

# Deltec®

## **E-Flow<sup>24V</sup>** Pumps

### Operating Instructions



# IMPORTANT SAFETY INSTRUCTIONS

**WARNING** To guard against injury, basic safety precautions should be observed, including the following.

1) READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

2) **DANGER** – To avoid possible electric shock, special care should be taken since water is employed in the use of aquarium equipment. For each of the following situations, do not attempt repairs by yourself; return the appliance to an authorized service facility for service or discard the appliance. a) If the appliance shows any sign of water leakage, immediately unplug it from the power source.

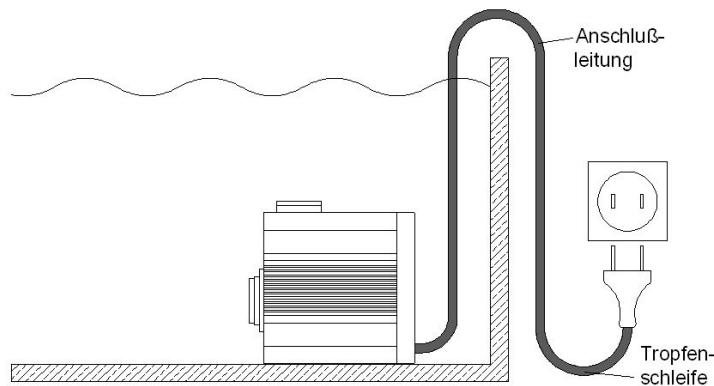
b) Carefully examine the pumps after installation. It should not be plugged in if there is water on parts not intended to be wet.

c) Do not operate the pumps if it has a damaged cord or plug, or if it is malfunctioning or has been dropped or damaged in any manner.

d) To avoid the possibility of the pumps plug or receptacle getting wet, position aquarium stand and tank to one side of a wall-mounted receptacle to prevent water from dripping onto the receptacle or plug.

A "drip-loop", shown in the figure below, should be arranged by the user for each cord connecting an aquarium appliance to a receptacle. The "drip-loop" is that part of the cord below the level of the receptacle, or the connector if an extension cord is used, to prevent water travelling along the cord and coming in contact with the receptacle.

If the plug or socket does get wet, **DON'T** unplug the cord. Disconnect the fuse or circuit breaker that supplies power to the appliance. Then unplug and examine for presence of water in the receptacle



3) Close supervision is necessary when any appliance is used by or near children.

4) Always unplug an pump from an outlet when not in use, before putting an or taking off parts, and before cleaning. Never yank cord to pull plug from outlet. Grasp the plug and pull to disconnect.

5) Do not use the pump for other than intended use. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.

6) Make sure an appliance mounted on a tank is securely installed before operating it.

7) Read and observe all the important notices on the appliance.

8) If an extension cord is necessary, a cord with a proper rating should be used. A cord rated for less amperes or watts than the appliance rating may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.

9) This pump has a polarized plug (UK and US version). As safety feature, this plug will fit in a polarized outlet only one way. If the plug does not fit, contact a qualified electrician. Never use with an extension cord unless plug can be fully inserted. Do not attempt to defeat this safety feature.

*Exception: This instruction may be omitted for an appliance that is not provided with a polarized attachment plug.*

Removing of the plug invalidates the warranty!

**SAVE THESE INSTRUCTIONS**

# E-FLOW<sup>24V</sup> PUMPS

Deltec E-Flow pumps are brushless motor, true sine wave 24V DC pumps. They come with a separate controller. The power consumption and performance can be selected with the up/down buttons located on the face of the controller. The pump itself can be installed either dry outside the sump or submersed inside the sump or aquarium. **The controller is not submersible.**

## Important safety instructions

Deltec E-Elow<sup>24V</sup> pumps are designed /manufactured according to existing technical standards and safety regulations. However there is a potential risk to persons and goods if the pumps or safety instructions are not being observed. Persons under the age of 16 or persons who are unable to understand possible risks or do not fully understand the safety and operating instructions are not allowed to use this pump for safety reasons.

**Keep these instructions in a safe place where it is accessible at all times.**

**Please read the following instructions very carefully before installing the pump. Should you still have questions please contact your supplier.**

## Installation of the pump

- **Always unplug the pump during the installation process.**
- After unpacking check pump, controller and cables for any damage. If any components show signs of damage, do not use the pump.
- The pumps are designed for 'dry' or submersible installation in fresh or seawater aquarium systems.
- The pumps are **not** self priming and need to be installed below the water level.
- The separate controller must be placed in a dry, cool area, to prevent damage to the electronic control circuits through water or dampness.
- To install, place the pump on a firm, even surface.
- Never select pipes or hoses smaller in diameter than that of the pumps suction and pressure side fittings. Shut off valves should be selected one size bigger and fitted with reducers down to the normal pipe diameters, since the normal inner shut off valve diameter restricts the flow considerably.
- To achieve best performance, plan the piping as short as possible, use slow bends instead of elbows.
- On longer pipe installation increase the diameter of the pipes. Instead of 32 mm use 40 mm, etc.
- It is good practice to use a straight length of pipe of app 300 mm on the suction side of the pump. This will give a laminar flow into the pump and prevent unwanted noises
- Never run the pump dry, this may lead to irreparable damage.

- Never put your fingers into the pump's suction or pressure side with the pump connected to mains electricity.
- When using flexible hoses make sure that they are suitable for the pumps performance and do not leach out dangerous substances into the water.
- When using non return valves ensure proper function, otherwise there is great danger of the pumps running dry.
- If required, use a strainer with app 2-3 mm opening on the suction side. When using finer filtration (sponges etc) make sure that they are always cleaned at short intervals, to prevent cavitations and possible damage to the pump.
- Do not operate the pump with a shut off valve on the suction side, partly or fully closed.

## **Installation of the controller**

Install the controller in a dry, suitably vented place, away from water, dampness and other heat sources like sunlight, artificial light etc.

### **Starting the pump**

Check that the power supply is suitable for the pump. Refer to the pumps label. Use the pump with an electric circuit breaker.

### **Overload protection**

*E-Flow* pumps are protected against overloading. If the impeller is blocked the pump is switched off automatically. If the cause of the blockage is removed the pump can be restarted or will start on its own.

### **Power cut new start**

After a power cut or the pump having being switched off, the pump will assume its old setting when the power comes back on.

# Controller Panel



## 4. Connections of the Controller

Left: 0-10V  
Middle: Power Supply  
Right: Pump

## 5. Display

- a) It shows the set wattage of the pump.
- b) It shows the faults of the pump with a code, see fault finding as follows.

## 6. Arrow buttons UP / DOWN

Setting the wattage

# Fehlerbestimmung mit der Displayanzeige

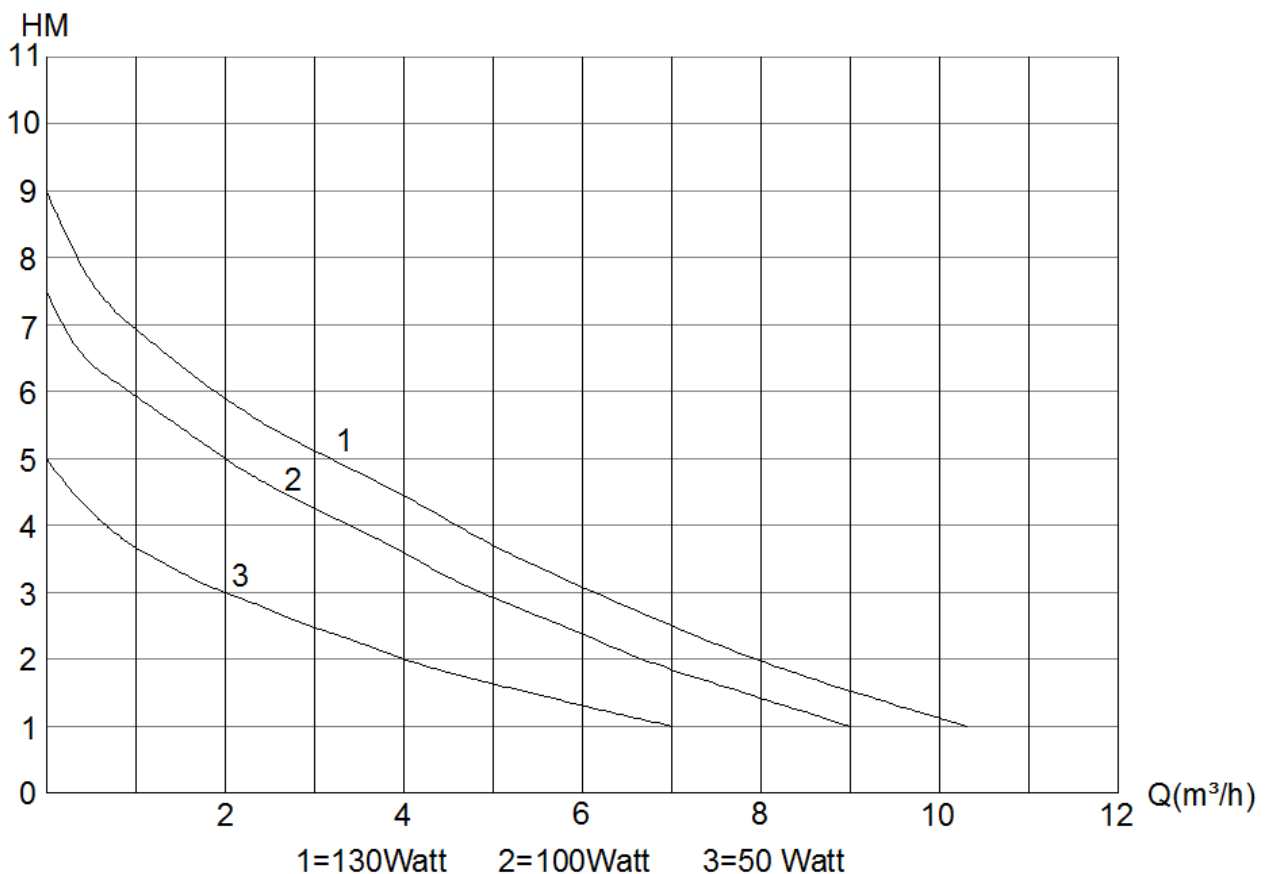
- F1** Internal communication error. Very rare. Hardware may be defective.
- F2** Failed to start engine (fixed or blocked).
- F3** Motor is blocked in operation (overcurrent due to high power consumption of the Rotor, foreign body)
- F4** Shows dry running.
- F7** Emergency shutdown since the plug has been pulled in operation

# Technical Data

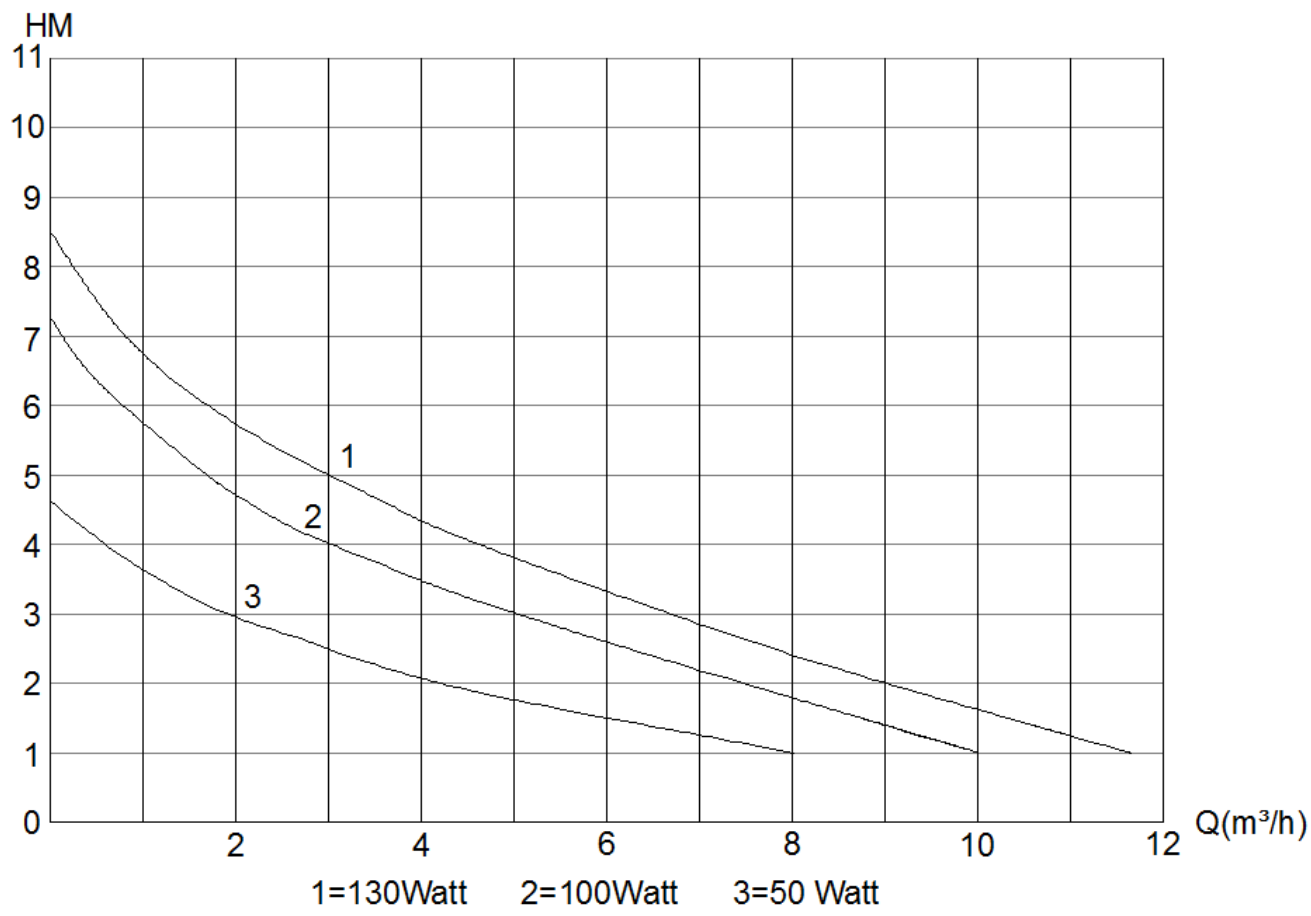
Technische Daten	E-Flow 10	E-Flow 12	E-Flow R3
Volumen max.	10.300 litre/h	11.800 litre/h	9.000 litre/h
Water head max.	9,0 meters	8,5 meters	10,5 meters
Power consumption max.	130 Watt	130 Watt	130 Watt
Performance selection	13 Stages	13 Stages	13 Stages
Voltage	24 Volt	24 Volt	24 Volt
inlet diameter	40 mm	40 mm	40 mm
outlet diameter	32 mm	40 mm	32 mm
Dimension pump (l/b/h) mm	195x132x212	200x135x214	230x135x214
Weight	3,50 kg	3,60 kg	3,90 kg

## Flowcharts

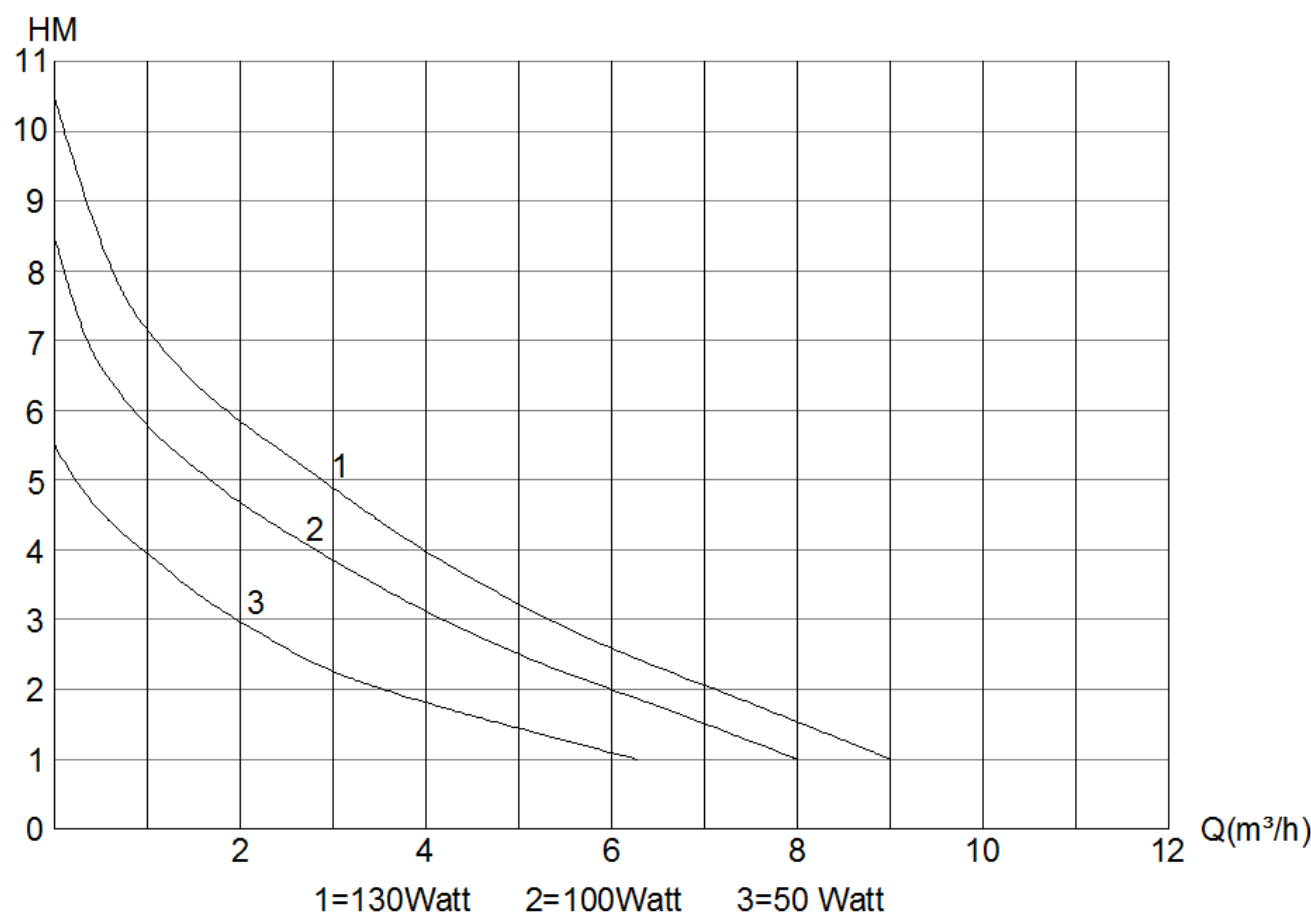
### E-Flow<sup>24V</sup> 10



# E-Flow<sup>24V</sup> 12



# E-Flow<sup>24V</sup> R3



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Deltec GmbH 06/2018