

New anti-condensation solution for ultrasonic level

Patented solution now on your LST200



New technology helps ultrasonic level to break traditional limits and get into a broader market.

Measurement made easy

LST200 Ultrasonic level transmitter

Summary

Ultrasonic, as one of the most mature technology in measuring level, has been widely used in different areas like water/waste water, chemical, food and beverage, etc. It has big advantages like easy setup, low effort on maintenance, cost-competitive, which makes it even more important in the new applications, like underground level measurement for smart city, open channel flow for flow measurement, etc.

However, like all the other technologies, there is also limitation for ultrasonic measurement and among all, the condensation issue on the sensor surface is the most famous one especially in water and wastewater industries.

Traditional way like “shaking” the sensor periodically, applying oil based material on the surface, or relying on the hydrophobicity of some material (like PVDF) are either with much higher cost or unsatisfactory performance.

With the new progress of the new material technology, ABB finds the opportunity to combine it with its new developed ultrasonic level transmitter.

Today, the patented new generation active surface technology is available on your LST200 which is essentially designed for water and waste water treatment.



- 01. Condensation on the sensor surface
- 02. Periodical failure as water accumulate and drop off
- 03. Lotus Effect
- 04. Same amount of water on traditional PVDF (left) hydrophobic surface and ABB patented active surface (right)
- 05.

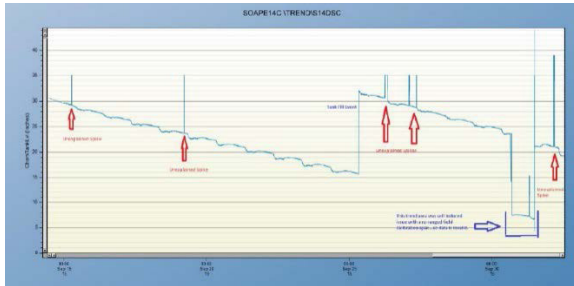
Challenges

Ultrasonic level is a good partner of water applications and in some of the applications with high humidity and big temperature change, there is condensation on the sensor surface, which in some cases, ends up with big drops or even a film layer. As a result, the power of the ultrasound will be weakened and, as the water accumulate, the device will cannot "see" the real level.

It is more frequently found inside some tanks in the morning of summer time or in some cold areas with hot water process.



01



02

Solution

The concept of 'Lotus Effect' is introduced in this case. By using the new generation active surface technology, the liquid will drop off before it gets into big drops.

Experiments show that the performance of the latest active surface on LST200 is better than the traditional PVDF and PTFE surface

Conclusions

This solution is the most straightforward and easiest solution for our customers.

By overcoming this traditional limit of surface condensation, and with the latest "GAP" ultra-stable algorithm, new LST200 will be more than equal to the applications in water and wastewater industry.



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