

The **Smith Meter™ Model H8 Meter** is a 8", double-case, straight-through, rotary vane, positive displacement meter. Applications include: blending, batching, dispensing, inventory control, and custody transfer of crude oils and refined products.

Features

- **Superior Accuracy** - The Smith Meter™ Rotary Vane Meter principle, combined with the meter's uniquely designed offset inlet and outlet nozzles, minimizes pressure drop across the measuring chamber, which reduces flow through the meter clearances for maximum accuracy.
- **Low Pressure Drop** - Streamlined flow path provides low pressure drop.
- **Positive and Accurate Registration** - High torque drive calibrator with adjustment in 0.05% increments ensures accurate registration.
- **Long Service Life** - Low friction ball bearings, fixed cam-type timing, and rugged construction give sustained accuracy and long service life.

Options

- **High Viscosity Meter Clearances** - To extend operation at maximum flow rate from 400 mPa•s to 2,000 mPa•s.
- **High Temperature Clearances** - To extend operating temperatures from 137°F to 200°F (58°C to 93°C).
- **All Iron Trim** - for operating temperatures above 200°F (93°C).
- **LPG Trim** - For low lubricity liquids such as LPG.
- **NACE Construction** - Special components available to meet requirements of NACE Standard MR-01-75.

Operating Specifications

Maximum Flow Rate

	USGPM	m ³ /h
Continuous Rating - Standard Trim	1,600	365
Intermittent Rating ³ - Standard Trim	1,750	400
Continuous Rating - All Iron or LPG Trim	1,200	275

¹ Based on a maximum flow rate of 1,600 USGPM (365 m³/h).

² 1,000 mPa•s = 1,000 cP = 1 Pa•s.

³ Intermittent rating applies to service on clean, refined products where continuous operation is not required (e.g., truck loading, rail loading, and other loading or batching applications).



Model H8-S6

Minimum Flow Rate — Typical Performance

Linearity ¹	Units	Viscosity (Centipoise - mPa•s)				
		1	5	20	100	400
±0.15%	USGPM	180	70	20	4.0	1.00
	m ³ /h	41	16	4.5	0.9	0.20
±0.25%	USGPM	135	55	15	3.0	0.75
	m ³ /h	31	12	3.4	0.7	0.20
±0.50%	USGPM	90	35	10	2.0	0.50
	m ³ /h	20	8	2	0.5	0.10

Repeatability

±0.02%

Viscosity

Standard: 400 mPa•s² (2,000 SSU) maximum.

Optional: 2 Pa•s (10,000 SSU) maximum - specify "High Viscosity Meter Clearances."

Over 2 Pa•s: Specify "High Viscosity Meter Clearances" and derate maximum flow rate in direct proportion to viscosity over 2 Pa•s (e.g., at 4 Pa•s, derate Maximum Flow Rate to 50% of normal continuous rating - 800 USGPM).

Temperature

Standard Meter Clearances With:

Buna N/Teflon: -20°F to 137°F (-29°C to 58°C).

Viton: 10°F to 137°F (-12°C to 58°C).

High Temperature Meter Clearances With:

Buna N/Teflon: -20°F to 200°F (-29°C to 93°C).

Viton: 10°F to 200°F (-12°C to 93°C).

All Iron Trim With:

Buna N: -20°F to 225°F (-29°C to 108°C).

Teflon: -20°F to 400°F (-29°C to 205°C).

Viton: 10°F to 400°F (-12°C to 205°C).

Meter Gearing

Ten U.S. gallons, 1 barrel, or 10 dekalitres per revolution of meter calibrator output shaft.

Maximum Working Pressure

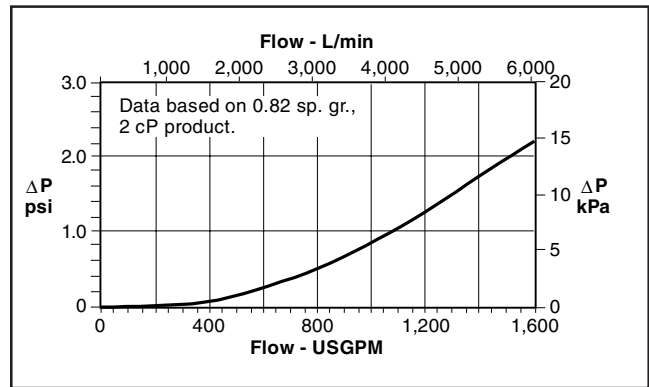
Model	Flange	PSI	kPa
H8-S1	150	150	1,034
H8-S3	150	285 ³	1,965 ³
H8-S5	300	300	2,069
H8-S6	300	720 ³	4,964 ³
H8-S7	600	1,440 ³	9,929 ³

Flange Class per ANSI B16.5 Raised Face Flange.

Installation

It is recommended that the meter be protected with a suitable mesh strainer.

Pressure Drop (ΔP)



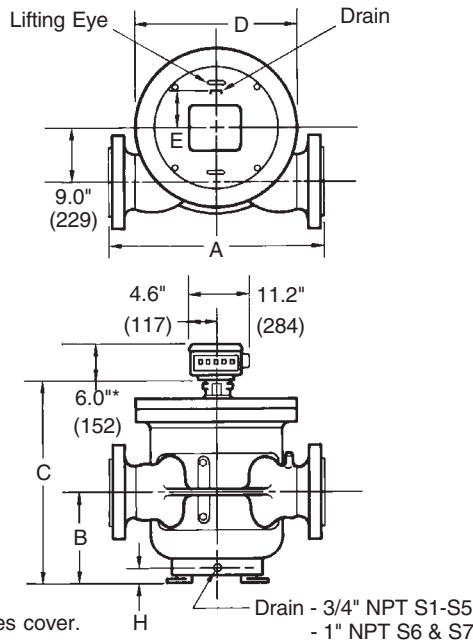
Materials of Construction

Trim	Housing	Internals	Seals ⁴
Standard	Steel	Iron, Steel, Stainless Steel, Aluminum	Buna N ⁵ , Teflon, or Viton
LPG Trim	Steel	Add Rulon and Nylon	Buna N ⁵ , Teflon, or Viton
All Iron	Steel	Delete Aluminum	Buna N ⁵ , Teflon, or Viton

Dimensions

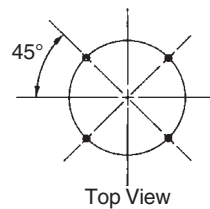
Inches (mm)

Model H8-S1 through S7



Meter Anchor Bolt Holes

4 - "F" Bolt Holes on a "G" Diameter Bolt Circle



Note: Dimensions — inches to the nearest tenth (millimetres to the nearest whole mm), each independently dimensioned from respective engineering drawings.

Model	A	B	C	D	E	F	G	H	Weight - lb (kg)
H8-S1	28.0" (711)	15.4" (391)	32.9" (836)	24.0" (610)	7.3" (185)	0.8" (20)	17.0" (432)	3.6" (91)	855 (388)
H8-S3	28.0" (711)	15.4" (391)	34.3" (871)	24.0" (610)	7.3" (185)	0.8" (20)	17.0" (432)	3.6" (91)	860 (390)
H8-S5	28.8" (732)	15.4" (391)	34.3" (871)	24.0" (610)	7.3" (185)	0.8" (20)	17.0" (432)	3.6" (91)	875 (397)
H8-S6	33.5" (851)	16.1" (409)	37.1" (942)	25.8" (654)	7.1" (180)	0.9" (23)	18.3" (465)	3.3" (84)	1,450 (658)
H8-S7	35.8" (909)	16.3" (414)	38.6" (980)	29.0" (737)	7.8" (198)	0.9" (23)	18.3" (465)	3.4" (86)	1,790 (812)

³ Maximum W.P. at 100°F (38°C).

⁴ All S3 through S7 meters with Viton trim will have Teflon packing gland seals.

⁵ Standard.

Ordering Information

Application	Batching, Loading, Blending, Inventory, Custody Transfer, Process Control, etc.
Operating Conditions	Liquid — Name and sp. gr., Flow Range ⁶ , Temp. Range ⁶ , Viscosity Range ⁶ , Maximum Working Pressure.
Seals	Buna N ⁷ , Viton, or Teflon.
Units of Registration	Gallons, Barrels, Litres, Dekalitres, Cubic Meters, Pounds, Tons, Kilograms.
Direction of Flow	Left to right (as viewed above) is standard and will be supplied unless right to left flow is specified.
Options and Accessories	As required.

Accessories

Strainer

8" steel, R.F. flanged.

Hydraulic Valves

8" globe-type, steel, R.F. flanged, 300 psi maximum working pressure (see Bulletin AB03004).

Air Eliminator

8" steel, R.F. flanged.

Counters

200 Series - Accumulative, 9-digit, non-reset type.
600 Series - 5 large digit reset, 8 small digit non-reset.

Printer

Seven-digit accumulative.
Optional 6-digit zero start.

Preset Counter

300C Series - 4-digit (5-digit optional) mechanical pushbutton preset. Microswitch package for hydraulic valve, pump control, or other interlock optional.

Pulse Transmitters

Type E - SPDT Mercury Wetted Switch.

LNC Pulse Transmitter (adapts to 600 Series Counters).

Low-Resolution - 1 or 10 pulses⁸.

High-Resolution (HR) - 50 or 100 pulses⁸.

UPT - Quad-channel, infrared, security pulse transmitter in an explosion-proof housing (up to 1,000 pulses/rev.).

Flow Rate Indicator

Direct Mount Mechanical.

Remote Electronic.

Remote Registration

Electro-Mechanical Counters.

Electronic Totalizers.

Automatic Temperature Compensation

Model ATC - Factory-set for a given product.

Model ATG - Field-adjustable for different products.

⁶ Specify: minimum/normal/maximum.

⁷ Standard seals supplied unless optional material specified.

⁸ Per revolution of LNC Right-Hand Wheel.

Revisions included in SS01017 Issue/Rev. 0.7 (2/07):

Page 2: Revised PSI and kPa for Model H8-S3 in the Maximum Working Pressure section.

Page 3: Deaerator changed to Air Eliminator; Revised Pulse Transmitter to include UPT and removed PEXP and PPS; removed Model LEATC from Automatic Temperature Compensation.

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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