Sage Metering, Inc.

8 Harris Court, Bldg. D1
Monterey, CA 93940
866-677-SAGE (7243)
831-242-2030/ 831-655-4965 Fax

**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 standard, with options for Bacnet, Bluetooth, Ethernet (DC only) or HART
7) The flowmeter shall also have a 2nd 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 on page 2

## GENERAL SPECIFICATIONS PARAMOUNT 401 SERIES INTEGRAL STYLE METER

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