

3" Iron Model T-20

Bulletin SS01002 Issue/Rev. 0.8 (9/17)

Smith Meter® PD Rotary Vane Meter

The Smith Meter® Model T-20 Meter is a 3", single case, angled, 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 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 accurate registration.
- **Long Service Life** – Low friction ball bearings, fixed cam type timing, and rugged construction give sustained accuracy and long service life.

Operating Specifications

Maximum Flow Rate

	USG/min	L/min
T-20 (Standard) Continuous Rating	200	750
T-20 (Standard) Intermittent Rating¹	240	900
T-20 (All Iron Trim) Rating	150	570

Minimum Flow Rate – Typical Performance

Linearity ²	Units	Viscosity (centipoise - mPa•s)					
		0.5	1	5	20	100	400
±0.15	USG/min	40	25	10	2.5	0.50	0.12
	L/min	150	95	38	9.5	1.90	0.45
±0.25	USG/min	30	18	8	2.0	0.40	0.10
	L/min	113	68	30	7.6	1.50	0.38
±0.50	USG/min	20	12	5	1.2	0.25	0.06
	L/min	75	45	19	4.5	0.90	0.22

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 - 100 USG/min).

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 Based on a maximum flow rate of 200 USGPM (750 L/min).

³ 1,000 mPa•s = 1,000 cP = 1 Pa•s.

Temperature

Standard:	-20°F to 150°F (-29°C to 65°C)
Optional:	-20°F to 200°F (-29°C to 93°C) - specify "High Temperature Meter Clearances" or "All Iron Trim."

Other Temperatures: Consult factory.

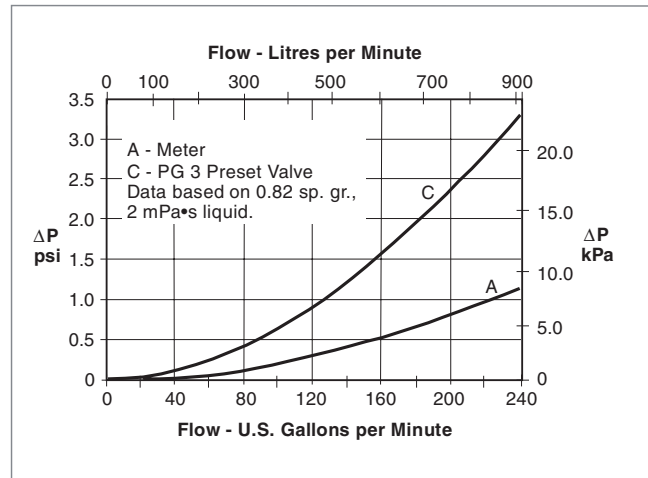
Maximum Working Pressure

Standard: 150 psig (1,034 kPa) up to 200°F (93°C).

Meter Gearing

One U.S. gallon or one dekalitre per revolution of meter calibrator output shaft.

Pressure Drop (ΔP)



Materials of Construction

Meter	Housing	Internals	Seals
T-20	Cast Iron	Iron, Steel, Stainless Steel, Aluminum ⁴ , Bronze ⁴	Cover O-Ring - Std. Buna-N, Opt'l. - Viton Packing Gland - Std. Buna, Opt'l. - Viton or PTFE ⁶
Valve: SPG-3 Preset Valve	Aluminum	Steel, Iron, Aluminum	Buna N ⁵ Opt'l. - Viton

Ordering Information

Application	Batching, Loading, Blending, Inventory, Process Control, etc.
Operating Conditions	Liquid – Name and sp. gr., Flow Range ⁷ , Temp. Range ⁷ , Viscosity Range ⁷ , Maximum Working Pressure
Seals	Meter: Buna ⁸ , Viton or PTFE ⁶ . Valve: Buna ⁸ , Viton.
Units of Registration	Gallons, Liters, Pounds and Kilograms
Inlet/Outlet Position	Position 1-A is standard and will be supplied unless another position (e.g., 2-C) is specified.
Options and Accessories	As required.

⁴ All iron trim (no aluminum or bronze) optional

⁵ Standard

⁶ Polytetrafluoroethylene (PTFE)

⁷ Specify: minimum/normal/maximum.

⁸ Standard seals supplied unless optional material specified.

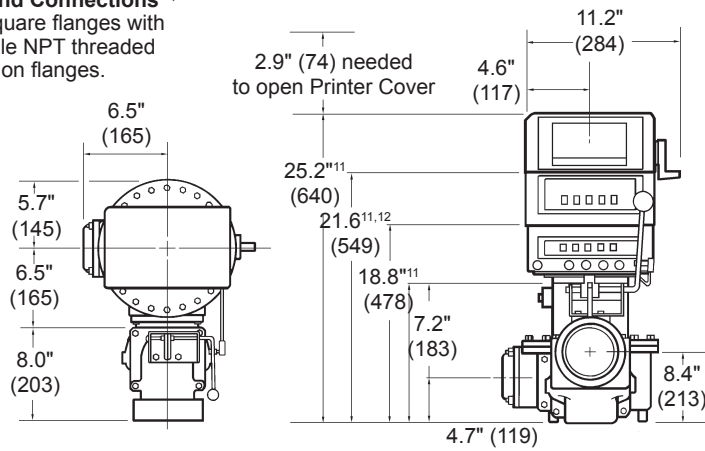
Dimensions

Inches (Millimeters)

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

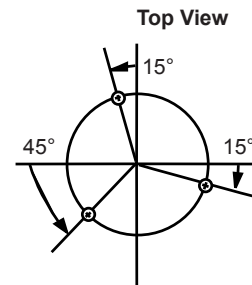
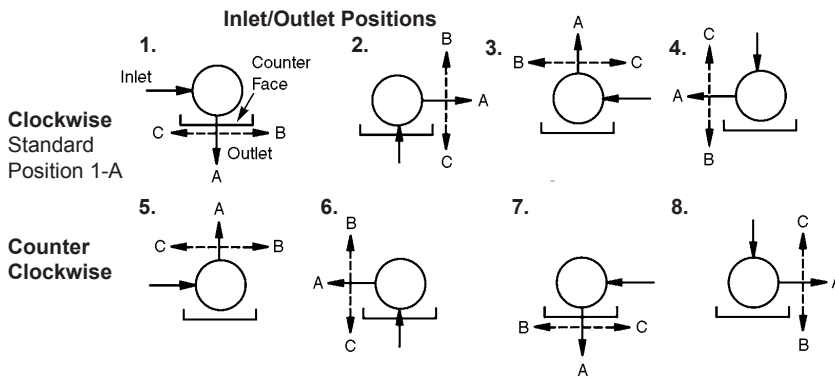
Meter End Connections^{11,12}

Smith square flanges with 3" Female NPT threaded companion flanges.



Weights ^{9,10}		
	lb.	kg.
Meter	82	37
Meter/LNC ⁹	97	44
Preset Package ^{9,10}	123	56

Install with suitable mesh strainer



Meter Anchor Bolt Holes
 3-3/8" – 16 Tapped Holes equally spaced on a 8.125" (206) dia. bolt circle.

Note: A, B, C denotes orientation of valve outlet if used.

9 Add 10 lb. (4.5 kg) if ticket printer is required.
 10 Includes Meter, LNC, Preset Counter and valve.
 11 Includes cover.
 12 Deduct 3.7" (94) if Present Counter is not required

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.

Contact information is subject to change. For the most current contact information, visit our website at www.fmctechnologies.com/measurementsolutions and click on the "Contact Us" link in the left-hand column.

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