Oil & Gas Production Measurement Solutions
Superior flow and density measurement
Best-in-Class Flow & Density Measurement for Upstream Production only from Emerson Process Management®

Emerson’s flow, density and viscosity measurement solutions are the best-in-class standard for a broad range of upstream applications, delivering unparalleled performance that results in maintenance-free, precise measurement and reliable control.

Emerson helps to solve your Upstream Production Challenges

Accurate, Real-time Data
Optimize well and field production, allocation, and characterization

Proven Field Reliability
Continued and uninterrupted data for early problem detection and improved availability of wells and facilities

Lower Cost of Ownership
Satisfy budget constraints while minimizing maintenance cost and operational effort

Process and Diagnostic Information
Rapid trouble shooting and abnormal situation identification to allow for higher value maintenance practice

Inherent Advantages of Emerson Flow Technologies

- In-line flow and density devices measure all fluids, slurries and gases with one instrument
- Minimal or no straight-run required to reduce installation space requirements
- Simple and fast installation and commissioning
- Smart Meter Verification eliminates the need for periodic and disruptive calibration checks
- Smart Wireless THUM™ on measurement devices reduces wiring and installation costs while providing remote access to advanced diagnostics
- Broad range of products provide fit for purpose measurement performance at lower total cost of ownership
Maximize your Upstream Production with Emerson Flow & Density Measurement

Production Management
- Gas Injection
- Gas Lift
- Oil & Gas Production
- Chemical Injection
- Water Injection

Enhanced Oil Recovery
- EOR Thermal
- EOR Chemical or Miscible

Natural Gas Treatment/Compression
- Compression
- Fuel Gas
- Production Separator
- Test Separator
- Dehydration/Acid Gas Removal
- Condensate Stabilizer
- Vapor Recovery

Oil Treatment and Storage
- Water Treatment
- Chemical Storage
- Tank Dewatering

Gathering and Custody Transfer
- To Gathering
- To Storage
- To Pipeline

Coriolis, Magnetic or Vortex Flowmeter
- GAS
- OIL
- WATER
- Vortex Flowmeter
- Density
**Production Management**

**Direct Well Measurement**
- Most reliable and accurate measurement of production rates and fluid quality
- Reduce operations cost with in-situ Smart Meter Verification and maintenance free meters

**Test and Production Separation Measurement**
- Flow, density, net oil and water cut measurement in one device for reliable, real time production surveillance
- Early detection of well problems and separator efficiency with more accurate, reliable well production data

**Water Cut and Net Oil Measurement**
- Flow and density based water cut measurement
- Simplified integration with single electronics and flow computer packages

**Gas Lift Production Measurement**
- Increase hydrocarbon liquids production
- Reduce lift costs and cost of ownership with simplified, accurate measurement

**Water Injection**
- Maintain efficient sweep pattern
- Avoid fluid breakthrough or channeling

**Chemical Injection**
- Reliable and accurate mass dosing for down hole, pipeline and oil and water treatment to minimize chemical usage and maximize effectiveness
- Direct density measurement for quality assurance and blend optimization

**Enhanced Oil Recovery**

**Miscible, Immiscible, and Chemical Injection**
- CO2 Breakthrough Detection on gas wells
- Reduce complexity with wide flow rate monitoring and single meter for WAG injection wells

**Flood Fluid Material Supply and Recovery**
- Optimize recovery of EOR fluids and diluents
- Accurately monitor and account for flood materials

**Thermal**
- Optimize steam injection rate to maximize effectiveness
- Reduce steam and energy waste with accurate injection rates

**Oil Treatment and Storage**

**Oil Treatment**
- Maximize oil recovery and product quality by optimizing treatment system performance with improved measurement and control
- Improve mass balance and treatment efficiency with continuous process information and abnormal situation detection

**Vapor Recovery**
- Meet regulatory and internal requirements while capturing rich hydrocarbon gases
- Low maintenance and reduced operator intervention to improve payback on VRU installations

**Dewatering and Product Transfer**
- Reduce regulatory risk, operator exposure and operating expenses
- Accurate interface and product transfer measurement from a single device

**Gathering and Custody Transfer**

**Pipeline custody transfer measurement**
- Continuous, accurate and reliable measurement of crude oil, natural gas and NGLs minimizes sources of error and accounting liability
- Lower cost of ownership with comparable capital costs and minimal maintenance requirements
- Sustained measurement performance over time ideal for pipeline, LACT units and loading/unloading applications (truck, rail and marine)

**Natural Gas Treatment / Compression**

**NGL recovery and stabilization**
- Accurate control and mass balance
- Improve condensate quality and reduce operating expense

**Dehydrator control**
- Optimize glycol regeneration and recirculation rates
- Eliminate glycol losses and improve environmental compliance

**Compressor fuel management**
- Direct mass measurement enables inferred energy rate for optimal air to fuel mix
- Improve environmental emissions compliance and reduced fuel consumption
World-class Flow & Density Measurement delivers the performance you need

Designed for Accuracy and Repeatability

Achieving optimal production and maximum output in a controlled and safe environment is the hallmark of best-in-class upstream oil and gas applications. Traditional upstream oil and gas applications utilize conventional meters, which bring risk, maintenance, and overall suboptimal measurement performance in operations that require more.

For more than 30 years, Emerson’s flow and density technology has delivered exceptional measurement accuracy and performance, regardless of challenging conditions. With field-proven instrumentation and expert application knowledge, your upstream business can operate at its peak.

Micro Motion and Rosemount Products for Oil & Gas Production Measurement

- Liquid Mass and Volume Flow
- Gas Flow
- Net Oil Measurement
- Gas Density and Specific Gravity
- Liquid Density and Liquid Viscosity
- Net Volume Correction

Superior accuracy and measurement performance for:

- Production Management
  - Gas Lift Production
  - Gas or Water Injection
  - Water Cut and Net Oil
  - Well Allocation Measurement
- Enhanced Oil Recovery
- Chemical Injection
- Oil Treatment and Storage
- Gathering and Custody Transfer
- Natural Gas Treatment/Compression
Emerson’s Micro Motion and Rosemount devices are known globally in over 85 countries for quality and reliability. Emerson delivers application expertise, service and technical support not available elsewhere.