

Emerson's Smart Wireless Technology Enables Online Filter Monitoring to Avoid Downtime at INEOS Köln GmbH

BENEFITS

- Wireless transmitters provide cost-effective measurements where wired devices would have been difficult to install
- Wireless differential pressure transmitters remove need for manual checks
- Filters blockages identified earlier ensuring quality of end product
- Scheduled cleaning work minimizes cost and disruption



CHALLENGE

INEOS Köln GmbH located in Cologne, Germany, “blows” polyethylene pellets through transportation tubes using compressed air. The incoming air is filtered to prevent any pollution of final product. The filters become blocked over time and lose their efficiency, which in turn affects the quality of the end product. Liquid columns (U-tube) installed across the filter indicating the differential pressure show when filters are becoming blocked, but identifying this early was depended on the operator making his rounds at the moment the blockage was becoming noticeable.

INEOS wanted to automate the process using online differential pressure meters with predetermined set points indicating when the filter is becoming blocked. However, the filters are very hard to reach and subsequently the high cost of installing cabling to connect the devices was prohibitive. Also, installing wired transmitters could have meant lengthy installation times, something that was not possible with INEOS' production schedule.

SOLUTION

Line-of-sight wireless solutions could not provide the reliability of connection or the robustness INEOS required. The transmitters are positioned in a very dense working environment with many metal obstructions that can cause interference. There is also a large amount of moving equipment that could cause temporary loss of signal for line-of-sight wireless solutions.

“We are currently testing Smart Wireless at eight filters in our logistic area. The filters are very hard to reach and the high cost of installing cabling prevented us from installing the online condition monitoring points we wanted.”

Frank Mehlkopf
Maintenance Engineer, INEOS Köln GmbH

Eight Rosemount® 3051S DP wireless transmitters were installed as well as a single Emerson Smart Wireless Gateway. The eight wireless transmitters send the pressure data back to the INEOS control system where the condition of the filters can be constantly monitored. The transmitters are positioned up to 150 meters from the gateway. Emerson's AMS® Suite predictive maintenance software is used to manage the new Smart Wireless devices, enabling the technicians to configure the devices, run diagnostic checks and monitor alarms and alerts.

RESULTS

Wireless has removed the need for time consuming manually checking and recording the results previously undertaken daily. Using Smart Wireless differential pressure meters it is now possible to closely monitor the condition of the filters online and ensure availability. This enables INEOS to clean the filters on a predictive basis, cleaning them before they become blocked and lose too much efficiency. In addition the maintenance team can now schedule the cleaning work at a time that will minimize the cost and disruption caused. The wireless network has been up and running without any problems for eight months. INEOS intends to further expand the wireless installation with the introduction of vibration monitoring.

“One of the main attractions of Smart Wireless is the ease in which you can expand the network, adding additional transmitters without having to add additional gateways.”

Frank Mehlkopf

Maintenance Engineer, INEOS Köln GmbH



Eight Rosemount 3051S DP wireless transmitters were installed at the INEOS plant in Cologne.

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