



ST-IP THERMAL MASS METER

## ST-IP: Thermal Mass Flow Meter For Gases Featuring In-Situ Calibration Check

Thermal Mass Flow Meters that measure the flow rate and consumption of gases for multiple industrial, municipal and commercial applications. Frequently used for energy management systems to monitor and improve energy efficiency as well as for regulatory compliance in environmental systems including carbon credit verification and flare gas monitoring.

ST-IP-01

### FEATURES

- Direct Mass Flow – No need for separate temperature or pressure transmitters
- High Accuracy and Repeatability – Precision measurement and extraordinary repeatability
- Turndown of 100 to 1 and resolution as much as 1000 to 1
- No Moving Parts – Eliminates costly bearing replacements, and prevents undetected accuracy shifts
- Low-End Sensitivity – Measures as low as 5 SFPM (e.g., 1 SCFM in a 6” pipe)
- Features in-situ Calibration Verification Procedure of sensor’s performance – verifies that the sensor is clean, and assures that there is no drift, or shift in the flow meter—Takes only three minutes!

### PRINCIPLE OF OPERATION

Thermal Mass Flow Meters measure heat transfer as the gas flows past a heated surface. Two platinum RTD sensors are clad in a protective sheath. The flow sensor is self-heated while the second sensor measures the temperature of the gas. As gas flows past the heated flow sensor the gas molecules carry heat away from the surface. The sensor drive circuit replenishes the lost energy by heating the flow sensor to maintain the desired temperature difference over the entire temperature range of the instrument. The power required to maintain this temperature differential is proportional to the mass flow rate.

### SPECIFICATIONS

Connections	Remote or Integral: In-line (MNPT, Flanged), Insertion
Communications	Modbus® compliant RS485 RTU or optional HART® communications
Accuracy:	+/- 0.5% of Full Scale +/- 1% of reading
Approvals:	CSA C22.2 (24 VDC); UL1604, Class I, Div 2, Groups B, C, D T4 (24VDC);
	CE (AC Power or 24VDC); ATEXnA - Div 2 (24 VDC)

### POWER

Dissipation: <2.5 W	24VDC Standard (12VDC or 115/230VAC optional)
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