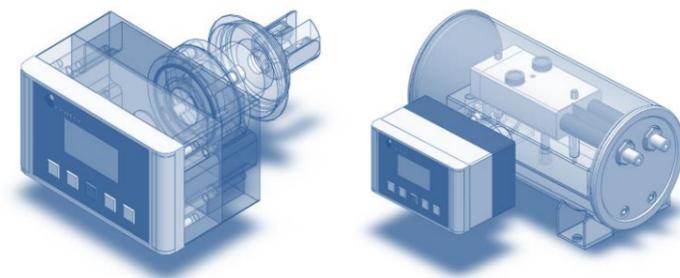


## The Centec Group

Centec is a privately owned group of companies. A core business for us is customized systems for the production and distribution of high purity water and water for injection (WFI) for pharmaceutical and biotechnological plants in accordance with GMP and FDA guidelines. We are an experienced partner for pure steam generation, CIP- and SIP-processes as well as for services related to product preparation. 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 pharmaceutical groups in the world are among our key customers.



**Accuracy. Reliability. Centec.**

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**IONTEC**

## Water Softening & Demineralization

### Centec Pharma Systems



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

# IONTEC

## The Principle

The Centec ion exchange system IONTEC is used for softening water. Softened water is the prerequisite for the next stage in the manufacturing of Purified Water (PW), Highly Purified Water (HPW) and Water for Injection (WFI), as otherwise there could be scaling on the membranes of the subsequent reverse osmosis unit. IONTEC contains an ion exchange resin which is an insoluble granular polymer. In its molecular structure it contains loosely held positive cations. These ions exchange with the ions in the treated solution as it passes through the unit. For softening of water, a cation resin containing  $\text{Na}^+$  is applied. The calcium and magnesium ions forming the hardness in water are exchanged for the sodium ions of the resin which bind more strongly with  $\text{Ca}^{++}$  and  $\text{Mg}^{++}$  than with  $\text{Na}^+$ . When most of the ions in the resin have been replaced the resin is exhausted and the regeneration cycle is initiated. Regeneration is done with brine which effectively strips out the  $\text{Ca}^{++}$  and  $\text{Mg}^{++}$  from the exhausted resin. The cation resin of the IONTEC unit withstands temperatures up to 85 °C applied during cleaning-in-place (CIP).

## Technical Data

Capacity	1 - 150 m <sup>3</sup> /h
Pressure of Operation	0 - 8 bar
Temperature of Operation	2 - 60 °C
Temperature of CIP	max. 85 °C
Material	1.4404/1.4435/... AISI 316L/... electropolishing possible
Surface Finish	Ra < 0,4 possible
Ferrite Content	< 1 % possible
PLC	SIMATIC S7
Options	hardness control pre-filtration reverse osmosis electro deionization disinfection

The Centec production is certified according to ISO 9001.



- **Application Specific and Energy Efficient**  
all stainless steel sanitary execution  
appropriate resin regeneration on demand
- **Modular Design with Standard PLC**  
skid mounted for easy installation and start-up
- **In Compliance with USP, ASME, GMP, FDA, ISPE**
- **Completely Qualified (DQ, IQ, OQ)**
- **Low Operating and Maintenance Costs**

## 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

