

Level Plus[®]

Magnetostrictive Liquid Level Sensors with
Temposonics[®] Technology



Choosing a Liquid Level Transmitter

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CHOOSING A LIQUID LEVEL TRANSMITTER

Selecting a level technology for liquid storage or processing is complex. Below, we outline the inherent features of various technologies used across many different industries.



MAGNETOSTRICTIVE SENSORS

Definition:

Magnetostrictive-based sensors work by inducing a sonic strain pulse in a specially designed magnetostrictive waveguide by the momentary interaction of two magnetic fields. This interaction produces a strain pulse, which travels at sonic speed along the waveguide until the pulse is detected at the head of the sensor. The magnet's position is determined with high precision by measuring the elapsed time between the application of the interrogation pulse and the arrival of the resulting strain pulse.

Inherent Features:

- Ease of installation
- 3-IN-1 combination sensing capabilities
- Unaffected by variations in vapor, foam, dust, and dielectric
- High accuracy

HYDROSTATIC PRESSURE SENSOR

Definition:

Hydrostatic pressure sensors measure the level of a liquid in a tank by measuring the force exerted by the weight of the liquid. The pressure sensor must be commissioned to the specific tank to account for differences in tank geometry.

Inherent Features:

- Economical
- Configured according to process connection
- Lower Accuracy

RADAR

Definition:

Radar level transmitters use microwave signals to reflect off of the surface of the fluid being measured and/or identify the levels where different fluids meet. There are two main types of radar, through air radar and guided wave radar. Both types use the same basic principles, but guided wave radar sends the microwave signals down a guide to help minimize the effect of changing environmental conditions. There are also multiple tiers of performance for radar from low cost, guided wave radar to high accuracy frequency, modulated radar.

Inherent Features:

- High accuracy
- Not affected by presence of light dust particles
- Non-contact technology



ULTRASONIC / SONIC

Definition:

Ultrasonic level sensors emit sound waves and operate on the principle that liquid surfaces reflect the sound waves back to the source. The sensor logs the transit time, which is proportional to the distance between the liquid surface and the transmitter.

Inherent Features:

- Economical
- Non-contact technology
- Ease of installation

CONCLUSION

The inherent features discussed serve as a base line to illustrate characteristics of the mentioned technologies.

No single technology is capable of economically meeting the requirements of any and all applications. One should discuss applications and requirements with a reputable manufacturer to determine the best possible solution.

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