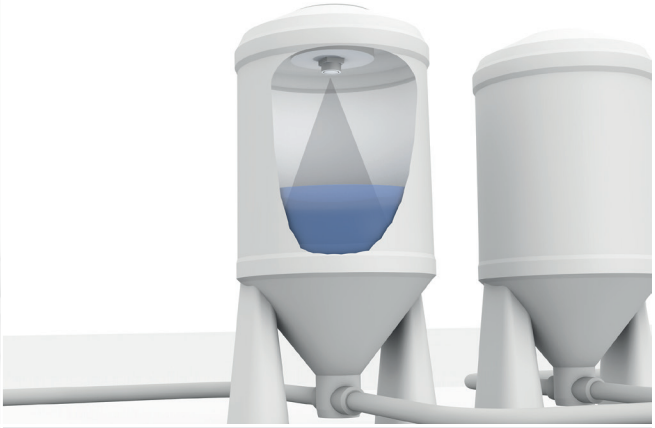
Measurement – Pressure and Level Measuring

MONITOR THE STATUS OF LIQUIDS, GASES AND SOLIDS

Do you need to measure the pressure of gaseous and liquid media, something which is common in so many industrial applications? Pressure sensors make this possible. Level measurement of liquid and solid materials often goes hand in hand with pressure measurement. Here we present a variety of sensor technologies for accomplishing this.

Coolant monitoring on machine tools using pressure sensors



Level measurement of liquids in a tank using ultrasonic sensors

Consistently high surface quality of the machined workpiece must be ensured in a machine tool. This requires continuous monitoring of the coolant feed. Pressure sensors can reliably monitor the pressure and shut down the machine within a few milliseconds when the defined pressure range is violated.
In many tanks and vats the fill height of the liquid must be continually measured. This is accomplished using ultrasonic sensors, which make it possible regardless of color, transparency or surface composition of the medium. These sensors detect objects made of virtually any material (including sound-absorbing) such as liquids, granulates and powders.

Pressure sensor for measuring the pressure range in liquids and gases

Ultrasonic sensor for level measurement of liquids and solids (no medium contact)

Capacitive sensor for level measurement of liquids and solids (medium contact)

Magnetostrictive sensor for measuring the level of liquids (medium-contacting with magnet)

Pressure sensors are widely used in process and factory automation, including for pressure regulation in tanks and distribution systems. The monitoring of process media such as coolants, hydraulic fluids and pneumatics has an important effect on the production processes.

For **level measurement** sensors having various operating principles can be used:

- Ultrasonic sensors are installed above the tank, and have no contact with the medium.
- Capacitive sensors are installed above the tank, and have contact with the medium.
- Magnetostrictive sensors can extend from the top to the bottom of the tank. The magnet (position marker) has contact with the medium.