Getting started is Smart Wireless Easy

For an exploratory beginning, contact and collaborate with our experts to define an upgrade or a greenfield oil and gas production project. Request a demo of wireless field network performance with instruments and controls tailored to your field application.

Or, if you have the perfect application in mind, request a quote of Emerson’s Smart Wireless Field Starter Kit (www.EmersonSmartWireless.com/FieldKit). It is complete with native wireless devices and enabling devices, including:

- **Field Instruments:** Choose from wireless pressure, temperature, level, flow, vibration, discrete switches, pH instruments, or valve position monitors.
- **Wireless Adapters:** The Smart Wireless THUM Adapter can help to free up stranded diagnostics from your wired devices.
- **Gateway:** The Smart Wireless Gateway connects wireless field instruments with host systems and data applications using industry leading security, scalability, and data reliability.
- **Configuration and Asset Health:** AMS Device Manager software provides access to predictive diagnostics from your wireless devices. Easily manage your wired and wireless networks from a single application.
- **Services:** SmartStart™ Services to help you with your first startup, including a full network health assessment to ensure robust communications plus verification of device functionality through your chosen output (Modbus, TCP/IP, Ethernet, etc.). SmartStart Services include the startup and commissioning of wireless industrial process control systems, technical support services, troubleshooting services and software installation.

Note: The number of wireless devices is flexible. You may order more than 5 units and adjust the mix of devices.

For a list of local locations in the Emerson Global Network, visit EmersonProcess.com

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Optimize production with better field insight

Look to Emerson’s Proven Oil and Gas Solutions

Emerson’s automation of oil and gas fields enables centralized management, avoids danger and time spent on field trips to remote facilities, improves safety and environmental performance, and increases production efficiency. Drawing from our wide range of Smart Wireless solutions, key extension of Emerson’s PlantWeb™ digital architecture, we help customers plan, engineer, and commission oil and gas applications for new fields and modernization of existing facilities.

Gain Advantages with Emerson’s Smart Wireless Technology

The wellheads, flow lines, and separation areas in these fields have typically used wired approaches which involve significant commissioning time, and lengthy installation of wiring, trenching, conduit runs, and cable trays; or proprietary wireless networks which suffer from reliability issues. Emerson’s Smart Wireless technology overcomes these issues.

Smart Wireless is Easy and Quick

Emerson’s global brands like Rosemount®, Fisher® and many more are available as wireless devices that typically install and are operating in less than a few hours, transmitting data to Smart Wireless Gateways and from there to the control room and maintenance shop. Not only are Emerson’s Smart Wireless solutions easy to install and operational, ease-of-use is exceptional as a result of guidance from extensive customer research done by our unique Human Centered Design Institute. It profiles customer roles and interaction of disciplines to guide Emerson’s development of technology that delivers significant improvement in our customer’s work force productivity.

Save on Total Installed Cost

Cost studies* have shown that Emerson’s Smart Wireless technology provides 30% or more installed cost savings over wired alternatives, whether automating a few wellheads or an entire oil or gas field. Significant savings from using Emerson’s Smart Wireless enable engineers to make improvements previously out of economic reach.

Monitor More to Manage Better

Emerson’s Smart Wireless instrumentation family, predictive maintenance software and services expertise deliver comprehensive capability for surface wellhead and downstream monitoring. Refer to the adjacent diagram and table for typical flow and description of monitoring applications.

* Customer references in Emerson’s Putman Media Supplement “Wireless Now” February 2010

Start with Emerson and Smart Wireless today
Unlock More Field Intelligence with the Smart Wireless THUM® Adapter

New wellhead installations of customizable devices like Coriolis meters, Magmeters, and Vortex flow meters require wired connections for real-time applications. Emerson’s Smart Wireless THUM® Adapter adds value for these instruments by communicating predictive diagnostics generated by the devices.

For existing installations that generate conducive data, the Smart Wireless THUM® Adapter provides wireless access to the intelligence. The THUM Adapter easily attaches to installed instruments, enabling them to send complete data to central stations.

Choose Open Standard Wireless Technology

Further extending the reach of wireless technology, the open standard design of Emerson’s Smart Wireless offering enables easy integration of other suppliers’ IEC 62591 WirelessHART® based instruments.

Leverage Proven Field Performance

Emerson has combined its global automation experience with its Smart Wireless family to implement thousands of installations across industries around the world. Emerson has combined its global automation experience with its Smart Wireless offering to implement thousands of installations across industries around the world.

Emerson’s Smart Wireless solutions help Emerson customers improve oilfield personnel safety and increase production.

Smart Wireless networks reduce maintenance downtime during onsite injection and allow better alarm alert pressure data. Smart Wireless has significantly improved maintenance and travel costs reduced at the wellhead because of the wireless technology. Emerson

“It only took three hours to install a wireless instrument, configure and establish the network IP address, and make the Ethernet connection to the control room. We have eliminated the excess steam usage and now have a reliable steam injection measurement at eight stations.”

Pauline, Chevron head operator

Achieve more advantages

Expand automation and safety of oil and gas fields while saving up to 30% with Smart Wireless.
Achieve more advantages

Unleash More Field Intelligence with the Smart Wireless THUM Adapter
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For existing installations that generate wireless devices.

predictive diagnostics generated by the Emerson's Smart Wireless solutions improve maintenance at BP Wytch Farm.
Enable the intelligent field

Automate Hundreds of Wells or a Few
Emerson's Smart Wireless is Scalable, Expandable
Start your Smart Wireless experience with a large greenfield project to automate hundreds of wells, or with upgrade of a few wellheads – it's easy to expand later. Easily plan your wireless network to best design practices using the AMS Wireless SNAP-ON™ application.

Leverage Smart Wireless Flexibility for Easy Project Deployment
Establish field networks by simply installing Smart Wireless Gateways, then mounting up to 100 Smart Wireless instruments per gateway. You can easily accommodate the wireless transmitter for a number of wellheads in one gateway. Devices configured with the same network and join keys will connect to their IEC 62591 WirelessHART field networks.

Facilitate Late Design Changes
Establish field networks by simply installing Smart Wireless Gateways, then mounting up to 100 Smart Wireless instruments per gateway. You can easily accommodate the wireless transmitter for a number of wellheads in one gateway. Devices configured with the same network and join keys will connect to their IEC 62591 WirelessHART field networks.

Achieve the Reliability of Wired Networks, Even Better
The IEC 62591 WirelessHART self-organizing mesh networks allow devices to serve as alternate communication paths, providing greater than 99 percent communications reliability. Signals will easily find their way around obstacles, fixed or moveable. Emerson’s AMS Wireless SNAP-ON application enables optimizing the network by viewing communication paths and observing key diagnostic and performance parameters.

Improve Safety, Centralize Operations
The limitless reach of Emerson’s Smart Wireless technology improves personnel safety by minimizing trips to and time spent at remote sites. A single Smart Wireless network can connect tens of thousands of devices to central control systems. The control rooms include Emerson’s DeltaV™ digital system or other hosts along with an historian and AMS Suite predictive maintenance software to oversee the intelligent field and send guidance and instructions to field operators.

Use Real-Time and Accurate Data to Improve Field Production Strategy
Rich data from Emerson’s Smart Wireless networks can improve well performance, lengthen well lifetime and enhance efficiency. The Smart Wireless instruments continuously monitor their own health and send diagnostic data with wellhead data to ROC and ControlWave® RTUs, FloBoss™ computers and remote control rooms for use in monitoring and production optimization solutions. Emerson’s highly secure Bluetooth® OpenEnterprise SCADA and HMI package provides telemetry capability of full integration with MIS, internet and other open systems. The control rooms include Emerson’s DeltaV™ digital system or other hosts along with an historian and AMS Suite predictive maintenance software to oversee the intelligent field and send guidance and instructions to field operations.

Apply Smart Wireless from wellhead to the operations center
Smart Wireless networks deliver data from remote wellhead area
Smart Wireless networks deliver separation facility data with wellhead data to support intelligent production management

Emerson’s Smart Wireless Technology uses flexible networks to cover the full expanse of the intelligent field

5 6 7

Remote Wellheads

Local or Remote Control Room

Emerson’s Smart Wireless Technology uses flexible networks to cover the full expanse of the intelligent field.
SMART WIRELESS NETWORKS DELIVER SEPARATION FACILITY DATA WITH WELLHEAD DATA TO SUPPORT INTELLIGENT PRODUCTION MANAGEMENT

Enable the intelligent field

Automate Hundreds of Wells or a Few – Emerson’s Smart Wireless is Scalable, Expandable

Start your Smart Wireless experience with a greenfield project to automate hundreds of wells, or with upgrade of a few wellheads – it’s easy to expand. Easily plan your wireless network to best design practices using the AMS Wireless SNAP-ON™ application.

Leverage Smart Wireless Flexibility for Easy Project Deployment

Establish field networks by simply installing Smart Wireless Gateways, then mounting up to 100 Smart Wireless instruments per gateway. You can easily accommodate the wireless transmitters for any number of wellheads in one gateway. Devices configured with the same network and join keys will connect to their IEC 62591 WirelessHART field network.

Facilitate Late Design Changes

The unified Smart Wireless architecture uses multiple field networks to connect up to thousands of devices. Late design changes are eased with Smart Wireless since measurements can be added or moved without the major impact that wiring presents for engineering, documentation and installation.

Achieve the Reliability of Wired Networks, Even Better

The IEC 62591 WirelessHART self-organizing mesh networks allow devices to serve as alternate communication paths, providing greater than 99 percent communications reliability. Signals easily find their way around obstacles, fixed or moveable. Emerson’s AMS Wireless SNAP-ON application enables optimizing the network by viewing communication paths and observing key diagnostic and performance parameters.

Improve Safety, Centralize Operations

Centralize operations and observing key diagnostic and performance parameters. Improve Safety, Centralize Operations

The limitless reach of Emerson’s Smart Wireless technology improves personnel safety by minimizing trips to and time spent at remote sites. A single Smart Wireless network covers 200 meters device separation via long range antennas, and as much as 800 meters when using an extended range antenna or more distant well pads connect data to centralized networks using IEEE 802.11 Wi-Fi access points. The access points also allow network applications including data backhaul, control network bridging, mobile worker access, people and asset tracking, safety monitoring, and video monitoring.

Use Real-Time and Accurate Data to Improve Field Production Strategy

Rich data from Emerson’s Smart Wireless networks can improve well performance, lengthen well lifetime and enhance efficiency. The Smart Wireless instruments continuously monitor their own health and send diagnostic data with wellhead data to ROC and ControlWave® RTUs, FloBoss™ computers and remote control rooms for use in monitoring and production optimization solutions. Emerson’s highly flexible Bristol® OpenEnterprise SCADA and HMI package provides telemetry capable of full integration with MIS, internet and other open systems. The control rooms include Emerson’s DeltaV™ digital system or other hosts along with an historian and AMS Suite predictive maintenance software to oversee the intelligent field and send guidance and instructions to field management.

Apply Smart Wireless from wellhead to the operations center

SMART WIRELESS NETWORKS DELIVER DATA FROM REMOTE WELLHEAD AREA

Applications include data backhaul, control network bridging, mobile worker access, people and asset tracking, safety monitoring, and video monitoring.

EMERSON’S SMART WIRELESS TECHNOLOGY USES FLEXIBLE NETWORKS TO COVER THE FULL EXPANSION OF THE INTELLIGENT FIELD

Apply Smart Wireless

from wellhead to the operations center

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Leverage Smart Wireless Flexibility for Easy Project Deployment
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Facilitate Late Design Changes
Establish field networks by simply installing Smart Wireless Gateways, then mounting up to 100 Smart Wireless instruments per gateway. You can easily accommodate the wireless transmitter for a number of wellheads in one gateway. Devices configured with the same network and join keys will connect to their IEC 62591 WirelessHART field network.

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Improve Safety, Centralize Operations
The limitless reach of Emerson’s Smart Wireless technology improves personnel safety by minimizing trips to and time spent at remote sites. A single Smart Wireless network is wide ranging, with up to 200 meters device separation via long range antennas, and as much as 800 meters when using an extended range antenna. More distant well pads connect data to centralized networks using IEEE 802.11 Wi-Fi access points. The access points also allow network applications including data backhaul, control network bridging, mobile worker access, people and asset tracking, safety monitoring, and video monitoring.

Use Real-Time and Accurate Data to Improve Field Production Strategy
Rich data from Emerson’s Smart Wireless networks can improve well performance, lengthen well lifetime and enhance efficiency. The Smart Wireless instruments continuously monitor their own health and send diagnostic data with wellhead data to ROC and ControlWave® RTUs, FloBoss® computers and remote control rooms for use in monitoring and production optimization solutions. Emerson’s DeltaV™ Distributed Control System (DCS) and AMS Suite predictive maintenance software to oversee the intelligent field and send guidance and instructions to field management.

Apply Smart Wireless from wellhead to the operations center

**SMART WIRELESS NETWORKS DELIVER DATA FROM REMOTE WELLHEAD AREA**

**USE REAL-TIME AND ACCURATE DATA TO IMPROVE FIELD PRODUCTION STRATEGY**

**SMART WIRELESS NETWORKS DELIVER SEPARATION FACILITY DATA WITH WELLHEAD DATA TO SUPPORT INTELLIGENT PRODUCTION MANAGEMENT**
Emerson has combined its global automation experience with its Smart Wireless offering based on IEC 62591 WirelessHART technology, the open standard design enabling easy integration of other suppliers’ 802.15.4 WirelessHART based instruments.

**Leverage Proven Field Performance**
Emerson has committed to its global automation experience with its Smart Wireless family to implement thousands of installations across industries around the world. These include small projects of a few installations to large multi-site projects for companies automating several hundred to several thousand installations.

**Achieve more advantages**
- Emerson’s wireless technology helps Emerson San Ardo improve oilfield personnel safety and increase production
- Emerson’s Smart Wireless solutions improve wireless monitoring at BP Wytch Farm
- Emerson’s wireless technology is the perfect technology for this area we could improve, but we found that wired transmitters were simply too expensive due to the wiring infrastructure needed, so wireless is the perfect technology for this application.

**Typical Wellhead and Separator**

**WELLHEAD AREA**
- WELLHEAD FLOW & NET OIL/WATER MEASUREMENT - measures and transmits diagnostic data to oil wellhead
- WELLHEAD FLOW TOTALIZED FLOW - provides totalized flow output
- WELLHEAD FLOW MEASUREMENT AT TEST STATIONS - measures and transmits diagnostic data to oil wellhead
- WELLHEAD PRESSURE AND TEMPERATURE MEASUREMENT - measures pressure and differential pressure across heat exchangers, centrifugal pump, and bearings, providing data for predictive maintenance
- WELLHEAD FLOW & NO. 1 SHUT IN FLOW MEASUREMENT - measures and transmits diagnostic data to oil wellhead
- WELLHEAD FLOW & NO. 2 SHUT IN FLOW MEASUREMENT - measures and transmits diagnostic data to oil wellhead
- WATER INJECTION FLOW - measures and transmits diagnostic data to oil wellhead
- OIL PRODUCTION VALVE DIAGNOSTIC - measures and transmits diagnostic data to oil wellhead
- STEAM INJECTION HEAT EXCHANGER MANAGEMENT - monitors open/close status and position of manual valves, shutdown valves

**SEPARATION PROCESS**
- SEPARATOR LEVEL - monitors separator interface level
- SEPARATOR MONITORING - monitors separator interface level
- SEPARATOR FUNCTION MONITORING - monitors separator functions
- SEPARATOR VANE MONITORING - monitors separator vane movement
- WATER INJECTION - measures and transmits diagnostic data to oil wellhead
- WATER INJECTION PUMPS - measures and transmits diagnostic data to oil wellhead
- WATER INJECTION FLOW - measures and transmits diagnostic data to oil wellhead

**WELLHEAD MONITORING**
- OIL PRODUCTION VANE POSITION - measures and transmits diagnostic data to oil wellhead
- INJECTION WELLHEAD MONITORING - measures and transmits diagnostic data to oil wellhead
- INJECTION PUMPS - measures and transmits diagnostic data to oil wellhead
- INJECTION WELLHEAD FLOW - measures and transmits diagnostic data to oil wellhead
- INJECTION FLOW & NO. 1 INJECTION FLOW - measures and transmits diagnostic data to oil wellhead
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- INJECTION FLOW & NO. 2 INJECTION FLOW - measures and transmits diagnostic data to oil wellhead

**Expand automation and safety of oil and gas fields while saving up to 30% with Smart Wireless**
EMERSON’S SMART WIRELESS FIELD STARTER KIT

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- **Gateway:**
The Smart Wireless Gateway connects wireless field instruments with host systems and data applications using industry leading security, scalability, and data reliability.

- **Configuration and Asset Health:**
AMS Device Manager software provides access to predictive diagnostics from your wireless devices. Easily manage your wired and wireless networks from a single application.

- **Services:**
SmartStart™ Services to help you with your first startup, including a full network health assessment to ensure robust communications plus verification of device functionality through your chosen output (Modbus, TCP/IP, Ethernet, etc.). SmartStart Services include the startup and commissioning of wireless industrial process control systems, technical support services, troubleshooting services and software installation.

*Note: The number of wireless devices is flexible. You may order more than 5 units and adjust the mix of devices.*
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