CONCENTRATION MEASUREMENT

RHOTEC

Measure Density and Determine Product-Specific Concentration

RHOTEC continuously measures density using the oscillating U-tube principle, for example in acids, alkalis, fats, emulsions and solvents. Concentration is determined from density using a suitable product-specific mathematical relationship.



Physical Measured Variable
Continuous density measurement using the oscillating U-tube principle.

Derived Concentration
Evaluation using a suitable product-specific polynomial.

Process Applications
Phase detection and monitoring of crystallisation processes.

Measuring Principle

Density measurement is based on the oscillating U-tube principle. Even small density changes affect the measurement signal. The measured density can be used to determine concentration with a suitable product-specific polynomial.

Applications

- Acids
- Alkalis
- Fats
- Emulsions
- Solvents
- Phase Detection
- Crystallisation Processes

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 RHOTEC and project coordination.

PARAMETER	RHOTEC
Measuring Principle	Density Measurement / Oscillating U-Tube
Measuring Range	0 - 3 g/cm³
Accuracy	± 0,0001 g/cm³
Repeatability	± 0,00001 g/cm³
Response Time	≤ 1 s
Operating Pressure	max. 50 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

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

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