

## Hardness control measuring device softwatch

### Intended use

The hardness control measuring device softwatch is designed to monitor the total hardness of drinking water. The choice of the indicator determines the limit value.

The hardness control measuring device softwatch is for exclusive use in the industrial and commercial sector.

The hardness control measuring device softwatch is designed to monitor a single soft water line.

The hardness control measuring device softwatch is suitable for BOB operation to monitor steam boiler systems.

### Application limits

Certain substances contained in the water can interfere with or falsify the colour reaction. Therefore, comply with the limit values below:

pH value	4 - 10
Acid capacity $K_{S4.3}$	< 5 mmol/l
Iron (Fe)	< 3 mg/l
Copper (Cu)	< 0.2 mg/l
Aluminium (Al)	< 0.1 mg/l
Manganese (Mn)	< 0.2 mg/l

### Function

The installation location should be in the immediate vicinity downstream of a water softener to prevent a

delayed response of the protective device or a falsification of the measured value.

The flushing time can be adjusted as a function of the length of the supply line, so that the sampling water that is monitored during the measurement is always fresh.

The hardness control measuring device softwatch is installed in a branch of the soft water pipe and takes soft water samples at freely adjustable intervals. By adding an indicator to the water sample, a colour reaction is generated which is analysed by a sensor.

The interval period between two measurements is continuously adjustable:

Flushing time: 15 s – 1800 s

Interval period: 5 min – 360 min

Interval volume: 1 l – 9999 m<sup>3</sup>

In combination with a flow meter, a water meter or a water softener, the measurements can take place exactly when water is withdrawn.

The indicator consumption can be optimally adjusted.

### Control unit

The control unit can be integrated into existing systems and units by way of relay outputs and the voltage-free input.

- 1x Voltage-free input contact
- 3x Voltage-free relay outputs for
  - Exceeding the limit value
  - System malfunction
  - Status message or lack of indicator

### Design

- Electronic control unit with display, operating panel and 5 cable screw connections
- Indicator pump
- Measuring chamber with magnetic stirrer
- High-performance LED
- Photometric sensor
- Inlet solenoid valve
- Quick-acting coupling
- Rigid foam housing

### Scope of supply

- Hardness control measuring device softwatch with connection material
- Operation manual

**Product Data Sheet**

Hardness control measuring device softwatch

**Technical specifications**

<b>Dimensions and weights</b>		
System width	mm	350
System height	mm	250
System height with connections	mm	270
System depth	mm	140
Operating weight, approx.	kg	2.0

<b>Connection data</b>		
Nominal connection diameter inlet/outlet	mm	6/8
Drain connection	DN	≥ 50
Rated voltage range	V	85 – 305
Rated frequency	Hz	47 – 440
Power input (standby)	VA	< 3.5
Power input (operation)	VA	25
Protection/protection class		IP54 / ⊕

<b>Performance data</b>		
Operating pressure (recommended)	bar	0.5 – 5.0 (1 – 2)
Load rating of relays at internal/external power supply	A	1/2.5
Load rating of relays (changeover contact)	V	250

<b>Consumption data</b>		
Indicator consumption per analysis	ml	< 0.1
Analyses per 500 ml indicator bottle		> 4000
Water consumption per analysis (at 2 bar)	ml	1000

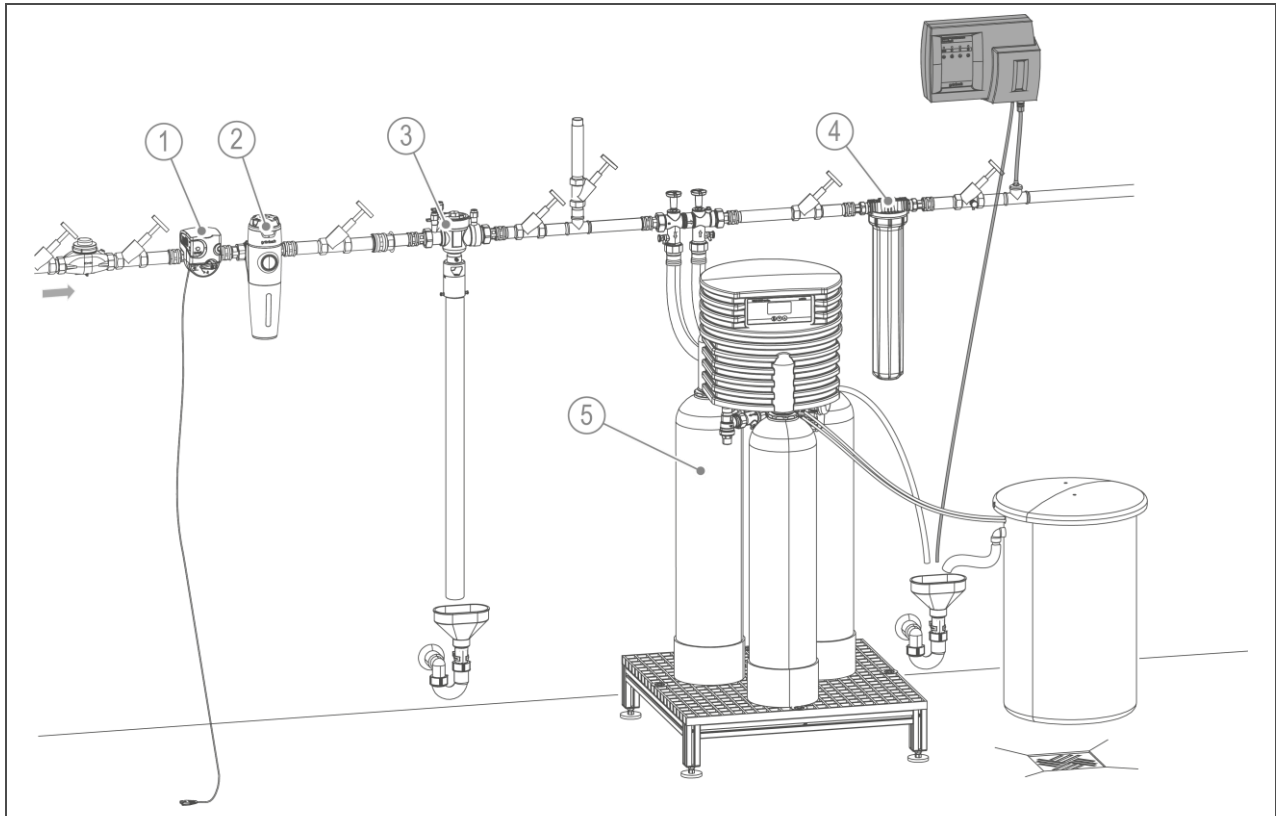
  

<b>General data</b>		
Water temperature	°C	5 – 40
Storage temperature	°C	5 – 45
Ambient temperature	°C	10 – 45
Max. humidity (RH non-condensing)	%	20 – 90
Shelf life of indicator (storage in a dark place, < 25 °C)	a	2
<b>Order no.</b>		<b>172600000000</b>

<b>Analysis properties</b>		
Inlet water quality		clear, colourless, free of solids, without gas bubbles
Measuring time, approx..	s	300
Measuring method		titration with colour change
Measuring range	°dH	0.02 – 10
	°f	0.04 – 20
	ppm CaCO <sub>3</sub>	0.4 – 200
	mmol/l	0.004 – 1.78
	°e	0.028 – 14
	mval/l	0.008 – 4
Measuring accuracy of indicator	%	≤ 10

<b>Limit value indicators for total hardness</b>					
		Indicator SWK – 0.1	Indicator SWK – 0.3	Indicator SWK – 0.5	Indicator SWK – 10
Limit value	°dH	0.1	0.3	0.5	10
	°f	0.178	0.534	0.89	17.8
	ppm CaCO <sub>3</sub>	1.78	5.35	8.9	178
	mmol/l	0.0178	0.053	0.089	1.783
Content	ml	500	500	500	500
<b>Order no.</b>		<b>172 201</b>	<b>172 202</b>	<b>172 203</b>	<b>172 204</b>

## Installation example



Item	Designation	Item	Designation
1	Safety device protectliQ	2	Drinking water filter pureliQ
3	System separator GENO-DK 2	4	Activated carbon filter AKF
5	Water softener Delta-p		

### Installation requirements

Obey the local installation directives, general guidelines and technical specifications.

The installation site must be frost-proof and protect the product from chemicals, dyes, solvents and their vapours.

Install a drinking water filter and, if required, a pressure reducer (e.g. fine filter pureliQ:KD) upstream of the product.

A permanent power supply, which must not be coupled with light switches, heating emergency switches or the like, is required for electrical connection.

A drain connection (DN 50) must be available to discharge the sample water.

A floor drain suitable for the system size must be available at the installation site, or a safety device such as a protectliQ or a protection device with water stop of the same quality must be installed.

In case of inlet pressures > 5 bar, a pressure reducer must be installed.

### Accessories

**Water sample cooler for hot water 40 bar(g)**  
Order no. 160 460

**Pressure reducer for softwatch**  
Order no. 172 860

### Contact

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