2" Steel Model C2

Bulletin SS01010 Issue/Rev. 0.8 (4/18)

Smith Meter® Rotary Vane PD Meter

The Smith Meter Model C2 Meter is a 2", double-case, straight-through (S1 through S7), 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 the meters' 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

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	125	475
Intermittent Rating[1]	150	570
Continuous/Intermittent Rating - All Iron, and LPG Construction	100	375

Minimum Flow Rate Typical Performance							
Linearity[2]	**Units**	**Viscosity (Centipoise – mPa•s)**					
		.5	**1**	**5**	**20**	**100**	**400**
±0.15%	US-GPM	25	15	6	1.5	0.30	0.08
	L/min	95	57	23	6.0	1.00	0.30
±0.25%	US-GPM	17	10	4	1.0	0.20	0.05
	L/min	65	38	15	4.0	0.75	0.20
±0.50%	US-GPM	13	8	3	0.8	0.16	0.04
	L/min	50	30	11	3.0	0.60	0.15

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 125 USGPM (475 L/min)

Repeatability

±0.02%

Viscosity

Standard: 400 mPa•s[3] (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 - 63 USGPM).

Temperature

Standard Meter Clearances With:

Buna N/PTFE[7]: -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//PTFE[7]: -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[7]: -20°F to 400°F (-29°C to 205°C).
Viton: 10°F to 400°F (-12°C to 205°C).

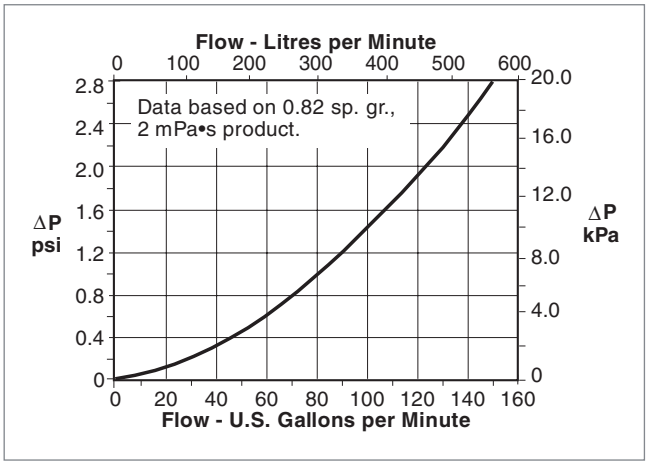
Meter Gearing

Five U.S. gallons or one dekaliter per revolution of meter calibrator output shaft (standard).

Maximum Working Pressure			
Model	**Flange**	**PSI**	**kPa**
C2-S1	150	150	1,034
C2-S3	150	285[4]	1,965[4]
C2-S5	300	300	2,068
C2-S6	300	740[4]	5,102[4]
C2-S7	600	1,480[4]	10,204[4]

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

Pressure Drop (ΔP)



Materials of Construction

Trim	Housing	Internals	Seals
Standard	Steel	Iron, Steel, Stainless Steel, Aluminum	Buna N[6], PTFE[7] or Viton[5], EPR
LPG	Steel	Iron, Steel, Stainless Steel, Rulon, Nylon	Buna N[6], PTFE[7] or Viton[5], EPR
Iron	Steel	Iron, Steel, Stainless Steel	Buna N[6], PTFE[7] or Viton[5], EPR

Installation

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

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.

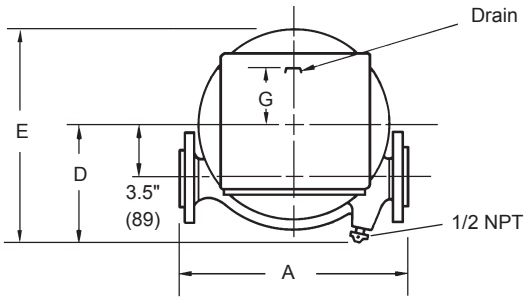
Pressure Safety

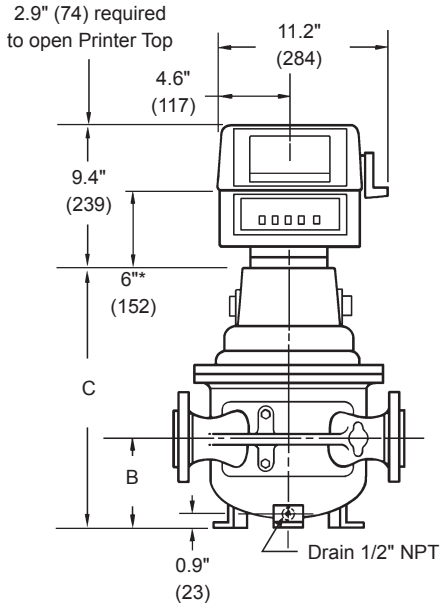
Canadian CRN

3 1,000 mPa•s = 1,000 cP = 1 Pa•s.
4 Maximum W.P. at 100°F (38° C).
5 All S3 through S7 meters with Viton adder will have Polytetrafluoroethylene (PTFE) packing gland seals.
6 Standard.
7 Polytetrafluoroethylene (PTFE).

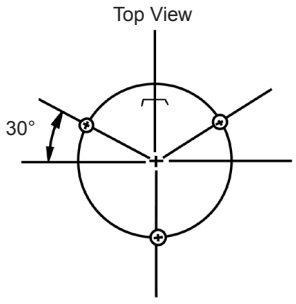
Dimensions

Inches (mm)





Meter
Anchor Bolt Holes
3 - 0.6" (15) Bolt Holes
on a "F" Diameter Bolt Circle.



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	Weight – lb (kg)
C2-S1	14.0" (356)	5.6" (142)	15.8" (400)	7.4" (188)	13.4" (340)	8.5" (216)	3.8" (97)	95 (43)
C2-S3	14.0" (356)	5.6" (142)	18.6" (472)	7.4" (188)	13.4" (340)	8.5" (216)	3.8" (97)	110 (50)
C2-S5	14.6" (371)	5.6" (142)	18.6" (472)	7.4" (188)	13.4" (340)	8.5" (216)	3.8" (97)	115 (52)
C2-S6	18.0" (457)	5.8" (147)	21.0" (533)	7.8" (198)	14.8" (375)	9.1" (232)	4.3" (109)	170 (77)
C2-S7	18.8" (476)	6.4" (162)	21.6" (548)	7.8" (198)	15.1" (385)	9.1" (232)	4.3" (109)	255 (116)

Ordering Information	
Application	Batching, Loading, Blending, Inventory, Process Control, etc.
Operating Conditions	Liquid – Name and sp. gr.or API Gravity, Flow Range[8], Temp. Range[8], Viscosity Range[8], Maximum Working Pressure, C of E.
Seals	Buna N[9], Viton, or PTFE[7].
Units of Registration	Gallons, Liters, Pounds, Kilograms
Direction of Flow[10]	Left to right flow (as viewed above) is standard and will be supplied unless right to left flow is specified.
Options and Accessories	As required.

7 Polytetrafluoroethylene (PTFE).
8 Specify: minimum/normal/maximum.
9 Standard seals supplied unless optional material specified.
10 For right-to-left flow on C2-S1 meters, add reversing gear kit.

Accessories

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

Mechanical Preset Valves
2" offset or straight through type, steel, flanged, 150 psi and 300 psi (300 psi straight through only) maximum working pressure respectively.

Hydraulic Valves
2" globe type, steel, R.F. flanged, 300 psi maximum working pressure.

Air Eliminator
2" steel, R.F. flanged.

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 pulses[11].
High-Resolution (HR) - 50 or 100 pulses[11].
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.

11 Per revolution of LNC right-hand wheel.

Revisions included in SS01010 Issue/Rev. 0.8 (4/18):
Weights & Measures information added. EPR references removed. Type E Pulse Transmitter removed. Pressure Safety section added.
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.

TechnipFMC
FMC Technologies
Measurement Solutions, Inc.
500 North Sam Houston Parkway West,
Suite 100
Houston, Texas 77067 USA
P:+1 281.260.2190

USA Operation
1602 Wagner Avenue
Erie, Pennsylvania 16510 USA
P:+1 814.898.5000

Germany Operation
Smith Meter GmbH
Regentstrasse 1
25474 Ellerbek, Germany
P:+49 4101 304.0

TechnipFMC.com

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