SAGE PRIME™ (SIP Series)
THERMAL MASS FLOW METER FOR GASES
FEATURING IN-SITU CALIBRATION CHECK

SAGE PRIME™ THERMAL MASS FLOW METER FOR GASES

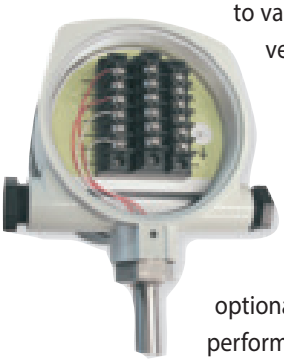
Sage Prime is one of our top selling meters in our Product Line. The Sage Prime Thermal Mass Flow Meter features a bright, high contrast, photo-emissive OLED (Organic LED) display of Flow Rate, Total and Temperature in a robust, yet lightweight, dual-sided NEMA 4 enclosure. The Flow Rate is also displayed 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 (12VDC optional, or 115/230VAC). The power dissipation is under 2.5 watts (e.g. under 100 mA at 24VDC).

The Sage Prime 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 Prime supports full Modbus® compliant RS485 RTU communications (IEEE 32 Bit Floating Point), or optional BACnet.

Sage Prime is CE approved, and CSA, UL approved for Hazardous Service (see Wiring, Videos and Approvals under KNOWLEDGE BASE using the GET HELP tab on the website). For Division 1 approvals, request Sage Paramount, DIV1 option).

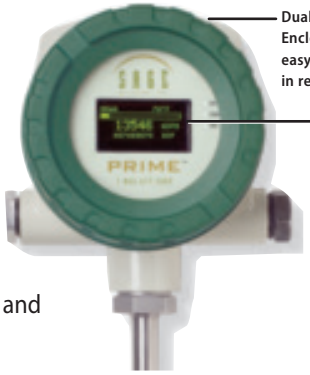
CONTINUOUS DIAGNOSTICS & FIELD CONFIGURABILITY

Sage Prime 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. It essentially provides a means to validate that the meter is operating properly, verifies that there is no shift or drift, and eliminates the need for annual factory calibrations. This simple field diagnostic procedure, in addition, verifies that the sensor is free from contamination, even without inspection.



SageCom™ software (SAGECOM-2) is optionally available for field reconfigurability and performance validation and a printed report.

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
- Dirt Insensitive – Provides sustained performance
- Ease of installation and convenient mounting hardware

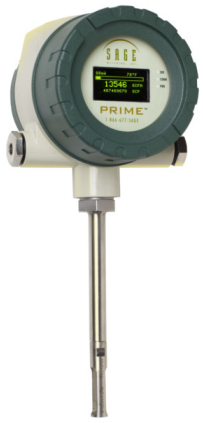
SPECIFIC BENEFITS OF THE SAGE PRIME

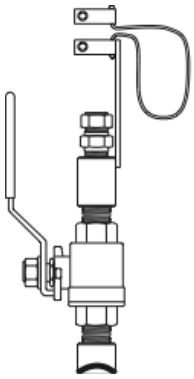
- Features in-situ Calibration Verification Procedure of sensor's performance – verifies that the sensor is clean, and assures that there is no drift, or shift in the flow meter—Takes only three minutes!
- Compact design of enclosure is only 4½" dia. by 4⅜" deep (DC Models)
- High contrast photo-emissive 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
- 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 (BACnet optional)
- Isolated 4-20 mA output and pulsed output of Totalized Flow
- Rugged, user-friendly packaging with easy terminal access
- 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)
- Field reconfigurability via optional SageCom™ Validation and Configuration Software
- Flow conditioning built into In-Line flow meters (1/2" and up)
- Captive Flow Conditioners for Insertion meter applications, if required

SAGE PRIME™ 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 and environmental monitoring needs, including carbon credit verification for greenhouse gas reduction, and flare gas monitoring. In addition, the Prime is frequently specified to measure natural gas flow rate and consumption in commercial applications for tenant billing, or to reduce energy costs in college and university campuses as well as shopping centers and office buildings.

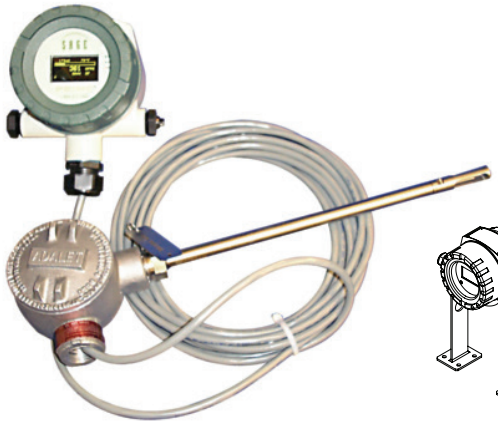
SIP SERIES – INTEGRAL





Optional SVA05 Isolation Valve Assembly

SRP SERIES – REMOTE



Mounting Hardware (included)

PRIME SIP/SRP

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-down[4].

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 drive[6]). In addition, Modbus RS485 RTU communications is standard (BACnet optional).

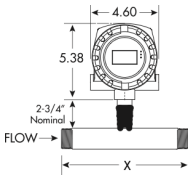
INTEGRAL STYLE ELECTRONICS[7]

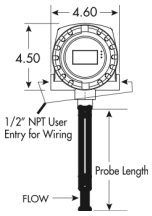
Electronics is Integral style, with rugged windowed dual compartment NEMA 4 enclosure with local display. The display is a high contrast photo-emissive OLED display, and displays Mass Flow Rate, Totalized Flow and Temperature as well as a graphical representation of Flow Rate in a horizontal bar graph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

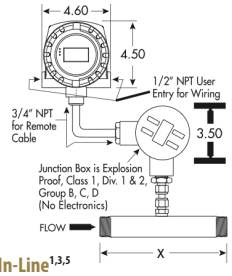
REMOTE STYLE ELECTRONICS

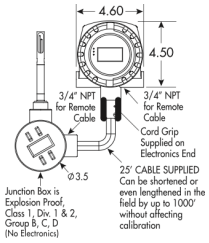
Electronics is Remote style, with rugged windowed dual compartment NEMA 4 enclosure with display. The display is a high contrast photo-emissive OLED display, and displays Mass Flow Rate, Totalized Flow and Temperature as well as a graphical representation of Flow Rate in a horizontal bar graph format. 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.









SIP 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

SIP Insertion[2]

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

SRP 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

SRP Insertion[2]

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

ENGINEERING SPECIFICATIONS OF OPTIONAL SAGE PRIME PLUS

This is an optional version of Sage Prime offering a separate ground for the 24VDC Power Supply (optional 5VDC or 12VDC Power Supplies) which isolates the Modbus ground from the power supply ground. All other features of Prime PLUS are identical to the standard Sage Prime, except Approvals do not apply at this time.

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" is on table on the right*

4 *Flow Conditioners are built into In-Line style flow bodies from ½" to 4"*

5 *10 Amp Dry Contact external relay available for Totalized Flow (specify DCR-DC accessory)*

6 *If NEMA 4X enclosure or HART needed, specify Sage Paramount (Series 400)*

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 Paramount Flyer

Scan here for General Brochure

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