

Operating instructions
Thermo Scientific Barnstead GenPure Pro
Water Purification System

- [] Art. no.: 50131956(Standard)
- [] Art. no.: 50131950(UV/UF)
- [] Art. no.: 50131948(UV-TOC)
- [] Art. no.: 50131954(UF)
- [] Art. no.: 50131952(UV)
- [] Art. no.: 50131922(UV-TOC/UF)



Serial no.:

Read these operating instructions before installing and operating the system!

50131947 Stand: 11.12 Rights to technical changes reserved



EC Declaration of Conformity

according to EC Machines Directive 2006/42/EC, Appendix II A

We herewith declare that the design and construction of the machines named below, and the versions of it that we have introduced into the market, conform to the fundamental safety and health requirements of EC Directive 98/37/EC.

This declaration is invalidated when changes which were not agreed to by us are made to the machine.

Manufacturer: Thermo Electron LED GmbH
Robert-Bosch-Straße 1
D-63505 Langenselbold
Germany

Description of the machine:

Function: Ultrapure water system

Versions: GenPure Pro standard, GenPure Pro UF, GenPure Pro UV/UF
GenPure Pro UV, GenPure Pro UV-TOC, GenPure Pro UV-TOC/UF

Article numbers: 50131956, 50131954, 50131952, 50131950, 50131948, 50131922

We also declare that the machine complies with the following further appropriate Guidelines/Directives:

EMV Directive (2004/108/EC)

Harmonized Standards applied:

DIN EN ISO 12100-1 Safety of machines, Part 1: Principles
DIN EN ISO 12100-2 Safety of machines, Part 2: Technical Guidelines
DIN EN ISO 14121-1 Safety of machines, Part 1: Risk assessment
DIN EN 61326-1

Person authorized for documentation:

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Niederelbert, 11 October 2010

Detlef Opp, Head of Technical Documentation


Signature

Preface

Dear Sir or Madam

In deciding to purchase an ultrapure water system from the GenPure Pro series, you have selected a high-quality product.

Thank you for the confidence you have placed in us.

Before you start to install and work with your ultrapure water system, please carefully read the information that is given in these operating instructions on how it is to be installed and operated.

This is particularly important as we, the manufacturer, cannot accept liability for any damage occurring as a result of incorrect operation of the system or from use of it for other than the specified purpose.

Niederelbert, 11.10.2010

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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 Pro system in the space provided on the front page.

* Read the serial number of your ultrapure 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 prior to dispatch, but damage could still possibly occur during transport. When the system is to be carried by hand, two people must always do this. Do not throw or tip the system.

3.1 Examination on receipt

- Check the completeness of the goods received against the delivery note.



Does the packaging show signs of damage?

- Inspect the system for damage.

3.2 Complaints

Should damage have occurred to the goods during transport:

- Immediately contact the post, railway or forwarding agent *.
- Save the complete packaging, including the cardboard box, for a possible inspection of them and/or return shipment of the system.

3.3 Packing for return shipment

If possible, use the original box and packaging material.

When these are no longer available:

- Protect the system from shock by packing it in a suitable bag or sheet and a strong cardboard box.



* The time limit for claims is 6 days from the time of receipt of the goods. The right to claim for damages ceases when this time has elapsed.

4. Extent of delivery

GenPure Pro ultrapure water systems are available in the following versions:

50131956	GenPure Pro standard	Basic system
50131954	GenPure Pro UF	Basic system + ultrafiltration module
50131952	GenPure Pro UV	Basic system + UV photooxidation
50131950	GenPure Pro UV/UF	Basic system + UV photooxidation+ ultrafiltration module
50131948	GenPure Pro UV-TOC	Basic system + UV-photooxidation with TOC measurement
50131922	GenPure Pro UV-TOC/UF	Basic system + UV-photooxidation with TOC measurement + ultrafiltration module

(Please check that your system corresponds to the article number given on the delivery note.)

1x GenPure Pro	Article no. 5013xx
together with:	
Filter cartridge	Article no. 09.2005
Sterile filter capsule	Article no. 09.1003
Transformer-table power unit	Article no. 50134184
Universal adapter	Article no. 21.1006
Universal holder	Article no. 21.1007
Feedwater connection kit	Article no. 25.0075
PE hose, 8x1, 2 m	Article no. 18.0036
Operating instructions	Article no. 50131947
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

5. Safety precautions



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

- Your GenPure Pro series system is a contemporary ultrapure water system. It serves exclusively to purify tap water of drinking water quality. The water it produces is not fit for drinking!
- Do not start to install and operate the system until you have read through the corresponding information given in these operating instructions.
- Lifting and carrying the ultrapure 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.
- Note that the manufacturer is freed from all damages that result from improper operation of the system, or from use of it for other than the intended purpose.
- The CE-Mark is invalidated should constructional changes be made to the system, or products of other manufacturers be installed in it.
- Protect the system from frost. The temperature in the area in which the system is installed is not to go below +2°C or above +40°C.
- Observe all appropriate rules and regulations, including the valid accident prevention regulations, which are applicable at the location where the system is installed.
- The feedwater pressure must be at least 0.1 bar and at most 6 bar. When the feedwater pressure is higher, install a reducing valve.
- Water purification systems require a safety device acc. to DIN EN 1717 to protect the tap water system from contamination.
- A grounded 100-250V, 50/60Hz socket must be available
- The installation area must have a drain at floor level with at least DN 50 pipe (40 mm o.d.). Should no such drain be available then we recommend for safety reasons that a water watcher (article no.: 16.0129) be installed, otherwise the manufacturer will not accept liability for any possible water damage.
- Proceed as follows when the system is to be at a standstill for a longer time (e.g. long, holidays):
 - **Switch the system off (unplug the mains plug).**
 - **Shut off the water feed line to the ultrapure water system.**
 Allowing the system to run with the water feed line closed would result in damage to the pump. The manufacturer does not accept liability for such damage.
- The system must be subjected to rinsing and possibly also disinfection after longer standstill periods. Follow the directions given in the "Rinsing and disinfection" section.
- The surface or wall where the system is to be installed must have sufficient load-bearing capacity (see "Technical Specifications" for the weight).
- When installing the ultrapure water system, ensure that there is sufficient working area around it for convenient operation of it (e.g. filter cartridge replacement, connections, etc.).
- The guarantee is valid for a period of 12 months!

- Never look directly into a switched-on UV-lamp, as UV-light endangers eyesight! The UV-lamp is only to be replaced by service personnel.
- Burns may be caused when the system or a system component has a defect. If appropriate, wear protective gloves.
- To avoid possible risks of crush injury, cuts or electric shock when handling the system, never take the protective casing off of the system. Only trained, skilled personnel are to be assigned to carry out maintenance of the system.
- Regularly carry out visual inspection of the system before operating it, as splashes of liquid could result in a danger of slipping. Any emergent liquid must be immediately mopped up.
- Wear protective gloves when chlorine tablets are to be handled during maintenance. Do not stop a disinfection process that is in progress. After faulty disinfection, carry out a new disinfection run.
- Do not use oxidative cleaning agents when cleaning the system. They would cause damage to it.
- If the system has a defect, proceed as follows:
 - **Switch the system off (dead)**
 - **Stop the water intake**
 - **Contact the manufacturer**

6. Intended use

The GenPure Pro ultrapure water system is a solution to the continually increasing requirements that water of ultrapure quality must fulfil, the increasingly strict demands resulting from technological advances and the need for user-friendly systems and complete solutions.

GenPure Pro systems have been solely and specifically designed to excel in the intended use, which is to produce sterile filtered ultrapure water free of particles, salts and organic compounds.

To benefit from the long possible service lives of the high-quality purification media, feed the ultrapure water system with water which has been subjected to an upstream pre-treatment step (reverse osmosis, ion exchange or distillation),

- Analytical techniques in laboratories:

- HPLC (**H**igh **P**erformance **L**iquid **C**hromatography)
- IC (**I**on **C**hromatography)
- ICP (**I**nductive **C**oupled Argon **P**lasma)
- AAS (**A**tom ic **A**bsorption **S**pectrophotometry)
- TOC Analysis (**T**otal **O**rganic **C**arbon)
- DNA Research
- etc.

- Reagent and solution preparation:

- Cell culture media
- Tissue culture media
- Make-up water for reagents for on-line analytical systems

- Water for high-purity rinse processes on a laboratory scale

7. Technical specifications

Demands the feedwater must fulfill	
Source	Potable tap water, pretreated by reverse osmosis, ion exchange or distillation.
Clogging rate (SDI)	max. 1 for all versions. A 1 µm membrane prefilter is recommended for water not pretreated by reverse osmosis.
Feedwater resistance	> 0.5 MΩxcm
Free chlorine	max. 0.05 ppm
TOC	max. 50 ppb
Bacteria count	< 100 CFU/ml
Turbidity	< 1.0 NTU
Carbon dioxide (CO ₂)	max. 30 ppm
Silicate	max. 2 ppm
Particles	Filtration to 0.2 µm is recommended for protection of the internal filter / final filter.
Temperature	2 - 35 °C
Pressure	0.1 - 6 bar

Product water quality							
		Standard	UV	UF	UV/UF	UV-TOC	UV-TOC/UF
Resistance (Reference temp. 25°C)	MΩxcm	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
Performance	l/min**	1.2	1.2	1.2	1.2	1.2	1.2

* Depends on the feedwater and disinfection

** Depends on the feedwater pressure

Dimensions and weight	
Height	615 mm
Width	495 mm
Depth	330 mm
Weight:	
GenPure Pro Standard	23 kg
GenPure Pro UF	24 kg
GenPure Pro UV	25 kg
GenPure Pro UV/UF	25 kg
GenPure Pro UV-TOC	25 kg
GenPure Pro UV-TOC/UF	26 kg

Cell constants of the measuring cells	
Feedwater conductivity LF2	0.16 cm ⁻¹
Conductivity after UV oxidation LF3	0.01 cm ⁻¹
Ultrapure water conductivity LF1	0.01 cm ⁻¹

Connectors for water	
Feedwater	Hose, 8 mm o.d.
Rinse water	Hose, 8 mm o.d.
Sterile filter outlet	Hose, 8 - 10 mm o.d.

Electrical connections / external switched mode power supply	
Input voltage	AC 100 – 250 V, 50 – 60 Hz, 4 – 2.5 A
Output voltage	DC 48 V, 2.5 A
System connection	DC 48 V, 120 W
Serial interface	RS 232
Protection Class	Class II (external SMPS certified as Class I)

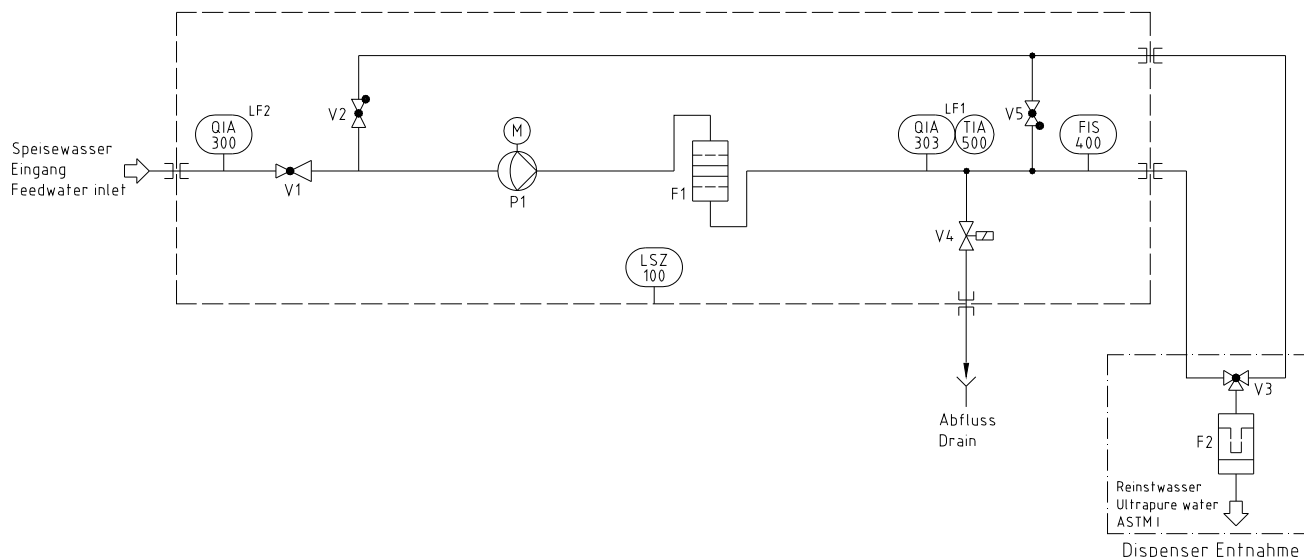
Airborne sound emission	
Sound-pressure level	49 db(A)

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 ± 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 which contact water	
Pressure reducer	NBR
Pump head	Nylon with glass fibre
UV-Lamp	High-purity quartz
UV Housing	Stainless steel
Filter cartridge	PP
UF Housing	Polycarbonate
Rinsing solenoid valve	PA
Dispensing valve	PVDF
Conductivity measuring cells	POM, stainless steel
Distributor block	POM
Connectors	POM
Hoses	PE
O-Rings	EPDM

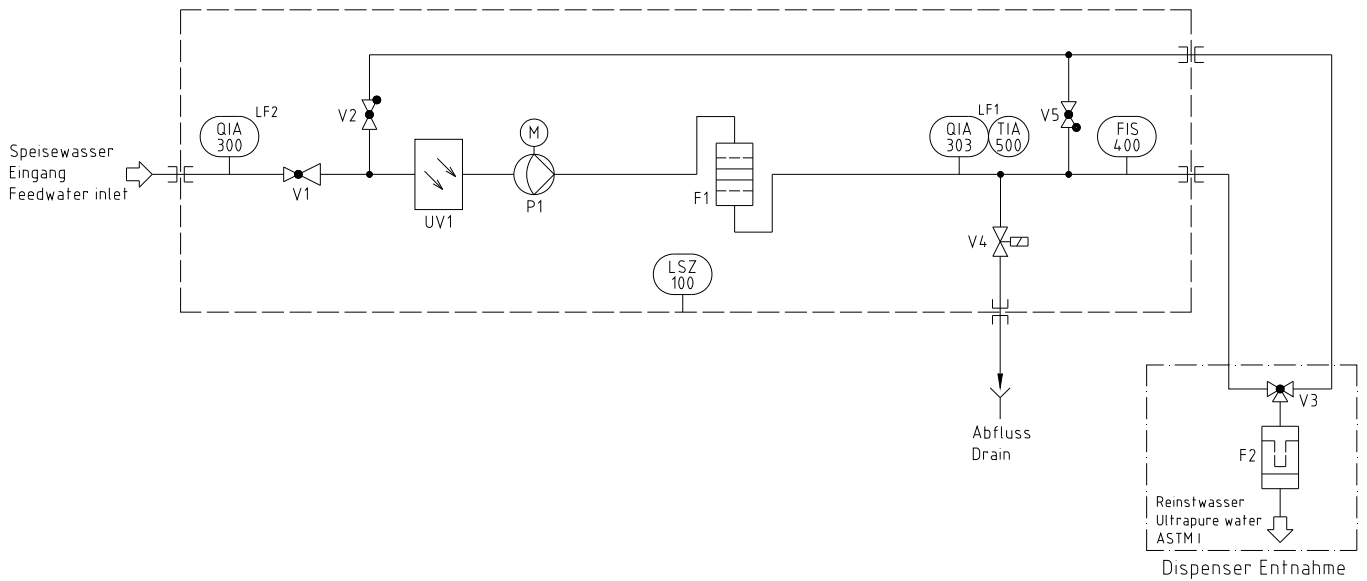
8. Flow charts

8.1 Flow chart for GenPure Pro standard



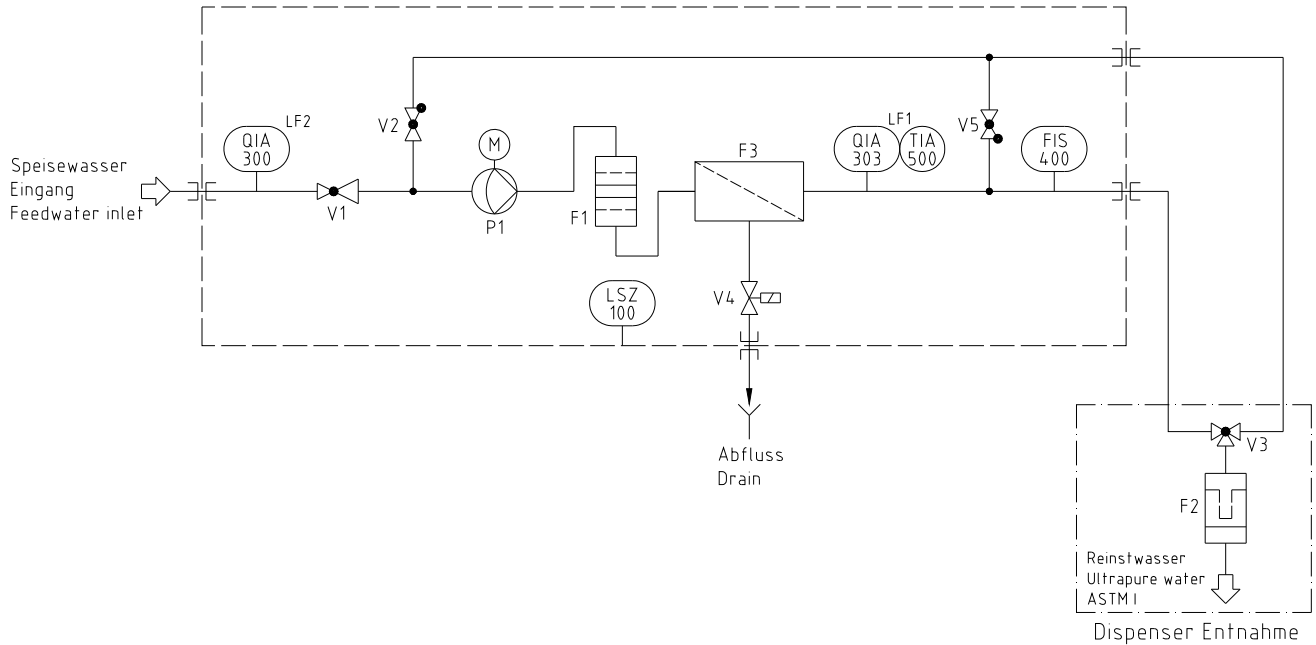
F1	Filter cartridge
F2	Sterile filter
FIS 400	Digital flow meter
LSZ 100	Leakage sensor
P1	Circulation pump
QIA 300	Feedwater conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve
V5	Check valve

8.2 Flow chart for GenPure Pro UV



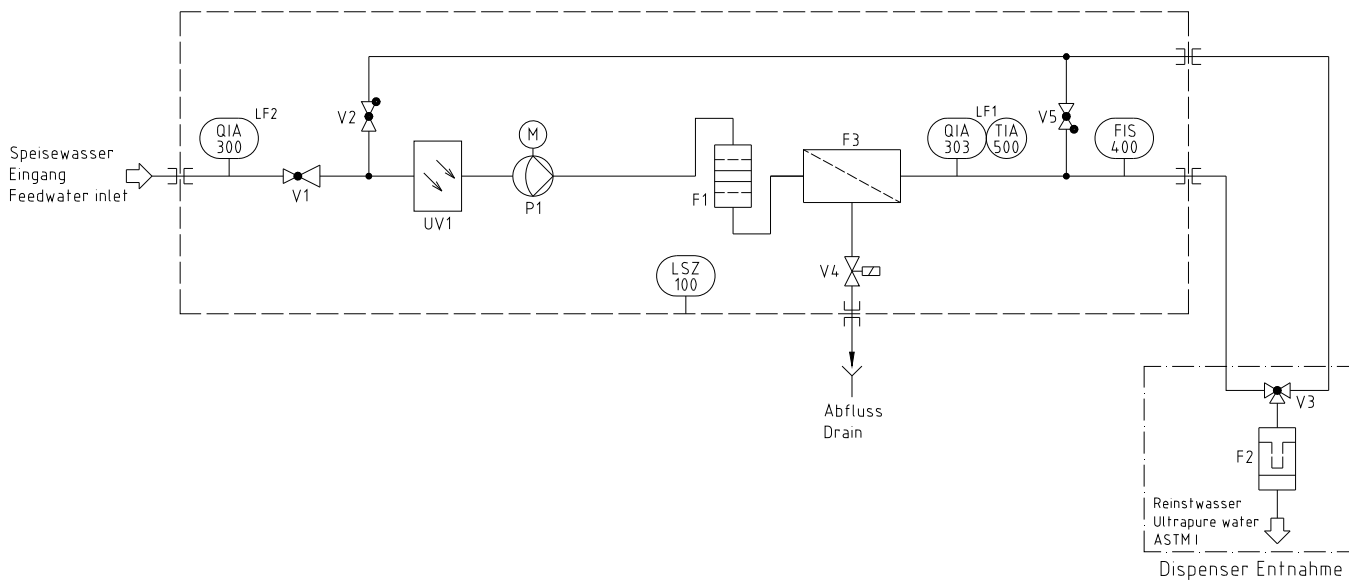
F1	Filter cartridge
F2	Sterile filter
FIS 400	Digital flow meter
LSZ 100	Leakage sensor
P1	Circulation pump
UV1	UV-Photooxidation
QIA 300	Feedwater conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve
V5	Check valve

8.3 Flow chart for GenPure Pro UF



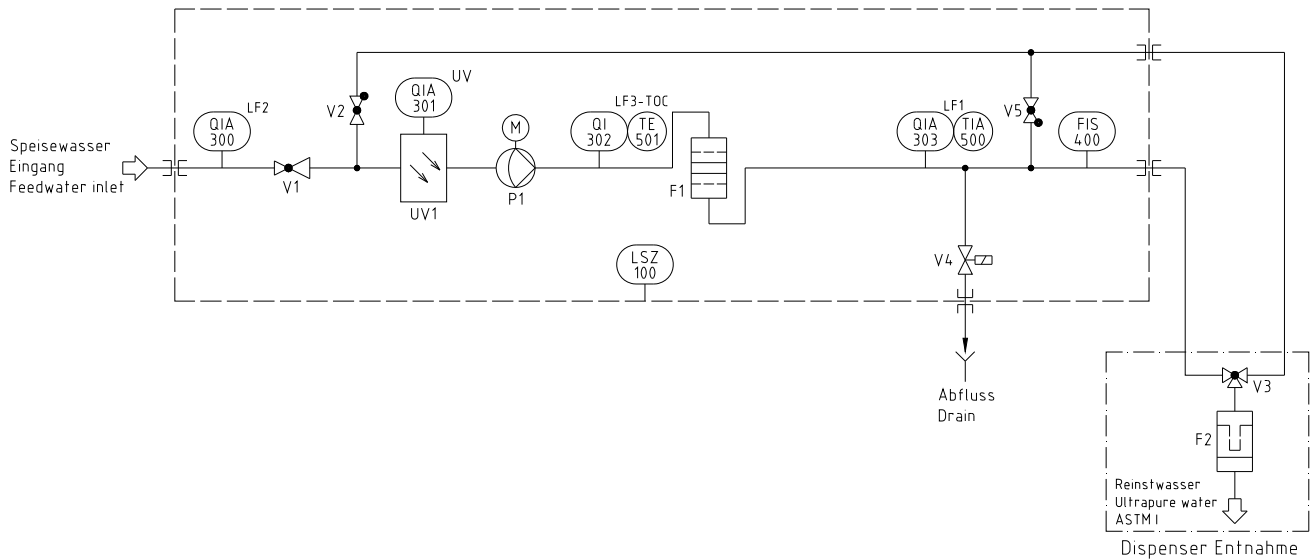
F1	Filter cartridge
F2	Sterile filter
F3	Ultrafiltration module
FIS 400	Digital flow meter
LSZ 100	Leakage sensor
P1	Circulation pump
QIA 300	Feedwater conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve
V5	Check valve

8.4 Flow chart for GenPure Pro UV/UF



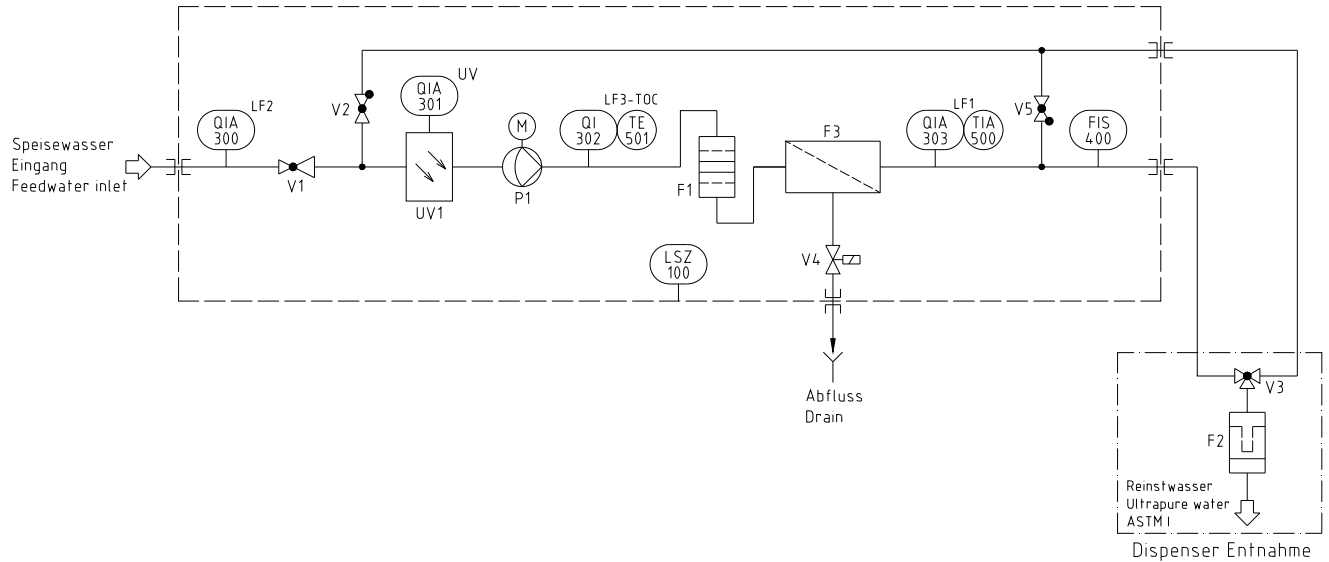
F1	Filter cartridge
F2	Sterile filter
F3	Ultrafiltration module
FIS 400	Digital flow meter
LSZ 100	Leakage sensor
P1	Circulation pump
UV1	UV-Photooxidation
QIA 300	Feedwater conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve
V5	Check valve

8.5 Flow chart for GenPure Pro UV-TOC



F1	Filter cartridge
F2	Sterile filter
FIS 400	Digital flow meter
LSZ 100	Leakage sensor
P1	Circulation pump
UV1	UV-Photooxidation
QIA 300	Feedwater conductivity
QIA 301	UV-Intensity
QI 302	TOC Measurement conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
TE 501	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve
V5	Check valve

8.6 Flow chart for GenPure Pro UV-TOC/UF



F1	Filter cartridge
F2	Sterile filter
F3	Ultrafiltration module
FIS 400	Digital flow meter
LSZ 100	Leakage sensor
P1	Circulation pump
UV1	UV-Photooxidation
QIA 300	Feedwater conductivity
QIA 301	UV-Intensity
QI 302	TOC Measurement conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
TE 501	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Rinsing solenoid valve
V5	Check valve

9. How the system functions

GenPure Pro standard, UV, UF, UV/UF versions

Tap water that has been pretreated upstream by reverse osmosis, ion exchange or distillation flows through a pressure reducer and into the GenPure Pro ultrapure water system, where the conductivity of it is monitored. A pump forces this feedwater through UV-photooxidation (only with GenPure Pro UV and GenPure Pro UV/UF) and the filter cartridge, from where it flows through an ultrafiltration module (only with GenPure Pro UF and GenPure Pro UV/UF), following which the conductivity is permanently measured by a special conductivity measuring cell equipped with temperature compensation. When ultrapure water is drawn from the system, it flows through a sterile filter before reaching the dispensing outlet (removable dispenser). During Interval operation, the water in the system is circulated around an internal circuit at regular intervals.

GenPure Pro UV-TOC, UV-TOC/UF versions

Tap water that has been pretreated upstream by reverse osmosis, ion exchange or distillation passes through a pressure reducer and into the GenPure Pro ultrapure water system, where the conductivity of it is monitored. A pump forces this feedwater through UV-photooxidation, following which a conductivity measurement is made for determination of the TOC value.

The TOC value is calculated from the difference between the measured conductivities of 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 in place of the measured value.

In Stand-by mode, "---" is shown instead of the measured value.

The filter cartridge and the ultrafiltration module are then flown through (only with GenPure Pro UV-TOC/UF), after which the conductivity is permanently measured by a special conductivity measuring cell QIA 303 (with temperature compensation). When ultrapure water is taken from the system, it flows through a sterile filter before reaching the dispensing outlet (removable dispenser). During Interval operation, the water in the system is circulated around an internal circuit at regular intervals.

10. The installation area

Take the following criteria into consideration when selecting the installation area:

- Feedwater pressure, not below 0.1 bar and not above 6 bar.



The feedwater pressure must never exceed 6 bar. If it is higher than this, install an additional pressure reducer.

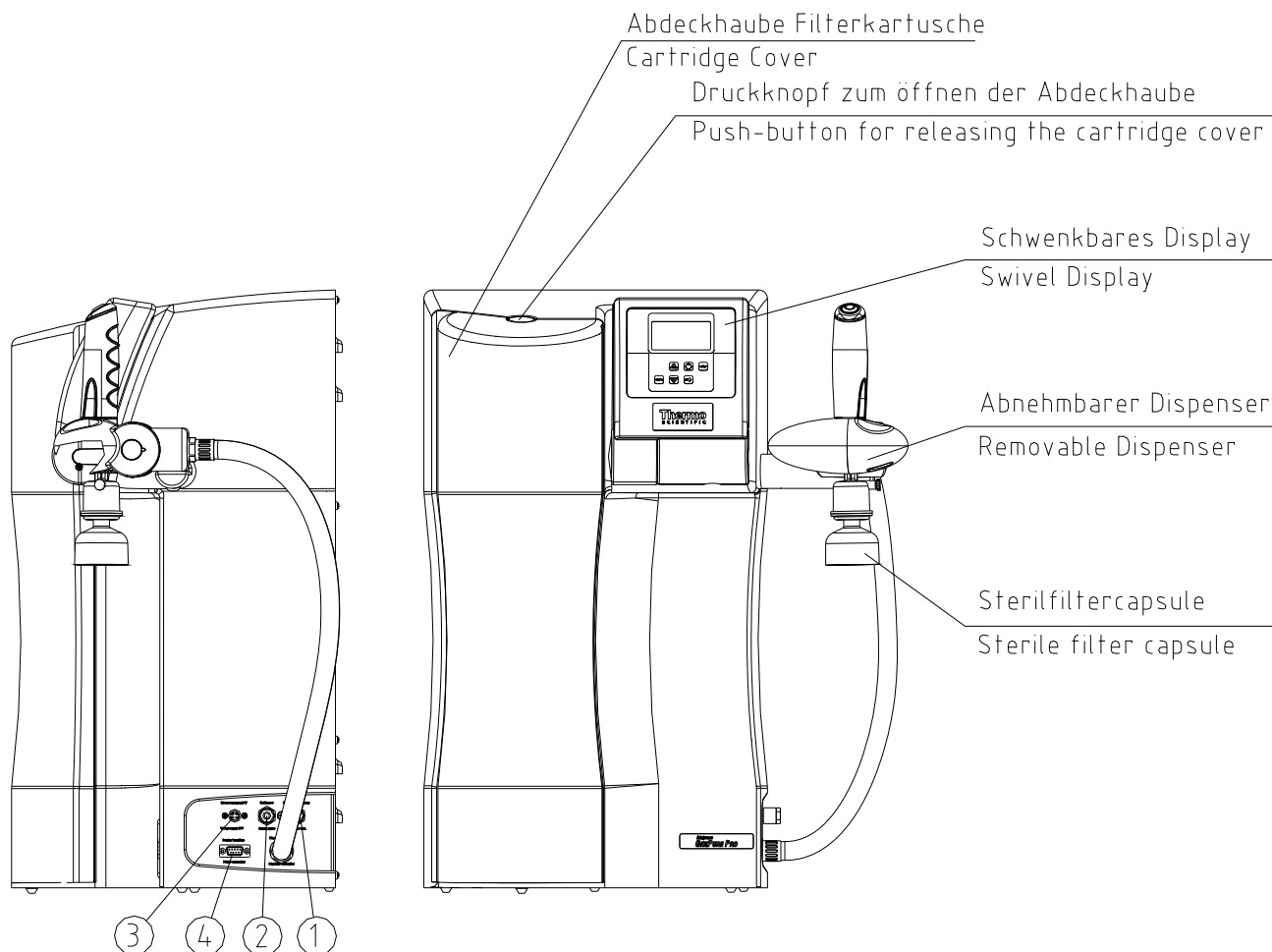
- Minimum temperature + 2°C.
- Level standing surface
- A smooth wall is required when the system is to be wall-mounted. Check the statics of the wall. It must have sufficient load-bearing capacity (for system weight, see "Technical Specifications")
- A floor drain with a DN 50 size waste pipe
- Free run off to drain.
When no floor drain is available, install a water watcher (article no.: 16.0129) to protect against water damage!



Unrestricted gravity flow to drain must be ensured!

- An electrical socket appropriate for the system (see "Technical Specifications").
- Sufficient working room around the system (for replacing filters etc.).
- Easy access for operation and control of the system.
- Tap water connection with R 3/4" thread.

11. Installation



- 1) Feedwater connector for 8 mm o.d. hose
- 2) Rinse water connector for 8 mm o.d. hose
- 3) Power supply connector 48V DC
- 4) Connector for an optional printer (article no.: 09.2207)

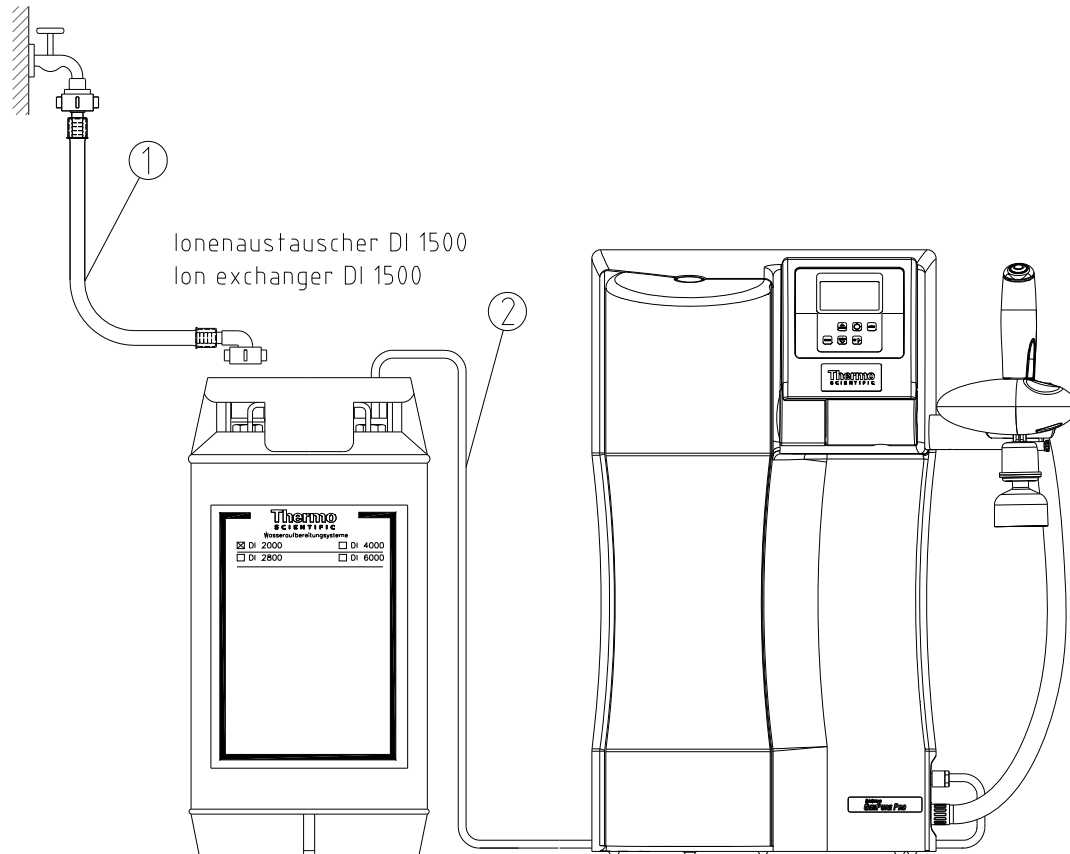
Proceed as follows to put your GenPure Pro ultrapure water system into operation:

- Either stand the system on the intended surface or hang it on a wall using the hooks which are supplied with it.
- Take the cartridge cover off of the system.
- Remove the stoppers from the filter cartridge and save them for later use.
- Push the filter cartridge in via the guide, fit the quick connects onto the cartridge connectors and fit the cartridge cover on again.
- Use the feedwater connector kit to connect the system (connector 1) to the feedwater connection (Important! Only feedwater that has been pretreated by reverse osmosis, ion exchange or distillation is to be used!).

- Use the 8 mm o.d. hose to make a gravity fall (pressureless) connection from the system (connector 2) to the floor drain. The drain to the sewer must be max. 1m above the rinsing water connector of the Unit.
- Screw the sterile filter supplied in the dispensing valve outlet (R 1/4" female thread).
- Open the feedwater supply tap.

11.1 Mounting example GenPure Pro with Ion exchanger DI 1500 (option)

Speisewasser
Feedwater

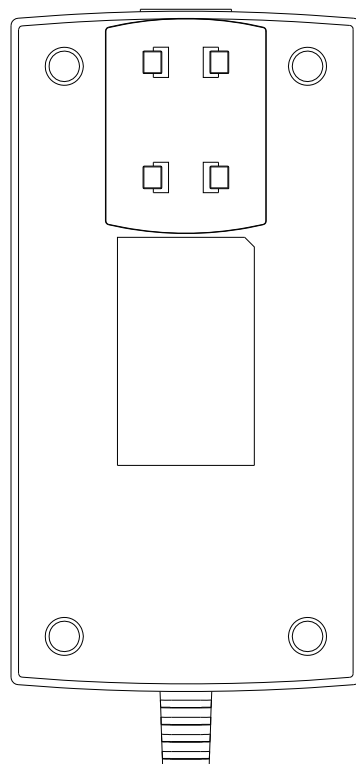


Proceed as follows to connect an ion exchanger to the upstream side of the GenPure Pro system:

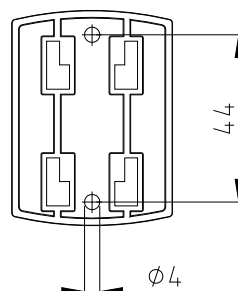
- 1) Connect the hose which has a R3/4 union nut (1) from the raw water tap to the R3/4" input of the ion exchanger.
- 2) Make connection from the R3/4 output of the ion exchanger to the feedwater Connector of the GenPure Pro system by using the feedwater connector kit (2) that is contained in the assembly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

11.2 Mounting the power pack (voltage supply)

Back side / power supply



Universal adapter

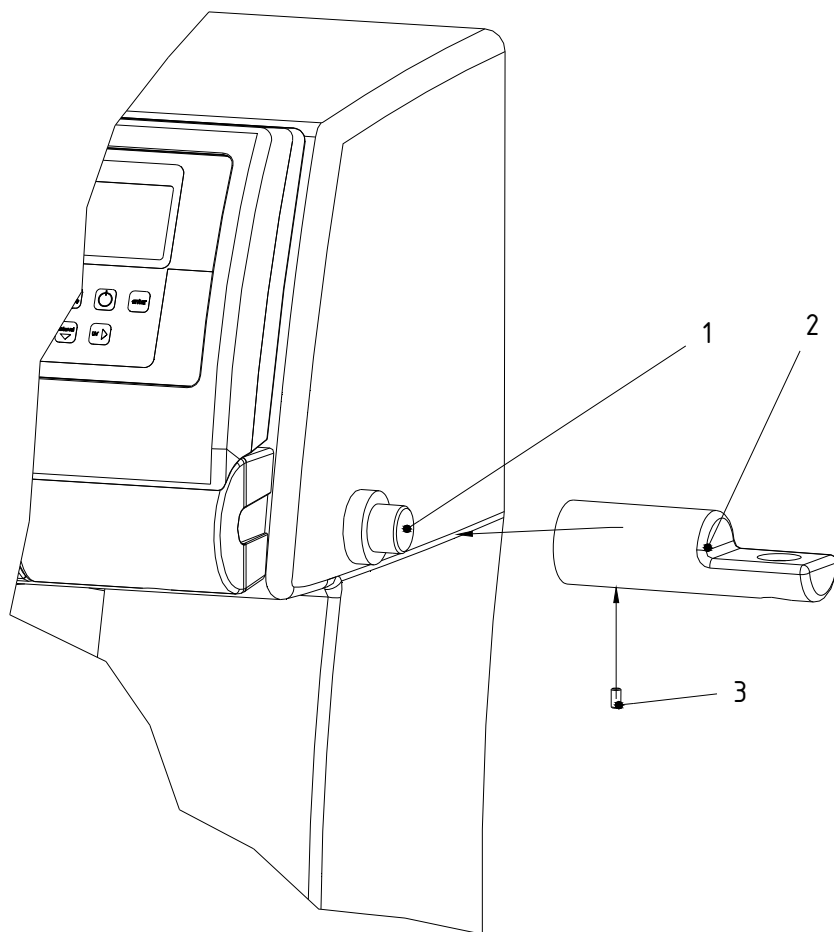


Fixing with screws

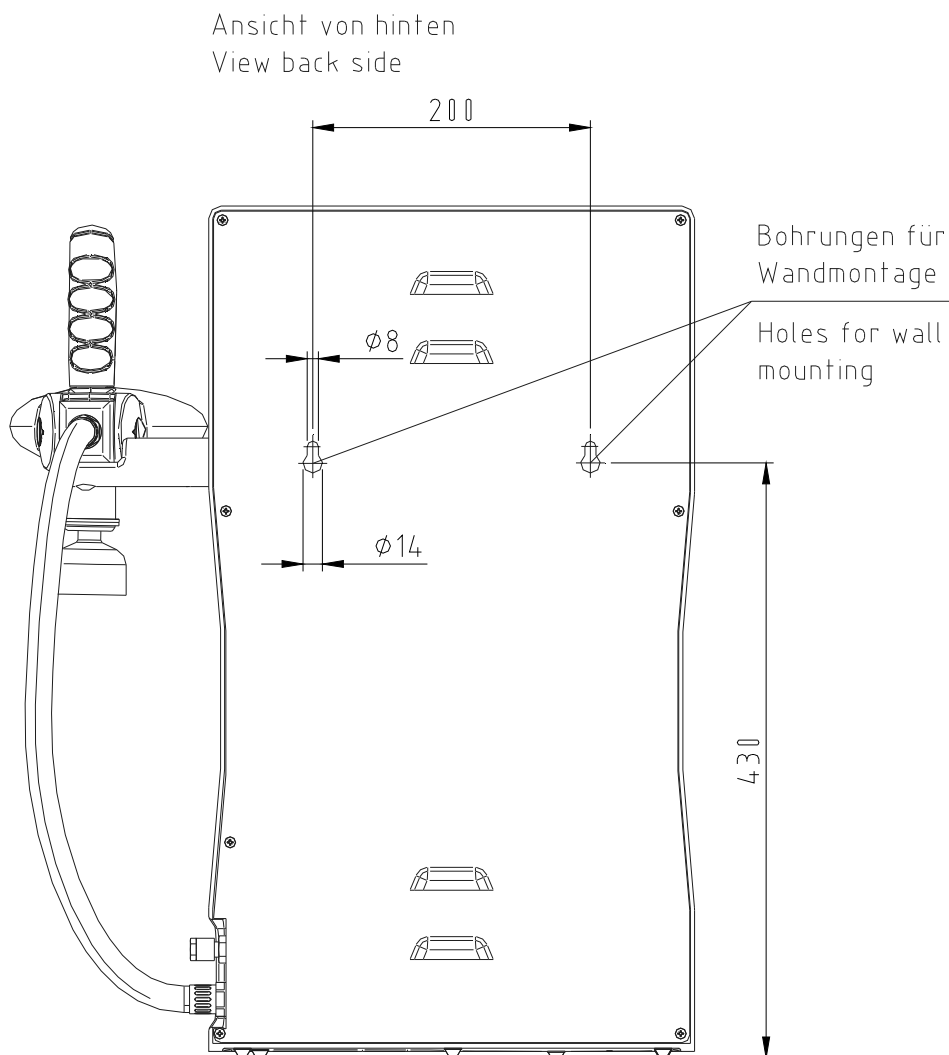
- Whenever possible, mount the power pack on the wall to the left or right of the ultra pure water system where it is freely accessible.
- Stick the universal holder which is supplied in the assembly kit to the back of the power pack as shown in the above Figure.
- Stick the universal adapter to a smooth 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 ultrapure water system (48V 4-pin power supply connector, connector 3) and to an earthed 100 - 250V, 50/60Hz socket.
- The system is now ready for use

11.3 Fixing of the holder of the dispenser:

- Fit the holder (Pos. 2) on the system receptacles (Pos. 1).
- Lock the holder in position with the stud (Pos. 3).



11.4 Wall mounting



Proceed as follows to mount your GenPure Pro to a wall:

- 1) Use a twist drill (8mm or 5/16 inch) to make the two holes in the wall that are required as shown in the diagram above.
- 2) Plug the nylon S8 dowels 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.
- 3) Lift the GenPure Pro system (2 people are required for this) and hang the back side of it on the scw hooks.

11.5 Putting into operation



The system must have cooled down, or warmed up, to room temperature before being put into operation.



Check that all connections have been made as detailed above.



Press this button to switch the system on. After a compulsory rinse, the system switches to the last used operating mode.



Vent the system by switching it to “Rinsing” three times in succession and, during this procedure, withdraw approximately 5 litres of water and discard it. The ultrapure water limiting value may be exceeded during this procedure.

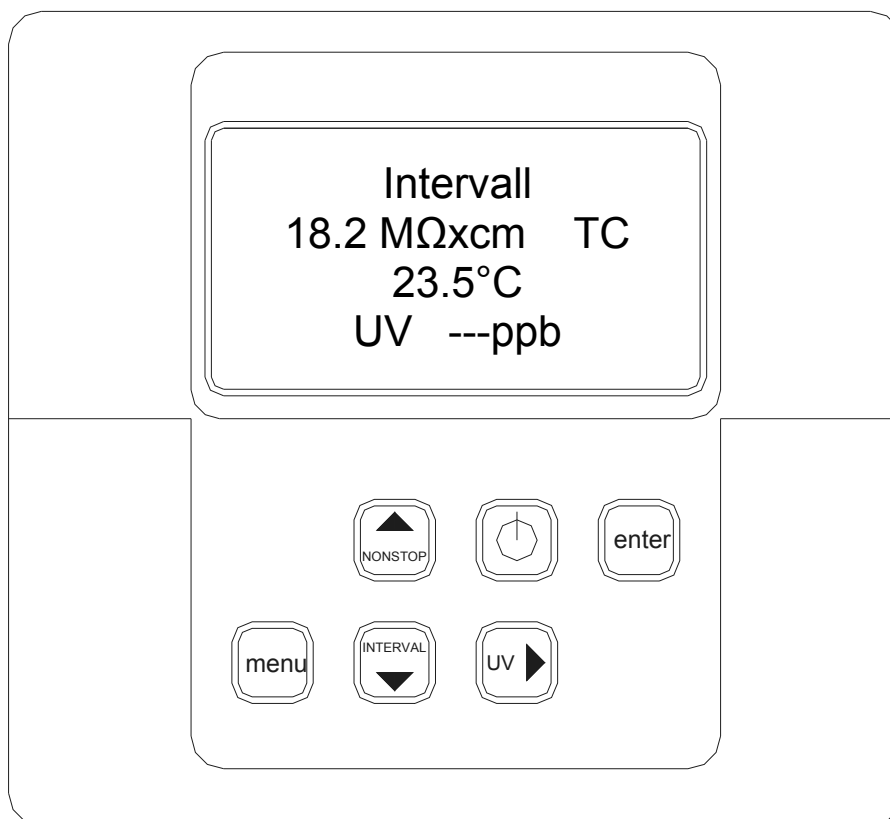


Use the “NONSTOP” button to switch the system to the “Nonstop” operating mode“.



When the system successfully produces the ultrapure water quality that you require, press this button to return the system to the “Interval” mode.

12. Operating elements



Switches the system on or off



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



Confirms the value shown in a menu point



Switches the menu to the next menu point



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



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

13. System control

13.1 General information

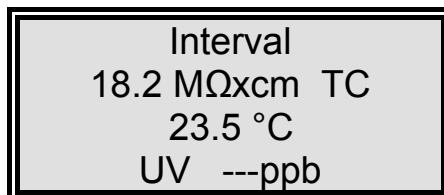
The software structure consists of five operating modes and four menus, which will be described in more detail in the following. Measured values are continually shown in the display and/or in the menus. The displayed TOC value is calculated from the difference in the ultrapure water measuring cell and TOC-measurement measuring cell values. When a fault occurs, the potential-free outlet is set, the display backlighting changes from green to red and the fault message is shown in clear text in the first line of the display in alternation with the operating mode message.

13.2 Operating modes

13.2.1 Interval operating mode after switching on

Following a press on the ON/OFF button, system control first brings the system version, the system serial number and the software version number to display for 3 seconds. The system then automatically goes to the Interval operating mode (see Interval mode), whereby the green backlighting of the display is switched on and remains on until system control is switched off via the ON/OFF-button. The “UV” text message is displayed when the UV-lamp is switched on. The “TC” message is displayed when measured values are subject to temperature compensation. Further to these, the measured values for ultrapure water (measuring cell LF1) and temperature are also displayed. The displays of messages and measured values are independent of the operating mode. The TOC value is not shown in Interval mode.

The display shows:



13.2.2 Non-stop mode

A press on the “N/S” button switches the system to the Non-stop mode. The circulation pump starts to run, the (UF) rinsing solenoid valve opens for the set “Intv.rinse time”. Non-stop operation can be stopped by a press on the “Int” button. If Non-stop operation is not ended manually, the system automatically switches to Interval operation after it has been running for 2 hours. The message *UV* is shown in the display when the UV-lamp is switched on, but switching on of it is only made in Non-stop mode (see UV-lamp). The TOC value is additionally shown in the display whenever the UV-lamp is switched on.

The display shows:

<p>Nonstop 18.2 MΩxcm TC 23.5 °C UV 3 ppb</p>

13.2.3 Interval operation

The system is in the Interval mode when the system is switched on with the ON/OFF button and when called by a press on the Interval button. The pump runs for the set interval pump time and the rinsing solenoid valve (UF) opens for the set “Intv.rinse time”. When the interval pump time has expired, the pump is switched off until the end of the standstill time. The standstill time is given by the difference between half an hour and the interval pump time, so that the pump and the solenoid valve are actuated in a half-hourly rhythm. The TOC value is not shown in this operating mode.

The display shows:

<p>Interval 18.2 MΩxcm TC 23.5 °C UV --- ppb</p>
--

13.2.4 UV-Lamp

A press on the UV-button brings *UV* to view in the display. The UV-lamp is only switched on, however, when the system is in Nonstop operation or when the system circulates. The UV-lamp is switched off at the end of Nonstop operation (settable). When Nonstop operation is manually ended by a press on the “NT” button, the UV-lamp is switched off after it has been burning for 0.5 hours. During the time that the UV-lamp is burning, the UV light intensity is monitored and is displayed in Menu. Should the limiting value for the UV-intensity (OEM menu / Menu) be gone below, the potential free output is set and the “UV Intensity” fault message is displayed.

The operating time of the UV-lamp is recorded and the “*UV time*” fault message is brought to display when the limiting value set for this time is exceeded. TOC measurement is also carried out during the time that the UV-lamp is burning.

The display shows:

Nonstop 18.2 MΩxcm TC 23.5 °C 1,00L UV 3 ppb

13.2.5 Water dispensing via volume control

Ultrapure water systems which are equipped with the volume control option can dispense a preset volume of water.

As soon as the Nonstop-mode is selected, a litre volume is shown in line 2 of the display. This is the volume of ultrapure water that was last dispensed.

A single press on the Enter-key enables this volume value to be changed within the range from 0.01 to 65.5 litres by means of the arrow-keys. The UV-key can be used to position the cursor at the particular number that you wish to change.

A second press on the Enter-key causes the volume of water that has been set to be dispensed. The litre volume shown in the display is the actual volume dispensed.

Dispensing stops as soon as the set volume is reached.

Dispensing can be stopped at any time by a further press on the Enter-key. This enables small volumes to be dispensed by two successive presses on the Enter-key. One press starts dispensing and, when the wanted amount has been dispensed, a second press stops dispensing. The button on the dispenser has the same function as the Enter-key.

Volume control is supported in all programme versions.

The display shows:

Nonstop 18.2 MΩxcm TC 23.5 °C 1.00L UV 3 ppb

13.2.6 OFF mode

A second press on the ON/Off-button causes the display to go dark and all text output on the display to be extinguished. No outputs are now switched.

13.3 User menu

All measured values, operating times and limiting values which are relevant for the user can be set and read in this menu.

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

Settings can be changed with the arrow keys. When you confirm a value by pressing on the Enter-key, you are taken to the next menu prompt. Settings can only be made when system control has been previously unlocked by entering a valid code number.

To simplify changing settings, a press on the UV-key allows you to select a certain individual number in the numerical value that you want to change. The arrow keys can now be used to enter the new number from 0 to 9 at that position.

13.3.1 Feedwater measured value and limiting value

Under this menu prompt, the feedwater conductivity can be read and the limiting value for it can be set (LF2). The fault message "*Limit value feed*" is shown flashing in line 1 of the display when the feedwater limiting value is exceeded. Should several fault messages occur simultaneously, then they are alternately shown.

Measurement range, feedwater:	10.0- 0.010 MΩxcm
Setting range, limiting value:	0.1- 49.9 μS/cm
Basic setting:	0.5 MΩxcm

Set the limiting value using the arrow keys (see Settings with the arrow keys).
With settings above 50 μS/cm, the limiting value is switched off and the word *off* appears in the display.

The display shows:

<p>Feedwater 3.125 MΩxcm Limit value feed 2.00 μS/cm</p>
--

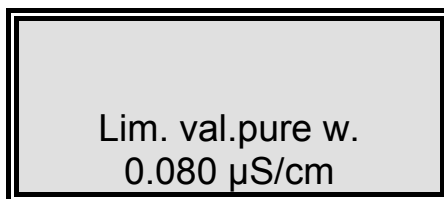
13.3.2 Ultrapure water limiting value

The limiting value for the ultrapure water conductivity can be set here. When the entered limiting value is exceeded, "*Lim. val.pure w.*" is displayed (LF1).

Setting range for the limiting value: 0.055- 5.000 μS/cm

Set the limiting value using the arrow keys (see Settings with the arrow keys).
With settings above 5.000 μS/cm, the limiting value is switched off and "*Off*" is shown in the display.

The display shows:

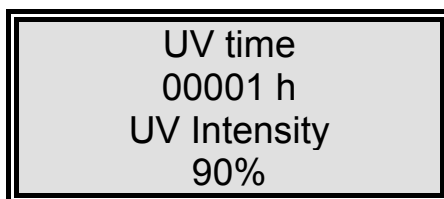


13.3.3 UV Intensity and operating time

In this menu, the UV-lamp operating time is displayed and the UV-sensor input is evaluated. The UV-lamp operating time counter counts the hours that the UV-lamp has been burning.

The "UV-time" fault message is triggered when the maximum operating time is reached. The UV-sensor measures the actual intensity of the UV-lamp. The display shows the % of this compared to the maximum value. The *UV-Intensity* fault message is issued when the limiting value is gone below. The limiting value is set in the OEM-menu. The fault message for the UV intensity is first displayed after a settable fault time to avoid fault message display during the start-up phase.

The display shows:



13.3.4 Filter cartridge serial number

The operating time counter for the filter cartridge is set back on entry of a valid serial number.

The display shows:



13.3.5 Rinsing the ultrafilter

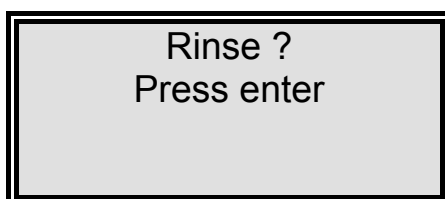
In this menu, a press on the Enter-key allows rinsing to be carried out whenever it is necessary. The pump is started and the rinsing solenoid valve (UF) is opened for the rinsing time set in the OEM-menu.

Neither fault messages nor measured values are displayed during rinsing.

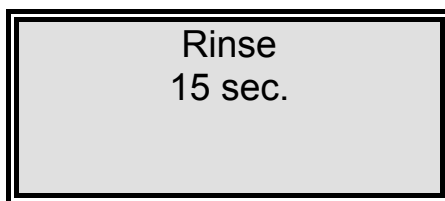
When rinsing has finished, the system returns to the last operating mode (Interval or Nonstop)

The remaining rinsing time is counted down and displayed during rinsing.

The display shows:



During rinsing, the display shows:

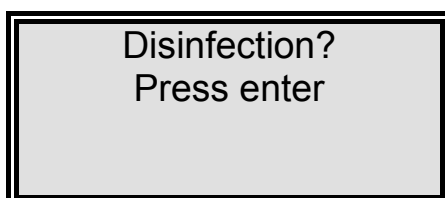


13.3.6 Disinfection

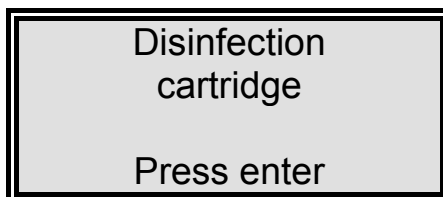
In this menu prompt, the query asks if there is a need of disinfection. Confirmation with Enter brings the *Disinfection cartridge. Install one* prompt to display. When this is also confirmed with Enter, disinfection begins and the pump runs for the whole of the disinfection time. When half of the disinfection time has expired, the rinsing solenoid valve (UF) is additionally opened until the end of disinfection. When disinfection has been completed, the *New filter cartridge. Install one* message is shown. Confirmation with Enter returns system control to the last used operating mode. The disinfection time can be set in the OEM-menu.

The remaining disinfection time is counted down and displayed during disinfection.

The display shows:



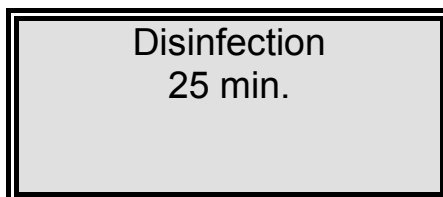
After confirmation with Enter, the display shows:



Disinfection
cartridge

Press enter

During disinfection, the display shows:



Disinfection
25 min.

After disinfection, the display shows:



New
filterset

Press enter

13.3.7 Fault storage

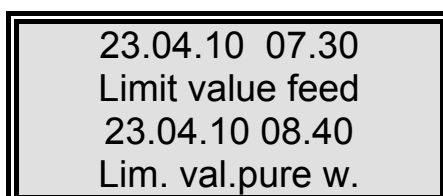
Confirmation of this prompt with Enter allows the fault storage to be looked through. Two faults, each with date and time, are shown in the display. Pressing the arrow keys takes you successively through preceding or following faults. Press the menu-key to end the fault display. This takes you to the next menu prompt.

The display shows:



Error history
Press enter

The fault storage display shows:



23.04.10 07.30
Limit value feed
23.04.10 08.40
Lim. val.pure w.

13.3.8 Registering the station

In this menu, external dispenser units can be registered at the server.

The display shows:



13.3.9 Entering a code number

To prevent unauthorized access to system control, settings can only be changed when a valid code number is entered and confirmed with Enter in this menu. Each code access is issued to the printer (RS 232) with date, time and code number.

The display shows:



13.4 OEM Menu

Basic settings and limiting values can be changed in this menu. To be able to make changes in the OEM menu, system control must be previously unlocked by entering a code number.

Calling the OEM menu.

After system control has been unlocked, simultaneous presses on the Enter-key and the Nonstop-key call the OEM menu. Following this, the "OEM menu Press Enter" prompt is displayed. When this is confirmed with Enter, the first menu prompt can be worked on. To simplify changing settings, press the UV-key to select the individual number in the numerical value which you want to change. Now use the arrow keys to enter the wanted number from 0 to 9 at that selected position.

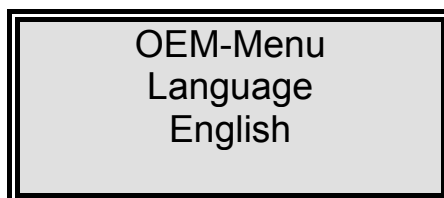
A press on the menu-key takes you to the next menu prompt.
The setting can be changed with the arrow keys.

13.4.1 Language selection

The language can be changed in this menu.
The choice is between English, French and German.
The setting can be changed with the arrow keys.

Basic setting: English

The display shows:



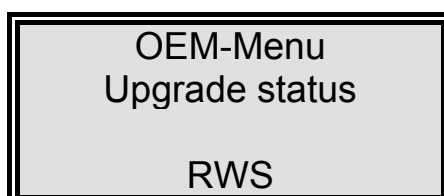
13.4.2 Programme selection

The programme according to which system control operates is set in this menu,.
The following possibilities are given:

RWS+RO+EDI or RWS

Basic setting: RWS

The display shows:



13.4.3 Entering system version and serial number

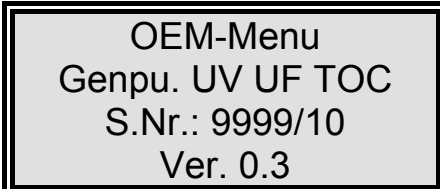
The system version and system serial number can be entered in this menu. The two are then printed out as header on each print-out. Use the arrow keys to enter the settings. The number of the software version is given in the bottom line of the display.

The following system versions can be set here:

GenPure Standard, GenPure UV, GenPure UF, GenPure UV/UF, GenPure UV/TOC, GenPure UV/TOC/UF, LabTower EDI, LabTower TII.

The serial number consists of six numerals and a slash. Use the arrow keys to enter the settings, as for other settings.

The display shows:



OEM-Menu
Genpu. UV UF TOC
S.Nr.: 9999/10
Ver. 0.3

13.4.4 Switching units

In this menu, a choice is given as to whether measured values are to be displayed in the conductivity unit or the specific electric resistance unit.

Basic setting: Conductivity

The display shows:



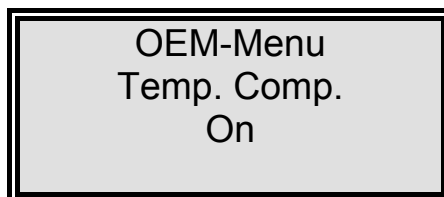
OEM-Menu
 $\mu\text{S/cm}$ - $\text{M}\Omega\text{xcm}$
 $\text{M}\Omega\text{xcm}$

13.4.5 Switching temperature compensation off

Temperature compensation can be switched off or on in this menu. TC is shown in the display when it is switched on, NTC is shown when it is switched off.

Basic setting: Temperature compensation on

The display shows:

**13.4.6 Setting the limiting value for temperature**

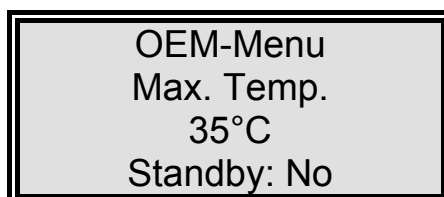
The maximum temperature which the system is to be allowed to reach is set in this menu. The *max. Temp.* fault message is triggered when this limiting value is exceeded. A setting can also be made here to have the system automatically switched over to the Stand-by operating mode to avoid further heating up.

Setting range: 1- 50 °C

Basic setting: 50 °C

Basic setting: Standby: No

The display shows:

**13.4.7 Rinsing time**

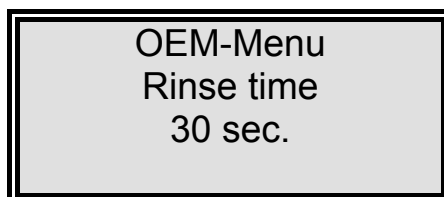
The rinsing time can be set in this menu.

Step width: 1

Setting range: 10 - 60 sec.

Basic setting: 30 sec.

The display shows:



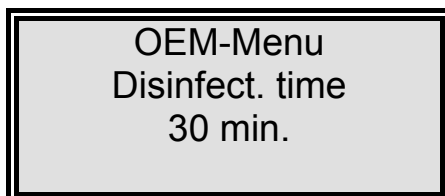
13.4.8 Changing the disinfection time

The disinfection time can be set in this menu.

Setting range: 15- 90 min.

Basic setting: 30 min.

The display shows:



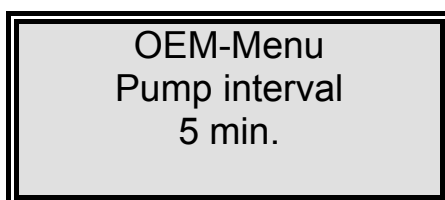
13.4.9 Setting the interval pump time

The interval pump time can be set in this menu.

Setting range: 1- 30 min.

Basic setting: 5 min.

The display shows:



13.4.10 Circulating pump performance

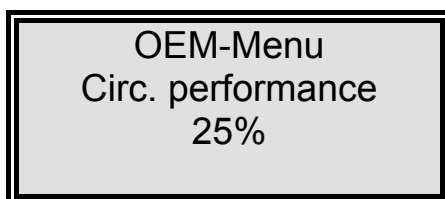
In this menu, the setting is made for the performance which the pump is to have in Interval operation and the duration of the start-up ramp for volume control.

Specification of the voltage in % of the maximum supply voltage value.

Setting range: 25%- 100%

Basic setting: 25%

The display shows:



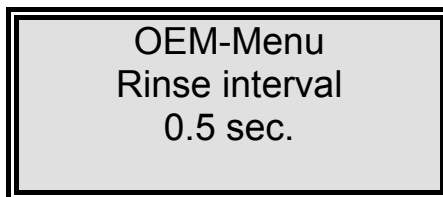
13.4.11 Setting the interval rinse time

In this menu, setting can be made of the time for which the rinsing solenoid valve is opened for ultrafilter rinsing at each start of the Interval cycle or on changing from Interval to Nonstop.

Setting range: 0.1- 2 sec.

Basic setting: 0.5 sec.

The display shows :



OEM-Menu
Rinse interval
0.5 sec.

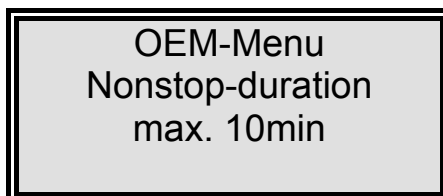
13.4.12 Nonstop duration

In this menu, the length of time for Nonstop operation can be set. With settings above 120 min. the system is switched to continuous operation. The display shows *Nonstop* operation.

Setting range: 10- 120 min.

Basic setting: 10 min.

The display shows:



OEM-Menu
Nonstop-duration
max. 10min

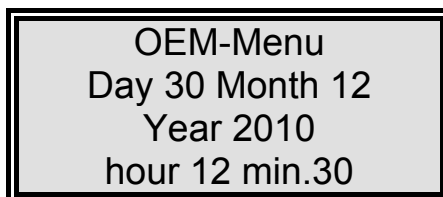
13.4.13 Setting the real-time clock

The real time clock can be set in this menu.

Setting range: 1-12 Month, 1-31 Day, 0-24 h, 0-60 min.

Basic setting: The actual date

The display shows:



OEM-Menu
Day 30 Month 12
Year 2010
hour 12 min.30

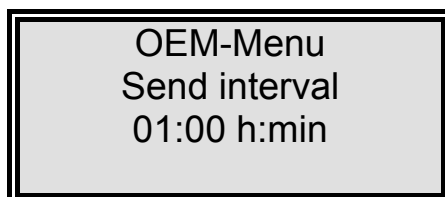
13.4.14 Setting the sending interval

In this menu the sending interval between transmissions of measured values and fault messages to the RS 232 is set.

Setting range: 0.5-12 hours

Basic setting: 1 hours

The display shows:



13.5 Data transmission via the RS 232 interface

All measured values are issued to the interface complete with date and time in the rhythm of the set sending interval. Should a fault occur, this is issued to the interface as text with date and time. Each unlocking of system control is also registered by issue to the printer with date, time and the abbreviated code number.

In Nonstop operation, a set of data is issued to the printer once only.

The interface has a transmission rate of 9600 bits/sec., 8 data bits, 1 stop bit and no parity.

The SUB-D socket assignment is:

PIN 2:	TXD
PIN 3:	RXD
PIN 5:	GND

13.6 Printer output

Various parameters are documented by the printer. It differentiates between three types of message:

- **Standard message**
- **Code message**
- **Fault message**

13.6.1 Standard message:

A record of all measured values is printed out according to the sending interval. A print out is also made of a complete set of data in Nonstop operation.

Print-out:

e.g.:

```
01.10.10 10:38
GenPure Standard
S.No. 9876/10
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%
```

The standard record documents all measured values. With systems without TOC measurement and UV-intensity, 0 is entered in place of measured values for these functions!

13.6.2 Code message:

Whenever a code number is entered in system control and confirmed with Enter, the code input is immediately printed out.
Code identification (see the "Assignment Table for code numbers which unlock the system").

Print-out:

```
01.10.10 10:38
GenPure Standard
S.No. 9876/10
Code 0002
```

13.6.3 Fault message:

When a fault message is shown in the display, e.g. for the ultrapure water limiting value, then the fault message is printed out on expiry of the sending interval.

Print-out:

```
01.10.10 10:38
GenPure Standard
S.No. 9876/10
Reinst.grenzwert
```

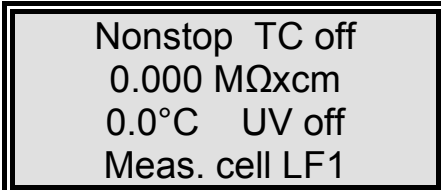
13.7 Measuring cell fault recognition

Minimum and maximum limiting values for each of the conductivity measuring cells and the temperature sensor are fixed in the programme. Should measured values go below or above these respectively, then it must be assumed that a cable break has occurred. The appropriate fault message "Measuring cell LF1", "Measuring cell LF2", "Measuring cell LF3" or "Measuring cell Temp" is then issued in line 1.

When resistances are in a region below 50 Ω or above 20M Ω , then a cable break or a short-circuit can be assumed.

These basic settings cannot be changed in any menu.

The display shows:



```
Nonstop TC off
0.000 MΩxcm
0.0°C UV off
Meas. cell LF1
```

13.8 Code lock

To prevent unauthorized access to system control settings, changes to these settings can only be carried out when a correct code number has been entered and confirmed with Enter.

In deviation to existing programmes, control release can be given at three levels. Only the menu is released for changes at the first level. Both the menu and the OEM menu are released at the second level. All menus are released at the third level.

Code numbers:

No.	Menu	No.	Menu+OEM-menu	No.	All levels
1	150	4	450	7	750
2	250	5	550	8	850
3	350	6	650	9	950

Each access via the code is printed out by the printer (RS 232) complete with date, time and the code number used.

The display shows:



Code numbers can be assigned to individual persons in the Assignment Table on the following page. Please remove this page from these operating instructions and keep it where it is safe from unauthorized viewing.

14. Maintenance

Regular servicing of your system ensures that the quality of water is maintained. We recommend that you close a service contract with a service company expressly authorised to ensure that maintenance work that is required twice yearly is carried out. You then have the certainty of a high operational, safe, and reliable water purification system.

To ensure fault-free operation, your system must be checked, serviced and cared for at regular time intervals in accordance with these operating instructions! For this reason, the operating instructions must be readily available to operating and maintenance staff at all times, and be carefully followed!

The operating-staff assigned is committed to carry out the weekly checks. During the agreed term of validity of the guarantee, maintenance is to be carried out weekly according to the maintenance record supplied with the operating instructions.

Calibration of the conductivity is only to be carried out and recorded by customer service.

Cleaning and disinfection of your system is performed for reasons of hygiene and has no effect on the technical condition of the system. The system must be cleaned and disinfected at least once yearly.



Control and maintenance work on electrical systems are only to be carried out when the system has been switched currentless at the mains and the switching has been secured against inadvertent switching back on. Such work is only to be performed by an appropriately trained, skilled electrician.

14.1 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.

14.2 Replacing the filter cartridge



Replace the filter cartridge when the maximum limiting value that you have set for the ultrapure water is exceeded or when the "New filter set" message is shown in the display.

Proceed as follows to replace the filter cartridge:

1. Switch the system off.
2. Turn the feedwater tap off.
3. Open the dispensing valve until water no longer emerges and close it again.
4. Remove the cartridge cover.
5. Take off the quick-connects from the feedwater and ultrapure water sides of the filter cartridge and close the free connectors with the stoppers you have saved.
6. Draw the spent filter cartridge out from the guide and replace it with the new filter cartridge.
7. Remove the stoppers from the new filter cartridge and save them.
8. Fit the quick connects to the filter cartridge.
9. Replace the cartridge cover.
10. Open the feedwater tap.
11. Switch the system on.
12. Dispense and discard at least 5 litres of water.
13. To set the operating time counter of the filter cartridge back to zero, enter the serial number given on the filter cartridge as is described in the "Filter cartridge serial number" section.



Switch the system to the "Rinsing" operating mode to vent air out of it.

14.3 Disinfection



Disinfection must 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 disinfect 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.

15. 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.

16. Trouble shooting

Fault	Cause	Remedy
The system does not start	<ul style="list-style-type: none"> - No supply of power 	<ul style="list-style-type: none"> - Provide power
Dispensing not possible	<ul style="list-style-type: none"> - Feedwater tap is closed - Feedwater and rinse water connections are mixed up - Feedwater pressure < 0.1 bar 	<ul style="list-style-type: none"> - Open the feedwater tap - Correct the connections - Increase the feedwater pressure
Resistance < 18.2 MΩxcm	<ul style="list-style-type: none"> - System has a UF-module (higher conductivity possible) - Ion exchange capacity is exhausted 	<ul style="list-style-type: none"> - Replace filter cartridge with a new one
System control no longer reacts	<ul style="list-style-type: none"> - Improper operation 	<ul style="list-style-type: none"> - Unplug the mains plug for 5 seconds
Water flows out	<ul style="list-style-type: none"> - Leaky hose connection - Feedwater pressure > 6 bar 	<ul style="list-style-type: none"> - Check and seal the hose connection - Install a pressure reducer
Dispensed amount is too small	<ul style="list-style-type: none"> - UF-Module blocked - Pre-pressure too low - Internal pressure too low 	<ul style="list-style-type: none"> - Replace UF-module - Increase the pre-pressure - Readjust pressure reducer
Wrong time or date	<ul style="list-style-type: none"> - Time zone - Summer/winter time 	<ul style="list-style-type: none"> - Reset time and date
Wrong language	<ul style="list-style-type: none"> - Wrong language set 	<ul style="list-style-type: none"> - Correct the language setting
Fault message: <i>"Limit value feed"</i>	<ul style="list-style-type: none"> - Feedwater conductivity too high - Limiting value set too low 	<ul style="list-style-type: none"> - Check the pretreatment - Check and suit the limiting value setting

<p>Fault message: <i>"Lim. va.pure w."</i></p>	<ul style="list-style-type: none"> - Filter cartridge exhausted - Limiting value set too low - System has a UF-module (higher conductivity possible) 	<ul style="list-style-type: none"> - Replace with new filter cartridge (art.-no.: 09.2005) - Check and suit the limiting value
<p>Fault message: <i>"UV-time"</i></p>	<ul style="list-style-type: none"> - UV-Lamp operating time has been exceeded 	<ul style="list-style-type: none"> - Replace the UV-lamp (art.-no. 09.2002). Re-set the operating time counter
<p>Fault message: <i>"UV-intensity"</i></p>	<ul style="list-style-type: none"> - UV-Lamp intensity no longer sufficient - UV-Sensor is dirty - Limiting value set too low 	<ul style="list-style-type: none"> - Replace and measure in a new UV-lamp - Clean the UV-sensor - Check and suit the limiting value
<p>Fault message: <i>"max.Temperature"</i></p>	<ul style="list-style-type: none"> - The temperature in the system is too high - Interval pump time too long - Limiting value set too low - Feedwater temperature is too high 	<ul style="list-style-type: none"> - Reduce the temperature by running water off - Reduce interval pump time - Check and suit the limiting value - Reduce the feedwater temperature
<p>Fault message: <i>"Measuring cell LF1"</i></p>	<ul style="list-style-type: none"> - Measuring cell cable break - System control defect - Conductivity of ultrapure water outside of the measuring range 	<ul style="list-style-type: none"> - Replace the measuring cell - Replace system control - see "Resistance < 18.2 MΩxcm "
<p>Fault message: <i>"Measuring cell LF2"</i></p>	<ul style="list-style-type: none"> - Measuring cell cable break - System control defect - Feedwater conductivity outside of measuring range 	<ul style="list-style-type: none"> - Replace the measuring cell - Replace system control - see "Limit value.feed"
<p>Fault message: <i>"Measuring cell LF3"</i></p>	<ul style="list-style-type: none"> - Measuring cell cable break - System control defect 	<ul style="list-style-type: none"> - Replace the measuring cell - Replace system control

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

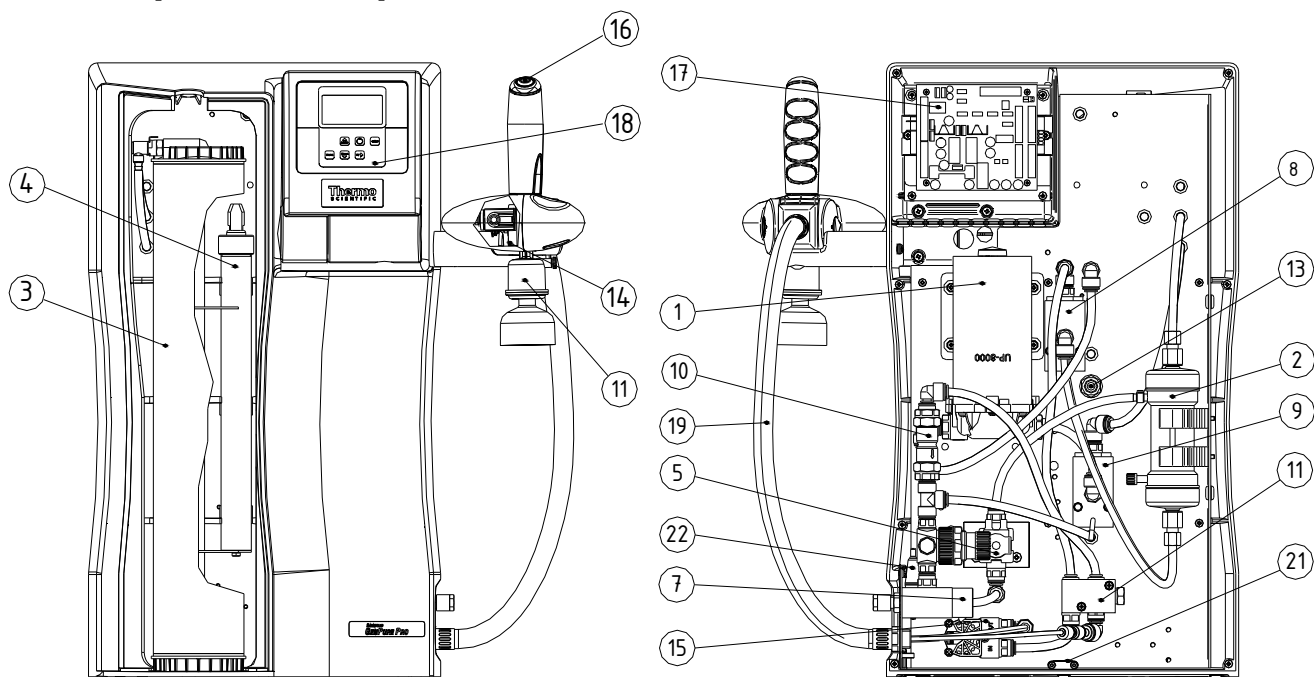
or +49 6184 90 6940

Service Toll free 0800 1 112110

or +49 6184 90 6940

E-Mail info.labequipment.de@thermoftsher.com**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** +41 44 454 1212**Service** +41 44 454 1212**UK/Ireland****Service** +44 870 609 9203**Sales** +44 870 609 9203

17. Replacement parts



Parts marked with an "x" are wear parts.

Pos.	Flow chart-no.	Designation	Article no.	
1	P1	Circulation pump	19.0050	x
2	F3	Ultrafiltration module	50133980	
3	F1	Filter cartridge	09.2005	
4	UV1	Replacement UV-lamp	09.2002	
5	V4	Rinsing solenoid valve	15.0062	x
6	V1	Pressure reducer	50133985	
7	QIA 300	Feedwater conductivity measuring cell	16.0129	
8	QIA 303	Ultrapure water conductivity measuring cell	50133992	
9	QI 302	TOC conductivity measuring cell	50133992	
10	V2	Check valve	15.0019	
11	V5	Check valve	15.0130	
12	F2	Sterile filter capsule	09.1003	
13	QIA 301	UV-Intensity sensor	16.0222	
14	V3	Dispensing solenoid valve	15.0101	x
15	FIS 400	Digital flow meter	15.0100	
16		Press button	16.0370	x
17		Interface board	16.0408	
18		CPU Board with display	16.0409	
19		Protective hose	16.0371	
20		Transformer-Table power unit (not shown)	50134184	
21	LSZ 100	Leakage sensor	16.0389	
22		Fuse holder for glass tube fuse 5 x 20mm	50133979	
		Glass tube fuse 5 x 20mm, 2 A, nimble	50134191	



We ask for your understanding that our guarantee for this system is invalidated when replacement parts, accessories or consumable materials from other manufacturers are used in or for the system, as we have no influence on their composition or quality.

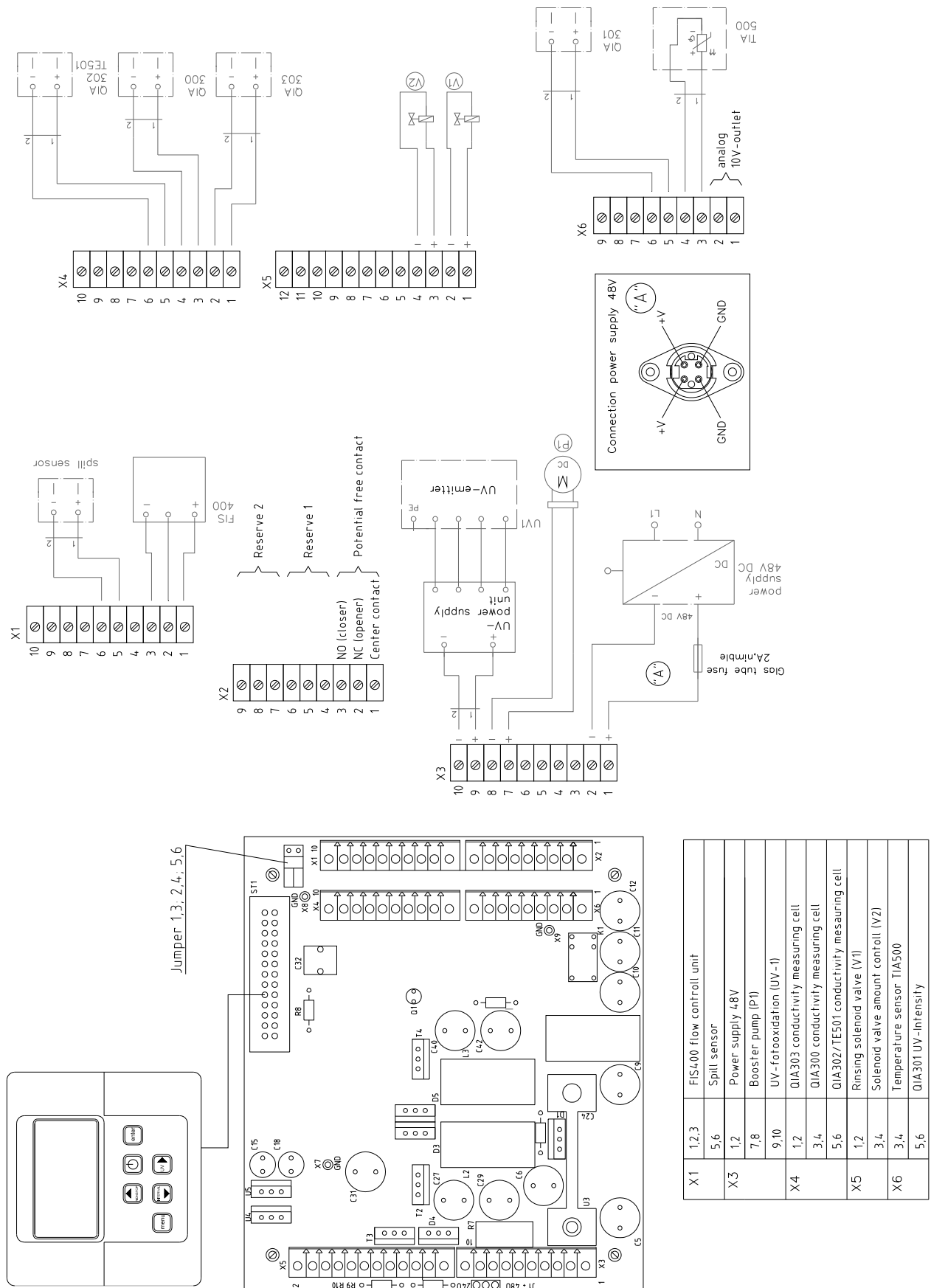
18. Consumable materials

Designation	Article no.
Filter cartridge	09.2005
UV-Lamp	09.2002
Ultrafiltration module	50133980
Sterile filter capsule	09.1003

19. 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
Printer	09.2207
Ion exchanger DI 1500	02.1500
Qualification Manual IQ, OQ	IOQDOCE50133919

20. Terminal assignments



21. Maintenance record

(Please keep this maintenance record carefully updated, as correct keeping of it is a condition of the guarantee)

Customer address:

Location:

System type:

Serial no.:

Year made:

Date	Feedwater resistance [MΩxcm]	Ultrapure water resistance [MΩxcm]	Temperature [°C]	TOC value [ppb]	UV-Intensity [%]	UV-Lamp operating time [h]

Ultrapure water flow rate [l/h]	Last filter cartridge replacement	Last cleaning, disinfection	Remarks	Signature

Any false entry is considered to be a falsification of documents.

The following point must be observed for maintenance of the quality of the system:

- 1x / Weekly, acquire measured values.

Distributed By

APS Water Services Corp

7320 Valjean Ave
Lake Balboa, Ca. 91406

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818-786-0600 Local/International
818-786-2347 Fax

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