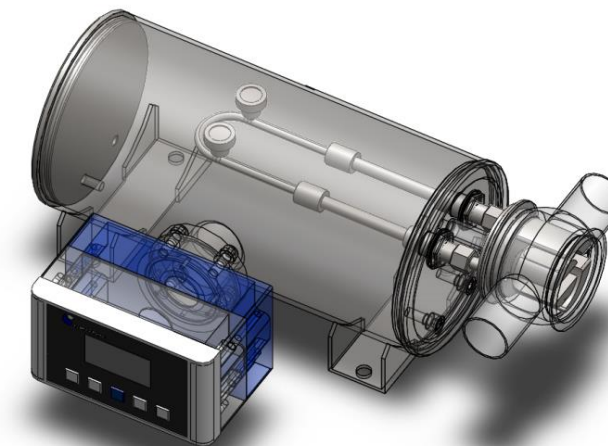


Determination of Concentration by Density & Sound Velocity

Centec Process Sensors



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

More information at www.centec.de

COMBITEC INNOVATION

Designed for the specific needs of breweries, the BEERMONITOR has a proven track-record. This special type of COMBITEC is used in different parts of the brewery to simultaneously measure Original Gravity, extract and alcohol concentrations with extreme precision:

Technical Data BEERMONITOR

Original Gravity	
Measurement Range	0 - 25 °Plato
Accuracy	± 0,03 °Plato
Reproducibility	± 0,01 °Plato
Extract	
Measurement Range	0 - 10 mass %
Accuracy	± 0,02 mass %
Reproducibility	± 0,01 mass %
Alcohol	
Measurement Range	0 - 12,5 vol.%
Accuracy	± 0,02 vol.%
Reproducibility	± 0,01 vol.%

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

Hyxo Oy
P.O. Box 16 (Palokorvenkatu 2)
FI-04261 Kerava, Finland
Tel. +358 10 417 4500
hyxo@hyxo.fi • www.hyxo.com

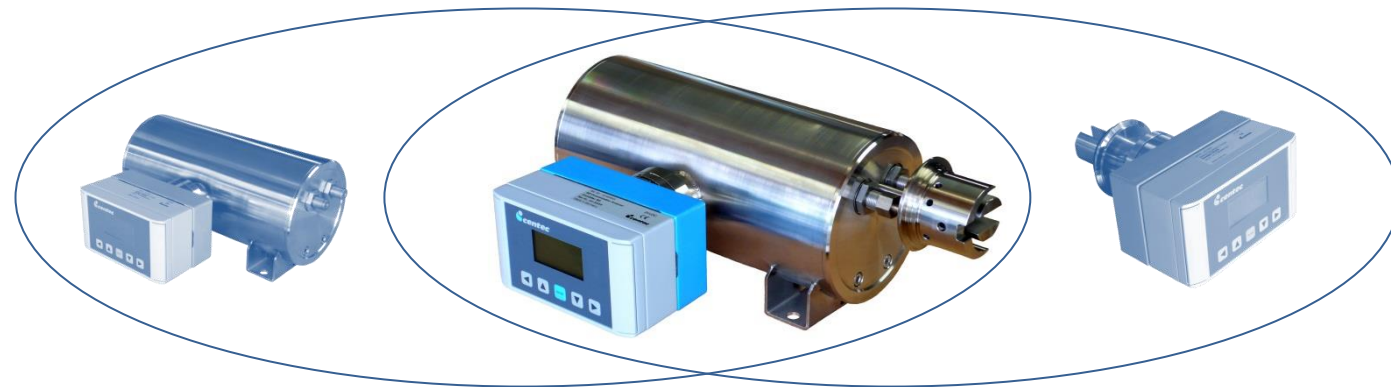
India
Centec RRR Systems & Sensors Pvt Ltd
RRR House, Plot 80, Sector 23
Turbhe Naka, Navi Mumbai - 400 705
Tel.: +91 22 2783 3655 & 2783 1348
Fax: +91 22 2783 4814
mail@centecrrr.com

Brazil
Centec América Latina Ltda
Largo de Sao Francisco de Paula nº 26
Centro Cep. 20051 070 Rio de Janeiro
Tel.: +55 21 2223 2066
Fax: +55 21 2223 0324
centeclatina@terra.com.br

COMBITEC

The Principle

COMBITEC combines the functionality of both RHOTEC and SONATEC. In various industries and around the world this device simultaneously measures density and sound velocity in 3-component liquids with highest sensitivity and accuracy. For density measurement, the liquid 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 density has an impact on the detected signal and can thus be identified. At the same time the instrument measures the speed of a sound pulse between a transmitter and a receiver. The sound pulse is created by piezo-elements and moves perpendicular to the product flow. As a specific property of each liquid, the correlation between concentration and density resp. sound velocity can be described by a mathematical polynomial. With decades of experience and own laboratory facilities, we have particular knowledge about these polynomials for a huge number of products. Any temperature drifts of the measured signal are automatically compensated for by an internal Pt1000 sensor. COMBITEC displays various units, e.g. vol.%, mass %, °Brix and °Plato.



COMBITEC
Transmitter Version

- Available as Transmitter Version with Local Display and as Sensor
- Highly Precise and Fast Determination of the Concentration
- Based on Density and 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 and Maintenance Free
- Outstanding Price-Performance-Ratio

Technical Data COMBITEC

Measuring Range	
Density	0 - 3 g/cm ³
Sound Velocity	400 - 3.000 m/s
Accuracy	
Density	± 0,0001 g/cm ³
Sound Velocity	± 0,05 m/s
Repeatability	
Density	± 0,0001 g/cm ³
Sound Velocity	± 0,01 m/s
Response Time	≤ 1 s
Pressure of Operation	max. 16 bar
Temperature of Operation	- 25 - + 125 °C
Temperature Compensation	Pt1000
Material	1.4404/AISI 316L; Hastelloy C276; Monel 400; Incoloy 825; others on request
Connections	compatible to Varivent® Inline-Housings DN40 - DN150; others on request
Input	10 x digital (24 VDC) &
Transmitter Version	2 x analog (4 - 20 mA)
Output	5 x digital (24 VDC) &
Transmitter Version	2 x analog (4 - 20 mA)
Profibus DP	
Transmitter Version	option
Sensor (w/o local display)	standard
Enclosure Rating	IP65
Power Supply	24 VDC