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ISIA Spa
A GRUNDFOS COMPANY

Chlorine Dioxide Compact Production System

ISIA Chlorine Dioxide Generation Technology

Chlorine dioxide is **much more powerful** than chlorine or sodium hypochlorite, used in potable water disinfection or as antifouling agents in seawater.

ISIA Chlorine dioxide generation techology is based onthe reaction of two concetrated chemicals (sodium chlorite 15-31%, hydro-chloric acid 15-33%). The **reaction chamber is very small** (volume of o.1liter for 10kg/h of ClO2) and it is installed **in-line** directly in the water to treat. In this way the chlorine dioxide is present **only into the water**, with concentration of 1-2g/lt, with **no accumulation**.

There are two type of reaction chamber: U-type (installed inside a pipe) and the L-type (installed directly in the water basin).

With this two kind of generators, the **Compact production systems** can produce **from 0,040kg/h to 30kg/h** of chlorine dioxide and are suitable for a wide range of applications:

- **Industrial Water** (seawater, fresh water, cooling water, raw water)
- **Potable Water** (pre and post disinfection, low bromate and trihalomethanes formation)
- **Waste water.**

Chlorine Dioxide Compact Production System

Compact

The System provides the powerful ISIA chlorine dioxide technology in a very small package. The whole system is enclosed in a steel frame with the maximum size of 2000x600x2000(h) mm.

Easy to install

After the positioning, the System has only to be connected to the dilution water source, to the injection point, to the two reagent sources, to the 230Vac power supply and it is ready to run. The System handling can be perfomed by means of a forklift only.

Customizable

The System can be tailor made as per customer needs: on board or in-basin reaction chamber, titanium pump for pressurized injection point, a distribution panel for multiple injections.

Communication

The System has the possibilty to have a serial link in order to be interfaced to the major part of the PLC or DCS. In this way it is possible to be monitored directly from the existing control room.

Reagent Dosing Area

RD

Each reagent has a dedicated dosing skid, well separated from the other, in order to allow a safe management of the plant. The electronic metering pumps assure the correct dosages in each moment.

Injection Area

INJ

The chlorine dioxide solution is injected in pressurized pipes by means of a titanium centrifugal pump.

Dilution Water Area

DW

Dilution water is a must in this process for the safety point of view.
There is always at least a double redundant instrument (flow meter and flow switch) connected to the Control System in order to guarantee a safe concentration of chlorine dioxide.

CS Control System

The System can be managed by using PLC with a touch panel interface that it is configured providing the safest program but, at the same time, the best user-friendly interface. All equipment, settings and running modes are easily available to the operator by the touch panel.

UG U-type Generator

The U-type Generator is the core of the plant. The Chlorine dioxide is generated into a very small reaction chamber that is always surrounded by water; in this way the chlorine dioxide solution has always a safe concentration (1-2 g/l). As option the plant can be supplied with L-type Generator for the chlorine dioxide production directly in a water basin.

Storage Area

As option, ISIA can provide storage tanks and related instrumentation for the two reagents or containement basins for IBCs. If required, ISIA can provide civil and mechanical engineering for the installation of the storage area equipment .

Container

Where it is not possible to install the system indoor or where ambient condition are not suitable for an installation outdoor, the System is preinstalled in an air conditioned container. In this way the System could be installed everywhere.

EasyaReadox

The System can be provide with an EasyaReadox Probe on board, in order to monitor the biofouling growth and tune the chlorine dioxide dosing strategy. This probe is very useful in industrial water treatment.

Commissioning and Start-up

Commissioning and start-up are followed by an ISIA's engineer. If requested ISIA personnel can also follow Supervision of erection and Personnel training