

# **EUROWATER**

A GROUP OF CO-OPERATING EUROPEAN WATER TREATMENT SPECIALISTS

AUTOMATIC SOFTENING

## AUTOMATIC SOFTENING PLANTS SERIES SM & SG



Type SM 62/CSD-F

## TIMER-CONTROLLED SOFTENING PLANT

- SUITABLE FOR REGULAR AND MODERATE DAILY CONSUMPTION
- ELECTRONIC 12 V PROGRAMMER FOR INDIVIDUAL DAILY PROGRAMMING
- REGENERATION TIMER FOR INDIVIDUAL PROGRAMMING OF SALT AND RINSE WATER CONSUMPTION
- SERIES SG IS INTENDED FOR SOFTENING OF HOT WATER UP TO 85°C

### SOFTENING

During operation, calcium and magnesium salts (hardness) in the raw water are exchanged for sodium salts, thereby eliminating the problems caused by hard water. When the resin is saturated with calcium and magnesium salts, the unit draws brine from the brine tank. The collected calcium and magnesium salts are discharged to drain, and the resin is recharged with sodium ions.

### THE PRINCIPLE OF TIMER CONTROL

A timer-controlled 1-tank unit regenerates at preset hours by means of an electronic timer. During regeneration, the resin tank is out of service and the water supply is consequently interrupted. When the regeneration is completed, the tank returns to operation.

### RANGE OF APPLICATION

A timer-controlled 1-tank unit is used in case of moderate water consumptions without considerable fluctuations, and where interruptions of 1-3 hours in the water supply are acceptable.

### PLANT DESIGN

A 1-tank unit consists of a resin tank with 5-cycle valve and brine tank. In connection with a multi-tank plant, a connecting pipe system can be delivered with stop valves. Each plant is supplied with an electronic programmer.

### TIMER CONTROL

The electronic ETP 4 programmer consists of a time clock and a regeneration clock. The time clock allows for several regenerations every 24 hours and submits pulses to start a regeneration. The regeneration clock controls the variable salt and rinse programmes.

### COMBINED TIMER AND METER CONTROL

A CSD control panel is a combination of timer and meter control. The panel starts regenerations at preset hours, but only if the preset consumptions have been reached. With this arrangement, water and regeneration chemicals are saved during holidays and other non-working days. The CSD control panel may be used for meter control only, if interruptions of the water supply during regeneration are acceptable.



Type SM 61

## METER-CONTROLLED SOFTENING PLANTS

### THE PRINCIPLE OF METER CONTROL

A pulse transmitter at the outlet side of the unit registers the consumptions of softened water and transmits pulses to the control panel concurrently with the consumption. When the capacity of a resin tank is exhausted, the control panel starts a regeneration of the tank.

### CONTINUOUS SOFT WATER SUPPLY

During regeneration, one tank is taken off-line while the other supplies softened water. When the tank is regenerated, it goes into operating position.

### ADVANTAGES OF METER CONTROL

The resin tanks can be regenerated at intervals of a few hours. Thus the filter media are utilized in the best way, and even small plants can deliver large amounts of softened water at minimum cost and space requirements. As the units are regenerated according to consumption only, the system offers optimal economy as to water and chemicals.

### RANGE OF APPLICATION

A meter-controlled softening plant is suited for irregular and large water consumptions.

### FRAME-MOUNTING

A meter-controlled 2-tank unit can be constructed as a frame-mounted plant and ready for installation. It consists of two resin tanks with 5-cycle valves, a pipe system with necessary automatic and manual plastic valves, and a control.

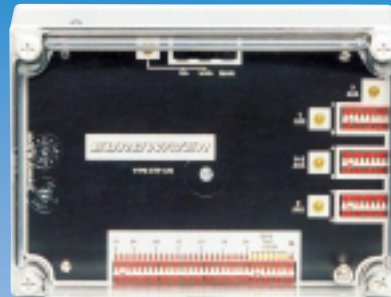
### ELECTRONIC CONTROL PANEL

The CSD control panel contains a programming and a pulse counting section which can both be programmed individually by means of keys on the panel front.

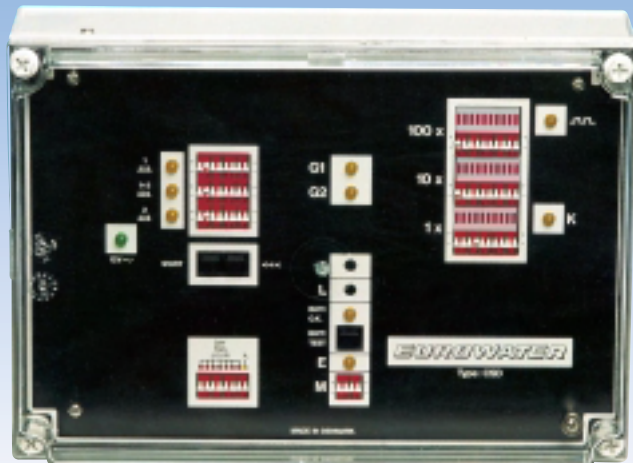
### LIGHT-EMITTING DIODES

The programming section controls the salt and rinse programmes of the unit, while the counting section controls the meter control. All service cycles and regenerations can be checked by means of light-emitting diodes.

- SUITABLE FOR IRREGULAR AND LARGE WATER CONSUMPTIONS
- CONTINUOUS SOFT WATER SUPPLY
- REGENERATION PROPORTIONAL TO WATER CONSUMPTION ENSURES OPTIMAL WATER AND CHEMICAL ECONOMY
- ELECTRONIC 12 V CONTROL PANEL FOR INDIVIDUAL PROGRAMMING
- SERIES SG IS INTENDED FOR SOFTENING OF HOT WATER UP TO 85°C



Programmer for timer control



Control panel for meter control

## SOFTENING PLANT FOR HOT WATER, SERIES SG

## PLANT COMPONENTS

### APPLICATION

Series SG is used for softening of hot water with a temperature up to 85°C. Resin tank, inlet and outlet distributors and 5-cycle valve are constructed especially for hot water.

### THEORY OF OPERATION

The plant is regenerated with cold water from a separate cold water connection, to avoid unnecessary calorie loss during regeneration. During the last regeneration cycle, the resin tank is rinsed with hot water again, whereby the plant can supply hot, softened water for consumption immediately after a regeneration.

### SPECIAL ADVANTAGES

When hot water is softened in a traditional way, calcium precipitations very fast clog the valve. The mechanical functions are thus disturbed. As to the SG-plants, this problem is almost eliminated by feeding the movable parts of the valve with cold water only. In the same way, supplying the brine tank with cold water only, prevents crystallisation and clogging from happening.

### EUROWATER 5-CYCLE VALVE

The patented Eurowater 5-cycle valve is made of plastics and is simple and sturdy with 3 movable parts only. The valve has been designed especially for Eurowater plants and ensures an efficient and lenient treatment of the ion exchangers resulting in a better utilization of the plant and a long life of the resin.

### CORROSION-RESISTANT RESIN TANK

The resin tanks are coated with high-density polyethylene. The coating is absolutely free of pin-holes, and the TAB dielectric strength is approximately 21 kV/mm. The tanks thus have the strength of steel and the chemical corrosion resistance of plastics.

### CORROSION-RESISTANT BRINE TANK

The brine tanks are made of rigid polyethylene with lids of the same material. They are easy to fill and clean and contain salt for several regenerations.

## FLOW RATES AND CAPACITIES

MODULE	FLOW RATE m <sup>3</sup> /h	PRESSURE LOSS bar	BASIC CAPACITIES (1)			
			Minimum m <sup>3</sup> at 1°GH	Salt cons. kg NaCl	Maximum m <sup>3</sup> at 1°GH	Salt cons. kg NaCl
SM/SG 11	1.8	0.8	31	0.9	50	2.6
SM/SG 15	2.4	1.1	38	1.4	54	3.7
SM/SG 20	2.4	1.1	48	1.4	78	4.0
SM/SG 40	3.0	1.2	84	2.5	136	7.0
SM/SG 60	3.6	1.2	136	4.0	222	11.4
SM/SG 80	3.6	1.2	192	5.6	312	16.0

(1) Selection of the control system influences on the basic capacity.

Operating pressure: 2.5-6 bar. Power supply: 230 volt, 50 Hz, transformed into 12 V.

Regeneration salt: 98% NaCl, grain size 10-20 mm. Water temperature: Type SM max. 35°C. Type SG max. 85°C.

### SALT SETTING

All units have variable salt settings which can be adjusted without tools. The minimum setting is the most economic. At higher settings, comparatively more salt is used per m<sup>3</sup> of softened water.

### BASIC CAPACITY

The amount of raw water which can be softened between two regenerations depends on the hardness of the raw water and the salt consumption per regeneration. The basic capacities stated indicate the amount of raw water with 1 degree of hardness (1° GH) which can be softened per regeneration. The actual capacity per regeneration is consequently calculated by dividing the basic capacity by the hardness of the raw water.

## DIMENSIONS

MODULE	1-TANK-UNIT						2-TANK-UNIT					
	RESIN TANK		BRINE TANK			FRAME DIMENSIONS			RESIN TANK			
	Diam. mm	Height mm	Diam. mm	Height mm	Content kg NaCl	Width mm	Depth mm	Height mm	Diam. mm	Height mm	Content kg NaCl	
SM/SG 11	250	985	350	750	80	-	-	-	-	-	-	
SM/SG 15	300	815	350	750	80	-	-	-	-	-	-	
SM/SG 20	250	1165	420	1090	140	1000	450	1425	520	1090	230	
SM/SG 40	250	1465	420	1090	140	1000	450	1795	520	1090	230	
SM/SG 60	300	1465	420	1090	140	1000	450	1795	520	1090	230	
SM/SG 80	350	1925	520	1090	230	1300	600	2075	520	1090	230	

Dimension sketches with exact installation dimensions are available on request.



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