IOTRONIC water treatment plant

Drinking water supply from lakes and rivers

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 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 there 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 generated daily from rivers and lakes with surface water quality. 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. An integrated chlorine dioxide dosing and an optional chlorine dioxide control system protects the water against re-contamination. 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 or houses. The plant contains a generator and is independend from external power supply.

Advantages

- Water supply for small villages and outlying houses.
- Daily generation of 20000 liters drinking water from rivers and lakes.
- Compact sytem for 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 and disinfection.
- Easy handling and long maintenance intervalls.
- No further chemicals for filter cleaning required.

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Function

The IOTRONIC water treatment plant can generate max. 20.000 liters drinking water daily from river or surface water. 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 were particles >100 □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 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 or from photovoltaic cells (220/230 Volts, 50/60 Hz).

Technical Data

IOTRONIC Water treatment plant			**ClO2 generation and control unit**	
Generator power	Max. 2300 Watt		Reaction chamber	1500 ml
Generator consumption	appr. 0,75 l/h (unleaded fuel)		Concentration	2 g/l ClO2
Flow	max. 20.000 liters/day		Reagents	10 liters HCl (9 %)
Temperature	5 – 30 °C			10 liters NaClO2 (7,5 %)
Dimensions (L x W x H)	120 x 80 x 158 cm		Water meter	1 inch, 4 imp./l
Weight	appr. 350 kg		Display	Touchscreen
Filter cascade			**ClO2 analyzer**	
Separation	200 µm, 100 µm (PF) 0,02 µm (UF)		Range	0,02 – 0,50 ppm ClO2

Technical data subject to change.

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