

# PRODUCT CATALOGUE

# 2010



Those who feel personally responsible take a lot of more pride in their work. This sense of responsibility is our motivation to further improvement of existing quality products, to tailor our services even more to specific demands and to intensify our quality of customer relationships.

Our company is specialized in the distribution of innovative and reliable products suited for applications in the industrial water treatment business. We service professional engineering companies that operate in key industry sectors as food & beverage, pharmaceuticals & cosmetics, plant engineering & construction as well as swimming pool technology. If you are looking for customer friendly system solutions and customized services in professional water treatment you should talk to us. We deliver products for water treatment plants as single components as well as pre-assembled components for complex water treatment solutions.

Product news in this catalogue are:

- Testomat 2000® CN. Our special equipment for the Chinese Market
- NEOMERIS Conductivity Measuring Instruments

As a distributor we cooperate with partners and manufacturers from all over the world. We focus on offering best solutions for our customers as well as on cost optimized solutions – in the sense of broadest possible range of quality products available. In addition we develop new components, systems and interfaces if required.

One of our most important competencies beside technological know-how and development expertise is the quality of consulting we offer. This is a result of close collaboration with our customers. Please call us, we will be happy to assist you.

Find out more about our products and services. Intelligent solutions for industrial water treatment will guarantee you optimally processes.

Marc Osterwald, Managing Director



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## INHALT

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Controllers MMP 83 for Softening Plants  
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NEOMERIS Conductivity Measuring Instruments D10 / D200 / D300

## ONLINE-ANALYSIS INSTRUMENTS

**TESTOMAT®**

**TITROMAT®**

**ACCESSORIES TESTOMAT®/TITROMAT®**

**SPARE PARTS TESTOMAT®/TITROMAT®**

**REAGENTS/INDICATOR TESTOMAT®/TITROMAT®**



## TESTOMAT 2000® PHILOSOPHY

**Type**
**Testomat 2000®**


The **Testomat 2000®** automatically determines water hardness, carbonate hardness, the p-value or the minus m-value via titration. It is ideal for monitoring the water quality of water treatment, water blending and drinking-water plants. Monitoring and quality control of softening plants with and without blending (Testomat 2000® reagent TH 2005–2250) Monitoring and quality control of decarbonisation plants (Testomat 2000® reagent TC 2050–2100) Measuring acidic values in decarbonisation and desalination plants (Testomat 2000® reagent TM 2005) Monitoring of steam boilers (Testomat 2000® reagent TP 2100).

**Performance profile:**

- 4-line LCD display for text display and the self-explanatory, menu-driven operating interface
- Accurate titration via piston-dosing pump
- Reliable low maintenance operation
- Minimal reagent and water consumption
- Programmable hardness unit in °dH, ‰, ppm, CaCO<sub>3</sub> and mmol/l
- Two adjustable limit values with programmable switch functions
- Analysis initiation:
  - dynamic
  - automatic interval operation (0–99 min.)
  - quality-dependent (impulse water meter)
  - external initiation and suppression
- The monitoring of the analysis run and error message, e.g. low water pressure
- Reagent storage bottle 500 ml for extended operating periods
- All parts in contact with water or reagent are made of a corrosion-resistant material.

**Optional:**

- Plug-in card RS 910 for printer connection
- Plug-in card SK 910 for electricity interface 0/4-20 mA, galvanically isolated
- Booster Pump
- Data Logger for Testomat 2000®

**Technical data:**

Power Consumption:	max. 30 VA
Protection class:	IP 65
Ambient Temperature:	10–45 °C (50–113 °F)
Water Temperature:	10–40 °C (50–104 °F)
Operating Pressure:	0.3–8 bar
Weight:	approx. 9.5 kg
Dimensions (W x H x D):	380 x 480 x 280 mm

## TESTOMAT 2000® PHILOSOPHY

**Type**
**Testomat 2000®**

<b>Measuring ranges:</b>	0.05-25 °dH	Water hardness
	0.5-20 °dH	Carbonate hardness
	1-15 mmol/l	p-value
	0.05-0.5 mmol/l	minus m-value

**Reference**
**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 Hz	115 V/50-60 Hz	230 V/50-60 Hz
German	<b>100090</b>	<b>100100</b>	<b>100095</b>
English	<b>100091</b>	<b>100101</b>	<b>100096</b>
French	<b>100092</b>	<b>100102</b>	<b>100097</b>
Italian	<b>100093</b>	<b>100103</b>	<b>100098</b>
Polish	<b>100094</b>	<b>100104</b>	<b>100099</b>
Dutch	<b>100011</b>	<b>100012</b>	<b>100013</b>

**Without front label:**
**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 Hz	115 V/50-60 Hz	230 V/50-60 Hz
German	<b>100420</b>	<b>100421</b>	<b>100422</b>

**Accessories:** Testomat®/Titromat®

**Reagents:** Selection Table 1

**Testomat 2000® CN**

**Testomat 2000® CN** is a special equipment for the Chinese Market. Languages: Mandarin and English.  
Incl. SD-Card Datalogger

<b>Measuring ranges:</b>	0.05-25 °dH	Water hardness
	0.5-20 °dH	Carbonate hardness
	1-15 mmol/l	p-value
	0.05-0.5 mmol/l	minus m-value

**Menu Navigation and Reference:**

Menu Navigation	230 V/50-60 Hz
German	<b>110212</b>

**Accessories:** Testomat®/Titromat®

**Indicators:** Selection Table 1

# TESTOMAT 2000® PHILOSOPHY

**Type****Reference****Testomat 2000® CAL**

The functionality and suitability of **Testomat 2000® CAL** correspond to Testomat 2000®, but it has an additional calibration function.

<b>Measuring ranges:</b>	0.05-25	°dH	Water hardness
	0.5-20	°dH	Carbonate hardness
	1-15	mmol/l	p-value
	0.05-0.5	mmol/l	minus m-value

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>100210</b>	<b>100215</b>	<b>100220</b>
English	<b>100211</b>	<b>100216</b>	<b>100221</b>
French	<b>100212</b>	<b>100217</b>	<b>100222</b>
Italian	<b>100213</b>	<b>100218</b>	<b>100223</b>

**Accessories:** [Testomat®/Titromat®](#)

**Indicators:** [Selection Table 1](#)

## TESTOMAT 2000® PHILOSOPHY

**Type**
**Testomat 2000® CrVI**
**Reference**

The process photometer **Testomat 2000® Cr VI** is a wet-chemical online instrument for monitoring the content of chromate  $\text{CrO}_4^{2-}$  in the 0 to 2.0 mg/l range or chrome VI (Cr VI) in the 0 to 1.0 mg/l range using the colourimetric method.

The device uses a photometrical analysis principle based on DIN 38405. Application ranges are, e.g., controlling and monitoring wastewater treatment plants in the electroplating industry. Two separately programmable limit value contacts allow various controlling and monitoring tasks.

The dosing of two reagents and the display of the analysis value after a reaction time of approx. two minutes (absolute measuring time without flushing times).

The analysis result is recorded via an optional plug-in card (current interface **SK910**, for a recorder (0/4–20 mA).

**Measuring ranges:** 0–2.0 mg/l Chromate  
0–1.0 mg/l Chrome-VI

**Application area:**

- Monitoring of chromate content of galvanic waste water
- Controlling of process water in the electroplating/metal industry

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>100310</b>	<b>100315</b>	<b>100320</b>
English	<b>100311</b>	<b>100316</b>	<b>100321</b>
French	<b>100312</b>	<b>100317</b>	<b>100322</b>

**Accessories:** **Testomat®/Titromat®**

**Reagents:** **Selection Table 2**

Testomat 2000®-Reagents CrVI 2100A

**156220**

Testomat 2000®-Reagents CrVI 2100B

**156221**

## TESTOMAT 2000® PHILOSOPHY

**Type****Testomat 2000® DUO****Reference**

**Testomat 2000® DUO** is, just like Testomat 2000®, the ideal instrument for monitoring the water quality of water treatment, water blending and drinking-water plants.

<b>Measuring ranges:</b>	0.05-25	°dH	Water hardness
	0.5-20	°dH	Carbonate hardness
	1-15	mmol/l	p-value
	0.05-0.5	mmol/l	minus m-value

**Performance profile:**

- Two different parameters can be measured simultaneously (e.g. two measuring ranges for water hardness or water hardness and carbonate hardness).
- Automatic switching between measuring points.
- Existing port for measuring point 1 limitation.

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>100290</b>	<b>100295</b>	<b>100300</b>
English	<b>100291</b>	<b>100296</b>	<b>100301</b>
French	<b>100292</b>	<b>100297</b>	<b>100302</b>
Italian	<b>100293</b>	<b>100298</b>	<b>100303</b>
Polish	<b>100294</b>	<b>100299</b>	<b>100304</b>

Accessories: **Testomat®/Titromat®**Reagents: **Selection Table 2**

ONLINE ANALYSIS INSTRUMENTS

## TESTOMAT 2000® PHILOSOPHY

**Type**
**Testomat 2000® Fe**
**Reference**

The process photometer **Testomat 2000® Fe** is a wet-chemical online monitor for monitoring the content of dissolved iron (II) + (III) in the 0 to 1.0 mg/l (ppm) range using the colourimetric method. The dosing of two reagents and the display of the analysis value after a reaction time of approx. seven minutes (absolute measuring time without flushing times). Incl. two independently programmable limit value contacts for monitoring and controlling tasks; the analysis result is recorded via an optional plug-in card (current interface 270305) for a recorder (0/4–20 mA).

**Measuring range:** 0–1.0 mg/l Iron-II and Iron-III

**Application area:**

- The monitoring of de-ironing plants
- Controlling industrial or drinking-water currents

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>100150</b>	<b>100155</b>	<b>100160</b>
English	<b>100151</b>	<b>100156</b>	<b>100161</b>
French	<b>100152</b>	<b>100157</b>	<b>100162</b>
Italian	<b>100153</b>	<b>100158</b>	<b>100163</b>
Polish	<b>100154</b>	<b>100159</b>	<b>100164</b>

**Accessories:** **Testomat®/Titromat®**

**Reagents:** **Selection Table 2**

**156250**

**156251**

Testomat 2000® Reagent Fe 2005A

Testomat 2000® Reagent Fe 2005B

**Testomat 2000® SO<sub>3</sub>**

The process photometer **Testomat 2000® SO<sub>3</sub>** is a wet-chemical online instrument for monitoring the content of Sulphite SO<sub>3</sub><sup>2-</sup> in the 0 to 20 mg/l range using the colourimetric method.

The dosing of two reagents and the display of the analysis value after a reaction time of approx. three minutes (absolute measuring time without flushing times). The monitoring of boiler feed water or condensate in boiler plants (sulphite for oxygen-binding).

Two separately programmable limit value contacts allow various controlling and monitoring tasks.

The analysis result is recorded via an optional plug-in card (current interface **SK910**) for a recorder (0/4–20 mA).

**Measuring range:** 0–20 mg/l Sulphite

**Application area:**

- Monitoring of Sulphite for oxygen-binding in boiler feed water

## TESTOMAT 2000® PHILOSOPHY

## Type

## Reference

Testomat 2000® SO<sub>3</sub>**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<a href="#">100350</a>	<a href="#">100355</a>	<a href="#">100360</a>
English	<a href="#">100351</a>	<a href="#">100356</a>	<a href="#">100361</a>

Accessories: Testomat®/Titromat®

Reagents: Selection Table 2

Testomat 2000® SO<sub>3</sub> Reagent A[156240](#)Testomat 2000® SO<sub>3</sub> Reagent B[156241](#)

Testomat 2000® S8 plus

**Testomat 2000® S8 plus** is a special version of Testomat 2000® with an additional dosing pump for cleaning or disinfecting agents after an analysis. It can be used to remove possible pollution of the measuring chamber and the drain hose. After a preset number of analysis cycles, the measuring chamber is rinsed and the agent is added to the water in the measuring chamber. After a reaction time of 30 seconds, the content of the measuring chamber is dumped. The measuring chamber is subsequently rinsed twice.

**Measuring ranges:** 0.05-25 °dH Water hardness  
 0.5-20 °dH Carbonate hardness  
 1-15 mmol/l p-value  
 0.05-0.5 mmol/l minus m-value

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<a href="#">100380</a>	<a href="#">100390</a>	<a href="#">100370</a>
English	<a href="#">100381</a>	<a href="#">100391</a>	<a href="#">100371</a>

Accessories: Testomat®/Titromat®

Reagents: Selection Table 2

Testomat 2000® S8 plus cleaning reagent

[151105](#)

## TESTOMAT 2000® PHILOSOPHY

**Type****Testomat 2000® V**

**Testomat 2000® V**, in combination with a proportional 3/2-way motor control valve with an 0/4-20 mA interface, is ideal as a control system for the water hardness and carbonate hardness of blending water.  
The selection of the reagent determines the working range of the controller (=measuring range).

**Measuring ranges:** 1.0–25.0 °dH Water hardness  
1.0–20.0 °dH Carbonate hardness

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>100170</b>	<b>100175</b>	<b>100180</b>
English	<b>100171</b>	<b>100176</b>	<b>100181</b>
French	<b>100172</b>	<b>100177</b>	<b>100182</b>

**Accessories:** Testomat®/Titromat®**Indicators:** Selection Table 1**Testomat 2000® Antox**

**Testomat 2000® Antox** is a special version of Testomat 2000® with an additional pump for dosing a reducing agent. An oxidising agent fault is prevented by adding a reducing agent to the filled measuring chamber. The further analysis of the water hardness measurement is then continued according to the standard procedure.

**Measuring ranges:** 0.05-25 °dH Water hardness  
0.5-20 °dH Carbonate hardness  
1-15 mmol/l p-value  
0.05-0.5 mmol/l minus m-value

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>100440</b>	<b>100450</b>	<b>100460</b>
English	<b>100441</b>	<b>100451</b>	<b>100461</b>

**Accessories:** Testomat®/Titromat®**Indicators:** Selection Table 2

Testomat 2000® Antox-solution

**151107**

ONLINE-ANALYSIS INSTRUMENTS

## TESTOMAT ECO®

**Type**
**Testomat ECO®**

**Testomat ECO®** determines water hardness fully automatically via titration.

It is ideal as a cost-effective alternative to Testomat 2000® for monitoring and controlling the water quality of water treatment and drinking-water plants.

**Performance profile:**


- Two-line LCD for displaying text and a self-explanatory, menu-driven operating interface
- Programmable hardness unit in °dH, ‰, ppm, CaCO<sub>3</sub> and mmol/l
- Accurate titration via piston-dosing pump
- Reliable low maintenance operation
- Minimum reagent and water consumption
- Two adjustable limit values with programmable switch functions
- Analysis initiation:
  - automatic interval operation (0–99 min.)
  - quality-dependent (impulse water meter)
- The monitoring of the analysis run and error message, e.g. low water pressure
- External analysis suppression “STOP”
- A 500 ml reagent storage bottle for extended operating periods
- Analogue terminal 0/4–20 mA for a recorder
- Menu navigation with international language selection:

D = German	PL = Polish
GB = English	E = Spanish
F = French	I = Italian
NL = Dutch	

**Technical data:**

Power Consumption:	max. 30 VA
Protection class:	IP 65
Ambient Temperature:	10–45 °C (50–113 °F)
Water Temperature:	10–40 °C (50–104 °F)
Operating Pressure:	0.3–8 bar
Weight:	approx. 9.0 kg
Dimensions (W x H x D):	380 x 480 x 280 mm

**Measuring ranges:** 0.05-25 °dH Water hardness

ONLINE-ANALYSIS INSTRUMENTS

# TESTOMAT ECO®

Type

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
(D, GB, F, NL, PL,E, I)	<b>100112</b>	<b>100117</b>	<b>100122</b>

Without front label:

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
(D, GB, F, NL, PL,E, I)	<b>100430</b>	<b>100431</b>	<b>100432</b>

Accessories: Testomat®/Titromat®

Indicators: Selection Table 1

**ONLINE ANALYSIS INSTRUMENTS****TITROMAT®****Type****Reference****Overview: Titromat® -Instruments**

Model/Type	Measuring Parameter	Measuring Range	Applications/Functions
<b>Titromat® KH</b>	• Carbonate hardness	2-150 °KH	• Alkalinity (cooling towers)
<b>Titromat® MP</b>	• -p-value	10-150 mmol/l	• Monitoring of acid metal pickle
<b>Titromat® M1</b>	• m-value	0,05-1 °dH	• residual alkalinity after decarbonisation (boiler houses, brewery)
<b>Titromat® M2</b>	• m-value	0,05-2 °dH	• residual alkalinity after decarbonisation (boiler houses, brewery)
<b>Titromat® TH</b>	• Carbonate hardness	2,5-50 °dH	• Alkalinity (cooling towers)

**ONLINE ANALYSIS INSTRUMENTS**

# TITROMAT®

**Type**
**Reference**

**Titromat® KH, MP, M1, M2 and TH** are based on the instrument technology, the performance features and the basic technical data of Testomat 2000®.

**Titromat® KH**

**Titromat® KH** is used for automatically determining and monitoring the carbonate hardness in aqueous media; the analysis is carried out by adding two reagents.

**Measuring range (resolution):** 2–60 °dH (2)      5–150 °dH (5)  
 4–107 ‰ (4)      9–269 ‰ (9)  
 0.7–21.4 mmol/l (0.7) 1.8–53.6 mmol/l (1.8)

**Application areas:**

- Alkalinity of open circulating coolants

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<a href="#">110190</a>	<a href="#">110195</a>	<a href="#">110200</a>
English	<a href="#">110191</a>	<a href="#">110196</a>	<a href="#">110201</a>
French	<a href="#">110192</a>	<a href="#">110197</a>	<a href="#">110202</a>

**Accessories: Testomat®/Titromat® (A.3)**

**Reagents: Selection Table 3 (A.5)**

Titromat® TC 2060 Reagent A	<a href="#">155176</a>
Titromat® TC 2060 Reagent B	<a href="#">155177</a>
Titromat® TC 2150 Reagent A	<a href="#">155178</a>
Titromat® TC 2150 Reagent B	<a href="#">155179</a>

**Titromat® MP**

**Titromat® MP** is used for automatically determining and monitoring the minus p-value in aqueous media; the analysis is carried out by adding two reagents.

**Measuring range (resolution):** 10–150 mmol/l (10)

**Application areas:**

- Monitoring of acid metal pickle

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<a href="#">110090</a>	<a href="#">110095</a>	<a href="#">110100</a>

**Accessories: Testomat®/Titromat® (A.3)**

**Reagents: Selection Table 3 (A.5)**

Titromat® MP 2150 Reagent 1	<a href="#">155150</a>
Titromat® MP 2150 Reagent 2	<a href="#">155151</a>

ONLINE-ANALYSIS INSTRUMENTS

## TITROMAT®

**Type**
**Titromat® M1**
**Reference**

**Titromat® M1** is used for automatically determining and monitoring the carbonate hardness (m-value) in aqueous media; the analysis is carried out by adding two reagents.

**Measuring range (resolution):** 0.05–1 °dH (0.025)  
 0.09–1.8 ‰ (0.045)

**Application areas:**

- Corrosion control in boiler feed water
- Residual alkalinity after de carbonization (e.g. breweries)

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>110150</b>	<b>110155</b>	<b>110160</b>
English	<b>110151</b>	<b>110156</b>	<b>110161</b>
French	<b>110152</b>	<b>110157</b>	<b>110162</b>

**Accessories: Testomat®/Titromat® (A.3)**

**Reagents: Selection Table 3 (A.5)**

Titromat® TC 2010 Reagent A

**155172**

Titromat® TC 2010 Reagent B

**155173**

**Titromat® M2**

**Titromat® M2** is used for automatically determining and monitoring the carbonate hardness (m-value) in aqueous media; the analysis is carried out by adding two reagents.

**Measuring range (resolution):** 0.05–2 °dH (0.05)  
 0.09–3.6 ‰ (0.09)

**Application areas:**

- Corrosion control in boiler feed water
- Residual alkalinity after de carbonization (e.g. breweries)

**Menu Navigation and Reference:**

Menu Navigation	24V/50-60HZ	115V/50-60HZ	230V/50-60HZ
German	<b>110130</b>	<b>110135</b>	<b>110140</b>
English	<b>110131</b>	<b>110136</b>	<b>110141</b>
French	<b>110132</b>	<b>110137</b>	<b>110142</b>

**Accessories: Testomat®/Titromat® (A.3)**

**Reagents: Selection Table 3 (A.5)**

Titromat® TC 2020 Reagent A

**155170**

Titromat® TC 2020 Reagent B

**155171**

ONLINE-ANALYSIS INSTRUMENTS

## TITROMAT®

**Type**
**Titromat® TH**
**Reference**

**Titromat® TH** is used for automatically determining and monitoring the water hardness in aqueous media; the analysis is carried out by adding two reagents.

**Measuring range (resolution):** 2.5–50 °dH (2.5)

**Application areas:**

- Drinking water production and supply
- Raw water monitoring

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>110110</b>	<b>110115</b>	<b>110120</b>
English	<b>110111</b>	<b>110116</b>	<b>110121</b>
French	<b>110112</b>	<b>110117</b>	<b>110122</b>

**Accessories: Testomat®/Titromat® (A.3)**

**Reagents: Selection Table 3 (A.5)**

Titromat® TH 2500 Reagent A

**155160**

Titromat® TH 2500 Reagent B

**155161**

ONLINE-ANALYSIS INSTRUMENTS

## ACCESSORIES TESTOMAT® /TITROMAT®

Type		Reference
<b>Connection Set</b>	Connection Set for Testomat 2000®/Testomat ECO®/Titromat® 5 m tube, plastic PE 6/4x1, blue 2 m drain hose, internal diameter = 12 mm 1 x ball valve, PPSV 011223W 1 x reducing connector 10-6 1 x reducing nipple $\frac{3}{8}$ " – $\frac{1}{2}$ "	<b>040187</b>
<b>Booster Pump</b>	Booster pump for Testomat 2000®/Titromat®. Pump installation for water input pressure below 0.3 bar. Installation is carried out by the manufacturer when ordering Testomat 2000® with pump.	<b>270410</b>
<b>External Relay for 230V</b>	External Relay for the Testomat easy®	<b>320502</b>
<b>Horn H95</b>	Small horn with control lamp, 95 phone, degree of protection IP 43. Dimensions(W x H x D): 70 x 250 x 80 mm 230 V/50–60 Hz	<b>130014</b>
<b>Cooler KCN for Testomat Instruments</b>	The cooler is connected upstream of the Testomat® instrument if the measuring water is above 40 °C. Capacity: There is a temperature drop of approx. 40 °C (V4A steel, 1.4571) for water throughput of 12 l/h and 25 l/h of coolant water Connection 8 mm Dimensions (W x H x D): 150 x 320 x 120 mm	<b>130020</b>
	Sampling cooler for manual sampling of hot water; with hot and cold water valve. Technical data is the same as KCN, two stop valves. Dimensions (W x H x D): 210 x 350 x 115 mm	<b>130021</b>
	Sampling cooler for manual sampling of hot water. without valve.	<b>130024</b>
<b>Inverter RS232-RS485</b>	Inverter RS232-RS485 for long distance data transmission (up to 1000 m). The inverter is designed for top hat rail mounting and can be used for all instruments with an RS23 interface.	<b>270510</b>
	Testomat® aerator for reducing the CO <sub>2</sub> content. Capacity: Max. water throughput of 12 l/h when reducing the free carbon dioxide from max. 200 mg/l to below 20 mg/l. Dimensions (W x H x D): 150 x 500 x 100 mm 230 V/50 Hz	<b>130010</b>

## ACCESSORIES TESTOMAT®/TITROMAT®

Type		Reference
<b>SAV Rinsing Automatic</b>	Rinsing automatic (including valves) for regulating the water demand, of the analysis and for extending the rinsing function in connection with Testomat® F-BOB.	<b>130006</b>
	Dimensions (W x H x D): 360 x 210 x 80 mm Line voltage: 230 V/50-60 Hz	
		
<b>Plug-In Card RS 910</b>	Plug-in card for connecting Testomat 2000® to a protocol printer via the serial interface RS232	<b>270310</b>
<b>Service Pack Testomat 2000®/ ECO</b>	Service pack Testomat2000®/Testomat ECO®/Titromat® Content: 1 x gasket kit T2000 2 x sight glass windows 30x3 1 x flow regulator core, complete 3 x cylindrical protection plug with shoulder 5.3dx5 PE 1 x set of valves for the injection pump 1 x filter screen for feed 19.5dx25	<b>270350</b>
<b>1-Year Service Pack Testomat 2000®/ECO</b>	1-year service pack Testomat 2000®/Testomat ECO®/Titromat® Content: 1 x gasket kit T2000 2 x sight glass windows 30x3 3 x cylindrical protection plug with shoulder 5.3dx5 natural PE 1 x set of valves for injection pump 1 x filter screen for feed 19.5dx25	<b>270360</b>
	Data Logger for Testomat 2000® e.g. for Testomat 2000®, Testomat 2000 THCL®. The data logger, which is inserted, into the instrument as a plug-in card, saves the measuring results and fault messages on a SD card. The data is available in CSV format and can be further processed or analysed in a spreadsheet.	<b>100490</b>
<b>Voltage Interface UK 910</b>	Voltage interface (plug-in card), e.g. for Testomat 2000®, Testomat 2000® CAL, Testomat 2000® CLF, Testomat 2000® CLT, Testomat 2000® CrVI, Testomat 2000® DUO, Testomat 2000® Fe, Testomat 2000® SO <sub>3</sub> , Testomat 2000® S8 plus, Testomat 2000 THCL®  Output voltage: 0/2-10 V Electrical isolation	<b>270315</b>
<b>Interface SK910</b>	Interface (plug-in card), e.g. for Testomat 2000®, Testomat 2000® CAL, Testomat 2000® CLF, Testomat 2000® CLT, Testomat 2000® CrVI, Testomat 2000® DUO, Testomat 2000® Fe, Testomat 2000® SO <sub>3</sub> , Testomat 2000® S8 plus, Testomat 2000 THCL®  Adjustable interface: 0–20 mA or 4–20 mA. Maximum load: 500 Ohms Electrical isolation	<b>270305</b>

## ACCESSORIES TESTOMAT® /TITROMAT®

Type		Reference
<b>Conversion Set for Waterfeed T2000</b>	Conversion set for waterfeed (snap-in connector and self-sealing coupling) Testomat 2000®/Testomat ECO® and Titromat®	<b>040123</b>
<b>Hot Water Valve</b>	Control valve with red rotary knob for cooler KCP	<b>130022</b>
<b>Cold Water Valve</b>	Control valve with blue rotary knob for cooler KCP	<b>130023</b>
<b>Maintenance Case T2000 Heyl</b>	Maintenance case T2000 Heyl: 10 x o-ring 20x2 10 x o-ring 10.82x1.78 5 x o-ring 4.47x1.78 5 x o-ring 18x2 EPDM 20 x flat gasket 24x2 EPDM 60 5 x filter screen for feed 19.5dx25 5 x flow regulator core, complete 2 x spring for feed 15 x cylindrical protection plug with shoulder 5.3dx5 natural PE 3 x fuse (soldering) T 0.08 A 3 x fuse (soldering) T 0.1 A 3 x fuse (soldering) T0.16 A 3 x fuse (soldering) T 0.2 A 3 x fuse (soldering) T 0.315 A 3 x fuse (soldering) T 1.0 A 3 x fuse GS-M 5x20 E 4 A 10 x inspection glass 30x3	<b>270335</b>
<b>Maintenance Case T2000 Heyl special</b>	Similar to maintenance case T2000 Heyl, but with additional spare parts for maintenance and repairs: 1 x screw cap with insert T2000 4 x bolt M3x40, A2, DIN 965 1 x capillary, suction, complete 1 x capillary, pressure, complete	<b>270336</b>

ONLINE-ANALYSIS INSTRUMENTS

## ACCESSORIES TESTOMAT® /TITROMAT®

Type		Reference
<b>Maintenance Case F/C/M-BOB</b>	Maintenance case Testomat® F-BOB with various spare parts for maintenance and repairs: 4 x gasket kit dosing insert 4 x gasket kit MK 2 x PCB (18) with lamp 1 x mirror holder complete F-BOB 4 x flow regulator core, complete 1 x regulator plug 1-8 bar 1 x upper lever, complete, BOB 2 x lower lever, complete, BOB 4 x cylindrical protection plug with shoulder 5.3dx5 natural PE 4 x valve collar 4/5dx6 2 x filter screen for feed 19.5dx25 3 x fuse (soldering) T 0.1 A 3 x fuse (soldering) T 0.2 A 3 x fuse (soldering) T 0.315 A 3 x fuse (soldering) 0.5 A 5 x fuse GS-M 50x20E 2A 8 x sight glass windows for chamber 16 x snap closing bag 80x120 3 x splash guard 5.3710dx12 1 x measuring plunger	<b>270340</b>
<b>Tool Kit T2000</b>	Tool kit for Testomat 2000® maintenance: 1 x trimming tool 2 mm 1 x screwdriver Torx TX20 20x100 1 x screwdriver Torx TX10 10x80 1 x screwdriver Torx TX8 8x60	<b>040138</b>
<b>Feed tube with flow regulator 4l/h</b>	Feed tube with flow regulator 4l/h for Testomat easy®	<b>320501</b>

# SPARE PARTS TESTOMAT®/TITROMAT®

Type		Reference
<b>Spare parts:</b>		
Testomat 2000®/		
Testomat ECO®/		
Titromat®		
<b>Pressure Regulator</b>	Regulator/filter intake, complete	040125
	Regulator/filter intake	040120
	Regulator plug T2000, complete	040129
	Flow regulator core (1–8 bar)	011225
	Fixing pin for regulator plug	011230
	Filter screen for feed	011217
	Spring for feed	011218
	Feed connector	040121
	Screw connector-G 1/4"- 6	040153
<b>Measuring Chamber</b>	Sight glass windows 30x3 with gasket	040173
	Sight glass windows 30x3	040170
	Holder for sight glass windows	040176
	Bolt M 3x40	033253
	Tenterhook TL 800-7-1	040032
	Cylindrical protection plug with shoulder	011203
	Measuring chamber, complete, T2000	040022
	Flat gasket 24x2 EPDM 60	033777
	Set Sight-glass holder with 2 bolts (2 Sight-glass holder with 2 bolts)	040510
<b>Chamber Holder</b>	Chamber holder, complete (without valves)	040029
	Magnetic stivver	040050
	Slot, wrought	040186
	Two-way electrovalve	040018
	Pivot for chamber holder 5x60 mm	040181
<b>Pump DOSIClip®</b>	Injection pump, complete	040001
	Capillary, suction, complete	040011
	Capillary, pressure, complete	040016
	Set of valves	040040
	Main board TI, complete	037232
	Magnet 24 VDC	034668
	Cover CNH 45 N	032046
<b>Bracket Connection/ Suction Device</b>	Screw cap with insert T2000	040131
	Screw cap GL32 – hole	040130
	Insert for screw cap with suction tube	040135

# SPARE PARTS TESTOMAT®/TITROMAT®

**Type****Reference****Spare parts:****Testomat 2000®/****Testomat ECO®/****Titromat®****Instrument spare parts**

Fuse M4A	031582
Main board T2000, complete, 230 V	037266
Control PCB T2000, complete	040092
Pinboard driver/receiver T2000, complete	040091
Cable feedthrough 5 - 7	040190
Cable feedthrough 7 - 10	040191
Main switch T2000	040197
Cover for main switch	040198
Ribbon cable, 10-pole, with ferrite	031713
Ribbon cable, 26-pole, with ferrite	040096
Loom 2V, complete (for valves)	040060
Loom 2P, complete (for max. two dosing pumps)	040062
Loom for main switch, complete	040200
Fuse T0.08 A	031596
Fuse T0.315 A	031585
Fuse T0.1 A	031595
Fuse T0.16 A	031622
Fuse T1.0 A	031592

<b>Spare part requirements for 2-3 years of operation</b>	2 x Sight glass windows 30x3 with gasket	040173
	1 x Filter screen for feed	011217
	gasket kit T2000 (according to maintenance complexity)*	040124
	1 x Fuse T0.315 A	031585
	1 x Fuse T1.0 A	031592

\* Correct functioning of TESTOMAT 2000® can only be ensured with regular maintenance, including a change of gaskets.

ONLINE-ANALYSIS INSTRUMENTS

## SPARE PARTS TESTOMAT®

**Type**

**Spare parts:**  
**Testomat® BOB**

**Reference**
**Measuring Chamber**

Flow regulator 1 – 8 bar	010122
Flow regulator 0.1 – 1 bar	010123
Measuring chamber body with clamp flap	011201
Sight glass window with gasket 27x4	011204
Sight glass window for chamber	011205
Sight glass windows gasket 27x4	011206
Holding plate 3.1/12dx2	011207
Holding plate M3/12dx2	011208
Holding bolt M3x42	011209
Filter screen for feed	011217
Spring for feed	011218
Flow regulator core (1 – 8 bar)	011225
Fixing pin for regulator plug and valve axis	011230
Detent lever	011235
Spring for detent lever	011236
Axis for detent lever	011237
Calve, complete (flushing switch)	011244
Pressure spring for valve axis	011247
Splash guard	011248
Fixing pin for dosing insert	011270
Closing plug for measuring chamber	011299
Feed screwing	011510
Feed coupling	011511
Feed coupling with screwing	011512
Double nipple for discharge nozzle	011513
Discharge nozzle, complete	011514

**Dosing Unit**

O-ring 4.5x1.5	011264
Gasket	011269
Rotatable ring	011280
Quadrung 3.2/11.8dx1.8	011284
Valve collar for measuring plunger	011295
O-ring 6x1.5	011296
Measuring plunger (incl. 11295)	011548
Eletrode insert	011568
Box nut	011572
Dosing insert body	011573
Bottom for dosing insert, complete	011582

**Construction Set**

Gasket set for dosing insert	011480
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**Measuring Chamber/**

Gasket set for measuring chamber	011482
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**Dosing Insert**

Gasket set for measuring chamber and dosing insert	011483
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Dosing insert, complete (F/C/M-BOB)	011531
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Measuring chamber, complete (F/C/M-BOB incl. 011531)	011536
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ONLINE-ANALYSIS INSTRUMENTS

## SPARE PARTS TESTOMAT®

Type		Reference
<b>Spare parts</b>		
<b>Testomat® BOB</b>		
<b>Instruments-Spare parts</b>		
Fuse M2A (E1, E2, E3, E4)		010843
Amplifier body, complete (F-BOB)		011500
Amplifier body, complete (C-BOB)		011501
Amplifier body, complete (M-BOB)		011502
Lower board, complete (C-BOB)		011503
Upper board (M-BOB)		011504
Upper board (F-BOB)		011505
Upper board (C-BOB)		011506
Lower board (F/M-BOB)		011507
Pinboard with lamp		011508
Mirror holder (F-BOB)		011509
Mirror holder (C/M-BOB)		011519
Mirror		011520
Draft lever, complete (upper and lower lever, complete)		011522
Motor board with motor, complete		011523
Upper lever, complete (inside the amplifier body)		011524
Pull-spring		011525
Lower lever, complete (outside the amplifier body)		011528
Main switch		011550
Push-button, black, complete		011551
Push-button, red, complete		011552
Display board for cover of instrument, complete		011555
Flat cable plug-in connection		011560
Loom, complete		011561
Main board, complete		011575
Cover of instrument, complete		011585
Telescopic lifting device with groove pins		011590
Cover for amplifier body		011592
Amplifier body, pre-assembled		011602
Microswitch 1052, complete		011607
Fuse T0.315 A		031585
Fuse T0.1 A		031595
Fuse T0.2 A		031584
Fuse T0.5 A		031604
Micro-light bulb for pinboard 011508		031607
Telescope, top 12x108 mm		034955
Telescope, bottom 8x75 mm		034956
<b>Spare part requirements</b>	4 x fuse M2A	010843
<b>for 2-3 years of operation</b>	2 x inspection glass with gasket	011204
	1 x filter for feed	011217
	gaskets sets (according to maintenance complexity)*	011483
	1 x mirror	011520
	1 x dosing insert, complete	011531
	1 x fuse T0.315 A	011585
	1 x micro-light bulb for pinboard	031607

\* Correct functioning of TESTOMAT® BOB can only be ensured with regular maintenance, including a change of gaskets.

# INDICATORS/REAGENTS

## TESTOMAT 2000®/TESTOMAT ECO®/TITROMAT®

**Type**
**Reference**

**Selection Table 1:**
**Testomat 2000®/Testomat ECO® reagent (500 ml bottle):**

Testomat 2000®, Testomat 2000® CAL, Testomat 2000® DUO, Testomat 2000® V, Testomat ECO®

Reagent type	Unit °dH (resolution)	% (resolution)	ppm CaCO <sub>3</sub> (resolution)	mmol/l (resolution)	
<b>TH 2005</b>	0.05– 0.50 (0.01)	0.09–0.89 (0.02)	0.89–8.93 (0.2)	0.01–0.09 (0.01)	<b>152005</b>
<b>TH 2025</b>	0.25– 2.50 (0.05)	0.45–4.48 (0.10)	4.48–44.8 (0.9)	0.04–0.45 (0.01)	<b>152025</b>
<b>TH 2100</b>	1.00–10.00 (0.20)	1.79–17.9 (0.40)	17.9–179 (3.8)	0.18–1.79 (0.04)	<b>152100</b>
<b>TH 2250</b>	2.50–25.00 (0.20)	4.48–44.8 (0.40)	44.8–448 (3.8)	0.45–4.48 (0.04)	<b>152250</b>
<b>TC 2050</b>	0.50–5.00 (0.50)	0.90–8.96 (0.90)	8.9–89.5 (8.9)	0.18–1.79 (0.18)	<b>153050</b>
<b>TC 2100</b>	1.00–20.00 (1.00)	1.79–35.8 (1.79)	18–358 (18)	0.36–7.14 (0.36)	<b>153100</b>
<b>TM 2005</b>				0.05–0.50 (0.01)	<b>154005</b>
<b>TP 2010</b>				0.1–1.5 (0.10)	<b>155010</b>
<b>TP 2100</b>				1–15.0 (1.00)	<b>155100</b>
<b>TH 2005</b>	0.05– 0.50 (0.01) (2 x 100 ml)	0.09–0.89 (0.02)	0.89–8.93 (0.2)	0.01–0.09 (0.01)	<b>151005</b>

*water hardness (TH), carbonate hardness (TC), minus m-value (TM), p-value (TP)*
**Selection Table 2:**
**Testomat 2000® reagent (500 ml bottle):**

 Testomat 2000® Antox (100ml),  
 Testomat 2000® Fe,

 Testomat 2000® CrVI,  
 Testomat 2000® SO<sub>3</sub>, Testomat 2000® S8 plus

Reagent type	Test substance	T2000	Measuring range [mg/l]	
<b>CrVI 2100 A</b>	Chromate CrO <sub>4</sub> <sup>2-</sup> or Chrome VI	CrO <sub>4</sub> <sup>2-</sup> Cr VI	0 – 2.0 0 – 1.0	<b>156220</b>
<b>CrVI2100B</b>	Chromate CrO <sub>4</sub> <sup>2-</sup> or Chrome VI	CrO <sub>4</sub> <sup>2-</sup> Cr VI	0 – 2.0 0 – 1.0	<b>156221</b>
<b>FE 2005 A</b>	Dissolved iron (II) + (III)	Fe	0 – 1.0	<b>156250</b>
<b>FE 2005 B</b>	Dissolved iron (II) + (III)	Fe	0 – 1.0	<b>156251</b>
<b>SO<sub>3</sub> reagent A</b>	Sulphite	SO <sub>3</sub> <sup>2-</sup>	0 – 20	<b>156240</b>
<b>SO<sub>3</sub> reagent B</b>	Sulphite	SO <sub>3</sub> <sup>2-</sup>	0 – 20	<b>156241</b>
<b>S8 plus cleaning reagent</b>				<b>151105</b>
<b>Antox-solution</b> (2 x 100 ml)				<b>151107</b>

# INDICATORS/REAGENTS

## TITROMAT®/TESTOMAT EASY®

**Type**
**Reference**
**Selection Table 3:**
**Titromat® reagent (500 ml bottle):**

Titromat® KH, Titromat® MP, Titromat® M1, Titromat® M2, Titromat® TH



Reagent type	Test substance	Measuring range	Resolution	Reference
TH 2500 reagent A	Water hardness	2.5–50 °dH	2.5 °dH	<b>155160</b>
TH 2500 reagent B	Water hardness	2.5–50 °dH	2.5 °dH	<b>155161</b>
MP 2150 reagent 1	Minus p-value	10–150 mmol/l	10 mmol/l	<b>155150</b>
MP 2150 reagent 2	Minus p-value	10–150 mmol/l	10 mmol/l	<b>155151</b>
TC 2010 reagent A	Carbonate hardness	0.05–1 °dH	0.025 °dH	<b>155172</b>
TC 2010 reagent B	Carbonate hardness	0.05–1 °dH	0.025 °dH	<b>155173</b>
TC 2020 reagent A	Carbonate hardness	0.05–2 °dH	0.05 °dH	<b>155170</b>
TC 2020 reagent B	Carbonate hardness	0.05–2 °dH	0.05 °dH	<b>155171</b>
TC 2060 reagent A	Carbonate hardness	2–60 °dH	2 °dH	<b>155176</b>
TC 2060 reagent B	Carbonate hardness	2–60 °dH	2 °dH	<b>155177</b>
TC 2150 reagent A	Carbonate hardness	5–150 °dH	5 °dH	<b>155178</b>
TC 2150 reagent B	Carbonate hardness	5–150 °dH	5 °dH	<b>155179</b>

## INDICATOR TESTOMAT® BOB

**Type**
**Reagent F-BOB**
**Reagent C-BOB**
**Reagent M-BOB**

**Selection Table 5:**
**Testomat® reagent F-BOB, C-BOB, M-BOB and Reference:**

	Type	Limit value	Bottle	Reference
<b>F-BOB</b>	300	0.02 °dH res. hardn.	100 ml	<b>140001</b>
	300 S	0.05 °dH res. hardn.	100 ml	<b>140002</b>
	301	0.1 °dH res. hardn.	100 ml	<b>140003</b>
	302	0.2 °dH res. hardn.	100 ml	<b>140004</b>
	303	0.3 °dH res. hardn.	100 ml	<b>140005</b>
	305	0.5 °dH res. hardn.	100 ml	<b>140006</b>
	310	1 °dH res. hardn.	100 ml	<b>140007</b>
	320	2 °dH res. hardn.	100 ml	<b>140008</b>
	330	3 °dH res. hardn.	100 ml	<b>140009</b>
<b>C-BOB</b>	C 5	0.5 °dH carb. hardn.	100 ml	<b>140020</b>
	C 10	1 °dH carb. hardn.	100 ml	<b>140021</b>
	C 15	1.5 °dH carb. hardn.	100 ml	<b>140022</b>
	C 20	2 °dH carb. hardn.	100 ml	<b>140023</b>
	C 30	3 °dH carb. hardn.	100 ml	<b>140024</b>
	C 40	4 °dH carb. hardn.	100 ml	<b>140025</b>
<b>M-BOB</b>	M 1	0.1 mmol/l minus m-value	100 ml	<b>140040</b>
	M 3	0.3 mmol/l minus m-value	100 ml	<b>140041</b>
	M 5	0.5 mmol/l minus m-value	100 ml	<b>140042</b>



<b>F-BOB</b>	300	0.02 °dH res. hardn.	500 ml	<b>141001</b>
	300 S	0.05 °dH res. hardn.	500 ml	<b>141002</b>
	301	0.1 °dH res. hardn.	500 ml	<b>141003</b>
	302	0.2 °dH res. hardn.	500 ml	<b>141 004</b>
	303	0.3 °dH res. hardn.	500 ml	<b>141005</b>
	305	0.5 °dH res. hardn.	500 ml	<b>141006</b>
	310	1 °dH res. hardn.	500 ml	<b>141007</b>
	320	2 °dH res. hardn.	500 ml	<b>141008</b>
	330	3 °dH res. hardn.	500 ml	<b>141009</b>
<b>C-BOB</b>	C 5	0.5 °dH carb. hardn.	500 ml	<b>141020</b>
	C 10	1 °dH carb. hardn.	500 ml	<b>141021</b>
	C 15	1.5 °dH carb. hardn.	500 ml	<b>141022</b>
	C 20	2 °dH carb. hardn.	500 ml	<b>141023</b>
	C 30	3 °dH carb. hardn.	500 ml	<b>141024</b>
	C 40	4 °dH carb. hardn.	500 ml	<b>141025</b>
<b>M-BOB</b>	M 1	0.1 mmol/l minus m-value	500 ml	<b>141040</b>
	M 3	0.3 mmol/l minus m-value	500 ml	<b>141041</b>
	M 5	0.5 mmol/l minus m-value	500 ml	<b>141042</b>

CONTROLLING DEVICES

## CONTROLLERS

**SOFTMASTER® MMP**

**MMP 83**

**ROE Mini**

**SOFTMASTER® ROE**

**MVE 100/MVD 100**

**ECOCONTROL DO**

**MSK Mini / MSK 101**

**Desalination Plates**

**PILOT DISTRIBUTOR**

**ACCESSORIES SOFTMASTER®**



CONTROLLING DEVICES

# SOFTMASTER® MMP SOFTENING PLANTS

**Overview: Softmaster® MMP -Instruments**

Model	Features	Application/Functions
<b>Softmaster® MMP 1</b>	<ul style="list-style-type: none"> <li>• 5 Relay outputs</li> <li>• 4 Inputs</li> <li>• 1 Input for water meter</li> <li>• 12 V-supply for water turbine</li> <li>• 24 V, 115 V, 230 V</li> <li>• IP 65</li> <li>• Weight approx. 1.3 kg</li> <li>• (W x H x D) 270 x 295 x 130 mm</li>   <li>• Option: - Disinfection-electrolysis cell</li> </ul>	<ul style="list-style-type: none"> <li>• 1 and 2-filter-Change over plant via central control valves or pilot distributor</li> </ul>
<b>Softmaster® MMP 2</b>	<ul style="list-style-type: none"> <li>• 8 Relay outputs</li> <li>• 8 Inputs</li> <li>• 2 Input for water meter</li> <li>• 12 V-supply for water turbine</li> <li>• 24 V, 115 V, 230 V, 230 V/24V</li> <li>• IP 65</li> <li>• Weight approx. 1.3 kg</li> <li>• (W x H x D) 270 x 295 x 130 mm</li>   <li>• Option: - Disinfection- electrolysis cell - Remote control via RS232 and telephone network</li> </ul>	<ul style="list-style-type: none"> <li>• 1 and 2-filters for change over, parallel and serial plant operation via central control valves or pilot distributor</li> </ul>
<b>MMP 83</b>	<ul style="list-style-type: none"> <li>• 6 Relay outputs</li> <li>• 6 Switch Inputs</li> <li>• 3 Input for water meter</li> <li>- • 3 Additional programmes</li> </ul>	<ul style="list-style-type: none"> <li>• 2 and 3-filters change over, operation with 2 filters or parallel operation with 2 or 3 filters via central control valves or pilot distributor via</li> </ul>

CONTROLLING DEVICES

# SOFTMASTER® MMP SOFTENING PLANTS

**Type****Reference**

Micro-controlling devices **Softmaster® MMP** for water softening systems.

**Performance profile:**

- Variable multi-purpose body for control panel and wall installation
- Multilingual menu navigation
- Large blue LCD with 2 lines x 16 characters and backlight
- Error messages and operating mode messages are displayed alternately and stored in the error history.
- Real time clock

**Technical data:**

Protection class:	IP65
Mains connection:	115 V, 230–240 V, or: 24 V +/- 10 % 50–60 Hz
Power consumption:	max. 9 VA
Dimensions (W x H x D):	approx. 270 x 295 x 130 mm
Control panel cut-out:	262 x 146 mm, +1 mm
Weight:	approx. 1.3 kg
Installation depth:	approx. 90 mm
Front frame dimensions:	270 x 155 mm

**Softmaster® MMP 1**

Controlling device **Softmaster® MMP 1** for fully automated regeneration of water softening plants; fitting for central control valves or pilot distributor, controlled via electrical toggle or pulse switch for 1-filter, 2-filter–alternate switching; quantity/time/quality controlled activation of regeneration.

**Performance profile:**

- Five potential-free relay outputs for two filters, operation valves and error message, synchronising contact
- Outlet for electrolysis cell/ disinfection (optional)
- 12 V-power supply for water turbine
- Five gate inputs for water flow meter, regeneration-start/regeneration-stop, brine level – empty and external add-on program-start

**Menu Navigation (D, GB, F, I, NL, PL) and Reference:**

	with RS232	with RS232 and disinfection
<b>wall-mounted</b>		
24 V/50-60 Hz	<b>610100</b>	<b>611100</b>
115 V/50-60 Hz	<b>610101</b>	<b>611101</b>
230 V/50-60 Hz	<b>610102</b>	<b>611102</b>
<b>panel-mounted</b>		
24 V/50-60 Hz	<b>610110</b>	<b>611110</b>
115 V/50-60 Hz	<b>610111</b>	<b>611111</b>
230 V/50-60 Hz	<b>610112</b>	<b>611112</b>

**Accessories: Softmaster® (B.4)**

Plug-in card disinfection

037262

CONTROLLING DEVICES

# SOFTMASTER® MMP SOFTENING PLANTS

**Type**
**Softmaster® MMP 2**
**Reference**

Controlling device **Softmaster® MMP 2** for fully automated regeneration of water softening plants; fitting for central control valves or pilot distributor, controlled via electrical toggle or pulse switch and for pilot valves to pilot regeneration valves; for 1-filter, 2-filter-alternate switching; quantity/time/quality controlled activation of regeneration.

**Performance profile:**

- Eight potential-free relay outputs for two filters, operation valves, two add-on programs and error message, synchronising contact
- Outlet for metering pulse
- Electrolysis cell/ disinfection (optional)
- 12 V-power supply for water turbine
- Inputs for two water flow meters
- Eight inputs for regeneration-start/ regeneration-stop, brine level – empty/full, synchronous messages of valves and error messages of Testomat® instruments
- Remote control and monitoring via telephone network or mobile communications network by means of RS232 and Modem, ISDN-TA or GSM-device (optional), see remote control (D.1)

**Menu Navigation (D, GB, F, NL, PL, I) and Reference:**

		with RS232	with disinfection	with RS232 and disinfection
<b>wall-mounted</b>				
24 V/50-60 HZ	<b>620000</b>	<b>620200</b>	<b>621000</b>	<b>621200</b>
115 V/50-60 HZ	<b>620001</b>	<b>620201</b>	<b>621001</b>	<b>621201</b>
230 V/50-60 HZ	<b>620002</b>	<b>620202</b>	<b>621002</b>	<b>621202</b>
230V/24V/50-60 HZ	<b>620003</b>	<b>620203</b>	<b>621003</b>	<b>621203</b>
<b>panel-mounted</b>				
24 V/50-60 HZ	<b>620010</b>	<b>620210</b>	<b>621010</b>	<b>621210</b>
115 V/50-60 HZ	<b>620011</b>	<b>620211</b>	<b>621011</b>	<b>621211</b>
230 V/50-60 HZ	<b>620012</b>	<b>620212</b>	<b>621012</b>	<b>621212</b>

**Accessories: Softmaster® (B.4)**
**Optional for Softmaster® MMP:**

All sets consist of electrolysis cell(s), cell holder(s) and 230 V wall power supply.

 Electrolysis cell disinfection set MMP,  $\frac{1}{2}$ "
**036875**

 Electrolysis cell disinfection set MMP,  $\frac{3}{8}$ "
**036883**

 Electrolysis cell disinfection set 2 filter MMP,  $\frac{1}{2}$ "
**036882**

 Electrolysis cell disinfection set 2 filter MMP,  $\frac{3}{8}$ "
**036884**

Plug-in card disinfection

**037262**

RS232 interface/ current interface 0/4-20 mA

**037259**

I/O card 0/4-20 mA (current interface Softmaster)

**037309**



NEOMERIS

Tradition and future by your side

CONTROLLING DEVICES

## MMP 83

**Type****Reference****210601**

**NEOMERIS** The MMP 83 micro-controller enables full automatic regeneration and monitoring of single, double or triple filter softening plants. It is suitable for central control valves or pilot distributors controlled via an electrical change-over or impulse switch.  
For double or triple filter plants it is possible to select between change-over mode (two filters) or parallel mode (two or three filters)

- 6 potential-free relay outputs for filter, 3 regeneration valves, 3 additional programmes and collective message contact.
- Output for feed pump or valve, dosing impulse and flushing (for initiation of time-limited flush process)
- Signal input for 3 water meters, external regeneration start/stop and lack of chemicals.

Protection class: IP 65

Mains connection: 230 V 50–60 Hz  
230/24V 50–60 Hz

Power consumption: 96 VA

Wall housing dimensions (W x H x D): approx. 390 x 318 x 160 mm

230 V/50-60 Hz		230/24 V/50-60 Hz
<b>210601</b>		<b>210602</b>

# REVERSE OSMOSIS PLANTS

Type

Reference

**Overview: Softmaster® ROE -Instruments**

Model	Features	Application/Functions
<b>ROE Mini</b>	<ul style="list-style-type: none"> <li>• 4 Relay outputs</li> <li>• 4 Switch Inputs</li> <li>• Option: Analogue module 0(4) -20 mA</li> <li>• Plug in module for data communication</li> </ul>	<ul style="list-style-type: none"> <li>• Reverse osmosis plants with 1 conductivity measurement</li> </ul>
<b>Softmaster® ROE 1</b>	<ul style="list-style-type: none"> <li>• 5 Relay outputs</li> <li>• 5 Inputs</li> <li>• 12 V-supply</li> <li>• 24 V, 115 V, 230 V</li> <li>• IP 65</li> <li>• Weight approx. 2.3 kg</li> <li>• (W x H x D) 270 x 295 x 130 mm</li> </ul>	<ul style="list-style-type: none"> <li>• Reverse osmosis plants with 1 conductivity measurement</li> </ul>
<b>Softmaster® ROE 2</b>	<ul style="list-style-type: none"> <li>• 8 Relay outputs</li> <li>• 8 Inputs</li> <li>• 2 Inputs for water meter</li> <li>• 12 V-supply for water turbine</li> <li>• 1 output for dosing impulse</li> <li>• 1 Input for pressure sensor 0(4)-20 mA</li> <li>• 24 V, 115 V, 230 V, 230 V/24V</li> <li>• IP 65</li> <li>• Weight approx. 2.6 kg</li> <li>• (W x H x D) 270 x 295 x 130 mm</li>   <li>• Options:</li> <li>- Current interface 0(4)-20 mA</li> <li>- Remote control via RS232 and telephone network</li> </ul>	<ul style="list-style-type: none"> <li>• Reverse osmosis plants with 1 conductivity measurement</li> </ul>
<b>Softmaster® ROE 3</b>	<ul style="list-style-type: none"> <li>• Input for second conductivity probe</li> <li>• 8 Relay outputs</li> <li>• 8 Inputs</li> <li>• 2 Inputs for water meter</li> <li>• 12 V-supply for water turbine</li> <li>• 1 output for dosing impulse</li> <li>• 1 Input for pressure sensor 0(4)-20 mA</li> <li>• 24 V, 115 V, 230 V, 230 V</li> <li>• IP 65</li> <li>• Weight approx. 2.6 kg</li> <li>• (W x H x D) 270 x 295 x 130 mm</li> </ul>	<ul style="list-style-type: none"> <li>• Reverse osmosis plants with second conductivity measurement for controlling an EDI module</li> </ul>



CONTROLLING DEVICES

# NEOMERIS ROE MINI REVERSE OSMOSIS PLANTS

**ROE Mini**


The **ROE Mini** micro-controller for the automatic operation of reverse osmosis plants.

**640010**

- LC display with 2 lines x 16 characters and backlight, membrane keypad, real-time clock
- Language selection: D | GB | NL
- 4 relay outputs for pressure pump, inlet valve, flushing valve, alarm (1<sup>st</sup> remove of permeate)
- 4 switching inputs for level control tank (min/max), pressure switch and external stop
- Connection for conductivity probe LMZ 3/1.0 with KTY temperature sensors and probes with cell constants < 1 upon request

Measuring ranges: 0....100 µS/cm  
0....1000 µS/cm

Accuracy (+/- regarding the range end value): 2%

Temperature measuring: 0...50°C

Protection class: IP65

Power consumption: max. 4 VA

Mains connection: 230V/50–60Hz

Housing dimensions (W x H x D): approx. 120 x 122 x 87 mm

**Other power supplies upon request.**

**Mounting frame for installation into switching cabinets upon request.**

## Accessories

**LMZ 3/1.0**
**Conductivity probe**

Material: PVC-U

Connection: DN 32

Measuring ranges: 0....500 µS/cm

0....3000 µS/cm

Accuracy (+/- regarding the range end value): 2%

Temperature measuring: 0...50°C

Cell constant: 1.01/cm

Connection cable: 2m 4x0.25mm<sup>2</sup>

Connection: DN 32

**310135**

**880159**

**VIM-AIO-MOD**

**Plug-in card** with analogue output 0(4)...20 mA and analogue input for controller function

**880111**

**Plug-in card** for data communication (RS 232, GSM, analogue, ISDN) upon request

**PC-ROE-Mini**

**PC service adapter set** for configuring and parameter setup of MSK Mini consisting of:  
PC-Software, adapter box, USB-RS232 transformer incl. cable set and driver CD

**036892**

CONTROLLING DEVICES

# SOFTMASTER® ROE REVERSE OSMOSIS PLANTS

**Type**


Micro-controlling device **Softmaster® ROE** for reverse osmosis plants.

**Performance profile:**

- Variable multi-purpose body for control panel and wall installation
- Multilingual menu navigation
- Large blue LCD with 2 lines x 16 characters and backlight
- Error messages and operating mode messages are displayed alternately and stored in the error history.
- Real time clock
- Port for conductivity probe for permeate and temperature sensor

**Technical data:**

Measuring range:	0.1–50 000 µS/cm
Cell constant:	0.01–5.0 cm <sup>-1</sup>
Protection class:	IP65
Mains connection:	115 V, 230 V, or 24 V +/- 10 % 50–60 Hz
Power consumption:	max. 9 VA
Dimensions (W x H x D):	approx. 270 x 295 x 130 mm
Control panel cut-out:	262 x 146 mm, +1 mm
Weight:	approx. 2.6 kg
Installation depth:	approx. 90 mm
Front frame dimensions:	270 x 155 mm

**Softmaster® ROE 1**

Controlling device **Softmaster® ROE 1** for the automated operation of reverse-osmosis systems.

**Performance profile:**

- Five potential-free relay outputs for pump, inlet valve, flushing valve, measuring and error message output
- Five inputs for water deficiency message, overpressure message motor protection, storage tank FULL/EMPTY, system stop
- 12 V-power supply

**Menu Navigation (D, GB, F, I, NL, PL) and Reference:**

	with RS232
<b>wall-mounted</b>	
24 V/50-60 Hz	<b>601100</b>
115 V/50-60 Hz	<b>601101</b>
230 V/50-60 Hz	<b>601102</b>
<b>panel-mounted</b>	
24 V/50-60 Hz	<b>601110</b>
115 V/50-60 Hz	<b>601111</b>
230 V/50-60 Hz	<b>601112</b>

**Accessories:** Softmaster® (B.4)

Conductive conductivity probe (C.2)

CONTROLLING DEVICES

# SOFTMASTER® ROE REVERSE OSMOSIS PLANTS

Type		Reference
Softmaster® ROE 2	Controlling device Softmaster® ROE 2 for the automated operation of reverse osmosis plants.	

**Performance profile:**

- Eight potential-free relay outputs for two pumps, programmable function output, inlet valve, outlet valve, flushing valve, by-pass valve and error message output
- Outlet for metering pulse
- Eight inlets for concentrate surveillance, emergency operation (by-pass) and external motor protection switch, water deficiency message, overpressure message, motor protection, storage tank FULL/EMPTY, system stop
- Two inputs for water flow meter
- 12 V power supply for water turbine
- 4-20 mA input for a pressure transducer
- Remote control and monitoring via the telephone network or mobile communications network by means of RS232 and Modem, ISDN-TA or GSM-device (optional), see remote control (D.1)

**Menu Navigation (D, GB, F, NL, PL, I) and Reference:**

		with RS232
<b>wall-mounted</b>		
24 V/50-60 HZ	<b>602000</b>	<b>602200</b>
115 V/50-60 HZ	<b>602001</b>	<b>602201</b>
230 V/50-60 HZ	<b>602002</b>	<b>602202</b>
230V24V 50-60 HZ	<b>602003</b>	<b>602203</b>
<b>panel-mounted</b>		
24 V/50-60 HZ	<b>602010</b>	<b>602210</b>
115 V/50-60 HZ	<b>602011</b>	<b>602211</b>
230 V/50-60 HZ	<b>602012</b>	<b>602212</b>

**Accessories: Softmaster® (B.4)**
**Conductive conductivity probe (C.2)**

I/O card 0/4-20 mA (current interface Softmaster)

**037309**
**Softmaster® ROE 2/S5**

**Softmaster® ROE 2/S5** is a special version of Softmaster® ROE 2 with an additional function. It is possible to program the reaction of the controller during low water. Determine how often the plant is to be restarted. A restart occurs between 1 and 99 minutes depending on the programming.

**Menu Navigation (D, GB, F, NL, PL, I) and Reference:**

		mit RS232
<b>wall-mounted</b>		
230 V/50-60 HZ	---	<b>602302</b>
<b>panel-mounted</b>		
230 V/50-60 HZ	---	<b>602312</b>

CONTROLLING DEVICES

# SOFTMASTER® ROE

## REVERSE OSMOSIS PLANTS

**Type****Softmaster® ROE 3**

Controlling device **Softmaster® ROE 3** for the automated operation of reverse osmosis plants with downstream electro de-ionisation (EDI).

**Performance profile:**

- Input for second conductivity probe
- Eight potential-free relay outputs, two programmable function outputs, two pumps, inlet valve, outlet valve, flushing valve, error message output
- Outlet for metering pulse
- Eight inlets for water deficiency message, concentrate surveillance, overpressure message, motor protection, storage tank FULL/EMPTY, system stop
- Two inputs for water flow meter, programmable function output
- 12 V power supply for water turbine

**Menu Navigation (D, GB, F, I, NL) and Reference:**

		<b>with RS232</b>
<b>wall-mounted</b>		
24 V/50-60 HZ	<b>603000</b>	<b>603200</b>
115 V/50-60 HZ	<b>603001</b>	<b>603201</b>
230 V/50-60 HZ	<b>603002</b>	<b>603202</b>
<b>panel-mounted</b>		
24 V/50-60 HZ	<b>603010</b>	<b>603210</b>
115 V/50-60 HZ	<b>603011</b>	<b>603211</b>
230 V/50-60 HZ	<b>603012</b>	<b>603212</b>

**Accessories: Softmaster®**  
**Conductive conductivity probe**

CONTROLLING DEVICES

# CONTROLLER

## FULL DEMINERALIZATION

**Type**  
**MVE 100**



Micro-controlling device **MVE 100** (surface mounting) for the fully automated control of 1-line-demineralisation systems. Fitting for controlling four and five-level-central control valves, pilot distributors or regeneration valves with own regeneration program. Embedded conductivity meter for monitoring the soft water quality and for controlling regeneration sequences.

**Performance profile:**

- Quality and/or quantity and/or time controlled start of regeneration
- Regeneration delay
- Premature start of regeneration
- Variable regeneration ratio
- Proportional addition of regeneration reagent
- Regeneration counter
- Integrated level control with surveillance of the extraction of chemicals
- Connector for filling valves
- Level sensors and pump for chemicals
- Add-on program:  
During the regeneration sequence of the cationic filter and anionic filter it is possible to pilot a pump or a valve.
- Error message
- Inputs for regeneration stop, remote start and water flow meter
- Current interface 0/4 – 20 mA

**Measuring ranges:**

- 0 ... 2000 µS/cm for C = 0.1/cm e.g. SO 1 or SOE 1  
0 ... 200 µS/cm for C = 0.01/cm e.g. SOE 0

**Technical data:**

- Weight: ca. 2.9 kg  
Dimensions (W x H x D): 320 x 165 x 230 mm

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 Hz	115 V/50-60 Hz	230 V/50-60 Hz
German	<b>230070</b>	<b>230071</b>	<b>230072</b>
English	<b>230170</b>	<b>230171</b>	<b>230172</b>

**MVE 100 E**

- Flush mounting:  
Control panel cut-out:  
Installation depth:
- Technical specifications similar to MVE 100  
285 x 140 mm  
105 mm

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 Hz	115 V/50-60 Hz	230 V/50-60 Hz
German	<b>230075</b>	---	<b>230077</b>

CONTROLLING DEVICES

# CONTROLLER

## FULL DEMINERALIZATION

Type  
**MVD 100**



Micro-controlling device **MVD 100** (surface mounting) for the fully automated control of two-line-demineralisation systems. Construction similar to MVE 100, but with inputs for four exchangers and two measuring probes. Current interface 0/4 – 20 mA.

**Technical data:**

Weight: ca. 2.9 kg

Dimensions (W x H x D): 320 x 165 x 230 mm

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>230080</b>	<b>230081</b>	<b>230082</b>
English	<b>230180</b>	<b>230181</b>	<b>230182</b>

**MVD 100 E**

Flush mounting: Technical specifications similar to MVD 100

Control panel cut-out: 285 x 140 mm

Installation depth: 105 mm

**Menu Navigation and Reference:**

Menu Navigation	24 V/50-60 HZ	115 V/50-60 HZ	230 V/50-60 HZ
German	<b>230085</b>	<b>230086</b>	<b>230087</b>
English	<b>230185</b>	<b>230186</b>	<b>230187</b>

CONTROLLING DEVICES

# CONTROLLERS

## CIRCULATING COOLANT AND AIR WASHER

**Type**
**EcoControl DO 10**

Micro-controlling device **EcoControl DO 10** for the quantity-based blow-down and measuring for cooling systems and air washers

**Performance profile:**

- Large blue LCD with 2 lines x 16 characters
- Membrane keypad
- Multilingual menu navigation (D, GB, F, I, PL)
- Three potential-free relay outputs for blow-down valve, measuring output and alarm/ inlet valve
- Three inputs for water flow meter, low-level-control feed tank and flow controller


**Technical data:**

Power consumption without external load:	max. 6 VA
Mains connection:	115 V, 230 V or 24 V +/-10 %, 50–60 Hz
Degree of protection:	IP54
Weight:	approx. 0.8 kg
Dimensions (W x H x D):	166 x 155 x 115 mm

**Menu Navigation (D, GB, F, I, PL) and Reference:**

24 V/50-60 Hz	115 V/50-60 Hz	230 V/50-60 Hz
<b>240103</b>	<b>240102</b>	<b>240101</b>

CONTROLLING DEVICES

# DESALINATION PLATES WITH CONTROLLERS MSK 101

**Type**
**MSK Mini**


**NEOMERIS** Micro controller **MSK Mini** for conductivity controlled desalination and time controlled dosing, e.g. of biocides.

- LC display with 2 lines x 16 characters and backlight
- Membrane keypad, operating languages: D, GB
- Switching outputs: 3x free configurable (e.g. for limitvalue MIN/MAX) and 1x alarm
- Switching inputs: 4x free configurable (e.g. start/stop cooling tower pump)
- 2 programmable time switches
- Connection for conductivity probe and temperature sensor LMZ3/1.0 and for probes with cell constants < 1,0 upon request
- Measuring range: 0.5µS/cm–50mS/cm
- Option: controller function

**880046**

Protection class:

IP65

Power consumption:

max. 4 VA

Mains connection:

230V/50–60HZ

Housing dimensions (W x H x D):

approx. 120 x 122 x 87 mm

Other power supplies upon request.

Mounting frame for installation into switching cabinets upon request.

## Accessories

**LMZ3/1.0**
**Conductivity probe**

Material:	PVC-U
Connection:	DN 32
Measuring ranges:	0....500 µS/cm
	0....3000 µS/cm

Accuracy (-/- regarding the range end value): 2%

Temperature measuring: 0...50°C

Cell constant: 1.01/cm

 Connection cable: 2m 4x0.25mm<sup>2</sup>

Connection:	DN 32	<b>310135</b>
	¾" outer thread	<b>880159</b>

MSK Mini version of inductive conductivity measurement upon request

**VIM-AIO-MOD**

Plug-in card with analogue output 0(4)...20 mA and analogue input for controller function

**880111**

Plug-in card for data communication (RS 232, GSM, analogue, ISDN) upon request

**PC-MSK-Mini**

PC service adapter set for configuring and parameter setup of MSK Mini consisting of:

**880052**

PC-Software, adapter box, USB-RS232 transformer incl. cable set and driver CD

CONTROLLING DEVICES

# DESALINATION PLATES WITH CONTROLLERS MSK 101

**Type****MSK 101**

**NEOMERIS** The **MSK 101** micro-controller for conductivity-, water quantity- and time-controlled circulating coolants and air-washers.

- 2 line LC display and standard operating language: D+GB
- LEDs for operation, alarm, prop. dosing, time dosing, desalinating valve opening/closing, biocide programme
- 5 Relay outputs: Desalination valve, system pump, dosing biocide pump, time-controlled dosing and connecting alarm
- Impulse output for quantity-proportional dosing
- Analogue output for conductance values or temperatures with 0(4)...20mA
- 2 impulse outputs for contact water meter (inlet, outlet)
- 3 switch inputs for alarm, alarm biocide dosing, alarm quantity proportional dosing and universal
- Connection for conductivity probe type LMZ 3/1.0 (conductive) and LFI-04 (inductive), resolution: 0.2%, accuracy: 1%, KTY temperature sensor
- PC software for parameter setup and visualization

Protection Class:

IP65

Mains connection:

230 V, +/- 10%, 50–60 Hz

Power consumption:

max. 15 VA

Housing dimensions (W x H x L):

approx. 256x132x217 mm

**Other power supplies upon request**

## Accessories

**LMZ 3/1.0****Conductivity Probe**

Material:	PVC-U
Connection:	DN 32
Measuring ranges:	0....500 µS/cm 0....3000 µS/cm

Accuracy (+/- regarding the range end value): 2%

Temperature measuring: 0...50°C

Cell constant: 1,0 l/cm

Connection cable: 2m 4x0,25mm<sup>2</sup>

Connection:	DN 32	<b>310135</b>
	%" outer thread	<b>880159</b>

**LFI-04****Inductive Conductivity Probe**

Material:	PVC-U	<b>310136</b>
Connection:	d50 DN 40	
Sensor installation in T-piece,		
installation fitting type:	d50 DN 40	
Measuring range:	up to 5000 µS/cm	
Accuracy regarding the range end value:	≤ 3%	
Connection cable:	2m 6x 0,25 mm <sup>2</sup>	

CONTROLLING DEVICES

## DESALINATION PLATES WITH CONTROLLERS MSK 101

**Type**

Desalination plate KDV 101 K  
DN 25 with MSK 101-controller  
and conductive probe

**Neomeris** Desalination plates **KDV-Mini** and **KDV 101** for monitoring and control of desalination and dosing in cooling systems and air washers.

Mounted on a PVC-plate (dimensions upon request) the ready for use system consists of the following components:

- 1 Micro-Controller MSK Mini or MSK 101 (see specifications)
- Ball valves for in and outlet; sample valve
- 1 Desalination valve: electric engine driven valve 230VAC (solenoid valve upon request)
- 1 Conductive or inductive probe (see specifications)

**KDV-101\_K****MSK 101 Controller with conductive probe LMZ-3/1.0****880067**Nominal diameter: **DN 25****KDV-101 I****MSK 101 Controller with inductive probe LFI-04****880068**Nominal diameter: **DN 25**

CONTROLLING DEVICES

## PILOT DISTRIBUTOR

Type  
Front



Rear



PVH  
PVH 4

**Toggle switch**

Pilot distributor with four switch settings

Construction: Toggle switch designed for 8 bar hydraulic or 4.5 bar pneumatic pressure, without screw nipples.

Dimensions (W x H x D): 125 x 120 x 210 mm

**Reference:**

	24 V/50-60 Hz	230 V/50-60 Hz
Normally open valves	<a href="#">250002</a>	<a href="#">250001</a>
Normally closed valves	<a href="#">250004</a>	<a href="#">250003</a>

Pilot distributor with four switch settings

Construction: Toggle switch designed for 8 bar pneumatic pressure, without screw nipples.

Dimensions (W x H x D): 125 x 120 x 210 mm

**Reference:**

	24 V/50-60 Hz	230 V/50-60 Hz
Normally open valves	<a href="#">250011</a>	<a href="#">250010</a>
Normally closed valves	<a href="#">250013</a>	<a href="#">250012</a>

**Pulse switch**

Pilot distributor with four switch settings

Construction: Pulse switch designed for 8 bar hydraulic or 4.5 bar pneumatic pressure, without screw nipples.

Dimensions (W x H x D): 125 x 120 x 210 mm

**Reference:**

	24 V/50-60 Hz	230 V/50-60 Hz
Normally open valves	<a href="#">250006</a>	<a href="#">250005</a>
Normally closed valves	<a href="#">250008</a>	<a href="#">250007</a>

Pilot distributor with four switch settings

Construction: Pulse switch designed for 8 bar pneumatic pressure, without screw nipples.

Dimensions (W x H x D): 125 x 120 x 210 mm

**Reference:**

	24 V/50-60 Hz	230 V/50-60 Hz
Normally open valves	<a href="#">250015</a>	<a href="#">250014</a>
Normally closed valves	<a href="#">250017</a>	<a href="#">250016</a>

PVH I  
PVHI 4

PVPI  
PVPI 4

CONTROLLING DEVICES

## PILOT DISTRIBUTOR

Type		Reference
<b>Program Disc PV S1</b>	Additional disc and neutral contact for controlling a valve or a relay during the course of the program.	<b>250031</b>
<b>Program Disc PV S2</b>	Similar to S1, but with two additional discs	<b>250032</b>
<b>Program Disc PV S8</b>	Automatic return movement due to the pre-connected timer	<b>250038</b>
<b>Program Disc PV S9</b>	Fully adjustable program disc, e.g. for gravel filter plants	<b>250039</b>
<b>Compression Coupling PVH/PVP</b>	Screw nipple for pilot distributor (eight pieces required)	<b>033900</b>
<b>Seal for Screw nipple</b>	Seal for screw nipple (eight pieces required)	<b>033475</b>

## ACCESSORIES SOFTMASTER®

Type		Reference
Adapter Plate Softmaster®	<b>Use this adapter plate to replace your old Heyl controlling device with a Softmaster® controlling device without having to drill new holes.</b> The old holes could be used for mounting the adapter plate. The Softmaster® device is then fixed to the adapter plate.  	<b>130011</b>
<b>Dimensions (W x H x D): 264 x 280 x 8 mm</b>		
<b>Accessories Softmaster®</b>	Plug-in card disinfection	<b>037262</b>
	Electrolysis cell disinfection set MMP, $\frac{1}{2}''$	<b>036875</b>
	Electrolysis cell disinfection set MMP, $\frac{3}{8}''$	<b>036883</b>
	Electrolysis cell disinfection set 2 filter MMP, $\frac{1}{2}''$	<b>036882</b>
	Electrolysis cell disinfection set 2 filter MMP, $\frac{3}{8}''$	<b>036884</b>
	RS232 interface/ current interface 0/4-20 mA	<b>037259</b>
	I/O card 0/4-20 mA (current interface Softmaster®)	<b>037309</b>
<b>Inverter RS232-RS485</b>	Inverter RS232-RS485 for long distance data transmission (up to 1000m).The inverter is designed for top hat rail mounting and can be used for all instruments with a RS232 interface.	<b>270510</b>

# PROCESS MEASURING INSTRUMENTS

ACCESSORIES MEASURING INSTRUMENTS

NEOMERIS CONDUCTIVITY MESSURING INSTRUMENTS D10 / D200 / D300

NEOMERIS CONDUCTIVITY MEASURING CELLS

**NEW**



PROCESS MEASURING INSTRUMENTS

# NEOMERIS

## CONDUCTIVITY MEASURING INSTRUMENTS / CELLS

## Type

## Reference

NEOMERIS Conductivity Measuring Instruments are used for the conductivity measurement in aqueous solutions via 2-electrode measuring cells. Possible applications are:

- Demineralisation Plants
- Reverse Osmosis Plants
- Desalination Systems
- Cooling Water Recirculation
- Phase Separation

**Conductivity measuring instrument D300 für control cabinet installation****Technical Data:**

- Measuring ranges: 0 – 20 / 200 / 2000 µS/cm, depending on measuring cell and amplification
- Temperature compensation: Linear 2.2 % / K, can be disabled; Reference temperature 25 °C
- Indication of limit values: Optical via 2 LEDs, 2 limit values can be set within 0 and 100 % of the measuring range
- Limit value outputs: 2 potential-free relay contacts, max. 6 A / 250 V AC each
- Analog outputs: 0-10 V, Ra>1 kOhm and 4-20 mA, Ra< 500 Ohm; corresponding to 0 – 20 / 200 / 2000 µS/cm
- Power supply: 22-26 V DC, protected against voltage reversal, potential-separated, 1000 V isolation voltage; or 230 V 50/60 Hz
- Power consumption: Approx. 3 W / 3 VA
- Plastic housing (Noryl), 96 x 48 x 109 mm, IP 52 (Front side)

**D300**

0-20/200/2000 µS/cm for control cabinet installation

**880205****Conductivity measuring instrument D200 for wall mounting installation****Technical Data:**

- Measuring ranges: 0 – 20 / 200 / 2000 µS/cm, depending on measuring cell and amplification
- Temperature compensation: Linear 2.2 % / K, can be disabled; Reference temperature 25 °C
- Indication of limit values: Optical via 2 LEDs, 2 limit values can be set within 0 and 100 % of the measuring range
- Limit value outputs: 2 potential-free relay contacts, max. 6 A / 250 V AC each
- Analog outputs: 0-10 V, Ra>1 kOhm and 4-20 mA, Ra< 500 Ohm; corresponding to 0 – 20 / 200 / 2000 µS/cm
- Power supply: 22-26 V DC, protected against voltage reversal, potential-separated, 1000 V isolation voltage; or 230 V 50/60 Hz
- Power consumption: Approx. 3 W / 3 VA
- Wall mounting housing (Polycarbonate) 120 x 122 x 57 mm, IP 65

**D200**

0-20/200/2000 µS/cm for wall mounting installation

**880204**

PROCESS MEASURING INSTRUMENTS

# NEOMERIS

## CONDUCTIVITY MEASURING INSTRUMENTS / CELLS

Type	Reference
	<b>Conductivity measuring instrument D10 / D100 / D1000 with integrated or for separate measuring cell</b>
	<b>Technical Data:</b>
	<ul style="list-style-type: none"> <li>• Measuring ranges: 0 – 10 / 100 / 1000 µS/cm, depending on instrument type</li> <li>• Without temperature compensation, analog outputs</li> <li>• Indication of limit values: Optical via 2 LEDs, 2 limit values can be set within 0 and 100 % of the measuring range</li> <li>• Limit value output (optional): 1 potential-free relay contact, max. 2 A / 250 V AC, 60 W / 62,5 VA</li> <li>• 12 V DC via wall transformer power supply 100 – 240 V AC (Upon request: Power supply 22 – 26 V DC)</li> <li>• Power consumption: Approx. 1 W</li> <li>• Polycarbonate housing, 82 x 60 x 57 mm, IP 65</li> <li>• Measuring cell (Versions with integrated sensor): ¾", PP, PN 6, T<sub>max</sub> 80 °C</li> </ul>
D10	0-10µS/cm with integrated ¾" screw-in sensor <b>880201</b>
D100	0-100µS/cm with integrated ¾" screw-in sensor <b>880202</b>
D1000	0-1000µS/cm with integrated ¾" screw-in sensor <b>880203</b>
D10 DIS	0-10µS/cm mit with 3m hardwired connection cable for ext. sensor (not M301) <b>880257</b>
D100 DIS	0-100µS/cm with 3m hardwired connection cable for ext. sensor (not M301) <b>880258</b>
D1000 DIS	0-1000µS/cm with 3m hardwired connection cable for ext. sensor (not M301) <b>880259</b>
R D10/100/1000	Potential-free relay contact for D10/100/1000 (to be ordered together with measuring devices, due to necessary integration) <b>880260</b>

**Conductivity measuring instrument LED5 with integrated or for separate measuring cell****Technical Data:**

- Measuring range: 0 – 20 µS/cm (Other measuring ranges upon request)
- Without temperature compensation, limit value outputs, analog outputs
- LED-display (3 LED green, 1 LED yellow, 1 LED red flashing = limit value indication) of the following conductivity ranges: ≤1.0 / 1-5 / 5-10 / 10-20 / >20 µS/cm (Other display modes and LED-configurations/colors upon request)
- 12 V DC via wall transformer power supply 100 – 240 V AC
- Power consumption: Max. 0.5 W
- Housing: LED5.20: PP, PMMA; Ø40 x 68 (Top) / 110 (Total) mm  
LED5.20 DIS: POM; 64 x 42 x 14 mm
- No protection class due to non-sealed low-voltage plug
- Measuring cell (Versions with integrated sensor): ¾", PP, PN 6, T<sub>max</sub> 80 °C

<b>LED 5.20</b>	0-20 µS/cm with 5 LEDs and integrated ¾" screw-in sensor <b>880213</b>
<b>LED 5.20 DIS</b>	0-20 µS/cm with 5 LEDs and 3m hardwired connection cable for ext. sensor (not M301) with plug for LED5 <b>880214</b>
<b>LED 5.20 DIS M301</b>	0-20 µS/cm with 5 LEDs und external M301 sensor with 3m hardwired connection cable with plug for LED5 <b>880261</b>

PROCESS MEASURING INSTRUMENTS

# NEOMERIS

## CONDUCTIVITY MEASURING INSTRUMENTS / CELLS

Type	Reference
<b>Conductivity measuring cells, ½“ and ¾“</b>	
<b>Technical Data:</b>	
• Cell constant K:	0.1 or 1.0 ( $\pm 5\%$ ), depending on type
• Electrode body material:	PP (M101, M110, M201, M210) or PVDF (M401, M410)
• Electrode pin material:	1.4404
• Electrode pin sealing:	NBR 70 (optionally EPDM / VITON; max. 130 °C)
• Max. operating pressure:	6 bar
• Max. temperature:	80 °C
• Plug protection class:	IP 65
• Temperature sensor Pt100:	Optionally for M201, M210, M401, M410 (Pt1000 upon request)
• Immersion depth:	Depending on type
<b>½ M101</b>	<b>880206</b>
<b>½ M110</b>	<b>880207</b>
<b>¾ M201</b>	<b>880208</b>
<b>M201 / Pt100</b>	<b>880210</b>
<b>¾ M210</b>	<b>880209</b>
<b>¾ M210 / Pt100</b>	<b>880211</b>
<b>½ M401</b>	<b>880262</b>
<b>½ M401 / Pt100</b>	<b>880263</b>
<b>½ M410</b>	<b>880264</b>
<b>½ M410 / Pt100</b>	<b>880265</b>



PROCESS MEASURING INSTRUMENTS

# NEOMERIS

## CONDUCTIVITY MEASURING INSTRUMENTS / CELLS

Type	Conductivity measuring cell M301, John Guest 8 mm; Without temp. sensor	Reference
M301	<p><b>Technical Data:</b></p> <ul style="list-style-type: none"> <li>• Cell constant K: 0.1 (<math>\pm 5\%</math>)</li> <li>• Electrode body material: POM</li> <li>• Electrode pin material: 1.4404</li> <li>• Max. operating pressure: 6 bar</li> <li>• Max. temperature: 60 °C</li> </ul> <p>K=0.1 in John Guest T-Piece PM0208E with 3m hardwired cable</p>	880212

Selection Chart: Measuring Cells / Instruments

Cell constant ( $\pm 5\%$ )	For measuring range	Measuring cell <u>with Pt100</u>	Reference	For Instruments	Measuring cell <u>without Pt100</u>	Reference	For Instruments
0.1	0 – 20 $\mu\text{S}/\text{cm}$ (0-10: D10)	$\frac{3}{4}$ M201 / Pt100 880210 $\frac{1}{2}$ M401 / Pt100 880263		D200 D300	$\frac{1}{2}$ M101 880206 $\frac{3}{4}$ M201 880208 M301 880212 $\frac{1}{2}$ M401 880262		LED5* D10** D200 D300
0.1	0 – 200 $\mu\text{S}/\text{cm}$ (0-100: D100)	$\frac{3}{4}$ M201 / Pt100 880210 $\frac{1}{2}$ M401 / Pt100 880263		D200 D300	$\frac{1}{2}$ M101 880206 $\frac{3}{4}$ M201 880208 M301 880212 $\frac{1}{2}$ M401 880262		D100** D200 D300
1.0	0 – 2000 $\mu\text{S}/\text{cm}$ (0-1000: D1000)	$\frac{3}{4}$ M210 / Pt100 880211 $\frac{1}{2}$ M410 / Pt100 880265		D200 D300	$\frac{1}{2}$ M110 880207 $\frac{3}{4}$ M210 880209 $\frac{1}{2}$ M410 880264		D1000** D200 D300

\* only with external measuring cell. \*\* not with M301

Special designs and leak detectors upon request:

- For example conductivity cells with screw connection:
- **Leak detectors:**

Applications: Detection of liquid leakages in building services engineering, archives, large-scale IT facilities, emergency power systems, hydraulic systems, laboratories, etc.

Function: Infrared spot detector. Works with any liquid and reacts already at thin films. Does not depend on conductivity, consistency or draught in the environment.



#### **§1 Validity of the Conditions**

(1) The following terms and conditions apply to all our deliveries and services and to all future business relations, even if they have not been expressly agreed. We do not accept customer's terms and conditions which differ to our terms and conditions.

#### **§2 Conclusion of a Contract**

(1) All offers are made subject to contract. Products are subject to acceptable technical as well as dimensional, colour and/or weight changes.  
(2) Orders placed with us are binding offers which we can choose to accept within two weeks. Acceptance is declared either in writing or by delivery of goods to our customers.  
(3) If customers place an order electronically, we shall immediately confirm receipt of the order. Receipt confirmation does not constitute a binding acceptance of the order, but can be combined with the declaration of acceptance. We shall store the contractual text and send it to the customer via email together with these terms and conditions if requested.  
(4) Conclusion of a contract occurs under the reserve of the correct and timely delivery through our supplier, unless we are liable in the case of non-delivery, e.g. if a congruent hedging transaction has not been agreed with our supplier. We shall immediately inform the customer of any possible unavailability of the service and refund any money already received.

#### **§3 Prices**

(1) Our quotation prices are valid for 30 days after the quotation date, unless otherwise stated. In case of doubt, the prices specified in our confirmation of order are decisive.  
(2) Our prices are valid, unless otherwise agreed, as net prices without cash discounts or any other allowances ex stock in Hildesheim, Germany, excluding packaging and shipping costs and plus the respective statutory VAT.  
(3) If there is any change in labour costs, material costs, purchase conditions, etc. between the date of contract conclusion and the agreed and/or actual delivery date, we shall be entitled to adjust our prices accordingly and, if an agreement cannot be reached, to withdraw from the contract. This only applies for non-trade operators if the time between the date of contract conclusion and the delivery is more than four months.  
(4) Payment must be made within 30 days of the delivery date with no deductions. If the payment deadline is exceeded, we are entitled, irrespective of the proof of greater damage caused by delay, to charge a higher default penalty, interest at 8 % points above the base rate.  
(5) The off-setting of any counter-claims by the purchaser is permissible only if such counter-claims are undisputed or established in law. Purchasers can only exercise their right of retention if it is based on claims contained in this contract.

#### **§4 Delivery**

(1) Delivery and service delays due to instances of force majeure or circumstances which make delivery difficult or impossible - e.g. industrial action, administrative regulations, natural disasters, business disruptions, power failure, etc. irrespective of whether we or our suppliers are affected by such circumstances - will exempt us from our contractual deadlines and obligations. We then have the right to postpone the delivery or the service for the period of the hindrance. If the delivery or service becomes impossible or unreasonable and this is not due to our fault, we shall be entitled to terminate the contract. In this case the customer has no right to make claims for damages.  
(2) We shall be entitled to carry out part deliveries and part services.

#### **§5 Transfer of Risk**

(1) The risk of accidental loss and accidental deterioration of the goods passes to the customer as soon as the consignment has been transferred to the freight carrier (mail order purchase) or other parties designated to carry out delivery. This applies irrespective of which party bears the transport costs.  
(2) Goods will still be delivered even if the customer is delayed in accepting the delivery.  
(3) We shall only take out transport insurance at the customer's request and expense.

#### **§6 Warranty**

(1) We provide warranty for two years at our own discretion via fault rectification or replacement delivery. If the fault cannot be eliminated within an acceptable time period or if rectification or replacement delivery is considered failed due to other reasons, customers can, according to their choice, demand a reduction or terminate the contract. Failure can only be assumed if sufficient opportunity has been provided to rectify the fault or to deliver a replacement without the desired aim being achieved, if fault rectification or replacement delivery is impossible, if we refuse to rectify the fault or deliver a replacement or unacceptably delay fault rectification or replacement delivery, if there is justified doubt regarding the prospect of success, or if the tasks are considered unacceptable due to other reasons. Cancellation is impermissible on the grounds of minor faults. Wear parts (e.g. seals, moving parts, etc.) are only guaranteed for one year. The same applies if operating resources or equipment other than those recommended by the respective manufacturers are used in the devices or systems which we supply.  
(2) A commercial transaction involves the customer determining that the goods conform to the contract by checking the goods immediately upon their receipt, and immediately notify us in writing of any visible damages upon receipt of the goods, notification of any other defects should occur immediately after their identification (§ 377 HGB); otherwise the goods are considered as accepted. Other business requires written notification of visible damage within two weeks upon receipt of the goods. The burden of proof of the fault, the time of its identification and the timely receipt of the complaint rests with the customer.  
(3) Contrary to the aforesaid rules of warranty, we only sell used items, except in the case of fraudulent intent, without any form of warranty. This does not affect warranty commitments.

(4) If customers decide to terminate the contract due to a fault after an unsuccessful rectification of faults, they are not entitled to an additional claim for damages due to this fault; the customer is obliged to return the goods. If customers make a claim for damages after an unsuccessful rectification of faults, the goods remain with the customers if this is reasonable for them. The claim for damages is then limited to the difference between the purchase price and the value of the faulty item. This is not valid if we have fraudulently attempted to violate the contract.

#### **§7 Liability**

(1) Our liability and the liability of our vicarious agents are hereby excluded for slight negligent breach of duty, provided that no contractual duties, damages to life, limb or health, or agreed guarantees or claims in accordance with the German Product Liability Act are affected. In the case of violation of contractual duties our liability shall be limited to typical contractual losses which could have been reasonably foreseen.  
(2) The period of limitation of one year applies for claims for damages against us which are based on wilful conduct attributed to us. This does not include a supplier's claim for recourse in accordance with section 478 of the BGB.

#### **§8 Retention of Title**

(1) We retain the title to the goods until complete settlement of all the existing or future claims against the customer.  
(2) Our customers shall be entitled to process and resell the conditional goods in the ordinary course of business, provided that they are not in default. The pledging of goods or security transfers of ownership is not permissible. Claims resulting with respect to the conditional goods (including all balance claims from the current account) resulting from the resale or any other cause in law (insurance, unlawful act) shall now be assigned by the customer to us as security up to the amount of our claim. We hereby accept the transfer and authorise the customers to collect the claims assigned to us for their account in their own name. This authorisation can only be revoked if our customers do not fulfil their payment obligations.  
(3) Any adaptation and processing of the conditional goods by the customers shall always be carried out in our name and on our behalf. If processing occurs with goods which do not belong to us, we shall acquire co-ownership of the new goods in proportion to the value of the goods supplied by us to other processed goods. The same shall apply if the conditional goods are intermingled with other goods which do not belong to us.  
(4) The customers shall keep our retention of title free of charge. They are obliged to take out insurance in a reasonable and usual scope. In the case of an intervention or seizure of the conditional goods by a third party – in particular by a bailiff – our customers are obliged to indicate our ownership and to notify us without delay.

#### **§9 Installation and Maintenance**

(1) If our customer asks us to carry out installation and maintenance work, which we do not carry out within the framework of our liability for defects, a separate contract for work and services comes into being. If not stated otherwise hereinafter these terms and conditions also apply for this contract for work and services. Payment takes place according to the respective valid prices for maintenance rates.  
(2) A written estimate is required if our customer requests a binding quote. We are bound to this estimate for one complete month after submission.  
(3) Customer rights due to defects of installation and maintenance work fall under the statute of limitations after one year as from acceptance of the repair item of work. This time limit does not apply if we acted with intent or gross negligence or if we are responsible for damages to life, limb or health or for claims in accordance with the German Product Liability Act. In the case of contractors, we do not accept liability even for slight negligent breach of marginal contractual obligations.

#### **§10 Miscellaneous**

(1) The exclusive place of jurisdiction for all disputes is Hildesheim, Germany, if our customer is a trader, a legal person governed by public law or special public law funds. This shall also apply if our customers do not have a general place of jurisdiction in the Federal Republic of Germany or if their normal place or residence when legal action is brought is unknown.  
(2) Changes or additions to this contract have to be in writing. This also applies for the written form clause.  
(3) Our customers agree that their personal data is stored for the purpose of contract conclusion.  
(4) In the event that a provision of this contract or these terms and conditions is or becomes invalid or unenforceable, such invalidity or impossibility to enforce shall not affect the validity of the remaining provisions hereof.  
(5) Only the relevant laws of the Federal Republic of Germany shall apply, the UN Convention on the International Sale of Goods is hereby excluded.



Tradition and future by your side

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