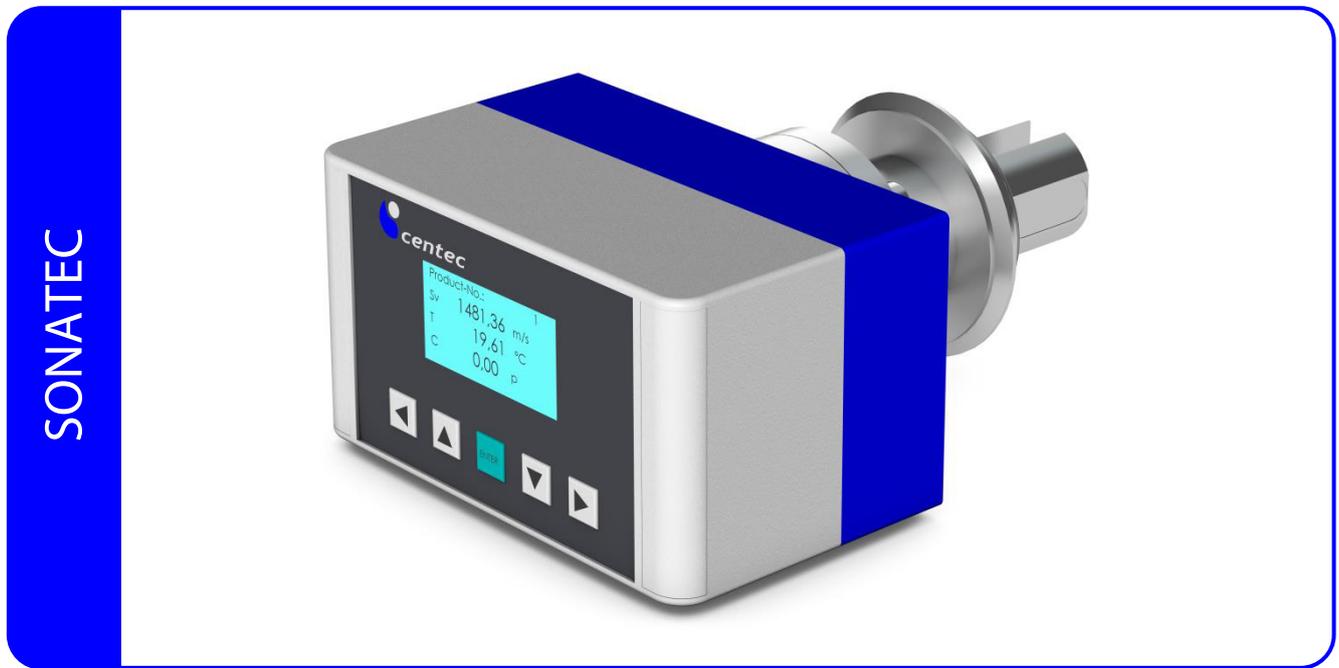


Measurement of Sound Velocity and Concentration



The Principle

SONATEC is a highly precise sensor for determination of sound velocities and concentrations (e. g. of acids, caustics, fats, emulsions and solvents). The instrument is designed for applications requiring maximum sensitivity and highest accuracy. It is easy to operate and maintenance-free. For sound velocity measurement a sound pulse is created by a piezo-element in a sonic transmitter. It moves perpendicular to the product flow towards a sonic receiver where it is detected. Since the distance between transmitter and receiver is known, the sound velocity can easily be calculated by measuring the travel time of the sonic signal. As a specific property of each liquid, the correlation between concentration and sound velocity can be described by a mathematical polynomial. With decades of experience and our own laboratory facilities, Centec know the polynomials for a large number of products. Any temperature drifts of the measured signal are automatically compensated for.

Technical Data

Measuring Range	400 - 3.000 m/s
Accuracy	± 0,05 m/s
Repeatability	± 0,01 m/s
Response Time	≤ 1 s
Pressure of Operation	max. 16 bar
Temperature of Operation	- 25 - + 125 °C (Pt1000)
Material	1.4404/1.4435/AISI 316L; Hastelloy; Tantalum; etc.
Input	6 x digital (24 VDC)
Output	3 x digital (24 VDC) & 2 x analog (4 - 20 mA)
Profibus DP	option
Enclosure Rating	IP65; option: ATEX (Ex II 2G EEx d IIC T6)
Power Supply	24 VDC

Highlights

Very accurate determination of sound velocity and concentration
Patented compact design with local display available
Hygienic execution; various materials and flange connections

The Centec Group

Centec offer fully automated, skid-mounted process units and high precision measurement technology from a single source. Our systems and sensors are engineered to perfectly meet the most demanding requirements of the brewery, beverage, food and pharmaceutical industries. With a team of experienced engineers, we aim to create quantifiable added value for our customers. We are your partner from planning and design through to commissioning of your plant.



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