BADU®

Pool technologies and solutions

swimming pool
public

experience water

Water has its own language and to use it requires a lot of experience and know-how. BADU makes it possible with pool technologies and solutions that impress. For public facilities and hotels, even in tough conditions.
Energy saving and environmentally friendly; robust and durable.
Each pump a true innovation in its field.
Experience water with BADU.

You will find detailed information on all our products at badu.de
or simply contact our BADU team.

All prices on request.

Contents

badu.de YouTube Instagram Facebook LinkedIn

Brand promise

Five star pool technology.

We are very passionate about the power of water and have been for over 50 years. The result of this enthusiasm is successful pool technologies and solutions.
With BADU you get the brand quality of an owner-managed company and everything that goes with it: lifelong innovation, consistancy and reliability.

Quality

We know what is important when selecting perfect pool technology: the long service life of each individual pump. As brand manufacturers we guarantee reliable water attractions. BADU products meet these requirements.

Innovation

As well as the longevity of a swimming pool unit, other economic factors are also crucial. Therefore our development team works daily to further optimise innovative materials and efficient technology for you.

Flexibility

Each pump has special requirements and is designed individually for you. Therefore our pumps have to have the greatest possible flexibility. We offer products that can be perfectly implemented in existing and newly designed units.

Service

Choose a manufacturer who is there for you in the long term. For years we have been partners with our customers and are well known for our fast, excellent service. Our technicians are always there for you on site when you need them.

BADU Block Multi
The circulation pump made from technically high-performance plastic.
page 12.

BADU® Quality

Convincing. First-class.

1

With BADU you will be well-advised in all areas.
Our quality and competence have been convincing people all over the world for decades. That's how impressive projects such as leisure complexes, wellness spas or the polar sea at Hagenbeck Zoo come about. BADU provides optimal water movement everywhere.

1 Burj Al Arab, Dubai
2 Zoo Hagenbeck, Hamburg
3 The Ritz-Carlton Residence, Bodrum
4 Mercedes Platz/ Uber Platz, Berlin
5 Nautiland, Würzburg
6 Obermain Therme, Bad Staffelstein
7 Badeparadies Schwarzwald, Titisee

SPECK Select

Pump configuration.

Three simple steps

Simply scan the QR code, register and compare in an instant.

1 **Register now**

Create your free SPECK SELECT account to access all features of the pump configuration software.

2 **Log in**

Log in with your credentials to access personalised pump solutions and detailed technical information.

3 **Get started**

Start the pump configurator now. Configure your optimum pump and download all the relevant technical data.You can save your current configuration and edit it later.

The programme for professional pump configuration.
Configure the optimum pump for your project, comfortably and easily.
For all SPECK Pumpen applications.
The latest version is available on our website.

SPECK Select

> For all application areas
  - BADU swimming pool private
  - BADU swimming pool public
  - Domestic technology
  - Industrial technology
  - Aquaculture.
> The programme for professional pump configuration. Configure the optimum pump for your project, comfortably and easily. For all SPECK Pumpen applications.

All information regarding SPECK Select at:

speck-pumps.com | Apps | SPECK Select

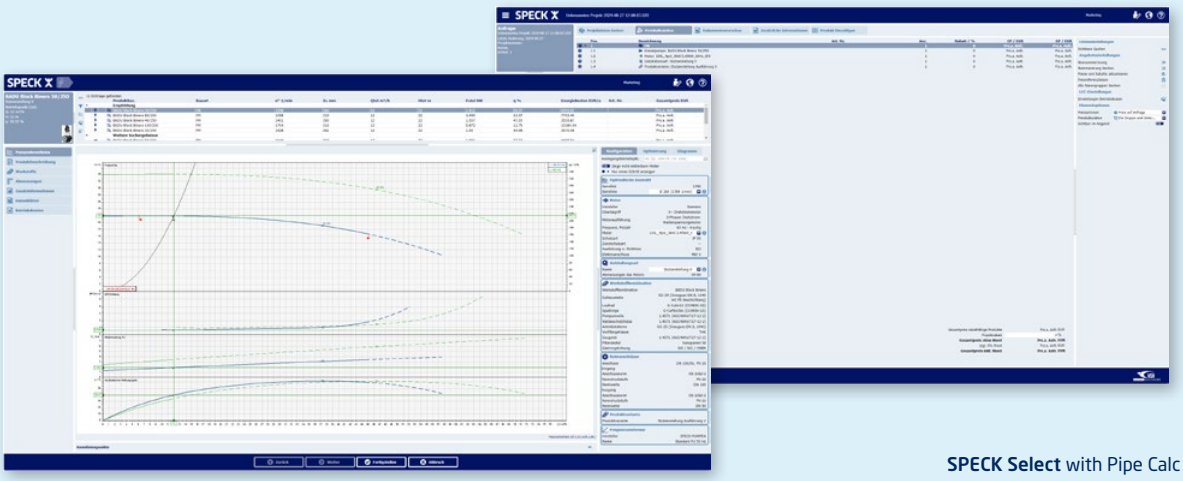
Further pump types for a variety of specific applications can be found on our website:

speck-pumps.com

The comprehensive SPECK Select pump configurator programme is user-friendly. It makes it easy for you to select and configure the optimum pump for your specific application needs, including swimming pool pumps for the public and private sectors, as well as industrial and domestic pumps.
In addition, the WebApp offers performance specifications, product descriptions, dimensional drawings, characteristics diagrams, and tender specifications for the respective pumps. All technical data is available for download in the form of detailed pump data sheets.

Simply scan the QR code, register and compare in an instant.

Please contact us if you need assistance, we're happy to help: **info@speck-pumps.com**



SPECK Select with Pipe Calc

Circulation pumps
Performance: 4-600 m³/h

Attraction pumps
Performance: 2-600 m³/h

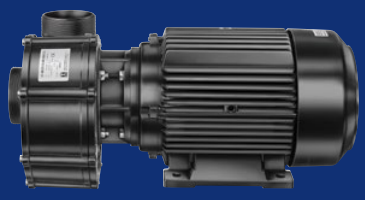
Metering water pumps
Performance: 0.2-10 m³/h

Sample water return units
Performance: 0-7 m³/h

Staged centrifugal pumps
Performance: 0.5-160 m³/h

Booster units
Performance: 0.5-960 m³/h

Simply scan the QR code and experience the world of SPECK.



Sewage water pumps
Performance: 1-90 m³/h

TECHNOLOGY

BADU® Fact checker

Circulation pumps






Info Type ▶	BADU Block Multi	BADU Block Binero	BADU Block	BADU Prime	BADU Prime	BADU Resort
Circulation pumps	x	x	x	x	x	x
Attraction pumps						
Metering water pumps						
Sample water return units						
Staged centrifugal pumps						
Booster units						
Sewage water pumps						
Flow rate Q max.	330 m³/h	380 m³/h	600 m³/h	20 m³/h	48 m³/h	110 m³/h
Efficiency	IE3-IE5	IE5	IE3-IE5	IE3	IE3	IE3
Catalogue page	12	24	30	34	36	38

Metering water pumps and Sample water return units






Info Type ▶	BADU M3 Eco Soft	BADU M3 Eco Soft-AK	BADU M1/M2	BADU M1-AK/ M2-AK	V 600	MRA 6
Circulation pumps						
Attraction pumps						
Metering water pumps	x	x	x	x	x	
Sample water return units						x
Staged centrifugal pumps						
Booster units						
Sewage water pumps						
Flow rate Q max.	10 m³/h	10 m³/h	7 m³/h	7 m³/h	0.8 m³/h	7 m³/h
Efficiency	IE4/IE5	IE4/IE5	IE3	IE3	IE3	IE3
Catalogue page	66	68	70	72	74	76

Circulation and Attraction pumps








	BADU Resort-PM	BADU Delta-MK Eco VS	Normblock Binero	Normblock	Normblock Multi	BADU 42	BADU 21-50/ 21-60	BADU 21-80
	x	x						
			x	x	x	x	x	x
	110 m³/h	30 m³/h	380 m³/h	600 m³/h	450 m³/h	17 m³/h	50 m³/h	80 m³/h
	IE4/IE5	IE4/IE5	IE3-IE5	IE3-IE5	IE3-IE5	IE3	IE3	IE3
	40	42	44	51	52	60	62	64

Staged centrifugal pumps, Booster units and Sewage water pumps







	IN-VB/IN-VC/ IN-VB-S	Aquacell A	Aquacell AE	Multicell SFE	BADU 21-80/33 G-AK OL	Top 71	Top 300
	x						
		x	x	x			
					x	x	x
	160 m³/h	160 m³/h	160 m³/h	960 m³/h	75 m³/h	10 m³/h	48 m³/h
	IE3	IE3	IE3	IE3	IE3	-	-
	78	80	80	82	84	86	86


BADU® Block Multi
Maximum
innovation.

Corrosion-resistant – even with high brine concentrations.
Permanently improved rate of efficiency due to new surface qualities.
The innovative, completely plastic concept of the BADU Block Multi
enhances the proven BADU Block technology,
taking it to a completely unique level.

Benefits of the BADU Block Multi:

- Pump in all-plastic design.
- Wetted parts made of optimised high-performance technical plastic (THP) - permanently robust, maintenance-free and economical.
- Pump shaft does not come into contact with the pump liquid.
- Corrosion-resistant and low-wear, even at high salt concentrations.
- Maintenance-friendly plug-in shaft design.
- Flexible attachment of IE3, IE4 and PM motors from 2.20 to 22.00 kW.
- Plastic filter housing with transparent lid.
- Strainer basket made from stainless steel.
- Vent line made from plastic.
- Individual mechanical seal versions for special water treatments.

Why plastic?

We wanted to improve the performance and eliminate systemic disadvantages of the BADU Block concept, which has already been proven a thousand times over.
Robust with high brine concentrations, lighter, less wear, less maintenance - more flexibility. The THP plastic construction of the new BADU Block Multi achieves more in every respect.

BADU Block Multi 125/250

BADU® Block Multi

Performance features

1 Motor
Standard trademark motor, optimised for the operating point with ball bearings that are lubricated for their whole operating life.
Further motor variations on page 17.

2 Plug-in shaft system
Motor can be replaced without having to completely disassemble the pump or without having to dismantle the mechanical seal.

3 Ventilation
External vent line for manual ventilation of the pump/mechanical seal chamber.

4 Pump shaft
Pump shaft made from stainless steel. Motor/pump shaft has no contact with the medium providing complete electrical separation.

5 Mechanical seal
Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.

6 Impeller
Closed impeller for optimal smooth running and durability of the whole pump.

7 Pump material
THP (technically high-performance plastic).
Permanent corrosion protection and protection against aggressive media for all relevant wetted parts due to completely plastic version.

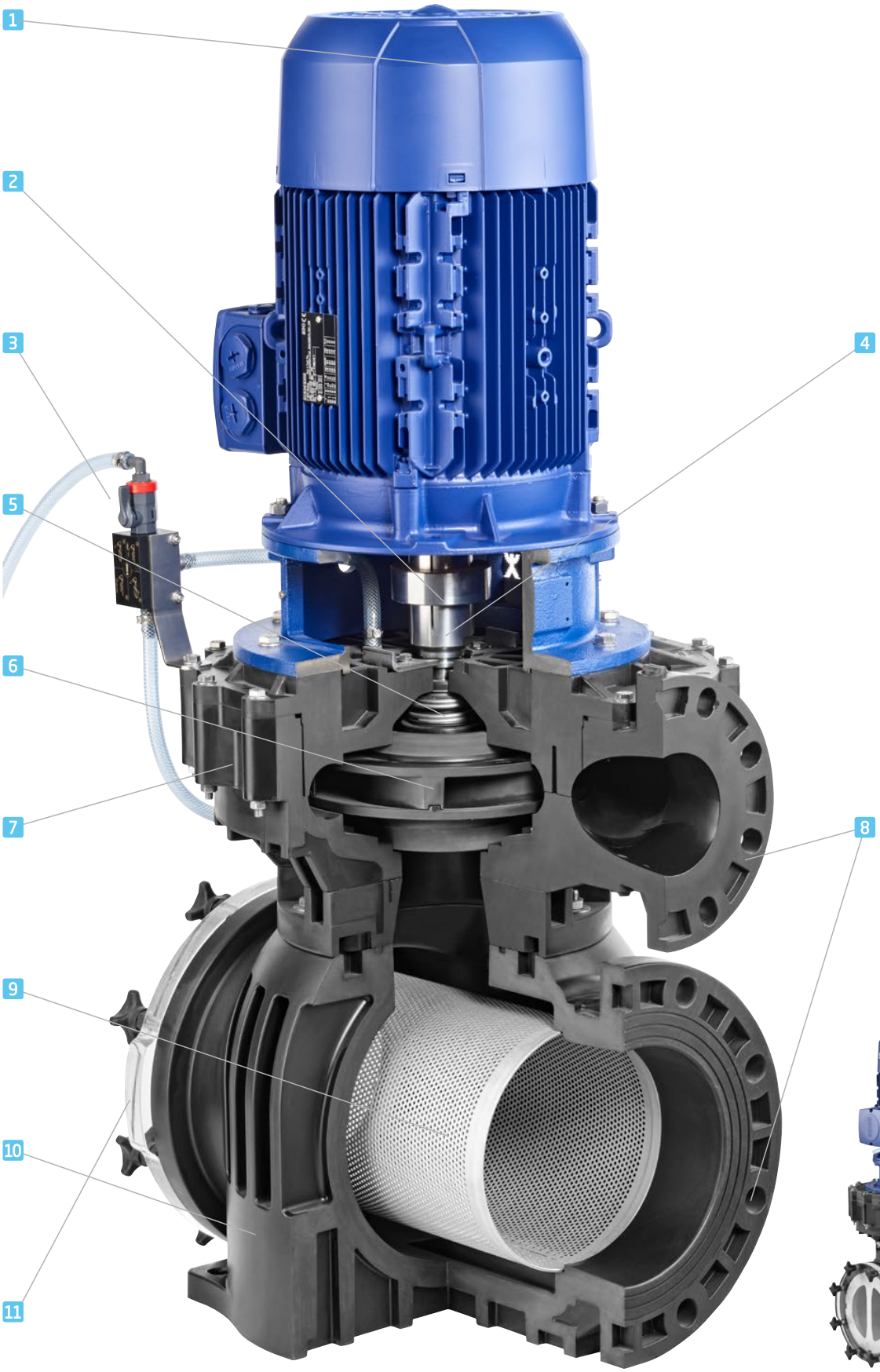
8 Connections
Standardised connections, compatible with DIN and ASME (American standard).

9 Strainer basket
Low-wear with weld-on retaining plate as a handle and rotation lock. Robust welding seals. Curved edges for more stability.

10 Filter housing
Completely plastic version. Corrosion-resistant without elaborate internal coating and can be used with high brine concentrations. Low-wear, robust and light.

11 Filter lid
Transparent, lightweight lid for convenient cleaning. Simple level control for drainage and visual checking of the level of pollution without having to open the lid.

> Detailed information regarding the BADU Block Multi can be found on page 16.



Cross section

BADU Block Multi

BADU® Block Multi

Description

Field of application

Swimming pool water circulation for filtration and filter rinsing as well as operation of swimming pool attractions in public swimming pools.

> Open-air and indoor pools
> Thermal, therapeutic and health spas[4)]
> Pools with high salt concentrations[4)]
> Water treatment, e.g. filter unit construction
> Leisure facilities
> Attractions, e.g. water slides
> Shipbuilding[4)]
> Industry, e.g. cooling water units[4)]
> Water supply, e.g. irrigation

Design

Non-self-priming, single-stage, volute casing pump in vertical monoblock design. The process design allows for easy and quick replacement of the motor without disassembling the pipes. Due to the low motor speed, pump operation is quiet with very little wear and tear. The closed impeller can be individually adjusted to suit the respective operating conditions.

Filter housing capacity

BADU Block Multi 65/250 ..... approx. 9 l
BADU Block Multi 100/250, 125/250, 80/200 ..... approx. 19 l
Strainer basket mesh size ..... approx. Ø 3 mm

See page page 19 for materials used.

Paintwork

RAL 5002, ultramarine blue.

> **Customised paintwork on request.**

Technical data at 50 Hz

Flow rate ..... Q up to max. 330 m³/h
Dynamic head ..... H up to 24 m
Water temperature ..... t max. 40 °C
Maximum operating pressure ..... p 2.5 bar
Speed variables ..... n approx. 1450/1750 rpm

Flange sizes

BADU Block Multi 65/250 ..... DND 65/DNS 125
BADU Block Multi 80/200 ..... DND 80/DNS 150
BADU Block Multi 100/250 ..... DND 100/DNS 200
BADU Block Multi 125/250 ..... DND 125/DNS 200

Flange

up to DN 150 compatible with EN 1092-2 PN-16 and ASME
from DN 200 compatible with EN 1092-2 PN-10 and ASME

Noise generation

Sound intensity and sound pressure level are mainly influenced by the motor and the pump and especially by the installation conditions and the respective installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

Types

BADU Block Multi 65/250
BADU Block Multi 80/200
BADU Block Multi 100/250
BADU Block Multi 125/250

> More details regarding all designs, characteristics and dimensional drawings on request.

Motor

Motor

Directly mounted, low-noise, surface-cooled and removable IEC standard three-phase motor according to DIN, in German brand quality. Energy efficiency class IE3 from 0.75 kW, including PTC resistor sensor with fixed bearings on the pump side.

The motors are produced in the factory with closed condensation drain holes.

Motor mounting position	IM B 5
Protection class	IP 55
Idle speed	1450/1750 rpm
Frequency	50/60 Hz
Voltage 50 Hz	up to 2.20 kW: 230 V Δ/400 V Y
60 Hz	up to 2.60 kW: 265 V Δ/460 V Y
Voltage 50 Hz	from 3.00 kW: 400 V Δ/690 V Y
60 Hz	from 3.60 kW: 460 V Δ
Class of insulation	F
Cooling air temperature	max. 40 °C

> **Special motors on request.**

Direction of rotation

Clockwise, as viewed from the motor shaft end.

Bearing/lubrication

The motors have sufficiently dimensioned, maintenance-free, deep groove ball bearings according to DIN 625 with permanent grease lubrication.

1 Standard motor

2 PM motor

3 Water-cooled motor

1 Standard motor

IE3 motor from 0.75 kW.
Advantage: very high grade of efficiency.

2 PM motor

IE4/IE5 motor.
Advantage: very high efficiency rate.

3 Water-cooled motor

Energy efficiency class depends on the temperature of the media.
Advantage: heat recovery.
> **Motor design only available on request.**

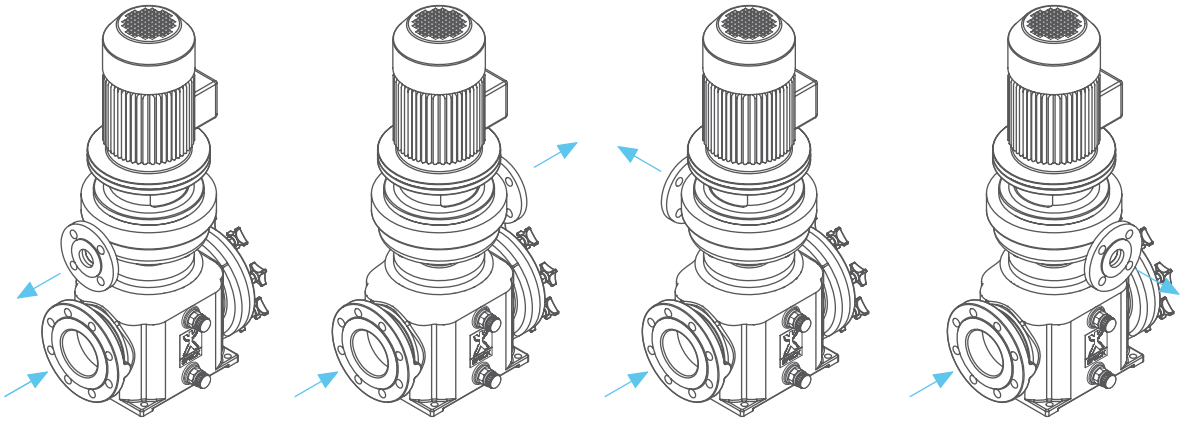
BADU® Block Multi

Connection positions

Variable outlet connection positions

The outlet connection positions can be arranged flexibly where the installation conditions are less convenient. Therefore the pump can be adapted depending on the situation in the engineering room and installation area.

All pump types can be rotated on the filter housing by 45° and 90°.

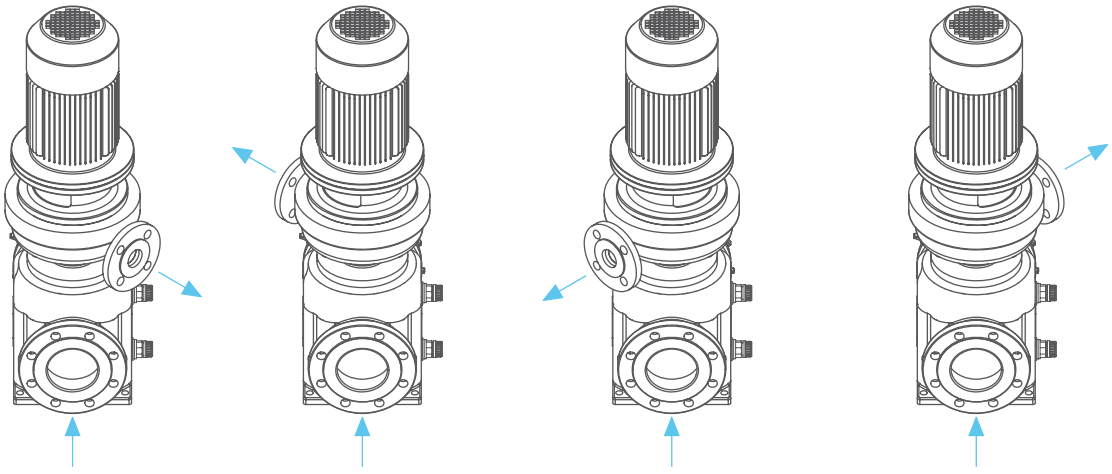


F
standard front

B
back

L
left

R
right



F45°
front, rotated by 45°

B45°
back, rotated by 45°

L45°
left, rotated by 45°

R45°
right, rotated by 45°

Materials used

Design	BADU Block Multi	BADU Block Multi-S	BADU Block Multi Mar
Casing parts	THP, PPE GF 30, PP GF 30	THP, PPE GF 30, PP GF 30	THP, PPE GF 30, PP GF 30
Impeller	THP, PPE GF 30	THP, PPE GF 30	THP, PPE GF 30
Mechanical seal	carbon/SiC/EPDM	SiC/SiC/EPDM	SiC/SiC/EPDM
Pump shaft (no contact with pump liquid)	stainless steel 1.4057	stainless steel 1.4057	stainless steel 1.4057
Motor lantern	cast iron EN-JL 1040	cast iron EN-JL 1040	cast iron EN-JL 1040
Filter housing	THP	THP	THP
Strainer basket	stainless steel 1.4571	stainless steel 1.4571	PVC
Filter lid	acrylic glass	acrylic glass	acrylic glass
Circulation line/ball valve vent	plastic/PVC hose	plastic/PVC hose	plastic/PVC hose

Subject to technical modifications.

BADU Block Multi-S/BADU Block Multi Mar

Field of application

Swimming pool water circulation and filtration as well as operation of swimming pool attractions in public swimming pools.

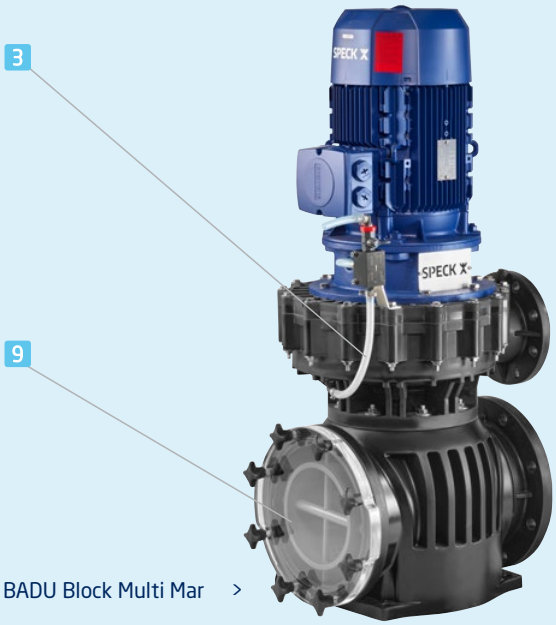
- **BADU BLOCK Multi-S** – Pools with thermal water and high salt concentrations[4)]
- **BADU BLOCK Multi Mar** – water treatment, e.g. fish farming

3 Ventilation

An external ventilation line allows manual ventilation and thus leads to a long service life for the mechanical seal. External ventilation made from plastic.

9 Strainer basket

Made from plastic. Robust design with handles.
Strainer basket mesh size
BADU Block Multi Mar .....65/250 approx. Ø 6 mm
BADU Block Multi Mar ..... 80/200, 100/250 and 125/250 approx. Ø 10 mm



BADU Block Multi Mar >

BADU® Block Binero

Maximum coating.

Energy-efficient and corrosion-resistant - a reliable partner even at high salt concentrations. The innovative and new series: BADU Block Binero. BADU Block Binero lifts the proven BADU Block technology to a higher level.

Benefits BADU Block Binero:

- Pump in cast iron design with thermoplastic corrosion protection coating based on polyethylene. Filter housing made of optimised high-performance technical plastic (THP) with transparent lid **up to 15.00 kW**. **From 18.50 kW**: cast iron filter housing with RILSAN coating and a transparent lid.
- Full diameter bronze impeller. Balanced to grade 6.3 in accordance with DIN 1940. Operating point individually adjusted via frequency converter.
- Robust construction and solid finish.
- Flexible attachment of IE4, IE5 and PM motors.
- Maintenance-friendly plug-in shaft design.
- Filter housing with transparent lid.
- Strainer basket made from stainless steel.
- Vent line made from plastic.
- Mechanical seal versions for special water treatments.

Why anti-corrosion coating?

The new thermoplastic anti-corrosion coating based on polyethylene ensures very good resistance to swimming pool, thermal water and bathing water with high salt concentration, as well as good UV resistance and weather-ability. Thanks to the high surface quality of the anti-corrosion coating, the new BADU Block Binero can withstand different usage requirements while maintaining a high level of efficiency.

BADU Block Binero

BADU® Block Binero

Performance features

1 Motor
IE4, IE5 and PM motor
with ball bearings lubricated for their whole operational life.

2 Plug-in shaft system
Motor can be replaced without having to completely disassemble the pump or dismantle the mechanical seal.

3 Ventilation
External vent line for manual ventilation
of the pump/mechanical seal chamber.

4 Pump shaft
Pump shaft made from stainless steel.

5 Mechanical seal
Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.

6 Impeller
Closed full diameter bronze impeller for optimal smooth running and durability of the whole pump. The operating point is is individually adjusted to the respective operating conditions via a frequency converter.

7 Pump material
Cast iron with thermoplastic corrosion protection coating based on polyethylene. Permanent corrosion protection and protection against aggressive media.

8 Connections
Large dimension inlet connections allow low flow speeds.

9 Strainer basket
Low-wear with weld-on retaining plate as a handle and rotation lock. Robust welding seals. Curved edges for more stability.

10 Filter housing
All-plastic design or RILSAN-coated.
Can be used with high salt concentrations.
Hardwearing and robust.

11 Filter lid
Transparent acrylic design for easy maintenance and visual checking from the outside. The amount of debris is visible without removing the lid.

> Detailed information regarding the BADU Block Binero can be found on page 24.

BADU Block Binero

BADU® Block Binero

Description

Field of application

Swimming pool water circulation for filtration and filter rinsing as well as operation of swimming pool attractions in public swimming pools.

> Open-air and indoor pools
> Thermal, therapeutic and health spas[4)]
> Pools with high salt concentrations[4)]
> Water treatment, e.g. filter unit construction
> Leisure facilities
> Attractions, e.g. water slides
> Shipbuilding[4)]
> Industry, e.g. cooling water units[4)]
> Water supply, e.g. irrigation

Design

Non-self-priming, single-stage, volute casing pump in vertical monoblock design. The process design allows easy replacement of the motor without disassembling the pipes. Due to the low motor speed, pump operation is quiet with very little wear and tear.
The pump is equipped with replaceable, corrosion-resistant wear rings. The closed, well-balanced impeller can be individually adjusted to suit the respective operating conditions. Balancing is carried out in quality class 6.3 according to DIN ISO 1940. This ensures optimal smooth running and durability of the whole pump.

Filter housing capacity

BADU Block Binero 32/.. to 65/.. - THP ..... approx. 9 l
BADU Block Binero 80/.. to 125/... - THP ..... approx. 19 l
BADU Block Binero 150/... - GGKS*) ..... approx. 71 l
Strainer basket mesh size ..... approx. Ø 3 mm

See page 25 for materials used.

Paintwork

RAL 9016, traffic white, RAL 9005 jet black.

> **Customised paintwork on request.**

Technical data at 50 Hz

Flow rate ..... Q up to max. 600/720 m³/h
Dynamic head ..... H up to 25/36 m
Water temperature ..... t max. 40 °C

Maximum operating pressure/temperature

Pump casing ..... p 10 bar
Filter housing with transparent lid ..... p 2.5 bar

Speed variables ..... n approx. 1450/1750 rpm

Flange size DN 32 up to 200

Flange

up to DN 150 according to EN 1092-2 PN-16
from DN 200 according to EN 1092-2 PN-10

Noise generation

Sound intensity and sound pressure level are mainly influenced by both the motor and the pump and especially by the installation conditions and the respective installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

Types

BADU Block Binero 32/ 160
BADU Block Binero 40/ 160, 200
BADU Block Binero 50/ 160
BADU Block Binero 65/ 200, 250
BADU Block Binero 80/ 160, 200, 250
BADU Block Binero 100/ 200
BADU Block Binero 125/ 200, 250

> More details regarding all designs, characteristics and dimensional drawings on request.

Materials used

Design	BADU Block Binero
Casing parts	cast iron EN-JL 1040 PE-coated
Impeller	tin bronze CC480K-GS
Mechanical seal	SiC/SiC/HNBR
Wear rings	CC495K-GS
Pump shaft	stainless steel 1.4571
Shaft protection sleeve	stainless steel 1.4571
Motor lantern	cast iron EN-JL 1040
Filter housing	cast iron EN-JL 1030 plastic-coated THP
Strainer basket	stainless steel 1.4571
Filter lid	acrylic glass
Circulation line/ball valve vent	plastic and PVC hose

Subject to technical modifications.

BADU® Block

Maximum reliability.

Proven over decades and continually improving.
Energy efficient thanks to optimised efficiency rate.
Perfect all-metal concept of the BADU Block
unites reliability and durability.
At the cutting edge of development.

Benefits of the BADU Block:

- Pump in cast iron or bronze design with RILSAN-coated filter housing.
- Robust construction with above-average wall thickness and solid finish.
- Material and seal combinations can be selected depending on the pump media.
- Flexible attachment of IE3, IE4 and PM motors up to 55.00 kW.
- Various material and equipment combinations can be selected e.g. tin bronze housing, plastic filter housing, transparent lid etc.

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BADU Block

BADU® Block

Performance features

1 Motor
Standard brand motor, optimised for the operating point with ball bearings that are lubricated for their whole operating life.
Further motor variations on page 31.

2 Plug-in shaft system
Motor can be replaced without having to completely disassemble the pump or having to dismantle the mechanical seal.

3 Ventilation
External vent line for manual ventilation of the pump/mechanical seal chamber.

4 Pump shaft
Pump shaft made from stainless steel.

5 Mechanical seal
Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.

6 Impeller
Closed impeller, well-balanced, for optimal smooth running and durability of the whole pump. Individual adjustment of the impeller diameter for the respective operating points.

7 Pump material
Various materials can be selected e.g. cast iron/material 12, tin bronze/material 05.

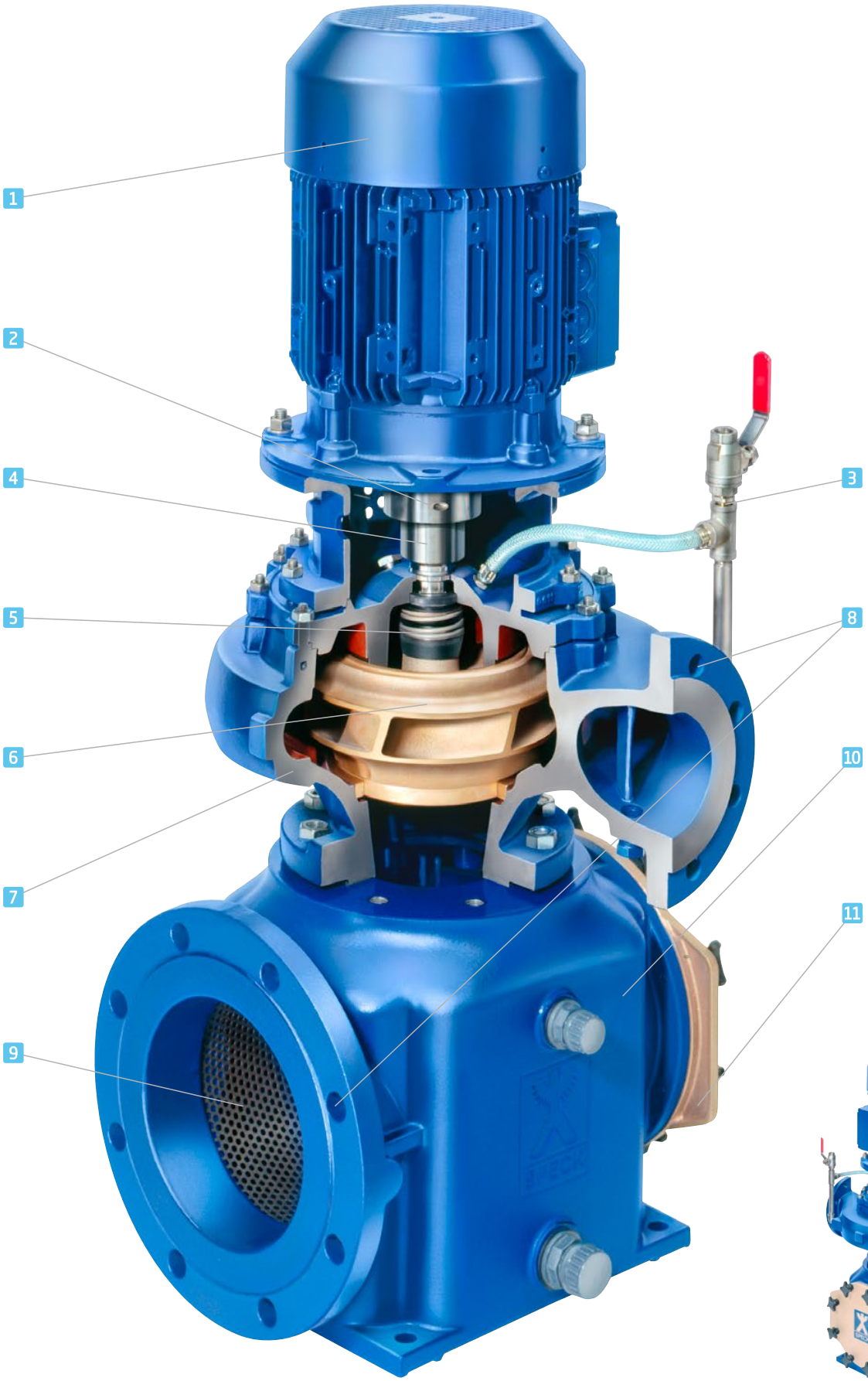
8 Connections
Larger-dimension inlet connections result in low flow speeds.

9 Strainer basket
Low-wear with retaining plate and handle welded into the basket. Robust welding seals. Curved edges for more stability.

10 Filter housing
RILSAN-coated filter housing for optimal corrosion protection. Stain resistant. Also optionally available in a plastic version – see accessories on page 100.

11 Filter lid
Robust lid, extremely stable under pressure, made from bronze. Also optionally available in a transparent version – see accessories on page 100.

> Detailed information regarding the BADU Block can be found on page 30.



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Cross section

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BADU Block

BADU® Block

Description

Field of application

Swimming pool water circulation for filtration and filter rinsing as well as operation of swimming pool attractions in public swimming pools.

- Open-air and indoor pools
- Thermal, therapeutic and health spas[4)]
- Pools with high salt concentrations[4)]
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding[4)]
- Industry, e.g. cooling water units[4)]
- Water supply, e.g. irrigation

Design

Non-self-priming, single-stage, volute casing pump in vertical monoblock design. The process design allows easy replacement of the motor without disassembling the pipes. Due to the low motor speed, pump operation is quiet with very little wear and tear.
The pump is equipped with replaceable, corrosion-resistant wear rings. The closed, well-balanced impeller can be individually adjusted to suit the respective operating conditions. Balancing is carried out in quality class 6.3 according to DIN ISO 1940. This ensures optimal smooth running and durability of the whole pump.

Filter housing capacity

BADU Block 32/.. to 65/.. ..... approx. 13 l
BADU Block 80/.. to 125/... ..... approx. 29 l
BADU Block 150/... ..... approx. 71 l
Strainer basket mesh size ..... approx. Ø 3 mm

See page 33 for materials used.

Paintwork

RAL 5002 ultramarine blue.

- **Customised paintwork on request.**

Technical data at 50/60 Hz

Flow rate ..... Q up to max. 600/750 m³/h
Dynamic head ..... H up to 40/55 m
Water temperature ..... t max. 50 °C

Maximum operating pressure/temperature

Pump casing ..... p 10 bar
Filter housing
- cast iron ..... p 5 bar
- **optional** plastic THP
- BADU Block 32/.. to 125/... ..... p 2.5 bar
  ..... t max. 40 °C
- **optional** transparent lid ..... p 2.5 bar
  ..... t max. 40 °C

Optional plastic filter housing can be found on page 100.

Speed variables ..... n approx. 1450/1750 rpm

Flange size DN 32 up to 250

Flange

up to DN 150 according to EN 1092-2 PN-16
from DN 200 according to EN 1092-2 PN-10

Noise generation

Sound intensity and sound pressure level are mainly influenced by both the motor and the pump and especially by the installation conditions and the respective installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

Types

BADU Block. 32/ 160, 200, 250
BADU Block. 40/ 160, 200, 250, 315
BADU Block. 50/ 160, 200, 250, 315
BADU Block. 65/ 160, 200, 250, 315
BADU Block. 80/ 160, 200, 250, 315
BADU Block. 100/ 160, 200, 250, 315
BADU Block. 125/ 200, 250, 315
BADU Block. 150/ 200, 250, 315

- More details regarding all designs, characteristics and dimensional drawings on request.

Motor

Motor

Directly mounted, low noise, surface-cooled and removable IEC standard three-phase motor according to DIN, in German brand quality. Energy efficiency class IE3 from 0.75 kW, including PTC resistor sensor with fixed bearings on the pump side.

Motor mounting position	IM B 5
Protection class	IP 55
Idle speed	1450/1750 rpm
Frequency	50/60 Hz
Voltage 50 Hz	up to 2.20 kW: 230 V Δ/400 V Y
60 Hz	up to 2.60 kW: 265 V Δ/460 V Y
Voltage 50 Hz	from 3.00 kW: 400 V Δ/690 V Y
60 Hz	from 3.60 kW: 460 V Δ
Class of insulation	F
Cooling air temperature	max. 40 °C

> **Special motors on request.**

Direction of rotation

Clockwise, as viewed from the motor shaft end.

Bearing/lubrication

The motors have sufficiently dimensioned, maintenance-free, deep groove ball bearings according to DIN 625 with permanent grease lubrication.

1 Standard motor

IE3 motor from 0.75 kW.
Advantage: very high efficiency rate, can be used without a frequency converter.

2 PM motor

IE4/IE5 motor.
Advantage: very high efficiency grade.

3 Water-cooled motor

Energy efficiency class depends on the temperature of the media.
Advantage: heat recovery.

1 Standard motor

2 PM motor

3 Water-cooled motor

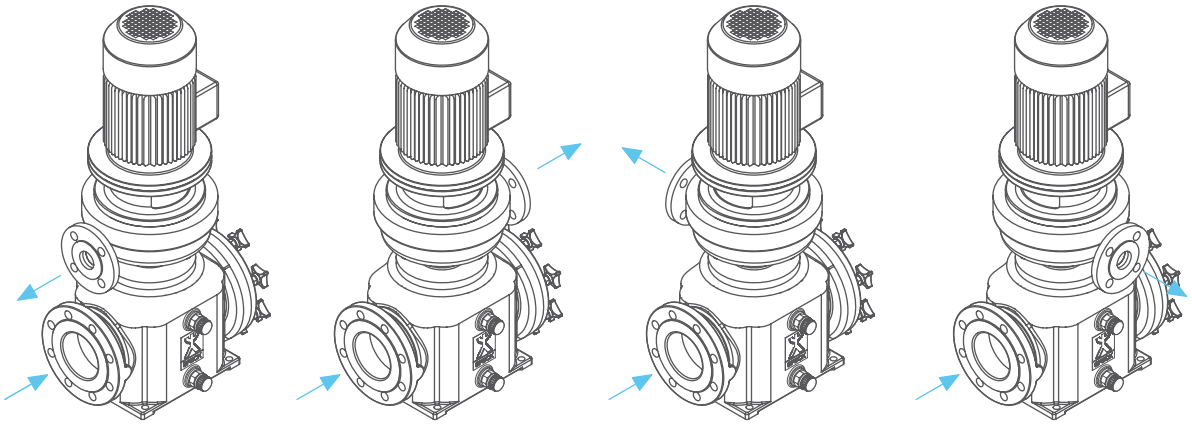
BADU® Block

Connection positions

Variable outlet connection positions

The outlet connection positions can be arranged flexibly where the installation conditions are less convenient. Therefore the pump can be adapted depending on the situation in the engineering room and installation area. A spacer is not necessary, even if the inlet and outlet connections are arranged above each other.

All pump types can be rotated on the filter housing by 90°. The following pump types can be rotated by 90° and 45°: BADU Block 65/160, 65/200, 65/250, 65/315, 80/160, 80/200, 80/250, 80/315, 100/160, 100/200, 100/250, 100/315, 125/200, 125/250, 125/315, 150/200, 150/250, 150/315.

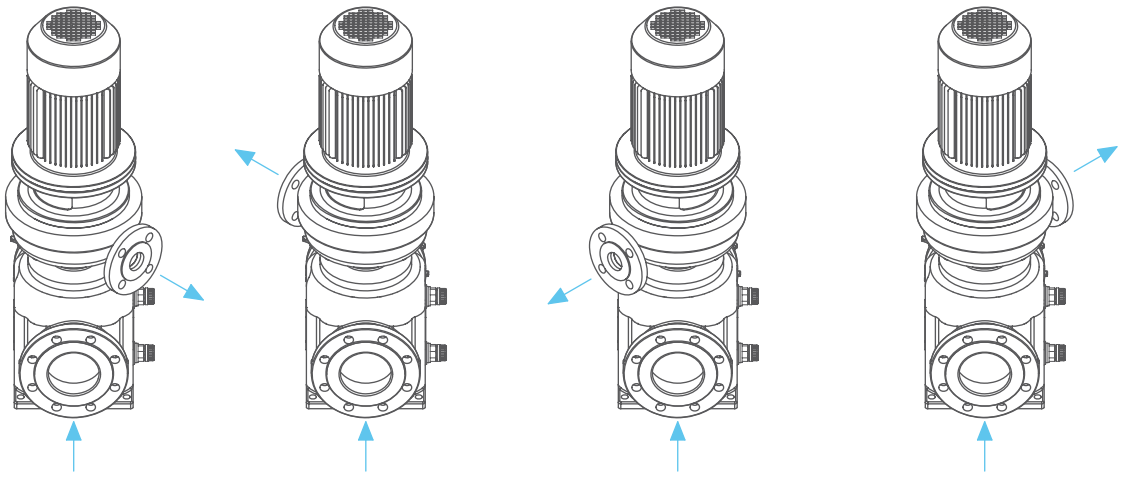


F
standard front

B
back

L
left

R
right



F45°
front, rotated by 45°

B45°
back, rotated by 45°

L45°
left, rotated by 45°

R45°
right, rotated by 45°

Materials used

Design	12	05
Casing parts	cast iron EN-JL 1040	tin bronze CC480K-GS
Impeller	tin bronze CC480K-GS	tin bronze CC480K-GS
Mechanical seal	carbon/SiC/EPDM optional SiC/SiC/HNBR	SiC/SiC/HNBR
Wear rings	CC495K-GS	CC495K-GS
Pump shaft	stainless steel 1.4571	stainless steel 1.4571
Shaft protection sleeve	stainless steel 1.4571	stainless steel 1.4571
Motor lantern	cast iron EN-JL 1040	cast iron EN-JL 1040
Filter housing	cast iron EN-JL 1030 plastic-coated	cast iron EN-JL 1030 plastic-coated
Strainer basket	stainless steel 1.4571	stainless steel 1.4571
Filter lid	tin bronze CC480K-GS PA66 GF30*)	tin bronze CC480K-GS PA66 GF30*)
Circulation line/ball valve vent	stainless steel/PVC hose	stainless steel/PVC hose

Subject to technical modifications.

*) Only for BADU Block: 32/160, 32/200, 32/250, 40/160, 40/200, 40/250, 40/315, 50/160, 50/200, 50/250, 50/315, 65/160, 65/200, 65/250, 65/315

BADU® Prime

Extra quiet, high quality bestseller.
Premium circulation pump for discerning customers.

Field of application

Swimming pool water circulation through a filter system. The pump can be installed max. 3 m above or below water level.

Design

Monoblock-type pump with integrated strainer tank. The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve. Motor/pump shaft has no contact with the pool
water providing complete electrical separation.
Strainer tank capacity ..... approx. 3 l
Strainer basket mesh size ..... approx. 3.2 x 2.6 mm

Materials used

Pump casing ..... PP GF 30
Intermediate housing ..... PP TV 40
Gland housing ..... PP TV 40
Diffuser ..... PA 66 GF 30/PP GF 30
Impeller ..... PP GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel
Elastomers ..... NBR/Viton

Technical data at 50 Hz	BADU Prime	7	11	13	15	20
Inlet Sa/outlet connection Da Rp[2)]		1½/1½	1½/1½	2/1½	2/1½	2/1½
Rec. inlet/outlet pipe, PVC pipe, d		50/50	50/50	63/50	63/50	63/63
Power input P_1/output P_2 [1)] (kW)	1~ 230 V	0.54/0.30	0.65/0.45	0.87/0.55	1.10/0.75	1.40/1.00
Rated current (A)	1~ 230 V	2.40	2.90	4.00	5.20	6.70
Power input P_1/output P_2 [1)] (kW)	3~ Y/Δ 400/230 V	0.51/0.30	0.63/0.45	0.81/0.55	1.00/0.75	1.26/1.00
Rated current (A)	3~ Y/Δ 400/230 V	0.95/1.65	1.25/2.15	1.55/2.70	1.95/3.40	2.25/3.90

For more detailed information regarding the motor protection please see page 104.

Technical data may vary.

Article no	Description	Voltage	Power output P_2
219.0078.038	BADU Prime 7	1~ 230 V	0.30 kW
219.0118.038	BADU Prime 11	1~ 230 V	0.45 kW
219.0138.038	BADU Prime 13	1~ 230 V	0.55 kW
219.0158.038	BADU Prime 15	1~ 230 V	0.75 kW
219.0208.038	BADU Prime 20	1~ 230 V	1.00 kW
219.0078.037	BADU Prime 7	3~ Y/Δ 400/230 V	0.30 kW
219.0118.037	BADU Prime 11	3~ Y/Δ 400/230 V	0.45 kW
219.0138.037	BADU Prime 13	3~ Y/Δ 400/230 V	0.55 kW
219.0158.037	BADU Prime 15	3~ Y/Δ 400/230 V	0.75 kW
219.0208.037	BADU Prime 20	3~ Y/Δ 400/230 V	1.00 kW

Universal opening device included in delivery.

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
Please contact us for higher salt concentrations.

< Opening device included in delivery

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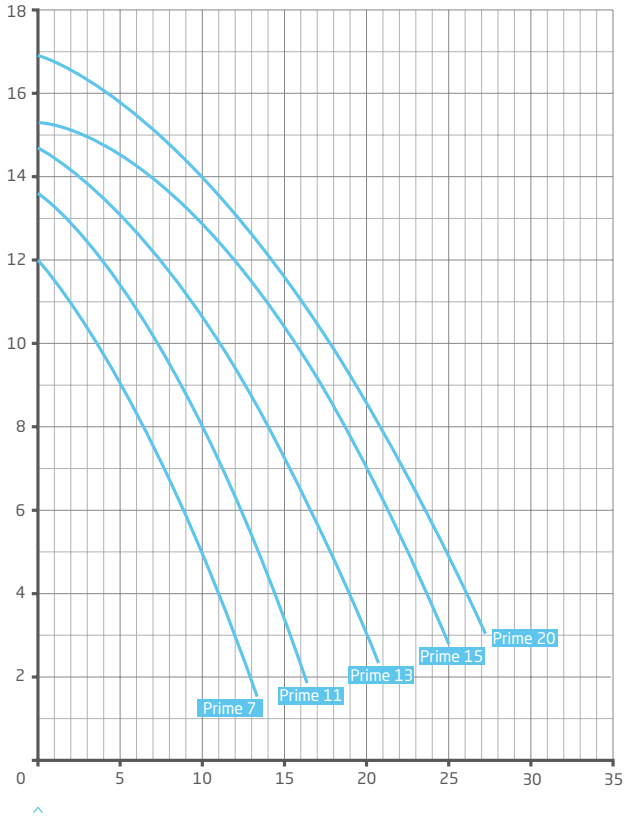
ID 0000021507

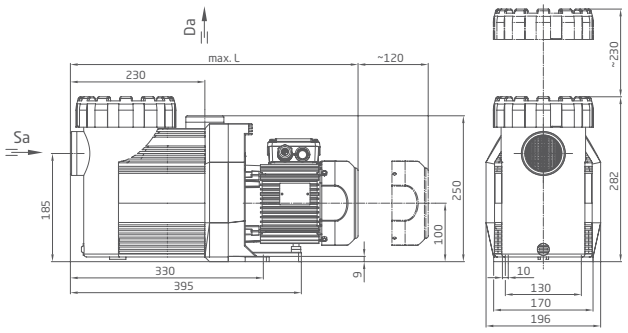
7-20 m³/h

Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions



Detailed dimensions available on request.

BADU® Prime

Highly efficient. With a motor suitable for use with a frequency converter. For large pools, swimming baths and solar panel units.

Field of application

Swimming pool water circulation through a filter system. The pump can be installed max. 3 m above or below water level.

Design

Monoblock-type pump with integrated strainer tank. The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve. Motor/pump shaft has no contact with the pool water providing complete electrical separation.

Strainer tank capacity ..... approx. 6 l
Strainer basket mesh size ..... approx. 3.0 x 2.8 mm

Materials used

Pump casing ..... PP GF 30
Intermediate housing ..... PP GF 30
Gland housing ..... PP TV 40
Diffuser ..... PP GF 30
Impeller ..... PPE GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... ABS
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel
Elastomers ..... NBR/Viton

Technical data at 50 Hz	BADU Prime	25	30	40	48
Inlet Sa/outlet connection Da d[2)]		75/75	75/75	90/90	90/90
Rec. inlet/outlet pipe, PVC pipe, d		75/75	75/75	90/90	110/110
Power input P_1/output P_2 [1)] (kW)	1~ 230 V	1.85/1.30	2.00/1.50	2.90/2.20	3.45/2.60
Rated current (A)	1~ 230 V	7.70	8.80	13.00	15.00
Power input P_1/output P_2 [1)] (kW)	3~ Y/Δ 400/230 V	1.55/1.30	1.77/1.50	2.55/2.20	3.00/2.60
Rated current (A)	3~ Y/Δ 400/230 V	2.95/5.10	3.30/5.72	4.60/8.00	5.50/9.50

For more detailed information regarding the motor protection please see page 104.

Technical data may vary.

Article no	Description	Voltage	Power output P_2
219.0258.038	BADU Prime 25	1~ 230 V	1.30 kW
219.0308.038	BADU Prime 30	1~ 230 V	1.50 kW
219.0408.038	BADU Prime 40	1~ 230 V	2.20 kW
219.0488.038	BADU Prime 48	1~ 230 V	2.60 kW
219.0258.037	BADU Prime 25	3~ Y/Δ 400/230 V	1.30 kW
219.0308.037	BADU Prime 30	3~ Y/Δ 400/230 V	1.50 kW
219.0408.037	BADU Prime 40	3~ Y/Δ 400/230 V	2.20 kW
219.0488.037	BADU Prime 48	3~ Y/Δ 400/230 V	2.60 kW

Three-way opening device included in delivery.

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l. Please contact us for higher salt concentrations.

< Opening device
included in delivery

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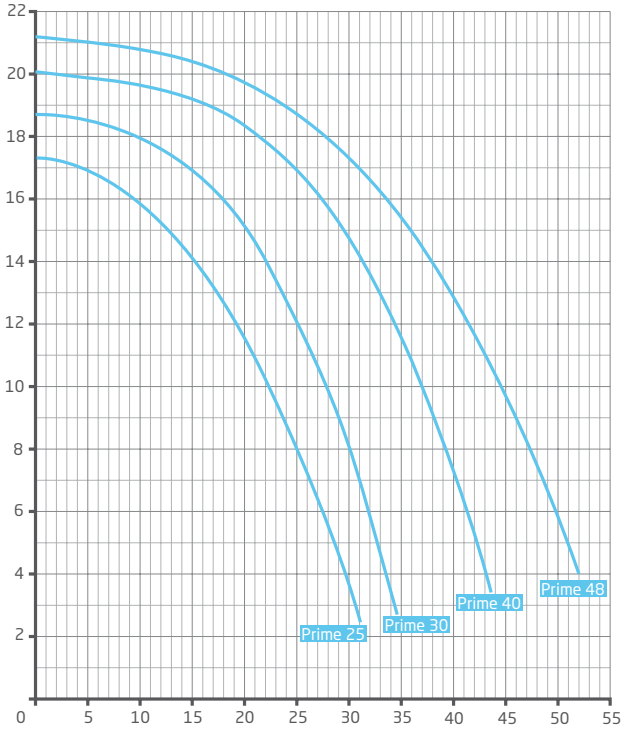
ID 0000021507

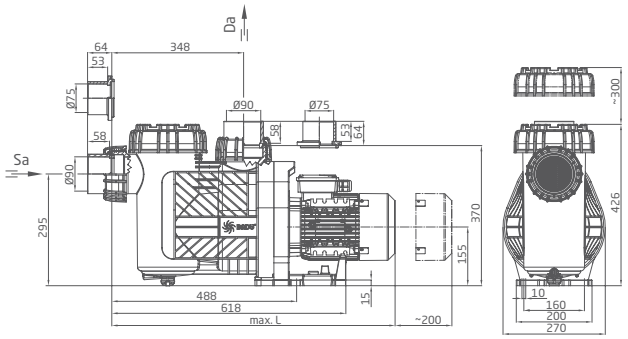
25-48 m³/h

Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions



Detailed dimensions available on request.

BADU® Resort

Cost saving pump for large units. Light and powerful. For wellness oases, hotel swimming pools or special pools.

Field of application

Swimming pool water circulation through a filter system. The pump can be installed max. 3 m above or below water level.

Design

Monoblock-type pump with integrated strainer tank. The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve. Motor/pump shaft has no contact with water providing complete electrical separation.
Strainer tank capacity ..... approx. 10 l
Strainer basket mesh size ..... approx. 3.4 x 3.2 mm

Glue sockets made from PVC suitable for BADU Resort 50 to BADU Resort 110 available.

Materials used

Pump casing ..... PP GF 30
Intermediate housing ..... PP TV 40
Gland housing ..... PP TV 40
Diffuser ..... PP GF 30
Impeller ..... PPE GF 30/PP GF 30
Impeller nut ..... PP GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... ABS
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel
Elastomers ..... NBR/Viton

Technical data	BADU Resort	30	40	45	50	55	60	70	80	110
Inlet Sa/outlet connection Da d[2)]		75/75	90/90	90/90	110/110	110/110	110/110	110/110	110/110	110/110
Rec. inlet/outlet pipe, PVC pipe, d		75/75	90/90	90/90	110/110	110/110	110/110	110/110	140/140	160/140
Power input P_1/output P_2 [1)] (kW)	3~ Y/Δ 400/230 V	1.77/1.50	2.55/2.20	3.00/2.60	3.45/3.00	-/-	3.00/2.60	3.45/3.00	-/-	-/-
Rated current (A)	3~ Y/Δ 400/230 V	3.30/5.72	4.60/8.00	5.50/9.50	6.20/10.70	-/-	5.50/9.50	6.20/10.70	-/-	-/-
Power input P_1/output P_2 [1)] (kW)	3~ Y/Δ 400/230 V	-/-	-/-	-/-	-/-	4.55/4.00	-/-	-/-	4.55/4.00	6.15/5.50
Rated current (A)	3~ Y/Δ 400/230 V	-/-	-/-	-/-	-/-	4.60/7.90	-/-	-/-	4.60/7.90	6.00/10.40

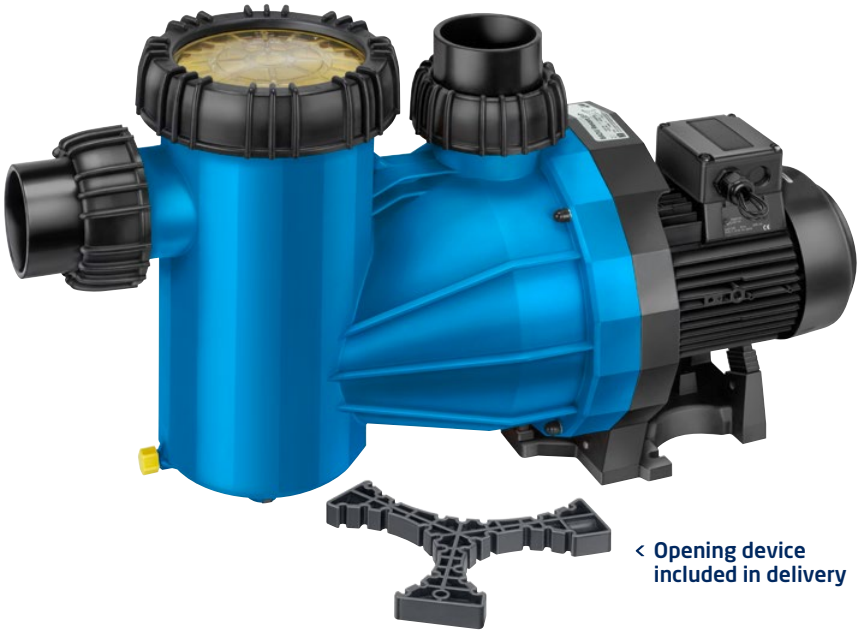
For more detailed information regarding the motor protection please see page 104.

Technical data may vary.

Article no	Description	Voltage	Power output P_2
219.5308.037	BADU Resort 30	3~ Y/Δ 400/230 V	1.50 kW
219.5408.037	BADU Resort 40	3~ Y/Δ 400/230 V	2.20 kW
219.5458.037	BADU Resort 45	3~ Y/Δ 400/230 V	2.60 kW
219.5508.037	BADU Resort 50	3~ Y/Δ 400/230 V	3.00 kW
219.5558.037	BADU Resort 55	3~ Y/Δ 690/400 V	4.00 kW
219.5608.037	BADU Resort 60	3~ Y/Δ 400/230 V	2.60 kW
219.5708.037	BADU Resort 70	3~ Y/Δ 400/230 V	3.00 kW
219.5808.037	BADU Resort 80	3~ Y/Δ 690/400 V	4.00 kW
219.5118.037	BADU Resort 110	3~ Y/Δ 690/400 V	5.50 kW

Three-way opening device included in delivery.

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l. Please contact us for higher salt concentrations.



< Opening device included in delivery

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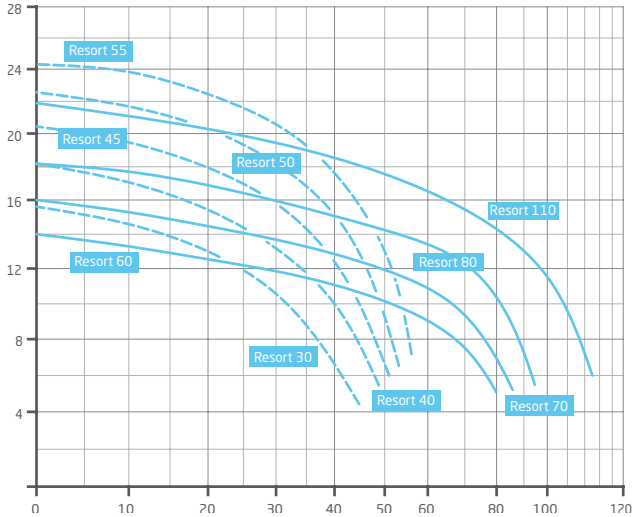
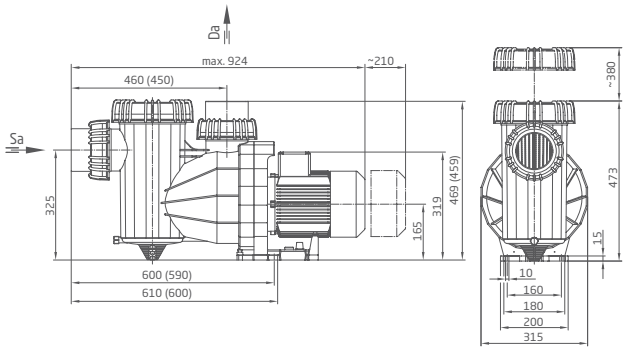
35-110 m³/h

Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions



Dimensions in brackets for BADU Resort 30 to BADU Resort 45.
Detailed dimensions available on request.

BADU® Resort-PM

Synchronous drive for external control units. Efficient circulation pump for large pools.

Field of application

Swimming pool water circulation through a filter system. The pump can be installed max. 3 m above or below water level.

Design

Monoblock-type pump with integrated strainer tank. The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve. Motor/pump shaft has no contact with the pool water providing complete electrical separation.

Strainer tank capacity ..... approx. 10 l
Strainer basket mesh size ..... approx. 3.4 x 3.2 mm

Materials used

Pump casing ..... PP GF 30
Intermediate housing ..... PP TV 40
Gland housing ..... PP TV 40
Diffuser ..... PP GF 30
Impeller ..... PPE GF 30/PP GF 30
Impeller nut ..... PP GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... ABS
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

Technical data at 50 Hz	BADU Resort	50-PM	70-PM	110-PM
Inlet Sa/outlet connection Da d[2)]		110/110	110/110	110/110
Rec. inlet/outlet pipe, PVC pipe, d		110/110	110/110	160/140
Power input P_1/output P_2[1)] (kW)	3~ 400 V	3.28/3.00	3.28/3.00	5.98/5.50
Rated current (A)	3~ 400 V	6.00	6.00	11.10

For detailed information regarding the motor protection please see page 104.

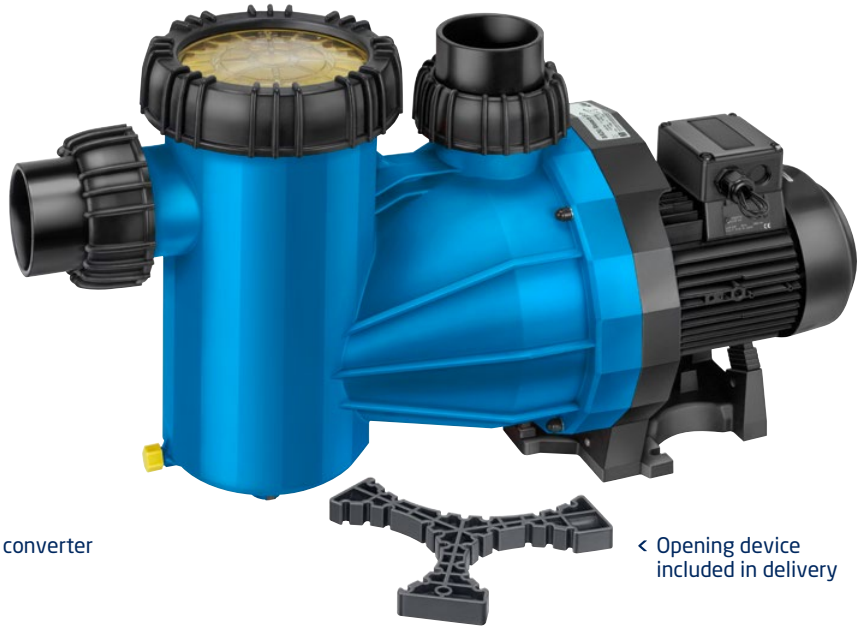
Can only be operated with a frequency converter. | Technical data may vary.

Article no	Type	Voltage	Power output P_2
219.5508.137	BADU Resort 50-PM	3~ 400 V	3.00 kW
219.5708.137	BADU Resort 70-PM	3~ 400 V	3.00 kW
219.5118.137	BADU Resort 110-PM	3~ 400 V	5.50 kW
297.0075.402	Frequency converter BADU Eco Drive II for 0.75 kW	3~ 380-480 V	
297.0150.402	Frequency converter BADU Eco Drive II for 1.50 kW	3~ 380-480 V	
297.0220.402	Frequency converter BADU Eco Drive II for 2.20 kW	3~ 380-480 V	
297.0400.402	Frequency converter BADU Eco Drive II for 4.00 kW	3~ 380-480 V	
297.0550.402	Frequency converter BADU Eco Drive II for 5.50 kW	3~ 380-480 V	
297.0000.001	Programming flat rate for BADU Eco Drive II		

Three-way opening device included in delivery.

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l. Please contact us for higher salt concentrations.

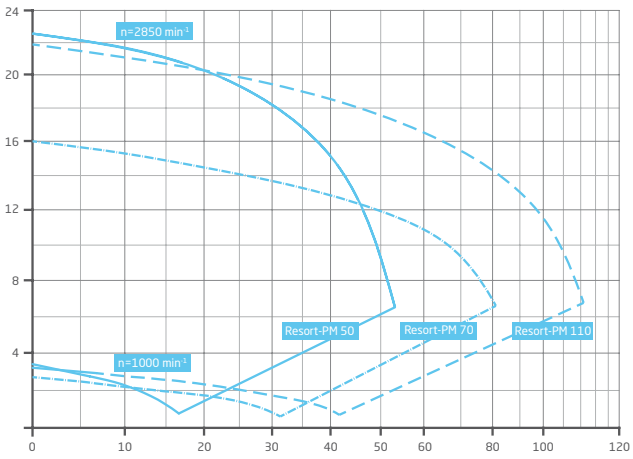
Optional frequency converter



Opening device included in delivery

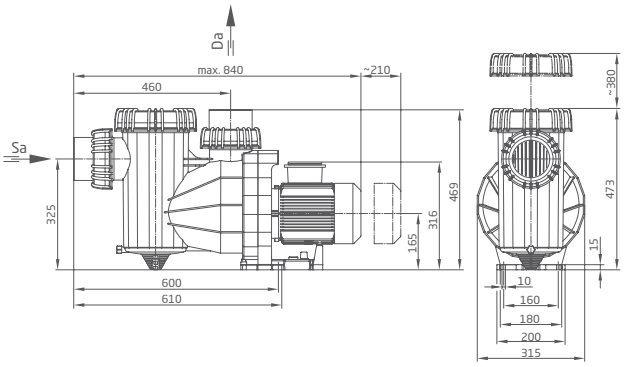
30-110 m³/h

Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request.

BADU® Delta-MK Eco VS

Sealless pump for the pool.
Speed controlled and quiet.

Fields of application

Swimming pool water circulation through a filter system. The pump can be installed max. 1.5 m above or 3 m below water level.

Design

Monoblock-type pump with integrated strainer tank. Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Strainer tank capacity ..... approx. 4 l
Strainer basket mesh size ..... approx. 2.2 x 2.2 mm

Can be controlled with the BADU Eco Logic pump remote control.

Materials used

Pump casing ..... PP GF 30
Intermediate housing/gland housing ..... PP GF 30
Lid for gland houisng ..... PP GF 10
Can ..... PP GF 30
Intermediate flange ..... PP GF 30
Pump feet ..... ABS GF 20
Unions/glue sockets ..... ABS/PVC-U
Diffuser ..... PP GF 30
Impeller ..... PPE GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Slide bearing ..... SiC/SiC
Elastomers ..... NBR
Screws ..... stainless steel

Technical data at 50/60 Hz	BADU Delta-MK Eco VS	
Inlet Sa/outlet connection Da[2)]		63/63
Rec. inlet/outlet pipe, PVC pipe, d[2)]		63/63
Power input P_1/output P_2 [1)] (kW)	1~ 230 V	0.48-1.80/0.37-1.40
Rated current (A)	1~ 230 V	2.15-7.80[*)]
Net weight (kg)	1~	19.00

For more detailed information regarding the motor protection please see page 104.

[*)] At speed n = 2000-3000 rpm | Technical data may vary.

Article no	Description	Voltage	Power output P_2
210.3281.438	BADU Delta-MK Eco VS	1~ 230 V	1.40 kW

Universal opening device included in delivery.

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 8 % i.e. 5 g/l. Please contact us for higher salt concentrations.

Transparent lid with integrated LED lighting

TÜVRheinland ZERTIFIZIERT
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ID 0000021507

geprüfte Sicherheit

BADU GREEN

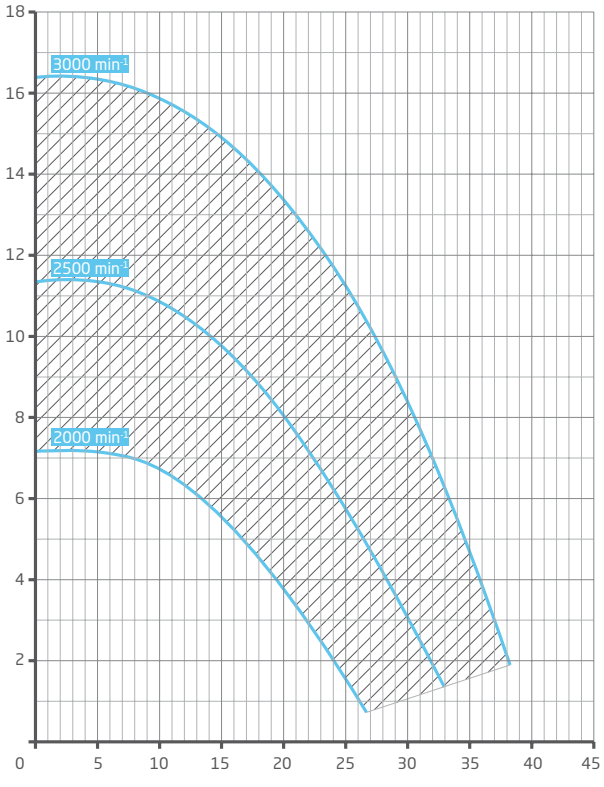
PATENT

D

33 m³/h

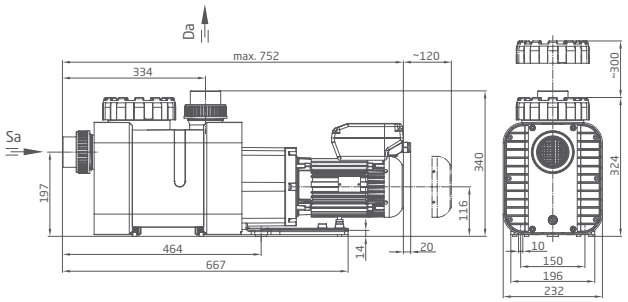
External motor control:
Digital potential-free

Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request.

Normblock Binero

Maximum coated.

Energy-efficient and corrosion-resistant - a reliable partner even at high salt concentrations. The innovative and new series: Normblock Binero . Normblock Binero lifts the proven Normblock technology to a higher level.

Benefits Normblock Binero:

- Pump in cast iron design with thermoplastic corrosion protection coating based on polyethylene.
- Full diameter bronze impeller. Balanced to grade 6.3 in accordance with DIN 1940 Operating point individually adjusted via frequency converter.
- Robust construction and solid finish.
- Flexible attachment of IE3- and PM motors.
- Maintenance-friendly plug-in shaft design.
- Mechanical seal versions for special water treatments.

Why anti-corrosion coating?

The new thermoplastic anti-corrosion coating based on polyethylene ensures very good resistance to swimming pool and thermal water and bathing water with high salt concentration, as well as good UV and weather resistance. Thanks to the high surface quality of the anti-corrosion coating, the new Normblock Binero can withstand different usage requirements while maintaining a high level of efficiency.

Normblock Binero

Performance features

1 Motor

Standard brand motor, optimised for the operating point with ball bearings that are lubricated for their whole operating life.
Further motor variations on page 49.

2 Plug-in shaft system

Motor can be replaced without having to completely disassemble the pump or having to dismantle the mechanical seal.

3 Pump shaft

Pump shaft made from stainless steel.

4 Mechanical seal

Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.

5 Impeller

Closed full diameter bronze impeller for optimal smooth running and durability of the whole pump. The operating point is is individually adjusted to the respective operating conditions via a frequency converter.

6 Pump material

Cast iron with thermoplastic corrosion protection coating based on polyethylene. Permanent corrosion protection and protection against aggressive media.

9 Drainage

Easy drainage without having to remove the pump.

> Detailed information regarding the BADU Normblock Binero can be found on page 48.

Normblock Binero

Normblock Binero

Description

Field of application

Swimming pool water circulation for filtration and filter rinsing as well as operation of swimming pool attractions in public swimming pools.

- Open-air and indoor pools
- Thermal, therapeutic and health spas[4)]
- Pools with high salt concentrations[4)]
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding[4)]
- Industry, e.g. cooling water units[4)]
- Water supply, e.g. irrigation

Design

The Normblock Binero is a non-self-priming, single-stage, volute casing pump with performance classification and main dimensions according to NF E 44-112 and DIN EN 733 (replacement for DIN 24255).
See page 50 for materials used.

Construction

Pump and replacable standard motor are flanged to one modular unit.

Paintwork

RAL 9016 traffc white, RAL 9005 jet black.

Technical data at 50 Hz

Flow rate ..... Q up to max. 720 m³/h
Dynamic head ..... H up to 101 m
Water temperature ..... t max. 75 °C
Maximum operating pressure .....p 10 bar
Speed 50 Hz ..... n approx. 1450 rpm/2900 rpm

Flange sizes ..... DN 32 up to 150

Flange

up to DN 150 according to EN 1092-2 PN 16
from DN 200 according to EN 1092-2 PN 10

Noise generation

Sound intensity and sound pressure level are mainly influenced by the motor and the pump and especially by the installation conditions and the respective installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

Connection positions

Inlet connection ..... axial
Outlet connection ..... radial upwards, side option

Installation

The Normblock Binero is installed horizontally in the pipe network.
Vertical installation with the motor facing downwards is not permitted.

Types

Normblock Binero 32/ 160
Normblock Binero 40/ 160, 200
Normblock Binero 50/ 160
Normblock Binero 65/ 200, 250
Normblock Binero 80/ 160, 200, 250
Normblock Binero 100/ 200
Normblock Binero 125/ 200, 250

> More details regarding all designs, characteristics and dimensional drawings on request.

Motor

Motor

Directly-mounted, low noise, surface-cooled and removable DIN-IEC motor in German brand quality. Energy efficiency class IE3 from 0.75 kW, including PTC resistor sensor with fixed bearings on the pump side. The motors are produced in the factory with closed condensation drain holes.

Motor mounting position ..... IM B 35/IM B 5
Protection class ..... IP 55
Idle speed ..... 1450/1750 rpm 2900/3500 rpm
Frequency ..... 50/60 Hz
Voltage 50 Hz ..... up to 2.20 kW: 230 V Δ/400 V Y
60 Hz ..... up to 2.60 kW: 265 V Δ/460 V Y
Voltage 50 Hz ..... from 3.00 kW: 400 V Δ/690 V Y
60 Hz ..... from 3.60 kW: 460 V Δ
Class of insulation ..... F
Cooling air temperature ..... max. 40 °C

> **Special motors on request.**

Direction of rotation

Clockwise, as viewed from the shaft end.

Bearing/lubrication

Motors have sufficiently dimensioned, maintenance-free, deep groove ball bearings according to DIN 625 with permanent grease lubrication.

1 Standard motor

2 PM motor

1 Standard motor

IE3 motor from 0.75 kW.
Advantage: very high grade of efficiency.

2 PM motor

IE4/IE5 motor.
Advantage: very high grade of efficiency.

3 Water-cooled motor

Energy efficiency class depends on the temperature of the media.
Advantage: heat recovery.
> Motor design only available on request.

Normblock Binero

Materials used

Design	Normblock Binero
Casing parts	cast iron EN-JL 1040 with PE-coating
Impeller	tin bronze CC480K-GS
Mechanical seal	SiC/SiC/HNBR
Wear rings	CC495K-GS
Pump shaft	stainless steel 1.4571
Shaft protection sleeve	stainless steel 1.4571
Motor lantern	cast iron EN-JL 1040

Subject to technical modifications.

Normblock

Horizontal, completely metal block pump with optimised rate of efficiency. Classic attraction pump with a thousandfold proven concept.

Field of application

Swimming pool water circulation for filtration and filter rinsing as well as operation of swimming pool attractions in public swimming pools. Can also be used for irrigation, drainage, water supply, shipbuilding and industry.

Design

The Normblock pump is a non-self-priming, single-stage, volute casing pump with performance classification and main dimensions according to NF E 44-112 and DIN EN 733 (replacement for DIN 24255).

Performance

2-740 m³/h

Flange sizes ..... DN 25 bis 200

Types

Normblock 25/..... 160, 200
Normblock 32/..... 125, 160, 200, 250
Normblock 40/..... 125, 160, 200, 250, 315
Normblock 50/..... 125, 160, 200, 250, 315
Normblock 65/..... 125, 160, 200, 250, 315
Normblock 80/..... 160, 200, 250, 315, 400
Normblock 100/..... 160, 200, 250, 315, 400
Normblock 125/..... 200, 250, 315, 400
Normblock 150/..... 200, 250, 315, 400

Materials used

Design	05	11	12
Casing parts	tin bronze CC480K-GS	cast iron EN-JL 1040	cast iron EN-JL 1040
Impeller	tin bronze CC480K-GS	cast iron EN-JL 1040	tin bronze CC480K-GS
Mechanical seal	SiC/SiC/HNBR	carbon/SiC/EPDM SiC/SiC/HNBR optional	carbon/SiC/EPDM SiC/SiC/HNBR optional
Wear rings	CC495K-GS	cast iron EN-JL 1040	CC495K-GS
Pump shaft	stainless steel 1.4571	stainless steel 1.4571	stainless steel 1.4571
Shaft protection sleeve	stainless steel 1.4571	stainless steel 1.4571	stainless steel 1.4571
Motor lantern	cast iron EN-JL 1040	cast iron EN-JL 1040	cast iron EN-JL 1040

Subject to technical modifications.

Normblock Multi

Maximum stability.

Corrosion-resistant – even at high salt concentrations.
Permanently improved efficiency due to new surface qualities.
The innovative, all-plastic concept of the Normblock Multi
lifts the proven Normblock technology,
to a completely unique level.

Benefits of the Normblock Multi:

- Pump in all-plastic design.
- Wetted parts made of optimised high-performance technical plastic (THP) - permanently robust, maintenance-free and economical.
- Pump shaft does not come into contact with the pump liquid.
- Corrosion-resistant and low-wear, even at high salt concentrations.
- Maintenance-friendly plug-in shaft design.
- Flexible attachment of IE3, IE4 and PM motors from 2.20 to 22.00 kW.
- Individual mechanical seal versions for special water treatments.

Why plastic?

Our aim was to enhance the Normblock concept, which has proven itself thousands of times, and eliminate systemic disadvantages. Resistant to high salt concentrations, less weight, less wear, less maintenance – more flexibility. The all-plastic design of the new Normblock Multi offers better performance in every respect.

Normblock Multi

Performance features

1 Motor

Standard brand motor, optimised for the operating point with ball bearings that are lubricated for their whole operating life.
Further motor variations on page 57.

2 Plug-in shaft system

Motor can be replaced without having to completely disassemble the pump or having to dismantle the mechanical seal.

3 Pump shaft

Pump shaft made from stainless steel. Motor/pump shaft has no contact with the medium providing complete electrical separation.

4 Mechanical seal

Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.

5 Impeller

Closed impeller for optimal smooth running and durability of the whole pump.

6 Pump material

THP (high-performance technical plastic). Permanent corrosion protection and protection against aggressive media for all wetted parts due to all-plastic design.

7 Auxiliary connections

Holes for additional connections e.g. pressure gauge.

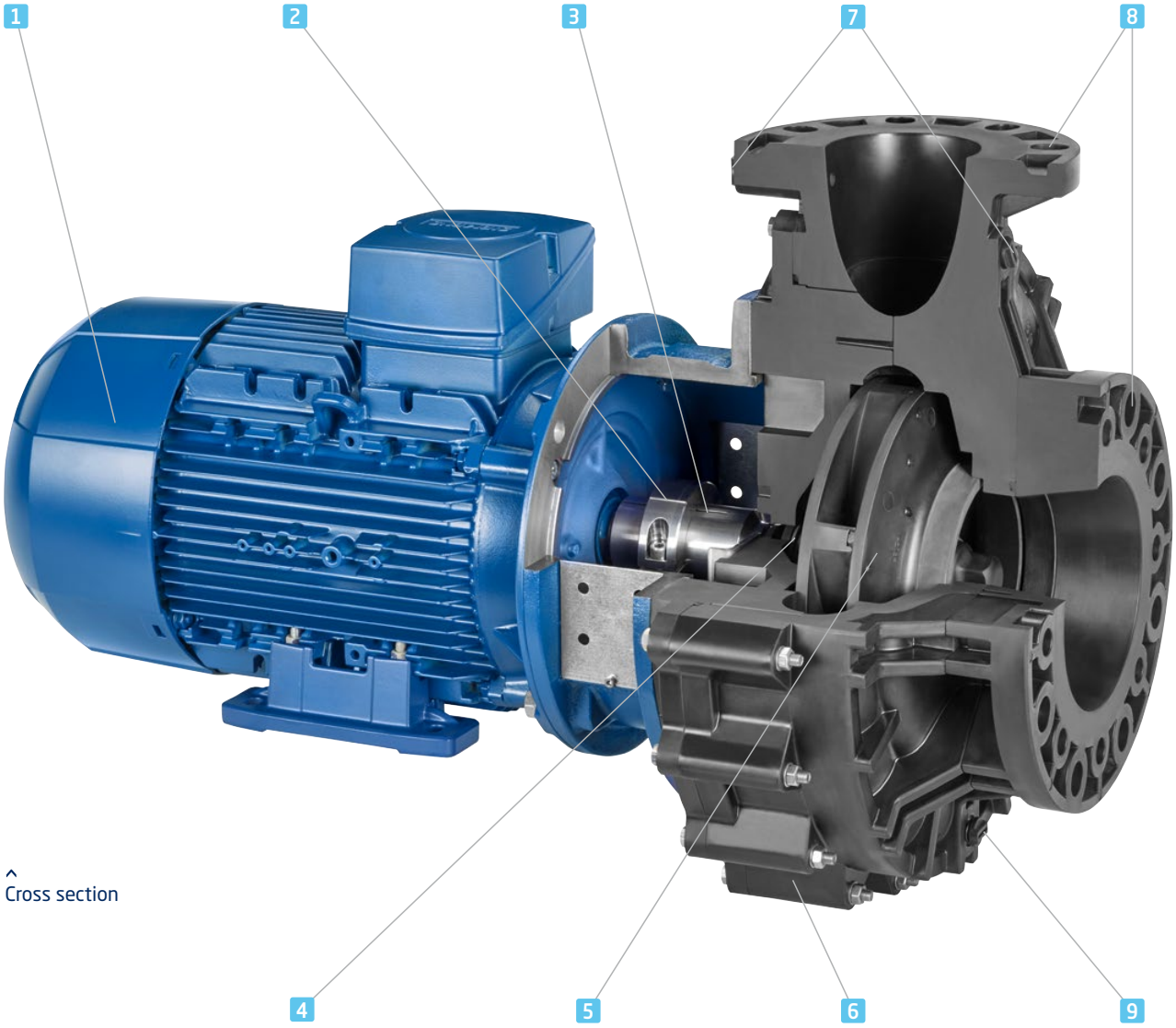
8 Connections

Standardised connections, compatible with DIN and ASME (American standard).

9 Drainage

Easy drainage without having to remove the pump.

> Detailed information regarding the BADU Normblock Multi can be found on page 56.



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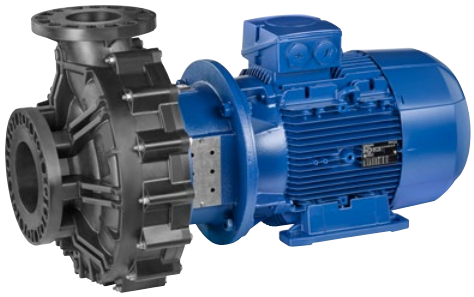
Cross section



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Normblock Multi

Normblock Multi

Description

Field of application

Swimming pool water circulation for filtration and filter rinsing as well as operation of swimming pool attractions in public swimming pools.

> Open-air and indoor pools
> Thermal, therapeutic and health spas[4)]
> Pools with high salt concentrations[4)]
> Water treatment, e.g. filter unit construction
> Leisure facilities
> Attractions, e.g. water slides
> Shipbuilding[4)]
> Industry, e.g. cooling water units[4)]
> Water supply, e.g. irrigation

Design

The Normblock Multi is a non-self-priming, single-stage, volute casing pump with performance classification and main dimensions according to NF E 44-112 and DIN EN 733 (replacement for DIN 24255).
See page 58 for materials used.

Construction

Pump and replacable standard motor are flanged to one modular unit.

Paintwork

RAL 5002 ultramarine blue.

> **Customised paintwork on request.**

Technical data

Flow rate ..... Q ..... up to max. 450 m³/h
Dynamic head ..... H ..... up to 24 m
Water temperature ..... t ..... max. 40 °C
Maximum operating pressure ..... p ..... 3 bar
Speed 50 Hz ..... n ..... approx. 1450 rpm
60 Hz ..... n ..... approx. 1750 rpm

Flange sizes

Normblock Multi 65/250 ..... DND 65/DNS 80
Normblock Multi 80/200 ..... DND 80/DNS 100
Normblock Multi 100/250 ..... DND 100/DNS 125
Normblock Multi 125/250 ..... DND 125/DNS 150

Flange

compatible with EN 1092-2 PN-16 and ASME

Noise generation

Sound intensity and sound pressure level are mainly influenced by both the motor and the pump and especially by the installation conditions and the respective installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

Connection positions

Inlet connection ..... axial
Outlet connection ..... radial upwards, side option

Installation

The Normblock Multi is installed horizontally in the pipe network.
Vertical installation with the motor facing downwards is not permitted.

Types

Normblock Multi 65/250
Normblock Multi 80/200
Normblock Multi 100/250
Normblock Multi 125/250

> More details regarding all designs, characteristics and dimensional drawings on request.

Motor

Motor

Directly-mounted, low noise, surface-cooled and removable DIN-IEC motor in German brand quality. Energy efficiency class IE3 from 0.75 kW, including PTC resistor sensor with fixed bearings on the pump side. The motors are produced in the factory with closed condensation drain holes.

Motor mounting position	IM B 35
Protection class	IP 55
Idle speed ...	1450/1750 rpm
Frequency	50/60 Hz
Voltage 50 Hz	up to 2.20 kW: 230 V Δ/400 V Y
60 Hz	up to 2.60 kW: 265 V Δ/460 V Y
Voltage 50 Hz ..... from	3.00 kW: 400 V Δ/690 V Y
60 Hz ..... from	3.60 kW: 460 V Δ
Class of insulation	F
Cooling air temperature	max. 40 °C

> **Special motors on request.**

Direction of rotation

Clockwise, as viewed from the shaft end.

Bearing/lubrication

Motors have sufficiently dimensioned, maintenance-free, deep groove ball bearings according to DIN 625 with permanent grease lubrication.

1 Standard motor

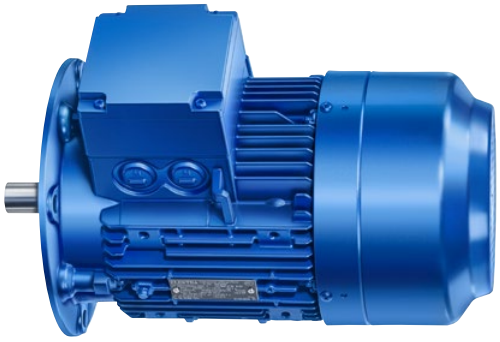
IE3 motor from 0.75 kW.
Advantage: very high grade of efficiency.

2 PM motor

IE4/IE5 motor.
Advantage: very high grade of efficiency.

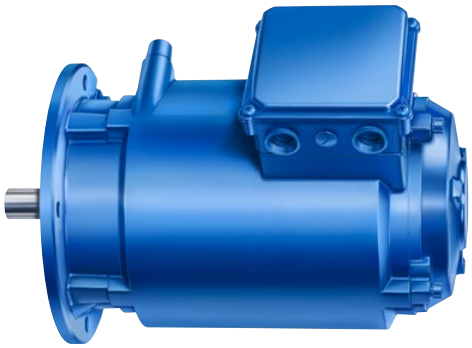
3 Water-cooled motor

Energy efficiency class depends on the temperature of the media.
Advantage: heat recovery.
Motor design only available on request.



1 Standard motor

2 PM motor



3 Water-cooled motor

Normblock Multi

Materials used

Design	Normblock Multi	Normblock Multi-S
Casing parts	THP, PPE GF 30, PP GF 30	THP, PPE GF 30, PP GF 30
Impeller	THP, PPE GF 30	THP, PPE GF 30
Mechanical seal	carbon/SiC/EPDM	SiC/SiC/EPDM
Pump shaft (no contact with pump liquid)	stainless steel 1.4057	stainless steel 1.4057
Motor lantern	cast iron EN-JL 1040	cast iron EN-JL 1040

Subject to technical modifications.

Normblock Multi-S for the use with at high salt concentrations and with thermal water.

BADU® 42

Small jet pump and additional pump, available in 3 designs. For bath tubs and small whirlpools.

Field of application

BADU 42/6, BADU 42/9 and BADU 42/12 are the perfect jet pumps for bath tubs and whirlpools.

Design

Monoblock-type pump with a closed bellow-type mechanical seal mounted on a plastic shaft protector sleeve. Motor/pump shaft has no contact with the pool water providing complete electrical separation.

Materials used

Pump housing ..... PP GF 30
Gland housing ..... PP GF 30
Impeller (BADU 42/6, BADU 42/9) ..... PP GF 30
Impeller (BADU 42/12) ..... PA 66 GF 30
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

Technical data at 50 Hz	BADU 42/	6	9	12
Inlet Sa/outlet connection Da Rp[2)]		1½/1½	1½/1½	1½/1½
Rec. inlet/outlet pipe, PVC pipe, d		50/50	50/50	50/50
Power input P_1/output P_2[1)] (kW)	1~ 230 V	0.50/0.30	0.69/0.45	0.97/0.65
Rated current (A)	1~ 230 V	2.40	3.00	4.70
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 400/230 V	0.44/0.30	0.63/0.45	0.97/0.65
Rated current (A)	3~ Y/Δ 400/230 V	0.95/1.65	1.25/2.15	1.75/3.00

For detailed information regarding the motor protection please see page 104.

Technical data may vary.

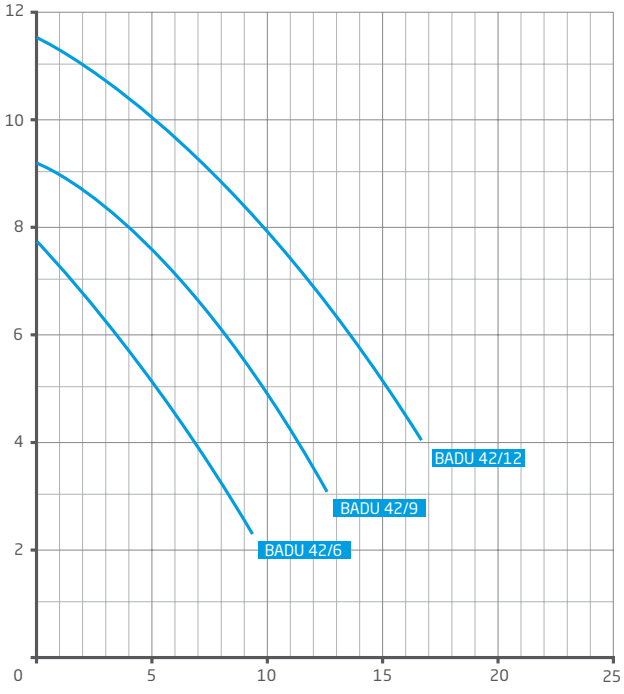
Article no	Type	Voltage	Power output P_2
204.2060.138	BADU 42/6	1~ 230 V	0.30 kW
204.2090.138	BADU 42/9	1~ 230 V	0.45 kW
204.2120.138	BADU 42/12	1~ 230 V	0.65 kW
204.2060.137	BADU 42/6	3~ Y/Δ 400/230 V	0.30 kW
204.2090.137	BADU 42/9	3~ Y/Δ 400/230 V	0.45 kW
204.2120.137	BADU 42/12	3~ Y/Δ 400/230 V	0.65 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact us.

www.tuv.com
ID 0000021507

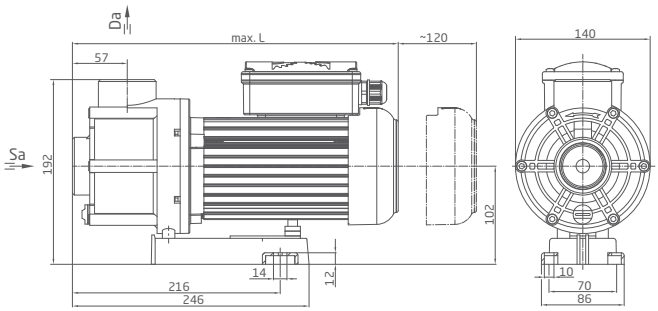
9-17 m³/h

Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request or at badu.de

BADU® 21-50/21-60

Universal, medium-size circulation pump. Reliable and flexible. For whirlpools, counter swim units, pool cleaning devices and massage units.

Field of application

Large whirlpools, hotel pools, swimming pools and industrial filter units, counter swim units, massage units, air conditioning units, pool cleaning devices and many other applications with a flow rate of up to 54 m³/h.

Design

The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve.
Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Discharge outlet swivels infinitely.

Suitable unions available on request.

Materials used

Pump housing ..... PP GF 30
Gland housing ..... PPE GF 30
Impeller BADU 21-50 ..... POM GF 30
Impeller BADU 21-60 ..... PP GF 30
Wear ring ..... stainless steel
Mechanical seal ..... carbon/ceramic/NBR
Impeller nut ..... PP GF 30
Clamping ring ..... aluminium
Screws ..... stainless steel
Motor shaft ..... stainless steel
Elastomers ..... NBR/Viton

Technical data at 50 Hz	BADU 21-	50/42 G	50/43 G	50/44 G	60/43 G	60/44 G	60/46 G
Inlet Sa/outlet connection Da G[2)]		2¾/2¾	2¾/2¾	2¾/2¾	2¾/2¾	2¾/2¾	2¾/2¾
Rec. inlet/outlet pipe, PVC pipe, d		90/75	90/75	90/75	90/75	90/75	90/75
Power input P_1/output P_2[1)] (kW)	1~ 230 V	1.63/1.10	2.27/1.60	2.90/2.20	2.27/1.60	2.90/2.20	3.90/3.00
Rated current (A)	1~ 230 V	7.20	10.00	13.00	10.00	13.00	17.00
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 400/230 V	1.33/1.10	1.90/1.60	2.55/2.20	1.90/1.60	2.55/2.20	3.45/3.00
Rated current (A)	3~ Y/Δ 400/230 V	2.40/4.15	3.30/5.70	4.60/8.00	3.30/5.70	4.60/8.00	6.20/10.70

For detailed information regarding the motor protection please see page 104.

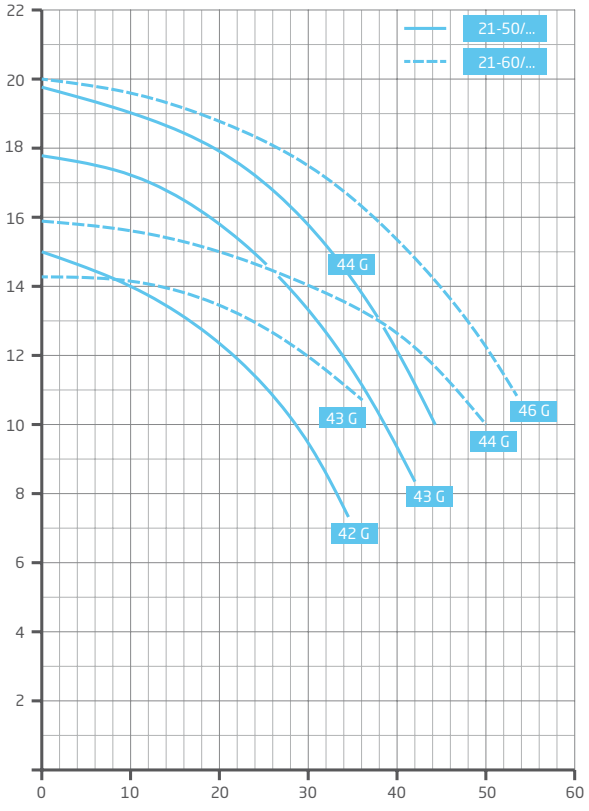
Technical data may vary.

Article no	Type	Voltage	Power output P_2
235.0420.138	BADU 21-50/42 G	1~ 230 V	1.10 kW
235.0430.138	BADU 21-50/43 G	1~ 230 V	1.60 kW
235.0440.138	BADU 21-50/44 G	1~ 230 V	2.20 kW
236.0430.138	BADU 21-60/43 G	1~ 230 V	1.60 kW
236.0440.138	BADU 21-60/44 G	1~ 230 V	2.20 kW
236.0460.138	BADU 21-60/46 G	1~ 230 V	3.00 kW
235.0420.137	BADU 21-50/42 G	3~ Y/Δ 400/230 V	1.10 kW
235.0430.137	BADU 21-50/43 G	3~ Y/Δ 400/230 V	1.60 kW
235.0440.137	BADU 21-50/44 G	3~ Y/Δ 400/230 V	2.20 kW
236.0430.137	BADU 21-60/43 G	3~ Y/Δ 400/230 V	1.60 kW
236.0440.137	BADU 21-60/44 G	3~ Y/Δ 400/230 V	2.20 kW
236.0460.137	BADU 21-60/46 G	3~ Y/Δ 400/230 V	3.00 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact us.

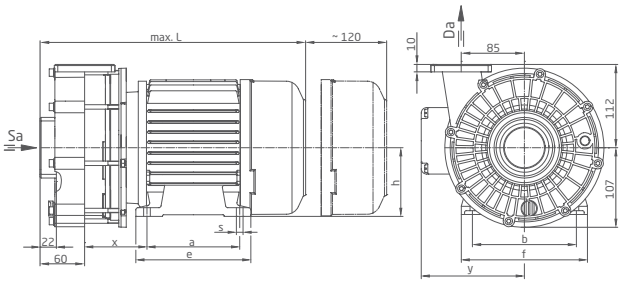
35-55 m³/h

Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request.

Type		a	b	e	f	h	s	x	y	L
BADU 21-50/42 G	1~	125	140	155	170	90	9	85	139	358
BADU 21-50/42 G	3~	100	125	125	156	80	9	94	129	333
BADU 21-50/43 G	1~	125	140	155	170	90	9	85	139	358
BADU 21-50/43 G	3~	125	140	155	170	90	9	100	139	382
BADU 21-50/44 G	1~	125	140	155	170	90	9	100	139	373
BADU 21-50/44 G	3~	140	160	176	195	100	12	107	155	407
BADU 21-60/43 G	1~	125	140	155	170	90	9	85	139	358
BADU 21-60/43 G	3~	125	140	155	170	90	9	100	139	382
BADU 21-60/44 G	1~	125	140	155	170	90	9	100	139	373
BADU 21-60/44 G	3~	140	160	176	195	100	12	107	155	407
BADU 21-60/46 G	1~	140	160	176	195	100	12	107	154	427
BADU 21-60/46 G	3~	140	160	176	195	100	12	107	155	407

BADU® 21-80

Universal, large circulation pump. Reliable and high-powered. For whirlpools, counter swim units and swimming pool attractions.

Field of application

Swimming pools and industrial filter units, counter swim units, air conditioning units, pool cleaning devices and many more applications with a flow rate of up to 90 m³/h.

Design

The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve.
Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Discharge outlets swivel gradually by 90° each and by 29° clockwise when viewing the pump from the suction side.

BADU 21-80/... SG conditionally self-priming up to 0.5 m, on request.

Suitable unions available on request.

Materials used

Pump housing ..... PPE GF 30
Wear ring ..... stainless steel
Gland housing ..... PPE GF 30
Impeller ..... PP GF 30
Impeller nut ..... PP GF 30
Mechanical seal ..... carbon/ceramic/NBR
Motor shaft ..... stainless steel
Screws ..... stainless steel
Elastomers ..... NBR/Viton

Technical data at 50 Hz	BADU 21-80/	31R G	32R G	32 G	33 G	34 G
Inlet Sa/outlet connection Da R[2)]		2¾/2¾[**)]	2¾/2¾[**)]	2¾/2¾[**)]	2¾/2¾[**)]	2¾/2¾[**)]
Rec. inlet/outlet pipe, PVC pipe, d		110/110	110/110	110/110	140/110	140/110
Power input P_1/output P_2[1)] (kW)	1~ 230 V	2.27/1.60	2.90/2.20	-/-	3.90/3.00	-/-
Rated current (A)	1~ 230 V	10.00	13.00	-/-	17.00[*)]	-/-
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 400/230 V	1.90/1.60	2.55/2.20	3.00/2.60	3.45/3.00	-/-
Rated current (A)	3~ Y/Δ 400/230 V	3.30/5.70	4.60/8.00	5.50/9.50	6.20/10.70	-/-
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 690/400 V	-/-	-/-	-/-	-/-	4.55/4.00
Rated current (A)	3~ Y/Δ 690/400 V	-/-	-/-	-/-	-/-	4.60/7.90
Net weight (kg)	1~/3~	17.00/15.00	18.00/24.00	-/19.00	30.00/27.00	-/35.00

For detailed information regarding the motor protection please see page 104.

[*)]Start-up current approx. 82 A. | [**)]Pumps also available with Ø 82 mm hose connections.

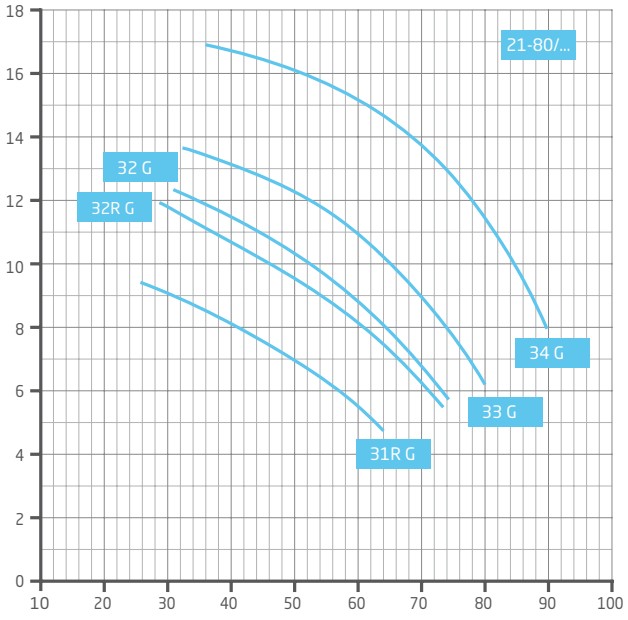
Technical data may vary.

Article no	Type	Voltage	Power output P_2
238.0310.138	BADU 21-80/31R G	1~ 230 V	1.60 kW
238.0320.138	BADU 21-80/32R G	1~ 230 V	2.20 kW
238.0330.138	BADU 21-80/33 G	1~ 230 V	3.00 kW
238.0310.137	BADU 21-80/31R G	3~ Y/Δ 400/230 V	1.60 kW
238.0320.537	BADU 21-80/32R G	3~ Y/Δ 400/230 V	2.20 kW
238.0320.137	BADU 21-80/32 G	3~ Y/Δ 400/230 V	2.60 kW
238.0330.137	BADU 21-80/33 G	3~ Y/Δ 400/230 V	3.00 kW
238.0340.137	BADU 21-80/34 G	3~ Y/Δ 690/400 V	4.00 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact us.

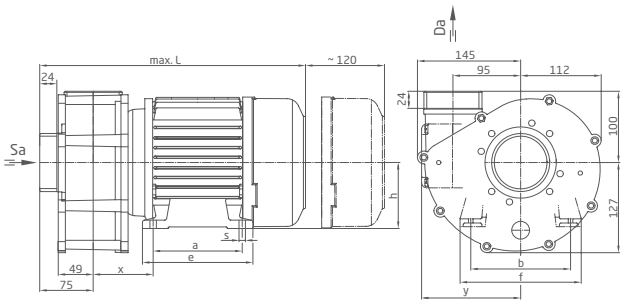
40-80 m³/h

Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request.

Type		a	b	e	f	h	s	x	y	L
BADU 21-50/42 G	1~	125	140	155	170	90	9	85	139	358
BADU 21-50/42 G	3~	100	125	125	156	80	9	94	129	333
BADU 21-50/43 G	1~	125	140	155	170	90	9	85	139	358
BADU 21-50/43 G	3~	125	140	155	170	90	9	100	139	382
BADU 21-50/44 G	1~	125	140	155	170	90	9	100	139	373
BADU 21-50/44 G	3~	140	160	176	195	100	12	107	155	407
BADU 21-60/43 G	1~	125	140	155	170	90	9	85	139	358
BADU 21-60/43 G	3~	125	140	155	170	90	9	100	139	382
BADU 21-60/44 G	1~	125	140	155	170	90	9	100	139	373
BADU 21-60/44 G	3~	140	160	176	195	100	12	107	155	407
BADU 21-60/46 G	1~	140	160	176	195	100	12	107	154	427
BADU 21-60/46 G	3~	140	160	176	195	100	12	107	155	407

BADU® M3 Eco Soft

Self-priming, corrosion-resistant, energy-efficient.
Speed-controlled metering water pump with different performance levels.

Field of application

Metering water pump for the continuous analysis of pool water in public swimming pools.
Pumped liquid: Swimming pool water.

Design

Monoblock-type pump with integrated strainer tank. Bellow-type mechanical seal mounted on a plastic impeller hub. Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Strainer tank capacity ..... approx. 1.0 l
Strainer basket mesh size ..... approx. 2.8 x 2.8 mm

Materials used

Pump housing ..... PP
Gland housing ..... PP GF 30
Impeller ..... PPE GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... PVC
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

Technical data at 50 Hz/60 Hz	BADU	M3 Eco Soft
Inlet dS/outlet connection dD glue sockets		32/25*)
Power input P_1/output P_2 1) (kW)	1~ 230 V	0.04-0.75/0.02-0.50
Rated current (A)	1~ 230 V	0.30-3.20

For detailed information regarding the motor protection please see page 104.

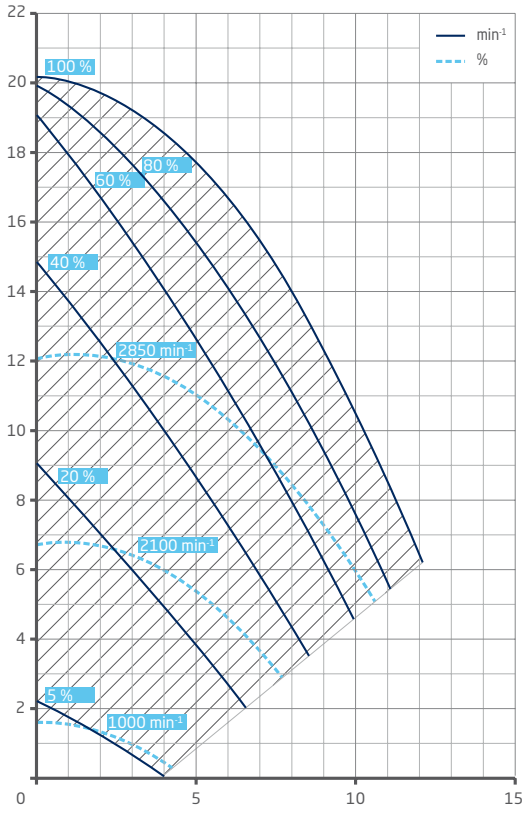
*) Special unions with glue sockets are included in delivery. | Technical data may vary.

Article no	Type	Voltage	Power output P_2
210.4004.038	BADU M3 Eco Soft	1~ 230 V	0.50 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact us.

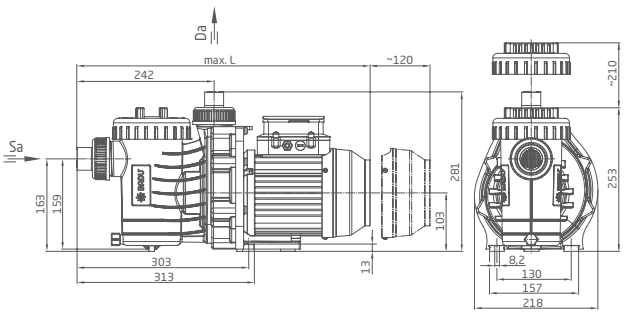
Highly efficient motor with built-in frequency converter. Can be controlled externally.

Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request.

BADU® M3 Eco Soft-AK

Self-priming, corrosion-resistant, energy-efficient in AK version. Speed-controlled metering water pump with different performance levels.

Field of application

Self-priming metering water pump for the continuous analysis of pool water in public swimming pools.
Pumped liquids: For thermal water, as well as water high in minerals and brine.

Design

Monoblock-type pump with integrated strainer tank. Bellow-type mechanical seal mounted on a plastic impeller hub. Motor/shaft has no contact with the pool water providing complete electrical separation.

Drive-pump separation for longer operating life.
This means: The gland housing is not mounted directly to the A-side motor bearing, but is separated from the motor by an intermediate lantern and labyrinth disk.
Thus, leaking medium and crystallising minerals or salt cannot come into contact with the motor and its bearings.

Strainer tank capacity ..... approx. 1.0 l
Strainer basket mesh size ..... approx. 2.8 x 2.8 mm

Materials used

Pump housing ..... PP
Gland housing ..... PP GF 30
Lantern ..... PPE GF 30
Baseplate ..... PE
Impeller ..... PPE GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... PVC
Mechanical seal ..... SiC/SiC/Viton
Elastomers ..... Viton
Screws ..... stainless steel

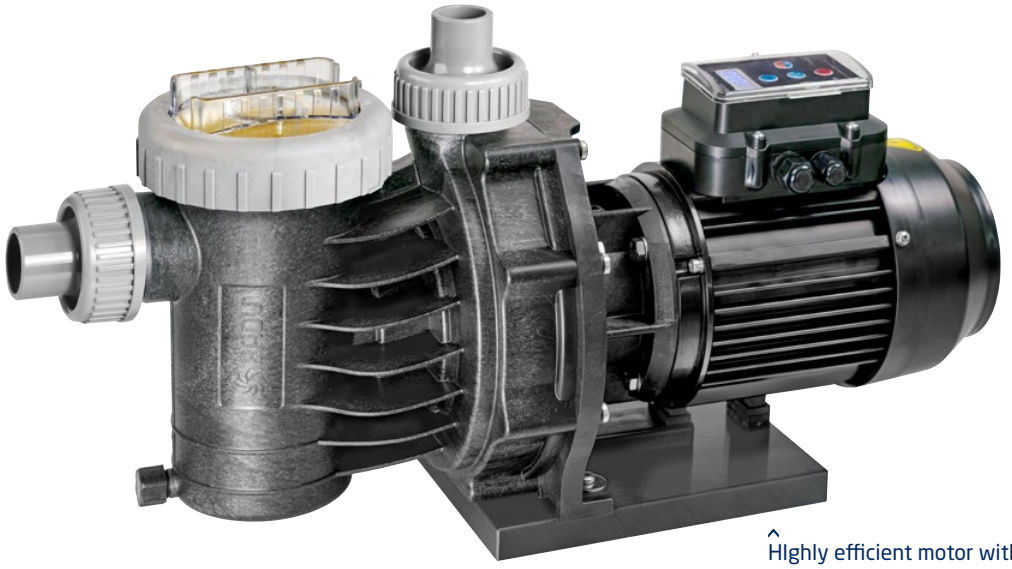
Technical data at 50 Hz/60 Hz	BADU	M3 Eco Soft-AK
Inlet dS/outlet connection dD glue sockets		32/25*)
Power input P_1/output P_2 1) (kW)	1~ 230 V	0.04-0.75/0.02-0.50
Rated current (A)	1~ 230 V	0.30-3.20

For detailed informed regarding the motor protection see page page 104.
For detailed information regarding the accessories see page page 99.

*) Special unions with glue sockets are included in delivery. | Technical data may vary.

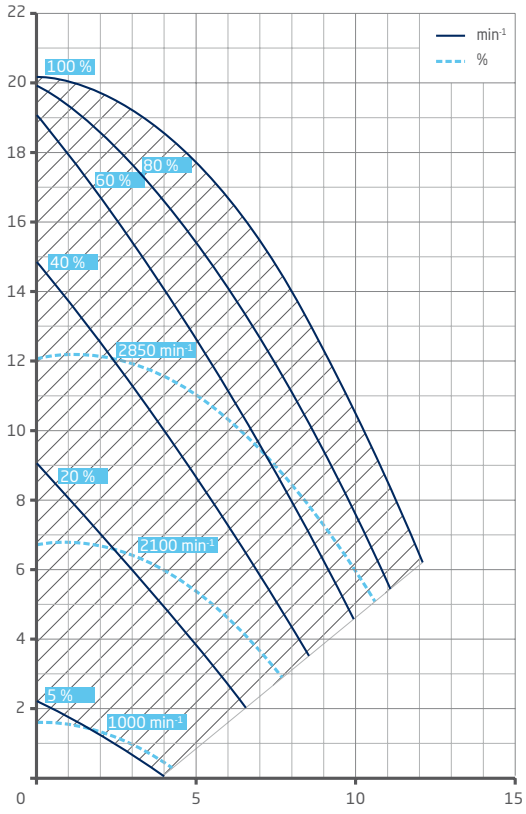
Article no	Type	Voltage	Power output P_2
210.4004.048	BADU M3 Eco Soft-AK	1~ 230 V	0.50 kW

The above-mentioned pump can be used for swimming pool water with a salt concentration of up to 3.84 % i.e. 40 g/l.
For higher salt concentrations please contact us.



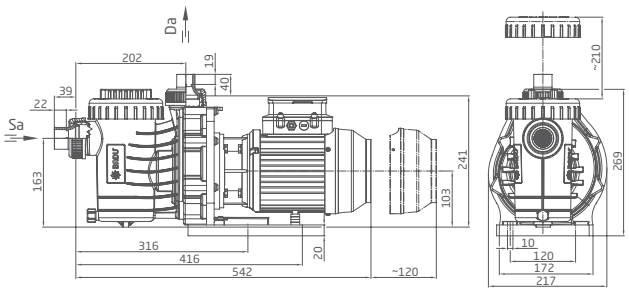
^ HIghly efficient motor with built-in frequency converter. Can be controlled externally.

Leistung



^ Total dynamic head H (m) / Flow rate Q (m³/h) >

Maße



Detailed dimensions available on request.

BADU® M1/M2

Durable, reliable and efficient.
Corrosion resistant metering water pump for continuous analysis.

Field of application

Metering water pump for the continuous analysis of pool water in public swimming pools.
Pumped liquid: Swimming pool water.

Design

Monoblock-type pump with integrated strainer tank. Bellow-type mechanical seal mounted on a plastic impeller hub. Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Strainer tank capacity ..... approx. 0.5 l
Strainer basket mesh size ..... approx. 2.8 x 2.8 mm

Materials used

Pump housing ..... PP
Gland housing ..... PP TV 40
Impeller ..... PP 66 GF 30/PC
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... PVC
Mechanical seal ..... carbon/ceramic/NBR
Elastomers ..... NBR/Viton
Screws ..... stainless steel

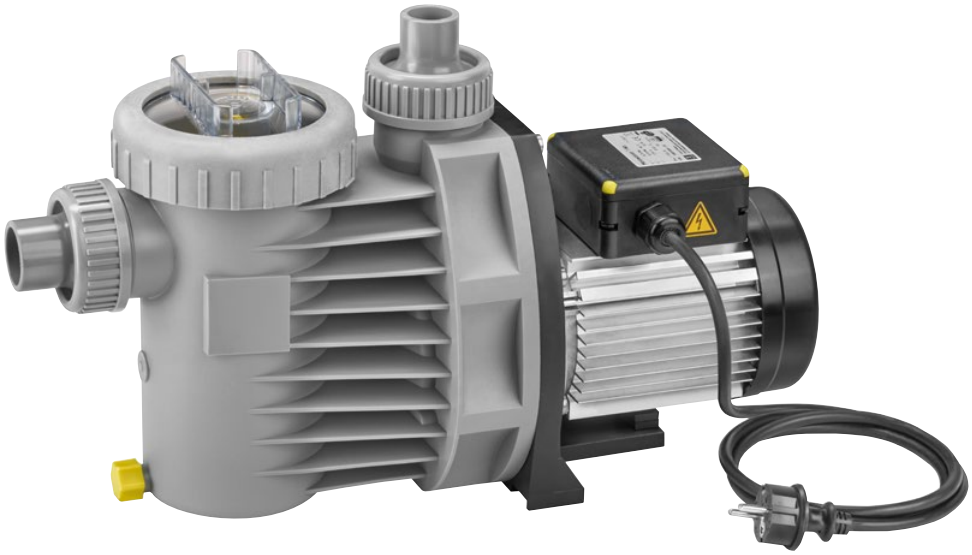
Technical data at 50 Hz	BADU	M1	M2
Inlet dS/outlet connection dD glue sockets		32/25*)	32/25*)
Rec. inlet/outlet pipe, PVC pipe, d		50/50	50/50
Power input P_1/output P_2[1)] (kW)	1~ 230 V	0.35/0.18	0.45/0.25
Rated current (A)	1~ 230 V	1.95	2.30

For detailed information regarding the motor protection please see page 104.

*) Special unions with glue sockets are included in delivery. | Technical data may vary.

Article no	Type	Voltage	Power output P_2
219.1040.838	BADU M1	1~ 230 V	0.18 kW
219.1060.838	BADU M2	1~ 230 V	0.25 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact us.



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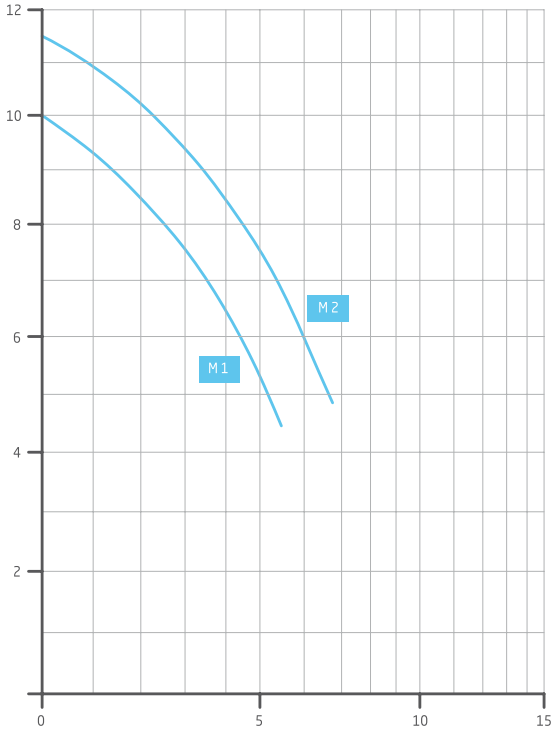
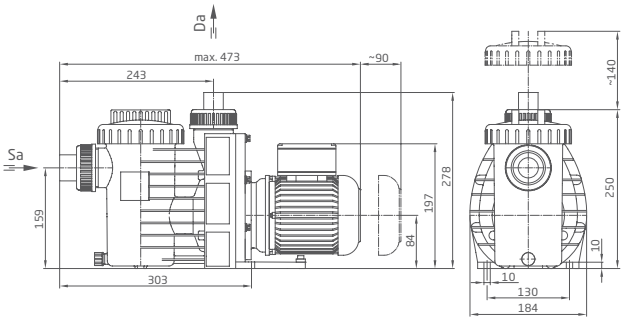
Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request.

BADU® M1-AK/M2-AK

Durable, reliable and efficient.
Corrosion resistant metering water pump for continuous analysis.

Field of application

Metering water pump for the continuous analysis of pool water in public swimming pools.

Design

Monoblock-type pump with integrated strainer tank. Bellow-type mechanical seal mounted on a plastic impeller hub. Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Strainer tank capacity ..... approx. 0.5 l
Strainer basket mesh size ..... approx. 2.8 x 2.8 mm

Materials used

Pump housing ..... PP
Gland housing ..... PP TV 40
Impeller ..... PP 66 GF 30/PC
Lantern ..... PPE GF 30
Baseplate ..... PE
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... PVC
Mechanical seal ..... carbon/ceramic/NBR
Elastomers ..... Viton
Screws ..... stainless steel

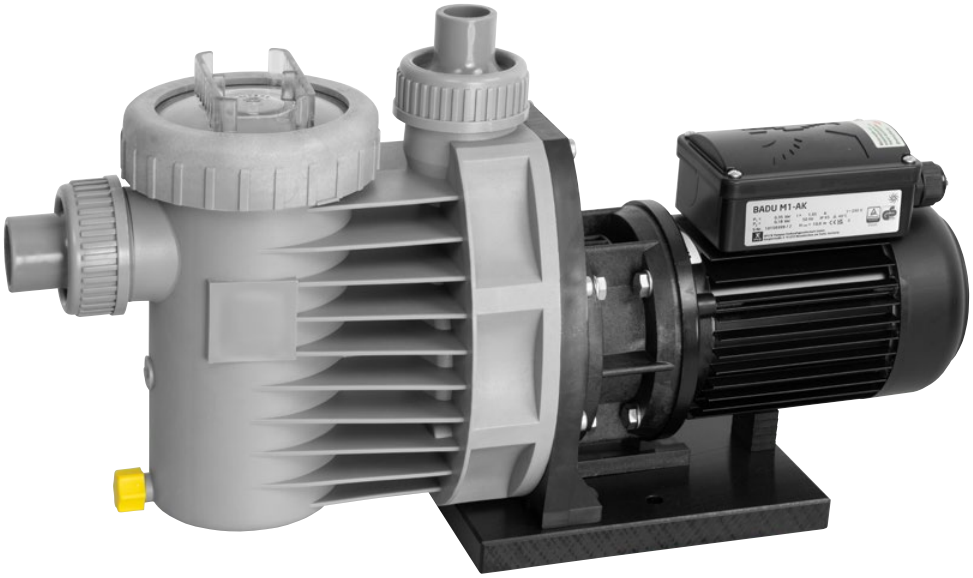
Technical data at 50 Hz	BADU	M1-AK	M2-AK
Inlet dS/outlet connection dD glue sockets		32/25*)	32/25*)
Power input P_1/output P_2[1)] (kW)	1~ 230 V	0.35/0.18	0.45/0.25
Rated current (A)	1~ 230 V	1.95	2.30

For detailed information regarding the motor protection please see page 104.

*) Special unions with glue sockets are included in delivery. | Technical data may vary.

Article no	Type	Voltage	Power output P_2
219.1041.838	BADU M1-AK	1~ 230 V	0.18 kW
219.1040.838	BADU M1-AK, 3 m cable and plug	1~ 230 V	0.18 kW
219.1061.838	BADU M2-AK	1~ 230 V	0.25 kW
219.1060.838	BADU M2-AK, 3 m cable and plug	1~ 230 V	0.25 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact us.



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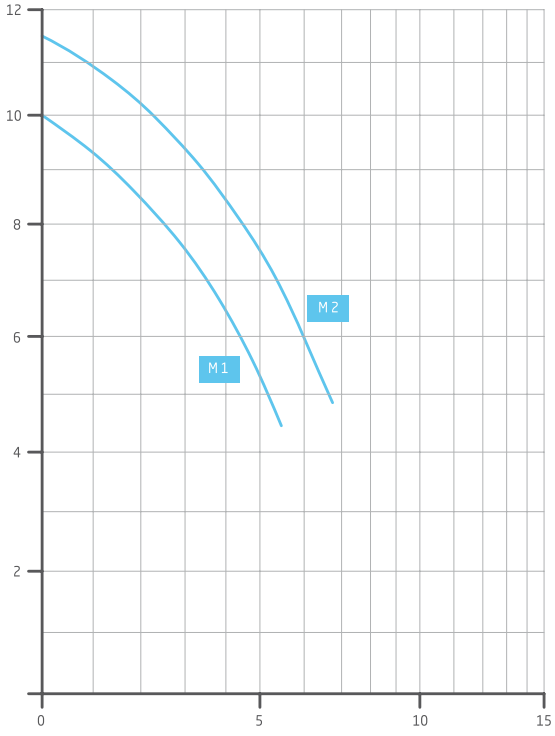
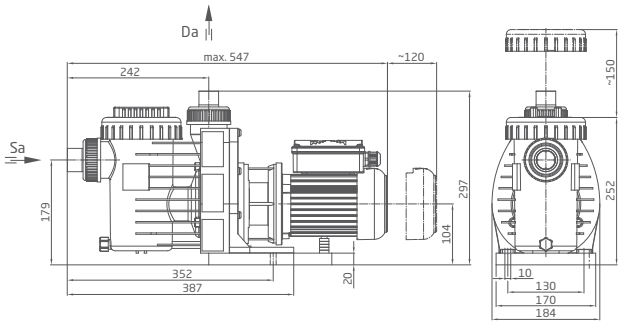
Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request.

V 600

Safe, reliable and efficient.
Power adapted metering water pump with low capacity range.

Field of application

Metering water pump for the continuous analysis of pool water in public swimming pools.

Design

Centrifugal pump with peripheral impeller.
Bellow-type mechanical seal mounted on a plastic impeller hub. Motor/pump shaft has no contact with the pool water providing complete electrical separation.

Materials used

Pump housing ..... PPS GF 40
Housing cover ..... PPS GF 40
Pump shaft ..... PPS GF 40
Impeller ..... PEEK
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

Technical data at 50 Hz	BADU	V 600
Inlet/outlet (G)*)		¾ / ¾
Rec. inlet/outlet pipe, PVC pipe, d		12.5/12.5
Power input P_1/output P_2[1)] (kW)	1~ 230 V	0.28/0.14
Rated current (A)	1~ 230 V	1.35

For detailed information regarding the motor protection please see page 104.

*) Threads according to DIN ISO 228, part 1. Seal with additional sealing ring. | Technical data may vary.

Article no	Type	Voltage	Power output P_2
219.2060.838	V 600	1~ 230 V	0.14 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact us.

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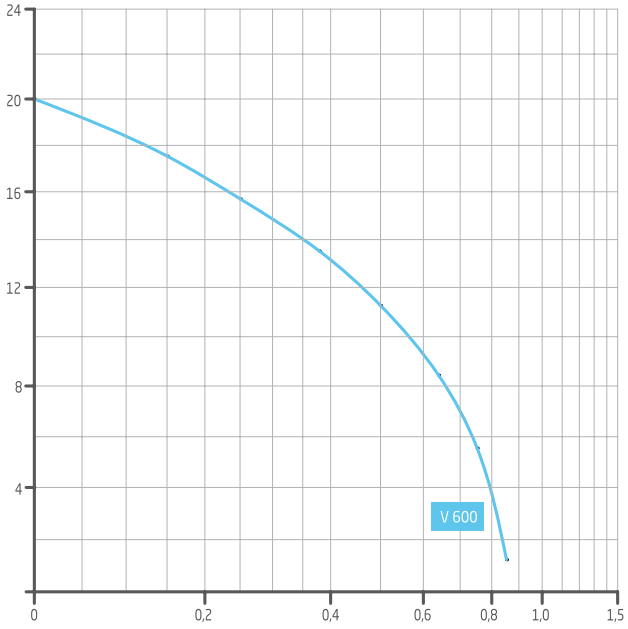
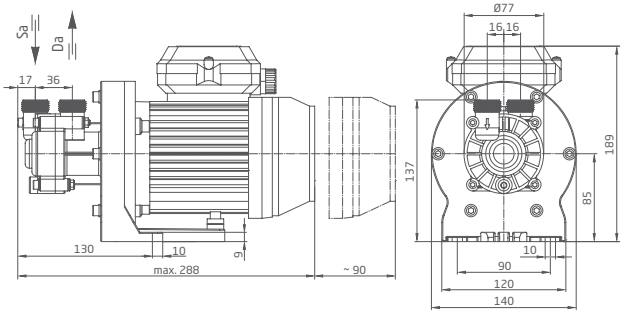
Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request.

MRA 6

Intelligently designed, independent and very flexible. With large collecting tank and reduced switching frequency.

Field of application

For trouble-free disposal of pure or slightly contaminated water where there is no shaft and also for returning sample water in public swimming pools.

Design

100 litre polyethylene container. Lid with integrated ventilation, including pump, float switch and non-return valve. Ready for connection with 3 m cable and plug.

> **Further designs on request.**

Technical data at 50 Hz	BADU	MRA 6
Container capacity		100 l
Motor output P_2[1)] (kW)	1~ 230 V	0.20
Connection intake/pressure side		on site/G 1½
Switch volume		adjustable, max. 80 l

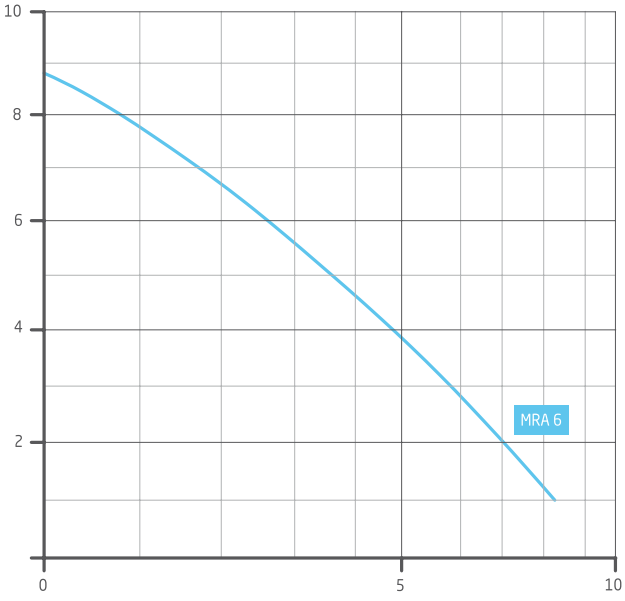
For detailed information regarding the motor protection please see page 104.

Technical data may vary.

Article no	Type	Voltage	Power output P_2
219.1076.338	MRA 6	1~ 230 V	0.20 kW

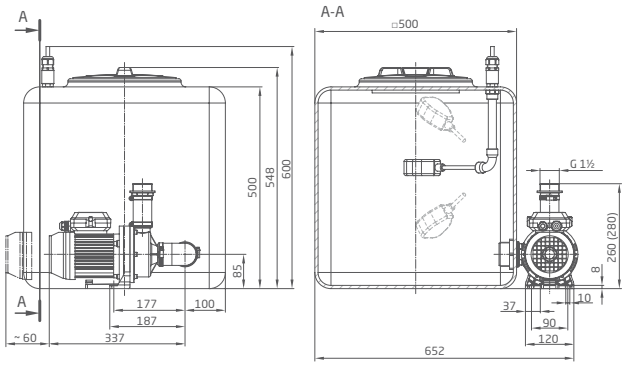
> More details regarding all designs, characteristics and dimensional drawings on request.

Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available.

IN-VB/IN-VC/IN-VB-S

Durable, low-noise, stainless steel hydraulics with a high performance range. Staged centrifugal booster pump for swimming pools.

Field of application

Staged centrifugal pump.
Booster pump for chlorine and ozone dosage.

> Booster units
> Water supply units

Design

Multistage, vertical, centrifugal pump suitable for pure, watery liquids. Equipped with ceramic, wear-resistant, liquid lubricated bearings. Shaft is sealed using a mechanical seal. The pump has the CE seal of approval and corresponds to the newest safety guidelines.

Drive

Specially developed three-phase motors. Motors with 3.00 kW and above are equipped with a PTC thermistor. Also available with a 230 V, 50 Hz, single-phase motor up to 2.20 kW.

Motor mounting position	IM V1/V18
Protection class	IP 55
Idle speed	2850 rpm
Frequency	50/60 Hz
Voltage	up to 2.20 kW: 230 V Δ/400 V Y
	+/- 10 %
Voltage from	3.00 kW: 400 V Δ/690 V Δ
	+/- 10 %
Class of insulation	F
Cooling air temperature	max. 40 °C

Technical data

Flow rate	Q up to max. 160 m³/h
Dynamic head	H up to max. 240 m
Water temperature	t -15 °C to +100 °C
Casing pressure (PN)	p max. 25 bar
Speed variables 50 Hz	n 2850 rpm
60 Hz	n 3420 rpm

Direction of rotation

Clockwise, viewed from the drive end.

Materials used IN-VB/IN-VC

Pump housing	stainless steel 1.4301
Sleeve	stainless steel 1.4301
Impellers	stainless steel 1.4301
Diffusers	stainless steel 1.4301
Stages	stainless steel 1.4301
Shaft	stainless steel 1.4057
Shaft protection sleeve	tungsten carbide
O-rings	EPDM
Shaft seal	mechanical seal
Support plate	cast iron JS 1030

Materials used IN-VB-S/IN-VC-S

Pump casing	stainless steel 1.4408
Sleeve	stainless steel 1.4404
Impellers	stainless steel 1.4404
Diffusers	stainless steel 1.4404
Stages	stainless steel 1.4404
Shaft	stainless steel 1.4460
Shaft protection sleeve	tungsten carbide
O-rings	Viton
Shaft seal	mechanical seal
Support plate	cast iron JS 1030

Performance features

1 Plug-in shaft system
Motor can be replaced without having to completely dismantle the pump or remove the mechanical seal.

2 Hydraulics
Highly efficient stainless steel hydraulics.

3 Connections
Wide variety of connection options.

> More details regarding all designs, characteristics and dimensional drawings on request.

^
IN-VB/IN-VC

Aquacell A/AE

Compact, low-noise operation and easy to assemble.
Fully automatic booster unit for swimming pool and drinking water.

Field of application
Pressure boosting for swimming pool and drinking water.

Design
Fully automatic booster unit, supplied wired ready for connection, with the pipes in place and on base frames with rubber buffers. Including fully automatic pump controls. AE series units also have a frequency converter.

Technical data
Flow rate ..... Q up to max. 160 m³/h
Dynamic head ..... H up to max. 250 m
Water temperature ..... t up to 70 °C
Max. unit pressure ..... p max. 25 bar

Materials used
Pump casing ..... stainless steel 1.4301
Impellers ..... stainless steel 1.4301
Diffusers ..... stainless steel 1.4301
Shaft ..... stainless steel 1.4305
Shaft seal ..... mechanical seal
O-ring ..... EPDM
Piping ..... stainless steel 1.4571
Fittings ..... copper alloy/stainless steel
Base frame ..... stainless steel 1.4301

Dry run protection
A dry run protection is included in delivery.

Plant piping
Completely in stainless steel for swimming pool water*).

***) Available optionally at an extra cost.**

> More details regarding all designs, characteristics and dimensional drawings on request.

Aquacell A

With a non-self-priming, centrifugal pump and constant speed drive.

Mode of operation

The unit is automatically switched on and off using a pressure switch situated on the discharge side. An 18 l diaphragm pressure vessel is installed as a control cylinder in the pressure line, up to PN 10. Above that 8 l, PN 16 or PN 25.

The unit is fitted with an electronic turn-off relay (follow-up) in order to minimise the switching frequency. The electronic turn-off can be manually set from 5 to 100 seconds and has been preset to 40 seconds, thus ensuring a low switching frequency.

The booster unit is equipped with dry run protection which turns the device off in case of insufficient water.

Aquacell AE

With a non-self-priming, centrifugal pump and speed regulation (frequency converter).

Mode of operation

The unit is automatically switched on and off using a pressure switch situated on the discharge side. An 18 l diaphragm pressure vessel is installed as a control cylinder in the pressure line, up to PN 10. Above that 8 l, PN 16 or PN 25.

The speed control is achieved using a frequency converter built onto the motor, display (from 5.50 kW) and keyboard.

Multicell SFE

Fail-safe, compact, low-noise operation and easy to assemble. Fully automatic booster unit for higher performance.

Field of application
Pressure boosting for swimming pools and drinking water.

Design
Fully automatic booster unit, supplied wired ready for connection, with the pipes in place and on base frames with rubber buffers. Including fully automatic pump controls.

Technical data
Flow rate ..... Q up to max. 960 m³/h
Dynamic head ..... H up to max. 250 m
Water temperature ..... t up to 50 °C
Max. unit pressure ..... p max. 25 bar

Materials used
Pump casing ..... stainless steel 1.4301
Impellers ..... stainless steel 1.4301
Diffusers ..... stainless steel 1.4301
Shaft ..... stainless steel 1.4305
Shaft seal ..... mechanical seal
O-ring ..... EPDM
Piping ..... stainless steel 1.4571
Fittings ..... copper alloy/stainless steel
Base frame ..... stainless steel 1.4301

Dry run protection
A dry run protection is included in delivery.

Plant piping
Completely in stainless steel for swimming pool water*).

***) Available optionally at an extra cost.**

> More details regarding all designs, characteristics and dimensional drawings on request.

Multicell SFE

With 2 to 6 non-self-priming, centrifugal pumps and speed regulation (frequency converter).

Mode of operation

The unit consists of two to six pumps whereby one is designated as the reserve pump. The automatic switching between pumps guarantees an even load on all pumps. The unit is switched on and off, depending on the pressure, using a pressure switch or transmitter. Each pump is speed controlled. Switching additional operational pumps on or off is achieved steplessly and with speed regulation, depending on water extraction and pressure loss.

The microprocessor controlled central unit determines the optimal number of pumps required.The relevant operating conditions are displayed on the control cabinet.

Three floating signals are included as standard. These can be forwarded to a central supervision centre. Should one of the operating pumps fail, a reserve pump is automatically switched on.

BADU® 21-80/33 G-AK OL

Reliable, powerful and light in weight.
Sewage water pump made of plastic and in AK version.

Field of application

In corrosive environments and especially for brine water.

Design

Close-coupled pump with open impeller and closed bellow-type mechanical seal, mounted on a plastic shaft. Motor/pump shaft has no contact with the pool water providing complete electrical separation. Drive-pump separation for longer operating life.
This means: The gland housing is not mounted directly to the A-side motor bearing, but is separated from the motor by an intermediate lantern and labyrinth disk. Thus, leaking medium and crystallizing minerals or salts cannot come into contact with the motor and its bearings.

Special sealing materials available on request.

Materials used

Pump housing ..... PPE GF 30
Wear ring ..... stainless steel
Gland housing ..... PPE GF 30
Impeller ..... PP GF 30
Impeller nut ..... PP GF 30
Mechanical seal ..... SiC/SiC/Viton
Motor shaft ..... stainless steel
Screws ..... stainless steel

Technical data at 50 Hz	BADU 21-80/	33 G-AK OL
Inlet Sa/outlet connection Da R[2)]		2¾/2¾[*)]
Rec. inlet/outlet pipe, PVC pipe, d		140/110
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 400/230 V	3.45/3.00
Rated current (A)	3~ Y/Δ 400/230 V	6.20/10.70

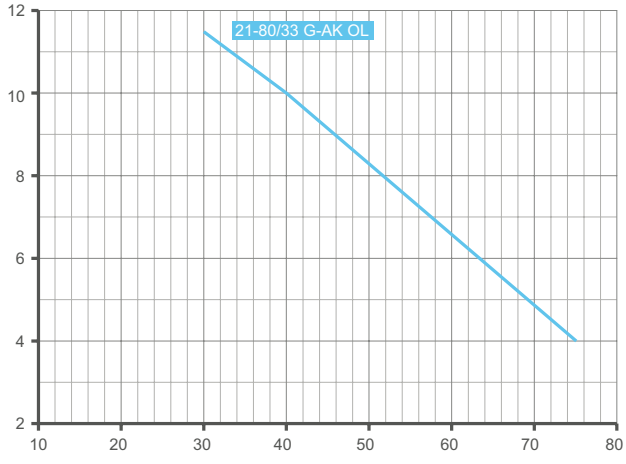
For detailed information regarding the motor protection please see page 104.

[*)]Pumps also available with Ø 82 mm hose connections. | Technical data may vary.

Article no	Type	Voltage	Power output P_2
238.0333.243	BADU 21-80/33 G-AK OL	3~ Y/Δ 400/230 V	3.00 kW
238.0333.247	Version with PTC for frequency converter operation		

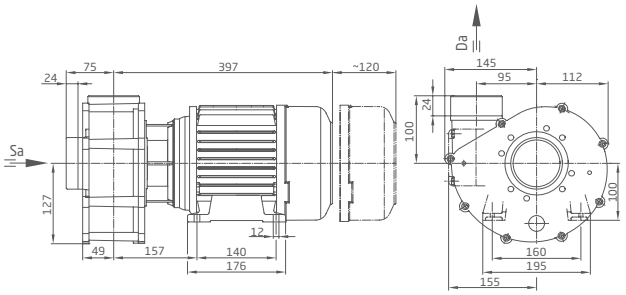
The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact us.

Performance



Total dynamic head H (m) / Flow rate Q (m³/h)

Dimensions



Detailed dimensions available on request or at badu.de

Top 71 - Top 300

Very flexible and tough. Powerful sewage water pump for media with a high proportion of solid material.

TOP 71 WS

TOP 300

Field of application

Drainage.

Design

The stainless steel submersible pumps from the Top 71 - Top 300 range are suitable for handling swimming pool water.
All wetted parts are made from stainless steel 1.4301.
The single-phase version is also available with integrated float switch.

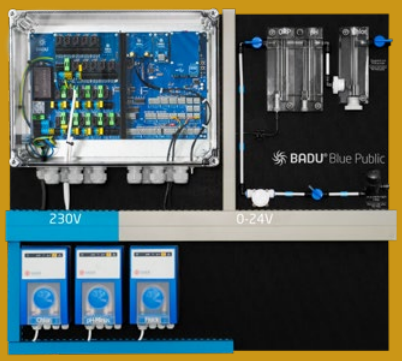
Technical data

Flow rate ..... Q up to max. 55 m³/h
Dynamic head ..... H up to max. 21,5 mwc
Water temperature ..... t up to max. 40 °C
Dimension of free passage through impeller .. max. 50 mm

Materials used

Pump/exterior casing ..... stainless steel 1.4301
Impeller ..... stainless steel 1.4301
Inlet grille ..... stainless steel 1.4301
Pump shaft ..... stainless steel 1.4305
Motor housing ..... stainless steel 1.4301
Shaft seal ..... mechanical seal in oil bath
O-rings ..... NBR
Shaft end in media ..... stainless steel 1.4305
Cable ..... 3 x 0.75 mm² H05RN-F (single-phase)
..... with shock-proof plug
Cable .. 4 x 1.00 mm² H07RN-F (three-phase) without plug

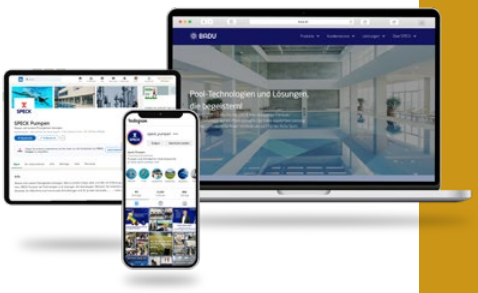
> More details regarding all designs, characteristics and dimensional drawings on request.



BADU Blue Public
Pool control

BADU Eco Drive II
Frequency converter

BADU VTLS
Dry run protection



To find out more about us on social media, please see page 112.

Suction safety system
Swimming pool safety

Suction safety system for BADU M3 Eco Soft
Swimming pool safety

BADU Block / Block Multi(-S) / Block Multi Mar / Block Binero
Transparent lid, plastic filter housing, suction strainer and opening device

OPERATIONS / ACCESSORIES

BADU® Blue Public

The smart and intuitive pool control for carefree swimming fun. With integrated measurement and control technology for hotel swimming pools.

Field of application

BADU Blue Public is a pool control system with seamless network integration. The system has been designed to adapt to the widest range of pool installations and technical equipment. It is suitable for whirlpools and hotel swimming pools up to a maximum size of 250 m³.*)

Mode of operation

The parameters that are recorded, evaluated and appropriately regulated can all be displayed and modified using a web app. Display is possible both via the local network and remotely, using all mobile end devices or a PC. The pool installation company can administer the control system via a backend as an additional option.

Scope of delivery

1x BADU Blue Public, mounted on a mounting board, wired
1x pH glass electrode
1x Redox glass electrode
1x Potentiostatic chlorine electrode
1x Adhesive set for injection points and sample water
1x Buffer solution set
2x PE hose, Ø 6 mm, white, 3 m
1x Teflon tape, 12 mm wide
1x Interference snubber, wired, 250V AC
3x Accessories/small parts for dosing groups
1x Installation instructions

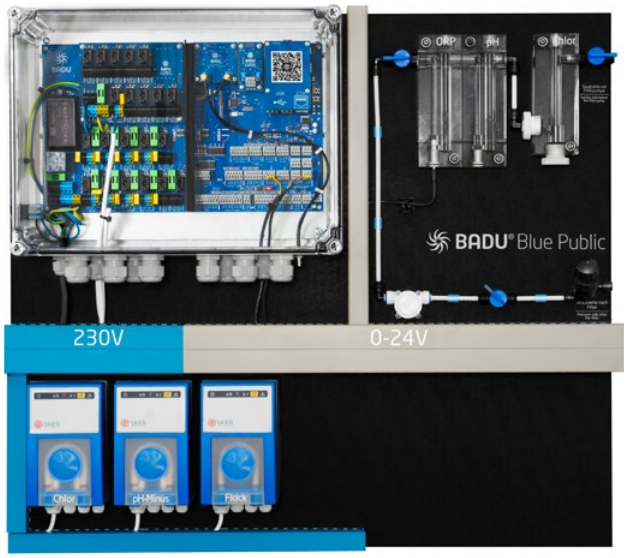
Features

- Redox measurement.
- pH measurement.
- Free chlorine measurement.
- Control of variable speed and unregulated filter pumps.
- Optional filter pressure and/or circulation monitoring.

Features

- Bigger dosing pumps designed for dispensing pH, chlorine and flocculants. The dispense capacity is adjustable via a potentiometer (up to a maximum of 9 l/h for the pH/chlorine dosing pump and up to a maximum of 2.4 l/h for the flocculant pump).
- Continuous flocculant dosing.
- Self-cleaning chlorine measurement cell.
- Control of heating, heat pump or heat exchanger.
- Suction control via floor drains (ECO), overflow channels or skimmers.
- Active winterising/frost protection.
- Solar panel forced flushing.
- Solar panel priority circuit.
- Backwash control via actuator or rod valve possible.
- Water level control for skimmer and overflow tank possible.
- Safety switch-off / monitoring of the water refilling.
- Connection of additional analogue sensors with display on the dashboard.
- PV surplus control.
- Temperature control with up to 12 sensors.
- Connection of 4 suction lances for water care products.
- Integration of the weather interface.
- Software updates through independent installation.
- Support interface.
- Optional, free remote access via cloud server.
- Configuration wizard.
- User notification by email, push notifications.
- Simple integration of the measured values into home automation systems (JSON API).
- Inline assistent for direct access to the operating instructions.
- Customisable user interface.
- Salt water electrolysis.
- Control of attractions.
- Control of pool cover.

*) For pool volumes > 250 m³ on demand.



Features of the BADU Blue Public

Control of water disinfection (Redox, free chlorine, salt water electrolysis)

Pool cover control

Control of pool attractions

Continuous flocculant dosage

Control of pH value (pH plus or pH minus; optionally both)

Backwash control

Alarm and notifications (by email or PUSH)

Control of water level via level control

Control of filter pump

Control of solar panel system

Pool lighting control

Integration of weather interface

Additional connection options for analogue sensors

Additional connection options for up to 12 temperature sensors

Eco mode

Control of heating, heat pump or heat exchanger

Technical data	BADU Blue Public
Operating voltage	1~ 230 V, 50/60 Hz
Fuse for circuit board/relay	1A delay/400mA relay/630 mA relay light
Max. permissable load current	250 V/4 A

For more detailed information regarding the device protection see page 104.

Technical data may vary.

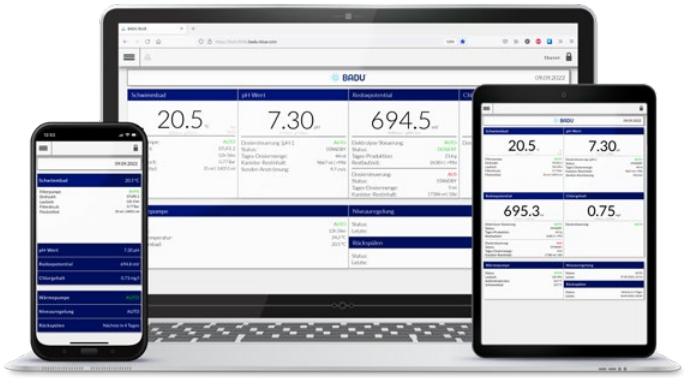
Article no	Type
271.6502.000	BADU Blue Public

BADU® Blue Public - Accessories

The smart and intuitive pool control for carefree swimming fun. With integrated measurement and control technology for hotel swimming pools.

Article no	Type
271.6500.513	1-Wire Sensor, 3 m
271.6500.514	1-Wire Sensor, 5 m
271.6500.515	1-Wire Sensor, 10 m
271.6500.517	Pressure transmitter
271.6500.518	Level sensor
271.6500.571	Additional terminal box 3~ 1.1 - 1.6 A BADU Blue
271.6500.572	Additional terminal box 3~ 1.4 - 2.0 A BADU Blue
271.6500.573	Additional terminal box 3~ 1.8 - 2.5 A BADU Blue
271.6500.574	Additional terminal box 3~ 2.2 - 3.2 A BADU Blue
271.6500.575	Additional terminal box 3~2.8 - 4.0 A BADU Blue
271.6500.576	Additional terminal box 3~ 3.5 - 5.0 A BADU Blue
271.6500.583	Additional terminal box 1~ 1.8 - 2.5 A BADU Blue
271.6500.584	Additional terminal box 1~ 2.2 - 3.2 A BADU Blue
271.6500.585	Additional terminal box 1~ 2.8 - 4.0 A BADU Blue
271.6500.586	Additional terminal box 1~ 3.5 - 5.0 A BADU Blue
271.6500.534	pH glass electrode
271.6500.535	Redox plastic electrode, gold
271.6500.536	Redox glass electrode, platinum
271.6500.537	Potentiostatic chlorine electrode
271.6500.554	Buffer solution set, BADU Blue
260.6100.041	BADU Omni actuator with R 41/3A
260.6100.051	BADU Omni actuator with R 51/3A
260.6402.119	PVC holder temp.+adhesive drill flange, BADU OmniTronic
271.6500.590	PE hose, ø 6 mm, 3 m
271.6500.591	PE hose, ø 6 mm, 5 m
271.6500.592	PE hose, ø 6 mm, 10 m
260.6402.161	Conductive sensor pins 7.5 m, BADU OmniTronic
260.6402.171	Conductive sensor pins 25 m, BADU OmniTronic
260.6402.185	Conductive sensor pins 40 m, BADU OmniTronic
271.6500.539	Snubber, wired, 250V AC
260.6402.157	Option: Battery pack+converter, OmniTronic
271.6070.003	Magnetic valve, separate, 230 V, Rp 1/2, IP 65
271.6090.005	Level switch, BNR 300, with 10 m cable
250.0014.050	Ball valve LH II 50, solar actuator 1~ 230 V
250.0014.063	Ball valve LH II 63, solar actuator 1~ 230 V
271.6500.532	Filter with screen, 6 mm tube
271.6500.708	Suction lance with level switch
271.6500.709	Hose, 4 x 1 mm, PVC, transparent
271.6500.713	Injection point SKD, BADU Blue Public
271.6500.715	Rotor for hose dosing pump, Concept
271.6500.716	Hose kit for hose dosing pump Concept 420i
271.6500.717	Hose kit for hose dosing pump, Concept 2112sm
271.6500.751	Hose dosing pump flocculant, BADU Blue Public
271.6500.752	Hose dosing pump pH/chlorine, BADU Blue Public
271.6500.516	Flow transmitter YF-S402B
271.6500.527	Cable for flow transmitter, 3 m, black

BADU Blue Public control system in responsive Design.
You can control your hotel pool from anywhere at any time.



Are you looking for a solution to stay on top of your hotel pool's energy management, water treatment and water care at all times? BADU Blue Public is easy to use via the web, mobile devices or the PC.
Just sit back, relax, and let our all-in-one pool control do the job while you can entertain your guests or focus on admin or management tasks. Remote pool automation and control from anywhere with the option of remote maintenance support from your installation/maintenance company. And with servers located in Germany, you can enjoy your pool with complete peace of mind.

BADU® Eco Drive II

It's all go. Compact frequency converter for optimal working conditions.

Field of application

Due to the pump capacity the BADU Eco Drive II frequency converter is ideally suited for use with the BADU Prime 25 to BADU Prime 48, BADU Resort and BADU Resort-PM as well as with the Normblock, Normblock Multi, BADU Block and BADU Block Multi.

Mode of operation

There are various operating conditions in swimming pool water treatment, for example filtering, swimming pool water circulation, backwashing and rinsing. Depending on pipe friction loss and filter speed, different operating points have to be set. This can be conveniently ensured by controlling the pump's operating points via a frequency converter. Therefore the pump's motor speed is electronically adjusted as necessary.

Performance characteristics

- Unnecessary energy loss, e.g. through a shut-off valve, is avoided.
- Energy saving potential through adjustable flow rate, e.g. in public pools with low pool usage or outside pool operating hours.
- Pump is always run at its optimal and most economic operating point.

Control

The frequency converter offers a wide range of control options: direct control via buttons, digital inputs to approach fixed speeds or external control via the 0-10 V or 4-20 mA interface. It can therefore be integrated into building control systems. Relay output functions e.g. indicating operational readiness or motor overload, relay input functions e.g. "start" or "stop", PTC thermistor sensor evaluation and time functions round up its range of applications. Please check special on site requirements on the next page.

Technical data at 50 Hz	BADU Eco Drive II for	0.75 kW	1.50 kW	2.20 kW	4.00 kW	5.50 kW
Frequency		50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz
Voltage		3~ 380-480 V	3~ 380-480 V	3~ 380-480 V	3~ 380-480 V	3~ 380-480 V
Analog input		0-10 V/4-20 mA	0-10 V/4-20 mA	0-10 V/4-20 mA	0-10 V/4-20 mA	0-10 V/4-20 mA
Cooling		ventilation	ventilation	ventilation	ventilation	ventilation
Max. ambient temperature		50 °C	50 °C	50 °C	50 °C	50 °C

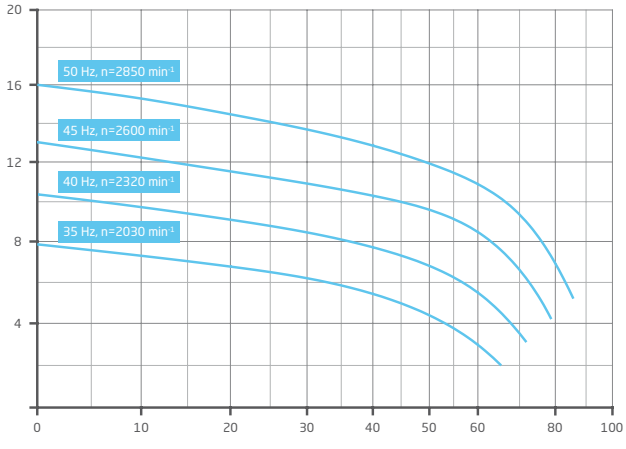
For detailed information regarding the motor protection please see page 104.

Article no	Type	Voltage
297.0075.412	Frequency converter BADU Eco Drive II for 0.75 kW	3~ 380-480 V
297.0150.412	Frequency converter BADU Eco Drive II for 1.50 kW	3~ 380-480 V
297.0220.412	Frequency converter BADU Eco Drive II for 2.20 kW	3~ 380-480 V
297.0400.412	Frequency converter BADU Eco Drive II for 4.00 kW	3~ 380-480 V
297.0550.412	Frequency converter BADU Eco Drive II for 5.50 kW	3~ 380-480 V
297.0000.001	Programming flat rate BADU Eco Drive II	3~ 380-480 V

Frequency converter BADU Eco Drive II up to 55.00 kW and special editions on request.

Graphic display >

Characteristics calculated for the BADU Resort 70 at different frequencies.



Total dynamic head H (m) / Flow rate Q (m³/h) >

- Protected cable between motor and frequency converter.
- We recommend providing a PTC thermistor sensor for the motor winding.
- We recommend not running the motor below 30 Hz.
- Residual current circuit breaker type B.

BADU® VTLS

Fully automatic dry run protection - automated venting.

Field of application

For attaching to the series

- BADU Block Multi
- BADU Block
- Normblock Multi
- Normblock

where the vent line has been led out to vent the mechanical seal.

Design

- Electronic control with modern terminal connection technology.
- Automatic venting via electric ball bearing.

Performance features

- Manual venting is no longer necessary.
- Fully automatic monitoring via the pump control because the unit is connected directly. This means that the venting process runs automatically during start-up, after the suction strainer has been cleaned or according to a set requirement for precautionary venting.
- The control is carried out via conductive sensors and a control switch box.

Control functions

- Dry run protection and venting. Short venting intervals can also be programmed for example once a day or once a week.
- Manual quick venting is possible.
- potential-free contact for connection to the frequency converter.

Article no	Type	Voltage
271.6607.004	BADU VTLS	1~ 230 V

For detailed information regarding the motor protection please see page 104.

Switch box for connection to pump control

Vent line

Motor ball valve

Quick vent

Conductive probe control

BADU Block Multi with VTLS

BADU® Suction safety system

Safety with automatic shut-down technology. For reliable protection in swimming pools.

Sensors >

Field of application

The BADU Suction safety system can be integrated into all existing systems.

Mode of operation

The BADU Suction safety system eliminates the hidden risk posed by suction points to users in public facilities, e.g. hotel pools, wellness spas or in private pools. The fitting of redundant sensors further increases the reliability of the system. The potential risk at suction points was known even before the publication of the bulletin 60.03 “Avoidance of risks at suction, drain and intake points in swimming pools” issued by the German Swimming Pool Association [Deutschen Gesellschaft für das Badewesen e. V.]. In extreme cases pool users can be sucked in and trapped by their swimwear, hair or limbs, which can lead to serious physical injury or even death by drowning.

The BADU Suction safety sytem reliably eliminates this hazard. As specified in bulletin 60.03, it demonstrates “safe characteristics” instead of indirectly creating other safety gaps.

Performance characteristics

- Redundant sensors.
- Prevention of accidental restart.

In this case the BADU Suction safety system control box immediately switches the pump off and a signal is displayed. The trapped person is released without delay.
In order to ensure maximum functional reliability the sensors are made from materials suitable for use in swimming pool water. They are also protected from overload as a result of over pressure and under pressure.

Article no	Type	Connections	Voltage
230.0000.801	BADU Suction safety system for emergency-off system	d 63**)	1~ 230 V
230.0000.803	BADU Suction safety system up to 4.00 kW with low voltage coil	d 63**)	1~ 230 V

1) Control box not included in delivery. Further information on request.
For detailed information regarding the motor protection please see page 104.

**) Glue socket; other sizes to be provided on site.

BADU® Suction safety system for BADU M3 Eco Soft

Safety with automatic shut-down technology. For reliable protection in swimming pools.

Sensors >

Field of application

The suction safety system for BADU M3 Eco Soft is designed to protect against the hidden risks of suction entrapment in private and public pools at the water sampling point.

Mode of operation

The suction safety system for BADU M3 Eco Soft offers maximum safety. Integrated into the water sampling line of swimming and bathing pools, it reliably protects bathers in private and public pools from the hidden safety hazards caused by suction at the suction point.
If the suction opening at the intake point gets blocked, the running pump creates a vacuum recognised by the suction safety system and the metering pump is switched off automatically.
To further increase the reliability of the system and minimise potential risks, two redundant sensors are installed in case one sensor fails. In public bathing facilities such as hotel pools and wellness areas, this technology is essential for operational safety and early hazard detection.
The suction safety system for BADU M3 Eco Soft is a proactive measure that prevents damage and ensures a safe bathing environment.

Performance characteristics

- Redundant sensors.
- Direct pump shut-down via a digital signal (potential-free).
- Prevention of accidental restart.
- Various reducers included in the scope of delivery.

When a blockage is detected, the switch box of the suction safety system immediately switches off the BADU M3 Eco soft pump potential-free via a digital signal. The entrapped person is released straight away.
For maximum functional safety, the sensors are made from materials resistant to pool water and protected against underpressure to prevent overload.

Article no	Type	Connections	Voltage
230.0000.804	BADU Suction safety system for BADU M 3 Eco Soft[1)]	d 20[**)]	1~ 230 V

[1)] Control box not included in delivery. Further information on request.
For detailed information regarding the motor protection please see page 104.

[**)] Glue socket; other sizes to be provided on site.

BADU® Block/Block Multi(-S)/ Block Multi Mar/Block Binero

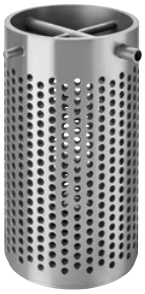
Even more flexibility for the BADU Block/BADU Block Multi/BADU Block Multi Mar. Transparent lid, plastic filter housing and strainer basket.

1

2

3

4



5

6

1 Transparent lid

- Amount of debris and turbulence is visible without removing the lid.
- Easy to maintain and control.
- Can be used for high brine concentrations.
- Available for: BADU Block 80/.. to BADU Block 150/...

2 Plastic filter housing

- Corrosion-resistant and low-wear.
- Additional internal coating no longer necessary.
- Can be used for high brine concentrations.
- Available for: BADU Block 32/.. to BADU Block 65/.. up to maximum 11.00 kW. Generally installed in: BADU Block Multi 65/250.
- Strainer basket made from stainless steel 1.4571.

3 Plastic filter housing

- Corrosion-resistant and low-wear.
- Additional internal coating no longer necessary.
- Can be used for high brine concentrations.
- Available for: BADU Block 80/.. to BADU Block 125/... up to maximum 11.00 kW. Generally used in: BADU Block Multi 100/250, BADU Block Multi 125/250, BADU Block Multi 80/200 and BADU Block Binero.
- Strainer basket made from stainless steel 1.4571.

4 Strainer basket BADU Block/BADU Block Multi

- Low wear.
- Retaining plate and handle welded into the basket.
- Robust welding seams.
- Curved edges for more stability.
- Made from stainless steel 1.4571.

5 Strainer basket BADU Block Multi Mar

- Low wear.
- With handle.
- Robust design.
- Made from PVC.

6 Opening device for T-handle BADU Block/ BADU Block Multi/BADU Block Multi Mar

- Adapter for electric screwdriver.
- To screw and unscrew the T-handle.

BADU® for you

Quality is the reason customers buy BADU products.
Service is the reason customers are always happy.
We are motivated to always give more than you expect.
That's why we're always there for you with help and solutions,
from planning to implementation. And of course with our
after sales service including customer and repair services:
personally, in store and online.

SERVICE

Motor/device protection classifications

This overview shows the safety classifications of all motors that are used in BADU pumps.

BADU Prime, BADU Resort, BADU 42

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2840
Max. water temperature (°C)	40 (60)[3)]
Max. casing pressure (bar)	2.5

BADU Resort-PM, BADU Delta-MK Eco VS, BADU M 3 Eco Soft

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	variable
Max. water temperature (°C)	40 (60)[3)]
Max. casing pressure (bar)	2.5

BADU 21-50, BADU 21-60, BADU 21-80, BADU 21-80/33 G-AK OL

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2850
Max. water temperature (°C)	60[3)]
Max. casing pressure (bar)	2.5

M1 / M2

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2840
Max. water temperature (°C)	60[3)]
Max. casing pressure (bar)	2.5

V 600

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2840
Max. water temperature (°C)	40 (60)[3)]
Continuous sound pressure level dB (A)	63.3[*)]
Max. casing pressure (bar)	4.0

[*)] Measured with a phonometer according to DIN 45635.

MRA 6

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2840
Max. water temperature (°C)	60[3)]

BADU Suction safety system, BADU VTLS

Device protection class	IP X4

BADU Eco Drive II

Device protection class	IP 55

Maximum permitted ambient temperature 40 °C.

Footnotes/abbreviations

On this page you will find all notes and explanations.

1) Single phase motors

1~ 230 V single phase motors are fitted with a built-in overload switch or winding protection as a series feature. Further information can be found in the pump data sheet.
Three-phase motors are not fitted with a motor protection device.

Special voltage, special frequency, 2-speed or direct current motors on request.

Suitable for standard voltage according to DIN IEC 60038
and DIN EN 60034 (euro voltage),
i.e. suitable for continuous operation at:
1~ 220-240 V.
3~ Y/Δ 380-420 V/220-240 V.
3~ Y/Δ 660-725 V/380-420 V.
Tolerances ± 5 %.
GS approved pumps according to EN 60335-1.

2) Thread

according to DIN EN 10226-1 and ISO 7-1.
Description for pipe thread sealing inside the thread.
Internal pipe thread: e.g. Rp 1½,
External pipe thread: e.g. R 1½.
(Sealed with teflon tape only.)

according to DIN ISO 228-1.
Description for pipe thread sealing on the end.
Internal pipe thread: e.g. G 2,
External pipe thread: e.g. G 2.
(Sealed with additional sealing ring.)

3) Clarification of water temperature 40 °C (60 °C)

40 °C:	The maximum water temperature allowed according to GS approval.
(60 °C):	The pump is suitable/configured for a maximum water temperature of 60 °C.

4) A water analysis is necessary prior to the selection of materials used.

Materials used

ABS	Acrylonitrile butadiene styrene copolymer
CrNi	Chrome nickel steel (stainless steel)
EPDM	Ethylene-propylene-diene rubber
FKM	Fluoroelastomer (Viton)
G-Cu Sn 10	Cast bronze
GG-20	Cast iron
HNBR	Hydrogenated acrylonitrile butadiene rubber
NBR	Acrylonitrile butadiene rubber (Perbunan)
PA	Polyamide
PA 66 GF 30	Polyamide, glass fibre reinforced
PC	Polycarbonate
PEEK	Polyether ether ketone
POM GF 30	Polyoxymethylene, glass fibre reinforced
PP	Polypropylene
PP GF 30	Polypropylene, glass fibre reinforced
PP TV 40/PP TV 20	Polypropylene, talc reinforced
PPE GF 30	Polyphenylene Ether, glass fibre reinforced
PPS GF 40	Polyphenylene sulfide, glass fibre reinforced
PVC	Polyvinyl chloride
SAN	Styrene-acrylonitrile copolymer
SiC	Silicon carbide
THP	Technically high-performance plastic

1 bar = 100,000 Pa
1 bar = 10.2 mwc

Characteristics measured according to EN ISO 9906;
Flow rate Q = ± 10 %, total dynamic head H = ± 8 %.

Self-priming pumps are tested according to DIN EN 16713-2. Pumps classified as self-priming have a suction height of approx. 3 m geodetic. Pumps must be filled with water when priming.

Pump Energy Check

The way to slash the operating costs.

At SPECK Pumpen, it's all about making things easier for you. That's why we offer all public pool operators a free pump energy check that does away with any mystery and brings transparency to your operating costs. We'll identify measures to reduce your energy consumption and provide you with precise data about how much energy you can save.

How much does it cost to run a public swimming pool? There's no one-size-fits-all answer to that, as each pool operation is unique – pools come in all shapes, sizes, and surface areas, and have different equipment and energy consumption. So, the operating costs will be different, too.

However, are operators aware of the level of their operating costs and can they accurately identify the major energy guzzlers? That's not very likely.
The pressing challenges and key questions for public pool operators are: What can be done about the high energy consumption and where is the greatest potential for energy savings?

SPECK offers a pump energy check for this purpose. We support all public pool operators in reducing their running costs and saving money. If you're interested, we'll carry out a pump energy check in your pool by means of an „as-is"-analysis - we'll audit and document the actual energy costs of the installed pumps. Then, based on these findings, we can forecast the savings potential. In this way, we ensure transparency regarding the potential energy savings that can be achieved by replacing conventional pumps with energy-efficient alternatives. This also helps to identify the actual duty points at which the pumps operate. By adjusting theses duty points where necessary, pump damage and subsequent pump failure can be avoided.
This knowledge and data allows operators to enter into discussions with the relevant stakeholders (authorities, mayor, local council, government bodies) about the technological renovation/modernisation of the existing pool facilites. For example, at the outdoor pool Osterhofen, the existing pumps where replaced by modern, energy-efficient pumps from SPECK that were equipped with frequency converters.

In a preliminary step, SPECK provided both the manager of the outdoor pool Osterhofen and Wilhelm Dosiertechnik, the company commissioned and entrusted with the project, with a pump energy check. This check precisely quantified the energy savings, showing they would amount to around 18,000 € per year. A solid, compelling argument for replacing the pumps that the operations manager and the specialist company could use when discussing the project with the decision-makers in the local authorities!

Public authorities are offering subsidies for energy-efficient upgrades to public baths.*)
This helps reduce their energy bills and carbon emissions. These grants for energy saving measures reduce costs and shorten amortisation, and they are a great stride to reduce carbon emissions in the public sector. They are paving the way for a more sustainable environment, decarbonising the public sector, and reducing energy bills. It's a win-win situation for all parties involved.

Contact us now for conducting a pump energy check. Please write to **info@speck-pumps.com** or call **+49 9123 949-400**.

We look forward to hearing from you.

*) Local conditions apply. For subsidies available for the energy-efficient refurbishment of public swimming pools, please check with your local authorites.

Energy Audit in 4 Steps:

1	2	3	4
As-Is Analysis existing energy usage of the facility	Detailed calculation of actual electricity consumption	To-Be Analysis with expected energy savings	Implementation

Case Study - Energy Makeover of the Public Pool Vilsbiburg, Germany:

Utilising the Vilsbiburg municipal swimming pool as a case study, our experts will demonstrate the practical implementation of an energy-efficient refurbishment project of the pool technology, and quantify the potential for tangible savings. They will show the precise process steps that had to be completed to comply with the funding programme of the National Climate Protection Initiative of the Federal Ministry of Economics and Climate Protection (BMWK). These steps include conducting of an as-is analysis of the existing pumps in the facility and a detailed calculation of their actual energy consumption, exploring energy-efficient options for a technological makeover, estimating the expected savings on electricity, and implementing the project. The funding bases, including the funding application form, will also be covered.

To access a recording of our live session on energy-savings options and advances in resource efficiency for public swimming pools, please click here:

Expand your Technical Expertise with SPECK's Training Programme

SPECK's specialist instructors are here for you. They'll be sharing their technical knowledge and practical expertise in specialised training courses.
The training programme is tailored to meet the current needs of our customers. It includes both basic training and application-specific training which offer comprehensive insights into the world of pumps, systems and service. Benefit from SPECK's extensive wealth of experience!

Table of content

Locations

Sales regions Germany

Sales region
South/East

Hauptstraße 3
91233 Neunkirchen am Sand
Phone +49 9123 949235
Fax +49 9123 949245
neunkirchen@speck-pumps.com
speck-pumps.com

Sales region
South

Lindberghstraße 7
82178 Puchheim
Phone +49 89 800709930
Fax +49 89 80070993609
muenchen@speck-pumps.com
speck-pumps.com

Sales region
South/West

Phone +49 711 341901112
Fax +49 711 341901118
stuttgart@speck-pumps.com
speck-pumps.com

Sales region
Central

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Our company is headquartered in Neunkirchen am Sand, Germany, from where we export our technologies and solutions around the world. For a comprehensive list of all our global locations, please visit our BADU website.

Dealer-search – Online

BADU products and accessories can only be purchased from qualified specialist retailers. Visit the BADU website to find trusted local trade partners in your area:

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We're happy to help!

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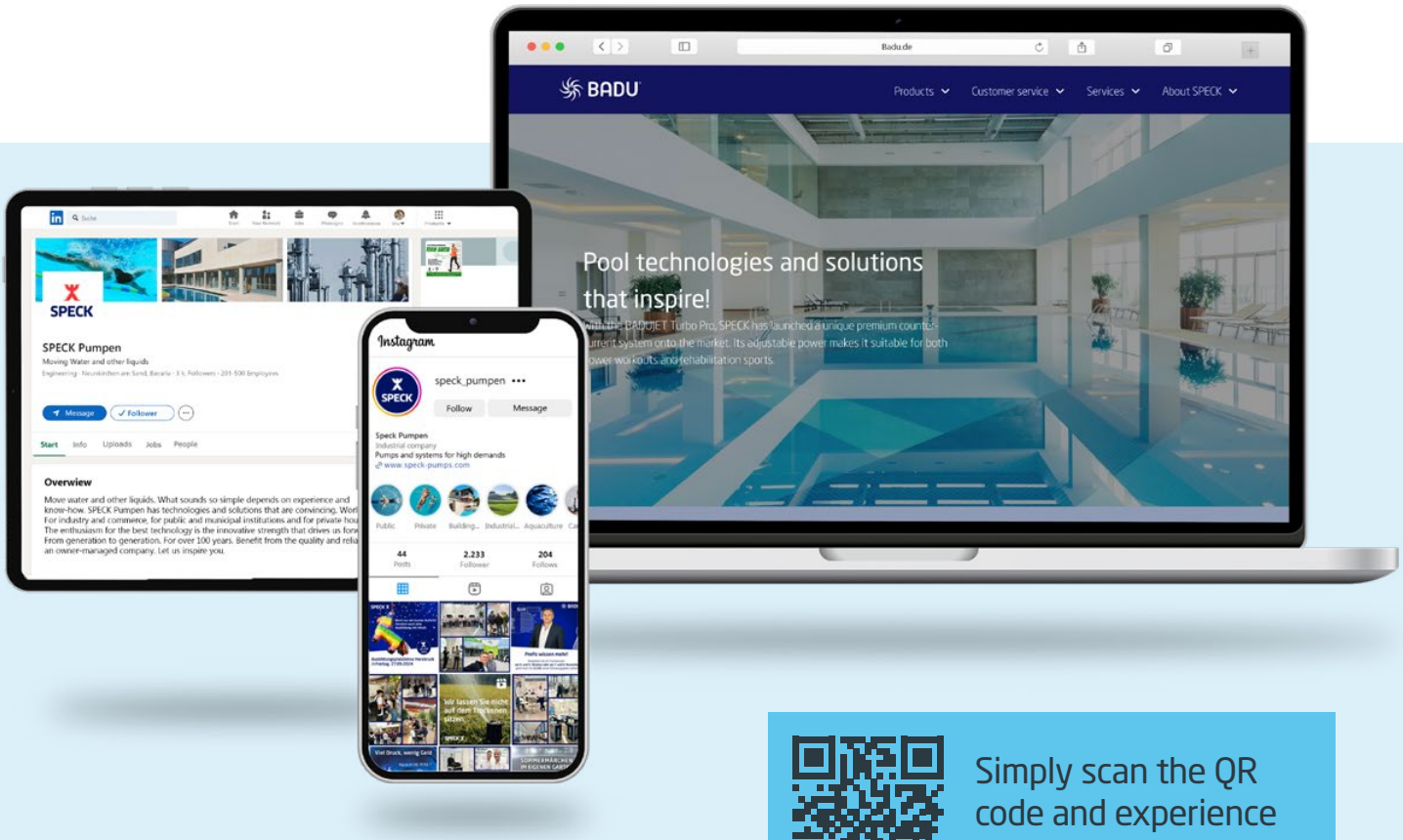

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