

High Accuracy, High Quality Turbine Flow Meters for Liquid Applications

Turbines, Inc. is a leader in the design and manufacture of turbine metering equipment, electronic monitors, and accessories for liquid flow measurement. Turbines, Inc. flow meters are manufactured in the U.S.A. and deliver best-in-class accuracy and reliability with custom designs, retrofits, and replacements easily available. Through innovation in design and manufacturing, coupled with peerless engineering and technical expertise, Turbines, Inc. delivers versatile and accurate liquid flow metering solutions to help customers safely leverage production assets to peak efficiency.

Our turbine flow meters are ideal for oil and gas applications, agricultural and agrichemical applications, chemical processing, wineries and breweries, and a host of other custody transfer applications. Our products deliver the accuracy, reliability, and precise measurement required for the most demanding and high-scale applications.



In-Line Turbine
Retrofit Kit



Custody Transfer
Applications



Oil and Gas
Applications



Flanged-End Turbine
Flow Meters



Metering performance second to none ...



Turbine Metering

Turbine type flow meters measure the velocity of gas or fluid flowing through an enclosed channel or tube, and consist of a precisely machined body within which is suspended a specially-designed turbine rotor that spins freely. As the rotor spins, it affects the magnetic field provided by the magnetic pick-up, which is interpreted by the flow monitor and expressed as a flow-rate. Turbines, Inc. offers in-line turbines, installed within a length of conduit, and wafer-style turbines, that insert between sections of conduit line. Turbines, Inc. also provides the highest quality flow monitors and retrofit kits.

Performance Data

Turbines, Inc. meters feature leading accuracy ($\pm 1.0\%$)* and repeatability ($\pm 0.10\%$ over flow range) plus a wide operating temperature range (-100°F to $+300^{\circ}\text{F}$) for the performance, precision, and versatility required for even the most demanding applications.

Our in-line and wafer-style turbine meters for liquid applications are ruggedized, machined with precision stainless steel, and offered with CD4MCu and/or 416 stainless steel rotors in line sizes from 3/8" through 10.0".

*TM0038: $\pm 2.0\%$ accuracy

In-Line Turbines for Liquid Measurement

• TM Series: Liquid In-Line Turbine Flow Meter

- Two (2) hub drillings available; unit comes with one hub standard – second hub hole is optional for second mag output
- Definite end connections: either threaded, flanged, or victaulic couplings, corresponding to matching end connections in the mating process piping



- End connection is NPT-threaded standard; victaulic, flanged, or sanitary ends are available

• HP Series: High-Pressure Liquid Turbine Flow Meter

- Linear output over normal range
- NIST traceable
- Flow range from 40 to 400 GPM
- Direct connection WECO®, API®, or other hammer-union style, high pressure hubs
- Up to 15,000 PSI line pressure



... for liquid applications



Refineries



Agriculture

- **TK Series:** Liquid In-Line Turbine Retrofit Kit
 - Our retrofit kits fit most other manufacturers' turbines, providing durability and accuracy
- **TMF Series:** Liquid Flanged-End Turbine Flow Meter
 - Available ratings up to 5,000 PSI line pressure

Wafer-Style Turbines for Liquid Measurement

- **WM Series:** Liquid Wafer-Style Turbine Flow Meter
 - Wafer-style meter that is installed between existing process piping flanges
 - Up to 3,700 PSI (depending on flange size)
- **WK Series:** Liquid Wafer-Style Turbine Retrofit Kits
 - Our retrofit kits fit most other manufacturers' turbines, providing durability and accuracy



Flow Monitors

The Turbines, Inc. **FM Series** flow monitors provide rugged, durable and low cost monitoring, providing local output for instantaneous and total flow monitoring in the field.



Please contact your Turbines, Inc. applications group specialist for assistance in determining the best FM Series flow monitor for your particular application requirements.

Turbines, Inc. flow meters and monitors are designed for easy, do-it-yourself replacement. Contact our Field Application Engineers for more information.

For more information, visit www.turbinesincorporated.com

Application Guide Liquid

Turbines, Inc. is a leading designer and manufacturer of liquid and cryogenic turbine flow meters, electronic monitors, accessories, and replacement parts.

The Turbines, Inc. difference:

- Most inventory shipped within 24 hours
- Metering performance second to none; proven accuracy is +/- 1.0% over flow range
- More than 35 years of in-house manufacturing and engineering expertise
- Operate a fully-staffed R&D facility for continuous product improvement and new product development
- Industry-leading customer service with more than 75% repeat business
- Affiliation with Primary Flow Signal, Inc. for strong financial strength, bankability, and leading technical, manufacturing, and application expertise.

Certifications

Turbines, Inc.'s quality management systems are registered to ISO 9001 and AS:9100 compliance, as well as ASME S and U, NB R, PED Module H, Indian IBR, and GOST.

Worldwide Support

Turbines, Inc. serves customers worldwide with U.S.A. offices in Cranston, RI (headquarters); Houston and Odessa-Midland, TX; Tulsa and Altus, OK; Seneca, SC; as well as locations in Edmonton, AB Canada and Beijing, China.



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Turbines, Inc. products and operations are certified to industry standards for safety and performance. Visit our web site for details.



Turbines, Inc. products are proudly made in the U.S.A.