

Onshore Production

Solutions for Your Most Challenging Problems



The World is Demanding More



Challenges Facing Oil and Gas Producers Have Never Been Greater

In an era of growing demand and increasing production costs, companies in the oil and gas industries are challenged to seek new and innovative ways to efficiently produce across the entire field life cycle.

The difficulty of developing new, increasingly remote and unconventional assets is matched by the struggle of maintaining production in existing assets as they become depleted. Adding the increasing complexity of today's production scenarios makes maximizing revenue, minimizing costs and ensuring the safety of employees, assets and the environment even harder.

Emerson is your long-term partner for innovative solutions to meet evolving demands in the oil and gas industry. Have a tough challenge? Consider it Solved™.

Solve Your Most Complex Challenges

Safety First

Put safety first with local control and predictive diagnostics

- Leverage local controllers and emergency shutdown logic to react quickly to process upsets
- Use predictive device diagnostics to perform maintenance on devices before they fail

Optimize Production

Optimize production from existing assets using a systems approach

- Integrate all measurement data from the field into a single system
- Add additional measurement points using advanced technologies
- Use the full set of information available to enhance decision making

Quickly Develop Assets

Quickly develop new assets with a reduced project risk strategy

- Early project engagement in the design phase combined with functional project management expertise
- Integrated solutions reduce surprises during project commissioning and start-up

Maximize Profitability

Maximize profitability by reducing unplanned downtime and minimizing operational costs

- Reduce unplanned downtime by using advanced device diagnostics and predictive maintenance
- Minimize energy loads and chemical treatments through enhanced measurement accuracy and targeted process optimization



Maximize Your Upstream Production

Reservoir & Production Wellheads

Reservoir Monitoring

- Reliable and accurate downhole measurement solutions
- Downhole monitoring integrated into surface systems for data collection, aggregation and communication

Reservoir Management

- Enable fast response to changing reservoir conditions
- Reservoir modeling capabilities to enhance field performance

Wellhead Optimization

- Integrate best-in-class measurement and control devices
- Leverage a portfolio of field infrastructure strategies - including wired, serial communications, advanced busses, and Smart Wireless™
- Wellhead optimization strategies to maximize production and minimize operating costs, running locally on our family of leading RTUs and flow computers
- Locally controlled safety and emergency shutdown logic

Gas Lift Production Measurement

- Reduce lift costs and cost of ownership with process optimization and accurate measurement
- Increase hydrocarbon liquids production

Test & Production Separation

Test Separation & Manifolds

- Flow, density, net oil, and water cut measurement for reliable, real time production and surveillance
- Multiphase flow measurement solutions
- Early detection of well problems and separator efficiency with more accurate, reliable well production data
- Flow assurance solutions to monitor corrosion and erosion

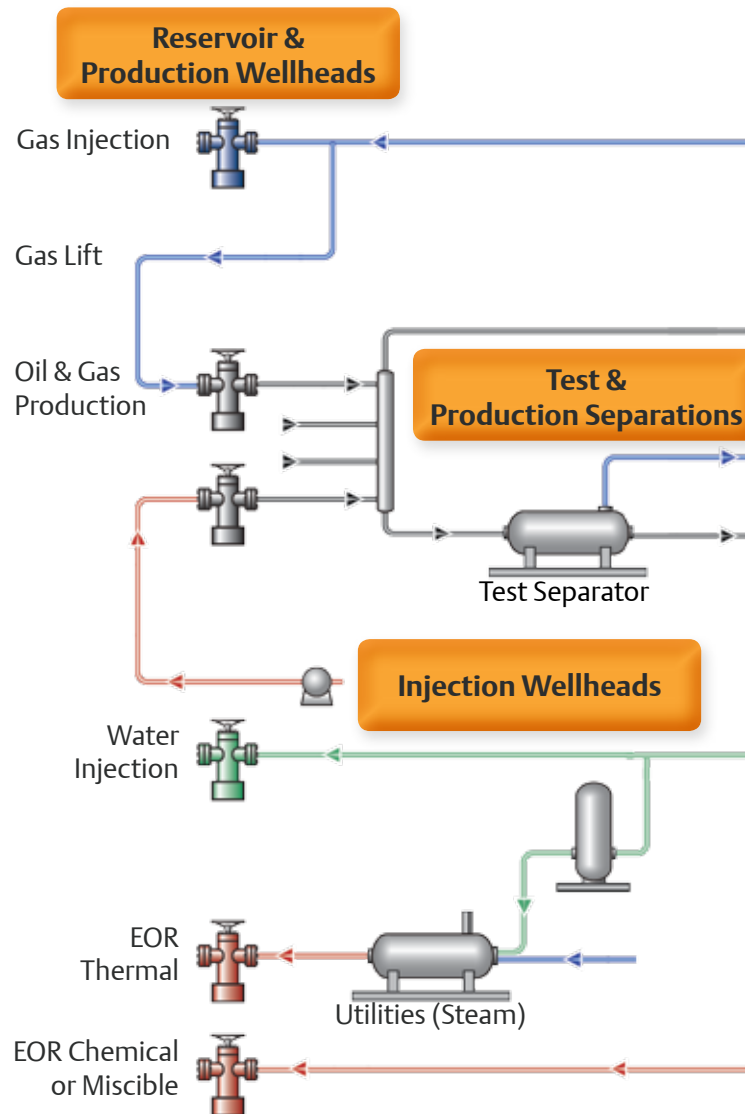
Production Separation Facilities

- Optimize production separation efficiency by combining advanced process control with measurement and control devices
- Accurately monitor and account for flood materials

Injection Wellheads

Water Injection

- Monitor and control water and steam systems
- Reduce energy usage

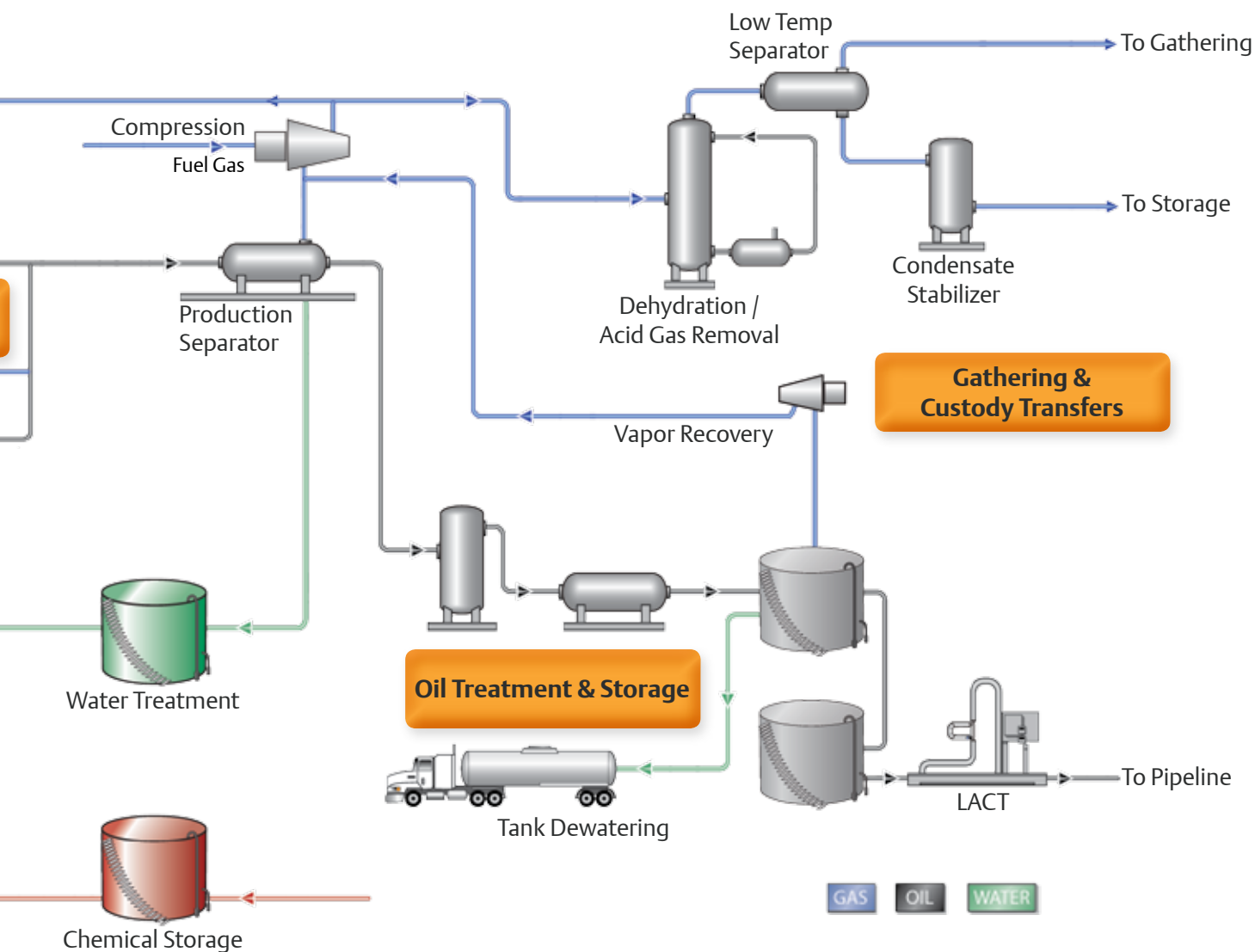


Chemical Injection

- Reliable and accurate mass dosing for downhole, 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

- CO₂ breakthrough detection on gas wells
- Optimize recovery of EOR fluids and diluents



Oil Treatment & Storage

Oil Treatment

- Maximize oil recovery and product quality by optimizing treatment system performance
- 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

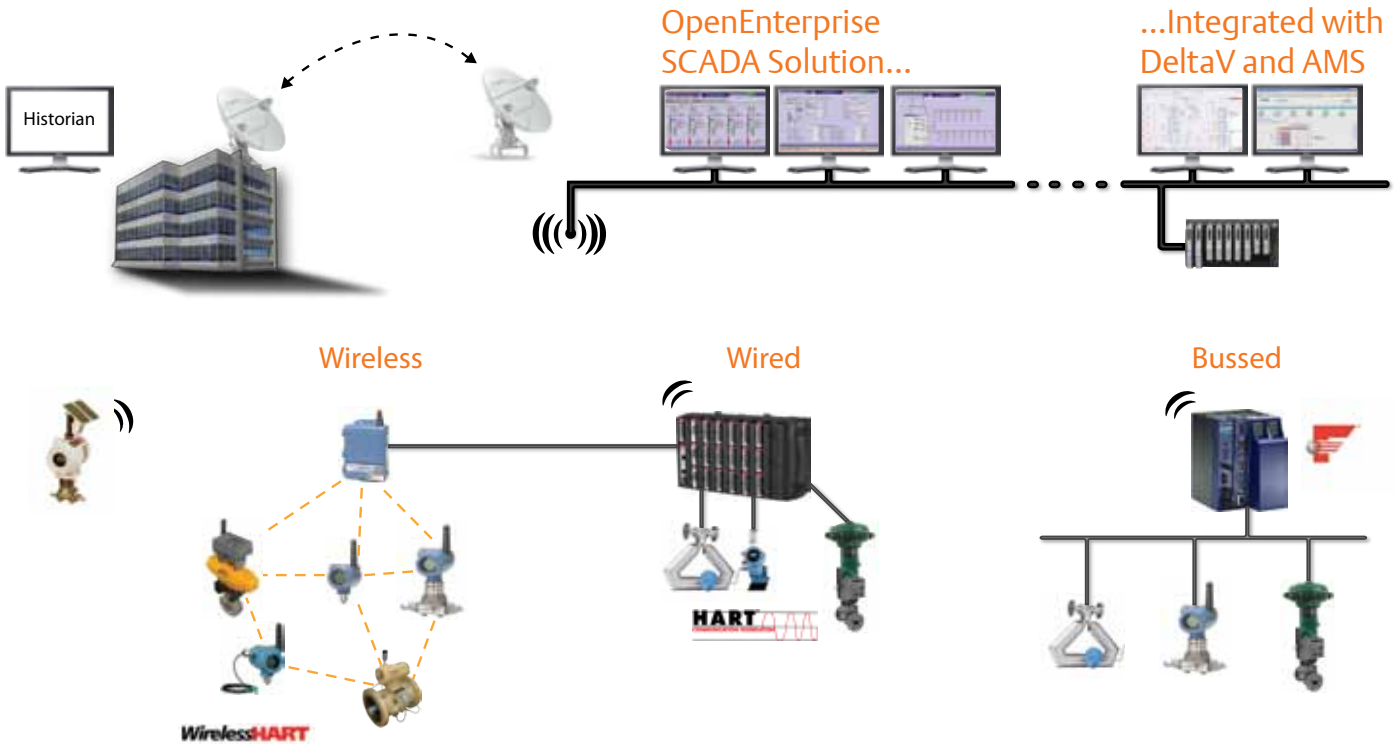
Dewatering & Product Transfer

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

Gathering & Custody Transfers

- Continuous, accurate and reliable measurement of crude oil, natural gas and NGLs minimizes sources of error and accounting liability
- Minimize complexity and risk with complete custody transfer metering systems, including API and AGA compliant flow computers

From the Reservoir to the Enterprise



Leveraging Product Breadth for a Total Solution

Designing a successful system architecture begins with understanding your unique requirements, business drivers, and situation.

Our recommended architecture for onshore oil and gas production addresses our customers' typical challenges:

- Minimal power
- Communications are at a premium
- Robustness is required

Our approach is SCADA-centric

In the field, we combine our family of leading edge SCADA devices with power and wide-area telemetry solutions to provide local control and optimization. Our solution architecture provides the framework

for an integrated approach to field automation, while also providing flexibility to account for your unique requirements, business drivers and situation.

Using long haul communications, we get your process information where you need it using intelligent field devices and our SCADA host system, OpenEnterprise™. This strategy allows you to integrate the full Emerson portfolio, including best-in-class measurement and control devices, and use traditional wired, bussed, or wireless approaches.

Emerson makes it easy to seamlessly integrate your field control system with a centralized DeltaV™ DCS into a single interface for field and facilities control. With simple integration to AMS™, customers can realize the benefits of PlantWeb™.

Your Total Solutions Provider

Measurement and Control

Field Control Systems

With a family of RTUs and flow computers that include the ROC, FloBoss™ and ControlWave™, we have products that lead the way for robust operation when power and communications are scarce. Combine with our OpenEnterprise SCADA host system for a complete field control system.

Facility Control Systems

Simple integration to DeltaV and to AMS enables you to run your entire field, including separations facilities, as a system.

Control Devices

Combine control elements from Fisher™, TopWorx™ and Bettis™ to improve reliability, safety, uptime, and performance.

Measurement

Choose from Micro Motion™ Coriolis flow and density meters, Roxar™ multiphase meters, Daniel™ senior orifice, turbine and ultrasonic meters — whatever your application requirements, we can find the best technology to meet your needs. Pairing of these technologies with Rosemount™ transmitters and other Smart Wireless products will enable you to understand your performance better than ever.

Services

Engineering

Utilize Emerson's local and global engineering resources during early design work, project management and execution to help maximize the return on your automation investment.

Commissioning and Start-up

Ensuring proper installation and a seamless process implementation are integral to maximizing production and profitability. Emerson and METCO audit and consultancy experts provide the support you need to optimize your assets and processes.

Training

Whether virtual, on-site or in the factory, Emerson trainers and process experts will equip your employees with the knowledge and education they need to streamline operations and maximize limited resources.



Find us around the corner or around the world

For a complete list of locations please visit us at www.EmersonProcess.com



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