Level Measurement – LLT100 for the most demanding level measurements in the oil and gas industry

LLT100 Laser Level Transmitter
is the solution for sump tanks
in the Oil & Gas industry

Measurement made easy

Introduction
The demands on level measurement for the oil and gas industry is a constant challenge.

At ABB, we understand that customers need a solution that is reliable and maintenance-free.

The conditions in the field and in critical processes require instruments with stability in their measurement and without variations due to external or process factors. ABB’s tier portfolio is not only complete, but also backed by years of manufacturing and experience in the oil and gas industry.

ABB’s laser level transmitter LLT100 is specifically made for industrial applications and harsh environments. It provides continuous, non-contact level measurement capabilities for process automation and inventory management. The distinct capabilities of laser level measurement, when tailored for industrial applications, lead to significant benefits for the oil & gas industry.

Challenge
In this application, the client needed to measure the level of a sump tank buried underground and with no access to it.

The sump contains liquids, gasses and foam, as well as variations in temperature and pressure conditions. The fluid is a mix of water, crude oil and chemicals. In this case, this mix often had a very low dielectric constant, so the false echoes were a problem.

The client had installed a guided radar and an open-air radar, but in the face of changes in dielectric constants and process conditions, the equipment presented erroneous measurements due to false echoes.

Because accurate measurement is so important, the client used both radar and laser technologies for an entire month.
The ABB Solution

ABB Laser technology has serious advantages over other industry operating principles.

By not needing a specific dielectric constant of the product, or the presence of "echoes" for a correct measurement, the ABB Laser (LLT100) is the indicated solution for the most demanding applications.

The laser avoids the overflow of the sump by using two redundant sensors, one for control and other for safety. Why is this important? If the tank overflows, the customer must then hire a special waste cleaning service, which can cost as much as $6,000.00 USD. This happened a few times with this customer, costing them thousands of dollars.

Additionally, the laser does not require start-up on site. There is no need to empty and fill the vessel at the installation as with other measurement techniques relying on a wider beam. Those technologies require echo mapping inside of the vessel at the commissioning phase. Laser levels provide users with another way to perform non-contact level measurement with an easy setup not affected by internal structures with this narrow beam. It makes measurement easy.

Conclusion

The application was solved successfully. The customer changed the radars out for ABB LLT100 lasers because of stability and reliability. The maintenance-free benefit of the LLT100 was another selling point.

It is important to mention that with ABB lasers, we can measure processes that until now had a high cost or were not possible.

For more information

To learn more about how ABB’s solutions can help you realize benefits, visit our website www.abb.com or contact your ABB account manager.