

6" Steel Model G6

Bulletin SS01014 Issue/Rev. 1.0 (4/18)

Smith Meter® Rotary Vane PD Meters

The **Smith Meter® Model G6 Meter** is a 6", double-case, straight-through rotary vane type positive displacement meter. Applications include: blending, batching, dispensing, inventory control, and custody transfer of oils, solvents, chemicals, paints, fats, and fertilizers.



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 meter clearances to maximize 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 accuracy 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 150°F to 200°F (65°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	L/min
Continuous Rating - Standard Trim	1,000	3,750
Intermittent Rating¹ - Standard Trim	1,200	4,600
Continuous/ Intermittent Rating - All Iron or LPG Trim	750	2,800

Minimum Flow Rate – Typical Performance

Linearity ²	Units	Viscosity (Centipoise – mPa•s)					
		.5	1	5	20	100	400
±0.15%	USGPM	160	100	40	8	1.40	0.70
	L/min	606	378	152	30	5.30	2.65
±0.25%	USGPM	120	75	30	6	1.00	0.50
	L/min	455	284	114	23	3.80	1.90
±0.50%	USGPM	80	50	20	4	0.70	0.35
	L/min	303	190	76	15	2.65	1.33

¹ Intermittent rating applies to service on clean, refined products where continuous operation is not required (e.g., truck loading, rail loading, and other batching applications).

² Linearity based on a maximum flow rate of 1,000 USGPM (3,750 L/min) unless otherwise stated.

³ 1,000 mPa•s = 1,000 cP = 1 Pa•s.

Repeatability

±0.02%

Viscosity

Standard: 400 mPa·s (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 – 500 USGPM).

Temperature

Standard Meter Clearances With:

Buna N/PTFE⁹: -20°F to 150°F (-29°C to 65°C).

Viton: 10°F to 150°F (-12°C to 65°C).

High Temperature Meter Clearances With:

Buna N/PTFE⁹: -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).

PTFE⁹: -20°F to 400°F (-29°C to 205°C).

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

Meter Gearing

Five U.S. Gallons, one Barrel, or five Dekaliters per revolution of meter calibrator output shaft.

Maximum Working Pressure

Model	Flange	PSI ⁴	kPa ⁴
G6-S3	150	285 ⁴	1,965 ⁴
G6-S5	300	300 ⁴	2,068 ⁴
G6-S6	300	740 ⁴	5,102 ⁴
G6-S7	600	1,480 ⁴	10,204 ⁴
G6-S8	900	2,220 ⁴	15,307 ⁴

Note: Flange Class per ANSI B16.5 Raised Face Flange.

Weights & Measures Approvals

United States - NTEP CC 95-054

Candida - NOA S.WA-0615

Australia - 5/6B/55B

PTB Issued OIML R117-1 Test Report

PTB Issued MID certificate

Brazil - INMETRO

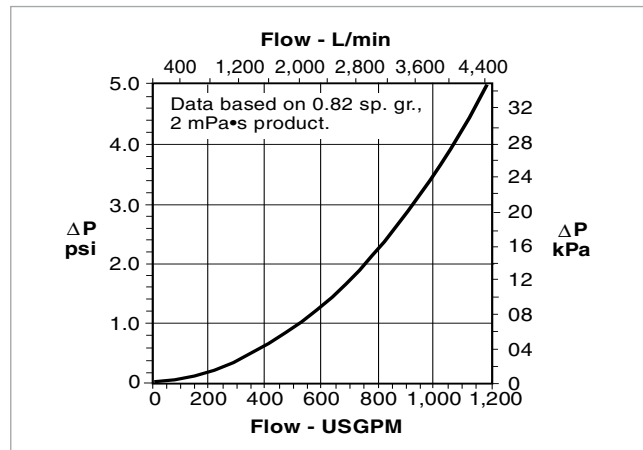
Russia - GOST

For others, consult factory.

Pressure Safety

Canadian CRN

Pressure Drop (ΔP)



Materials of Construction

Trim	Housing	Internals	Seals
Standard	Steel	Iron, Steel, Stainless Steel, Aluminum	Buna N ⁵ , Viton, or PTFE ⁹
LPG	Steel	Iron, Steel, Stainless Steel, Aluminum, Rulon and Nylon	Buna N ⁵ , Viton, or PTFE ⁹
All Iron	Steel	Iron, Steel, Stainless Steel	Buna N ⁵ , Viton, or PTFE ⁹

Installation

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

Ordering Information

Application	Batching, Loading, Blending, Inventory, Process Control, etc.
Operating Conditions	Liquid – Name, Specific Gravity or API Gravity, Flow Range ⁶ , Temperature Range ⁶ , Viscosity Range ⁶ , Maximum Working Pressure.
Seals	Buna N ⁷ , Viton, or PTFE ⁹ .
Units of Registration	Gallons, Barrels, Litres, Dekalitres, Pounds, Kilograms.
Direction of Flow	Left-to-right (as viewed above) is standard and will be supplied unless right-to-left flow is specified.
Style	Straight-through.
Options and Accessories	As required.

⁴ Maximum working pressure at 100°F (38°C).

⁵ Standard.

⁶ Specify: minimum/normal/maximum.

⁷ Standard seals supplied unless optional material specified.

⁸ Not compatible with higher pressure models.

⁹ Polytetrafluoroethylene (PTFE).

Accessories

Strainer

6" steel, R.F. flanged, 4 mesh or finer screen.

Hydraulic Valve⁸

6" globe-type, steel, R.F. flanged, 300 psi maximum working pressure.

Air Eliminator

6" steel, R.F. flanged, 300 psi maximum working pressure.

Counters

200 Series – Accumulative, nine-digit, non-reset type.

600 Series – Five-large digit reset, eight small-digit non-reset.

Printer

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

Preset Counter

300C Series – Four-digit (five-digit optional) mechanical pushbutton preset with valve linkage. Microswitch package for hydraulic valve, pump control, or other interlock optional.

Pulse Transmitters

LNC Pulse Transmitter (adapts to 600 Series Counters).

Low Resolution – 1 or 10 pulses¹⁰.

High Resolution (HR) – 50 or 100 pulses¹⁰.

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

Electronic totalizers.

Automatic Temperature Compensation

Model ATC – Factory-set for a given product.

Model ATG – Field-adjustable for different products.

Catalog Code

The following guide defines the correct PD meter for a given application and the respective catalog code. This code is part of the ordering information and should be included on the purchase order.

1	2	3	4	5	6	7	8	9	10
K	G	6	S	1	B	B	S	0	0

Position 1: Code

K - Catalog Code

Positions 2 and 3: Model/Flange Size

G6 - 6"

Position 4: Flow Path

S - Straight
V - Vertical

Positions 5: Pressure Class and End Connections

Standard (Raised Face Flanges)

- 1 - Class 150, 150 psig/1,034 kPa
- 3 - Class 150, 285 psig/1,965 kPa
- 5 - Class 300, 300 psig/2,068 kPa
- 6 - Class 300, 740 psig/5,102 kPa
- 7 - Class 600, 1,480 psig/10,204 kPa
- 8 - Class 900, 2,220 psig/15,307 kPa

PED (Raised Face Flanges)

- 1 - Class 150, Not Available
- 3 - Class 150, 285 psig/1,965 kPa
- 5 - Class 300, 300 psig/2,068 kPa
- 6 - Class 300, Consult Factory
- 7 - Class 600, 1,480 psig/10,204 kPa
- 8 - Class 900, 2,220 psig/15,307 kPa

All Flanges designed to ANSI B16.5, pressure ratings maximum working pressure at 100°F

Position 6: Meter Gearing

- G - Gallons (5:1 - V3, S3 through S8)
- B - Barrels (1:1 - V3, S3 through S8)
- D - Dekaliters (5:1 - V3, S3 through S8)
- I - Imperial Gallons¹¹
- P - Pound¹¹

Position 7: Seals

- B - Buna-N
- V - Viton
- T - PTFE⁹

Position 8: Trim

- S - Standard
- A - All Iron
- L - LPG

Position 9: Temperature Compensation

- 0 - None
- A - ATC
- B - ATG

Position 10: Special Requirements¹²

- 0 - Standard
- P - PED (consult factory)

⁹ Polytetrafluoroethylene (PTFE).

¹⁰ Per revolution of LNC right-hand wheel.

¹¹ Consult factory for model number when selecting Imperial or Pound gearing.

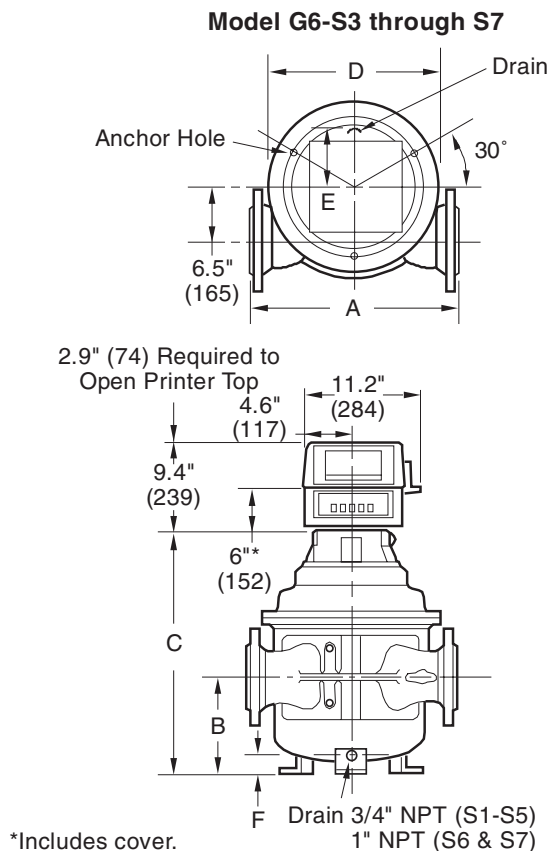
¹² PED required for all European countries. Equipment must be manufactured by Ellerbek, Germany facility.

Dimensions

Inches (Millimeters)

Model G6-S3 through S7

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



Meter Anchor Bolt Holes
3 - 0.8" (20) Bolt Holes on a
15" (381) Diameter Bolt Circle.

Model	A	B	C	D	E	F	Weight - lb (kg)
G6-S3	23.0" (584)	10.6" (270)	27.0" (686)	20.1" (511)	6.4" (163)	1.3" (33)	435 (197)
G6-S5	24.0" (610)	10.6" (270)	27.0" (686)	20.1" (511)	6.4" (163)	1.3" (33)	485 (220)
G6-S6	28.9" (734)	11.5" (292)	29.6" (752)	23.0" (584)	7.3" (185)	1.4" (36)	930 (433)
G6-S7	30.9" (785)	12.0" (305)	30.9" (785)	24.3" (617)	7.3" (185)	1.4" (36)	1,305 (592)

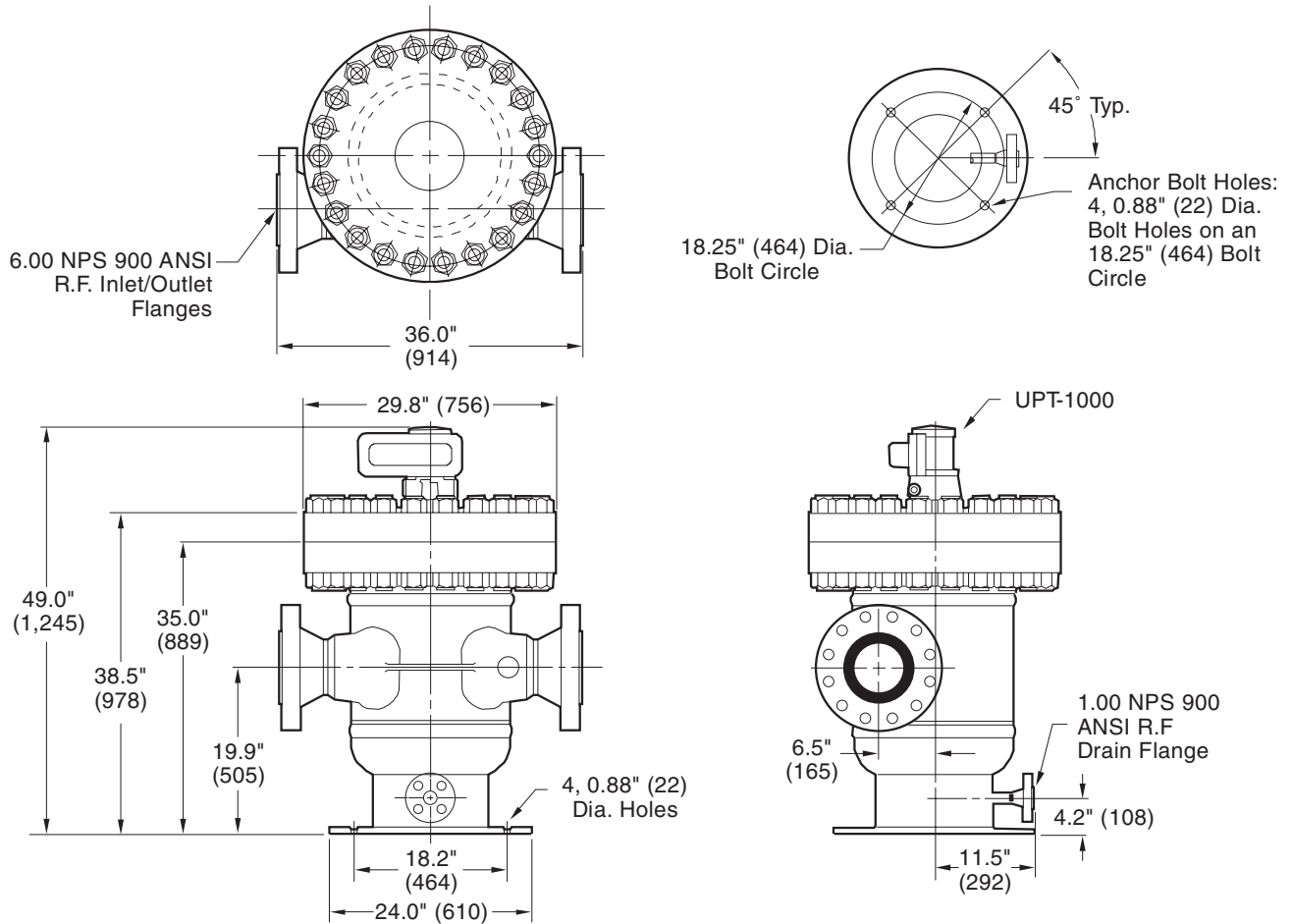
Note: Dimensions – Inches to the nearest tenth (millimeters to the nearest whole mm), each independently dimensioned from respective engineering drawings.

Dimensions

Inches (Millimeters)

Model G6-S8

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



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

Weight

2,800 lb (1,273 kg).

Revisions included in SS01014 Issue/Rev. 1.0 (4/18):

Weights & Measures information added. EPR references removed. Type E Pulse Transmitter removed.

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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