

The **Smith Meter® Model T-40 Meter** is a 4" single-case, angle-type, rotary vane, 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

	USGPM	L/min
Continuous Rating - Standard Trim	400	1,500
Intermittent Rating ¹ - Standard Trim	500	1,900

T-40 Minimum Flow Rate - Typical Performance

Linearity ²	Units	Viscosity (mPa•s)					
		0.5	1	5	20	100	400
±0.15%	USGPM	80	50	20	5.0	1.0	0.25
	L/min	303	190	75	19.0	4.0	1.00
±0.25%	USGPM	50	35	15	4.0	0.8	0.20
	L/min	190	132	57	15.0	3.0	0.80
±0.50%	USGPM	40	25	10	2.5	0.5	0.13
	L/min	150	95	38	10.0	2.0	0.50

Repeatability

±0.02%



T-40 Meter with Preset, Counter, Printer, and Preset Valve

Viscosity

Standard: 400 mPa•s³ (2,000 SSU) maximum.

Optional: 2 mPa•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 - 200 USGPM).

Maximum Working Pressure

Standard: 75 psig (517 kPa) up to 200°F (93°C) for cast iron or aluminum housing.

Meter Gearing

Five U.S. Gallons or one Dekalitre per revolution of meter calibrator output shaft.

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."

Aluminum Housing Option: -50°F to 200°F (-45°C to 93°C).

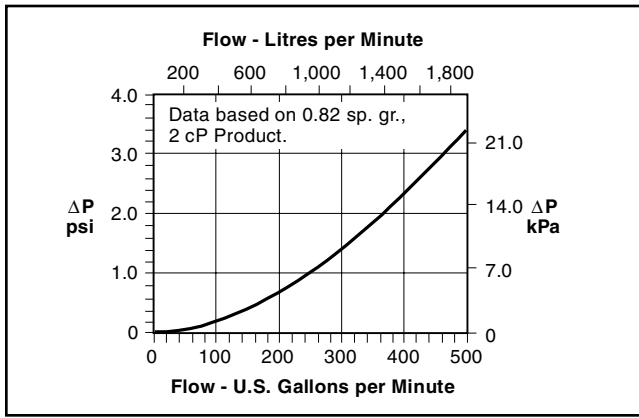
Other Temperatures: Consult factory.

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 400 USGPM (1,500 L/min) unless otherwise stated.

³ 1,000 mPa•s = 1,000 cP = 1 Pa•s.

Pressure Drop (DP)

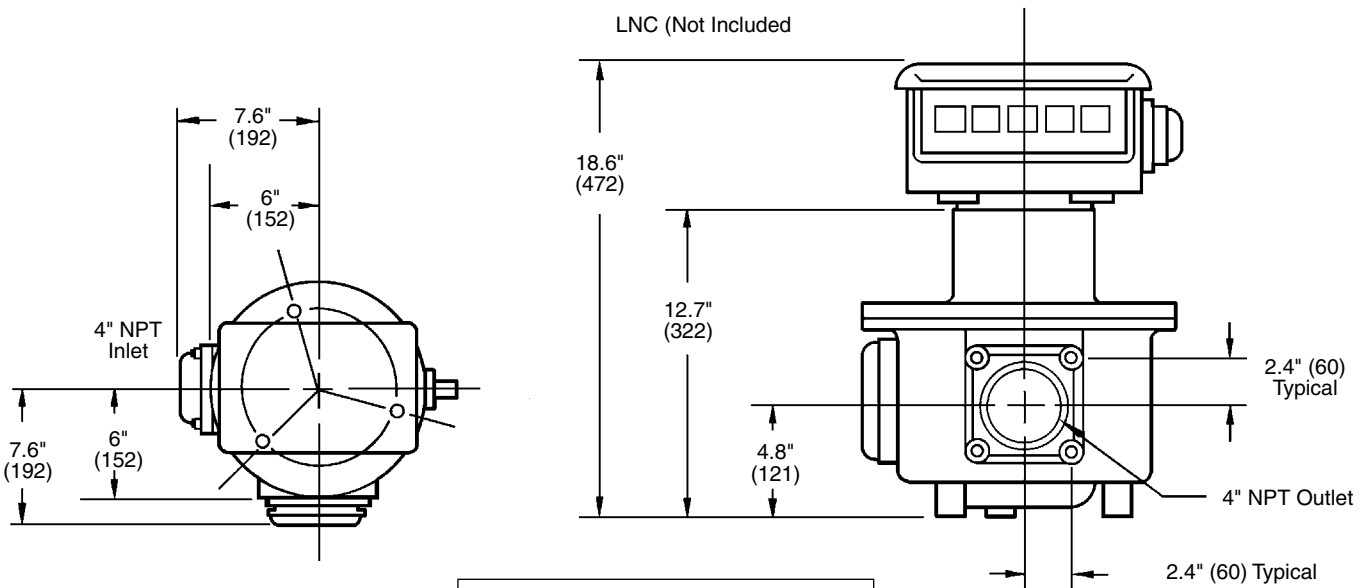


Materials of Construction

	Housing	Internals	Seals
Meter: T-40	Cast Iron	Iron, Steel, Stainless Steel, Aluminum	Cover O-Ring Std. - Buna-N Opt. - Viton Packing Gland Std. - Buna Opt'l. - Viton or PTFE ⁴

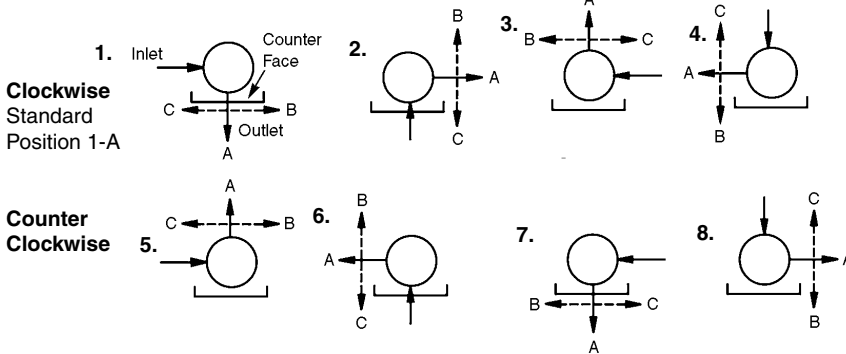
Dimensions

Inches (mm)



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

Inlet/Outlet Positions



Weight: Approximately 110 lb (50 kg).

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

⁴ Polytetrafluoroethylene (PTFE).

Ordering Information

Application	Batching, Loading, Blending, Inventory Process Control, etc.
Operating Conditions	Liquid—Name and sp. gr., flow range ⁵ , temperature range ⁵ , viscosity range ⁵ , maximum working pressure.
Meter Seals	Packing Gland: Buna ⁶ , Viton, or PTFE ⁴ .
Units of Registration	Gallons, Litres, Pounds, 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.

Accessories

Strainer

Y-type 4" NPT, cast iron.

Automatic Temperature Compensation

Model ATC⁷ - Factory-set for a given product.

Model ATG⁷ - Field-adjustable for different products.

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.

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.

PST - Dual-channel, high-resolution, security pulse generator.

UPT - Universal Pulse Transmitter - High resolution dual pulse quadrature output in a weather-tight explosion-proof enclosure (up to 1,000 pulses/rev.).

Flow Rate Indicator

Direction mount mechanical.

Remote electronic.

Remote Registration

Electro-mechanical counters.

Electronic totalizers.

⁴ Polytetrafluoroethylene (PTFE).

⁵ Specify: minimum/normal/maximum.

⁶ Standard seals supplied unless optional material specified.

⁷ Requires temperature well kit.

⁸ Per revolution of LNC Right-Hand Wheel.

Revisions included in SS01029 Issue/Rev. 0.5 (2/04):

Page 2: Materials of Construction – Removed Loctite Master Gasket and added Buna-N or Viton Cover O-Ring.

Page 3: Updated the Accessories.

Editorial Change: 11/13: Seals - material reference changed to PTFE.

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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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