

# Emerson Process Management

Measurement of pH and conductivity play a key role in many areas of the municipal water market, from the monitoring of chemical addition in water treatment to the protection of vital components in desalination facilities, to ensure that there is no excessive buildup of dissolved solids to minimise fouling in the evaporator. The need for pH and conductivity analysis can be found in remote or difficult-to-access locations within a facility or liquid process, making it too difficult and costly to install, maintain or harvest data from these areas. This is where wireless comes in.

## Water and wireless: The new match in analytical instrumentation

Emerson has recently introduced the industry's first wireless pH and conductivity transmitters, Rosemount Analytical Models 6081-P and 6081-C. These transmitters use the WirelessHART communication protocol, rapidly emerging as the de-facto industry standard in wireless technology for plants. Consequently, wireless analytical instruments today can be integrated into the plant's HART Communications network making the adoption of wireless easy and painless.

Leveraging the WirelessHART protocol, Emerson has developed a "self-organising network" topology in which every wireless device on the network acts as a router for nearby devices. All devices work together seamlessly to identify and use the most efficient communication path for each message which ensures high data transmission reliability and network availability. The network dynamically reconfigures itself without manual intervention and without disrupting the flow of data. If something interferes with communication between two devices, the network automatically reroutes the message using other devices to provide an alternate path.

In the water industry, the first clear benefit of this technology is elimination of the need for power and host communications wiring. Water plants and networks can integrate wireless

pH and conductivity analysers and sensors easily and cost-effectively regardless of the wiring access challenges or remoteness of the installation. On average, this eliminates tens of thousands of dollars in wiring costs as well as the cost and complexity of installation. In fact, no site survey is required and wireless transmitters can be installed and fully operational in a matter of minutes.

Equally important, these wireless instruments transmit their data directly into the plant's host DCS or PLC data centre for easy process monitoring, greatly reducing the need for trips into the field and the potential for human error. The HART devices also transmit a wide range of diagnostics through WirelessHART. Wireless pH Model 6081-P can provide data such as slope, offset, and glass and reference impedances which help identify probe problems before a failure to reduce maintenance costs and unnecessary trips to the field.

The water industry today is being asked to do more with less and plants are looking for new and better ways to extract more productivity from their operations and reduce costs. While water professionals may often have trouble justifying the investment in new technology for their plants, the clear cost reductions and improvements in efficiency that wireless affords make such justification a much simpler task.



**Rosemount® Analytical's wireless field instrument solutions include both conductivity and pH/ORP measurement. Shown here are the wireless pH and ORP transmitter 6081-P and the 6081-C, a wireless conductivity transmitter.**