

Non-Contacting Radar with Smart Echo Supervision™ Signal Processing

Discerning Technology for Difficult Applications

Smart Echo Supervision is an innovative solution for difficult level measurement applications.

Smart Echo Supervision addresses concerns over nozzle placement, beam angles, and obstructions that historically have created challenges in many applications.

This innovative technology used in the Rosemount Non-Contacting Radar, tracks all echoes including those from obstructions in the vessel and distinguishes them from the real product surface echo. This ensures the true product level is reliably and accurately reported.



Rosemount™ 1208, 1408, 3408 and 5408
Level Transmitter - Non-Contacting Radar

What is the benefit of Smart Echo Supervision?

- If there is an existing nozzle located with an entirely unobstructed view to the product surface, use it! This is a best practice.
- It is rarely the case that a nozzle is ideally situated. Some manufacturers:
 - Suggest narrow radar beam width is required to avoid echoes from obstructions.
 - Suggest installation of deflector plates above obstructions when the mounting nozzle is located above them.
 - Use False Signal Suppression to map obstructions in the vessel when neither of the previous options is effective.
 - Suggest relocating the mounting nozzle as a last resort.
- Smart Echo Supervision reduces and often eliminates the need for any type of intervention at all.
- When false echoes do require intervention, this can be done easily by way of Emerson's graphical user interface by simply right-clicking the echo to suppress it.
 - No deflector plates required.
 - No need to run False Signal Suppression.
 - No need to relocate the nozzle.

HOW SMART ECHO SUPERVISION WORKS

We have completed comprehensive testing of our technology versus other manufacturers and the results prove this innovative technology provides accurate measurement in difficult applications.

Test Conditions

- 18' tank
- 2 tiers of agitators running at 80 rpm
- Oil dc – 2.2

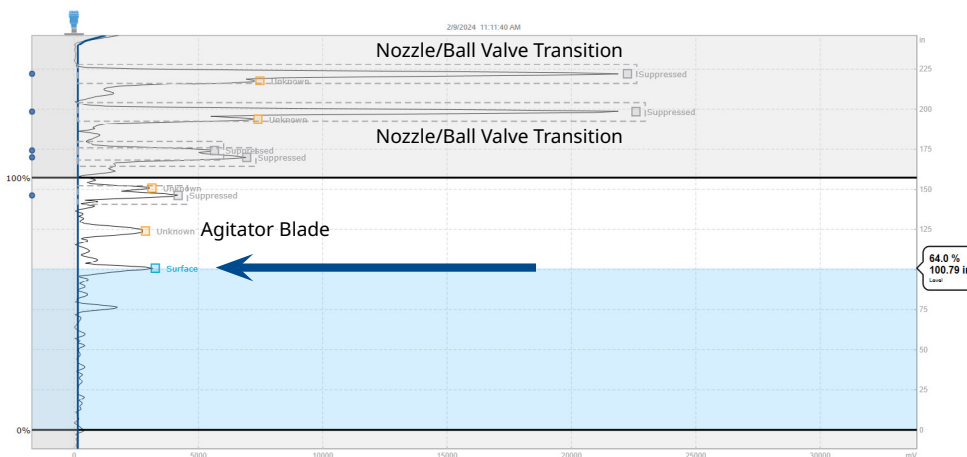
Long & disjointed/ball valve combination

- Combined length of 70" (well outside recommended best practices).
- Diameter change from 4" to 3" at ball valve.
- Located directly above the agitators.



THE RESULTS ARE IN!

- Smart Echo Supervision is a powerful signal processing algorithm.
- Provides vigilant awareness of multiple echoes, monitoring their behavior over time.



Smart Echo Supervision has automatically identified all the echoes. The surface echo has been clearly identified and the remaining echoes have been labeled as "unknown" or "suppressed".

An extremely challenging application

- Challenging nozzle configuration attenuates radar signal before it even enters the vessel.
- Product with very low reflectivity (dielectric constant).
- Agitator blades located directly below the mounting nozzle.

Device automatically has identified ten (10) total echoes

- Three (3) are suppressed.
- Seven (7) are in play.
- While the surface echo peak is very small, Smart Echo Supervision has correctly identified it and is reliably tracking it!

To learn more about the Rosemount Non-Contacting Radar and Smart Echo Supervision, contact your local Emerson sales representative or us at local.events@emerson.com.

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