

## CE 582 Water treatment plant 2

### Water treatment with sand filter and ion exchanger

This device allows you to clearly demonstrate and investigate the features of multistage water treatment. A sand filter and two ion exchangers are available for this purpose.

With the sand filter the didactic focus is the investigation of the pressure ratios in the filter bed. In order to measure the pressures, the sand filter is fitted with differential pressure measurement and a number of individual measuring points along the filter bed. These measurement points can be connected to a manometer panel, enabling you to measure the

pressure conditions in the filter bed very accurately. The manometer panel has 20 separate tube manometers. By using a transparent filter tube, you can also observe the increased loading of the filter bed visually. The sand filter can be rinsed back if necessary.

Ion exchange takes place after filtration. A cation exchanger and an anion exchanger are available for this purpose. The device also allows for regeneration of the ion exchanger.

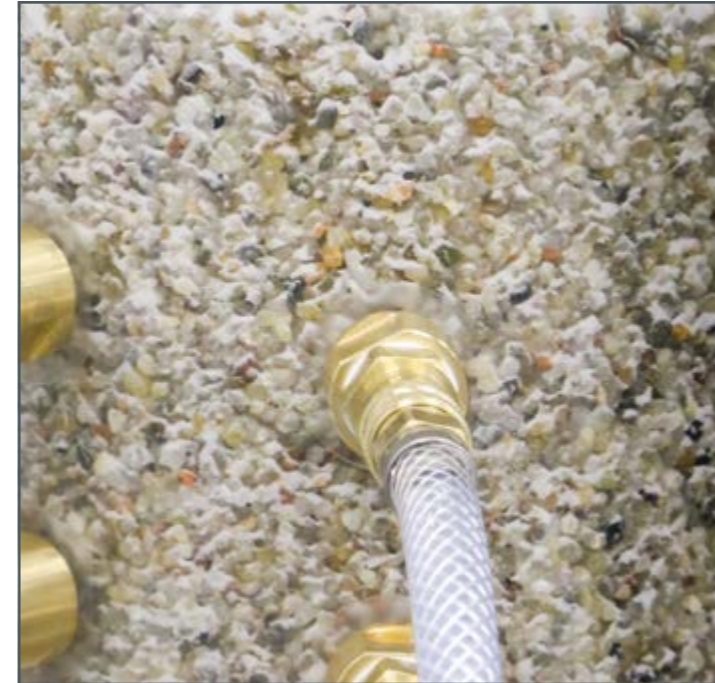


Developed in collaboration  
with the University  
of Magdeburg (Germany)



- 1 manometer panel
- 2 sand filter
- 3 ion exchanger
- 4 storage tank for regeneration agent
- 5 tank for raw water and treated water
- 6 backwash pump

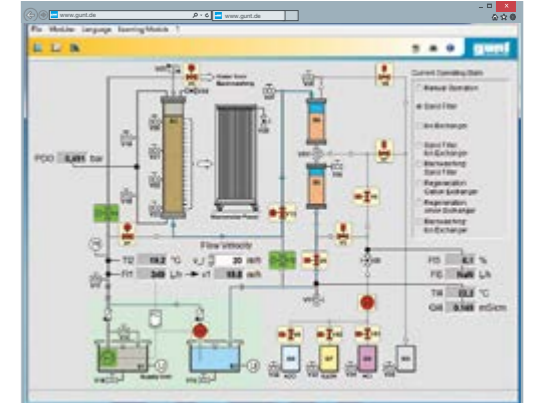
About the product:



By using a transparent filter tube, you can also observe the increased loading of the filter bed visually as well as using the rise in pressure loss.



Standard at GUNT: use of professional instrumentation



### Software

The device is equipped with extensive instrumentation. The device is operated with modern and clearly-arranged software. The software displays all measured process variables continuously. Of course, the software also allows you to save the measured values for analysis.

### Learning objectives

- observation and determination of pressure losses in a sand filter
- plotting of Michau diagrams
- backwash of sand filters
- modes of operation of cation and anion exchangers
- regeneration of ion exchangers