

### ANALYSER

# Digox 602 sodium



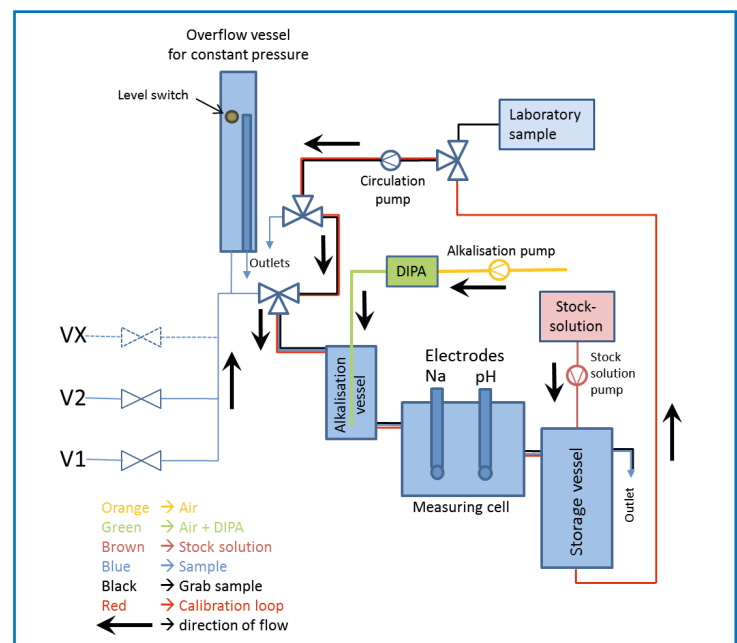
The determination of sodium in low concentrations in the water-steam cycle is of great importance in power plants. On the one hand, this is due to the fact that the significance of sodium in corrosion processes has become more and more recognized over the last few years. On the other hand, this measurement procedure enables a fast monitoring of a leakage for instance in the condenser or the aperture in a cation filter or a mixed bed filter. Not least for that reason, the sodium measurement has become increasingly important with revising the VGB-guidelines (S-006 / S-010).

The **Digox 602 sodium** is an analyser for the continuous measurement of dissolved sodium, even at the level of trace elements, and ideally suited for the operation in the water-steam cycle of power plants, for the control of full demineralisation units, desalination of sea water as well as in the semiconductor industry and electronics industry. The device is able to communicate via both Profibus-DP and a binary remote control.

In order to enable a measurement without the influence of hydronium ions, the sample is conditioned to a value of pH 11 +/- 0.02 pH. The pH-value is monitored continuously. The measurement is potentiometrically carried out by means of a special measuring sequence with an Na-sensitive electrode in combination with an Ag/AgCl-reference electrode:

Ag/AgCl(S) – buffer – Na<sup>+</sup>-sensitive glass membrane - alkalisied measuring solution - diaphragm - KCl-electrolyte gel - AgCl(S)/Ag.

The fluidics to the sodium analyser **Digox 602 sodium** is illustrated below:



## Technical features

- Very low diisopropylamine consumption (conditioning): typically of 0.5 l/month at pH 7, 25 °C
- Automatic three-point calibration, adjustable time interval, automatic regeneration of sodium electrode\*
- Individually selectable sequence and measuring duration in the multi-channel device
- Control and monitoring of the adjustable pH value
- Usable in the range (unbuffered) of pH 4–11
- Automatic temperature compensation
- Maintenance-free, high-precision micro-dosing pumps for stock solution
- 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
- Profibus DP Interface

\* The calibration solution lasts for 6 weeks at the recommended calibration of every 72 hours

## TECHNICAL DATA

# Digox 602 sodium

Device	Digox 602 sodium
Measuring range	0.1 – 9999 ppb Natrium
Measuring principle	Potential measurement of an ion-sensitive Na-electrode against a reference electrode
Display	Graphic display, measuring value for each channel with point in time and operating condition
Accuracy	Max. {±2 % of reading; ±2 ppb} in the measuring range < 2000 ppb ±5 % of reading in the measuring range > 2000 ppb
Repeatability	Max. {±2 % of reading; ±2 ppb} in the measuring range < 2000 ppb ±5 % of reading in the measuring range > 2000 ppb
Calibration	Three-point calibration by threefold standard addition
Reagents	0.5 l standard solution; 1.0 l Diisopropylamine (alkalisation), NH <sub>3</sub> solution (option)
Data interface	Profibus DP (optional)
Binary inputs	6 control inputs for external contacts for channel suppression and remote control
Alarm outputs	Two relays (1x for warnings and 1x for alarms), loading at 250 VAC/3 A, max. 24 VDC/3 A
Operation	Password protection for two levels, entry of threshold values, communication parameters and measuring cycles
Analog outputs	Up to 6 analog outputs 4...20 mA, max. load resistance 500 Ω
Response time	180 seconds (95 %) < 2000 ppb 600 seconds (95 %) > 2000 ppb
Ambient conditions	5 – 45 °C, storage and transport 0 – 50 °C <sup>1)</sup> , relative humidity 30 – 95 %
Sample conditioning	10 – 40 °C, 10 – 15 l/h, 1.0 – 5.0 bar, pH 4 – 11 (unbuffered), optional up to 2.5 pH
Sample connections	1 – 6 input channels with application for maintaining a constant pressure, additional laboratory sample possible
Power supply	100 – 240 VAC 50/60Hz, < 45 VA, battery-free parameter storage, no data loss after power blackout
Standard conformity	CE and CB-compliant according to EN 61010-1 / EN 61326-1 / EN 61326-2-3 / EN 50581
Protective system	IP 65
Weight	Max. 27.0 kg
Dimensions	850 x 450 x 250 mm (HxWxD)
Space requirement for mounting	1050 x 550 x 500 mm (HxWxD)

<sup>1)</sup> 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.

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