

# Industrial Flowmeters

High-accuracy solutions for steam, gas and liquid flow applications



*First for Steam Solutions*

EXPERTISE | SOLUTIONS | SUSTAINABILITY

**spirax**  
**sarco**



*First for Steam Solutions*



# Make Your Processes More Productive, Efficient and Sustainable

## Total Control Over Your Processes Starts with Precision Measurements

No matter what your flow media challenge — water-glycol mixtures, chemical-laden liquids, saturated steam, super heated steam, natural gas, compressed air or high temperature flows — our application experts work with you to select the right high-accuracy metering technology.

Low-maintenance, rugged industrial flowmeters that give you the precision data you need to:

- Boost Productivity
- Improve Efficiency
- Cut Energy Use
- Ramp Up Sustainability

## Total Support: From Process Audits to Optimization Programs

There is no doubt that accurate measurement of challenging flow media is often complex and difficult to get right. But with more than 50 years of flowmeter experience, we know exactly what resources our customers need to succeed:

- On-site audits of processes and existing equipment
- Expert product specification by our application engineers
- Installation and commissioning services
- Preventative maintenance and expert repair services
- Hands-on training courses
- Online tutorials, calculators, CAD libraries and sizing guides

**Need total control over your processes? Call your local Spirax Sarco contact to discuss just how accurately we can measure your flows: 800-883-4411.**

## Spirax Sarco Flowmeter Capabilities Chart

Flowmeter Type	Steam & Gas	Liquid Condensate	General Water	Viscous Liquids	Raw Sewage	Acids & Chemicals	Hydro-Carbons	Low Flow
UTM10 (Ultrasonic )			●			●	●	●
MagFlo (Electromagnetic)		● <sup>1</sup>	●	● <sup>1</sup>	●	● <sup>1</sup>		●
RIM20 (Insertion Turbine)	●	●	●				● <sup>2</sup>	●
VIM20 (Insertion Vortex)	●	●	●				● <sup>2</sup>	
VLM20 (Inline Vortex)	●	●	●				● <sup>2</sup>	
TVA (Target Variable Area)	●							●
ILVA (Inline Variable Area)	●	●	●			●	●	●
GILFLO	●	●	●			●	●	●
MTI10/MTL10 (Thermal Mass)	● <sup>3</sup>						● <sup>3</sup>	●

1: Must be conductive fluid > 5µs/cm

2: Low viscosity (<3 cP)

3: Dry and Clean Gas or Air

## Flowmeter Sizes Ranges

Flowmeter Type	1/2" (15mm)	1" (25mm)	2" (50mm)	3" (80mm)	4" (100mm)	6" (150mm)	8" (200mm)	10" (250mm)	12" (300mm)	14" < (350mm)	< 24" (600mm)	80" (2000mm)
UTM10 (Ultrasonic )												
MagFlo (Electromagnetic)												
RIM20 (Insertion Turbine)												
VIM20 (Insertion Vortex)												
VLM20 (Inline Vortex)												
TVA (Target Variable Area)												
ILVA (Inline Variable Area)												
GILFLO												
MTI10/MTL10 (Thermal Mass)												

## Liquid Flow Measurement Solutions

Spirax Sarco flowmeters for standard and conductive liquids feature ultrasonic or electromagnetic technology. They meet the requirements of industrial, municipal and HVAC flow applications.



### UTM10 Ultrasonic Transit-time Meter

The UTM10 Ultrasonic Transit-time Meter uses ultrasonic technology to obtain accurate, noninvasive measurements in general clean liquid applications. The meter attaches easily to a pipe's outer surface and is installed in minutes. Typical accuracy is 1.0% of flow rate.

The UTM10 can be ordered with optional NEMA 6P transducers for fully submerged operation. Communications capabilities such as Modbus, BACnet, pulse and analog options enable users to access the UTM10 meter remotely.

#### Additional specs:

- For line sizes from ½" to 80" (15mm to 2000mm)
- Resistance Temperature Detectors (RTDs) are available for energy measurements
- Media: Liquids



### MagFlo® Electromagnetic Flow Meter

The MagFlo® Electromagnetic Flowmeter provides reliable measurements in diverse applications involving conductive liquids—at accuracy levels equal to 0.20% of flow rate. MagFlo® boasts a wide selection of liners and electrodes for different applications, including ceramic liners for sanitary food/beverage applications and PTFE liners for high-temperature uses.

The meter's SENSORPROM® technology facilitates easy transmitter setup and replacement with automatically re-programming of any new transmitter without loss of data and accuracy. Comprehensive diagnostic and service menu enhancing trouble shooting and meter verification.

#### Additional specs:

- Available with flanged, wafer-type and sanitary connections
- Backlit display for easy viewing
- Media: Conductive Liquids

## Steam, Gas and Liquid Measurement Solutions

Spirax Sarco flowmeters for steam, gas and liquid applications meet virtually any metering challenge, without process shutdown and minimal maintenance requirements.



### RIM20 Insertion Turbine Meter

The RIM20 Insertion Turbine Meter provides volumetric, mass and energy monitoring of steam, gases and liquids. It makes accurate mass flow measurements without the need for a separate flow computer. This type of meter is better suited for reading lower flow applications.

The RIM20 is suitable for hot tapping, which means it can be installed and maintained under full flow conditions, without shutdown.

**Additional specs:**

- Output Options: Modbus RTU, BACnet MS/TP, HART, 4-20mA, pulse
- Mass flow accuracy (steam/gas): 2.0% of rate; (liquids): 1.5% of rate
- Measures liquid flow velocity down to 0.5 ft/sec (0.15 m/sec)
- Media: Liquids, steam, gas



### VIM20 Insertion Vortex Meter

The VIM20 Insertion Vortex Meter is an accurate, low maintenance measurement solution for steam, gas and liquid flow applications. The VIM20 can be installed without having to shut the process down — a big benefit for users. Installation is done via an isolation valve located on the pipe..

As a “Vortex” meter, VIM20 has no moving parts, resulting in highly reliable operation.

**Additional specs:**

- Output Options: Modbus RTU, BACnet MS/TP, HART, 4-20mA, pulse
- Accuracy: (gas & steam) 2.0% of rate; (liquids): 1.5% of rate
- Measures liquid flow velocity down to 1.0 ft/sec (0.3 m/sec)
- Media: Liquids, steam, gas

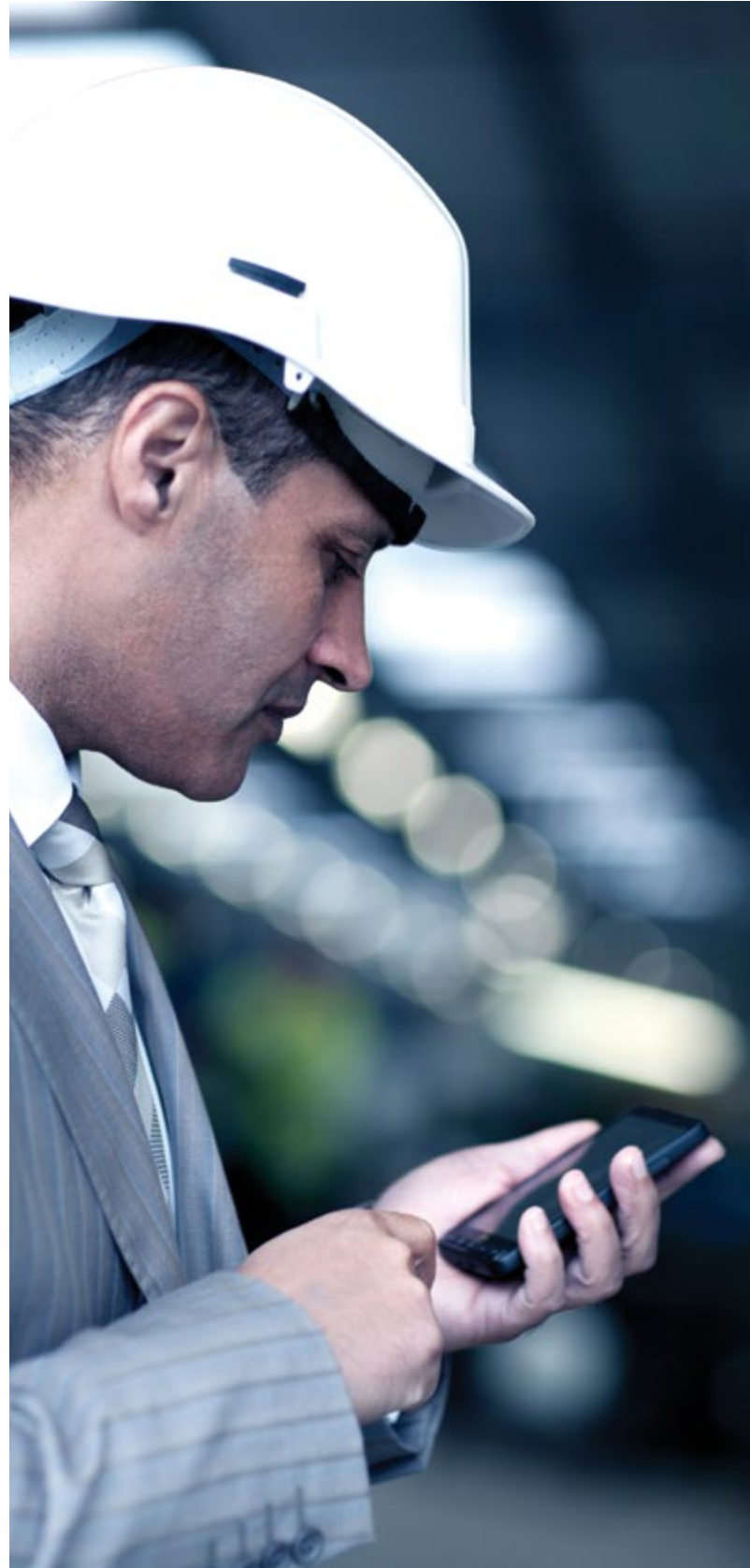


### VLM20 Inline Vortex Meter

The VLM20 Inline Vortex Meter offers volumetric, mass and energy monitoring of steam, gases and liquids to an accuracy level of 1.0% for liquids and 1.5% for steam and gases. The meter performs its calculations internally without the need for a separate flow computer. The meter's fully welded design has no moving parts and no path for leakage, resulting in reliable, low-maintenance operation. Available with remote or locally mounted electronics.

**Additional specs:**

- Output Options: Modbus RTU, BACnet MS/TP, HART, 4-20mA, pulse
- Mass flow accuracy (steam/gas): 1.5% of rate; (liquids): 1% of rate
- Measures liquid flow velocity down to 1 ft/sec (0.3 m/sec)
- Media: Liquids, steam, gas





### Target Variable Area (TVA) Meter

The Target Variable Area (TVA) Meter is specifically designed for accurate measurement in saturated steam applications. Its critical surfaces resist erosion caused by water droplets. For proper installation, the TVA requires only a short length of straight piping — six pipe diameters upstream and three diameters downstream from the meter.

The TVA's built-in density compensation feature provides accurate measurements without a separate flow computer.

#### Additional specs:

- Available in 2", 3" and 4" sizes (DN50, DN80, DN100)
- 50:1 turndown ratio provides accuracy over a wide flow range
- Wafer-type design for easy installation
- Integral display screen with keypad for simple setup and easy viewing of indicators such as flow rate, total flow, pressure and temperature
- Media: Saturated steam



### Inline Variable Area (ILVA) Meter

The Inline Variable Area (ILVA) Meter accurately measures widely varying flows, making it ideal for applications where flow rate fluctuates throughout the year. It is suitable for all types of industrial fluids.

The ILVA meter can be installed in compact spaces because it needs only six pipe diameters upstream from and three diameters downstream from the meter. Precision cone profiles the flow giving unrivaled turndown, for a more accurate flow measurement.

The ILVA's compact design, installed between two flanges, provides outstanding performance in a small footprint.

#### Additional specs:

- Accuracy: 1.0% of flow rate (between 100% and 5% of range)
- Repeatability:  $\pm 0.25\%$  of flow rate
- Factory calibrated to  $\pm 0.1\%$  FSD (between 1% and 5% of range)
- Nominal pressure drop of 200" wg at maximum range
- Turndown: Up to 100:1 compensation for all fluids with optional accessories
- Media: Liquids, steam and gas





### GILFLO 'B' Spring Loaded Variable Area Meter

The Spring Loaded Variable Area Meter (GILFLO 'B') provides a high degree of accuracy in measurements of diverse industrial fluids. Its spring-loaded design makes measurements of widely varying flow rates with ease.

The GILFLO 'B', a pipeline unit with ANSI 300 flanges, requires only six pipe diameters upstream and three diameters downstream from the meter. This makes it ideal for use in compact areas.

#### Additional specs:

- Handles horizontal and vertically down flows
- Accuracy: 1.0% of flow rate (between 100% and 5% of range)
- Repeatability:  $\pm 0.25\%$  of flow rate
- Factory calibrated to  $\pm 0.1\%$  FSD (between 1% and 5% of range)
- Nominal pressure drop of 140" wg at maximum range
- Turndown: Up to 100:1 compensation for all fluids with optional accessories
- Media: Liquids, steam and gas



### MTL10/MTI10 Thermal Mass Meter

The MTI10 Insertion and MTL10 Inline Thermal Mass Meter provides accurate mass flow measurement of clean, dry gases using constant temperature differential sensing for fast response and low flow accuracy. The unique CAL-V feature allows for in-situ testing of the meter's accuracy by testing the functionality of the sensor and the processing circuitry.

MTI10/MTL10 View software allows for ease of programming, monitor alarms, log data and viewing data from your PC.

#### Additional specs:

- Turndown up to 1,000:1; 100:1 typical.
- Gas and air flow velocity down to 15 FPM
- Media: Gas

USA

## case study

### Better Measurements, Greater Control

For a major seal manufacturing company, it was a classic case of not being able to control what it could not measure. The manufacturer planned to install a brand-new boiler in its steam system, but could not precisely calculate how much steam was needed to drive its manufacturing processes.

At Spirax Sarco's recommendation, the manufacturer installed an inline vortex flowmeter at a critical location. The meter's highly accurate measurements convinced the company to downsize from a 25,000 lb boiler to a less expensive 15,000 lb boiler. The manufacturer realized major savings while maintaining its production efficiency.

Bottom line: Better measurements lead to cost savings and greater control.



## Contact Spirax Sarco Today

Learn how to exert greater control over flow. Contact your local Spirax Sarco representative at 800-883-4411 or visit us on the web at [spiraxsarco.com/global/us](http://spiraxsarco.com/global/us)



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