



Improve processes in sewage treatment plants with VEGA sensors

This province Walloon Brabant in the heart of Belgium has just under 410,000 inhabitants distributed among 27 municipalities. Wastewater disposal in this rural area is the responsibility of InBW (Intercommunale du Brabant Wallon), who is responsible for a total of 36 sewage treatment plants. This already reveals the first challenge: the large distances between the various plants. However, measurement in a sewage treatment plant involves further hurdles – such as vibration, condensation, dust, dirt and sludge, digester gases and measuring points that are difficult to access.

So what requirements do the sensors have to meet?

It depends, of course, on where the level and pressure sensors are deployed. But no matter if it's flow in an open flume, a filter or a basin, one thing always applies: The measuring instruments must work accurately and uncomplicatedly, withstand extreme ambient conditions and function for as long as possible without maintenance.

VEGAPULS C 21 has proven itself over and over again in applications where a high protection class is required. The compact radar sensor delivers precise readings and is not affected by

- temperature fluctuations
- environmental influences like rain, fog or wind
- dirt and contamination

in any way. This gives radar measurement technology many advantages over ultrasonic-based measurement. Due to the good signal focusing of VEGAPULS C 21, the liquid level reflections can be better separated from false reflections, making the measuring results considerably more accurate. Another plus: VEGAPULS C 21, like other sensors of the series, has a fixed cable connection and is designed in protection class IP66/IP68. This enables a direct connection, for example to a PLC.



Where is VEGAPULS C 21 used?



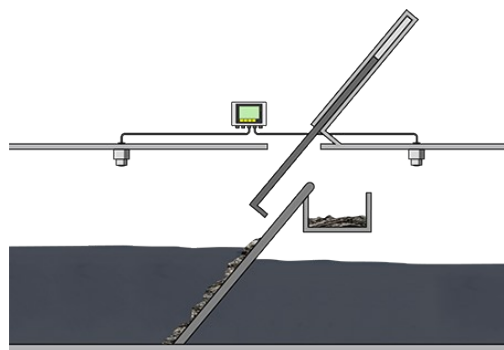
The radar sensor provides an exact overview of the levels at multiple points in the sewage treatment plant.

Screening system: Solids are sifted out of the water in various stages – in the coarse screen these are substances with a diameter of more than 25 millimetres. The fine screen is responsible for skimming off smaller solids. And this is exactly where **VEGAPULS C 21** is used in Walloon Brabant: The radar sensor indicates the difference in water level between the front and the back side of the screen. The degree of contamination is determined via the differential measurement, triggering the cleaning of the screen when necessary.

Applications

Differential water level measurement for control of screen raking

Mechanical cleaning removes entrained floating matter with screens or sieves. This protects the downstream process stages from buildup, clogging and abrasion. Solids with diameters greater than 25 mm are trapped in the coarse screens, compressed in a press and then disposed of. Finer secondary screens remove smaller residual materials. Measurement of the difference in water level between the front and the back of the screen determines the degree of contamination and initiates the cleaning of the screen when necessary.



Measuring task
Water level measurement
Measuring point
Screen
Measuring range up to
0 ... 5 m
Medium
Water
Process temperature
+10 ... +30 °C
Process pressure
0 ... 0 bar
Special challenges
Buildup, abrasion, foam

Reliable

Reliable control of screen cleaning

Cost effective

Non-contact and wear-free measurement

User friendly

Maintenance-free operation of the system

[See all recommended products](#)

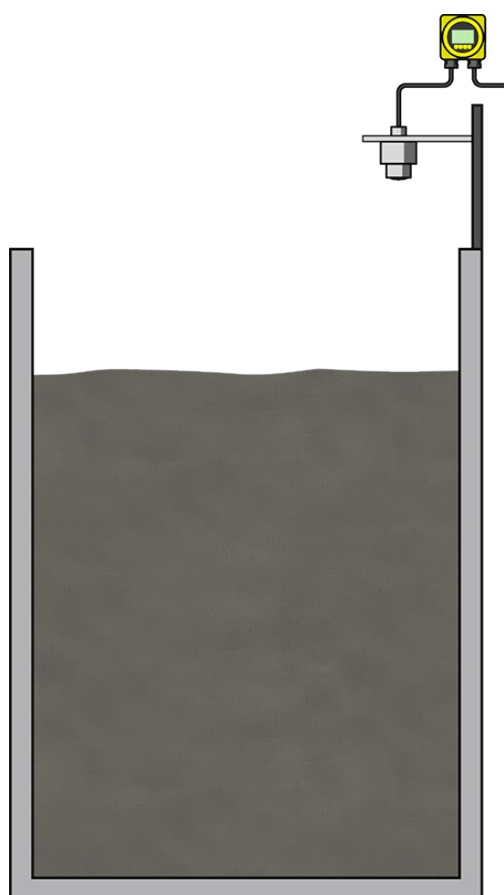
Sludge container: The accumulated sewage sludge is first dewatered and thickened in large tanks or basins. This reduces the amount of sludge and increases the dry solids content. To ensure optimal throughput, the sludge quantity in the receiving tank is continuously monitored with a continuous level measuring system. Twelve **VEGAPULS C 21** sensors measure the sludge levels in different containers. The treated sludge is transported away by truck and recycled in agriculture. VEGA sensors thus make an important contribution to recycling within Walloon Brabant's wastewater management regime.



Applications

Level measurement in a sludge concentration tank

Before the sludge enters the digestion tower, it is stored in large vessels. During storage, the sludge is dewatered and thickened sometimes scrapers and agitators are used to accelerate the process.



Measuring task
Level measurement
Measuring point
Container
Measuring range up to
0 ... 15 m
Medium
Sludge
Process temperature
0 ... +30 °C
Process pressure
0 ... 0 bar
Special challenges
Steam, condensate, buildup

Reliable

Reliable content measurement in the sludge thickening tank

Cost effective

Non-contact measurement ensures maintenance-free operation

User friendly

Simple installation and setup

[See all recommended products](#)

What other VEGA instruments can be found in the sewage treatment plants?



Besides VEGAPULS C 21, the employees responsible for wastewater technology in the province's sewage treatment plants rely on other measuring instruments from VEGA. The level in the settling basin is continuously measured with the submersible pressure transmitter **VEGAWELL 52** which uses a ceramic measuring cell, a component well known for its high overload and vacuum resistance. The point level switch **VEGAVIB 62** demonstrates its advantages in the sand trap: Its reliable operation under water and smooth surface of its vibrating rod, avoids any buildup or jamming of solid particles. Besides that, this feature makes the sensor very easy to clean.

How are the measurement data read and processed?

InBW also relies on VEGA instruments in this area of wastewater management. **VEGADIS 82**, for example, allows easy reading of the measured values. Thanks to its robust field housing, it is perfectly suited for use in rough environments. The **VEGASCAN 693** controller for up to 15 sensors enables the recording of 200,000 measured values for instruments with digital interface. In this way, data from level, gauge and process density measuring systems can be clearly bundled and used for control systems and visualisations and sent by e-mail or SMS. Those responsible at InBW applaud the efficiency, simplicity and versatility of **VEGAPULS C 21**. The ability to adjust the VEGA instruments via Bluetooth or to calibrate the sensors makes the everyday work of the sewage treatment plant employees much easier – especially in overcoming the great distances.



Related industries



Products

