

# **Operation Manual for Pump Control**



**WAVE**

**Controlling device for circulation and filtration pumps for the simulation of natural current conditions in the aquarium.**

**With the purchase of this device you have selected a top quality product which has been specially designed for aquaristic purposes and approved by experts.**

## 1. Basics

Apart from a good filtration and illumination water movement is one of the most important matters for optimum and healthy conditions in a coral reef aquarium.

The organism have aligned themselves with the always changing currents in a day/night rhythm. A continuous water current is essential for the provision with nutrients and oxigen and the transportation of waste substances.

**WAVE** creates natural current conditions to avoid „death zones“ in the aquarium.

## 2. Features of WAVE

### • Pumps

To create a continuously repeated current pattern, one to three powerheads and one filtration pump can be connected at the **WAVE**. Most of the standard circulation pumps up to 100 Watt can be used as powerheads.

Change of pumps:

The WAVE can be adjusted to every aquarium by choosing one of the 8 different current programmes. The switch mode of the 3 current poumps is varied as follows:

Pump 1	0	0	0	0	1	1	1	1
Pump 2	0	0	1	1	0	0	1	1
Pump 3	0	1	0	1	0	1	0	1
<b>number</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

position of the switch	program number
Mode 0 „standard“	→ 0-1-2-3-4-5-6-7
Mode 1 „storm“	→ 7-3-5-6-5-3-5-6
Mode 2 „wave“	→ 0-1-3-7
Mode 3 „sunny day“	→ 7-2-0-7-2-0-5-2-0-5-2-0
Mode 4 „reef“	→ 7-0-7-0-5-2-5-2
Mode 5 „beach“	→ 1-3-7-3-1-0-4-6-7-6-4-0
Mode 6 „Ocean“	→ 2-5-7-5-2-0
Mode 7 „random“	→ random generator. mode 0 to mode 6 are randomly combined

The filtration pump is switched on long-term. The frequency of pump changes can be adjusted with the knob on the front panel. The highest frequency is received at „-“; the lowest at „+“.

An automatic soft start of the pumps takes care of the impeller to prolong ist life-time.

### **Test mode:**

By pressing the Test- Button, the choosen program ( mode 1 – 7) is shown in quick modus. The change of the pumps can be watched by the green LED´s . During this time, the status LED flashes every 0.5 sec orange. If you press the test button during the night, the pump change is indicated, too and the status LED flashes green every 0,5 sec.

- **Day/Night Rhythm**

In natural coral reefs often occurs a weaker current during the night than during the day. This day/night variation is simulated by the **WAVE**.

During the day 0-3 powerheads work simultaneously in alternation; intensity and direction of the current vary.

During the night only one powerhead works. It changes the rhythm as adjusted so that the current direction continuously changes also during the night.

**WAVE** switches automatically between day and night programme. This is controlled by a photoelectric cell positioned in the front plate of the device („Sensor“). Therefore, **WAVE** should not be placed in a twilight zone.. If the **WAVE** is placed in the dark ( cabinet), it can be supplied with an external sensor. This sensor is placed in a way, that it is illuminated by the aquarium light. Option: **external light sensor**: art. no: 210.41

During the night, the status LED flashes green every 2 sec.

- **Feeding break**

Strong water movements interfere during the feeding of fishes and especially feeding of invertebrates with natural or synthetic plancton. Those movements can be interrupted by using the „PAUSE“ (break) function of **WAVE**. When pressing „PAUSE“, all 4 pumps (powerheads and filtration pump) are switched off for 10 minutes. It creates a phase without any currents; the animals get time to eat. During the feeding break, the Status LED flashes red every 2 sec.

If necessary, the break can be shortened (see „Starting“).

### 3. Starting

- Position the pumps at suitable places in the aquarium.
- Ensure that the pumps are connected correctly.
- Put the power cables of the pumps into the marked sockets at the device.
- **Caution:** Only circulation pumps up to 100 Watt are suitable for **WAVE**!
- Put the mains connection in.
- Switch the **WAVE** on (I).

- Feeding break:

Press the „Pause“ button.

All pumps (powerheads and filtration pump) are switched off.

The red LED („Pause“) blinks slowly.

After 10 minutes **WAVE** switches automatically into the operation mode; all pumps


start again.


It is possible to shorten the break by pressing the „Pause“ button until the red LED changes back to orange. the programme changes into the normal operation mode. The green LED's (pumps) light up again.

#### 4. Technical Data


Powerheads	3 channels
Filtration pump	1 channel
Power requirements/Pumps	max. 100 Watt/channel
Programme	8 day programmes 1 Night Programme, automatical shift through light sensor
„Pause“-button	10 minutes feeding break, automatical start
Electrical supply	230V / 50 Hz

#### 5. Warranty

This product is warranted for twelve months after date of purchase on material and production faults by  **AQUA MEDIC** GmbH. Warranty only by proof of purchase by the original invoice.

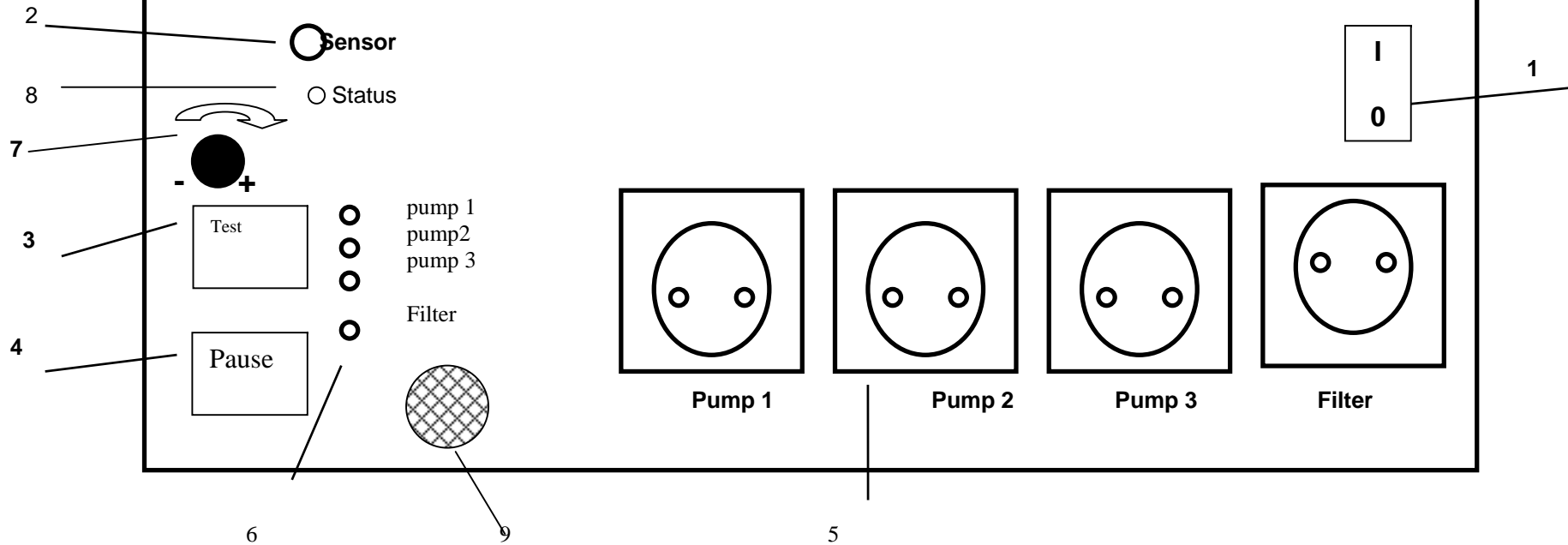
Our obligation under this warranty is limited to the free of charge repair or replacement of the unit (excluding freight costs). In case of problems please contact your  **AQUA MEDIC** dealer.

This warranty will not apply to units that were improperly installed, misapplied or modified by non-authorized institutions.

 **AQUA MEDIC** is not liable for any consequential damages caused by the use of the product.

- Technical changes reserved -

# AQUA MEDIC WAVE



- 1 Main switch
- 2 Photo cell
- 3 test button
- 4 Feeding break button
- 5 Sockets
- 6 LED's of the pump function
- 7 frequency of pump changes
- 8 status LED
- 9. Mode switch , pump change pattern