

## Process instrumentation and measurement solutions

### Mass flowmeters with Entrained Gas Management

- EGM™: no loss of measurement with a gas entrainment (GVF) of 0 to 100 % in the medium
- Measurement of mass flow and density
- Continuous measurement, even during a transition from a pure liquid phase to a gas phase and back



Typical applications:

- Ice cream
- Margarine
- Chocolate
- Ground meat
- Syrup
- Spinach
- Oil

### High-performance ceramic for the most demanding situations

- Permanently resistant to corrosive and abrasive media
- Resistant to temperature shocks
- Absolutely secure against permeation and leakage



### Analytical sensors with integrated transmitter

- Complete circuitry has been condensed into the sensor head
- Cost advantage thanks to longer sensor service life due to regeneration before the offline calibration
- Integrated memory for configuration data



### Auxiliary and supply circuits

KROHNE provides suitable solutions for utility and supply circuits

- Process water/auxiliary water
- Compressed air/air
- Natural gas/combustion system consumption measurement
- Steam
- Heat/energy quantity measurement
- CIP/SIP

### Weblinks

Detailed information on the KROHNE portfolio for the food and beverage industry:  
[de.krohne.com/food+beverage](http://de.krohne.com/food+beverage)

Service directory to contact our service team:  
[de.krohne.com/services](http://de.krohne.com/services)

Configure it – online configuration tool for KROHNE instrumentation and platform for 2D/3D CAD data:  
[de.krohne.com/configure-it](http://de.krohne.com/configure-it)

KROHNE eShop – online shop for measurement technology at attractive prices:  
[de.krohne.com/eshop](http://de.krohne.com/eshop)

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### KROHNE Food & Beverage – Your partner for the right measurement solution

The food and beverage industry is subject to constant change and faces rather short product life cycles. On top of that, there are strict hygienic and legal regulations that must be adhered to. KROHNE Food & Beverage is a specialist division, facing these challenges. The company offers a complete range of flow, level, temperature and pressure measurement, as well as process analysis technology including complete solutions plus services.



# Extract of the KROHNE product range – hygienic measuring devices

## OPTIMASS – mass flowmeters

- The straight measuring tube design eliminates negative effects on the measurement at high viscous liquids or pastes.
- EGM™ enables measurements of inhomogeneous mixtures, media with fibres or solid or gas entrainment
- Not susceptible to installation effects
- Minimal pressure loss with straight tube measuring devices: up to two sizes smaller than competitor devices if compared by pressure drop
- OPTICHECK – inline verification of meter accuracy



## Sensors for filling applications

### OPTIBATCH 4011

- Measurement independent of viscosity, conductivity or inlet runs, determines volume or mass flow in extremely short filling cycles
- No separate electronic required
- Entire electronic is integrated in the fully welded stainless steel housing
- Standard deviation <0.04 %



### BATCHFLUX 5500

- Specifically developed for the precise cold and hot filling processes for beverages
- High precision and long-term stability
- Excellent repeatability due to ceramic measuring tube
- Extremely short filling cycles <500 ms

## OPTIFLUX – electromagnetic flowmeters

- All KROHNE EMF are wet-calibrated in direct comparison of volumes
- Electric conductivity of the medium can be used for detection of product change over
- For high bubble content, high solids content and pulsating flow
- 3x100% diagnostics (application and device diagnostic, out-of-spec test)
- OPTICHECK – inline verification of meter accuracy



## H250 M40 – variable area flowmeter

- The world's only EHEDG-certified variable area flowmeter



## OPTITEMP – industrial temperature assemblies

- Very good repeatability and long-term stability
- Standardised and customer-specific temperature assemblies
- Compact, fast and precise measurement
- Pt100 class A according to IEC 60751
- In-situ verification



## OPTIWAVE – FMCW radar level transmitters

- Distance, level, volume and mass measurement
- Not affected by process conditions: dust, foam, vapour, agitated or boiling surfaces, changes in pressure, temperature and density
- Flat PEEK antenna for liquids
- Drop antenna for solids:
  - Its ellipsoidal shape and non-adhesive surface prevent product deposits in dusty or humid atmospheres
- No operation or maintenance costs for purging as the installation of a compressed air line is not necessary

## OPTISWITCH – level switch

- Measurement independent of media properties
- Not affected by adhesive media and foam
- Hygienic, flush-mounted installation

## OPTIBAR – process / differential pressure transmitters

- Differential pressure measurement (abs./rel.) up to +150 °C without diaphragm seal
- Flush and recessed metal (PM) and ceramic (PC) diaphragms
- Dp cell with high static pressure, specialized for low ranges
- Various housing materials available
- Very good repeatability and long-term stability
- Turndown ratio up to 100:1



## SMARTPAT – digital analytical sensors

- Measurement of pH, ORP and conductivity
- No external transmitter needed
- Configuration and simplified offline calibration via FDT/DTM
- Direct connection of the sensor to the control system



## OPTISYS IND 8100 – conductivity measuring systems

- Fast temperature compensation
- Configuration via touch display



## Sensors for turbidity measurement

### OPTISYS TSS X050

- Suitable for CIP/SIP and includes installation version for retractable assemblies
- Accurate NIR absorption measurement regardless of the colour
- Compact system with integral electronics



### OPTISENS TSS 7000

- Self-compensating four beam technology reduces drift caused by soiling or ageing
- Maximum product safety thanks to glass-free design and no material transitions
- Durable LED



Level

Pressure

Process analysis

Flow

Temperature