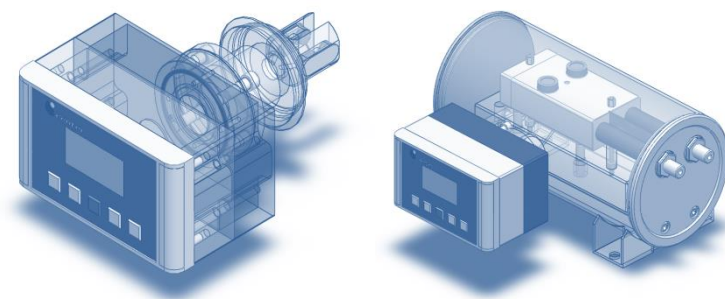


## The Centec Group

Centec is a privately owned group of companies. From conventional power plants to solar energy and biofuel – there is a broad range of applications for our automated process skids. We are a leading supplier of water purification and deaeration technologies. Automated CIP-systems designed and manufactured by Centec are installed around the globe. Centec technology includes a range of high precision process sensors for accurately measuring critical product properties such as the concentration of acidic and caustic solutions and O<sub>2</sub> content. The largest energy groups in the world and numerous power plants are among our key customers.



**Accuracy. Reliability. Centec.**

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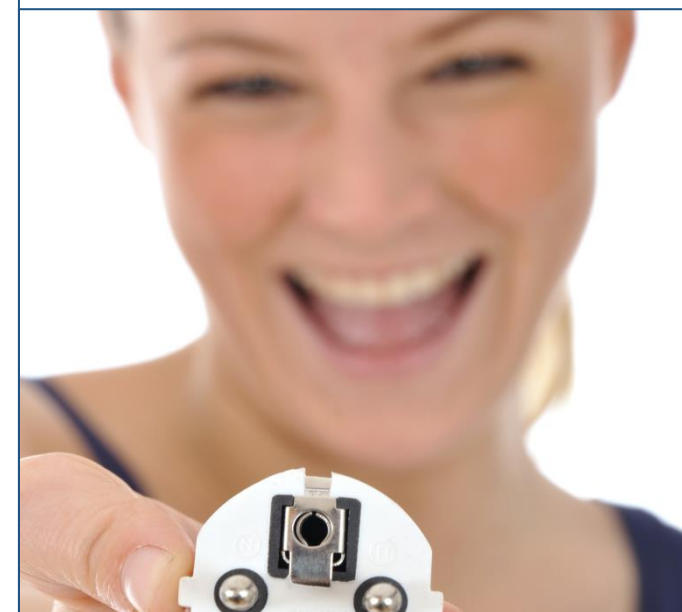
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**DGS**

**Membrane Deaeration**

**Centec Energy Systems**



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

# 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 cause serious corrosion damage by attaching to metal piping and other metallic equipment and forming oxides. 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	1 - 500 t/h
Residual Oxygen	< 10 ppb
Pressure of Operation	0 - 6 bar
Temperature of Operation	2 - 45 °C
Temperature of CIP	max. 85 °C
Material	fibre reinforced plastics (FRP) 1.4301/1.4404 AISI 304/316L
Membrane	polyolefin/epoxy
PLC	SIMATIC S7
Options	in-line O <sub>2</sub> measurement chilling/chilling water recovery pre-filtration 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.

Particle Pre-Filtration · Disinfection · Water Softening & Demineralization · Ultrafiltration · Reverse Osmosis  
Electro Deionization · WFI Distillation · Membrane Deaeration · Column Deaeration · Vacuum Deaeration  
Multi Component Mixing · Additive Dosing · Flash Pasteurization · Cleaning-in-Place · Pure Steam Generation

