



## SEPARATORS

# “It’s costly and difficult to get accurate, timely production data to manage my field.”

*“Whether testing is performed during exploration and appraisal, development, or production, it provides the greatest levels of security to support decisions—decisions that can affect the reservoir for its active life.”*

Journal of Petroleum Technology,  
September 2008

### What if...

- You were confident that indicated production changes were real?
- You could determine the cause of production data anomalies without sending someone to the field?
- You could reduce reactive operations and maintenance events?

It’s essential for you to meet production plans but, in order to maximize production and yield, you need reliable and efficient separator operations to provide accurate and timely data. Uncertainty and lack of confidence in production data requires you to send employees to the field to validate measurements, which increases both HSE risks and operating costs and makes it difficult to keep up with the development schedule. With multiple technologies to choose from and limited resources, it’s a challenge to effectively utilize the best technology to manage your field.

Asset and production managers we talk to tell us about challenges like these:

**“I’ve got to make production management decisions using separator measurements that I don’t trust.”**

Accurate and timely well production rates and characteristics are critical to meeting production targets. Suspect gas, oil and water production data hampers your ability to gain early insight into problems, manage your reservoir and maximize net revenue.

**“I’m spending too much of my budget sending people out to the field to check, repair, and maintain my separators.”**

When you don’t have the production data you need, or the data itself is suspect, you’ve got to send someone to the field to check on separator operations. With a shortage of skilled people, it can be difficult to quickly diagnose the exact source of a problem affecting separator efficiency and production measurements. All of these factors contribute to increasing your operating and maintenance costs.

**“I’m worried about health, safety, and environmental performance.”**

Constant changes in regulatory compliance require increasing levels of management and reporting. You want to maintain good community and regulatory agency relations and demonstrate your commitment by minimizing emissions, reducing traffic, and having insight to any potential hazards before they create an incident. You can’t afford to be constantly reactive, sending people to remote locations and increasing the risk of injury.

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Integrated oil companies to independents are choosing to partner with Emerson Process Management to improve overall production management. With our range of technologies, application experience, and engineering support, you'll realize true operational improvements from accurate measurement and production data, robust and reliable devices, and remote diagnostics and insight.

### IMPROVE PRODUCTION MANAGEMENT

With industry expertise and effective technology utilization, Emerson can help develop best practices to reduce production allocation errors, ensure production targets are met, and reduce reservoir characterization uncertainty. With an end-to-end integrated portfolio of field-proven solutions, Emerson offers a wide breadth of technologies including RTUs, pressure regulators, and flow devices to ensure efficient and trouble-free separator operation. Reliable devices with diagnostic capabilities that detect and prevent separator upsets, coupled with remote verification of separator performance, allow you to optimize your field with confidence in your production management decisions.

### REDUCE OPERATION AND MAINTENANCE COSTS

Reliable and durable devices reduce costly repair, avoid well production shut in, and minimize the need for field maintenance to redirect focus back to optimizing production and increasing yield. With Emerson's accurate pressure regulation and advanced diagnostic capabilities, such as phase carry over detection, production data anomalies are detected remotely or are even eliminated before they occur, reducing costly trips to the field. Emerson's engineering consultancy aids ensure you select the most robust, reliable, and appropriate separator control solution to reduce your total cost of ownership.

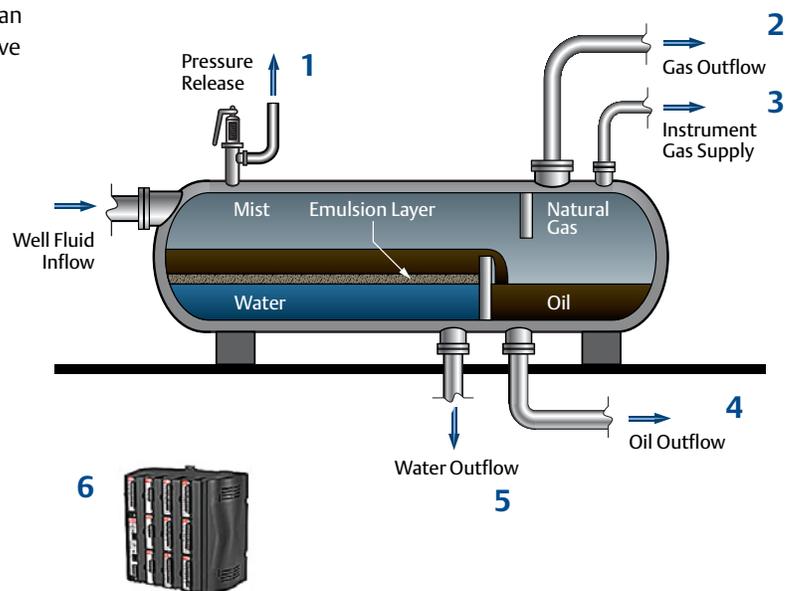
### IMPROVE HSE PERFORMANCE

With reliable, field-proven Emerson measurement devices you won't be sending as many people to the field for equipment repair, reducing exposure to hazardous areas and injury. Emerson remote operations technology, with advanced diagnostics, improves insight into what is happening in the field, so corrective action can be taken quickly to reduce flaring, fines, or even before an incident occurs.

### EMERSON FLOW SOLUTIONS

Take advantage of Emerson's wide range of Flow Solutions to select the right technology for your application. By incorporating industry-proven best practices, you can enhance the utilization of measurement data to improve separator operations and enable early insight into operational and production problems.

- 1. Pressure Release**
  - Relief Valves and Position Monitoring
- 2. Gas Outflow**
  - Back Pressure Regulators, Flowmeters
- 3. Instrument Gas Supply**
  - Pressure Reducing Regulator
- 4. Oil Outflow**
  - Flowmeters
- 5. Water Outflow**
  - Flowmeters
- 6. Control & Data Management**
  - RTUs, Net Oil Computers, Software



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MEASURE & ANALYZE	UNIQUE FEATURES	OUTCOMES
 <p><b>Daniel Jr. / Sr. Orifice Meters</b>  <b>Daniel Liquid Turbine Meter</b></p>  <p><b>Daniel Two-Path Ultrasonic Flowmeter</b></p>  <p><b>Micro Motion Coriolis Flowmeter</b>  <b>Micro Motion Density Meter</b></p>  <p><b>Rosemount Magnetic Flowmeter</b></p>  <p><b>Rosemount Vortex Flowmeter</b></p>	<ul style="list-style-type: none"> <li>• High pressure orifice plate removal</li> <li>• Repeatable orifice plate alignment</li> <li>• In-situ field verification</li> <li>• High turndown</li> <li>• Enhanced flow condition diagnostics</li> <li>• Less sensitivity to changing flow parameters and fluid properties</li> <li>• Advanced sensor diagnostics</li> <li>• Plug-free design</li> <li>• Field replaceable sensor</li> <li>• Multivariable measurements</li> <li>• Entrained gas and liquids detection</li> <li>• Liquid volume remediation for entrained gas</li> <li>• Easy wireless integration</li> <li>• Sand accumulation detection</li> </ul>	<ul style="list-style-type: none"> <li>• Improved production planning</li> <li>• Reduced wellbore damage</li> <li>• Less deferred / lost production</li> <li>• Improved environmental compliance</li> <li>• Reduced operation and maintenance events</li> <li>• Improved well and facility uptime</li> <li>• Early insight to operational / production problems</li> <li>• Enhanced safety and health performance</li> <li>• Reduced proving cycle and cost</li> </ul>
CONTROL & REGULATE	UNIQUE FEATURES	OUTCOMES
 <p><b>Fisher Back Pressure Regulator</b></p>  <p><b>Fisher Position Indicator</b></p>  <p><b>Fisher Pressure Reducing / Instrument Supply</b></p>	<ul style="list-style-type: none"> <li>• Superior materials compatibility</li> <li>• Sustainable operations in contaminated fluids</li> <li>• Verification of field performance</li> <li>• Wireless indication and estimated volumes of pressure relief events</li> </ul>	<ul style="list-style-type: none"> <li>• Improved separator efficiency and reliability</li> <li>• Improved environmental compliance</li> <li>• Increased data integrity</li> </ul>
OPERATE & MANAGE	UNIQUE FEATURES	OUTCOMES
 <p><b>FloBoss Flow Computers</b></p>  <p><b>Micro Motion Net Oil Computer</b></p>  <p><b>Micro Motion Net Oil Software</b></p>  <p><b>ROC Remote Operation Controllers</b></p>	<ul style="list-style-type: none"> <li>• Configurable systems</li> <li>• Intuitive applications software</li> <li>• HART pass through</li> <li>• Comprehensive, multi-platform software for water cut and net oil / water production</li> <li>• Flexible data management options</li> <li>• Simple device and data interface</li> </ul>	<ul style="list-style-type: none"> <li>• Local and remote diagnostics and trouble shooting</li> <li>• Effective control and operations at remote facilities</li> <li>• Reduced automation complexity and costs</li> <li>• Reduced production uncertainty</li> </ul>

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