CONCENTRATION MEASUREMENT

SONATEC

Measure Sound Velocity and Determine Product-Specific Concentration

SONATEC continuously measures sound velocity, for example in acids, alkalis, fats, emulsions and solvents. Concentration is determined from sound velocity using a suitable product-specific mathematical relationship.



Physical Measured Variable
Continuous sound velocity measurement.

Derived Concentration
Evaluation using a suitable product-specific polynomial.

Process Applications
Phase detection and monitoring of changing mixing ratios.

Measuring Principle

An ultrasonic transmitter generates a sound pulse that is detected by an ultrasonic receiver. Sound velocity is determined from the transit time. It can be used to determine concentration with a suitable product-specific polynomial.

Applications

- Acids
- Alkalis
- Fats
- Emulsions
- Solvents
- Phase Detection
- Process Monitoring

Temperature drift of the measurement signal is automatically compensated. European patent application: 1 439 438 B1.

Technical Data

The following data supports technical preselection of SONATEC and project coordination.

PARAMETER	SONATEC
Measuring Principle	Sound Velocity Measurement
Measuring Range	400 - 3.000 m/s
Accuracy	± 0,05 m/s
Repeatability	± 0,01 m/s
Response Time	≤ 1 s
Operating Pressure	max. 16 bar
Operating Temperature / Temperature Sensor	-25 to +125 °C / Pt1000
Material	1.4404 / 1.4435 / AISI 316L; Hastelloy; tantalum; others on request
Input	1 x analog (4 - 20 mA) & 6 x digital (24 VDC)
Output / Fieldbus	2 x analog (4 - 20 mA) & 3 x digital (24 VDC) optional: PROFIBUS DP & PROFINET
Enclosure Rating	IP65; optional: ATEX (II 3G Ex ic IIC T6 Gc)
Power Supply	24 VDC

Sound Velocity and Concentration

Highly accurate determination of both variables.

Display at the Measuring Point

Depending on the version, the measured value can be read directly at the sensor.

Hygienic Design

Various materials and flange connections.

Design & Integration

We support you with the project-specific selection and integration of the **SONATEC** - from measuring range and installation position to process connection and interfaces.

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