

# Pump Health Monitoring for Improved Safety and Operations

## BENEFITS

- Wireless instrumentation easily and cost-effectively enhances visibility into the health of pumps and attendant equipment
- Trending pump and motor vibration enables operators to switch to spare pump in a controlled manner, avoiding pump seal failure which can cause environmental and safety incidents



## CHALLENGE

There are literally hundreds of process pumps in a refinery operating on a continuous basis. From pumping the crude oil into the refinery to pumping the various crude fractions throughout the process units and ultimately pumping the refined products to storage, pumps keep the refinery running. Even though most process pumps are installed with in-line spares, sudden pump failure typically results in process upsets due to the time it takes to get the spare pump up and running. In some cases pump seal failure can result in hazardous material releases and a fire. Many technician hours are consumed with manual monitoring rounds.

## SOLUTION

Adding instrumentation to regularly monitor the process pumps is now economical and easy to implement. By monitoring and trending the pump and motor vibration, operators have a better view to pump health and can reduce the wear on pump mechanical seals due to increasing vibration by switching to the spare pump in a controlled manner. In addition to monitoring vibration, the pump suction strainer differential pressure, pump discharge pressure, pump and motor temperatures, and pump auxiliary seal flush system alarms can be monitored using Emerson's Smart Wireless solutions. Continuous measurements enable technicians to target known problems.

## RESULTS

Emerson Smart Wireless instrumentation easily and cost-effectively enhances visibility into the health of rotating and attendant equipment to enable improved utilization and product quality. Trending pump and motor vibration enables operators to switch to spare pump in a controlled manner, thereby reducing wear on pump mechanical seals to ensure improved production and lower maintenance costs. Additionally, wireless technologies can prevent pump seal failure and avoid environmental and safety excursions.

### PUMP HEALTH SMART WIRELESS STARTER KIT

Monitoring rotating equipment health has never been easier. Emerson has a complete wireless solution ideally suited for pump health monitoring that you can order today. The Pump Health Smart Wireless Starter Kit includes the following components:

#### Field Instruments

You can start with the wireless vibration transmitter then add any combination of wireless discharge pressure, pump suction strainer differential pressure, motor and pump temperature, or auxiliary seal oil system discrete level and pressure switches that satisfy the needs for the pump service.

#### Gateway

A secure, robust Smart Wireless Gateway.

#### Configuration and Asset Health

AMS<sup>®</sup> Device Manager predictive maintenance software delivers powerful diagnostics from your wireless devices. Easily manage your wired and wireless networks from a single application.

#### Services

Smart Start<sup>™</sup> Services help you with your first startup, including full network health assessment to ensure robust communications plus verification of device functionality through your chosen output (Modbus, OPC, Ethernet, etc.), with the alerts properly configured. Emerson's technician will not leave the site until the wireless network is successfully communicating with your control system – connectivity of your network guaranteed!

#### Expansion is Easy and Cost Effective

Start with your critical pump services and add other pumps and rotating equipment such as air cooled condenser fans and motors at your own schedule with the flexibility to add field devices using the same wireless backbone.



*The Pump Health Smart Wireless Starter Kit may include: CSI 9420 Wireless Vibration Transmitter, Rosemount<sup>®</sup> 702 Wireless Discrete Transmitter, Rosemount<sup>®</sup> 3051S Wireless Pressure Transmitter, Smart Wireless Gateway, and AMS<sup>®</sup> Device Manager.*



### WirelessHART

*WirelessHART<sup>™</sup> encompasses evolutionary enhancements that build on the solid foundation of HART technology used in more than 24 million installed devices worldwide.*

[www.EmersonSmartWireless.com/FieldKit](http://www.EmersonSmartWireless.com/FieldKit)

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