

Chemical Measurement Solutions

Superior flow and density measurement



Best-in-class measurement

“I need to simultaneously increase production and plant up-time while lowering operations and maintenance costs.”

The chemical industry faces many challenges for greater production at higher quality and lower cost from existing facilities, greater customization of final products, fluctuating feedstock and fuel costs as well as stricter environmental and safety mandates. Older, traditional measurement technologies were designed for yesterday's more predictable process world – they don't provide the accuracy, flexibility, or safety features you need to compete.

What if you could ...

Produce every batch right every time, reducing waste, rework and off-spec product

- ✓ Direct mass measurement over wide turndowns and varying fluid properties, with onboard, real-time concentration measurement assures precise, repeatable and reproducible batch chemistry
- ✓ High precision catalyst; liquid-solid slurries are a specialty!
- ✓ High accuracy batch-from-empty
- ✓ Reduced cycle times between recipes
- ✓ Onboard, in-line meter verification for troubleshooting and calibration checks while operating

Simultaneously increase production and plant up-time while lowering operation and maintenance costs

- ✓ Simplified meter design with no wearing parts – dramatically reduces maintenance costs and staffing, allowing for fewer process disruptions and lost production
- ✓ Direct mass measurement eliminates the cost and maintenance of temperature and pressure transmitters, flow computer or DCS configuration

Assure the health and safety of my employees and community, and environmental mandates

- ✓ Dramatically fewer leak points than with traditional flow technologies – no impulse lines
- ✓ Check existing meters in-line to assure they are safe and compliant by conducting SIS-proof tests while the process is running without removing the meter from the line
- ✓ Online concentration measurement, eliminating sample ports and potential operator exposure to hazardous chemicals

A chemical processing company installed Micro Motion meters on three chlorine lines feeding each unit—immediately reducing seven potential leak points per line and tripling accuracy.

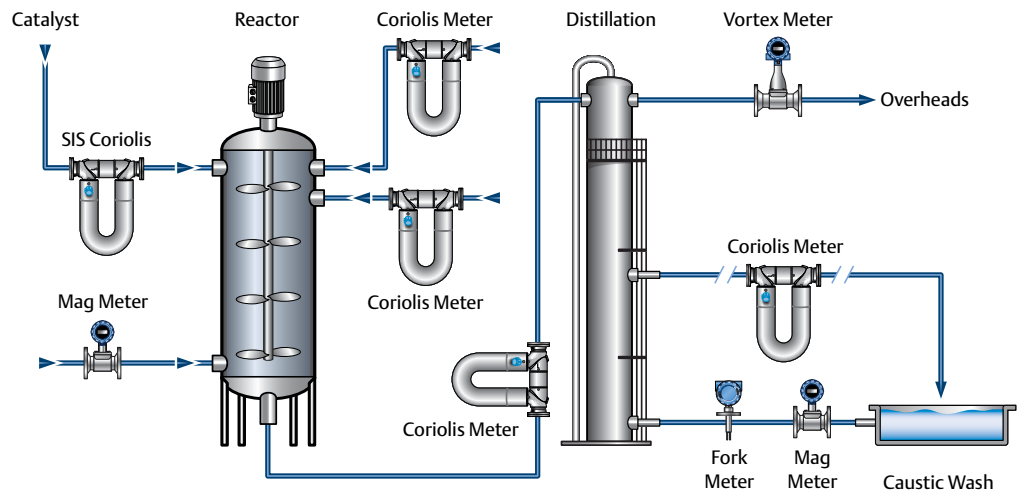
MEASUREMENT PRECISION
for chemical processing applications



Plant operators worldwide are choosing Micro Motion® and Rosemount® measurement technologies for chemical applications to increase production, reduce costs while, at the same time, minimizing the risk to workers, the environment, and the surrounding community.

Micro Motion & Rosemount Flow offer:

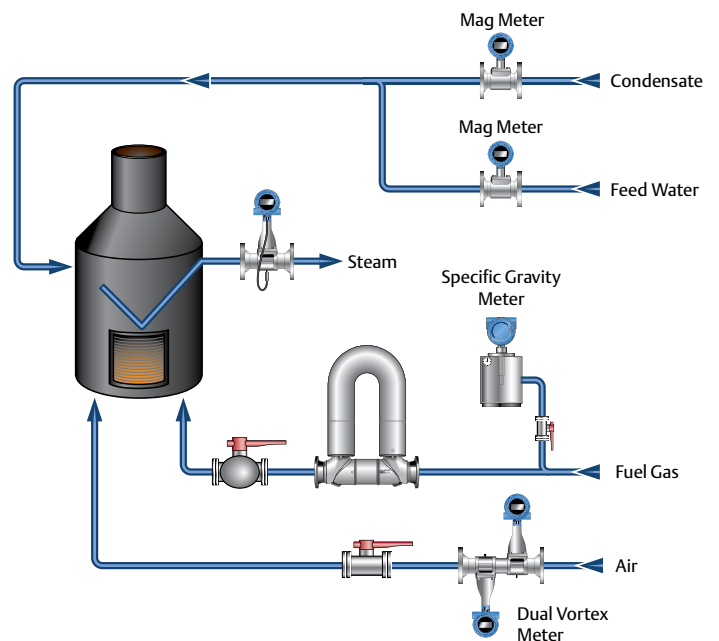
- Best-in-class mass balance and reactor control
- Unwavering accuracy under changing recipes and fluid properties
- Facilitates a more versatile operation
- Increased safety due to the online ability to adjust to reactant and catalyst concentration



Chemical Applications

Boiler/Burner Combustion Control

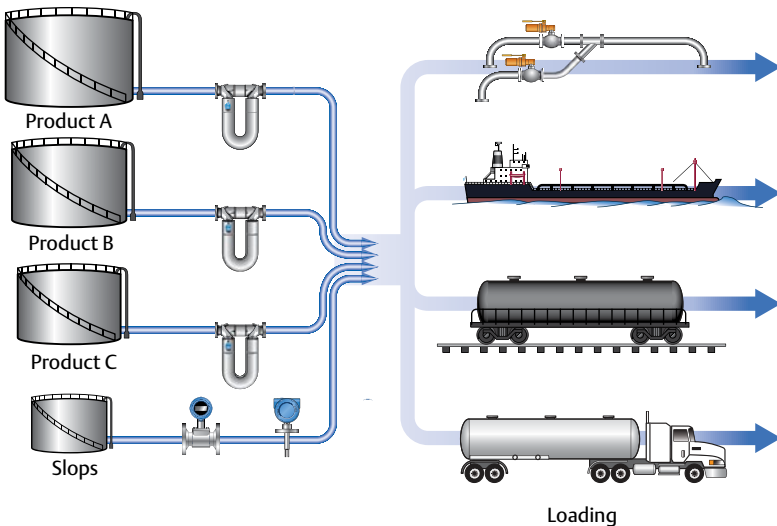
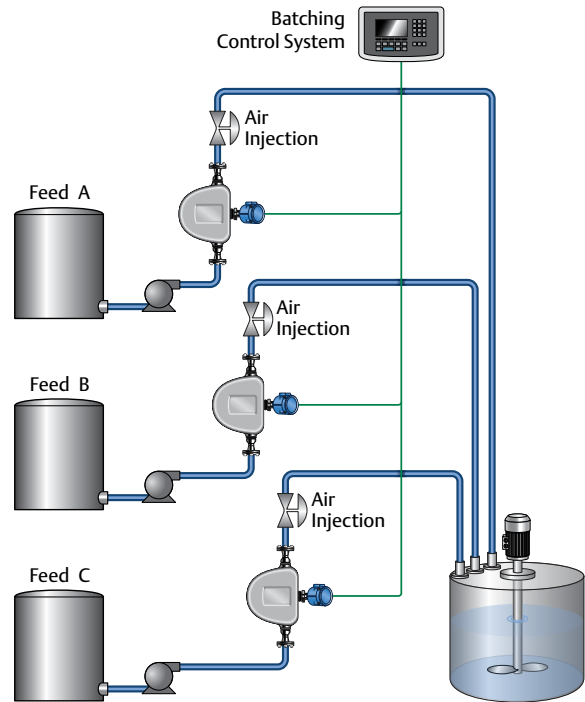
- Reduce impact of fuel variations
- Enables feed forward control of fuel and combustion air to reduce emissions
- Enables regulatory reporting
- Smart Meter Verification via wireless THUM provides remote proof test, in-line
- Enhanced safety via certified SIS devices





Blending & Batching Operations – Critical Chemistry

- Precise and accurate measurements reduce batching errors
- Robust measurements are insensitive to entrained air from batch starts and stops
- Monitor in-line concentration to provide real-time molar ratio control
- Drainable design reduces inventory losses from line blowdown



Custody Transfer – Loading/Unloading

- Improve fiscal accuracy and throughput compared to conventional metering, gauging, and weigh scale processes
- Bidirectional Coriolis enables greater operational flexibility
- Immunity to changing fluid or process conditions makes Emerson's Micro Motion Coriolis flowmeters ideal for multi-product loading/unloading



Micro Motion® and Rosemount® Flow and Density Meters



Micro Motion® ELITE® Coriolis Flow and Density Meters	
Flow range	0.01 to 120,000 lb/min (0.35 – 3,266,000 kg/hr)
Liquid mass flow accuracy	±0.05% or ±0.1%
Liquid volume flow accuracy	±0.05% or ±0.1%
Gas flow accuracy	±0.25% or ±0.35%
Liquid density accuracy	±0.2 kg/m ³ , ±0.5 kg/m ³ or ±2.0 kg/m ³
Nominal line size	1/12" to 16" (2 to 400 mm)



Micro Motion® F-Series Coriolis Flow and Density Meters	
Flow range	6.5 to 10,000 lb/min (180 to 272,000 kg/hr)
Liquid mass flow accuracy	±0.10%, ±0.15% or ±0.20%
Liquid volume flow accuracy	±0.15% or ±0.30%
Gas flow accuracy	±0.50%
Liquid density accuracy	±0.5 kg/m ³ , ±1.0 kg/m ³ or ±2.0 kg/m ³
Nominal line sizes	¼" to 4" (6 to 100 mm)



Micro Motion® T-Series Coriolis Meters	
Flow range	3 to 3200 lb/min (82 to 87,000 kg/h)
Liquid mass flow accuracy	±0.15%
Liquid volume flow accuracy	±0.25%
Gas flow accuracy	±0.50%
Liquid density accuracy	±0.002 g/cm ³ (±2.0 kg/m ³)
Nominal line size	¼" to 2" (6 to 50 mm)



Micro Motion® SGM (Specific Gravity Meter)	
Gas specific gravity accuracy	Up to ±0.1% of reading
Specific gravity range	0.1 to 3 typical



Micro Motion® FDM (Fork Density Meter)	
Density accuracy	±0.001 g/cm ³ (±1.0kg/m ³) (±0.06 lb/ft ³)
Flexible installation with compact design and hot-tap retractor fork option	



Rosemount® 8800 Vortex Flowmeter	
Liquid flow accuracy	±0.65%
Gas flow accuracy	±1.0%
Saturated steam mass flow accuracy	±2.0%
Nominal line size	0.5" to 12" (12 to 300 mm)



Rosemount® 8700 Magnetic Flowmeter	
Liquid flow accuracy	±0.15%
Nominal line size	0.15" to 48" (4 to 1200 mm)

See product data sheets for complete technical specifications



EMERSON WORLD-LEADING
FLOW AND DENSITY
technology

SETS THE STANDARD FOR
RELIABLE, REPEATABLE,
HIGH PERFORMANCE
MEASUREMENT



Emerson's Micro Motion and Rosemount devices are known globally in over 85 countries for quality, reliability, application expertise, and support not available elsewhere.



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