POSITIVE DISPLACEMENT FLOWMETERS

FTB3001

- Patented Toothless Oval Gear Design
- High Accuracy
- Compact Design
- High-Resolution Electronic Output
- Temperatures to 176°C (350°F)
- Pressure Rated to 3000 psig
- Multiple Bearing Options
- 316 Stainless Steel Construction
- No Special Gears Needed for High Viscosity
- Linearity Unaffected by Viscosity Changes
- 1 MNPT End Fitting
- 150 or 300# Flange Fittings Available

FTB3002 shown smaller than actual size.

The oval-shaped smooth gears in the FTB-3000 Series are used to displace a precise volume of fluid, which is passed through the measurement chamber during each revolution. The toothless design, working with the fluid being measured, provides a complete viscous seal within the measuring chamber. This sealing effect provides for greater flow measurement accuracy.

The displacement of the fluid is translated via a magnetic or Hall effect pick-up into a pulse output that is proportional to the flow.

The unique design of the FTB-3000 oval gear meter incorporates two smooth (toothless) oval gears positioned 90 degrees out of phase. The measurement gears are held together by two timing gears. The standard meter contains no seal between the measurement chamber and the timing chamber. The timing gears have a pitch diameter equal to the outside diameter of the measurement gears. The flow through the meter measurement chamber follows the path of least resistance. Therefore, no liquid passes through the center cavity between the measurement gears.

The fluid is displaced from the inlet to the outlet via the area between the smooth oval gear and the inner diameter of the meter housing.

Conventional oval gears have teeth that mesh. One of the advantages of smooth oval gears is that the viscous flow does not get trapped or squeezed between the gears. Typically, oval gears need to have cuts made in the teeth to allow high viscosity fluids to pass. These cuts result in a decrease in accuracy.

Toothless Gears

As shown below, the oval-shaped toothless gears sweep out a precisely known volume of fluid passing through the measurement chamber during each rotation.

To Order

Model No.	Flow Rate	Sensor
FTB3001	2 to 25 GPM	Magnetic pick-up
FTB3002	0.02 to 25 GPM	Hall effect, 6 to 24 Vdc

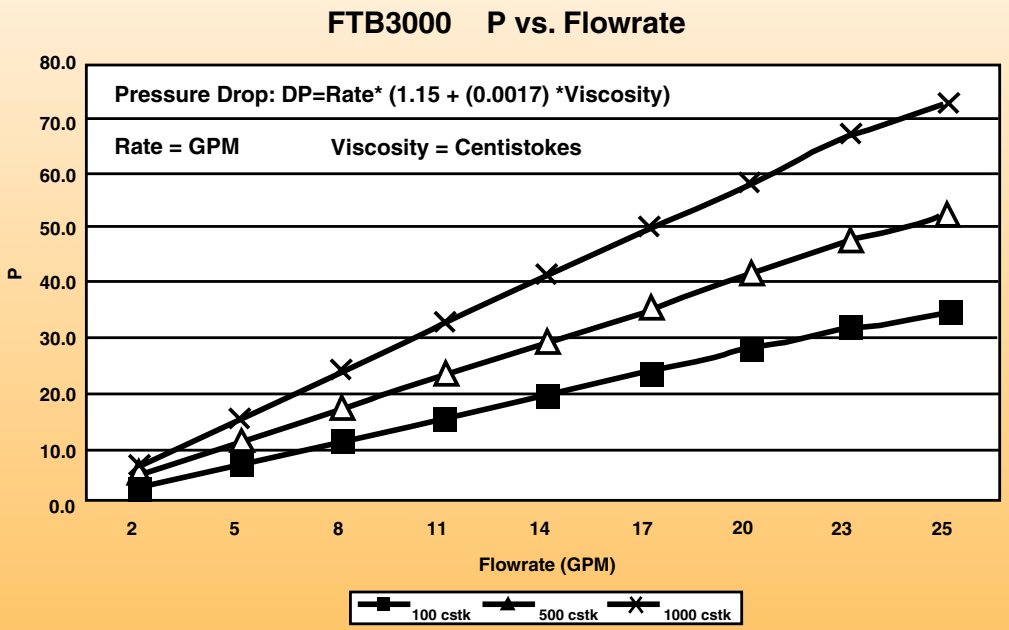
Accessories

Model No.	Description
U24Y101	24 Vdc power supply

Comes complete with operator's manual and 10-point NIST calibration certificate.
To order with flange fittings, consult Flow Engineering.
***Ordering Examples: FTB3002,** hall effect sensor.*
***FTB3001,** magnetic pick-up sensor.*

FOR HIGH VISCOSITY FLUIDS GREATER THAN 100 CENTISTOKES

Test Results from Independent Lab



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SPECIFICATIONS

Service Fluid: Clean liquids, maximum particle size 3.175 mm (0.125")
Accuracy: ±0.25% of reading
Viscosity: 100 cSt or greater
Repeatability: ±0.05%
Operating Temperature:
FTB3001: -240 to 176°C (-400 to 350°F)
FTB3002: -40 to 150°C (-40 to 302°F)
Operating Pressure: 3000 psig standard
Wetted Parts: 316 SS body and gears with PEEK™ gear seats
Bearings: Shielded, self-lubricating 440 SS ball bearings
Connections: 1 MNPT
Pick Up Coil: Magnetic type or Hall Effect (6 to 24 Vdc power)
Calibration: Ten-point calibration traceable to NIST @ 100 centistokes
Weight: 7.53 kg (16.6 lb)