iotronic
ELEKTROGERÄTEBAU GMBH

Compact water treatment plant

with automatic disinfection

Clean drinking water directly from rivers and lakes

IOTRONIC Water treatment plant

More than 1,5 billion people have no access to safe and clean drinking water. The insufficient supply with drinking water is one of the most important causes for illness and child mortality in many countries of the so called „third world“. But there are also serious problems with the drinking water supply in developed countries. So called „drinking water“ often contains harmful viruses and bacteria. These germs can cause severe diseases, and especially children and old people are threatened.

With the new water treatment system from Iotronic, up to 20.000 liters/day drinking water can be generated from rivers and lakes with surface water quality. A special developed filter cascade incl. ultrafiltration removes particles and germs from the untreated water. The treatment plant provides a drinking water which complies to the WHO water guidelines. An integrated controled chlorine dioxide dosing and an optional chlorine dioxide measurement system protects the water against re-contamination. The operation of the plant is fully automated incl. backflushing and disinfection. The treatment plant can be used for the drinking water supply in emergency situations (e.g. flood catastrophes, earthquakes etc.) as well as for the permanent drinking water supply of outlying villages. It includes a generator and is independent of an external power supply.

Our advantages

- Daily generation of 20000 liters drinking water directly from rivers and lakes.
- Water supply for small villages and outlying houses.
- Compact size (base = euro pallet size 120 x 80 cm)
- Mobile use in emergency areas possible.
- Drinking water quality according to WHO guidelines.
- Protection against microbial re-contamination of the drinking water by dosing of chlorine dioxide.
- Fully-automated operation with integrated filter backflushing and disinfection.
- Automatic monitoring of the chlorine dioxide concentration with a process analyser.
- Flow-proportional dosing can be optimised with the measured ClO2 concentrations.
- Special self-disinfection program for the shut down avoids the contaminations of the filters und the pipework when the plant is used discontinuously.
- No further chemicals for filter cleaning are required.
- Easy handling and long maintenance intervalls.

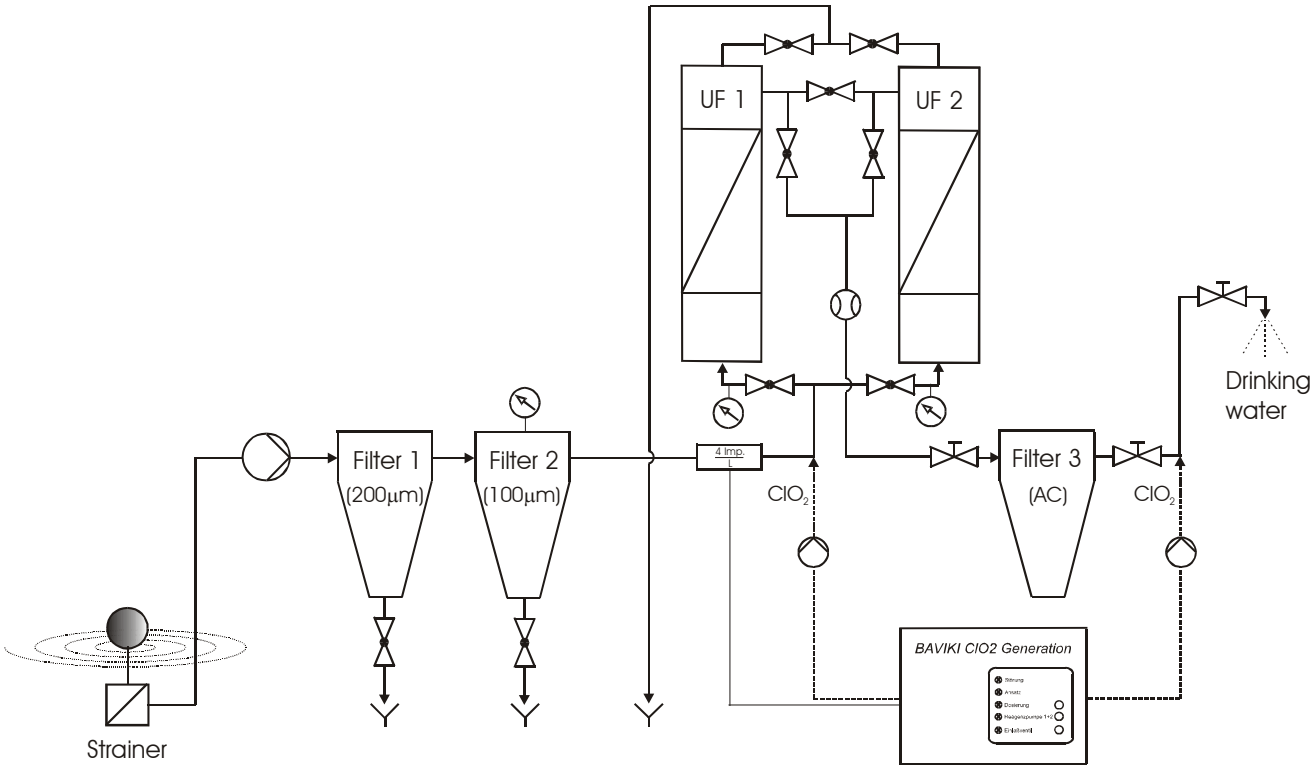
Technical Description

The water intake takes place through a swimming strainer. A compact pressure boosting system pumps the raw water through a filtering cascade for pre-filtration were particles >100 µm are removed. After the pre-filtration, the water is disinfected with chlorine dioxide to prevent fouling. In the following ultrafiltration unit with 2 parallel ultrafiltration membranes, nearly all particles and germs (bacteria, viruses) will be removed from the water. The disinfection and backflushing of the ultrafiltration membranes is induced automatically. After the ultrafiltration unit, the water flows through an activated carbon filter. After this filter, the water is disinfected again with chlorine dioxide to prevent re-contamination and flows to the water tap were it can be taken as drinking water and filled up in bottles or cans.

The system includes a chlorine dioxide generation unit and a control unit for the ultrafiltration. Both systems are placed together in a small wall cabinet. The chlorine dioxide solution is generated automatically with a concentration of 2 g/l and dosed flow-proportional according to the signal of a water meter (4 pulse/liter). The chlorine dioxide concentration after the filter and at the water tap can be measured and controled with a chlorine dioxide analyser which is placed in a second wall cabinet (optional). As special function, a self-optimizing chlorine dioxide dosing which considers the measured chlorine dioxide values is also available.

The BAVIKI water treatment plant can be supplied with power from an integrated generator, but also with power from the electrical grid (220/230 Volts, 50/60 Hz).

Plant plan



Technical Data

Water treatment plant BAVIKI

Generator power:	max. 2300 Watt
Fuel consumption:	0,75 l/h (unleaded fuel)
Flow (Water):	max 1,000 liters/h max. 20,000 liters/day
Temperature (Water):	5 – 30 °C
Dimensions (LxWxH):	120 x 80 x 158 cm (incl. pallet)
Rack material:	Aluminium profiles
Weight:	appr. 350 kg

Pipework with filter cascade

Diameter:	1 inch
Pipe Material:	Brass, Stainless Steel, PVC
Filtration:	200 µm (separation) 100 µm, (prefiltration) 0,02 µm (ultrafiltration)
Water meter:	1 inch, 4 Imp./l
Valves:	7 Motor ball valves (PVC)

CLO2 generation and control unit

Reaction chamber:	1500 ml
Concentration:	2 g/l ClO_2
Dosing pumps:	2 (for ClO_2 dosing)
Display:	Touchscreen
Reagents:	10 liters HCl (9 %) 10 liters NaClO2 (7,5 %)
Housing material:	Polycarbonate

Chlorine dioxide measurement

Measuring Range:	0,02 – 0,5 ppm ClO2
Principle:	Titration (selective for ClO2)
Reagents:	ClO2-R1001 ClO2-R1002 Clean. Solution 1
Measuring points	2 samples
Display	Touchscreen

Technical data subject to change.

Contact

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