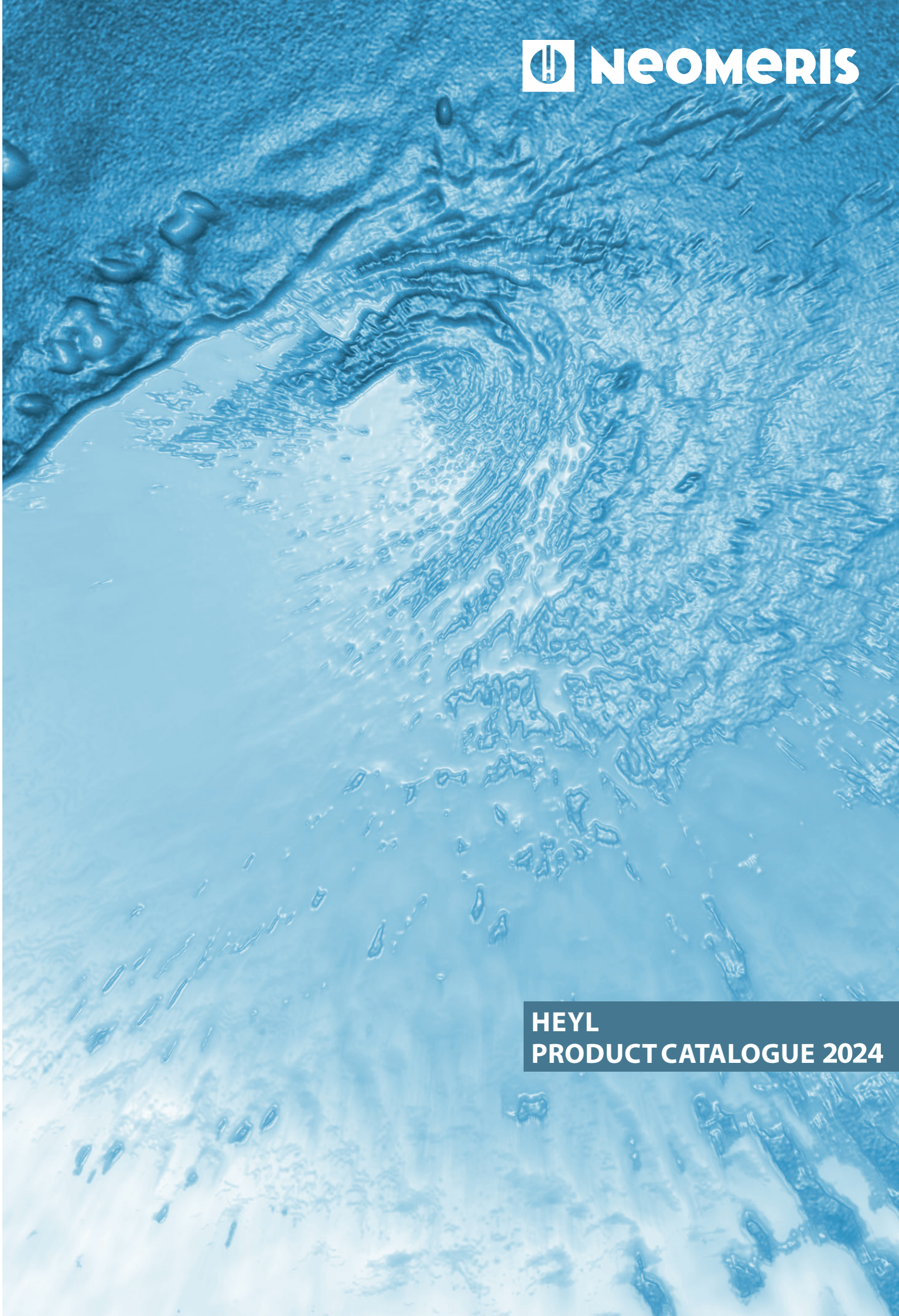

HEYL
PRODUCT CATALOGUE 2024

Tradition is the future for us

2018 our parent company has been a manufacturer of chemicals, equipment and components for industrial water treatment for 60 years. At the same time, we have been the largest and most successful distributor of Heyl products for 14 years.

We supply more than 40 countries around the world and have established national as well as international networks and partnerships in the interest of our well over 4,000 customers in order to serve the various customer interests and provide concrete support up to aftersales.

Just in time for the anniversary of the Gebr. Heyl brand, we have ushered in a new era in the history of the Heyl Group. We have changed our company location and moved into our new building. In the industrial park Glockensteinfeld, Hildesheim, directly at the freeway A7, we have moved into approx. 1.400 m2 (before <700 m2) of office, technical and storage space. The development of our company has made this necessary to ensure the future and further development of our brand.

You are the focus of our daily activities. For many years we have been serving plant manufacturers for boiler houses (heating and steam boilers), the pharmaceutical industry, drinking water treatment, industrial cleaning plants, swimming pool construction, the food and beverage industry, cooling and process water conditioning, softening plant construction, for reverse osmosis plants, cooling tower construction, hospital equipment, fish farming plants, and many more.

As experts for chemical rapid tests, online analysis technology, and disinfection of your plant water, we work with you to design process-oriented applications, individual system solutions, and special product variants. Our expert knowledge up to development competence is an expression of our consulting quality and enables you to successfully implement customer requirements.

Take advantage of our strengths for you and have the conversation directly with us!

We feel personally responsible and put our heart into our work.

Marc Osterwald
Managing Director

GEBRÜDER HEYL
Vertriebsgesellschaft für innovative Wasseraufbereitung mbH

Please visit our online store and inform yourself about our product portfolio.
www.heylneomeris.shop

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TRADITION UND ZUKUNFT AN IHRER SEITE
TRADITION AND FUTURE BY YOUR SIDE

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Overview water analyzers

Measurement	Measurement parameters	Measuring range	Application area
	• Water hardness	0,05 - 25 °dH	• Universal for water treatment plants
Testomat® EVO TH CAL	• Water hardness	0,05 - 25 °dH	• Universal for water treatment plants • With additional calibration function
Testomat® LAB TH	• Water hardness	0,05 - 25 °dH	• Universal for water treatment plants • For connection to higher-level controls
Testomat ECO®	• Water hardness	0,05 - 25 °dH	• Universal for water treatment plants
Testomat ECO® C	• Acid capacity 0,7 ≤ $K_{S4,3}$ ≤ 2,0 mmol/l • Carbonate hardness	0,18 - 3,58 mmol/l 0,36 - 7,16 mmol/l	• For monitoring the acid capacity in swimming pool water • For water treatment plants
Testomat ECO® Plus	• Water hardness	0,05 - 25 °dH	• Universal for water treatment plants
Testomat® 808	• Water hardness limit check	0,02 - 5 °dH	• Universal for water treatment plants
Testomat 2000®	• Water hardness • Carbonate hardness • p-value • minus m-value	0,05 - 25 °dH 0,5 - 20 °dH 1,0 - 15 mmol/l 0,05 - 0,5 mmol/l	• Universal for water treatment plants • Approved for boiler houses
Testomat 2000® CN*	• Water hardness • Carbonate hardness • p-value • minus m-value	0,05 - 25 °dH 0,5 - 20 °dH 1,0 - 15 mmol/l 0,05 - 0,5 mmol/l	• Especially for the Chinese market • Languages: Mandarin and GB • Universal for water treatment plants • Approved for boiler houses
Testomat 2000® CAL	• Water hardness • Carbonate hardness • p-value • minus m-value	0,05 - 25 °dH 0,5 - 20 °dH 1,0 - 15 mmol/l 0,05 - 0,5 mmol/l	• Universal for water treatment plants • With additional calibration function
Testomat 2000® Antox	• Water hardness • Carbonate hardness • p-value • minus m-value	0,05 - 25 °dH 0,5 - 20 °dH 1,0 - 15 mmol/l 0,05 - 0,5 mmol/l	• Universal for water treatment plants • Dosing of reducing agents at high oxidant concentration
Testomat 2000® Self Clean	• Water hardness • Carbonate hardness • p-value • minus m-value	0,05 - 25 °dH 0,5 - 20 °dH 1,0 - 15 mmol/l 0,05 - 0,5 mmol/l	• Monitoring of two measuring points with different indicators • automatic measuring chamber clea-ning

*China

Measurement	Measurement parameters	Measuring range	Application area
Testomat 2000® DUO	• Water hardness • Carbonate hardness • p-value • minus m-value	0,05 - 25 °dH 0,5 - 20 °dH 1,0 - 15 mmol/l 0,05 - 0,5 mmol/l	• Monitoring of two measuring points with different indicators
Testomat 2000® DUO CN*	• Water hardness • Carbonate hardness • p-value • minus m-value	0,05 - 25 °dH 0,5 - 20 °dH 1,0 - 15 mmol/l 0,05 - 0,5 mmol/l	• Monitoring of two measuring points with different indicators • Languages: Mandarin and GB
Testomat 2000® THCL	• Water hardness • Total chlorine	0,00 - 0,99 mg/l and 1,0 - 2,5 mg/l 0,25 - 2,5 °dH	• Combination device for hardness and chlorine (DPD) for monitoring reverse osmosis systems
Testomat 2000® Br_2	• Bromine	0,00 - 2,23 mg/l and 2,3 - 5,6 mg/l	• Monitoring the content of bromine
Testomat® LAB CL	• Total chlorine or free chlorine	total chlorine: 0 - 5 mg/l free chlorine: 0 - 5 mg/l	• DPD method suitable for water quality control in the environment of water treatment and drinking water plants, process monitoring as well as for monitoring the chlorine concentration in the cooling tower process. • for connection to higher-level controls
Testomat 2000® CLF	• free chlorine	0,00 - 0,99 mg/l and 1,0 - 2,5 mg/l	• DPD method for swimming pool- and drinking water
Testomat 2000® CLT	• total chlorine	total chlorine:: 0,00 - 0,99 mg/l and 1,0 - 2,5 mg/l free chlorine: 0,00 - 0,99 mg/l and 1,0 - 2,5 mg/l	• DPD method for swimming pool- and drinking water
Testomat 2000® CLT Self Clean	• total chlorine	0,00 - 0,99 mg/l and 1,0 - 2,5 mg/l	• DPD method for swimming pool- and drinking water • automatic measuring chamber cleaning
Testomat 2000® ClO_2	• Chlorine dioxide	0,00 - 1,88 mg/l and 1,0 - 2,5 mg/l	• Monitoring of the chlorine dioxide content
Testomat 2000® CrVI (Standard)	• Chromate (CrO_4^{2-}) • Chrome VI (CrVI)	0 - 2 mg/l 0 - 1 mg/l	• Monitoring of process and waste water in electroplating; control of waste water in metal processing industry

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Modell / Typ	Messparameter	Messbereich	Einsatzbereich
Testomat 2000® CrVI 0-5 ppm (High measuring range)	• Chromate (CrO_4^{2-}) • Chrome VI (CrVI)	0 - 11,15 mg/l 0 - 5 mg/l	• Monitoring of process and waste water in electroplating; control of waste water in metal processing industry
Testomat 2000® Fe	• Iron-II and Iron-III	0,00 - 0,65 mg/l and 0,7 - 1,0 mg/l	• Deferrization systems
Testomat® 808 SiO_2	• Silicate	0,3 - 1,2 mg/l	• Autoclaves and sterilization in hospitals, EDI plants
Testomat 2000® SO_3	• Sulfite	0,0 - 50 mg/l	• Monitoring the excess of oxygen binder sulfite
Testomat 2000® PO4	• Ortho-Phosphate	0 - 10,0 mg/l	• Monitoring the content of ortho-phosphate
Testomat 2000® Polymer	• Polymers • Polyacrylates	z.B. Polyacrylates 0 - 50 mg/l	• Monitoring of conditioning agents in cooling and heating circuits

Testomat® EVO TH

The **Testomat® EVO TH** determines the water hardness fully automatically by means of titration. The device is suitable for checking the water quality of water treatment plants, drinking water plants, industrial boilers and for monitoring process water.

The Testomat® EVO TH convinces with new functionalities:

- TÜV-certified
- Optical water detection when filling the measuring chamber
- Import and export of settings (basic programming) with selectable file name
- Logging of measurement data and messages/alarms by means of an integrated SD or optional SDHC card (2GByte)
- Firmware update via SD card
- LCD - graphic display
- Multilingual menu navigation with simple switching (internal programming is retained)
- Integrated self-test with continuous monitoring
- External erase/acknowledge input
- Freely programmable password
- Automatic venting of the indicator line
- Doors individually changeable
- Range monitoring (falling below limit value 1/ exceeding limit value
- Permissible number of water shortages freely programmable (for systems with temporarily low water pressure)
- Measurement data transfer via RS 232 interface

Performance Profile:

- High-precision titration using a piston metering pump
- Analog output 0/4 - 20 mA
- Programmable hardness unit in ° dH, °f, ppm CaCO3, mmol/l
- 2 independent limit values with adjustable switching functions as well as switching possibility after adjustable number of bad analyses
- Analysis trigger:
  - automatic interval operation (0-99 minutes)
  - quantity-dependent via contact water meter
- Indicator quantities: 100 and 500 ml bottles

Technical data:

Supply voltage:	Switching power supply 100 - 240 VAC, 100 - 353 VDC or 24 VAC
Power consumption:	max. 30 VDC
Protection class:	I
Protection type:	IP 44
Ambient temperature:	10 - 40 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9 kg
Operating pressure:	1 to 8 bar / 1x105 to 8x105 PA or 0.3* to 1 bar / 0.3x105 to 1x105 PA (after removal of the regulator core)
Menu languages:	German, English, French, Dutch, Spanish, Turkish, Mandarin (Chinese), Czech, Russian, Portugiesisch, Polnisch (other languages on request)
Measuring range:	0,05 - 25 °dH (0,89 - 448 ppm)

Supply voltage and article number:

Article number	Description
100704	Switching power supply 100 - 240 VAC / 100 - 353 VDC
100706	Switching power supply 24 VAC *

Indicators *new*

Description	Amount	
Testomat Indicator TH2005	500 ml	152005
Testomat Indicator TH2025	500 ml	152025
Testomat Indicator TH2050	500 ml	152050
Testomat Indicator TH2100	500 ml	152100
Testomat Indicator TH2250	500 ml	152250
Testomat Indicator TH2005	2 x 100 ml	151005
Testomat Indicator TH2025	2 x 100 ml	151025
Testomat Indicator TH2050	2 x 100 ml	151050
Testomat Indicator TH2100	2 x 100 ml	151100
Testomat Indicator TH2250	2 x 100 ml	151250

* Please note that the UL certification and the WÜH type examination only applies to the device with wide-range power supply unit.

Optional:

Article number	Description
850925	Cam switch for Testomat® 808 / EVO TH, 2 pole, 2 contacts, IP65

Testomat® EVO TH CAL

The **Testomat® EVO TH CAL** with additional calibration function determines the water hardness fully automatically by titration. The device is suitable for checking the water quality of water treatment plants, drinking water plants, industrial boilers and for monitoring process water.

The Testomat® EVO TH CAL corresponds in function to the Testomat® EVO TH:

- Optical water detection when filling the measuring chamber
- Import and export of settings (basic programming) with selectable file name
- Logging of measurement data and messages/alarms by means of an integrated SD or optional SDHC card (2GByte)
- Firmware update via SD card
- LCD – Graphic display
- Multilingual menu navigation with simple switching (internal programming is retained)
- Integrated self-test with continuous monitoring
- External erase/acknowledge input
- Freely programmable password
- Automatic venting of the indicator line
- Doors individually changeable
- Range monitoring (undershoot limit value 1/ overshoot limit value 2)
- Permissible number of water shortages freely programmable (for systems with temporarily low water pressure)
- Measurement data transfer via RS 232 interface

Performance profile:

- High-precision titration using a piston metering pump
- Analog output 0/4 - 20 mA
- Programmable hardness unit in ° dH, °f, ppm CaCO3, mmol/l
- 2 independent limit values with adjustable switching functions as well as switching possibility after adjustable number of bad analyses
- Analysis trigger:
  - automatic interval operation (0-99 minutes)
  - quantity-dependent via contact water meter
- Indicator quantities: 100 and 500 ml bottles

Technical data:

Supply voltage:	Switching power supply 100 - 240 VAC, 100 - 353 VDC or 24 VAC
Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 44
Ambient temperature:	10 - 40 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9 kg
Operating pressure:	1 to 8 bar / 1x105 to 8x105 PA or 0.3* to 1 bar / 0.3x105 to 1x105 PA (after removal of the regulator core)
Menu languages:	German, English, French, Dutch, Spanish, Turkish, Mandarin (Chinese), Czech, Russian, Portugiesisch, Polnisch (other languages on request)
Measuring range:	0,05 - 25 °dH (0,89 - 448 ppm)

Supply voltage and article number:

Article number	Description
100712	Switching power supply 100 - 240 VAC / 100 - 353 VDC
100714	Switching power supply 24 VAC

Indicators *new*

Description	Amount	
Testomat Indicator TH2005	500 ml	152005
Testomat Indicator TH2025	500 ml	152025
Testomat Indicator TH2050	500 ml	152050
Testomat Indicator TH2100	500 ml	152100
Testomat Indicator TH2250	500 ml	152250
Testomat Indicator TH2005	2 x 100 ml	151005
Testomat Indicator TH2025	2 x 100 ml	151025
Testomat Indicator TH2050	2 x 100 ml	151050
Testomat Indicator TH2100	2 x 100 ml	151100
Testomat Indicator TH2250	2 x 100 ml	151250

Optional:

Article number	Description
850925	Nockenschalter für Testomat® 808 / EVO TH, 2 polig, 2 Kontakte, IP65

Testomat® LAB TH TH-R

The **Testomat® LAB TH** determines the water hardness fully automatically by means of titration. The device is suitable for checking the water quality of water treatment plants, drinking water plants, industrial boilers and for monitoring process water.

Please note that the Testomat® LAB - TH for use in multi-parameter concepts or for connection to an existing higher-level control concept, such as the NeoTecMaster®.

https://neomeris.de/steuerung-multicontroller.html

In addition to the 4-20 mA output for transmitting the measured values, this series has an RS232 interface for transmitting the measured values and error & status messages. Furthermore, all data are continuously recorded on the integrated SD card or optionally available SDHC card (2Gbyte) as a file in CSV format structured and can be used at any time for detailed observations.

The Testomat® LAB TH convinces with new functionalities:

- RS232 interface for transmission of the measured values and error messages
- Carrying out parameterization using an SD card or the „Service Monitor“ software via mini-USB (on the device side) to USB 2.0 (for example PC/notebook)
- Multilingual menu navigation of the software in German, English, French, Dutch
- Firmware update via SD card
- Compact design
- Optimized water detection based on an optical measuring method
- Integrated self-test with continuous monitoring
- Automatic venting of the indicator line

Proven performance profile:

- High-precision titration using a piston metering pump
- Reliable and low-maintenance operation
- Minimum indicator and water consumption
- Analog output 4 - 20 mA for transmission of the measured values
- Programmable hardness unit in °dH, °f, ppm CaCO3, mmol/l
- Common alarm output
- Indicator quantities: 500 ml bottles

Analysis trigger:

- Automatic interval operation (interval pause adjustable from 0 - 255 minutes)
- External analysis input (start/stop)
- Manual start

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Technical data:

Operating voltage:	24 VDC
Power consumption	Max. 1 A, Without external load
Protection class:	I
Protection type:	IP 40 (when using the optionally available device cover IP43)
Ambient temperature:	10 - 40 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	270 x 350 x 147 mm
Weight:	ca. 4,35 kg
Operating pressure:	1 to 8 bar / 1x105 to 8x105 PA or 0.3* to 1 bar / 0.3x105 to 1x105 PA (after removal of the regulator core)
Menu languages:	(English, French, German, Dutch, Portugese)
Parameterization by means of software service monitor	0,05 - 25 °dH

Optional:

Article number	Description
37764	OLED display module for measured value display 2.8“, yellow, 256 x 64
37798	Testomat® LAB fumigation hood (recommended if the instruments are exposed to direct sunlight)
40187	Connection set
130010	Kleinriesler R (see page 63)

Indicators *new*

Description	Amount	
Testomat Indicator TH2005	500 ml	152005
Testomat Indicator TH2025	500 ml	152025
Testomat Indicator TH2050	500 ml	152050
Testomat Indicator TH2100	500 ml	152100
Testomat Indicator TH2250	500 ml	152250

Order number:

Article number:	Description
116102	**Testomat® LAB TH**
116112	**Testomat® LAB TH-R**

Testomat LAB TH-R

Additional function:
Parameterization and readout of the device parameters via the RS232 interface.

Testomat® 808

The **Testomat® 808** is a compact analyzer for online measurement of water hardness according to the principle of „limit value monitoring with color change“ in the measuring range 0.02 - 5 ° dH (0.4 - 89 ppm).

Performance profile:

- Indication of limit value undercut or exceeded: green / red LED
- Modern indicator pump system
- Automatic measuring sequence with low water consumption
- Direct error and indicator quantity display
- Internal and external flushing of the measuring chamber via manual control
- Control of an external flush valve
- Three potential-free relays for:
  - External flush valve control
  - Limit value evaluation
  - External control and / or alarm processing
- Safety check for 72-hour operation without supervision
- Indicator quantities: 100 and 500 ml bottles
- 4 - 20 mA interface for defined status and error messages
- RS 232 interface for firmware updates

Technical data:

Power consumption:	max. 16 VA
Protection class:	I
Protection type:	IP 44
Ambient temperature:	15 - 40 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	364 x 314 x 138 mm
Weight:	ca. 4,5 kg
Operating pressure:	1 - 4 bar or 0,3 - 1 bar*
Measuring range:	0,02 - 5 °dH (0,4 - 89 ppm)

Optional:

Article number	Description
850925	Cam switch for Testomat® 808 / EVO TH, 2 pole, 2 contacts, IP65
37610	Connection set

* For pressures above 4 bar, use a separately available pressure reducer. For pressures between 0.3 - 1 bar, use a separately available measuring chamber.

Order number:

	24 V / 50-60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
1 - 4 bar	**100652**	**100651**	**100650**
0,3 - 1 bar	**100655**	**100654**	**100653**

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Testomat 2000®

The Testomat 2000® process photometer determines water hardness, carbonate hardness, p-value or minus m-value fully automatically by means of titration. This instrument is suitable for monitoring the water quality of water treatment, water cutting and drinking water plants, for monitoring and quality control of softening plants (Testomat 2000® Indicator TH 2005-2250) and for monitoring and quality control of decarbonization plants (Testomat 2000® Indicator TC 2050 - 2100), prevention of acidity drops in decarbonization plants and desalination plants (Testomat 2000® Indicator TM 2005) and boiler water monitoring of steam boilers (Testomat 2000® Indicator TP 2100).

Performance profile:

- Menu-guided operation and programming by means of plain text display
- Measuring ranges of residual hardness, total hardness, carbonate hardness, minus m-value, p-value that can be determined by indicator selection
- Selection of hardness units in ° dH, °f, ppm CaCO3 or mmol/l
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Dynamic (exhaustion-dependent interval operation)
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Indicator quantities: 100 and 500 ml bottles
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Water hardness: 0.05 - 25 °dH (0.89 0 448 ppm) Carbonate hardness: 0.5 - 20 °dH (8.9 - 358 ppm) p-value: 0.1 - 15 mmol/l minus m-value: 0.05 - 0.5 mmol/l

Order number:

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

Testomat 2000®CN

The **Testomat 2000® CN** corresponds in function and suitability to the **Testomat 2000®** and has been equipped with the operating languages **Mandarin and English** especially for the Chinese market. It has an optional data logger function.

Order number:

Article number	Description
	230 V / 50-60 Hz
110212	**incl.** SD card data logger
110215	**without** SD card data logger

Testomat 2000® + Testomat 2000®CN

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232(for log printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Indicators

Description	Amount	
Testomat Indicator TH2005	500 ml	152005
Testomat Indicator TH2025	500 ml	152025
Testomat Indicator TH2100	500 ml	152100
Testomat Indicator TH2250	500 ml	152250
Testomat Indicator TH2005	2 x 100 ml	151005
Testomat Indicator TH2025	2 x 100 ml	151025
Testomat Indicator TH2100	2 x 100 ml	151100
Testomat Indicator TH2250	2 x 100 ml	151250

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Testomat 2000® CAL

The **Testomat 2000® CAL** with additional calibration function determines water hardness, carbonate hardness, p-value or minus mW-value fully automatically by means of titration. This instrument is suitable for monitoring the water quality of water treatment, water cutting and drinking water plants, for monitoring and quality control of softening plants (Testomat 2000® Indicator TH 2005-2250) as well as for monitoring and quality control of decarbonization plants (Testomat 2000® Indicator TC 2050-2100), prevention of acidity dips in decarbonization plants and desalination plants (Testomat 2000® Indicator TM 2005) and boiler water monitoring of steam boilers (Testomat 2000® Indicator TP 2100).

Performance profile:

- Menu-guided operation and programming by means of plain text display
- Measuring ranges of residual hardness, total hardness, carbonate hardness, minus m-value, p-value that can be determined by indicator selection
- Selection of hardness units in ° dH, °f, ppm CaCO3 or mmol/l
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Dynamic (exhaustion-dependent interval operation)
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Indicator quantities: 100 and 500 ml bottles
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Water hardness: 0.05 - 25 °dH (0.89 0 448 ppm) Carbonate hardness: 0.5 - 20 °dH (8.9 - 358 ppm) p-value: 0.1 - 15 mmol/l minus m-value: 0.05 - 0.5 mmol/l

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for log printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Order number:

Menu languages	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100210	100215	100220
English	100211	100216	100221
France	100212	100217	100222
Italian	100213	100218	100223
Dutch	100214	100219	100224

Indicators

Description	Amount	
Testomat Indicator TH2005	500 ml	152005
Testomat Indicator TH2025	500 ml	152025
Testomat Indicator TH2100	500 ml	152100
Testomat Indicator TH2250	500 ml	152250
Testomat Indicator TH2005	2 x 100 ml	151005
Testomat Indicator TH2025	2 x 100 ml	151025
Testomat Indicator TH2100	2 x 100 ml	151100
Testomat Indicator TH2250	2 x 100 ml	151250

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Testomat 2000® Antox

The **Testomat 2000® Antox** is a special version of the Testomat 2000® with an additional pump for dosing a reducing agent. By adding this reducing agent to the already filled measuring chamber, the interference caused by oxidizing agents is eliminated. Further analysis of the water hardness measurement is then continued according to the standard procedure.

Performance profile:

- Menu-guided operation and programming by means of plain text display
- Measuring ranges of residual hardness, total hardness, carbonate hardness, minus m-value, p-value that can be determined by indicator selection
- Selection of hardness units in ° dH, °f, ppm CaCO3 or mmol/l
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Dynamic (exhaustion-dependent interval operation)
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Indicator quantities: 100 and 500 ml bottles
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protect class:	I
Protect type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure	0,3 - 8 bar
Measuring range:	Water hardness: 0.05 - 25 °dH (0.89 0 448 ppm) Carbonate hardness: 0.5 - 20 °dH (8.9 - 358 ppm) p-value: 0.1 - 15 mmol/l minus m-value: 0.05 - 0.5 mmol/l

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100440	100450	100460
English	100441	100451	100461

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (RS 910) (for log printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnels
40187	Connection set

Indicators

Description	Amount	
Testomat Indicator TH2005	500 ml	152005
Testomat Indicator TH2025	500 ml	152025
Testomat Indicator TH2100	500 ml	152100
Testomat Indicator TH2250	500 ml	152250
Testomat Indicator TH2005	2 x 100 ml	151005
Testomat Indicator TH2025	2 x 100 ml	151025
Testomat Indicator TH2100	2 x 100 ml	151100
Testomat Indicator TH2250	2 x 100 ml	151250
Reagents		
Reducing agent: Testomat 2000® Antox solution	2 x 100 ml	151107

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Testomat 2000® Self Clean

The **Testomat 2000® Self Clean** is a special version of Testomat 2000® with an additional dosing pump for dosing a cleaning agent after analysis. This can be used, for example, to remove possible contamination of the measuring chamber and drain hose. After the set number of analyses has been performed, the measuring chamber is rinsed and then the Testomat 2000® Self Clean cleaning solution is added to the water in the measuring chamber. After 30 seconds of regeneration time, the contents of the measuring chamber are drained. The measuring chamber is then rinsed twice.

Performance profile:

- Menu-guided operation and programming by means of plain text display
- Measurement of residual hardness, total hardness, carbonate hardness, minus m-value, p-value determinable by indicator selection
- Selection of hardness units in ° dH, °f, ppm CaCO3 or mmol/l
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Dynamic (exhaustion-dependent interval operation)
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Indicator quantities: 100 and 500 ml bottles
- Programmable maintenance interval for maintenance request
- Indicator quantities: 100 and 500 ml bottles
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure	0,3 - 8 bar
Measuring range:	Water hardness: 0.05 - 25 °dH (0.89 0 448 ppm) Carbonate hardness: 0.5 - 20 °dH (8.9 - 358 ppm) p-value: 0.1 - 15 mmol/l minus m-value: 0.05 - 0.5 mmol/l

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100380	100390	100370
English	100381	100391	100371
France	100382	100392	100372

Indicators

Description	Amount	
Testomat Indicator TH2005	500 ml	152005
Testomat Indicator TH2025	500 ml	152025
Testomat Indicator TH2100	500 ml	152100
Testomat Indicator TH2250	500 ml	152250
Testomat Indicator TH2005	2 x 100 ml	151005
Testomat Indicator TH2025	2 x 100 ml	151025
Testomat Indicator TH2100	2 x 100 ml	151100
Testomat Indicator TH2250	2 x 100 ml	151250
Reagents		
Testomat 2000® Self Clean cleaning solution	500 ml	151105

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Testomat 2000® DUO

The **Testomat 2000® DUO** is suitable for monitoring water hardness, carbonate hardness, p-value or minus m-value of water treatment, water separation and drinking water systems.

Performance profile:

- Monitoring of 2 measuring points with different indicator types, e.g. water hardness with different measuring ranges or water and carbonate hardness
- The measuring point switchover takes place automatically
- An input for restriction to one measuring point is available
- Menu-guided operation and programming by means of plain text display
- Measurement of residual hardness, total hardness, carbonate hardness, minus m-value, p-value determinable by indicator selection
- Selection of hardness units in ° dH, °f, ppm CaCO3 or mmol/l
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Dynamic (exhaustion-dependent interval operation)
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Indicator quantities: 100 and 500 ml bottles
- Programmable maintenance interval for maintenance request

Technical datas:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Water hardness: 0,05 - 25 °dH (0,89 0 448 ppm) Carbonate hardness: 0,5 - 20 °dH (8,9 - 358 ppm) p-value: 0,1 - 15 mmol/l minus m-value: 0,05 - 0,5 mmol/l

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100290	100295	100300
English	100291	100296	100301
France	100292	100297	100302
Italian	100293	100298	100303
Polish	100294	100299	100304

For Testomat®- indicators, see selection table 1 (page 26).

Testomat 2000® DUO CN

The **Testomat 2000® DUO CN** ncorresponds in function and suitability to the Testomat 2000® and has been equipped with **Mandarin and English** operating languages especially for the Chinese market.

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
Mandarin / GB	110119	110220	110221

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Testomat 2000® THCl

The **Testomat 2000 THCl®** bprocess photometer determines the content of total chlorine according to the photometric analysis principle in the range from 0 to 2.5 mg/l (ppm) and the water hardness in the range from 0.25 to 2.5° dH by titration.

Performance profile:

- 2 independently programmable limit contacts for monitoring and control tasks
- Menu-guided operation and programming by means of plain text display
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Indicator quantities: 100 and 500 ml bottles
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Watertemperature:	10 - 40 °C
Dimensions (B x H x T)	380 x 480 x 280 mm
Weight:	ca. 10,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Total chlorine: • 0,00 - 0,99 ppm (Resoltuion: 0,01 ppm) • 1,0 - 2,5 ppm (Resolution: 0,1ppm) Water hardness: • 0,25 - 2,5 °dH (Resolution: 0,05 ppm)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application

- Protection of reverse osmosis membrane against blocking due to hardness and destruction due to excessive chlorine content
- Monitoring of softening and chlorination plants in the drinking water or swimming pool sector
- Medical technology (dialysis)

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100270	100275	100280
English	100271	100276	100281
France	100272	100277	100282

Testomat®-Indicator	Amount	
Testomat 2000® Indicator TH2025	500 ml	152025
	2 x 100 ml	151025
Chlorine reagents		
Testomat 2000® Reagent CL 2250 A	500 ml	156230
Testomat 2000® Reagent CL 2250 B	500 ml	156231
Testomat 2000® Reagent CL 2250 C	500 ml	156232
Testomat 2000® Chlor Reagent kit T*	Reagent A = 2 x 500 ml Reagent B = 400 ml Reagent C = 200 ml	156235
Testomat 2000® Chlor Reagent kit T* 50%	Reagent A = 500 ml Reagent B = 200 ml Reagent C = 100 ml	156237

* The reagent sets are designed for uniform reagent consumption, therefore the filling quantities of the individual reagent bottles are different.

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Testomat Indicators

Selection table 1:
Testomat®-Indicators (500 ml / 2 x 100 ml bottle

Testomat® EVO TH / Testomat ECO® / ECO® C / Testomat 2000® / Testomat® Antox / Testomat 2000® CAL / Testomat 2000® DUO / Testomat® Self Clean / Testomat 2000® THCL / Testomat LAB TH

*Only for the Testomat EVO TH and LAB TH

Indicatortype	Unit °dH (Resolution)	°f (Resolution)	ppm $CaCO_3$ (Resolution)	mmol/l (Resolution)	Amount	Order number
TH 2005	0,05 - 0,5 (0,01)	0,09 - 0,89 (0,02)	0,89 - 8,93 (0,2)	0,01 - 0,09 (0,01)	500 ml	152005
TH 2025	0,25 - 2,50 (0,05)	0,45 - 4,48 (0,10)	4,48 - 44,8 (0,9)	0,04 - 0,45 (0,01)	500 ml	152025
TH 2050* ***new***	0,5 - 5,0 (0,10)	0,89 - 8,90 (0,20)	8,90 - 89,0 (2,0)	0,09 - 0,89 (0,10)	500 ml	152050
TH 2100	1,00 - 10,00 (0,20)	1,79 - 17,9 (0,40)	17,9 - 179 (3,8)	0,18 - 1,79 (0,04)	500 ml	152100
TH 2250	2,50 - 25,00 (0,50)	4,48 - 44,8 (1,00)	44,8 - 448 (10)	0,45 - 4,48 (0,1)	500 ml	152250
TC 2050	0,50 - 5,00 (0,50)	0,90 - 8,96 (0,90)	8,9 - 89,5 (8,9)	0,18 - 1,79 (0,18)	500 ml	153050
TC 2100	1,00 - 20,00 (1,00)	1,79 - 35,8 (1,79)	17,9 - 358 (18)	0,36 - 7,14 (0,36)	500 ml	153100
TM 2005				0,05 - 0,50 (0,01)	500 ml	154005
TP 2100				1,0 - 15,0 (1,00)		155100

Notice:
Please note that a different bottle insert than the one supplied is required for the 100 ml bottles.
(Conversion kit T2000 order number 40143)
This container size is not available for Testomat LAB TH.

*Only for the Testomat EVO TH

Indicatortype	Unit °dH (Resolution)	°f (Resolution)	ppm $CaCO_3$ (Resolution)	mmol/l (Resolution)	Amount	Order number
TH 2005	0,05 - 0,5 (0,01)	0,09 - 0,89 (0,02)	0,89 - 8,93 (0,2)	0,01 - 0,09 (0,01)	2 x 100 ml	151005
TH 2025	0,25 - 2,50 (0,05)	0,45 - 4,48 (0,10)	4,48 - 44,8 (0,9)	0,04 - 0,45 (0,01)	2 x 100 ml	151025
TH 2050* ***new***	0,5 - 5,0 (0,10)	0,89 - 8,90 (0,20)	8,90 - 89,0 (2,0)	0,09 - 0,89 (0,10)	2 x 100 ml	151050
TH 2100	1,00 - 10,00 (0,20)	1,79 - 17,9 (0,40)	17,9 - 179 (3,8)	0,18 - 1,79 (0,04)	2 x 100 ml	151100
TH 2250	2,50 - 25,00 (0,50)	4,48 - 44,8 (1,00)	44,8 - 448 (10)	0,45 - 4,48 (0,1)	2 x 100 ml	151250

Water hardness (TH), carbonate hardness (TC), minus m-value (TM), p-value (TP)

Selection table 2:

Testomat®-Indicators
(500 ml / 2 x 100 bottle)

Testomat® 808 / Testomat® F-BOB

Indicator-type	Monitored Limit value °dH	°f	ppm $CaCO_3$	mmol/l	Amount	Order number
300	0,02 °	0,0358	0,358	0,00358	500 ml	141001
300 S	0,05 °	0,0895	0,89	0,00895	500 ml	141002
301	0,1 °	0,179	1,79	0,0179	500 ml	141003
302	0,2 °	0,358	3,58	0,0358	500 ml	141004
303	0,3 °	0,537	5,37	0,0537	500 ml	141005
305	0,5 °	0,895	8,9	0,0895	500 ml	141006
310	1 °	1,79	17,9	0,179	500 ml	141007
320	2 °	3,58	35,8	0,358	500 ml	141008
330	3 °	5,37	53,7	0,537	500 ml	141009
350	5 °	8,95	89,5	0,895	500 ml	141010

Indicator-type	Monitored Limit value °dH	°f	ppm $CaCO_3$	mmol/l	Amount	Order number
300	0,02 °	0,0358	0,358	0,00358	2 x 100 ml	140001
300 S	0,05 °	0,0895	0,89	0,00895	2 x 100 ml	140002
301	0,1 °	0,179	1,79	0,0179	2 x 100 ml	140003
302	0,2 °	0,358	3,58	0,0358	2 x 100 ml	140004
303	0,3 °	0,537	5,37	0,0537	2 x 100 ml	140005
305	0,5 °	0,895	8,9	0,0895	2 x 100 ml	140006
310	1 °	1,79	17,9	0,179	2 x 100 ml	140007
320	2 °	3,58	35,8	0,358	2 x 100 ml	140008
330	3 °	5,37	53,7	0,537	2 x 100 ml	140009
350	5 °	8,95	89,5	0,895	2 x 100 ml	140010

Notice: Please note that the 100 ml bottles can only be purchased in batches of 2!

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Selection table 3:

Testomat®-Indicators
(500 ml / 2 x 100 bottles)

Testomat® C-BOB

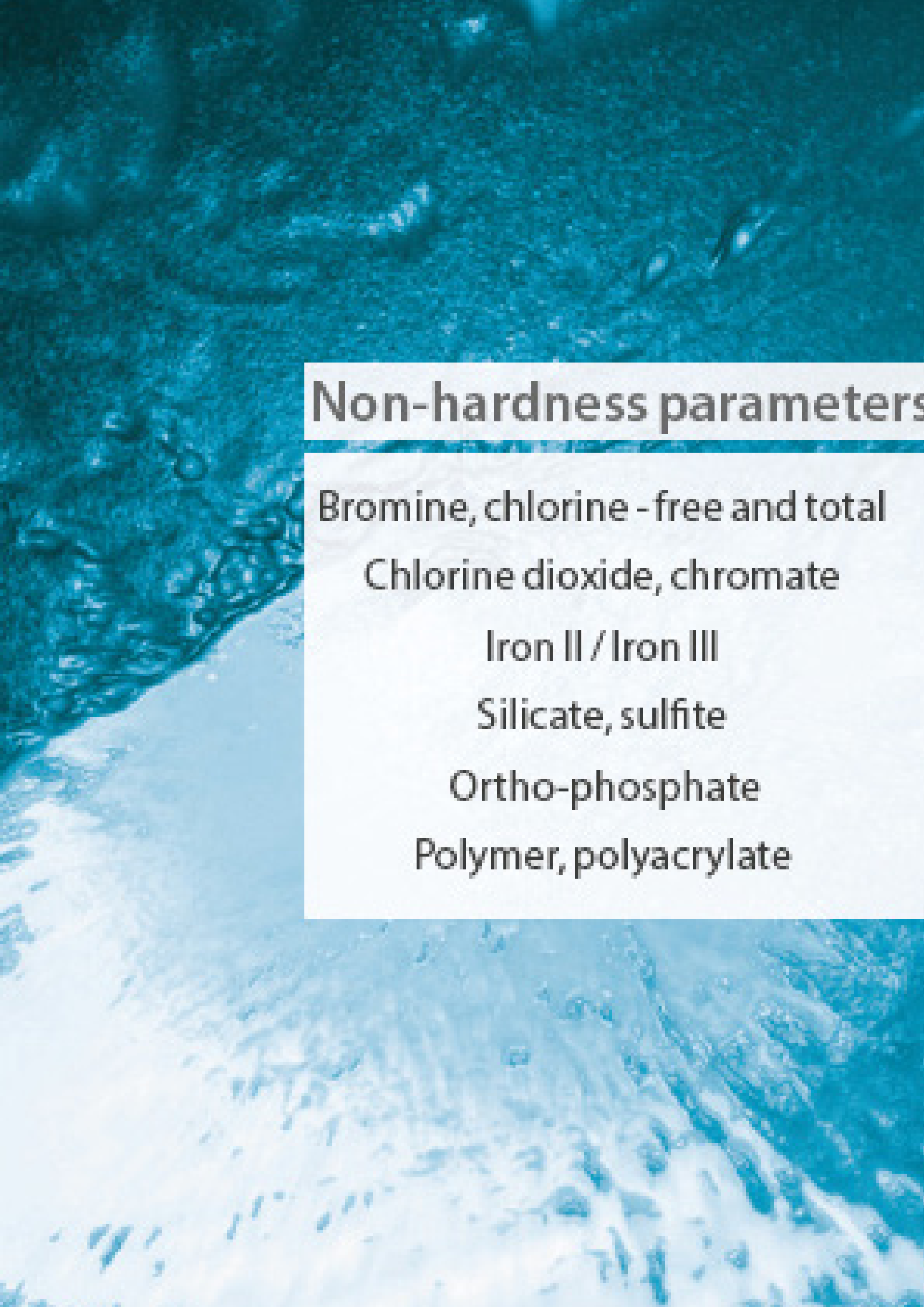
Indicator-type	Carbonate hardness Limit °dH	°f	ppm $CaCO_3$	mmol/l	Amount	Order number
C 5	0,5	0,9	8,9	0,18	500 ml	141020
C 10	1	1,79	17,9	0,36	500 ml	141021
C 15	1,5	2,685	26,85	0,54	500 ml	141022
C 20	2	3,58	35,8	0,72	500 ml	141023
C 30	3	5,37	53,7	1,08	500 ml	141024
C 40	4	7,16	71,6	1,44	500 ml	141025
C 5	0,5	0,9	8,9	0,18	2 x 100 ml	140020
C 10	1	1,79	17,9	0,36	2 x 100 ml	140021
C 15	1,5	2,685	26,85	0,54	2 x 100 ml	140022
C 20	2	3,58	35,8	0,72	2 x 100 ml	140023
C 30	3	5,37	53,7	1,08	2 x 100 ml	140024

Notice: Please note that the 100 ml bottles can only be purchased in batches of 2!

Testomat® M-BOB

Indicator-type	Carbonate hardness Limit °dH	°f	ppm $CaCO_3$	mmol/l	Amount	Order number
M 1	0,1	5	500 ml	141040	500 ml	141040
M 3	0,3	15	500 ml	141041	500 ml	141041
M 5	0,5	25	500 ml	141042	500 ml	141042
M 1	0,1	5	2 x 100 ml	140040	2 x 100 ml	140040
M 3	0,3	15	2 x 100 ml	140041	2 x 100 ml	140041

Notice: Please note that the 100 ml bottles can only be purchased in batches of 2!



Non-hardness parameters

Bromine, chlorine - free and total

Chlorine dioxide, chromate

Iron II / Iron III

Silicate, sulfite

Ortho-phosphate

Polymer, polyacrylate

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Testomat 2000® Br_2

The **Testomat 2000® Br_2** process photometer is an analytical instrument for online monitoring of the bromine (Br2) content in the measuring range of 0 - 5.6 mg/l.

Performance profile:

- Analysis via automatic dosing of two reagents
- Measurement result display after a reaction time of approx. 1 minute (measurement time without purging time)
- 2 independently programmable limit contacts for monitoring and control tasks
- Menu-guided operation and programming by means of plain text display
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Brom Br_2: 0,00 - 5,60 mg/l (ppm) Resolution: - 0,02 mg/l (ppm) in the range of 0 - 2,23 mg/l (ppm) - 0,2 mg/l (ppm) in the range of 2,3 - 5,6 mg/l (ppm)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application:

- Monitoring the dosage of the disinfectant

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100520	100525	100530
English	100521	100526	100531
France	100522	100527	100532

Reagent:	Amount:	
Testomat 2000 Brom Reagent kit	500 ml	156295

* The reagent sets are designed for uniform reagent consumption therefore the filling quantities of the individual reagent bottles are differ.

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Testomat® LAB CL

The **Testomat® LAB CL** is a robust, wet-chemical online transmitter that measures the content of total chlorine or free chlorine. The device is suitable for water quality control in the environment of water treatment & drinking water plants, process monitoring as well as for monitoring the chlorine concentration in the cooling tower process. The measuring range is 0 to 5 ppm (resolution 0.1). The instrument operates according to the DPD method based on EN ISO 7393-2. The analysis is performed by adding two reagents. After a reaction time of approx. 60 seconds (dosing and measuring time without rinsing time) the measuring result is available.
Please note that the Testomat® LAB - CL was developed for use in multi-parameter concepts or for connection to an existing higher-level control concept, such as the NeoTecMaster®.
https://neomeris.de/steuerung-multicontroller.html

In addition to the 4-20 mA output for transmitting the measured values, this series has an RS232 interface for transmitting the measured values and error & status messages. Furthermore, all data are continuously recorded on the integrated SD card or optionally available SDHC card (2Gbyte) as a file in CSV format structured and can be used at any time for detailed observations.

The Testomat® LAB CL convinces with new functionalities:
- RS232 interface for transmission of measured values and error messages
- Carrying out the parameterization by means of SD card or the software
- „Service monitor“ via mini-USB (device side) to USB 2.0 (for example PC/notebook)
- Multilingual menu navigation of the software in German, English, French, Dutch
- Firmware update via SD card
- Compact design
- Optimized water detection based on an optical measuring method
- Integrated self-test with continuous monitoring
- Optimized reagent set for the measurement of total chlorine (reduction from three to two reagents

Performance profile:
- High precision peristaltic roller pumps
- Reliable and low-maintenance operation
- Minimal reagent and water consumption
- Analog output 4 - 20 mA for transmission of the measured values
- RS232 interface for transmission of measured values & fault messages
- Common alarm output
- Optimized reagents:
  - nur 2 Reagenzien für die Bestimmung von Gesamtchlor
- Optimized reagent containers:
  - Filling quantities are coordinated so that both containers are used up at the same time

Analysis resolution:

- Automatic interval operation (interval pause adjustable from 10-60 minutes)
- Measurement phase operation (start pulse triggers a sequence of analyses for a period of 10 minutes to 12 hours)
- External analysis input (start/stop)
- Manual start

Technical data:

Operating voltage:	24 VDC
Power consumption:	max. 1 A, without external load
Protection class:	I
Protection type:	IP 40 (when using the optionally available device cover IP43)
Ambient temperature:	10 - 40 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	270 x 350 x 147 mm
Weight:	ca. 4,35 kg
Operating pressure:	1 to 8 bar / 1x105 to 8x105 Pa or 0.3* to 1 bar / 1x105 to 1x105 PA *(after removing the regulator core)
Measuring range:	0 - 5 mg/l (ppm) free chlorine / 0 - 5 mg/l (ppm) Total chlorine
Resolution:	0,1 mg/l (ppm)
Parameterization by means of software service monitor	(Service Monitor) German, English, French, Dutch, Portugese

Order number:	116106

Optional:

Article number	Description
37764	OLED display module for measured value display 2.8“, yellow, 256 x 64
37798	Testomat® LAB Smoke hood (recommended if the equipment is exposed to direct sunlight)
40187	Connection set

Reagent sets	Content	mg/l (ppm) (Resolution)	Order number
Testomat® LAB CL Chlorine Reagent Kit F (free chlorine)	2 x 500 ml AF Reagent 1 x 400 ml B Reagent	0 - 5 (0,1)	158234
Testomat® LAB CL Chlorine Reagent kit T (total chlorine)	2 x 500 ml AT Reagent 1 x 400 ml B Reagent	0 - 5 (0,1)	158239

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Testomat® LAB Monochloramin (NH2CL)

The **Testomat® LAB Monochloramin (NH2CL)** is an online analyzer that photometrically measures the content of monochloramine in process water. The device is used for continuous monitoring of process quality, for example in cooling circuits. Another application is the use in the environment of water treatment and drinking water plants, for process monitoring, as well as the monitoring of the decay behavior in cooling towers after shock chlorination. The measuring range for monochloramine (NH2CL, calculated as Cl2) is 0 to 5 ppm (resolution 0.1). The instrument operates according to the DPD method based on EN ISO 7393-2. The analysis is performed by adding two reagents. After a reaction time of approx. 60 seconds (dosing and measuring time without rinsing time) the measuring result is available. Please note that the Testomat® Monochloramine (NH2CL) was developed for use in multiparameter systems or for connection to a higher-level control system.
https://www.heylneomeris.shop/Testomat-LAB-Monochloramin-NH2CL/116109

In addition to the 4-20 mA output for transmitting the measured values, this series has an RS232 interface for transmitting the measured values and error & status messages. Furthermore, all data are continuously recorded on the integrated SD card or optionally available SDHC card (2Gbyte) as a file in CSV format structured and can be used at any time for detailed observations.

The Testomat® LAB CL convinces with new functionalities:

- RS232 interface for transmission of measured values and error messages
- Carrying out the parameterization by means of SD card or the software
- „Service monitor“ via mini-USB (device side) to USB 2.0 (for example PC/notebook)
- Multilingual menu navigation of the software in German, English, French, Dutch
- Firmware update via SD card
- Compact design
- Optimized water detection based on an optical measuring method
- Integrated self-test with continuous monitoring
- Optimized reagent set for the measurement of total chlorine (reduction from three to two reagents

Performance profile:

- High precision peristaltic roller pumps
- Reliable and low-maintenance operation
- Minimal reagent and water consumption
- Analog output 4 - 20 mA for transmission of the measured values
- RS232 interface for transmission of measured values & fault messages
- Common alarm output

- Optimized reagents:
  - nur 2 Reagenzien für die Bestimmung von Gesamtchlor
- Optimized reagent containers:
  - Filling quantities are coordinated so that both containers are used

Analysis resolution:

- Automatic interval operation (interval pause adjustable from 10-60 minutes)
- Measurement phase operation (start pulse triggers a sequence of analyses for a period of 10 minutes to 12 hours)
- External analysis input (start/stop)
- Manual start

Technical data:

Operating voltage:	24 VDC
Power consumption:	max. 1 A, without external load
Protection class:	I
Protection type:	IP 40 (when using the optionally available device cover IP43)
Ambient temperature:	10 - 40 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	270 x 350 x 147 mm
Weight:	ca. 4,35 kg
Operating pressure:	1 to 8 bar / $1x10^5$ to $8x10^5$ Pa or 0.3* to 1 bar / $1x10^5$ to $1x10^5$ PA *(after removing the regulator core)
Measuring range:	0 - 5 mg/l (ppm) Monochloramin (NH2CL)
Resolution:	0,1 mg/l (ppm)
Parameterization by means of software service monitor	(Service Monitor) German, English, French, Dutch

Order number:	**116109**

Optional:

Article number	Description
37764	OLED display module for measured value display 2.8“, yellow, 256 x 64
37798	Testomat® LAB Smoke hood (recommended if the equipment is exposed to direct sunlight)

Reagent sets	mg/l (ppm) (Resolution)	Order number
Testomat® Chlorine Reagent Kit M Reagents AM / B	0 - 5 (0,1)	158238

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Testomat 2000® CLF

The **Testomat 2000® CLF** process photometer is an online analyzer for monitoring the free chlorine (CLF) content in the range of 0-2.5 mg/l (ppm).

Performance Profile:

- Analysis by automatic addition of 2 reagents
- Measurement result display after a reaction time of approx. 1 minute (measurement time without purging time)
- 2 independently programmable limit contacts for monitoring and control tasks
- Menu-guided operation and programming by means of plain text display
- High measuring accuracy due to precise piston metering pump
- Analysis triggers:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Free Chlorine: • 0,00 - 0,99 mg/l (Resolution: 0,01 mg/l) • 1 - 2,5 mg/l (Resolution: 0,1 mg/l)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application:

- Monitoring of chlorination plants for drinking / swimming pool water
- Reverse osmosis membrane protection
- Monitoring of chlorine-containing biocides and conditioning agents

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100230	100235	100240
English	100231	100236	100241
France	100232	100237	100242

Reagent	Amount	
Testomat 2000® Reagent CL 2250 A	500 ml	156230
Testomat 2000® Reagent CL 2250 B	500 ml	156231
Testomat 2000® Chlorine Reagent kit F	Reagent A 2 x 500 ml Reagent B 1 x 400 ml	156233
Testomat 2000® Chlorine Reagent kit F 50%	Reagent A 1 x 500 ml Reagent B 1 x 200 ml	156236

* The reagent sets are only designed for uniform reagent consumption, therefore the filling quantities in the individual reagent bottles are not the same.

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Testomat 2000® CLT

The **Testomat 2000® CLT** process photometer is an online analyzer for monitoring the content of total chlorine (CLT) in the range of 0-2.5 mg/l (ppm); switchable to free chlorine in the same measuring range.

Performance profile:

- Analysis by automatic addition of 3 reagents
- Measurement result display after a reaction time of approx. 1 minute (measurement time without purging time)
- 2 independently programmable limit contacts for monitoring and control tasks
- Menu-guided operation and programming by means of plain text display
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Total chlorine: • 0,00 - 0,99 mg/l (Resolution: 0,01) • 1 - 2,5 mg/l (Resolution: 0,01) Free chlorine: • 0,00 - 0,99 mg/l (Resolution: 0,01 mg/l) • 1 - 2,5 mg/l (Resolution: 0,1 mg/l)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application:

- Monitoring of chlorination plants for drinking / swimming pool water
- Reverse osmosis membrane protection
- Monitoring of chlorine-containing biocides and conditioning agents

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100130	100135	100140
English	100131	100136	100141
France	100132	100137	100142

Reagent	Amount	
Testomat 2000® Reagent CL 2250 A	500 ml	156230
Testomat 2000® Reagent CL 2250 B	500 ml	156231
Testomat 2000® Reagent CL 2250 C	500 ml	156232
Testomat 2000® Chlorine Reagent kit T	Reagent A 2 x 500 ml Reagent B 1 x 400 ml Reagent C 1 x 200 ml	156235
Testomat 2000® Chlorine Reagent kit T 50%	Reagent A 1 x 500 ml Reagent B 1 x 200 ml Reagent C 1 x 100 ml	156237

* The reagent sets are only designed for uniform reagent consumption, therefore the filling quantities in the individual reagent bottles are not the same.

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Testomat 2000® CLT Self Clean

The **Testomat 2000® CLT Self Clean** process photometer with additional cleaning function for the measuring chamber is an online analyzer for monitoring the content of total chlorine (CLT) in the range of 0-2.5 mg/l (ppm); switchable to free chlorine in the same measuring range.

Performance profile:

- Analysis by automatic addition of 3 reagents
- Measurement result display after a reaction time of approx. 1 minute (measurement time without purging time)
- 2 independently programmable limit contacts for monitoring and control tasks
- Menu-guided operation and programming by means of plain text display
- High measuring accuracy due to precise piston metering pump
- Analysis triggers:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Total Chlorine: • 0,00 - 0,99 mg/l (Resolution: 0,01) • 1 - 2,5 mg/l (Resolution: 0,01)
	Free chlorine: • 0,00 - 0,99 mg/l (Resolution: 0,01 mg/l) • 1 - 2,5 mg/l (Resolution: 0,1 mg/l)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application:

- Monitoring of chlorination plants for drinking / swimming pool water
- Reverse osmosis membrane protection
- Monitoring of chlorine-containing biocides and conditioning agents

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	upon request	upon request	100245
English	upon request	100256	100246
France	upon request	upon request	100247

Reagent	Amount	
Testomat 2000® Reagent CL 2250 A	500 ml	156230
Testomat 2000® Reagent CL 2250 B	500 ml	156231
Testomat 2000® Reagent CL 2250 C	500 ml	156232
Testomat 2000® Chlorine Reagent kit T	Reagent A 2 x 500 ml Reagent B 1 x 400 ml Reagent C 1 x 200 ml	156235
Testomat 2000® Chlorine Reagent kit T 50% **Reducing agent:**	Reagent A 1 x 500 ml Reagent B 1 x 200 ml Reagent C 1 x 100 ml	156237
Testomat 2000® Self Clean Cleaning solution	500 ml	151105

* The reagent sets are only designed for uniform reagent consumption, therefore the fill quantities in the individual reagent bottles are not the same. bottles are not the same.

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Testomat 2000® ClO_2

The **Testomat 2000® ClO_2** process photometer is an online analyzer for monitoring the chlorine dioxide (ClO2) content in the range of 0 - 4.7 mg/l (ppm).

Performance profile:

- Analysis by automatic addition of 2 reagents
- Measurement result display after a reaction time of approx. 1 minute (measurement time without purging time)
- 2 independently programmable limit contacts for monitoring and control tasks
- Menu-guided operation and programming by means of plain text display
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Watertemperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Chlorine dioxide ClO_2: • 0,00 - 4,70 mg/l Resolution: • 0,00 - 1,88 mg/l (0,02) • 1,90 - 4,70 mg/l (0,2)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application:

- Monitoring of the disinfectant dosage in the drinking water as well as in the process water area

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100500	100505	100510
English	100501	100506	100511
France	100502	100507	100512

Reagent	Amount	
Testomat 2000® Reagent kit A + B	Reagent A 2 x 500 ml Reagent B 1 x 400 ml	156265

* The reagent set is designed for an even consumption of the two reagents. It is sufficient for approx. 2400 analyses.

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Testomat 2000® CrVI

The **Testomat 2000® CrVI** process photometer is an online analytical measuring instrument for monitoring the content of chromate (CrO42-) or chromium VI (CrVI). The instrument works with a photometric analysis principle based on DIN 38405. Two device variants are available for the realization of the most diverse measurement requirements.

Performance profile:

- Analysis by automatic addition of 2 reagents
- Measurement result display after a reaction time of approx. 2 minutes (measurement time without purging time)
- 2 independently programmable limit contacts for monitoring and control tasks
- Menu-guided operation and programming by means of plain text display
- High measuring accuracy due to precise piston metering pump
- Analysis triggers:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Dynamic (exhaustion-dependent interval operation)
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 10,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	see following page

Variant	Parameter	Measuring range	Resolution
CrVI (Standard)	Chromate (CrO_4^{2-})	0 - 2 mg/l	0,00 - 0,99 mg/l (resolution0,01) 1,0 - 2,0 mg/l (resolution 0,01)
	Chrome VI (CrVI)	0 - 1 mg/l	0,00 - 1,0 mg/l (resolution 0,01)
CrVI 0 - 5 ppm (high measuring range)	Chromate (CrO_4^{2-})	0 - 11,15 mg/l	
	Chrome VI (CrVI)	0 - 5 mg/l	0,00 - 0,99 mg/l (resolution 0,01) 1,0 - 3,0 mg/l (resolution 0,1) 3,0 - 5,0 mg/l (resolution 0,2)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD-Card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application:

- Monitoring the chromate content of wastewater in electroplating plants
- Control of wastewaer in the metalworking industry

Order number:

Type	Menu language	24 V 50 - 60 Hz	115 V 50-60 Hz	230 V 50-60 Hz
CrVI (Standard)	**German**	100310	100315	100320
	English	100311	100316	100321
	France	100312	100317	100322
CrVI 0 - 5 ppm (high measuring range)	German	upon request	upon request	100640
	English	upon request	upon request	100641
	France	upon request	upon request	upon request

Reagent:	Menge:	
Testomat 2000® Reagent CrVI 2100 A	500 ml	156220
Testomat 2000® Reagent CrVI 2100 B	500 ml	156221

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Testomat 2000® Fe

The **Testomat 2000® Fe** process photometer is an online analytical instrument for monitoring the dissolved iron (II) + (III) content in the range from 0 to 1.0 mg/l (ppm) using the photometric analysis principle.

Performance profile:

- Analysis by automatic addition of 2 reagents
- Measurement result display after a reaction time of approx. 7 minutes (measurement time without purging time)
- 2 independently programmable limit contacts for monitoring and control tasks
- Menu-guided operation and programming by means of plain text display
- High measuring accuracy due to precise piston metering pump
- Analysis trigger:
  - Automatic interval operation (interval pause adjustable from 0 - 99 minutes)
  - External control
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 10,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Iron Fe (II + III): • 0,00 - 1,00 mg/l Resolution: • 0,00 - 0,65 mg/l (0,01) • 0,7 - 1,00 mg/l (0,1)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD-Card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application:

- Monitoring of deferrization plants and well water
- Control of operational or drinking water supply systems

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100150	100155	100160
English	100151	100156	100161
France	100152	100157	100162
Italian	100153	100158	100163
Polish	100154	100159	100164
Dutch	100186	100187	100188

Reagent:	Amount:	
Testomat 2000® Reagent Fe 2005A	500 ml	156250
Testomat 2000® Reagent Fe 2005B	500 ml	156251

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Testomat 808 SiO_2

The **Testomat® 808 SiO_2** automatically monitors adjustable silicate limits in the measuring range 0.3 - 1.2 ppm in water.

Areas of application:

Sterilizers and autoclaves in hospitals Monitoring of EDI - equipment

Performance profile:

- Automatic interval operation
- Interval pause adjustable from 0 - 480 minutes
- External control (acknowledge alarm, stop analysis)
- Hand launch
- Long operating times due to 500 ml indicator supply
- RS 232 interface for optional firmware update
- Weekend operation monitoring through 72 hours - operation without supervision
- Output of status and error messages via a current interface (0/4-20 mA)

Technical data:

Power supply:	24 / 115 / 230 VAC, 50 – 60 Hz
Device protection:	230 – 240 V: T0,1 A 115 V: T0,2 A 24 V: T0,8 A
Mains protection for consumers:	max. 4 A (N, L)
Power consumption:	max. 16 VA, without external load
Protection class:	I
Protection type:	IP 44
Conformity:	EN 61000-6-2, EN 61000-6-4, EN 61010-1
Ambient temperature:	10 - 45 °C
Current interface:	Output of status and error messages
Dimensions (B x H x T):	364 x 314 x 138 mm
with side shelf:	442 x 314 x 138 mm
Contact load relay:	230 V / 4A AC resistive load
Measuring range:	0,3 - 1,2 mg/l

Water connection

Operating pressure:	0,3 - 1 bar: 0,3 x 10_5 bis 1 x 10_5 Pa 1 - a bar: 1 x 10_5 bis 4 x 10_5 Pa depending on version From 4 bar, a pressure reducer must be used **(Accessories on fp. 74)**
Water temperature:	10 - 40 °C

Order number

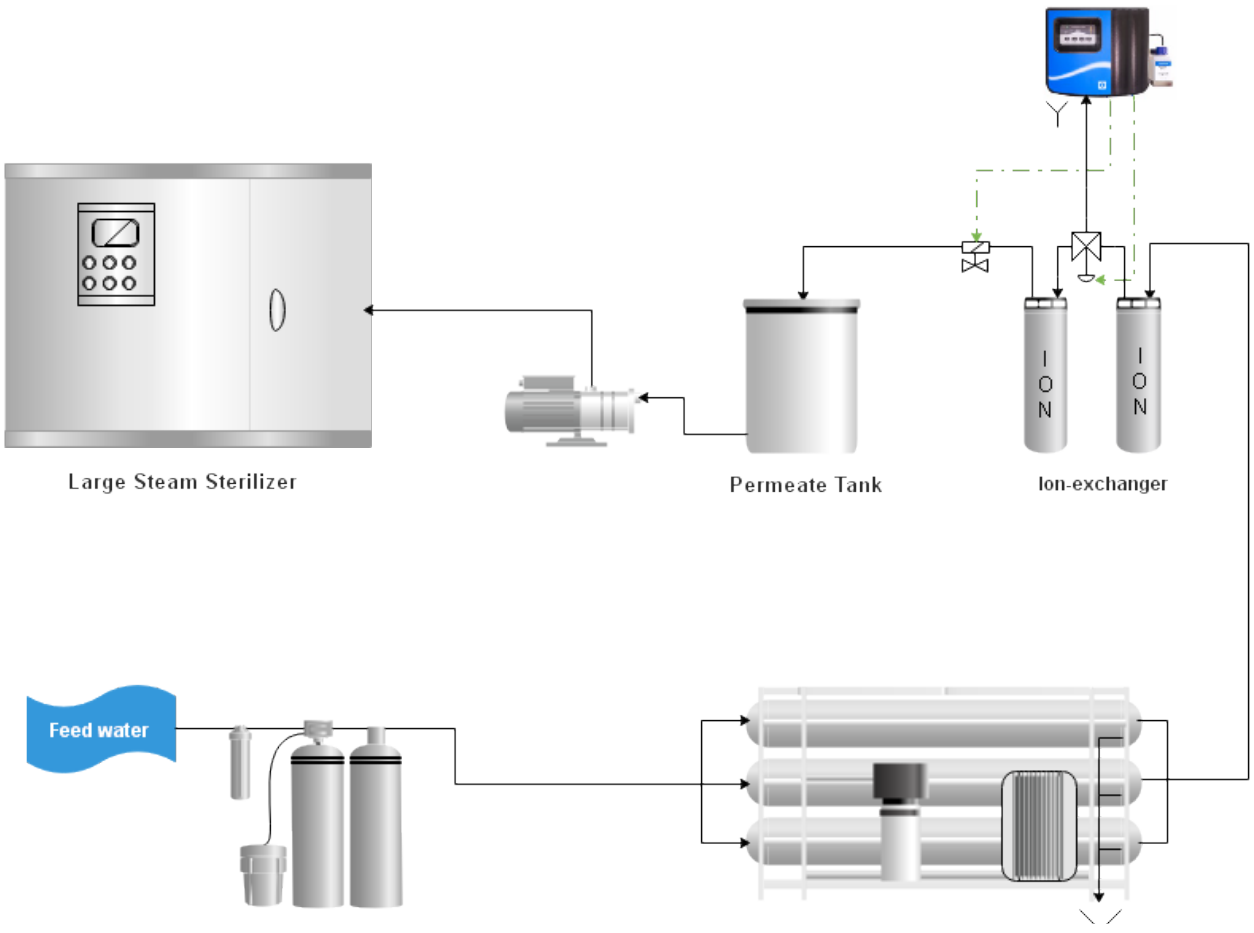
	230 V / 50-60 Hz
1 - 4 bar	100660
0,3 - 1 bar	100663

Optional:

Article number	Description
37610	Connection-Set

Reagents:	Amount:	
Testomat® 808 SiO_2 Reagent kit A+B	Reagent A 1 x 100 ml Reagent B 1 x 100 ml	140808
Testomat® 808 SiO_2 Reagent A	500 ml	141808
Testomat® 808 SiO_2 Reagent B	500 ml	141809

Example of water treatment in hospitals with silicate measurement.



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Testomat 2000® PO_4

The **Testomat 2000® PO_4** process photometer is an online analytical measuring instrument for monitoring the content of ortho-phosphate in the range from 0 to 10.0 mg/l (ppm) using the photometric analysis principle.

Performance profile:

- Analysis by automatic addition of 2 reagents
- Measurement result display after a reaction time of approx. 10 minutes (measurement time without purging time)
- Menu-guided operation and programming by means of plain text display
- Selection of units in ppm or mg/l
- Analysis triggers:
  - Automatic interval operation (interval pause adjustable from 0 - 255 minutes)
  - External control
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambient temperature:	10 - 45 °C
Water temperature:	5 - 30 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 9,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	Phosphate PO_4: • 0,00 - 10,0 mg/l Resolution: • 0 - 7 mg/l (0,1) • 7 - 10 mg/l (1,0) Defection limit : • 0,1 bzw. 0,25 mg/l depending on measuring range

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD-Card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application:

- treated wastewater (sewage treatment plants)
- Online - Environmental analysis
- Monitoring of conditioning agents in cooling and heating circuits

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	100560	100565	100570
English	100561	100566	100571
France	100562	100567	100572
Dutch	100563	auf Anfrage	100573
Spanish	100564	100568	auf Anfrage

Reagent:	Amount:	
Reagent kit PO_4 2100 A+B	Reagent A 1 x 500 ml Reagent B 1 x 100 ml	156264
Large container (requires suction lance):		
PO_4 Reagent A	20 Liter	156281
PO_4 Reagent B	5 Liter	156282
Suction lance for large containers	20 Liter Canister	40535
	5 Liter Canister	40536

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Testomat 2000® Polymer

The **Testomat 2000® Polymer** process photometer is an online analytical instrument for monitoring the content of polyacrylate in the range from 0 to 50 mg/l (ppm) (with a set product-specific factor of 1.00) using the photometric analysis principle.

Performance profile:

- Analysis by automatic addition of 2 reagents
- Measurement result display after a reaction time of approx. 7 minutes (measurement time without purging time)
- Menu-guided operation and programming by means of plain text display
- Selection of units in ppm or mg/l
- Analysis triggers:
  - Automatic interval operation (interval pause adjustable from 0 - 255 minutes)
  - External control
  - Quantity-dependent via contact water meter
- Two independent limit values with hysteresis (1, 2 or 3 bad analyses) and adjustable switching functions
- Monitoring of two measuring points (switchover by external solenoid valves)
- Internal error documentation
- Programmable service address
- Programmable maintenance interval for maintenance request

Technical data:

Power consumption:	max. 30 VA
Protection class:	I
Protection type:	IP 65
Ambienttemperature:	10 - 45 °C
Watertemperature:	10 - 40 °C
Dimensions (B x H x T):	380 x 480 x 280 mm
Weight:	ca. 10,5 kg
Operating pressure:	0,3 - 8 bar
Measuring range:	With the aid of the correction factor, which can be set from 0.01 to 99.99, a measuring range of 0.5 to 4999 mg/l (ppm) is obtained. This allows different polymer contents of different products to be determined.

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD-Card data logger Testomat 2000®
100492	Network logger plug-in card
40315	Drain funnel
40187	Connection set

Scope of application:

- Monitoring of conditioning chemicals in cooling circuits

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	upon request	upon request	100470
English	upon request	100472	100473
France	upon request	upon request	100471

Reagent:

Please note that there is a wide range of polyacrylates for which the Testomat 2000® Polymer can be adapted. Therefore, the instrument must be specially calibrated for each application.

We either use reagents provided by the customer or:

Reagent:	Amount:	
Testomat 2000® Polymer Reagent A	500 ml	156271
Testomat 2000® Polymer Reagent B	500 ml	156272

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Overview Titromat® - Devices

Die **Titromat® - instruments KH, M1, M2 and TH** are based on the instrument technology, the performance profile and the basic technical data of the Testomat 2000®.

Modell/Type	Measuring parameters	Measuring range	Application area/Functions
Titromat® KH	• Carbonate hardness	2 - 150 °KH 35,8 - 2685 ppm	Alkalinity (cooling water)
Titromat® M1	• m-value	0,05 - 1 °dH 0,89 - 17,9 ppm	Residual alkalinity after decarbonization (boiler house, brewery)
Titromat® M2	• m-value	0,05 - 2 °dH 0,89 - 35,8 ppm	Residual alkalinity after decarbonization (boiler house, brewery)
Titromat® TH	• Total hardness	2,5 - 50 °dH 44,8 - 895 ppm	Raw and drinking water

Titromat® KH

The application range of the **Titromat® KH** is used for the automatic determination and monitoring of the carbonate hardness at high hardness measuring ranges.

Measuring range		
Carbonate hardness: (Total alkalinity or m-value)	5 - 150 °KH 2 - 60 °KH 89,5 – 2685 ppm 35,8 - 1074 ppm	(Resolution: 5 °KH) (Resolution: 2 °KH) (Resolution: 89,5 ppm) (Resolution: 35,8 ppm)

Scope of application:

- Alkalinity of open cooling circuits

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD-Card data logger Testomat 2000®
40315	Drain funnel
40187	Connection set

Reagent:

Reagents:	Amount:	
Titromat® TC2060 Reagent A	500 ml	155176
Titromat® TC2060 Reagent B	500 ml	155177
Titromat® TC2150 Reagent A	500 ml	155178
Titromat® TC2150 Reagent B	500 ml	155179

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	110190	110195	110200
English	110191	110196	110201
France	110192	110197	110202

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Titromat® M1

The **Titromat® M1** is used for the automatic determination and monitoring of carbonate hardness at low hardness measuring ranges.

Measuring range		
Carbonate hardness: (Residual alkalinity or m-value)	0,05 – 1 °dH 0,09 – 1,8 °f 0,89 – 17,8 ppm	(Resolution: 0,025 °dH) (Resolution: 0,045 °f) (Resolution: 0,44 ppm)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD-Card data logger Testomat 2000®
40315	Drain funnel
40187	Connection set

Scope of application:

- Corrosioan monitoring in boiler feed water
- Residual alkalinity after decarbonization (e.g. brewery sector)

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	110150	110155	100160
English	110151	110156	110161
France	110152	110157	110162

Reagent:

Reagent:	Amount:	
Titromat® TC2010 Reagent A	500 ml	155172
Titromat® TC2010 Reagent B	500 ml	155173

Titromat® M2

The **Titromat® M2** is used for the automatic determination and monitoring of carbonate hardness at low hardness measuring ranges.

Measuring range		
Carbonate hardness: (Residual alkalinity or m-value)	0,05 – 2 °dH 0,09 – 3,6 °f 0,89 – 35,8 ppm	(Resolution: 0,05° dH) (Resolution: 0,09 °f) (Resolution: 0,89 ppm)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD-Card data logger Testomat 2000®
40315	Drain funnel
40187	Connection set

Scope of application:

- Corrosioan monitoring in boiler feed water
- Residual alkalinity after decarbonization (e.g. brewery sector)

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	110130	110135	110140
English	110131	110136	110141
France	110132	110137	110142

Reagent:

Reagent:	Amount:	
Titromat® TC2020 Reagent A	500 ml	155170
Titromat® TC2020 Reagent B	500 ml	155171

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Titromat® TH

The **Titromat® TH** is used for automatic determination and monitoring at high water hardness in aqueous media.

Measuring range		
Total hardness:	2,5 - 50 °dH 44,8 - 895 ppm	(Resolution: 2,5 °dH) (Resolution: 44,8 ppm)

Optional:

Article number	Description
270305	Interface card 0/4-20 mA (SK 910)
270310	Interface card RS 232 (for protocol printer)
270315	Interface card 0/2 - 10 V (UK 910)
100490	SD-Card data logger Testomat 2000®
40315	Drain funnel
40187	Connection set

Scope of application:

- Drinking water production and supply
- Raw water monitoring

Order number:

Menu language	24 V / 50 - 60 Hz	115 V / 50-60 Hz	230 V / 50-60 Hz
German	110110	110115	110120
English	110111	110116	110121
France	110112	110117	110122

Reagent:

Reagent:	Amount:	
Titromat® TH2500 Reagent A	500 ml	155160
Titromat® TH2500 Reagent B	500 ml	155161

Case
TESTOMAT 2000 / ECO / EVO TH

Repair and maintenance case T 2000® / ECO / EVO TH

270337

Repair and maintenance case for regular maintenance of a Testomat instrument.

Content:	
10 x	O-ring 20 x 2
10 x	O-ring 10,82 x 1,78
5 x	O-ring 4,47 x 1,78
5 x	O-ring 18 x 2
20 x	Flat gasket 24 x 2
5 x	Filter screen for inlet 19,5d x 25
5 x	Flow controller core cpl.
2 x	Spring for inlet
15 x	Plug for measuring chamber
6 x	Fuse soldering-, TR5, T 0,08A
6 x	Fuse soldering-, TR5, T 0,1A
6 x	Fuse soldering-, TR5, T 0,16A
6 x	Fuse soldering-, TR5, T 0,2A
6 x	Fuse soldering-, TR5, T 0,315A
6 x	Fuse soldering-, TR5, T 1,0A
6 x	Fuse M4A
20 x	Viewing glass 30x3
3 x	Screw cap with insert T2000
4 x	Screw M3 x 4
1 x	Suction hose
1 x	Pressure hose
2 x	Pipe, PE, D=6 d=4 x 105
2 x	Pipe, PE, D=6 d=4 x 115
2 x	Pipe, PE, D=10 d=8 x 98
1 x	Cleaning brush set
2 x	Insert - Angle Connector
2 x	Magnet - stirring core

Repair and maintenance case „professional T 2000® / ECO

270338

Repair and maintenance case „professional“ for regular maintenance of a Testomat instrument.

Content:	
4 x	O-ring 20 x 2
4 x	O-ring 10,82 x 1,78
2 x	O-ring 4,47 x 1,78
2 x	O-ring 18 x 2
4 x	Flat gasket 24 x 2
2 x	Filter screen for inlet 19,5d x 25
2 x	Flow controller core cpl.
2 x	Spring for inlet
6 x	Plug for measuring chamber
1 x	Plug connection for drain hose
2 x	Fuse soldering-, TR5, T 0,08A
2 x	Fuse soldering-, TR5, T 0,1A
2 x	Fuse soldering-, TR5, T 0,16A
2 x	Fuse soldering-, TR5, T 0,2A
2 x	Fuse soldering-, TR5, T 0,315A
2 x	Fuse soldering-, TR5, T 1,0A
2 x	Fuse M4A
4 x	Viewing glass 30x3
3 x	Screw cap with insert T2000
2 x	Screw M3 x 4
2 x	Suction hose
2 x	Pressure hose
2 x	Pipe, PE, D=6 d=4 x 105
2 x	Pipe, PE, D=6 d=4 x 115
2 x	Pipe, PE, D=10 d=8 x 98
1 x	Cleaning brush set
2 x	Insert - Angle Connector
2 x	Magnet - stirring core
2 x	Valve - set for dosing pump
1 x	Inlet connection
1 x	Screw-in connector G ¼“ -6
1 x	Angle - screw-in - connector

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Case
TESTOMAT 808 / 808 SiO_2

Repair and service case Testomat 808®

270342

Content:	
8 x	O – ring 3,68 x 1,78
8 x	O – ring 1,78 x 1,78
8 x	O – ring 4,5 x 1,5
8 x	Flat gasket 24 x 2
1 x	Pump head
4 x	Insert with screw cap 500 ml
1 x	Insert with screw cap 100 ml
1 x	Cleaning brush set
6 x	Fuse T 0,1 A
6 x	Fuse T 0,2 A
6 x	Fuse T 1,0 A
6 x	Fuse T 4 A
6 x	Viewing glass 30 x 3
2 x	Pipe, L = 53 mm
2 x	Pipe, L = 140 mm
1 x	Optics board
1 x	SUB - D null modem cable
1 x	Adapter USB - serial
2 x	Dosing needle
4 x	Hose adapter
2 x	Magnet - stirring corev
8 x	Screw M3 x 12
4 x	Screw M3 x 40
2 x	Rohr, PE, D=10 d=8 x 98
1 x	LED - recording
1 x	Solenoid valve
1 x	Documentation / Software

Repair and service caseTestomat 808® SiO_2

270343

Content:	
8 x	O – ring 3,68 x 1,78
8 x	O – ring 1,78 x 1,78
8 x	O – ring 4,5 x 1,5
8 x	Flat gasket 24 x 2
1 x	Double pump head
4 x	Insert with screw cap 500 ml
1 x	Insert with screw cap 100 ml
1 x	Cleaning brush set
4 x	Angle - screw-in connector
8 x	Fuse T 0.315 A
6 x	Fuse T 0.1 A
6 x	Fuse T 0.2 A
6 x	Fuse T 1.0 A
8 x	Fuse T 4 A
6 x	Viewing glass 30 x 3
2 x	Pipe, L = 53 mm
2 x	Pipe, L = 140 mm
1 x	Optics board
1 x	SUB - D null modem cable
1 x	Adapter USB - serial
2 x	Dosing needle
4 x	Hose adapter
2 x	Magnet - stirring core
8 x	ScrewM3 x 12
4 x	Screw M3 x 40
1 x	LED - recording
1 x	Solenoid valve
1 x	Documentation / Software

Service sets

TESTOMAT 2000 / ECO / EVO TH / TITROMAT

Service set Testomat 2000® / EVO TH / ECO / Titromat

270352

Content:	
1 x	Gasket set T2000
2 x	Viewing glass 30 x 3
1 x	Flow controller core cpl.
3 x	Plate plug 5,3dx5 PE natural
1 x	Valve set injection pump
1 x	Filter screen for inlet 19,5dx25
3 x	Pipes: D= (6 d=4x105), (6 d=4 x 115), (10 d= 8x98)
1 x	Cleaning brush set

Service set Testomat 2000® Polymer

270353

Content:	
1 x	Gasket set T2000
2 x	Viewing glass 30 x 3
1 x	Flow controller core cpl.
3 x	Plug for measuring chamber
2 x	Pump head
1 x	Filter screen for inlet 19,5dx25
1 x	Pipes: D= (6 d=4x105), (6 d=4 x 115), (10 d= 8x98)
1 x	Cleaning brush set
2 x	Hose connector
2 x	Hose adapter gasket
2 x	Insert with screw cap and suction tube

Service set Testomat 2000® PO_4

270354

Content:	
1 x	Gasket set T2000
2 x	Viewing glass 30 x 3
1 x	Flow controller core cpl.
3 x	Plug for measuring chamber
2 x	Pump head, 4 rollers, 1.6 mm hose
2 x	Filter screen for inlet 19,5dx25
3 x	Pipes: D= (6 d=4x105), (6 d=4 x 115), (10 d= 8x98)
1 x	Cleaning brush set
2 x	Hose connector
2 x	Hose adapter gasket
1 x	Insert with screw cap and suction tube 500 ml bottle
1 x	Insert with screw cap and suction tube 100 ml bottle

Service set Testomat LAB CL®

270356

Content:	
1 x	Gasket set T2000
2 x	Viewing glass 30 x 3
1 x	Flow controller core cpl.
3 x	Plug for measuring chamber
2 x	Filter screen for inlet 19,5dx25
5 x	verschiedene Rohre
1 x	Cleaning brush set
2 x	Insert with screw cap and suction tube 500 ml bottle
1 x	Pump head
2 x	Hose connector
2 x	Hose adapter gasket

Service set Testomat LAB TH®

270357

Content:	
1 x	Gasket set T2000
2 x	Viewing glass 30 x 3
1 x	Flow controller core cpl.
3 x	Plug for measuring chamber
2 x	Screw cap with insert T2000
1 x	Filter screen for inlet 19,5dx25
5 x	different pipes
1 x	Cleaning brush set
1 x	DosiClip valve set
1 x	Suction hose
1 x	Pressure hose
2 x	Hose adapter gasket

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Service set measuring chamber & Measuring chamber receptacle

891304

Content:	
3 x	Flat gasket
2 x	O-ring 18x2 EPDM
2 x	Viewing glass 30x3
3 x	Plug for measuring chamber
1 x	Magnetic - stirrer core

Service set DosiClip

891305

Content:	
1 x	Hose, suction, cpl.
1 x	Hose, pressure, cpl.
1 x	DosiClip valve set

Service set Regulator filter holder

891307

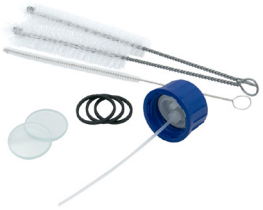
Content:	
1 x	Inlet connection
1 x	Drain connection, PVC.
1 x	Flow controller core, cpl.
2 x	O-ring 20x2 (NBR)
1 x	Filter screen for Inlet 19,5dx25
1 x	Flat gasket 24x2
1 x	Screw-in connector G1/4“-6
1 x	Regulator plug T2000 cpl.

Service sets

TESTOMAT 808 / 808 SiO_2

Annual service set Testomat 808

890609



Content:	
2 x	Viewing glass 30x3
3 x	Flat gasket 24x2
1 x	Insert with screw cap and suction tube 500 ml bottle
1 x	Cleaning brush set

Service set Testomat 808 **2 year maintenance**

890610

Content:	
2 x	Viewing glass 30x3
3 x	Flat gasket 24x2
1 x	Insert with screw cap and suction tube 500 ml bottle
1 x	Pump head
1 x	Gear motor
2 x	Hose adapter
2 x	Cleaning brush set

Service set Testomat 808

270351

Content:	
15 x	Flat gasket 24x2
6 x	Viewing glass 30x3
6 x	O – ring 3,68 x 1,78
6 x	O – ring 4,5 x 1,56
16 x	O – ring 1,78 x 1,78
1 x	Pipe, L = 53 mm
1 x	Pipe, L = 140 mm
1 x	Cleaning brush set

Annual service set Testomat 808 SiO_2

890611

Content:	
2 x	Viewing glass 30x3
3 x	Flat gasket 24x2
1 x	Insert with screw cap and suction tube 500 ml bottle
1 x	Insert with screw cap and suction tube 100 ml bottle
1 x	Cleaning brush set

Service set 2 year maintenance Testomat 808 SiO_2

890612

Content:	
2 x	Viewing glass 30x3
3 x	Flat gasket 24x2
1 x	Insert with screw cap and suction tube 500 ml bottle
1 x	Insert with screw cap and suction tube 100 ml bottle
1 x	Double pump head
1 x	Gear motor
2 x	Hose connector
1 x	Cleaning brush set

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Accessories Testomat® / Titromat®

MEPUClip® — 270410

Booster pump for Testomat 2000® / Testomat® EVO TH / Titromat® / LAB

Installation of the pump at water inlet pressure below 0.3 bar. When ordering „Testomat® with pump“, the pump is installed at the factory.

Small trickling — 130010

Testomat®-small trickling filter to reduce the CO_2 content.

Max. 12 l/h water flow with reduction of free carbonic acid from max. 200 mg/l to below 20 mg/l.

Dimensions (B x H x T):	150 x 150 x 100 mm
Mains voltage:	230 V / 50 Hz

Drain funnel — 40315

Drain funnel cpl. Testomat 2000® / Testomat ECO®

Conversion kit for water inlet Testomat 2000® — 40123

Conversion kit for water inlet to connect a fabric hose for Testomat 2000® / Testomat® EVO TH / Titromat® / LAB.

Content:

1 x Quick release plug $^1/_4$“
1 x Quick release plug $^1/_4$“
1 x Locking on the hose side

Cleaning brush set — 895230

1 x Cleaning brush Ø 6 mm
1 x Cleaning brush Ø 16 mm
1 x Cleaning brush Ø 20 mm

Connection set Testomat 2000®

Connection set for Testomat 2000® / Testomat® EVO TH / Testomat ECO® / Titromat® / LAB — **40187**

Content:

5 m	Pipe, Plastic PE 6/4x1, blue
2 m	Drain hose di= 12 mm
1 x	Ball valve, PPSV 011223W
1 x	Reducing connector 10-6
1 x	Reducing nipple $^3/_8$“ - $^1/_2$“

Pressure regulator

Pressure regulator cpl. — **37602**

- Pressure range 4-8 bar
- max. inlet pressure: 11 bar
- Ambient temperature: 0-50°C
- Pressure gauge connection: G1/8, on both sides

Pressure regulator - kit

The pressure regulator is used at pressures from 0.5 - 10 bar. — **880505**
Note: Not suitable for deionized water and condensate.

Content:

1 x	Pressure gauge
1 x	Mounting bracket with nut
2 x	Straight screw-in fittings

Basic tool kit for Testomat 2000 / ECO / EVO / LAB

Content: — **896114**
1 x Screwdriver Torx 10x80-3K
1 x screwdriver VDE-SZ-0,4X2,5X80
1 x water pump pliers 250mm
1 x flat round nose pliers 200MM

Tool kit „professional“ for Testomat 2000 / ECO / EVO / LAB

Content: — **896115**
1 x Screwdriver Torx 10x80-3K
1 x screwdriver VDE slot 0,5x3x100
1 x water pump pliers, infinitely variable
1 x flat round nose pliers VDE L200MM
1 x screwdriver Torx 8x60-3K
1 x screwdriver Torx 9x60-3K
1 x screwdriver VDE slot 0,5x3x100

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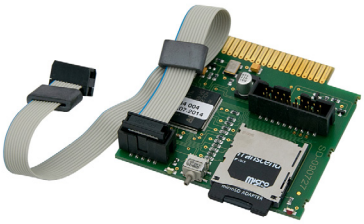
SD - Card data logger



SD - Card Data Logger for Testomat 2000® / Titromat® **100490**

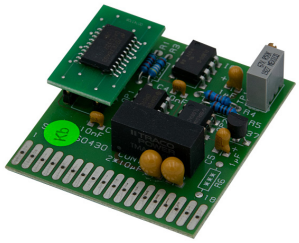
The data logger, which is plugged into the device as a plug-in card, stores the measurement results and error messages on a 2 GB SD card.
The data is available in CSV format and can be easily processed or evaluated in a spreadsheet program.

Voltage interface UK 910

UK 910 voltage interface for Testomat 2000® / Titromat® **270315**
Voltage interface (plug-in card)

Voltage output: 0/2-10V Galvanic isolation

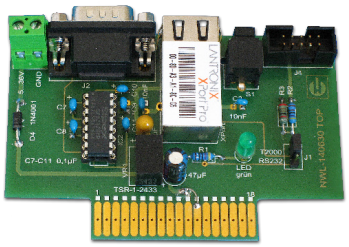
Voltage interface SK 910



Current interface SK910 for Testomat 2000® / Titromat® **270305**
Power interface (plug-in card)

Current output: 0-20 mA or 4-20 mA
Maximum load: 500 Ohm, galvanic isolation

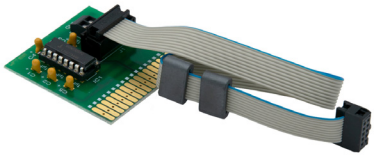
Network logger



Netzwerklogger for Testomat 2000® / Titromat® **100492**

- Plug-in card with 100 mBit network connectionWebserver, FTP server and integrated flash memory
- 8MB Flash memory for 400,000 measured values and messages (~ 5 years)
- Generation of one measurement and alarm file per month
- Files are saved in CSV format and can be edited with Office packages.

Interface card RS 910



Interface card RS 910 for Testomat 2000® / Titromat® **270310**

Plug-in card for connecting Testomat 2000® to a protocol printer via the RS232 serial interface.

Accessories Testomat® 808 / 808 SiO_2

Candle filter

Cartridge filter Testomat® 808 cpl. for filtering the sample water before analysis. **37583**

Pressure:	max. 4 bar at 50°C, up to max. 10 bar at 20°C
Temperature:	max. 50°C
Filter fineness:	150 µm
Inlet/outlet:	1/4“

Filter element

Filter cartridge for candle filter **37584**

Pressure regulator

Pressure regulator cpl. forTestomat® 808. **37602**

- Pressure range 4-8 bar
- max. inlet pressure: 11 bar
- ambient temperature: 0-50°C
- pressure gauge connection: G1/8, on both sides

Pressure regulator - kit

The pressure regulator is used at pressures from 0.5 - 10 bar. **880505**
Note: Not suitable for deionized water and condensate.

Content:

1 x	pressure gauge
1 x	mounting bracket with nut
2 x	straight screw-in fittings

Data logger

The data logger stores the measured values of the 20 mA interface periodically, memory capacity for 32,768 values available. Data access is possible via the built-in USB port. **100493**

Drivers and applications are included.

Conversion set for water inlet and outlet — 37576

Conversion set for converting the water connection from Testomat BOB to Testomat® 808.

Consisting of:
1 x plug nipple G1/4“ DN6
1 x plastic hose, 6/4 L=5m
1 x screw-in connector G1/4“-6

Connection set — 37610

Connection set Testomat 808 for the water connection.

Consisting of:
1 x plastic hose blue 6/4 x 1.5 m
1 x reduction 10 to 6 mm
1 x stopcock 3/8“ to 6 mm

Cleaning brush set — 895230

1 x Cleaning brush Ø 6 mm
1 x Cleaning brush Ø 16 mm
1 x Cleaning brush Ø 20 mm

Silicate filter cartridge — 270344

The Testomat® 808 SiO_2 can only be calibrated without problems using silicate-free water. Therefore, please use the silicate filter cartridge specially developed for this purpose when replacing the double pump head (Art. No. 40395) and the associated device pump adjustment.

Tool set „professional“ for Testomat 808 — 896116

Content:
1 x Screwdriver VDE Slot 0,5x3x100
1 x Screwdriver VDE-PH-SLIM 1X80
1 x Screwdriver VDE-PH 0x60
1 x Screwdriver Torx 9x60-3K
1 x Screwdriver VDE Slot 0,4x2,5x80

Spare parts

GENERAL SPARE PARTS TESTOMAT

Article-number	Name	Component	Type of device
37583	Candle filter cpl.		808 / T 2000 / ECO / EVO TH / LAB
37643	Hose connector		808 SiO_2 / LAB CL / 2000 PO4 / 2000 Polymer
40050	Magnetic stirrer core	Measuring chamber receptacle	T 2000 / 808 / ECO / EVO TH / LAB / Titromaten
40170	Viewing glass 30 x 3		T 2000 / ECO / 808 / EVO TH / Titromaten
40173	Viewing window with seal		T 2000 / ECO / 808 / EVO TH / Titromaten
37833	Viewing glass 30x1,6	Measuring chamber with double glazing	T 2000 / 808 / ECO / EVO TH / LAB
37806	Window holder with countersink and thread 1.5	Measuring chamber with double glazing	T 2000 / 808 / ECO / EVO TH / LAB / Titromaten

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Spare parts
T2000 / T-ECO / T-EVO TH / TITROMAT

Article-number	Name	Component	Type of device
11210	Plug for measuring chamber	Measuring chamber	T 2000 / ECO / EVO TH / EVO TH CAL / LAB
11217	Filter screen f. Inlet 19,5dx25	Regulator / filter holder	T 2000 / ECO / EVO TH / LAB
11218	Spring f. inlet	Regulator / filter holder	T 2000 / ECO / EVO TH / LAB
11225	Flow controller core, cpl.	Regulator / filter holder	T 2000 / ECO / EVO TH / LAB
11270	Retaining pin for regulator plug	Regulator / filter holder	T 2000 / ECO / EVO TH / LAB
40010	Valve	DosiClip	T 2000 / ECO / EVO TH / LAB
40011	Hose,suction cpl.	DosiClip	T 2000 / ECO / EVO TH / LAB
40016	Hose,pressure compl.	DosiClip	T 2000 / ECO / EVO TH / LAB
40018	Solenoid valve, 2/2-way	Measuring chamber receptacle	T 2000
40022	Measuring chamber, cpl.		T 2000 / ECO / EVO TH / LAB
40559	Measuring chamber with double glazing		T 2000 / ECO / EVO TH / LAB
40029	Measuring chamber receptacle without solenoid valve		***Device-specific, see page 79***
40032	Tensioning hook - NIRO TL 800-7-1	Measuring chamber	T 2000 / ECO / EVO TH / Titromat / LAB
40040	Valve set	DosiClip	T 2000 / ECO / EVO TH / LAB
40056	Solenoid valve, 2/2-way	Measuring chamber receptacle	ECO / EVO TH / EVO TH CAL
40096	Ribbon cable 26 pin w. Ferrite		T 2000, ECO und Titromat
40120	Regulator / filter holder	Pressure regulator	T 2000 / ECO / EVO TH / Titromat / LAB
40121	Inlet connection	Regulator / filter holder	T 2000 / ECO / EVO TH / Titromat
40122	Drain connection		T 2000 / ECO / Titromat
40124	Gasket set	Measuring chamber and measuring chamber receptacle	T 2000 / ECO
40125	Regulator / filter holder		T 2000 / ECO / EVO TH / Titromat / LAB
40127	Regulator / filter holder with hose		T 2000 / ECO / EVO TH / Titromat / LAB
40129	Controller plug	Regulator / filter holder	T 2000 / ECO / EVO TH / Titromat / LAB
40151	Screw-in connector-T 3/8“-10	Drain side Measuring chamber receptacle	T 2000 / ECO / EVO TH / Titromat / LAB
40152	Reducing connector 10-6	Drain side Measuring chamber receptacle	T 2000 / ECO / EVO TH / Titromat / LAB
40153	Screw-in connector-G ¼“ - 6	Regulator / filter holder	T 2000 / ECO / EVO TH / Titromat
40154	Push-in angle connector 6-6	Drain side Measuring chamber receptacle	T 2000 / ECO / EVO TH / Titromat / LAB
40156	Screw-in connector G3/8“-10	Drain side Measuring chamber receptacle	T 2000 / ECO / EVO TH / Titromat / LAB
40176	Viewing pane holder, countersunk and wt.	Measuring chamber	T 2000 / ECO / EVO TH / LAB / Titromat

Article-number	Name	Component	Type of device
40186	Push-in connector, machined	Measuring chamber receptacle	T 2000 / T ECO / EVO TH / Titromat / LAB
40240	Pipe, PE,D=10 d=8x98	Measuring chamber	T 2000 / T ECO / EVO TH / Titromat / LAB
40244	Viewing glass 30x3 with 7.5mm glass cylinder	Measuring chamber with shortened measuring section	T 2000 CrVI (0-5 mg/l) / T 2000 PO4
37644	Screw cap with insert for 500 ml - bottle		T 2000 Polymer, PO_4 und LAB CL
37645	Screw cap with insert for 100 ml - bottle		T 2000 PO_4
37644	Screw cap with insert for 500 ml - bottle		T 2000 Polymer, PO_4 und LAB CL
37645	Screw cap with insert for 100 ml - bottle		T 2000 PO_4
40130	Screw cap GL32 - hole	Bottle connection	T 2000 / ECO
40131	Screw cap with insert		T2000 / ECO / EVO TH
40135	Insert for screw cap with suction tube	Bottle connection	T 2000 / T ECO / EVO TH / Titromat / LAB
40143	Conversion kit 100ml bottle		T 2000 / T ECO / EVO TH / Titromat / LAB
32383	Motherboard, 230V		EVO TH
37245	Motherboard cpl. 230 V		ECO
40091	Plug-in board driver/receiver		T 2000
40092	Control board cpl.		T 2000
40294	Motherboard cpl. 230V		T 2000
40332	Control board		ECO
40001	Injection pump ET DosiClip		T 2000 / ECO / EVO TH / LAB
270471	Dosing pump DosiClip VI		Titromat KH / for T 2000 with use of TC indicators
270430	Dosing pump PeriClip		T 2000 Polymer, PO_4
270440	Dosing pump FLOWClip		T 2000 self clean
37653	Sight glass set for SI-containing water		T 2000 / T ECO / EVO TH / Titromat / LAB

NEOMERIS
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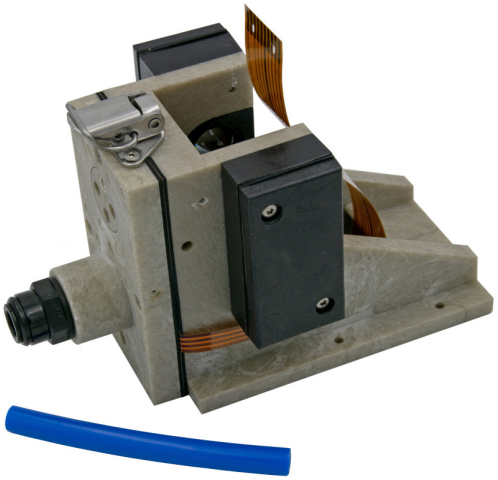
Spare parts
TESTOMAT 808 / TESTOMAT 808 SiO_2

Article-number	Name	Component	Type of device
37538	Hose connector	Bottle connection, suction device	808 / 808 SiO_2
37570	Solenoid valve cpl.		808 SiO_2
37584	Filter element	Candle filter	808 / 808 SiO_2
37621	Dosing needle		808
37643	Hose connector	Bottle connection, suction device	808 SiO_2
37653	Sight glass set increased silicate content		808 SiO_2
37681	Dosing needle		808 SiO_2
40363	Pump head conversion kit	from the old version to the new	808 *(bis G.N.: 253.060)*
40364	Optical measuring unit		808
40365	Optical measuring unit		808 SiO_2
40393	Optical measuring unit		808 *(2019)*
40395	Conversion kit double pump head, ID=1.6mm cpl.	from the old version to the new	808 SiO_2
100494	Gear motor for metering pump	Dosing pump	808 / 808 SiO_2
37615	Measuring chamber completely tested (1-4 bar)		808
37616	Measuring chamber complete (0.3 - 1 bar)		808
37784	Measuring chamber complete (1 - 4 bar)		808 SiO_2
37785	Measuring chamber complete (0.3 - 1 bar)		808 SiO_2
37863	Measuring chamber with double glazing		808 *(1-4 bar)*
37322	Control board		808
37324	Motherboard		808
37579	Insert with screw cap and suction tube 500 ml bottle	Bottle connection, suction device	808
37580	Insert with screw cap and suction tube 100 ml bottle	Bottle connection, suction device	808
37644	Insert with screw cap and suction tube 500 ml bottle	Bottle connection, suction device	808 SiO_2
37645	Insert with screw cap and suction tube 100 ml bottle	Bottle connection, suction device	808 SiO_2
40157	Screw-in connector angle, G 1/8“- 6mm	Measuring chamber	808

Overview measuring chamber - recordings

Type of device	Order number of the measuring chamber receptacle						
		DUO	DUO	TRIO	QUAD	DUO	DUO
	40029	40370	40371	40372	40373	40375	40382
Testomat 2000®	X						
Testomat® ECO	X						
Testomat® EVO TH	X						
Testomat 2000® Antox		X					
Testomat 2000® Br			X				
Testomat 2000® CLF			X				
Testomat 2000® CLT				X			
Testomat 2000® CLT self clean					X		
Testomat 2000® ClO_2			X				
Testomat 2000® CN DUO		X					
Testomat 2000® CrVI			X				
Testomat 2000® CrVI 0 - 5 ppm							
Testomat 2000® DUO		X					
Testomat 2000® Fe			X				
Testomat 2000® Polymer			X				
Testomat 2000® PO_4							X
Testomat 2000® self clean		X					
Testomat 2000® SO_3						X	
Testomat 2000® THCL					X		
Testomat® LAB TH + TH-R	X						
Titromat® M1		X					
Titromat® M2		X					
Titromat® KH		X					
Titromat® TH		X					



Accessories Softmaster®

Conductive conductivity probes with temperature sensor

Stainless steel electrodes (V4A, 1.4571 suitable for applications up to 6 x 106 Pa (6 bar).

Conductive conductivity probes with temperature sensor

	Cell constant [1/cm]	Maximum media temperature [°C]	Connection-Outlet	Measuring range [µS/cm]	Article number
Sondes:					
ST 1 / PT 100	0,1	40	PVC - union nut Rp 1 $^{1}/_{4}$	1 - 2000	310120
ST 5 / PT 100	0,5	40	PVC - union nut Rp 1 $^{1}/_{4}$	5 - 10000	310121
Screw-in probes:					
STE 0 / PT 100	0,01	130	External thread R $^{3}/_{4}$	0,1 - 200	310110
STE 1 / PT 100	0,1	130	External thread R $^{3}/_{4}$	1 - 2000	310125
STE 5 / PT 100	0,5	130	External thread R $^{3}/_{4}$	5 - 10000	310126

Conductive conductivity probes without temperature sensor

	Cell constant [1/cm]	Maximum media temperature [°C]	Connection-Outlet	Measuring range [µS/cm]	Article number
Sondes:					
SO 1	0,1	40	PVC - union nut Rp 1 $^{1}/_{4}$	1 - 2000	310001
SO 5	0,5	40	PVC - union nut Rp 1 $^{1}/_{4}$	5 - 10000	310003
SO 10	1	40	PVC - Überwurfmutter Rp 1 $^{1}/_{4}$	10 - 20000	310014
Screw-in probes:					
SOE 0	0,01	130	External thread R $^{3}/_{4}$	0,1 - 200	310005
SOE 1	0,1	130	External thread R $^{3}/_{4}$	1 - 2000	310002
SOE 5	0,5	130	External thread R $^{3}/_{4}$	5 - 10000	310004

Durognost® Limit test specimens

Modell/Type	Measuring range	Range of application/functions
Durognost® I	0 - 0,1 °dH 0 - 2 ppm $CaCO_3$ 0,2 °f	For rapid determination of the smallest traces of hardness
Durognost® SR 0	0,1 und 0,05 °dH 1,79 und 0,89 ppm	For monitoring the residual hardness in softened water
Durognost® SR	0,5 und 0,25 °dH 8,9 und 4,47 ppm	For monitoring the residual hardness in softened water
Durognost® SR 1	1 und 0,5 °dH 17,9 und 8,9 ppm	For monitoring the residual hardness in softened water
Durognost® Special buffer solution		For buffering strongly alkaline water samples

DUROGNOST® I — **400050**

Special indicator in powder form for the colorimetric rapid determination of the smallest traces of hardness in the range 0 - 0.1 °dH bzw. 0 – 2 ppm $CaCO_3$ oder 0,2 °f (French hardness).
Complete with measuring tube and dosing spoon.
Analysis: approx. 700
Measuring time: approx. ½ minutes

DUROGNOST® SR 0 — **400056**

Special liquid indicator in a dropper bottle for monitoring residual hardness in softened water, adjusted to the limits of 0.1 and 0.05 °dH (1.79 and 0.89 ppm).
Complete with measuring tube and stopper.
Analysis: approx. 250
Measuring time: approx. ½ minutes

DUROGNOST® SR — **400055**

Equipped like DUROGNOST® SR0, but adjusted to the limits of 0.5 and 0.25 °dH (8.9 and 4.47 ppm).
Analysis: approx. 250
Measuring time: approx. ½ minutes

DUROGNOST® SR 1 — **400054**

Equipped like DUROGNOST® SR0, but set to the limits of 1 and 0.5 °dH (17.9 and 8.9 ppm).
Analysis: approx. 250
Measuring time: approx. ½ minutes

DUROGNOST®
Special buffer solution — **400016**

For buffering strongly alkaline water samples (above pH 11) for total hardness determination with DUROGNOST® and DUROVAL®- instruments (8 ml dropper bottle).
Analysis: approx. 200

Overview Duroval®
Titration rapid test kits

Modell/Type	Measuring range		Range of application/functions
DUROVAL® 1 Dr. = 0,1 °dH	1 Drop ≙ 0,1 °dH		To determine the water hardness
DUROVAL® 1 Dr. = 1 °dH	1 Drop ≙ 0,1 °dH (17,9 ppm)		To determine the water hardness
DUROVAL® 1 Dr. = 1 °f	1 Drop ≙ 0,1 °f (10 ppm)		To determine the water hardness
DUROVAL® 1 Dr. = 10 ppm $CaCO_3$	1 Drop ≙ 10 ppm $CaCO_3$		To determine the water hardness
DUROVAL® 1 Dr. = 1 °KH	1 Drop ≙ 1 °KH		To determine the water hardness
DUROVAL® A	0 - 30 °dH	0 - 537 ppm	To determine the water hardness
DUROVAL® A with pipette 0-60 °f	0 - 60 °f	0 - 600 ppm	To determine the water hardness
DUROVAL® AF	0 - 60 °f	0 - 600 ppm	As DUROVAL® A, but with powder indicator
DUROVAL® AP	0 - 30 °f	0 - 537 ppm	As DUROVAL® A, but with powder indicator
DUROVAL® B	0 - 2 °dH	0 - 35,8 ppm	For determining the hardness in very soft or softened water samples
DUROVAL® BP	0 - 2 °dH	0 - 35,8 ppm	As DUROVAL® B, but with powder indicator
DUROVAL® BF	0 - 4 °f	0 - 40 ppm	As DUROVAL® B, jbut with powder indicator
DUROVAL® C	0 - 20 °dH	0 - 358 ppm	For determining the carbonate hardness or the m-value (acid capacity up to pH ; $K_{S\,4,3}$)
DUROVAL® CPM	0 - 20 °dH	0 - 358 ppm	For determining the carbonate hardness or the m-value (acid capacity up to pH 4,3 ; $K_{S\,4,3}$) and the p-value (acid capacity up to pH 8.2; $K_{s\,8,2}$) contains additional p-value indicator

Modell/Type	Measuring range		Range of application/functions
DUROVAL® $K_{S\ 4,3}$	0 - 2,0 mmol/l		For the determination of acid capacity up to pH 4,3 ; $KS_{4,3}$ in water
DUROVAL® KB 8,2	0 - 2 mmol/l		For determining the base capacity up to pH 8.2 with special connection plug, indicator and 50 ml titration solution
DUROVAL® TI	0 - 30 °dH	0 - 537 ppm	To determine the water hardness
DUROVAL® TI with pipette 0-60 °f	0 - 60 °f	0 - 600 ppm	As DUROVAL® TI, but with dosing pipette
DUROVAL® TF	0 - 60 °f	0 - 600 ppm	As DUROVAL® TI, but with dosing pipette and powder indicator
DUROVAL® TP	0 - 30 °dH	0 - 537 ppm	As DUROVAL® TI, but with dosing pipette and powder indicator
DUROVAL® Chloride	Calibrated 0 - 300 mg/l Cl		For the determination of the chloride content
DUROVAL® CO_2			For the determination of free carbonic acid
DUROVAL® Sulfate	0 - 300 mg/l SO_4^{2-}		For the determination of the sulfate content
Water hardness DUO	0 - 2 °dH 0 - 30 °dH	0 - 35,8 ppm 0 - 537 ppm	For determination of water hardness in raw water and after water treatment
KSS - Titration set	Variable		For monitoring cooling lubricants
Polyamine test kit			For the determination of the polyamine content in circulating water

Duroval® Titration rapid test kits

DUROVAL® 1 Dr. = 0,1 °dH

Titration kit for determining water hardness by complexometric titration. **400007**
1 drop corresponds to 0.1 degree of German hardness.

Analyses: approx. 30 at an average hardness of 1 °dH.

DUROVAL® 1 Dr. = 1 °dH

Titration kit for determining water hardness by complexometric titration. **400010**
1 drop corresponds to 1 degree of German hardness.

Analyses: approx. 30 at an average hardness of 10 °dH.

50 pieces	neutral inserts without folding box	**400110**
50 pieces	kit neutral inserts without folding box	**400112**
50 pieces	neutral inserters with neutral folding boxes	**400118**

DUROVAL® 1 Dr. = 1 °f

Titration kit for determining water hardness by complexometric titration. **400011**
1 drop corresponds to 1 degree of French hardness.

Analyses: approx. 30 at an average hardness of 10 °f.

50 pieces	neutral inserts without folding box	**400111**
50 pieces	kit neutral inserts without folding box	**400113**
50 pieces	neutral inserters with neutral folding boxes	**400119**

DUROVAL® 1 Dr. = 10 ppm $CaCO_3$

Titration kit for determining water hardness by complexometric titration. **400012**
1 drop corresponds to 10 ppm $CaCO_3$.

Analyses: approx. 30 at an average hardness of 10 ppm $CaCO_3$.

DUROVAL® 1 Dr. = 1 °KH

Titration kit for determining the carbonate hardness. **400015**
1 drop corresponds to 1 degree of carbonate hardness.

Analyses: approx. 30 at an average hardness of 10 °KH.

50 pieces **400120**

Water hardness DUO

Titration kit for determination of water hardness in raw water (0 - 30 °dH) and after water treatment (0 - 2 °dH). **400005**
Complete with all reagents and accessories.

Measuring range:	0 - 30 °dH	Resolution:	0,5 °dH
Measuring range:	0,5 °dH	Resolution:	0,025 °dH

DUROVAL® A

Set for determining water hardness in all hardness ranges by complexometric titration with a liquid titration agent and a dosing pipette precisely calibrated in hardness units.
Complete with measuring tube, liquid indicator and dosing pipette calibrated to 0 - 30 °dH and 50 ml titration solution.

400020

Analysis:	approx. 100 at an average hardness of 15 °dH
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,5 °dH

DUROVAL® A with pipette 0 - 60 °f

As cutlery type A, but with dosing pipette calibrated to 0 - 60 °f (French hardness).

400018

Analysis:	approx. 100 at an average hardness of 26.7 °f
Measuring time:	approx. 2 minutes
Measurement accuracy:	1 °f

DUROVAL® AF

As Type A cutlery, but with powder indicator and dosing pipette calibrated to 0 - 60 °f (French hardness).

400022

Analysis:	approx. 100 at an average hardness of 26.7 °f
Measuring time:	approx. 2 minutes
Measurement accuracy:	1 °f

DUROVAL® AP

As cutlery type A, but with powder indicator and dosing pipette calibrated to 0 - 30 °dH (0 - 537 ppm).

400021

Analysis:	approx. 100 at an average hardness of 15 °dH
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,5 °dH

DUROVAL® B

Set for determining the hardness in very soft or softened water samples by titration with liquid titrant and a dosing pipette calibrated in hardness units.
Complete with measuring tube, liquid indicator and dosing pipette calibrated to 0 - 2 °dH.

400030

Analysis:	approx. 100 at an average hardness of 1 °dH
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,05 °dH

DUROVAL® BP

Like cutlery type B, but with powder indicator and dosing pipette calibrated to 0 - 2 °dH. **400031**

Analysis:	approx. 100 at an average hardness of 1 °dH
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,05 °dH

DUROVAL® BF

As Type B cutlery, but with powder indicator and dosing pipette calibrated to 0 - 4 °f (French hardness). **400032**

Analysis:	approx. 100 at an average hardness of 0.1 °f
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,1 °f

DUROVAL® C

Set for determining the carbonate hardness or the m-value (acid capacity up to pH4.3 ; $KS_{4.3}$) in all natural and technical water samples by titration with a liquid titrant and a dosing pipette precisely calibrated in degrees of German hardness and mmol/l. Complete with measuring tube and dosing pipette calibrated to 0 - 20 °dH and 0 - 7 mmol/l, special connecting plug, indicator and 50 ml titration solution. **400060**

Analysis:	approx. 100 at an average hardness of 10°dH.
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,5 °dH / 0,25 mmol/l

DUROVAL® CPM

Set for determining the carbonate hardness or the m-value (acid capacity up to pH 4.3 ; $Ks_{4.3}$) and the p-value (acid capacity up to pH 8.2 ; $Ks_{8.2}$). **400065**
Equipment as Duroval® C, but with an additional p-value indicator.

Analysis:	approx. 100
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,5 °dH / 0,25 mmol/l

DUROVAL® $K_{S\ 4,3}$

Titration set for the determination of acid capacity up to pH 4.3. Complete with measuring tube, dosing pipette (calibrated), special connecting plug, 8 ml indicator and 50 ml titration solution.

400067

Analysis:	approx. 200 with an average acid capacity of 1 mmol/l.
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,05 mmol/l

DUROVAL® K B 8,2

For the determination of the base capacity up to pH 8.2, dosing pipette calibrated to 0 - 2 mmol/l with special connecting plug, indicator and 50 ml titration solution.

400077

Analysis:	approx. 100 (at an average base capacity of 1 mmol/l)
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,05 mmol/l

DUROVAL® TI

Industrial set, especially suitable for the initial equipment of water treatment plants.
Complete with measuring tube, liquid indicator, dosing pipette, calibrated to 0 - 30 °dH and 30 ml titration solution.

400040

Analysis:	approx. 60 (at an average hardness of 15 °dH)
Measuring time:	approx. 2 minutes
Measurement accuracy:	0,5 °dH

DUROVAL® TI with pipette 0 - 60 °f

As cutlery type TI, but with indicator „liquid“ and dosing pipette calibrated to 0 - 60 °f (French hardness).

400038

Analysis:	approx. 60 (at an average hardness of 26.7 °f)
Measuring time:	approx. 2 minutes
Measurement accuracy:	1 °f

DUROVAL® TF

As Type TI cutlery, but with powder indicator and dosing pipette calibrated to 0 - 60 °f (French hardness).

400042

Analysis:	approx. 60 (at an average hardness of 26.7 °f)
Measuring time:	approx. 2 minutes
Measurement accuracy:	1 °f

DUROVAL® TP

Like Type TI cutlery, but with powder indicator and dosing pipette calibrated to 0 - 30 °dH. **400041**

Analysis:	ca. 60 (bei einer durchschnittlichen Härte von 15 °dh)
Measuring time:	ca. 2 Minute
Measurement accuracy:	0,5 °dH

DUROVAL® Chloride

Set for the determination of the chloride content in water. Titration pipette calibrated to 0 - 30 mg/l Cl-.
Complete with all reagents and accessories. **400090**

Analysis:	approx. 200
Measuring time:	approx. 2 minutes
Measurement accuracy:	10 mg/l Cl^-

DUROVAL® CO_2

Set for the determination of free carbonic acid in water by droplet titration. **400070**
Complete with measuring tube, stopper and 3 reagents.

Analysis:	approx. 200 at an average content of 100 mg/l / CO_2.
Measuring time:	Concentration-dependent
Measurement accuracy:	• for 10 ml water sample: 5 mg CO_2/l (for concentrations up to 100 mg CO_2/l), • for 5 ml water sample: 10 mg CO_2/l (for concentrations above 100 mg CO_2/l)

DUROVAL® Sulfate

Set for the determination of the sulfate content in water. **400080**
Complete with all reagents and accessories.

Analysis:	approx. 30
Measuring time:	calibrated 0–300 mg/l SO_4^{2}
Measurement accuracy:	10 mg/l SO_4^{2}

KSS - Titration test kit

Measuring set for simple content monitoring of cooling lubricants (KSS) by titration. **400280**
Complete with all reagents and accessories.
Concentration range and accuracy customer-specific.

Polyamine - test kit

Test kit for the determination of the polyamine content in the circulating water. Product-specific adaptation of the titration solution. Complete with all reagents and accessories.

Article description	
Test kit Polyamine CCOH	400165
Testkit Polyamine V 15/30	400166
Testkit Polyamine K 26	400167
Testkit Polyamine B42/C71	400168
Testkit Polyamine A-853R	400169

Refill pack Polyamine NI

Refill universally applicable for all products.

Article description	
Polyamine NI (Reagent A + B)	400170

Refill pack Polyamine NT

Refill Reagent C and titration solution:

Article description	
Polyamine Reagent NT CCOH	400175
Polyamine Reagent NT V 15/30	400176
Polyamine Reagent NT K 26	400177
Polyamine Reagent NT B42/C71	400178
Polyamine Reagent A-853R	400179

Polyamine Reagent

Article description		
Polyamine Reagent A	10 bottles á 8 ml	400185
Polyamine Reagent B	10 bottles á 8 ml	400186
Polyamine Reagent C	10 bottles á 50 ml	400187

Polyamine Reagent

Article description		
Polyamine Titration kit CCOH	10 bottles á 50 ml	400188
Polyamine Titration kit V 15/30	10 bottles á 50 ml	400189
Polyamine Titration kit K 26	10 bottles á 50 ml	400190
Polyamine Titration kit B42/C71	10 bottles á 50 ml	400191
Polyamine Titration kit A-853R	10 bottles á 50 ml	400192

Duroval® Refill packs

Modell/Type	Measuring range	Amount	Article number
DUROVAL® A Titration solution	0 - 30 °dH (0 - 60 °f)	Bottle with 50 ml	400023
DUROVAL® A Titration solution	0 - 30 °dH (0 - 60 °f)	50 bottles with each 50 ml	400123
DUROVAL® B Titration solution	0 - 2 °dH (0 4 °f)	Bottle with 50 ml	400033
DUROVAL® TI Titration solution	0 - 30 °dH (0 - 60 °f)	Bottle with 25 ml	400043
DUROVAL® Indicator liquid		Bottle with 8 ml	400024
DUROVAL® Indicator 3 g (Powder)		Powder 3 g	400025
DUROVAL® C Titration solution	0 - 20 °dH and 0 - 7 mmol/l	Bottle with 50 ml	400061
DUROVAL® C Indicator	to pH 4,3 ; $KS_{4,3}$	Bottle with 8 ml	400062
DUROVAL® $K_{S\ 4,3}$ Titration solution		Bottle with 50 ml	400069
DUROVAL® $K_{S\ 4,3}$ Indicator	to pH 4,3	Bottle with 8 ml	400068
DUROVAL® P Indicator		Bottle with 8 ml	400066
DUROVAL® KB 8,2 Indicator		Bottle with 8 ml	400078
DUROVAL® SO_4 Ion exchanger			400081
DUROVAL® SO_4 Reagent A		2 bottles with each 50 ml	400082
DUROVAL® SO_4 Reagent B			400083
DUROVAL® SO_4 Titration solution C		Bottle with 50 ml	400084
DUROVAL® Chloride Reagent A + B		2 bottles with each 17 ml	400091
DUROVAL® Chloride - Titration solution C		2 bottles with each 50 ml	400092

Overview Testoval®
Colorimetric test sets

Modell/Type	Measuring / concentration range
Aluminium	0 - 2 mg/l Al
Ammonium	0 - 10 mg/l NH_4^+
Chlorine DPD	0,1 - 1 mg/ Cl_2
Chlorine DPD	0,5 - 4 mg/l Cl_2
Chloride	0 - 100 mg/l Cl^-
Chromate CrVI	0 - 5 mg/l Cr
Iron (II + (III) solved	0 - 1 mg/l Fe
Iron (II + III) solved	0 - 10 mg/l Fe
Hydrazine	0 - 1 mg/l N_2 H_4
Copper	0 - 2 mg/l Cu
Nitrite	0 - 1 mg/l NO_2^-
Phosphate test	0 - 10 mg/l P_2O_5
pH - Chlorine DPD	pH: 6,8 - 7,4 - 8 Chlorine: 0,1 - 0,5 - 1 mg/l
pH - value	pH - range: 1 - 5,5 pH - range: 5,5 - 8 pH - range: 8 - 12
Silicate solved	0 - 10 mg/l SiO_2
Sulfite	0 - 20 mg/l SO_3^{2-}

Testoval® Colorimetric test sets

Aluminium

Driving comparison set for the concentration range 0 - 15 mg/l Al. **410650**
Individual values: 0 - 0.1 - 0.2 - 0.5 - 1 - 1.5 mg/l.
By diluting the water sample 1:10, the measuring range can be extended to 10-fold concentrations, complete with 2 reagents.

Analysis:	approx. 130	
Measuring time:	approx. 6 minutes	
Refill pack:	1 set of reagents for approx. 130 analyses	**410651**
	Spare color comparator complete (without cuvette)	**410652**

Ammonium

Color comparison kit for the concentration range 0-10 mg/l NH_4+. **410680**
Individual values: 0.1 - 0.5 - 1 - 2.5 - 5 - 10 mg/l, complete with 3 reagents.

Analysis:	approx. 70	
Measuring time:	approx. 4 minutes	
Refill pack:	1 set of reagents for approx. 70 analyses	**410681**
	Spare color comparator complete (without cuvette)	**410682**

Chlorine DPD 0,1 - 1 mg/l

Color comparison kit for the concentration range 0.1-1 mg/l free and total chlorine. **410520**
Individual values: 0.1 - 0.2 - 0.3 - 0.5 - 0.75 - 1 mg/l, complete with 3 reagents.

Analysis:	approx. 70	
Measuring time:	approx. 1 minute	
Refill pack:	1 set of reagents for approx. 70 analyses	**410521**
	Spare color comparator complete (without cuvette)	**410522**

Chlorine DPD 0,5- 4 mg/l

Color comparison kit for the concentration range 0.5 - 4 mg/l free and total chlorine. **411520**
Individual values: 0.5 - 1 - 1.5 - 2 - 3 - 4 mg/l, complete with 3 reagents.

Analysis:	approx. 40	
Measuring time:	approx. 3 minutes	
Refill pack:	1 set of reagents for approx. 40 analyses	**410521**
	Spare color comparator complete (without cuvette)	**410523**

Chloride

Color comparison kit for the concentration range 0 - 5 mg/l Cl-. Individual values: 0.1 - 0.25 - 0.5 - 1 - 2.5 - 5 mg/l, complete with 2 reagents. **410526**

Analysis:	approx. 40	
Measuring time:	approx. 3 minutes	
Refill pack:	1 set of reagents for approx. 40 analyses	**410527**
	Spare color comparator complete (without cuvette)	**410528**

Chromate CrVI

Color comparison kit for the concentration range 0 - 5 mg/l Cr. Individual values: 0.1 - 0.25 - 0.5 - 1 - 2.5 - 5 mg/l, complete with 2 reagents. **410532**

Analysis:	approx. 180	
Measuring time:	approx. 3 minutes	
Refill pack:	1 set of reagents for approx. 180 analyses	**410533**
	Spare color comparator complete (without cuvette)	**410534**

Iron (II) + (III) solved, 0 - 1 mg/l

Color comparison set for the concentration range 0 - 1 mg/l Fe. Individual values: 0.05 - 0.1 - 0.25 - 0.5 - 0.75 - 1 mg/l. By diluting the water sample 1:10, the measuring range can be extended to 10-fold concentrations, complete with 2 reagents. **410547**

Analysis:	approx. 100	
Measuring time:	approx. 7 minutes	
Refill pack:	1 set of reagents for approx. 100 analyses	**410548**
	Spare color comparator complete (without cuvette)	**410549**

Iron (II) + (III) solved, 0 - 10 mg/l

Color comparison kit for the concentration range 0 - 10 mg/l Fe. Individual values: 0.25 - 0.5 - 1 - 2.5 - 5 - 10 mg/l, complete with 3 reagents. **410544**

Analysis:	approx. 60	
Measuring time:	approx. 7 minutes	
Refill pack:	1 set of reagents for approx. 60 analyses	**410545**
	Spare color comparator complete (without cuvette)	**410546**

Hydrazine

Color comparison kit for the concentration range 0 - 1 mg/l N_2H_4. Individual values: 0 - 0.05 - 0.1 - 0.25 - 0.5 - 1 mg/l, complete with reagent. **410556**

Analysis:	approx. 100	
Measuring time:	approx. 2 minutes	
Refill pack:	1 set of reagents for approx. 100 analyses	**410557**
	Spare color comparator complete (without cuvette)	**410558**

Copper

Color comparison kit for the concentration range 0 - 2 mg/l Cu. Individual values: 0.1 - 0.25 - 0.5 - 1.0 - 1.5 - 2 mg/l, complete with reagent. **410562**

Analysis:	approx. 100	
Measuring time:	approx. 2 minutes	
Refill pack:	1 set of reagents for approx. 100 analyses	**410563**
	Spare color comparator complete (without cuvette)	**410564**

Nitrite

Color comparison set for the concentration range 0 - 1 mg/l NO_2-. Individual values: 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 mg/. By diluting the water sample 1:10, the measuring range can be extended to 10 times the concentrations, complete with reagent. **410690**

Analysis:	approx. 100	
Measuring time:	approx. 15 minutes	
Refill pack:	1 set of reagents for approx. 100 analyses	**410691**

Phosphatest® (ortho-Phosphat)

Color comparison set for the concentration range 0 - 10 mg/l P_2O_5. Individual values: 0.25 - 0.5 - 1 - 2.5 - 5- 10 mg/l. By diluting the water sample 1:10, the measuring range can be extended to 10-fold concentrations, complete with 3 reagents. **410592**

Analysis:	approx. 180	
Measuring time:	approx. 5 minutes	
Refill pack:	1 set of reagents for approx. 180 analyses	**410593**
	Spare color comparator complete (without cuvette)	**410594**

pH - Chlor DPD

Color comparison kit for monitoring pH and chlorine levels in swimming pools.
Individual values: pH: 6.8 - 7.4 - 8, chlorine: 0.1 - 0.5 - 1 mg/l (free and total), complete with a set of reagents. **410601**

Analysis:	approx. 70	
Measuring time:	approx. 3 minutes	
Refill pack:	1 set of reagents for approx. 70 analyses	**410602**

pH - value 5,5 - 8

Color comparison kit for the pH range 5.5 - 8. **410610**
Individual values: 5.5 - 6 - 6.5 - 7 - 7.5 - 8, complete with reagent.

Analysis:	approx. 250	
Measuring time:	approx. 1 minute	
Refill pack:	1 set of reagents for approx. 250 analyses	**410611**
	Spare color comparator complete (without cuvette)	**410612**

pH - value 8 - 12

Color comparison kit for the pH range 8 - 12. **410616**
Individual values: 8 - 8.5 - 9 - 10 - 11 - 12, complete with re-

Analysis:	approx. 250	
Measuring time:	approx. 1 minute	
Refill pack:	1 set of reagents for approx. 250 analyses	**410617**
	Spare color comparator complete (without cuvette)	**410618**

Silicate solved

Color comparison set for the concentration range 0 - 10 mg/l SiO_2. **410622**
Individual values: 0.25 - 0.5 - 1.0 - 2.5 - 5 - 10 mg/l, by diluting the water sample 1:10 the measuring range can be extended to 10-fold concentrations, complete with 4 reagents.

Analysis:	approx. 100	
Measuring time:	approx. 19 minutes	
Refill pack:	1 set of reagents for approx. 100 analyses	**410623**
	Spare color comparator complete (without cuvette)	**410624**

Sulfite

Color comparison kit for the concentration range 0 - 20 mg/l SO_3^{2-}. **410634**
Individual values: 0.5 - 1 - 2.5 - 5 - 10 - 20 mg/l, complete with 2 reagents.

Analysis:	approx. 150	
Measuring time:	approx. 3 minutes	
Refill pack:	1 set of reagents for approx. 150 analyses	**410635**
	Spare color comparator complete (without cuvette)	**410636**

Testoval® Accesories

Article description	Associated test set	Article number
Measuring tube 1 + 5 + 10 ml 	DUROGNOST / DUROVAL / TESTOVAL	51010
Connecting plug white	DUROVAL / KSS - Titration set	51013
Pipette 0 - 60 Polyamine 	Polyamine Test cultlery	51101
Pipette 0 - 30	DUROVAL Chloride / Sulfate	51109
Pipette 0 - 30 °dH 	DUROVAL A / AP / TI / TP / Water hardness DUO	51110
Pipette 0 - 2 °dH	DUROVAL B / BP / Water hardness DUO	51112
Pipette 0 - 20 °dH, 7 mmol/l 	DUROVAL C / CPM	51114
Pipette 0 - 60 °f	DUROVAL A (0 - 60 °f) / AF / TI (0 - 60 °f) / TF	51116
Replacement - cuvette normal 	all TESTOVAL cutlery (except chloride)	410001
Replacement - cuvette chloride	TESTOVAL Chloride	410529

Analysis sets

Standard analyzer cabinet H

Content:		
Titration set:	1 x Duroval A 1 x Duroval B 1 x Duroval C	410300
Testoval color comparison set:	1 x Hydrazine 1 x Phosphate 1 x ph - value 8 - 12	
Others:	1 x Seal spindle 1 x Measuring cylinder 100 ml 1 x Sampling vessel 500 ml 1 x Measuring cup 100 ml 1 x Funnel	

Standard analyzer cabinet S

Contents as standard analyzer cabinet H
diggering: 1 x Testoval sulfite **instead of** hydrazine

410305

Anaylsis cabinet Special design

Individual composition on request

410310

Analysis case boiler house

Content:		
Titration set:	1 x Duroval A 1 x Duroval B 1 x Duroval CPM	410320
Testoval color comparison set:	1 x Sulfite 1 x Phosphate	
Others:	1 x pH - Tester pHep + buffer solution pH 7,01 in a bag 1 x buffer solution pH 10,01 in a bag 1 x Conductivity tester DIST 4 1 x Conductivity solution 5000 µS/cm	

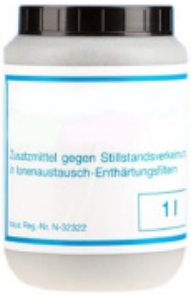
Analysis case Special version

Individual composition on request

410360

Silver resin

Special resin for protection against standstill germination in softening plants.



The disinfection effect of Silver resin is based on metallic silver, which has been firmly bonded to the beads of the exchanger resin in a special process. Metallic silver is practically insoluble in water. Odor and taste of the water are not affected.

Performance profile:

- acts against recontamination of the exchanger resin at low flow rates and during standstills
- no impairment of the disinfection effect by backwashing and salting
- during regeneration of the filter, therefore effective for a long time can also be retrofitted in existing plants
- no impairment of odor and taste of the water
- no need for expensive dosing devices for disinfection of the filter mass
- no premature regeneration of the softening plant with common salt
- necessary for disinfection, therefore environmentally friendly and economical
- maintenance-free.

Article description	
1 L Silver resin	510001
10 L Silver resin	510010
100 L Silver resin	510100

Note: This product is NOT approved for drinking water use! (except in Switzerland)

Conditions of sale

Applicable to business transactions with consumers, consumers, tradesmen, freelancers, legal entities under public law and special funds under public law.

1. General

1.1. All of our deliveries, services and offers are made exclusively based on these General Terms and Conditions of Delivery. They are an integral part of all contracts that we conclude with our contractual partners regarding the deliveries or services that we offer. They also apply to all future deliveries, services or offers to our customers, even if they are not separately agreed again.

1.2. Our Terms and Conditions of Sale apply exclusively. We acknowledge general terms and conditions of business of our customers that contradict or deviate from our Terms and Conditions of Sale only to the extent that we have expressly agreed to - at least in text form in accordance with § 126b of the German Civil Code (Bürgerliches Gesetzbuch, „BGB“). Our provision of services in knowledge of the general terms and conditions of business of our customer (for example, as the delivery of goods) does not signify any consent.

1.3. The sale, resale, and scheduling of deliveries and services and any related technology or documentation may be subject to German, EU, and US export control laws, and possibly export control laws of other countries. Any resale of goods to embargoed countries or to denied persons or to persons that use or may use the goods for military purposes, ABC weapons, or nuclear technology is subject to approval. With its order, the customer declares compliance with such laws and regulations, and that the deliveries and services are not supplied directly or indirectly to countries that prohibit or restrict the import of such goods. The customer declares that it has obtained all approvals necessary for export or import.

1.4. The presentation of the products in our online shops do not constitute legally binding offers, they are non-binding online catalogues.

2. Conclusion of and amendments to contracts, form

2.1. Any orders, transactions or delivery requests of our customer, along with any amendments or supplements, must be in text form acc. § 126b BGB.

2.2. Legally relevant declarations and notifications of the customer with regard to the contract (for example, the setting of a deadline, notification of defects, withdrawal or reduction) must be made in writing; i.e. in written or text form (for example, letter, e-mail, fax). This shall not affect formal statutory requirements and further evidence, in particular in cases of doubt as to the authority of the declarant.

2.3. Individual agreements made with the customer in individual cases (including ancillary agreements, supplements and amendments) shall, in any case, take precedence over these General Terms and Conditions of Sale. Subject to evidence to the contrary, a written contract or our written confirmation in text form (§ 126 b BGB) shall approve the content of such agreements.

2.4. The customer‘s ordering of goods shall be regarded as a binding contractual offer. Unless otherwise stated in the order, we shall be entitled to accept this contractual offer within two weeks after we received it. Acceptance can be declared either in writing (for example, through order confirmation) or through the delivery of the goods to the customer.

2.5. By clicking on the button „submit order“ in the online shop, you submit a binding offer of contract (§ 126b BGB). After receipt of your contract offer in our company, you will receive a message automatically generated by the online shop that we have received your order via the shop system (order confirmation).

This order confirmation does not constitute our legally binding acceptance of your contractual offer. After receipt of your online shop order in our company, the order data, the legally required information on distance contracts and the terms and conditions of sale will be sent to you by e-mail. We can accept your online shop contract offer within 2 weeks of receipt at our company. Acceptance by us can be confirmed to you as the purchaser either in writing (e.g. by order confirmation) or by delivery of the goods directly.

2.6. Information provided by the seller regarding the subject matter of the delivery or service (for example, weights, dimensions, utility values, load-bearing capacity, tolerances and technical data) and our representations of the same (for example, drawings and illustrations) are only approximately applicable, unless usability for the contractually intended purpose requires exact conformity. They do not comprise guaranteed characteristics, but descriptions or markings of the delivery or service. Deviations customary in the trade and deviations that occur due to legal regulations or that represent technical improvements, along with the replacement of components by equivalent parts, are permissible provided that they do not impair usability for the contractually intended purpose.

2.7. Should there be any typing, printing, graphic or calculation errors or other discrepancies in the online shop, we are entitled to withdraw from the contract at any time.

3. Prices

3.1. Our offers are non-binding unless otherwise expressly stated.

3.2. The prices set forth in our order confirmations shall be solely controlling. Additional services are invoiced separately.

3.3. All prices are net prices and exclude sales tax. which our customer must must also pay in its respective statutory amount. If the customer is a consumer, the net prices, as well as any freight and transport costs incurred, are exclusive of the applicable statutory value added tax.

3.4. Unless expressly agreed otherwise, our prices apply ex works, which is also the place of performance for the delivery and any subsequent performance. At the customer‘s request and expense, the goods shall be shipped to a different destination (sales shipment). Our customer must bear additional freight and/or transport costs, packaging costs exceeding those customary in the trade, public charges (including withholding tax) and customs duties.

4. Delivery

4.1. Deviations from our contracts and order confirmations are only permitted with our prior consent in text form acc. § 126b BGB.

4.2. Unless expressly agreed otherwise, we deliver ex works (INCOTERMS 2010: EXW). Risk shall pass to the customer upon leaving the supplier‘s factory or warehouse. Delivery shall be deemed to have taken place upon delivery within the meaning of the applicable Incoterms 2010 clause. Delivery periods shall only be deemed agreed after express confirmation in text form in accordance with § 126b BGB. Delivery periods shall commence on the date of our order confirmation, but not before all details of the order have been unambiguously clarified and any necessary certificates have been provided. They shall be deemed to have been complied with upon timely notification of readiness for dispatch if the goods cannot be dispatched on a timely basis without our culpability.

4.3. For periods and deadlines that are not expressly designated as fixed in the order confirmation, two weeks

after their expiration, our customer may set for us a reasonable period for the delivery / service. Only after the expiration of this grace period will we be in delay.

4.4. Without prejudice to our rights arising from the default of the customer, periods and deadlines shall be extended by the period of time in which the customer does not satisfy its obligations towards us. In the event of a breach of a duty on our part, we shall be liable for damages only in accordance with Section 9 of these terms and conditions.

4.5. We are entitled to engage in partial deliveries if they are reasonably acceptable for our customer.

4.6. Our customer shall be entitled to withdraw from the contract after two unsuccessful grace periods, unless the hindrance is merely temporary and the postponement of the delivery date is reasonably acceptable for our customer.

4.7. If our customer is entitled to a contractual or statutory right of withdrawal and we set a reasonable period for our customer for its exercise of such right, the right of withdrawal shall expire if the withdrawal is not declared prior to the expiration of such period.

4.8. If we do not adhere to the agreed deadlines, the statutory provisions shall apply. If we foresee difficulties regarding advance delivery, the adherence with delivery deadlines or similar circumstances, which could prevent us from making a timely delivery or a delivery in the agreed quality, we shall notify our customer without delay.

5. Force majeure

5.1. An event of force majeure, an operational disturbance for which we are not responsible, an event of unrest, administrative measures, and other unavoidable events shall release us from the obligation to make a timely delivery / provide timely service for the duration of the existence of such force majeure.

5.2. The provisions of Section 5.1 shall also apply in the event of a labor dispute.

6. Shipping and passage of risk

6.1. Unless otherwise expressly agreed, shipping and transport takes place at the risk of the customer. The risk shall pass to the customer as soon as the shipment has been delivered to the person performing the transport.

6.2. If the dispatch of the delivery is delayed for reasons for which our customer is responsible, the risk of accidental deterioration and accidental loss shall pass to our customer with the notification of the readiness for shipment. Upon such an event, our customer shall bear the storage costs after the passage of risk. Claims going beyond this shall remain unaffected.

6.3. If the goods cannot be delivered at the place of delivery specified by you and are returned to our company, additional freight costs for the return and new shipment will be incurred, which must be borne by the ordering party. We will charge an additional fee of €7.50 net plus VAT for the additional administrative costs incurred as a result.

6.4. If our customer is in default with its acceptance, we shall be entitled to demand compensation for any expenses that arise from this; upon the occurrence of acceptance default, the risk of accidental deterioration and accidental loss shall pass to our customer.

6.5. To the extent that an acceptance must take place, the purchased item shall be deemed to have been accepted, if

- delivery and, if we also owe installation, the installation has been completed,
- we have informed the customer of this concerning the notional acceptance in accordance with this number 6.4 and have requested him to accept,
- twelve working days have elapsed since delivery or installation, or the customer has begun to use the purchased item (for example, the delivered system has been put into operation) and in such a case six working days have elapsed since delivery or installation and the customer has refrained from acceptance within this period for reasons other than a defect, notified to the seller, that makes the use of the purchased item impossible or substantially impairs it

7. Payment terms

7.1. Payments shall be made in advance or on invoice. We reserve the right, without giving reasons, not to comply with the request for payment on invoice. Payments by invoice must be made within 7 days of the invoice date. The receipt of the payment on our bank account is decisive for the timeliness of the payment.

7.2. Our customer shall only be permitted to withhold payments that are due or engage in an offset with counterclaims if such counterclaims are undisputed or have been legally established.

7.3. If the event of a payment default or a cessation of payments by our customer, all of our claims shall be immediately due. In all of such specified cases, we shall also be entitled to make any outstanding deliveries only against advance payment or the provision of security, and, if the advance payment or provision of security is not made within two weeks, withdraw from the contract without setting a new deadline. Claims going beyond this shall remain unaffected.

8. Retention of title

8.1. All delivered goods shall remain our property (goods subject to retention of title) up to the fulfillment of all claims, regardless of the legal grounds, arising from the legal relationship underlying the delivery.

8.2. Upon the processing, combining and mixing of the goods subject to retention of title with other goods by the customer, we shall be entitled to co-ownership in the new products in the proportion of the invoice value of the goods subject to retention of title to the value of the other goods involved. If our ownership is extinguished through processing, combining, or mixing, the customer herein assigns to us the ownership rights to which it is entitled in the new items or products to the extent of the value of the goods subject to retention of title, and shall hold them in custody on our behalf at no charge. The co-ownership rights that arise from this shall be deemed to be goods subject to retention of title within the meaning of Section 8.1.

8.3. Our customer is entitled to further process the goods subject to retention of title, combine or mix them with other products or resell them only in the ordinary course of business and as long as it is not in delay. Any other disposal of the goods subject to retention of title is not permitted. We must be notified without delay of any attachments or any other access to the goods subject to retention of title undertaken by any third party. All intervention costs shall be borne by our customer, to the extent that they cannot be recovered from the third party. If our customer grants its buyer additional time for the payment of the purchase price, in respect of such party, it must reserve ownership in the goods subject to retention of title at the same terms under which we have reserved ownership upon the delivery of the goods subject to retention of title. Otherwise, our customer shall not be authorized to resell the goods subject to retention of title.

8.4. Any claims of our customer arising from the resale of the goods subject to retention of title are hereby assigned to us. They serve as security to the same extent as the goods subject to retention of title. Our customer shall only be entitled and authorized to resell the goods subject to retention of title if it is certain that the claims to which it is entitled from them will be transferred to us.

8.5. If the goods subject to retention of title are sold by our customer, together with other goods that we have not delivered, at one overall price, the assignment of the claim arising from the sale shall take place in the amount of the invoice value of our goods subject to retention of title that are sold.

8.6. If the assigned claim is included in a current account, our customer hereby assigns to us that part of the balance that is equivalent to the amount of such claim, including the final balance arising from the current account.

8.7. Until our revocation, our customer is authorized to collect the claims assigned to us. We shall be entitled to a revocation if our customer does not properly comply with the payment obligations arising under the business relationship with us. If the conditions for the exercise of the right of revocation are present, our customer must, at our request, promptly disclose to us the assigned claims and their obligors, provide all information necessary for the collection of the claims, deliver to us the associated documents and notify the obligors of the assignment. We shall also be entitled to notify the obligors of the assignment.

8.8. If the value of the items of collateral existing for us exceeds, as a whole, the secured claims by more than fifty (50) percent, at the request of our customer, we shall be obligated to release items of collateral at our discretion.

8.9. If we assert the retention of title, this shall only apply as a withdrawal from the contract if we expressly state this. The right of our customer to possess the goods subject to retention of title shall lapse if it does not fulfill its obligations arising under this contract.

9. Claims for defects and resources

9.1. The customer‘s rights in the event of material defects and defects of title (including incorrect and shortfall deliveries along with improper assembly or defective assembly instructions) shall be governed by the statutory provisions unless otherwise specified below. In all cases, this shall not affect the special statutory provisions in the case of final delivery of unprocessed goods to a consumer, even if the consumer has further processed them (supplier recourse pursuant to § 478 et seq. BGB). Claims arising from supplier recourse shall be barred if the defective goods have been further processed by the customer or another company, for example through installation in another product.

9.2. The basis of our liability for defects is, above all, the agreement reached regarding the condition of the goods. If the condition has not been agreed, whether or not a defect exists is to be assessed according to the statutory provision (§ 434 (1)(2) and (3) BGB). However, we do not accept any liability for public statements made by the manufacturer or other third parties (for example, advertising statements) that the customer has not pointed out to us as decisive for its purchase.

9.3. The customer‘s claims based on defects presuppose that it has fulfilled its statutory duties to inspect and give notice of defects (§ 377, 381 et seq. of the German Commercial Code (Handelsgesetzbuch)). In the case of building materials and other goods intended for installation or other further processing, an inspection must always be carried out immediately before processing. If a defect becomes apparent upon delivery, inspection or at any later point in time, we must be notified of it in writing without delay. In any case, obvious defects must be reported in writing within five working days of delivery, and defects not recognisable during inspection must be reported within the same period from their discovery. If the customer fails to engage in proper inspection and/or to give notice of defects, our liability for any defect not reported or

not reported promptly or not properly shall be barred in accordance with the statutory provisions.

9.4. If the delivered item is defective, we can initially choose whether we shall provide subsequent performance by remedying the defect (subsequent improvement) or by delivering a defect-free item (replacement delivery). This shall not affect our right to refuse subsequent performance under the statutory conditions.

9.5. We shall be entitled to make the subsequent performance that is owed dependent on the customer paying the purchase price that is due. However, the customer shall be entitled to retain a reasonable part of the purchase price in proportion to the defect.

9.6. The customer must give us the time and opportunity required for the subsequent performance that is owed; in particular, it must hand over the goods subject to inspection for inspection purposes. In the event of a replacement delivery, the customer shall return the defective item to us in accordance with the statutory provisions. Subsequent performance does not include the removal of the defective item or its reinstallation if we were not originally obligated to install it.

9.7. If a defect actually exists, we shall bear or provide reimbursement for the expenses necessary for inspection and subsequent performance, in particular transport, travel, labour and material costs along with any dismantling and installation costs, in accordance with the statutory provisions. Otherwise, we may demand that the customer reimburse us for the costs incurred as a result of the unjustified request to remedy the defect (in particular, testing and transport costs).

9.8. If the subsequent performance has failed, or a reasonable period to be set by the customer for the subsequent performance has expired unsuccessfully or is unnecessary according to the statutory provisions, the customer may withdraw from the purchase contract or reduce the purchase price. However, in the case of an insignificant defect, there shall be no right of withdrawal.

9.9. Claims of the customer for compensation or the reimbursement of futile expenses shall only exist in accordance with number 11, even in the case of defects, and otherwise shall be barred.

9.10. If our operating or maintenance instructions are not followed, changes to the deliveries or services are undertaken, parts are replaced or consumable materials that do not meet the original specifications are used, any warranty shall be rendered inapplicable, unless our customer can prove that the defect is not based on any of such actions.

9.11. The period of limitations for claims for defects shall be 12 months. This does not apply to claims for damages of our customer based on compensation for damages to body or health caused by a defect for which we are responsible, or based on intentional, or grossly negligent culpability.

10. Product liability

10.1. Prior to any recall action that is due, in whole or in part, to a defect in the contractual object that we have delivered, we shall inform our customer in order to give it the possibility of cooperating with us in carrying out the exchange in a sufficient manner, unless our notification or participation is not possible because of the particular urgency. To the extent that a recall action is due to a defect in the contractual object that we have delivered, we shall bear the necessary costs of the recall action.

11. Compensation of damages

11.1. Our liability for damages, for whatever legal grounds, in particular, impossibility, delay, defective or incorrect delivery, breach of contract, breach of duties in contract negotiations or tortious action shall be limited in accordance with this number 11 to the extent that this depends on culpability.

11.2. We shall be liable for the compensation of damages – regardless of the legal grounds – within the scope of faultbased liability in cases of intent and gross negligence. In the event of ordinary negligence, we shall be liable, subject to statutory limitations of liability (for example, diligence in our matters; insignificant breach of duty), only

a for damages arising from any injury to life, body or health,
b for damages arising from the breach of an essential contractual duty (obligation, the fulfilment of which is essential for the proper performance of the contract and the observance on which the contractual partner regularly relies and may rely); upon such an event, however, our liability shall be limited to compensation for foreseeable damages that typically occurs.

11.3. The liability limitations arising from 11.2 shall also apply to breaches of duty by or for the benefit of persons for whose culpability we are responsible in accordance with statutory provisions. They shall not apply if we have wilfully concealed a defect or assumed a guarantee for the condition of the goods and claims of the purchaser under the Product Liability Act (Produkthaftungsgesetz).

11.4. For any breach of duty that does not consist of a defect, the purchaser may withdraw from the contract or terminate the contract only if we are responsible for the breach of duty. An unrestricted right of termination on the part of the purchaser (in particular in accordance with § 650, 648 et seq. BGB) is barred. In all other respects, statutory requirements and legal consequences shall apply

12. Period of Limitations

12.1. Notwithstanding § 438 (1)(3) BGB, the general period of limitations for claims arising from material defects and defects of title shall be one year from delivery. If acceptance has been agreed, the period of limitations shall commence upon acceptance.

12.2. To the extent that we carry out installation, repair or maintenance work on behalf of the customer, the general period of limitations for claims arising from faulty contractor services shall be six months from the acceptance of the repair work, notwithstanding § 634 a (1) (1), (3) BGB.

12.3. The preceding limitation periods of the purchase right also apply to contractual and non-contractual claims for damages on the part of the purchaser, which are based on a defect of the goods, unless the application of the regular statutory period of limitations (§ 195, § 199 BGB) would lead in individual cases to a shorter period of limitations.

12.4. Claims for the compensation of damages of the purchaser according to § 11.2 for intentional conduct, gross negligence, injury to life, body or health or according to the Product Liability Act (Produkthaftungsgesetz) shall be time-barred exclusively according to the statutory period of limitations.

13. Rights of withdrawal and termination

13.1. Beyond the statutory rights of withdrawal, we shall also be entitled to withdraw from or terminate the contract with immediate effect if

- our customer becomes unable to pay or over-indebted or
- our customer has discontinued its payment.

13.2. We shall also be entitled to withdraw from or terminate the contract if our customer requests the opening of insolvency proceedings over its assets or comparable proceedings for the settlement of debts.

13.3. If, based on the preceding contractual rights of withdrawal or termination, we withdraw from or terminate the contract, the customer must provide compensation to us for any damages that arise from this, unless it is not responsible for the emergence of rights of withdrawal or termination.

13.4. Statutory rights and claims are not limited by the provisions contained in this Section 11.

14. Consumer right of cancellation

14.1. Consumers have the right to cancel the concluded contract within fourteen days without giving reasons. The cancellation period is fourteen days from the day on which you or a third party named by you, who is not the carrier, has taken possession of the last goods.

In order to exercise your right of withdrawal, you must inform us (Gebrüder Heyl Vertriebsgesellschaft mbH, Max-Planck-Str. 16, 31135 Hildesheim, Germany, vertrieb@heylneomeris.de, Fax: +49 (0) 51217609-44) by means of a clear declaration (e.g. a letter sent by post, fax or e-mail) of your decision to withdraw from this contract. You can use the enclosed model withdrawal form for this purpose, but this is not mandatory.

In order to comply with the withdrawal period, it is sufficient that you send the notification of the exercise of the right of withdrawal before the expiry of the withdrawal period.

14.2. Consequences of cancellation

For consumers who cancel the concluded contract, we must refund all payments received, including delivery costs, without delay and at the latest within fourteen days of the day on which we received notification of your cancellation of the concluded contract (with the exception of the additional costs resulting from the fact that you have chosen a type of delivery other than the cheapest standard delivery offered by us). For this repayment, we will use the same means of payment that you used for the original transaction, unless we have expressly confirmed otherwise. In no case will there be any costs due to the repayment. This repayment will only take place after receipt of the goods demonstrably delivered to us; the customer must provide proof of this.
You must return or hand over the goods to us without delay and in any case no later than fourteen days from the day on which you notify us of the cancellation of the concluded contract. The deadline is met if you send the goods before the expiry of the period of fourteen days. You shall bear the direct costs of returning the goods.
In the case of goods which, due to their nature, cannot be returned by standard parcel (bulky goods/freight forwarding goods), the customer must bear the costs, which amount to 99 euros for such goods.
You only have to pay for any loss in value of the goods if this loss in value is due to handling of the goods that is not necessary for checking the condition, properties and functioning of the goods.

The right of withdrawal does not apply to the following contracts:

Contracts for the delivery of goods that can spoil quickly or whose expiry date would be quickly exceeded.
Contracts for the delivery of sealed goods which are not suitable for return for reasons of health protection or hygiene if their seal has been removed after delivery.
Contracts for the delivery of goods if these have been inseparably mixed with other goods after delivery due to their nature.
There is no right of withdrawal for contracts with companies, commercial buyers, freelancers, authorities, municipal institutions, associations, public institutions and trade.

Note: On the last page you will find a sample revocation form.

15. Environmental protection and disposal

Gebrüder Heyl Vertriebsgesellschaft mbH is obliged to comply with the law on the sale, return and environmentally friendly disposal of batteries and accumulators (Battery Act - BattG). We are obliged to take back batteries and accumulators purchased from us free of charge.

Batteries or accumulators that contain harmful substances are marked with the symbol of a crossed-out waste bin. 

Near the dustbin symbol is the chemical name of the pollutant.

Pb: Battery contains lead
Cd: Battery contains cadmium
Hg: Battery contains mercury

Batteries and rechargeable batteries must not be disposed of in household waste. You can return used batteries and rechargeable batteries to us or dispose of them at the collection points set up for this purpose. In case of return to Gebrüder Heyl Vertriebsgesellschaft mbH, the shipment must be sufficiently stamped.

16. Environmental protection and disposal

16.1. All of the business or technical information that we have made available (including features that can be inferred from objects, documents or software that have been delivered, and any other knowledge or experience), as long as and to the extent that they are not verifiably known to the public, must be kept secret from third parties, and, within the customer‘s own operations, may be made available only to those persons who necessarily must be involved for their use for the purpose of the delivery and are likewise bound to confidentiality; they remain our exclusive property. Without our prior written consent, such information may not be reproduced or used commercially. At our request, all of the information originating from us (including copies or records, if applicable) and any objects provided on loan must be fully returned to us or destroyed without delay.

16.2. We reserve all rights to such information (including copyrights and the right to register industrial property rights, such as patents, utility models, semiconductor protection, etc.). To the extent, such information has been provided by third parties, such reservation of rights shall also apply for the benefit of such third parties.

17. Environmental protection and disposal

17.1. All recognisable brands / trademarks are for illustration purposes only. The brands shown are protected by copyright of the respective owner. All mentioned or otherwise recognisable trademarks, registered trademarks or service marks are the property of their respective owners. All data, information and material on this website, images, illustrations, audio and video clips are protected by copyrights, trademarks and other intellectual property rights held or controlled by Gebrüder Heyl Vertriebsgesellschaft mbH or other parties and for which Gebrüder Heyl Vertriebsgesellschaft mbH has been granted permission.

18. Consumer arbitration board

The European Commission provides a platform for online dispute resolution (ODR), which you can find here: ***http://ec.europa.eu/consumers/odr/***

We are willing to participate in an out-of-court arbitration procedure before a consumer arbitration board.

19. General provisions

19.1. If any provision of these terms and conditions and the additional agreements that have been made are invalid or unenforceable, this shall not affect the validity of the remaining provisions. The contracting parties shall be obligated to replace the invalid provision with a provision that comes as close as possible to it in its economic effect.

19.2. The laws of the Federal Republic of Germany, to the exclusion of uniform international law, in particular U.N. sales law, shall apply to these terms and conditions and all legal relationships between our customer and us. In the case of consumers, this choice of law shall only apply to the extent that the protection granted by mandatory provisions of the law of the state of the consumer‘s habitual residence is not withdrawn as a result (favourability principle).

19.3. Legal venue for all disputes that directly or indirectly arise from contractual relationships based on these terms and conditions of purchase shall be Hildesheim.

Sample cancellation form for end consumers

(If you want to cancel the contract, please fill out and return this form).

To Gebrüder Heyl Vertriebsgesellschaft mbH, Max-Planck-Straße 16, 31135 Hildesheim, Germany, vertrieb@heylneomeris.de, Fax: +49 (0) 5121 7690-44.

I / we (*) hereby revoke the contract concluded by me / us (*) for the purchase of the following goods / the provision of the following service (*).

- Ordered / Received (*) on: _____
- Name of the consumer(s): _____
- Address of the consumer(s): _____
  _____

Signature of the consumer(s): _____

Date: _____

(*) delete incorrect.

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