



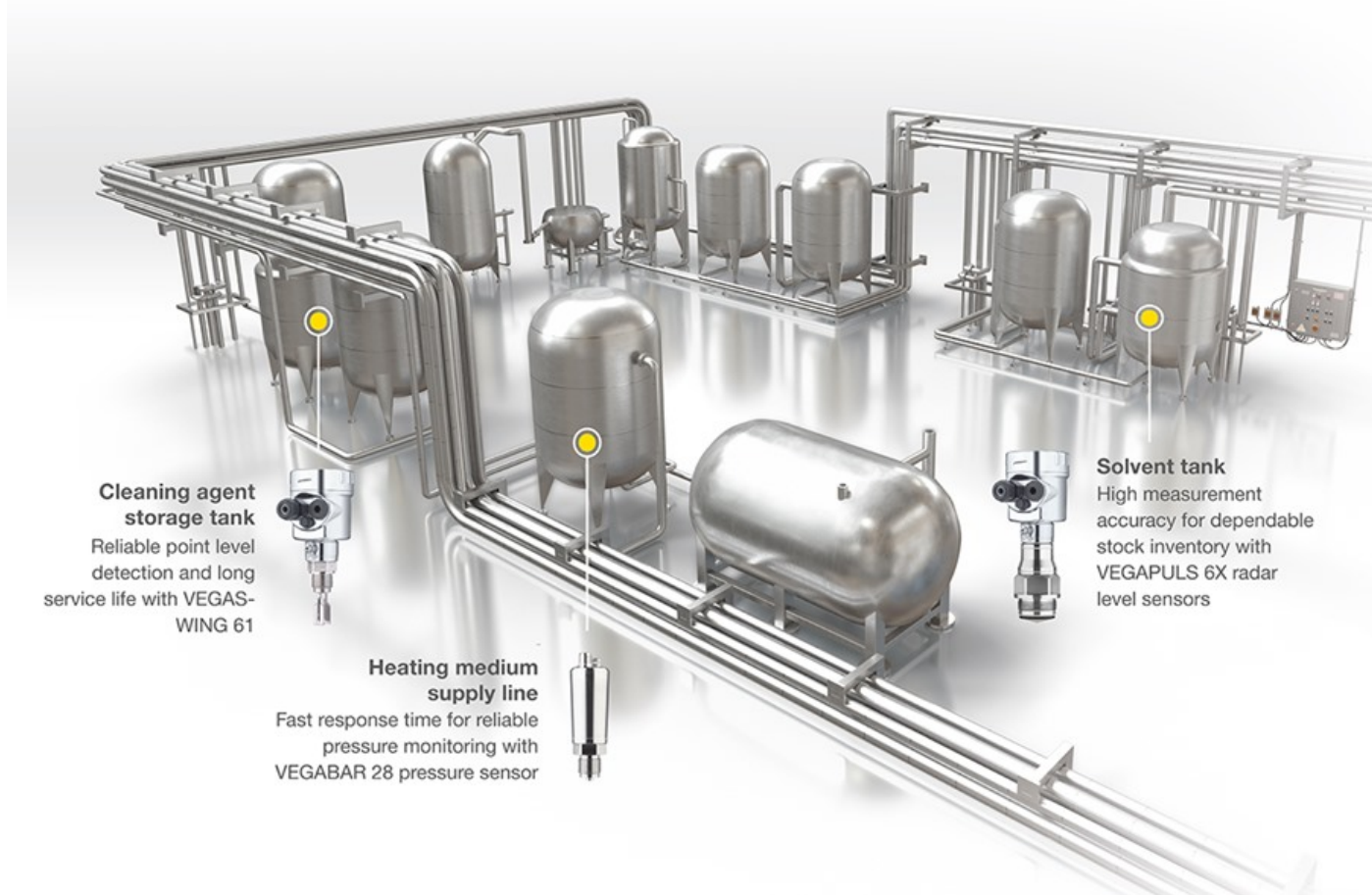
Safety, hygiene and quality management – VEGA sensors fulfil the requirements of the pharmaceutical industry

In **biotechnology and in the pharmaceutical industry**, the requirements on measurement technology are many: Safety, flexibility and the ability to guarantee the highest hygienic standards, such as FDA, ISPE GAMP, ASME-BPE or EHEDG, are just a few examples of what standards sensors must fulfil. From preparation, fermentation and separation to storage, precise dosing, filling and regular cleaning during operation, measurement technology facilitates processes in pharmaceuticals production, increases efficiency and boosts productivity.

VEGA offers the entire range of suitable measuring principles for **level** and **pressure**. The advantages of the sensors:

- Standardised process fittings
- Standardised hygienic adapter system
- Diffusion-tight
- Extremely robust
- Designed for CIP and SIP processes

The following examples show which tasks the sensors perform and where they are used.



VEGA sensors are perfectly designed for the critical aspects of CIP and SIP processes. Even during cleaning operations and at temperatures of up to 150 °C, they ensure that all required process media are available in sufficient quantities.

Level measurement sensors:

VEGAPULS 42

The [radar sensor VEGAPULS 42](#) is particularly suitable when continuous automation is required for rapid level changes. With its versatile, hygienic adapters, it meets the processes requirements with high levels of hygiene. VEGAPULS 42 with IO-Link ensures ideal networking of process data with the user's business administration and laboratory systems. The sensor's non-contact, 80-GHz radar technology enables maintenance-free operation. It measures at a distance of up to 15 metres and at temperatures of up to 150 °C. This makes it ideal for use in dosing systems or in downstream process steps, such as conveyor systems and filling systems, for example.

VEGAPULS 6X

The [radar sensor VEGAPULS 6X](#), with its exceptionally high measurement accuracy, is the right choice for particularly challenging conditions. Thanks to the strong focussing of the radar beam, tank installations such as agitators do not impair the sensor's ability to measure reliably. With its high dynamic range, VEGAPULS 6X still reliably measures products containing oil, solvents or other media with poor reflective properties.



Thanks to their standardised fittings, such as M12 and valve plug connections, the VEGA level sensors can be quickly and easily integrated into the system architecture.

Pressure measurement sensors:

VEGABAR 28

Fast reaction times are crucial characteristics when it comes to supply lines carrying heating media. The [VEGABAR 28 pressure transmitter](#) enables reliable pressure monitoring of gases, vapours and liquids at up to 130 °C. Its ceramic-capacitive CERTEC® measuring cell, developed and produced by VEGA itself, has a lot to offer: It is abrasion-resistant, oil-free and demonstrates high long-term stability and a high overload capacity. For users, the optional universal fitting for hygienic adapters on VEGABAR 28 reduces installation costs and the stocking of spare parts.

Point level sensors:

VEGASWING 61

Reliable detection and a long service life make the [VEGASWING 61 vibrating level switch](#) the ideal sensor for overflow and dry run protection, for example in storage tanks with cleaning agents. It can be used universally for all liquids and has the ability to detect the level reliably with millimetre accuracy, regardless of the mounting position.

VEGA has the right solution for every application. A complete overview of the VEGA portfolio for the pharmaceutical industry can be found here:

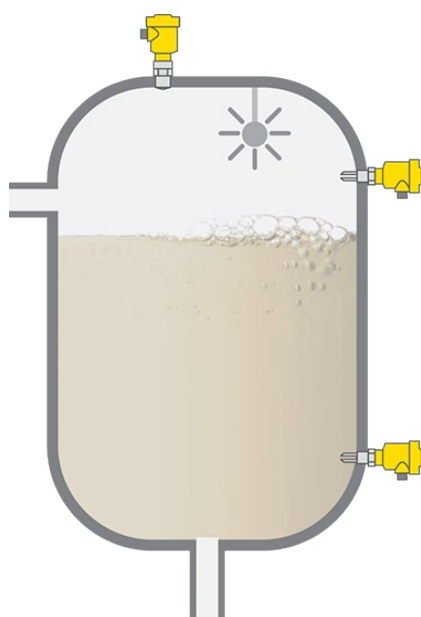
Related industries



Applications

Level measurement and point level detection in the cleaning agent storage tank of the CIP system

In the pharmaceutical industry, cleaning of process equipment takes place within the framework of a validated "Clean in Place (CIP)" process to ensure aseptic conditions are maintained in production equipment, tanks and pipelines. Sodium hydroxide or concentrated acids are frequently used as cleaning agents, which are held in storage tanks within the CIP system. They are diluted in a premix vessel prior to use. Level measurement enables safe storage and optimal usage of these cleaning agents. Point level detection serves as overfill and dry run protection.



Measuring task
Level measurement and point level detection
Measuring point
Tank
Measuring range up to
3 m
Medium
Sodium hydroxide/acid
Process temperature
+5 ... +30 °C
Process pressure
0 ... +1 bar
Special challenges
Chemically aggressive medium

Reliable

Approved materials in compliance with FDA and EC 1935/2004

Cost effective

Maintenance-free operation

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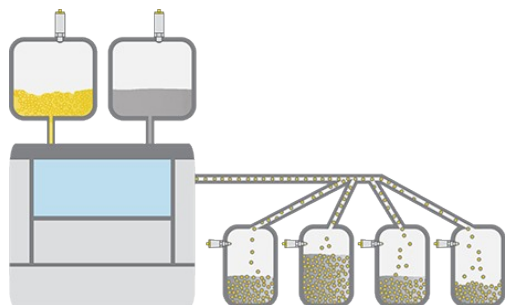
User friendly

Simple mounting

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Level and point level measurement during the capsule filling process

The empty raw capsules and the active ingredient pellets are stored above the filling machine. Reliable level measurement is required here to ensure a continuous supply to the process. The capsules are only lightly stuck together and can be easily sucked apart by a vacuum, so that the upper part separates from the lower part. The pellets are then filled into the lower part of the capsule. After filling, the capsules are transported to the collecting vessels via a hose system. A level detection system serves as overfill protection in these containers.



Measuring task
Level measurement and point level detection
Measuring point
Vorratsbehälter
Measuring range up to
1 m
Medium
Wirkstoff, Rohkapseln, befüllte Kapseln
Process temperature
+20 ... +25 °C
Process pressure
0 ... 0 bar
Special challenges
Kleine Füllstände, kleine Füllstandsänderungen

Reliable

Certified materials according to FDA and EC 1935/2004 regulations

Cost effective

Uninterrupted filling of the capsules thanks to reliable measurement

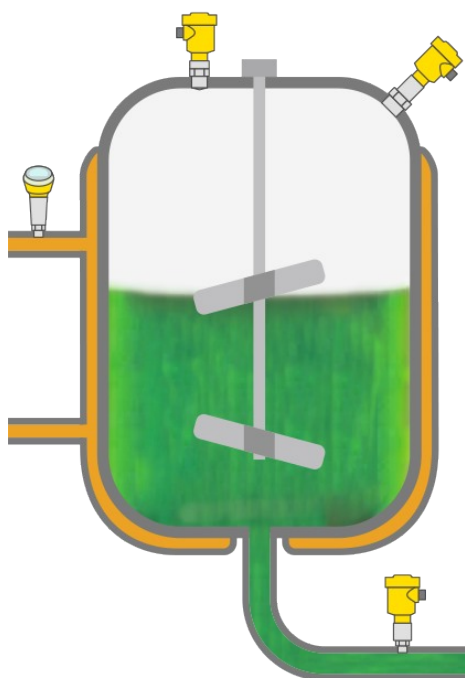
User friendly

Automatic filling through continuous monitoring of the containers

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Level and pressure measurement in the production of enzymes, proteins and antibodies

Some pharmaceutical companies use bioreactor vessels to cultivate particular cells or microorganisms required for certain treatments. The very high level of hygiene required means the vessels and all associated parts must be easy to thoroughly clean, because even the slightest contamination with other organisms can lead to an aborted production run. These reactors are mainly "batch-fed", where they are completely filled at the start and not emptied again until the process is completed. The pressure and level in the reactor have to be monitored continuously during process in order to obtain a high-quality yield.



Measuring task
Level and pressure measurement
Measuring point
Reactor
Measuring range up to
5 m
Medium
Microorganisms
Process temperature
+20 ... +80 °C
Process pressure
-1 ... +5 bar
Special challenges
Frequent cleaning cycles

Reliable

Unaffected by extreme process conditions

Cost effective

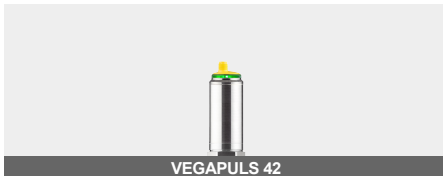
Reliable, continuous operation with absolute hygiene

User friendly

Easy adjustment and setup, as internals do not interfere

[See all recommended products](#)

Products



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