

ANALYSER

Digox 602 *silica*

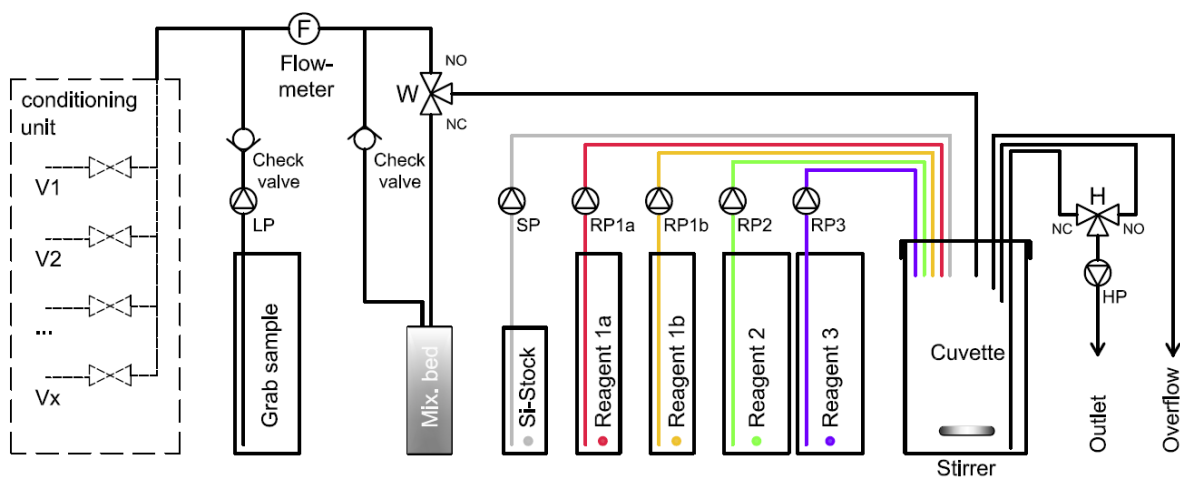


The determination of dissolved silicic acid (ortho-silicate) in the water-steam cycle is of great importance for the operation and plant safety in power plants. In addition to the determination of ortho-silicate in the live steam in order to avoid deposits or crystallisation inside the turbine, it is possible to detect an aperture in the anion filter or mixed bed exchanger.

The **Digox 602 silica** has been further developed and is in accordance with the physical-chemical measuring method of the new VGB guidelines S-006 for the quantitative detection of dissolved silicic acid.

A photometric procedure with a detection limit of 3 ppb is used which is ideally suited for the determination of silicic acid in ultra pure power plant water. For determining the measured values, the Lambert-Beer's law applies in combination with an additional calibration and calculation for the non-linear range in higher concentrations.

The fluidics to the analyser of silicic acid **Digox 602 silica** is illustrated below:



Technical features

- Very low reagent consumption, one reagent set (approx. 3 liters) lasts for 8 weeks at maximum measurement frequency
- Automatic re-calibration, adjustable measuring interval
- Individually selectable sequence and measuring frequency for each channel. Time frame can be adjusted from a continuous measurement up to a measuring interval of 96 hours
- Real blank value determination of chemicals when determining the zero point
- Highly accurate temperature control of the sample
- Galvanically separated signal outputs
- Pressure regulator and easy-to-clean prefilter per channel
- Built-in sequencer for up to 6 sample channels
- Additional connection for the measurement of a laboratory sample

TECHNICAL DATA

Digox 602 silica

Device	Digox 602 silica
Measuring range	0 – 5000 ppb SiO ₂
Photometer	precision photometer with temperature control of the sample
Display	graphic display, measuring value for each channel with point in time and operating condition
Accuracy	Max. {± 2 % of reading or ± 2 ppb} within measuring range 0 – 100 ppb Max. {± 5 % of reading or ± 5 ppb} within measuring range > 100 ppb
Determination limit	0.5 ppb
Repeatability	Max. {± 2 % of reading or ± 2 ppb} within measuring range 0 – 100 ppb Max. {± 5 % of reading or ± 5 ppb} within measuring range > 100 ppb
Calibration	two-point calibration (low range) or three-point calibration (high range) is realised with the help of micro dosing pumps; deionised water via an integrated ionic exchanger for zero point and standard
Reagents	2 x 2.0 l and 2 x 1.0 l reagents, 0.25 l standard solution
Data interface	USB
Alarm outputs	two relays (1x for warnings and 1x for alarms), 250 VAC/3 A, max. 24 VDC/3 A
Operation	password protection for the menu-led entry of threshold and calibration values, communication parameters, programming of calibration and measuring cycles
Analog outputs	up to 6 analog outputs 4...20 mA, max. load resistance 500 Ω
Response time	20 minutes analysis duration
Ambient temperature	+10 – +40 °C, storage and transport 0 – 50 °C ¹⁾ , relative humidity 30 – 95 %
Sample conditioning	at least 1.0 bar, 10-15 l/h, 15-40°C
Sample path	1- 6 input channels with application for maintaining a constant pressure, additional laboratory sample, blank value determination with mixed bed filter
Safety	no data loss after power blackout, data is stored in a memory
Power supply	100 - 240 VAC 50/60 Hz, 150 VA, battery-free parameter storage
Protective system	IP 65 (electronic unit)
Weight	Approx. 40.0 kg (including all consumables)
Dimensions	850 x 450 x 250 mm (HxWxD)
Space requirement for mounting	850 x 550 x 500 mm (HxWxD)

¹⁾ When exposed to temperatures around and under the freezing point, it has to be ensured that no water or reagents are inside the analyser! These have to be stored at temperatures above 0 °C!

Dr. Thiedig

Subject to technical alterations.

Sampling & Analysing Systems

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