

# GENIE® JTR-H

## Joule-Thomson Heated Regulator

### The four-stage regulator not effected by supply pressure changes!

The Model JTR-H™ is a revolutionary product containing four stages of heated pressure regulation in one 316 stainless steel housing. The design of the JTR-H™ separates it from current multi-stage heated regulators that are typically limited to two stages. Specifically designed for gas analytical systems, the JTR-H™ prevents condensation of the sample gas from occurring as a result of Joule-Thomson (JT) cooling during the pressure reduction process of high pressure and high dew point gases or due to low operating or ambient temperatures.

The first three stages of the JTR-H™ reduce pressure by a set ratio and the fourth stage is user adjustable. This ensures that all stages remain functional and give the JTR-H™ the ability to auto correct and maintain its outlet pressure during inlet pressure swings up to 5700 PSI. Inlet pressure swings commonly occur at natural gas storage facilities, making the JTR-H™ the regulator of choice for these applications.

The need for the JTR-H™ is best illustrated by referencing the natural gas phase diagram below. For this particular gas composition, the only regulator capable of preventing condensation and complying with the API 14.1 requirement of maintaining the sample 30°F above the hydrocarbon dew point is the JTR-H™.

The JTR-H™ can be heated using either an electrical cartridge heater with proportional temperature controller or a self-limiting heater block; both of which require a direct power connection. The proportional temperature controller allows for precise temperature control using a digital temperature readout and is protected with a backup thermal cutoff. The self-limiting heater block provides a simple and reliable option that prevents temperature overload and is designed to be mounted in small enclosures or densely populated cabinets.



Controller Option

Heater Block Option

### Product Brief

#### Applications

- Continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining
- Not for use with Hydrogen, Helium or Neon

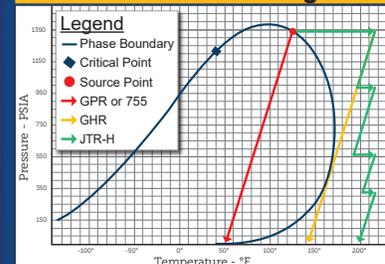
#### Benefits

- Prevents condensation:
  - Preserves sample integrity
  - Reduces regulator freeze-ups
- Eliminates the need for multiple regulators in series
- Maintains outlet pressure during large inlet pressure swings

#### Features

- Patented multi-stage design
- Preset, ratio controlled stages with user adjusted final stage
- Two heating method options
  - Cartridge heater with proportional temperature controller
  - Self-limiting heater block

#### Natural Gas Phase Diagram



### Technical Specifications

<b>Maximum pressure rating</b>	300 - 6000 psig (20.7 - 413.7 barg) per criteria of ANSI/ASME B31.3
<b>Outlet pressure range</b>	0-10 psig (0-0.7 barg), 0-25 psig (0-1.7 barg), 0-50 psig (0-3.4 barg), 0-100 psig (0-6.9 barg), 0-250 psig (0-17.2 barg), 0-500 psig (34.5 barg)
<b>Temperature range</b> * Actual limit depends on sealing material chosen. Refer to Temperature Range Comparison Chart.	<b>*Process (all models):</b> -40°F (-40°C) to 300°F (149°C) <b>Controller:</b> 95 to 300°F (35 to 149°C) set at 300°F (149°C); backup thermal cutoff opens at 338°F (170°C)
<b>Port sizes</b>	1/4" female NPT
<b>Cv Coefficient</b>	0.009
<b>Maximum flow rate</b>	~10 SLM (consider heat transfer limitations)
<b>Wetted materials</b>	<b>Machined parts:</b> 316/316L stainless steel / ISO 15156-3 compliant <b>All other metal parts:</b> stainless steel / ISO 15156-3 compliant <b>Regulator seat material:</b> PFA <b>Seals:</b> User Defined
<b>Electrical connection</b>	<b>Conduit (CSA):</b> JTR-H: 1/2" female NPT 901-JTR: 3/4" female NPT <b>Cable OD (ATEX/IECEX):</b> 3/8" (10mm)
<b>Power requirements</b>	<b>Heater Block:</b> 110/220 VAC, 80W or 24 VDC, 25W <b>Controller:</b> 200 W @ 110 VAC or 700 W @ 240 VAC
<b>Electrical approval</b>	<b>CSA:</b> Class 1, Division 1, Groups B, C, & D; T3 <b>ATEX/IECEX (Model JTR-H only):</b> II 2G Ex db IIC T3

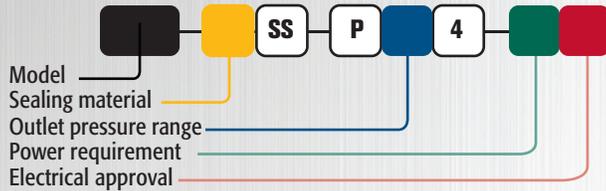


## Model Numbering & Additional Part Numbers

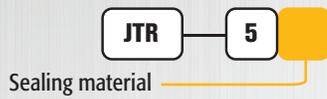
Your model number is determined by your specific needs. Materials of construction must be compatible with process fluid.

<b>Model</b>	JTR-H = JTR with self-limiting heater block		901-JTR = JTR with temperature controller		
<b>Sealing material</b>	0 = Fluoroelastomer	JW = RGD resistant HNBR		(other materials available upon request)	
<b>Outlet pressure range (psig)</b>	0 = 0-25	1 = 0-50	2 = 0-100	3 = 0-250	4 = 0-500 9 = 0-10
<b>Power requirement</b>	1 = AC power		2 = DC power (not available in Model 901-JTR)		
<b>Electrical approval</b>	C = CSA		A = ATEX/IECEX (not available in Model 901-JTR)		

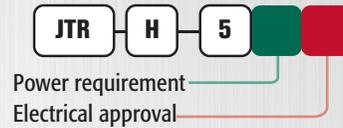
### How to build the model number:



### How to build the seal replacement kit model number:



### How to build the heater replacement kit part number:

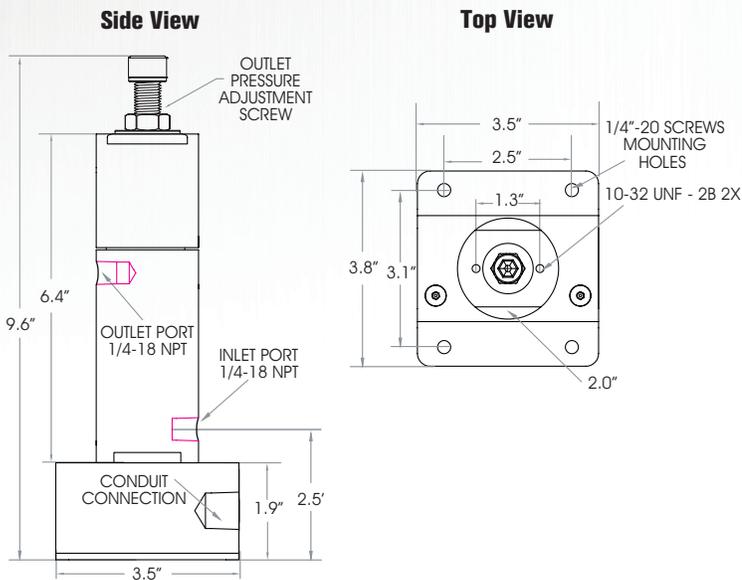


### Spare Parts & Accessories (sold separately)

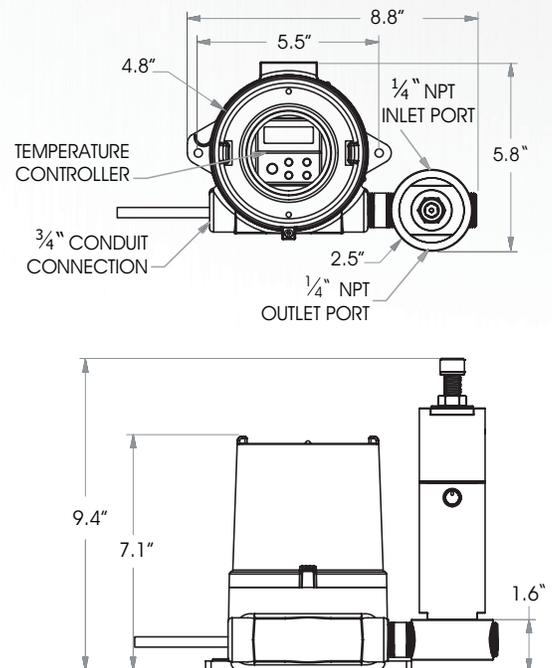
- Kozy Insulated Cover - Part # KZ-10-L (not for enclosures)
- Heater Base & Controller Replacement - Part # 901-00-SS
- Manifold with pressure gauge, ball valve, & relief valve - for ordering information, refer to the Genie® Probe Regulator Accessory Manifold product sheet
- Inlet filter replacement - Part # JTR-5FSS
- Seat & Seal replacement kit - Seat, Valve Stem, Bias Spring & O-Rings

## Dimensions

### Heater Block



### Controller



Analytically Correct™ sample systems, sample conditioning components, and revolutionary gas and liquid sampling technology.

Contact us for expert product application assistance.

1.225.644.5255

sales@geniefilters.com

geniefilters.com

41041 Black Bayou Road, Gonzales, Louisiana 70737