

## The intelligent alternative of online-water hardness monitoring

# *Softcontrol-M*

### UNIQUE

In contrast to conventional water monitoring devices Softcontrol-M operates with a selective sensor for calcium and magnesium ions on potentiometric method basis.

Both the monitoring of the water hardness and a quality controlled regeneration release can be operated with Softcontrol-M. Thereby the performance of the softener system can be optimized. A novelty is the percentage description of the current achieved added value at the display.

### INDIVIDUAL

The monitored soft water threshold value can be defined individually in steps of 0,5% up to 10% in reference to raw water hardness. Through a current loop the indicated water hardness value will put out and allows a record of the hardness progress. The qualitative regeneration release can be parameterized between a minimal and a maximal flow rate.

### UNCOMPLICATED

Installation, commissioning and operating of Softcontrol-M are completely uncomplicated. Also the sensor can be changed easily by pushing it into the measuring chamber.

### COMPATIBEL

Softcontrol-M is instal able in every water softener system. Also a subsequently installation into an existing system is possible. Softcontrol-M needs impulses of an external flow rate water flow meter as wel as an electrical input at the control er to release a forced regeneration to ensure a process with qualitative regeneration release.

### ENVIRONMENTAL

An addition of reagents or indicators is not necessary. This makes the device environmental friendly and cost-effective.

### WELL- ARRANGED

A clearly represented LED display shows functional status, water hardness evaluation and the momentary soft water capacity at the first glance. With three double assigned buttons Softcontrol-M can be parameterized and information can be recalled.

### EASY TO MAINTAIN

Except an occasional sensor exchange Softcontrol-M is nearly maintenance free.



# Softcontrol-M

## DESCRIPTION OF FUNCTIONS

By means of a bypass-process, Softcontrol-M extracts soft water samples time controlled or flow rate dependent at the outlet of the water softener. The device evaluates the residual hardness in reference to the defined threshold. The threshold value can be parameterized by three buttons with individual y defined steps of 0,5 % up to 10 % residual water hardness in reference to raw water hardness.

The measurements will be automatically carried out in a flow-rate measurement chamber in which an ionic-selective dipped electrode is securely placed. With opening and/or closing of the upstreamed stop valves the respective process water will be exchanged and then rejected depressurized.

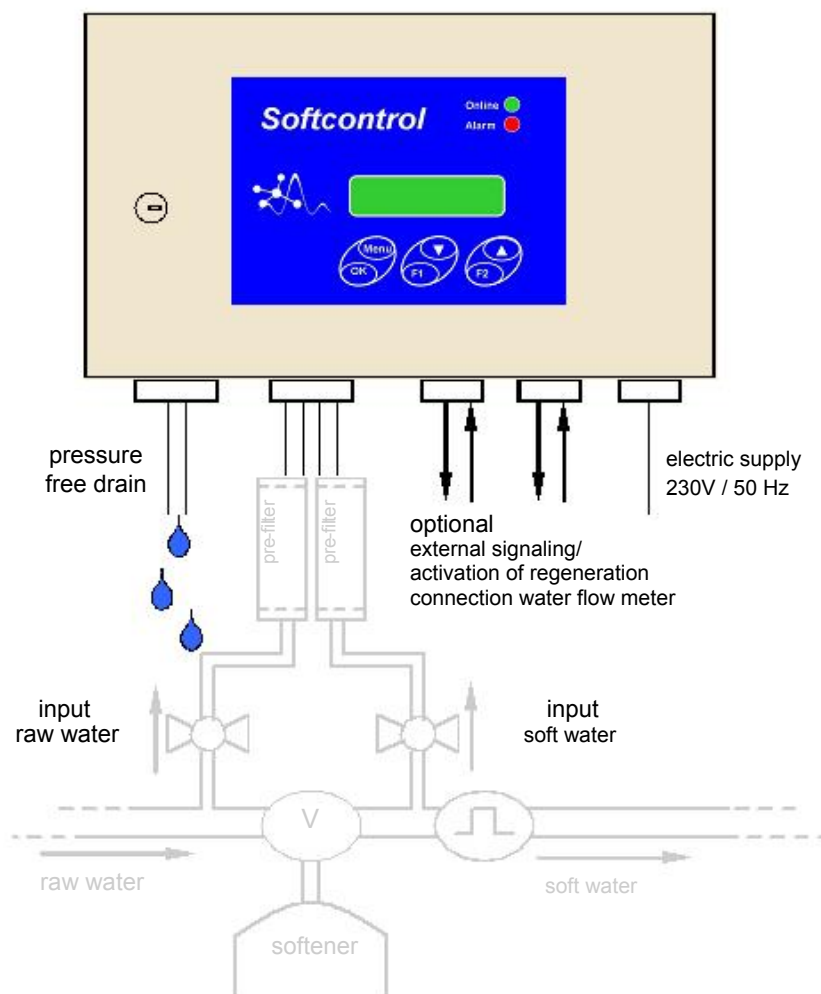
The soft water quality has to be monitored continuously by the connected water flow meter while the extraction process to release the regeneration of the softener by Softcontrol-M. The water hardness quality and the issue quantity are evaluated during this period.

A potential-free contact will be released to start external y the regeneration by exceeding of the threshold value or of the fixed flow rate quantity. The regeneration of the softener system will turn from qualitative operation mode to quantitative operation mode with perturbation of the electrode. The device switches over to qualitative operation mode with identification of the remediation of the blockage.

Functional status, measuring functions and their results are represented by a display and coloured LED's. Threshold value exceedings, brine-shears and service requirements are signalized by LED's.

The measuring system calibrates and monitors itself via the intermittent automatic switching from soft water to raw water. An addition of reagents or indicators is not necessary.

Softcontrol-M operates independently and signalizes automatically recognized service requirements.



**OPERATING MODES****Threshold value monitoring/time controlled measurement**

The device operates time controlled and measures in parameterized time periods while operating without connection to a water flow meter. Alarm is signalized with identification of malfunctions.

**Quantitative regeneration process/flow rate controlled measurement**

There is no external regeneration release by connection to a water flow meter until the achievement of a parameterized minimum flow rate which is independent of recognized threshold exceedings. The device switches automatically to qualitative regeneration process with exceeding of the minimum flow rate. Softcontrol-M turns automatically to quantitative regeneration process with identification of a degraded sensor performance.

**Qualitative regeneration process/flow rate controlled measurement**

Regeneration will be released with threshold exceeding within a parameterized minimum and maximum flow rate. The current soft water flow rate is represented by the display in per cent whereas 100% relate to flow rate controlled regeneration.

**Regeneration**

The release of the external regeneration will be accomplished with a potential-free contact under the terms of realizing an external forced regeneration by the connected controller of the softener system.

**Sensor alarm**


The sensor performance will be monitored cyclically. During this process water samples are measured and the sensor performance will be calculated out of the measured voltage. Sensor alarm will be signalized if these results do not comply with defined performance parameters. The softener system operates at quantitative process after recognized sensor malfunction. Therefore the operative process reliability is ensured.

**Calibration mode**

The measuring system calibrates and monitors itself in cyclical y intervals and after recognized alarms via intermittent automatic switching from soft water to raw water.

**LED-STATUS AND DISPLAYS OF FUNCTIONAL STATUS**

The functional status and the measuring results will be shown by display and luminiscent or flashing LEDs:

	LED „Online“ lights up	> ready for operation
	LED „Online“ is flashing	> active operation
	LED „Alarm“ lights up/is flashing	> threshold alarm/ brine alarm
	Display	
	first line	> menu or status line
	second line	> measurement line

button „Menu/OK“ > start of the menu or reset  
validation of threshold adjustment/calibration/parameterization

button <F1> > selection process data/single value decreasing; manual regeneration

button <F2> > selection process data/single value increasing; manual regeneration

**SENSOR SYSTEM**

selective sensor for calcium and magnesium ions type 620

**ACCESSORIES KIT**

power supply unit 100 ... 240 V / 50 ... 60 Hz  
 1 m drain tube o.d. 6mm / i.d. 4 mm  
 4 m sample tube o.d. 4 mm / i.d. 2 mm  
 2 pieces prefilter 100 µm (optional)

**TECHNICAL DATA**

Dimension of case	400 x 250 x 160 mm (B x H x D), wall mounted
Installation space	420 x 300 x 180 mm (B x H x D)
Weight	appr. 8 kg
Surrounding temperature	5°C to 50°C
Relative humidity	20% to 80%
Power supply	electric supply 100 ... 240 V / 50 ... 60 Hz
Power consumption	15 V DC, appr. 20 Watt
Raw and soft water connection	branch pipe with connection for PA-tube o.d. 4 mm, i.d. 2 mm; up streamed dirt filter ≤ 0,1 mm recommended
Raw and soft water pressure	minimum 1 bar up to maximum 10 bar
Drain	minimum ø 15 mm, pressure free
Quality of raw and soft water	natural water, free of grease, oil or brine germ content < 5000 KBE/ml
Hardness range raw water	1°dH up to 60°dH, natural water
Evaluation of water hardness in raw water	100%
Evaluation of water hardness in soft water	parameterized threshold values between 0,5 and 10% in reference to raw water hardness

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