

IOTRONIC water treatment plant

Drinking water supply from lakes and rivers

More than 3 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 the so called third world. But there are also serious problems with the drinking water supply in developed countries. Here, most of the residents receive their drinking water from water suppliers or from their own well. But this drinking water often



contains harmful viruses and bacteria. Germs in the drinking water can cause severe diseases, and especially children and old people are threatened.

With the mobile IOTRONIC water treatment plant, up to 20000 liters drinking water can be produced daily for the supply of the population. A special developed filter cascade removes particles and germs from the untreated water. The treatment plant provides a drinking water which complies to the WHO water guidelines. It 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 or houses. The plant contains a generator and is independent from external power supply.

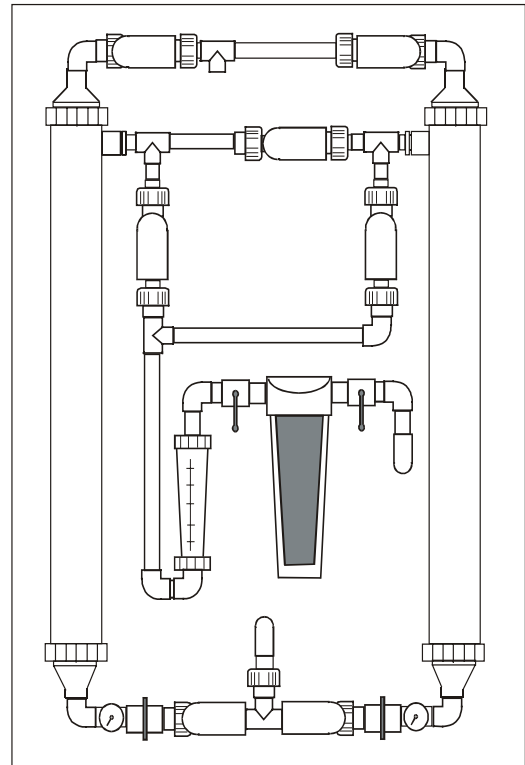
Your advantages

- Water supply for villages and outlying houses.
- Daily production of 20000 liters drinking water from rivers and lakes.
- 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 stabilized oxygen (chlorine dioxide).
- Fully-automated operation with integrated filter backflushing disinfection.
- Easy handling and long maintenance intervals.
- No further chemicals for filter cleaning required.

IOTRONIC water treatment plant

Function

The IOTRONIC water treatment plant can generate 20000 liters drinking water daily from river or surface water. The plant can be supplied with power from an integrated generator, but optionally also with power from the electrical grid (220/230 Volts, 50/60 Hz). The water intake takes place through a swimming strainer. A compact pressure boosting system, composed of a pump, a motor and a build-in control unit, pumps the raw water through a filtering cascade for pre-filtration where particles $>100 \mu\text{m}$ are removed. The pre-filtration system has automatic backflushing included. 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 with 0,2 ppm chlorine dioxide to prevent re-disinfection and flows to the water tap where it can be filled as drinking water in bottles or cans.



The chlorine dioxide generator BAVIKI consists of a reaction chamber (volume: 1500 ml), 2 peristaltic pumps for volumetric dosage of the chemicals, 2 dosing pumps and a level control. For the generation of chlorine dioxide, the reaction chamber is partly filled with water. Then, a defined amount of reagents (hydrochloric acid 9 %, sodium chlorite solution 7,5 %) is added. After a certain reaction time, the reaction chamber is completely filled up with water. Now the system is ready for stepwise dosing of the chlorine dioxide solution (concentration: 2 g/l) into the water. The chlorine dioxide solution is dosed flow-proportional according to the signal of a water meter (4 pulse per liter) for the disinfection of the ultrafiltration units and also for the terminal disinfection of the drinking water. One charge chlorine dioxide solution can disinfect 5000 liters water. The control systems of the chlorine dioxide generation and of the filter backflushing are both placed in small wall cabinets. The water treatment plant will be delivered ready to use with one set reagents.

Technical Data

IOTRONIC Water treatment plant		Chlorine dioxide generation BAVIKI	
Generator power	appr. 1200 Watt	Reaction chamber	1500 ml
Generator consumption	0,75 l/h (unleaded fuel)	Concentration	2 g/l ClO ₂
Flow	max. 20000 liters/day	Reagents	10 liters HCl (9 %)
Temperature	5 – 30 °C		10 liters NaClO ₂ (7,5 %)
Dimensions (L x W x H)	120 x 80 x 144 cm	Water meter	4 imp./l
Weight	appr. 160 kg	Display	5 LED
Filter cascade		Control unit UF	
Separation	200 μm , 100 μm (PF) 0,02 μm (UF)	Display	9 LED for valves and functions

Technical data subject to change.