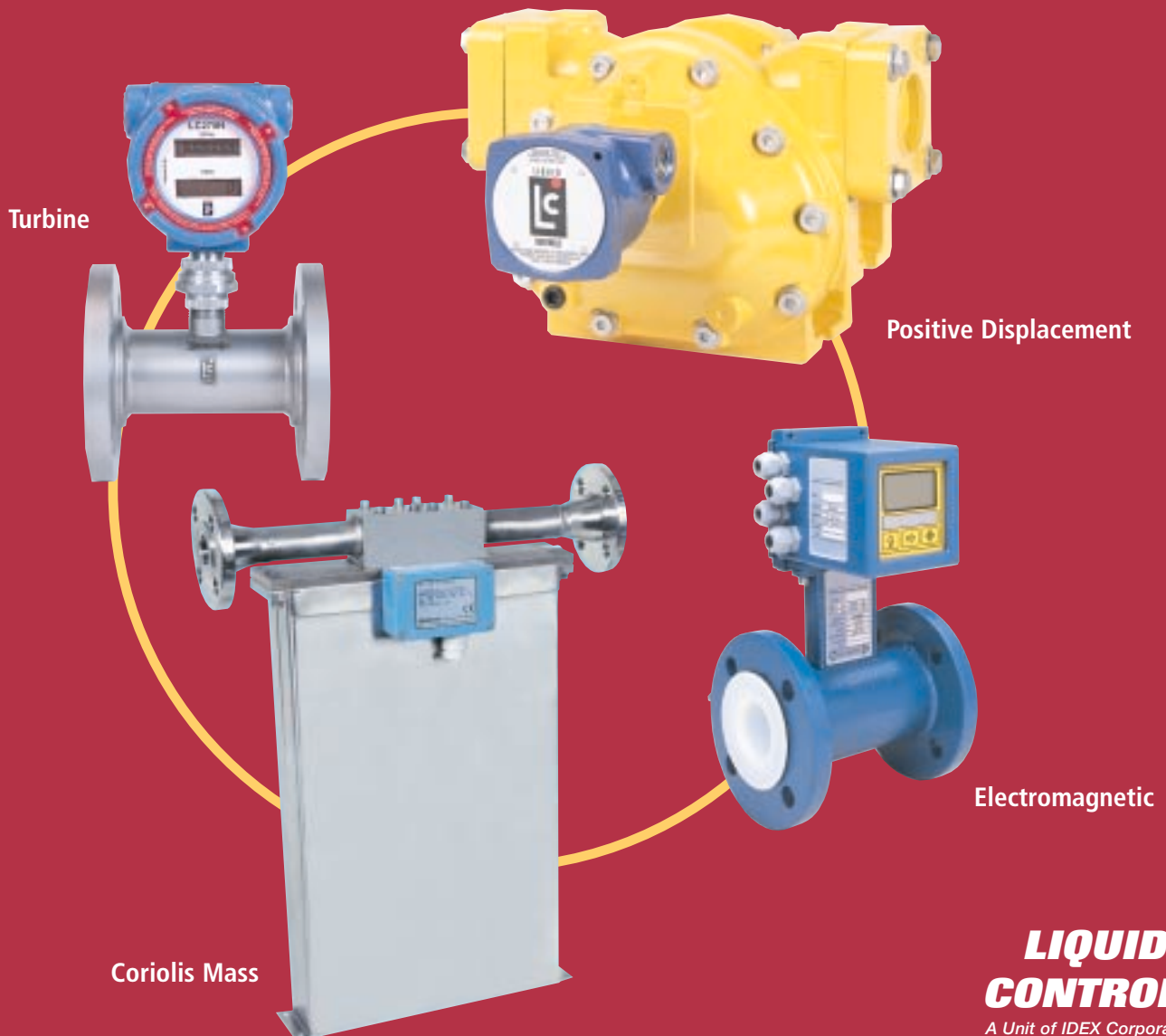




*A world leader  
in flow measurement  
offering high performance,  
field proven technologies.*



# ***Application Driven Flow Metering Solutions***



**LIQUID  
CONTROLS**  
A Unit of IDEX Corporation



# Flow Metering Solutions

## Positive Displacement Flow Meters

- **Sizes:** 1 1/2" through 6"
- **Flow Rates:** 5 gpm through 1,000 gpm
- **End Connections:** ANSI Flanged, NPT, Slip Weld
- **Pressure Ratings:**
  - Cast Case: 150 & 350 PSI non shock working pressure
  - Two Case Steel Case: 150/150, 150/275, 300/300, 300/720 PSI; 600/1440 ANSI non shock working pressure
- **Materials of Construction:**
  - **Meter Body:** Aluminum, Cast Iron, Brass, Steel, Stainless Steel
  - **Seal Material:** Buna "N"; Viton; Teflon
- **Accuracy:** Capable of +/- 0.125% over 5:1 range; +/- 0.22% over 10:1 range
- **Repeatability:** 0.05% of reading over entire range



3-A models available



## Turbine Flow Meters

- **Sizes:** 1/4" through 12"
- **Flow Rates:** 0.25 - 12,000 gpm
- **End Connections:** ANSI, NPT (1/4" to 2"), Tri Clover, Flare Tube, Wafer
- **Pressure Ratings:** 150 - 2,500 ANSI
- **Materials of Construction:**
  - **Body:** 304, 316, 316L SS; **Rotor:** 17-4 Ph SS
  - **Bearing:** Metal Ball, Carbide Sleeve, Cryo Ball, Fluorosint Sleeve
- **Accuracy:** Capable of +/- 0.25% of rate over 10:1 range
- **Repeatability:** 0.05% of reading over entire range

## LCMASS™ Coriolis Mass Flow Meters

- **Sizes:** 1/4" through 12"
- **Flow Rates:** 0.0022 lbs/min to 50,000 lbs/min
- **End Connections:** ANSI Flanged, Threaded, Sanitary
- **Pressure Ratings:** 150 - 2,500 ANSI
- **Materials of Construction:** 316 Ti Stainless Steel (Hastelloy and Tantalum available on request)
- **Accuracy:** Capable of +/- 0.2% of rate over 20:1 range
- **Repeatability:** 0.1% of reading over entire range

3-A models available



3-A models available

## LCMAG™ Electromagnetic Flow Meters

- **Sizes:** 1/8" through 72"
- **Flow Rates:** 0.10 through 400,000 gpm
- **End Connections:** Flange, Wafer, Thread, Tri Clover
- **Pressure Ratings:** 150 - 300 ANSI
- **Materials of Construction:** Housing, Carbon Steel - 304 SS
  - **Electrodes:** 316 SS - Hastelloy B, C & Titanium
  - **Liner:** PTFE, Ebonite & Polypropylene
- **Accuracy:** Capable of +/- 0.2% of rate over 10:1 range for flow velocity between 6 to 33 feet per second range
- **Repeatability:** 0.1% of Full Scale

# Process Control Instrumentation

## Electronic Registration & Control Systems



### LectroCount LCR, POS, RAM & RF Systems

Weights & Measures (custody transfer) approved advanced microprocessor based electronic registration, presetting, printing and control systems. Designed to meet - even adapt to - your flow meter and process control instrumentation requirements. LCR and RSCB/REC are NEMA 4X non-incendive Class I, Division 2, Group C & D. Accepts pulse input from most flow meters. Includes RS232/485 communications.

#### **Power Requirements:**

- LC<sup>3</sup>, 10 -18 VDC
- LCR, 9-28 VDC

#### **Features:**

- Multiple point calibration of flow meter
- Multiple product calibration of flow meter
- Electronic temperature volume compensation
- System and transaction security
- Fail closed circuitry



### RHE Remote Mass Flow Transmitter (including explosion-proof)

Available in two basic constructions for wall mounting or rack mounting, as required. The units are powered by 115/220 VAC or 24 VDC. Power consumption for the units is less than 15 Watts. Standard outputs include mass flow, temperature, and density. Wall mount model is NEMA 4X (Class I, Division 2, Group C & D). Intrinsically safe sensor (Class I, Division 1, Group C & D). Rack mount electrical classification is NEMA 1 rated.



### Multi-Function Batch Controller

Model 414 accepts pulse or frequency outputs from most flow meters. A large 6-digit LCD readout can provide a display of Rate, Accumulative Total, Batch Total or Preset Batch Quantity. Requires 11.5 to 28.5 VDC to operate alternatively 115 or 220 VAC. Panel mount standard, weatherproof or explosion proof enclosure optional. Accepts frequency inputs from .25Hz to 10KHz and most sine wave and proximity switch (pulse) inputs. Two relay outputs, 250 VAC/30 VDC, 5 amps.



### Weather Proof Rate/Totalizer

Model 202 Rate/Totalizer is a battery powered (requires no external power source). Industrial counter that computes and displays Rate, Resettable Totals and Accumulative Totals. Includes two open collector outputs suitable for driving DC solenoids or external relays. Power options include 4 - 20 mA loop powered or 12 - 28 VDC.



### Explosion Proof Rate and/or Totalizer

- DC power via internal AA Lithium battery
- FM approved and CSA certified; Class I, Group B, C & D and Class II, Group E, F & G, NEMA 4
- Fully programmable, field calibration via BCD switches

# Process Control Instrumentation

## Mechanical & Electromechanical Registration & Control Components



### Mechanical Counter with Printer

A Large Numerical Counter provides 5-digit resettable and 8-digit non-resettable totalizers. Printer provides an imprinted ticket record of the transaction. Counter and printer are legal for use on resale applications. Adaptable to most PD meters.

### Mechanical Preset Counter with Microswitches

Preset Counter enables you to set a predetermined volume and control a mechanically linked valve closure so that the exact predetermined volume will be delivered and the valve will close, shock free. Microswitches convert mechanical signal to electrical or pneumatic signal to provide preset counter control of remotely located valve, pump and/or alarms.



### Pulse Output Device

Adapts to all LC positive displacement meters and provides a high resolution, unscaled pulse stream. The pulser is magnetically coupled to an optical encoder that has a signal which is directly proportional to the liquid flow through the meter.

#### FEATURES:

- **Glandless Drive:** No dynamic seals to fail and leak. Meets current environmental standards.
- **Pulse Output:** Easily adapts to remote totalizers, batch controllers, computers, PLC's and other pulse receiving devices. No amplifier or signal conditioner required.
- **Construction:** All wetted parts are 316 Stainless Steel or equivalent.
- **Regulatory:** Meets Weights & Measures requirements; cover to housing has a ready-made location for wire seal.
- **Pressure Rating:** Process wetted portion carries 350PSI (25 BAR) working pressure rating. Burst pressure exceeds 1,750 PSI (121 BAR).
- **Housing:** Weatherproof UL/CSA Enclosure Type NEMA 4X design.
- **Explosion-proof rating:** Class I, Division 1 & 2, Groups C & D.
- **Flameproof rating:** Zone 1 & 2, EEx d IIB T6.



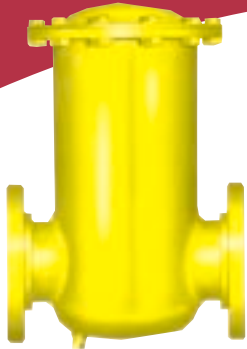
### Counter Mounted Pulser

Pulsers supply an electrical signal to devices such as remote totalizers, batch controllers, rate-of-flow recorders, etc. Models include Dry Reed 1 PPR or 10 PPR (50-60% on/off) and Solid State single channel 100p/channel or solid state quadrature dual channel 50 P/channel.



# System Components

## Strainers & Air Eliminators



### ANSI Flanged Fabricated Steel Strainers

- Strainer is made of fabricated steel in 2", 3", 4" and 6" sizes.
- Seal Materials: Buna, Viton or Teflon.
- Straight-through flow standard configuration.
- Optional: Right angle version with bottom inlet.
- Supplied with cover only or cover with cast steel air eliminator optional.
- Pressure Rating: 150 PSI (10.3 BAR), 275 PSI (19.0 BAR) or 300 PSI (20.7 BAR) non shock working pressure.
- 20, 40, 80 and 100 mesh basket selection based on product viscosity
- Provides reasonable protection to moving parts of PD and Turbine style meters.

### 2", 3" & 4" Strainers with Companion Flanges

- 2" available in Aluminum, Brass, Cast Iron or Stainless Steel.
- 3" and 4" available in Aluminum only.
- Seal materials: Buna, Viton or Teflon.
- Right angle strainers with optional NPT, BSPT or Slip Weld companion flanges.
- Pressure Rating: 150 PSI (10.3 BAR) non shock working pressure. 2" and 3" Aluminum strainers available in 350 PSI (24.1 BAR) non shock working pressure model.
- Supplied with cover or without cover when air eliminators are used.
- 20, 40, 80 and 100 mesh basket selection based on product viscosity.
- Provides reasonable protection to moving parts of PD and Turbine style meters.



### Air Eliminator

- For direct mounting on any LC strainer.
- Optional: In-line mounting with 3" pipe adapter.
- Available in Aluminum, Cast Iron or Stainless Steel.
- Seal Materials: Buna, Viton, Teflon/Kalrez or EPT.
- Pressure Rating: 150 PSI (10.3 BAR) or 350 PSI (24.1 BAR) Aluminum only; 150 PSI (10.3 BAR) Cast Iron or Stainless Steel.
- Optional: Versions available for use with model "X" air actuated check valve or vapor differential check valve.

### Bulk Plant Air Eliminator

- Fabricated steel tank with nodular iron air elimination head(s). Designed for high flow applications where storage vessel is emptied on a repetitive basis.
- Choice of 3", 4", 6" and 8" ANSI flanged connections.
- Seal Materials: Buna, Viton or Teflon.
- Pressure Rating: 150 PSI (10.3 BAR) non shock working pressure.
- Available in single or dual head models.
- Optional: DIN flanges.



### High Capacity Aluminum Air Eliminator/Strainer

- Cast Aluminum body. Designed specifically for high flow refined fuels delivery truck applications.
- 2" or 3" flanged with optional NPT, BSPT or Slip Weld companion flanges.
- Seal Materials: Buna, Viton or Teflon.
- Includes spring loaded back pressure valve
- Pressure Rating: 150 PSI (10.3 BAR) non shock working pressure.
- Passes U.S. and Canadian Weights & Measures split compartment tests.

# System Components

## Valves



### 2", 3" and 4" Mechanically Operated Fail Closed Valves

- 2" valve is available in Aluminum, Brass, Cast Iron or Stainless Steel.
- 3" and 4" valves are Aluminum only.
- Seal Materials: Viton or Teflon.
- Right angle valves with optional companion flanges - NPT, BSPT or Slip Weld.
- Pressure Rating: 150 PSI (10.5 BAR) non shock working pressure.
- Optional: 90° elbow for in-line mounting 2" only.



### ANSI Flanged Steel VS-Series Mechanically Operated, Fail Closed Valves

- Cast Steel Valve.
- 3" or 4" ANSI flanged.
- Seal Materials: Viton or Teflon.
- Pressure Rating: 150/275 PSI (19 BAR) non shock working pressure.
- Optional: DIN flanged.



### ANSI Flanged Steel Hydraulically Operated, Fail Closed Control Valve

- Steel valve. 2", 3", 4", 6" and 8" ANSI flanged. Valve functions include: two-stage preset control, opening and closing speed control, differential pressure control, pressure sustaining, pressure reducing, single or dual rate-of-flow control, thermal relief, manual override and emergency override.
- Seal Materials: Buna and/or Viton.
- Pressure Rating: 150/275 PSI (19 BAR) or 300/300 PSI (21 BAR) non shock working pressure.
- Class I, Division 2, Group C & D explosion proof solenoid(s) standard.
- Optional: DIN flanged.
- Optional: Ductile Iron or Aluminum 150 PSI (10.5 BAR) working pressure valve bodies.



### 2" Pneumatically Operated Fail Closed, Piston Style Valve

- Cast Aluminum with optional companion flanges of NPT, BSPT or Slip Weld. Designed especially for use with LectroCount<sup>3</sup> and LectroCount LCR electronic registration, data acquisition and system control devices.
- Seal Materials: Viton and Teflon.
- Pressure Rating: 150 PSI (10.5 BAR) non shock working pressure.
- Pneumatically controlled (70 - 100 PSI air pressure required), electrically actuated, solenoid operated, piston style block valve can be used for either single or two-stage operation and to provide system security.



### Solenoid Operated, Fail Closed Block Valve

- Cast Aluminum 2" in-line valve with optional companion flanges NPT, BSPT or Slip Weld. The electrically actuated, solenoid operated, diaphragm style block valve can be used for either single or two-stage operation and to provide system security.
- Seal Materials: Buna and Viton
- Pressure Rating: 150 PSI (10.5 BAR) or 350 PSI (25 BAR) non shock working pressure.
- Class 1, Division 2, Group C & D non-incendive solenoid(s) standard.
- Designed especially for use with LectroCount<sup>3</sup> and LectroCount LCR electronic registration, data acquisition and system control devices.

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