



PRODUCT CATALOG - SWIMMING PONDS



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WHO OR WHAT IS POLYCON?



THAT'S WHO WE ARE

Polycon GmbH is an environmental engineering company founded in 2011 and based in Bremen. Before the company was founded, our motivated team gained extensive experience in the field of swimming pond construction, water ecology and biology as a plant construction group of Polyplan GmbH (today Polyplan-Kreikenbaum Gruppe GmbH). Over the years, this know-how has been incorporated into the development of our own product groups for swimming pond construction. Together with our worldwide partners we are continuously working on the optimization and expansion of our product range. As a result, the components we offer are precisely tailored to the needs of a swimming pond owner.

With nine people, our team is relatively small. But as we all know, size does not matter. Through passion, motivation and joy, we implement everything from small one-off productions to extensive series productions or even large special constructions. Each team member brings individual strengths to the work. This allows us to offer a wide range of technical and practical skills for the implementation of your project.

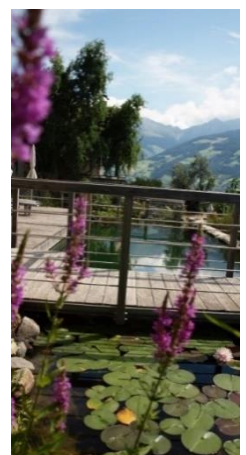


BIOLOGICAL WATER TREATMENT

The topic of water treatment is central to the planning and construction of a swimming pond. But why does a pond need water treatment? Isn't it enough to dig a pit, line it with foil and fill the pool thus created with water? Well, it is possible, but the joy of having your own pond would dim very quickly. Because apart from the fact that the stagnant water will be populated by floating algae in no time and literally become cloudy, other organisms will also settle. With every bath, people introduce foreign matter into the water - hair, dander and the like, as well as



bacteria and other pathogens. Whether with or without water treatment, the swimming pond becomes a biotope. And in a stagnant body of water, the conditions for undesirable processes are optimal. The regular entry of pathogens and the lack of competition from them allows them to flourish. Sooner or later, this will have negative consequences for the bather. And this is where water treatment comes in. With the help of the circulation of the bathing water through biological and physical filter stages, not only are the bacteria and other pathogens eliminated, but suspended matter is also removed from the water, so that the swimming pond with clear water invites you to enjoy hygienic bathing. What sounds simple at first glance is, however, a very complex undertaking. Thanks to



WHO OR WHAT IS POLYCON?



our years of work in the field of biological water treatment and our active network of international partners, you are in good hands with us: We make sure that the complex processes of biological water treatment can be easily implemented by suitable technology.

THE CATALOG

This catalog gives you an overview of the components that are already in series production. Due to constant further and new developments, it is worthwhile to visit our website regularly and to call up the latest product catalog. We would also be pleased to inform you about changes in our product portfolio. Just get in touch with us.

Swimming ponds are as individual as their owners. That's why custom designs are not uncommon. Many of our products are individually tailored to your requirements. In the catalog, you will find corresponding notes on customizability with the products. If you also have customization requests for products without corresponding notes or if you need components that are not listed in our brochure, please do not hesitate to contact us. Our goal is always to find the optimal solution for your needs. Together we will create the swimming pond of your dreams.

If you have any questions about our products, just contact us by phone. We look forward to answering your questions and will surely find a suitable solution for you.

We will be happy to provide you with independent advice and support you in the implementation of your projects.

WHO OR WHAT IS POLYCON?



YOUR CONTACT PERSONS - WE ARE THERE FOR YOU



Robin Bruns



Katja Dräger

Polycon GmbH

Überseetor 14

28217 Bremen

Tel.: 0421 17876 - 290

Fax: 0421 17876 - 299

info@polycon-gmbh.de






www.polycon-gmbh.de

PRODUCT GROUP I - SKIMMER



Pollen, leaves and other floating debris not only give a swimming pond an unclean look, once they sink to the bottom it becomes even more difficult to remove them from the water. Skimmers take care of this task and ensure a clean water surface in your swimming pond by continuously draining off the surface water. The impurities skimmed off in this way collect in a collection basket and can be easily removed and disposed of through it.

ADVANTAGES

-  Clean water surface
-  Less cleaning effort
-  Easy removal of leaves and floating debris
-  Low energy consumption
-  Possibility to dispense with surge tanks

PRODUCT GROUP I - SKIMMER



STANDARD DA500

The **Standard DA500** is a component made of PE-HD with a skimmer basket made of PP. It is our all-rounder and is regularly used in both new buildings and renovation projects. Due to the foil flange (made of PE as standard, available in stainless steel on request) and a rubber seal, it can be incorporated into all foils. The skimmer basket can be loosened by simply turning it and can thus be emptied easily and without the use of tools.

Skimmer dimensions:

Total height:	60 cm
Enclosure:	Ø 50 cm
Base area:	55 cm
Flow:	90 mm
	PE-HD OD90

Skimmer opening:

Height:	16.5 cm
Breadth:	35.6 cm
Foil flange:	5 mm PE- Plate or 5 mm stainless steel panel

Mesh size skimmer basket: 2 - 5 mm

erf. Volumenstrom: 8 - 15 m³/h



Figure 1: Standard DA500

Scope of delivery: 1 x skimmer incl. skimmer basket (PP), on pallet

PRODUCT GROUP I - SKIMMER



SKIMMER 360°

The **Skimmer 360°** is ideal for large swimming ponds, as it can be used completely freestanding and thus absorbs surface water from all sides. In addition, it can also be used to cover water level fluctuations of up to 40 cm. It is equipped with a PP skimmer basket and a $\varnothing 110$ mm bottom drain. The circumferential collar on the bottom is used for fastening to the ground and for welding on the foil. It is also possible to install the skimmer in the gravel bed. In this case, the collar serves as a buoyancy protection. Additional fastening is not required in this case.

Skimmer dimensions:

Total height:	70 cm
Enclosure:	$\varnothing 63$ cm
Base area:	$\varnothing 83$ cm
Flow:	110 mm
	PE-HD OD110 (below)

Skimmer opening:

Diameter:	$\varnothing 50$ cm
Hub:	40 cm
Total Height:	109 cm
Mesh size skimmer basket:	2 - 5 mm
Load:	1-50 m ³ /h

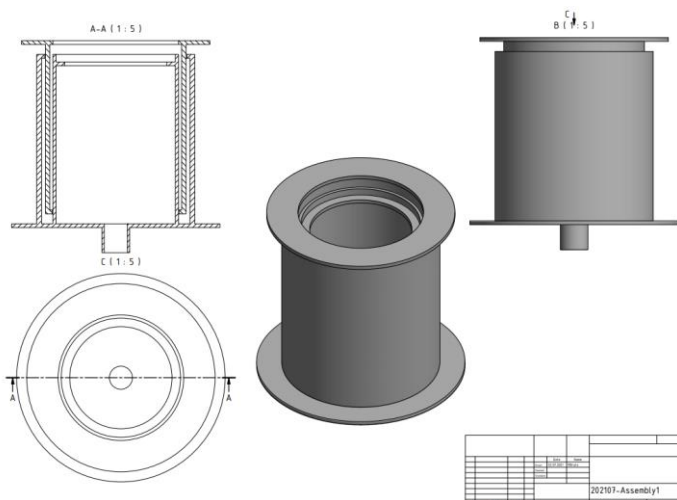


Figure 1: Skimmer 360°-Drawing



Figure 2: installed in the filter bed Skimmer 360°

Lieferumfang: x skimmer incl. skimmer basket (PP) and overshot sleeve (KG2000), on pallet

PRODUCT GROUP II - PUMP SHAFT



Pump shafts are the heart of swimming pond technology. Regardless of whether it is a small pond or a large swimming pool - no water treatment is possible without the continuous circulation of the water. And since every swimming pond is individually tailored to its users, we also manufacture the pump shafts according to your needs. In the table below you will find our standard dimensions - these are optimal for most applications. Should you nevertheless require deviations, please do not hesitate to contact us.



STANDARD DN1000

Our standard DN1000 offers you an individually equipped, modularly expandable chamber, which is particularly characterized by compactness and easy installation.



Figure 3: Standard DN1000

Dimensions and specifications:

Total Height:	approx. 1,840 mm other dimensions possible upon request
Inner diameter:	1,000 mm
Inflows:	3x PE-HD OD90 other quantities and sizes possible upon request
Drains:	1x PE-HD OD63 other quantities and sizes possible upon request
Lid:	Plastic, day waterproof
	Casting with concrete support ring possible on request

We will gladly equip your pump chamber with a phosphate adsorber of the type **PCAD - DA500**. We can also supply pumps (see **product group VIII - Pumps**), which we will be happy to integrate directly into the sump.

Scope of delivery: 1 x manhole standard DN1000 on pallet

PRODUCT GROUP III - PHOSPHATE ADSORBER



Phosphates (PO₄) are often an ongoing issue for swimming pond owners. This is not surprising, as phosphorus compounds are an essential nutrient for plant life. Unfortunately, the nutrients introduced during bathing or fill water replenishment are not exclusively metabolized by desirable aquatic plants. Filamentous algae and floating algae also help themselves to the nourishing supply and can cloud the pond ambience unattractively. So that you don't have to worry too much about phosphates, we have developed phosphate adsorber that remove the nutrients from the filling water before they can enter the circulation. It is also possible to continuously run the bath water through a phosphate adsorber, thus continuously removing nutrients from the system.



PC_{TOP} - DA315

Our PO₄ adsorbers **PC_{TOP} - DA315** are used for treatment of drinking water for filling water feeding or can be used internally in the pure water circuit. Depending on the intended use, we offer two variants: one variant is designed for permanent installation and can be dug into the garden or installed in the technical room - the other variant was developed for mobile use; it has wheels and can be flexibly used by you wherever it is most needed. Both adsorbers are fed from the bottom up and have a pressure-tight body made of PE (lid made of PVC).



Abmessungen:

Total Height:	110 cm
Bulk height adsorber material:	80 cm
	corresponds to 60kg
Total Diameter:	31.5 cm
Connections:	Gardena hose connector or OD25 compression fitting
Intake:	2.5 cm (PE-HD OD25) with water meter and manual control valve up to 3.0 bar
Drain:	6.3 cm (PE-HD OD63)
Lid:	Flange 20mm (PVC) 16x M16x70 V2A stainless steel bolt
Load Rate:	max. 341.7 l/h max. 5.7 l/min

Figure 4: PC_{TOP} - DA315

Of course you can also get **adsorption material** for refilling from us.

Scope of delivery: Phosphate adsorber **PC_{TOP} - DA315**, water meter, control valve to adjust the flow rate, check valve and 60kg adsorption material **Granulated Iron hydroxide (GEH)**, on pallet.

FEHLER! VERWEISQUELLE KONNTE NICHT GEFUNDEN WERDEN



PC_{AD} - DA500

The **PCAD - DA500** phosphate adsorber is integrated directly into the pump shaft and is available exclusively in a package with a standard **DN1000** pump shaft. By default, the feed is done via a bypass from the clean water line - but on request we can also install the phosphate adsorber in such a way that the replenished filling water is passed through the adsorbent. The water leaves the adsorber by overflowing over the upper edge, thus returning to the pump shaft.



Dimensions:

Total Height:	1000 mm
Bulk height adsorber material:	800 mm
Total Diameter:	500 mm
Inflow:	PE-HD OD32 with manual control valve
Load:	max. 942.9 l/h max. 15.7 l/min
Flow:	free overflow into the pump shaft

Figure 5: PCAD - DA500

Of course you can also get **adsorption material** for refilling from us.

Scope of Delivery: 1 x manhole standard **DN1000** with welded phosphate adsorber **PCAD - DA500**, 60kg adsorption material **Granulated Iron Hydroxide (GEH)** and control valve to adjust the volume flow, on pallet

PRODUCT GROUP IV - DRUM FILTER



Our drum filters are developed for the highest demands. We attach great importance to robustness and reliability combined with user-friendliness!

The water to be cleaned reaches the pre-chamber by means of gravity or a pump, through the inlet (1) and from there into the filter drum (8). Here the dirt particles are retained by the filter fabric. The size of the particles varies depending on the mesh size.

In the standard version, the drum filter filters everything $>60\mu\text{m}$. The cleaned filtrate leaves the drum filter through the two outlets (2). The number in the model name of the drum filter in m^3/h indicates the maximum flow rate (standard model: $30\text{m}^3/\text{h}$).

The retained particles are deposited on the Drum filter mesh, increasing its flow resistance. This in turn leads to an increase in the water level inside the drum (pump mode) or to a drop outside the drum (gravity mode). A sensor registers this and the individually programmable control box (5) triggers the rinsing process. An electric motor (6) rotates the drum via a gear drive (7), while several high-pressure spray nozzles (4) flush the filter fabric of the drum filter from above. The resulting highly concentrated dirty water is discharged at the rear of the drum filter (9). The level indicators (10, 11) allow visual control at any time.

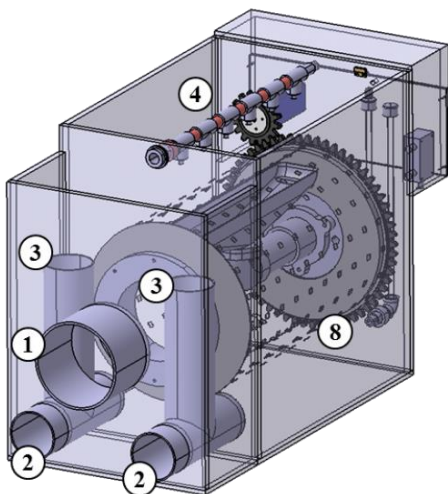


Figure 6: Front view

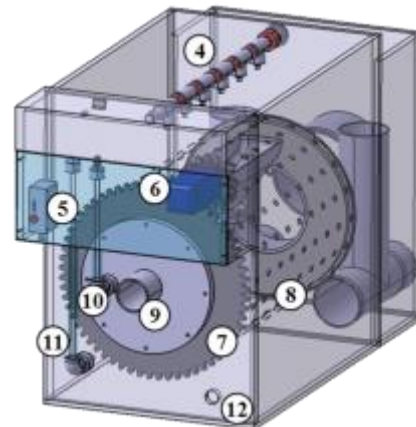


Figure 7: Rear view

PRODUCT GROUP V - PRECIPITATION STATION



Every photosynthesis-driving life needs the basic building blocks oxygen (O), carbon (C), nitrogen (N), water (H₂O) and phosphorus (P). In order to leave as little room as possible for undesirable organisms such as filamentous or floating algae to grow, we must take one or more building blocks out of the equation. Clearly, water is essential in a swimming pond, and oxygen, carbon and nitrogen occur regularly in our atmosphere and dissolve in the water entirely without our intervention. The simplest approach to minimize filamentous or floating algae is to reduce the amount of phosphorus compounds in the water. This is done, for example, in the filtration area, by water plants growing in the pond or also by adsorption units (see **product group III - phosphate adsorbers**). Under some conditions it can still happen that the measures taken are not sufficient and a lot of free phosphates are dissolved in the water. In this case, you should get ahead of the biology and chemically bind the free phosphates by the targeted use of so-called precipitants (see ferric chloride solution (40%)) before the growth of the filamentous algae explodes.

Phosphate binding (also called phosphate precipitation) is a natural process. In areas with very iron-rich groundwater, a reddish-brown discoloration of the water can be observed. This is due to the iron II ions dissolved in the water. By adding oxygen, an oxidation of the iron-II ions takes place. They turn into water-insoluble ferric ions. These ferric ions are positively charged and, if present, form a bond with negatively charged phosphates. Nutrient flocs are formed, which sink to the bottom and sediment.

Precipitants allow this process to take place in a controlled manner. In addition, the iron salts used have a stronger binding power and thus allow a more sustainable removal of phosphates. Precipitants are used globally in water treatment.

PRODUCT GROUP VI - FILTER NOZZLES

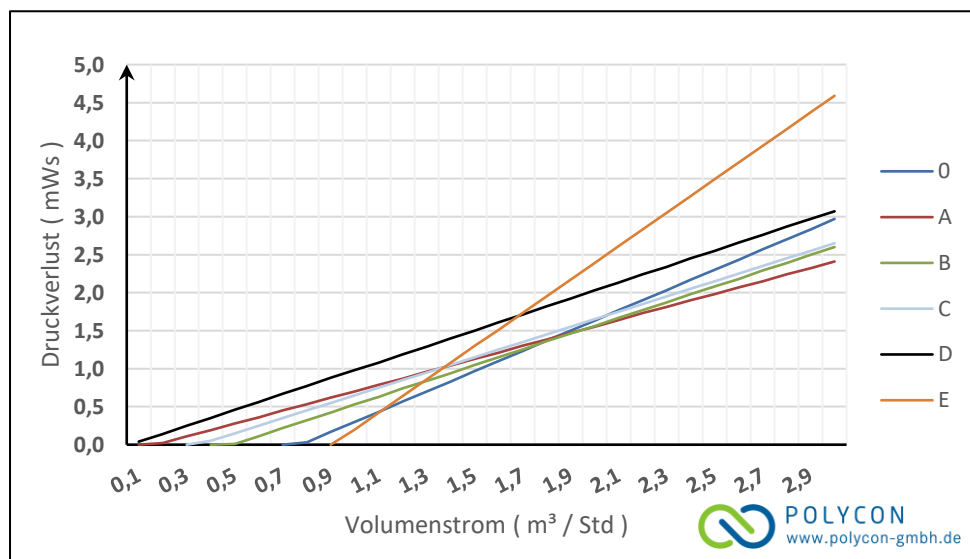


Sprinkled bottom filters are one of the different types of filters for natural swimming ponds. The raw water to be treated is forced by pump power into various nozzles installed on the filter surface. The nozzles disperse the water evenly over the surface and at the same time provide optimal aeration of the water. The water then percolates through the filter layers and is cleaned both biologically and physically.



WETLANDER-75

For the uniform distribution of raw water on the installed filter surfaces, we developed special nozzles in 2020. These have a large ball diameter and result in good distribution of relatively large droplets. This reduces dead zones while minimizing evaporation.



The connection is made via a OD32 compression fitting. To prevent plants overgrowing the filter area from reducing the performance of the nozzles, we recommend installation five centimeters above the ground. The nozzles are injection molded from black PE and welded in our workshop.

For use in branched piping systems, the nozzles are available in five different variants.

Scope of delivery: Nozzles including nozzle insert and OD32 compression fitting in package

PRODUCT GROUP VII - EJECTORS



The biological processes in the ecosystem "pond" are complex - but underlying everything is always the interaction of water and oxygen. The life of this world is strongly based on these two molecules and has become partly very inventive to find a niche for its own existence. Roughly simplified, it can be said for pond biology that most processes taking place under oxygen-rich conditions are rather desirable while under oxygen-less conditions rather undesirable processes take place. In order to provide you with a simple means to introduce oxygen into the water during regular operation or to help you react quickly in emergency situations, we have developed a range of different ejectors.

Ejectors, also called water-jet air compressors or Venturi nozzles, use a simple physical principle: when a flowing medium (water) in a pipeline meets a constriction, the pressure increases at this point while a vacuum is created downstream of the constriction. This negative pressure is used to mix a second medium (air) with the first medium. This process is very energy-efficient and does not require any noisy compressors.

PRODUCT GROUP VIII - PUMPS



Life is movement - without the circulation of water, a swimming pond will struggle to develop an appealing balance. Fortunately, getting water to circulate is quite simple. We offer a wide range of efficient and reliable pumps to make your swimming pond the oasis of tranquility you dream of.



PCA100

The compact **PCA100** pump is in no way inferior to the larger pumps in the choice of materials used. It consists of programmable, powerful menu-controlled electronics (driver) and a sine-commutated synchronous motor (pump). Operation with low voltage (12V) allows the safest use in all applications. The integrated bearing flushing offers optimum protection against calcification and, in conjunction with the silicon carbide bearings used, a titanium rotor and a special carbide shaft, ensures low-maintenance operation. The processed materials are designed for a long service life and meet the highest requirements and quality standards. The product is developed and produced in Germany: "Made in Germany"!

Technical data:

Delivery capacity:	max. 8,500 l/h nom. 7,300 l/h
Delivery Head:	max. 6 m
Absorbed power:	5 - 100 W
Operating voltage:	90 - 240 VAC 50 - 60 Hz
Ambient temperature:	2°C - 40 °C
Maximum operating pressure:	1.2 bar
Maximum diving depth:	2 m
Pump line length:	2 m
Intake:	40 mm
Outlet:	25 mm



Figure 8: PCA100

The connections are suitable for PVC / ABS adhesive fittings. Installation submerged and dry possible.

Scope of Delivery: 1 x PCA100 pump including driver in the package

PRODUCT GROUP VIII - PUMPS



The innovative **PCA200** pump with titanium rotor consists of programmable, powerful menu-controlled electronics (driver) and a sine-commutated synchronous motor (pump). The high efficiency of the motor, in combination with the speed adjustable to your power requirements, makes the pump an energy-saving solution. The integrated bearing flushing offers optimum protection against calcification and, in conjunction with the silicon carbide bearings used and a special carbide shaft, ensures low-maintenance operation. The processed materials are designed for a long service life and meet the highest requirements and quality standards. The product is developed and produced in Germany: "Made in Germany"!

Technical data:

Delivery capacity:	max. 17,000 l/h nom. 14,500 l/h
Delivery head:	max. 8,8 m
Input power:	4 - 200 W
Operating voltage:	230 VAC 50 - 60 Hz
Ambient temperature:	2°C - 40 °C
Maximum operating pressure:	1.2 bar
Maximum diving depth:	2 m
Pump cable length:	3 m or 10 m
Intake:	50 mm
Outlet:	40 mm



Figure 9: PCA200

The connections are suitable for PVC / ABS adhesive fittings. Installation submerged and dry possible.

Scope of Delivery: 1 x **PCA200** including driver in the package

PRODUCT GROUP VIII - PUMPS



The innovative **PCA400** pump with titanium rotor consists of programmable, powerful menu-controlled electronics (driver) and a sine-commutated synchronous motor (pump). The high efficiency of the motor, in combination with the speed adjustable to your power requirements, makes the pump an energy-saving solution. The integrated bearing flushing offers optimum protection against calcification and, in conjunction with the silicon carbide bearings used and a special carbide shaft, ensures low-maintenance operation. The processed materials are designed for a long service life and meet the highest requirements and quality standards. The product is developed and produced in Germany: "Made in Germany"!

Technical Data:

Delivery capacity:	max. 23,500 l/h nom. 18,600 l/h
Delivery Head:	max. 12.5 m
Input power:	4 - 400 W
Operating voltage:	230 VAC 50 - 60 Hz
Ambient temperature:	2°C - 40 °C
Maximum operating pressure:	1.2 bar
Maximum diving depth:	2 m
Pump cable length:	3 m or 10 m
Intake:	50 mm
Outlet:	40 mm



Figure 10: PCA400

The connections are suitable for PVC / ABS adhesive fittings. Installation submerged and dry possible.

Scope of Delivery: 1x **PCA400** including driver in the package

PRODUCT GROUP VIII - PUMPS



PCA1200

The innovative PCA1200 pump with titanium rotor consists of programmable, powerful menu-controlled electronics (driver) and a sine-commutated synchronous motor (pump). The high efficiency of over 90%, combined with the speed adjustable to your power requirements, makes the pump an energy-saving solution. The integrated bearing flushing offers optimum protection against calcification and, in conjunction with the silicon carbide bearings used and a special carbide shaft, ensures low-maintenance operation. The processed materials are designed for a long service life and meet the highest requirements and quality standards. The product is developed and produced in Germany: "Made in Germany"!

Technical Data:

Maximum delivery capacity:	68,000 l/h
Conveying capacity at 4m:	48,000 l/h
Ambient temperature:	Pump: 2 - 40 °C
	Driver: 0 - 30 °C
	(without additional cooling)
Delivery Head:	12.5 m
Power consumption:	4 – 1,200 W
Operating voltage:	100 - 240 VAC
	50 - 60 Hz
Maximum operating pressure:	1.2 bar
Maximum diving depth:	2 m
Maximum diving depth:	3 m or 10 m
Intake:	90 mm
Outlet:	75 mm



Figure 11: PCA1200

Installation horizontal, optionally immersed or dry in piping, not self-priming. The connections are suitable for PVC / ABS adhesive fittings..

Scope of Delivery: 1 x PCA1200 pump including driver in the package

PRODUCT GROUP IX - MEASUREMENT AND CONTROL TECHNOLOGY



The pool has been excavated, the foil sheets have been welded, pipelines and manholes have been placed, the first water has been filled in - from now on nothing can happen. Or can it? In fact, a swimming pond involves a lot of work. Depending on bathing use and season, pump run times and filter loading should be adjusted, and depending on the nutrient load, the operation of an adsorption bypass is necessary or the use of precipitants is recommended. To keep an overview here, the keyword is "measurement and control technology". And many suppliers make themselves pay very dearly for this technology. Since we don't want the pleasure of your swimming pond to be ruined by expensive and complicated technology, we have developed various useful devices and tools in cooperation with our sales partners. This will make it especially easy for you to keep an eye on what is happening in your swimming pond at all times and everywhere.

PRODUCT GROUP IX - MEASUREMENT AND CONTROL TECHNOLOGY



DANA-CONTROL-UNIT (DCU)

The autonomous control continuously and steplessly adjusts the filter operation to the cleaning requirement. In contrast to static controls, biologically optimal filtration and regeneration is achieved while using as little energy as possible. All operating data is transmitted in real time to our database for natural outdoor pools (**DaNa**). A dashboard displays clear evaluations and also enables control of the system. The application is web-based and can be used on all common computers or cell phones. This consolidates the entire environment for controlling, analyzing and supporting complex filtration processes into one tool. For hardware, software, transmission and data storage, only mature industry standard products are used. For this purpose, we operate our own server, which is designed for secure data management and extremely high availability.

Equipment:

Control option:	2 pumps with max. 800 W power		
Pressure sensor:	Amount:	1 Piece	
	Measuring range:	0 - 4 mWc	
Temperature sensor:	Amount:	1 Piece	

Technical Data:

Measurements (B x H x T):	30 x 40 x 25 cm
Operating voltage:	230 VAC
	50 Hz
	16 A

For the installation at the swimming pond we recommend the installation in the technical room or the installation of an outdoor protection box IP65 (not included in the scope of delivery).

Please note that the use of the **DaNa Control Unit (DCU)** is linked to a user account with **DaNa**. An annual license fee is charged for the use of **DaNa**.

Scope of Delivery: 1x **DaNa-Control-Unit (DCU)** including pressure sensor (6m cable length) and temperature sensor (6m cable length) in package

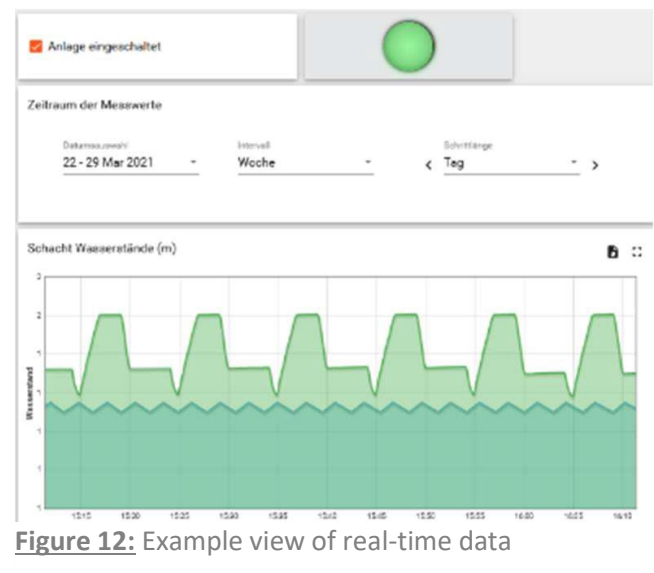


Figure 12: Example view of real-time data

PRODUCT GROUP IX - MEASUREMENT AND CONTROL TECHNOLOGY



Ondina is a system developed by our operating partners, which offers various measuring instruments for the control of swimming pond technology as well as for the monitoring of water quality. A particular advantage of this system is the ease of installation: all sensors are based on **LoRaWAN** (Long Range Wide Area Network) technology and, once placed, automatically connect to our DaNa database. Together with **DaNa**, Ondina becomes a powerful tool to control your swimming pond technology.

Equipment:

Gateway	1 Piece	Antenna	1 Piece
Measurement		Measurement	
(BxHxT):	26.3 x 14.5 x 9 cm	(B x H x T):	2.2 x 40 x 2.2 cm
Operating voltage:	100 - 240 VAC	Frequency:	868 MHz
	50 Hz	Cable length:	60 cm
	0.5 A		
Cable length:	160 cm	Pressure sensor	2 Piece
		Measurement excl. Antenna (B x H x T):	11.5 x 4.9 x 6.4 cm
Temperature sensor	1 Piece	Measurement incl. Antenna (B x H x T):	21.5 x 4.9 x 6.4 cm
Measurement		Cable length:	300 cm
(B x H x T):	4.2 x 9.4 x 2.9 cm	Measuring range:	0 - 1 m
Cable length (Sensor):	100 cm	A sensor additionally measures the water temperature	
Measuring range: Temperature:	-40 - 80 °C	Electricity meter	1 Piece
Humidity:	0 - 99,9 %	Measurement	
Battery:	10 Years	(B x H x T):	3.6 x 9.9 x 6.3 cm
		Operating voltage:	230 V
Water meter	1 Stück		
Measurement			
(B x H x T):	7.8 x 7.2 x 11 cm	Measuring range:	50 - 60 Hz
Connections: In:	G $\frac{3}{4}$ " AG	Display resolution:	0.01 kWh
Out:	G $\frac{3}{4}$ " AG	Temperature:	-25 - 55 °C
Max. operating pressure:	16 bar	Installation:	Hutschiene
Temperature: Water:	max. 30 °C	Protection class:	IP51
Air:	-15 - 70 °C		
Nominal flow rate (Q ₃):	2.5 m ³ /h		
Protection class:	IP 68		
Display resolution:	0.001 m ³		

Scope of Delivery: as listed in the above list in the package

PRODUCT GROUP IX - MEASUREMENT AND CONTROL TECHNOLOGY



DANA

DaNa is an intuitive monitoring and control tool for use in lakes, public as well as private pools, and other water engineering facilities. **DaNa** has a wide range of functions that support operational management at all levels. Decades of experience have shown that the successful operation of a wide variety of water technology plants, especially those with biological water treatment, is practically impossible to implement without monitoring. **DaNa** enables easy input, monitoring and evaluation of individually configurable measurements of any kind: from manual readings to live data from connected sensors or plant control systems to laboratory measurements and highly reliable alarm messages. Maintenance plans and measurement protocols can be individually created by the operator and filled out by authorized users. The result is a holistic overview of the current as well as historical operating status of a plant in the simplest way possible. The integrated control interface allows convenient remote control of various operating parameters via PC or laptop. Manual data acquisition is additionally possible via tablet or smartphone. **DaNa** combines all these functions in a web-based software solution with an intuitive user interface.

DaNa offers a wide range of technical interfaces so that you no longer need to enter your data manually but can comfortably monitor the live data from anywhere on your terminal device and even make changes to the control system. Our **DaNa Control Unit (DCU)** and Ondina components, which were specially developed for this purpose, are particularly suitable for this purpose.

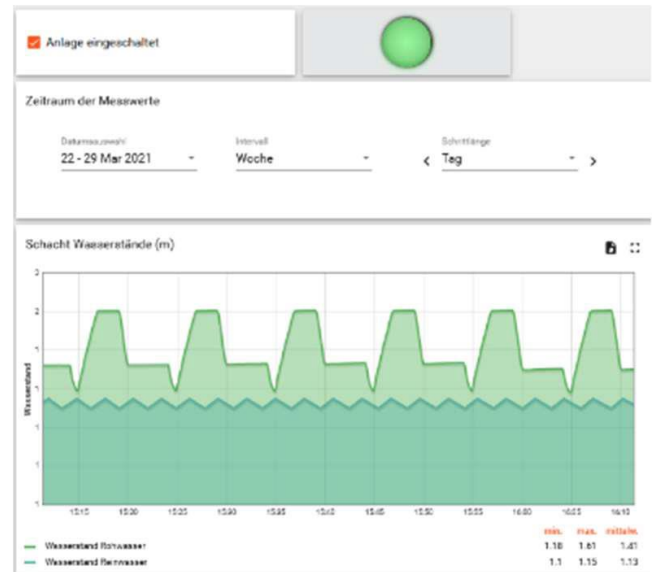


Figure 13: sample dashboard

PRODUCT GROUP X - CONSUMABLES



GRANULATED FERRIC HYDROXIDE (GEH)

Granulated iron hydroxide (GEH) is our all-rounder for optimum bath water quality. Our product group III - phosphate adsorbers is made to absorb this adsorption material. It is used worldwide for the treatment of industrial and drinking water. The adsorption material frees your water from unwanted pollutants and phosphates. We recommend to run at least the filling water through a **phosphate adsorber**, in the optimal case you have additionally an adsorber used in the bypass of the clean water line. This keeps the bath water clean and clear.

HYDROTEC BERLIN

Features:

Composition:		dark brown, irregular granules
Grain range:		2 - 4 mm
Specific surface area according to BET:		approx. 230 m ² / g
Total porosity:		at least 70 %
Bulk density:		0.65 kg / dm ³
Bulk height:		min. 0.5m max. 5.0 m
Filter velocity:		5 - 20 m / h
Adsorption capacity:	Arsenic (As)	7 - 13 g/kg
	Phosphorus (P)	12 - 18 g/kg

Scope of Delivery: depending on the quantity ordered in bags of 15 kg each as a package, on a pallet or as a big bag of 650 kg

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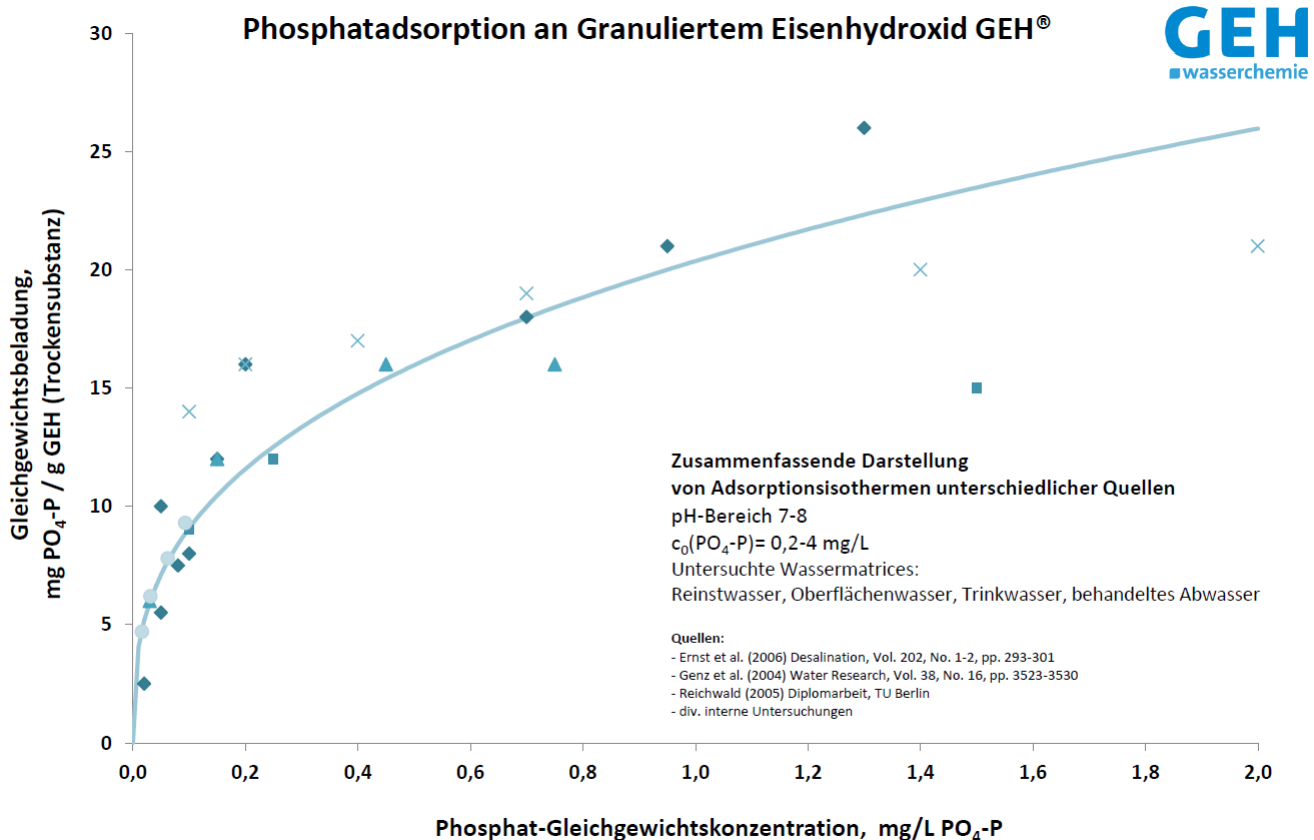


GEH WASSERCHEMIE

Features:

Composition:	dunkelbraune, unregelmäßige Granulate
Grain range:	0.2 - 2 mm
Specific surface area according to BET:	approx. 300 m ² / g
Total porosity:	58 % (± 10 %)
Bulk density:	1,150 kg / m ³ (± 10 %)

Scope of Delivery: depending on the quantity ordered in bags of 15 kg each as a package, on a pallet or as a big bag of 650 kg



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SODIUM PERCARBONATE

Filamentous algae have become the dominant organism in your pond? This is annoying, but do not despair: With the help of **sodium percarbonate** you have a proven means to reduce an intermittent occurrence of high densities of filamentous algae. However, this should be an exceptional situation in order to achieve a growth advantage for the macrophytes. In the case of permanently high filamentous algae populations, the overall system should be checked.

Sodium percarbonate is a white powder that is scattered in places of heavy algae growth. An oxidation process takes place that kills the algae and causes them to float up. The algae thus transported to the water surface can now be removed with nets.

Optimally, the water treatment of your swimming pond together with regular cleaning intervals should be sufficient to reduce the amount of filamentous algae. Therefore, we recommend keeping the use of **sodium percarbonate** as low as possible.

Attention: When using **sodium percarbonate**, it is mandatory to observe the protective measures prescribed by the manufacturer.

Scope of Delivery: 1x **sodium percarbonate** in bucket

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IRON III CHLORIDE SOLUTION (40%)

Clear water that invites you to swim while lost in thought - that's what this product catalog is all about. It is not always possible for the swimming pond owner to spend time in and around the pond lost in thought. To save you as many worries as possible in connection with **phosphates**, we have included our product **group V - Precipitant Station** in our program. All precipitant stations are suitable for the use of **iron III chloride solution (40%)**.

Our **iron III chloride solution (40%)** comes in a practical 30l canister and is optimally compatible with the connections of our precipitant stations.

Attention: When using **iron III chloride solution (40%)**, it is mandatory to observe the protective measures prescribed by the manufacturer.

Scope of Delivery: 1x **iron III chloride solution (40%)** in a 30 l canister