

Hesse Lignal Improves Process Control with Non-Contacting Radar

RESULTS

- Increased production throughput
- Improved environmental safety
- Improved product quality and consistency



APPLICATION

Production tank with liquid dissolver

APPLICATION CHARACTERISTICS

6.6 ft (2 m) tank with agitator, turbulent surface, condensate, vapor and low dielectric fluid. Ambient pressure and 212 °F (100 °C).

Rosemount 5402 Non-Contacting Radar sees past vapor and condensation and provides continuous level measurement in a dissolver tank with an agitator.

CUSTOMER



Hesse GmbH & Co. KG 59075 Hamm, Germany

Since 1910, the Hesse-Lignal group has been producing interior lacquers and

stains for industrial manufacturers and carpentry companies. Known for their quality, they are one of the three largest manufacturers of lacquers and stains in Europe and the market leader in Germany.

Their state of the art manufacturing plants allow for safe and easy processing of approximately 40,000 innovative recipes, equaling more than 100 tons of lacquers and stains daily.

Their extensive range of environmentally-minded products include solvent free systems, aqueous systems and a line of products produced solely from naturally renewable resources.

CHALLENGE

Hesse Lignal was using vibrating forks for high and low level alarms in their liquid dissolver tank, but they did not have a device to continuously track the level in their tank. Without a continuous level measurement, they were lacking continuous control of their process. They could not meter each component as it was added. This was making it hard for them to utilize their tank efficiently, which was hampering their production and resulting in inconsistent quality, as it was affecting the overall proportions of their product mixture.



Rosemount 5402 Non-Contacting Radar with the process seal antenna installed in a 2-in. nozzle allowed for readings despite vapors and condensate.

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The dissolver tank was a short 6.6 ft (2 m) vertical tank with a 2-in. (5 cm) nozzle. The tank also contained an agitator to mix the products. Agitators can affect level readings because they make the surface turbulent and therefore difficult to read. Additionally, agitators make a contacting level device a poor option and the blades themselves can interfere with the level readings. The fluid had a low dielectric and there were vapors and the potential for condensation.

Due to the physical set-up of the tank and the process conditions, finding a continuous level device to meet the application challenges would take special consideration.

SOLUTION

Hesse Lignal needed a continuous measurement. Since the process had vapors and the tank had agitators, non-contacting radar was the optimal choice as there is nothing to extend into the process and radar is not affected by vapors. Since high frequency radar has a smaller beam width, it was needed for installation into the 2-in. (5 cm) nozzle. The process seal antenna reduces the impact of condensation.

The combination of low dielectric fluid and turbulence created a surface with minimum signal reflections for the radar transmitter. But the Rosemount 5400 was able to provide a continuous level measurement because of its high signal strength.

The Radar Master software, which is used to configure the Rosemount 5400 allowed for registration of the location for the agitators so they would not interfere with the level readings. Non-contacting radar made level readings easy, even though there were agitators in the process.

Since the tank is only 6.6 ft (2 m) tall, having a continuous level measurement also gave the customer peace of mind since they no longer had to wait for a high level alarm to know where the level in the tank was. Instead they could monitor the tank level throughout the process.

The Rosemount 5402 Non-Contacting Radar with the process seal antenna made it possible for Hesse Lignal to have continuous control of their process, resulting in better product quality and increased production in addition to increasing the environmental safety.



Rosemount 5402 non-contacting radar with the process seal antenna.

RESOURCES

Solutions for the Chemical Industry from Emerson Process Management

More Information on the Rosemount 5400 Radar Level Transmitter

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