

## Membrane Deaeration

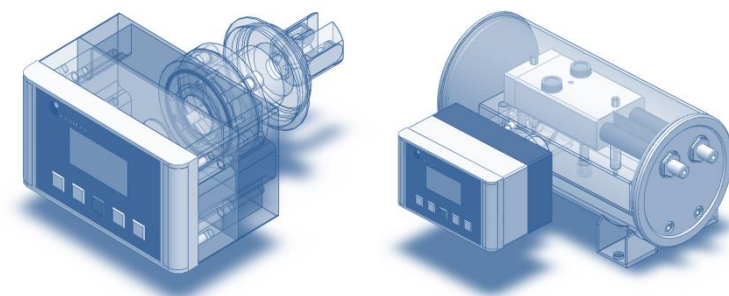
### Centec Beverage Systems



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

## The Centec Group

Centec is a privately owned group of companies. Our automated process skids are used throughout the entire brewing process. For soft drinks, dairy and food industries we offer a large variety of skid mounted systems. We have decades of experience in water purification and deaeration, carbonation, liquid blending and dosing, flash pasteurization and cleaning-in-place. Centec technology includes a range of high precision process sensors for accurately measuring critical product properties such as extract, alcohol, milk fat, O<sub>2</sub> and CO<sub>2</sub>. The largest brewery, soft drink, dairy and food groups in the world are among our key customers.



**Accuracy. Reliability. Centec.**

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# DGS

## The Principle

The Centec membrane deaeration system DGS is a modular skid for the removal of oxygen from water and low viscosity liquids. Using highly effective membrane contactors, extraordinarily low values of residual O<sub>2</sub> are achieved. The presence of even low oxygen levels can increase microbial activity and adversely affect taste, colour and shelf life of beverages and food products. Each contactor contains thousands of microporous hydrophobic hollow fibre membranes. Their large internal surface maximizes the contact area between liquid and gas. While the strip gas (CO<sub>2</sub> or N<sub>2</sub>) is applied on the inside of the hollow fibres, the water flows in counter current on the outside. The high partial pressure difference of O<sub>2</sub> forces the oxygen out of the liquid to permeate through the membranes and away with the strip gas. This fundamental scientific principle is described by "Henry's Law". The DGS system consumes minimal energy and strip gas. Due to its modular design, DGS can easily be adapted to the required capacity (by parallel installation of membranes) and to the required residual oxygen content (by serial installation). O<sub>2</sub> content monitoring can be achieved with highly accurate Centec OXYTRANS optical sensing technology.

## Technical Data

Capacity	10 - 2.000 hl/h
Residual Oxygen	< 1o ppb
Pressure of Operation	0 - 6 bar
Temperature of Operation	2 - 45 °C
Temperature of CIP	max. 85 °C
Material	1.4301/1.4404 AISI 304/316L
Membrane	polypropylene
PLC	SIMATIC S7
Options	in-line O <sub>2</sub> /CO <sub>2</sub> measurement chilling/chilling water recovery pre-filtration carbonation disinfection



The Centec production is certified according to ISO 9001.

- **Application Specific and Energy Efficient**  
extremely low residual oxygen content  
minimum consumption of energy and strip gas
- **Modular Design with Standard PLC**  
skid mounted for easy installation and start-up  
easy adaption to required capacity and residual O<sub>2</sub>
- **Hygienic Execution and Full CIP Capability**
- **Outstanding Price-Performance-Ratio**

## Experience. Expertise. Centec.

*Ion Exchange · Reverse Osmosis · Membrane Deaeration · Column Deaeration · Hops Pre-Isomerization  
Wort Aeration · Yeast Pitching · Nitrogenation · Carbonation · Carboblending · High Gravity Blending  
Multi Component Mixing · Additive Dosing · Flash Pasteurization · Cleaning-in-Place · Dealcoholization*

