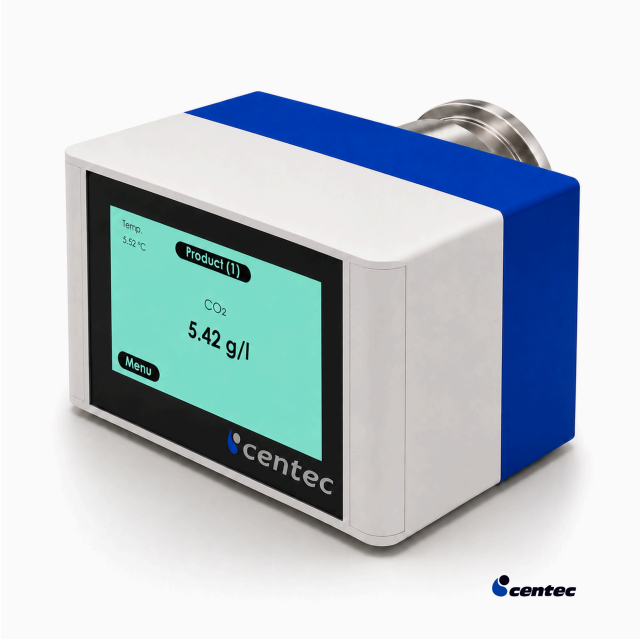
$CO_2$ MEASUREMENT

# CARBOTEC NIR

## Optical $CO_2$ Measurement in Liquids

CARBOTEC NIR measures dissolved carbon dioxide in carbonated beverages such as beer, sparkling wine and soft drinks. Optical ATR/NIR measurement determines the $CO_2$ content directly in the running process.




**"Pure" $CO_2$ Content**
The measurement result is not affected by other gases in the product.

**ATR / NIR Technology**
Optical measurement using a sapphire crystal and near-infrared light.

**Virtually Maintenance-Free**
No moving parts in the sensor head; temperature drift is compensated.

## Measuring Principle

Near-infrared light passes through a sapphire crystal and is reflected several times at its inner surfaces. $CO_2$ molecules absorb a specific wavelength. The reduced light intensity is used to determine the $CO_2$ content.

## Applications

- Beer
- Sparkling Wine
- Soft Drinks
- Dissolved $CO_2$
- Carbonated Beverages
- In-line Measurement

Temperature drift of the measurement signal is automatically compensated.

# Technical Data

The following data supports technical preselection and coordination of the measurement task, medium, installation situation and automation connection.

| PARAMETER | CARBOTEC NIR |
|---|---|
| **Measuring Principle** | Optical ATR/NIR Measurement |
| **Measuring Range** | 0 - 10 g/l |
| **Accuracy** | ± 0,1 g/l |
| **Repeatability** | ± 0,02 g/l |
| **Response Time** | ≤ 3 s |
| **Operating Pressure** | max. 10 bar |
| **Operating Temperature / Temperature Sensor** | -10 to +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 / Fieldbus** | 2 x analog (4 - 20 mA) & 3 x digital (24 VDC)<br>optional: PROFIBUS DP & PROFINET |
| **Enclosure Rating / Supply** | IP65 / 24 VDC |

**Optical ATR Technology**
Measurement principle using near-infrared light.

**Robust Evaluation**
Unaffected by other gases, colour, turbidity and viscosity.

**Virtually Maintenance-Free**
No moving parts in the sensor head.

## Design & Integration

We support you with the project-specific selection and integration of the **CARBOTEC NIR** - from measuring range and installation position to process connection and interfaces.

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