

FLOWMETRICS, INC.

WHERE QUALITY IS MEASURABLE



THE INDUSTRIES WE SUPPORT:

Aviation (Defense/Military/Commercial)

Energy

General Industrial

Pharmaceutical

Nuclear Power

Aerospace

Laboratory

Chemical/Petrochemical

OUR PRODUCT OFFERINGS INCLUDE:

Turbine Flowmeters

Positive Displacement Flowmeters

Variable Area Flowmeters

MAG/RF Pickups

Signal Conditioners

Field Indicators

Flow Computers

Batch Controllers

Ratemeters

Totalizers



TURBINE FLOWMETERS

FM SERIES FLOWMETERS are used for numerous applications in a variety of industries such as petrochemical, pharmaceutical, aerospace, and automotive. FM Series turbine flowmeters are especially well suited for custody transfer of fluids in high-temperature, high-pressure, and high-shock applications.

FM Series flowmeters are available in a variety of sizes from 0.5" to 12". The FM Series flowmeter offers a high turn-down with minimum uncertainty and very repeatable output.

FMT SERIES FLOWMETERS are capable of measuring extremely low flow rates (0.002 GPM in liquids and 0.01 ACFM in gases). The FMT flowmeter is a unique volumetric device which uses a dual-orifice design to direct a stream of fluid tangent to a low mass/balanced rotor and a precision bearing to provide maximum sensitivity. This geometry also eliminates the need for flow straighteners and allows for greater repeatability.

FMP SERIES INSERTION FLOWMETER prime application is large diameter pipes or ducts where traditional flow meter equipment is bulky, expensive, or difficult to maintain. FMP Series are well suited in applications exhibiting high-pressure drop characteristics and/or limited flow ranges where "in-line" flow meters would not be suitable.

Ranges: Liquid 0.3 - 50 FPS;
Gas 1.0 - 100 FPS



POSITIVE DISPLACEMENT FLOWMETERS

FMG SERIES

The force of liquid moving through the flowmeter drives the measuring gears and the liquid stream is divided into the fixed volume cavities between the gear teeth and the metering body.

The FMG Series positive displacement flowmeter is used with low, medium, or high viscosity fluids. Used in numerous hydraulic test stands, aerospace, automotive, and petrochemical industries, the FMG is well suited for batch mixing and lube oil blending.

The FMG Series flowmeters are available from 1/4" to 1-1/2".

Maximum operating pressure: 6000 psi
Temperature limits: -40° F to 400° F
Flow range: .01 - 110 GPM

In all FM, FMT, FMP, and FMG Series flowmeters, the pulse or frequency outputs are processed by secondary instruments ranging from a basic signal conditioner, indicator/totalizer, to more complex flow computers which compensate for temperature, pressure, density, and viscosity, and provide accurate volumetric or mass flow measurement.



VARIABLE AREA FLOWMETERS

VARIABLE AREA FLOWMETERS are frequently used in military, aerospace, chemical, petrochemical, water treatment, and waste treatment industries.

The **Series 2000** Variable Area Flowmeter is a rugged industrial flowmeter available in a wide range of liquid and gas flow rates. The Series 2000 family includes flowmeters with scale lengths of 150mm and 250mm, providing accuracies to $\pm 1\%$ of flow rate. Materials of construction are available for the most corrosive process applications.

The **Series 2600** (Single Stage) and the **Series 4600** (Multi-Stage) 600mm flowmetering panels offer the highest precision available in our product line of variable area flowmeters. The Variable Area Flowmeter line has available capacities, of 2.8 cc/min up to 180 GPM for liquid or 100 cc/min to 750 SCFM for gas. Suited for temperatures up to 250°F / 121°C, the variable area flowmeter line can be mounted in-line or as a panel installation. Connections are available as NPT or MS and Vertical/Horizontal Flange.

The variable area flowmeter series has a standard calibrated *accuracy* of $\pm 2\%$ full scale for the 250mm meter and $\pm 1\%$ rate for the 600mm meter.

Optionally, the 600mm meter is available with $\pm 0.5\%$ rate accuracy. Length of the flowmeter varies by series and model. 150mm (Model 2150); 250mm (Model 2250); 600mm (Model 2600). *Graduation* is shown as a direct reading on detachable scale with millimeter graduation on tube.



MAF/RF PICKUPS

PREMIUM MAGNETIC PICKUPS are suited for harsh environments and will provide years of reliable service. These pickups are hermetically sealed for resistance to moisture and other atmospheric contamination and can withstand repeated thermo cycling in temperatures ranging from -450°F to 450°F.

These types of pickups are routinely used in cryogenics due to their ability to operate dependably at extremely low temperatures for long periods of time.

Features like glass-sealed connectors, unique internal potting, and high quality magnets that resist demagnetization make these pickups the best choice for demanding environments. We offer pickups with varying temperature ranges, sensitivity, body size, style, and connector types to cost effectively meet all applications.

Humbucking pickups are dual coil versions of premium series pickups and feature the same materials and construction methods.

Intrinsically Safe is an increasingly popular approach for a large number of customers. We are certified to manufacture intrinsically safe versions of almost any pickup we offer and they are certified by CSA (with NRTLIC) and CENELEC for the most stringent hazardous locations.

Modulated Carrier (RF) pickups require coupling with the PA100IA series preamp or other modulated carrier amplifier for square wave output.

Digipulse pickups offer digital output at low cost for interfacing directly with data acquisition systems.





SIGNAL CONDITIONERS

SIGNAL CONDITIONERS, signal converters, transmitters, and amplifiers are devices which represent the majority of the instrumentation requirements for transducers. They are with flow, temperature, pressure, as well as many other transducer sensor types. In some cases, the signal conditioner/ converter is provided by the sensor manufacturer so the user will have the desired output signal.



Signal conditioners are secondary devices intended to amplify, filter, condition, scale, and convert low level "raw" signals produced by many transducers and convert it into the desired industry standard high level signal prior to transmitting it across potentially noisy environments. In some cases, a secondary function is providing signal isolation.

The input signal to a pulse signal conditioner may be a contact closure, a magnetic pickup, or a low level pulse. In nearly all cases, the signal conditioner/ converter is intended to be powered by DC supply voltage.

Enclosures are available for outdoor, weatherproof, and hazardous locations.



FIELD INDICATORS

FIELD INDICATORS are signal conditioners/ converter devices with a display. Field indicators are intended for mounting on or near the flow sensor.

Field Indicators are secondary display devices. They also amplify, filter, condition, scale, and convert low level "raw" signals produced by many transducers and convert it into the desired industry standard high level signal prior to transmitting it across potentially noisy environments.

The field indicator is intended to be powered by an internal battery or through the 4-20mA output current loop or by a DC voltage supply. Enclosures are available for outdoor weatherproof and hazardous locations. Most have provisions for mounting on the flowmeter and/or near the flowmeter.

Field Rate/Total Indicators are applied in most PLC and PC based control systems to adapt the process signals into the standardized levels provided on I/O cards while at the same time providing a display of information in the field.



FLOW COMPUTERS & BATCH CONTROLLERS

FLOW BATCH CONTROLLERS are special purpose instruments which are intended to be used in conjunction with a flow sensor and control valve to dispense a desired amount of a fluid into a container, tank, or vehicle. In some cases the temperature may also be used to estimate the fluid density from stored fluid properties.

Our batch controllers are capable of Batch Overrun Compensation, Two-Stage Batching, Slow Fill, Count Mode, as well providing for a variety of other functions such as printing and remote start/stop.

FLOW COMPUTERS satisfy the instrument requirements for a variety of pulse-producing flowmeter types in liquid applications.

Alphanumeric displays show measured and calculated parameters in an easy to understand format. Single key direct access to measurements and display scrolling is supported. An EZ-Setup feature rapidly guides the user through the basic setup.

Flow Computers can be programmed for rate/total indication or batching. The various pulse inputs and outputs can be "soft" assigned to meet a variety of common application needs. The user "soft selects" the usage of each feature while configuring the instrument. A 0-20mA or 4-20mA analog output is standard.



RATEMETERS & TOTALIZERS

RATEMETERS are utilized for rate, total, or blending applications. This is a general purpose instrument which conditions the electrical signal generated by the flowmeter and scales the resulting flow information into a flow rate and flow total display in the units of measure desired by the end user. Additional functionality such as alarms, analog output, pulse output, and serial communications may also be provided.



Rate/Totalizers are available to work with most flowmeter types and most common electrical signals produced by flowmeters. In some cases an amplifier or signal conditioner may be necessary. Non-linearity corrections are available in some units. Separate K-factors (calibration points) can be programmed to compensate for changes in K-factor with flow rates. Linearization is useful in improving the accuracy of the flowmeter.

Serial communication is used to transmit information between two computers or between a computer and a printer. There are several commonly used standard hardware interfaces such as RS-232, RS-422, and RS-485. There are also a variety of communication protocols, or message formats, which are used.

Enclosures are available for outdoor, weatherproof, and hazardous locations.





Flowmetrics Inc. is a leading manufacturer of in-line and insertion turbine flowmeter, rotameter, and associated flow computers. In-line turbine flowmeters are available in sizes from 1 /2" to 12" and are capable of measuring liquid flow rates from .002 to 15,000 GPM and gas flow rates from .01 to 15,000 ACFM.

For more than 25 years, Flowmetrics has been recognized for superior flow measuring products/services and specialized fluid flow systems. Flowmetrics has on-site testing and calibration laboratories to service any type or brand of flowmeter.

Flowmetrics Inc. flowmeters are used throughout the Hydrocarbon Processing, Chemical/Petrochemical, Aerospace, Pharmaceutical, Power/Energy, and many other industries in a variety of applications. Flowmetrics has earned an outstanding reputation with over 8,000 successful flowmeter installations in the U.S. and around the world.

Flowmetrics is located in Chatsworth, California in a modern 80,000 square foot facility. Design, Manufacturing, and Quality Assurance of our flowmeters is performed in this facility.

Flowmetrics provides immediate shipment of standard products.. Products which require special calibration are typically shipped within two to three weeks. Contact Flowmetrics. Customer Service or your local Representative.

Flowmetrics is dedicated to providing the highest quality flowmeter products and services in a timely manner.

FLOWMETRICS, INC.

WHERE QUALITY IS MEASURABLE

9201 Independence Ave
Chatsworth, California 91311
U.S.A.

TOLL FREE: +1 800.356.6387
TEL: +1 818.407.3420
FAX: +1 818.700.1961
www.flowmetrics.com