



Ultrasonic Level Sensing

Top Mounted Ultrasonic Sensing on Liquids and Solids

Principle

An ultrasonic sensor sends high frequency pulses of sound towards the target. This sound strikes the surface of your media (be it solid or liquid) and bounces back.

By examining the returning echo, you can accurately determine the distance to the surface.

This can then be translated into an analogue output, and is also available in digital (switch) devices.

Advantages

- Non-contact
- Suitable for solid and liquid applications
- Excellent for tanks with agitators or other stirring mechanisms
- Takes a sample over a wider area than other solutions

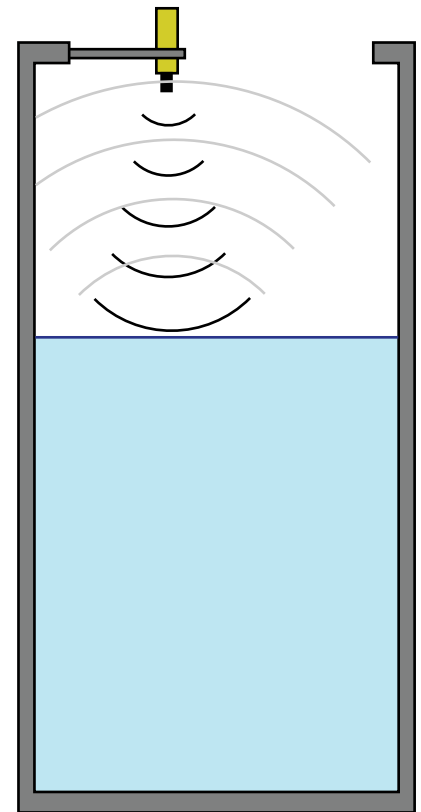
Disadvantages

- Easily confused by foam, dust, vapour or other types of surface disruption
- Not suitable for pressurised vessels or vacuum
- A small 'dead zone' directly in front of the sensor
- Can be confused by rapid changes in environment

Considerations

Standard ultrasonic sensors can be confused by very narrow channels, extrusions into the tank or unusually shaped vessels. This is because they create extra echoes that can reflect and bounce around the tank.

The more advanced models have 'false echo suppression', which is a feature which allows you to filter out these false echoes and concentrate only on the valid echo from the surface of your target.



The ultrasonic beam bounces off the surface of the target.



A simple **Pepperl+Fuchs** barrel-style ultrasonic transmitter



The **Vegason** series of ultrasonic level transmitter from **Vega**.