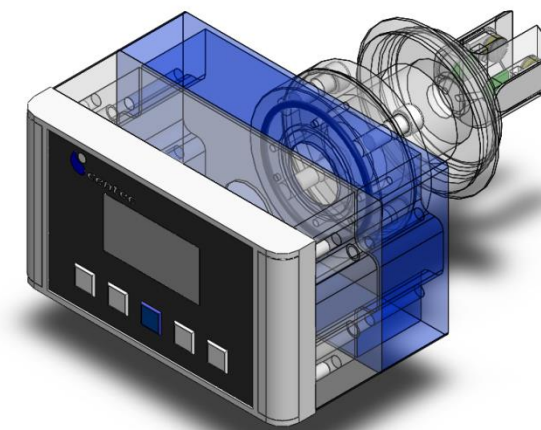


Extract Measurement during Lautering or Boiling

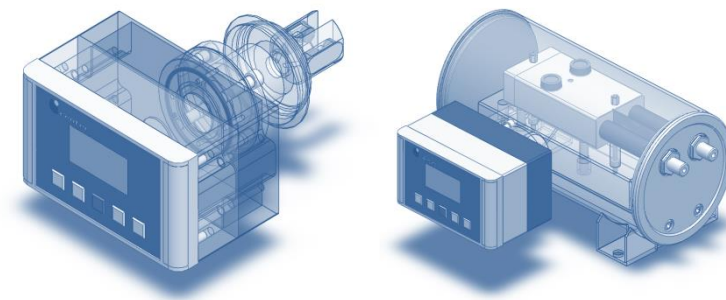
Application Report



Automated
process skids
and high precision
sensors from a
single source.
Centec.

The Centec Group

Centec is a privately owned group of companies. With a focus on the processing industries, we are rapidly growing in the major world markets. We have a global sales and service structure, with our own subsidiaries and a network of qualified distributors. Our international operations include mechanical, electrical and process automation engineering, with skid manufacture and pipework fabrication; as well as our own switch cabinet production. This infrastructure allows efficient logistics, short lead times and strict adherence to delivery deadlines. The quality of our products is excellent, so is the price-performance ratio.



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SONATEC

Application and Measurement Principle

Brewing is divided into milling, malting, mashing, lautering, boiling, fermenting, storage, filtering and filling. Lautering is the separation of the extracts won during mashing from the spent grain to create wort. During boiling hops are added which contribute aroma and flavor compounds to the beer. Lautering and boiling take place in the brewhouse and are controlled depending on the amount of extract. Breweries need to measure the extract concentration with precision to maintain beer quality. For the measurement of this 2-component system consisting of water and extract both density and sound velocity sensors can be used. SONATEC is often preferred because of its easy installation. SONATEC HW is designed for direct installation in the wort kettle. This instrument contains an integrated cleaning nozzle.

The speed of a sound pulse between a transmitter and a receiver is measured. The sound pulse is created by piezo-elements and moves perpendicular to the product flow. Based on the correlation between concentration and sound velocity, the concentration of the 2-component liquid is calculated and displayed.



SONATEC
Transmitter Version



SONATEC HW
Transmitter Version
for the Wort Kettle

- Available as Transmitter Version with Local Display and as a Sensor
- Highly Precise and Fast Determination of the Concentration
- Based on Sound Velocity Measurement
- Applicable for a Huge Number of Liquids in Various Industries
- Short Response Time and Excellent Long-Term Stability
- Hygienic Execution, Full CIP Capability, Maintenance Free
- Outstanding Price-Performance-Ratio

Technical Data	SONATEC	SONATEC HW
Measuring Range	400 - 3.000 m/s	400 - 3.000 m/s
Accuracy	± 0,05 m/s	± 0,05 m/s
Repeatability	± 0,01 m/s	± 0,01 m/s
Response Time	≤ 1 s	≤ 1 s
Pressure of Operation	max. 16 bar	max. 16 bar
Temperature of Operation	- 25 - + 125 °C	- 25 - + 125 °C
Temperature Compensation	Pt1000	Pt1000
Material	1.4404/AISI 316L; 1.4571/AISI 316Ti; Hastelloy C276; Monel 400; Incoloy 825; Tantal; others on request	1.4404/AISI 316L; others on request
Connections	Varivent© DN65; Diary DIN11851 DN65; others on request	DIN2633 DN100; others on request
Input Transmitter Version	6 x digital (24 VDC)	1 x digital (24 VDC)
Output Transmitter Version	3 x digital (24 VDC) & 2 x analog (4 - 20 mA)	3 x digital (24 VDC) & 2 x analog (4 - 20 mA)
Profibus DP Transmitter Version	option	option
Sensor (w/o local display)	standard	standard
Enclosure Rating	IP65	IP65
Explosion Protection Ex II 2G EEx d IIC T6	option	-
Power Supply	24 VDC	24 VDC