



# OXIPERM ISIA

## Chlorine dioxide production of 0.5 to 20 kg/h

### General

The Oxiperm ISIA system is suitable for many water treatment applications. Based on a patented underwater production technology, it generates chlorine dioxide ( $\text{ClO}_2$ ) using concentrated solutions of sodium chlorite ( $\text{NaClO}_2$  25 % or 31 %) and hydrochloric acid (HCl 31-33 %).

The chlorine dioxide is produced in a very small reaction chamber which is installed in-line, and is injected directly into the water to be treated. In this way, the chlorine dioxide is present only in the treated water, which provides high safety and very effective consumption of the chemical precursors.

### Chlorine dioxide

Chlorine dioxide is excellent for the control of legionella bacteria, biofilm and algae. It destroys the existing biofilm and prevents it from building up again, thus removing the breeding ground for microorganisms. Chlorine dioxide does not alter the taste or smell of the treated water.

### Oxiperm ISIA

The Oxiperm ISIA system is available in six different capacities, producing up to 0.5, 1, 2, 5, 10 and 20 kg/h of chlorine dioxide. These are sufficient to treat up to 50,000  $\text{m}^3$  of water per hour considering concentration of 0.4 mg/l  $\text{ClO}_2$ .

Upon request Grundfos can supply engineered solutions with the underwater production technology from 60 g/h to 200 kg/h of  $\text{ClO}_2$ .

With their high precision, the integrated Grundfos dosing pumps assure a high performance level and yield.

The chlorine dioxide solution is injected using Grundfos vertical centrifugal titanium pumps, known for their reliability, flexibility and smart control with the optional frequency controller mounted on board.

### Features and benefits

- Very effective underwater production technology: chemical reaction yield of 95-98 % requiring less chemicals and generating less by-products
- Low consumption of chemicals: only 5.7 kg HCl and 5.7 kg  $\text{NaClO}_2$  per 1 kg of generated  $\text{ClO}_2$
- Reduced transportation and chemical storage costs: using concentrated sodium chlorite ( $\text{NaClO}_2$  25 % or 31 %) and hydrochloric acid (HCl 31-33 %)
- Reduced investments and increased safety: no need for a storage tank for the generated  $\text{ClO}_2$  solution
- Lower risk due to low quantity: small volume of reaction chamber means lower  $\text{ClO}_2$  quantity
- No risk of concentrated  $\text{ClO}_2$  gas released into the atmosphere: the concentrated  $\text{ClO}_2$  is generated under water
- Easy installation

### Applications

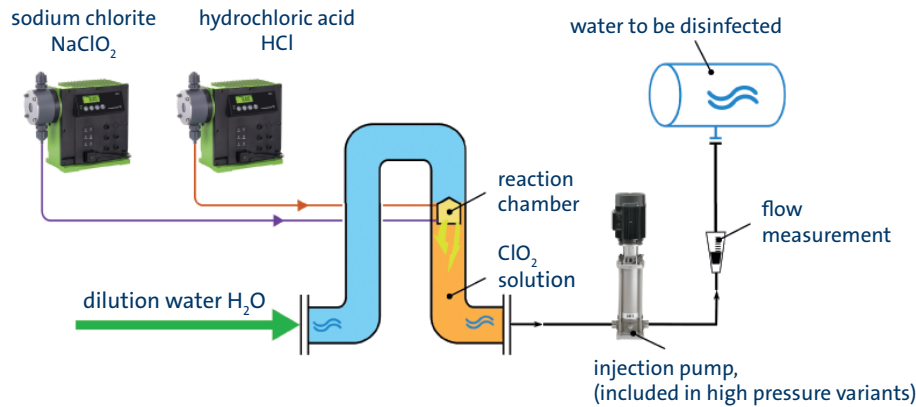
Oxiperm ISIA disinfection systems are ideal for combating germs and pathogens, such as legionella, in the following applications areas:

- Drinking water treatment
- Cooling water treatment
- Municipal water treatment
- Industrial water treatment

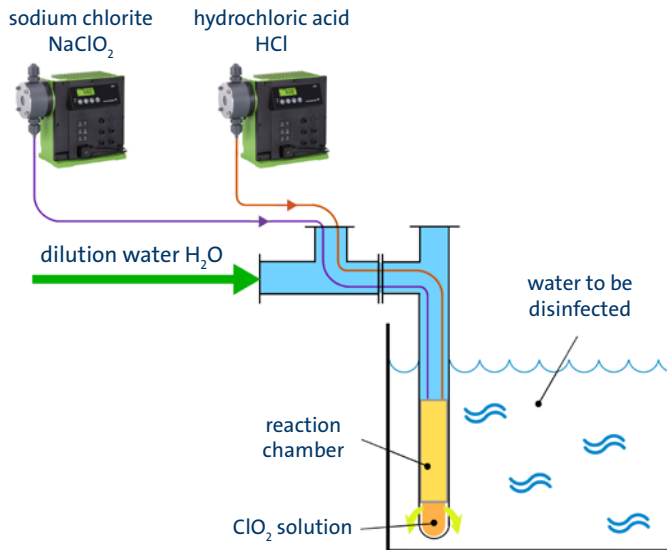
## U-type and L-type underwater ClO<sub>2</sub> generating systems

Two types of reaction chambers are available: U-type (installed inside a pipeline) and L-type (installed directly in a water basin).

### U-type



### L-type



## Technical data

Max. capacities [kg/h]	0.5; 1; 2; 5; 10; 20
Capacity range	10 to 100 % of max. capacity
Reaction chamber	U- or L- type
Inlet dilution water pressure	1-2 bar
ClO <sub>2</sub> solution injection pressure	1-7 bar (depending on variant)
Concentration of chemicals	NaClO <sub>2</sub> 25 % or 31 %; HCl 31-33 %
Concentration of ClO <sub>2</sub> solution	Max. 1 g/l (1,000 ppm)
Consumption of NaClO <sub>2</sub> 31 % (25 %)	5.7 kg (7.1 kg) per kg of ClO <sub>2</sub>
Consumption of HCl 31-33 %	5.7 kg per kg of ClO <sub>2</sub>
ClO <sub>2</sub> yield (EPA method)	95 to 98 % *
Admissible temperature range	Ambient temperature: 0 to 40 °C
	Operational water temperature: 0 to 40 °C
	Chemical temperature: 0 to 40 °C
Interfaces	Ethernet, serial connection and USB data download

\* Within the range of 25 to 100 % of the max. capacity