

LST300 compact ultrasonic level transmitter Adds value when replacing failed instruments

The obvious choice for replacements of failed instruments in harsh weather conditions

Measurement made easy



The application

A 10,000 m³ drinking water reservoir in the Baoshan District of Shanghai. This reservoir supplies clean water to the neighborhood so reliable measurement is critical. In case of an instrument failure, pumps keep running and the reservoir overflows. This wastes water and can result in water supply being cut off to the neighborhood.

The challenges

The customer prefers an integrated, compact instrument. The biggest challenge is that compact instruments don't typically perform well in all weather conditions found here. In winter the instrument needs to run as low as -10 °C, while in summer going up to 60 °C in direct sunlight. Most instruments fail after running at their temperature limits for long periods of time.

Protection against the environment is a big consideration too. Traditionally, in some applications such as this case, a compact unit must be placed in another enclosure. With LST300 the extra enclosure is no longer needed, as it is approved to work outside even in heavy rain and any other conditions.

The final challenge when replacing a 4-wire unit, is the potential need of wiring change. LST300 has a unique wiring strategy, which allows you to use the same 4 wires already available for installation, even though it is a 2-wire instrument.

LST300

Adds value when replacing failed instruments

What LST300 offers

Features	LST300	Competitor instruments	Benefits
Weather proof	IP66/67	IP65	LST300 can be installed outside without protection against sun and rain. The old product from a competitor needed an external housing to protect against the weather, and still was not sealing well resulting in dust in the enclosure. The bad seal likely caused the deteriorating performance and eventual failure. LST300 does not have this problem.
Low power, 2-wire installation	Loop powered	4-wire instrument	LST300 can be installed using only 2 wires to save installation cost and reduce power consumption. LST300 performs better using 2-wire power than the old instrument that requires 4 wires for additional power.
Easy to retrofit 4-wire installations	Easy wiring terminal		LST300 can easily retrofit an old 4-wire device by using all the wires already in the field. LST300 does not require a change of wiring and control system port to move to a loop powered device.
Easy configuration	Graphic HMI with Easy Setup guide	2-button system	LST300 is much easier to configure with access to all the important functions. Other instruments have outmoded and hard-to-use 2-button setup systems where diagnostics and advanced functions are impossible.
Easy installation	2" thread	2" thread	LST300 uses a standard 2" thread. This ensures replacement of old instruments can be done without any mechanical changes.



The result

The LST300 replaced an old competitor unit within 10 minutes. The unique wiring terminal made replacing a 4-wire instrument a breeze, even though LST300 is a 2-wire instrument. A quick verification of the old instrument's configuration was easily transferred to the LST300. Both instruments use a 2" thread making device mounting a simple task.

The LST300 worked immediately, reporting the correct level to the SCADA. No additional setup was needed, and no diagnostics needed to be checked. It just worked.

The LST300 measures reliably. It survived one of the hottest weeks in Shanghai history reaching temperature of 40 °C at humidity above 90 %. Following this heat wave, it survived the heavy rain of the typhoon season without interruption. In the final test of winter, it also functioned well in temperatures below freezing, the first instrument to work reliably under such a wide range of extreme weather conditions.

This application is only one example of how changing to LST300 saved time, reduced downtime, and added additional value to the operators for many years to come.

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