

# AQUACON RH/RH-S

## Process analyzers for residual water hardness

The process analyzers AQUACON RH and AQUACON RH-S are suitable for the automatic measurement and control of residual hardness in boiler water and boiler feed water. Measurement principle is a complexometric titration of the water hardness with one combination reagent (RH) or with two reagents (RH-S) which include a buffering solution, the titrant solution and a hardness specific indicator. A photodetection system determines the titration end point (color change from red to blue). The result is displayed on the touchscreen as ppm  $\text{CaCO}_3$  or °dH (RH) or as  $\mu\text{mol/l}$  alkaline earth ions. Main application for the analyzers is the monitoring and control of de-hardening plants and the supervision of salt-less water.

The analyzers consist of a control unit with touchscreen and an analysis unit with measuring chamber, valve, dosing pump (incl. stepper motor) and all required tube connections. The control unit includes a microprocessor which controls the automatic measurement incl. sampling, rinsing, titration and surveillance of the photodetection system. The analysis results can be used for the monitoring and control of a supervised process.

### Your advantages:

- ⇒ Automatic measurement incl. self test and drift compensation
- ⇒ Low Measurement ranges  
RH: 0,5–9,0 ppm  $\text{CaCO}_3$  or 0,02–0,50 °dH  
RH-S: 1,0 – 10,0  $\mu\text{mol/l}$  alkaline earth ions
- ⇒ Easy operation via touchscreen
- ⇒ Adjustable limit value and alarm value
- ⇒ Programmable analog output (0/4-20 mA)
- ⇒ External start/stop of an analysis possible
- ⇒ No external calibration required.
- ⇒ Multi range power supply for variable use.
- ⇒ Including two-part polycarbonate wall cabinet
- ⇒ Optional for RH: second dosing pump for buffering solution to prevent interferences



### Order informations:

AQUACON RH

Option second pump for AQUACON RH  
Combination reagent RH-B2300 (500 ml)

Order No. 693 2705 01  
Order No. 125 0011 01  
Order No. 101 2705 01

AQUACON RH-S

Titration reagent RH-B1000 (500 ml)  
Indicator reagent RH-IND (250 ml)

Order No. 693 2702 02  
Order No. 101 2702 01  
Order No. 101 2702 03

## Technical Data

Current output	0/4 - 20 mA, max. load 500 ohm
Display	240 x 128 dots, touchscreen
Relay	1 x Alarm, potential-free 230 V/50 Hz, 3A 1 x Limit, potential-free 230 V/50 Hz, 3A 1 x Analysis state, potential-free 230 V/50 Hz, 3A
External Switching	potential-free contact, 18 V DC, ca. 4 mA
Power Supply	110 - 230 V -- 50/ 60 Hz
Power Consumption	approx. 16 VA
Dimensions	640 x 315 x 190 mm (H x W x D)
Protection	IP 65 (transmitter housing)
Connections	Plugs with circular connection 1,5 mm <sup>2</sup>
Temperature	5° to 45°C, at consumption of reagents within 6 months

Since it is company policy to continuously improve its product range, we reserve the right to make changes in the product design without notification to its users.

## Specifications

Parameter	Residual Hardness																
Description	Microprocessor-controlled analyzers for the determination of residual hardness in water																
Typical Applications	Monitoring and control of water treatment, water blending and potable water plants, supervision of salt-less water																
Analysis Method	Complexiometric titration of the total hardness using a combination reagent (RH) or two single reagents (titration reagent and indicator reagent)																
Type	AQUACON RH	AQUACON RH-S															
Measuring Range	0,5 – 9,0 ppm	1,0 – 10 µmol/l															
Resolution	0,2 ppm	0,1 µmol/l															
Accuracy	5 % of end value	5 % of end value															
Reproducibility	3 % of end value	3 % of end value															
Zero-point Stability	automatic adjustment	automatic adjustment															
Number of Samples	11																
Sample	Operating Pressure 0,1 - 10 bar Temperature 5 - 30 °C Sample Volume 25 ml per analysis (excluding rinsing) Sample Condition clear, with particles < 0.5 g/l ; < 50 µm Chemical Demands pH 4 - 10, Fe < 3 ppm, Cu < 0,2 ppm, CO <sub>3</sub> <sup>2-</sup> < 10 mmol/l absence of Mn- /Al-salts, HCO <sub>3</sub> <sup>1-</sup> / CO <sub>3</sub> <sup>2-</sup> < 1 mmol/l (only RH-S) Drain pressure free into open drain																
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Analysis	Cycle (approx.) 6 - 13 min., incl. rinsing Sample interval 1 – 99 min or external start/stop Optional 2 <sup>nd</sup> pump (for buffering solution, only RH)																