TrickleMeter®

Low Flow Flowmeters

Description

The Flow Technology TrickleMeter® is ideal for measuring very low flows of low- to high-viscosity liquids. Its positive displacement design provides rugged, reliable operation for a variety of industrial applications. The SRP sensor is specially matched to the TrickleMeter® providing a reliable pulse output at the full range of flows.

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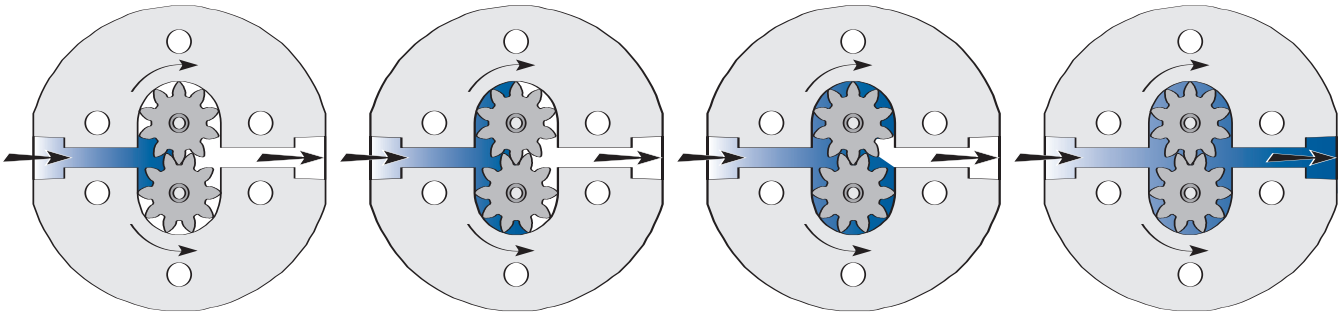
Low Flow Flowmeters

Features

- Only two moving parts
- 1000 PSI
- Stainless steel case, carbide shafts
- Up to 100:1 turndown
- 3/8" NPT connections
- Non-intrusive sensor
- Easy installation and maintenance
- Wide range of applications
- Handles pulsating flow systems
- Ideal for additive injection

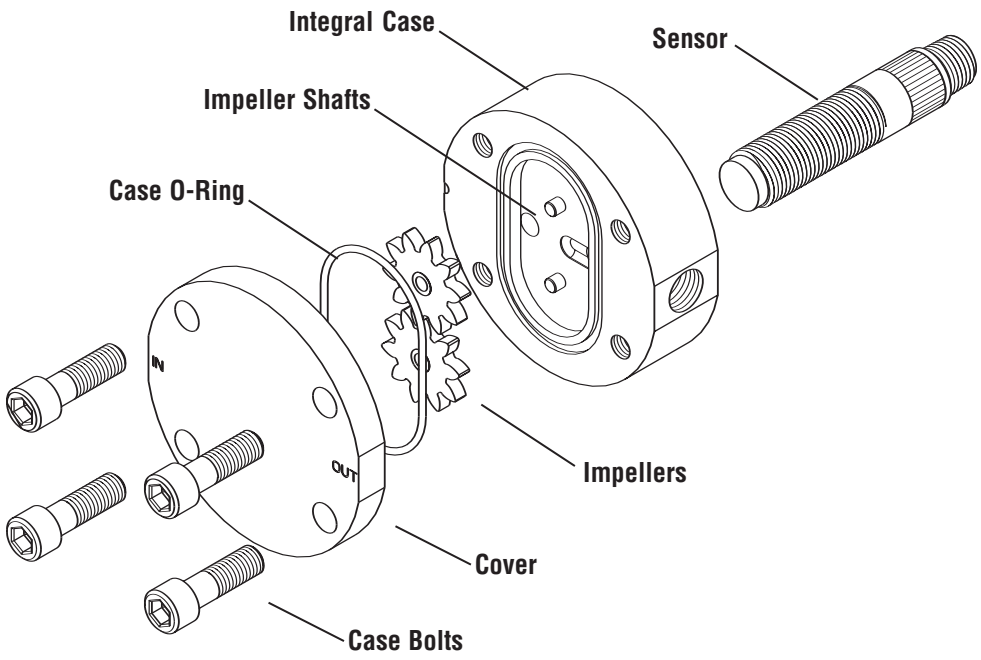
Protected by one or more U.S. Patents:
4641522, 4815318, 4911010, 4996888, 5027653, 5325715

Principle of Operation

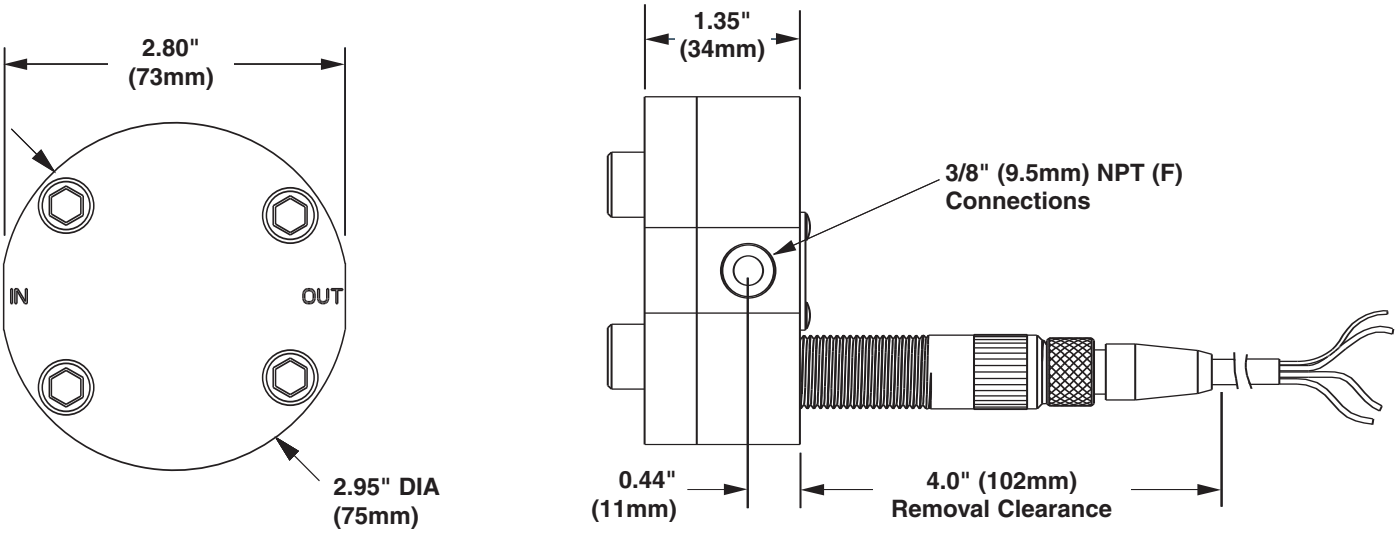


TrickleMeter® flowmeters use two rotating impellers driven by the flowing liquid. A non-intrusive sensor responds to the passing teeth on one impeller and generates a pulsed output signal. Each pulse represents a known volume of liquid that is captured between the teeth of the impellers. A K-factor converts the pulses into engineering units for remote data collection and digital display.

Flowmeter Assembly Diagram

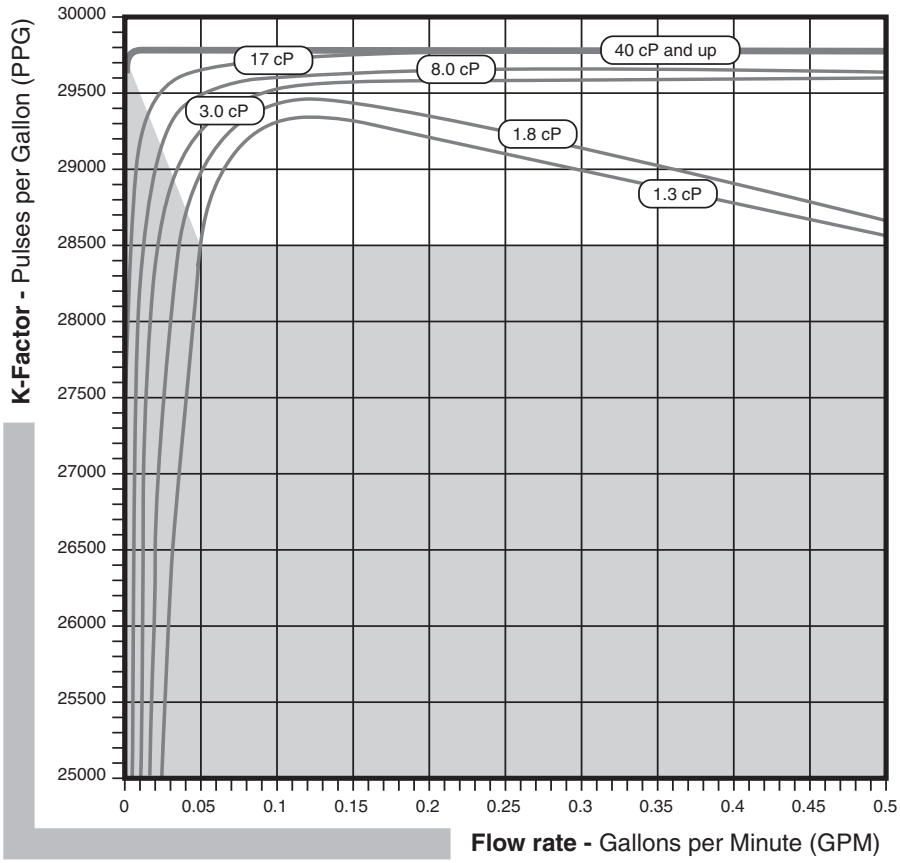


Dimensions



Caution: *Finger-tighten sensor into meter body.*
WARNING: *Do not pressurize meter without sensor installed. Do not run for any period of time without media in meter. Severe damage will result.*

Typical Calibration Curves



Standard flowmeter calibrated using standards traceable to the National Institute of Standards and Technology (NIST).

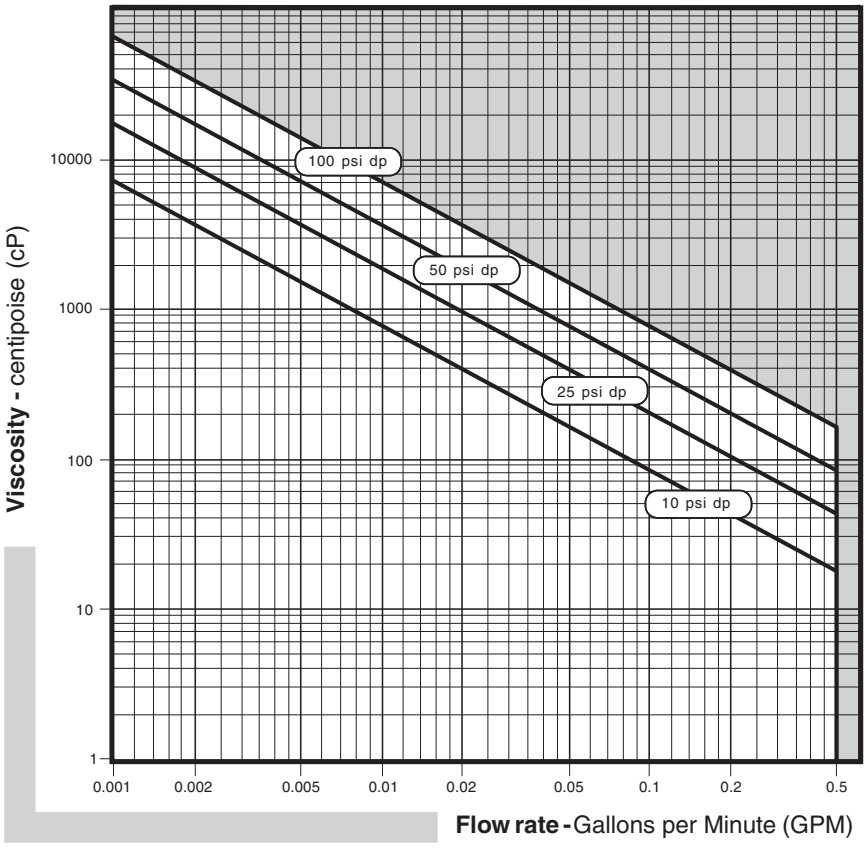
Pressure Drop Across Meter

$$\Delta P = e^{\left(\frac{\ln(\text{viscosity}) + b\ln(\text{flow}) + a}{c}\right)}$$

viscosity is in cP, flow is in GPM, ΔP is in PSI

with:

a = 0.0082
b = 0.9642
c = 0.9659



Recommended Operating Range

Not Recommended Operating Range

Specifications

Operating Temperature -20° F to +450° F (-29° C to +232° C)

Operating Pressure 1,000 psig (6.89 MPa)

Turndown Ratio *(ratios based on maximum rated flow rate)*

Low-viscosity fluids	10:1 standard (1.0 cP to 3.0 cP)
Medium-viscosity fluids	100:1 standard (>3.0 cP)
High-viscosity fluids	100:1 standard (>3.0 cP)

Repeatability *(Reference Accuracy)*

±0.05% of rate on medium/high-viscosity fluids

Accuracy *(Linearity)*

Medium/high-viscosity fluids	±0.5% of rate over upper 80% of full span typical
With enhanced signal conditioning	Up to ±0.1% of rate over full turndown range

Flow Rate

Minimum	0.005 GPM (0.019 L/min)*
Maximum	0.5 GPM (1.9 L/min)*

Weight 2.5 lbs (1.1 kg)

* See turndown ratio

Output

(Refer to individual product sheets for complete specifications)

Sensors (1 required per meter)

Surface Reference Sensor: 7–30 VDC square-wave pulse depending on supply voltage, 3-wire

Signal Conditioners, Transmitters: Refer to individual product sheets available from Flow Technology

Materials of Construction

Integral Body (Case), Cover(s)	316 stainless steel, standard
Shafts	Tungsten Carbide
Impellers	440C, Hardened
O-Rings	Viton® or Teflon® standard
Bolts	Black-Oxide Grade 8 standard

Note: High Strength Corrosion-Resistant A-286 Stainless Steel bolts are available.

Recommended Filtration

Sieve No.	625
Micron	20

Model Numbering System

L 0 0 □ – □ □ □ □ I 2 – □ □ □ □ □ □

Basic Model No.

Nominal Size
00 = .005–.5 GPM

Meter Type
I = Intermediate Pressure (1,000 psi)

Case Material
6 = 316 SST with black-oxide steel Grade 8 bolts
C = 316 SST with A-286 High Strength Grade 8 bolts

Special Designator
000 = Standard Meter

Connection Size
03 = 3/8"

Connection Type
1 = NPT (Female)

Impeller Material
T = 440C, Hardened

O-Ring Material
1 = Viton®
9 = Teflon®

Shaft Material
C = C2 Tungsten Carbide

Specifications are for reference only and are subject to change without notice.

Local Representative:

FTI FLOW TECHNOLOGY™

ISO 9001 REGISTERED

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