



Wireless**HART**[®]

Simple, Reliable and Secure

EXPANDING THE POSSIBILITIES

Wireless HART

Reduces Cost and Improves Reliability

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WIRELESSHART TECHNOLOGY MAINTAINS ALL THE INTEROPERABILITY CHARACTERISTICS OF THE HART PROTOCOL AND IS SIMPLE TO USE, RELIABLE FOR PROCESS APPLICATIONS AND SECURE TO MEET INDUSTRY STANDARDS.

NEW MEASUREMENTS – COST SAVINGS IN REDUCED ENGINEERING

By using WirelessHART technology, a new measurement point can be added in hours or days rather than weeks or months. Users save with reduced engineering time, faster commissioning, and more efficient maintenance.

Installation costs can be reduced further by using the HART all-digital multidrop mode where multiple devices connect to a single WirelessHART adapter.

REMOTE AND DIFFICULT TO ACCESS PROCESS AREAS

Whether it's rotating equipment across a public road or through a plant with little spare room on cable trays, all plants have difficult-to-access areas. By utilizing wireless technologies these areas now become accessible for new measurements without the need for additional expensive cabling.

ASSET MANAGEMENT – IMPROVE PLANT RELIABILITY

Critical measurement devices in a plant can be more efficiently integrated into your maintenance strategy by using WirelessHART technology. It enables process and device diagnostic information to be used to shift to a predictive maintenance strategy. This increases the reliability and safety of your plant, while reducing repair costs and unplanned shutdowns.



"WirelessHART builds on the solid foundation of HART Communication enabling users to quickly and easily gain the benefits of wireless automation while continuing compatibility with existing devices, tools, skills and systems."

WALLY PRATT
Director - Field Communication Protocols
FIELD COMM GROUP



**WIRELESSHART TECHNOLOGY IS FIELD PROVEN
WORLDWIDE WITH BILLIONS OF OPERATING HOURS.
IT IS LOW-RISK, LOW-COST, INTEROPERABLE AND
USES THE SAME TOOLS AND SKILLS AS THE HART
PROTOCOL.**

USE CASES

WirelessHART technology opens the door for enhanced performance of a process plant. This is true for both new and existing plants. The advantage for operators lies in more plant transparency, resulting in increased performance and productivity.

Process Monitoring and Control

- Process control applications
- Monitoring remote tank farms and pipelines
- Plant expansions and device replacements

Asset Management

- Calibrate, configure and perform device loop tests
- Access and monitor diagnostics and analytics
- Conform to new health, safety and environmental regulations

Temporary Measurements

- Test and troubleshooting
- Pilot plant applications
- Performance enhancements



Field Proven
with Networks
Installed
Worldwide

"We use wireless data on six level instruments for pump seal pots. Additional WirelessHART gateways have been purchased and plans call for WirelessHART network coverage to extend across the entire facility."

JOEL HOLMES
Site Reliability Engineer
MONSANTO



Wireless HART Mesh Network and 3 Basic Device Types

THERE ARE MANY ADVANTAGES TO USING A WIRELESSHART MESH NETWORK – IT IS SELF-ORGANIZING AND SELF-HEALING, PROVIDES REDUNDANT COMMUNICATION PATHS AND INCREASES NETWORK RELIABILITY.



WIRELESS HART GATEWAY

- Access point, network and security managers
- Interoperable with all HART devices and systems
- System integration via HART-IP, Modbus RTU/ TCP and others



WIRELESS HART ADAPTER

- Makes a wired HART device wireless
- Connects on a device or anywhere on the loop
- One adapter for multiple devices reduces project and installation costs

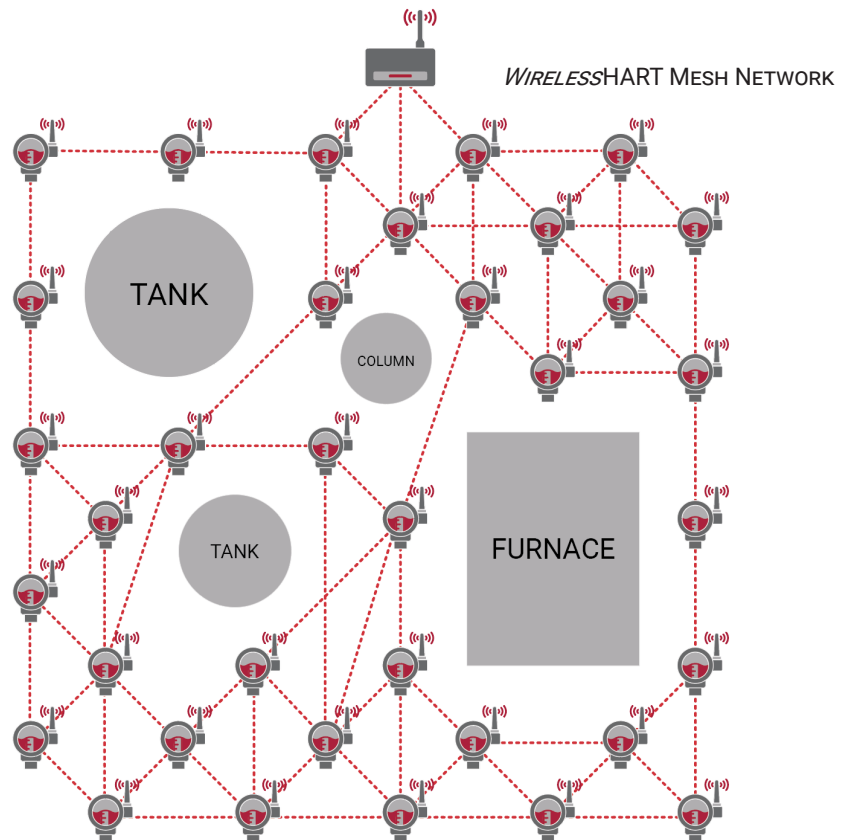


WIRELESS HART DEVICE

- Standard device with wireless communication
- Smart reporting for long battery life
- Battery, line, loop or harvesting power

"WirelessHART is ideal to create a diagnostic network where I/Os are old and not HART ready. Adding WirelessHART capability to critical instruments and positioners is very easy compared to the cost and required downtime needed for a DCS upgrade."

GABOR BERENZAI
Head of Control & Electrical Engineering
MOL

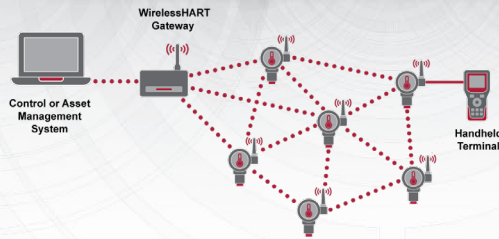


Host Data Integration Provides 24/7 Information Access

HOST DATA INTEGRATION PROVIDES REAL-TIME ACCESS TO DEVICE DIAGNOSTICS TO HELP LOWER YOUR OPERATION COSTS AND IMPROVE PLANT RELIABILITY. HART-IP TECHNOLOGY SIGNIFICANTLY SIMPLIFIES THE CONNECTION CONFIGURATION AND THE INFORMATION INTEGRATION.

WirelessHART devices communicate with a gateway to deliver process measurements and device diagnostics. The gateway connects to the host via wired or wireless options including:

- HART-IP
- Modbus-TCP/RTU
- Wi-Fi
- Others



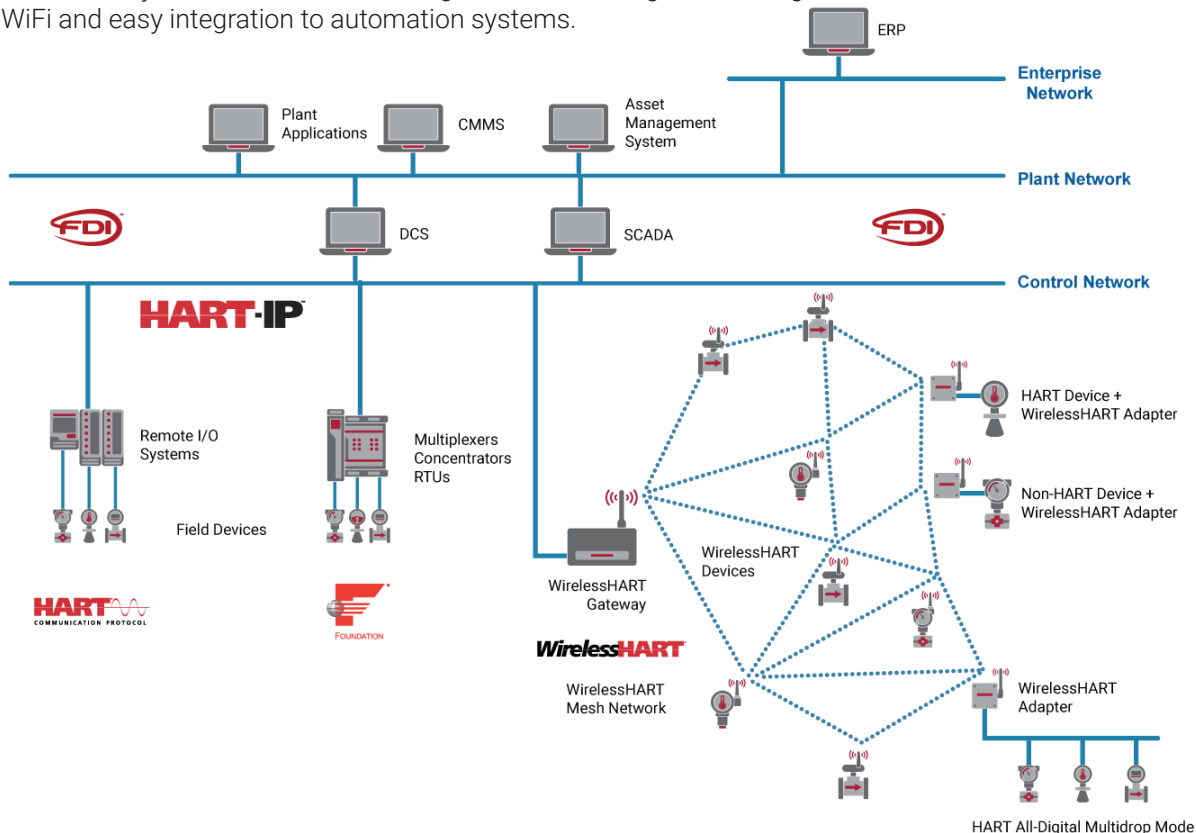
The output of the gateway may be connected to a Wi-Fi based backhaul infrastructure to the control room. In a HART-enabled system HART-IP technology connects information using standard HART commands over the plant network infrastructure.

"The use of WirelessHART allows us to monitor devices in areas of the plant that would be too costly to achieve using wired devices, helping us achieve our goal of continuously improving plant productivity."

MICHAEL PELZ
Head of Process Optimization and Automation
CLARIANT

HART-IP

HART-IP technology enables standardized plant-wide deployment, remote access to the device level from anywhere in the world, intelligent device management using Ethernet or WiFi and easy integration to automation systems.



The Global Process Communication Standard

THE HART PROTOCOL IS THE INDUSTRY STANDARD WITH TENS OF MILLIONS OF HART DEVICES INSTALLED WORLDWIDE. THE USE OF REAL-TIME INFORMATION IN HART DEVICES FACILITATES A FUNDAMENTAL SHIFT IN PLANT OPERATIONS.

THE HART PROTOCOL:

- is supported by all leading suppliers
- is easy to install and use
- is low cost and low risk
- benefits all phases of the plant life cycle

THE WIRELESSHART ADVANTAGE

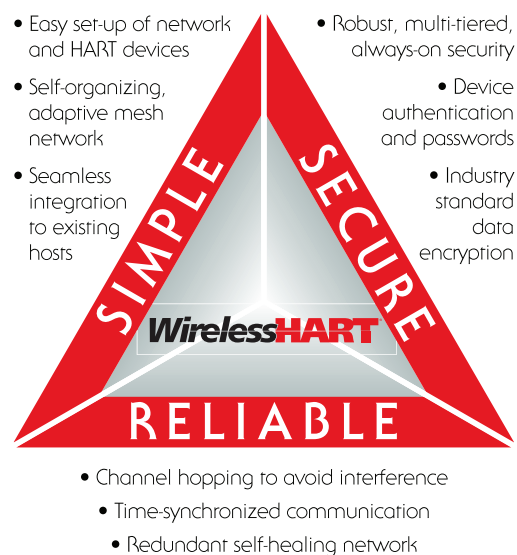
With the increase in information and measurement points needed today, WirelessHART technology can easily add these additional measurements without new cable trays or new wires at a greatly reduced total cost.

WirelessHART is an evolutionary communication technology built on the solid foundation of the HART Communication Protocol. It is the process industry's first international open wireless communication standard (IEC 62591; EN 62591).

When asked to name potential barriers to adopting a wireless solution, process industry users stated their main requirements are: security, reliability and ease-of-use. WirelessHART technology is designed to meet those requirements.

"WirelessHART devices offer a number of advantages beyond the low installed cost that often drives the end user choice of wireless. Wireless interfaces always provide access to a rich range of instrument performance and diagnostic information. The range of applications that can be served continues to expand, and device service life has also improved."

HARRY FORBES
Senior Analyst
ARC ADVISORY GROUP



WIRELESSHART TECHNOLOGY IS A COMPLEMENTARY ENHANCEMENT TO THE HART PROTOCOL, PROVIDING AN ADDITIONAL CAPABILITY THAT BENEFITS BOTH EXISTING AND NEW MONITORING AND CONTROL APPLICATIONS.

WIRED

HART Communication is built on the industry standard 4-20mA signal which is the most widely used communication method.

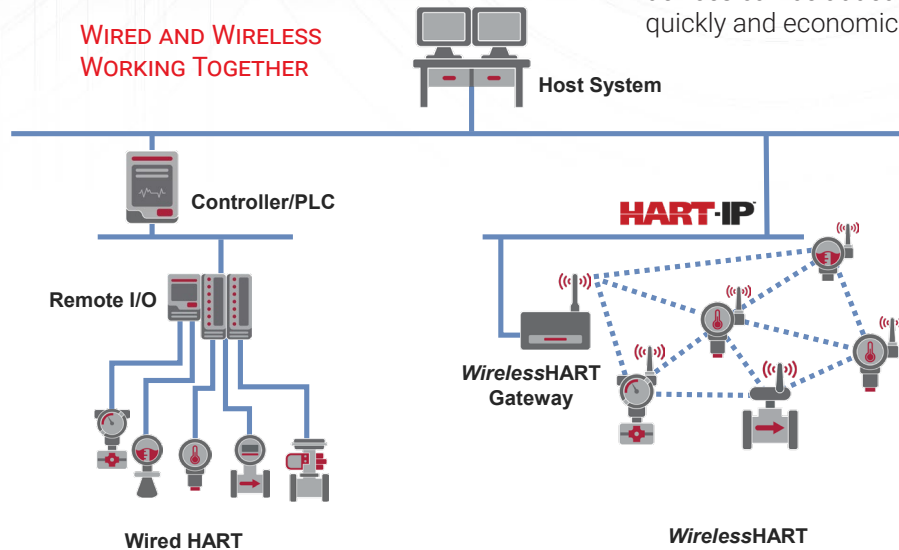
WIRELESS

A WirelessHART device can be installed anywhere in the plant without wires, significantly reducing the cost of cabling, installation and commissioning.

WIRED + WIRELESSHART

Using a combination of both wired and wireless HART technology, your investment in installed devices is protected and additional devices can be added quickly and economically.

WIRED AND WIRELESS WORKING TOGETHER



WirelessHART Attributes

ITEM	DESCRIPTION
Network Topologies	Automatic mesh, star, or combination of both
Standards	HART – IEC 61158 WirelessHART – IEC 62591 EDDL – IEC 61804-3 IEEE 802.15.4 -2006 @250kbps
Frequency Band	2.4 GHz ISM band
Frequency Management	Channel hopping and blacklisting
Coexistence	Time-synchronized communication for on-time messaging and clear channel assessments
Security and Authentication	Multi-tiered always-on security using 128-bit AES industry standard encryption
Power Options	Line, loop, battery and harvesting

From Wired to Wireless ... HART Expands the Possibilities

"We added WirelessHART transmitters to our existing wireless network to monitor the activation of emergency showers and eyewash stations throughout the facility. This immediately activates an alarm in the Control Room if someone uses an emergency shower in any remote location, which has greatly enhanced the safety of plant employees."

TODD GORDON
Instrument Technician Leader
WE ENERGIES

WirelessHART[®]

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Process Automation*

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