

Series 6600 - Oscillating Piston Flowmeters

The standard by which flowmeters are measured.



Fluidyne Oscillating Piston flowmeter series is the industry standard for flow measurement of liquids. Virtually unaffected by variations in density of the product, makes it one of the best instruments for Chemical Processing, Life Sciences, Food and Beverage and Hydrocarbon process industries.

Overview

Your Benefits

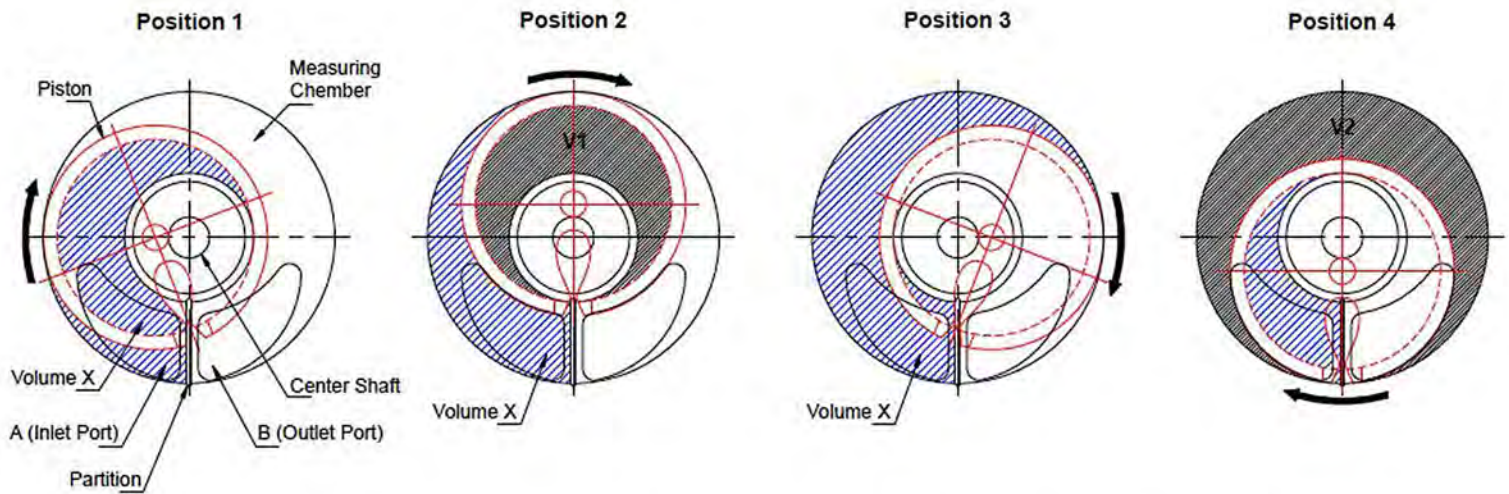
- Cost-effective measurement device; an alternative to other volumetric flowmeters
- Repeatability – Better than $\pm 0.02\%$
- Lowest pressure drop due to single light-weight moving part
- Unaffected by turbulence from pipe-borne vibrations, valves, bends
- Space-saving installation, no inlet and outlet pipe runs
- The highest turndown in a flowmeter – 1:50, 1:100 (Premium Cal) with single k factor
- Does not need laminar flow profiles; unaffected by pulsating flow
- Access to process and diagnostic information
- Unaffected by changes in density and viscosity of product



Specs at a glance

- Max measurement error (liquid) - $\pm 0.1\%$ (Standard)
- Measuring range – 0 to 60,000 LPH (0 to 16,000 GPH)
- Medium temperature - -45 deg to 150 deg C
- Max process pressure – 40 bar (class 600)
- Wetted materials – 316L (Body), PEEK (Piston)
- Strainer – Built-in 149 micron 316L mesh

Measurement Technology



- High Inlet pressure condition fills the Piston Inner cavity V1 which drives the piston in the direction of the arrow
- Volume X outside the Piston starts expanding

- The Piston Inner space V1 is completed filled and sealed off
- Due to the high pressure at the Inlet Piston continues to rotate in the direction of the arrow
- Volume X has further expanded

- Piston continues to move in the direction of the arrow
- Volume X further expands
- Piston inner cavity V1 connects with the Outlet causing the Volume V1 to flow out through the outlet

- Volume X fully expands to volume V2 and is sealed
- Liquid filling into the Piston inner cavity rotates the piston in the same direction
- As the Piston moves ahead showed in Position 1, Volume V2 connects with the Outlet
- For One revolution of the piston Volume V1+V2 is displaced from Inlet to the Outlet

The Positive Displacement principle is the only accurate method of flow measurement due to its direct measurement of volume. Volume is not inferred from velocity of liquid or mass flow rates as in inferential meters.

The Fluidyne Oscillating Piston meter is a unique single rotor principle works by continuously filling and emptying a measurement chamber of fixed volume for a certain meter geometry. The correlation of piston movement to the calibrated volume is the calibration factor or 'k factor' which is adjusted as per the liquid to be measured by the flowmeter.

Total volume in flow stream = k factor * number of oscillations of piston



Features and specifications

Measuring principle

Oscillating Piston (Positive Displacement)

Product headline

Flowmeter suited for high precision measurement of liquids with rugged design and easily configurable transmitter

Sensor features

Cost-effective high precision flow sensor with direct volume quantity measurement, no inlet/outlet runs needed, unaffected by turbulences/valves/bends, unaffected by pulsating flow, built-in strainer, low pressure drop and low slippage characteristics. Medium temperature - -50 deg C to +150 deg C

Transmitter features

Process, diagnostic information, suitable for use in hazardous areas, compact dual-housing with upto 2 I/Os. Backlight display enabled with capacitive touch control and standard industrial output protocol options

Nominal diameter range

DN6 to DN100 (1/4" to 4")

Wetted materials

Body – Aluminium LM04/316/316L/Alloy 20/Alloy C276

Rotor – PEEK/PVDF/PPS

Gaskets – PTFE/Viton/EPDM/BUNA-N/Silicone

Measured variables

Volume, volume flow, corrected volume, velocity

Metrological data

Accuracy – $\pm 0.1\%$ of measured volume (std), 0.05% (advanced)

Turndown – 1:10 (std), 1:50 or 1:100 (PremiumCal)

Repeatability – Better than $\pm 0.02\%$

Measuring range

0 to 36,000 LPH (0 to 10,000 GPH)

Medium temperature range

-50 deg C to +150 deg C

Features and specifications

Medium pressure range

Upto 40 bar (class 600)

Transmitter housing

Die cast Aluminium LM06 / Stainless Steel 304 option (Hygienic application)

Protection

Std – IP66

Option – IP68

Process connection

Flanged (ANSI/Table D,F, JS)

Threaded (NPT/BSP)

Triclamp (Hygienic)

Special connection on request

User Interface

2 line backlight display with capacitive touch control

Remote mounting display available

Configuration via local display possible

Power Supply

86-250 VAC 50/60 Hz (universal)

DC 24 V

Internal battery powered

Outputs

4-20 mA / HART (under process)

Modbus

Pulse output

DI/DO

GSM (FlowLog®)

Approvals

Legal Metrology (India)

Calibration in accredited facilities (ISO 17025)

PESO (India)

Ingress Protection IP66

ATEX/IECEX (under process)

Material certificates – 3.1

Hygienic approval (under process)



Design Highlights

SMART TRANSMITTER

Volume/mass flow modes.
4-20mA/ MODBUS/PULSE
output. Comprehensive fault
detection & diagnostics

TRANSDUCER

Direct Pulse Output to
Transmitter

EASY ACCESS 3-PART CONSTRUCTION

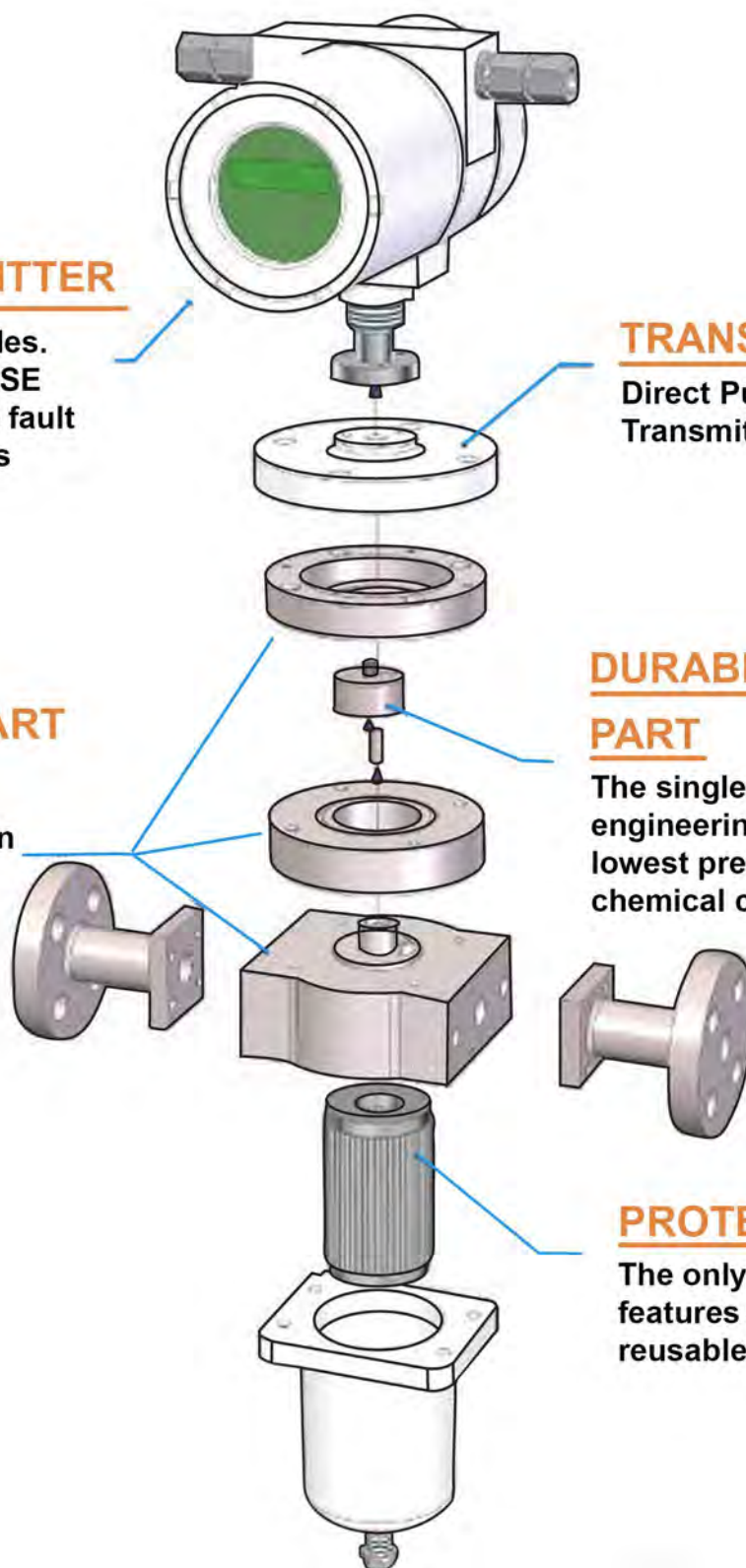
Fluidyne Oscillating Piston
meter uses a
top & bottom
connection mounted
closed-end body
configuration

DURABLE MOVING PART

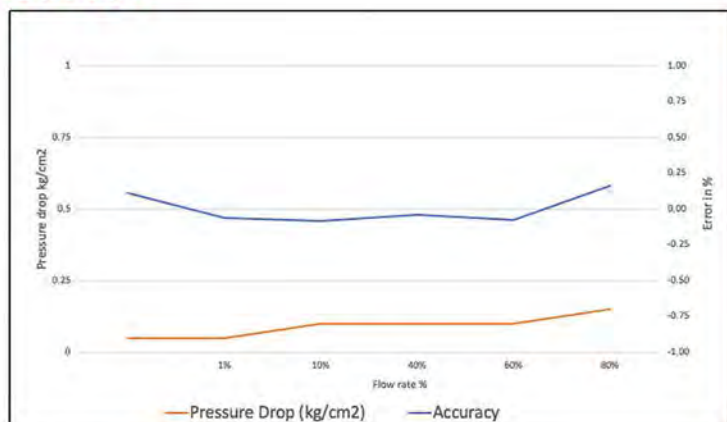
The single moving part in
engineering plastic allows
lowest pressure drop and
chemical compatibility

PROTECTION

The only flowmeter which
features an inbuilt
reusable strainer (149 micron)



Accuracy and Pressure Drop Curves



Flow meter sizing

Connection size (inch)	Model No.	Calibrated flow range (LPH)
1/4"	6600 – 06	0.5-90
1/2"	6600 – 15	12-700
3/4"	6600 – 20	20-1500
1"	6600 – 25	40 - 3000
1.5"	6600 – 40	360 – 7200
2"	6600 – 50	1000 – 12,000
3"	6600 – 80	1000 – 36,000
4"	6600 – 100	3600 – 70,000

Accuracy and Pressure drop test conditions

Test liquid - Exxsol D-80, Density = 0.78-0.82

Flowmeter size – DN25

Applications

- Custody transfer
- Chemical dosing/batching
- Petrochemical flow measurement
- Sanitary flow measurement
- DM/RO water measurement
- Solvent charging
- Tanker and Container Loading

Product Suitability

- Petrochemicals
- White Oils/Fuels
- Organic solvents
- DM/DI/RO/Drinking water
- Food and Beverage products
- Spirits/Alcohols
- Tanker and Container Loading
- Viscous pastes/additives



Other clean liquids upto 60,000 cps



May we assist you with your liquid measurement and control requirement?

Contact your Fluidyne representative today to discuss your problem statement and experience our state-of-the-art product quality, accuracy, reliability and outstanding service.

Key people

Shubhankar Shivdas Menon
Director, Business Development
M: +91 967735 1134
E: shubhankarshivdas@fluidyne.co.in

Sushant Patil
Sales Executive
M: +91 98233 98676
E: sushant.patil@fluidyne.co.in

Distributor – North region

Saika Instruments and Solution
Mrinal Kaushik (Director)
M: +91 97186 88851
E: tech@saikainstruments.in



Fluidyne Control Systems P. Ltd.
S No. 79/2 Plot No. 12
Near Agarwal Godown,
Shivne, Pune,
Maharashtra - India – 411023

Email: inquire@fluidyne.co.in
Phone: +9120 2529-0504