

# Badger Meter

## Flow Instrumentation

Flow measurement and control you can count on.

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An industry leader in both mechanical and electrical flow metering technologies, Badger Meter offers one of the broadest flow control and measurement portfolios in the industry—a portfolio that includes eight out of the ten major flow meter technologies.



### BLANCETT® TURBINE FLOW METERS

Blancett turbine flow meters feature durable stainless steel designs that are well-suited for applications with high corrosive, temperature or pressure environments.

#### FLOW MONITORS AND TRANSMITTERS:

- Digital display of flow rate and total with selectable unit of measure
- Mounting options: meter, remote, swivel, panel, and explosion-proof
- Loop, battery and solar-powered options
- Communications options for Modbus RTU

#### LIQUID MEASUREMENT TURBINE FLOW METERS:

- Pipe size: 1/2 to 10 in. (13 to 254 mm)
- Threaded, flange, wafer, and sanitary (3-A) connections
- Operating pressure: up to 5000 psig (344 barg)
- Operating temperature: up to 450° F (232° C)
- Flow range: 0.6 to 5000 gpm (11.36 to 18,927 lpm)
- Accuracy: up to  $\pm 1\%$  of reading

#### GAS TURBINE FLOW METERS:

- Pipe size: 2 in. (51 mm)
- Wafer mounting provides quick installation and requires minimal space
- Operating pressure: up to 2200 psig (15.3 MPa)
- Operating temperature: up to 330° F (165° C)
- Flow range: 7 to 350 acfm (12 to 595 m<sup>3</sup>/hr)
- Accuracy: up to  $\pm 2\%$  of reading



- Well performance testing
- Mudflow measurement
- Hydraulic power units
- Wellhead measurement
- Multi-stage separators
- Water and chemical injections
- Hydraulic fracturing
- Flare gas feed lines
- Venting systems
- Wellhead tank storage
- Fluid loss and leak detection
- Water quality
- Wastewater treatment



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## CORIOLIS MASS FLOW METERS

The Badger Meter RCT1000 Coriolis mass flow meter identifies flow rate by directly measuring fluid mass over a wide range of temperatures with a high degree of accuracy. For fluids consisting of two liquids or two gases, the RCT1000 Coriolis system can derive the concentration and mass of each fluid based on the density measurement. Furthermore, the unobstructed, open flow design makes it suitable for a variety of fluids such as slurries and other viscous, nonconductive fluids that are difficult to measure with other technologies.

### ADVANTAGES:

- Unobstructed open flow design
- Low-maintenance operation with no free-moving parts
- Modbus RTU, Modbus TCP/IP, HART®, and EtherNet I/P network options
- Advanced fluid diagnostic tools
- Batching and PID control

### SPECIFICATIONS:

- Pipe size: 1/16-3 in. (1.6-76.2mm)
- Accuracy:
  - Liquids: up to  $\pm 0.1\%$  of flow rate
  - Density: up to  $\pm 0.0005$  g/cm<sup>3</sup>
- Zero stability: up to  $\pm 0.025\%$  of full scale
- Repeatability: up to  $\pm 0.05\%$  of flow rate
- Process temperature range:  $-40$  to  $392^\circ$  F ( $-40$  to  $200^\circ$  C)
- General area or hazardous location



### SIMULTANEOUSLY MEASURES

- Mass flow
- Density
- Temperature



## MODMAG® ELECTROMAGNETIC FLOW METERS

Whether it's improving accuracy, decreasing system maintenance or meeting the demands of challenging liquid conditions, Badger Meter electromagnetic meters deliver the performance and precision your critical flow measurement applications require.

- Non-intrusive, completely open flow tube design
- Pipe size: 1/4 to 54 in. (6.35 to 76.2 mm), depending upon model
- Accuracy: up to  $\pm 0.25\%$
- Corrosion-resistant liners for long life
- Remote or meter mounted amplifier
- LCD display
- SCADA-ready outputs
- NEMA 4X/6P options
- NSF approved

### MODELS AVAILABLE INCLUDE:

- M1000 for basic general area environments or on-truck applications
- M2000 for general area environments
- M3000 for Class 1, Div. 2 environments
- M4000 for Class 1, Div. 1 environments
- M5000 battery powered for locations without power M7600P for basic batching applications



- Water and wastewater
- Well water
- Reclaimed water
- Bi-directional flow
- Chemical
- Pharmaceutical
- Food and beverage
- Concrete production
- Irrigation



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## DYNASONICS® ULTRASONIC FLOW METERS

Dynasonics ultrasonic flow meters are ideal for liquid flow measurement as a permanently installed meter, a temporarily installed meter, or as a portable flow verification device. The clamp-on design for closed pipes is non-intrusive and offers fast installation and setup—no need to cut into or drain piping. Some models also offer energy metering and network connectivity.

### PORTABLE TRANSIT TIME/DOPPLER HYBRID ULTRASONIC FLOW METERS:

- Pipe size: 1/2 in. (12 mm) and larger
- Accuracy:  $\pm 1\%$  of reading
- Measures flow and energy
- Full-color display, graphing capabilities, advanced touch-screen interface, and wizard-based configuration tools
- 1 GB internal data logging
- Optional dual-mode pipe wall thickness sensor

### TRANSIT TIME ULTRASONIC FLOW METERS:

- Pipe size: 1/2 in. (12 mm) and larger
- Accuracy:  $\pm 1\%$  of reading ( $\pm 1.5\%$  of reading for inline model)
- Variety of output options: 4 to 20 mA, frequency pulse, and control relay
- Options include BACnet MSTP, Modbus RTU, EtherNet/IP, Modbus TCP/IP, BACnet/IP, and energy monitoring

### DOPPLER ULTRASONIC FLOW METERS:

- Pipe size: 1/4 in. (6 mm) and larger
- Accuracy: up to  $\pm 1\%$  of full scale
- Fluid velocity: up to 30 feet (9 meters) per second



- Water and wastewater
- HVAC/Energy monitoring
- Power generation
- Mining
- Semiconductor
- Food and beverage
- Flow system commissioning and troubleshooting



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## FLOW INSTRUMENTATION SOLUTIONS

	Coriolis Mass Flow Meters	Electromagnetic Meters	Impeller Meters	Disk Meters	Turbine Meters	Oscillating Piston Meters	Oval Gear Meters	Control Valves	Ultrasonic Meters	Vortex Meters	Variable Area Meters	Differential Pressure Meters	Hydraulic Diagnostic Products
Drinking Water		✓	✓	✓	✓			✓	✓	✓			
Waste Water		✓	✓					✓	✓			✓	
Irrigation		✓	✓		✓				✓	✓			
Process Water/ Semiconductor		✓	✓	✓	✓			✓	✓	✓	✓	✓	
Chemicals	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Food		✓		✓	✓	✓		✓	✓				
Oil/Automotive Fluids	✓		✓	✓	✓		✓	✓	✓		✓		
Petrol	✓		✓	✓	✓		✓	✓	✓		✓		
Phramaceutical/ Biotechnology		✓	✓			✓		✓	✓			✓	
HVAC		✓	✓	✓	✓	✓			✓	✓		✓	
Industrial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concrete Batching		✓	✓	✓									
Test and Measurement	✓				✓			✓			✓	✓	✓
Oil and Industrial Gas	✓				✓			✓	✓			✓	
Petrochem	✓				✓			✓		✓		✓	
Mining					✓			✓	✓		✓		✓
Machine Tools					✓				✓		✓		✓
Power Generation	✓	✓							✓			✓	
Aerospace					✓			✓			✓		✓
Hydraulic/Fluid Power					✓				✓		✓		✓

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