

Semiconductor Manufacturer Improves Safety and Tank Measurement Reliability with Rosemount 5408 Non-Contacting Radar

Results

- Reduced man hours as manual measurement is no longer needed
- Improved safety
- Accurate measurement management



Application

Liquid chemical storage tank level measurement

Customer

A semiconductor manufacturing plant in Jiangsu, China

Challenge

The customer has several storage tanks onsite with proprietary liquid chemical mixtures in them. The chemicals are corrosive and toxic, some of the tanks develop vapors, but those are contained within the tank. The chemicals are predominantly acids, alkalis and other solvent type chemicals used for etching and cleaning of silicon wafers. To measure liquid levels in each tank they used either displacer floats, dip tape or just a visual inspection of the tank level. The process temperature of the liquid chemicals is at 122 °F (50 °C), stored in a tank that's 6.5 ft. (2 meters) tall.

None of these manual testing methods are very safe for the operator testing the levels, nor are they accurate. The customer needed a safer and more reliable way to measure tank levels.

Solution

The customer selected the Emerson Rosemount™ 5408 Non-Contacting Radar Level Transmitter with process seal antenna due to its high performance and corrosion resistance. The Rosemount 5408 is based on the principle of frequency modulation continuous wave technology (FMCW), which maximizes the strength of the radar signal, maintaining a robust measurement reading. Through the internal EMC design and surge isolation, noise-free output can be achieved, and the unique radar wave path protects the signal from external interference. The measurement will not be affected by factors such as medium density, temperature, and pressure.

“Without the need for manual level testing, safety was greatly improved.”



Rosemount 5408 Level Transmitter - Non-Contacting Radar

After first trying out one device, the customer purchased and installed 40 radar devices; one for each of the 40 tanks at the plant, each containing a number of different chemicals.

Since manual level measurements are no longer required, risk to personnel from exposure to hazardous media is reduced and man hours are reduced. The new digital solution has proved to be more accurate and reliable than mechanical displacer devices, making processes more efficient.

Resources

Emerson Automation Solutions Industries
[Emerson.com/Chemical](https://www.emerson.com/Chemical)

Rosemount 5408 Level Transmitter - Non-Contacting Radar
[Emerson.com/Rosemount5408](https://www.emerson.com/Rosemount5408)

***The Rosemount 5408 provides
noise-free measurements
regardless of medium,
temperature or density.***



Rosemount 5408 installed on chemical storage tank

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