

Product Consistency Improved Using Rosemount™ 2160 Wireless Level Switch For Interface Detection

RESULTS

- Elimination of operator risk in areas with potential hazardous conditions
- Improved batch consistency and throughput
- Cost savings due to the elimination of scrapped batches



APPLICATION

Water/acid interface detection

CUSTOMER

Chemical company, USA

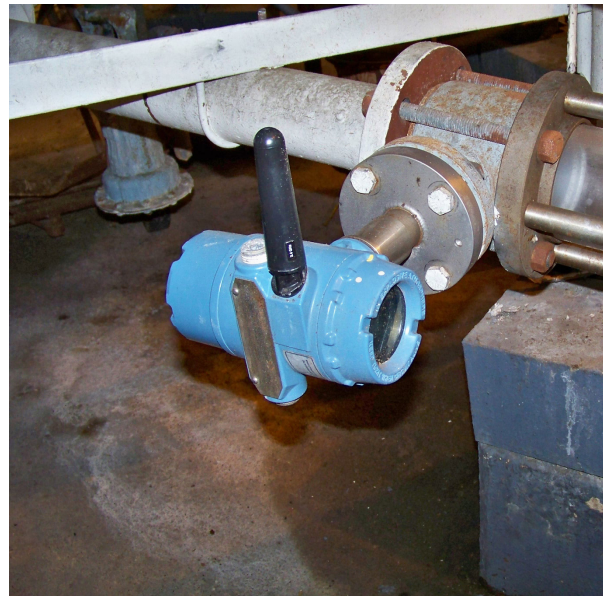
CHALLENGE

The customer supplies customized chemical solutions to manufacturers in a wide variety of industries. A solution was needed to detect the level and interface of acid/water in the acid decant tank. There is a layer of water on the top of the acid in the tank for stability purposes, but when the acid is decanted into containers, any water included in the acid could result in a scrapped batch. The emptying had to be stopped before the water was introduced into the container. Top down radar was unsuitable because the microwave signal could not pass through the water layer on top of the acid. They also looked at magnetostrictive devices but these were complex to configure and their flexibility in different fluids was not good.

Operators were therefore tasked with observing the visual indication of the phase change/interface through a site glass in a pipe spool piece. When the interface was observed by the operators, they radioed the control room to turn off a valve to stop decanting into the container. However, this resulted in a huge variation in batch consistency because some operators were more vigilant than others.

The customer wanted to eliminate operator interaction to increase personnel safety and allow staff to concentrate on other tasks. They also required accurate indication of the acid/water interface to retain batch consistency, but needed a method that would be able to measure through the layer of water on top of the acid.

“Since installing the Rosemount 2160, product quality has improved and throughput is more consistent throughout.”



Rosemount 2160 Wireless Vibrating Fork Level Switch is installed in the acid tank

SOLUTION

There was an existing wireless network on the site so a wireless device requiring minimal installation was ideal for the application.

A Rosemount 2160 Wireless Vibrating Fork Level Switch was installed in the acid tank. The frequency of the forks changed depending on whether the forks were in the acid or water and this frequency change gave a reliable indication of the phase change from acid to water. The wetted material options - in this case Alloy C-276 - solved any concerns regarding potential acid corrosion to the device.

The result was that product quality improved and throughput is more consistent throughout. Most importantly, eliminating human intervention in areas with health and safety hazards increased the safety of the plant. Cost savings were also made due to the elimination of scrapped batches, and because the Rosemount 2160 is a wireless device, the installation was quick and easy.

The customer is very happy with the result and is now equipping a second tank using the same solution.



Rosemount 2160 Wireless Vibrating Fork Level Switch

RESOURCES

Rosemount 2160 Wireless Vibrating Fork Level Switch

www2.emersonprocess.com/en-us/brands/rosemount/level/2100-series-level-switches/2160-level-switches/pages/index.aspx

Emerson Process Management Chemical Industry

www2.emersonprocess.com/en-us/industries/chemical/pages/index.aspx

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