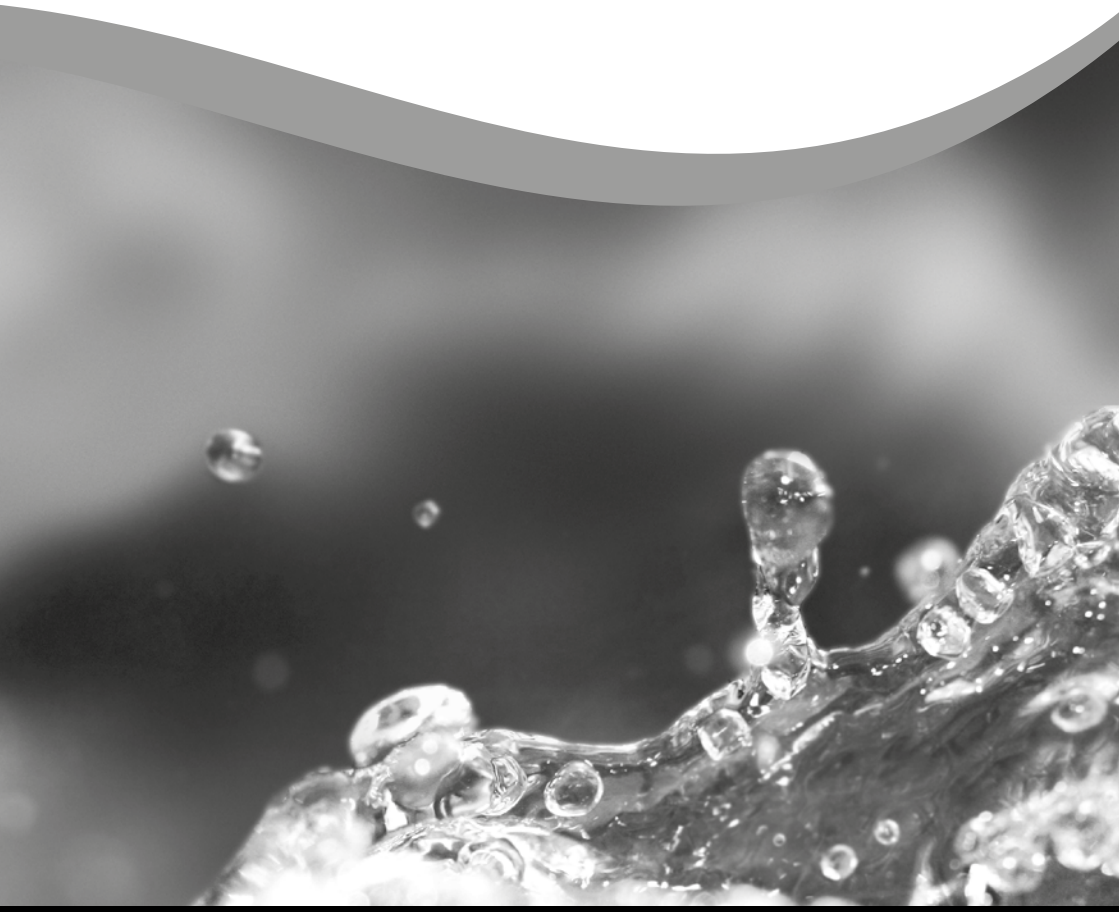
BLUE ECO
Titanium

240/320/500/900/1500/2200
4Flow900/2200/ Marine

Manual / Gebrauchsanleitung / Notice d'utilisation / Handleiding



www.blue-eco.nl

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Blue Eco start-up instructions

Dear Blue Eco user,

Thank you for choosing Blue Eco pumps! With these pumps you own the latest technology in variable pumps. Blue Eco pumps are the most energy efficient pumps worldwide and are fitted with high tech features.
Your Blue Eco pump has a standard warranty period of 2 years after initial start up (optional expandable to 4 years). For a decent warranty registration your pump has a maximum speed of 1200 RPM. This maximum speed is set by the manufacturer as a good speed for "running in" the pump. After registration on www.blue-eco.nl you (or your supplier) will receive 2 codes that will release the full speed of the pump. If you do not appreciate a personal registration you can register the pump on your supplier's name/e-mail address, the purpose of this registration is to have the serial numbers of the pump and controller on the initial day of use.

During registration at www.blue-eco.nl you will be asked for two internal serial numbers from the controller. These can be found as follows:

1. Turn on the controller and wait for "0" in the display.
2. Press the 'MENU' button, the display will show 'SYSTEM'.
3. Press 'ENTER' and press the yellow button with the ▲ symbol 3 times.
4. 'SERIAL NUMBER 1' will appear in the display, write down this number.
5. Press the ▲ button again and write down 'SERIAL NUMBER 2'.
6. Press 2x on "MENU" to go back to starting display or do nothing for 30 seconds.

You now have the two desired serial numbers for registration. After you register by filling in these two serial numbers and the rest of the data, you will immediately receive a reply email containing the relevant instructions:

Example:

You have registered your pump and received the two codes. Your registration is processed.
RPM activation code 1: xxxx
RPM activation code 2: xxxx
Your warranty period begins today.

Note! The pump must not be running when you enter the codes!

Follow the instructions below to activate the codes:

1. Turn on the controller and wait until '0' appears on the display.
2. Press the 'MENU' button so that 'SYSTEM' appears on the display.
3. Press 'ENTER' (display shows 'TIMER MODE'), then press the yellow button with the ▲ symbol five times.
4. The display now shows 'ACTIVE CODE !' with four digits (e.g. 3998).
5. Enter the four digits of activation code 1 that you received by email: pressing 'SELECT' causes the fourth digit to begin flashing, and you can now change its value with the ▲ and ▼ buttons.

6. Press 'SELECT' again to move to the next digit and do the same thing. You can change all four digits in this way. If you make a mistake, you can press the 'SELECT' button until the corresponding number flashes again so you can change it.
7. Check carefully that the four digits match the code you received, and then press 'ENTER'.
8. The display now shows 'ALERT KEYDATA MODIFIED'.
9. Now press 'RESET'; code 1 is saved.
10. Wait until '0' appears on the display and repeat steps 2 to 9 to enter code 2, but in step 3 you must press the ▲ button six times to reach code 2.

Once the display shows '0' again, you can press 'RUN' to start the pump. You can use the ▲ and ▼ buttons to change the speed. If you are unsuccessful, contact the Blue Eco service helpdesk on 0031-413-747009 or at blue-eco@sibo.nl.

If you registered your pump on the website it is not necessary to send in the supplied warranty papers. Keep them safe for future use.

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Gebruikte symbolen

CAUTION – HIGH VOLTAGE
IGNORING THIS INSTRUCTION MAY HARM USER AND/OR ANIMALS.

CAUTION
IGNORING THIS INSTRUCTION MAY DAMAGE THE PUMP AND/OR OTHER DEVICES ATTACHED.

Not intended use

This manual is intended to give you brief information about the device. The user, installer or maintenance personal, is solely responsible for the strict adherence of all instructions made in this manual. The BLUE ECO was manufactured according state-of-the art technology and current safety regulations. Nevertheless this device may involve risks for life and physical condition if not used as intended or if safety regulations were ignored. If not used as intended, our liability expires as well as the general operating license. Children, youth below an age of 16 as well as persons who may not recognize possible risks or who are not familiar with this manual must not use the device for safety reasons. Please keep this manual safe and hand out in the case of change of proprietor. The combination of water and electricity may severely harm life and physical condition if the device was not connected properly or used inappropriate.

Do not use the device as long as persons remain in the water! Unplug all devices in the water before touching the water! Check the specification of the mains against the electrical specifications on the package or the label of device. Make sure the device is connected to a fault current detection switch with a fault leakage below 30 mA (DIN VDE 0100T739) Use the device only if plugged into a wall plug installed according to regulations). Keep the power plug and all connections dry! Install cables dry and save to avoid damage.

DO NOT CUT OR TRIM THE CABLE OR PLUG OF THE DEVICE; CLAIMS AND WARRANTY EXPIRE IMMEDIATELY!.

Only use cables, adapters, installations, extension cords or power cables which are designed for outdoor use (DIN VDE 0620) and with a proper cable diameter. Do not pull or carry the device on the cables! In the case of a defective cable or housing, the device must not be used! Protect cables and accessories against heat, oil, UV light and sharp objects. The manufacturer cannot be held liable for damages resulting from unintended or inappropriate use or negligence of the user or installer. Damages to the power plug or the housing remains the device unusable. Repairs are impossible due to the fact that the cables were cast into the housing. Keep the connectors dry. In the case the connector got wet or humid it must be rinsed in demineralised water and must be carefully dried by a trained service person.

Generally the pump must be cleaned carefully before put out of operation. At return of service check clearance of the impeller. If the impeller cannot be moved the pump must be disassembled and cleaned. DO NOT unplug the power plug while operating the pump and the controller. This may result in severe damage of the internal electronics and dangerous hazards due to grounding problems. The controller must be connected to a safety fault current detector (30mA) and a properly installed wall plug. Do not modify or replace any cables. Electric installations on garden ponds must be in accordance with

national and international regulations, guidelines and engineer standards. Never open the housing of the device or attached parts if not explicit stated in the manual .Use original spare parts and accessories only. Repairs must be executed by trained service persons only. DO NOT pump any liquids beside water. In the case of questions or problems, for your own safety, contact trained service persons.

Unplug the pump from main power before service and/or maintenance!

Applications

The BLUE ECO pump was designed for fresh-, brackish- or salt water, or other low viscosity liquids which are neither explosive nor aggressive or oily. The pump may be used for clean water and in a limited way also for contaminated water. The pump is not intended for water with coarse debris. Particles should not be larger than 0.8 mm. Basically the pump is intended for use with „clean water" without solid particles which may damage the bearings, like, for example sand and pyrolusite after the treatment of ponds with potassium permanganate. Warranty does not apply for damages resulting from above described particles. The bearings of the pump are milled spirally to evacuate particles larger than 0.8 mm. The bearing plate contains enough space for a filter. The filter must be cleaned regularly regardless the degree of soiling. A special amount of water is flushing the pump housing to ensure long term operation of the pump. To decrease the flow rate in the housing, perfectly close the plate and adjust to the smallest dot on the plate. Now the bearing lubrication by water is very low.

The most common applications of the Blue Eco pump are to operate a filter system (ponds or swimming pools) and/or for circulation of a stream or waterfall. The pump is not self-priming, but with the aid of a non-return valve on the suction line below the water level it can be installed above the water level. However, the suction line must be prefilled with water.

Intended use

- Liquid temperature: 0 to +40°C.
- Environmental temperature: max. +55 °C
- Maximum operation pressure: 2 bar

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Model	Marine	240	320	500	900	4Flow900	1500	2200	4Flow2200
Induced power	P1 240 watt	P1 240 watt	P1 320 watt	P1 500 watt	P1 900 watt	P1 900 watt	P1 1500 watt	P1 2200 watt	P1 2200 watt
Nominal power	P2 216 watt	P2 216 watt	P2 280 watt	P2 473 watt	P2 851 watt	P2 851 watt	P2 1490 watt	P2 2068 watt	P2 2068 watt
Efficiency	90%	90%	90%	90%	94,6%	94,6%	94,6%	94,6%	94,6%
External controller	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP68	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cable	10m	10m	10m	10m	10m	10m	10m	10m	10m
Digital display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dry & wet application	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inlet	40/50mm	2½" male threaded	2½" male threaded	2½" male threaded	2½" male threaded	3" male threaded	2½" male threaded	2½" male threaded	3" male threaded
Outlet	40/50mm	50/63mm	50/63mm	2" male threaded	2" male threaded	3" male threaded	2" male threaded	2" male threaded	3" male threaded
Weight (kg)	5	6	6	11	14	18	20	20	24
Warranty pump	2	2	2	2	2	2	2	2	2
RPM	300 - ±3200	300 - ±3200	300 - ±3200	300 - ±2100	300 - ±2600	300 - ±2600	300 - ±2850	300 - ±3400	300 - ±3400

Model identification

The Blue Eco 240 and 320 Watt use the same model pump, the controllers are different. This means that a model 240 can be controlled by a 320 watt controller and vice versa. Model 500 uses the same pump as model 900. The controller determines the model. In the future you can decide to buy a 320 controller for a model 240 or a 900 controller for a 500. Model 1500 uses the same pump as model 2200.

Noise emission

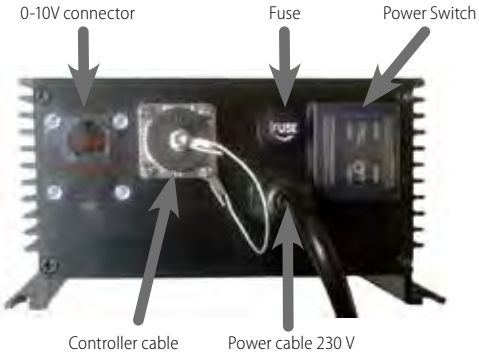
The noise emission of the pump is within the limits of the machine guidelines of the European Council.

Short Instruction

The pump is driven by a DC-motor and, therefore, equipped with a controller. Check the following sequence when starting the pump:

1. Flush the pump thoroughly to remove any residual disinfection fluids!
2. Install the pump below the water surface (Pump is not self-priming).
3. Interconnect pump and controller using the attached controller cable (check pins).
4. Check the main power switch is set to „0" (OFF).
5. Connect the mains cable to the controller and plug into a wall plug.
6. Switch on the controllers power switch.
7. Press the RUN button (pump will start after a 10 seconds delay)

Coded plug, fits only one way



Key	Function
	Switching the pump on and off
	RUN: to start the pump
	STOP: to stop the pump
	Increase pump power (when running): *Higher flow-rate, more energy consumpion*
	Decrease pump power (when running): *lower flow-rate, less energy consumpion*

After switching on there is a 10 second delay countdown. After that, the pump slowly increases speed to the previous value set, while the flow rate is also updated. When switched off, the pump stops immediately.

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▲ / ▼ keys

Use the ▲ / ▼ o set the power of the pump. This will also change the flow (l/h) and the energy consumption (W) and the RPM. **The power can be set between 10 and 240/320/500/900/1500/2200 watt (depending on the model)**. The pump will always run on the set power. After a power break the pump will automatically return to the last setting.

Example 1 (Model Marine)

Option 1:

Suction side / Discharge side: three-piece 50mm coupling (AA255) can be fitted with hard PVC glue (e.g. Uni 100). **Do not glue permanent fittings (such as a regular sleeve coupling) to the pump, because this makes it very hard to disconnect the pump!**

Option 2:

Suction side / Discharge side: a flexible 50mm-to-50mm (FC120) or 50mm-to-40mm (FC140) coupling can be fitted. **Thanks to the rubber feet on the bottom, the pump is now completely vibration-free and flexibly connected.**

Example 2 (Model 240/320)

Option 1:

Suction side: a two-piece 2½"x63mm coupling with rubber ring that provides the seal (AG287).

Discharge side: a three-piece 63mm coupling (AA256) can be fitted with hard PVC glue (e.g. Uni 100). **Do not glue permanent fittings (such as a regular sleeve coupling) to the pump, because this makes it very hard to disconnect the pump!**

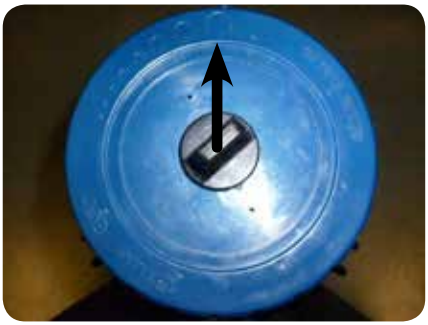
Option 2:

Suction side: a 90mmx2½" inner diameter adhesive ring (AB367) can be attached with a little liquid Loctite 5331 (AK142) or Teflon tape (AK119/120). Then a flexible 90mm-to-110mm (FC148) or 90mm-to-63mm (FC146) coupling can be fitted.

Discharge side: a flexible 63mm to 63mm (FC122) or 50mm to 90mm (FC146) coupling can be fitted. **Thanks to the rubber feet on the bottom, the pump is now completely vibration-free and flexibly connected**.

Example 3 (Model 500/900/1500/2200)
Option 1:
Suction side: a two-piece 2½"x63mm coupling with rubber ring that provides the seal (AG287).
Discharge side: a two-piece 2"x63mm coupling with rubber ring that provides the seal (AG279).
Option 2:
Suction side: a 90mmx2½" inner diameter adhesive ring (AB367) can be attached with a little liquid Loctite 5331 (AK142) or Teflon tape (AK119/120). Then a flexible 90mm-to-110mm (FC148) or 90mm-to-63mm (FC146) coupling can be fitted.
Discharge side: A three-piece 2"x63mm coupling (AB246) can be attached with a little liquid Loctite 5331 (AK142) or Teflon tape (AK119/120).

On the back side of models 500/900/1500/2200 you will find a cover with 8 dots ranging from small to large. This is for additional cooling of the motor. Make sure that this is always set to the biggest dot.



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Mounting

Note:
Damage caused by not following the instructions is not covered by the warranty.

When unpacking the pump, make sure everything is present. Any damage must be reported to your supplier within eight days of purchase. When you unpack the pump you may find that it is wet inside. This is because the pump is tested before it leaves the factory to ensure that it works correctly and meets all the stated specifications. The pump is operated for several hours to run in the bearings and complete a battery of tests, including water-tightness, noise level, vibration, overload, short-circuit, etc.
Before packaging, the pump is treated with a biodegradable disinfectant in order to prevent any possible bacterial contamination. It is therefore strongly recommended that you flush the pump before using it in water with livestock such as fish, despite the fact that only a minimal amount of disinfectant is used and has probably already broken down. Before commissioning you must thoroughly inspect the pump for external damage. If damage is found, the pump should NOT be put in service; instead, contact your dealer. After commissioning there is no longer any warranty coverage based on external damage of any kind.

Remove the plug from the mains socket and ensure that the unit cannot be switched on again. During installation the pump must not be connected to the mains. To avoid serious personal injury, it is absolutely forbidden to feel inside the opening of the pump with your hands/fingers while the pump is connected to the mains.
The device may only be used in the horizontal position, and you must place it on a firm surface so that the pump is stable. Keep in mind that the pump must be able to purge itself of any air through the outlet. The device must be located below the surface of the water and can be placed in (submerged) or outside the pond (dry). The pump must be located as close as possible to the water intake point. If the pump must draw liquid from a level that is lower than the suction connection of the pump, a foot valve / non-return valve must be placed below the lowest occurring liquid level, because the pump is not self-priming. Thereafter, the pump must be manually filled with water.

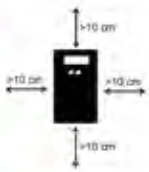
Dry running of the pump is not allowed and will lead to irreparable damage to the rotor shaft and silicon carbide bearings. You must pay particular attention to this if the pump is mounted above the water level (using a non-return valve). When used in dirty water a pre-filter is necessary, as indicated in the preceding specifications. The installation of quick-disconnects (or three-piece couplings), so the pump can be easily disconnected from the pipes, simplifies cleaning and maintenance.

The pipes should be installed so that any mechanical stresses as a result of varying temperatures have no effect on the pump housing. If the suction line is longer than ten metres or the suction height greater than one metre, it is recommended that a suction line with a diameter larger than that of the suction connection on the pump be chosen. All connections in the suction line must be completely air- and liquid-tight. If a hose is used as a suction line, it must meet the requirements that would apply to a suction pipe. If there is any risk that the pump may pump against a closed valve, a bypass/drain must be installed in the discharge line so that a small amount of liquid is always flowing.

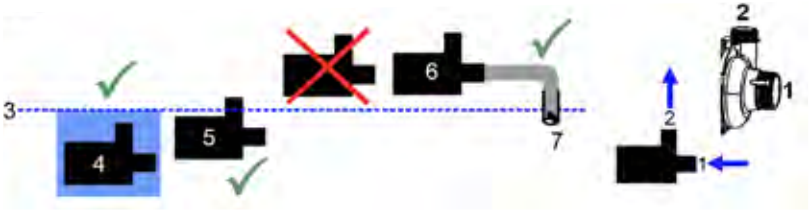
1.1. Controller

The controller unit can be installed indoor and outdoor. Do not expose the controller to direct sun light or heat (powerful lamp, radiator). Be sure there is enough air circulation. Keep all sides of the unit free for at least 10cm.

1.2. Pump



The pump must be installed in a horizontal position. The pump must rest firmly on a flat and even surface. Install the intake line to the pump's inlet (1) (see fig.). Make sure the pump can evacuate air from the outlet (2). At best, install the pump below the water level (3). The pump may be installed inside (4) as well as outside (dry) of the water (5). If operated outside, check for sufficient air circulation. Do not expose the pump to direct sunlight. Install the pump as close as possible to the location of water withdrawal, i. e. the intake line should be as short as possible. If the pump was operated above the water level (6) install a check valve to the pump's inlet (7). In this case, the intake line of the pump must be filled with water. This kind of installation exposes the pump to dry run damages if the check valve doesn't work correctly. Damages resulting from running dry are not covered by warranty.



1.3. Suction side (pump inlet)

If there is not enough water, due to the resistance of the intake line the pump needs a lot of power and the electronics will heat up in the long run. The electronic circuit protects itself by powering down. If the flow rate of the pump decreases within a couple of hours or days, the reason might be the too high resistance of the intake line, especially on warm days.
Try to enlarge the pipe diameter after the pump to a sufficient size for more pump capacity and and lower energy consumption.
It is not allowed to let the pump run dry. It will lead to irreparable damage to the shaft and silicium carbide bearings. Especially when the pump is mounted above the water surface level (with a check valve) you have to be very careful about this. When used in dirty water the use of a (previously described) pre-filter is necessary. The use of flexible fittings or unions is recommended for easy dismantling for cleaning and/or maintenance.

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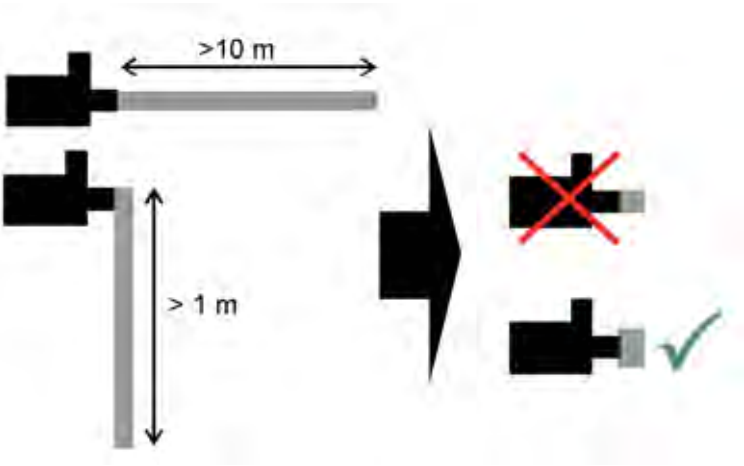
The pipe work must be fitted in a way that possible mechanical stress (due to changing temperatures) have no negative influence on the pump house. Any tubing on the intake line must be 100% air tight. If a hose was used as intake line, make sure the hose is in accordance to the requirements for intake hoses. It is very important that the intake line on the pump head is primarily straight (min. 5 times the diameter of the inlet). This will increase the power of the pump, due to the laminar water flow on the impeller. Avoid short 90° bends, try to use long swept bends (less pressure loss).

If the intake line is longer than 10 meters or the intake height is higher than 1 meter, the diameter of the intake line must be bigger than the inlet of the pump.

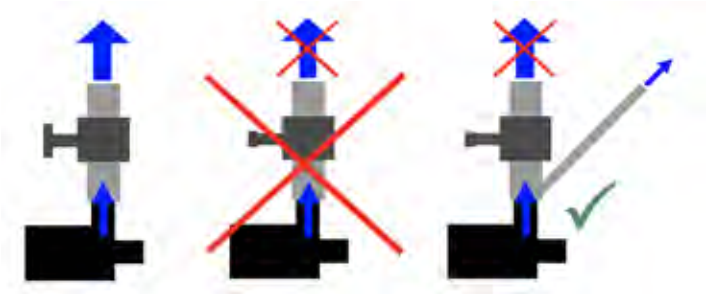


Suction side:
40/50mm or 2 ½" male threaded (dependant of model). Suction line must be at least Ø75mm.

1.4. Pressure side (pump outlet)

The pressure side must be at least the same diameter like the diameter of the pump's outlet to avoid pressure drop, too high flow rates and noise to a minimum. At best increase the diameter of the tubing directly behind the pump to increase flow rate and save energy.

Avoid short 90° bends, try to use long swept bends (less pressure loss). If there is a chance of a blocked pump (e.g. closed ball valve), a bypass must be installed to the pressure line to ensure some water flow through the pump.



Connection pressure side:
50/63mm or 2" male threading (dependant of model)

Flow

Maximum flow – volume in pipe diameter:

Pipe Diameter (mm)	Optimal flow for minimum pressure loss (l/h)
50	8.000
63	14.000
75	20.000
90	29.000
110	43.000
125	55.000

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Electrical connections – initial startup

Compare voltage and frequency imprinted on the specification plate to the specifications of your mains voltage. The one who is responsible for the installation must check, if the voltage grounding was according to specifications. It's also important to check, if the installation was secured by a sensitive fault current detection switch (30mA - DIN VDE 0100T739). The mains fuses should be stronger than the pump fuses.

Fuse

Power	Pump fuse	Mains fuse
Marine/240 Watt	1,2 ampère	4 ampère
320 Watt	1,6 ampère	4 ampère
500 Watt	2,5 ampère	6 ampère
900 Watt/4Flow900	6 ampère	10 ampère
1500 Watt	10 ampère	16 ampère
2200 Watt/4Flow2200	16 ampère	16 ampère

Overload protection

The Blue Eco pumps were equipped with electric and electronic fuses for overload protection. If the impeller blocks, the motor stops. When blockage has been cleared the pump can be restarted again or it restarts itself where applicable.

General operation

Operation and function of the display.

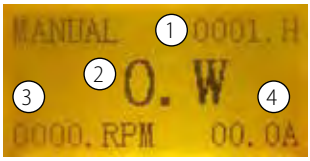
Attention:

The imprint on buttons and display may differ from the text in the manual, but the functions remain the same.

Buttons & Display

1	LCD Display
2	Run LED: This led is on during pump performance
3	Stop LED: This led is on when the pump has stopped
4	Increases the RPM
5	Decreases the RPM

LCD Display



The display shows the following data:

1	Hour counter: shows how many hours the pump has been running
2	Wattage: the current energy consumption
3	RPM (Rotations Per Minute).
4	Amperage

The external connection with RJ45 connector can be used to change the RPM. A 10volt signal triggers the maximum RPM (±2800). Please note: the 0-10volt signal cannot trigger a RPM setting lower than the current value. Example: the pump is running at 1500 RPM and the 0-10v connector sends out a low voltage that is below the 1500 RPM, nothing will happen. The moment the outgoing signal is higher than the 1500RPM, the 1500 RPM will increase. Use pin 2 and 5 of the RJ45 connector.

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Signal port

1	Source current of 5 Volt
2	DC control current 0-10 volt
3	Program inlet TXD
4	Program in Program inlet let RXD
5	GND
6	NC
7	NC
8	NC

0-10V Connection

If this port is used, the pump must be set to UAM. The cable may not be connected yet. This can be done in the following way:

1. Press 'MENU': System appears on the display.
2. Press 'SELECT': timer mode appears on the display.
3. Press the up arrow to go to Panel Command Source.
4. Press 'SELECT': the display starts flashing.
5. Press the up arrow to go to UAM Command Source.
6. Press 'ENTER'; Alert Keydata Modified appears on the display.
7. Press 'RESET' at the top right; UAM appears.
8. Now connect the network cable, and you can control the pump via the external cable.

You can set the pump to back to manual by going to UAM Command Source in step 3 and Panel Command Source in step 5.

Error messages

When there are errors or changes occur the output to the pump will be stopped and the display will give an ALERT message. The 3rd line in the display will indicate the error code.

Over Voltage	The DC voltage is higher than 400V, which may happened when pump speed down quickly without load.
Low Voltage	The DC voltage is lower than 220V, which may happened on the time of the power just on or off.
Over Out Current	The current of pump get too big suddenly, and controller stop output to protect the pump.
P 2 P Short Circuit	There is a short circuit between two output phases.
Data Error	The data in eeprom get wrong, should initial all data to recover this error.
All Data Initial	All data in eeprom was initialized.
User Data Initial	User data in eeprom was initialized.
Key Data Modified	Some important data in eeprom was changed.
CT U Error	The current transducer on U phase is wrong.
CT V Error	The current transducer on V phase is wrong.
CT W ERROR	The current transducer on W phase is wrong.
Power Supply ERR	The input power is wrong.
IPM Overheating	The temperature of controller gets too high.
Over In Current	The current of input gets too big.
Pump Blocked	The pump is blocked and controller can't start it.
Cable Error	The output cable connection is wrong.
Waiting	Contact service department
PFC Error	Contact service department
No water	No water in pump
Timer set error	Control the timer settings or choose other timer

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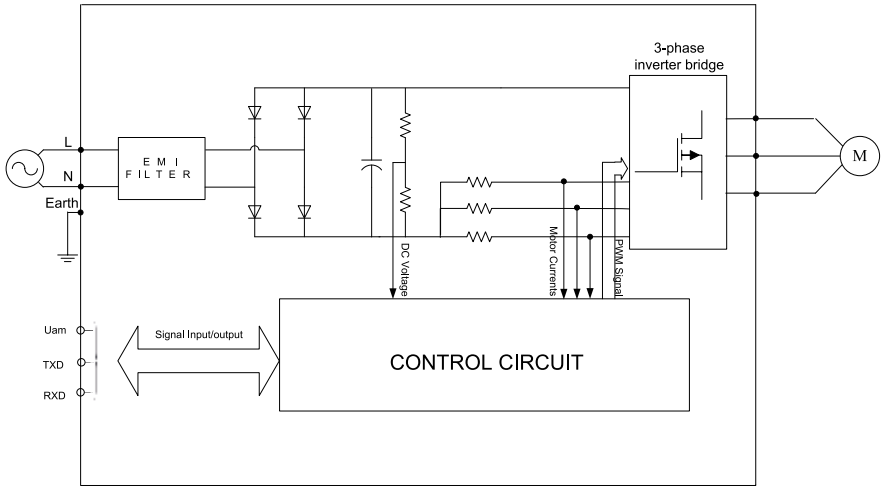
Controller diagram



Maintenance

Unplug the pump before maintenance. Blue Eco series are basically treated as low maintenance. In normal case maintenance is restricted to impeller checking for clogging. Remove potential objects from the impeller with a thin, spiky tool. A reduced delivery rate of the pump is generally caused by waste in the impeller. In the case of calcification (especially when used in salt water) remove the scale with a weak acid like vinegar. Avoid sidewise pressure to the impeller or the rotor. The pump can be completely disassembled for cleaning. The rear bearing can be easily removed by unscrewing of the bearing plate counter clockwise. Use an appropriate tool to move the shaft to the front, so the impeller unit can be removed much easier. In fresh water applications, calcification generally occurs before and after a complete pond filling. The dissolved lime scale will precipitate within 2 or 3 days.

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Use a M6-Allan key to remove the titanium screws (1), which mount the pump head to the motor housing. Now, the complete pump head can be removed. If necessary, remove the complete impeller from the 240/320 unit by pulling out the shaft after removing the O-ring. For the models 500/900/1500/2200 you need to remove the nut on the impellers front. This will reveal 3 screws that also need to be removed. You can now remove the shaft. 13

Be very careful, because the impeller is fixed to its position by a strong magnet. Releasing the shaft occasionally may hit the bearing

resulting in severe damage. **Do not underestimate the power of the magnets. If you lose grip the shaft will hit the rear bearing, which most likely will result in severe damage and, thus, in expensive repair costs...**

After maintenance reassemble the pump in reverse order. Do not over tighten the screws, due to the fact that the threads in the case are made from plastic. The O-rings are made from silicone or EPDM/Viton, depending on the application. As spare parts, only use new and original O-rings with the proper thickness and hardness. Used O-rings slowly alter their hardness. Always replace with new parts if disassembled to prolong the life time of the pump. Silicone and EPDM/Viton O-Rings are resistant against acids and bases.

Bearings

The bearings of the 240 and 320 are based on silicium/ carbide (the hardest material after diamond). The front and back bearing are equal and can be switched. At normal use they will last for life. Both bearings sit in a EPDM O-ring that will adsorb vibrations and keep the bearing in a exact position. The shaft of the Marine/240/320 is made of wolfram and also acts as a bearing. The 500/900/1500/2200 Watt model have a flat silicium carbide slip bearing that will keep up with the axial and radial forces. These bearings are exchangeable. These bearings are based on a wet sealant that means that the pump has no seals that can leak. The shafts of the 240/320 watt are made of an improved wolfram that is seawater resistant. The shafts of the 500/900/1500/2200 Watt are made of 100% pure titanium of the highest class G5.

Power outage + auxiliary power supply

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Codes

The control panel contains a number of buttons that are activated by default if the activation codes have been entered.

What do these codes provide access to?

There are five different timers available that can be independently programmed, for each season for example.
These timers can be used to set up both the run time and speed. On all pumps, the dry running protection is also activated automatically. This dry running protection only functions above 1,500 rpm. Below this speed the dry running protection will not turn off the pump when there is no water in the pump. This ensures that the bearings cannot be damaged by dry running.

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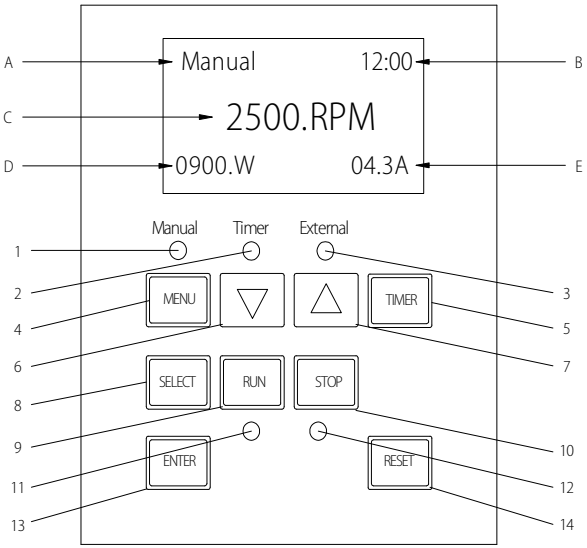
Blue Eco Controller



Buttons and LEDs

1. Manual LED: This LED is lit when manual operation is active.
2. Timer LED: This LED is lit when the timer function is active.
3. External LED: This LED is lit when the pump speed is controlled with an external voltage of 0-10 V.
4. Menu button: Access to the various menus when the pump is stopped.
5. Timer button: This is used to select whether the controller is operated manually or via the timer.
6. Down arrow button: Moves down one level in the menu structure or decreases a digit one step when changing a setting.
7. Up arrow button: Moves up one level in the menu structure or increases a digit one step when changing a setting.
8. Selection button: Shows the available items on the display or is used to change values on the second line of the display.
9. Run button/LED: Starts the pump.
10. Stop button: Stops the pump.
11. When this LED is lit the pump is running.
12. When this LED is lit the pump is stopped.
13. Enter button: Saves the setting in memory. Is also used to acknowledge alarms and warnings.
14. Reset button: Resets controller for initializing the program in the alert situation.

LCD display lines:

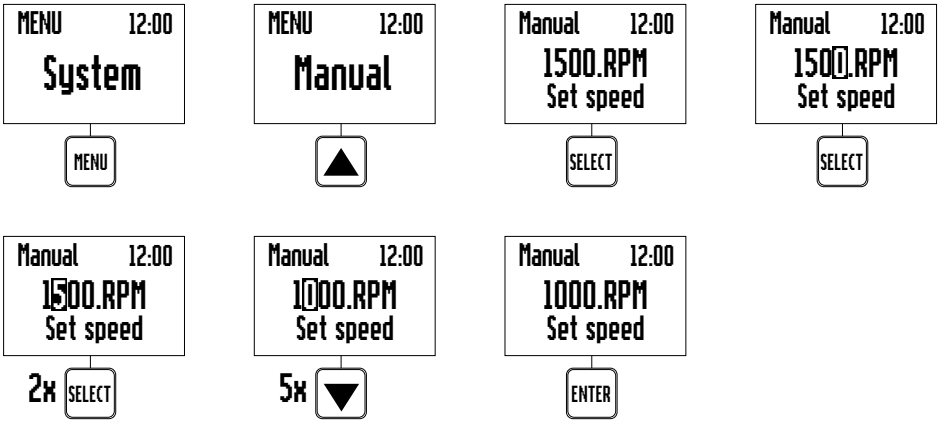
A. and B. Line 1 – mode and time

C. Line 2 – date and variables

D. and E. Line 3 – labels for the data on line 2

Navigating through the menu structure

Before we begin navigating through the various menu structures, it is a good idea to first familiarize yourself with the various buttons. To change parameters or settings we use the Select button. Then we edit the various digits with the up and down buttons. The following example shows how to change the speed.



Changing the 'speed'

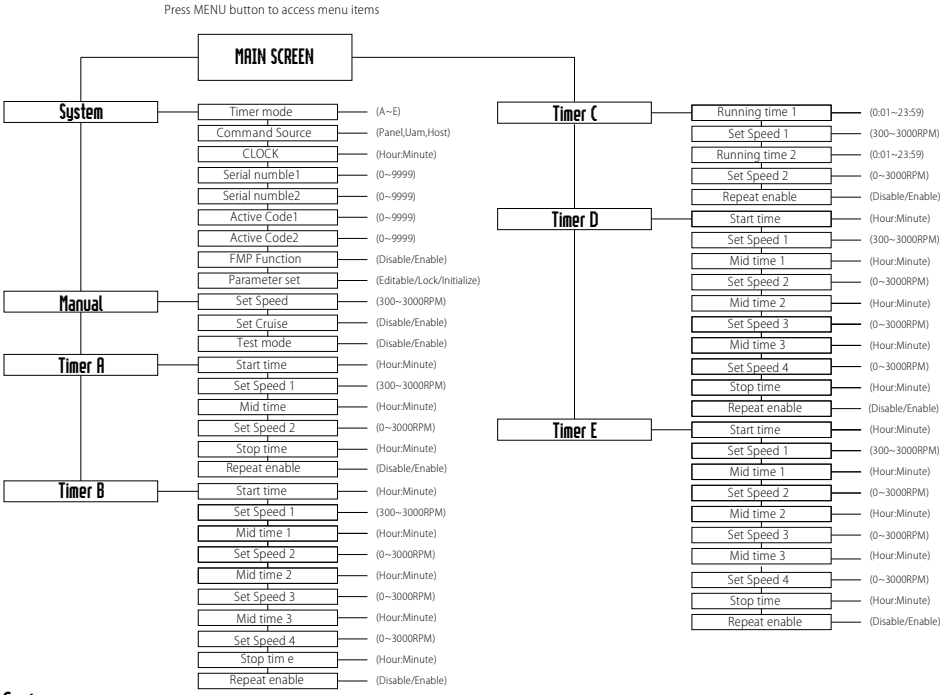
1. Turn on the controller and wait until '0' appears on the display.
2. Press the Menu button. You now see the word 'SYSTEM' on the display.
3. Press the Up arrow. 'Manual' is now shown.
4. Press the Select button to set the menu to manual. The set speed is now displayed.
5. Now program the desired speed. Press Select and change the speed with the up and down arrow buttons.
6. When the desired speed is shown, press Enter to save the setting. If you DO NOT want to save the setting, press Menu.

Blue-Eco Control Panel Menu

This section includes a flow diagram to explain the controller's functions and control options.
Use the menu system to set up and configure the pump.

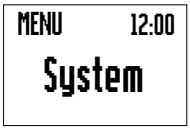
When you want to make changes, '0' must always be shown on the display.
Press Menu and use the up and down arrows to scroll through the various menus. Use the Select button to select the menu you want to change. After making the change, press Enter to save the settings.
Press the menu button again to return to the previous menu.

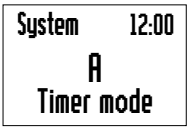
EN

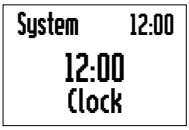


System menu

From the System menu you can select the timer, select whether the controller is controlled via a data cable and set the clock. The System menu is also where you can release the controller using the activation codes. The system is used for all the programmed start and stop times and functions. The system clock continues to run for at least 96 hours after the power supply is disconnected. After this time has elapsed the current time must be re-entered.







1. Turn on the controller and wait until '0' appears on the display.
2. Press the Menu button.
3. Press the arrow buttons to scroll through the various menu items. Select the System menu with the select button.
4. A. To select the correct timer: Use the arrow buttons to go to 'Timer mode', then press select.
   B. Now you can use the arrows to select the appropriate timer (A to E). Select the timer you entered.
   C. Press 'Enter'; the right timer is selected.
   D. The display now shows 'Alert Keydata Modified'.
   E. Now press 'RESET'.

5. A. To control the controller manually or via the External connection: Use the arrow buttons to go to 'Command Source', then press select.
   B. Now you can use the arrow buttons to select UAM or PANEL. Choose PANEL for manual or UAM for external connection.
   C. Press 'Enter'; the control method is selected.
   D. The display now shows 'Alert KeyData Modified'.
   E. Now press 'RESET' and in the top left corner of the display you will see MANUAL for manual or UAM for external control.
6. A. To set the correct time in the controller: Use the arrow buttons to go to 'Clock', then press select.
   B. Now you can use the arrow buttons to enter the correct time. You can use Select to switch between hours and minutes.
   C. Press 'Enter'; the correct time appears in the top right corner of the display.

Manual control

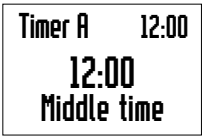
Manual control is set as the default when the pump leaves the factory. The first time, you must press the RUN button to start the pump. In the future, after a power interruption the pump will always return to the set speed. When the pump is running in manual mode, the Manual LED will be lit and the LCD display shows Manual on the first line. The pump will then run at the set speed.

Time modules

Time modules can be used for programming, e.g. for day and night operation, waterfalls, cleaning situations for swimming pool filters, etc. Each timer can be programmed with its own schedule. Each timer also uses the speed control. This means, among other things, that you can not only start and stop the pump at various times but also change the speed at different points in time. There are five independent timers available, from A to E.

EN

Timer A menu



To program timer A.

1. Turn on the controller and wait until '0' appears on the display.
2. Press the Menu button.
3. Use the arrow buttons to scroll to 'Timer A'. Press the Select button to activate Timer A in the menu. The time program is now displayed.
4. Press the arrow buttons to step through the various menus.
5. Press the Select button to change or enter the relevant time. This is done with the arrow buttons.
6. When you are finished, press Enter to save the data in memory. You can press the Menu button to exit the menu without making any changes.

Timer A settings

Display text	Adjustable values	Description
Start time	00:00 – 23:59 (Default 8:00)	Start time for timer A.
Set speed 1	300 – 3000 RPM (Default 1500.RPM)	The pump runs at this speed until the next time 1.
Middle time	00:00 – 23:59 (Default 12:00)	Pump changes speed when the set time is reached.
Set Speed 2	0 – 3000 RPM (Default 300.RPM)	Pump now runs at this speed until the next set time. If a speed between 0 and 300 is selected, the pump automatically switches to 300 rpm.
Stop time	00:00 – 23:59 (Default 22:00)	Pump stops at the set time the next day. If repetition is turned off, the pump will switch back to manual mode at the end of the cycle.
Repeat enable	Disable/Enable (Default Enable)	This setting specifies whether you want to continuously repeat timer A. Disable = one time. Enable = repeat.

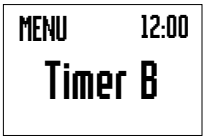
Notes:

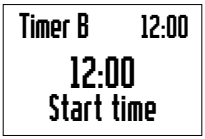
1. The timer cannot extend beyond midnight. Start no earlier than 00:00 and stop no later than 23:59/23:59:50/24:00:00.
2. The set times must be sequential. Otherwise, when the timer is selected and 'RUN' is pressed the display will show 'ALERT TIMER SET ERROR'.

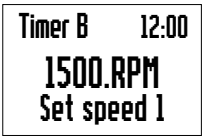
Timer B Menu

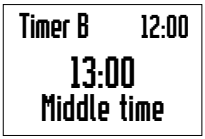
Access to timer B menu:

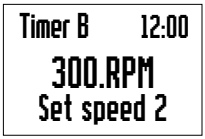
1. Turn on the controller and wait until '0' appears on the display.
2. Press the Menu button.
3. Use the arrow buttons to scroll to 'Timer B'.
   Press the Select button to select timer B program.
4. Press the arrow buttons to step through the timer menu.
5. Press the Select button to select what you want to change.
   Then use the arrow buttons to step through the various menus, after which you can change the selected item with the arrow buttons.
6. When you are finished, press Enter to save the data in memory.
   You can press the Menu button to exit the menu without making any changes.

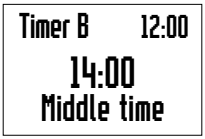


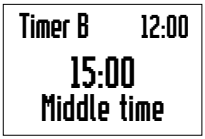


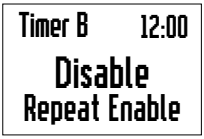










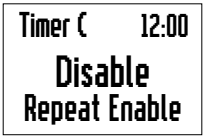


Timer B settings

Display text	Adjustable values	Description
Start time	00:00 – 23:59/23:59:50/24:00:00 (Default 12:00)	Start time for timer B.
Set Speed 1	300 – 2100/3400 RPM (Default 1500.RPM)	The pump runs at this speed until the next time 1.
Middle Time 1	00:00 – 23:59/23:59:50/24:00:00 (Default 13:00)	Pump changes speed when the set time is reached.
Set Speed 2	0 – 3000 RPM (Default 1500.RPM)	Pump now runs at this speed until the next set time. If a speed between 0 and 300 is selected, the pump automatically switches to 300 rpm.
Middle Time 2	00:00 – 23:59/23:59:50/24:00:00 (Default 14:00)	Pump runs at new speed until the next set time is reached.
Set speed 3	0 – 2100/3400 RPM (Default 1500. RPM)	Pump now runs at this speed from set time 2 to set time 3. If a speed between 0 and 300 is selected, the pump automatically switches to 300 rpm.
Middle time 3	00:00 – 23:59/23:59:50/24:00:00 (Default 15:00)	Pump changes speed at the set time.
Set Speed 4	0 – 2100/3400 RPM (Default 1500. RPM)	Pump now runs at this speed from set time 3 to the stop time. If a speed between 0 and 300 is selected, the pump automatically switches to 300 rpm.
Stop Time	00:00 – 23:59/23:59:50/24:00:00 (Default 16:00)	Pump stops at the set time the next day. If repetition is turned off, the pump will switch back to manual mode at the end of the cycle.
Repeat enable	Disable/Enable (Default Disable)	This setting specifies whether you want to continuously repeat timer A. Disable = one time. Enable = repeat.

Notes:

1. The timer cannot extend beyond midnight. Start no earlier than 00:00 and stop no later than 23:59/23:59:50/24:00:00.
2. The set times must be sequential. Otherwise, when the timer is selected and 'RUN' is pressed the display will show 'ALERT TIMER SET ERROR'.



Timer C Menu

Access to timer C menu:

1. Turn on the controller and wait until '0' appears on the display.
2. Press the Menu button.
3. Use the arrow buttons to scroll to 'Timer C'. Press the Select button to enter the Timer C menu. The Timer C menu is now on the display.
4. Press the arrow buttons to step through the Timer C menu.
5. Press the Select button to select the value to be changed. Change the relevant value with the arrow buttons. .
6. When you are finished, press Enter to save the data in memory. You can press the Menu button to exit the menu without making any changes.

Timer C settings

Display text	Adjustable values	Description
Running Time 1	00:01 – 23:59/23:59:50/24:00:00 (Default 10:00)	The running time of the first run
Set speed 1	300 – 2100/3400 (Default 2500.RPM)	The speed of the pump during the first run
Running time 2	00:01 – 23:59/23:59:50/24:00:00 (Default 10:00)	The running time of the second run
Set speed 2	0 – 2100/3400 (Default 300.RPM)	The speed of the pump during the second run If a speed between 0 and 300 is selected, the pump automatically switches to 300 rpm.
Repeat enable	Disable/Enable (Default Enable)	This setting specifies whether you want to continuously repeat timer C. Disable = one time. Enable = repeat.

Timer D Menu

See Timer B menu.

Timer E Menu

See Timer B menu.

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Display text	Adjustable values	Description
1. The Pump delivers no water. The Motor is not running. The display is not lit. 	1. Low mains voltage 2. Connector not properly seated 3. No proper connection from pump to controller 4. Fault current protection switch triggered 5. Impeller clogged 6. Pump electronics or motor defective 7. Motor fuse switched off motor	1/2/3) Check mains and power plug 4. Reset fault current protection switch, If it's triggered again check the impeller for blocking 5. Check Impeller for blocking. Probably the armature must be removed also to clean the housing 6. Contact service 7. Motor indicates an error. Check the inlet and the housing for clogging
2. The Pump delivers no water. The motor is not running. 	1. Pump takes air in 2. Air bubble in impeller housing 3. Too much head pressure in the system 4. Pump not filled with water 5. Inlet tube or check valve clogged 6. Delivery height exceeded	1/2 Restart the pump a few times or fill the pump housing and suction pipes with water. 3. Remove blockages or other resistance in the piping (ball valve closed?) 4/5 Verify 6. Contact the supplier
3. The volume of water delivered is limited	1. See also the previous point 2) 2. Pump Rotor worn/damaged 3. Control knob on the plug is in minimum position	1. See also the previous point 2 2. Contact the supplier. 3. No good air circulation to the housing, e.g. when it is built into a cabinet, is in the sun or the ambient temperature is too high. Suction line not in perfect working order.
4. Erratic fluctuations 	1. Solid particles preventing the pump rotor from turning normally. 2. Mains voltage out of tolerance 3. Damage to magnetic armature or motor 4. The pump is in test mode	1. Remove particles 2. Supply pump with specified voltage. 3. Contact the supplier 4.a Turn on the controller and wait until '0' appears on the display. 4.b Press the Menu button. 'System' is displayed. 4.c Press the Up arrow. 'Manual' is displayed. 4.d Press the Select button. The set speed is now displayed. 4.e Press the Down arrow. 'Test mode' is displayed. 4.f Press the Select button. The value starts to flash. 4.g Use the up or down arrow to select Disable, and press Enter. 4.h Press Menu twice to exit the menu. 4.i If the problem is not resolved, contact your dealer.

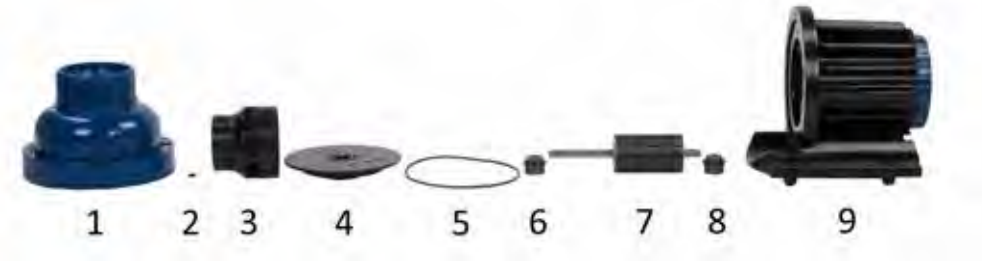
Parts list

Blue Eco Marine

Part number	Description
1	Pump head Blue Eco Marine
2	O-ring impeller Blue Eco
3	Impeller Blue Eco Marine
4	Impeller plate Blue Eco Marine
5	O-Ring Impeller plate Blue Eco Marine

Part number	Description
6	Bearing Blue Eco Marine / 240 / 320
7	Rotor Blue Eco Marine
8	Bearing Blue Eco Marine / 240 / 320
9	Pump body Bleu Eco Marine (not available separately)

Blue Eco 240/320



Part number	Description
1	Pump head Blue Eco 240 / 320
2	O-ring impeller Blue Eco
3	Impeller Blue Eco 240 / 320
4	Impeller plate Blue Eco 240 / 320
5	O-Ring Impeller plate Blue Eco 240 / 320

Part number	Description
6	Bearing Blue Eco 240 / 320
7	Rotor Blue Eco 240 / 320
8	Bearing Blue Eco 240 / 320
9	Pump body Bleu Eco 240 / 320 (not available separately)

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Blue Eco 500/900/1500/2200

Part number	Description
1	Pump head Blue Eco 500/900/1500/2200
2	O-ring pump head Blue Eco 500/900/1500/2200
3	O-ring impeller Blue Eco 500/900/1500/2200
4	Impeller Blue Eco 500/900/1500/2200
5	Impeller plate Blue Eco 500/900/1500/2200
6	O-Ring Impeller plate Blue Eco 500/900/1500/2200

Part number	Description
7	Bearing Blue Eco 500/900/1500/2200
8	Rotor Blue Eco 500/900
8	Rotor Blue Eco 1500/2200
9	Bearing Blue Eco 500/900/1500/2200
10	Pump body Blue Eco 500/900 (not available separately)
10	Pump body Blue Eco 1500/2200 (not available separately)
11	Back Blue Eco pump incl. O-Ring Blue Eco 500/900/1500/2200