

Fit-for-Purpose Level Measurement in Wastewater Plant

Benefits at a Glance

- Robust, overload-resistant high purity ceramic sensor for high durability
- Climate proofed sensor due to potted electronics
- Approved for hazardous areas
- Unaffected by foam or clogging
- GORE-TEX vent filter prevents condensation
- The 4-20 mA span can be field customized to the specific application to maximize resolution



The FMX21 hydrostatic level sensor serves as the solution for FOG and foam application.

Summary: When it comes to level applications, no set of challenges are exactly the same. Therefore, the solutions and technologies should be different and unique as well. Challenges such as condensate, foam, turbulence, obstructions and FOG (Fat Oil Grease) require specific, fit- for-performance solutions rather than a one-size-fits-all approach.

Challenge: Recently, a customer approached TriNova, an Endress+Hauser sales and service

representative in Northeastern USA. The W/WW customer had a thick layer of scum on the surface of their water basin that was latticed with all types of FOG and unknown solids, and they needed a better way to measure the water level. The Electrical and Instrumentation (E&I) Supervisor was set on using an 80 GHz radar unit, due to the advice from another supplier who asserted that 80 GHz was the answer to all the level applications in the plant. But in the world of level measurement, there is no one

technology for all applications. The instrument must be fit-for-purpose for the best results.

Our Solution: The Endress+Hauser level portfolio is deep and wide in its measuring technologies. These include: pressure, hydrostatic pressure, ultrasonic, capacitance, vibronic, guided wave radar, free space radar (6 GHz, 26 GHz, 80 GHz) and radiometric level solutions. Each one has its share of advantages and restrictions as to where it should be applied to enable customer success.

In this situation, the water basin was 20 ft. deep and the layer of scum was prone to cover the entire top layer of the basin and act as a solid layer, not moving with the rising and falling water levels. Therefore, an 80 GHz level transmitter would constantly read the solid layer and not the actual water level.

The TriNova team understood this and recommended a different solution than the previous supplier: hydrostatic level measurement. They knew the hydrostatic level measurement would serve the customer's needs with its reliable and robust level probe, ceramic measuring cell and HART technology.

Results: Installing the FMX21 hydrostatic pressure transmitter has yielded many benefits. As the submerged FMX21 device is not affected by debris or foam collected on the surface, reliable measurement is achieved. With the increased reliability, false alarms and wasted visits to the lift station have been eliminated. Scheduled maintenance intervals have been extended as the sensor works even with material collected on the face. Unlike a metal faced transducer, cleaning of the ceramic face is accomplished using a stiff nylon brush with no resulting damage.

Radar and ultrasonic technology have numerous advantages in the right solution, but in this case the customer needed a device that wouldn't be affected by clogging, foaming or condensation. In this customer application, the FMX21 hydrostatic level sensor was the best, fit-for-purpose solution.

Learn more about our level measurement offerings here: eh.digital/3HUqcGa



Hydrostatic level measurement
Waterpilot FMX21



Robust overload-resistant,
high purity ceramic sensor

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