Gebrauchsanleitung
Instructions for Use
Mode d'emploi

Multicontroller 7097

x7097.8888
02/2016

TUNZE®

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General Information

The TUNZE® Multicontroller 7097 is a control device for all Turbelle® pumps fitted with an electronic motor and the TUNZE® LED, which can be adjusted and programmed by computer via USB cable. It contains a microprocessor with memory and an internal real-time clock. Together with Turbelle® pumps, the Multicontroller 7097 is able to simulate any kind of oceanic current situation within the aquarium, including wave motion simulations, high and low tide simulation, oscillation current, night mode, storm and desedimentation, seasonal adaptations, etc.
In addition, the TUNZE® LED can be connected for a separate adjustment of the color channels, to simulate sunrise and sunset, seasonal adaptations, moonlight, etc. Optionally, a separate TUNZE® switching socket can be connected to switch additional aquarium lighting on and off.
Scope of delivery: Multicontroller, 5 m (196 2/3“) USB cable, 4 connection cables.
Suitable for Windows 7 to Windows 10.

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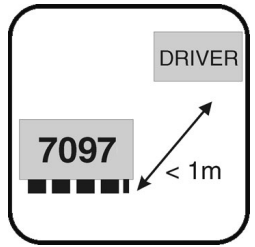
② 

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Selecting the position

(1) The suitable wall has to be dry and protected against splashing water and humidity. By no means attach above the aquarium!

(2) Observe the cable length of the units, control lamps should be visible; the foodtimer should be easily accessible!

(3) Place the cable connections in such a way that water cannot run down the cables and enter the Multicontroller.

Attachment of the Multicontroller 7097 with hook-and-loop strips for smooth plastic surfaces

Adhere the strip on to the housing (4); for this purpose remove the protective foil and press on.

Prior to adhering the strip, please make sure that the surface is clean, free from grease and smooth. Subsequently, remove the second protective foil and then position and adhere the Multicontroller at the requested position.

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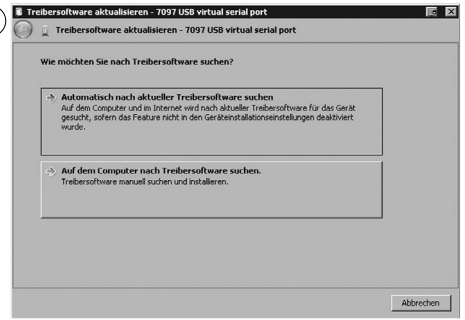
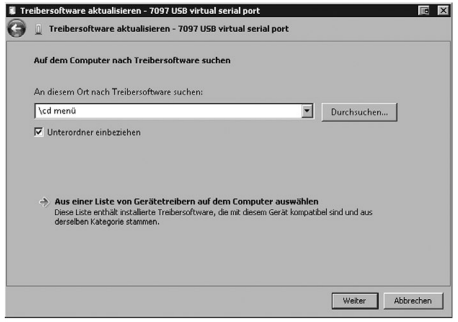
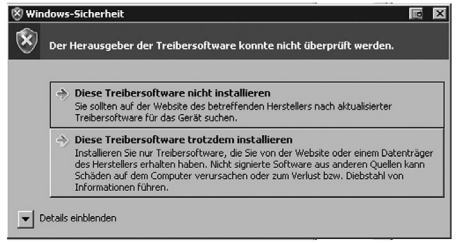
② 

③ 

④ 

Installation – connection to computer

Also refer to the quick start guide “Installation“.

Download the ZIP file under “www.tunze.com - download - software - Multicontroller 7097“ and store it in a folder on your computer.

Open the ZIP file, and unzip it into a separate folder.

Connect the Multicontroller 7097 to the computer with the USB cable (an extension should only be performed with a USB repeater/amplifier), and the automatic search for a driver will start, but no driver will be found!

In the Device Manager (click on “Control Panel“, then “Device Manager“) a yellow exclamation point (1) will appear to indicate that the driver is not installed!

(2) With the mouse, right click on “7097 USB virtual serial port“ and update driver software.

Use the search your computer for “Driver software” option.

(3) Confirm the unzipped folder as source for the driver installation, and confirm with next.

(4) The warning must be ignored by clicking on “Install this driver software anyway“.

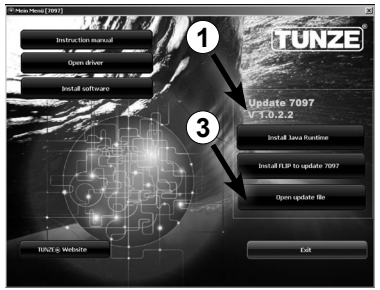
This set up is only required for the initial use of the product.

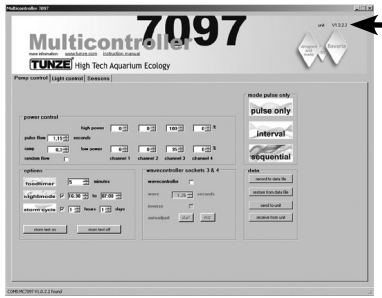
Then, click on the folder “cd menu“ in the folder that was unzipped in the first step, then on the folder “autorun“, and there on “autorun.exe“.

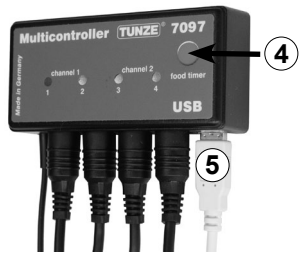
The TUNZE® logo will appear.

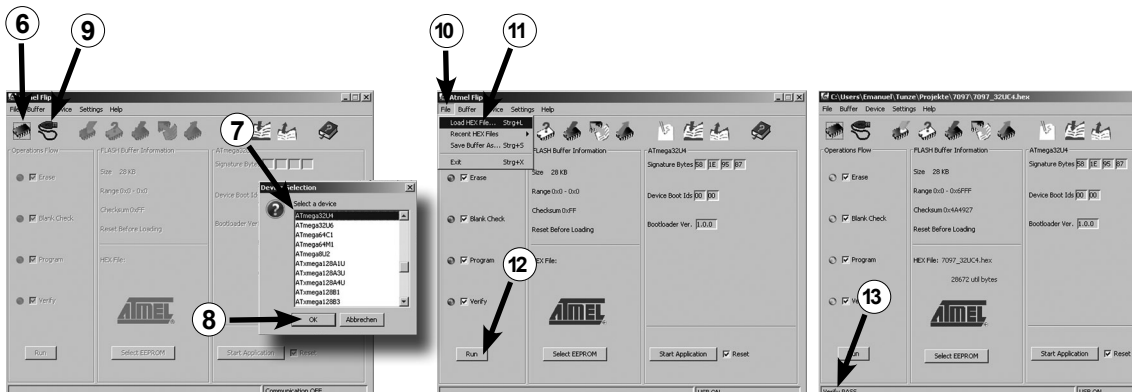
Click on “install software“ and follow the subsequent installation routine.

The Multicontroller is now ready for use.









Software update for Multicontroller 7097

To update the software of the Multicontroller 7097, it is necessary to use the “Updater FLIP“ application provided by the chip manufacturer Atmel®. This will be included with each update. The version number will be displayed in the package (1).

When your device is connected to the computer, the previous/current version number will be displayed in the program of the Multicontroller 7097 on the top right of the user interface (2). When a new version is available you can determine this based on the version number, and update the software as needed.

New versions are not automatically updated by the device itself, but must rather be downloaded from www.tunze.com/download/software-download.

Install the JavaRuntime from the software package to update the 7097. For this, please follow the application’s installation routine.

Afterwards, please install “FLIP“ which is also included in the package on your computer.

Save the file from the sub-item “Open Update File“ on the desktop (3).

Press and hold the Food-timer button (4) of the powered-down Multicontroller 7097, and connect it to the computer via the USB cable (5). Now release the Food-timer button and open the program “FLIP“.

Press the “Select a target device“ button (6). There, select “ATMEGA32U4“ (7) from the menu and open it (8). Click on the “Select a communication medium“ (9) button, and there on USB. Then select the update file stored on the desktop under “File“ (10) / “Load HEX file“ (11). Now click on the “Run” button (12). After the successful update, “Verify pass“ can be read on the bottom left (13). Now, the Multicontroller 7097 is ready for use with the new software.

Connection to Turbelle® electronic pumps / TUNZE® LEDs

The Multicontroller 7097 is designed for the operation with all Turbelle® electronic pumps (1) and TUNZE® LEDs.

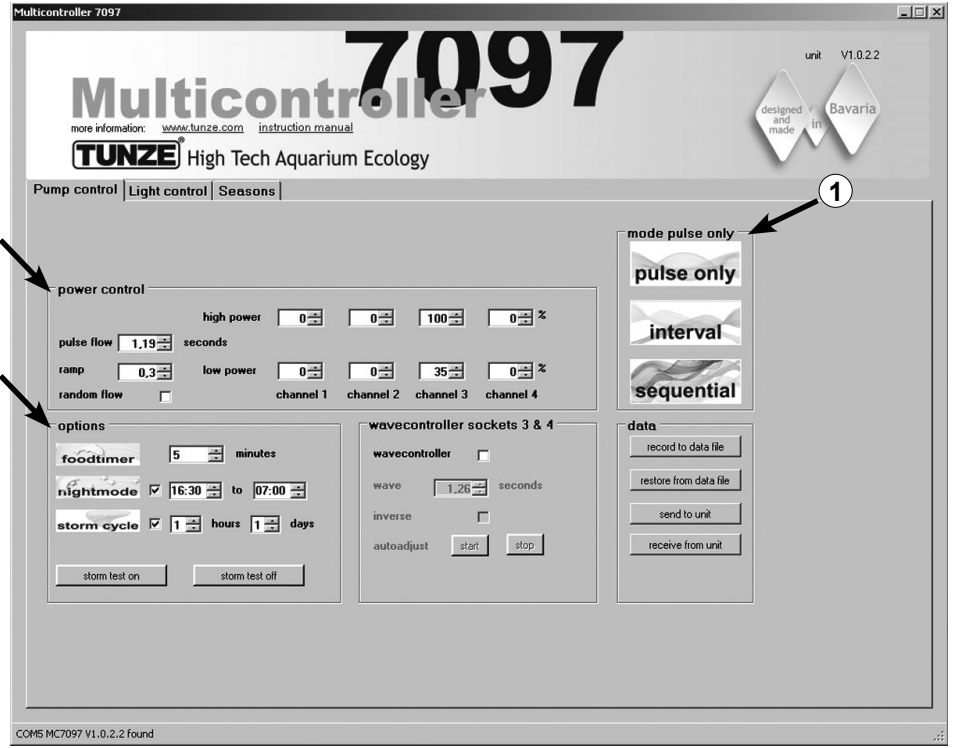
Connections: Before each connecting / disconnecting of the connecting cables to the pump / LED, always first disconnect the power supply from the mains socket and switch it off (2). The Multicontroller 7097 is connected to the Turbelle® pump / TUNZE® LED and supplied with power through a 5-pin connection cable 7092.300 or 5-pin Y-adapter cable 7090.300. With the help of the Y-adapter it is possible to connect two pumps / LEDs per output, or operate up to eight pumps / LEDs or four pumps and four LEDs at the same time.

The Multicontroller 7097 automatically detects whether a Turbelle® pump, TUNZE® LED or switching socket 7097.120 is connected, i.e. the connected channel is automatically allocated to “Pump control“ or “Light control“.

Important Note:

Pumps and switching sockets never may be connected conjointly by a Y-adapter cable to one single channel. However, one pump and one TUNZE® LED or one switching socket and one LED may operate together on a common Y-adapter cable.

When using a Y-cable it is only possible to connect identical LED lights with the same voltage, for example, 2 x 8850 with 24 V, or 2 x 8810 with 12 V. Is not possible to combine 24 V and 12 V.



Short description of the display

“Pump control“ – for Turbelle® circulation pumps

Field “mode” (1)

In this field the mode of the pumps can be selected with a simple click on the icons, which will also be signaled in the box on the upper left.

“pulse only” = only wave motion simulation

“interval“ = low and high tide simulation

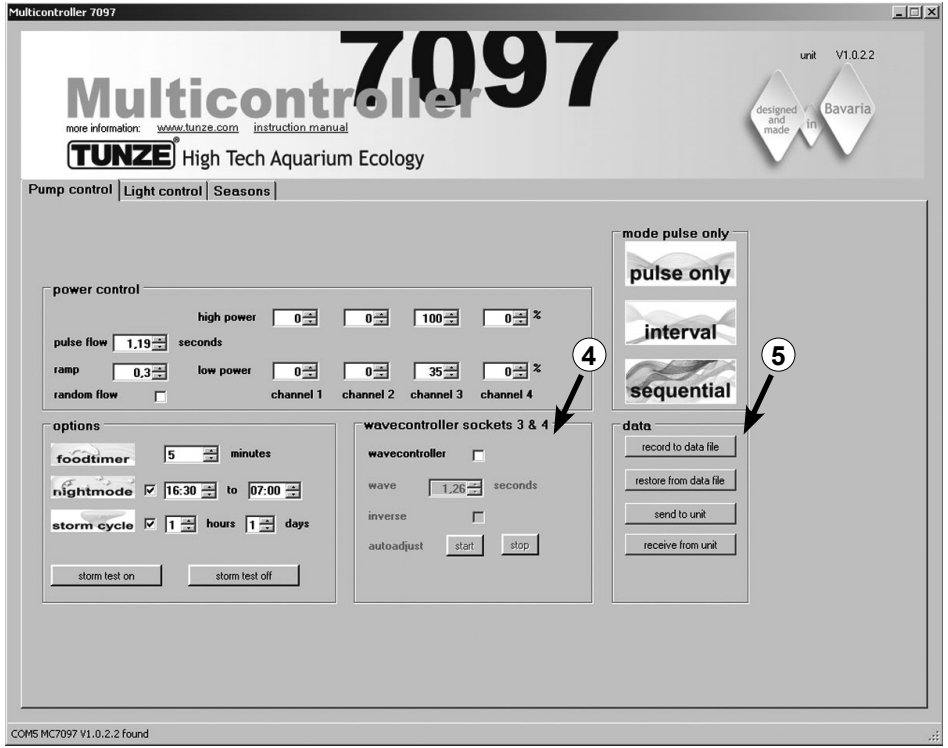
“sequential” - sequential pump circuit /random current flow

Field “power control“ (2)

In this field the performance of the various pumps, as well as the time base for the wave motion, tide and flood, or sequential pump circuit / random current are specified.

Field “options“ (3)

This field is used to specify the important options of the Multicontroller such as the food timer, moon-phases simulation, night mode, storm for desedimentation.



Field “wavecontroller socket 3 & 4“ (4)

The Wavecontroller function can be switched independently at the outputs 3 and 4 four each “mode“. This function was especially designed for the use of TUNZE® Waveboxes, and is also interesting option for the electronically controlled Turbelle® propeller pumps.

This field is used to activate the function, but also the automatic search for the wave frequency, and direct or reciprocal switching of the Waveboxes.

Field “data“ (5)

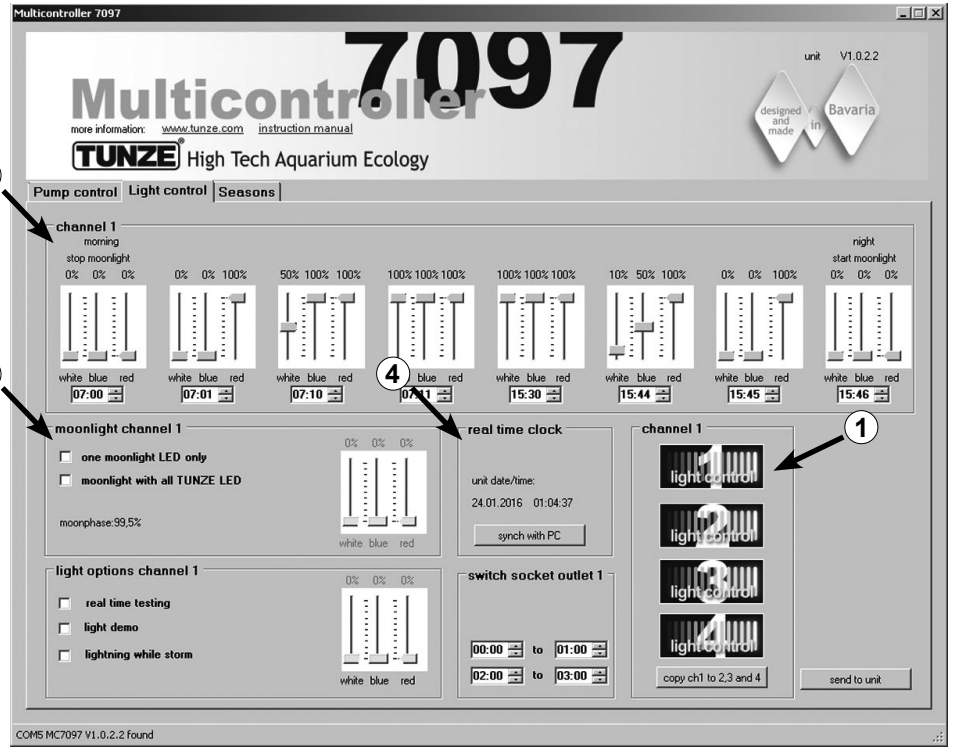
This field is used activate the connections between the Multicontroller 7097 and computer:

“record to data file“ = saves the settings of the Multicontroller into a file on the computer.

“restore from data file“ = the data stored on the computer transferred back to the Multicontroller.

“send to unit“ = computer settings are sent to the Multicontroller.

“receive from unit“ = the Multicontroller settings are sent to the computer.



Short description of the display

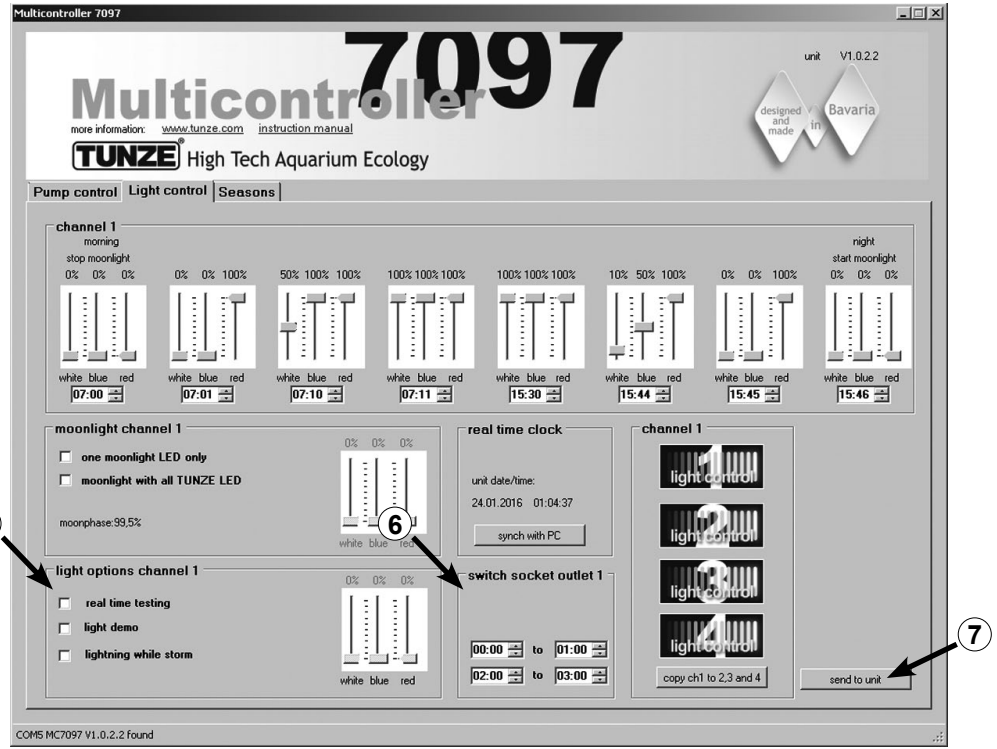
“Light control“ – for the TUNZE® LED

Field “channel 1, 2, 3, 4” (1)
In this field, the light channel can be selected with a simple click on the icons, which will also be signaled in the box on the upper left.
“copy ch1 to 2, 3 and 4“ copies the basic settings from channel 1 to the three other channels.

Field “channel“ (2)
This field is used to set the performance and light colors, as well as the time base of the TUNZE® LED.

Field “moonlight channel...“ (3)
In this field, it is possible to configure the TUNZE® LED as moonlight.

Field “real time clock“ (4)
In this field, the Multicontroller 7097 is synchronized with time in the computer.



Field “light options channel...” (5)

In this field, there are three major options for the TUNZE® LED:

“real time testing“ allows a check of all three LED colors separately, without the confirmation “send to unit“.

“light demo“ simulates the dimming and brightening of the selected TUNZE® LED as a demonstration routine.

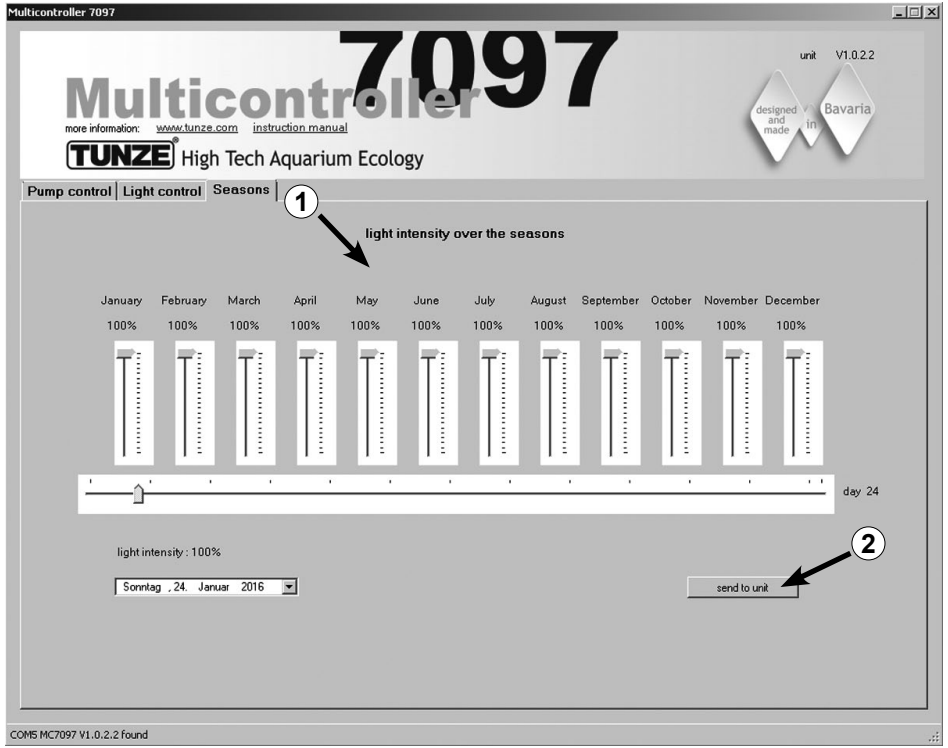
“lighting while storm“ allows a lightning simulation, as soon as the „storm cycle“ for the desedimentation has been switched on at “Pump control“.

Field “switched socket outlet…” (6)

In this field, a TUNZE® switching socket 7097.120 can be programmed for conventional aquarium lamps.

Send to unit (7)

Computer settings are sent to the Multicontroller.



Short description of the display

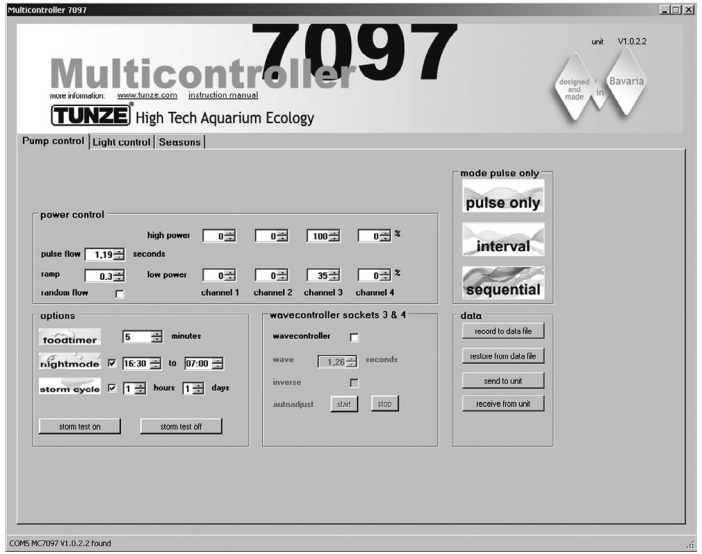
“Seasons“ – for the TUNZE® LED

Field “light intensity over the seasons” (1)

In this field, it is possible to control the entire light intensity throughout the year, and perform an adaption to the requirements of the aquarium habitat.

Send to unit (2)

Computer settings are sent to the Multicontroller.



Commissioning

Before first use, please check the proper attachment of the pumps / Wavebox in the aquarium!

Position the pumps in the aquarium in such a manner, that the settings do not cause any water damages on the Multicontroller due to strong current!

Connect the Turbelle® pumps / TUNZE® LED to the Multicontroller 7097 with the connection cable (see connection to Turbelle® electronic pumps / TUNZE® LED).

Connect the Multicontroller 7097 two the computer with a USB cable (see installation – connection to the computer).

During the initial use, all flow and light parameters can be freely set via the computer display, but will only be active in the Multicontroller 7097 after clicking on “send to unit“ (1).

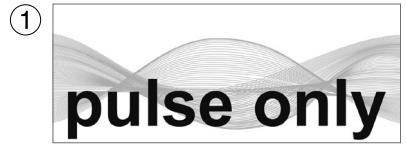
To subsequently read the settings in the Multicontroller 7097, the data should be sent from the Multicontroller 7097 to the computer by clicking on “receive from unit“ (2).

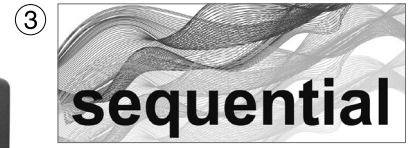
Saving/restoring settings:

The data and settings of the Multicontroller 7097 can be easily stored in a computer file, and subsequently restored from there. Through this, it is possible to store several current flow and lighting versions for different aquarium scenarios, and apply them to the Multicontroller 7097 at any time.

For this, click on the “record to data file“ (3) button, which will open a “save data” window and enable the naming of a file (e.g. 01_01_2015.txt), and the subsequent saving by clicking on “save“.

To call up the file again, click on the “restore from data file“ button to open the “restore data” window, and then click on the appropriate file to open it.





Current flow with Turbelle® electronic

Currents in nature and in the aquarium

The combination of Turbelle® pumps with electronic motor and the Multicontroller 7097 will enable the following current flow patterns in the aquarium:

(1) Wave motion simulation (pulse only)

By setting the maximum and minimum performance as well as the pulse duration for two pumps, it is possible to generate the high and low water velocities of a natural wave motion below a water column of one meter.

(2) High and low tide simulation (interval)

The pump channels 1/2 and 3/4 are switched on or off alternately. The water will flow through the reef from both sides at an adjustable switching time from 1 minute up to 12 hours.

(3) Sequential pump circuit (sequential)

The pumps (up to four outputs) are started sequentially, which permits the generation of a swelling current. The time until the next pulse can be adjusted.

(4) Random flow

Random flow is generated by wave motion simulation and sequential pump operation. For some special reef zones (surf) this combination may produce an interesting water movement.

(5) Oscillating current using Wavebox (oscillating current; Wavecontroller)

The pump channels 3 and 4 can be used directly or indirectly as Wavecontrollers for the operation of the Wavebox. This function also includes an automatic search for the resonance frequency, which can be combined with a wave motion or high and low tide simulation.

(6) Oscillating current with Turbelle® pumps (Wavecontroller)

The pump channels 3 and 4 can be used as Wavecontrollers for the operation of Turbelle® propeller pumps (nanostream®, stream, masterstream). This function includes an automatic search of the resonance frequency, which can be combined with a wave motion or high and low tide simulation.

(7) Food timer

The pumps can be stopped completely by pushing a button on the Multicontroller 7097 during the feeding. After about 1 to 15 minutes (adjustable), a restart is carried out automatically.

(8) Moon-phase simulation (moonlight)

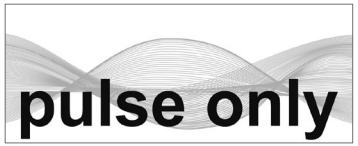
The Multicontroller 7097 offers a 29-day moon simulation function for the TUNZE® LED. The moonlight with photo diode 7097.050 (optional) can also be connected to each channel of the Multicontroller to reproduce the lunar cycle.

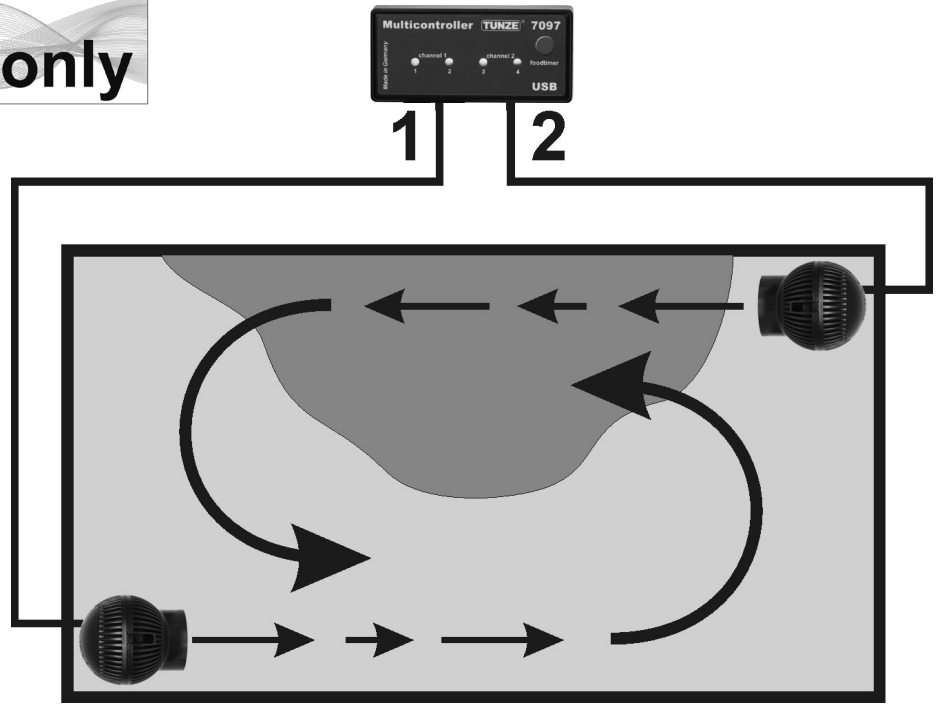
(9) Night mode

The Multicontroller 7097 offers a time-adjustable night mode which throttles down the pumps at night, to enable small animals and plankton to rise up in the aquarium just as they would any reef, and occupy the habitat of diurnal animals.

(10) Storm for desedimentation (storm cycle)

Like in nature, sediment should be removed from a reef aquarium in regular intervals. This function can be programmed automated with the Multicontroller 7097, in order to control the connected pumps according to an efficient and precise cycle.





Settings in practice

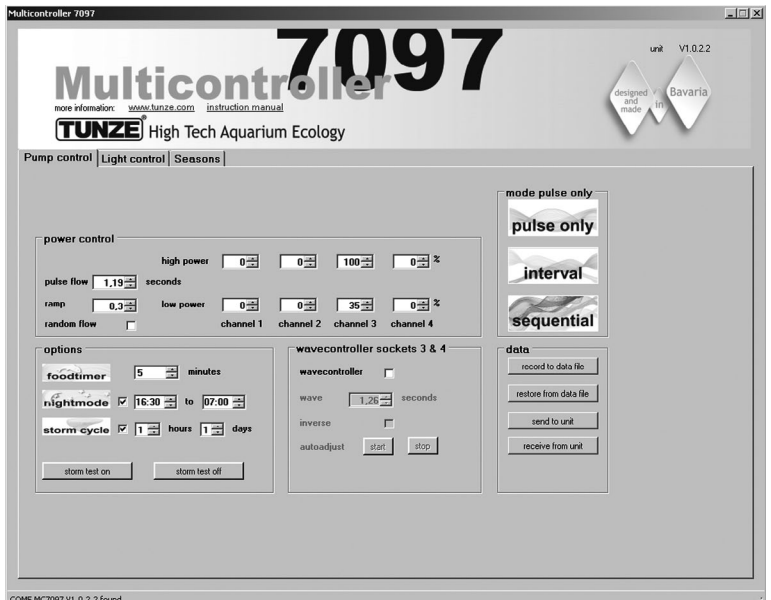
Before first use, please check the proper attachment of the pumps / Wavebox in the aquarium!
Position the pumps in the aquarium in such a manner, that the settings do not cause any water damages on the Multicontroller due to strong current!
Prior to the adjustment, we recommend a synchronization of the Multicontroller 7097 time with the computer. For this, click on the “light control“ field, and in the field “real time clock“ click on the “sync with PC” button. The real time in the computer is now displayed in this field.

“pulse only“ – wave motion simulation

The pulse operation generates biologically active current pulses (= waves) which simulate a natural wave motion. The greater the difference between the specified pump performances, the greater the wave character of the current flow will be.

In the field of “mode“, click on the “pulse only“ button.
In the field “power control“, the pump performance can be set to “low power“ and “high power“ by clicking on “channel“ in the channels 1 to 4. The number zero “0“ means pump not operating. The lowest possible setting is 20%, and the maximum adjustable setting is 100%.
The pulse frequency “pulse flow“ can be set from 0.3 to 8.0 sec. This pulse frequency is very accurate, and can also function as a Wavebox controller (Wavecontroller).
Ramping function (swelling): the “ramp” setting can be used to program a soft start of the pumps (reduces the pumps sounds). The ramp time cannot be selected greater than the “pulse flow” time.
Surf current flow “random flow“: a clicking will cancel the setting “pulse flow“, and the pumps will function according to a random variable pulse operation between 0.5 and 3.5 seconds to reproduce a typical surf.
Up to four pumps can be connected directly. With two Y-adapter cables 7090.300 an extension up to eight pumps will be possible.

pulse only



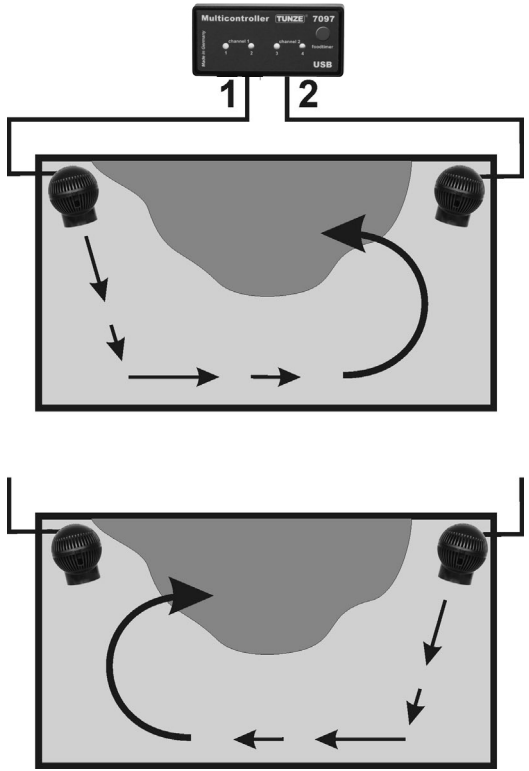
An example for “pulse only“:

Performance “low power“: Outputs “channel” 1 and 2 to 20%, 3 and 4 to 40%
Performance “high power“: Outputs “channel” 1 and 2 to 80%, 3 and 4 to 100%
Pulse frequency “pulse flow“ to 1.5 sec.
Start ramp “ramp“ to 0.5 sec.
Connect a pump to each socket of the channels.

Result:
The pumps at the outputs 1 and 2 will vary their output between 20% and 80% with a start ramp of 0.5 sec., at a pulse cycle defined with 1.5 sec.
The pumps at the outputs 3 and 4 will vary their output between 40% and 100% with a start ramp of 0.5 sec., at a pulse cycle defined with 1.5 sec.

If the night mode function “night mode“ is enabled, this will interrupt the pulse operation for the programmed time interval, for example, from 9:00 p.m. to 9:00 a.m., during which all pumps will remain in the “low power” setting. In the morning after 9 a.m., the selected pulse operation of the pump will then start.

Further options:
“pulse flow“ can be used as Wavecontroller for Wavebox or Turbelle® propeller pumps. With “low power“ (at 0% or 100%) and “high power“ (to 100% or 0%) the four channels can be controlled directly or alternately. The resonant frequency should then be entered precisely in “pulse flow“. If one of the four channels in “low power“ is set to 100%, the “night mode“ function cannot be activated!
“ramp“ is the setting of a time delayed start process through a rotational speed delay. It performs a quiet gentle start of the pump.
“random flow“ generates a random alternating pulse frequency in the range between 0.5 and 3 sec. Clicking on “random flow“ will cancel the time setting in “pulse flow“.



“interval“ – high and low tide simulation

The interval operation between low tide (pump outputs “channel” 1 / 2) and high tide (pump outputs “channel“ 3 / 4) enables two annular flows within the aquarium. The reef rock is regularly flooded from both sides, the sediments are washed away and the invertebrates exposed to current from all directions. We recommend setting the same pump power on both channels if possible.

In the field “mode”, click on the “interval” button.

Set the interval time between 1 minute and 12 hours by clicking on “interval time“ clicking, whereas 6 hours would be the optimal setting to replicate nature.

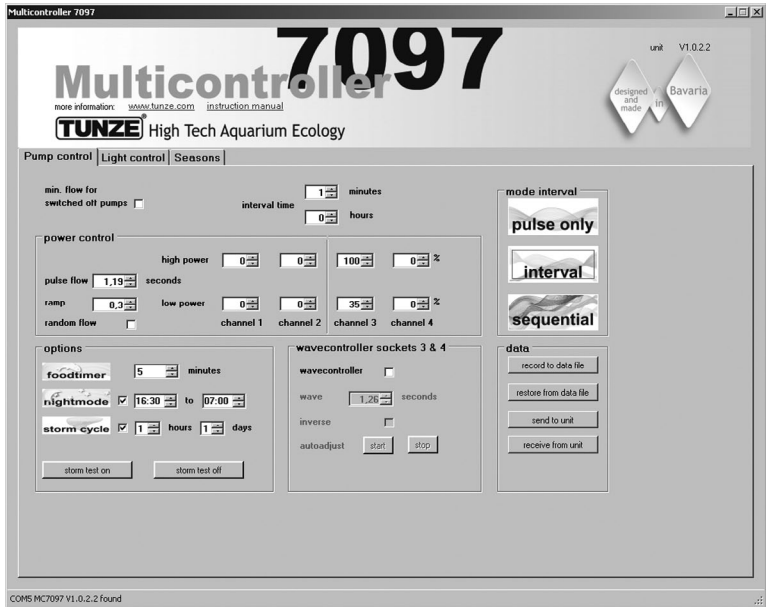
In the field “power control”, the pump performance can be set to “low power” and “high power” by clicking on “channel” in the channels 1 to 4. The number zero “0“ means pump not operating. The lowest possible setting is 20%, and the maximum adjustable setting is 100%.

The pulse frequency “pulse flow” can be set from 0.3 to 8.0 sec. This pulse frequency is very accurate, and can also function as a Wavebox controller. The wave motion simulation can also be switched off at a pump output through a simultaneous “low power” and “high power” setting. For example, both settings can be 60%, which would cause the pumps at this output to have a consistent performance, and the pulse mode would be deactivated.

Following function can be activated in the field “minimum flow for switched off pumps“: The circulation pumps are no longer completely mutually switched off, and there is a variation between a freely selectable performance and minimal performance (20%) of the pumps. However, a minimum current flow will always persist, for example, through the operation of the pump in a filter system.

Up to four pumps can be connected directly. With two Y-adapter cables 7090.300 an extension up to eight pumps will be possible.

interval

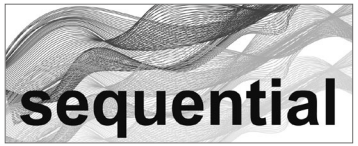


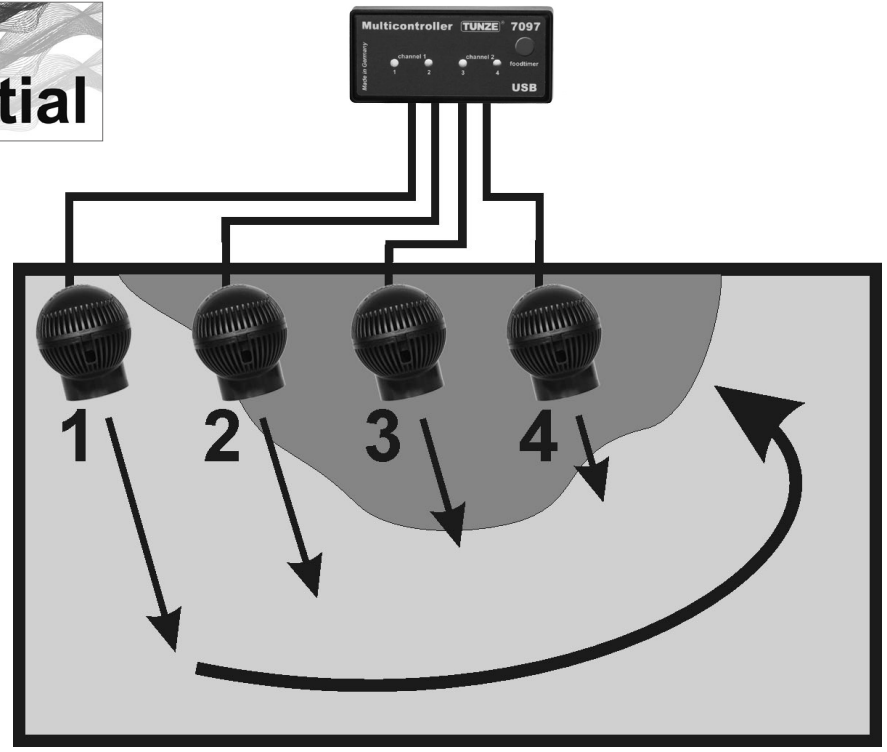
An example for “interval“:

Outputs 1 and 2, “low power” at 20% and “high power” at 80%.
Outputs 3 and 4, “low power” at 40% and “high power” at 100%.
Interval “interval time” at 6 hours.
Pulse frequency “pulse flow” to 1.5 sec.
Connect a pump to each socket of the outputs.

Result:
The pumps at the outputs 1 and 2 will operate for 6 hours, and vary their output between 20% and 80%.
After 6 hours the pumps 1 and 2 will be switched off, and the pumps 3 and 4 will continue to operate and vary their performance between 40% and 100%.
After 6 further hours, the pumps 1 and 2 will switch on again, etc.

If the night mode function “night mode” is enabled, this will interrupt the pulse operation for the programmed time interval, for example, from 9:00 p.m. to 9:00 a.m., during which all pumps will remain in the “low power” setting, but the high and low tide simulation “interval” will continue to function. In the morning after 9 a.m., the selected pulse operation of the pump will then start.





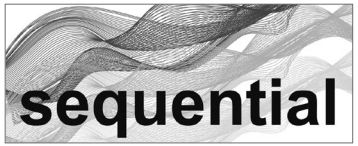
“sequential“ – simple sequential pump circuit

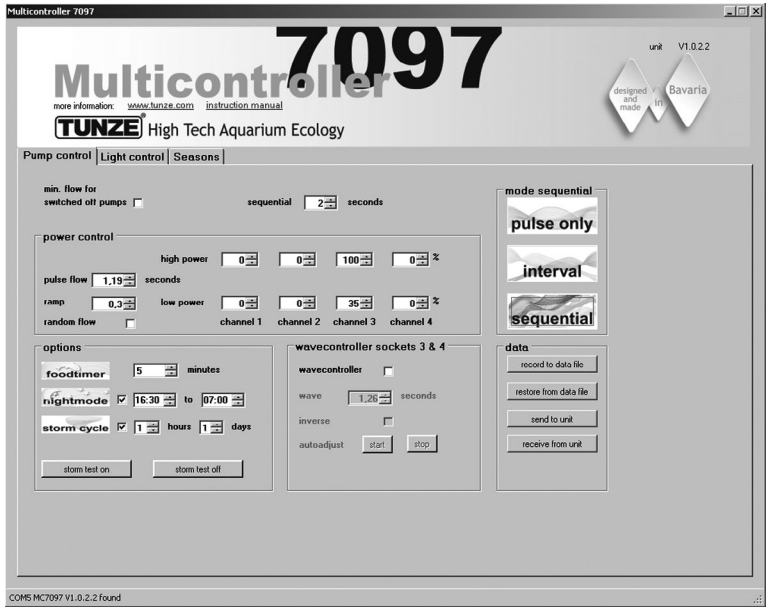
The sequential pump circuit is particularly recommended for long tanks, and should be operated with at least 3 pumps, because otherwise no pump sequence will be clearly identifiable. The Turbelle® pumps should be arranged in line, in order to generate a strong wave front with swelling water movement.

In the field “mode”, click on the “sequential” button.

Set the “sequential” switching time by clicking on 1 to 10 sec.

In the field “power control“, the pump performance “low power” and “high power” can be set to the same value for every output (between 20% and 100%) by clicking on the same value. This will also deactivate the wave motion simulation for each output.



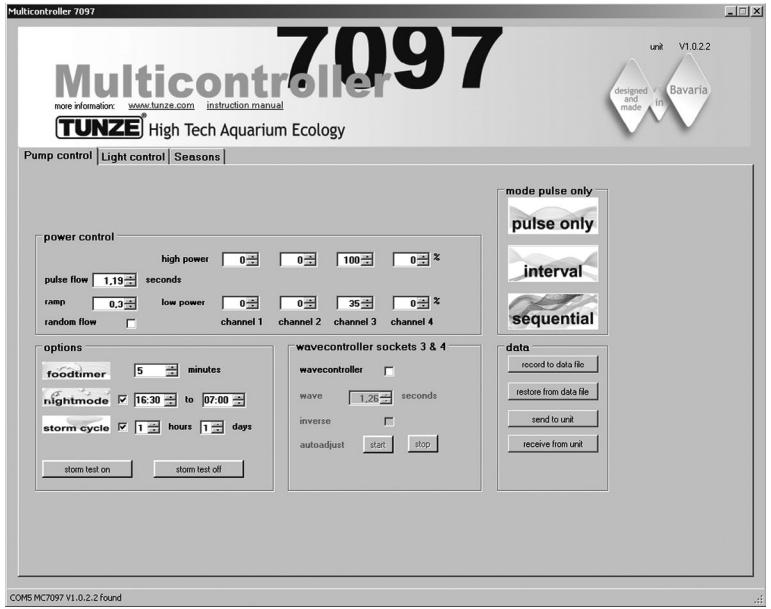


An example for “sequential“:

Outputs 1 and 2, “low power“ at 80% and “high power“ at 80%.
Outputs 3 and 4, “low power“ at 100% and “high power“ at 100%.
„Sequential“ switching time at 2 sec.
Connect a pump to each socket of the outputs.

Result:
Pump 1 will start with 80% power.
2 seconds later pump 2 will start with 80% power.
2 seconds later pump 3 will start with 100% power.
2 seconds later pump 4 will start with 100% power.
2 seconds later all four pumps will stop.
2 seconds later pump 1 will start again, etc.

If the “wavecontroller“ function is activated, the outputs 3 and 4 will be used, the sequential pump circuit “sequential“ will then only be active for outputs 1 and 2.



“random flow“ – random current flow

The random flow occurs when the sequential pump circuit and the pulse operation are switched on simultaneously. It always occurs when a fixed “pulse flow“ pulse frequency, or “random flow“ is set.

In the field “mode“, click on the “sequential“ button.

Set the “sequential“ switching time by clicking on 1 to 10 sec.

In the field “power control“, the pump performance can be set to “low power“ and “high power“ by clicking on the channels “channel“ 1 to 4. The number zero “0“ means pump not operating. The lowest possible setting is 20%, and the maximum adjustable setting is 100%.

The pulse frequency “pulse flow“ can be set from 0.3 to 8.0 sec.

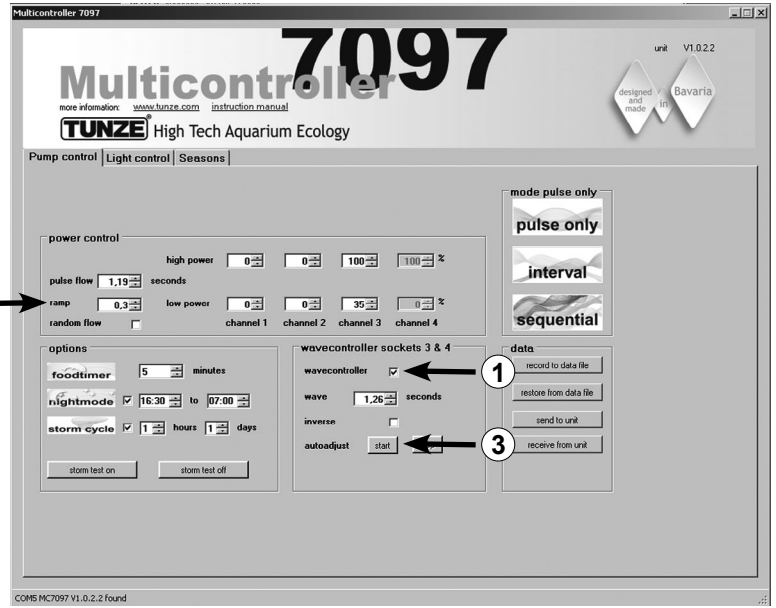
Result:

Pump 1 will start, later on pump 2, then pump 3, then pump 4, and subsequently all four pumps will stop.

At the same time, the pumps will pulse in the pulse frequency “pulse flow“ and reproduce an uneven current flow pattern.

If the night mode function “night mode“ is enabled, this will interrupt the pulse operation for the programmed time interval, for example, from 9:00 p.m. to 9:00 a.m., during which all pumps will remain in the “low power” setting. In the morning after 9 a.m., the selected pulse operation of the pump will then start.

If the “wavecontroller“ function is activated, the outputs 3 and 4 will be used, the sequential pump circuit “sequential“ will then only be active for outputs 1 and 2.



“wavecontroller“ – oscillating current with the Wavebox

The Wavecontroller function was especially designed for the use of TUNZE® Waveboxes, and is also interesting option for the electronically controlled Turbelle® propeller pumps. To generate the maximum wave motion, the frequency of the Wavebox must be set exactly to the resonance frequency of the aquarium.

Any current flow type can be selected in the “mode“ field (see previous chapter).

Click on the “wavecontroller“ function in the field “wavecontroller socket 3 & 4“ (1) The pump outputs 3 and 4 in the box “power control“ are now active for the Wavecontroller function.

Set a known resonance frequency the field “wave“, or find a suitable frequency through several attempts.

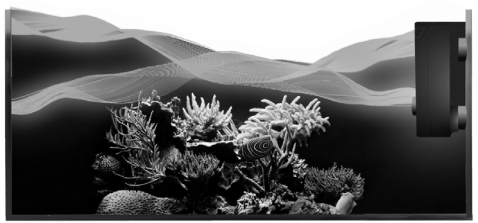
The function “inverse“ should be clicked, if at least two Waveboxes are positioned adjacent to each other (setting visibly to “low power“ and “high power“). If the Waveboxes are placed side by side, this feature should be disabled.

The “ramp“ setting with a time delayed start-up start creates a quiet and gentle start of the Wavebox pump. (2)

“autoadjust“ (3)

Clicking on “start” will enable an automatic and convenient detection of the optimal resonance frequency for the Wavebox in the aquarium. The pulsing will then start at an interval of 0.3 sec, and increase every 3 seconds in an interval of 0.01 seconds to the highest value of 2.5 seconds. During this time, the aquarium should be closely observed. A water movement can be observed, once the resonant frequency is reached. The “auto adjust“ function can then be stopped by clicking on “stop“. The “wave“ value can be additionally manually fine-tuned with “seconds“.

oscillating current



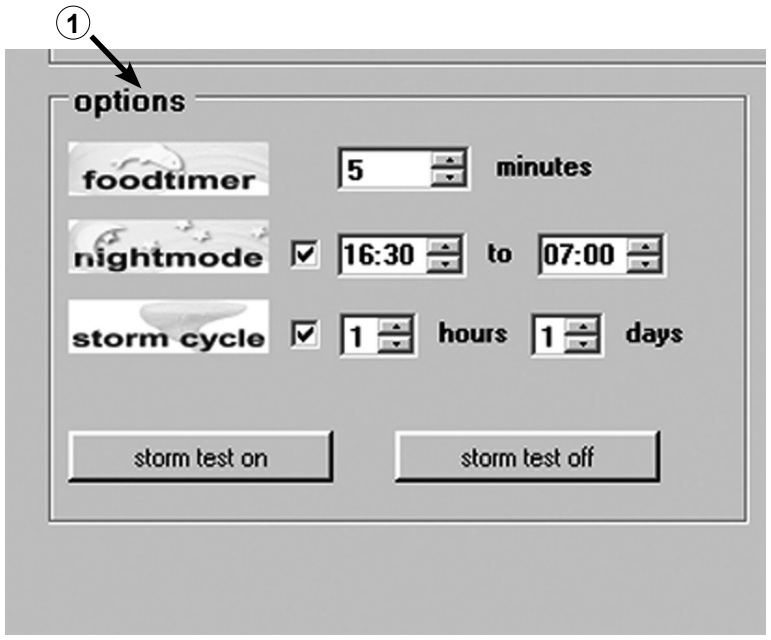
“wavecontroller“ – oscillating current with the Wavebox (1)

If enabled, the “night mode“ function will interrupt the Wavecontroller when the aquarium lighting is switched off, the Wavebox remains off. In the morning, after the light turns on again, the oscillating flow will also restart.

Further options:
The “wavecontroller“ function can be combined with each “mode“ setting. The calculated resonance frequency can be entered in “pulse flow“, the configured circulation pumps will then support the oscillating current flow in the aquarium.

“wavecontroller“ – oscillating current using only the Turbelle® pumps (2)

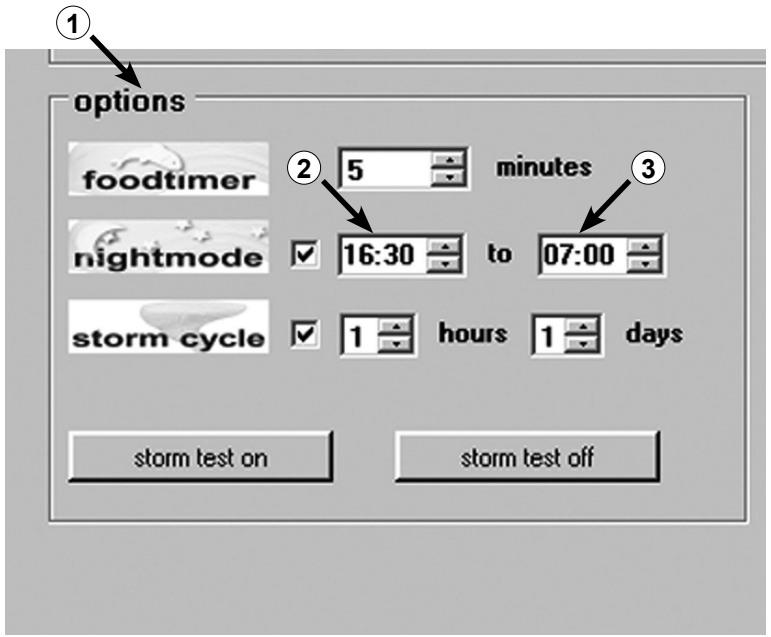
The Wavecontroller function can also be used for Turbelle® propeller pumps without the Wavebox. However, we recommend to always use at least two Turbelle® stream positioned adjacently. For this, the “inverse” function should be clicked.
Settings: see “wavecontroller“ - oscillating current with the Wavebox



“food timer“ – operating in feeding mode

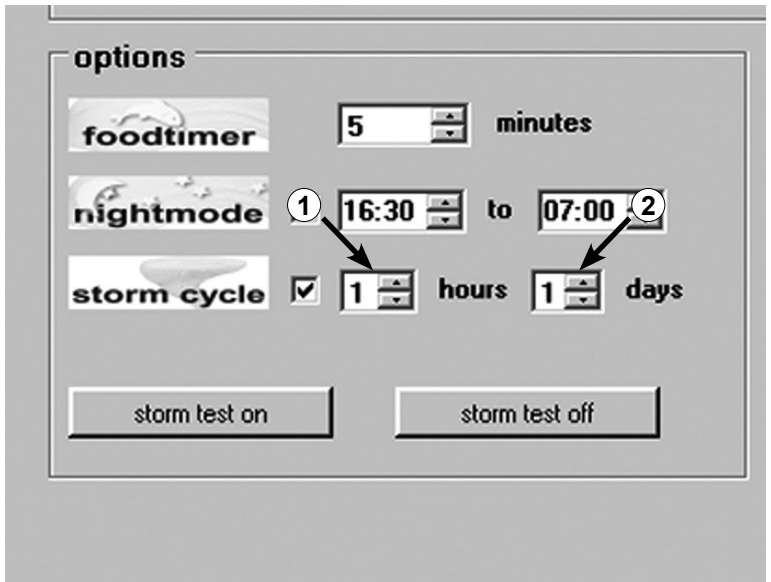
By pressing the “food timer“ button on the Multicontroller 7097 the connected pumps will be switched off, the fish can feed without disturbance. After the feeding break, the device will automatically switch the pumps back on again. This will ensure that after the feeding the connected pumps will be put into operation again. The “food timer“ will prevent up to 40% of food entry into the filter system.

This function is adjustable from 1 to 15 minutes in the field “options“ (1).
When the feeding break is activated, the green LEDs for the pump outputs 1 to 4 on Multicontroller will switch off, and will illuminate again after the pumps restart.



“night mode“

This function is adjustable in the field “options“ (1).
Time window for the night mode can be set by clicking on (2) and (3) hours. The internal real time clock will interrupt the pulse operation of the connected pumps during this time. The pumps will then continue to run with the “low power“ performance. In the morning, after the time has expired, the selected pulse operation of the pump will start again. The night mode is possible for every current flow program of the Multicontroller 7097.
The internal real time clock is permanently displayed during the “night mode“ function. The time in the Multicontroller can be synchronized with the computer under “Light control“ in the field “real time clock“.

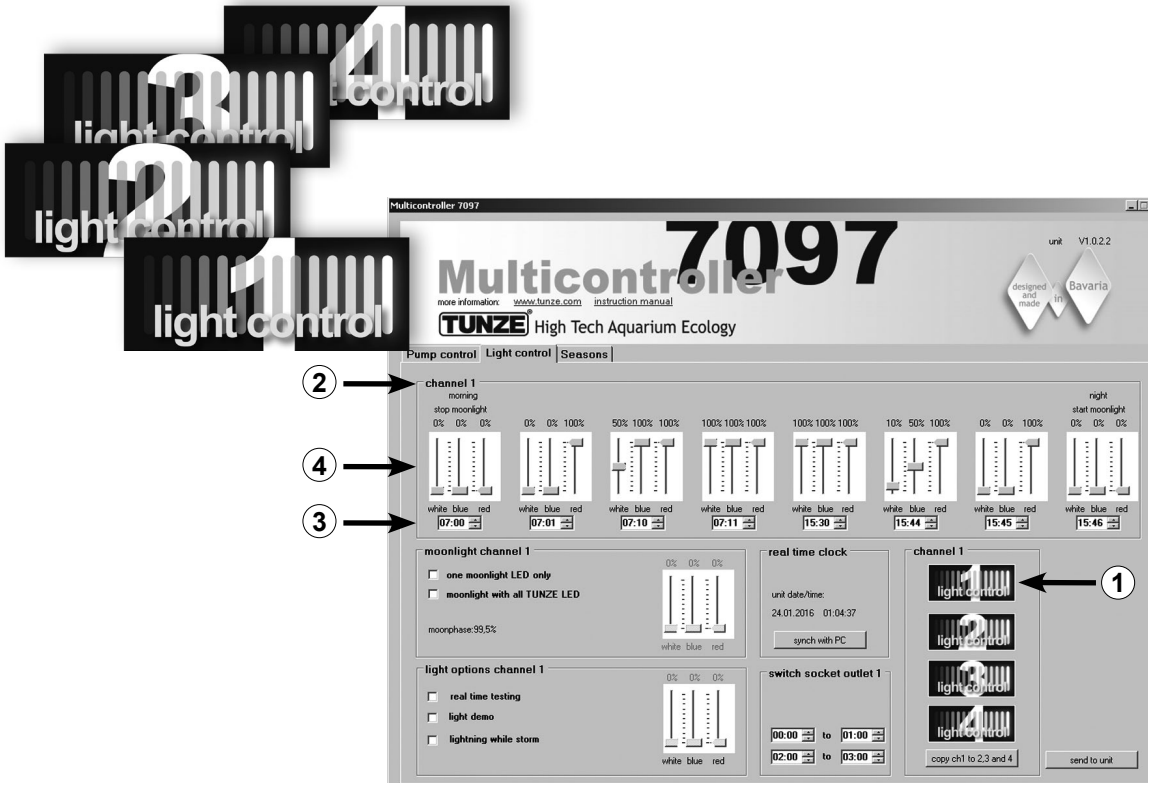


“storm cycle“ – storm for the desedimentation

Just as in nature, and similar to the random current flow the “storm cycle“ serves to perform a desedimentation of the reef structure in the aquarium. The storm-like current flow is not constantly in operation, but can be programmed for several times a day or week.
This function is adjustable in the field “options“. The frequency of the “storm cycle“ can be adjusted from 1 hour (1) up to 7 days (2).
The “storm cycle“ is based on a fixed and precise pump cycle, which controls all four pump outputs for five minutes according to the following program:

Pump 1 → 20 seconds
Pump 2 → 20 seconds
Pump 3 → 20 seconds
Pump 4 → 20 seconds
Pumps 1 + 2 → 20 seconds.
Pumps 3 + 4 → 20 seconds.
Pumps 1 + 3 → 20 seconds
Pumps 2 + 4 → 20 seconds
Pumps 1 + 2 + 3 + 4 → 20 seconds
Pumps 1 + 2 → 30 seconds.
Pumps 3 + 4 → 30 seconds
Pump 1 → 10 seconds
Pump 2 → 10 seconds
Pump 3 → 10 seconds
Pump 4 → 10 seconds
Pumps 1 + 2 + 3 + 4 → 20 seconds

Position the pumps in the aquarium in such a manner, that the “storm cycle” is able to cause any water damages!



Light setting for the TUNZE® LED

Field “Light control“

Settings in practice:

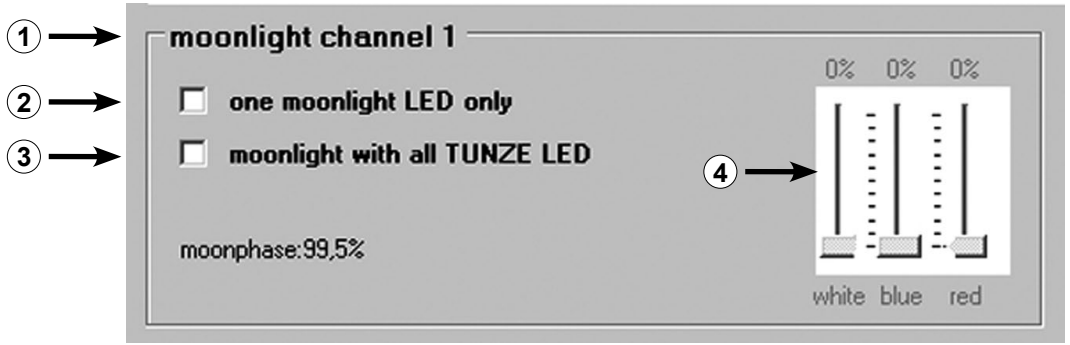
The Multicontroller 7097 enables a separate adjustment of the connected TUNZE® LED color channels, with sunrise and sunset times, seasonal adjustments, moonlight, lightning simulation during the storm and desedimentation function, and demo-light for each light channel. Optionally, a separate TUNZE® switching socket 7097.120 can be connected to a desired channel in order to switch additional aquarium lighting on and off.

Note:

When using a Y-adapter cable 7090.300 it is only possible to connect identical LED lights with the same voltage, for example, 2 x 8850 with 24 V, or 2 x 8810 with 12 V. Is not possible to combine 24 V and 12 V products.
Prior to the adjustment, we recommend a synchronization of the Multicontroller 7097 time with the computer. For this, click on the „light control“ field, and in the field „real time clock“ click on the “sync with PC” button. The real time in the computer is now displayed in this field.

Depending on the selected channel for the connection to the TUNZE® LED, in the “channel” field click on the button “light control 1“ (or 2, 3, 4) (1) at the bottom right of the display. The channel number “channel 1” (or 2, 3, 4) will also be displayed at the top left in the main “channel” frame (2).
It is best to start with the setting of channel 1!
The “channel“ main frame contains eight setting options for the light. Initially, the light times should be entered by clicking on hours and minutes (3). The settings should always be entered from left (earliest time - stop of the moonlight) to the right (latest point in time - start of the moon light).
Depending on the desired light colors, set the cursors for white light “white“, blue light “blue“ and red light “red“ for the respective time (4).
The settings made in channel 1 can simply be copied into the other three channels. For this, press on the button “copy ch 1 to 2, 3 and 4“ (5) the field „channel“ on bottom right of the display. The settings of the time and light colors will now be copied to the three other channels.
There, “light control 2“ (or 3, 4) can then be clicked on, and the light colors set as needed.

moonlight



“moonlight channel 1“ (oder 2, 3, 4) – moon-phase simulation

In the “moonlight“ field (1) the option “one moonlight LED only“ (2) - only one LED active in the LED-lamp - or “moonlight with all TUNZE® LED“ (3) - all LEDs in the LED lamp active - can be clicked for each light channel.
Thus, all TUNZE® LED on the Multicontroller 7097 can be used as moonlight. The Multicontroller 7097 offers a real automatic moon phase functionality, from full moon to new moon, with the internal real time clock aligned to the natural moon-phase.
For the option “moonlight with all TUNZE® LED“, the exact light color (4) should also be selected.

The start of the moonlight will commence as of the last time setting in the “channel” field, and stop at the first time setting.

The cycle of the moon-phase is also precisely displayed in the “moonlight“ field in % (5).

“light options channel 1“ (oder 2, 3, 4) – light options

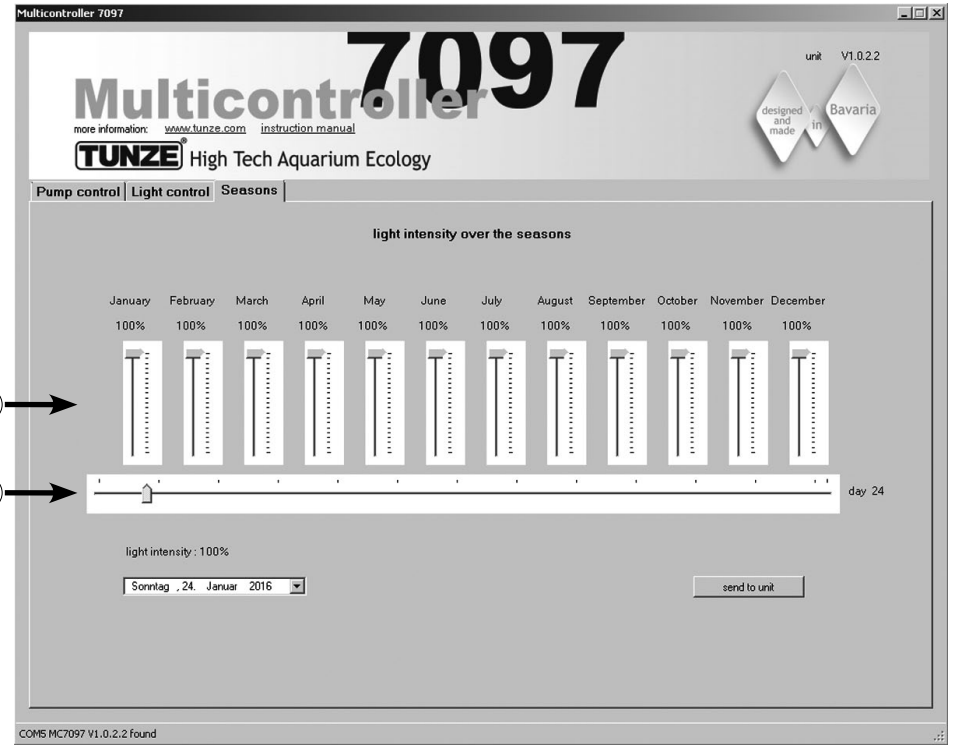
The following options for each light channel can be clicked on in the “light options“ field (1):
Clicking on the “real time testing“ (2) - LED-test - enables the individual testing of every TUNZE® LED color. The function automatically activates the cursors white, blue and red (3), which can then be set. This function doesn’t require a confirmation through “send to unit“.
Clicking on the “light demo“(4) – demonstration of the TUNZE® LED – is a function that is designed especially for the sale of TUNZE® LEDs in shops. The lamp is permanently dimmed up and down between 0% and set light intensity specified here (3), depending on the setting of the cursor.
Clicking on the “lighting while storm“ (5) – lightning simulation during the storm for the desedimentation – is an option that runs simultaneously with the pump program. Only a blue and a white LED will be used.

“real time clock“ – correct time in the Multicontroller

The real time in your computer is synchronized with the Multicontroller in the “real time clock“ field (6). The real time in the computer is now displayed in this field.

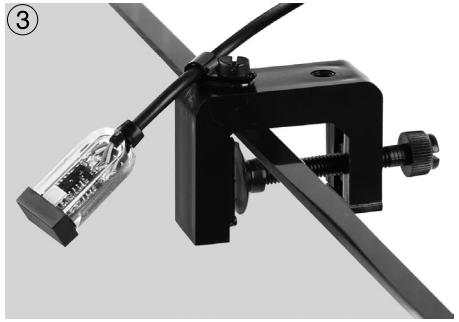
“switched socket outlet 1“ (oder 2, 3, 4) – switching of aquarium lights with a switched socket outlet

A separate TUNZE® switching socket 7097.120 can be connected to a desired channel in order to switch additional aquarium lighting on and off.
The Multicontroller 7097 automatically detects whether a Turbelle® pump, TUNZE® LED or switching socket 7097.120 is connected, i.e. the connected channel is automatically allocated to “Pump control“ or “Light control“. For example, a Y-adapter cable 7090.300 can be used to connect a pump and a switching socket to a single channel.
In the field “switched socket outlet 1“ (2, 3, 4) (7) it is possible to enter the lighting times by clicking on the hours and minutes (8). If there is no interruption of the lighting times, the bottom frame should contain the same times, e.g. “12 p.m. to 12 p.m.”.



Field “Seasons“

In this field, it is possible to control the entire light intensity throughout the year. For this function there is a cursor (1) for each month. The cursor (2) displays the exact time of the year.
The function is particularly interesting for aquariums with a direct lighting, and can thus be used to reduce the light intensity in the summer time, or increase the light intensity during the summer for native habitats.



Accessories

(1) Replacement cable 7092.300 1.20 m (47.2 in.) for all Turbelle® controllers.

(2) Y-adapter cable 7090.300 Moonlight 7097.050 or third additional pump.

The Y-adapter cable expands a single pump output of a Multicontroller 7097 by two outputs. Through this, it is possible that two Turbelle® pumps can be connected to a single socket and controlled parallel. This allows a connection of up to six pumps to a single Multicontroller 7097 with one Y-adapter cable, and up to eight pumps with two Y-adapters.

(3) Photo diode 7097.050

The Moonlight with photodiode 7097.050 offers a simplified moon-phase of 29 days. For this, a special LED is located in the photodiode which is positioned above the water surface. The moon-phase is programmed to reproduce the lunar cycle from the full moon to the new moon. This cycle can be aligned to the natural moon-phase by inserting the Moonlight with photodiode 7097.050 on a full moon, which will then reset the phase. The Moonlight is only illuminated when the photodiode receives very little or no light. It is therefore adapted to the light cycle of the aquarium.

(4) Switched Socket Outlet 7097.120

The special switching socket for the Multicontroller 7097 is an option used for the on/off switching of further aquarium lights on and turn off. The setting of the microcontroller is performed in the field “Switched socket outlet“, 230 V max., 1800 W (115 V / 900 W).

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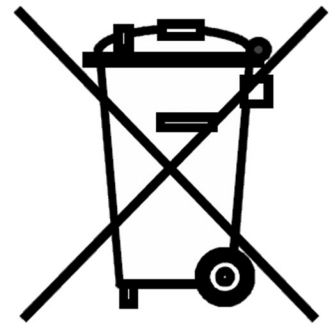
Guarantee

The unit manufactured by TUNZE® Aquarientechnik GmbH carries a limited guarantee for a period of twenty-four (24) months after the date of purchase covering all defects in material and workmanship. Within the framework of the corresponding laws, your remedies in case of a violation of the guarantee obligation shall be limited to returning the unit manufactured by TUNZE® Aquarientechnik GmbH for repair or replacement at the discretion of the manufacturer. Within the framework of the corresponding laws, the said shall be the only remedies. Consequential damage and/or other damage shall be excluded therefrom explicitly. Defect units shall have to be shipped to the dealer or the manufacturer in the original packaging together with the sales slip in a pre-paid consignment. Unpaid consignments will not be accepted by the manufacturer.
Exclusion from guarantee shall exist also in case of damage caused by inexpert handling (such as water damage), technical modification carried out by the buyer or by connection to devices which have not been recommended.
Subject to technical modifications, especially those which further safety and technical progress.
Customers in USA, please refer to seperate Limited Warranty for United States brochure.



Disposal

(in keeping with RL2002/96/EU)
The device and the battery may not be disposed of in normal domestic waste; it has to be disposed of in an expert manner.
Important for Europe: Devices can be disposed of through your community's disposal area.