

8" Steel Model H8

Bulletin SS01017 Issue/Rev. 1.1 (10/18)

Smith Meter® PD Meter

The **Smith Meter® Model H8 Meter** is an 8", double-case, straight-through, rotary vane type 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.

1 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).

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

Operating Specifications

Maximum Flow Rate				
	USGPM	BPH	L/min	m³/h
Continuous Rating – Standard Trim	1,600	2,300	6,075	365
Intermittent Rating¹ – Standard Trim	1,750	2,500	6,625	400
Continuous Rating – All Iron or LPG Trim	1,200	1,725	4,550	275

Minimum Flow Rate Typical Performance						
		Viscosity (Centipoise – mPa·s)				
Linearity ²	Units	1	5	20	100	400
	±0.15%	USGPM	180	70	20	4.0
BPH		260	100	30	5.7	1.4
L/min		680	265	76	15	3.8
m³/h		41	16	4.5	0.9	0.2
±0.25%	USGPM	135	55	15	3.0	0.75
	BPH	193	79	22	4.3	1.1
	L/min	511	208	57	12	2.8
	m³/h	31	12	3.4	0.7	0.2
±0.50%	USGPM	90	35	10	2.0	0.5
	BPH	129	50	15	2.9	0.7
	L/min	341	133	38	7.6	1.9
	m³/h	20	8	2	0.5	0.1

Repeatability

±0.02%

Viscosity

Standard: 400 mPa•s³ (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 / PTFE ⁴ :	-20°F to 137°F (-29°C to 58°C)
Viton:	10°F to 137°F (-12°C to 58°C)
High Temperature Meter Clearance with:	
Buna-N / PTFE ⁴ :	-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)
PTFE ⁴ :	-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, one barrel, or ten dekaliters per revolution of meter calibrator output shaft.

Maximum Working Pressure			
Model	Flange	PSI	kPa
H8-S1	150	150	1,034
H8-S3	150	285 ⁵	1,965 ⁵
H8-S5	300	300	2,068
H8-S6	300	740 ⁵	5,102 ⁵
H8-S7	600	1,480 ⁵	10,204 ³
H8-S8	900	2,220 ⁵	15,306 ⁵

Flange Class per ANSI B16.5 Raised Face Flange.

3 1,000 mPa•s = 1,000 cP = 1 Pa•s.

4 Polytetrafluoroethylene (PTFE).

5 Maximum working pressure at 100°F (38°C).

6 All S3 Through S8 meters with Viton trim will have PTFE⁴ packing gland seals.

7 Standard

8 Specify: minimum/normal/maximum.

9 Standard seals supplied unless optional material specified

Materials of Construction

Trim	Housing	Internals	Seals ⁶
Standard	Steel	Iron, Steel, Stainless, Steel, Aluminum	Buna-N ⁷ , PTFE ⁴ , or Viton
LPG Trim	Steel	Iron, Steel, Stainless, Steel, Aluminum, Rulon and Nylon	Buna-N ⁷ , PTFE ⁴ , or Viton
All Iron	Steel	Iron, Steel, Stainless Steel	Buna-N ⁷ , PTFE ⁴ , or Viton

Installation

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

Weights & Measures Approvals

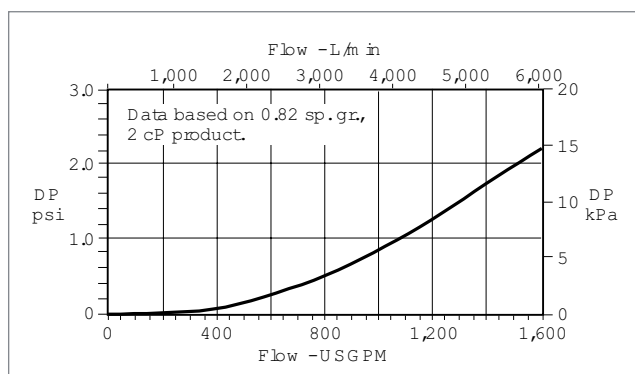
USA: NTEP CC 95-054

Canada: NOA S.WA-0615

European Union: MID

Others: Consult factory

Pressure Drop (ΔP)



Meter Ordering Information

Application	Batching, Loading, Blending, Inventory, Custody Transfer, Process Control, etc.
Operating Conditions	Liquid – Name and sp. gr., Flow Range ⁸ , Temp. Range ⁸ , Viscosity Range ⁸ , Maximum Working Pressure.
Seals	Buna-N ⁹ , Viton, or PTFE ⁴ .
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.

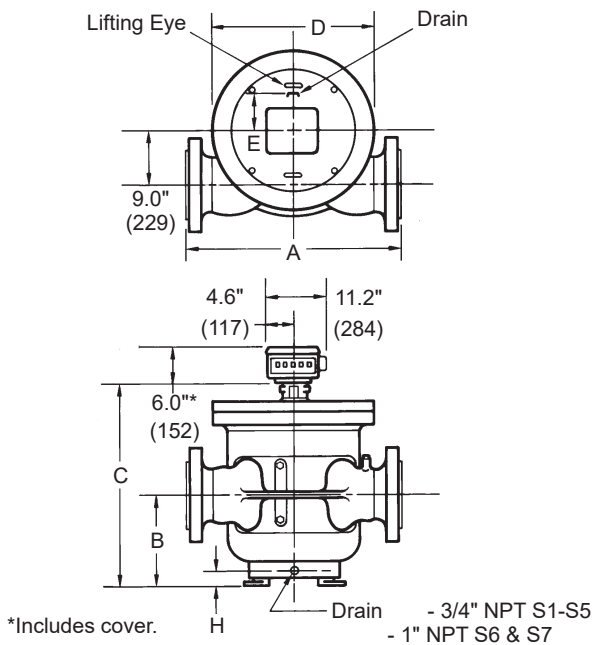
Dimensions

Inches (Millimeters)

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

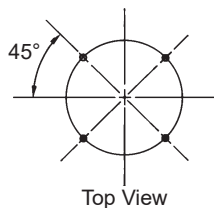
Model	A	B	C	D	E	F	G	H	Weight - lb (kg)
H8-S1	28.0" (711)	15.4" (391)	32.9" (836)	24.0" (610)	7.3" (185)	0.8" (20)	17.0" (432)	3.6" (91)	855 (388)
H8-S3	28.0" (711)	15.4" (391)	34.3" (871)	24.0" (610)	7.3" (185)	0.8" (20)	17.0" (432)	3.6" (91)	860 (390)
H8-S5	28.8" (732)	15.4" (391)	34.3" (871)	24.0" (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)
H8-S8	40.3" (1,023)	23.0" (584)	46.9" (1,191)	37.8" (960)	15.6" (396)	1.3" (31)	25.0" (635)	6.3" (160)	4,530 (2,059)

Model H8-S1 through S8



Meter Anchor Bolt Holes

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



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 - Large 5 digit reset, small 8 digit non-reset.

Printer

7-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.

Electronic Pulse Transmitters

LNC Pulse Transmitter (adapts to 600 Series Counters).

Low-Resolution - 1 or 10 pulses¹⁰.

High-Resolution (HR) - 50 or 100 pulses¹⁰.

UPT

Universal Pulse Transmitter – High Resolution dual pulse quadrature output in a weather-tight explosion-proof enclosure (up to 1000 pulses/rev) used to provide pulse inputs to optional electronic indicators/controllers/flow computers which may perform electronic temperature compensation.

Flow Rate Indicator

Direct Mount Mechanical.

Remote Electronic.

Remote Registration

Electronic Totalizers.

Mechanical Automatic Temperature Compensation

Model ATC - Factory-set for a given product.

Model ATG - Field-adjustable for different products.

¹⁰ Per revolution of LNC Right-Hand Wheel.

Revisions included in SS01017 Issue/Rev. 1.1 (10/18):

Weights & Measures approvals added. Updated Pulse Transmitters section.

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.