



PRODUCTION OF CHLORINE DIOXIDE

Using diluted NaClO_2 and HCl solutions

General

OxipermPro systems produce chlorine dioxide using diluted solutions of sodium chlorite (NaClO_2 7.5%) and hydrochloric acid (HCl 9%). They are available in four capacity levels, producing 5, 10, 30 and 60 g/h of chlorine dioxide. The systems can treat up to 1500 gpm at the residual concentration of 0.4 ppm ClO_2 .

Chlorine dioxide is produced on demand from diluted solutions using the reliable and simple two chemicals methods of sodium chlorite and hydrochloric acid. The chlorine dioxide solution produced can be stored in an internal batch tank for continuous injection, or dosed into an external batch tank for on-demand operation.

Chlorine dioxide is a EPA registered chemical safe for drinking water treatment. Grundfos OxipermPro systems are NSF 61 PWTf registered for drinking water initiative, and UL and CE certified.

Applications

Penetrating Biofilm to Combat Legionella

Chlorine dioxide is especially effective when used to combat germs and pathogens, such as legionella in commercial building water systems and installations. It disinfects by attacking the stubborn biofilm that acts as a protective layer for the bacteria, continuously destroying the biofilm, thus removing the breeding ground for microorganisms and preventing it from building up again. Chlorine dioxide also reacts and interrupts the bacterial cellular processes, completely eliminating the bacteria on impact.

No Taste and Odor for Food and Beverage Processing

Chlorine dioxide is often used in the food and beverage industry for disinfection of process water or for CIP and bottle washing since its residual does not have any taste and odor and does not affect the taste or smell of the treated water.

The Oxiperm Pro OCD-162-5 and -10 systems are designed for small or medium size industrial or food and beverage projects with water flow up to 275 gpm.

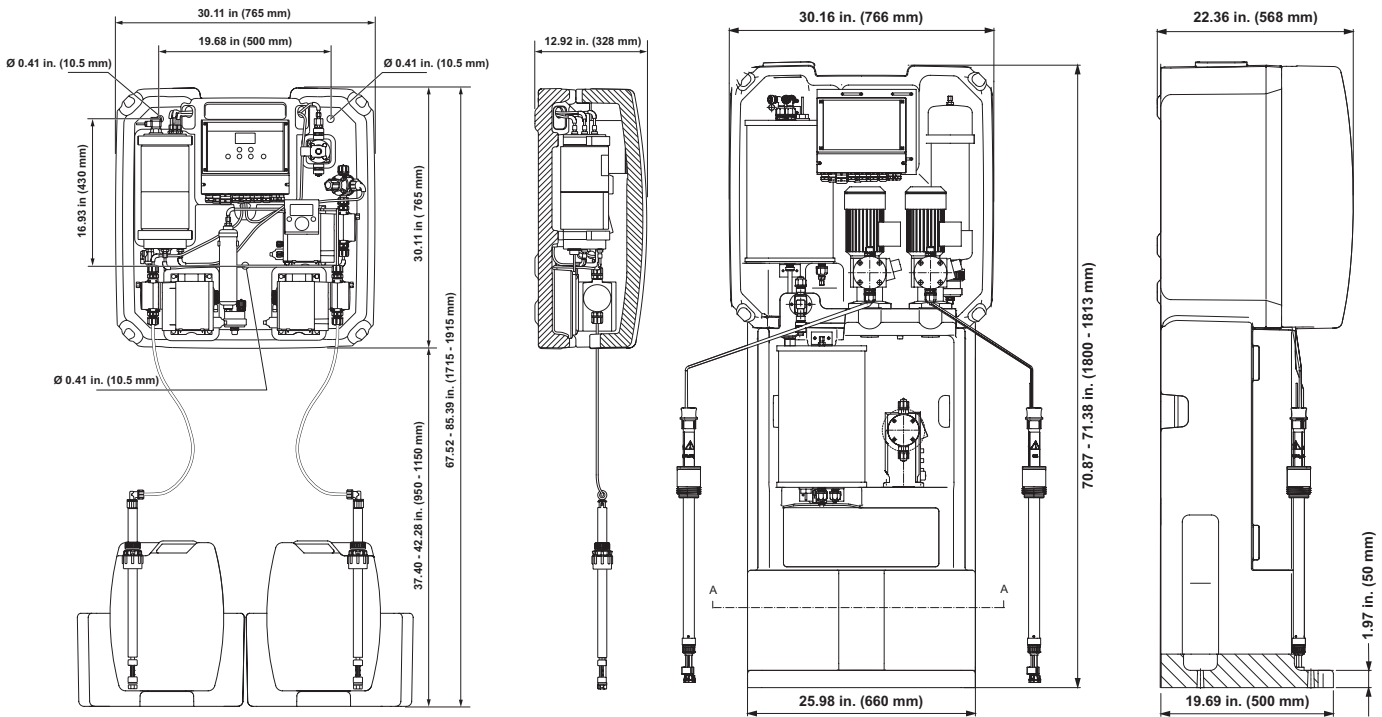
The Oxiperm Pro OCD-162-30 and -60 systems are suited for large building and cooling tower applications up to 1650 gpm.

Benefits of the Oxiperm Pro system

- Compact system for small or confined space
- Simple two dilute chemicals for safe handling and low operating cost
- Stable 2% product solution can be stored for several days
- Integrated 4-20 mA for measured value logging
- Integrated analyzer for accurate residual monitoring
- Safety air bag and filter to prevent any off gasing
- Collective warning and alarm output relay
- Single reaction chamber and batch tank for easy maintenance

Technical Data

Chlorine dioxide generator		OCD model				
		162-5	162-10	162-30	162-60	
ClO ₂ production	[lbs/day (grams/hr)]	0.26 (5)	0.53 (10)	1.59 (30)	2.9 (55)	
ClO ₂ concentration	[ppm]	2000				
Max continuous ClO ₂ dosing feed rate* (i.e. max. ClO ₂ pump output at 20mA)	[gal/hr (l/hr)]	0.66 (2.5)	1.32 (5)	3.96 (15)	7.26 (27.5)	
Consumption data	[gal/hr (l/hr)]	NaClO ₂	0.039 (0.15)	0.079 (0.3)	0.24 (0.89)	0.4 (1.5)
		HCl	0.042 (0.16)	0.087 (0.33)	0.26 (0.97)	0.44 (1.67)
		H ₂ O	0.69 (2.6)	1.35 (5.1)	4.23 (16)	8.5 (32)
Precursor concentration by weight	HCl	9 %				
	NaClO ₂	7.5 %				
Precursor safety equipment		Capacity monitored via level control				
Temperature range	[*F (°C)]	Ambient	40 to 95 °F (5 to 35 °C)			
		Dilution H ₂ O	50 to 85 °F (10 to 30 °C)			
		HCl & NaClO ₂	50 to 95 °F (10 to 35 °C)			
Dilution water pressure	[psi (bar)]	44 to 87 psi (3 to 6 bar)				
Admissible relative air humidity		max. 80 %, not condensing				
Total volume - reaction tank	[gal (liters)]	0.26 (1.0)	0.48 (1.8)	1.6 (6.1)	3.5 (13.4)	
Total volume - reservoir tank (up to max level alarm)	[gal (liters)]	0.26 (1.0)	0.48 (1.8)	1.85 (7.0)	3.67 (13.9)	
Filling volume - reaction tank	[gal (liters)]	0.23 (0.87)	0.44 (1.67)	1.46 (5.52)	3.16 (11.96)	
Filling volume - reservoir tank (up to max level alarm)	[gal (liters)]	0.23 (0.87)	0.44 (1.67)	1.72 (6.5)	3.43 (13.0)	
Materials of construction	System rack	Polypropylene				
	Fastening sleeves	Stainless steel				
	Solenoid valve	PVC				
	Reaction/reservoir tank	PVC				
	Internal hoses	PTFE				
	Gaskets	FPM				
Connections	ClO ₂ dosing line	1/8" ID x 1/4" OD tube		1/4" ID x 3/8" OD tube		
	Dilution water	1/4" ID x 3/8" OD tube				
	NPT adaptor	1/2" NPT connector				
Full text menu control	Commissioning	Yes				
	Operation parameters	Yes				
	Flush / rinsing	Yes				
	Maintenance	Yes				



Please verify the local legislation requirement with Grundfos for your applications.

GRUNDFOS Kansas City
17100 West 118th Terrace
Olathe, Kansas 66061
Phone: (913) 227-3400
Fax: (913) 227-3500

GRUNDFOS Canada
2941 Brighton Road
Oakville, Ontario
L6H 6C9
Phone: (905) 829-9533
Fax: (905) 829-9512

GRUNDFOS Mexico
Boulevard TLC No. 15
Parque Industrial Stiva Aeropuerto
C.P. 66600 Apodaca, N.L. Mexico
Phone: 011-52-81-8144 4000
Fax: 011-52-81-8144 4010

www.grundfos.us

