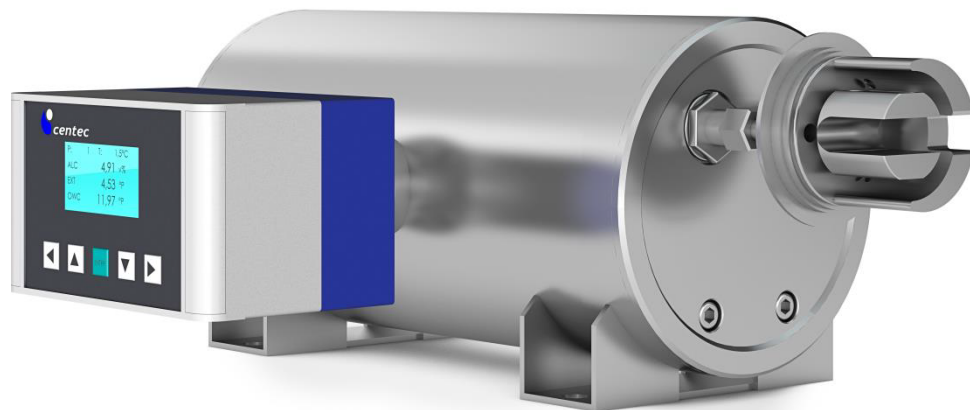


Measurement of Density and Sound Velocity

COMBITEC



The Principle

COMBITEC is used for 3-component solutions to measure simultaneously density, sound velocity and concentration e. g. in a mixture of acid and salt in water or in systems such as sulfuric acid/oleum or methanol/formaldehyde. COMBITEC combines the functionality of both RHOTEC (density measurement) and SONATEC (sound velocity measurement). The instrument is designed for applications requiring maximum sensitivity and highest accuracy. It is easy to operate and maintenance-free. The density measurement is based on the oscillating U-tube principle. For sound velocity measurement a sound pulse is created by a sonic transmitter and detected by a sonic receiver. As a specific property of each liquid, the correlation between concentration and density resp. 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

Density	0 -3 g/cm ³	± 0,0001 g/cm ³
Measuring Range		
Sound Velocity	400 - 3.000 m/s	± 0,05 m/s
Measuring Range		
Response Time	≤ 1 s	
Pressure of Operation	max. 16 bar	
Temperature of Operation	- 25 - + 125 °C	
Temperature Sensor	Pt1000	
Material	1.4404/1.4435/AISI 316L; Hastelloy; Tantalum; etc.	
Input	10 x digital (24 VDC) & 2 x analog (4 - 20 mA)	
Output	5 x digital (24 VDC) & 4 x analog (4 - 20 mA)	
Profibus DP	option	
Enclosure Rating	IP65	
Power Supply	24 VDC	

Highlights

Very accurate determination of density, sound velocity, 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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