

Actaris Coriolis Mass Flow Custody Transfer Systems

Actaris RML2000+Ri505 massflow meter systems are the answer that businessmen have been waiting for to integrate a solution for their business that simplifies the assimilation of technology, enabling them to achieve control and management simply, safely and economically. .

Actaris Massflow meters are fully electronic flow measurement and transaction management systems on the bobtail. Successful in industrial applications for decades, proven Actaris Coriolis mass measurement technology now goes mobile on the bobtail.

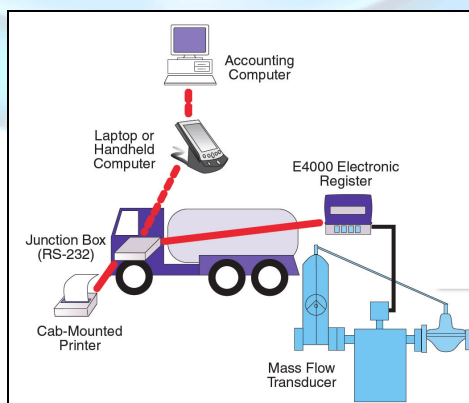
Reducing costs today...and tomorrow

Coriolis mass measurement reduces LP Gas under-measurement thanks to outstanding accuracy stability between yearly calibrations. Compared to traditional mechanical flowmeters, the Actaris mass flowmeter offers better accuracy with higher flow rates over a longer service life, thanks to its unobstructed dual vibrating tube design. No-moving-part technology reduces maintenance costs related to both product measurement and registration.

The Coriolis mass flowmeter provides volumetric flow measurement of LP Gas when interfaced with E4000 or Ri505 Electronic Register. With the outstanding flexibility of the registers, the Actaris mass flow system allows an upgrade path not obtainable with competitive electronic transaction management systems. Electronic temperature compensation further enhances measurement accuracy.

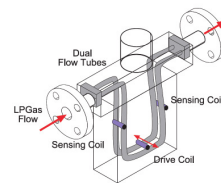
The menu-driven register functions are easy to learn and remember. Interfacing through common handhelds and laptops makes data management fast and easy between truck and office.

In short, we have put the highest LPG technology in your hands for operations and sales to be as simple and accurate as possible.



Dual Flow Tube Coriolis Technology For Stable Accuracy

A drive coil causes the tubes to vibrate. Fluid flow through the tubes causes them to twist. This twist, directly proportional to the mass flow rate of the fluid, is measured by two sensing coils. Electronics convert the resulting mass flow rate signal to volumetric flow for LP Gas delivery.



Features and benefits :

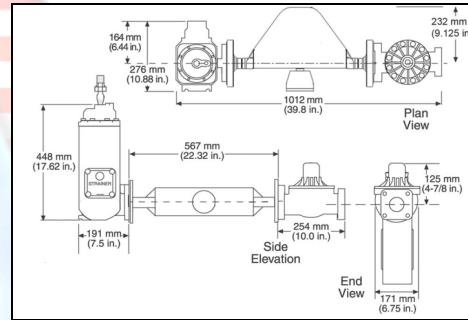
- Reduced product losses between yearly calibrations
- No-moving-part technology means more reliable operation, less downtime and longer life cycles
- Typical payback less than two years based on accuracy stability alone
- High-frequency electronic temperature compensation sampling for improved accuracy
- Electronic register handles multiple products and multiple pricing tables
- Electronic capture of all transaction data eliminates manual errors
- From simple pump and print to full electronic inventory management—all in one model without upgrades
- Communicates easily with office accounting and route management applications
- Actaris Coriolis mass flowmeters have applications from the bulk terminal to the end user: bulk transport, multi-product distribution, residential distribution, fuel oils, gasoline, aviation fuels
- Established technology in a new application—from a long-established name in LP Gas bobtail metering

Main Components

Coriolis sensor :

RML2000

- Mass Accuracy: $\pm 0.10\%$ of flow rate (No zero Stability)
- Volume Accuracy: $\pm 0.15\%$ of flow rate (No zero Stability)
- Repeatability: $\pm 0.05\%$ of rate
- Density accuracy: $\pm 0.001 \text{ g/cm}^3$ ($\pm 1.0 \text{ kg/m}^3$)
- Repeatability: $\pm 0.0005 \text{ g/cm}^3$ ($\pm 0.5 \text{ kg/m}^3$)
- Temp Accuracy: $\pm 1 \text{ }^\circ\text{C} \pm 0.5\%$ of reading in $^\circ\text{C}$
- Repeatability: $\pm 0.2 \text{ }^\circ\text{C}$
- Process Temp Variation: For each degC away from calibration temperature, mass flow measurement offset by $\pm 0.00175 \%$ of max flow, density measurement offset by $\pm 0.0001 \text{ g/cm}^3$ per degC.
- Process Pressure sensitivity: (None)
- Pipe material: 316L SST
- Flow tube Pressure: 100 bar, 1450 psi
- Body: 304L SST
- Vibration Limits: Meets IEC 68.2.6, endurance sweep, 5 to 2000 Hz, 50 sweep cycles at 1.0 g
- ATEX 0575 Ex II 2 G EEx ib IIC T1-T5
II 2 D IP65 T $^\circ\text{C}$



Coriolis Mass Flow Transducer Dimensions

Electronic Registers :

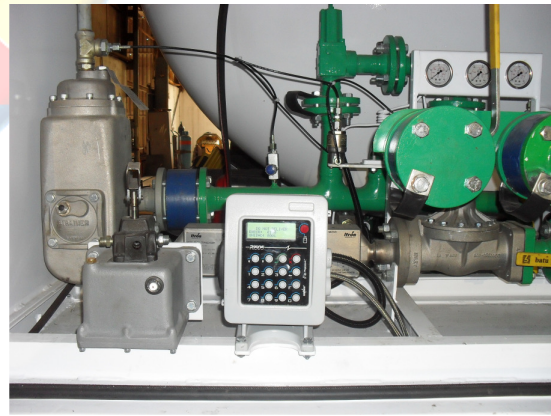
RML2000 mass flow meters can be used with one of the following registers according to customer needs ...

E4000



- **Enclosure rating:** Nema 3X
- **Outputs :**
 - 1 frequency pulse output
 - 2 x Relay
 - Epson TMU295 serial printer port
 - RS232 Hand Held computer connection
- **LPG Truck delivery features:**
 - Custom ticket print out – print any measurement mass only or volume only delivery information
 - LPG solenoid valve delivery control
 - Supervisor Password for authorised personel only menus
 - Four Button easy usage control panel
 - Store up to 10 different product definition in the register.
- **Ambient Temp :** -18 to 55 deg C
- **Sensor Communication :** Puls Mode
- **Robust metal enclosures designed for truck mounting**

Ri505



- **Enclosure rating:** Nema 4X
- **Outputs :**
 - 1 frequency pulse output
 - 2 x Relay
 - Epson TMU295 serial printer port
 - RS232 Hand Held computer connection
- **LPG Truck delivery features:**
 - Custom ticket print out – print any measurement mass, volume, density, temperature + customer and delivery information
 - LPG solenoid valve delivery control
 - ID Tag allows delivery by authorised personnel only – optional
 - 5 Hour back up battery prevents delivery when power is off
 - GPS, Radio Frequency and PDA infra red communication as options.
 - Store 7000 customer details and 50 prices in the register
- **Ambient Temp :** -25 to +70 deg C
- **Sensor Communication :** Modbus RTU
- **Robust metal enclosures designed for truck mounting**