

## HBP Series

Electrically Heated Back Pressure Regulators

### Introduction

The HBP Series heated back pressure regulator is designed to supply heat to samples entering instrumentation systems. It can be used to preheat liquids, to prevent condensation of gases or to vaporize liquids prior to gas analysis.

The modular design of the HBP consists of heat exchanger and pressure control sections. The pressure control section is patterned after the time proven design of the BP-3 back pressure regulator and provides the same excellent upstream pressure stability. The heat exchanger section is made up of a body and heat exchange element and is based on the time proven design of

the HPR-2 vaporizing regulator. The heat exchange element uses GO Regulator's unique spiral wrapped screen as the heat exchange surface. This screen has up to 100 square inches of heat transfer area and precise design forces all sample flow to pass through the element just prior to exiting the regulator.

The HBP Series of vaporizing back pressure regulators are both CSA and ATEX approved. The electrical components of this unit are securely housed in a Class A, B, C, D conduit assuring that there is always an adequate flame path between the environment and the controller. Safety considerations can be further enhanced by using the optional TCO (Thermal Cut Out) heater cartridge. This feature enables the unit to boast a T3 rating with up to 250 watts of power (CSA rated T2D watt heater).



pressure regulators

### Typical Applications

#### Analytical process sample conditioning systems:

- Petrochemical refineries
- Chemical production facilities
- Pilot plants (chemical & petrochemical)
- LNG loading and off-loading points
- Natural gas pipeline sampling

### Technical Data

<b>CONSTRUCTION</b>	316L stainless steel
<b>CONTROL PRESSURES</b>	0-10, 0-25, 0-50, 0-100, 0-250, 0-500, 0-750 and 0-1000 psig
<b>HEATING CAPACITY RANGES (IN WATTS)</b>	50, 100, 150, 200 and 250
<b>Cv COEFFICIENT</b>	0.2, others available
<b>CERTIFICATIONS</b>	CSA certification # LR-82566-5 ATEX Directive 2014/34/EU Certification # TRL03ATEX11001X

### Features & Benefits

- Optional HASTELLOY® C and MONEL®
- Electropolished body with better than 25 Ra finish in diaphragm cavity for an optimal sealing surface
- Bubble-tight shutoff
- Modular pressure control and heat exchanger assemblies for easy maintenance
- Unique spiral wrapped heat exchange element provides up to 100 square inches of heat transfer area.
- Available in 120VAC or 230VAC
- Optional TCO heating cartridge
- INCONEL® diaphragm standard

# HBP Series

To Order, contact your local Distributor Link below:  
[www.gore.com/distributor/index.htm](http://www.gore.com/distributor/index.htm)

Verify that your chosen part number is valid using the GO Wizards at  
[www.gore.com/products/matrix/index.htm](http://www.gore.com/products/matrix/index.htm)

## How to Order

Standard items in bold

**HBP - 4 Z 3 3 Q 3 G 4 1 4 1**

### BODY MATERIAL

- 1 316L stainless steel, stainless steel diaphragm
- 4 MONEL®, INCONEL® diaphragm
- 6 HASTELLOY® C, INCONEL® diaphragm
- C 316L stainless steel, INCONEL® diaphragm**

### PORT CONFIGURATION

- A A Style
- B B Style
- C C Style
- D D Style
- G G Style
- L L Style
- M M Style
- N N Style
- P P Style
- V V Style
- W W Style
- X X Style
- Y Y Style
- Z Z Style

For more configurations, see pages 38

### TEMPERATURE RANGE / HEATING TYPE

- 1 55°-85°F (13-29°C)
- 2 75°-175°F (24-80°C)
- 3 130°-300°F (54-149°C)
- 4 260°-380°F (126-194°C)
- 5 Steam
- 8 No electronics

### HEATER WATTAGE

- 1 40W
- 2 50W
- 3 100W
- 4 150W (TCO Thermistor must be selected in the "Options" box)
- 6 No electronics
- 8 200W (TCO Thermistor must be selected in the "Options" box)
- 5 Steam
- 9 250W

### ACTUATOR MATERIAL

- B CF PTFE
- C Polyimide
- D Viton®
- I High Density PTFE
- K Kalrez®
- Q PEEK™

### FLOW COEFFICIENT (Cv)

- 1 **0.03**
- 3 **0.06**
- 5 **0.20 (Standard)**
- 6 **0.24**
- 7 **0.30**
- C **0.025**
- E **0.04**
- I **0.005**

NOTE: 1. Contact the factory for any additional requirements.  
 2. Units that will be used for flammable liquid or gas with fire point at 200°C or below require the TCO Thermistor. It is also recommended to use the 1-PC body option. In addition, Tefzel and PCTFE seats in these units are recommended to use the captured vent cap option which provides for venting to a safe location.

### OTHER OPTIONS

- B EB5 cleaning
- D Helium leak test
- E Pressure test certificate
- F Certificate of Conformity
- G CMTR
- P PEEK™ Diaphragm Liner

### OPTIONS

- 1 TCO Thermistor
- 2 TCO Thermistor with 1-Piece Body
- 3 1-Piece Body
- 0 Other options

### CAP ASSEMBLY

- 1 **Tamper-proof, standard, stainless steel**
- 4 Tamper-proof, panel, mount, stainless steel
- 7 Tamper-proof, captured vent, stainless steel
- J Tamper-proof, captured vent, panel mount, stainless steel
- L BP-6 topworks, stainless steel

### HEATER BLOCK PORTING

- 1 **Standard block (1/4" NPT Inlet, 1/8" NPT Outlet)**
- 4 Reverse block
- B **Standard block with 1/4" NPT Outlet**

### HEATER BLOCK TYPE

- 1 Steam
- 2 Steam XW
- 3 **120 VAC**
- 4 **230 VAC**
- 5 No electronics
- 6 120 VAC XW
- 7 230 VAC XW

### CONTROL RANGE

- C 0-10 psig (0-0.69 bar) (0-69 kpa)
- D 0-25 psig (0-1.72 bar) (0-172 kpa)
- E 0-50 psig (0-3.45 bar) (0-345 kpa)
- G 0-100 psig (0-6.90 bar) (0-690 kpa)
- I 0-250 psig (0-17.24 bar) (0-1724 kpa)
- J 0-500 psig (0-34.50 bar) (0-3450 kpa)
- K 0-1000 psig (BP-6 Top Works must be selected)
- W 0-750 psig (0-51.80 bar) (0-5180 kpa)

## Maximum Temperature & Operating Inlet Pressures

### HBP Electric, 1 & 2-Piece Body

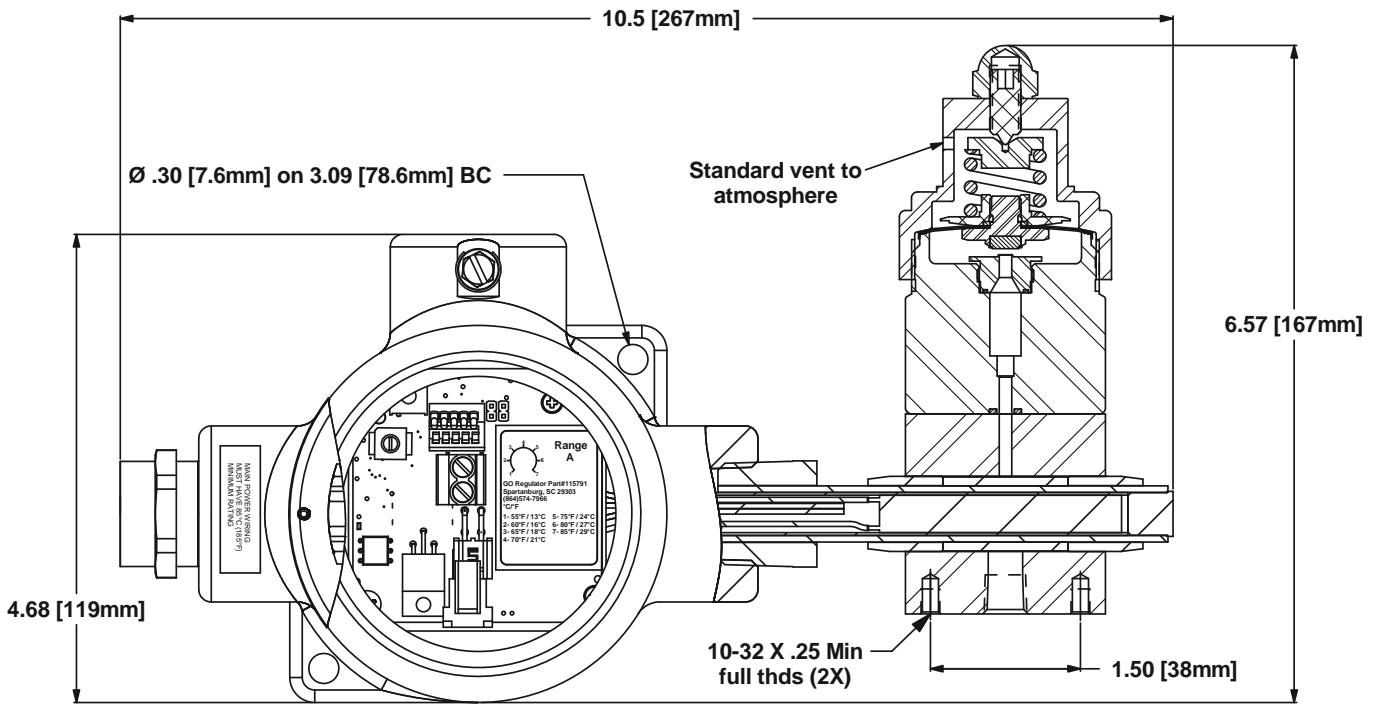
SEAT MATERIAL	MAXIMUM TEMPERATURE	@	MAXIMUM OPERATING INLET PRESSURE
Viton®	Up to 175°F (79°C)	@	3600 psig (24.82 MPa)
	176°F to 300°F (80°C to 148°C)	@	Not Available
	301°F to 380°F (149°C to 193°C)	@	Not Available
High Density PTFE	Up to 175°F (79°C)	@	500 psig (3.45 MPa)
	176°F to 300°F (80°C to 148°C)	@	Not Available
	301°F to 380°F (149°C to 193°C)	@	Not Available
CF PTFE	Up to 175°F (79°C)	@	500 psig (3.45 MPa)
	176°F to 300°F (80°C to 148°C)	@	500 psig (3.45 MPa)
	301°F to 380°F (149°C to 193°C)	@	Not Available
Kalrez	Up to 175°F (79°C)	@	250 psig (1.72 MPa)
	176°F to 300°F (80°C to 148°C)	@	250 psig (1.72 MPa)
	301°F to 380°F (149°C to 193°C)	@	Not Available
Polyimide	Up to 380° F (193° C)	@	1000 psig (6.89 MPa)
PEEK™	Up to 380° F (193° C)	@	1000 psig (6.89 MPa)

### HBP Steam, 1 & 2-Piece Body

SEAT MATERIAL	MAXIMUM TEMPERATURE	@	MAXIMUM OPERATING INLET PRESSURE
Viton®	Not Available	@	Not Available
High Density PTFE	Not Available	@	Not Available
CF PTFE	Up to 380° F (193° C)	@	250 psig (1.72 MPa)
Kalrez	Up to 380° F (193° C)	@	250 psig (1.72 MPa)
Polyimide	Up to 500° F (260° C)	@	1000 psig (6.89 MPa)
PEEK™	Up to 500° F (260° C)	@	1000 psig (6.89 MPa)

# HBP Series

## Outline & Mounting Dimensions



Panel mount option requires  
1.390" (35.3mm) minimum  
diameter panel cut out

Weight 8.7 lbs (3.95 kg)

