VALUE PROPOSAL

Improve Quality and Reduce Operations Costs with Valuable Guided Wave Radar Diagnostics

POTENTIAL RESULTS
• Improve process quality and control
• Increase throughput
• Decrease operations costs
• Reduce the risk of spills

APPLICATION
Monitor changing surface conditions

CHALLENGE
In some processes it is critical to monitor for changing surface conditions. Mixing of different fluids and temperature variation are common in batch processes. If unwanted foam, boiling, or emulsions occurs, the batch might be spoiled. In addition, surface changes that go unnoticed could result in overfilling and further problems downstream.

When batch processes require both level and surface condition monitoring, plant personnel may utilize multiple measurement methods to monitor these conditions. This requires additional maintenance and additional process connections. If a vessel is limited to only one process connection, plant personnel may resort to manual or visual methods of monitoring surface conditions. These methods can be both time consuming and unreliable.

Unwanted surface conditions can lead to several negative business results. When these conditions go unnoticed, the result is poor product quality and potential product waste or rework. If the batch is ruined or needs further processing, additional time and resources are needed thereby increasing operations costs and decreasing plant throughput. Significant foaming can also overflow the tank releasing process materials into the environment.

SOLUTION
To help monitor changing surface conditions, the Rosemount 5300 Guided Wave Radar can be utilized with Signal Quality Metrics. Guided Wave Radar technology reliably measures level in changing surface conditions and it is minimally impacted by the presence of foam or boiling. As a feature of the PlantWeb Diagnostic Suite, the Rosemount 5300 calculates Signal Quality and outputs a value from 0 to 10.

For more information:
www.rosemount.com

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A value of 10 indicates a strong signal and no process noise. A significant change in the Signal Quality value might indicate changing surface conditions. If foam is present, the Signal Quality would drop in value. Level and Signal Quality can be sent to the control room as process variables and monitored over time.

Figure 2. This tank plot demonstrates a strong surface signal with a corresponding high signal quality value.

Figure 3. Due to foam on the surface, this tank plot demonstrates a weakened surface signal with corresponding reduced signal quality value.
Customers with batch processes subject to changing surface conditions can experience a variety of positive outcomes with the unique capabilities of the Rosemount 5300. They are able to continuously monitor level, while getting the added benefits of surface monitoring. The signal quality diagnostics can help identify changing surface conditions, which in turn helps maintain high quality batches and prevents waste or rework. By maintaining good quality, customers are able to increase throughput and decrease operations costs. Lastly, the ability to quickly recognize an unwanted surface change reduces the risk of tank overfills caused by these conditions.

**RESOURCES**

**Rosemount 5300 Series Guided Wave Radar**
http://www.emersonprocess.com/rosemount/products/level/m5300b.html