

# Petrochemical manufacturer improves ease of use with radar technology

## Endress+Hauser's Micropilot FMR51 provides solution to prevent false alarms and overfills

### Benefits at a Glance

- Reduce overfill risk
- Prevent false alarms
- Ensure plant safety and efficiency
- Fast and easy commissioning and configuration
- Eliminate time-consuming manual measurement



**Summary:** Control system engineers and SIS team leads at petrochemical companies each have responsibility to ensure efficiency, safety and accuracy in processes. Although, they each have different roles, both groups are affected when a challenge or issue emerges.

Recently, a large petrochemical manufacturer had an issue with its radar level instruments not properly communicating with its control system. From a control system perspective, this of course was a concern because these communications are key to the process. From a safety and field maintenance perspective, it was critical to find a solution because this communication issue could result in unnecessary labor expenses and open the possibilities of tank overfills.

Endress+Hauser's Micropilot FMR51 was installed on two of the petrochemical manufacturer's tanks, and both level instruments were easily configured and commissioned remotely. The instruments are now communicating with the control system properly. All challenges have been addressed and there are no longer concerns from either perspective.

**Challenge:** The petrochemical manufacturer has many tanks filled with various liquids at its facility. The company uses radar level instruments to measure the media and liquids inside the tanks. The company started to experience challenges using its previously installed radar technology on its water-cooling tank and its sump tank. The radar level instruments

were not communicating properly to the control system, resulting in 1,000+ false alarms and firmware update alerts per day. These excessive alarms and alerts were overwhelming the control system and hindering operators' efforts to view and act upon real alarms in a timely manner.

These excessive alarms left operators with the difficult choice to manage every alarm each day, manually turn these alarms off or hide them in the background so the control system would not see them. They decided to turn the alarms off, but to ensure safety it was necessary to then take measurements manually.

When the alarms were turned off, plant personnel lost visibility of the levels in the tanks and risked the potential of an overflow. This forced operators to go out to each tank daily to take a measurement at the level instruments.

Depending on the measurement readings, the team lead would have to drain the tank, then run the radar to see if any levels or obstructions were detected. If a measurement reading came back, they would use a handheld communicator to map out the tanks to find the obstructions or reasons why the radar measurement signaled a level with the tank drained. Draining the tank was time consuming and using a handheld communicator did not work well for tank mapping.

They needed an easier and more efficient way to manage the level of their tanks.

**Solution details:** The petrochemical company contacted Endress+Hauser's sales and service partner, Vector Controls and Automation Group, to explain their challenges. The Vector team recommended the Micropilot FMR51 for the application. The team explained Endress+Hauser puts all instruments through live tests to ensure compatibility with DCS/PLC platforms, and showed how this is important for seamless communications, in this case via Foundation Fieldbus, instead of 4-20 mA.



Field Xpert SMT70

The FMR51 was shipped and installed. Andy Nall from Vector Controls demonstrated how easy mapping, configuration and set up could be accomplished when using Endress+Hauser's Field Xpert SMT70, a tablet PC platform with a full screen display. Nall also walked plant personnel through a step-by-step setup Wizard to commission and configure the radar, a very simple and straight forward procedure.

**Results:** The communication challenges to the control system have been resolved since demonstrating the SMT70 and installing the FMR51. This eliminated the time-consuming manual measurement and tank mapping, reduced the risk of overfills and ensured plant safety.

The control system engineer and SIS team lead were impressed with how easy it was to configure the device type manager (DTM) software for communication with their existing control system. Nall was able to load the DTMs on the control system, which allowed them to configure the radar instrument remotely. They were able to easily configure and set up the instrument right from their computer, in their shop.

And for mapping out the tanks, there was no need for the small handheld communicator anymore. Using the SMT70 and the control system for mapping saved between one and four hours depending on the level instruments, their location and the application. This was particularly important due to the location of the level instrument, which required man lifts for access.

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