DIOX-A 250
CHLORINE DIOXIDE GENERATOR

WALLACE & TIERNAN® PROCESS TECHNOLOGY

The DIOX-A chlorine dioxide technology combines safe performance with durability, simplicity and low maintenance. Chlorine dioxide is produced as an aqueous solution at constant strength for capacities up to 250 g/h. To maximize safety, dilute precursor chemicals hydrochloric acid (9%) and sodium chlorite (7.5%) are used. The strength of the two basic chemicals is balanced in a ratio that ensures an optimal yield of chlorine dioxide. The chlorine dioxide solution produced is directly metered via an injection unit into the water to be treated.

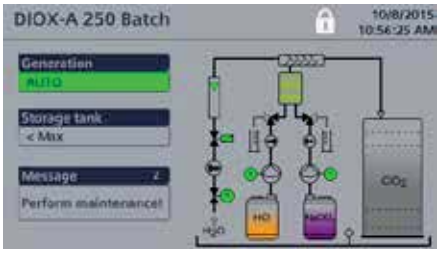
APPLICATIONS

- Drinking water
- Industrial; process water, food and beverage, cooling towers
- Legionella control
- Wastewater

Chlorine dioxide is a powerful yet selective oxidant and can also be used to provide both primary and residual disinfection. In potable water, it can also be used for THM/THAA control (DBP reduction), iron and manganese and removal, taste and odor control, and nitrification prevention. It will not react with ammonia to form less active chloramines, making it suitable as well for wastewater disinfection and treatment of ammonia plants. It is highly effective against biofilm formation as well as viruses, bacteria, protozoa and cysts; including Cryptosporidium and Legionella.

Key Benefits

- Inherently safe operation using dilute reactants under vacuum
- Batch operation offers flexibility: multiple dosing points or high pressure application
- Intuitive, user-friendly touchpanel
- Animated process graphics
- Connection to Process Monitoring System via RS 485 interface, PROFIBUS® DP or PROFINET® IO device (options)
- Optimal process precision by calibrated metering pumps and regulation of the chemical dosage
- Compact design



ANIMATED PROCESS FLOW SCHEME VIEW

METHOD OF OPERATION

In the DIOX-A system, chlorine dioxide is produced as an aqueous solution of a constant strength. Both reagents are withdrawn from commercial carboys or storage tanks by metering pumps and discharged into a reaction tower. The exact metering of the two basic chemicals is monitored by volumetric flow meters (oval wheel flow meters). The capacity of generation can be precisely set manually on a well arranged operating panel.

In addition to manual control the following automatic control modes are available:

For flow-proportional operation a linear input signal (for example from a water meter installed in the main water pipeline) is used to control the feed rate of the generator.

The generator's feed rate can also be controlled from an external measured value. This arrangement allows a control loop to be configured. Batch operation is normally used where the generator supplies several points of application. In this case an intermediate tank is required.

An optional leakage probe installed in the bunds can be added to the standard two-level control system of the reagent tanks. All control parameters are entered via plain-text menus. Status signals and alarms are displayed on the operating panel.

	DIOX-A 50	DIOX-A 100	DIOX-A 170	DIOX-A 250
Standard capacities	50 g/h	100 g/h	170 g/h	250 g/h
Capacities (batch)*	40 g/h	80 g/h	135 g/h	200 g/h
Flow rate of Nadolyt	1.25 l/h	2.50 l/h	4.25 l/h	6.25 l/h
Flow rate of Cedolyt	1.25 l/h	2.50 l/h	4.25 l/h	6.25 l/h
Water flow meter with min. contact	500 l/h		1000 l/h	
Approx. weigh	30 kg	32 kg	35 kg	37 kg

* by use of a standard product tank

TECHNICAL DATA

Nadolyt $NaClO_2$ solution (7.5 %):
Standard carboy or storage tank
Cedolyt HCl solution (9 %):
Standard carboy or storage tank
Operating water pressure: min. 1 bar – max. 10 bar
Power supply: 1/N/PE AC 230 V, 50 Hz
Power consumption: approx. 0.12 kVA
Fuse: max. 10 A
Dimensions (W x H x D): 800 x 1150 x 300 mm

CONTROL

SIMATIC® S7-1200 CPU 1214C
SIMATIC HMI KTP400 Basic Panel with 4'' TFT wide-screen display, 65536 colors, LED backlighting, key and touch operation, code-protected operation, retentive and maintenance-free message system, Backlight with automatically dimming, acoustic buzzer

Inputs:
Set value signal (pulses from controller, contact water meter or inductive flow meter; analog input 4-20 mA);
leak monitoring

Unpowered inputs: external release
Level monitoring system:
Tank levels EMPTY, MIN, MAX, OVER-FILLED (required for batch operation only)

Unpowered outputs:
Two alarm relays (functions selectable)
Outputs:
Control of a motor contactor for an external booster pump
Potential-free contact for release dosing (only for batch operation)

Connections (optional):
Process Monitoring System via RS 485,
PROFIBUS® DP-Slave, PROFINET® IO-Device

EVOQUA WATER TECHNOLOGIES

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