



## Measurement technology improves brewing processes

Water, hops, malt and yeast – these are the ingredients permitted by the German Beer Purity Law. It's a short list and yet the variety of beers on offer is huge. This is due to the great creativity of the brewers. These craftsmen rely on their skill and dependable measurement technology in the brewing process – with so few ingredients, correct control is all the more important.

### Where is measurement technology needed in a brewery?



- Pressure
- level and
- switching

are important parameters to keep an eye on at all times during brewing. Alpirsbacher Klosterbräu, a traditional brewery in the Black Forest whose beers repeatedly win awards, also uses a large number of measuring instruments from VEGA.

Measurement technology facilitates the brewing process in many places and thus ensures optimised processes and reliable production.

## Differential pressure measurement across the filter: What is it good for?

Beer contains a large amount of yeast, which, however, has to be filtered out during the brewing process. Most of it is already removed in the separator after leaving the green beer storage tank, before it enters the filtering stage. Turbidity and the remaining yeast cells are removed to give the beer its bright, clear appearance. Precise monitoring of the differential pressure is very important, in order to be able to react quickly and provide the right amount of diatomaceous earth for the beer being filtered.

Alpirsbacher Klosterbräu accomplishes this quite well with the VEGABAR pressure sensor. "We can now measure very accurately," says Jürgen Wöhrle, the man responsible for quality assurance and quality management at the brewery, and who is more than satisfied with the sensor.

The quick installation and user-friendly operation via the VEGA Tools app on a tablet or smartphone further simplify the processes in the brewery.





## Where else do the pressure sensors provide data?



The measured values from the VEGA pressure sensors are also the basis for smooth-functioning processes in the fermentation and storage tanks. This is where the fermentation and maturing of the beers takes place over a period of several weeks. One particularly important parameter, for example, is the pressure in the tank, which has to be just right to achieve the correct saturation of the beer with CO<sub>2</sub>. The level is also a crucial value – filling and emptying the tanks at the right moment depends on it.

*“We need to know how much liquid is in the tanks at any given time,”* explains Jürgen Wöhrle.

## At what point does the point level become important?



The point level plays a crucial role at several points in the brewing process – at Alpirsbacher, for example, the VEGAPOINT level switch is used in the grist mill. This is where the malt is crushed before brewing. This point level sensor immediately detects when a certain value is reached and reports this. It prevents the mill from overflowing or running idle without malt, which can waste energy and lead to damage in the long term.

## Many measuring points, but very little work integrating them

Setting up and commissioning VEGA sensors is extremely easy, regardless of the measuring point. The sensors have a common process-fitting adapter system that is compliant with all established food approvals. This reduces downtimes and the stocking of spare parts – and leaves more time to relax and perhaps to enjoy an after-work beer.

[Explore 3D brewery](#)

In this episode of VEGA talk, Stefan and Jürgen show where measurement technology is used in the brewing process at Alpirsbacher Klosterbräu

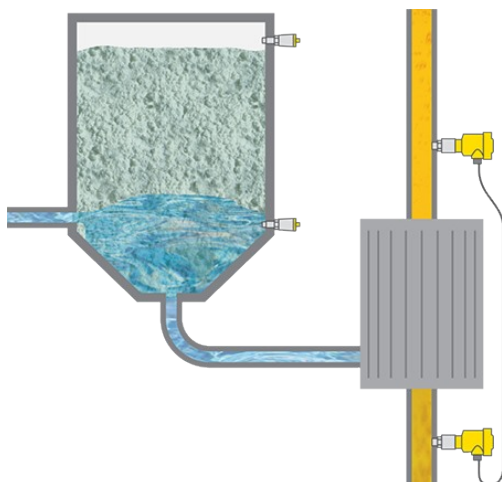
## Related industries



## Applications

### Differential pressure and limit level measurement in the diatomaceous earth filter

After a large part of the yeast has already been filtered out in the separator, the brew leaves the green beer storage tank and is pumped into the diatomaceous earth filter for filtration. Here, the remaining yeast cells and other substances causing turbidity are removed with the help of diatomaceous earth, which clarifies the beer. The limit level is detected in the diatomaceous earth storage tank. If necessary, diatomaceous earth is added to the diatomaceous earth filter via water inflow. The degree of contamination of the diatomaceous earth filter is monitored by an electronic differential pressure measuring system.



Measuring task  
Differential pressure and limit level measurement  
Measuring point  
Tank  
Measuring range up to  
+3 bar  
Medium  
Diatomaceous earth, green beer  
Process temperature  
+1 ... +10 °C  
Process pressure  
0 ... +3 bar  
Special challenges  
Abrasion

Reliable

Approved materials in compliance with FDA and EC 1935/2004

Cost effective

VEGA Austria GmbH

Johann Roithner-Straße 131  
4050 TRAUN Austria

Tel.: +43 7229 66877

[info.at@vega.com](mailto:info.at@vega.com)  
[www.vega.com](http://www.vega.com)

Monitoring of the diatomaceous earth filter ensures continuous operation

User friendly

Easy diagnosis thanks to Bluetooth communication

[See all recommended products](#)

#### Level, pressure and point level measurement in the fermentation tank

After the wort has been cooled down to the appropriate temperature in the wort cooler, it is pumped into the fermentation tanks. The fermentation process is then started by adding in yeast. The yeast converts the malt sugar dissolved in the wort into carbonic acid and alcohol. To ensure optimal fermentation in the tank, the following key parameters are measured: hydrostatic pressure for determining the level, overpressure for CO<sub>2</sub> content monitoring and limit level for overflow or dry run protection.



Measuring task

Level, pressure and point level measurement

Measuring point

Tank

Measuring range up to

5 m

Medium

Wort

Process temperature

+3 ... +120 °C

Process pressure

0 ... +5 bar

Special challenges

Foam generation and condensation due to humid cold environment

Reliable

Certified materials according to FDA and EC 1935/2004 regulations

Cost effective

Accurate monitoring optimizes the brewing process

User friendly

One measuring instrument, three measured values: Level, overpressure, temperature

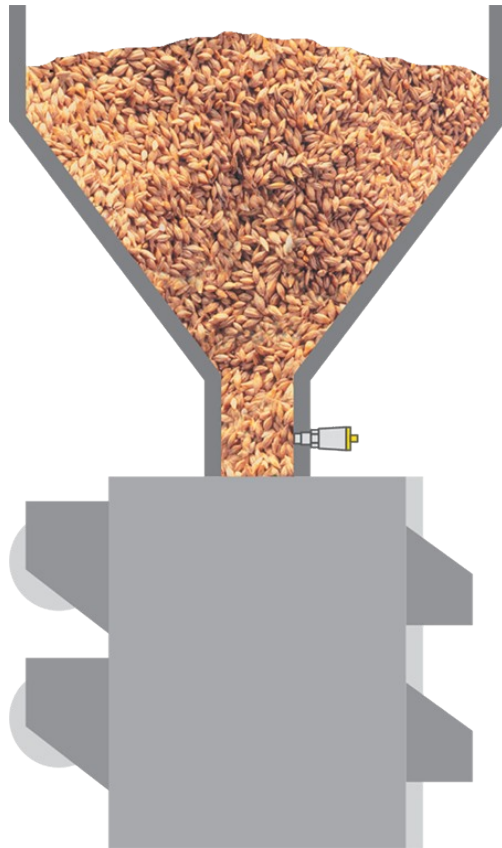
[See all recommended products](#)

#### Point level detection in the malt mill

The malt is prepared for mashing in the malt mill. Wet or dry malt mills are used depending on which brewing process is being used. During the milling process it is important to have a continuous flow of malt. If the mill is operated without malt, wear increases, which can lead to breakdowns and outages. To prevent the mill from running empty, the limit level is monitored.

Measuring task





Point level detection  
Measuring point  
Mill inlet  
Medium  
Malt  
Process temperature  
+3 ... +40 °C  
Process pressure  
0 ... 0 bar  
Special challenges  
Dust generation, mechanical influence of the bulk material

Reliable

Certified materials according to FDA and EC 1935/2004 regulations

Cost effective

Minimal mounting depth ensures maintenance-free operation

User friendly

No adjustment required

[See all recommended products](#)

## Products

