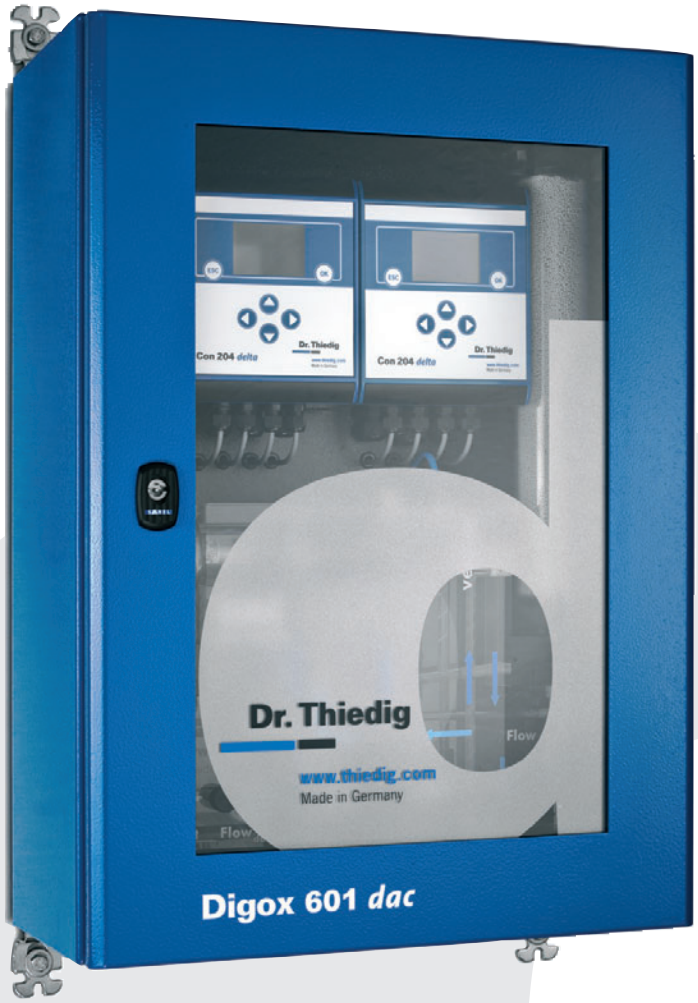
Dr. Thiedig



Digox 601 *dac*

Degassed Acid Conductivity

Digox 601 *dac*

Degassed Acid Conductivity

The conductivity in the water-steam circuit in power plants is an important measurement.

It must be distinguished between:

- Specific conductivity

  which records the sum of all charge carriers and is mainly caused by enriched alkalising materials.

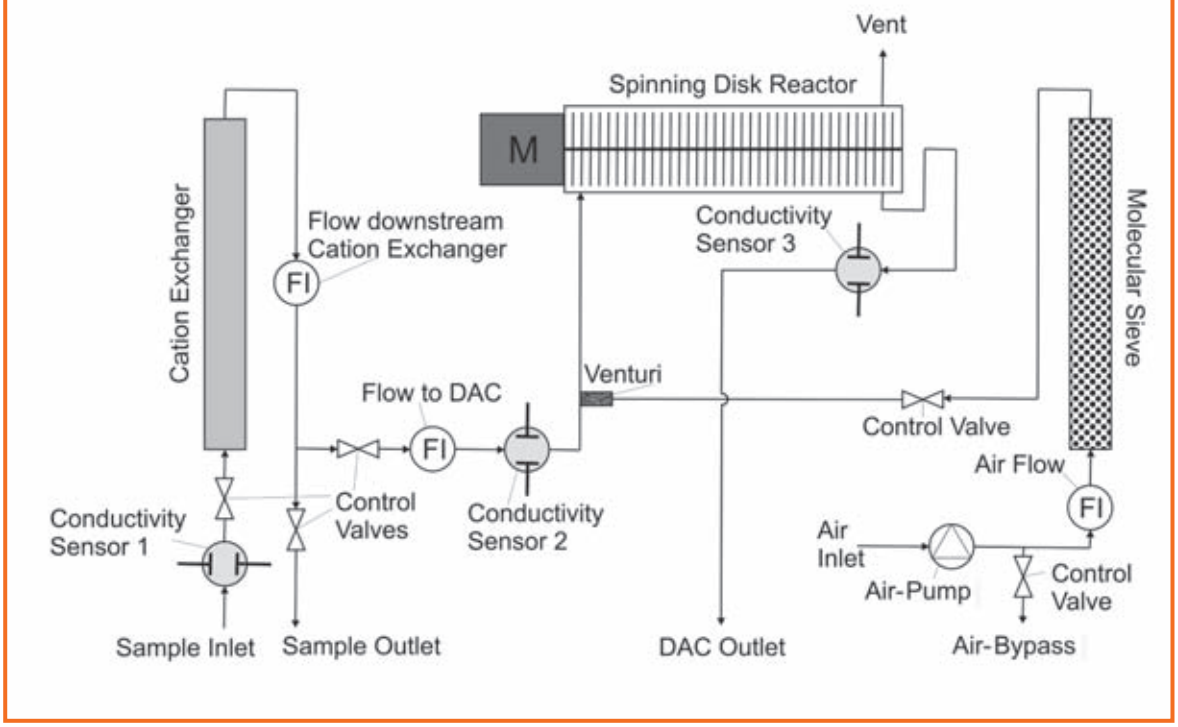
- Cation conductivity

  which records the sum of hydrogen ions occurring and to a limited extent anions, i.e. also CO_3^{2-}. In normal conditions, H^+ and OH^- combine to form water according to the ion product so that the cation conductivity value of 0.2µS cm^{-1} will not be exceeded. As soon as the cation conductivity demonstrably exceeds this value or is possibly even higher than the specific conductivity, a case of break-down has occurred which is either due to a

  - coolant leakage or an
  - air-inleakage.

In order to ensure a short start-up phase, it has be differentiated whether an air-inleakage or a coolant leakage exists. Therefore, it is necessary to remove the carbonic acid from the sample. The conductivity after the CO_2-degassing is now measured (degassed conductivity).
If the conductibility value measured after degassing falls under the value of 0.2µS cm^{-1} then merely H^+ and OH^- according to the ion product of the water are still present as well as slip-induced anions as charge carriers. Thus, a cooling water hardness change can be ruled out and the start-up phase can be significantly shortened.

With the **Digox 601** ***dac*** you have a universal measuring instrument at your disposal. In the compact design, the specific conductivity and the cation conductivity are measured and the pH-value is calculated – the “degassed conductivity” is displayed.



flow chart

Advantages

- Degassing and measurement at normal temperature
- No heating up, therefore no gas emissions of other volatile acids
- No inert gas required, air-conditioning by means of a molecular sieve
- High gain of degassed carbonic acid
- Interpolation of measuring results to actual CO_2 content
- Automatic shut down of the DAC reactor following the fall below the acceptable limit of 0.2 µS cm^{-1} (VGB-guideline)
- Short response times
- Regenerative operating chemicals

The analyser **Digox 601** ***dac*** ensures very short start-up times of the power plant.

TECHNICAL DATA

Digox 601 *dac*

Device	Digox 601 ***dac***
Measuring range	Conductivity 0 – 200 mS/cm, divided into measuring ranges, pH 7.5 – 10.5
Display	Graphic display, backlit
Accuracy	± 1 % of the measuring field final value
Alarm outputs	six relays; 6 A/250 VAC max. 550 VA
Error report	accumulative error report, potential-free change-over contacts 6 A/250 VAC, water shortage, high temperature
Operation	password protection for the menu-led entry with 6 operating keys
Analog outputs	five 0(4)…20 mA, bi-linear, max. load 500 Ω galvanically isolated
Ambient temperature	+5 – 45°C, storage and transport 0 – 50°C, relative humidity 30 – 95 %
Sample quantity	Display in l/h with digital flow rate sensor
Power supply	230 VAC 50/60Hz, 50 VA
Weight	40.0 kg
Dimensions	700 x 500 x 250 mm (HxWxD)

Subject to technical alterations.

Necessary preconditions for the validity of the pH-value calculation:

- Use of just one alkalising medium
- Main contamination of NaCl
- pH-value >8
- Low phosphate concentration (< 0.5 mg/l)

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