Low Profile Aircraft Fueling Series

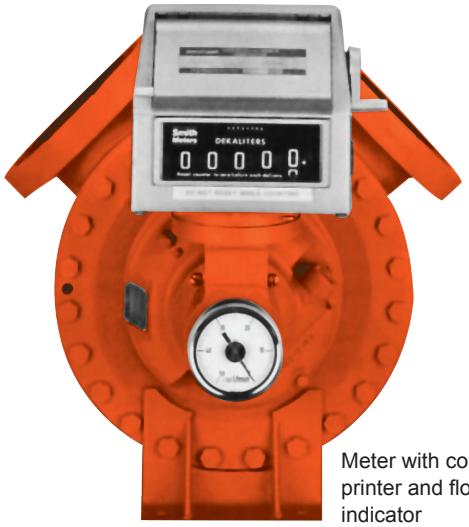
Bulletin SS01070E Issue/Rev. 0.1 (4/18)

Smith Meter® Rotary Vane PD Meters

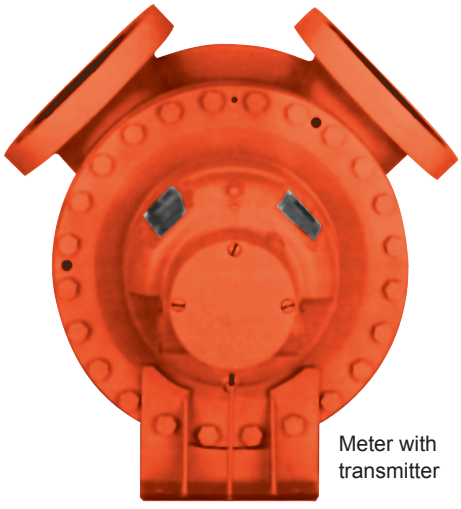
The **Smith Meter® Low Profile Aircraft Refueling Meters** are compact, single case, rotary vane positive displacement meters with an angle flow path and DIN PN16 or Class 125 ANSI B16.1 flat face flanges. Applications include: refuelers, defuelers, and truck loading.

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 adjustments 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.
- **Lightweight and compact design** – for ease of installation and weight reduction.



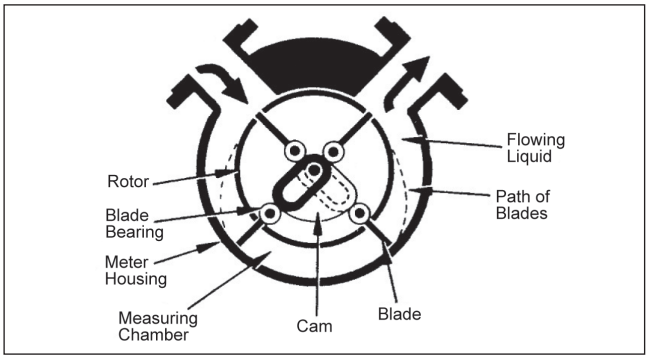
Meter with counter printer and flow rate indicator



Meter with transmitter

Principle of Operation

The rotor, which revolves on stainless steel bearings, has four evenly-spaced slots. The slots control the position of two blades that are at right angles to each other.
As liquid flows through the meter, the rotor and blades revolve around a fixed cam. Ball bearings fixed to the blades roll around the cam, causing the blades to move radially. The successive movement of the blades, outward toward the case wall, forms a measuring chamber of precise volume between the blades, rotor, case wall, and the bottom of the case. Four measuring chambers are produced for each revolution of the rotor, continuously and uninterrupted. Neither the blades nor the rotor contact the stationary walls of the measuring chamber.



Principle of Operation Diagram

Materials of Construction	
Body and Cover	Anodized Aluminum
Block	Anodized Aluminum
Rotor	Cast Iron Optional: Aluminum
Bearings	Stainless Steel
Shaft and Cam	Stainless Steel
Gears	(in contact with liquid) Stainless Steel
Blades	Aluminum with PEK Wear Strips
Bushings	Rulon

Temperature

Standard

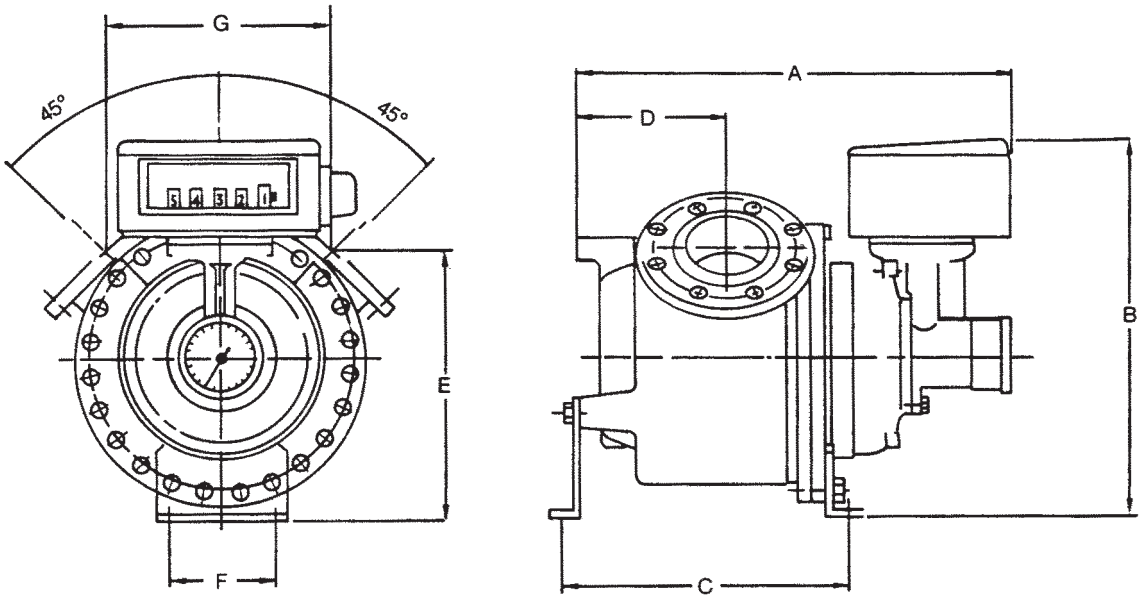
-30°C to 65°C (-20°F to 150°F)

Maximum Working Pressure

All meters 10 bar (150 psi)

Dimensions

Millimetres (mm)



Meter Type	Dimensions (mm)							Approx. Weight
	A	B	C	D	E	F	G	
ASG 100-H	655	530	475	240	466	170	412	105 kg
ASF 60-H	585	480	405	190	398	150	356	78 kg
ASD 30-H	490	455	310	115	353	130	306	50 kg

Modeling Code

Example: A S F60 — HC — 4A — R

Angle Flow Path

Single Case

Rotor Size/Flow Rate

D30 - 1,600 l/min
F60 - 3,000 l/min
G100 - 4,600 l/min

Horizontal Rotor

Rotor Material

C - Cast Iron
A - Aluminum

Calibrator

Blank - Standard Clutch
R - Bidirectional
G Calibrator

Connection Type

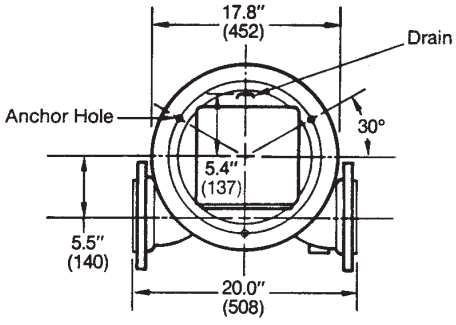
A - ANSI Flange
D - DIN Flange
V - Victaulic Flange

Connection Size

3 - 3″ (D Rotor)
4 - 4″ (D or F Rotor)
6 - 6″ (F or G Rotor)

Dimensions

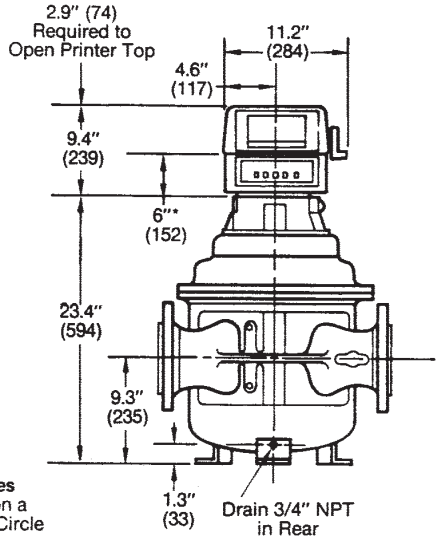
Inches (mm)



Top View

*Includes cover.

Weight: 302 lb (137 kg)



Meter Anchor Bolt Holes
3 - 0.8″ (20) Bolt Holes on a
13.5″ (343) Diameter Bolt Circle

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

Ordering Information	
Application	Batching, Loading, Blending, Inventory Process Control, etc.
Operating Conditions	Liquid – Name and sp. gr. or API gravity, Flow Range*, Temp. Range*, Viscosity Range*, Maximum Working Pressure, C of E. *Specify: Minimum/normal/maximum
Seals	Buna N+, Viton, PTFE[1], or EPR. + Standard seals supplied unless optional material specified.
Units of Registration	Gallons, Litres, Pounds, Kilograms, Dekalitres, Barrels, Tons, etc.
Direction of Flow	Left to right (as viewed above) is standard and will be supplied unless right to left flow is specified.
Style	Straight Through or Angle Type
Options and Accessories	As required.

1 Polytetrafluoroethylene (PTFE).

Accessories

Strainer

Steel, Flanged, DN100, PN16, 10 mesh or finer screen.

Mechanical Preset Valves

Straight Through type, Steel, Flanged, DN100, PN16.

Hydraulic Valves

Globe Type, Steel, Flanged, DN100, PN16

Deaerator

Steel, Flanged, DN100, PN16

Counters

200 Series – Accumulative, 9 digit, non-reset type.
600 Series – 5 large digit reset, 8 small digit non-reset.

Printer

7 digit accumulative
Optional 6 digit zero start.

Preset Counter

300C Series – 4 digit (5 digit optional) mechanical push-button preset with valve linkage. Microswitch package for hydraulic valve, pump control, or other interlock optional.

Pulse Transmitters

Type "E" - SPDT Mercury Wetted Switch.
LNC Pulse Transmitter (adapts to 600 Series Counters).
Low Resolution – 1 or 10 pulses*.
High Resolution (HR) – 50 or 100 pulses*.
*Per revolution of LNC Right Hand Wheel

PEXP – Photo-electric pulse generator in an explosion proof case (up to 1,000 pulse/rev.).

PST – Dual channel, high resolution security pulse generator.

PPS – Dual channel, photo-electric, security pulse transmitter in an explosion proof housing (up to 1,000 pulses/rev.).

Flow Rate Indicator

Direct Mount Mechanical.
Remote Electronic.

Remote Registration

Stepper Drive and Motor.
Electro-mechanical Counters.
Electronic Totalizers.

Automatic Temperature Compensation

Model ATC – Factory set for a given product.
Model ATG – Field adjustable for different products.
Model DATC – Field adjustable for different products with de-activation.
Model LEATC – Electronic, field programmable for different products.

Revisions included in SS01070E Issue/Rev. 0.1 (4/18):
New company branding.
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

 SS01070E Issue/Rev. 0.1 (4/18)