

**SAGE METERING, INC. PARAMOUNT 401 SERIES INTEGRAL INDUSTRIAL THERMAL MASS FLOWMETER**

- 1) The flowmeter shall use the principle of convective heat transfer to directly measure mass flow. The sensor shall consist of two platinum resistance temperature detectors (RTDs).
- 2) The thermal mass flow meter shall directly measure the gas mass flow for calibrated Full Scale velocity settings from 0 to 35,000 feet per minute (e.g., 0 to 7000 SCFM in a 6" pipe) with a turndown ratio of at least 100:1
- 3) The flowmeter shall track the of overall gas consumption with an accuracy of +/- 0.5% of Full Scale +/- 1% of reading (enhanced accuracy optionally available with limited turn-down)
- 4) The flowmeter shall provide repeatability of 0.2% Full Scale
- 5) The meter shall provide an update of 1 second for a step change in measurement up to 63% of final flow value
- 6) The flowmeter shall have a 4-20mA flow signal output for rate and a 24VDC pulse for totalized value and Modbus® compliant RS485 RTU or HART communications. BacNet optional
- 7) The flowmeter shall also have a 2<sup>nd</sup> USB communication channel (cable supplied) which directly connects to PC for reconfigurability or meter validation checks
- 8) The thermal mass flowmeter shall be microprocessor based (Hybrid-Digital) with Integral Electronics
- 9) The flow meter can be either Insertion Style or In-Line Style
- 10) The flowmeter shall support field adjustments of the Full Scale flow range, engineering units, pipe size, low flow cutoff, filtering, etc. (using the supplied SageCom™ software)
- 11) The flowmeter shall provide a field In-Situ Calibration Check Verification using the displayed mW
- 12) The thermal mass flowmeter shall be Sage Metering Paramount Series (401)
- 13) Contact Sage Metering 866-677-7243 for further information or pricing

## GENERAL SPECIFICATIONS PARAMOUNT 401 SERIES INTEGRAL STYLE METER

<b>STYLE:</b>	Integral Insertion or In-Line Mass Flow Meter
<b>SENSOR:</b>	Two reference grade platinum RTDs clad in 316SS sheath
<b>MATERIAL:</b>	Wetted metal components: 316SS
<b>POWER:</b>	24VDC Standard (115/230VAC optional)
<b>POWER DISSIPATION:</b>	<2.5 W
<b>ELECTRONICS:</b>	Integral-Style Microprocessor based (Hybrid-Digital)
<b>ELECTRONICS ENCLOSURE</b>	Integral Mount, NEMA 4x enclosure, explosion proof rated
<b>DISPLAY:</b>	High contrast photo-emissive OLED graphical display (Flow Rate, Totalizer, Temperature and mW)
<b>TURNDOWN:</b>	100 to 1
<b>RESOLUTION:</b>	1000 to 1
<b>LOW END SENSITIVITY:</b>	5 SFPM
<b>FIELD CALIBRATION CHECK:</b>	Yes - Digital system features In-Situ Calibration Verification using the displayed mW
<b>COMMUNICATIONS:</b>	Modbus® compliant RS485 RTU or HART (BacNet optional) with separate USB connector/cable
<b>APPROVALS (DIV2):</b>	CSA C22.2 (24 VDC); ANSI 12.12.01, Class I, Div 2, Groups B, C, D T4 (24VDC); CE (AC Power or 24VDC) ; ATEXnA (Div 2 on 24 VDC )
<b>APPROVALS (DIV1):</b>	Optional on 115/230 VAC or 24 VDC powered meters; Class I, Div 1, Groups B, C, D, T6
<b>FIELD RECONFIGURABLE:</b>	SageCom™ software included for reconfigurability and validation checks
<b>FLOW ACCURACY:</b>	+/- 0.5% of Full Scale +/- 1% of reading (enhanced accuracy optionally available with limited turn-down)
<b>FLOW REPEATABILITY:</b>	0.2%
<b>RESPONSE TIME:</b>	1 second time constant
<b>GAS TEMPERATURE RANGE:</b>	Standard -40° to 200°F (93°C), Optional to 300°F (149°C) and 450°F (232°C)
<b>GAS PRESSURE:</b>	500 PSIG (If higher pressure needed, contact Sage)
<b>FLOW OUTPUT:</b>	4 to 20 mA for Rate
<b>TOTALIZER:</b>	24VDC pulse for Totalized value
<b>TEMPERATURE OUTPUT:</b>	Through Modbus® or HART only
<b>AMBIENT TEMPERATURE:</b>	-40°F to 150°F (66°C)
<b>PROBE/ FLOW BODY</b>	Insertion: 1/2" OD Probe (3/4" optional) probe lengths 6" to 36"; In-Line Flow Body: ¼" to 4" (6" optional)
<b>RELAYS:</b>	Optional external dry contact relay available (DCR-DC)
<b>FLOW CONDITIONING:</b>	Standard for In-Line Meters; Captive Flow Conditioners available upon request for Insertions
<b>ENCLOSURE DEPTH:</b>	DC: 8.0" ; AC: 8.0"