

## Operating Instructions Thermo Scientific Barnstead GenPure Water Purification System

- [ ] Art. No.: 50131211 (Standard) [ ] Art. No.: 50131235 (UF)  
[ ] Art. No.: 50131217 (UV/UF) [ ] Art. No.: 50131243 (UV)  
[ ] Art. No.: 50131229 (UV-TOC) [ ] Art. No.: 50131256 (UV-TOC/UF)



Serial number: \_\_\_\_\_

**Read these operating instructions carefully before installing and starting the system!**

50131265 State: 11.12 Information given is not binding. Rights reserved for technical changes.

## EC-Declaration of Conformity

in accordance with the EEC machine directive 2006/42/EC, appendix II A

We hereby certify that the following described machine in its conception and form put by us into circulation is in accordance with all the relevant essential health and safety requirements of the EC machinery directive 2006/42/EC as amended and the national laws and regulations adopting this directive.

This declaration is no longer valid if the machine is modified without our consent.

**Manufacturer:** Thermo Electron LED GmbH  
Stockland 3  
D-56412 Niederelbert

### Description of the machine:

function: Ultrapure water system

type: GenPure, GenPure UV, GenPure UV/UF, GenPure UF,  
GenPure UV-TOC, GenPure UV-TOC/UF

article number: 50131211, 50131217, 50131229, 50131235, 50131243, 50131256

### The agreement with further valid guidelines/regulations following for the product is explained:

EMC Directive (2004/108/EC)

### Reference to the harmonised standards:

DIN EN ISO 12100-1 Safety of machinery, Part 1: Basic terminology  
DIN EN ISO 12100-2 Safety of machinery, Part 2: Technical principles  
DIN EN ISO 14121-1 Safety of machinery, Part 1: Risk assessment  
DIN EN 61326-1

### Authorized person for the technical documentation:

Detlef Opp  
Stockland3  
D-56412 Niederelbert

Niederelbert, 1. April 2010

Detlef Opp, Head of Technical documentation

  
\_\_\_\_\_  
Signature

## **Preface**

Dear Sir or Madam

Thank you for the confidence you have placed in us by deciding to purchase a GenPure ultrapure water system.

You have selected a high quality product designed to give long and reliable service.

Before you start to install and commission your GenPure system, please carefully read through the information given in this operating instructions manual on installation and operation.

This is important as we, the manufacturer of the system, cannot be held liable for any damage occurring as a result of incorrect operation of it, or use of it for other than the intended purpose.

Niederelbert, 1st September 2004

## 1. Contents

Preface.....	3
1. Contents.....	4
2. Explanatory notes on the operating instructions .....	6
3. Transport and packaging .....	7
3.1 Examination on receipt.....	7
3.2 Complaints .....	7
3.3 Packing for return .....	7
4. Safety precautions .....	8
5. Intended purpose .....	10
5.1 Application areas.....	10
6. Parts standardly supplied.....	11
7. Technical specifications .....	14
8. Description of how the systems function.....	16
8.1 Flow chart for GenPure Standard.....	17
8.2 Flow chart for GenPure UV .....	18
8.3 Flow chart for GenPure UF .....	19
8.4 Flow chart for GenPure UV/UF .....	20
8.5 Flow chart for GenPure UV-TOC .....	21
8.6 Flow chart for GenPure UV-TOC/UF.....	22
9. Installation.....	23
9.1 The installation area .....	23
9.2 Installing the system.....	24
9.3 Mounting the power pack (voltage supply).....	25
9.4 Installation examples.....	26
9.5 Mounting example GenPure with Ion exchanger DI 1500 (option).....	28
9.6 Wall mounting.....	29
10. Putting the system into operation.....	30
11. The control panel .....	31
12. The system control.....	32
12.1 The User-menu .....	33
12.1.1 Feedwater conductivity: .....	33
12.1.2. Ultrapure water limiting value: .....	33
12.1.3. UV-Lamp operating time and intensity:.....	34
12.1.4. Filter cartridge operating hours counter:.....	34
12.1.5. Rinsing procedure.....	34
12.1.6. Disinfection procedure .....	35

12.1.7	Fault storage display: .....	36
12.1.8	Print-out.....	37
12.1.9	Unlocking the system .....	37
12.2	The OEM-Menu: .....	39
12.2.1	Set the limiting value for temperature: .....	39
12.2.2	Set the rinsing time: .....	40
12.2.3	Change the disinfection time:.....	40
12.2.4	Set the pump interval time: .....	40
12.2.5	Set the rinse interval time:.....	41
12.2.6	Adjust the real time clock: .....	41
12.2.6	Set the sending interval:.....	41
12.2.7	Select the language: .....	42
12.2.8	Switch units, conductivity/resistance:.....	42
12.2.9	Switch temperature compensation on/off:.....	42
12.3	Using volume control for water dispensing .....	43
12.4	Printer output .....	43
12.4.1	Standard message .....	43
12.4.2	Code message .....	44
12.4.3	Error message.....	44
13.	Maintenance.....	45
13.1	Maintenance intervals.....	46
13.2	Change the Filter cartridge .....	47
13.3	Disinfection procedure .....	48
14.	Waste disposal .....	50
15.	Trouble shouting.....	51
16.	Replacement parts and consumables .....	54
17.	Accessories .....	55
18.	Terminal assignment .....	57
19.	Maintenance record.....	59

## 2. Explanatory notes on the operating instructions



EU Mark of Conformity



CSA - admission



**Important operating and/or maintenance instructions! Read the operating instructions with due care.**

**Risk of electric shock! Electrical work on the system is only to be carried out by qualified personnel.**



**General information! Particularly important notes are marked with this information sign.**



**Protective conductor connection**

**Connect the power supply to an electrical socket with a protective connection.**

The information provided in these operating instructions is only valid for the system which has the serial number which is to be entered on the front page.



**Please enter the serial number\* of your GenPure system in the space provided on the front page.**

\* Read the serial number of your ultra pure water system from the type plate.

For quick and correct service, please include the following information on all inquiries and replacement parts orders which relate to your system:

- The serial number
- The article number

### 3. Transport and packaging

Ultrapure water systems are carefully controlled and packed, but despite this damage could occur during transport.

#### 3.1 Examination on receipt

- Check complete delivery by comparing the parts supplied with those listed in the delivery note.



#### Is the packaging visibly damaged?

- Inspect the equipment supplied for damage.

#### 3.2 Complaints

Should damage have occurred during transport:

- Immediately\* contact the postal, railway, shipping or air freight agent.
- Save the complete packaging (outer carton and packaging materials) for possible inspection or return delivery.

#### 3.3 Packing for return

Whenever possible, use the original carton and packaging material.

Should these no longer be available, or be unfit for use:

- Pack the equipment in suitable sheets or bags in a strong cardboard box so that all parts are protected against shock.



- \* **The time limit for claims is 6 days after the date of delivery.  
All rights to claim for damages cease when this time limit has elapsed.**

## 4. Safety precautions



**For your own safety, please observe the above safety precautions!**

- Your GenPure system is an advanced system that has been designed exclusively for the production of ultrapure water from potable water that has been pretreated by reverse osmosis, ion exchange or distillation.
- Do not start to install or operate the system until you have heeded the corresponding information contained in these Operating Instructions.
- Lifting and carrying the ultra pure water system, e.g. to the installation location, should be carried out by two people. To lift it, each takes hold of it under the base plate at two corners.
- Do not make changes to the system. Please note that the manufacturer's liability does not cover damages resulting from improper operation or from use other than for the intended purpose.
- The CE-mark is invalidated when constructional changes are made to the system or foreign products are installed in it.
- Protect the system from frost. The temperature at the installation area must not go below +2°C.
- Follow all general regulations and requirements that must be observed at the installation location, including the valid accident prevention regulations.
- A feedwater pressure of min. 0.1 bar and max. 6 bar is required. Install an additional pressure reducer should the feedwater pressure be higher.
- DIN EN 1717 requires that water purification systems be equipped with a safety device that protects the drinking water system from contamination.
- A grounded 100-240V, 50/60Hz socket must be available.
- A floor drain with at least DN 50 pipe (38.5 mm internal diameter) must be available at the installation area.
- When the system is to be wall-mounted, check the statics of the wall for sufficient load-bearing capacity (see Technical Data for the weight of your system). The ultrapure water system only be mounted on a concrete wall or a solid masonry.
- Positioning the system so that operation of the power separation unit is not made difficult.
- The maximum operating temperature is +40°C.



- When the system will be at a standstill for a longer period (e.g. long holidays), proceed as follows:
  - **Switch the system off.**
  - **Close the supply of feedwater to the ultrapure water system.**Damage to the pump will occur should the supply of feedwater be turned off with the system still on. The manufacturer does not accept liability should such damage occur.
- When planning the installation of the system, ensure that there will be sufficient working room for convenient operation of the system and for maintenance such as changing the Filter cartridge and opening, breaking and checking connections.
- The guarantee is valid for a period of 12 months.
- Never look directly at a switched-on UV-lamp, because UV light endangers eyesight!  
Never switch the UV-lamp on when it has been taken out of the metal cylinder!  
Only authorized personnel are to carry out UV-lamp replacement.

## 5. Intended purpose

Increasingly sophisticated technologies, continually lower detection limits in laboratory analysis, and the requirement for biologically-pure water in research correspondingly require the water used to be of ever higher quality. The novel GenPure line of water purification systems has been developed to produce such ultrapure water, as well as to fill the needs for user-friendly systems and complete solutions

GenPure ultrapure water systems produce salt-free, organically-pure particle-free and sterile filtered ultrapure water.

To make full use of the long and economical service life of the high-quality purification media, the feedwater for GenPure systems must be pretreated by an appropriate purification step (reverse osmosis, ion exchange or distillation).

### 5.1 Application areas

#### - Analytical methods:

- HPLC (High Performance Liquid Chromatography)
- IC (Ion Chromatography)
- ICP (Inductive Coupled Argon Plasma )
- AAS (Atomic Absorptions Spectrophotometry)
- TOC-measurements (Total Organic Carbon)
- DNA research
- etc.

#### - Preparation of reagents and solutions:

- Cell culture media
- Tissue culture media
- Make-up water for reagents for online analyzers

#### - Ultraclean washing and rinsing processes in laboratories

## 6. Parts standardly supplied

The following GenPure versions are available:

GenPure Standard	(Standard system)
GenPure UF	(Standard system + Ultrafiltration module)
GenPure UV	(Standard system + UV-photooxidation)
GenPure UV/UF	(Standard system + UV-photooxidation + Ultrafiltration module)
GenPure UV-TOC	(Standard system + UV-photooxidation with TOC-measurement)
GenPure UV-TOC/UF	(Standard system + UV-photooxidation with TOC-measurement + Ultrafiltration module)

(Please check that the version you have received corresponds to that stated on the delivery note.)

**Art.-No. 50131211** consists of:

**GenPure Standard** basic unit

Material for wall-mounting	
Connecting hose, 1.5 m, straight/angle	(Article-No. 18.0042)
Sterile filter capsule, 0.2 µm	(Article-No. 09.1003)
Filter cartridge for ultrapure water systems	(Article-No. 09.2005)
PE hose, 8 mm OD, 2 m	(Article-No. 18.0036)
Operating Instructions manual	(Article-No.50131265)
Connecting cord (rubber connector to nema plug connector)	(Article-No. 50132200)
Connecting cord (rubber connector to british ST plug connector)	(Article-No. 50132203)
Connecting cord (rubber connector to euro plug connector)	(Article-No. 50132215)
Tabletop power pack	(Article-No. 50134196)
Universal adapter	(Article-No. 21.1006)
Universal holder	(Article-No. 21.1007)

**Art.-No. 50131235** consists of:

**GenPure UF** basic unit

Material for wall-mounting	
Connecting hose, 1.5 m, straight/angle	(Article-No. 18.0042)
Sterile filter capsule, 0.2 µm	(Article-No. 09.1003)
Filter cartridge for ultrapure water systems	(Article-No. 09.2005)
PE hose, 8 mm OD, 2 m	(Article-No. 18.0036)
Operating Instructions manual	(Article-No. 50131265)
Connecting cord (rubber connector to nema plug connector)	(Article-No. 50132200)
Connecting cord (rubber connector to british ST plug connector)	(Article-No. 50132203)
Connecting cord (rubber connector to euro plug connector)	(Article-No. 50132215)
Tabletop power pack	(Article-No. 50134196)
Universal adapter	(Article-No. 21.1006)
Universal holder	(Article-No. 21.1007)

**Art.-No. 50131243** consists of:

**GenPure UV** basic unit

Material for wall-mounting	
Connecting hose, 1.5 m, straight/angle	(Article-No. 18.0042)
Sterile filter capsule, 0.2 µm	(Article-No. 09.1003)
Filter cartridge for ultrapure water systems	(Article-No. 09.2005)
PE hose, 8 mm OD, 2 m	(Article-No. 18.0036)
Operating Instructions manual	(Article-No. 50131265)
Connecting cord (rubber connector to nema plug connector)	(Article-No. 50132200)
Connecting cord (rubber connector to british ST plug connector)	(Article-No. 50132203)
Connecting cord (rubber connector to euro plug connector)	(Article-No. 50132215)
Tabletop power pack	(Article-No. 50134196)
Universal adapter	(Article-No. 21.1006)
Universal holder	(Article-No. 21.1007)

**Art.-No. 50131217** consists of:

**GenPure UV/UF** basic unit

Material for wall-mounting	
Connecting hose, 1.5 m, straight/angle	(Article-No. 18.0042)
Sterile filter capsule, 0.2 µm	(Article-No. 09.1003)
Filter cartridge for ultrapure water systems	(Article-No. 09.2005)
PE hose, 8 mm OD, 2 m	(Article-No. 18.0036)
Operating Instructions manual	(Article-No. 50131265)
Connecting cord (rubber connector to nema plug connector)	(Article-No. 50132200)
Connecting cord (rubber connector to british ST plug connector)	(Article-No. 50132203)
Connecting cord (rubber connector to euro plug connector)	(Article-No. 50132215)
Tabletop power pack	(Article-No. 50134196)
Universal adapter	(Article-No. 21.1006)
Universal holder	(Article-No. 21.1007)

**Art.-No. 50131229** consists of:

**GenPure UV-TOC** basic unit

Material for wall-mounting	
Connecting hose, 1.5 m, straight/angle	(Article-No. 18.0042)
Sterile filter capsule, 0.2 µm	(Article-No. 09.1003)
Filter cartridge for ultrapure water systems	(Article-No. 09.2005)
PE hose, 8 mm OD, 2 m	(Article-No. 18.0036)
Operating Instructions manual	(Article-No. 50131265)
Connecting cord (rubber connector to nema plug connector)	(Article-No. 50132200)
Connecting cord (rubber connector to british ST plug connector)	(Article-No. 50132203)
Connecting cord (rubber connector to euro plug connector)	(Article-No. 50132215)
Tabletop power pack	(Article-No. 50134196)
Universal adapter	(Article-No. 21.1006)
Universal holder	(Article-No. 21.1007)

**Art.-No. 50131256 consists of:****GenPure UV-TOC/UF basic unit**

Material for wall-mounting

Connecting hose, 1.5 m, straight/angle

(Article-No. 18.0042)

Sterile filter capsule, 0.2 µm

(Article-No. 09.1003)

Filter cartridge for ultrapure water systems

(Article-No. 09.2005)

PE hose, 8 mm OD, 2 m

(Article-No. 18.0036)

Operating Instructions manual

(Article-No. 50131265)

Connecting cord (rubber connector to nema plug connector)

(Article-No. 50132200)

Connecting cord (rubber connector to british ST plug connector)

(Article-No. 50132203)

Connecting cord (rubber connector to euro plug connector)

(Article-No. 50132215)

Tabletop power pack

(Article-No. 50134196)

Universal adapter

(Article-No. 21.1006)

Universal holder

(Article-No. 21.1007)

## 7. Technical specifications

Required quality of the feedwater	
Source and treatment	Potable water that has been pretreated by reverse osmosis, ion exchange or distillation.
Colloid index (SDI)	max. 1 for all versions. Additional upstream 1 µm membrane filtration is recommended for feedwater that has not been pretreated by reverse osmosis.
Feedwater resistance	> 0.5 MΩxcm
Free chlorine	max. 0.05 ppm
TOC	max. 50 ppb
Bacteria	< 100 CFU/ml
Turbidity	< 1.0 NTU
Carbon dioxide (CO <sub>2</sub> )	max. 30 ppm
Silicate	max. 2 ppm
Particles	Filtration to 0.2 µm is recommended to protect internal media and filters from fine particles.
Temperature	2 - 35 °C
Pressure	0.1 - 6 bar

Product water quality							
		Standard	UV	UF	UV/UF	UV-TOC	UV-TOC/UF
Resistance (Reference temperature 25°C)	MΩxcm at 25°C	18.2	18.2	18.2	18.2	18.2	18.2
TOC	ppb	5 - 10	1 - 5	5 - 10	1 - 5	1 - 5	1 - 5
Bacteria	CFU/ml	< 1	< 1	< 1	< 1	< 1	< 1
Bacterial Endotoxines	EU/ml	--	--	< 0.001*	< 0.001*	--	< 0.001*
Particles	> 0.2 µm	< 1/ml	< 1/ml	< 1/ml	< 1/ml	< 1/ml	< 1/ml
Flow rate	L/min**	up to 2	up to 2	up to 1.7	up to 1.7	up to 2	up to 1.7
Flow rate with volume control	L/min	1.2	1.2	1.2	1.2	1.2	1.2

\* Depending on feedwater and appropriate disinfection

\*\* Depending on feedwater pressure

Dimensions and weight	
Height	615 mm
Width	372 mm
Depth	330 mm
Weight:	
GenPure Standard	22 kg
GenPure UF	23 kg
GenPure UV	24 kg
GenPure UV/UF	24 kg
GenPure UV-TOC	24 kg
GenPure UV-TOC/UF	25 kg

Cell constants of the measuring cells	
Feedwater conductivity	0.16 cm <sup>-1</sup>
Conductivity after UV-oxidation	0.01 cm <sup>-1</sup>
Ultrapure water conductivity	0.01 cm <sup>-1</sup>

Connectors for water	
Feedwater	R 3/4"
Rinse water	8 mm OD hose
Ultrapure water	R 1/4"
Sterile filter outlet	8 - 10 mm OD hose

Electrical connections / external switched mode power supply	
Input voltage	AC 100 – 240 V, 50 – 60 Hz, 5 – 3.8 A
Output voltage	DC 24 V, 3.8 A
System connection	DC 24 V, 80 W
Serial interface	RS 232
Protection Class	Class II (external SMPS certified as Class I)

Airborne sound emission	
Sound-pressure level	49 db(A)

Ambient conditions (DIN EN 61010-1 (VDE 0411-1):2011-02)	
Usage	Indoor rooms
Height	Up to 2000 m
Temperature range	From 5° C to 40° C
Relative humidity	Maximum relative humidity 80 % at temperatures of up to 31° C, linearly decreasing to 50 % relative humidity at 40° C
Line-voltage variation	Not more than $\pm 10$ % of the line voltage
Transient overvoltages	As usually occur in the supply network (overvoltage category II acc. to IEC 60364-4-443). <u>Note:</u> The rated level of transient overvoltage is the withstand impulse voltage acc. to overvoltage category II of IEC 60364-4-443
Ventilation requirements	There are no special requirements with regard to ventilation.
Degree of pollution	2

Materials of parts that contact water	
Pressure reducer	NBR
Pump head	Nylon with glass fibre
UV-Lamp	Ultrapure quartz
UV-Housing	Stainless steel
Ion exchanger	PP
UF-Housing	Polycarbonate
Rinsing solenoid valve	PA
Dispensing valve	PVDF
Conductivity measuring cell	POM, stainless steel
Distributor block	POM
Connectors	POM
Hoses	PE
Gaskets	EPDM

## 8. Description of how the systems function

### GenPure Standard, UV, UF and UV/UF versions

Potable water is pretreated by a downstream reverse osmosis, ion exchange system or distillation, then fed through a pressure reducer into the GenPure ultrapure water system, where the conductivity of it is measured. A pump forces this feedwater through a UV-photooxidation (only with GenPure UV and GenPure UV/UF) and a Filter cartridge, then through an ultrafiltration module. (only with GenPure UF and GenPure UV/UF), following which the conductivity is permanently measured by a special measuring cell (with temperature compensation). When the dispensing valve is opened, the ultrapure water is subjected to filtration by a sterile filter immediately prior to flowing out of the ultrapure water outlet. When the system is in stand-by mode (the Interval operating state), the water in the system is recirculated through the internal circuit at regular intervals.

### GenPure UV-TOC and UV-TOC/UF versions

Potable water is pretreated by a downstream reverse osmosis, ion exchange system or distillation, then fed through a pressure reducer into the GenPure ultrapure water system, where the conductivity of it is measured. A pump forces this feedwater through a UV-photooxidation, following which the conductivity of the water is measured for the TOC determination, and on through a Filter cartridge and an ultrafiltration module (only with GenPure UV-TOC/UF), and the conductivity is then permanently measured by a special measuring cell (with temperature compensation).

The TOC value is calculated by taking the difference between the values measured by the measuring cells QIA300 and QI302.

The measurement range is 0 - 30 ppb.

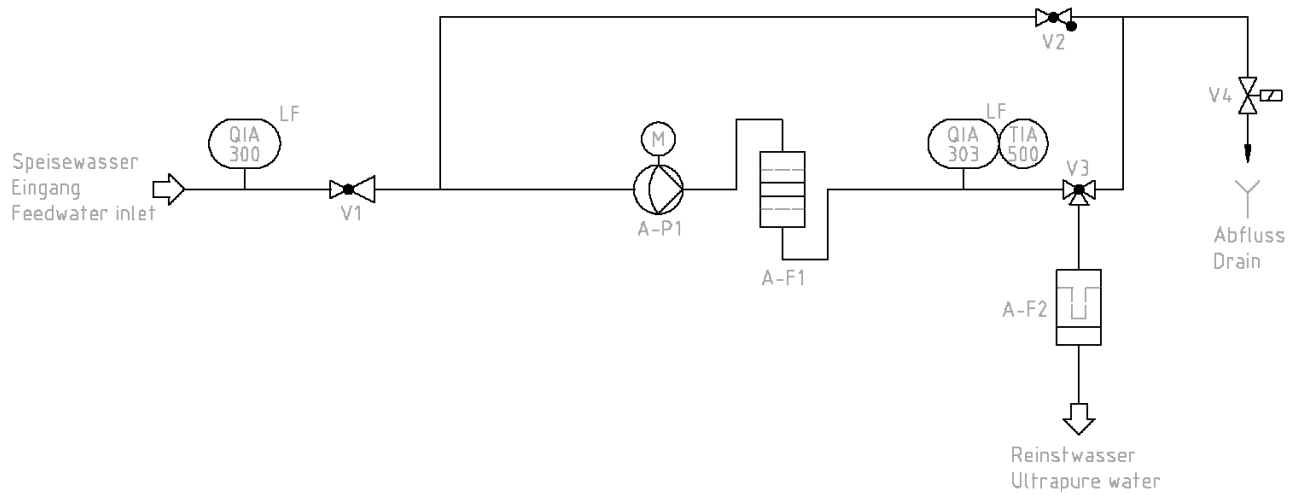
When this measurement range is exceeded, the number 99 is shown in the display instead of the measured value.

In Stand-by operation, "\_\_\_" is shown instead of the measured value.

When the dispensing valve is opened, the ultrapure water is subjected to filtration by a sterile filter immediately prior to flowing out of the ultrapure water outlet. When the system is in standby mode (the Interval operating state), the water in the system is recirculated through the internal circuit at regular intervals.

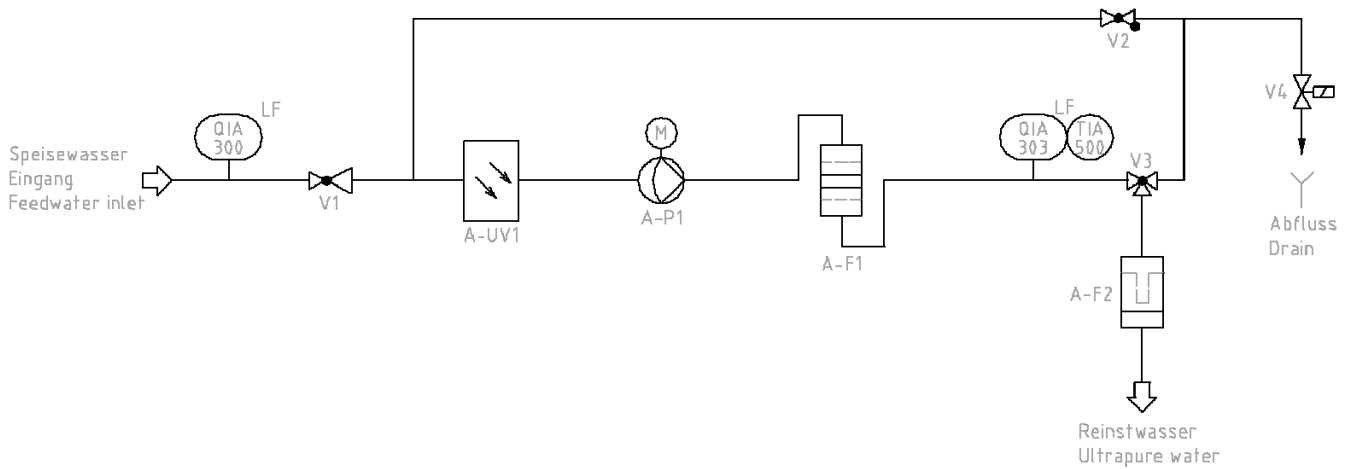


## 8.1 Flow chart for GenPure Standard



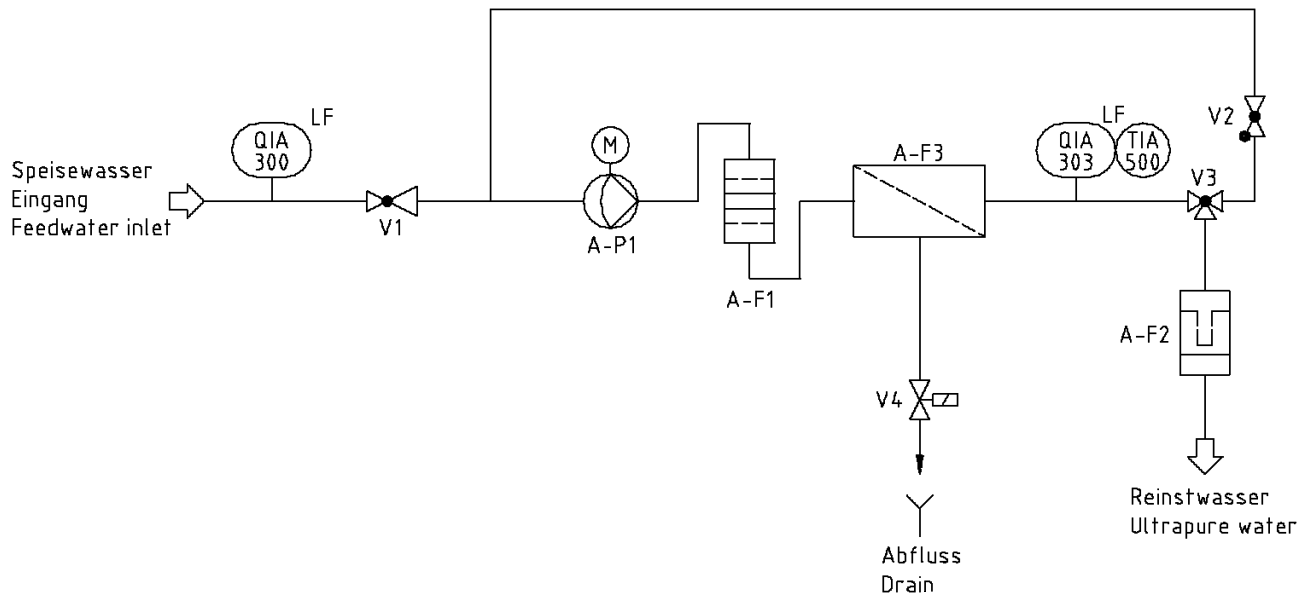
A-F1	Filter cartridge
A-F2	Sterile filter
A-P1	Circulation pump
QIA 300	Feedwater conductivity measuring cell
QIA 303	Ultrapure water conductivity measuring cell
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve

## 8.2 Flow chart for GenPure UV



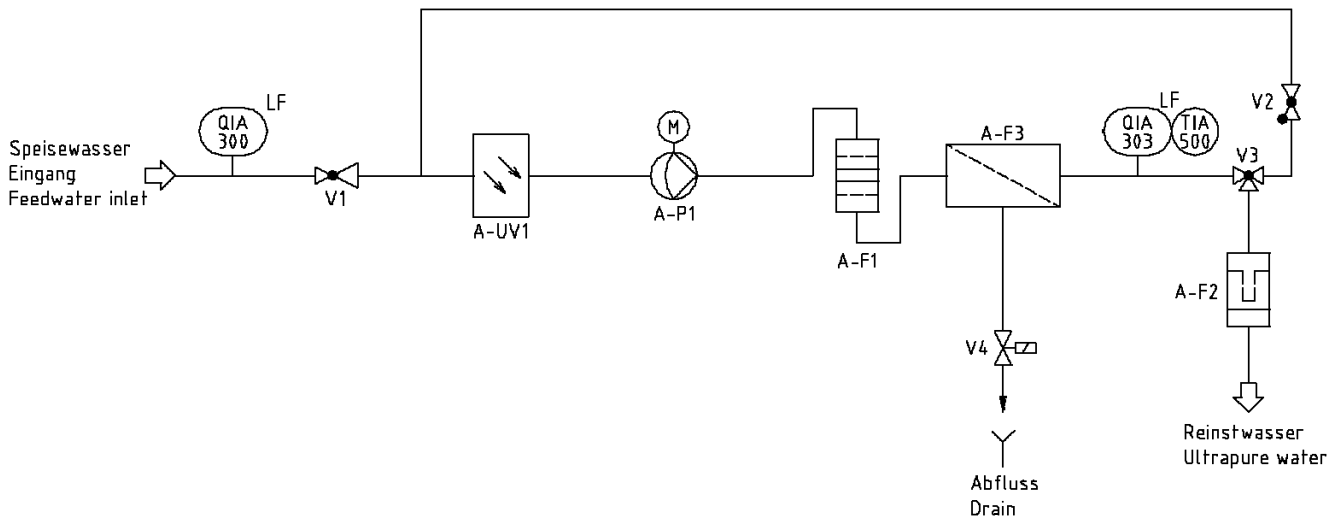
A-F1	Filter cartridge
A-F2	Sterile filter
A-P1	Circulation pump
A-UV1	UV-photooxidation
QIA 300	Feedwater conductivity measuring cell
QIA 303	Ultrapure water conductivity measuring cell
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve

### 8.3 Flow chart for GenPure UF



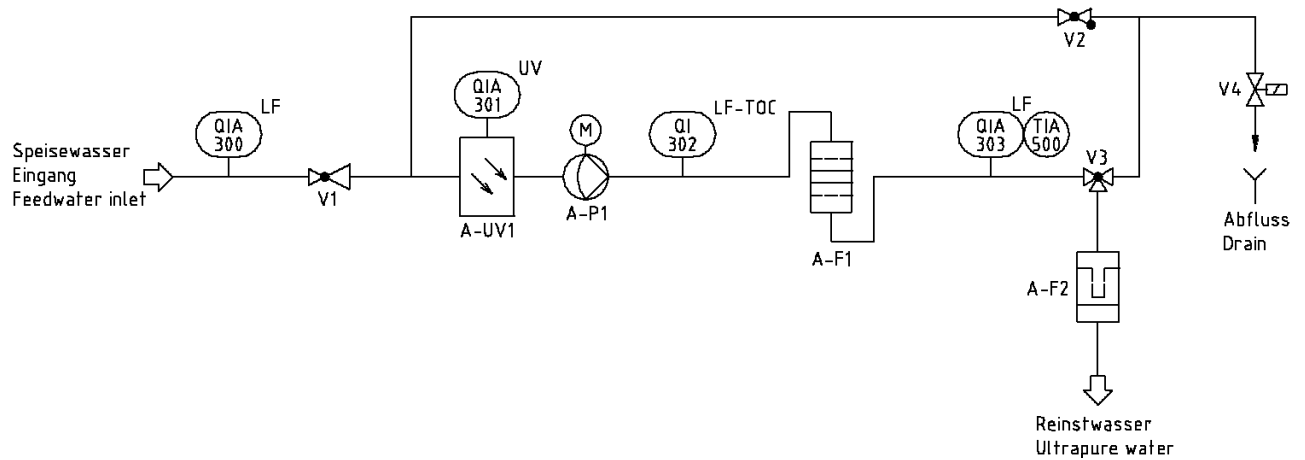
A-F1	Filter cartridge
A-F2	Sterile filter
A-F3	Ultrafiltration module
A-P1	Circulation pump
QIA 300	Feedwater conductivity measuring cell
QIA 303	Ultrapure water conductivity measuring cell
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve

## 8.4 Flow chart for GenPure UV/UF



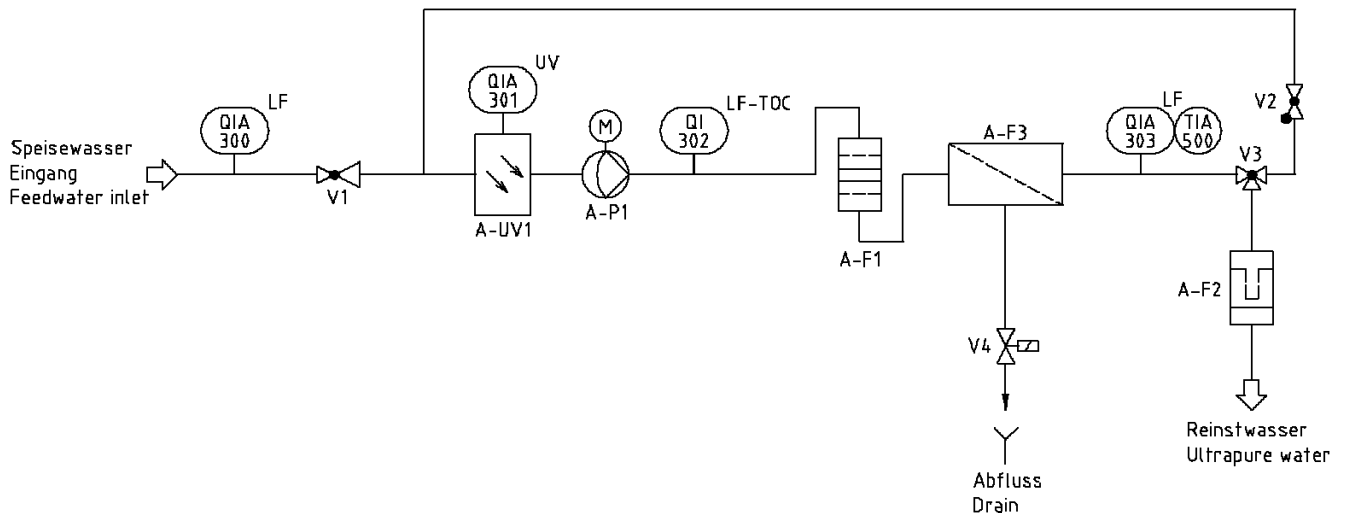
A-F1	Filter cartridge
A-F2	Sterile filter
A-F3	Ultrafiltration module
A-P1	Circulation pump
A-UV1	UV-photooxidation
QIA 300	Feedwater conductivity measuring cell
QIA 303	Ultrapure water conductivity measuring cell
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve

## 8.5 Flow chart for GenPure UV-TOC



A-F1	Filter cartridge
A-F2	Sterile filter
A-P1	Circulation pump
A-UV1	UV-photooxidation
QIA 300	Feedwater conductivity measuring cell
QIA 301	UV-Intensity
QI 302	Conductivity for TOC-measurement
QIA 303	Ultrapure water conductivity measuring cell
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve

## 8.6 Flow chart for GenPure UV-TOC/UF



A-F1	Filter cartridge
A-F2	Sterile filter
A-F3	Ultrafiltration module
A-P1	Circulation pump
A-UV1	UV-photooxidation
QIA 300	Feedwater conductivity measuring cell
QIA 301	UV-Intensity
QI 302	Conductivity for TOC measurement
QIA 303	Ultrapure water conductivity measuring cell
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve

## 9. Installation

### 9.1 The installation area

The following criteria must be considered when the installation area is selected:

- Feedwater pressure at least 0.1 bar, at most 6 bar.



**The feedwater pressure must not exceed 6 bar. With higher pressures, a pressure reducer must be installed.**

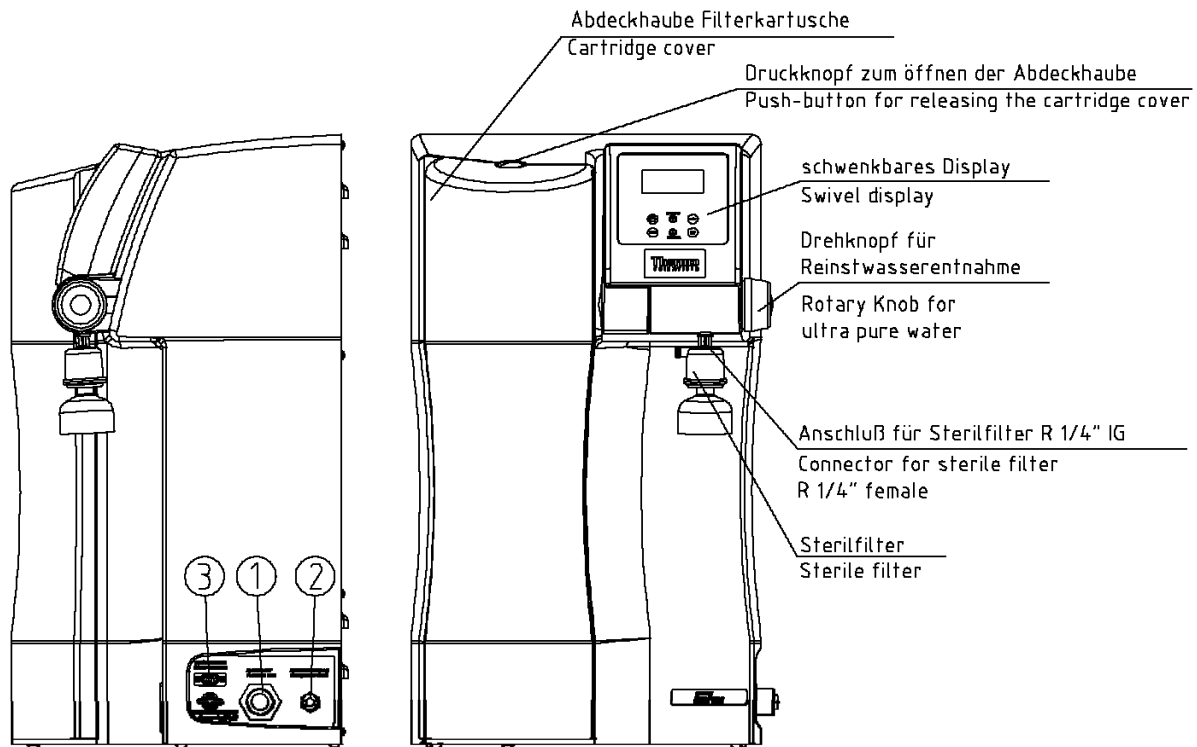
- Minimum temperature +2°C
- Level standing surface
- The standing surface or the wall where the system is to be stood or mounted must have sufficient weight-bearing capacity (see Technical specifications for weight).
- The ultrapure water system only be mounted on a concrete wall or a solid masonry.
- DN 50 floor drain
- Unrestricted gravity fall to the floor drain.  
Should a floor drain not be available, install a Water Watcher (Article No.: 16.0129) to protect against water damage!



**A free flow-off must be ensured!**

- Grounded 100-240 V, 50/60 Hz socket
- Positioning the system so that operation of the power separation unit is not made difficult.
- Sufficient working room around the GenPure system (for Filter cartridge change, etc.)
- The system must be positioned for easy operation and control
- R 3/4" potable water tap connection

## 9.2 Installing the system



- 1) Feedwater inlet connector, R 3/4" male thread
- 2) Rinsing water outlet connector, 8 mm OD
- 3) Connector for an optional printer (Article No.: 16.0330)

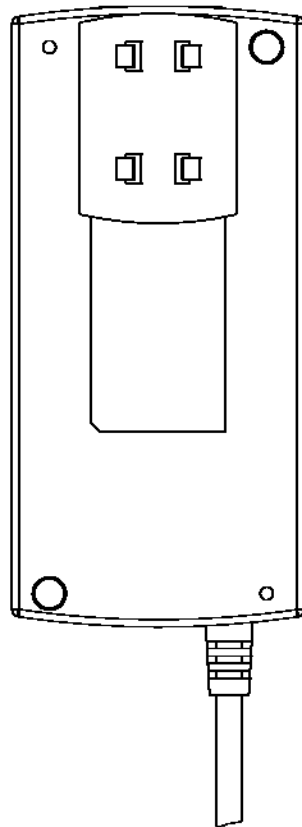
### Proceed as follows to prepare your GenPure ultrapure water system for operation:

- Stand the GenPure system on the selected surface or hang it on the wall using the hooks supplied.
- Remove the cartridge cover from the GenPure system (push-button on the top).
- Remove the closing caps from the Filter cartridge and save them for later use.
- Push the Filter cartridge in (guide in the recess), fit the quick-connect couplings on and put the cover back on.
- Fit the connecting hose to the GenPure system (connector 1) and to the feedwater connector (see the following Installation examples)
- Use the 8 mm OD hose to connect the GenPure system (connector 2) to the floor drain, ensuring free gravity fall to drain. The drain to the sewer must be max. Are 1m above the rinsing water connector of the Unit.
- If not already fitted, screw the sterile filter provided into the R 1/4" female thread of the dispensing valve outlet.
- Plug the line cord into an earthed 100-240, 50/60 Hz socket.
- Open the feedwater tap.

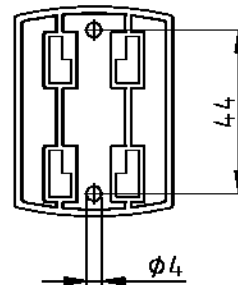


### 9.3 Mounting the power pack (voltage supply)

Back view power supply



Universal adapter



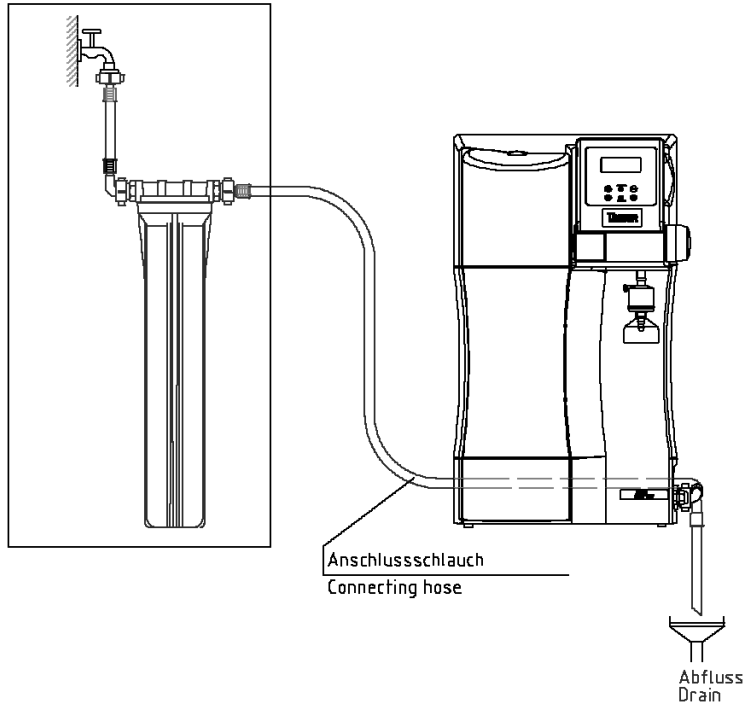
Wall mount  
with screws

- Whenever possible, mount the power pack on the wall to the left or right of the ultra pure water system where it is freely accessible.
- Stick the universal holder which is supplied in the assembly kit to the back of the power pack as shown in the above Figure.
- Stick the universal adapter to a smooth wall surface or screw it to the wall using the dowels and screws supplied in the assembly kit.
- When the universal holder and universal adapter have been fitted, hang the power pack in.
- Plug the connecting cable (appliance cable) in the power pack socket.
- Connect the power pack to the ultra pure water system (4-pin power supply connector,).
- The system is now ready for use.

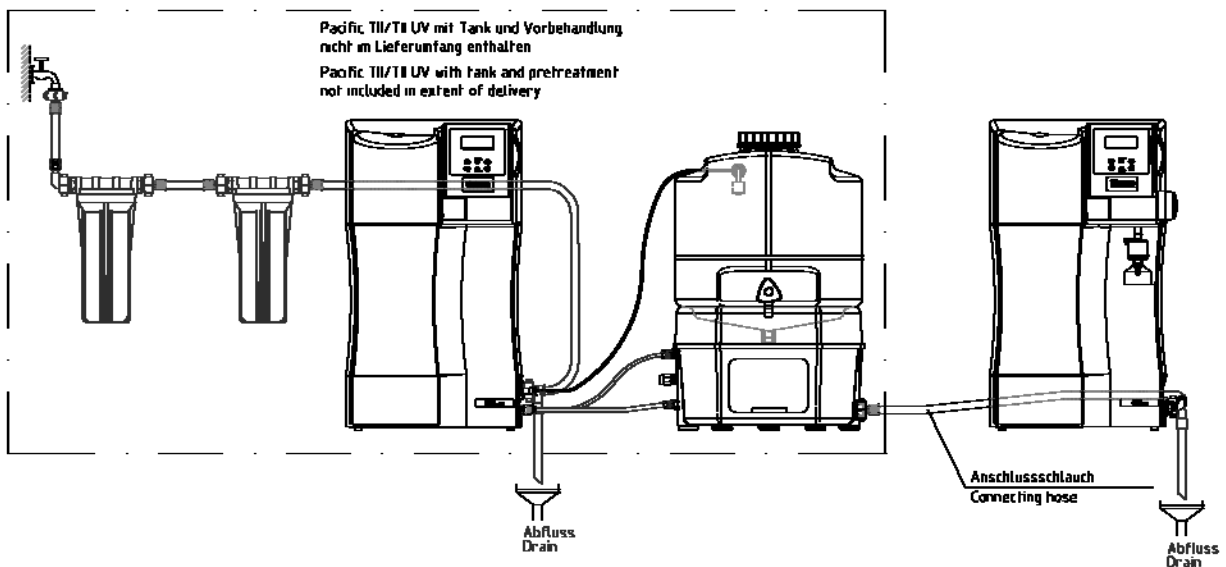
## 9.4 Installation examples

### Connection to a pretreatment unit:

Vorbehandlung 09.2000  
nicht im Lieferumfang enthalten  
Preatreatment 09.2000  
not included in extent of delivery



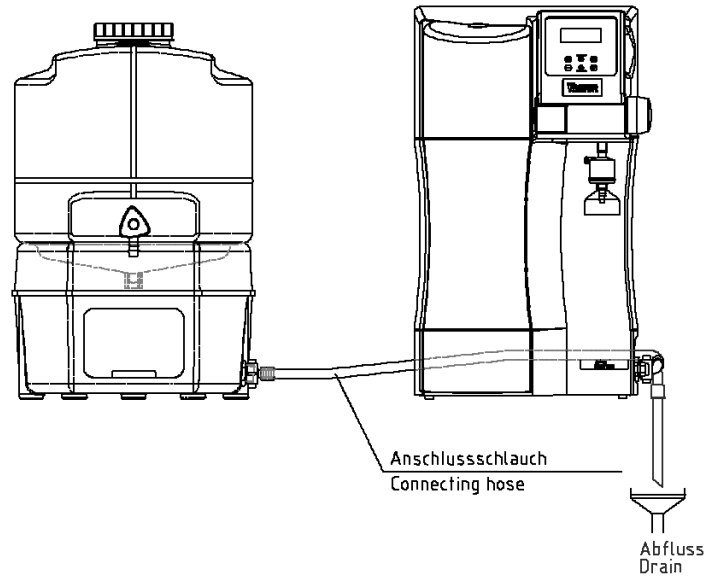
### Connection to a Pacific TII/TII UV system with a storage tank:



**Connection to a storage tank:**

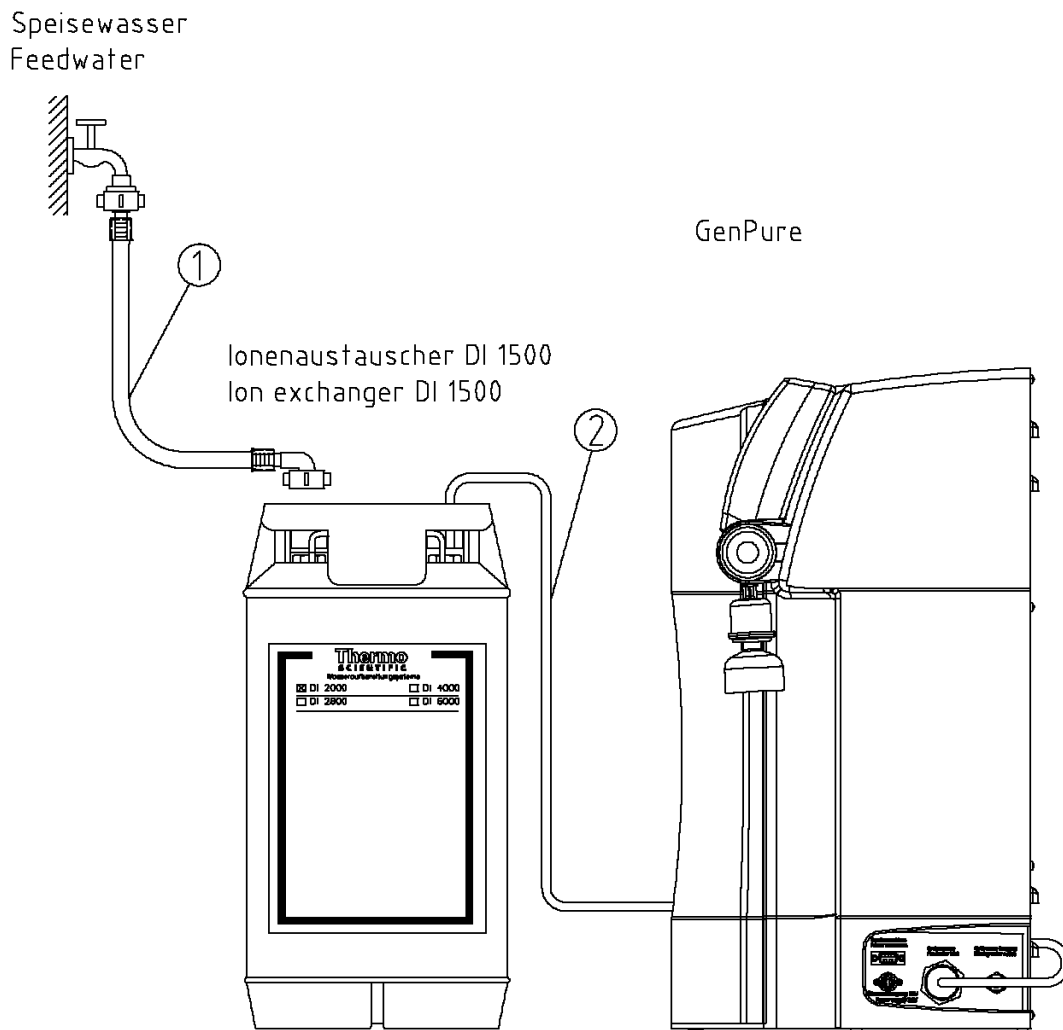
Vorratstank für destilliertes Wasser  
nicht im Lieferumfang enthalten

Storage tank for distilled water  
not included in extended of delivery



**Caution:** When connected to a storage tank, the GenPure system must be switched to "Nonstop" operation when ultrapure water is to be dispensed.

## 9.5 Mounting example GenPure with Ion exchanger DI 1500 (option)

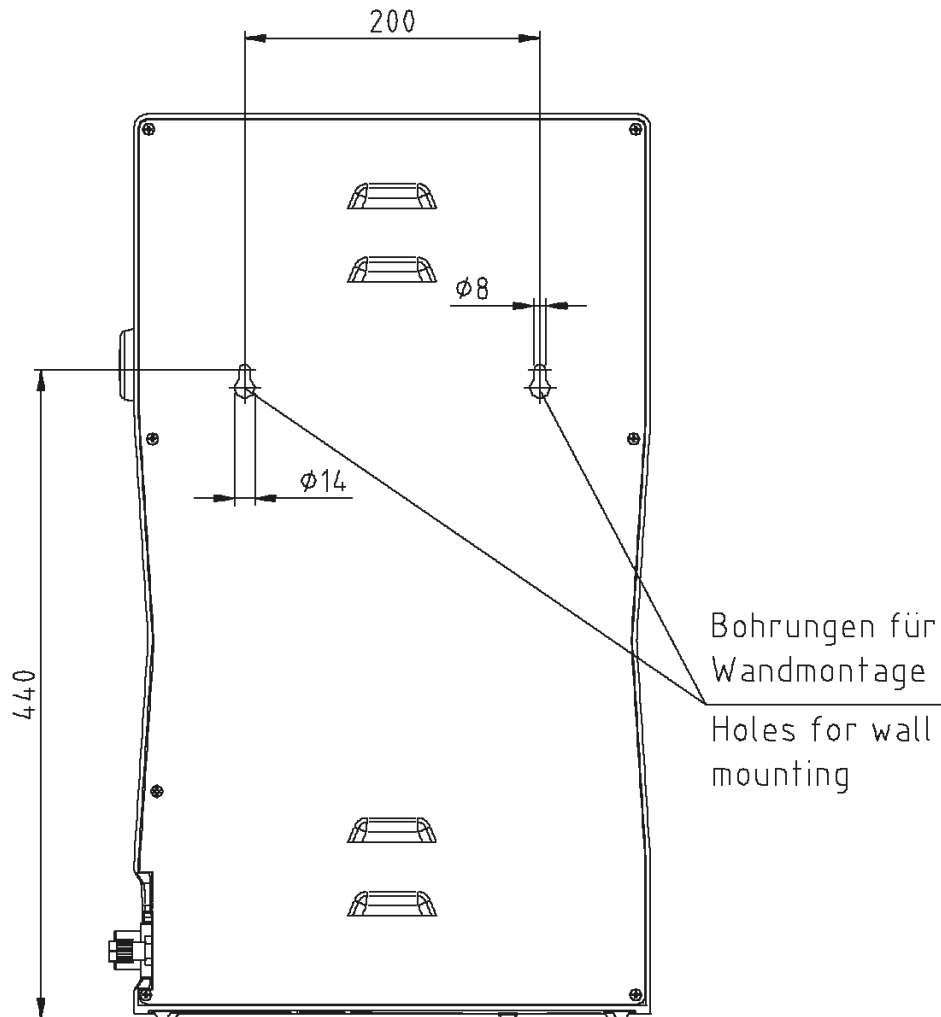


Proceed as follows to connect an ion exchanger to the upstream side of the GenPure system:

- 1) Connect the hose which has a R3/4 union nut (1) from the raw water tap to the R3/4" input of the ion exchanger.
- 2) Make connection from the R3/4 output of the ion exchanger to the feedwater Connector of the GenPure system by using the feedwater connector kit (2) that is contained in the assembly kit (article no. 50136423)

## 9.6 Wall mounting

Ansicht von hinten  
View back side



**Proceed as follows to mount your GenPure system to a wall:**

- Use a twist drill (8 mm diameter or 5/16 inch) to make the two holes in the wall that are required as shown in the diagram above.
- Plug the nylon S8 dowel that are supplied in the assembly kit in the holes. Screw the 5.2 x 50 mm screw hooks that are also supplied in the assembly kit in the dowels.
- Lift the GenPure system (2 people are required for this) and hang the back side of it on the screw hooks.

## 10. Putting the system into operation



Allow the system to warm up to, or to cool down to, room temperature before starting it up for the first time.



Check that all hose connections have been made as specified in the "Setting up the system" section.



Switch the system on by pressing this button. After a compulsory rinse the system switches to the last operating mode.



To vent air from the system, switch the system 3 times successively to "Rinsing" in the menu and collect and discard approx. 5 litres of water each time. The ultra pure water limiting value can be gone below during this procedure.

NONSTOP



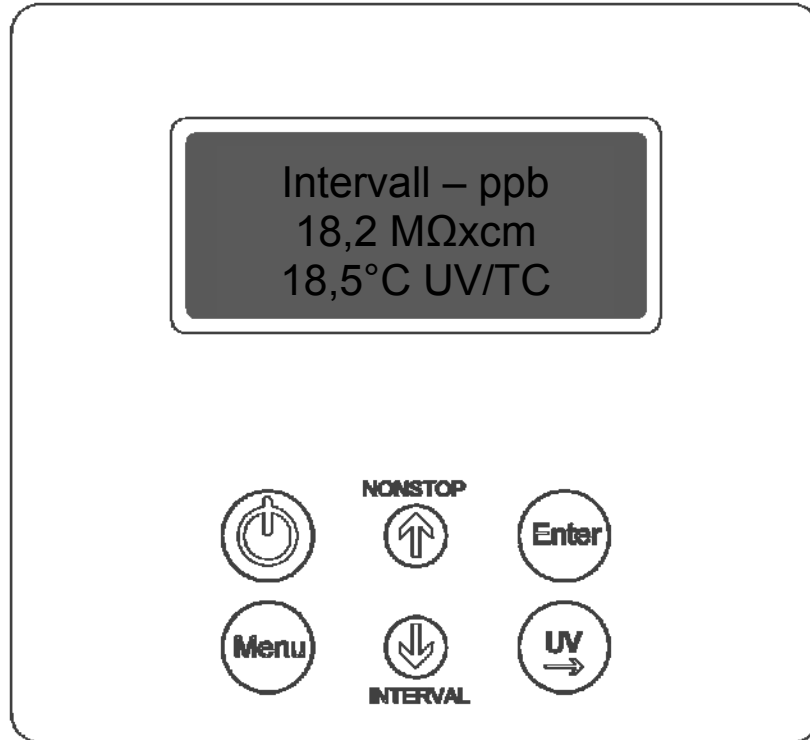
Use this "NONSTOP"-key to switch the system to the "Nonstop" operating mode.



INTERVAL

You can set the system back to "Interval" operation when the system has brought the ultra pure water to the quality you require.

## 11. The control panel



Switches the system on or off



NONSTOP Switches "Nonstop" operation on or, in the menu, increases a value on display



Enter Confirms the value shown in a menu point



Menu Switches the menu to the next menu point



INTERVAL Switches "Interval" operation on or, in the menu, decreases a value on display



UV Switches the UV-lamp on or, in the menu, allows you to select the position in a number that you wish to change

## 12. The system control

### General information

A single press on the ON/OFF-key brings the system to the *Interval* operating state (see Interval operation). In this stand-by mode, recirculation within the system is automatically started every half hour, and lasts for the time set. This measure assures maintenance of the ultrapure water quality.

The text message "UV" indicates that the UV-lamp is switched on. The text message "TC" indicates that temperature compensation is switched on. In addition, the measured value of the ultrapure water and the temperature are displayed.

Should a fault occur, the corresponding fault message is transmitted via the potential-free output and is shown in clear text in the 4th line of the display. In the case of several faults occurring at one time, they are alternately shown in the display.

A press on the NONSTOP-key switches the system to *Nonstop* operation. The pump runs and the rinsing solenoid valve opens for the duration of the *Rinse interval* that has been set. A press on the INTERVAL-key stops *Nonstop* operation and switches the system to *Interval* operation. After 2 hours, the system switches itself automatically to *Interval* operation.

When the UV-key is pressed, "UV" is shown in the display, but the UV-lamp is only actuated when the system is in the *Nonstop* operation state. It is automatically switched off when *Nonstop* operation is stopped after 2 h. When *Nonstop* operation is manually stopped by pressing the INTERVAL-key, the UV-lamp is not switched off until it has been burning for a minimum of 0.5 hours.

The intensity of the UV-light is monitored when the UV-lamp is actuated, and the measured value is shown in the display. The TOC-value is additionally shown.

### The User-menu

All measured values, operating times and limiting values that are relevant for the user can be set and read here.

A press on the menu-key brings you into this menu. Each further press on the menu-key moves you from one menu point to the next.

Settings can be changed by pressing on the arrow-keys and be confirmed by pressing the enter-key, which also takes you to the next menu point. Settings can only be changed when the system control has been previously unlocked (see 12.1.8).

To simplify changing a value, a press on the UV-key allows you to select the position in a number which you wish to change, and then use the arrow keys to replace the digit there by any digit from 0 - 9.

Minimum and maximum measured values have been entered as limiting values in the fixed programme for each of the conductivity and temperature measuring cells. Should these measured values be gone below or exceeded, it can be assumed that a break in a cable has occurred. The fault message "Meas. cell LF1", "Meas. cell LF2", "Meas. cell LF3" or "Temp. Meas. cell" is shown in the 4<sup>th</sup> line of the display.



## 12.1 The User-menu

### 12.1.1 Feedwater conductivity:

A single press on the menu-key allows the feedwater conductivity to be read or the limiting value of it to be changed. The fault message „*Limit value feed*“ flashes in the 4th line of the display when the limiting conductivity value is exceeded.

**Feedwater measuring range:** 10 – 0.01 MΩxcm  
**Limiting value setting range:** 0.1- 50.0 μS/cm  
**Basic setting:** 0.5 MΩxcm

When a setting above 50 μS/cm/ 0.02 MΩxcm is entered for the limiting value, the limiting value is switched off and the word „*Off*“ appears in the display.

The display shows:

<p>Feedwater 1.25 MΩxcm Limit value feed 2.0 μS/cm</p>
--------------------------------------------------------------------

### 12.1.2. Ultrapure water limiting value:

Two presses on the menu-key in this menu allow the fault display for the pure water limiting value and the pure water limiting value to be set. As soon as the fault display is switched on, the fault will be displayed both in Stand-by mode and in Production mode. When the fault display is switched off, the fault is only displayed in Production mode. The “Lim. val.pure w.” message is displayed when the limiting value is exceeded.

**Ultrapure water measuring range:** 0.1 MΩxcm  
**Limiting value setting range:** 0.055- 5.000 μS/cm  
**Basic setting:** 10 MΩxcm  
**Basic setting, fault suppression:** On

When a setting above 5.0 μS/cm is entered for the limiting value, the limiting value is switched off and the word „*Off*“ appears in the display.

The display shows:

<p>Fault message Stand- by On Lim. val. pure w. 0.100 μS/cm</p>
-----------------------------------------------------------------------------

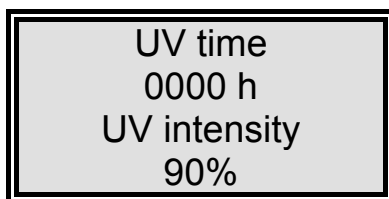
### 12.1.3. UV-Lamp operating time and intensity:

In this menu the operation hours of the UV-lamp are indicated and the evaluation of UV-sensor input into the display under "UV time".

The fault message "UV duration" is displayed when the maximum operating time has been reached.

The UV-sensor measures the intensity of the UV-light, and this is displayed as a percentage value of the maximum value.

The display shows:



UV time  
0000 h  
UV intensity  
90%

### 12.1.4. Filter cartridge operating hours counter:

After fourth press on the menu-key the operating hours counter for the filter cartridge is set by input of a valid serial number.

The display shows:



Ser. no.:  
cartridge  
Press enter  
----/--

### 12.1.5. Rinsing procedure

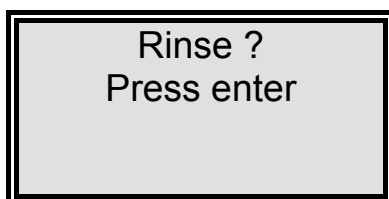
A fifth press on the menu-key calls the question asking if rinsing is to be carried out. A press on the enter-key confirms this and triggers the rinsing procedure. The pump starts and the rinsing solenoid valve opens for the rinsing time set in the OEM-menu.

The remaining rinsing time is shown in the display during rinsing

Neither fault messages nor measured values are displayed during rinsing.

When the rinsing procedure is finished, the system returns to the last operating state (Interval or Nonstop).

The display shows:



Rinse ?  
Press enter

The display during rinsing:



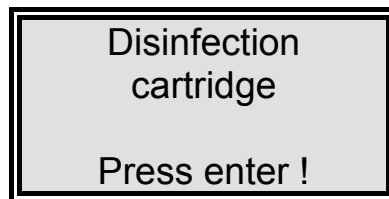
### 12.1.6. Disinfection procedure

A sixth press on the menu-key calls the question asking if a disinfection is to be carried out. A press on the enter-key confirms this, following which the demand "*Disinfection cartridge must be fitted*" is shown. When this has been fitted, a confirming press on the enter-key triggers the disinfection procedure. The pump starts for the full time set in the OEM-menu and, when the half of this time has elapsed, the rinsing solenoid valve opens and stays open until the disinfection procedure has finished. The demand "*New Filterset must be fitted*" is then displayed. When this has fitted, confirmation with the enter-key causes the system to return to the last operating state. During disinfection the remaining disinfection time is shown in the display.

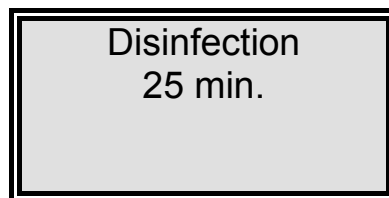
The display shows:



The display after confirmation with the enter-key:



The display during the disinfection procedure:



The display when disinfection has been completed:



New  
filterset  
Press enter

### 12.1.7 Fault storage display:

A seventh press on the menu-key calls the fault storage, and the contents of this can be examined by pressing the Enter-key.

Up to two faults are shown in the display, each with the date and time at which they occurred. Pressing the appropriate arrow key allows any fault messages before or after those shown to be called.

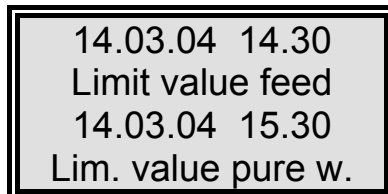
A press on the menu-key or on the Enter-key returns the system to the last operating state.

The display shows:



Error history  
Press enter

The fault storage display:



14.03.04 14.30  
Limit value feed  
14.03.04 15.30  
Lim. value pure w.

### 12.1.8 Print-out

A eight press on the menu-key bring you to a menu in which you can hand-request a print-out.

The display shows:



Print out?  
Press enter  
0000

### 12.1.9 Unlocking the system

A nine press on the menu-key calls the menu „Code“.

To prevent unauthorized access to the settings, changes to settings can only be made when a correct code number from the following Table is entered and confirmed with Enter. The unlocking is then active for a 5 minute period.

Each access via the code is printed out by the printer (RS 232) complete with date, time and shortened code number. ("Code 150" = Code 0001, "Code 250" = Code 0002 etc.)

The display shows:



Code  
Press enter  
0000



You can assign the permissible code numbers listed in the Table on the following page to appropriate members of the staff etc. When names have been entered, tear the page out and file it where it is safe from unauthorized viewing.

**Table for assigning permissible code numbers  
for unlocking the system**

Code-No.	printed out	Person
150	0001	
250	0002	
350	0003	
450	0004	
550	0005	
650	0006	
750	0007	
850	0008	
950	0009	

## 12.2 The OEM-Menu:

Basic settings and limiting values can be changed in this menu.

To make such changes in the OEM-menu, the system must first be unlocked (see 12.1.7).

Calling the OEM-menu:

Simultaneous presses on the INTERVAL-key and the NONSTOP-key call the OEM-menu.

The display shows "OEM-Menu Press enter". On confirming this by pressing the enter-

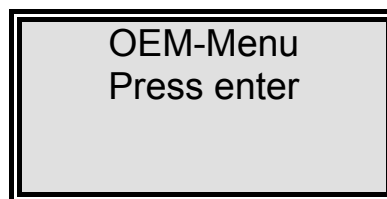
key, the first menu point is called to be worked on. To simplify making changes, a press on

the UV-key allows the position that is to be changed in a number to be selected, so that

the arrow keys can be used to replace it with any digit from 0 – 9.

A press on the menu-key takes you to the next menu point.

The display shows:



### 12.2.1 Set the limiting value for temperature:

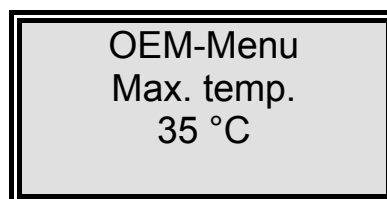
The maximum operating temperature limit for the system is set here. Should this temperature be exceeded, the fault message „Max. temperature“ is triggered.

This is shown in the 4th line of the display.

**Basic setting:**            50 °C

**Setting range:**        1 - 50 °C

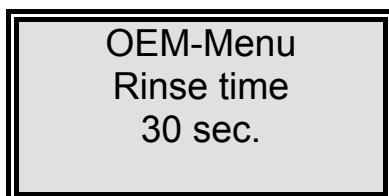
The display shows:



### 12.2.2 Set the rinsing time:

**Basic setting:** 30 sec.  
**Setting range:** 10 - 60 sec.

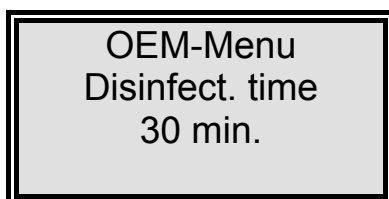
The display shows:



### 12.2.3 Change the disinfection time:

**Basic setting:** 30 min.  
**Setting range:** 15 - 90 min.

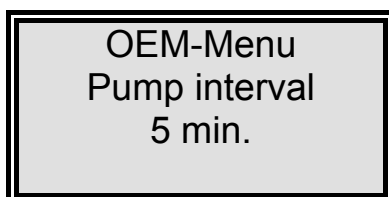
The display shows:



### 12.2.4 Set the pump interval time:

**Basic setting:** 5 min.  
**Setting range:** 1 - 30 min.

The display shows:

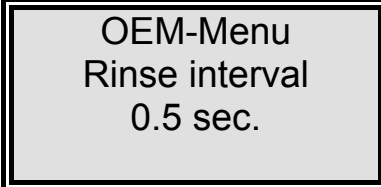




**12.2.5 Set the rinse interval time:**

**Basic setting:** 0.5 sec.  
**Setting range:** 0.1 - 2 sec.

The display shows:

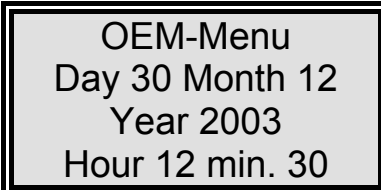


OEM-Menu  
Rinse interval  
0.5 sec.

**12.2.6 Adjust the real time clock:**

**Basic setting:** The actual date  
**Setting range:** Month 1 - 12, Day 1 - 31, Hour 0 - 24, Minutes 0 - 60.

The display shows:



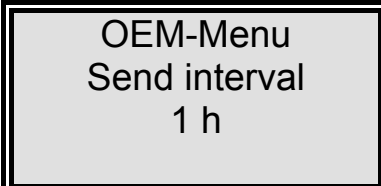
OEM-Menu  
Day 30 Month 12  
Year 2003  
Hour 12 min. 30

**12.2.6 Set the sending interval:**

The sending interval at which measured values and fault messages are transmitted via the RS 232 interface can be set here.

**Basic setting:** 1 hour  
**Setting range:** 0.5 - 12 hours

The display shows:



OEM-Menu  
Send interval  
1 h

### 12.2.7 Select the language:

**Basic setting:** German  
**Setting range:** German, English, French

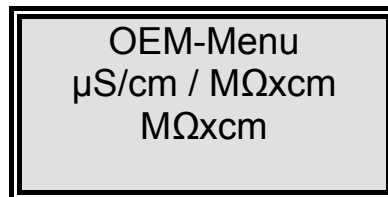
The display shows:



### 12.2.8 Switch units, conductivity/resistance:

**Basic setting:** Resistance  $M\Omega\text{cm}$   
**Setting range:** Resistance  $M\Omega\text{cm}$ , specific electrical resistance  $M\Omega\text{ cm}$

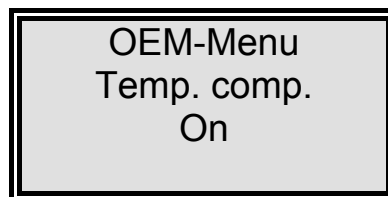
The display shows:



### 12.2.9 Switch temperature compensation on/off:

**Basic setting:** On  
**Setting range:** On, Off

The display shows:



## 12.3 Using volume control for water dispensing

GenPure systems that are equipped with the option of volume control allow volume-controlled dispensing to be carried out.

As soon as the Nonstop operating mode is selected, the number of litres that were last required appears as set value in line 2 of the display.

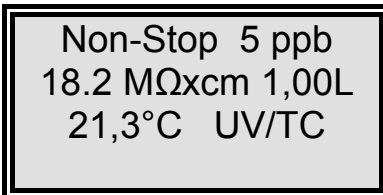
Press once on the Enter-key if you wish to use the arrow keys to change this set value within the permissible range of 0.01 to 60 litres. You can use the UV-key to position the cursor at the position where you want to change the number.

Press twice on the Enter-key if you wish to have the displayed water volume dispensed. During dispensing, the number shows the actual volume dispensed. Dispensing is stopped as soon as the set value has been reached.

Dispensing can be stopped at any time by a further press on the Enter-key.

To carry out manual dispensing of volumes smaller than the set value, first press the Enter-key twice, then press it once again when the required volume has been dispensed.

The Display shows:



```
Non-Stop 5 ppb
18.2 MΩxcm 1,00L
21,3°C UV/TC
```

## 12.4 Printer output

By means of the printer different parameters are documented. It is differentiated between three messages.

- **Standard message**
- **Code message**
- **Error message**

### 12.4.1 Standard message

Here in dependence of the transmit interval of all measured values are printed out. Within the NONSTOP-operation a complete data record is printed out.

Printout:

e. g.:                27.02.07 15:15  
                          GenPure Standard  
                          S.No. 3988/07  
                          Interv. TC on UV off  
                          LF1= 18.2 MΩxcm  
                          LF2= 10.0 MΩxcm  
                          LF3= 0.000 MΩxcm  
                          Temp.= 16.8 °C  
                          TOC= 0 ppb  
                          UV Intens.= 0%

Standard protocol contains all measured values. With devices without TOC measurement and UV-intensity are spent the measured values with 0!

**12.4.2 Code message**

If a code number is entered into the system control and confirmed with the enter key, then the code input is printed out immediately. Code identification (see „tables of classification for authority codes for unlocking the system“).

Printout:

e. g.:                27.02.07 15:17  
                          GenPure Standard  
                          S.No. 3988/07  
                          Code 0002

**12.4.3 Error message**

If an error message in the display, e.g. the high-purity water limit value is indicated, the error message is printed out after the transmit interval.

Printout:

e. g.:                27.02.07 17:09  
                          GenPure Standard  
                          S.No. 3988/07  
                          Reinst.grenzwert

## 13. Maintenance

Regular maintenance maintains the value of your system. We recommend that you close a service contract with representative authorized to service your area. You then have the certainty that your system is kept at a high level of operational safety and reliability.

### NOTE!

To ensure your system will work reliably for a long time, it must be controlled, maintained and cared for at regular intervals in accordance with the information given in these operating instructions!

These operating instructions must therefore be kept readily available to operating and maintenance staff at all times, and the staff must carefully follow them!

Any maintenance work that is necessary during the period of the guarantee is only to be carried out by a customer service company expressly authorized to do this.

It is the duty of the operating staff to carry out the weekly controlling of the system. During the period agreed upon for the guarantee, maintenance is to be carried out weekly according to the maintenance record provided in this operating instruction manual.

### IMPORTANT!

Ion exchangers should be replaced when the ultrapure water limiting value is exceeded. Longer usage can be result in bacterial growth on the resin.

Sanitization of the system by the performance of rinsing and disinfection is carried out for reasons of hygiene and has no effect on the technical condition of the system.

The system need only be rinsed and disinfected when algae or slime is determined in it, otherwise at least once per year.



Prior to carrying out control or maintenance work on electrical equipment, the mains power supply must be switched off and protected against being unwantedly switched on again. Such work is only to be performed by assigned skilled technicians.

## 13.1 Maintenance intervals

Consumable materials are to be replaced at the intervals given in the following Table or when there is a drop in performance:

Material	Flow chart no.	Article no.	Interval*
Filter cartridge	F1	09.2005	12 Months
Sterilefiltercapsule	F2	09.1003	12 Months
Ultrafiltration membrane	F3	50133980	24 Months

\*Please keep in mind that the life of your consumables is directly dependent on the quality of the feed water and the amount of water used daily. The interval is contingent on the feedwater quality so that a shorter one may be necessary.

## 13.2 Change the Filter cartridge



The filter cartridge must be replaced as soon as the maximum limiting value set for the ultrapure water is exceeded or when the "Change cartridge" message is shown in the display.

Proceed as follows to replace the Filter cartridge:

1. Switch the system off.
2. Shut off the supply of feedwater.
3. Open the dispensing valve until the flow of water stops, then re-close it.
4. Remove the cartridge cover.
5. Disconnect the quick-connects on the feedwater inlet and purified water outlet of the cartridge, then close the inlet and outlet with the stoppers which you have kept for later usage.
6. Draw the used Filter cartridge out from the guide and insert the new Filter cartridge.
7. Remove the stoppers from the new Filter cartridge and store them for later use.
8. Plug the quick-connects correctly onto the new Filter cartridge.
9. Replace the cartridge cover.
10. Open the supply of feedwater.
11. Switch the system on again.
12. Run off and discard at least 5 litres of water.
13. To return the operating time meter to zero, enter the serial number that is given on the cartridge as described in the "Filter cartridge operating hours counter" section.

**Important:** To do this, the system must first be unlocked via the code function, refer here to the "Unlocking the system" section.



To air-vent the system, switch it to the „Rinse“ state.

### 13.3 Disinfection procedure



**Disinfection should be regularly carried out, at the latest when the Filter cartridge is replaced.**

A disinfection cartridge (article no.: 09.2201) is required for disinfection of the system.

Use cleaning solutions as follows:

MICRO-Chlor Granulate, 1 box, article no. 09.2202 (Europe only)

Cleaning Solution, 1 syringe, article no. CMX 25 (US-market only).



**Please observe the information given in the safety data sheet supplied with Micro-Chlor disinfectant to avoid possible health hazards!**

**Proceed as follows to sanitize your system:**

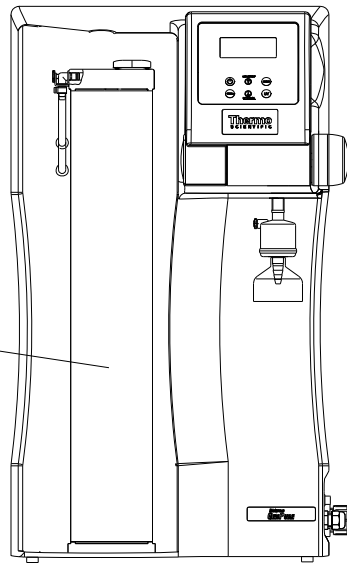
1. Switch the GenPure system off.
2. Shut off the supply of feedwater to the system and open the dispensing valve so that pressure in the system is completely released.
3. Remove the filter cartridge (as under "Changing the filter cartridge" in the Operating Instructions for the system).
4. Unscrew the stopper from the disinfectant cartridge, fill the cartridge with water then empty the contents of a box respectively a syringe of the cleaning solution into the water.  
**Important! For effective disinfection the cartridge must be completely filled with water.**
5. Screw the stopper back on the disinfectant cartridge and connect the cartridge in the system (as under "Changing the filter cartridge" in the Operating Instructions for the system).
6. Re-open the feedwater supply.
7. Switch the system on and select the "Disinfection" prompt in the menu. The disinfection programme is finished after approx. 30 minutes.
8. Switch the system off.
9. Shut off the supply of feedwater to the system.
10. Remove the disinfectant cartridge (as under "Changing the filter cartridge" in the Operating Instructions for the system).
11. Connect the new filter cartridge in the system (as under "Changing the filter cartridge" in the Operating Instructions for the system).



**Before dispensing water from the system, let water run out for approx. 15 minutes. The system is then ready for use.**



Desinfektions-  
kartusche  
Desinfection  
cartridge



## 14. Waste disposal

When the packaging is no longer needed it can be disposed of as household waste.

Systems are in conformity with EEC Guideline 2002/95/EC

The system is not to be thrown away as household waste but must be properly disposed of. It can be returned to the manufacturer for safe disposal according to EEC Guideline 2002/96/EC. We therefore request our customers in Germany and other member States in the European Economic Area to contact our local service centre or our headquarters:

Thermo Electron LED GmbH  
Stockland 3  
D-56412 Niederelbert, Germany

WEEE-Reg.-no.: DE 12471402

In countries outside of the European Economic Area, please contact your local authorities or waste disposal company.

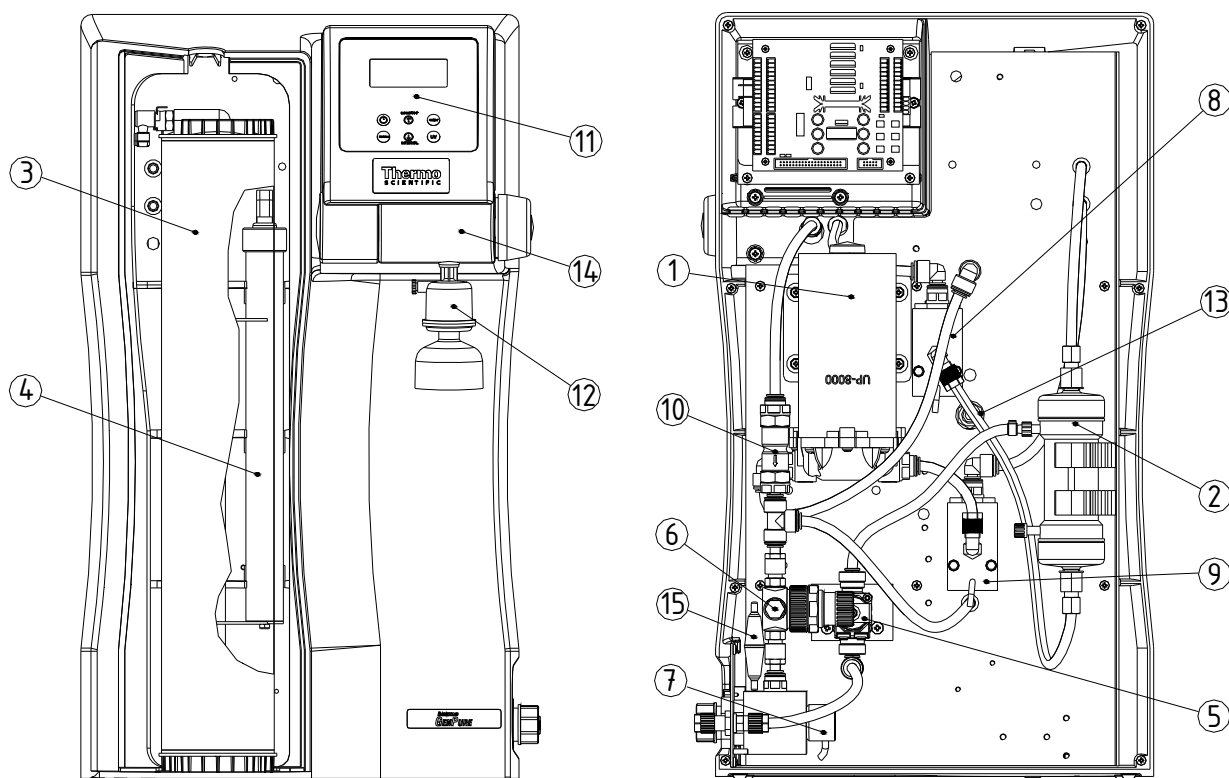
## 15. Trouble shooting

Fault	Cause	Remedy
System does not start	<ul style="list-style-type: none"> <li>- No power</li> </ul>	<ul style="list-style-type: none"> <li>- Connect to power supply</li> </ul>
No water can be dispensed	<ul style="list-style-type: none"> <li>- Feedwater tap is closed</li> <li>- Feedwater and rinse water connections are the wrong way round</li> <li>- The feedwater pressure is &lt; 0.1 bar</li> </ul>	<ul style="list-style-type: none"> <li>- Open the feedwater tap</li> <li>- Re-connect them properly</li> <li>- Increase feedwater pressure</li> </ul>
Resistance < 18.2 MΩxcm	<ul style="list-style-type: none"> <li>- System has a UF-module (higher conductivity can occur)</li> <li>- Ion exchange capacity is exhausted</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the Filter cartridge</li> </ul>
Control no longer reacts	<ul style="list-style-type: none"> <li>- Incorrect usage</li> </ul>	<ul style="list-style-type: none"> <li>- Unplug the line plug for 5 seconds</li> </ul>
Water leaks out	<ul style="list-style-type: none"> <li>- Hose connections not watertight</li> <li>- Feedwater pressure &gt; 6 bar</li> </ul>	<ul style="list-style-type: none"> <li>- Check connections and make them leaktight</li> <li>- Install a downstream pressure reducer</li> </ul>
Ultrapure water flow rate too low	<ul style="list-style-type: none"> <li>- UF-Module is clogged</li> <li>- Too low a pre-pressure</li> <li>- Internal pressure too low</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the UF-module</li> <li>- Increase the pre-pressure</li> <li>- Re-adjust the pressure reducer</li> </ul>
Wrong time or date	<ul style="list-style-type: none"> <li>- Time difference</li> <li>- Time change</li> </ul>	<ul style="list-style-type: none"> <li>- Reset the clock and the date</li> </ul>
Wrong language	<ul style="list-style-type: none"> <li>- wrong language setting</li> </ul>	<ul style="list-style-type: none"> <li>- Correct the language setting</li> </ul>
Fault message: "Limit value feed"	<ul style="list-style-type: none"> <li>- Feedwater has too high a conductivity</li> <li>- Limiting value set too low</li> </ul>	<ul style="list-style-type: none"> <li>- Check the pretreatment system</li> <li>- Check the limiting value setting and correct it</li> </ul>

<p>Fault message: <i>„Limit val. Pure w.“</i></p>	<ul style="list-style-type: none"> <li>- Filter cartridge is exhausted</li> <li>- Limiting value set too low</li> <li>- The system has a UF-module (higher conductivity can occur)</li> </ul>	<ul style="list-style-type: none"> <li>- Replace it with a new one (Art. No.: 09.2005)</li> <li>- Check the limiting value and re-adjust it</li> </ul>
<p>Fault message: <i>"UV duration"</i></p>	<ul style="list-style-type: none"> <li>- The maximum operating hours of the UV-lamp have been exceeded</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the UV-lamp with a new one (Art. No. 09.2002) and re-set the operating hours counter to zero</li> </ul>
<p>Fault message: <i>"UV-Intensity"</i></p>	<ul style="list-style-type: none"> <li>- Intensity to the UV-lamp is no longer sufficient</li> <li>- UV-Sensor is dirtied</li> <li>- Limiting value set too low</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the UV-lamp and measure maximum value</li> <li>- Clean the UV-sensor</li> <li>- Check and readjust the limiting value setting</li> </ul>
<p>Fault message: <i>"Max.temp."</i></p>	<ul style="list-style-type: none"> <li>- The temperature in the system is too high</li> <li>- Pump interval time too long</li> <li>- Limiting value set too low</li> <li>- Feedwater temperature too high</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce the temperature by dispensing water</li> <li>- Reduce pump interval time</li> <li>- Check and readjust the limiting value setting</li> <li>- Reduce the feedwater temperature</li> </ul>
<p>Fault message: <i>"Meas cell LF1"</i></p>	<ul style="list-style-type: none"> <li>- A break in the measuring cell cable</li> <li>- System control defect</li> <li>- Ultrapure water conductivity outside the measurement range</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the measuring cell</li> <li>- Replace the system control see "Resistance &lt;18.2 MΩxcm"</li> </ul>
<p>Fault message: <i>"Meas. cell LF2"</i></p>	<ul style="list-style-type: none"> <li>- A break in the measuring cell cable</li> <li>- System control defect</li> <li>- Feedwater conductivity outside the measurement range</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the measuring cell</li> <li>- Replace the system control see Feedwater limiting value</li> </ul>
<p>Fault message: <i>"Meas. cell LF3"</i></p>	<ul style="list-style-type: none"> <li>- A break in the measuring cell cable</li> <li>- System control defect</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the measuring cell</li> <li>- Replace the system control</li> </ul>

<p>Fault message: <i>"Temp. meas. cell."</i></p>	<ul style="list-style-type: none"> <li>- A break in the measuring cell cable</li> <li>- System control defect</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the measuring cell</li> <li>- Replace the system control</li> </ul>
<p>Fault message: <i>„change cartridge"</i></p>	<ul style="list-style-type: none"> <li>- Operating hours of the filter cartridge has expired</li> </ul>	<ul style="list-style-type: none"> <li>- Replace it with a new one (Art. No.: 09.2005)</li> </ul>

## 16. Replacement parts and consumables



No.	Designation	Article- No.
1	Pressure boosting pump	19.0050*
2	Ultrafiltration module (optional)	50133980
3	Filter cartridge	09.2005
4	Replacement UV-lamp	09.2002
5	Rinsing solenoid valve	50131190*
6	Pressure reducer	50133985
7	Feedwater conductivity measuring cell	16.0126
8	Ultrapure water conductivity measuring cell	50133992
9	TOC conductivity measuring cell (optional)	50133992
10	Check valve 1 bar	15.0019
11	Microprocessor system control	50131348
12	Sterile filter capsule, 0.2 µm, for dispensed water	09.1003
13	UV-Intensity sensor (optional)	16.0222
14	Dispensing valve	50133988
15	Fuse holder for glas tube fuse 5 x 20mm Glas tube fuse 5 x 20mm, 3,15 A, slow fuse	50133979 50131758
	Tabletop power pack, 24V DC (not shown)	50134196

\* Wearing part



**We ask for your understanding that we must declare the guarantee given for this system to be invalidated should replacement parts, accessories or consumables from other manufacturers be used, as we have no influence on their quality or appropriateness.**

## 17. Accessories

Designation	Article- No.
Disinfection cartridge	09.2201
Disinfection agent, MICRO-Chlor (pack of 12 cans, Europe only)	09.2202
Cleaning Solution, 1 syringe (US-market only)	CMX25
Volume control for water dispensing	09.2210
Printer	09.2207
Qualification Manual IQ, OQ	IOQDOCE50133917

The address to contact when your system requires service:

### Overview of Thermo Scientific International Sales Organization

#### Postal address USA:

Thermo Scientific  
 275 Aiken Road  
 Asheville, NC 28804  
 USA

#### Enquiries from USA/Canada

Sales: +1 866 984 3766  
 Service: +1 800 438 4851

#### Enquiries from Latin America

Sales: +1 866 984 3766  
 Service: +1 866 984 3766

#### Enquiries from Asia

##### China

Sales: +86 10 8419 3588  
 Service: Toll free 8008105118  
 Support Mobile 4006505118 or +86 10 8419 3588

##### India

Sales: +91 22 6716 2200  
 Service: Toll free 1 800 22 8374 or +91 22 6716 2200

##### Japan

Sales: +81 45 453 9220  
 Service: +81 45 453 9224

#### Enquiries from the Rest of Asia/Australia/New Zealand

Sales: +852 2885 4613  
 Service: +65 6872 9720

#### Enquiries from Countries not listed / Rest of EMEA

Sales: +49 6184 90 6940 or +33 2 2803 2000  
 Service: +49 6184 90 6940

#### Enquiries from Europe

##### Austria

Sales: +43 1 801 40 0  
 Service: +43 1 801 40 0

**Belgium****Sales:** +32 53 73 4241**Service:** +32 53 73 4241**Finland/Nordic/Baltic countries****Sales:** +358 9 329 100**Service:** +358 9 329 100**France****Sales:** +33 2 2803 2180**Service:** +33 825 800 119**Germany:****Postal Address Germany:**

Thermo Electron LED GmbH

Robert-Bosch-Straße 1

D - 63505 Langenselbold

**Phone****Sales:** Toll free 0800 1 536 376

or +49 6184 90 6940

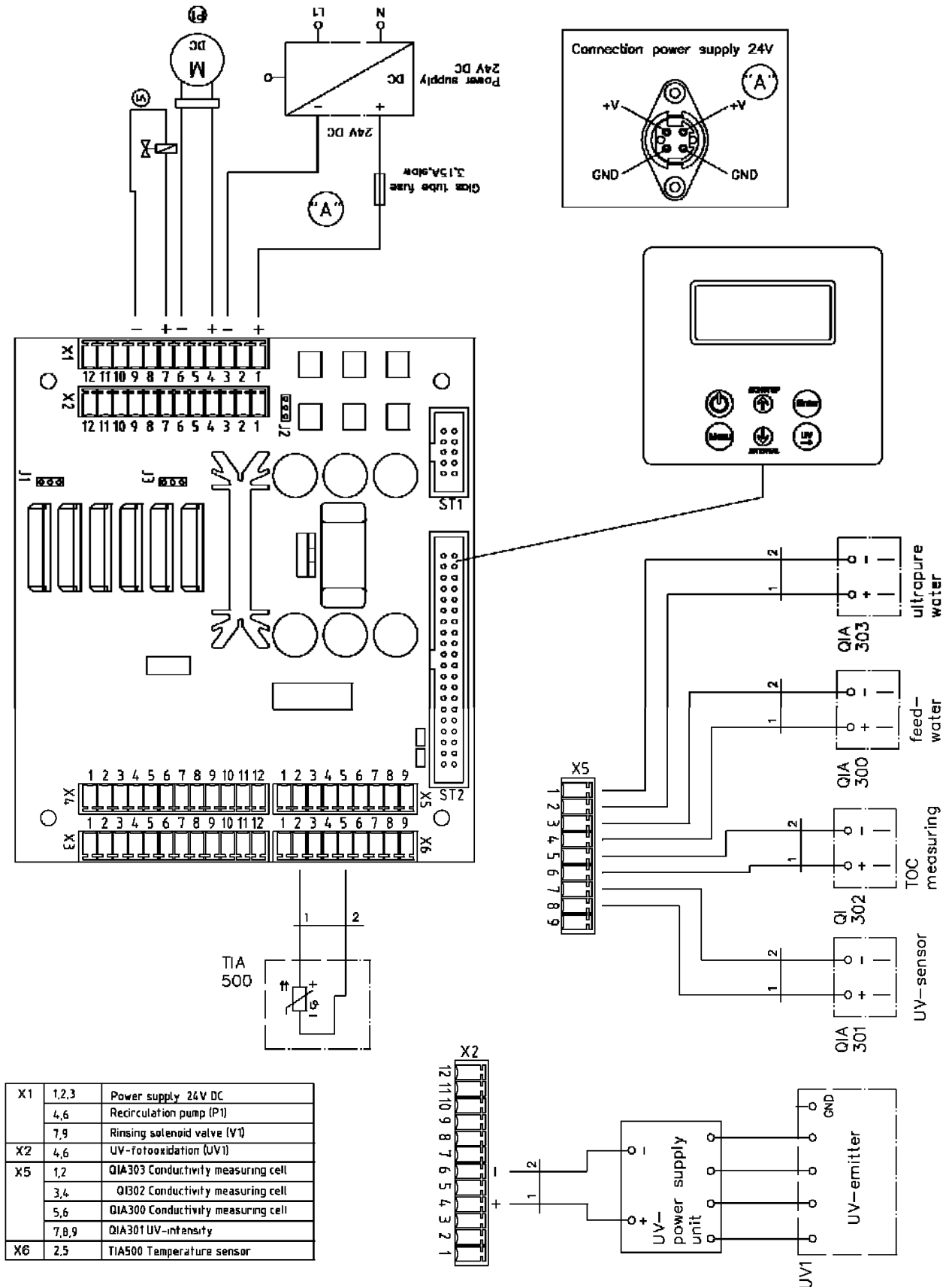
**Service:** Toll free 0800 1 112110

or +49 6184 90 6940

**E-Mail:** [info.labequipment.de@thermoftsher.com](mailto:info.labequipment.de@thermoftsher.com)**Italy****Sales:** +39 02 95059 341**Service:** +39 02 95059 250**Netherlands****Sales:** +31 76 579 5555**Service:** +31 76 579 5639**Russia/CIS****Sales:** +7 812 703 4215**Service:** +7 812 703 4215**Spain/Portugal****Sales:** +34 93 223 0918**Service:** +34 93 223 0918**Switzerland****Sales:** +41 44 454 1212**Service:** +41 44 454 1212**UK/Ireland****Service:** +44 870 609 9203**Sales:** +44 870 609 9203



## 18. Terminal assignment





## 19. Maintenance record

(Please carefully keep this record, as complete and correct entries are a requirement for the validity of the guarantee)

**Customer address:**

**Location:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Type of system:**

\_\_\_\_\_

**Serial number:**

\_\_\_\_\_

**Year made:**

\_\_\_\_\_

Date	Feedwater resistance [MΩxcm]	Ultrapure water resistance [MΩxcm]	Ultrapure water flow rate [L/h]	Temperature [°C]	TOC-value [ppb]	UV-Intensity [%]	UV-Lamp operating hours [h]

Last change of Filter cartridge	Last cleaning / disinfection	Last change of pretreatment	Remarks	Signature

Any false entry is a falsification of documents.

**The following points are to be observed to ensure maintenance of the quality of the system:**

- 1x/ Weekly – record measured values

For the optimal ultrapure water to be produced, the feedwater pre-treatment must be checked and subject to maintenance at regular intervals.

## Contact Information Thermo Scientific

**North America:**

USA/Canada +1 866 984 3766 (866-9-THERMO)

**Europe:**

Austria +43 1 801 40 0, Belgium +32 53 73 42 41, France +33 2 2803 2180,

Germany national toll free 08001-536 376,

Germany international +49 6184 90 6940, Italy +39 02 95059 448,

Netherlands +31 76 579 55 55, Nordic/Baltic/CIS countries +358 9 329 10200,

Russia +7 812 703 42 15, Spain/Portugal +34 93 223 09 18,

Switzerland +41 44 454 12 12, UK/Ireland +44 870 609 9203

**Asia:**

Australia +61 39757 4300, China +86 21 6865 4588 or +86 10 8419 3588,

India toll free 1800 22 8374, India +91 22 6716 2200,

Japan +81 45 453 9220, New Zealand +64 9 980 6700,

Other Asian countries +852 2885 4613

**Countries not listed:** +49 6184 90 6940