



GENIE[®] JTR-H

Joule-Thomson Heated Regulator



Offsets Joule-Thomson cooling, prevents regulator “freeze up”, and provides stable output pressure even through large swings in inlet pressure!

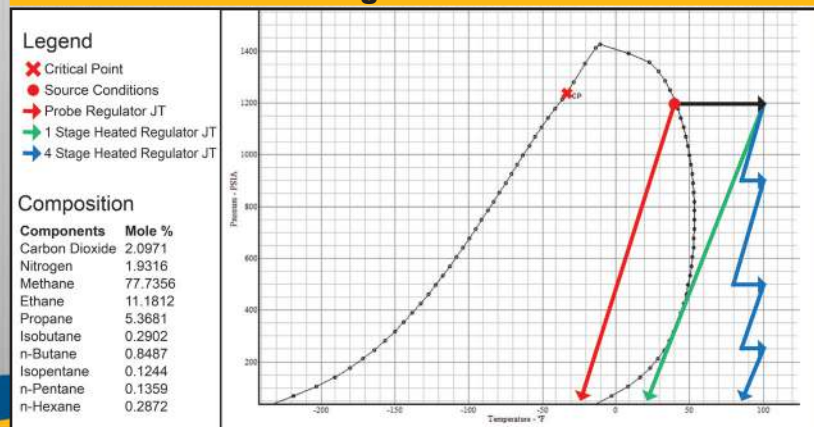
The Genie[®] Joule-Thomson Heated Regulator Model JTR-H™ is a four stage pressure regulator with a self-limiting block heater designed to prevent condensation from occurring during pressure regulation of high pressure gas sources and natural gas having a high moisture or hydrocarbon dew point. Unlike traditional single stage heated regulators, the JTR-H™ has the ability to autocorrect the outlet pressure during inlet pressure swings up to 5700 PSI. Inlet pressure swings commonly occur at natural gas storage facilities and during the use of calibration gas cylinders, making the JTR-H™ the regulator of choice for these applications.

When dropping the pressure of a natural gas stream whose operating pressure is higher and operating temperature is at, near or below its cricondentem temperature (highest dew point temperature on the natural gas phase diagram), it sometimes becomes necessary to use multi-stage pressure regulation to prevent the sample from condensing during the pressure reduction process. If the gas composition is very rich (high BTU) or wet (high moisture), the ambient temperature is low, or the pressure is high enough to where there will be substantial Joule-Thomson cooling then it may be required to provide additional heat even when reducing the pressure in multiple stages to ensure that there will be sufficient heat transfer during the pressure reduction process to prevent condensation from occurring.

The need for this type of regulator is best illustrated by referencing a natural gas phase diagram (see below). For this particular gas composition, it can be observed that the only regulator that is able to maintain the sample in a vapor state AND comply with the requirement from API 14.1 of maintaining the sample 30°F above the hydrocarbon dew point at all times is this four stage heated regulator.

Note: Although the example above was specific to natural gas, this regulator can be used with other types of gases. For assistance in determining heating and pressure regulation requirements, please contact A+ Corporation or your local A+ distributor.

Natural Gas Phase Diagram



Product Brief

Applications

- Heated, multi-stage pressure regulation for gas analytical systems in any process industry:
 - High pressure sources
 - Natural gas having a high hydrocarbon or moisture dewpoint
 - Natural gas storage facilities
 - Calibration gas cylinders

Benefits

- Provides a steady output pressure, even when its inlet supply pressure changes over time
- No need to constantly adjust set pressure for each stage
- Prevents condensation during pressure reduction—reducing regulator freeze ups, preserving sample integrity, and minimizing analyzer down time and maintenance cost
- Eliminates the need for multiple regulators in series reducing cost, space, and set up time
- Auto-corrects outlet pressure during inlet pressure swings of up to 5700 PSI
- Easy to mount in small enclosures or densely populated cabinets

Features

- Four (4) stages of pressure regulation in one stainless steel housing
 - First three pressure stages are ratio controlled
 - User-adjustable fourth stage
- Piston pressure sensing elements
- Self-limiting heater prevents temperature overload
- Heater can be supplied to meet:
 - American NEC standard (CSA/NRTL/FM/UL)
 - IEC, ATEX and GOST standard



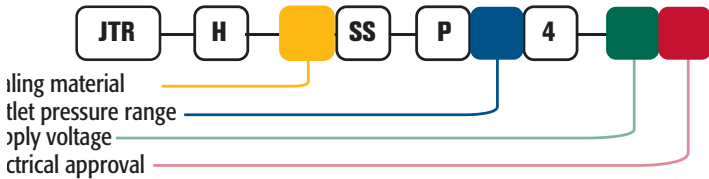
geniefilters.com

Model Numbering & Additional Part Numbers

Your model number is determined by your specific needs. Choose options below.

Sealing material	0 = Fluoroelastomer	JW = James Walker® Elast-O-Lion® 101	(other materials available upon request)
Outlet pressure range (psig)	0 = 0-25	1 = 0-50	2 = 0-100 3 = 0-250 4 = 0-500 9 = 0-10
Supply voltage	1 = 110 To 265 VAC, 80W	2 = 24VDC, 30W	
Electrical approval	C = CSA/NRTL (Cl. 1, Div. 1, Grp ABCD) A = ATEX/IECEx (II 2 G Ex d IIC T4 bzw. T3) (other electrical approvals available upon request)		

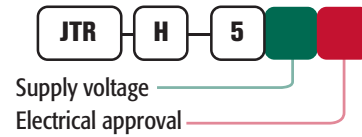
How to build the model number:



How to build the seal replacement model number:



How to build the heater replacement kit part number:

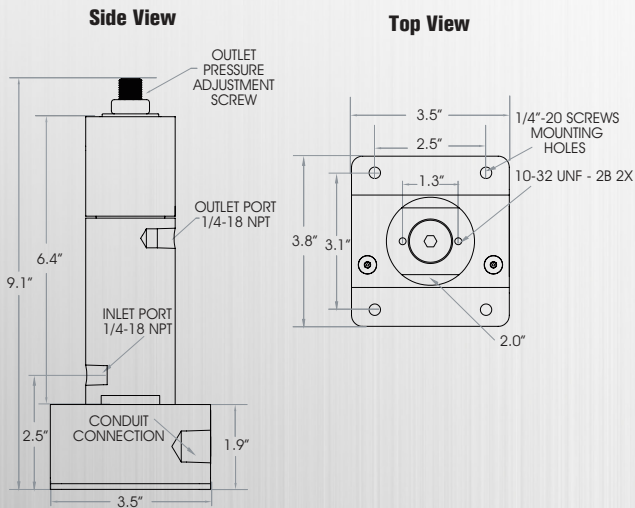


Spare Parts & Accessories (sold separately)

- Kozy Insulated Cover - Part # KZ-10-L (when not mounted in enclosure/sample cabinet)

Not designed for external fire. Prior to use in a system, a properly sized relief device is to be installed which limits the use to 110% of the MAWP.

Dimensions



Technical Specifications

Operating pressure range	300 PSIG (21 bar) to 6,000 psig (414 bar)
Temperature range	-15°F (- 26 °C) to 300 °F (149 °C)
Port sizes	1/4" female NPT
Outlet pressure range	0-10 psig (0-0.7 bar), 0-25 psig (0-1.7 bar), 0-50 psig (0-3.4 bar), 0-100 psig (0-6.9 bar), 0-250 psig (0-17.2 bar), 0-500 psig (34.5 bar)
C_v coefficient	0.06
Conduit connection	1/2" NPT
Power requirements	110 to 265 VAC, 80W 24 VDC, 30W
Heater block electrical approval	American NEC Standard (CSA/NRTL): File # 1655545 (LR43674) Protection Type: Class 1, Division 1, Groups ABCD ATEX/IECEx Standard: EC Examination Certificate - PTB 02 ATEX 1116 X IEC Scheme Certificate - IECEx PTB 07.0055X Protection Type: II 2 G Ex d IIC T4 BZW. T3
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Regulator seat material : Teflon® PFA Seals : Teflon®/Viton® (other materials available upon request)



Local Distributor

A+ Corporation is the leader in Analytically Correct™ Sample Extraction and Conditioning Systems.

Contact us for expert product application assistance.

sales@geniefilters.com > 225.644.5255 > Fax 225.644.3975

41041 Black Bayou Road, Gonzales, LA 70737 An ISO 9001:2008 Certified Company

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