

# Model 5866RT

Pressure



Model 5866RT Pressure Controller / Flowmeter

## Elastomer or Metal Sealed, Remote Transducer Pressure Controller / Flowmeter

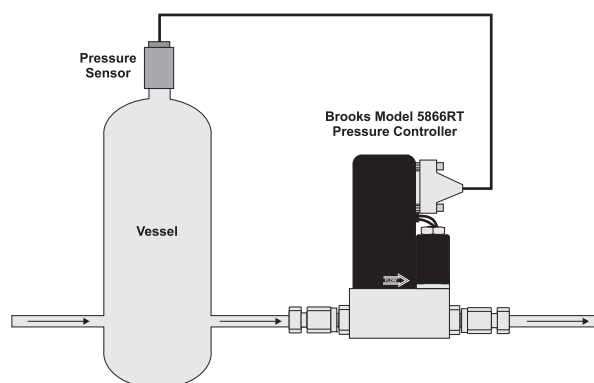
### Overview

The Brooks® Model 5866RT Pressure Controller/Flowmeter controls pressure while also measuring flow rate. The Model 5866RT receives a remote pressure transducer signal, and using adjustable integral PID control electronics and control valve, will maintain a desired set pressure. In addition to the pressure control function, the Model 5866RT provides a 0-5 V signal which is linear with mass flow rate. The Model 5866RT can also be configured as a mass flow controller for calibration or test purposes.

### Product Features

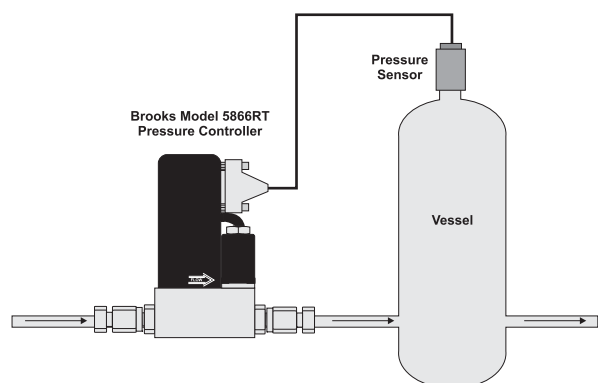
- High accuracy
- High leak integrity
- Electropolished wetted surfaces (optional)
- Pressure control and flow measurement
- Compact design
- Wide flow measurement range
- Dynamic tuning adjustments with top mounted DIP switches
- Electrically activated valve override

#### Typical Upstream Configuration



When the controller is placed downstream of the pressure vessel, the flow is usually determined by a mass flow controller in the line upstream of the vessel.

#### Typical Downstream Configuration



With the pressure controller upstream of the vessel, the inlet of the pressure controller can be at atmospheric gas pressure or at the vapor pressure of a liquid source. The flow in this situation is usually determined by the characteristics of a vacuum pump.

A pressure controller system can be built in two different configurations as shown above.

## Product Specifications

Performance	Model 5866RT
Flow Range*	Any range from 0 to 3 sccm to 0 to 30,000 sccm N <sub>2</sub> Eq.
Flow Output Signals	0-5 Vdc, max. load 1 k ohm
Flow Accuracy	±1.0% full scale including linearity at the calibration conditions. ±1.5% full scale for flow rates greater than 20 slpm
Flow Repeatability	±0.25% of rate
Flow Temperature Coefficient	0.1% full scale/°C
Pressure Ranges	Dependent upon remote transducer
Remote Pressure Sensor Input	Suitable for any pressure sensor with a 0-5 V or 0-10 V output signal
Pressure Setpoint Signal	0-5 Vdc or 0-10 V. 5 Vdc reference output available for setpoint generation. 1 k ohm maximum load
Pressure Ratings	Maximum pressure: 1500 psig
Pressure Equipment Directive (PED) 97/23/EC	Equipment falls under Sound Engineering Practice (SEP)
Pressure Control Range	100:1 for a remote transducer with a 0-10 V output
Pressure Response Time	Less than 0.8 seconds typical for a 0-100% command step with less than 2% pressure overshoot Actual pressure response depends on system design
Temperature Range	32 to 150°F (0-65°C)
Input/Output Offset	0.2% full scale
Leak Integrity, Inboard to Outboard	Elastomer Seal: 1 x 10 <sup>-9</sup> atm cc/sec Helium max. Metal Seal: 1 x 10 <sup>-10</sup> atm scc/sec Helium max.

## Mechanical

Materials of Construction	Wetted Parts - Standard: 316L/316L VAR Stainless Steel
	Valve Seat - Standard: Viton® fluoroelastomers or metal External/Internal Seals: fluoroelastomers or metal; Optional: Buna-N, Teflon® or Kalrez®
Mechanical Connections	Model 5866RT Standard: 1/8" or 1/4" Stainless Steel Compression Fittings
	Model 5866RT Optional: 1/4" VCO™ or VCR™
	Model 5866RT(M) 1/4" VCR

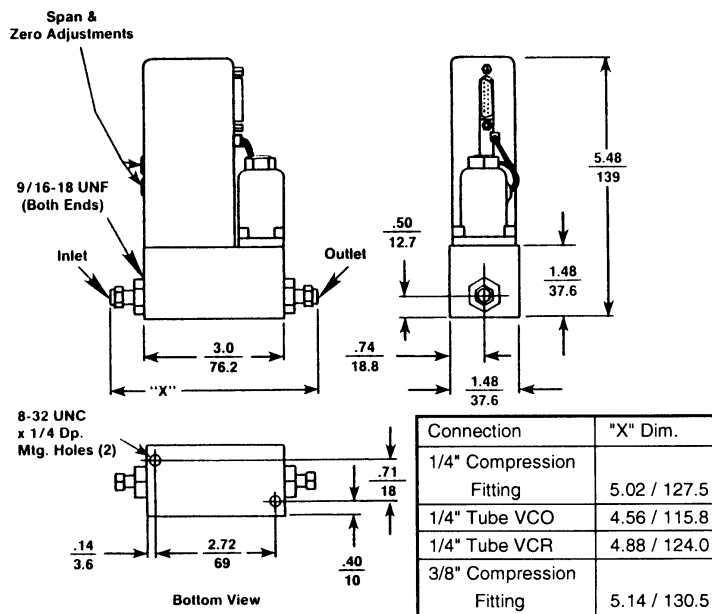
## Electrical

Electrical Connections	15 Pin D-Connector (DA-15P)
Power Requirements	N.C. 3.5 watts; +15 Vdc (±5%) @ 35 mA, -15 Vdc (±5%) @ 180 mA
	N.O. 10.5 watts; ±15 Vdc (±5%) @ 350 mA
Compliance	EMC Directive 89/336/EEC EN 61326-1

\*Standard pressure and temperature in accordance with SEMI (Semiconductor Equipment and Materials Institute) standard: 0°C and 101 kPa (760 torr).

## Product Dimensions

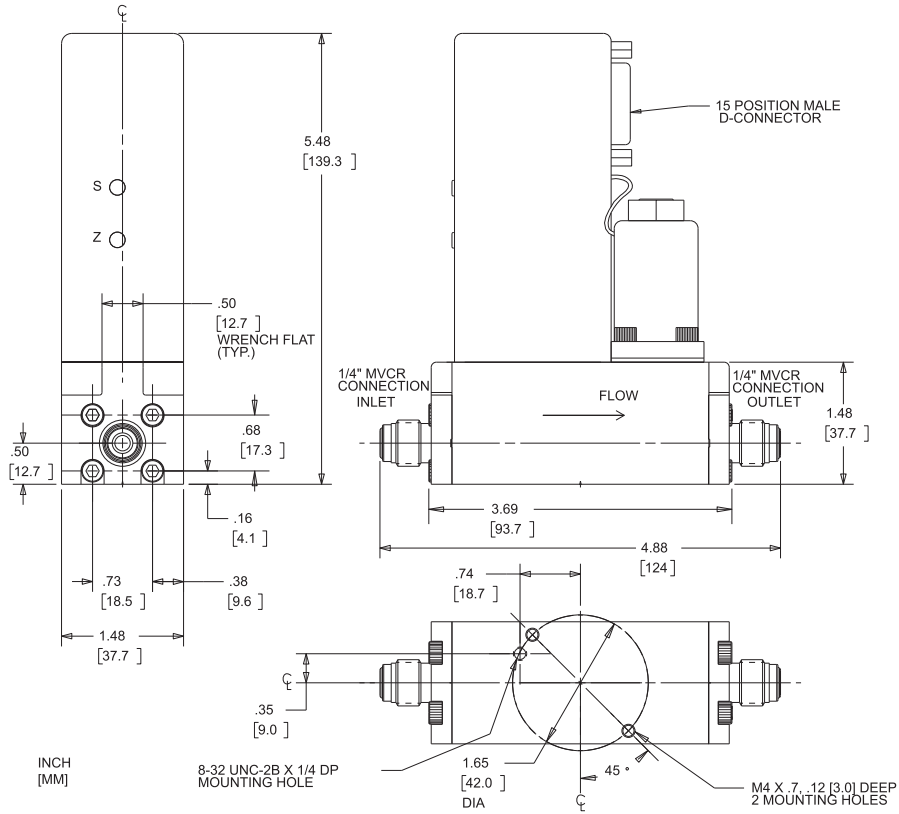
Model 5866RT  
with Elastomer Seals  
and D-Connector



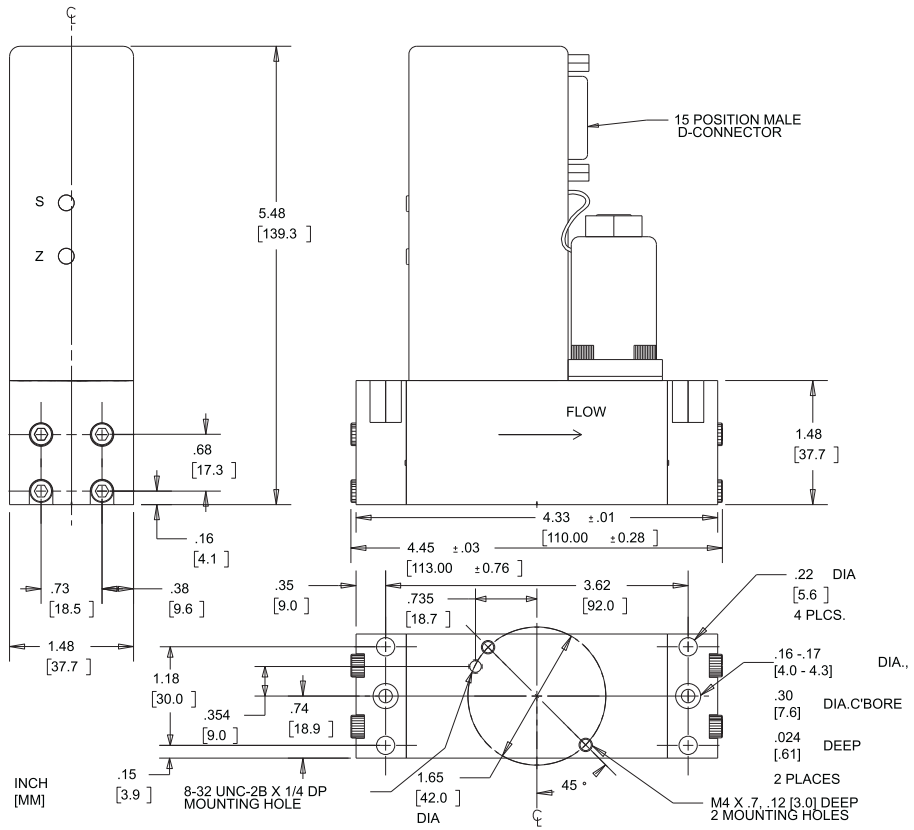
inches / millimeters

# Product Dimensions (continued)

Model 5866RT Common Body with VCR and D-Connector



Model 5866RT Common Body Downport and D-Connector



## Brooks Service and Support

Brooks is committed to assuring all of our customers receive the ideal flow solution for their application, along with outstanding service and support to back it up. We operate first class repair facilities located around the world to provide rapid response and support. Each location utilizes primary standard calibration equipment to ensure accuracy and reliability for repairs and recalibration and is certified by our local Weights and Measures Authorities and traceable to the relevant International Standards.

Visit [www.BrooksInstrument.com](http://www.BrooksInstrument.com) to locate the service location nearest to you.

### START-UP SERVICE AND IN-SITU CALIBRATION

Brooks Instrument can provide start-up service prior to operation when required. For some process applications, where ISO-9001 Quality Certification is important, it is mandatory to verify and/or (re)calibrate the products periodically. In many cases this service can be provided under in-situ conditions, and the results will be traceable to the relevant international quality standards.

### CUSTOMER SEMINARS AND TRAINING

Brooks Instrument can provide customer seminars and dedicated training to engineers, end users, and maintenance persons.

Please contact your nearest sales representative for more details.

Due to Brooks Instrument's commitment to continuous improvement of our products, all specifications are subject to change without notice.

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