

### Flow-through chlorine electrolysis system for swimming baths

Disinfection of bathing water is an essential part of water treatment for swimming pools and is required according to DIN 19643. With TECHNOSTAR, an innovative, high-quality method for public swimming pool operators, disinfection can be performed by means of electrolysis.

TECHNOSTAR disinfects bathing water without use or storage of any hazardous substances such as chlorine gas or chlorine bleach. The chlorine required for disinfection is produced on site from common NaCl salt (cooking salt, sea salt, sodium chloride) - entirely safely and with a pleasant side effect: salted water.

Salted water has a refreshing and invigorating effect and is gentle on the skin too. It is also indicative of the sort of quality of life bathers can enjoy every day with Technopool flow-through chlorine electrolysis systems. The systems operate according to the SALT-WATER-LIGHT® method, the efficiency of which has been proven time and time again in private homes, hotels, therapy and exercise pools and indoor/outdoor municipal or commercial pools around the world.

### Versatile and eco-friendly

Salty bathing pool water is essential for the flow-through chlorine electrolysis system method (also known as chlorine electrolysis systems in inline operation). Salt may be used in tablet form as granules, sea salt, rock salt or (natural) brine.

TECHNOSTAR requires a min. salt content of 0.35 %, which corresponds to 3.5 g per litre or 3.5 kg per m<sup>3</sup> of bathing pool water. By comparison, sea water contains about ten times that amount of salt ~3.6 %.

Besides generating the disinfectant hypochlorous acid (HClO), the system causes other chemical compounds to be decomposed in the water which reduce contamination of pool water considerably.

The system consists of a control unit and one or more electrolysis cells, which are installed directly in the water circuit of the swimming pool and can be used in any swimming pool providing its components are corrosion-proof and hence designed for use with salt water. It will ensure algae, germs and bacteria are a thing of the past.

A control unit with a programmable memory monitors and controls the electrolysis process in the electrolysis cells.

The TECHNOSTAR is operated via a measuring and control equipment, which can be selected by the operator (e.g. the EASYPOOL, PM 01 or DCM 01 water sampling stations) according to water values (chlorine, pH, Redox, temperature) measured on an ongoing basis in the bathing water and via an analogue current output (4 ... 20 mA). On reaching the set value for free chlorine in the water, the system will stop and hence production of hypochlorous acid too. External release and a temperature and flow monitor are also included for additional reliability.



### Safe and reliable

Flow-through chlorine electrolysis systems are user-friendly and reliable when it comes to operation. Disinfection capacity can also be adapted to modified loads of the bathing pool water in continuously adjustable increments between 0 and 100 %.

The systems are very low-maintenance. Frequency of the electrolysis cell's self-cleaning function can be adjusted to the water composition. Electrolysis cells are wearing parts with a service life of 1 to 3 years and available in 80 ... 1,000 g Cl/h capacities. The electrolysis cell can be replaced on site in a simple manual procedure.

### In Short

- Bathing water disinfection without any use of hazardous substances
- System operates using salt - no use of chlorine chemicals
- Safe, economical and environmentally friendly
- Proven in practice, tried and tested many times over
- DIN 19643-conform
- No chlorine gas chamber or related safety requirements
- Simple installation
- Can be activated via measuring and control equipment
- Simple control via graphical display  
manual control possible
- Low maintenance, self-cleaning function,  
no acidification required
- High-quality material for electrodes (titanium)
- No reddened eyes, no irritation of the mucosa
- Disinfection can be controlled externally and regulated on site
- For indoor and outdoor pools

# Product Information TECHNOSTAR

## Technical data

Control unit	2000 ST		2000 AX	
Power supply	230 V AC, 50 Hz, 16 A			
Nominal current	1.5 A	2.4 A	5.8 A	
Nominal power	400 VA	600 VA	1,400 VA	
Analogue input	4 ... 20 mA, constant control input			
Digital inputs	Temperature monitor, flow-through monitor, external release			
Display	Graphical display			
Control	Programmable memory with proportional integral control of electrolysis current at constant voltage			
Protection class	IP 54			
Ambient temperature	10 ... 40 °C			
Dimensions (W x H x D)	600 x 800 x 250 mm			
Weight	approx. 60 kg			
Electrolysis cell	ST-80	ST-160	AX-G	AX-F
Number of electrolysis cells	2	4	1	
Disinfectant capacity at a salt content of ~0.45 %	0 ... 80 g Cl/h	0 ... 160 g Cl/h	0 ... 250 g Cl/h	
Current	0 ... 12 A	0 ... 20 A	0 ... 40 A	
Voltage	28 V DC (according to VDE 0100)			
Electrical connection	Pin terminals		Plug	
Cable	4 m, 2x6 mm <sup>2</sup>		4 m, 2x10 mm <sup>2</sup>	
Temp. of pool water	15 ... 40 °C			
Nominal piping width	DN 50 / ø63 mm		DN 100 / ø110 mm	
Dimensions (Ø x L)	ø63 x 335 mm		ø110 x 555 mm	
Connection	Thread		Flange	
Housing/electrolysis plates material	PVC (transparent)/titanium (coated)			
Electrolysis plates package	Fixed mounted		Replaceable	
Weight	~2 kg		~8 kg	
Salt content	> 0,35 %			
Flow speed	<1.5 m/s			

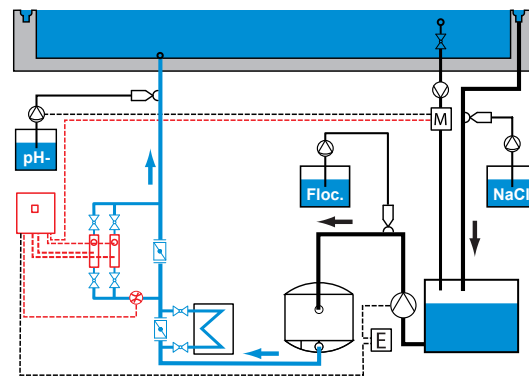
## Infrastructure requirements

- Salt water > 0.35 %
- Corrosion-resistant swimming pool equipment
- DN 50/DN 100 PVC pipe for water circulation piping
- 230 V AC voltage supply in engineering room
- In-line connection for circulation/filtering system
- Measuring and control equipment with analogue output 4 ... 20 mA
- Water/salt values with very low percentage of iron and manganese
- Water values after increase of saline content less than 20° dH total hardness

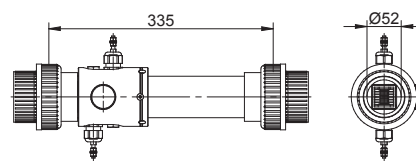
## Order data

Flow-through chlorine electrolysis systems	Order No.
TECHNOSTAR 2000 ST-80 (0 ... 80 g Cl/h) Control unit, 2 e-cells, seals, screw-in parts	91210100
TECHNOSTAR 2000 ST-160 (0 ... 160 g Cl/h) Control unit, 4 e-cells, seals, screw-in parts	91210102
TECHNOSTAR 2000 AX-G (0 ... 250 g Cl/h) Control unit, temperature monitor, 1 electrolysis cell with threaded connection, seals, screw-in parts	91210200
TECHNOSTAR 2000 AX-F (0 ... 250 g Cl/h) Control unit, temperature monitor, 1 electrolysis cell with flange connection and seals	91210210
TECHNOSTAR 4000 AX+ (0 ... 1,000 g Cl/h)	On request

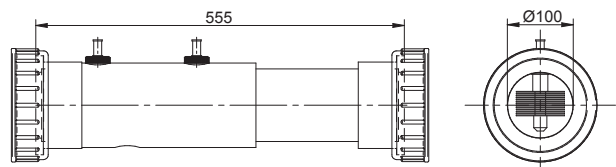
## Installation diagram



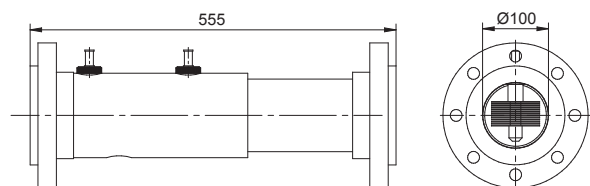
## Dimensioned drawings



Electrolysis cell Technostar 2000 ST



Electrolysis cell Technostar 2000 AX-G with threaded connection



Electrolysis cell Technostar 2000 AX-F with flange connection

All dimensions in mm