

# ***LIQUID CONTROLS GROUP***



## **Terminal and Bulk Plant Metering Applications**

**IDEX**<sup>®</sup>  
IDEX CORPORATION

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## Premier products, premier performance

Liquid Controls Group offers a broad selection of positive displacement (pd) meters and turbine meters for bulk flow measurement, worldwide. For **Weights and Measures-approved** custody transfer of petroleum products, petrochemicals and other industrial products, LCG meters represent your best choice in overall value, and lowest cost-of-ownership over time.



### Applications

#### Terminal Loading/Unloading

- Truck
- Railcar
- Barge
- Ship

#### Bulk Plant

#### Crude Petroleum Processing

- Wellhead
- Refinery

#### Prover Systems

- Volumetric Provers
- Master Meters

### Features and benefits

LC's positive displacement meters are exclusively engineered with **no metal-to-metal contact** inside the measuring chamber ensuring minimal wear and sustained accuracy. With LC metering systems, you can count on longer intervals between meter calibrations and **years of accurate and trouble-free performance** regardless of variations in temperature, volume, viscosity or pressure.

At the Liquid Controls ISO-certified facility in Lake Bluff, Illinois, LC metering systems are manufactured to last. Precision-engineered meters, valves, air eliminators/strainers, and accessories provide unsurpassed performance in the most demanding conditions.

And, when it comes to data management, LC offers both mechanical and electronic systems, providing simple registration or precise automated control and data management that suits your particular requirements.

LC metering systems are sold and serviced by a worldwide network of qualified distributors and OEMs. Our products are backed by our established reputation for accuracy and reliability. That's why Liquid Controls leads the industry in metering solutions and that's why you'll want Liquid Controls' quality as part of your process applications.





# Meters

The Liquid Controls Group delivers world-class flow measurement systems with both positive displacement and turbine meter technologies for bulk product and terminal metering applications. Weights & Measures approved Turbine Meters and M Series and MS Series PD meters provide an accurate and cost-effective method for custody-transfer loading and unloading of transports, tankers, railcars, ships, barges and more.

## Capacity (maximum nominal flow rate)

60 to 1000 GPM  
227 to 3,785 L/min

## Working pressure rating

150 PSI and 275 PSI  
10.5 BAR and 19 BAR

## Connections

1½", 2", 3", 4", 6" NPT, BSPT or slip weld companion flanges. Optional RF or FF ANSI.



Aluminum Body Meters

## Capacity (maximum nominal flow rate)

100 to 1,000 GPM  
380 to 3,785 L/min

22.7 to 227 m³/hour

## Working pressure rating

285 to 1,440 PSI  
10.5 to 100 BAR

## Connections

2", 3", 4", 6" and 8" ANSI flanges



Steel Case Meters

Optional Pulse Amplifier



Turbine Meters

## Capacity (maximum nominal flow rate)

To 12,000 GPM  
To 45,420 L/min

## Working pressure rating

To 2500# ANSI

## Connections

3", 4" and 6" ANSI flange (others on request)

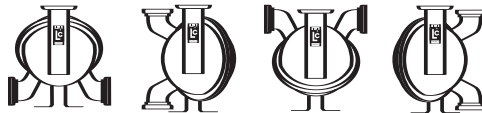
## M™ Series meters

Available in aluminum-body construction with working pressures to 150 psi and nominal flow rates to 1000 gpm for bulk metering applications. The choice of connections and compact construction features maximize the simplicity of the installation. Available with mechanical or electronic registration.

Linearity	Repeatability	Range	Registration
± .22%	.05%	10:1	Mechanical
± .10%	.03%	10:1	Electronic

## MS™ Series meters

The MS Series meters feature the same high-quality meter elements and accuracy that are the hallmark of all LCG PD meters. Housed in a spherical steel pressure shell rated up to 1,440 psi working pressure, and with flow rates to 1,200 gpm, the MS Series is ideal for terminal applications. Multiple inlet/outlet configurations provide wide-ranging mounting flexibility.



Standard Mounting Configurations (others available upon request)

## Turbine meters

NIST<sup>1,2</sup> approved models available for custody transfer applications. Available in 3", 4", and 6" sizes for accurate, dependable service measuring low to moderate viscosity liquids. Offered in 300 stainless steel, with other construction materials available on request. Turbine rotor is hydraulically balanced and supported by precision stainless steel bearings.

Linearity	Repeatability	Range	Registration
± .15%	.02%	10:1	Electronic

1. NIST-approved for gasoline, solvent, diesel fuel, and fuel oil on 3" and 4"  
2. Consult factory for ethanal approvals.

# System components

The Liquid Controls Group offers the full spectrum of components including meters, valves, air eliminators, strainers, and registers that ensure your flow measurement system functions properly. LC flow measurement systems provide accurate, trouble-free performance from the day your equipment is installed throughout its long service life.

## Capacity (Max. flow rate)

To 1,200 GPM, 4,542 L/min  
272 m³/hr

## Working pressure rating

150 psi, 10.5 BAR  
19.6 kg/cm

## Connections

To 8" flanged

## Temperature

-40° to 160° F  
-40° to 71° C



## Control valves

LCG valves for terminal applications are available in steel-body designs, engineered to provide precise, controlled response and soft closure at shut off. The hydraulically balanced designs ensure minimum head loss and maximum resistance to cavitation, regardless of system pressure and flow rate. Digital valves allow precise batch control when used with an electronic controller, such as the Toptech MultiLoad II Controller.

## Features

- Air eliminator senses and eliminates air or vapor before it enters the meter
- Strainer captures foreign particles; removes from flow
- Choice of strainer mesh sizes available (20 mesh through 100 mesh)



## Bulk air eliminators and strainers

A selection of strainers and air eliminators is available for removing foreign particles and air from the system. Air eliminators and strainers ensure accurate fluid measurement, protect the metering system, and extend system uptime. Strainer and air eliminators are available as individual components or as an integrated assembly supplied with the meter. Steel-body designs are offered for terminal applications.

## Features

- Weights and Measures approved
- Operator-friendly controls
- High visibility displays



LectroCount Electronic Register



Toptech MultiLoad II SMP



POD Pulser

## Registers and flow computers

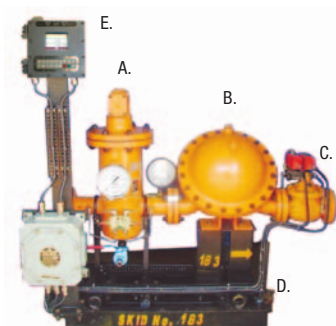
The Liquid Controls Group packages your meter with a selection of proven register and flow computer options manufactured by LCG. Engineered packages are available for high-end, automated batching and blending systems, as well as for basic electronic preset or mechanical registration systems. Meter-mounted LCG POD pulser available for pulse output to electronic register. Contact Liquid Controls Group for additional information.

# Turnkey solutions from Liquid Controls

Liquid Controls Group custom designs assembled metering systems tailored for your operation. Integrating the best meters and accessories, LCG maximizes the accuracy, efficiency, and operating life of your installation. That means fast, simplified installation, Weights and Measures-certified accuracy, and reduced downtime over the life of the system.

## Features

- Reduced field installation time
- Modular design for simplified future upgrades
- Pressure-tight joints fully assembled and tested
- Cabled for power and communications



A. Strainer/air eliminator B. Meter C. Valve

D. Skid mount E. Toptech MultiLoad II SMP

## Skids

All Liquid Controls Group components are built, inspected, assembled and tested under ISO-certified factory conditions. Skid-mounted units are delivered to the site ready for service. Units are simply set in place, connected to your system, calibrated... and are fully operational within hours.

## Capacity

132 to 1,320 gallons  
500 to 5,000 liters

## Metallurgy

Carbon steel, epoxy-coated  
steel or 300-series  
stainless steel



## Volumetric provers

The Liquid Controls Group supplies a range of volumetric provers, from basic provers to complete prover/master integrated systems. Volumetric provers are used for Weights and Measures approved calibration of master meters and delivery meters.

## Master meters

The Liquid Controls Group also offers fully certified positive displacement master meters for on-site meter calibration and system commissioning. Contact the factory for details.

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