KNX Sensor Water Quality - pH - ORP (Redox Potential), SK08-WAQ

The KNX Sensor Water Quality SK08-WAQ is a sensor/controller from the series S8 used for recording and controlling water parameters: ph-value, redox potential and water temperature. The sensor/controller has two high impedance BNC inputs for connecting a single-rod measuring cell for pH value and redox potential. The inputs are galvanically separated from the KNX bus so that no ground loop can occur. The SK08-WAQ has an integrated KNX bus coupler and does not require additional voltage. The transducer with the bus coupler is enclosed in a durable, sealed, glass ball-reinforced plastic casing which fulfills protection degree IP65. Additionally two inputs for dry contacts are available.

Article Nr.: 30802000

SK08-WAQ
Water Quality Controller/Sensor with pH Value und ORP Recording
(Single-Rod Measuring Cell included)

Arcus-EDS offers a set of electrodes from the manufacturer Hanna; electrodes of all other makes and applications may also be used.

In the application software there are several controllers (two-position or PI controller with continuous or pulsed output) for measuring the pH value and redox potential. Additional functions include the display of upper and lower thresholds and switching between the set point and threshold.

The sensor records the time period from the last calibration and can be used as an alarm function should the threshold be exceeded. The sensor is calibrated via the KNX bus using two calibration functions. In general, the pH-value probe is set up as a two-position calibration and the redox potential as a one-position calibration.

The sensor is configured with ETS (KNX Tool Software) and the application program. Controlling functions such as signal threshold and other adjustments are parameterized using ETS (KNX Tool Software).

Application:
- Aquariums, Swimming Pools, Ponds, Service Water Systems

Areas of Application:
- Monitoring the water quality in aquariums, swimming pools, ponds and service water systems
- Controlling sanitizing systems

Applicable Sensors:
Single-rod measuring cell for pH value and redox potential

Measuring Amplifier:
From KNX bus, isolated high-impedance (> 500 GΩ) inputs with shared 0-potential.

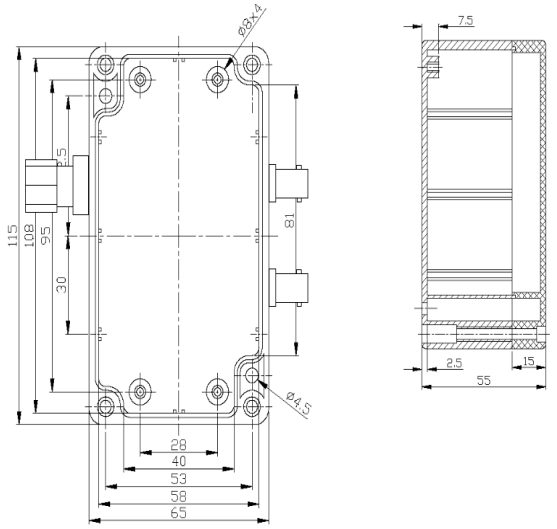
BNC bayonet coupler.
Entrance area pH: -600 .. 600 mV
Entrance area ORP/redox potential: -1200 .. 1200 mV

Use:
Electronic measuring equipment for flat surfaces, orientation of electrode connectors on bottom
Electrodes according to manufacturer's specifications

Measuring Range pH: 0 … 14
Measuring Range ORP: -1200 … 1200mV
Measuring Range water temperature: -20° … 100 °C

Ambient temperature transducer: -20 … +80°C
Ambient temperature electrodes according to manufacturer's specifications

Protection System casing transducer: IP65



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Technical Data	**SK08-WAQ**
Measured Data:	pH value (concentration of hydrogen ion), ORP (redox potential), Operating Time in hours
Sending options	No sending, periodic sending, sending when change occurs
Parameters	Periodic sending with variable cycle duration, sending when changes occurs with variable hysteresis.
Data type pH	2-byte float, 4-byte float, 1-byte unsigned integer
Data type ORP	2-byte float, 4-byte float, 2-byte signed integer
Data type Temperature	2-byte float
Data type dry contacts	1-bit
Data type Operating Time	2-byte unsigned integer
Controller Modi:	Two-position controller static, two-position controller pulsed, PI controller static, PI controller pulsed (PWM)
Parameter Two-Position Controller Static	Set point, differential gap, control direction
Parameter Two-Position Controller Pulsed	Set point, differential gap, control direction, cycle duration, duty cycle
Parameter PI Controller Static	Set point, reset time, proportional factor, control direction
Parameter PI Controller PWM	Set point, reset time, proportional factor, control direction, cycle duration, minimal/maximal duty cycle
Lock Function:	For pH and ORP controller, parameter driven release or lock
Controller for Control Variable Output:	Switching output (1/0), 1-Bit
	Switching output pulsed, parameter driven duty cycle and cycle duration, 1 Bit
	Switching output pulsed, parameter driven cycle duration, duty cycle variable driven (PWM) with minimal/maximal duty cycle, 1 Bit
	Control variable static, 1-byte
Control Variable Periodic Sending	None or 10-250 seconds parameter driven
Threshold pH:	Upper threshold, lower threshold
Threshold ORP:	Upper threshold, lower threshold
Threshold Temperature:	Upper threshold, lower threshold
Threshold Operating Time:	Upper threshold
Auxiliary Quantities pH, ORP and temperature:	Set point, lower threshold, upper threshold
Bus Power Failure	Saving changed auxiliary quantities is parameter driven
Calibration:	pH 7 - Zero pH X - Transconductance ORP X - Transconductance Operating Time - Reset
Ambient Temperature Electronic Measuring Equipment Casing:	Storage -20...+100°C, Operation -20...+80°C (transducer)
Ambient Temperature Humidity	0…95% rH not condensating
Accuracy pH:	+/- 0,1 (calibrated and not compensated for temperature)
Resolution pH:	+/- 0,01
Accuracy ORP:	+/- 10mV (calibrated and not compensated for temperature)
Resolution ORP:	+/- 1mV
Operating Voltage:	EIB/KNX bus voltage 21-32V DC
Power Consumption ca.:	240 mW (at 24V DC)
Auxiliary Supply:	Not required
Bus Coupler:	integrated
Start-up with ETS:	**ARC_S8.VD2 Product: SK08-WAQ**
Circuit Points:	EIB-2-pole clamps (red/black)
Protection Class:	IP65
Assembly Type Transducer:	Assembly with 2 screws finery
Casing Transducer:	Plastic grey
Casing Dimensions:	115 mm x 64mm x 56 mm (L x H x W)
Article Number:	**30802000**
Electrode Set:	Single-rod measuring cell, gel-filled, low-maintenance for standard applications pH: **HI2114P-2** ORP: **HI3214P-2**
Electrode Cable:	2m with BNC plug
Article Number:	**91110020**
Temperature Sensor:	PT1000 not included, please order separately

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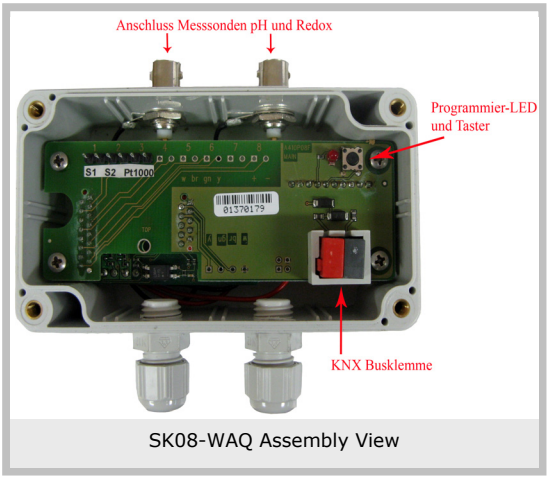
Order:			
SK08-WAQ		**KNX Sensor Water Quality - pH - ORP (Redox)**	
SK08-WAQ		Measuring Amplifier, Bus Coupler	**30802000**
SK08-WAQ-MES		SK08-WAQ incl. Measuring Electrode Set 91110020	**30802001**
Probe Set pH/ORP		Measuring Electrode Set, Single-Rod Measuring Cell pH-Electrodes HI2114P-2 ORP-Electrodes HI3214P-2 Gel-filled, Low-Maintenance, Connector BNC with 2m Cable Manufacturer: Hanna Instruments	**91110020**

Start-up:
The KNX Sensor is set up using the ETS (KNX Tool Software) and the applicable application program. The sensor is delivered unprogrammed. All functions are programmed and parameterized with ETS. Please read the ETS instructions.

Assembly:
The Sensor SK08-WAQ is for outdoor and (moist) indoor areas. It fulfills protection class IP65. The sensor is attached to the wall with two screws.



SK08-WAQ Assembly View

The transducer lid is opened by loosening the screws.

The external measuring electrode (single-rod measuring cell) cable is screwed into the side of the BNC case. First attach the sensor to the wall or ceiling, then insert the KNX Bus cable into the cable gland on the side of the casing. Detach the bus clamp from the device, attach the cable and replace the clamp onto the board. After successfully programming the device, screw the cover back on.

→ Be careful not to damage the electronics with tools and cable heads.

When using the external temperature sensor or the dry contacts, the cable is inserted in an additional cable gland.

For the initial set-up the sensors must be calibrated according to the application instructions. Afterwards, it is recommended to recalibrate every 3 to 6 months.

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In Case of Bus Voltage Recurrence:
All changes made using the help key for the KNX/EIB bus are saved if the device has been correctly parameterized. The controller and outputs start with the current values. The ETS parameter settings are saved.

Discharge Program and Reset Sensor:
Should the sensor crash due to a programming malfunction, the previous project can be deleted by pressing the programming button. Hold the programming button down while connecting the EIB bus clamp and wait until the programming LED display appears. This will take 5 – 10 seconds. Any calibrations undertaken will be lost.

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Safety Guidelines:
Attention! Installing and assembling electrical devices must only be done by an electronics specialist.
The customer should be aware of and adhere to the safety guidelines of VDE, TÜV and the appropriate energy provider. Our guarantee does not include defects and damage caused by improper use or non-compliance of operating instructions.

Warranty:
We provide a warranty as required by law. Please contact us in case of malfunction and send the device with a full description of the fault to the address below.

Manufacturer:

Incorporated Trademarks:

CE The CE Trademark is an inofficial market trademark used exclusively by authorities and provides no warranty of properties.

KNX Incorporated trademark of Konnex Association

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