Electrolysis System CHLORINSITU III

Chlorine and sodium hydroxide made from common salt. Directly on site.

Output 100 – 10,000 g/h of chlorine

Electrolysis systems of type CHLORINSITU III generate sodium hypochlorite with a concentration of approximately 25 g/l with minimal entrainment of sodium chloride (85 % output) from the diaphragm cell into the finished product. A saturated solution of sodium chloride is produced in a salt-dissolving tank, included in the scope of delivery, and this solution is then electrolysed in a diaphragm cell. Sodium hydroxide solution and hydrogen are produced in the cathode chamber while ultra-pure active chlorine and a diluted residual brine are produced in the anode chamber, separated by the diaphragm from the cathode chamber. The resulting active chlorine is bound to the sodium hydroxide solution through an injector under constant vacuum and is collected as sodium hypochlorite in a product tank. The vacuum is kept constant by a frequency-controlled centrifugal pump. This creates less mechanical stress on the diaphragm in the electrolysis cell and in other parts of the system. The complete sodium hypochlorite solution can be metered, as required, by separate metering pumps. Due to its moderate pH value of 9.5 - 10, it affects the pH of the treated water significantly less than if conventional sodium-calcium hypochlorite with a pH of 12 13.5 were to be used. Much less acid is used to adjust the pH value, enabling savings of up to 70 %. The hydrogen always produced during electrolysis is diluted with fresh air by a fan and discharged safely. The salt-dissolving water comes from an integrated softener, preventing the formation of lime deposits and ensuring the long service life of the diaphragm cell. The efficiency of electrolysis is constantly monitored by various flow meters, with addition of water depending on the sodium hydroxide solution production and a dynamic level control in the product tank.

Your benefits

- Sodium hypochlorite solution low in chloride and chlorate with a high chlorine concentration (25 g/l free chlorine)
- Minimal acid consumption for pH correction, enabling savings of up to 70 %
- Safe system control with remote diagnosis by Remote Control Engineer
- Excellent service life of the diaphragm cells, thanks to a constant vacuum
- A frequency-controlled centrifugal pump maintains the vacuum constant in the enclosed anode area
- Excellent operating safety due to its design as a negative pressure system

Field of application

- Potable water
- Waste water
- Process water
- Swimming pool water
- Cooling tower

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Technical Data

Power supply 3 x 400 V (VAC/3P/N/PE/50 Hz)

Type/output	Fuse	Power uptake	Max. salt consumption	Max. consumption of process water	Max. consumption of cooling water	Dimensions L x W x H (mm)	Brine tank	Recommended capacity storage tank
g/h	A	kW	kg/d	l/h	l/h		l	l
100	3 x 16	1.10	5	4	80	1,250 x 600 x 1,550	210	200
200	3 x 16	1.50	10	8	80	1,250 x 600 x 1,550	210	300
300	3 x 16	1.90	15	12	100	1,250 x 600 x 1,550	210	400
400	3 x 16	2.30	20	16	100	1,250 x 600 x 1,550	210	500
500	3 x 16	2.70	25	20	125	1,250 x 600 x 1,550	210	600
600	3 x 20	3.10	30	24	125	1,650 x 600 x 2,000	400	700
750	3 x 25	3.70	35	30	150	1,650 x 600 x 2,000	400	800
1,000	3 x 25	4.70	50	40	150	1,650 x 600 x 2,000	400	1,200
1,250	3 x 35	5.70	60	50	150	1,650 x 600 x 2,000	400	1,500
1,500	3 x 35	6.70	70	60	180	1,650 x 600 x 2,000	400	1,700
1,750	3 x 35	7.70	80	70	180	1,650 x 600 x 2,000	400	2,000
2,000	3 x 50	8.70	100	80	200	1,750 x 1,200 x 2,000	520	2,200
2,500	3 x 63	10.70	125	100	250	1,750 x 1,200 x 2,000	520	3,000
3,000	3 x 63	12.70	150	120	300	1,750 x 1,200 x 2,000	520	3,300
3,500	3 x 80	14.70	175	140	350	1,750 x 1,200 x 2,000	520	4,000
5,000	3 x 90	20.70	250	200	500	3,100 x 1,800 x 2,070	1,150	5,800
7,000	3 x 100	29.40	350	280	700	3,100 x 1,800 x 2,070	1,150	6,000
8,500	3 x 130	35.70	425	340	850	4,300 x 1,800 x 2,070	1,150	7,500
10,000	3 x 160	40.70	500	400	1,000	4,300 x 1,800 x 2,070	1,150	11,000

Scope of delivery:

Electrolysis systems of type CHLORINSITU III are mounted ready-wired with a PLC Programmable Logic Controller on a powder-coated stainless steel frame in the control cabinet. They include a Remote Control Engineer for remote diagnosis and troubleshooting, integrated water softener system, membrane electrolysis cells, hydrogen bleed system and separate salt dissolving tanks with level monitoring unit. Dynamic level control to monitor the storage tank to be provided on site for sodium hypochlorite. A chlorine gas detector and automatic monitoring of water hardness downstream of the softening system come as standard with systems producing more than 600 g/h.

Note:

Electrolysis systems of type CHLORINSITU II, III, V and V Plus are offered and planned to meet customer specifications. This is true both for the system documentation and the subsequent supply of spare parts and maintenance.

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ProMinent Group
info@prominent.com
www.prominent.com