

Capital Controls®

GS4000

Chlorine Dioxide Generator - 2g/day - 10g/h

System Advantages

Dosage Flexibility

The generator produces a chlorine dioxide solution, which can be dosed according to the specific process requirement. The system is able to produce a chlorine dioxide solution always on demand.

Flexibility in Auxilliary Components

The system offers superior flexibility, as elements such as dosing pumps can be configured according to the application. The dosing pump is not provided as a standard item, since the specification for this will depend on the intended use of the system.

Ease of Operations

The GS4000 produces chlorine dioxide through a completely automatic process.

System Description

The GS4000 chlorine dioxide generator consists of two key parts:

- Production / storage area for chlorine dioxide solution
- Microprocessor unit for monitoring and control

Chlorine dioxide is generated by injecting hydrochloric acid (8.5% concentration) and sodium chlorite (7.5% concentration) into a reaction chamber. The resulting dioxide solution is then diluted to 1mg/l strength and stored in a product tank, ready for use.

The production section is connected to a carbon filter, which removes vapours from the reaction chamber. The microprocessor control unit manages the reagents, both loading and following dilution. Any system malfunctions are raised through alarms on the microprocessor to stop the process in the event of an emergency.

The GS4000 generator has been designed to provide users with the maximum flexibility and choice for integration into the destination plant. Chlorine dioxide solution is always available on demand. Dosing pumps and MicroChem®2 chlorine dioxide analysers can be chosen according to the system requirements.

Severn Trent Services' experienced technicians are available to provide advice on most appropriate solution.



Technical Specification

- Production capacity: from 2 g/day to 10 g/h of ClO₂
- Produced solution concentration: 1 g/l of ClO₂
- Reagents: hydrochloric acid 8.5% and sodium chlorite 7.5% (commercially available solution)
- Hydraulic connections:
 - Dilution water inlet: 1/2" female connection;
 - Chlorine dioxide solution to dosing pumps: 1/2" female connection;
 - Drain: 1/2" female connection;
 - Vent tube: poly tube 10x12 mm;
- Materials:
 - Holding plate and shelf: PVC;
 - Reaction tower and tank: PVC;
 - Mixer: PVC;
 - Internal tube and fittings: teflon/PVDF/PVC/PE;
 - Enclosure: ABS, reinforced with 17% fiberglass;
- Ambient temperature: 5 - 45°C
- Power Supply: 230 Vac ±10%, 50 Hz, max consumption. 50 VA;
- Dimensions: 800 x 600 x 150 mm;
- Weight: 24 kg
- Microprocessor protection: IP65

Control Unit

- Display: digital LCD, 16+16 characters, back lighted.
- Digital inputs/outputs
 - Digital inputs: 8 (eight) NPN transistor;
 - Digital outputs: 8 (eight);

Functionality

- Biochem Control Unit allows the following signal retransmission:
 - Start/Stop of dosing pump (pump is supplied as optional);
 - Alarm switch for "system running";
 - Alarm switch for "system in alarm";
 - Alarm switch for "system in alarm " with assignable delay;
 - The following signals/commands can be connected to the control unit:
 - Remote START/STOP command;
 - Up to 4 digital inputs coming from external sensors (tank level)

Auxilliary Equipment

The process for the injection of chlorine dioxide solution into the treatable water is the same as for the injection of any other disinfectant solutions (sodium hypochlorite, peracetic acid etc)

The system is grouped into the following components:

1. A pump capable of dosing up to 10 l/h of solution. The only requirement of the pump specification is the option of a connection to a start/stop switch from the chlorine dioxide generation unit. Moreover the pump can be provided with an analog or pulse input, for connection to a flow rate transmitter to proportionally dose the amount of water to be treated.
2. A flow meter with an output signal compatible with the dosing pump, to enable proportional dosing.
3. Chlorine dioxide analyser/controller for analysis and control of residual chlorine dioxide in the treated water. This element is not provided when control is based on the chlorine dioxide residual. If the dosing is proportional to the flowrate, the analyser can simply be used for indication of residual level and/or alarm.

Reagents Storage Section

The reagents storage section comprises of two polyethelene tanks with a capacity from 20 litres to 100 litres depending on the estimated consumption. These will hold diluted hydrochloric acid (8,5% concentration) and diluted sodium chlorite (7.5% concentration).

The GS4000 basic model includes a feature to indicate if either of the two chemical tanks is running low. However, optional additional level switches for connection to the control unit in the generator can be provided. This option enables the chlorine dioxide production to be stopped in the event of a loss of reagents and an alarm to be generated.

Optional Accessories

- Covering Panel, made of plastic to protect the generator's components.
- Dosing pump for the chlorine dioxide solution, sized for the application.
- Dosing pump accessories (backpressure valve, injection system)
- Containment basins for reagents.
- Pressure regulator for dilution water line.
- Filter for the dilution water line.
- Pulse Counter to control the dosing pump - installed on the line of the water to be treated.
- Chlorine dioxide analyser (MicroChem®2), with a measuring cell specifically designed for use with hot water (T17KC4700).

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