

Tegwave F – Ultrasonic concentration meter

Smart, flexible inline 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** Acoustic density: $\pm 0.01 \text{ g/cm}^3$
Temperature: $\pm 0.5 \text{ K}$ Sound velocity: $\pm 2 \text{ m/s}$
- **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
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- **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 $212 \text{ }^\circ\text{F}$)

Field of application: Teqwave F is ideal for real-time liquid analysis in pipes, particularly in skids. Equipment manufacturers and end customers value the inline device for its accurate in situ concentration measurement. Teqwave reduces the operational expenditure by monitoring various measuring parameters at once. Match your Teqwave transmitter perfectly to your production needs: You can flexibly define and extend your application range.

Features and specifications

Density/Concentration

Measuring principle

Ultrasonic concentration

Product headline

Smart, flexible inline measuring device – individually for your process.
Easy and efficient – real-time in situ liquid analysis.
Continuous concentration measurement of liquids in 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.
Nominal diameter: DN 8 to 25 ($\frac{3}{8}$ to 1"). Full-bore design without pressure loss.

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

DN 8 (1/4") to DN 25 (1")

Density/Concentration

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: $\pm 2 \text{ m/s}$

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

Max. process pressure

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

Medium temperature range

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

Ambient temperature range

0 to $50 \text{ }^\circ\text{C}$ (32 to $122 \text{ }^\circ\text{F}$)

Sensor housing material

Stainless steel V4A 1.4571 (316 Ti)

Transmitter housing material

Anodized aluminium, Glas

Degree of protection

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

Transmitter: IP40

Density/Concentration

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%

Hazardous area approvals

Non-hazardous area
UK; Non-hazardous area

Product safety

CE, C-Tick, UKCA

Concentration

Measuring principle

Ultrasonic concentration

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Nominal diameter range

DN 8 (1/4") to DN 25 (1")

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: 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

Design

Inline

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 $68 \text{ }^\circ\text{F}$)

Concentration

Ex certification

Non-hazardous area
UK; Non-hazardous area

Ingress 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

Power supply

DC 24V +-20%

Product safety

CE, C-Tick, UKCA



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