

Float Gauge Maintenance Issues Solved with Non-Contacting Radar

RESULTS

- Eliminated maintenance issues due to sticking
- Facilitated change from manual to automatic control
- Saved start-up time

APPLICATION

Buffer Tank

Application Characteristics: Viscous fluid with vapors that leave a sticky coating; some turbulence

CUSTOMER

Casco Adhesives in Kristinehamn, Sweden

CHALLENGE

Casco Adhesives, a chemical company in central Sweden, manufactures resins for wooden beams, floors, furniture and wet strengthening paper bags. Resin is a formaldehyde based, viscous, and sticky product that tends to coat and solidify on any surface it contacts.

The process takes many steps, including batch reactors, cooling tanks and buffer tanks, before shipping. This application refers to the buffer tanks where the resin is slowly agitated before shipping. Even though the agitation is moderate, turbulence is generated since the agitator blades are large and angled.

Casco previously used a floating device, along with visual inspection, for this application. The float required frequent maintenance due to the sticky coating. Because of the characteristics of the product, a non-contacting technology was preferred. When upgrading to automatic process control, they chose radar.

SOLUTION

The problem was solved by installing a Rosemount 5400 Radar Level Transmitter with 6-in. cone antenna and 4-20 mA HART output.

Success in this application is due to the outstanding echo sensitivity of the level transmitter. Its Dual Port technology enables greater safety margins in changing measurement conditions, increasing reliability and process availability. Dual Port technology supplies more power to the fluid surface, resulting in a strong signal, even in turbulent conditions.



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Inside the tank with the agitator and baffles to generate turbulence and the mechanical float gauge on the right.

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The basic configuration wizard automatically determined the true echo and eliminated the false ones by initiating the “Measure & Learn” function inside the Rosemount 5400.

Rosemount Radar Master streamlined configuration and start-up. This software enables the device to ignore undesired echoes, such as the agitator blade, and to measure only the level peak.

The project manager, Johnny Lundberg, is very happy with the performance of the Rosemount 5400.

RESOURCES

Rosemount 5400

<http://www.emersonprocess.com/rosemount/products/level/m5400.html>

Emerson Process Management’s Chemical Industry Page

<http://www.emersonprocess.com/solutions/chemical/>

The outstanding echo sensitivity is the reason for success in this application.

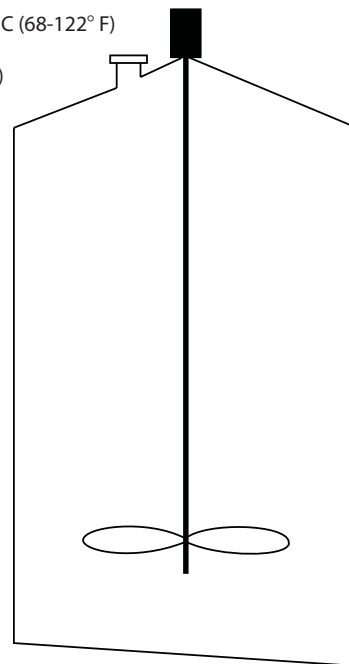
Details

Height: 7 m (23 ft.)

Temperature: 20-50° C (68-122° F)

Pressure: Ambient

Nozzle: 6-in. (DN 150)



The radar gauge was mounted directly above the agitator blades. There were no problems with false echoes from the blades.

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