Reliable instruments for challenging applications – How measurement technology secures the chemical industry

In chemical plants, measuring instruments must function reliably. VEGA transmitters are chemically resistant, provide long-term stability and are reliable, even in the most demanding applications. Their design ensures maximum process safety and reliability.

Why is sensor reliability so important in the chemical industry?

The chemical industry places extremely high demands on measurement technology. Extreme conditions like aggressive chemicals, high pressures and temperature fluctuations make reliable transmitters indispensable. This is because a malfunction cannot only jeopardise the safety of the process and therefore people and the environment, but also result in costly downtime and maintenance. Measurement technology is not only used in the chemical industry to control processes, but also to bring systems into a safe state in case of need or an emergency (functional safety).

With pressure sensors like VEGABAR and level sensors like VEGAPULS or thelevel switch VEGASWING, VEGA offers robust solutions that can withstand the toughest conditions. They measure precisely, work reliably and thus form the basis for trouble-free process control and optimisation – even under the most challenging conditions.

Which aspects of transmitters are important with regard to process safety?

Process safety is a key factor in the chemical industry, especially in dynamic processes and safety-critical applications. VEGA sensors offer innovative features and functions that ensure maximum safety and efficiency:

1. Chemically resistant high-tech materials such as alloy C22 and titanium easily withstand aggressive chemicals.
2. Second Line of Defense: An additional gas-tight feedthrough behind the process seal prevents hazardous substances from escaping even if the process seal fails.
3. Self-diagnosis: The transmitters can monitor themselves and quickly report any anomalies.
4. Redundancy options: Additional safety mechanisms ensure stability even if a sensor fails.

Thanks to these technologies, VEGA transmitters fulfil the strict requirements of SIL2 and – if required – SIL3. This makes them the ideal choice for safety-critical processes.

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What materials make the transmitters robust?

In the chemical industry, they often come into contact with aggressive media such as acids, alkalis or other corrosive substances. To ensure high, long-term stability and reliable measurement, VEGA uses:

- Alloy C22, titanium and stainless steel: materials that are resistant to corrosion and abrasion.
- PTFE and PFA coatings: additional protection in case of contact with highly reactive substances.
- Ceramic measuring cells: The CERTEC® technology in VEGABAR pressure transmitters enables virtually drift-free measurement and is extremely abrasion-resistant.

The high-quality materials and clever design features ensure that these transmitters function precisely and reliably, even under the toughest conditions.

How do VEGA instruments maintain the upper-hand in dynamic processes in the chemical industry?

Dynamic processes with rapid temperature fluctuations, changing media and high pressure are part of everyday life in the chemical industry. VEGA transmitters rely on advanced technologies such as radar to remain stable under these conditions.

Thanks to temperature and pressure compensation, they deliver reliable measuring results even in unstable environments. This precision helps to optimise processes and use resources efficiently – a significant advantage in maintaining process safety.

Why is long-term stability important?

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Regular maintenance in the chemical industry is expensive and has a negative impact on plant availability. Instrumentaion from VEGA offers exceptional long-term stability, which significantly reduces maintenance and the associated costs.

- Ceramic measuring cells (CERTEC®) are virtually maintenance free and have a long service life.
- Radar measurement operates totally independently of pressure and temperature, so these kinds of ambient influences do not affect measurement accuracy.
- Self-diagnostic functions enable predictive maintenance and reduce unscheduled downtime.
- Immunity to the effects of strongly fluctuating temperature ensures reliable measuring results for years.

The minimal drift and durability of materials and designs make VEGA transmitters the ideal choice for continuous processes.

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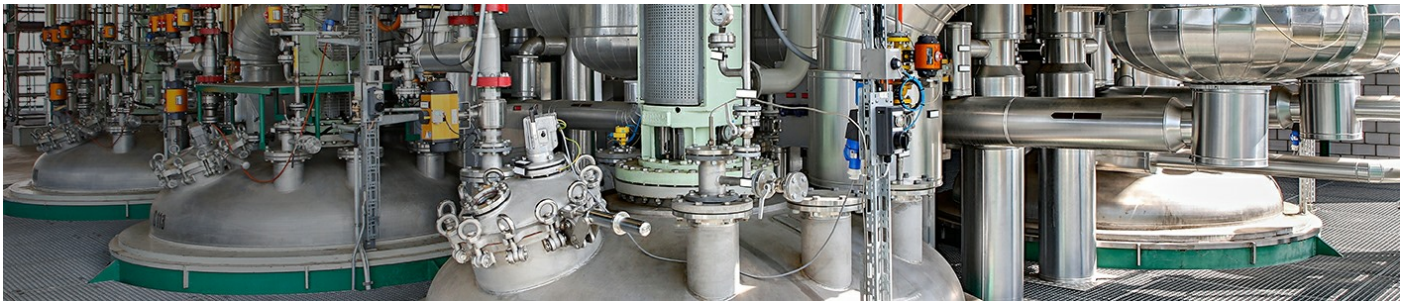

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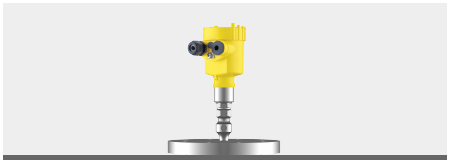
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