

# Ультразвуковые датчики для измерения жидкостей

## Техническое описание

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04  
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# Level or Distance Sensing in Fluids

CeramTec's ultrasonic level and distance sensors are utilised in a wide range of fluid sensing applications.



Ultrasonic level or distance sensors can be designed and manufactured in two main types:

- **Singlepoint Ultrasonic Sensor:** Single or multipoint ultrasonic level sensors for sensing in discrete positions. These may either use a damped resonator or an acoustic transmission principle (similar to the operation of our Air in Line sensors).
- **Level/distance Measurement Sensors:** Continuous level or distance measurement sensors are typically used to measure the time taken for an acoustic wave to propagate through a fluid (see our Standard Level/Distance Sensor below). From knowledge of the speed of sound in the fluid, the distance can be calculated.

Both types of ultrasonic sensors are employed in a wide range of market segments and can be designed to work invasively or non-invasively depending on the construction of the tank.

- Invasive measurement will usually allow for a rapid turn-key solution..
- Non invasive measurement has the advantage that submersion or exposure to difficult chemical or environmental conditions can be avoided.

Ultrasonic level/distance sensors inherently offer a number of reliability advantages over other types of sensors. These include operational tolerance

to sediment, foam and fluid opacity, making them ideal in applications where sensing levels (or height) of fuel, chemicals, additives or reactants is required.

#### Continuous Level or Distance Sensor for use with Liquids

Sensor features:

- Sealed for outstanding reliability in harsh or demanding applications
- Manufactured using robust materials
- Can be mounted in any orientation
- Suitable for full immersion in liquids

A Calibration Lane may be incorporated into a tank to obtain a reference speed of sound i.e. compensate for temperature or different fluid types/concentrations.

Typical level measurement/distance sensing applications include:

- Fuel level sensors (automotive, aerospace, rail, marine, storage, or materials processing applications)
- Liquid level cut off control
- In process/live level sensing in medical (inc. dialysis machines), pharmaceutical, industrial, chemical and brewery application

#### Level Sensors for cryogenic applications

Level sensors have previously been supplied for use in cryogenic (LN2) applications. They operate on the same principles as the continuous levels sensors described above.

#### Non-contact sensors

Non-contact level sensors can be implemented in air/gas and have the capability to measure the level of solid medium. These sensor types are also suitable for use in harsh or difficult industrial applications where it is favourable to keep the sensor remote from aggressive or abrasive media.

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