Enhance your oil & gas field operations

OpenEnterprise v3 SCADA System
Achieve unequalled productivity, visibility, and efficiency
by integrating and streamlining your oil & gas field operations.

EMERSON™

You are experiencing increasing challenges to optimize your field operations.

Operating and maintaining visibility to your remote assets is becoming more challenging and starting to impact your bottom line. Your experts are retiring and your new operators are overwhelmed with information. At the same time you are being asked to increase the production or throughput of your operation but you don't have the tools to ensure the safety and reliability of your people and your assets. To stay competitive, you have to address the unique challenges remote assets present.

"Traffic fatalities up as much as 1050% in high activity shale plays."
  – Texas Department of Transportation

"42% of abnormal situations or upsets in processing facilities are caused by people or their work context."
  – Abnormal Situation Management Consortium

42%

"One estimate is that 30% of the existing workforce will retire in the next five years, and take a large slice of the operating and commissioning experience into retirement."
 – Kolmetz.com

Instead of sending your people into the field to address frequent problems, what if you could make them more productive, integrate your field and plant assets to the enterprise, and optimize your operation, all while still protecting your people and the environment?

Emerson's OpenEnterprise v3 SCADA platform for remote oil & gas asset optimization.

Emerson's OpenEnterprise SCADA platform offers significant lifecycle cost savings by making remote oil & gas operations easier, safer, and more productive. Providing unrivaled flexibility and connectivity by linking remote operations with back office business decision making systems, OpenEnterprise allows you to unlock process data and transform the efficiency and profitability of your operation.
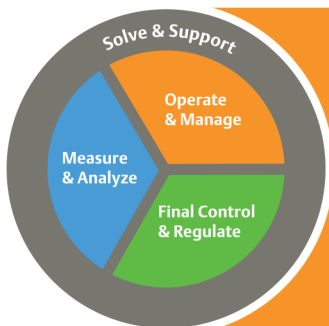
To perform at your best you need to continuously monitor, optimize, and maintain your remote assets. OpenEnterprise v3 is a SCADA platform designed for remote oil & gas applications where data integrity and uptime are essential over complex communications networks, enabling you to improve productivity, enterprise integration, reliability, and profitability.

- Oil ▪ Gas
- Production ▪ Transmission ▪ Distribution

Allow your people to focus more on critical operations

OpenEnterprise v3 has new features for object-oriented development, automating complex operator tasks, and managing alarms, so your people can focus on managing your remote operation instead of making changes to the system.

Achieve greater visibility across the enterprise

Integrate your remote assets to the plant with Delta V™ RTU Connect. Share information seamlessly between business systems with OpenEnterprise's open database architecture and standard integration to enterprise solutions such as FlowCal and OSI PI.

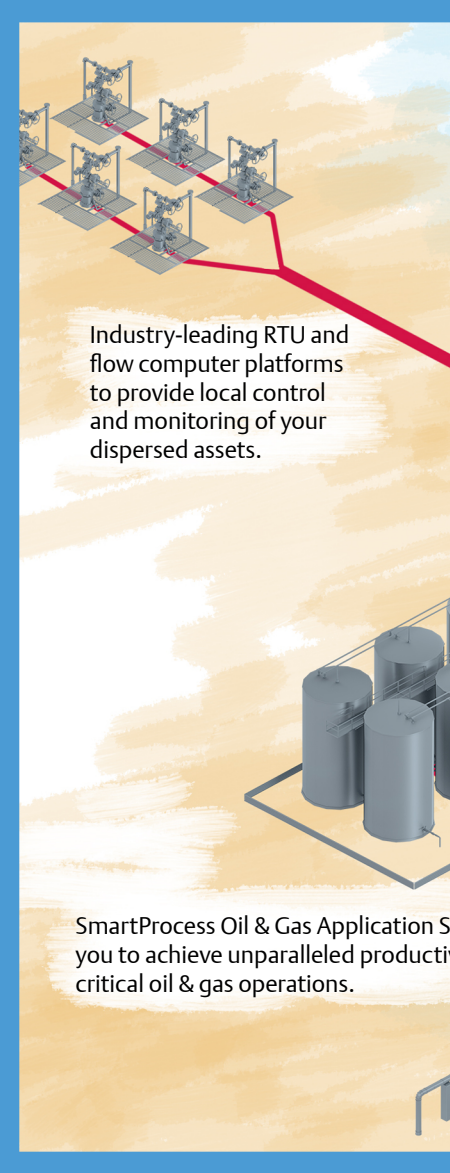## Keep your personnel safe by diagnosing problems remotely

Now with native integration to Emerson's AMS™ Device Manager, diagnose problems with your HART devices remotely before they become an issue. A robust communications engine, server redundancy, and security ensure your process availability.

Optimize every operation in your process stream

Integration to Emerson's SmartProcess™ Oil & Gas Application Suite, as well as pipeline management applications for pipeline leak detection and scheduling enable you to safely increase production or throughput of your operation.

Automation solutions to transform the productivity and efficiency of your oil & gas field operations.

Emerson offers an industry leading suite of SCADA solutions across the oil & gas industry: from the wellhead to the pilot light, from the field to the enterprise, Emerson is a total solutions provider for your remote oil & gas operations.

Industry-leading RTU and flow computer platforms to provide local control and monitoring of your dispersed assets.

SmartProcess Oil & Gas Application S
you to achieve unparalleled productiv
critical oil & gas operations.

OpenEnterprise SCADA Platform Features
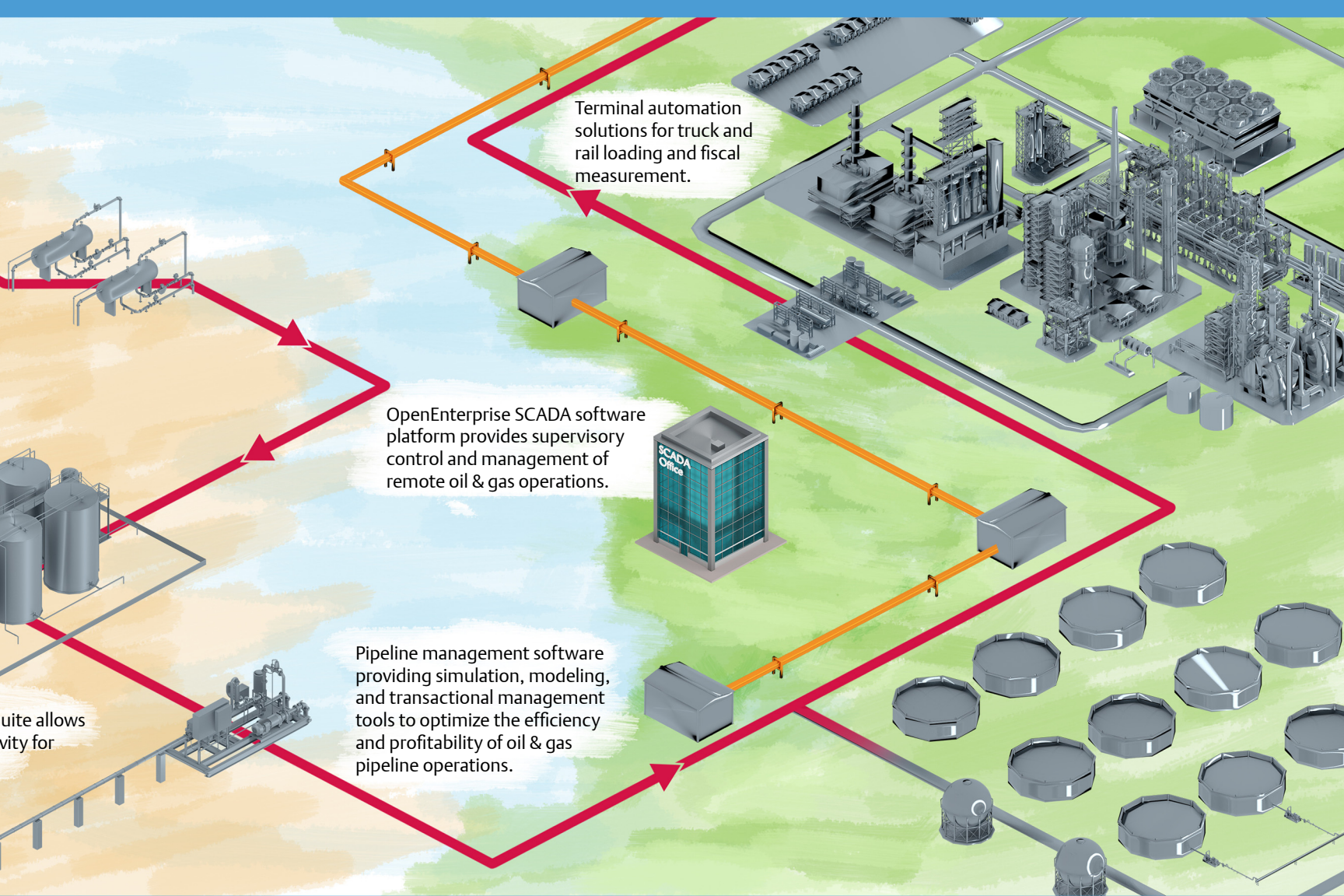
Scalable Architecture

- OpenEnterprise can easily grow as you do.

- Highly flexible platform that can easily scale from a single site to complex systems with thousands of wells or metering points.

- OpenEnterprise can support any number of distributed servers, polling engines, and remote workstations or terminal clients.

Reliable and Consistent Communications

- Servers and communication engines can support distributed, redundant configurations, enabling secure architectures with offsite disaster recovery locations.

- Multiple levels of redundancy can be addressed to meet the needs of the mission-critical applications to ensure your process is always available when you need it.

- AMS integration ensures you can diagnose problems with your HART devices without sending your people out into the field.

Customized Security Control

- Role-based access controls, simple user administration, and audit trails ensure that you can define who can access the system, what privileges they have access to, and have the visibility into what changes were made.

Terminal automation solutions for truck and rail loading and fiscal measurement.

OpenEnterprise SCADA software platform provides supervisory control and management of remote oil & gas operations.

Pipeline management software providing simulation, modeling, and transactional management tools to optimize the efficiency and profitability of oil & gas pipeline operations.

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Network Flexibility

- OpenEnterprise powers your operation by integrating seamlessly to Emerson's fully-wireless RTU and HART device architecture.

- Native support for common process protocols ensures that your remote devices are connected to the enterprise.

Seamless Integration

- Enables the transformation of process data into information that can be shared across the organization.

- Delta V RTU Connect enables bi-directional data sharing and control between Emerson's Delta V DCS and OpenEnterprise SCADA, ensuring you can connect your field to the plant and lowering your total lifecycle costs.

Maximize Uptime

- Optimize every process in your process stream with integration to the SmartProcess Oil & Gas Application Suite and pipeline management applications software.

Allow your people to focus more on critical operations.

To achieve your goals, you need speed and you can't afford to have your operators and technicians distracted by time-consuming system configuration or trips to the field. With all of your experts retiring and your workforce becoming less experienced, you need a SCADA solution which is easy to use, reduces the prevalence of non-essential information, and enables your people to be successful. With OpenEnterprise v3, you'll bring new assets online faster with object-oriented development using asset models and RTU templates, and reduce the load on your operators by organizing alarms and automating common tasks with the action engine. Together with Emerson's project services and global reach you can be assured that your people can focus on running the process, not the SCADA.

What's your challenge?

Calculating and monitoring over 120,000 data points in a remote oil field where real-time information was needed to quickly alert central control room of any field problems.
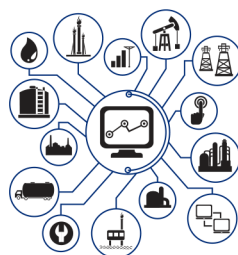
What's your opportunity?

Emerson's SCADA solution provided a flexible method of gathering real-time field data and providing diagnostics from a central control room for all producing wells. The solution eliminated excessive 'windshield' time of traveling to the remote field to update the database while providing faster alerts and decision making.
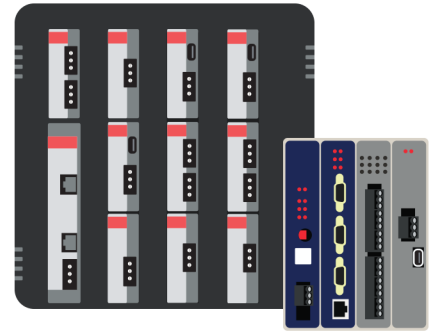
Bring new assets online faster
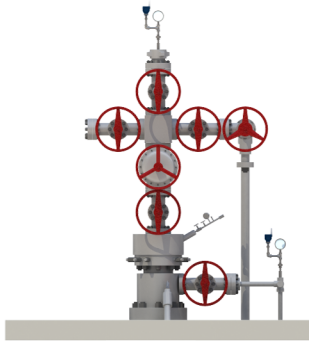
Asset Models - Allow creation of business objects with associated alarms, historical data, and graphics – enabling reuse and greatly simplifying system maintenance and configuration.
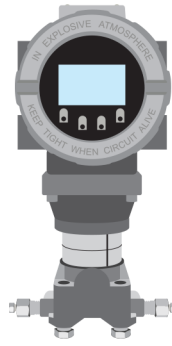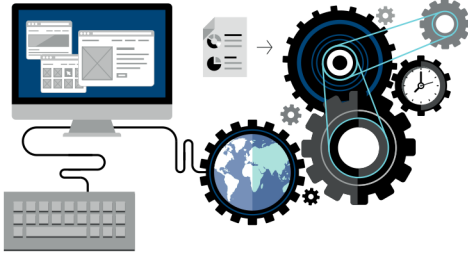
EFM Templates - Simplify flow meter configuration and representation enabling reuse and exporting of EFM data to Flow-Cal or PGAS.

Automated Database Build - Direct from Emerson ROC and ControlWave® RTUs gets your sites online faster and reduces the possibility of configuration errors.

Help your operators be more effective

Action Engine - Allows the development of workflows automating maintenance tasks or which can trigger actions in response to alarms and events, improving operator productivity and reducing workload.

Alarm Management - Categorization and escalation tools route alarms to designated operators by area of responsibility, ensuring the right people get notified and giving you the tools to manage the overall alarm load.

Reporting and Trending Tools - Give you the knowledge of your process that you need to be successful. Easily create real time or historical trends by dragging and dropping from the real-time display.

Rely on Emerson's expertise to deliver your SCADA projects

Turnkey Project Services - Emerson can bring your SCADA project to reality – from the early design phase to installation and commissioning – as a single point of accountability for the entire instrumentation and automation solution.

Global Reach - Our project execution resources ensure that Emerson can deliver your project in the remote environments you operate in.

Experience - With a 30-year legacy of over 300 SCADA projects executed throughout the production, transmission, and distribution segments, you can trust Emerson has the experience to deliver the solutions you need.

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www.Emerson.com/RemoteAutomation

Achieve greater visibility across the enterprise.

Leveraging the process data from your remote assets across your business is a challenge. You need a platform that enables sharing of process data to your business systems, and that can integrate your widely dispersed assets including DCS systems. You don't have the expertise or the budget to maintain multiple systems. With an open database supporting easy business system integration, a seamless interface to Emerson's Delta V DCS with Delta V RTU Connect, and native integration to Emerson's industry leading wireless RTU network, you can easily access, control, and leverage the data from your remote assets how you need to do it.

What's your challenge?

A 484-mile natural gas pipeline that is complex, with more than 50 city gates and custody transfer metering stations providing gas to 44 municipalities for multiple uses. Logistic challenges are significant to ensure high integrity information gathering and transmission under rugged conditions.

What's your opportunity?

The OpenEnterprise software package provided all the data acquisition and control capabilities to operate the entire pipeline system, with capabilities for future expansion as needed. This solution allowed the customer to continually track daily operations at each supply and delivery point and provide reports for billing purposes.

Connect and integrate all of your assets easily

Delta V RTU Connect - Enables seamless bi-directional real-time communication between OpenEnterprise SCADA and Emerson's Delta V DCS, providing a single operating environment to monitor and control your entire operation and eliminating the need to operate and maintain separate systems. In the event of a communication loss to the field, historical data is backfilled to the Delta V PI historian, providing a completely integrated SCADA and DCS solution.
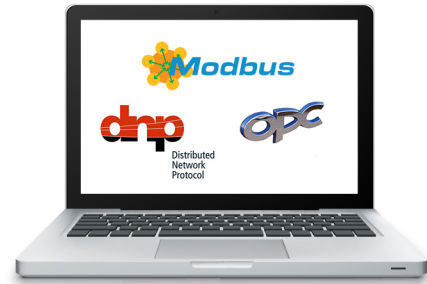
Industry Standard Protocol Support of Emerson RTUs and EFMs - Gives you a seamless out of the box solution integrated to the field. Support for industry standard protocols Modbus and DNP3 gives you more options to communicate with your install base of field devices.

Streamline data across the business to eliminate islands of automation

Standard Database Interfaces for ODBC, OPC, and SQL - Ensures you can easily integrate OpenEnterprise to your business. The data collected from the field is critical, and OpenEnterprise provides the capability to enable the flow of data to third-party databases, historians, accounting packages, and asset management systems.

Flow-Cal and PI Integration - Gives you the tools out of the box to integrate your EFM data and process data to the business. Export EFM data with CFX files to Flow-Cal, so that you can ensure the validity of your fiscal measurement data. A standard OSI PI interface means you can get your system up and communicating business relevant information as quickly as possible.

Keep your personnel safe by diagnosing problems remotely.

Keeping people safe and the oil and gas flowing is critical, but having widely dispersed remote assets presents unique challenges. Dealing with loss of communications to the field and process upsets due to device failures is difficult enough, but when your operation spans hundreds of miles sending your people into the field is time consuming and risks exposing them to hazardous areas. OpenEnterprise delivers and enables advanced capabilities so you can anticipate problems before they occur and quickly recover from problems that have occurred, keeping more of your people out of the field and maintaining the highly available process you need to realize your production goals and delivery commitments.

What's your challenge?

A customer did not have a reliable SCADA system and had to send their operators to inspect their instruments to get their process information elevating their safety risks, and increasing cost for frequent site visits.

What's your opportunity?

OpenEnterprise SCADA made it convenient to monitor, control, and collect data from the instruments at their stations. Having the ability for management to access real-time information and historical data made for easy reporting. This customer increased their savings by eliminating daily site inspections.

Diagnose remotely to reduce your maintenance and downtime

Native AMS Device Manager Integration - You can identify, troubleshoot, and resolve HART device issues remotely and efficiently, before they impact your bottom line.
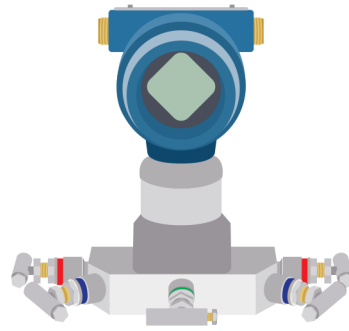
AMS HART Device Diagnostics - Enabled by AMS connectivity to OpenEnterprise allows you to quickly check the health of any connected wired or wireless device.

AMS Alert Monitor - Provides a powerful, proactive method of diagnosing potential device problems by giving you an overview of all device alerts, regardless of protocol.

Consistent system availability when you need it most

Server Redundancy - Supports your critical applications where high availability is paramount. A hot-standby server takes over immediately when it receives notification of a failure to the master.

User Security - Configuration for role-based access control allows you to configure multiple levels of system access and capability depending on role. Audit trails ensure you know who is making changes to the system.

Distributed Architecture Support - OpenEnterprise can support multi-tiered or dispersed server configurations where a backup server is located off site for disaster recovery, ensuring you can recover from failures.

Get reliable and constant communication no matter how remote
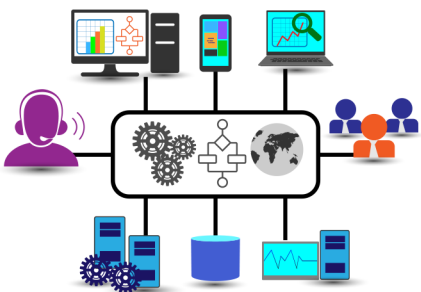
Communications Controller - Supports multiple communications protocols per channel and multiple channels per device which allows for up to triple redundant communications paths, and concurrent access of device configuration tools to the RTU network without disrupting regular communications.

Historical Backfill from Connected RTUs - You never have to worry about intermittent communications resulting in gaps in critical operational or billing data.

Report by Exception Support - Improves efficiency on low bandwidth communications networks, only backfilling missing data to the server in the event of communications failures.

Optimize every operation in your process stream.

Declining production is making your operation less profitable. Lack of consistency in control strategies and custom programming between sites is increasing your maintenance effort and technician trips to the field. Additionally, your experts are retiring and taking their expertise learned over years of experience with them. With Emerson's SmartProcess Oil & Gas Application Suite integration to OpenEnterprise, you have turnkey off-the-shelf applications available for monitoring, controlling, and optimizing your production operations, allowing you to achieve greater production.

Maximizing the throughput of your pipeline operation is a balancing act. You need to manage the integrity of the pipeline while still meeting the contractual commitments you have with your customers. With pipeline management applications integrated to OpenEnterprise, you have a complete solution leveraging the industry's most proven control room applications to enhance profitability, by optimizing your pipeline throughput – all while monitoring pipeline integrity.

OpenEnterprise provides a complete solution – from the field, to the control room, to the boardroom; it's your solution to deliver business intelligence and optimize your operation.

Optimize every process in your production value stream
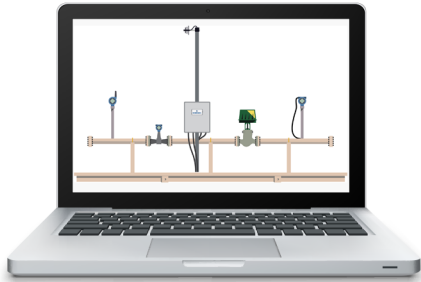
Gas Applications

Well Optimization Manager - Monitors, controls, and optimizes your production wells. Includes deliquidification techniques such as intermitting, plunger lift, gas lift, and more.

Automated Choke Control - Automatically adjusts choke position to protect reservoir and maximize production.
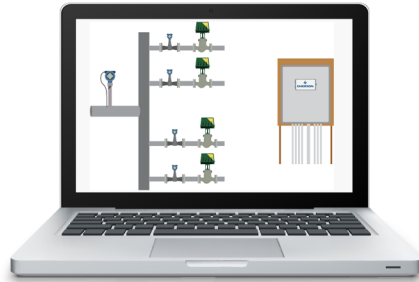
Oil Applications

Injection Controller - Controls and optimizes your steam and water injection for enhanced oil recovery or for disposal purposes. This means injecting the right amount while protecting your assets.

Gas Lift for Oil - Controls and optimizes lift gas applied to oil-producing wells to maximize production.
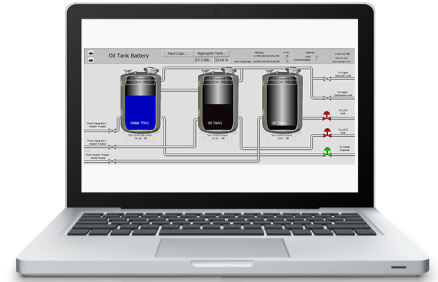
Site-Wide Applications

Surface Control Manager - Allows easy configuration for balance-of-plant equipment including separators, heater treaters, shut down logic, and more.

Tank Manager - Provides tank inventory management, well-to-tank allocation, and truck haul audit capabilities for up to 24 tanks. Get paid for what you produce.

Maximize pipeline operational efficiency, safety, and revenue

PipelineManager® - Provides the perfect environment to implement advanced pipeline applications like leak detection, leak localization, batch tracking, automated forecasting, facility planning, operator training, and support of the commercial business environment.

PipelineScheduler® - A total software solution for pipeline scheduling. It organizes and consolidates all information required to generate short and long term schedules for liquid pipeline movements. PipelineScheduler helps you schedule your pipeline efficiently and rapidly within a single application.

PipelineDashboard® - Displays key pipeline and commercial data from multiple applications in a single browser window on your desktop, laptop, or mobile device. No more logging into multiple disparate applications, reviewing hard copy reports, or calling other departments for the data you need to make critical decisions.

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