

Tegwave H – Ultrasonic concentration meter

Inline device with best-in-class hygienic design – plug and play for food and beverage processes



Benefits:

- High accuracy and repeatability – concentration calculation with latest algorithms
- Fulfilment of hygienic requirements – easily cleanable full-bore sensor
- Full transparency – constant monitoring of product quality without sampling
- Highest process safety – reliable metering due to robust, maintenance-free sensor
- 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
- **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 $120 \text{ }^\circ\text{C}$ (32 to $248 \text{ }^\circ\text{F}$)

- **Process temperature** 0 to 120°C (32 to 248 °F)

Field of application: Teqwave H is ideal for real-time liquid analysis in hygienic applications like spirits and soft drink production. End customers and equipment manufacturers value its highly accurate in situ concentration measurement and hygienic design. Teqwave reduces the operational expenditure by monitoring various measuring parameters at once. Match your Teqwave transmitter perfectly to your production needs by flexible definition and extension of your application range.

Features and specifications

Density/Concentration

Measuring principle

Ultrasonic concentration

Product headline

Inline device with best-in-class hygienic design – plug and play for food and beverage processes.

High accuracy and repeatability – concentration calculation with latest algorithms.

Continuous quality monitoring of beverages and in cleaning processes.

Sensor features

Fulfilment of hygienic requirements – easily cleanable full-bore sensor. Full transparency – constant monitoring of product quality without sampling. Highest process safety – reliable metering due to robust, maintenance-free sensor.

Nominal diameter: DN 25 (1"). Accurate and independent of flow profile. Sensor housing made of stainless steel (3-A, EHEDG).

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.

Density/Concentration

Nominal diameter range

DN 25 (1")

Wetted materials

Stainless steel 1.4404 (316L)

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 $120 \text{ }^\circ\text{C}$ (32 to $248 \text{ }^\circ\text{F}$)

Ambient temperature range

0 to $60 \text{ }^\circ\text{C}$ (32 to $140 \text{ }^\circ\text{F}$)

Sensor housing material

Stainless steel 1.4404 (316L)

Transmitter housing material

Anodized aluminium and glas, optional 1.4301 and plastic

Degree of protection

Sensor: IP67, IP69 optional

Transmitter: IP40, IP67 optional

Density/Concentration

Display/Operation

LED status indication
TFT color touch display

Outputs

4-20 mA/Modbus TCP, Relais AC 50V, DC30V 1A, 0..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

Material certificates

3.1 acceptance test certificate

Hygienic approvals and certificates

Food Approvals: EHEDG, 3-A, seals compliant with FDA, cGMP

Concentration

Measuring principle

Ultrasonic concentration

Product headline

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Concentration

Sensor features

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Transmitter features

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Nominal diameter range

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, hygienic

Concentration

Material

Sensor housing material: Stainless steel 1.4404 (316L)

Transmitter housing material: Anodized aluminium, optional 1.4301

Process temperature

0 to 120°C (32 to 248 °F)

Process pressure

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

Ex certification

Non-hazardous area

UK; Non-hazardous area

Ingress protection

Sensor: IP67, IP69 optional

Transmitter: IP40, optional IP67

Display/Operation

LED status indication

TFT color touch display

Outputs

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

Power supply

DC 24V +-20%

Product safety

CE, C-Tick, UKCA



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