

Deliver Exacting
Flow Measurements



CCI CENTRAL CALIFORNIA INSTRUMENTS

 **Oval Gear**
Industrial Oval Gear Flow Meters

Flow Measurement

Precise flow measurement is essential.

Industrial organizations face numerous operational and business pressures. Selecting the right flow measurement tool for the job is more important than ever to ensure environmental compliance, track precious resources and minimize operating and maintenance costs.

Badger Meter Industrial Oval Gear (IOG) flow meters are an excellent choice for any number of industrial applications including:

- Chemicals
- Petrochemicals
- Water and Wastewater
- Oils and Diesel Fuel
- Pulp and Paper
- Paints and Coatings
- Printing

When accuracy and durability are important, choose Badger Meter.



Accuracy and Optimization

Accuracy Counts

Although there are many types of flow meters used to measure fluid flow rates, positive displacement (PD) designs, including our Industrial Oval Gear flow meters, are unique as they are the only meters on the market that directly measure actual volume. All other metering techniques infer the volume by making a type of measurement and equating it to the flow rate.

One of the key criteria in selecting the right flow meter is the degree of accuracy dictated by the application. To meet high-precision requirements in various industrial environments, Badger Meter IOG flow meters are the instrument of choice. These meters feature a wide flow range, low pressure drop and extended viscosity range. IOG flow meters offer easy installation and high accuracy, plus measure high temperature, viscous and caustic liquids with simple calibration.

Badger Meter is committed to delivering products that enable industrial operations to obtain precise, real-time flow measurement data when and where it matters most.

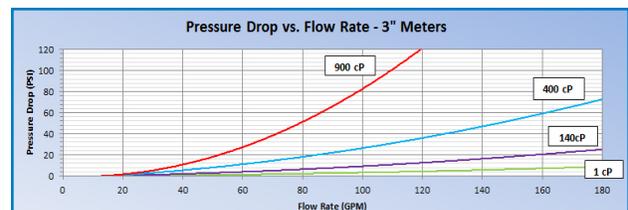
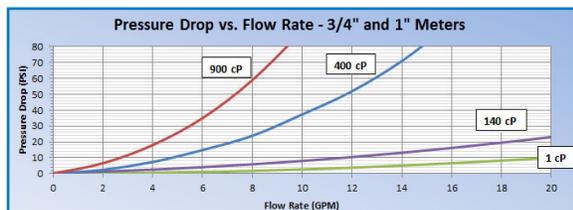
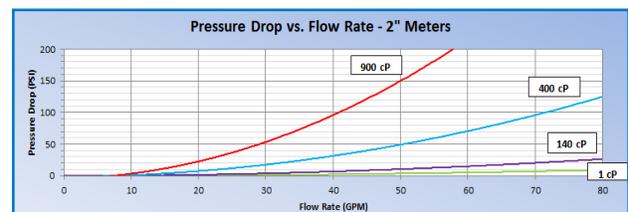
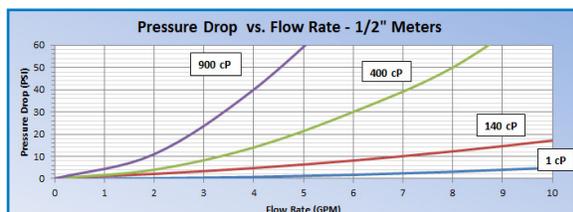
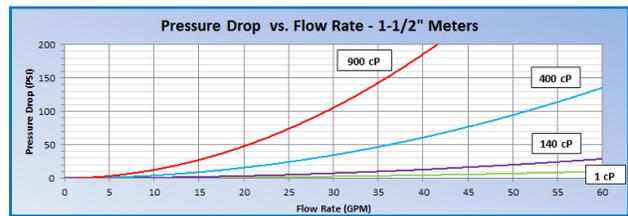
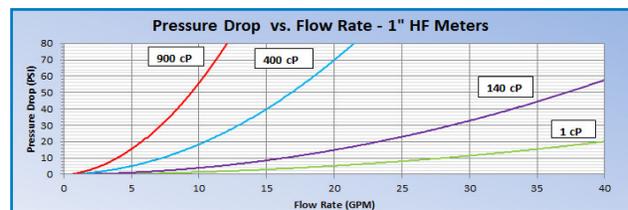
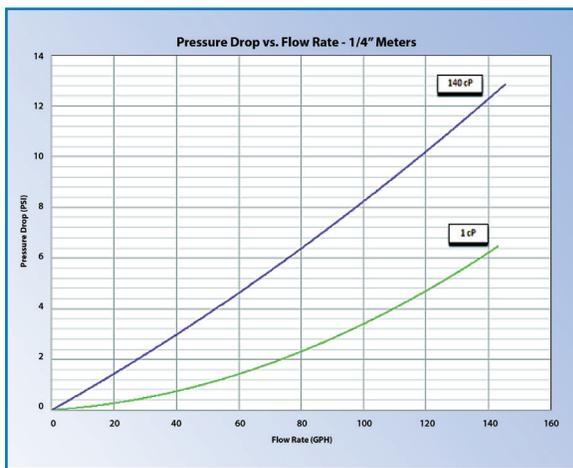
Optimize Process Operations

Badger Meter IOG flow meters, available in 1/4...3 inch sizes, provide an effective solution for optimizing process operations—even in very low-flow environments—enabling users to match the meter size to their application for utmost accuracy. The meters deliver precise flow measurements to eliminate waste, and with low pressure drop, have minimal impact on system energy requirements to move liquids.

Low Pressure Drop vs. Flow Rate

Badger Meter Industrial Oval Gear flow meters are compatible with a wide range of industrial liquids from general to corrosive, making them ideal for chemical dispensing, bulk filling of diesel or other petroleum products, and dispensing of industrial fuels and lubricants.

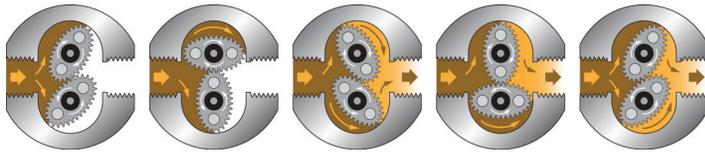
The IOG line features a compact size allowing for either vertical or horizontal installation into confined areas where space is at a premium. Plus, these meters do not require a straight run of pipe or flow conditioning.



Precise and Reliable

Unlike other flow meters, the Industrial Oval Gear flow meter is unaffected by shifts in frequency output due to viscosity variance. The meter is well suited for diverse fluids with a viscosity range of 5...1000 centipoise.

The Badger Meter oval gear meter configuration minimizes slippage between the gears and the measuring chamber wall. As a result, the liquid's viscosity and lubricity affects the meter less than other designs.



Exceptional Performance: The IOG line provides high accuracy ($\pm 0.5\% \dots \pm 1\%$) and excellent repeatability ($\pm 0.03\%$), even in low-flow environments, and measures liquid flows as low as 0.07 gallons per minute (gpm) and up to 185 gpm.

Rugged Design: Due to their durable construction, IOG flow meters can be employed in the harshest environments where conventional flow-measuring equipment is not acceptable. This includes processes with a fluid temperature range of 22...240° F (-30...120° C).

Long Service Life: The unique oval gear configuration minimizes wearable parts for long service life and simple field maintenance. Meters are provided with reliable, fully traceable factory calibration (stated in pulses per liter).

Suitable for the following applications

- Printing equipment
- Rotating industrial machinery lubrication
- Paper/pulp slurries
- General industrial high-viscosity fluids
- Chemical pacing
- Petroleum, chemical and fuel management
- Lubricants and solvents
- High-viscosity fluids

Rugged and Versatile

The Industrial Oval Gear line is available with aluminum or 316L stainless steel construction. In addition, the flow meters are equipped with an explosion-proof terminal enclosure and ATEX approvals, meeting the needs of hazardous environments.

Badger Meter IOG flow meters can be selected with a choice of NPT or BSP threaded connections, DIN or ANSI 150-pound or 300-pound flanges. A variety of instrumentation, both meter- and remote-mounted, is offered for control system interfacing or local monitoring.

ER500 (Remote-mount)



ER 420



ER 500



ILR 710
ILR 720
ILR 730



ILR 700



ILR 740



ILR 741



Meter-mount Registers

Standard Registers

ILR700	Standard	Features <ul style="list-style-type: none"> • Four-position display orientation • Shock-resistant housing • Lithium battery; five-year battery life • Large six-digit display can be rotated in 90-degree increments • Accurate up to three decimal places • Batches in pints, quarts, liters, or gallons • Totalizes in liters or gallons • 11-digit non-resettable lifetime totalizer • Five-digit resettable totalizer • Calibration in the field • Compatible with 1/2, 3/4, 1, 1-1/2 and 2 inch sizes
ILR710	Single Pulse (scalable pulse)	
ILR720	Dual Pulse (quadrature/dual pulse)	
ILR730	Analog (4...20 mA)	

Non-scaled Transmitters

ILR740	Features <ul style="list-style-type: none"> • Simple reed switch • Wired attached
ILR741	<ul style="list-style-type: none"> • Explosion-proof rated • Two reed switches • Wire via conduit

Large Display Registers

ER420	Features <ul style="list-style-type: none"> • 11-digit display • AC/DC or loop power • Scalable pulse output • 4...20 mA output • Selectable UOM • Remote-mount option with ILR-740 or ILR-741 • Compatible with all meter sizes
ER500	<ul style="list-style-type: none"> • Six-digit display • Battery or loop power • RS485 • BACnet and Modbus • Selectable UOM • Remote-mount option with ILR-740 or ILR-741 • Compatible with all meter sizes



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