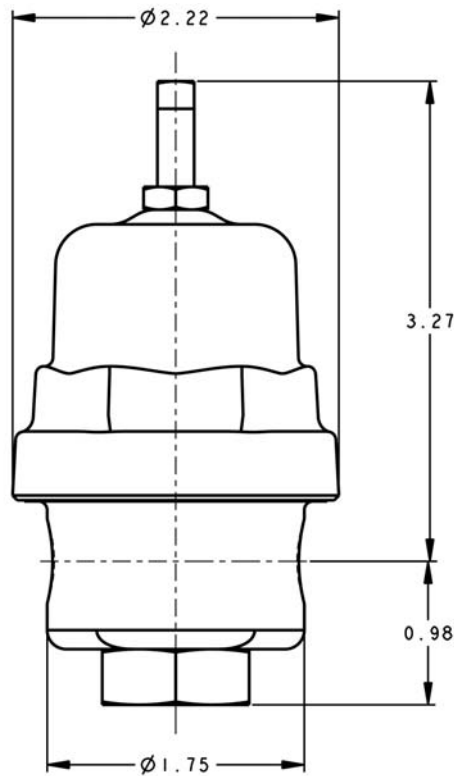
<b>TABLE 4 CAPACITY - Cv (F<sub>L</sub> = 0.95)</b>							
Setpoint (P <sub>1</sub> ) Pressure		Metal Diaphragm			Composition Diaphragm		
		% Droop			% Droop		
psig	(Barg)	10%	20%	30%	10%	20%	30%
5	(0.3)	0.01	0.02	0.04	0.01	0.03	0.05
10	(0.7)	0.01	0.02	0.05	0.02	0.05	0.07
15	(1.0)	0.04	0.06	0.07	0.03	0.06	0.08
25	(1.7)	0.05	0.07	0.10	0.05	0.08	0.10
35	(2.4)	0.07	0.09	0.12	0.06	0.10	0.11
50	(3.4)	0.05	0.09	0.13	0.06	0.12	0.16
75	(5.2)	0.06	0.11	0.14	0.07	0.14	0.18
100	(6.9)	0.07	0.13	0.16	0.10	0.16	0.20
125	(8.6)	0.08	0.13	0.18	0.11	0.20	0.26
150	(10.3)	0.06	0.12	0.18	0.14	0.22	0.23
175	(12.1)	0.09	0.14	0.18	0.09	0.15	0.23
200	(13.8)	0.09	0.12	0.18	0.11	0.18	0.21
225	(15.5)	0.09	0.15	0.19	0.12	0.20	0.22
250	(17.2)	0.08	0.15	0.16	0.14	0.18	0.22
275	(19.0)	0.09	0.16	0.17	0.12	0.19	0.23
300	(20.7)	0.09	0.15	0.18	0.13	0.19	0.23
350	(24.1)	0.08	0.11	0.14	0.10	0.15	0.18
400	(27.6)	0.08	0.13	0.15	0.11	0.15	0.22
450	(31.0)	0.07	0.11	0.13	0.11	0.17	0.22
500	(34.5)	0.08	0.13	0.15	0.08	0.15	0.22
550	(37.9)	0.10	0.14	0.20	0.10	0.17	0.24

# NOTES

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## DIMENSIONS & WEIGHT



<b>Weight</b>
1.5 lbs.

### MODEL PBE PRODUCT CODER 03/11/16

An "X" in POS 12 followed by a 5-digit control number overrides remaining selections.

A4
2 - 3
POS
6 & 7
7 - POS
10
POS
11
POS
12
0
0
0
0
0
A

POSITION 6 & 7 - TRIM DESIGNATION NO.	
Trim Design No.	
Desig.	CODE
B9S	BS
B9G	BG

POSITION 10 - END CONNECTION	
Description	CODE
FNPT	1
-31 Opt. BSPT	B
BSPT - Screwed Tapered Pipe Thread	

POSITION 11 - RANGE SPRING		
psig	(Barg)	CODE
2 - 30	(.14 - 2.07)	A
10 - 50	(.69 - 3.45)	B
40 - 125	(2.76 - 8.62)	C
100 - 175	(6.89 - 12.1)	D
175 - 360	(12.1 - 24.8)	E
350 - 500	(24.1-34.5)	F
400 - 600	(27.6-41.4)	G

POSITION 12 - OPTION		
Description	Option	CODE
None	---	0
For Special Construction Contact Cashco for Special Product Code.	SPQ	X

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