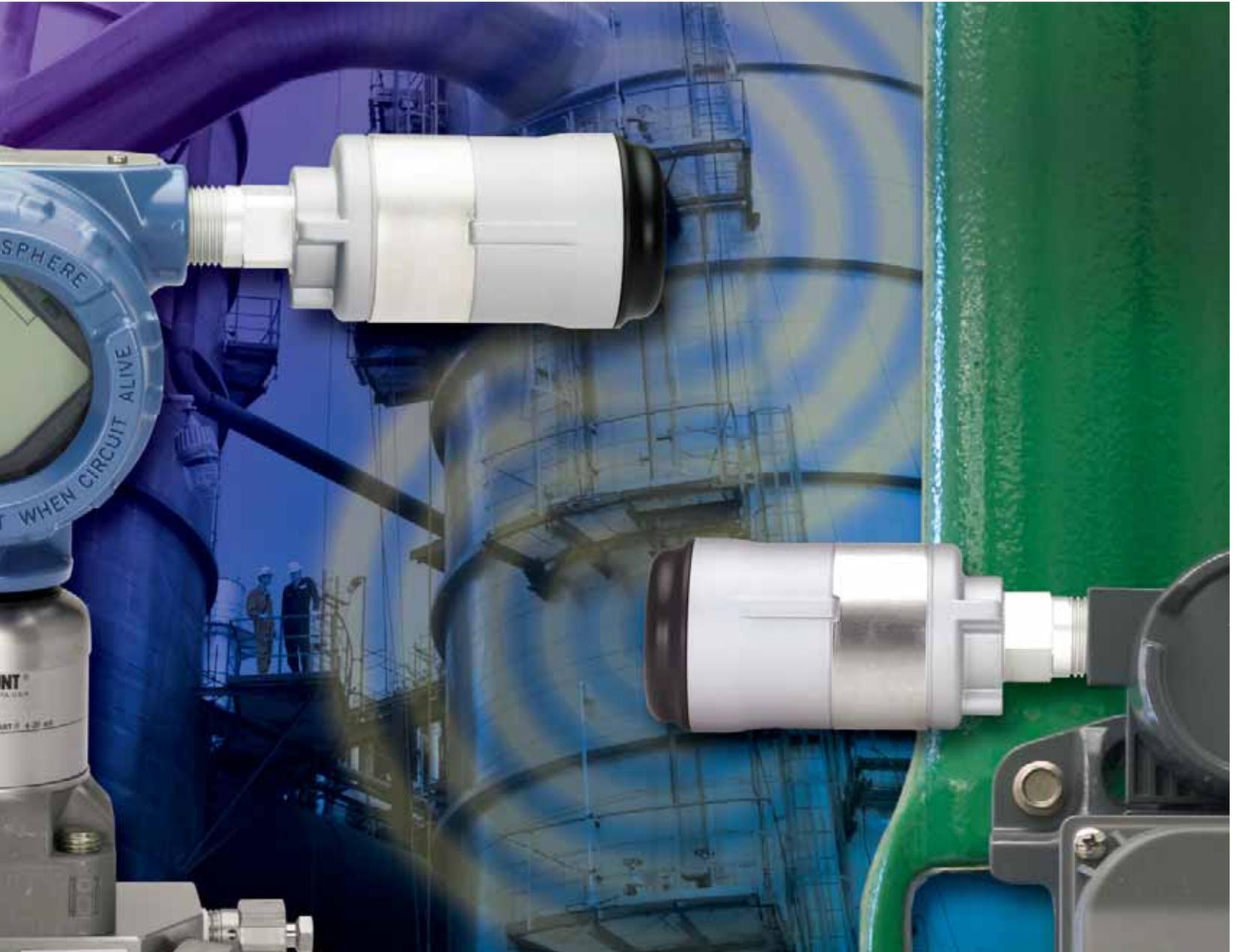


# Smart Wireless THUM™ Adapter

Unlock the Value in Your Existing Field Devices



# SEE MORE OF YOUR PLANT



## YOU CAN'T IMPROVE WHAT YOU CAN'T SEE

Most plants have hundreds or even thousands of HART® instrumentation points, all equipped with rich diagnostics and process information, yet this valuable information often goes unused because it's too difficult and costly to access through traditional wired means.

Most plants are simply unable to take full advantage of device intelligence because of older legacy control systems. These systems are not equipped to receive HART communications, such as diagnostics or additional process variables that could otherwise optimize plant efficiency. Until now...

## IMAGINE THE POSSIBILITIES

The Smart Wireless THUM adapter enables you to easily and cost-effectively "see" all the valuable information that exists in your plant today. Just imagine what problems you could solve and how much more you could improve your plant's productivity by using predictive intelligence in devices to enable continuous visibility to the process.

- Enable alerts and alarms to streamline troubleshooting
- Gain real-time access to advanced diagnostics about the health and performance of the process and equipment
- Move from reactive to proactive maintenance, lowering costs and saving time
- Monitor HART variables to gain insight into process efficiency and condition

The Smart Wireless THUM adapter is a device that you can retrofit on any existing two or four-wire HART device, and it allows you to wirelessly transmit measurement and diagnostic information that was previously not available. It's an easy way to gain access to the field intelligence already in your plant enabling you to improve quality, safety, availability, operations and maintenance costs.



The Smart Wireless THUM adapter extends the predictive intelligence of PlantWeb® digital plant architecture into new areas throughout the plant, opening the door for a vast range of process environment possibilities and improvements.



# REAL PROBLEMS, REAL SOLUTIONS.

Simply put, the innovative design of the Smart Wireless THUM adapter retrieves digital information from any HART device and makes it available wirelessly so you can gain the full benefit of intelligent devices.

## GAIN ACCESS TO ADVANCED DIAGNOSTICS

Accessing the predictive intelligence in devices allows you to take action before potential problems impact productivity and quality. For example, the Smart Wireless THUM adapter allows you to access advanced diagnostics through AMS Suite to tap into the power of in-situ meter verification for magnetic flowmeters and Coriolis meters, enabling significant operational improvements.

**Problem:** Impulse lines can fill with solid material or freeze in cold environments. Plugging in one or both lines can affect process quality and cause failure.

**Solution:** The Smart Wireless THUM adapter simply attaches to an existing Rosemount 3051S pressure transmitter, giving wireless access to diagnostics that can detect plugged impulse lines through AMS Suite.

**Result:** More efficient maintenance and early warning of potential problems for improved operations.

## ENABLE ENHANCED VALVE CAPABILITIES

Industry experts estimate that 75% of control valves are unnecessarily removed from service for maintenance. The key to reducing maintenance cost and ensuring quality and availability is to monitor valve performance, and complete maintenance on an as-needed basis and before the process is impacted.

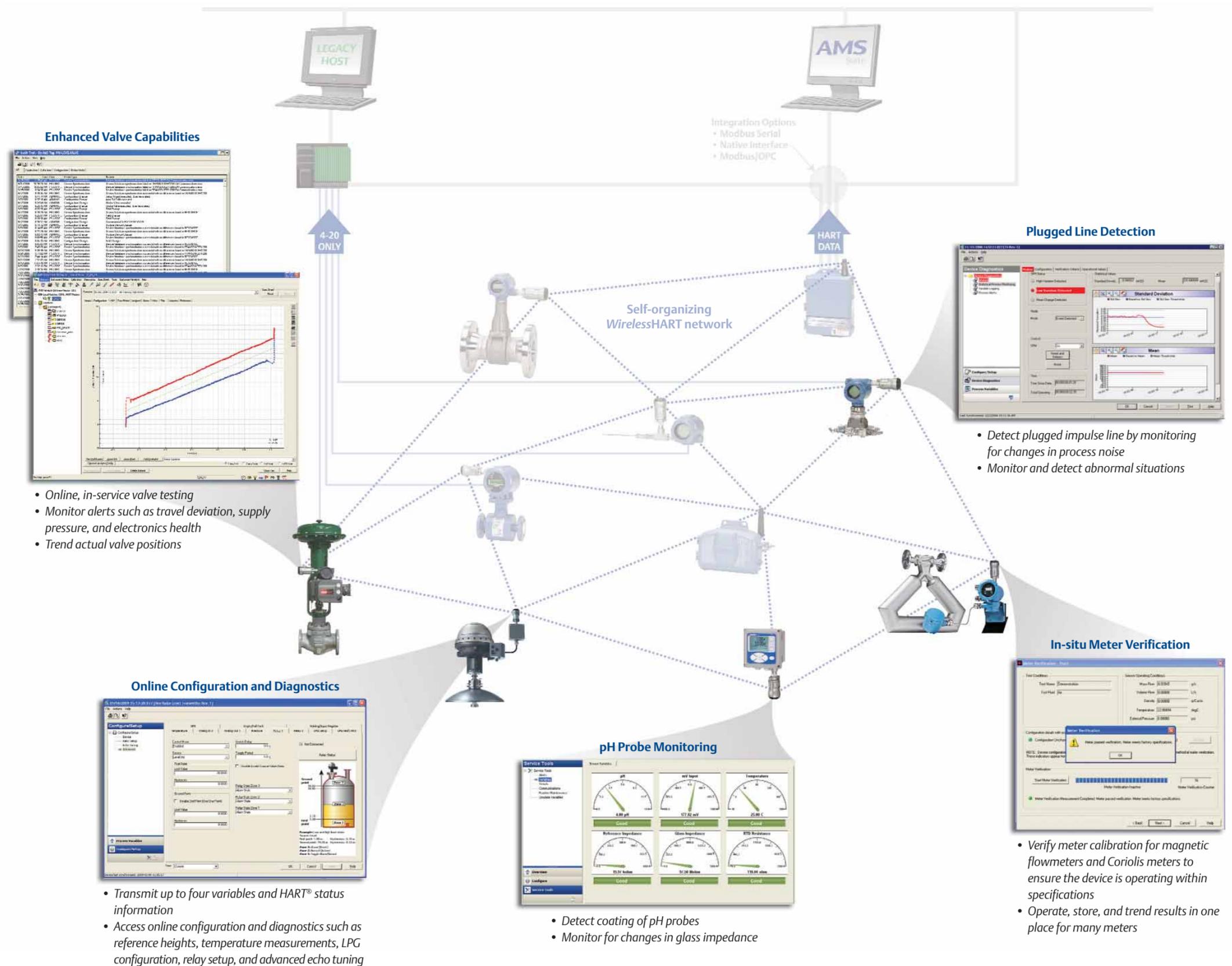
The Smart Wireless THUM adapter with AMS ValveLink® software can easily enable your Fisher® FIELDVUE® digital valve controllers with added capabilities such as:

- Online, in-service valve testing
- Monitor alerts such as travel deviation, supply pressure, and electronics health
- Trend actual valve positions

**Problem:** Dirty air supply impacts process control performance and increases the likelihood of an unplanned shutdown.

**Solution:** The Smart Wireless THUM adapter attaches to an existing HART digital valve controller (e.g. DVC6000 or DVC2000) giving you access to valve alerts and diagnostic tests. The AMS ValveLink SNAP-ON™ application provides advanced diagnostic capabilities.

**Result:** Learn of impending problems before they impact the plant and determine the optimal time to schedule maintenance.



## REMOTELY MANAGE DEVICES AND MONITOR HEALTH

There are huge inefficiencies in the way many field devices are currently maintained, including routine checks and preventive maintenance on equipment when it's not needed.

Industry studies find that:

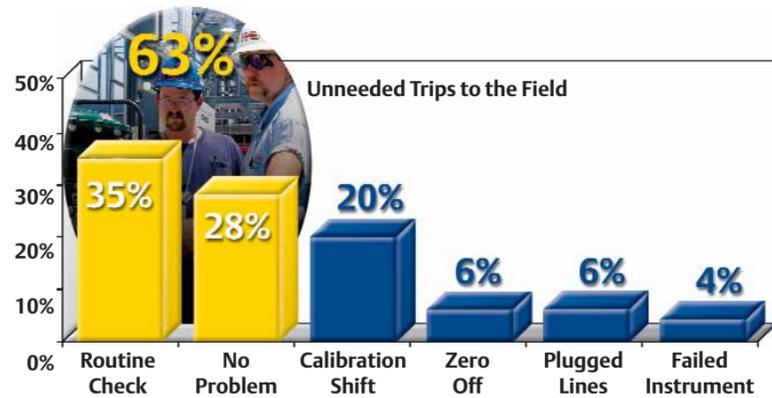
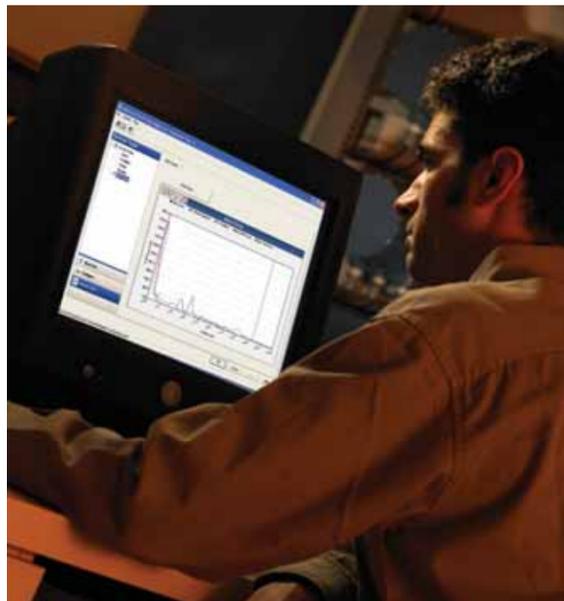
- 63% of transmitter work orders are closed with no problem found.
- 50% of instrument technicians' time is spent filling out paperwork.

If you don't have the infrastructure to communicate digital HART data to the control room or maintenance area, a trip to the field may be the only option. This not only takes time, but often requires a work permit or special clothing for hazardous areas. Now, with the Smart Wireless THUM adapter, you can eliminate unnecessary work and keep your employees safe.

## AMS DEVICE MANAGER MAKES IT EASY

Now there's an easy way to gain the benefits of HART diagnostics and remotely manage your devices and monitor health. The Smart Wireless THUM adapter with AMS Suite allows you to troubleshoot HART devices from your desk so you can optimize maintenance schedules, minimize downtime and reduce time spent in hazardous areas. What used to be a 25 minute trip to the field becomes a 2 minute task done online from the maintenance shop.

AMS Device Manager provides plants with a universal window into intelligent field devices. A comprehensive set of analysis and reporting tools is contained in a single application for predictive diagnostics, documentation, calibration management, and device configuration. Automatic documentation capabilities reduce potential errors and the time spent on data entry and paperwork. Online access to device diagnostics allows you to continually monitor devices and to know immediately if there is a problem so you can intercept the issue before it causes a major upset.



Work Order Analysis

Wasted maintenance can be avoided through remote diagnostics.

## MAKE ANY HART DEVICE WIRELESS TO ENABLE NEW MEASUREMENT POINTS

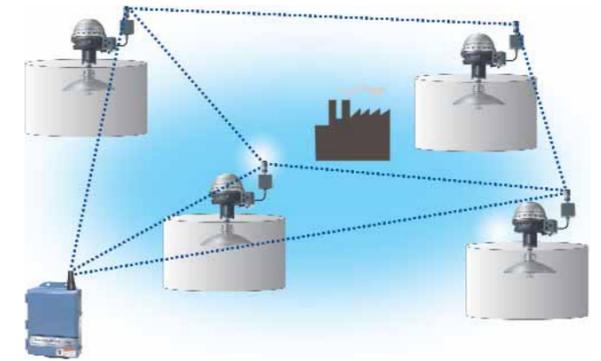
The high cost of loop wiring due to remote locations or physical obstructions often prohibits the feasibility of installing devices for new measurement points. With the Smart Wireless THUM adapter, you can easily and cost-effectively transform any HART device into a wireless device.

The Smart Wireless THUM adapter gives you expanded visibility in applications such as: tank gauging, radar level, ultrasonic level, flow, valves, liquid and gas analytical, pressure, and temperature.

**Problem:** Lack of field cabling can make tank gauging and overfill prevention difficult and costly to monitor, and requires personnel to take manual readings. Lack of automatic, precise tank gauging leads to uncertain inventory and inefficient tank operations.

**Solution:** With the Smart Wireless THUM adapter on a Rosemount radar gauge you can wirelessly transmit data such as level, level rate, temperature and water level to the TankMaster inventory software or host/DCS system.

**Result:** Better inventory and improved loss control, resulting in safer and more efficient tank capacity utilization, without an expensive communication infrastructure.



Transmit tank gauging information with the Smart Wireless THUM adapter on a Rosemount radar gauge.

With the Smart Wireless THUM adapter you get the benefits of wireless technology on products where a purely wireless version is not yet available.

**Problem:** The Rosemount Analytical Model 1056 4-wire toroidal conductivity analyzer is often used to determine when acid concentration has reached the target level and temperature, but this information often had to be checked manually due to the high cost of wiring.

**Solution:** By simply adding a Smart Wireless THUM adapter to HART-enabled Model 1056 analyzers, all the data can be brought to the control room.

**Result:** Easily and cost-effectively enable continuous process monitoring.



Continuously monitor process variables and stranded diagnostics in remote sites with the THUM adapter attached to Model 1056 toroidal conductivity analyzer on a conductivity meter.

## EFFICIENTLY GATHER DATA FROM MULTIVARIABLE DEVICES

Multivariable HART devices can provide a wealth of information in addition to the primary process variable.

Emerson's multivariable devices include:

- Rosemount 3051S MultiVariable™ and 3095 Mass Flow Transmitter
- Rosemount 3300, 5300, and 5400 Radar Level Transmitters
- Micro Motion Coriolis Meters
- Rosemount Vortex Flowmeters
- Rosemount Magnetic Flowmeters

**Problem:** Micro Motion Coriolis meters can not only transmit mass flow but can also indicate totalized flow and fluid density. However, traditional analog systems cannot access the additional variables that multivariable HART devices measure.

**Solution:** By installing a Smart Wireless THUM adapter on any multivariable device, you easily gain access to all variables

**Result:** For little investment, you can take full advantage of your assets and gain greater insight into your process.



Access more from your Micro Motion Coriolis meter with the Smart Wireless THUM adapter.

# KEY COMPONENTS

## EASY TO INSTALL. EASY TO USE.

Now you can avoid the costs and potential headaches of adapting an existing wired network with wired multiplexers to extract HART data. The Smart Wireless THUM adapter eliminates such constraints as:

- Limited rack room space
- Costly, time-consuming engineering and wiring
- Insufficient funds to buy the hardware needed.

You don't have to rewire – or install – multiplexers. And, THUM adapters are intrinsically safe when properly installed.

Additionally, the AMS Wireless SNAP-ON application makes it easier to plan and validate your wireless network using best practices. It allows for viewing of communication details graphically in real time, and helps you monitor the health of your entire self-organizing network.

## NO SPECIAL POWER REQUIREMENTS

Emerson's Smart Power™ innovation reduces energy consumption, allowing the THUM adapter to draw power from the 4-20 mA loop without compromising the integrity of the current loop network. No batteries are required, and current control and safety systems remain in place and intact. This allows users to gain the benefits of wireless technology without changing the control structure.

## NO MORE WIRES. SAME DATA RELIABILITY

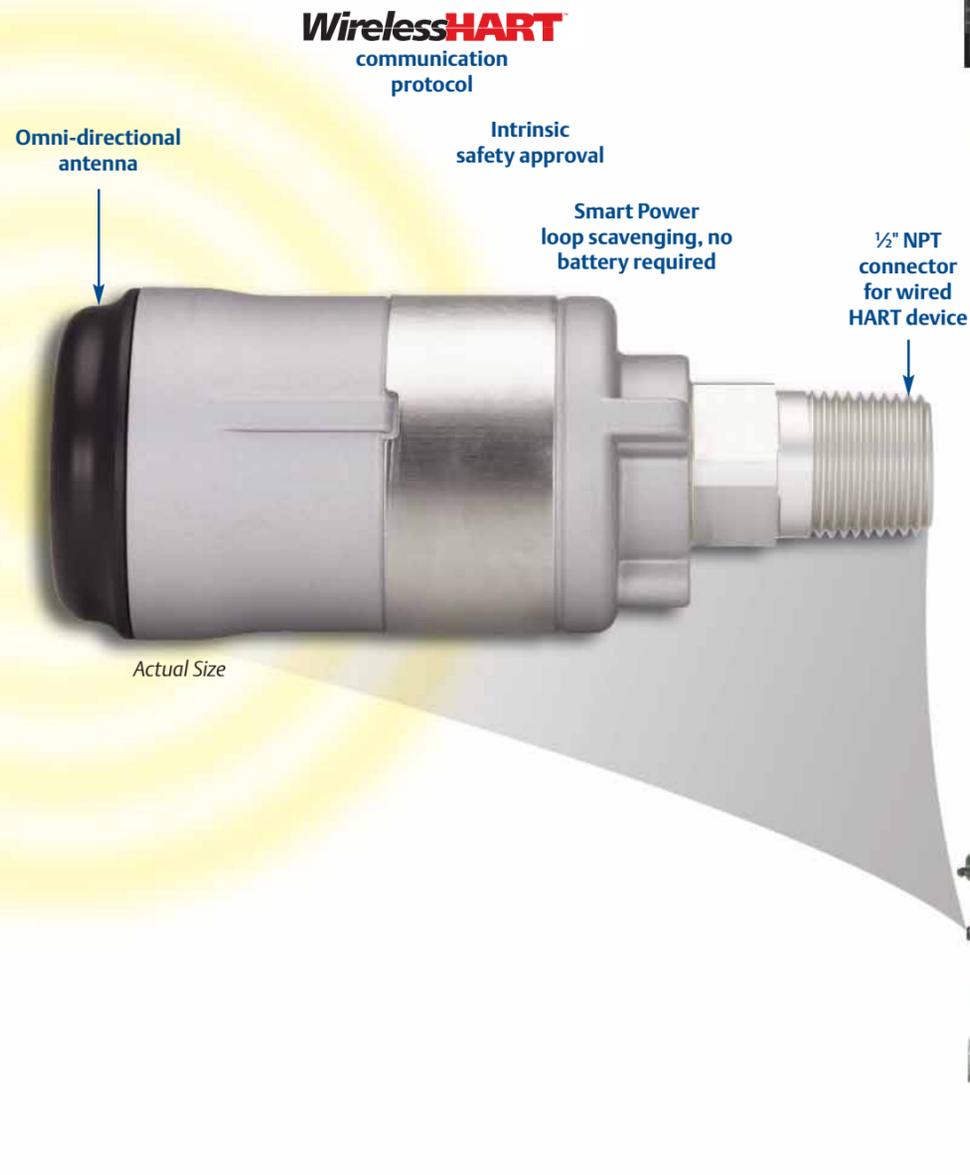
The Smart Wireless THUM adapter is a component of a self-organizing network that is not hindered by obstacles and disruptions. The Smart Wireless Gateway optimizes the system communication links so you don't have to. With frequency hopping technologies and redundant paths for information to travel, the network delivers greater than 99% data reliability.

## LAYERED SECURITY KEEPS YOUR NETWORK SAFE

Emerson Process Management's layered approach to wireless network security ensures that your network stays protected. The network devices implement encryption, authentication, verification, anti-jamming and key management methods.

## START ANYWHERE. GO EVERYWHERE.

The Smart Wireless approach with the THUM adapter gives you the freedom to choose your path. It's easy to pick and choose the wired instruments you want in your *WirelessHART™* network. You can start small and easily expand it over time.

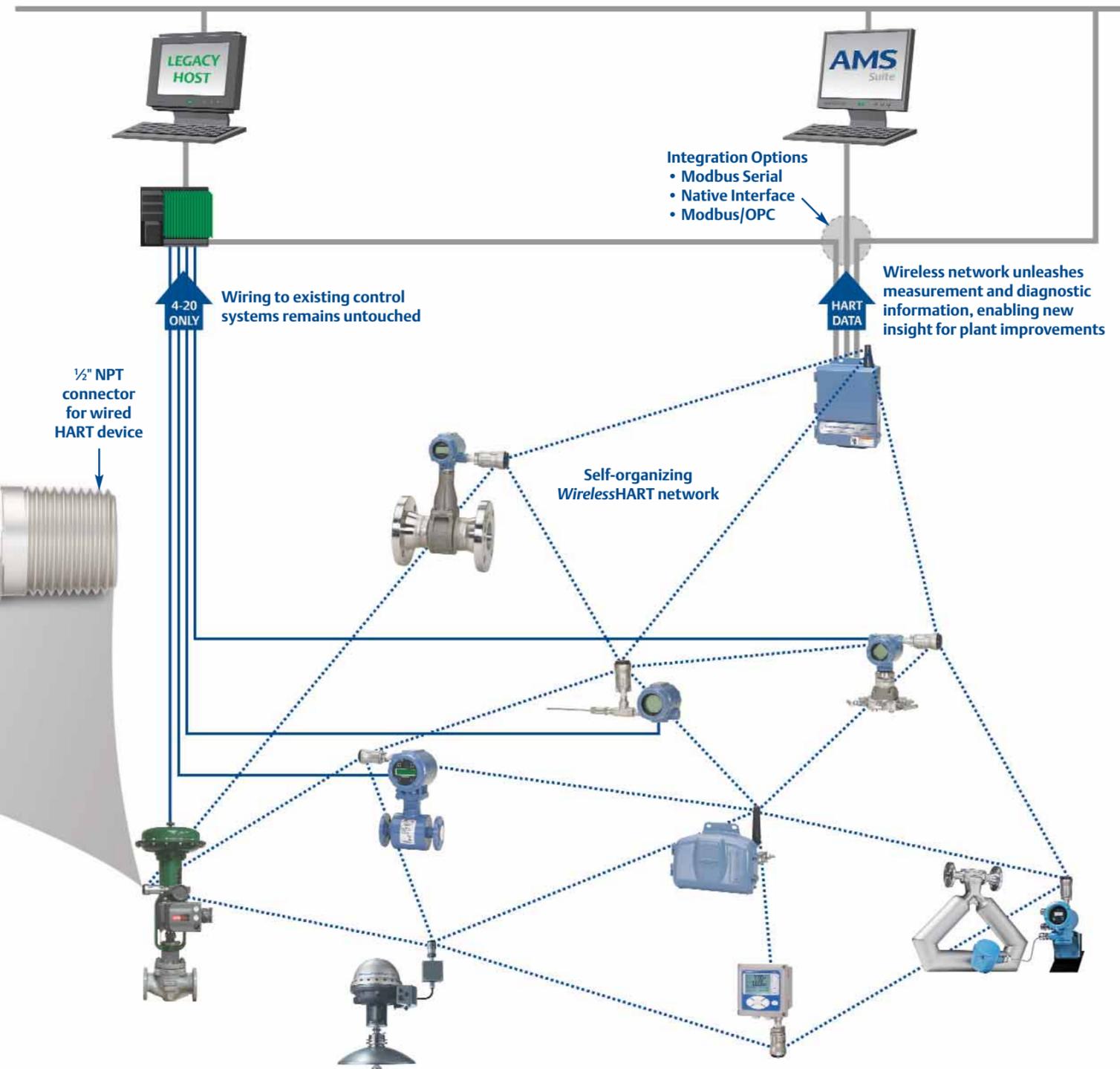


**WirelessHART™**  
communication  
protocol

Intrinsic  
safety approval

Smart Power  
loop scavenging, no  
battery required

1/2" NPT  
connector for wired  
HART device





### How does the Smart Wireless THUM adapter work?

The Smart Wireless THUM adapter easily attaches to any 2 or 4-wire HART device and uses WirelessHART technology to transmit the measurement and/or diagnostic information.

The Smart Wireless THUM adapter, which consists of a radio transmitter, receiver, micro-processor, and antenna, plugs into a standard electrical conduit entrance. It is electrically connected to the loop wiring and accesses HART data without affecting the analog control signal.

HART data passes through the network to the Smart Wireless Gateway. The gateway brings data from all the devices together into a central location.

### How many HART devices can be on a single Smart Wireless Gateway?

Up to 100.

### How many hosts can communicate with a single Smart Wireless Gateway?

Many at the same time. Example: legacy host systems (PLCs, DCS) and AMS Device Manager

### Is a site survey required?

No. Emerson Smart Wireless solutions for field networks use self-organizing WirelessHART technology, making wireless signals immune to possible obstacles or barriers.

### Can WirelessHART devices and wired HART devices with the THUM adapter be on the same network?

Yes.

### With what devices will the THUM adapter work?

The THUM adapter is designed to work with any two or four-wire HART Revision 5 device or higher.

### Is battery power required?

No. The Smart Wireless THUM adapter has been designed so that it draws power from a 4-20 mA signal without compromising the loop, or overall quality and safety.

### Does the Smart Wireless THUM adapter affect device approvals?

The Smart Wireless THUM adapter is classified as Intrinsically Safe and can be placed on an IS loop without affecting device approvals.

### What additional tools do I need to get the benefits of the Smart Wireless THUM adapter?

You will need a Smart Wireless Gateway to access the measurement and diagnostic information unlocked by the THUM adapter. From the Smart Wireless Gateway the information can be integrated into your host system through one of many ways such as Serial, TCP, and OPC. AMS Suite can be used as a convenient way to access the information made available by the Smart Wireless THUM adapter.



## SMART WIRELESS RESOURCES

Emerson offers a variety of resources to ensure that Smart Wireless solutions provide you with optimal results:

### PLANTWEB UNIVERSITY WIRELESS COURSES

Emerson's online wireless courses at PlantWeb University are fast, free and will teach you everything you need to know about taking your process or plant wireless – from security and power management to implementation considerations and typical use cases. Get started today at [PlantWebUniversity.com](http://PlantWebUniversity.com).



### SMART WIRELESS WEBSITE

Visit us at [www.EmersonProcess.com/SmartWireless](http://www.EmersonProcess.com/SmartWireless) for information on:

- Wireless Applications
- Getting Started
- Technology & Products
- News & Resources

### INDUSTRY EXPERTS

While our wireless architecture and applications are designed for ease of engineering, installation, and use, we also offer a broad range of services to help you get up and running quickly – and make the most of wireless technology. Our wireless experts ensure that your business needs are met and help you decide and implement the best combination of wired and wireless technologies and products to meet your goals.



Emerson also offers SmartStart™ Services, which include on-the-job training in network fundamentals, basic operation and troubleshooting. Our skilled technicians will provide training on how to use the equipment correctly, perform routine maintenance, and diagnose and resolve any potential issues.

**FOR MORE INFORMATION ABOUT WIRELESS, CONTACT YOUR LOCAL EMERSON REPRESENTATIVE TODAY!**

**FOR A LIST OF LOCAL LOCATIONS IN THE EMERSON GLOBAL NETWORK, VISIT [EMERSONPROCESS.COM](http://EMERSONPROCESS.COM)**

For more information on the Smart Wireless THUM adapter please visit  
[www.EmersonSmartWireless.com/THUMadapter](http://www.EmersonSmartWireless.com/THUMadapter)

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**Emerson Process Management North America**  
 12301 Research Blvd.  
 Research Park Plaza, Building III  
 Austin, TX 78759  
 USA  
 T +1 512 835 2190  
 F +1 512 834 7600  
[www.EmersonProcess.com](http://www.EmersonProcess.com)

**Emerson Process Management Europe**  
 Blegistrasse 23  
 P.O. Box 1046  
 CH 6341 Baar  
 Switzerland  
 T +41 041 768 6111  
 F +41 041 768 6300

**Emerson Process Management Asia Pacific**  
 1 Pandan Crescent  
 Singapore 128461  
 T +65 6777 8211  
 F +65 6777 0947

**Emerson Process Management Latin America**  
 8100 West Florissant Avenue  
 Annex K  
 St. Louis, MO 63136  
 USA  
 T +1 314 553 1847  
 F +1 314 553 1982

**Emerson FZE Middle East & Africa**  
 P.O. Box 17033  
 Jebel Ali Free Zone  
 Dubai, UAE  
 T +971 4 811 8100  
 F +971 4 886 5465

