

# Electrolysis System CHLORINSITU® V

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



## Output 100 – 3,500 g/h of chlorine

Electrolysis systems of type CHLORINSITU® V generate ultra-pure chlorine gas in a vacuum process. 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. Chloride-free sodium hydroxide solution and hydrogen are produced in the cathode chamber, while ultra-pure chlorine gas and dilute residual brine are produced in the anode chamber, separated by the diaphragm from the cathode chamber. The chlorine gas produced is suctioned off through an injector (contained in the scope of delivery) and fully dissolved as hypochlorous acid in the water being treated (through a bypass). The chlorinated water is then distributed throughout the various pools via one or more proportionately controllable motor driven ball valves. The vacuum is kept stable by a single frequency-controlled booster pump. This permits significant savings in terms of energy. The chloride-free sodium hydroxide solution is stored temporarily and can be used for pH value

correction. A standard diaphragm metering pump is first used to correct the base (pH 6.8 – 7) of the superchlorinated water. The fine correction of the pH value is provided via additional alkali metering pumps for each circuit or point of injection. The hydrogen produced is diluted with fresh air by a fan and discharged safely. The diluted residual brine is fully discarded. To achieve this, the diluted brine is strongly diluted with softened water, neutralised by the addition of sodium hydroxide solution and disposed of. All residual chloride and chlorate is thus disposed of and not mixed with the process water. Electrolysis systems of type CHLORINSITU® V can thus be compared with pure chlorine gas in terms of their oxidation strength and chloride / chlorate content in the process water. The salt-dissolving water comes from a softener integrated in the system, preventing the formation of lime deposits and ensuring the long service life of the diaphragm cell.

## Your benefits

- Chlorination and pH adjustment with a single system
- Exceedingly low chloride and chlorate content
- Production and metering of high-purity hypochlorous acid without temporary storage
- Safe system control with remote diagnosis by Remote Control Engineer
- Excellent service life of the diaphragm cells, thanks to a constant vacuum
- Excellent operating safety due to its design as a negative pressure system

## Field of application

- Potable 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	Consumption of cooling water (external)	Dimensions L x W x H (mm)	Brine tank
g/h	A	kW	kg/d	l/h	l/h		l
100	3 x 16	1.10	5	60	–	1,655 x 600 x 1,550	210
200	3 x 16	1.50	10	60	–	1,655 x 600 x 1,550	210
300	3 x 16	1.90	15	60	–	1,655 x 600 x 1,550	210
400	3 x 16	2.30	20	60	–	1,655 x 600 x 1,550	210
500	3 x 16	2.70	25	60	–	1,655 x 600 x 1,550	210
600	3 x 20	3.10	30	90	–	1,950 x 600 x 2,000	400
750	3 x 25	3.70	35	90	–	1,950 x 600 x 2,000	400
1,000	3 x 25	4.70	50	90	–	1,950 x 600 x 2,000	400
1,250	3 x 35	5.70	60	90	–	1,950 x 600 x 2,000	400
1,500	3 x 35	6.70	70	90	–	1,950 x 600 x 2,000	400
1,750	3 x 35	7.70	80	90	–	1,950 x 600 x 2,000	400
2,000	3 x 50	8.70	100	175	200	1,750 x 1,200 x 2,000	520
2,500	3 x 63	10.70	150	175	250	1,750 x 1,200 x 2,000	520
3,000	3 x 63	12.70	175	175	300	1,750 x 1,200 x 2,000	520
3,500	3 x 80	14.70	175	175	350	1,750 x 1,200 x 2,000	520

Capacities > 3,500 g/h upon request

### Scope of delivery:

Electrolysis systems of type CHLORINSITU® V are ready mounted, wired for use, on a powder coated stainless steel frame with a Programmable Logic Controller (PLC) in the control cabinet, Remote Control Engineer for remote diagnosis and troubleshooting, integral water softening unit, diaphragm electrolysis cells, hydrogen bleed system and separate salt dissolving tank with level monitoring. The scope of delivery also includes a frequency-controlled central injector system matched to the system to meter active chlorine and sodium hydroxide solution for pH correction and a single booster pump. 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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