CONCENTRATION MEASUREMENT

COMBITEC

Density, Sound Velocity and Concentration in 3-Component Systems

COMBITEC simultaneously measures density and sound velocity in liquid 3-component systems and determines concentrations from these values. Documented applications include acid and salt in water, sulphuric acid / oleum and methanol / formaldehyde.



Specific Measurement Task
Concentration determination in liquid 3-component systems.

Two Physical Measured Variables
Density and sound velocity are measured simultaneously.

Documented Mixtures
Acid and salt in water, sulphuric acid / oleum and methanol / formaldehyde.

Measuring Principle

COMBITEC measures density and sound velocity simultaneously. Density measurement is based on the oscillating U-tube principle. For sound velocity measurement, a sound pulse is generated and detected by an ultrasonic receiver.

Applications

- Acid and Salt in Water
- Sulphuric Acid / Oleum
- Methanol / Formaldehyde
- 3-Component Systems
- Density
- Sound Velocity
- Concentration
- 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 and project coordination.

PARAMETER	COMBITEC
Density / Measuring Range and Accuracy	0 - 3 g/cm³ / ± 0,0001 g/cm³
Sound Velocity / Measuring Range and Accuracy	400 - 3.000 m/s / ± 0,05 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
Power Supply	24 VDC

Three Measured Variables

Density, sound velocity and concentration.

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 **COMBITEC** - from measuring range and installation position to process connection and interfaces.

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