



Fig. 1: GENO®-softwatch Komfort

**GENO®-softwatch Komfort****Designated application**

The GENO®-softwatch Komfort is designed for automatic monitoring of the residual/total hardness (water hardness).

The limit value is determined by the choice of the indicator.

**Functional description**

The GENO®-softwatch Komfort is installed in a branch line of the soft water pipe.

The main components of the automatic water analysis system are the photometric measuring chamber with receptacle and non-wearing stirring device, the dosing unit for the indicator and the control electronics.

Following the rinsing of feed line and measuring chamber, the fully automatic titration takes place. The indicator is added by means of a dosing pump. After a settling period, the photometric evaluation of the water sample is carried out. Depending on the colour change, the water sample is either above or below the limit value (green = good measurement; red = bad measurement) and depending on the colour, a visual alarm signal will be released. A voltage-free output to connect an acoustic alarm on site is provided.

**Control unit**

Electronic control unit for micro-processor-controlled analysis with automatic functions monitoring in case of lack of indicator, with automatic monitoring of the impurities in measuring chamber, the lack of water and turbidities as well as output of internal disturbances. Via a LED display, the control unit indicates the result of the measuring (red-green), an ongoing analysis (yellow), the lack of indicator (blue) and an alarm (red).

The control unit features timer-controlled rinsing of the feed line while taking into consideration its length, so that only fresh water is analysed. Furthermore, in order to have the measuring result confirmed, the first measurement may be suppressed and the second measurement can be used as the determining end result.

**Timer control**

Via a timer, the GENO®-softwatch can be locked resp. released for analyses. Via this input and in combination with control unit GENO®-IONO-matic<sub>3</sub> and Weichwassermeister® GSX, the analysis can be locked at a flow rate = 0 m<sup>3</sup>/h.

**Standard automatic analysis**

The interval period between two measurements can be adjusted in 4 steps: 5/10/20/30 minutes.

In case of BOB operation (operation without constant supervision), the system continuously checks the available amount of indicator. If the remaining amount does not suffice for the set BOB interval, an alarm signal will be emitted. The BOB operation is a relevant safety feature if the system is used as a monitoring device for the water hardness in steam boiler systems according to TRD 604.

**Inputs and outputs****Inputs**

A galvanically isolated input is available.

**Stop** input, to interrupt the analysis interval in progress.

**Outputs**

The system features 3 voltage-free relay switching outputs for transmission to the central building management system resp. to activate additional components.

**REL 1 - Limit value exceeded**

Voltage-free change-over contact (max. 230V-2A) as permanent contact or alternatively as pulse contact (e. g. to start a regeneration in water softeners).

**REL 2 - System malfunction**

Voltage-free change-over contact (max. 230V-2A) for internal system malfunctions such as power failure, lack of indicator, zero sample error and measuring error.

**REL 3 - Analysis sequence**

Voltage-free change-over contact (max. 230V-2A) for signal devices and valves. The relay switches during the analysis. By means of a turn-switch, a delay of the sampling can be programmed (e. g. solenoid valve water sample cooler).

The system is fitted with noise suppression and meets the requirements of the EMV regulations. Power supply by means of a Euro plug with 1.5 m cable.

**Scope of supply**

Fully automatic water analysis system GENO®-softwatch Komfort with shapely, functional housing, consisting of:

- System housing
- Control electronics with LED display and operating keys
- Integrated automatic rinsing
- Photometric measuring chamber with non-wearing stirring device
- Dosing unit for indicator
- Connection technology
- Operation manual

### Options

#### Indicators

(refer to table "Limit value indicator")

#### Installation requirements

If the system is used to monitor the residual resp. total hardness, high amounts of heavy metal ions in the soft water may have a negative impact on the colour reaction.

pH	4-10.5
Iron	< 3 mg/l
Copper	< 0.2 mg/l
Aluminium	< 0.1 mg/l
Manganese	< 0.2 mg/l
Acid capacity $K_{S4,3}$	< 5 mmol/l

In case of a concentration of more than approx. 100 mg/l CO<sub>2</sub> (carbon dioxide) in the water, the free carbon dioxide must be removed.

Please observe local installation directives, general guidelines and technical specifications.

The installation site must be frost-proof and ensure the system's protection from chemicals, dyes, solvents and vapours. The ambient temperature as well as the radiation temperature next to the system must not exceed 45 °C.

A separate socket is required within a range of approx. 1.5 m of the system.

A drain connection DN 50 must be available on site.

Available indicators are available for GENO®-softwatch Komfort systems.

The different measuring parameters and measuring ranges are determined by the choice of indicators. The table "Limit value indicators" will give you an overview on the various possibilities.

Pressure reducer at an operating pressure > 5 bar – to protect the measuring device from damage. Pressure reducer with the appropriate connections for installation into the feed line for measuring water.

**Order no. 172850**

Table: Limit value indicator (shelf life 2 years!)						
Limit value/unit		Indicator SWK – 0.1	Indicator SWK – 0.3	Indicator SWK – 0.5	Indicator SWK – 10	
	°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	
	mol/l	0.0178	0.053	0.089	1.783	
<b>Order no.</b>	<b>172 201</b>	<b>172 202</b>	<b>172 203</b>	<b>172 204</b>		1x 500 ml
<b>Order no.</b>	<b>172 211</b>	<b>172 212</b>	<b>172 213</b>			4x 500 ml

Technical specifications	Automatic water analysis system GENO®-softwatch Komfort	
<b>Connection data</b>		
Nominal connection diameters inlet/outlet	[mm]	6/8
Operating pressure	[bar]	0.5 - 5
Required drain connection	[DN]	50
Power supply	[V]/[Hz]	85 – 264 V AC / 47 – 63 Hz all-phase power switch-off
Max. power input	[VA]	25
Protection/protection class		IP 54/I
<b>Dimensions and weights</b>		
Dimensions approx. (w x h x d)	[mm]	350 x 250 x 140
Weight, approx.	[kg]	2
<b>Consumption data</b>		
Indicator consumption	[ml]	< 0.10/analysis
Range of 500 ml indicator bottle		> 4000 analyses
Water consumption, approx.	[ml]	1000
<b>Ambient data</b>		
Ambient temperature	[°C]	5-45
Min./max. water temperature	[°C]	5 / 40
<b>Order no.</b>		<b>172 500</b>