

Operate Your Site Safely,
Reliably and Securely with
Emerson Wireless Solutions



The Future Secured



See Your Plant in a Whole New Way

Wireless field solutions help you cost-effectively touch more of your plant with predictive intelligence than ever before...with an installed cost savings over wired technologies. You can eliminate “blind spots” in your plant where it was previously too difficult or expensive to install wired instruments.

Scale wireless applications to meet the needs of your facility for today and tomorrow, starting with Plantweb process monitoring applications, and progressing to real-time control.

Stay on the Leading Edge with Proven Wireless Technology

“(Insight) from predictive wireless filter plugging alerts prevented a shutdown. Operators were able to shut down the pump, clean the filter and get it back on line in a matter of hours.”

– Refining Project Manager



Optimize Process Unit Efficiency

“Four days after the order was placed we could see minute-by-minute mid-zone temperatures trending on the control system... Overall, we have improved operation of the lime kiln, and increased throughput by 5%.”

– Pulp Mill Leader



High Performance in Challenging Environments

“With five possible trips a year depending on the severity of the winter, and with each trip costing \$250,000, that’s a savings of up to \$1,250,000 per year.”

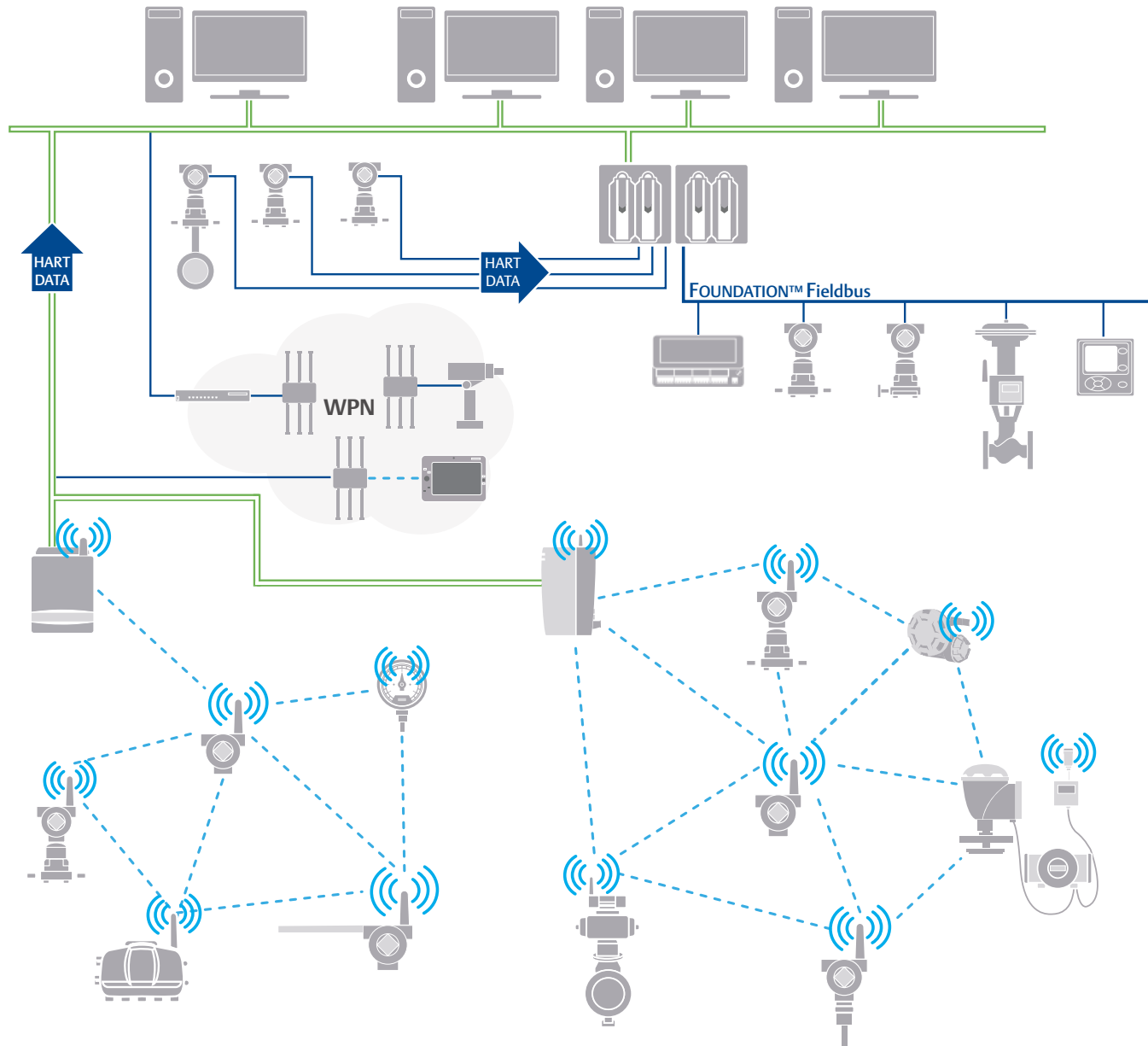
– Power Plant I&E Supervisor



Protect Your People, Community and Environment

“There are savings of \$14,600 per year in reduced operation and maintenance costs, but the incalculable savings were in safety.”

– Chemical I&E Designer



Simple architecture and integration for new insights that only Emerson wireless solutions can offer.



Secure Your Future with Wireless

To operate your sites safely, reliably, and securely, you need a stream of timely data — without sending personnel into the field more often than necessary. Emerson's wireless technology gives you visibility to detect problems before they occur, transforming your operation into a proactive facility.

Proven Technology. Proven Solutions.

- Stay on the leading edge with billions of operating hours and tens of thousands of networks
- Cover a wide range of applications with an extensive wireless portfolio
- Simplify network deployments through our robust networking capabilities and unparalleled ease of use
- Protect your network with always-on security
- Know your host system and instrumentation work together with IEC 62591 WirelessHART®

Reliability in Challenging Conditions

Count on Emerson's wireless solutions to work no matter what. Robust measurement points allow you to:

- Ensure 99% data reliability
- Identify trouble spots
- Minimize downtime
- Cost-effectively optimize your operation

WIRELESS PLANT APPLICATIONS INCLUDE:

- Field data backhaul
- Mobile workforce
- Control network bridge
- Remote video monitoring
- Mobile Video & Voice

WIRELESS FIELD NETWORKS:

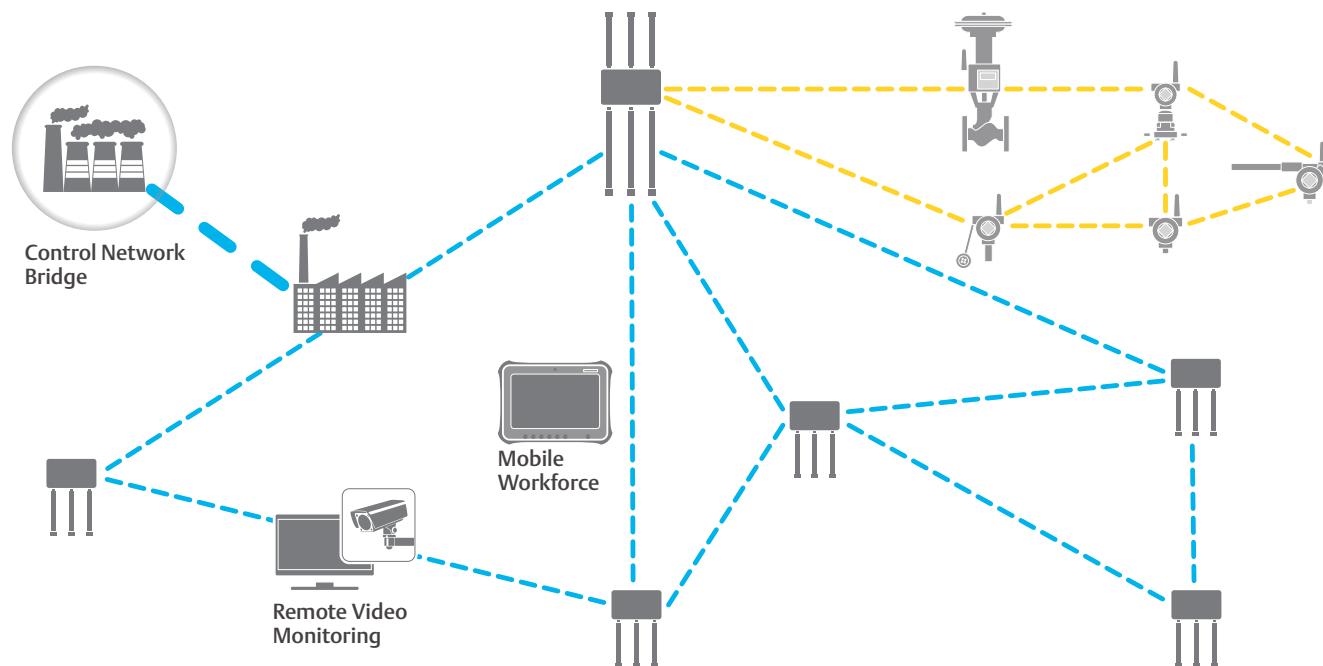
- Difficult process monitoring
- Rotating equipment
- Environmental
- Auxiliary systems
- Safety systems status
- Operator safety
- Mobile assets
- On/off valve position
- Process start-up
- Temporary installations
- Wired alternative
- Disaster recovery

Start here

Plant-wide sensing increases your monitoring reach and provides real-time smart data that is reliable, accurate, and always available.

No Wires. No Limits.

- Lower installation costs — calibration-free, reduced cabling, and fast commissioning add up to 50% savings per measurement point
- Low maintenance, non-intrusive and self-powered — wireless networks up and running in minutes, even when integrating into existing systems
- Eliminate site surveys — wireless field network devices are self-organizing so there's no need for a site survey — no matter how dense or obstructed the area
- Robust design — operates in the harshest environments and under the most challenging conditions



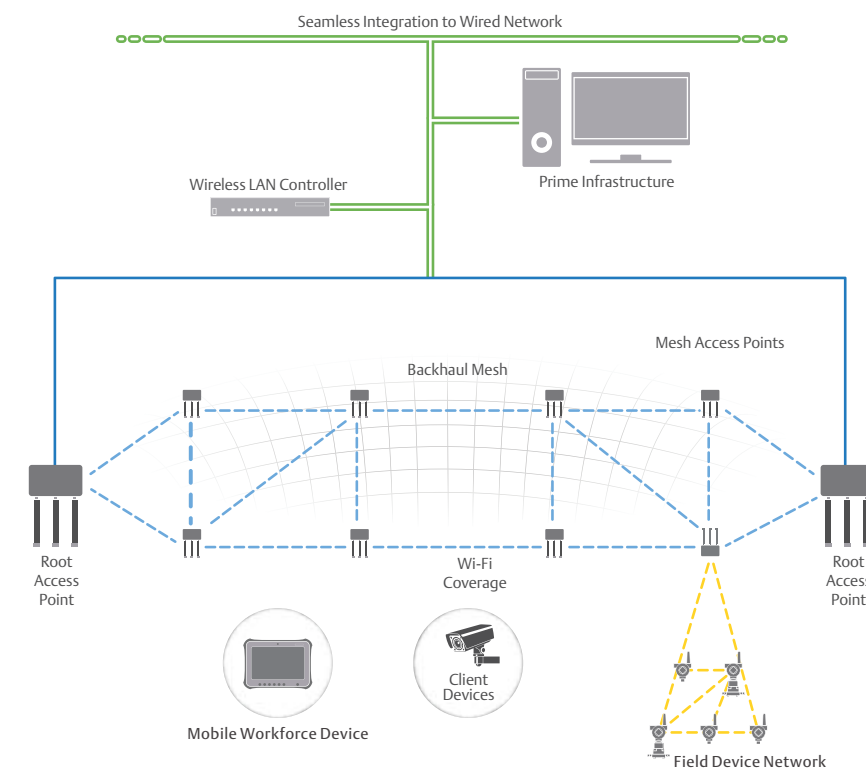
Get up and running fast with Emerson Wireless Solutions for plant-wide operations

Improve Productivity and Safety – for Your People and Your Plant

Enable greater workforce productivity and safety regardless of skill or experience

- Less training needed for proficiency in installing, operating, and maintaining operations
- Constant connectivity so information gets to the right person at the right time

Emerson Wireless Solutions for Plant Operations



Open. Reliable. Secure.

Increase your confidence in your network by:

- Controlling physical access
- Using strong, non-default join keys
- Using an access control list

For more information, visit us at [Emerson.com/Wireless](https://emerson.com/Wireless)

Wireless solutions for plant operation include key components that all work together consistently, and seamlessly.

- Open Standards - The industrial mesh access points are designed for industrial Wi-Fi deployments by utilizing open standards.
- Reliable Communications - The Wi-Fi network uses mesh technologies which are not only self-organizing, but also self-healing. The intelligent mesh protocol dynamically optimizes the best route to the wired network within the mesh, mitigates interference, and ensures high network capacity.
- Layered security keeps your network safe.
 - Ensures data transmissions are received only by the Emerson Wireless Gateway.
 - Network devices implement industry standard Encryption, Authentication, Verification, Anti-jamming, and Key Management.
 - Third party security verification including Achilles and FIPS197- User-based login and enforced password strength. Password strength monitoring, password reset requirements, automatic lockout, password expiration requirements.

Network Infrastructure Key Components

Wireless solutions for plant operation applications include key components that all work together to deliver a secure, consistent and reliable wireless infrastructure scalable to fit any need from a single application through plant-wide implementation.



Mesh Access Points

- Outdoor wireless mesh access points provide a universal standard network infrastructure for easy integration of all the wireless applications in your plant, allowing client devices to connect to the network and communicate
- Mesh access points are class I, Div 2 certified and support dual band radios compliant with IEEE 802.11 standards



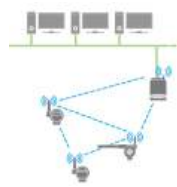
Wired and Wireless Devices

- Upgrade existing wired HART devices already installed in your plant to WirelessHART with the Wireless 775 THUM™ Adapter
- Auto-sense the Wireless Gateways and devices for quick and easy startup and commissioning



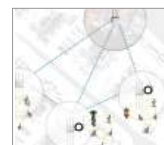
SmartPower Solutions

- Choose the mode of power that works best for your application
- Intrinsically safe to provide long-lasting instrument life
- Robust design to handle any environment
- Easily installed and field changeable



Seamless Integration via LAN to all Existing Host Systems

- Native integration into DeltaV™ and Ovation™ is transparent and seamless
- Gateways interface with existing host systems via a LAN, using industry standard protocols including OPC, Modbus TCP/IP, Modbus RTU, and EtherNet/IP™



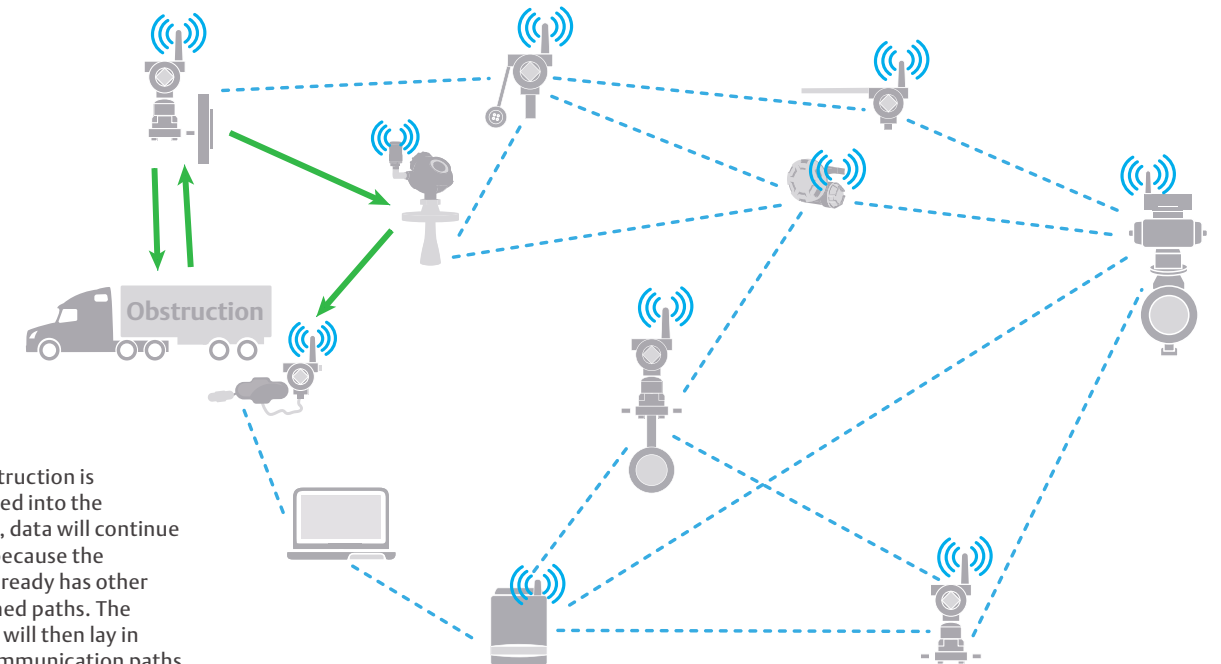
Self-Organizing, Adaptive Mesh Routing

- No wireless expertise required, network automatically finds the best communication paths
- The self-organizing, self-healing network manages multiple communication paths for any given device.



Wireless Mobile Voice & Video

- Your field technician can video conference with an expert at the source of the problem to troubleshoot in real-time



If an obstruction is introduced into the network, data will continue to flow because the device already has other established paths. The network will then lay in more communication paths as needed for that device.

WirelessHART is a backward compatible, cost-effective, common sense approach to wireless communication.



Mobile Workforce

- Increase worker productivity and accuracy with rich, real-time information from control and asset management systems
- Empower your field personnel by giving them access to live process data regardless of location
- Shorten the time it takes to perform turnarounds by equipping your field personnel with all the tools and support they require to lockout process equipment, perform maintenance, and bring the equipment back online



Wireless Personnel & Asset Tracking

- Always knowing where your workforce or high value assets are currently located within the plant improves productivity and saves time
- Providing full visibility to your workforce locations whenever they are working inside hazardous areas of your plant improves safety and enables automatic enforcement of best practices for workforce safety



Wireless Safety Mustering

- Providing full visibility to your workforce's locations in hazardous areas is extremely critical to an efficient evacuation in the case of an emergency
- Plant safety is increased by providing accurate real-time mustering reporting, enabling emergency responders to immediately prioritize their next actions depending on the nature of the emergency and the status of your personnel



Wireless Remote Video Monitoring

- Increase plant safety with 24x7 surveillance of the plant and its operations
- Comply with regulations by capturing visual data on flare, smoke stack or other emissions, providing evidence of regulation compliance to local authorities

Wireless Product Portfolio



Pressure Transmitters and Gauges

- Reduce deployment time and ensure a problem-free installation
- Enhance process insight, minimize variability, and reduce maintenance and downtime
- Access data continuously



Totalizing Transmitter

- Measure turbine flow continuously, with reliable pulse data from the field
- Get average flow rate and totaled volume measurements, even in remote and challenging environments
- Generate predictive diagnostics data to indicate instrument health and support timely maintenance



Temperature Transmitters

- Increase visibility into your process and run a smarter operation through efficient temperature measurements
- Choose from a complete portfolio of wireless temperature solutions for any use, including non-intrusive and high-density applications
- Accurate, repeatable process temperature measurement while eliminating leak points
- Simplify specification, installation and maintenance



Guided Wave Radar

- Receive high/low level alarms and overflow protection
- Utilize in virtually any process condition
- Unaffected by challenging conditions with no moving parts to fail



Vibrating Fork Liquid Level Switch

- Avoid overfills and spills that could harm workers, cause steep fines or even shutdowns
- Communicate output data, instrument health details, and alerts
- Install alarm points in previously inaccessible remote tanks



Tank Gauging

- Utilize for bulk liquid storage applications at refineries, tank terminals, fuel depots, LPG/LNG plants and more
- Provide precise level and temperature data needed for custody transfer, inventory control, and safe tank operations
- Works in parallel with wired emulation protocols, providing a safe and cost-effective way to upgrade legacy systems and to meet requirements for full communication redundancy



Discrete Transmitter

- Wirelessly monitor any single or double throw, unpowered dry contact switch
- Cost-effectively gain access to discrete points that are not connected to the control system due to wiring costs and lack of I/O
- Dual channels are configurable for discrete input or discrete output
- Utilize in safety showers, plunger arrival, flow/no flow, rupture discs, or safety guards/rails



Acoustic Transmitter

- Improve energy efficiency and environmental compliance with acoustic monitoring of steam traps and pressure relief valves (PRVs)
- Gain instant visibility through a non-intrusive, WirelessHART monitoring system
- Know immediately when steam traps and PRVs need attention



Vibration Transmitter

- Receive vibration, temperature, and bearing wear measurements
- Measure vibration on any plant asset — even in hard-to-reach and cost-prohibitive locations
- Get continuous online monitoring for machinery prediction and protection



Position Monitors

- Reduce valve alignment mistakes by wirelessly automating valve alignment work practices
- Know the status of your valve with predictive diagnostics on position, cycle counter, and stroke time



Corrosion Monitoring Transmitters

- Choose the best mix of technologies: complementary corrosion and erosion monitoring solutions enabled by WirelessHART
- Non-intrusive direct wall thickness monitoring with WirelessHART data delivery – measures the impact of changing corrosion or erosion risk on asset integrity
- Powerful data visualization and easy-to-use analytics tools WirelessHART intrusive probes – fast response to changes in corrosion or erosion risk (or both with unique multi-element probe) with WirelessHART data delivery*
- FSM (field signature method) – non-intrusive local area coverage for specific localized corrosion applications or buried pipelines
- SAM (sand acoustic monitors) – fast non-intrusive solids detection



Gas Monitor

- Extends the coverage of gas detection technology to applications that were considered to be too challenging/costly to monitor
- Improves toxic gas leak coverage to keep personnel safe and protect critical assets
- Continuously monitor for the presence of toxic hydrogen sulfide in remote locations

*Not available with FSM and SAM technologies

Wireless Product Portfolio



Gateways

- Easily integrate network wireless data to any host system or architecture
- Receive industry-leading security, scalability and data reliability
- Get redundancy that guarantees system availability



THUM Adapter

- Add wireless capabilities to your wired HART devices*
- Tap into the rich diagnostic and process data in your wired HART instrumentation
- Overcome the limitations of outdated legacy control systems
- Increase process visibility to run a safer, more productive operation
- Explosionproof approval options available (U.S./Canada)

*Devices compliant with HART 5 or later



AMS Wireless SNAP-ON™ Application

- Easily plan, customize, and manage your wireless networks with the application's drag-and-drop design simplicity
- Leverage analytical tools for insights to help maximize process network performance
- Free up your crew for higher-priority tasks



WirelessHART Power Meter

- Monitors voltage, current, power, energy and other electrical parameters - designed for continuous monitoring of energy data to ensure power quality, avoid downtime and increase energy efficiency on single and three phase electrical systems



Emergency Relief Valve

- Provides emergency pressure relief for storage tank overpressures not handled by standard tank vents
- Meets API Standard 2000, NFPA 30 and OSHA (29 CFR 1910.106)



Lifecycle Services

Our Lifecycle Service Strategy

- Service technicians are factory-trained and certified on Emerson products
- An established service network that places service technicians close to customers
- From simple repairs to complex projects, Emerson supports you with our Lifecycle Services portfolio

Wireless Start-Up and Commissioning Services

- Installation verification and commissioning of wireless transmitters
- A complete check of the transmitter's configuration, diagnostics, and all the variables for each transmitter, including mechanical, wiring, and loop verifications

Wireless Pervasive Field Network (PFN) Services

The PFN Wireless Solution package includes:

- Project management by a Field Service Specialist
- Site walk-down conducted by a wireless network expert to identify critical and non-critical areas for inclusion
- Plant drawings indicating gateways and access points
- Startup services — installation verification, commissioning, and FAT/SAT

Educational Services

- Learn from certified instructors with real-world experience and increase proficiency with hands-on experience
- Convenient locations and schedules that minimize disruptions to your employees' schedules
- Customized curriculums that cater to your process needs
- Improved production quality with services that improve the maintenance, reliability, and performance of your measurement products and process equipment

Real-time Insight into Your Operations, Anytime, Anywhere

Plantweb Insight Applications

Gain insight and clarity with a network of predictive intelligence. Your automation systems and sensors provide real-time control, but important plant data is often not collected due to the high cost, disruptions, and time required to add wired sensors and analyze the data. Pervasive sensing applications enabled by wireless sensors and networks address these issues, allowing you to quickly and cost-effectively gain new strategic data, delivering actionable information you can use to quickly improve your operations.

Mobile Applications

- ✓ Steam Trap Insight
- ✓ Pump Insight
- ✓ Pressure Gauge Insight
- ✓ Corrosion Insight
- ✓ Heat Exchanger Insight
- ✓ Mass Flow Insight
- ✓ Pressure Relief Device Insight
- ✓ Safety Shower Insight
- ✓ Air-cooled Heat Exchanger Insight
- ✓ Power Module Insight
- ✓ Wireless Network Insight
- ✓ Asset/Location Insight
- ✓ Electrical Insight
- ...and more!



Plantweb Insight Applications leverage Pervasive Sensing™ Strategies to fit your facility

Improve Reliability and Energy Efficiency

- Spot abnormal situations
- Recognize optimum maintenance times
- Reduce energy costs
- Identify and prevent failures before they occur
- Track asset health

Provides Ability to

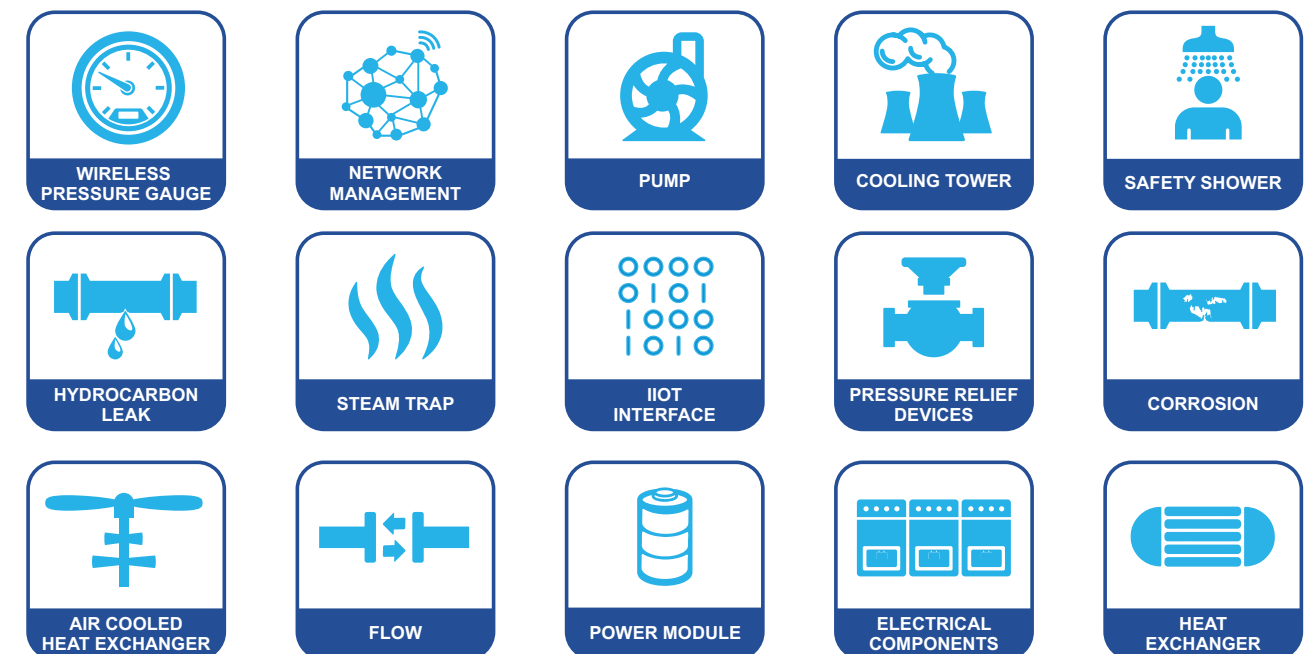
- Monitor key assets in real-time
- Quickly identify abnormal situations
- Prioritize maintenance

Improve Safety and Compliance

- Comply with regulations
- Identify leaking and sticking situations
- Gain real-time visibility
- Avoid potential safety hazards
- Reduce fines and environmental impact

IIoT Benefits

- Optimize operations
- Improve reliability





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