10" Model JB10

Bulletin SS01019 Issue/Rev. 1.0 (10/18)

Smith Meter® CT Series PD meter for crude transportation

The **Smith Meter Model JB10 Meter** is a 10", double-case, straight-through type, rotary vane, positive displacement flow meter and is part of the Crude Transportation (CT) Series of large PD meters.

The Crude Transportation series PD Meters incorporate updated design features including lightened blades, full-width wear strips, Armalloy coated rollers and cam and tungsten carbide roller pins to provide extended service in harsh crude applications.

The Crude Transportation series is suitable for both crude oil and refined product applications such as blending, batching and leak detection as well as traditional custody transfer applications.

Options

- **High Viscosity Meter Clearances** – To extend operation at maximum flow rate from 200 mPa•s to 2,000 mPa•s.
- **High Temperature Meter Clearances** – To extend operating temperatures from 115°F to 200°F (46°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

	BPH	m^3/h
Continuous Rating - Standard Trim	4,700	740
Continuous Rating - All Iron or LPG Trim	3,525	550

Minimum Flow Rate – Typical Performance

		Viscosity (Centipoise – mPa•s)				
Linearity[1]	**Units**	**1**	**5**	**20**	**100**	**200**
±0.15%	BPH	470	180	46.0	12.0	6.0
	m^3/h	74	29	7.0	2.0	0.9
±0.25%	BPH	330	135	35.0	9.0	4.6
	m^3/h	52	21	5.5	1.5	0.7
±0.50%	BPH	220	90	23.0	6.0	3.0
	m^3/h	35	14	3.6	1.0	0.5

Repeatability
±0.02%

Viscosity
Standard: 200 mPa•s[2] (1,000 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 – 2,350 BPH).

1 Based on a maximum flow rate of 4,700 BPH (740 m^3/h).
2 1,000 mPa•s = 1,000 cP = 1 Pa•s.

Temperature

Standard Meter Clearances With:
Buna N/PTFE[3]: -20°F to 125°F (-29°C to 52°C).
Viton: 10°F to 125°F (-12°C to 52°C).

High Temperature Meter Clearances With:
Buna N/PTFE[3]: -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[3]: -20°F to 400°F (-29°C to 205°C).
Viton: 10°F to 400°F (-12°C to 205°C).

Meter Gearing

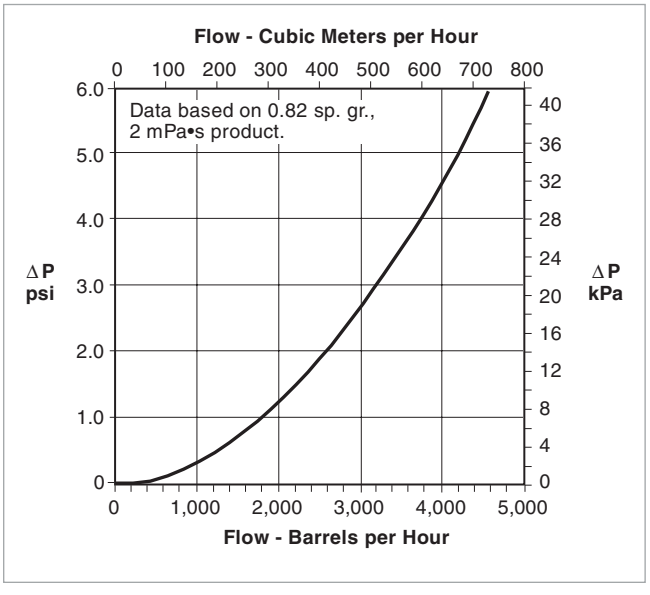
One barrel or ten dekalitres per revolution of meter calibrator output shaft.

Five gallons special.

Maximum Working Pressure			
Model	**Flange**	**PSI**	**kPa**
JB10-S3	150	285[4]	1,965[4]
JB10-S5	300	300	2,068
JB10-S6	300	740[4]	5,102[4]
JB10-S7	600	1,480[4]	10,204[4]
JB10-S8	900	2,220[4]	15,306[4]

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

Pressure Drop (ΔP)



Materials of Construction			
Trim	**Housing**	**Internals**	**Seals[5]**
Standard	Steel	Iron, Steel, Stainless Steel, Aluminum	Buna N[6], Viton, or PTFE[3]
LPG Trim	Steel	Iron, Steel, Stainless Steel, Aluminum, Rulon and Nylon	Buna N[6] or Viton
All Iron	Steel	Iron, Steel, Stainless Steel	Buna N[6] or Viton

Weights & Measures Approvals

European Union: MID
INMETRO/DIMEL No. 0148
Consult Factory for other certifications.

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	Buna N[8] or Viton
Units of Registration	Gallons, Barrels, Cubic Meters, Tons
Direction of Flow	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

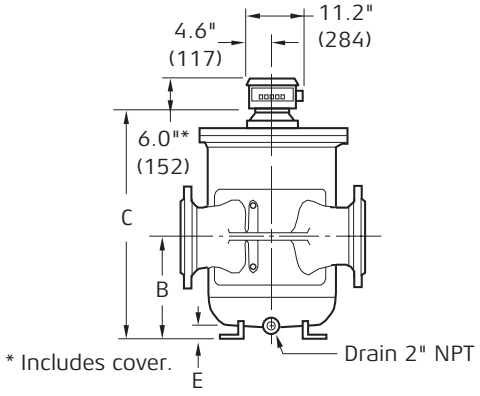
3 Polytetrafluoroethylene (PTFE).
4 Maximum W.P. at 100°F (38°C).
5 All 10" meters with Viton trim have PTFE[3] packing gland seals.
6 Standard.

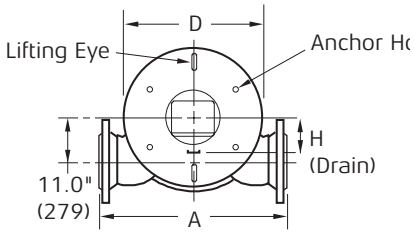
Dimensions

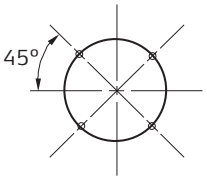
Inches (Millimetres**)**

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

Model	A	B	C	D	E	F	G	H	Weight – lb (kg)
JB10-S3	33.0" (838)	22.0" (559)	44.0" (1,118)	29.8" (757)	2.3" (58)	1.1" (28)	21.0" (533)	13.4" (340)	2,095 (952)
JB10-S5	33.8" (859)	22.0" (559)	44.0" (1,118)	29.8" (757)	2.3" (58)	1.1" (28)	21.0" (533)	13.4" (340)	2,230 (1,014)
JB10-S6	41.0" (1,041)	21.9" (556)	44.8" (1,138)	31.9" (810)	4.5" (114)	1.5" (38)	26.0" (660)	13.0" (330)	2,605 (1,184)
JB10-S7	44.3" (1,125)	21.9" (556)	46.4" (1,179)	34.0" (864)	4.5" (114)	1.1" (28)	26.0" (660)	13.0" (330)	3,985 (1,811)
JB10-S8	62.7" (1,590)	28.0" (711)	58.5" (1,486)	46.4" (1,178)	8.4" (212)	1.8" (44)	34.0" (863)	8.8" (222)	9,577 (4,353)







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

Accessories

Counters

200 Series - Accumulative, 9-digit, non-reset type.

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

Electronic Pulse Transmitters

LNC Pulse Transmitter (adapts to 600 Series Counters).

Low-Resolution - 1 or 10 pulses[10].

High-Resolution (HR) - 50 or 100 pulses[10].

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.

7 Specify: minimum / normal / maximum.

8 Standard seals supplied unless optional material specified.

Revision to SS01019 Issue/rev. 1.0: Approvals updated. Accessories section added.

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