MODEL# 600-9/9500P Thermal Mass Flow Meter

**Providing Features That Offer Value Added Benefits**

- Flow Rate Measurement of Gases & Liquids
- Available as Flow Switch
- Completely unobstructed flow path
- Sturdy 316 Stainless Steel Material Standard
- Corrosion Resistant Materials Available such as Hastelloy, Monel, Inconel, and others
- Redundant Non-Wetted Sensors
- 10:1 Turndown or greater. Multiple Ranges Available.
- No Moving Parts
- Negligible Pressure Drop
- Numerous Process Connections
- Available as small as 1/16” ID
- NIST Traceable Calibration
- Designed & Manufactured in the USA

Our Model # 600-9 Thermal Mass Flow Meter allows for a perfect marriage between your process piping and our flow measurement instrument. This model is also available as a Flow Switch.

The unobstructed flow path provides a clear pathway for your process fluid, with negligible pressure drop for both liquid and gas applications. Our instruments are known for providing years of service and accurate measurement.

Our Model # 9500P Integral Electronics allows local viewing of Flow Rate and Totalized Flow Rate on a bright LED display, as well as providing a 4-20mA flow output. All flow elements are also available with Remote Electronic Transmitters that provide information such as Flow Rate, Totalized Flow Rate, and Flow Alarms.

Thermal Instrument can manufacture custom face to face dimensions to easily plumb into existing process piping when necessary. Available process connections include Flange, MNPT, Tube Ends, and Sanitary connections to meet your application.

**Simplifying**

**Mass Flow Measurement**

Thermal Instrument Mass Flow Meters
**Design Features:**
- Non-wetted sensors mounted on outer surface of the flow tube allow for measurement of Gases, Liquids, and Slurries
- Built in Redundant Sensors
- 316SS construction material standard. Hastelloy, Monel, Titanium, and others are available by request
- Protective and high release coatings available
- \( \frac{3}{4} '' \) up to 4'' line size standard. Larger sizes available from factory upon request.
- Bi-Directional capability for measuring flow coming from both directions
- 4-20mA Flow Output standard. Pulse, Hart, and RS485 Modbus Communication available.
- Isolated 4-20mA Temperature Output available

**Design Specifications:**
- Wetted Materials: 316SS (Std.) Consult Factory for others
- Process Connections: Tube, MNPT, Flange, VCR, VCO, Tri-Clamp. Others available upon request

**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)

**Fluids:**
- Gases: All inert, clean, UHP, and non-condensing
- Flammable, Hydrogen, Hydrocarbons, and corrosive
- Liquids: Water, Oil, Hydrocarbons, and solvents
- Contact factory for others

**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: 0—1200 psig (Std).
- Mass Flowrates:
  - Gas 40—50,000 SFPM
  - Liquid .02—20 FPS
- Temperature:
  - -40—350°F (Std), -40—175°C (Std.)
  - Optional High Temps to 500°F (260°C)

**Transmitter Specifications (Integral or Remote):**
- Display: 8 Digit Flow Rate & Total Flow Rate
- Power:
  - 120 / 240 VAC, 50/60 Hz
  - 24 VDC, 1 Amp
- Output:
  - 4-20MADC Flow (Std.)
  - Pulse Output (Opt.)
  - 4-20 MA Process Fluid Temp. (Opt.)
  - 0-5 VDC, 0-10 VDC Optional
  - Modbus RS 485, Hart Communication (Opt.)
- Remote:
  - Up to 4000'. Signal Cable - 18 Gauge, 2 Pair with shield
  - Communication via RS-232 Cable & 4 Button Menu System (Opt.)
- Adjustable Variables:
  - Filter Factor, Flow Full Scale, Flow Factor, Pipe ID, Zero Cutoff %

**Enclosure Specifications:**
- Cast Aluminum, Epoxy painted with window or blind
- Connection: \( \frac{3}{4} '' \) 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)