



## Model # 600-9 In-line Thermal Mass Flow Meter

(Shown with 9500P Integral Electronics)

Our Model # 600-9 Thermal Mass Flow Meter allows for a perfect marriage between your process piping or tubing and our flow measurement instrument. We offer multiple process connections from Flange, MNPT, and 3rd party connections in order to simplify the plumbing connection.

The unobstructed flow path provides a clear pathway for your process fluid, with negligible pressure drop for both liquid and gas applications. The unique design and placement of our sensors keeps them from coming into direct contact with the passing fluid, allowing for long life and high accuracy.

All units come with redundant flow and temperature sensors further enhancing the long life of the measurement instrument. Our instruments are built from standard 316SS and can hold up to the harshest environments.

### Thermal Instrument Standard Features:

- 1/4" Line Sizes and larger
- Unobstructed Flow Path
- (1) RTD Flow Sensor & (1) RTD Temperature Sensor with Redundant Backup Sensors
- Non-wetted Sensor Design
- 316SS Material of Construction
- Variety of Process Connections available
- Model # 600-9 can be married to Integral or Remote Electronic Transmitter or Flow Switch

9500P Integral or 9500P Remote

9200B Panel mount Remote Electronics

926 Remote Electronics

FS16 Integral Transmitter



Model # 600-9 with Flange Connection



Model # 600-9 with Tube Ends



Unobstructed Flow Path

# Thermal Instrument Flow Meters

# Model # 600-9 In-line Mass Flow Meter

## Thermal Mass Technology Advantages:

- Accurate
- Repeatable Measurements
- Excellent Turndown up to 1000:1
- Capable of measuring low flow rates
- Non-wetted sensors do not come into direct contact with fluid
- Operates in varying pressures and vacuum environment
- Temperature Compensated
- No Moving Parts
- Independent 4-20mA output for Flow and Temperature

## Options:

### Wetted Materials:

316SS (Std.), Hastelloy-C, Tantalum, Titanium, and Monel available upon request

### Process Connections:

Tube Ends, MNPT, Flange, VCR, VCO

### Face to Face:

Standard and Custom lengths available

### Protective Coating:

Flow Wetted areas coated with Teflon, others upon request.

### Sensor:

Flow (Std), Temperature, Bi-Directional Flow Indication

## Applications:

Gas Flow Measurement, Liquid Flow Measurement, Fluid Temperature (Optional)

## Fluids:

### Gases:

All inert, clean, and non-condensing

Flammable, Hydrogen, Hydrocarbons, and corrosive

### Liquids:

Water, Oil, Hydrocarbons, and solvents

Contact factory for others

## Standard Installation:

10 pipe diameters before meter and 5 pipe diameters after meter without any piping changes (Note: We can calibrate to installation conditions if above cannot be met)



### As Pictured :

Model 600-9/ Flange Process Connection/  
Teflon Coating applied to inner flow tube and flange.

## Engineering Specifications:

Accuracy:	±0.50% of Full Scale or 1% of reading under 20% of flow range ** Process Fluid Temperature Span ±50°F
Repeatability:	± .20% of Rate
Turndown	10:1 Std. 1000:1 Application Dependent
Response Time:	Gases—1 to 2 Seconds Liquids— < 500ms.
Pressure Rating	Extreme Pressure Capability*
Mass Flowrates	Gas 40—50,000 SFPM Liquid .02—15 FPS
Temperature Capabilities:	-40—350°F (Std) , -40—175°C (Std.) Optional High Temps to 500°F (260°C)

\*\* Note—Accuracy of Meter reading based on air and meeting all piping conditions.

\* Note—Contact Factory to consult on pressure capability

## Transmitter Specifications (Integral or Remote):

Model Shown:	9500P
Display:	8 Digit Flow Rate & Total Flow Rate
Power:	120 / 240 VAC, 50/60 Hz 24 VDC, 1 Amp
Outputs:	4-20 MADC Flow (Std.) 4-20 MADC Temperature (Opt.)
Optional Outputs:	0-5 VDC, 0-10 VDC (Optional) Pulse, Modbus RS 485, Hart Communication
Remote:	Up to 2000'. Signal Cable- 18 Gauge, 2 Pair with shield
Communication via Micro-USB Cable & 4 Button Menu System (Opt.)	
<u>Adjustable Variables:</u>	Filter Factor, Flow Full Scale, Flow Factor, Pipe ID, Zero Cutoff %
<u>Enclosure Specifications:</u>	Cast Aluminum, Epoxy painted with window
Connection:	¾" FNPT Power & Signal
Ratings:	Nema 4, Explosion Proof, Class 1, Div 1 Groups B, C, D Weatherproof
Temperature:	Ambient—13 to 140°F (-25 to 60°C) Storage—-40 to 158°F (-40 to 70°C)



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