

HALOX TECHNICAL DATA SHEET

Halox H2000SRE Chlorine Dioxide (ClO₂) Generator



SYSTEM DESCRIPTION

The Halox H2000SRE is a new generation of chlorine dioxide generator. Based on proven Halox technology, the generator delivers high reliability and efficiency, low maintenance and simplified operation. The Halox H2000SRE ClO₂ generator is CE Marked and conforms to UL 61010A-1 and CSA C22.2 NO. 1010.1 for electrical safety. It directly converts sodium chlorite solutions to chlorine dioxide via a patented* electrochemical process. The Halox H2000SRE generator offers the following:

- State-of-the-art CPU and power supply designs
- Automatic flow rate control
- Wide operating voltage range and feed water temperature range

The heart of the Halox system is a patented electrochemical cassette that directly converts sodium chlorite to chlorine dioxide. When operated according to Halox guidelines, this Halox equipment generates a safe, dilute solution at a controlled, measurable rate that contains up to 550 ppm of chlorine dioxide. For specific sizing concentrations, please contact Halox Technical Service.

A single precursor, sodium chlorite (NaClO₂), is injected from an external source by means of an internal peristaltic metering pump. It is then converted inside the cassette to ClO₂. The amount produced varies with the number of cassettes installed. Thus, ClO₂ is produced 'on demand.' In some applications direct dosing is possible. In others, storage and/or dosing equipment may be utilized.

A basic requirement of any electrochemical technology is softened feed water. For this reason, the H2000SRE generator has a built-in water softener. Softener salt is added to an external brine tank. The softener is controlled by the system's microprocessor and regenerates automatically. The system also requires an externally-mounted prefilter assembly (provided with the unit). Feed water with hardness above 60 mg/L (as CaCO₃) must be pre-softened. Other feed water requirements are described in the Operator's Manual.

Dosing requirements vary by application. The amount of ClO₂ required in a particular application depends on system demand, make-up rate, and desired ClO₂ residual. For the highest accuracy and control, the generator should be operated with the Halox ClO₂ Measurement and Control System (MAC). Alternately, an internal timer, an external timer or an external controller may be used. Please contact Halox for specific control strategies.

Once the optimal ClO₂ requirement (demand) has been established, the Halox H2000SRE generator is programmed to operate independently or in conjunction with an external controller.

1. When operated independently, the Halox H2000SRE generator is programmed to operate continuously or intermittently using the internal timer.
2. If an external controller is specified, the Halox H2000SRE generator is connected to the external controller via built-in ports. The external controller then operates the system.

*Covered by U.S. Patent Nos. 5,419,816 / 5,609,742 / 5,705,050 / 6,024,850 / 6,402,916 and foreign patents. Other U.S. and foreign patents pending.

OPERATING PARAMETERS

Number of Cassettes	1 to 4
Production of ClO ₂	1.3 to 5.5 lb/day (25 to 100 gm/hr)
Generator Efficiency.....	93.75% average
Operating Flow Rates	
ClO ₂ Product.....	12 to 48 gal/hr (45 to 180 L/hr)
Catholyte Product	4 to 16 gal/hr (15 to 60 L/hr)
Feed Water	16 to 63gal/hr (60 to 240 L/hr)
Replacement Schedule	
Cassettes	2000 operating hours*
Pump Tubing	2000 operating hours
Prefilter	2000 op. hours or as required

FEEDWATER REQUIREMENTS

Source	Potable
Hardness	<200 mg/L (as CaCO ₃)
Temperature.....	41 to 113 °F (5 to 45 °C)
Feed Pressure.....	40 psi (2.8 kg/cm ²) minimum
Conductivity (77 °F/25 °C)	1000 µS/cm
Alkalinity (as CaCO ₃).....	<300 mg/L
Dissolved (Free) CO ₂	<50 mg/L
Fe and Mn	<1.0 mg/L combined
Dissolved Organics	<1.0 mg/L TOC
pH.....	6.0 to 8.5

*2000 hours is the estimated lifetime operating under optimum conditions in accordance with recommended Halox specifications. A normal variation of minus 10 to 15% (i.e. 1700 to 1800 operating hours) is to be expected.

DIMENSIONS

Depth	22 in (56 cm)
Width	24 in (61 cm)
Height	47 in (120 cm)
Operational Weight.....	180 lb (82 kilograms)
Externally Mounted	13 in D x 24 in W x 30 in H
Power Supply	(33 cm D x 61 cm W x 76 cm H)
Weight of Power Supply	150 lb (60 Kilograms)

PRECURSOR SPECIFICATIONS

Sodium Chlorite Solution*

NaClO ₂	24.25 to 25.75 wt %
NaCl	< 3.0 wt %
NaClO ₃	< 0.7 wt %

*Tech grade NaClO₂ can be diluted as low as 10 wt % for use with the Halox H2000SRE.

Softener Salt (Pellets only; No additives)

NaCl	> 99.85%
Total Metals (Cu,Fe,Pb)	< 1.0 mg/L
Na ₂ S ₂ O ₅ and NaHSO ₃	0%

PLUMBING REQUIREMENTS

	<u>Diameter</u>	<u>Material</u>
Feed Water	1/2 in OD	PE tubing
Catholyte Stream	3/8 in OD	PE tubing
ClO ₂ Product	3/8 in OD	FEP tubing
Sodium Chlorite Inlet.....	1/4 in OD	PE tubing
Brine Draw	3/8 in OD	PE tubing
Brine Tank Overflow	1/2 in ID	PVC tubing
Soft Water Reject.....	1/2 in OD	PE tubing
Leak Detector Drain	1/4 in OD	PE tubing

SYSTEM SPECIFICATIONS

Softener Resin Capacity	11 to 15 lb (5 to 7 kg)
Brine Tank Capacity.....	40 gal (150 L)
Pre-Treatment Filter	20 μm
Metering Pump.....	Peristaltic

ELECTRICAL REQUIREMENTS

230 VAC, 50/60 Hz, 1 ∅, 30 AMP
 Power Consumption: 4.8 KW maximum

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OPERATING ENVIRONMENT

Installation Location	Indoor, clean and dry
Ambient Temperature	35 to 110 °F (1.7 to 43 °C)

LOCATION OF SYSTEM

Locate system in a dry, level area close to the point of application. Allow access for service.

For delivery of chlorine dioxide solution the system back-pressure must be < 5 psi (0.35 kg/cm²).

When product delivery pressure requirements exceed the above specification, external dosing equipment is needed. Halox provides the Halox ClO₂ Dosing Package, appropriately sized for the Halox generator.

1. ClO₂ product
2. Catholyte product
3. Brine draw
4. Soft water reject
5. Feed water
6. NaClO₂ inlet
7. Power in
8. Leak alarm drain



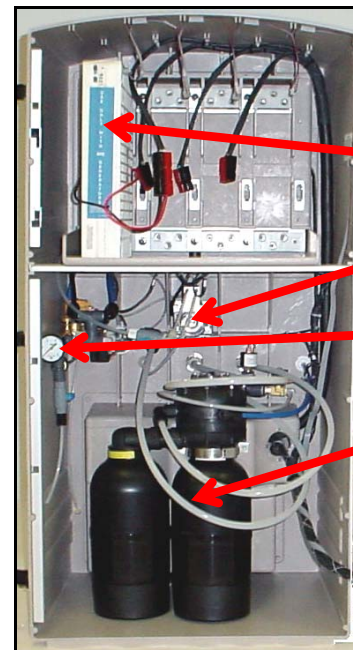
EXTERIOR – REAR VIEW



Externally-mounted pre-filter kit



External brine tank



Cassette(s)

Pump

Flow Valve with gauge

Softener

EXTERIOR –FRONT VIEW