

# 10" Steel Model JA10

Bulletin SS01018 Issue/Rev. 1.1 (10/18)

## Smith Meter® CT Series PD Meter for Crude Transportation

The **Smith Meter® Model JA10 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 125°F to 200°F (52°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	m³/h
<b>Continuous Rating – Standard Trim</b>	3,500	550
<b>Continuous Rating – All Iron or LPG Trim</b>	2,600	420

#### Minimum Flow Rate Typical Performance

Linearity <sup>1</sup>	Units	Viscosity (Centipoise – mPa•s)				
		1	2	20	100	200
±0.15%	BPH	350	140	36.0	9.0	4.6
	m³/h	56	22	6.0	1.4	0.7
±0.25%	BPH	260	105	27.0	6.8	3.4
	m³/h	41	17	4.5	1.1	0.5
±0.50%	BPH	175	70	18.0	4.5	2.4
	m³/h	28	11	3.0	0.7	0.4

<sup>1</sup> Based on a maximum flow rate of 3,500 BPH (550 m³/h).

## Repeatability

±0.02%

## Viscosity

Standard: 200 mPa•s<sup>2</sup> (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 – 1,750 BPH).

## Temperature

Standard Meter Clearances With:

Buna N/PTFE<sup>3</sup>: -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<sup>3</sup>: -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<sup>3</sup>: -20°F to 400°F (-29°C to 205°C).

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

## Meter Gearing

1 barrel or 1 hectolitres per revolution of meter calibrator output shaft.

5 gallons – Special.

Maximum Working Pressure			
Model	Flange	PSI	kPa
JA10-S3	150	285 <sup>4</sup>	1,765 <sup>4</sup>
JA10-S5	300	300	2,068
JA10-S6	300	740 <sup>4</sup>	5,102 <sup>4</sup>
JA10-S7	600	1,480 <sup>4</sup>	10,204 <sup>4</sup>
JA10-S8	900	2,220 <sup>4</sup>	15,306 <sup>4</sup>

Flange Class per ANSI B16.5 Raised Face Flange.

<sup>2</sup> 1,000 mPa•s = 1,000 cP = 1 Pa•s.

<sup>3</sup> Polytetrafluoroethylene (PTFE).

<sup>4</sup> Maximum W.P. at 100°F (38°C).

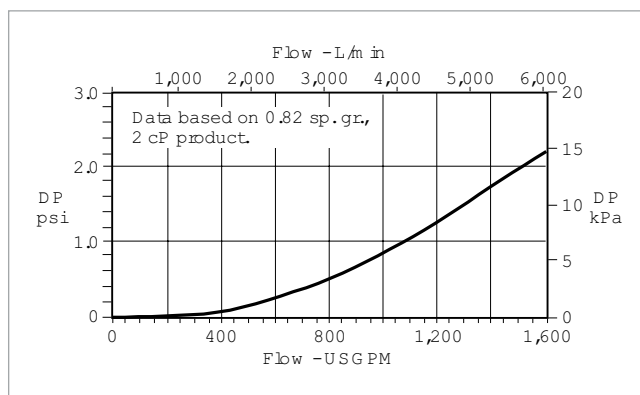
<sup>5</sup> All 10" meters with Viton trim have PTFE packing gland seals.

<sup>6</sup> Standard.

<sup>7</sup> Specify: minimum/normal/maximum.

<sup>8</sup> Standard seals supplied unless optional material specified.

## Pressure Drop (ΔP)



Materials of Construction			
Trim	Housing	Internals	Seals <sup>5</sup>
Standard	Steel	Iron, Steel, Stainless Steel, Aluminum	Buna N <sup>6</sup> , Viton, or PTFE <sup>3</sup>
LPG Trim	Steel	Iron, Steel, Stainless Steel, Aluminum, Rulon and Nylon	Buna N <sup>6</sup> , Viton, or PTFE <sup>3</sup>
All Iron	Steel	Iron, Steel, Stainless Steel	Buna N <sup>6</sup> , Viton, or PTFE <sup>3</sup>

## Installation

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

## Weights & Measures Approvals

European Union: MID

INMETRO/DIMEL No. 0148

Consult Factory for other certifications.

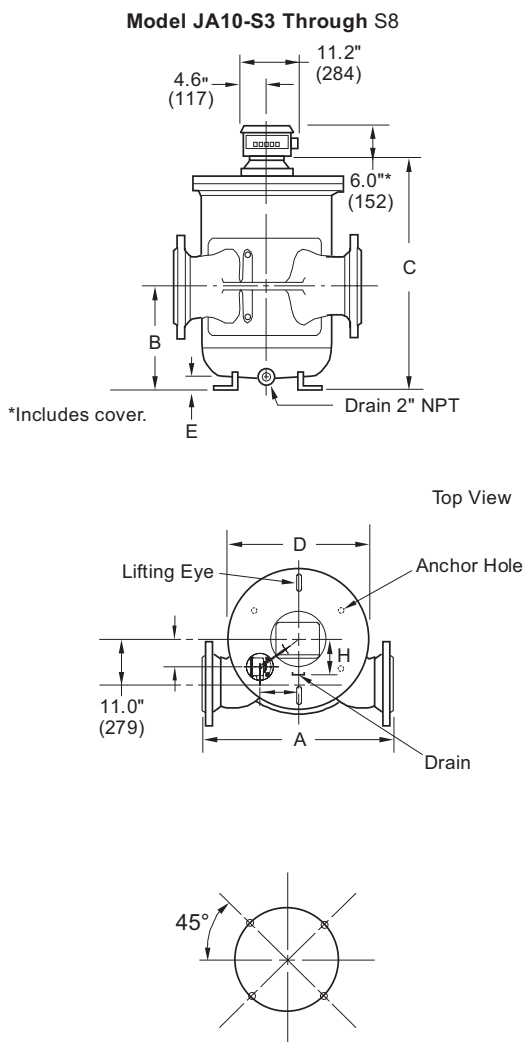
Meter Ordering Information	
Application	Batching, Loading, Blending, Inventory, Process Control, etc.
Operating Conditions	Liquid – Name and sp. gr., Flow Range <sup>7</sup> , Viscosity Range <sup>7</sup> , Maximum Working Pressure.
Seals	Buna N <sup>6</sup> , Viton, or PTFE <sup>3</sup> .
Units of Registration	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.

## 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)
JA10-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)	2,075 (941)
JA10-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)	2,210 (1,002)
JA10-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)	2,585 (1,173)
JA10-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)	3,965 (1,799)
JA10-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)	9,542 (4,337)



**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<sup>10</sup>.

High-Resolution (HR) - 50 or 100 pulses<sup>10</sup>.

### 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.

**Revisions included in SS01018 Issue/Rev. 1.1 (10/18):**

Approvals updated. Accessories 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.

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