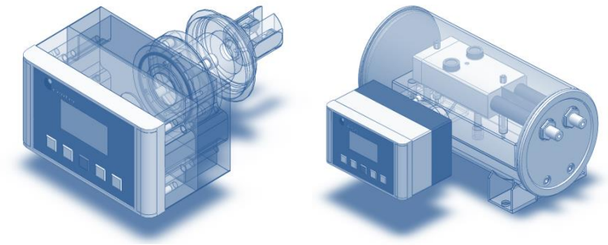
The Centec Group

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.



Innovation. Dedication. Centec.

Germany
Centec GmbH
Wilhelm-Röntgen-Strasse 10
63477 Maintal
Tel.: +49 6181 18 78 0
Fax: +49 6181 18 78 50
info@centec.de

Czech Republic
Centec automatika s.r.o.
Pekařská 8/601
155 00 Praha 5
Tel.: +420 257 084 111
Fax: +420 235 518 701
prodej@centec.cz

USA
Centec LLC
P. O. Box 820
Germantown, WI 53022-0820
Tel.: +1 262 251 8209
Fax: +1 262 251 8376
info@centec-usa.com

UK
Centec UK
Stalworths, The Street
Great Tey, Colchester, Essex, CO6 1JS
Tel.: +44 1206 21 19 21
Fax: +44 1206 21 19 16
info@centec-uk.com

Serbia
Centec Serbia
Bogdana Žerajića 34/III
11000 Beograd
Tel.: + 381 11 358 11 24
Fax: + 381 11 358 11 24
info@centec.rs

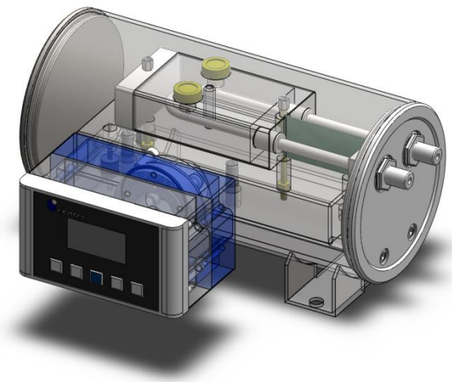
India
Centec RRR Systems & Sensors Pvt Ltd
RRR House, Plot 80, Sector 23
Turbhe Naka, Navi Mumbai - 400 705
Tel.: +91 22 2783 3655 & 2783 1348
Fax: +91 22 2783 4814
mail@centecrrr.com

Brazil
Centec América Latina Ltda
Rua Mexico 148 conj. 1004 Centro
20031 142 Rio de Janeiro
Tel.: +55 21 2223 2066
centeclatina@terra.com.br

RHOTEC

Extract Measurement during Lautering or Boiling

Application Report



More information at **www.centec.de**

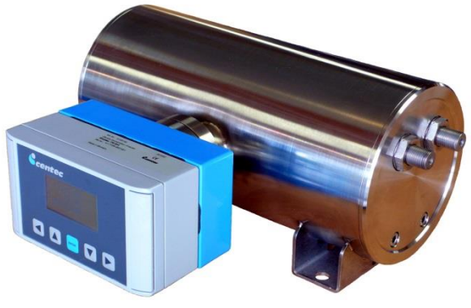
Automated process skids and high precision sensors from a single source. Centec.

RHOTEC

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. RHOTEC is often preferred because of its even higher accuracy compared to SONATEC.

For density measurement, the liquid consisting of 2 components flows through a U-shaped tube. While the tube is electronically excited to oscillate at resonance, the oscillation frequency is observed. Any change in the fluid density has an impact on the detected signal and can thus be identified. Based on the correlation between concentration and density, the concentration is calculated and displayed.



RHOTEC
Transmitter Version

The Centec production is certified according to ISO 9001.

- **Available as Transmitter Version with Local Display and as Sensor**
- **Highly Precise and Fast Determination of the Concentration**
- **Based on Density 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	**RHOTEC**
Measuring Range	0 - 3 g/cm^3
Accuracy	± 0,0001 g/cm^3
Repeatability	± 0,00001 g/cm^3
Response Time	≤ 1 s
Pressure of Operation	max. 50 bar
Temperature of Operation	- 25 - + 125 °C
Temperature Compensation	Pt1000
Material	1.4571/AISI 316Ti; Hastelloy C276; Monel 400; Incoloy 825; Tantalum; others on request
Connections	thread 3/8”; compatible to Varivent© Inline-Housings DN40 - DN150; others on request
Input Transmitter Version	6 x digital (24 VDC)
Output Transmitter Version	3 x digital (24 VDC) & 2 x analog (4 - 20 mA)
Profibus DP Transmitter Version Sensor (w/o local display)	 option standard
Enclosure Rating	IP65
Explosion Protection Ex II 2G EEx d IIC T6	option
Power Supply	24 VDC

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