



SAGE PARAMOUNT™ (400 Series) INDUSTRIAL THERMAL MASS FLOW METER FOR GASES

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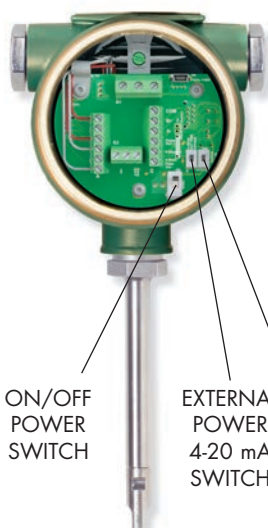
The Sage Paramount Thermal Mass Flow Meter features a bright, high contrast, photo-emissive OLED (Organic LED) display of Flow Rate, Total and Temperature in a robust, dual-sided NEMA 4X enclosure. The Flow Rate is also displayed graphically in a horizontal bar graph format. The rear compartment is completely separated from the electronics, and has large, easy-to-access, well marked terminals, for ease of customer wiring (see photo below). It is powered by 24VDC (optional 115/230VAC).

The Sage Paramount Flow Meter is offered in Integral or Remote style (which has lead-length compensation up to 1000 feet as well as an Explosion Proof Junction Box). Specify any standard probe length or flow body size. It has a 4-20 mA output as well as a pulsed output of Totalized Flow (solid state transistor drive). In addition, Sage Paramount supports full Modbus® compliant RS485 RTU communications as well as optional HART™. Note, the Modbus version is also supplied with a separate communication channel via a mini USB and cable.

All 24 VDC Powered Sage Paramount Meters are approved for Class 1, Div. 2, Groups B, C, D, T4, UL/CSA, ANSI 12.12.01, ATEX: Ex nA IIC T4, and CE.

CONTINUOUS DIAGNOSTICS & FIELD CONFIGURABILITY

Sage Paramount has continuous diagnostics. The raw calibration milliwatts (mw) is always displayed in the upper left hand corner of the meter's display. At any time, you can check this reading at a "No Flow" (0 SCFM) condition, and compare the reading to the original reported "No Flow" value noted on the last few lines of your meter's Certificate of Conformance or the Flow Meter's data tag. This in-situ diagnostic procedure not only checks the sensor performance and the "Live Zero" calibration point, but it also verifies that the sensor is clean. Although Sage Paramount is fully configured upon shipment for the pipe and process conditions requested, if changes are needed, SageCom™ software is **included at no charge** for field reconfigurability and performance validation and a printed report.



ON/OFF POWER SWITCH

EXTERNAL POWER 4-20 mA SWITCH

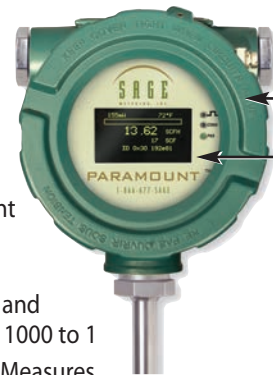
ISOLATED 4-20 mA SWITCH

Scan here for terminal details



MAJOR BENEFITS OF THERMAL MASS FLOW METERS

- 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
- Low-End Sensitivity – Measures as low as 5 SFPM (e.g., 1 SCFM in a 6" pipe)
- Negligible Pressure Drop – Will not impede the flow or waste energy
- No Moving Parts – Eliminates costly bearing replacements, and prevents undetected accuracy shifts
- Ease of installation and convenient mounting hardware



Dual-sided, explosion proof, NEMA 4X enclosure

Features a very high contrast display of Gas Flow Rate, Total and Temperature, visible outdoors

SPECIFIC BENEFITS OF THE SAGE PARAMOUNT

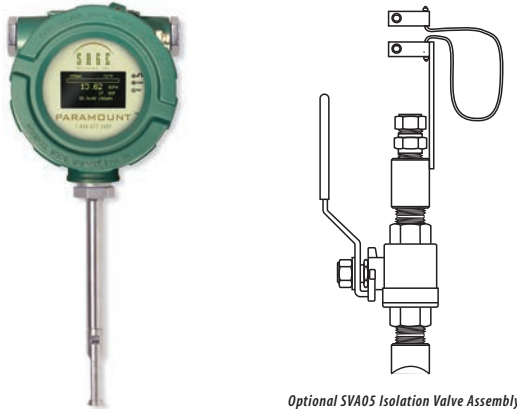
- Features in-situ "Field Zero Calibration Check" of sensor's performance – verifies that the sensor is clean, and assures that there is no drift, or shift in the flow meter
- Each Paramount order includes a free copy of the powerful SageCom™ validation and configuration software
- Compact design of enclosure is only 4.33" dia. by 8" deep
- High contrast photo-emissive OLED display with numerical Flow Rate, Total and Temperature, as well as Graphical Flow Indicator
- Calibration milliwatts (mw) is continuously displayed, providing for ongoing diagnostics
- Features both 1/2" dia. probe as well as optional rugged 3/4" probe and sensor with double seal (for insertion style)
- Measures velocities as high as 35000 SFPM (e.g., 3100 SCFM in a 4" Pipe)
- Proprietary digital sensor drive circuit provides enhanced signal stability and unaffected by process temperature & pressure changes
- Modbus® compliant RS485 RTU communications (HART™ optional) as well as separate USB communication channel
- Isolated 4-20 mA output and pulsed output of Totalized Flow
- Rugged, user-friendly packaging with well marked and easy terminal access including separate USB port
- Remote style has Lead-Length Compensation. Allows remote electronics up to 1000 feet from probe; Explosion Proof Junction Box has no circuitry, just terminals (suitable for harsh environments)
- Low power dissipation, under 2.5 Watts (e.g. under 100 mA at 24VDC)
- Flow conditioning built into In-Line flow meters (1/2" and up)
- Captive Flow Conditioners for Insertion meter applications, if required
- Explosion Proof Enclosure

SAGE PARAMOUNT™ STYLES AND SPECIFICATIONS

Sage Metering is your source for monitoring, measuring and controlling the gas mass flow in your industrial process, building management system or environmental application. Our high performance, NIST Traceable, Thermal Mass Flow Meters will help increase productivity, reduce energy costs, maximize product yields, and/or help reduce environmental insult. Sage provides high quality In-Line and Insertion Thermal Mass Flow Meters for a wide variety of industrial, commercial, and environmental monitoring needs, including carbon credit verification and Flare Gas monitoring.

Our experienced application engineers, many of whom have worked in the Thermal Mass Flow marketplace since its inception, will assist you in choosing the proper gas Flow Meter for your application—and they will be pleased to offer installation guidance to assure that the meter(s) selected will perform as accurately as possible. Additionally, our Service Staff stand ready to support you with any after-sale assistance that you may require.

401 SERIES – INTEGRAL



Optional SVA05 Isolation Valve Assembly

402 SERIES – REMOTE



Mounting Hardware (included)

PARAMOUNT 401/402

Standard accuracy is +/- 0.5% of Full Scale +/- 1% of reading with a turn-down of 100 to 1 and resolution as much as 1000 to 1. Repeatability is 0.2%. NOTE: Enhanced accuracy optionally available with limited turn-down⁴.

The electronics has an isolated 4 to 20 mA output proportional to Mass Flow Rate as well as pulsed outputs of Totalized Flow (24VDC solid state transistor drive⁶). In addition, Modbus RS485 RTU communications is standard, along with a USB channel⁷.

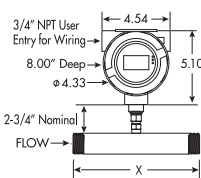
INTEGRAL STYLE ELECTRONICS

Electronics is Integral style, with rugged windowed dual compartment, explosion proof, NEMA 4X enclosure with local display. The display is a high contrast photo-emissive OLED display, and displays Mass Flow Rate, Totalized Flow and Temperature as well as a graphical representation of Flow Rate in a horizontal bar graph format. In addition, the calibration milliwatts (mw) is continuously displayed, providing ongoing diagnostics.

REMOTE STYLE ELECTRONICS

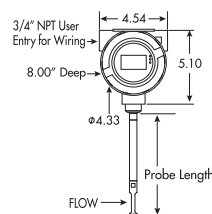
Electronics is Remote style, with rugged windowed dual compartment, explosion proof, NEMA 4X enclosure with display. The display is a high contrast photo-emissive OLED display, and displays Mass Flow Rate, Totalized Flow and Temperature as well as a graphical representation of Flow Rate in a horizontal bar graph format. In addition, the calibration milliwatts (mw) is continuously displayed, providing ongoing diagnostics. Includes Remote Mounting Hardware.

The Flow Element's Junction Box is Expl Proof (Class 1, Div 1, Groups B, C, D), and does not have any electronics—only a wiring terminal block. The Junction Box is connected to the Remote Electronics by 25 ft of lead-length compensated cable. The cable (6-conductor) can be lengthened or shortened without affecting accuracy (max loop resistance 10 ohms, over 1000 ft), if grounded properly, at transmitter.



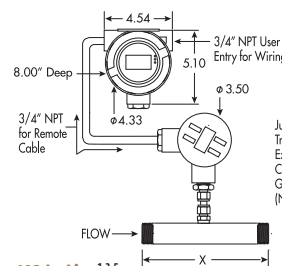
401 In-Line^{1,3,5}

Flow Element is In-Line style consisting of a choice of 316 Stainless Steel Schedule 40 Flow Bodies sized from 1/4" x 6" long to 4" x 12" long



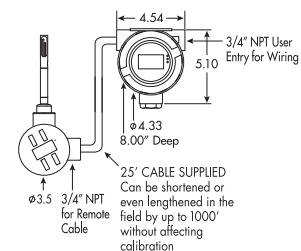
401 Insertion²

Flow Element is Insertion style, consisting of a 1/2" OD probe (3/4" optional) with lengths from 6" to 36" suitable for insertion into the center of a process pipe



402 In-Line^{1,3,5}

Flow Element is In-Line style consisting of a choice of 316 Stainless Steel Schedule 40 Flow Bodies sized from 1/4" x 6" long to 4" x 12" long



402 Insertion²

Flow Element is Insertion style, consisting of a 1/2" OD probe (3/4" optional) with lengths up to 36" long (typically 15" long) suitable for insertion into the center of a process pipe

- 1 Male NPT ends are standard, with flanged ends, tube, or butt weld optionally available
- 2 Mounting hardware such as Isolation Valve Assemblies, Compression Fittings, and Flanges, are optional
- 3 Chart of Flow Body length "X" shown in the table on the right
- 4 Enhanced accuracy available upon request, especially if turndown limited. Contact Sage
- 5 Flow Conditioners are built into In-Line style flow bodies from 1/2" to 4"
- 6 10 Amp Dry Contact external relay available for Totalized Flow (specify DCR-DC accessory)
- 7 HART™ meters do not have a USB channel. Rather, they are supplied with a RS485 to USB converter in order to connect to SageCom software

IN-LINE METER DIMENSIONS	
Pipe Size x Flow Body Length	
1/4" x 6"	1-1/4" x 10"
3/8" x 6"	1-1/2" x 12"
1/2" x 7"	2" x 12"
3/4" x 7"	2-1/2" x 12"
1" x 8"	3" x 12"
	4" x 12"

Scan here for additional products

