# Optimizing level measurement in milk tanks

## FMR62 prevents losses in the reception of milk tanks

### Get more efficient and secure process

Micropilot FMR62, ideal for applications with hygienic requirements, it is the first 80GHz radar instrument developed according to IEC 61508. Thanks to Heartbeat Technology, Micropilot FMR62 makes possible an easy diagnostic integration, verification and monitoring functions into your control system.

Milk reception tanks

**From the measurement of hydrostatic level to radar measurement: A hygienic and non-contact solution that guarantees maximum reliability in the measurement due to a shorter wavelength, a higher frequency and a small beam angle.**

### Context and customer's needs

One of the most important dairy producers in Central America needs to reduce product losses (leakages) caused by the limitations of the measurement system used (hydrostatic), for which it is necessary to have better control.

As a result, the automation unit promotes the improvement of the level measurement system in the reception tanks, considering that the hydrostatic measurement had variations due to changes in product density and the intrinsic error associated with the pressure sensor. These losses could reach up to 6 thousand liters of milk per batch, which results in a decompensation in the mass balance of the process and of course in large economic losses.

### Our Solution: 80 GHz non-contact radar

The conditions of this application were directly affected by the dimensions of the tank, presence of foam, agitation and product type. At first, the use of another radar was not appropriate, due to the fact, 6 and 26 Ghz are using a bigger beam angle; this means the signal of the radar will be reflected by the walls of the tank. Therefore, the use of the Micropilot FMR62 (80 Ghz) with a wavelength (4 mm) and a beam angle reduced to only 3 degrees avoids the contact with the walls, obtaining an efficient level measurement and high reliability.

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## Advantages of 80GHz technology

- Reliable measurement due to improved focusing and a smaller beam angle, particularly in tanks with many baffles.
- Compact design facilitates installation in small tanks and with small process connections starting from G¾".
- Increased accuracy up to ±1mm (0.04inch).
- Large measuring range up to 125m (410ft).

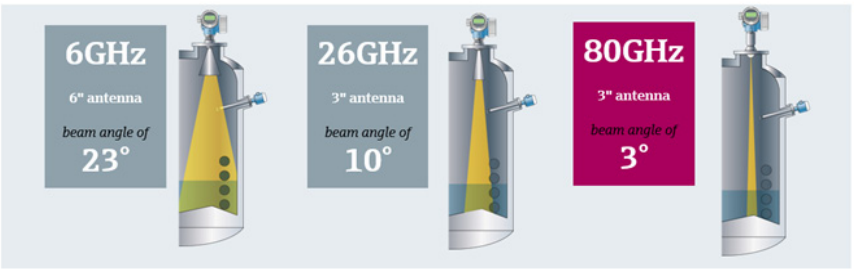
## Advantages of the small, focused signal beam of 80GHz

- Reduced tank wall effects.
- Less interference from tank obstacles.
- Allows installations in tall nozzles without antenna extension.
- Installations through ball valves.
- Longer measuring ranges and media with lower dielectric constant values can be measured as less energy is lost at obstacles.
- The possibility of installation in tanks or silos with complex geometries, tank obstacles and nozzles.
- Easier commissioning
- Reliable, stable measurement across the entire measuring range due to improved focus of the radar signal and dynamic algorithms.
- Increased accuracy of ±1mm (0.040inch) due to improved signal focus and dynamic self-learning algorithms.
- Reduced maintenance due to innovative antenna design that is resistant to sticky buildup and condensation.
- Highest reliability and measurement

Micropilot FMR62

## This results in

Small beam angle and process connections


**Do you want to see the FMR62 in augmented reality?**
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3D

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