

User Manual



AFC400

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GmbH

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Preface

Thank you for choosing an Abyzz pump. With this powerful product, you have purchased a highly efficient and fully adjustable pump that is designed and manufactured to the highest standards of quality and performance in Germany. This manual is intended to help you start up the product and make the necessary settings.

In order to enjoy the product for a long time, please read this manual carefully and adhere to our recommendations.

If the quality of your product does not meet your expectations, please contact the dealer from whom you have purchased this product or do not hesitate to contact us directly. We recommend that you register your product with the enclosed form, so that we can offer you the best service. Please make sure that you keep the serial number seals attached to the products harmless and notify us of these numbers if necessary.

Info



Particularly important information is highlighted with this symbol.

Scope of delivery

All models come with a set of registration documents for warranty and service purposes.

- 1 Abyzz AFC400 pump with 10m cable
- 1 Abyzz AFC400 driver
- 1 Abyzz connection cable (for Abyzz peripherals)
- 1 Abyzz power cable
- 1 User manual

Functional description

The heart of the Abyzz pumps is a sinusoidal three-phase synchronous motor. The efficiency of the engine is over 90%, making it one of the most efficient engines. The integrated bearing flushing system provides optimum protection against calcification and ensures low-maintenance operation.

The processed materials are designed for long life and meet the highest requirements and quality standards. The products were developed and manufactured in Germany. This is our understanding of:

"Made in Germany"

The electronic control unit offers optimum operating characteristics. These include in particular:

- Adjustable speed range (0 ... 100%)
- Programmable control
- Dry-running warning
- Smooth start
- Busable interface *
- Lockable plug-in contacts
- Temperature protection
- Overcurrent protection
- Current limitation
- Low noise operation
- Long life span
- Minimum dissipation (especially low release of heat loss to the water).

Abyzz peripherals and connections

The Abyzz connection cable necessary for the connection of peripheral devices is already part of the delivery of the pump. If you have no other peripheral devices in use, please protect the two connections with the enclosed protective caps from corrosion and dust.

Abyzz Control System (ACS):

With the ACS you have the possibility to control several (currently up to 8) Abyzz pumps. You can program different profiles, which generate waves, tides or random flow patterns, for example.

Furthermore, the ACS offers you the possibility to carry out a central operation and monitoring of all connected bus-capable Abyzz products. For example, operating data, alarms, temperatures etc. are displayed centrally on the ACS.

There are two D-Sub connectors on the bottom of the Abyzz drivers. The connection labeled "Master" is always connected in the direction of the ACS, the connection "Slave" always in the direction of the next Abyzz pump.

Abyzz Interface (AInt):

With the Abyzz interface, we offer you the possibility to integrate your Abyzz pumps into a control system (PLC, aquarium computer, etc.) already available.

These must only have a 0 ... 10V output. After connection of the Abyzz interface, the internal programming of the driver is disabled and the speed of the pump is regulated via the set DC voltage. The monitoring and protection functions of the pump as well as the display of the operating data remain active, the function of the keyboard on the driver is deactivated.

For certain devices ready-made adapters are available, please contact us if you are interested.



Warnings

- Always disconnect the mains plug before working on the pump!
- Attention High voltage: An opening of the electronics (Abyzz driver) is forbidden and only to be performed by the manufacturer!
- Never disconnect the motor cable from the driver during operation!
- Only connect parts that are clearly associated with each other!
- Keep the leads, plugs and drivers dry and protect the components from damage.
- Never work with wet hands on the cabling or on the driver.
- Operate the product only if there are no persons in the water or persons have contact with the water.
- Check the product for damage and never use a visibly damaged product.
- Only connect Abyzz devices to suitable sockets with protective contact according to the relevant standards which are protected by a residual current circuit breaker (FI).

Application and general instructions

The product is suitable for moving liquids (seawater, fresh water, brackish water, chlorine water and other liquids which are not aggressive to the components of the pump) with a temperature of + 2 ° C to + 35° C. A list of the parts that come into contact with the medium to be conveyed can be found in the appendix, for non or the like. Please ensure the compatibility with the specified components before use.

The product can promote both clear and polluted water up to a particle size of 5mm. For use in the dirty water, regular cleaning and the use of a pre-filter are required to protect the pump. In this case, the internal flushing channel must be cleaned. Abrasive components increase wear - damage is not covered by the warranty.

The pump must always be installed below the water level.

Please observe the generally applicable national and international regulations during installation.

The maximum working pressure must not exceed 1.2 bar.

Before storage, the product must be thoroughly cleaned with fresh water and suitable cleaning agents (e.g., vinegar), otherwise residue may settle in the pump.

When using, please ensure that the suction channel is adequately protected, otherwise animals or objects enter the pump, thus avoiding damage.

Installation of driver

Mounting:

The product must not be mounted outdoors. The wall provided for mounting must be dry and protected from splashing water and moisture. A suitable outlet should be located at the appropriate distance. A minimum distance of 30cm is required from ceilings.

Wiring:

When routing cables, care must be taken that no dripping water can enter the electronics via the cables.

Please note that you should not switch on several drivers at the same time due to the driver's inrush current. Do not use multiple sockets and do not exceed the permissible power supply of your cable.

Ambient temperature and cooling:

The product can be used at ambient temperatures of 2 ° C to + 35° C.



To ensure sufficient cooling, the driver should have a minimum distance of 30cm from objects (walls, ceilings, cable ducts, pipes, etc.) to the top of the housing. The heat sink must not be covered. It is advisable not to expose the driver to any additional heat source (heating, lighting, sunlight) and ensure sufficient ventilation during operation inside cabinets, narrow rooms or shelves.

Electrical connection:

The Abyzz driver requires a voltage of 230V / 50 ... 60Hz or 100-120V / 50 ... 60Hz (US variant).

The connection has to be carried out on a suitable, properly installed, protective contact socket, which is fused via a circuit breaker according to DIN VDE 0100T739 (residual current circuit breaker). We recommend not connecting more than 4 controllers to one supply line (16A fuse).

If a fuse is defective, replace it with fuses of the same type.

400 W models 250V 8A T

The product has two separate fuses and a main switch, which are accommodated in the connector element. To remove the fuses, the power plug of the Abyzz power cable must be removed. The cold plug is equipped with a locking mechanism to prevent it from falling out. Press the red lock button (P2) on the power connector and pull out the connector. You can then remove the fuse drawer (P1) and replace the fuses.

Installation of pump

The Abyzz pump can only be operated up to a depth of 0.5-8 meters. The mounting can be carried out via the optionally available accessories, please contact our sales department (info@abyzz.de). Installation must be carried out by qualified personnel.

Quick start

After proper installation, the Abyzz pump can be put into operation. Connect the motor cable to the driver. The plug is coded and can only be connected in one position. The plug used meets the highest requirements for tightness and safety. Screw the plug to ensure these characteristics. Connect the Abyzz power cable to the driver and plug the power plug into a suitable grounding box and turn on the main switch.

The LED is flashing. You can start and stop the pump in any mode by pressing the Start / Stop button.

If the pump suddenly becomes dry with more than 40% of its capacity, the dry-running warning is activated. This switches off the pump and signals an error ("DRYRUN!" And acoustic signal). After a few seconds, the pump starts running again and resumes its operation.

Run in phase

Despite very high precision, minimum production tolerances can not be avoided during production of the bearings. This condition can cause noise during the pump's start-up phase. However, this is normal and does not represent a long-term problem. During the equipment test after production, all pumps are tested for their performance, concentricity and noise. The running-in phase can take several days depending on the operating mode. In Figure P3, the difference between a brand-new bearing (left) and a bearing after the running-in phase (right) can be clearly seen. After the run-in phase, these operating noises will almost disappear.

Description of control elements

Display:

The display informs you about the operating state of the pump. The display goes into a quiet mode after 3 minutes to allow maximum service life and lowest power consumption. Pressing a key again turns the display back on. The overview changes as follows every 2 seconds and displays the following operating data:

Performance in%

Operating mode (Perm, Random, Random 2, Wave)

Internal driver temperature

warnings

The display of the first line changes from "Stopped" to "Running" when you increase the speed and switch on the pump. When an ACS is used, the current address of the driver is displayed in the overview.

LED:

The LED indicates a correct function via a flashing signal and allows visual monitoring even when the display is switched off (automatically).

Keyboard:

The keypad allows direct control and programming of the pump in the menu.

Usage

In the "Permanent" operating mode, you can start or stop the motor with the "Start / Stop" key and change the speed using the "Up" and "Down" keys. If you wish to permanently store the new speed, press the "M" key and the last value is retained. The "Start / Stop" setting is automatically stored so that the pump automatically returns to the original operating mode after a loss of the operating voltage or after actuation of the main switch.

If you want to enter the menu to display operating data or to program the pump, press the "M" key. An overview of the menu can be found in the appendix under P4.

You enter the menu and the current operating mode is displayed. Press the "up" and "down" buttons to navigate the menu. The current software status, the operating hours and the operating mode are displayed consecutively. Furthermore, the driver address can be displayed and deleted.

The contrast of the display can be set in the corresponding overview by holding down the "Start / Stop" key and pressing the "Up" or "Down" keys.

If you wish to change the operating mode, press the "Start / Stop" key when the operating mode is displayed. You can now set the operating mode with the "up" and "down" buttons. The different operating modes are:

- Permanent: The pump runs permanently at a fixed speed.
- Wave: The pump switches between two fixed speed settings in adjustable times.
- Random: The pump will change the speed within an adjustable minimum and maximum value in an adjustable time
- Random 2: Same as Random, but the time between bills is randomly selected.
- BOOST MODE: When the BOOST mode is activated, the pump generates a separate interval, regardless of the programmed operating state, e.g. to stir up detritus.

When you have selected the operating mode, press "Start / Stop". You are then asked to enter the corresponding data (minimum and maximum power, time interval). Confirm each setting with "Start / Stop". Finally, the settings are saved automatically and you return to the overview.

Service



Danger, strong magnetic field!

- Danger to life for people with heart pacemakers!
- Do not place runners near cardiac pacemakers, credit cards, data carriers or similar objects sensitive to magnetic fields!
- Danger of injury by clamping!
- Do not place any metal parts near the rotor!

Abyzz pumps are almost maintenance-free when used properly.

Should the flow rate deteriorate, dirt particles may have caught in the impeller, which must be removed. Light vibrations can also be an indication of impurities in the impeller. If a complete cleaning is necessary, remove the rotating screws (P5, P6) and remove the front part of the pump. Please note that when reassembling, new self-locking nuts must be used.

The protective grille can then be pulled backwards and the motor can be cleaned (P10). If it is necessary to remove the impeller, unscrew the retaining screw (P8) with a suitable hexagon socket wrench and pull the impeller from the shaft. This screw is made of titanium and must not be replaced by another screw! The rear bearing can be inspected by opening the rear bearing seat (P7).

O-rings and rubber parts are subject to unavoidable aging and should be exchanged if necessary. These parts can be referred to as spare parts under the name of the part number. The pump should be decalcified at regular intervals in plants which are continually and intensively calcined (for example, steinkor coral basins).

Tip:

We recommend the Abyzz Pump Cleaner for cleaning, so you have the certainty not to damage your pump.

Warranty

In accordance with the implied warranty, we provide a 12-month guarantee. You can also extend the product guarantee period from 12 months to 10 years „Lifetime guarantee“ free of charge within 4 weeks of purchasing the product (date of invoice) after registering your product successfully. The guarantee is only valid in the country of purchase - shipping costs may only be refunded within the country of purchase.

If you have a complaint, please contact us immediately under service@abyzz.de and if needed, send the device back - in its original packaging wherever possible and with proof of purchase - directly to the point of purchase or, if you contacted us before and received an RMA number, to the address stated in the documents. Please note that we cannot accept non-prepaid deliveries or deliveries without RMA number. Such deliveries will be sent back without being processed.

The guarantee covers material, functional, and production faults that can occur when using the product as intended. It does not cover damage of wearout or abrasive wear, transport damage, claims for compensation above and beyond compensation for the product itself, or damage resulting from improper use, negligence, incorrect installation, or interventions and changes carried out by unauthorized persons. We expressly exclude such scenarios from our scope of liability. Any secondary damages such as the loss of coral, fish, or water damage caused by pump failure or a lack of intake protection are expressly excluded from guarantee and warranty claims. Calcination inside the pump and any resulting damage to the product or motor, damage by use as not intended and any damage to cables (e.g. chafed cables) are expressly excluded from the warranty. The warranty is invalidated in the following cases: Removed original plugs, use of non-original spare parts, damage resulting from parts sucked into the pump, motor damage caused by the tapering of the intake port or if the pump is operated with a closed or partially closed ball valve in the intake area, motor damage caused by persistent dry running, limescale damage resulting from the improper use of chemicals or the use of unsuitable chemicals, motor damage resulting from upstream external electronic components or damage resulting from damp in the driver.

*** „Lifetime Guarantee“ is given during the minimum estimated lifetime of the product which is 10 years.**

Technical changes

Due to continuous development and innovation, which in particular serve the quality, safety and progress, the manufacturer reserves the right to technical modification.

Troubleshooting

If errors occur despite the high quality standards, use the following checklist to correct or restrict them. Various errors are already detected and displayed by the electronics.

Trouble	Possible cause	Solution
Display off, LED blinking	a) Screensaver active	a) Press button
Display off, LED off	a) No power b) Fuse blown	a) Check power chord b) Replace fuse <i>If the fault can not be remedied (fuses are always faulty), there is an error in the driver. In this case please contact the service.</i>
Status: COMM FU !	a) No internal communication	a) Switch off driver and wait 10 sec before switching on again.
Status: Imax!	a) Current protection	a) Check motor for blockades
Status: MOTOR ?	a) Pump defect or not attached	a) Check chords and connectors
Status: TEMP !	a) Driver too hot	a) Optimize cooling
Status: DRYRUN !	a) Motor dry running or sucking in air	a) Check water depth
Status: LOW VOLT !	a) Voltage too low (mains) b) Too many systems on one phase c) Power line too long	a) Check mains b) Reduce number of devices on phase c) Reduce cable length <i>Device still works, but does not reach maximum power</i>

If the fault can not be solved by checking the cables (faulty connection), the mains voltage and the pump (light running, clogging), please contact your dealer. In such a case, please keep the serial numbers of the driver and motor ready. You will find this on the serial number seal (blue sticker) or on your package.

Disposal

The product may not be disposed of in the normal household waste according to Regulation RL2002 / 96 / EC.

We offer our customers to return old devices within Germany free of charge and to take over the appropriate recycling or disposal. The corresponding WEEE number at the EAR is:

DE 16546900

If you do not dispose of the product by us, you accept the duty of disposal according to the legal regulations at your own expense and release us from the obligation pursuant to § 10 (2) ElektroG and related claims from third parties.

Technical data

Model	:	AFC400
Output (maximum)	:	220.000 l/h
Output (nominal)	:	165.000 l/h
Discharge speed (maximum)	:	3,3 m/s
Power consumption	:	4...400 W
Operating voltage	:	230V~, 50...60Hz
		100-120V~, 50...60Hz (optional)

Components and materials

The following substances are used in conjunction with the medium to be conveyed:

ABS GF 20, PVC, WCNi, Titan Gd. 2, SSIC, NBR, CR, EPDM, PU

CE-Konformitätserklärung

venotec GmbH
Am Nordkreuz 36
26180 Rastede



We hereby declare that the design of the pump system

Abyzz AFC400

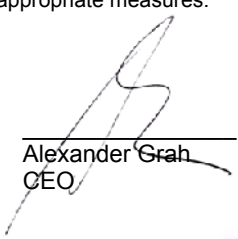
The following relevant provisions:

EC Directive 2014/30 / EU

Applied harmonized standards:

DIN EN 61000-6-1
DIN EN 61000-6-2
DIN EN 61000-6-4
DIN EN 61000-3-2

These devices are Class A devices. In residential environments, these devices may cause radio interference. In this case, the user is responsible for taking appropriate measures.



Alexander Grah
CEO

Appendix



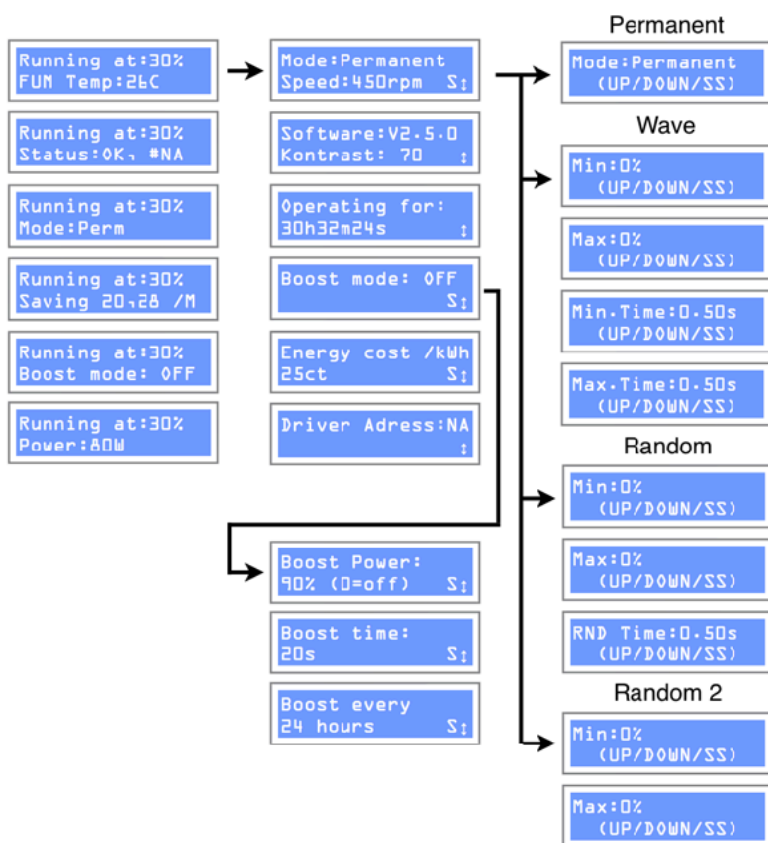
P1



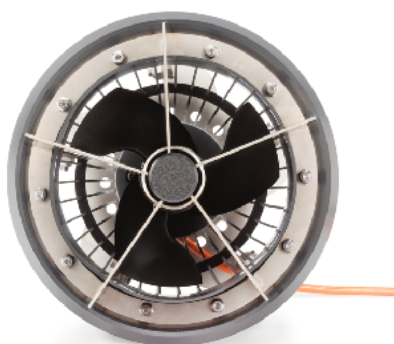
P2



P3



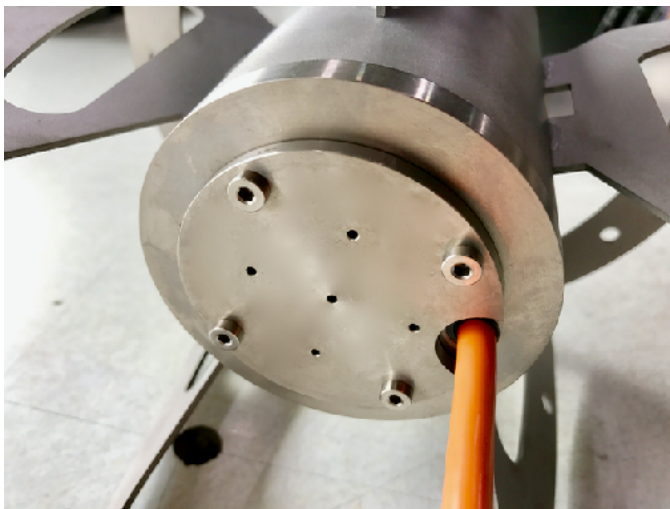
P4



P5



P6



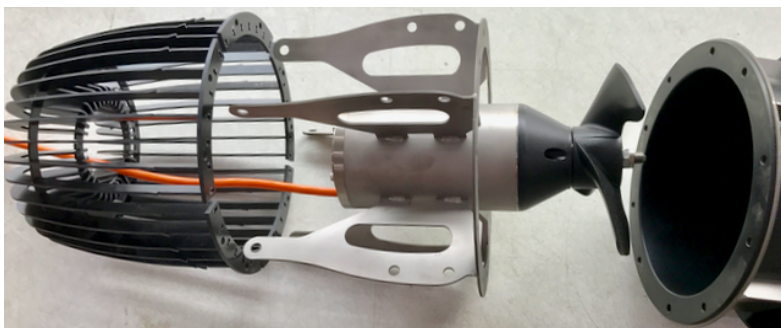
P7



P8



P9



P10

