



Focus on Quality: Level Measurement in the Ketterer Family Brewery

The per capita consumption of beer has been declining for years, forcing breweries to come up with new business concepts to remain competitive. With this in mind, the Black Forest-based Ketterer family brewery in Hornberg, has developed a winning strategy: an uncompromising focus on high quality beer, lowest possible energy consumption and efficient production processes.

"In order to be successful in this market, we are continually introducing new ideas and investing in new technologies," explains Klaus Vogt, master brewer and plant manager at Ketterer. The company operates very efficiently thanks to investments in modern technology, but still adheres to the classic methods of beer production.



It's been more than 20 years since the company first became aware of VEGA. That was when a level measuring system was installed on a spent grain silo. Over the years, step by step, new measuring points have been added. More than anything else, the demand for increasing hygienic process requirements were the catalyst for the upgrading and extension of measuring equipment in the brewery. All the fermentation and storage tanks were rebuilt, one after the other, to enable them to be cleaned better. Today, VEGA sensors are used in many places across the plant, e.g. in the CIP systems, in the brewing water tanks, in the storage tanks as well as in the fermentation tanks in the brewhouse. The sensors serve as overfill protection, support precise inventory measurement and take over the dosing of mixed beverages as well as the entire process control. Vogt especially appreciates their close proximity to the VEGA factory.



Additional pressure transmitters are used in the CIP tank.

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" We don't keep many instruments or spare parts in stock, so if problems arise and outside help is needed, we just go straight to VEGA."

The 14 large storage vessels, where the different types of beer mature, are equipped with VEGA instruments. For a long time, a non contact radar level sensor - VEGAPULS 63 with hygienic process fitting, was used to provide the level data, dealing with the various internals: spray cleaning heads, a conical tank bottom and pumping lines for mixing shandy. However, the mixed drinks in particular often generate excessive foam, which led to measurement inaccuracies. Due to this situation, the VEGA measurement specialists recommended a VEGAPULS 64, the contactless radar sensor with a transmission frequency of 80 GHz and significantly better focusing. The brewers were very pleased with the new sensor, not only because of the more dependable measured values, but also because of the high accuracy of +/- 2 mm. In general the sensors in the brewery have to withstand a lot, the tanks are mainly cleaned with cold water, but occasionally hot steam is also used. Having well designed hygienic process fittings is also very important. What really counts for Klaus Vogt and brewer Ralf Heizmann, is that the sensors are robust, simple and always function reliably.



View of a VEGAPULS 63 radar level transmitter on one of the maturation vessels.

During the last plant modification, a new buffer tank for mineral water was installed. Here too, a VEGAPULS 64 took over the task of inventory control. Since the water used for brewing is largely responsible for the quality and taste of the beer, the Hornberg brewers have always given it special attention. Many years ago they discovered a new spring in a buried tunnel in the forest above Hornberg. This particularly soft water turned out to be of such high quality that it is now marketed all over Germany as a brand of its own, called "Hornberger Lebensquell" ("Life Source"). In the meantime this spring water has become a second sales mainstay for the family brewery.



A VEGAPULS 64 radar level transmitter performs contents measurement.

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"We still use tanks that do not have any level measuring system, as not every tank can be retrofitted with instrumentation. But what is certain is that all the new tanks will be – and with radar level transmitters from VEGA."

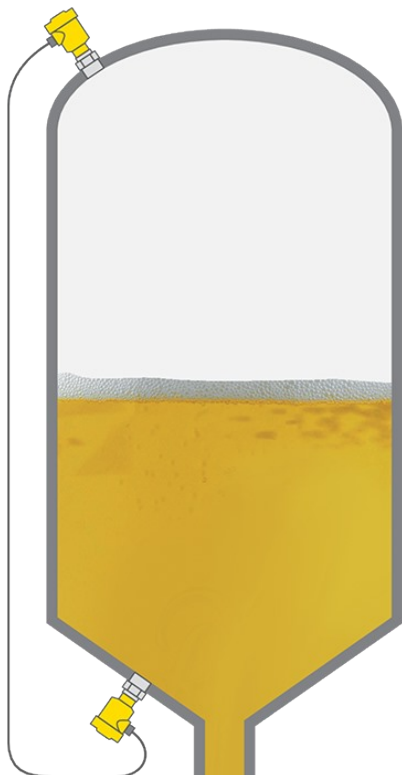


Front façade of the Ketterer brewery in Hornberg.

Applications

Level measurement in the beer tank

During the brewing process, a thick layer of foam is always present in the beer tanks. Therefore usually two pressure transmitters are used for level measurement. One transmitter measures the head pressure, while the other at the bottom measures the total pressure. The level is precisely calculated from the differential between these two pressures. Hygienic process fittings are absolutely necessary for these sensors.



Measuring task
Level measurement
Measuring point
Tank
Measuring range up to
5 m
Medium
Beer
Process temperature
+3 ... +120 °C
Process pressure
0 ... +5 bar
Special challenges
Humid environment, foaming

Reliable

Certified materials according to FDA and EC 1935/2004 regulations

Cost effective

plics® concept: short delivery time and standardized operation

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One measuring system, three measured values: level, pressure, temperature

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