VEGAPULS 64 monitors the level in chocolate cream tanks. The perfect melt.

Quality is the top priority for the Italian company. They not only use exclusively high-quality raw materials, but also the best, most advanced technologies and systems available. From the individual mixing phases, to production and packaging of the chocolates or creams, each step is precisely monitored and documented.

The company was looking for a new way to accurately and continuously measure inventory and consumption in its chocolate cream tanks. For its level measurement needs, the Italian chocolate manufacturer has relied on VEGA for almost ten years and is especially satisfied with the good technical support it has received. That's why there are so many VEGA level and pressure sensors deployed throughout the plant. One day the company decided it wanted to reduce or, if possible, completely avoid the routine maintenance of the ultrasonic sensors it has been using. Apart from the maintenance problem, the ultrasonic sensors in one of the tanks often delivered unreliable measuring results, due to the build up of deposits on the sensors or interference caused by the built-in agitator.

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Chocolates are the main focus of the company. For all products, however, only select, high-quality ingredients are used.

During a presentation on site, the technicians of VEGA Italy explained the advantages of the new VEGAPULS 64 radar level sensor. They even completely immersed the sensor in chocolate spread to show that the measured value remained stable despite the contamination. The instrumentation engineers at Socado all agreed: this radar sensor was made for us! Because they had such great trust in VEGA and the new technology, they even decided to forgo any tests or trial measurements. Since they could use the existing process fittings, they were able to install the new level sensor easily without costly modifications. The engineers were already familiar with the operation of the sensors, as VEGAPULS 64 is also a part of the proven plics system. As usual, the display and adjustment module PLICSCOM is used for setting up and operating the devices, as well as displaying the measured values in the sensor head. This means a PC or special software is not required, the PLICSCOM can be simply inserted into the sensor and removed again, without interrupting the power supply.

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The reason VEGAPULS 64 measures reliably even in applications with heavy build up (such as chocolate cream) and in difficult installation situations (in this case agitators), is that it has a considerably narrower beam angle compared to earlier level sensors. Reliable measurement with radar instruments is only possible when the interference signals are not the same size as the level echo. However, this is exactly what happens, when build up forms inside the container. Due to its 80-GHz frequency, VEGAPULS 64 has a more focused beam angle of only 3°. This allows this type of radar sensor to be used even in vessels with internal installations or heavy build up on the walls, because the beam simply passes by such obstacles. VEGAPULS 64 also has a very wide dynamic range. As a result, a much more reliable and stable measurement is possible, particularly with build up and high-fat products such as chocolate cream.

VEGAPULS 64 measures reliably even when faced with viscous build up, in this case chocolate, and difficult installation situations, e.g. caused by agitators.

Meanwhile, VEGAPULS 64 is measuring the level of the liquid chocolate in a large tank 5 meters high. A large agitator with five blades ensures a uniform consistency of the medium. The chocolate mass must have a uniform temperature of about 50° C, so that taste and quality are not adversely affected. Particularly in applications where the process temperature inside the container is higher than the external ambient temperature, condensation and build up on the sensor antenna always have to be expected. When the engineers were designing VEGAPULS 64, it was exactly these process conditions they had in mind. That's why they took special care to optimize the sensitivity of the sensor in the close range. This distance-dependent dynamic adaptation reduces the effects of interference directly in front of the antenna system and at the same time allows a very high signal sensitivity at a greater distance.

The radar level transmitter measures the liquid chocolate in five-meter-high tanks.

The level measurement is carried out over the entire tank height without a blocking distance, i.e. dead band, which is common with ultrasonic sensors. Due to this, the sensor measures with high accuracy at the top as well as at the bottom of the tank. The tank volume can thus be used to the full. And for Socado, it was also very important that the sensor doesn't require maintenance.

The new level sensor is also ideal from a hygienic point of view. For one thing, radar level transmitters lend themselves well for such applications, because they employ contactless measurement, thus ensuring optimal hygienic conditions. And for another, the front-flush, encapsulated antenna is easy to clean and resistant to the extreme conditions of SIP and CIP processes.

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The sensor measures with high accuracy at the top as well as at the bottom of the tank. VEGAPULS 64 does not require any maintenance.

Another interesting feature of the new VEGAPULS 64 is its optional adjustment/operation via Bluetooth. Adjustment is really simple: Insert PLICSCOM into the instrument, download the VEGA Tools app, done! The user can then immediately configure and parameterize his plics sensors from a safe distance with a smartphone or tablet. Display and diagnostic functions are also at the user's disposal.

Conclusion: From the outset it became clear that the main problem – the heavy build up of the chocolate cream was not going to be a problem for the radar sensor. VEGAPULS 64 functioned perfectly right from the start, measuring the level reliably and accurately.

Products

VEGAPULS 64

PLICSCOM

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