

Getting out of a sticky level measurement problem with Gill sensors.



It is often surprising what types of materials are encountered in the production of products that would not necessarily be termed 'high-tech' or 'advanced'.

Dental hardware and consumables may not, at first thought, fall in the 'advanced' category, but just because they are not a silicon valley product does not mean they do not use sophisticated materials and processes in their manufacture.

One of the largest manufacturers of professional dental solutions produce a consumable medical varnish that dentists apply to teeth to relieve hypersensitivity, which has a very high viscosity in manufacture. This presents a problem to their plant engineers in being able to reliably measure the level of lacquer in a bulk container.

As the lacquer drops to 25% capacity they require an alert to top-up the container. However, because of the high viscosity and sticky characteristics of the lacquer, the plant engineers had not been able to source a sensor that provides a reliable and repeatable output.

The engineers had been using point-level detection sensors and, although specified as suitable for use with viscous materials, their reliability was affected by the tip of the sensors gumming up and providing a false reading, to such an extent that the customer was using two sensors to try to achieve a trustworthy signal.

Because the fluid is slowly drawn down the container as the manufacturing lines consume the lacquer, the engineers ideally wanted a continuous output level: the most important measurement for them was to know where the low point is before the container empties, halting production.

The linearity and accuracy of the sensor was less important to them than having a sensor that could

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provide a consistently repeatable detection of low levels.

Gill's North American distributor, Everight Position, went to the customer's site to carry out a demonstration of the 7014 Viscous Liquids level sensor. This is a capacitive liquid level sensor with a probe that is immersed in the container providing the continuous level output requested by the engineer.

In a sample of the liquid - that bears a close resemblance to nail varnish - they were able to illustrate the responsiveness of the sensor. They were also able to show clearly that with its smooth FEP coating on the sensor probe and lack of holes and hidden voids, coupled with no moving parts, the sensor remained clean and reliable.

The customer was impressed with the responsiveness and repeatability of the sensor as the level of lacquer dropped. What also impressed was the serviceability of the sensor, requiring only simple cleaning with an alcohol wipe to cleanse the FEP coated probe.

Four sensors were ordered as a result of the demonstration, providing the customer with the measurement reliability they were looking for. As an additional bonus, the sensors purchase price was lower than the two point level switches they replaced.

For more information on the 7014 Viscous Liquids level sensor and how it can help you with your difficult liquid level measurements, visit <https://gillsc.com/products/level-sensors/7014-viscous-liquids-level-sensor/>