

Ultra pure water, 18,2 MΩ×cm.

# TKA GenPure Pro



**More Flexibility for  
Life Sciences, Analyses  
and Laboratory  
applications.**



**WATER  
PURIFICATION  
SYSTEMS**



■ **TKA GenPure Pro.**

■ **Ultra pure water 18,2 MΩ×cm, TOC 1 – 5 ppb. Assured quality. Even for the most demanding and sensitive applications.**

**In the Biosciences**

- For molecular biology and microbiology work
- In the preparation of cell and tissue cultures
- In PCR, DNA sequencing
- Electrophoresis

**In Analytical Chemistry**

- Organic and inorganic trace analysis
- HPLC
- GC-MS, ICP-MS, GF-AAS
- TOC Measurements, IC

**In Routine Laboratory Work**

- Analytical procedures
- IC, AAS, ICP-OES

**Norms**

All TKA Genpure systems exceed the norms ASTM type I, ISO 3696 Grade 1, ASTM D 1193, CLSI.

■ **With UV photo-oxidation and optional TOC monitoring!**

TKA GenPure Pro are ultrapure water systems suitable for the most demanding laboratory applications. Withdrawal of the ultra pure water by the new flexible dispenser.

**TKA GenPure Pro UV** with UV photo-oxidation.

**TKA GenPure Pro UV/TOC** with UV photo-oxidation 185/254 nm and display of TOC values.

■ **Ultra pure water. There where you need it.**

With a small footprint GenPure Pro can be stood on the lab bench or, if preferable, it can be hung on a wall (without the need for extra mounting material).

Independent from the place of installation the new flexible dispenser offers a maximum freedom while dispensing ultra pure water.



## ■ Intelligent technology that simplifies your work. Day for day!

## ■ Flexible and comfortable!

### Dispensing for a variety of tasks

- New flexible dispenser within a radius of 60 cm of the instrument. For filling larger vessels or easy glassware washing.



### Easily readable

- The ergonomically designed control/dispenser unit can be tilted for optimal key pressing and dazzle-free readability.
- Illuminated four-line alpha-numeric display.



### Ready to use

- Feed water pressure reducer, UV photo-oxidation, polisher, sterile filter - all included as standard.



### Exact dosing

- Ultra pure water simply at the push of a button. Automatic volume control from 0.01 - 65.0 litre with excellent accuracy of < 0,5%.
- Precise dispensing of even small volumes due to intelligent pump control.

### Simple to use

- Menu-driven operation with clear text displays of all functions and performance parameters.
- Choice of English, German or French.

### GLP Documentation

- Real-time clock and code protected operating system prevents unauthorized changes and settings.
- RS 232 Interface with adjustable sending intervals.

### Powerful ultra pure water set!

- The ultra pure water set is very generously dimensioned. So it combines a long service life with cost saving. The display gives notice of when it should be replaced.

### Rapid cartridge replacement

- The Aquastop quick connections of the ultra pure water set allows replacement within seconds during operation.



## ■ With the greatest accuracy!

### Measurement of conductivity

- By two high precision measuring cells. With fully automatic check and calibration prior to each measurement via built-in reference resistance.

### Temperature measurement

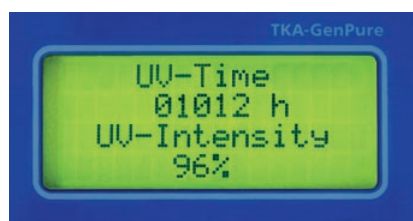
- With temperature compensation that can be switched off according to USP <645>.

### Online TOC measurement at the dispensing point

- Real time TOC monitoring for continual measurement of organic substances in the water according to USP <643>.

### Intensity monitoring

- A photo-sensor continually checks the intensity of the UV lamp. A decrease in the measured UV radiation that would lead to an incorrect TOC measurement result is directly indicated in %.

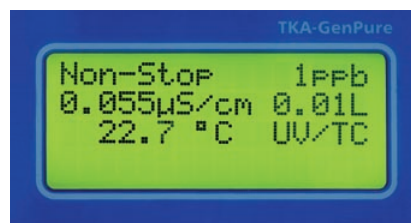


## ■ With highest security!

### Visible ultra pure water quality.

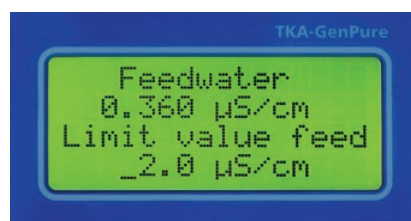
The measurements of conductivity and real-time TOC value are made directly prior to the dispensing valve. The display shows the most important measured values during ultra pure water dispensing.

For example:



### Integrated feedwater monitoring

Good quality feedwater is a basic requirement for the degree of purity of the water produced, as well as for the long service lives of all purification stages. An additional measuring cell permanently monitors the conductivity of the feedwater. Any exceeding of the limiting value is immediately displayed. The feedwater must always be included in a proper validation of an ultra pure water system.



### UV Photo-oxidation 185/254!

A high performance UV unit with intensity photo sensor serves for a reliable reduction in the content of micro-organisms and their metabolites. The top-grade UV lamp is made of synthetic quartz glass for the greatest light yield of exactly the right wavelengths. It is held in a robust and corrosion-resistant ANSI 316 L stainless steel housing.

### Optional PoD Ultrafilter!

The new point-of-dispensing ultrafilter ensures endotoxine-free water for all biological applications. For safe and quick production of RNase- and DNase-free water whenever needed.

### Replacement items and accessories

- 09.2002 Replacement UV-lamp
- 09.2005 Ultra pure water cartridge
- 09.1003 Sterile filter, 0.2 µm
- 09.1022 PoD ultrafilter
- 09.2201 Disinfection cartridge
- 09.2202 Disinfection kit, pack of 12
- 09.2207 Log printer with RS 232 interface
- 09.2900 Qualification documents according to GLP

## Feedwater requirements for TKA GenPure Pro

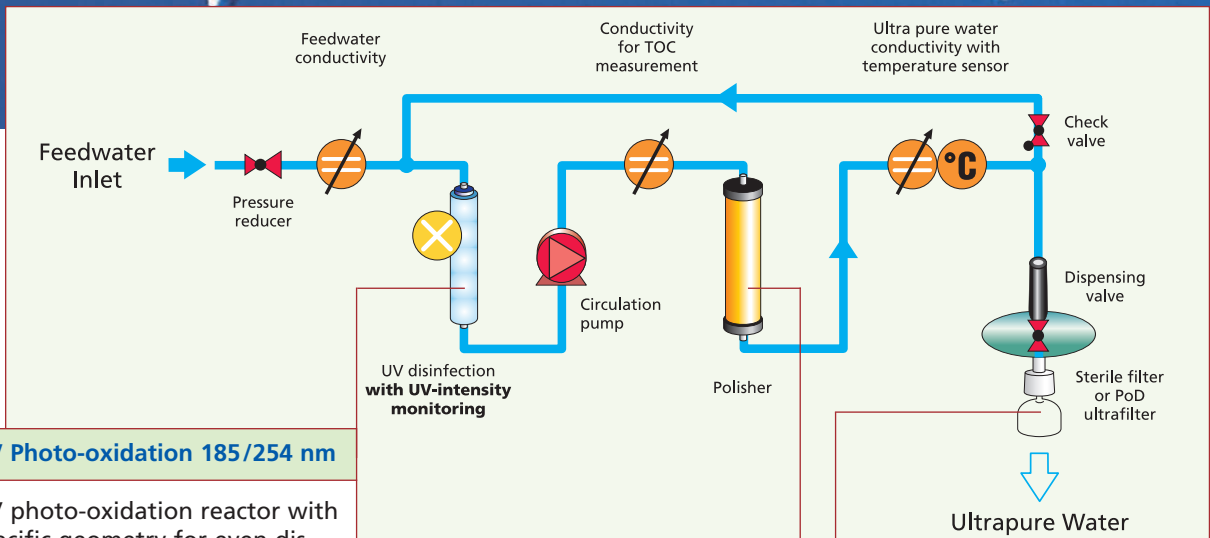
We recommend distilled water or tap water that has been pre-treated by flow through a DI type TKA ion exchanger or a TKA Pacific water purification system with connected 30, 60 or 100 litre storage tank.

Please request our TKA Pacific UP/UPW and TKA ion exchange brochures.

### Feedwater specifications:

Colloid index (SDI):	max. 1
Conductivity:	< 5 $\mu\text{S}/\text{cm}$
TOC value:	max. 50 ppb
Free chlorine:	max. 0.05 ppm
Turbidity:	< 1.0 NTU
Carbon dioxide:	max. 30 ppm
Silicate:	max. 2 ppm
Pressure:	0.1 – 6 bar
Ambient temp.:	+2 °C – +35 °C

## Flow chart TKA GenPure Pro UV-TOC



### UV Photo-oxidation 185/254 nm

UV photo-oxidation reactor with specific geometry for even distribution of UV light of 185 nm and 254 nm wavelengths.

254 nm UV light kills bacteria by destroying the DNA in their cells. The bacterial content within the system is minimized. The combination of the two wavelengths produces hydroxyl free radicals that are extremely reactive. They oxidize and cleave small organic substances that are otherwise difficult to remove. The cleavage products are removed in the next purification stage.

### Adsorption + Ion exchange

Polisher cartridge with a combination of high purity adsorptive material and an ion exchanger.

The combination of adsorption and ion exchange removes the smallest organic molecules, such as the UV photo-oxidation cleavage products, as well as remaining inorganic ions.

### Membrane filter/PoD ultrafilter

Validated sterile filter of 0.2  $\mu\text{m}$  pore size in a large area capsule with vent valve and protective bell. Sterile filter for the reliable removal of bacteria and particles directly prior to ultra pure water dispensing. Suitable for sterilization.

The point-of-dispensing ultrafilter predominately serves the production of pyrogen- and nuclease-free water.

## The result: Ultra pure water of ASTM Type 1 quality.

TKA ultra pure water system	GenPure Pro UV	GenPure Pro UV-TOC
Flow rate in l/min:	up to 2.0	up to 2.0
Conductivity in $\mu\text{S}/\text{cm}$ :	0.055	0.055
Resistivity, in $\text{M}\Omega \times \text{cm}$ at 25 °C:	18.2	18.2
TOC value in ppb:	1 – 5	1 – 5
Bacteria in CFU/ml:	< 1	< 1
Particulates, > 0,22 $\mu\text{m}/\text{ml}$ :	< 1	< 1
Endotoxines in EU/ml:	0.001	0.001
RNase* in ng/ml:	0.01	0.01
DNase* in pg/ $\mu\text{l}$ :	4	4
Voltage:	230 V/ 50 Hz	230 V/ 50 Hz
Power consumption:	0.1 kW	0.1 kW
Interface:	RS 232	RS 232
Dimensions W x D x H in mm:	472 x 330 x 615	472 x 330 x 615
Weight in kg:	25	26
Cat. no.:	08.2255	08.2256

\* with optional PoD ultrafilter



## ■ Qualification and Maintenance

### Technical support in the qualification of your TKA GenPure system

The assembly, installation, start-up, operation and maintenance of the system are explained in detail in the Operating Instructions. Proper operation ensures a constant production of ultra pure water within the given specifications for a long time. The Operating Instructions are also an extremely important basis for the qualification of the system.

### The TKA Qualification Manual

This is designed to assist you in qualifying your system. A series of steps lead through Design Qualification (DQ), Installation Qualification (IQ) and Operating Qualification (OQ) to the final evaluation of the qualification documents.

### Maintenance

We recommend that you sign a maintenance contract with your TKA authorized customer service company for the carrying out of all calibration and maintenance work.

You then have the assurance that the GLP-conformity and high operational safety and reliability of your system will be maintained.

Your TKA authorized specialist distributor:



**TKA Wasseraufbereitungssysteme GmbH**  
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56412 Niederelbert / Germany  
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Telefax: 02602/10699-50  
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