## 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_2 content. The largest energy groups in the world and numerous power plants are among our key customers.
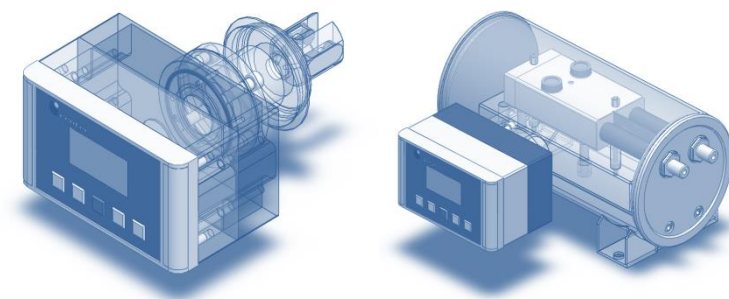
Accuracy. Reliability. Centec.

Germany
Centec GmbH
Wilhelm-Röntgen-Strasse 10
63477 Maintal
Tel.: +49 6181 18 78 0
Fax: +49 6181 18 78 50
info@centec.de

Czech Republic
Centec automatika s.r.o.
Pekařská 8/601
155 00 Praha 5
Tel.: +420 257 084 111
Fax: +420 235 518 701
prodej@centec.cz

USA
Centec LLC
P. O. Box 820
Germantown, WI 53022-0820
Tel.: +1 262 251 8209
Fax: +1 262 251 8376
info@centec-usa.com

UK
Centec UK
Stalworths, The Street
Great Tey, Colchester, Essex, CO6 1JS
Tel.: +44 1206 21 19 21
Fax: +44 1206 21 19 16
info@centec-uk.com

Serbia
Centec Serbia
Bogdana Žerajića 34/III
11000 Beograd
Tel.: + 381 11 358 11 24
Fax: + 381 11 358 11 24
info@centec.rs

India
Centec RRR Systems & Sensors Pvt Ltd
RRR House, Plot 80, Sector 23
Turbhe Naka, Navi Mumbai - 400 705
Tel.: +91 22 2783 3655 & 2783 1348
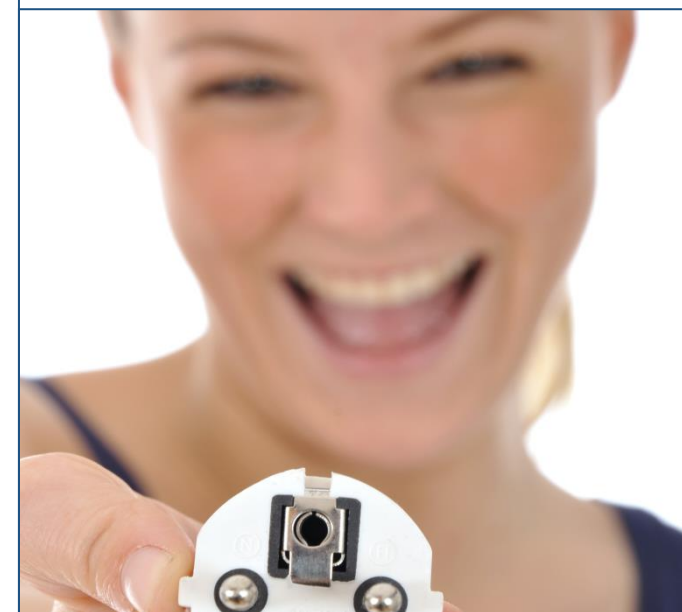Fax: +91 22 2783 4814
mail@centecrrr.com

Brazil
Centec América Latina Ltda
Rua Mexico 148 conj. 1004 Centro
20031 142 Rio de Janeiro
Tel.: +55 21 2223 2066
centeclatina@terra.com.br

DGS

Membrane Deaeration

Centec Energy Systems

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

More information at **www.centec.de**

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_2 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_2 or N_2) 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_2 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_2 content monitoring can be achieved with highly accurate Centec OXYTRANS optical sensing technology.

- **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_2
- **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

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_2 measurement chilling/chilling water recovery pre-filtration disinfection

The Centec production is certified according to ISO 9001.