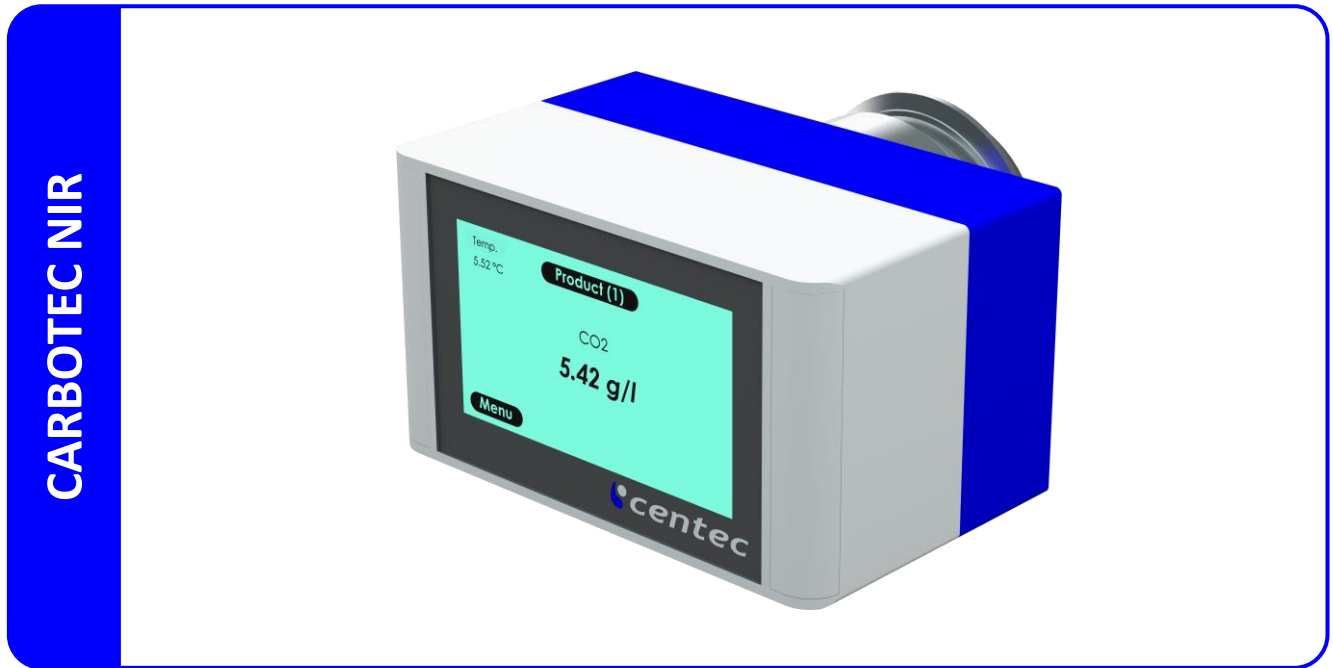


Optical CO₂ Measurement in Liquids



The Principle

CARBOTEC NIR is a very precise carbon dioxide sensor for measurement of dissolved CO₂ in liquids, e. g. in carbonated beverages like beer, sparkling wine and soft drinks. The instrument is designed for applications requiring maximum sensitivity and highest accuracy. The new generation of CO₂ sensors is based on Attenuated Total Reflection (ATR) technology. Near infrared (NIR) light is transmitted through a sapphire crystal. The NIR light reflects several times on the inner surfaces of the crystal, while the outer surfaces are in contact with the carbonated liquid. Since CO₂ molecules absorb the specific wavelength of the transmitted light, each reflection decreases the intensity according to the CO₂ content in the product. The sensor provides the "true" carbon dioxide content, as quantified by the NIR absorption. The measurement result is neither influenced by other gases in the product not by its colour, turbidity and viscosity. Due to the absence of moving parts in the sensor head, the instrument is virtually maintenance-free. Any temperature drifts of the measured signal are automatically compensated for.

Technical Data

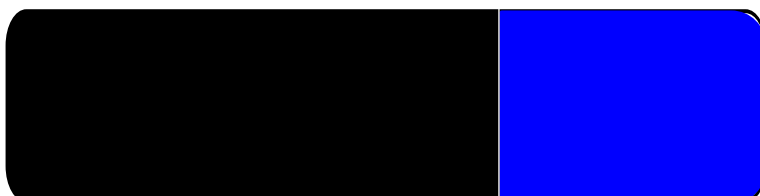
Measuring Range	0 - 10 g/l
Accuracy	± 0,1 g/l
Repeatability	± 0,02 g/l
Response Time	≤ 3 s
Pressure of Operation	max. 10 bar
Temperature of Operation	- 10 - + 85 °C (Pt100)
Material	1.4404/AISI 316L, sapphire glass, EPDM (FDA), PTFE (FDA)
Input	1 x analog (4 - 20 mA) & 6 x digital (24 VDC)
Output	2 x analog (4 - 20 mA) & 3 x digital (24 VDC) optional: PROFIBUS DP & PROFINET
Enclosure Rating	IP65
Power Supply	24 VDC

Highlights

- **Optical technology based on Attenuated Total Reflection (ATR)**
- **Determination of “true” CO₂ content not influenced by other gases**
- **Hygienic execution; various flange connections**

The Centec Group

Centec offer fully automated, skid-mounted process units and high precision measurement technology from a single source. Our systems and sensors are engineered to perfectly meet the most demanding requirements of the brewery, beverage, food and pharmaceutical industries. With a team of experienced engineers, we aim to create quantifiable added value for our customers. We are your partner from planning and design through to commissioning of your plant.



ProDetec Pty.Ltd.
P. +61 (02) 9620 8700
F. +61 (02) 9620 8755
E. info@prodetec.com.au
A. 17/38 Powers Rd,
Seven Hills NSW 2147
www.prodetec.com.au