RHOTEC INNOVATION

In various countries, producers of alcohol are subject to taxation. They need to determine the alcohol content with extreme precision and with a measuring device that is accepted and certified by government authorities. RHOTEC fulfils both requirements and is ATEX compliant. Applicable for ethanol and ethanol based mixtures and in a temperature range from +5 to +40 °C, RHOTEC “AlcTax” meets the requirements of the PTB (Physikalisch Technische Bundesanstalt).

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RHOTEC

The Principle

RHOTEC continuously measures the density of liquids. Designed for applications that require maximum sensitivity and high accuracy, this device is used in various industries all around the world. Breweries and beverage manufacturers determine alcohol or dissolved sugar contents inline with RHOTEC. Dairies rely on RHOTEC to measure milk and cream fat. In numerous pharmaceutical and chemical applications RHOTEC is used to control the concentration of acids, caustics and other solutions – but also for monitoring the quality of raw materials and final products. 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 fluid density has an impact on the detected signal and can thus be identified. As a specific property of each liquid, the correlation between concentration and density can be described by a mathematical polynomial. With decades of experience and own laboratory facilities, we have a particular knowledge of the polynomials for a huge number of products. Any temperature drifts of the measured signal are automatically compensated for by an internal Pt1000 sensor. RHOTEC displays various units, e.g. vol.%, mass %, “Brix and “Plato.

• 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 and Maintenance Free
• Outstanding Price-Performance-Ratio

Technical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>RHOTEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring Range</td>
<td>0 - 3 g/cm³</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 0.0001 g/cm³</td>
</tr>
<tr>
<td>Repeatability</td>
<td>± 0.0001 g/cm³</td>
</tr>
<tr>
<td>Response Time</td>
<td>≤ 3 s</td>
</tr>
<tr>
<td>Pressure of Operation</td>
<td>max. 50 bar</td>
</tr>
<tr>
<td>Temperature of Operation</td>
<td>-25 + 125 °C</td>
</tr>
<tr>
<td>Temperature Compensation</td>
<td>Pt1000</td>
</tr>
<tr>
<td>Material</td>
<td>1.4571/AISI 316Ti; Hastelloy C276; Monel 400; Incoloy 825; Tantalum; others on request</td>
</tr>
<tr>
<td>Connections</td>
<td>thread 3/8”; compatible to Varivent® Inline-Housings DN40 - DN150; others on request</td>
</tr>
<tr>
<td>Input</td>
<td>Transmitter Version 6 x digital (24 VDC)</td>
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<tr>
<td>Output</td>
<td>Transmitter Version 3 x digital (24 VDC) &amp; 2 x analog (4 - 20 mA)</td>
</tr>
<tr>
<td>Profibus DP</td>
<td>Transmitter Option Sensor (w/o local display) standard</td>
</tr>
<tr>
<td>Enclosure Rating</td>
<td>IP65</td>
</tr>
<tr>
<td>Explosion Protection</td>
<td>Ex II 2G Ex d IIC T6 option</td>
</tr>
<tr>
<td>Power Supply</td>
<td>24 VDC</td>
</tr>
</tbody>
</table>

The Centec production is certified according to ISO 9001.