

Tegwave I – Ultrasonic concentration meter

Smart, flexible insertion measuring device – individually for your process



Benefits:

- Easy and efficient – real-time in situ liquid analysis
- Full transparency – constant monitoring of product quality without sampling
- Highest process safety – reliable metering due to robust, maintenance-free sensor
- Cost-saving – fewer measuring points due to multivariable measurement
- Customized usage – innovative application concept, expendable for changing measuring tasks
- Simplified process control – user-friendly operation and clear status visualization
- Local data backup – integrated data storage for measured values up to 7,5 years

Specs at a glance

- **Max. measurement error** Density: $\pm 0.01 \text{ g/cm}^3$ Temperature: $\pm 0.5 \text{ K}$ Sound velocity: 2 m/s
- **Measuring range** Concentration According to concentration app data sheet, maximum 0 to 100 % Sound velocity 600 to 2000 m/s Temperature maximum 0 to $+100 \text{ }^\circ\text{C}$ (32 to $+212 \text{ }^\circ\text{F}$) Acoustic Density 0.7 to 1.5 g/cm^3
- **Medium temperature range** 0 to $100 \text{ }^\circ\text{C}$ (32 to $212 \text{ }^\circ\text{F}$)
- **Process temperature** 0 to $100 \text{ }^\circ\text{C}$ (32 to $212 \text{ }^\circ\text{F}$)
- **Max. process pressure** max. 16 bar at $20 \text{ }^\circ\text{C}$ (232 psi at $68 \text{ }^\circ\text{F}$)

Field of application: The insertion measuring device Tegwave I was developed for accurate real-time liquid analysis in vessels and larger pipes. Dedicated to in situ concentration measurement, Tegwave

monitors various measuring parameters at once, and thus reduces operational expenditure. Match your Teqwave transmitter perfectly to your production needs: You can flexibly define and extend your application range.

Features and specifications

Concentration

Measuring principle

Ultrasonic concentration

Product headline

Smart, flexible insertion measuring device – individually for your process. Easy and efficient – real-time in situ liquid analysis. Continuous concentration measurement of liquids in vessels or large pipes.

Sensor features

Full transparency – constant monitoring of product quality without sampling. Highest process safety – reliable metering due to robust, maintenance-free sensor. Cost-saving – fewer measuring points due to multivariable measurement. Insertion length: 180 mm (7 in) or 500 mm (20 in). Accurate and independent of flow profile.

Transmitter features

Customized usage – innovative application concept, expendable for changing measuring tasks. Simplified process control – user-friendly operation and clear status visualization. Local data backup – integrated data storage for measured values up to 7,5 years. Industry-compliant, easy installation via DIN rail. 3.5" TFT color touch screen or LED indication. 4-20 mA, Modbus TCP.

Nominal diameter range

Insertion length: 180 mm (7") or 500 mm (20")

Measured variables

Concentration, sound velocity, temperature, acoustic density, dispersion

Concentration

Max. measurement error

Density: $\pm 0.01 \text{ g/cm}^3$

Temperature: $\pm 0.5 \text{ K}$

Sound velocity: 2 m/s

Design

Insertion

Material

Sensor housing material: Stainless steel V4A 1.4571

Process temperature

0 to $100 \text{ }^\circ\text{C}$ (32 to $212 \text{ }^\circ\text{F}$)

Process pressure

max. 16 bar at $20 \text{ }^\circ\text{C}$ (232 psi at $68 \text{ }^\circ\text{F}$)

Ex certification

Non-hazardous area

UK; Non-hazardous area

Ingress protection

Sensor: IP67, IP69 optional

Transmitter: IP40, IP67 optional

Display/Operation

LED status indication

TFT color touch display

Outputs

4-20mA / Modbus TCP

Power supply

DC 24V $\pm 20\%$

Product safety

CE, C-Tick, UKCA

Density/Concentration

Measuring principle

Ultrasonic concentration

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Easy and efficient – real-time in situ liquid analysis.
Continuous concentration measurement of liquids in vessels or large pipes.

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Nominal diameter range

Insertion length: 180 mm (7") or 500 mm (20")

Wetted materials

Stainless steel 1.4571 (316 Ti)

Measured variables

Concentration, sound velocity, temperature, acoustic density, dispersion

Max. measurement error

Acoustic density: $\pm 0.01 \text{ g/cm}^3$
Temperature: $\pm 0.5 \text{ K}$
Sound velocity: $\pm 2 \text{ m/s}$

Density/Concentration

Measuring range

Concentration According to concentration app data sheet, maximum 0 to 100 %

Sound velocity 600 to 2000 m/s

Temperature maximum 0 to +100 °C (32 to +212 °F)

Acoustic Density 0.7 to 1.5 g/cm³

Max. process pressure

max. 16 bar at 20 °C (232 psi at 68 °F)

Medium temperature range

0 to 100 °C (32 to 212 °F)

Ambient temperature range

0 to 50°C (32 to 122°F)

Sensor housing material

Stainless steel 1.4571 (316 Ti)

Transmitter housing material

Anodized aluminium and glas

Degree of protection

Sensor: IP68 (with plugged-in cable), IP66 (without cable plug)

Transmitter: IP40

Display/Operation

LED status indication

TFT color touch display

Outputs

4-20 mA/Modbus TCP, Relais AC 50V, DC30V 1A, 0 to 10V Analog output

Inputs

2 open collector Inputs

Power supply

DC 24V +-20%

Density/Concentration

Hazardous area approvals

Non-hazardous area
UK; Non-hazardous area

Product safety

CE, C-Tick, UKCA



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