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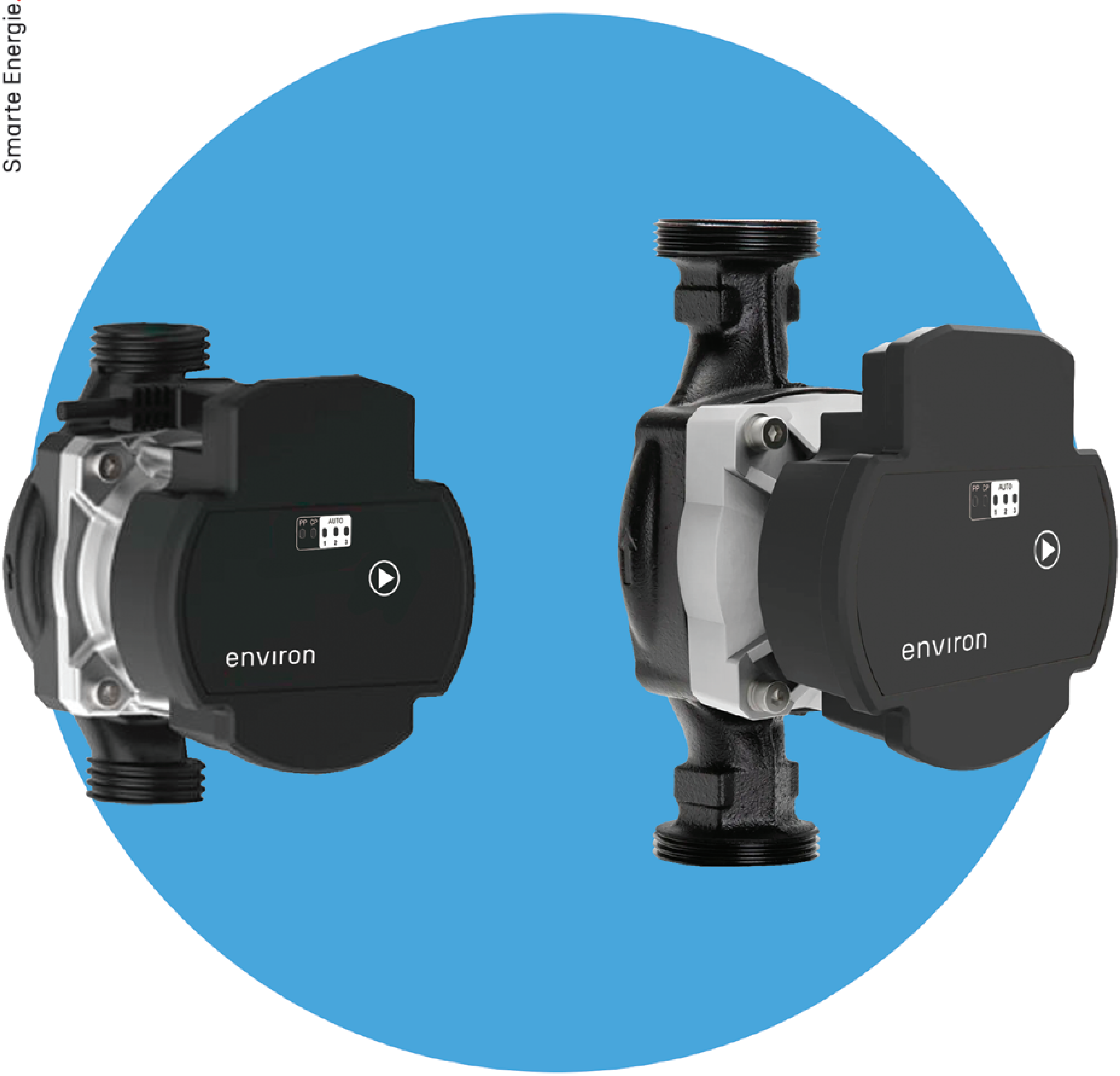
# environ Ecostar II

## Installation and Technical Data

Smarte Energie. Für Alle.



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## Purpose

The expertise and enthusiasm for good ideas and solutions that drive our society forward in the field of energy transition are a powerful force behind ENVIRON..

Smart solutions for society's energy supply.

## Vision

Our vision is to make a future possible — through our expertise, products, and services — in which everyone has access to energy that is affordable, high-quality, and intelligent.

A world full of energy through smart solutions.

## Mission

Our mission is to provide society with affordable and sustainable solutions for generating, storing, and using energy — based on our products, expertise, and values.

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Affordable. Honest. Sustainable.

Pioneering energy solutions for every home.
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# environ Ecostar II

## Installation and Technical Data

Thank you for choosing our products. Please read these instructions carefully and keep them in a safe place for reference before installation and operation.

## Safety Warnings

- Please read the instructions carefully before installation and use.
- The electric pump must be properly grounded and equipped with a residual current circuit breaker (RCCB) before operation.
- It is strictly forbidden to touch the pump while it is running.

## Warning for Children

- Children, persons with disabilities, or individuals with limited decision-making ability must not use this product without supervision, unless they have been instructed in its safe use and understand the associated risks.

## Electrical Warning

- The electrical system may only be used if it complies with the safety requirements specified by the regulations of the country where the product is installed.

## Pressure Warning

- The pump system must be able to withstand the pump's maximum pressure.

## Modification Warning

- The manufacturer shall not be held responsible for any consequences resulting from unauthorized modifications to the electric pump or operation beyond the specified conditions.

# 1 Introduction

The Environ Ecostar high-efficiency circulation pump (hereinafter referred to as the electronic pump) features a fully enclosed motor stator, while the rotating components are immersed in clean water, which serves as a coolant and lubricant during operation. The pump's thin-walled shielding sleeve completely isolates the motor's internal stator from the water, eliminating the need for a traditional mechanical seal and effectively preventing leakage issues common in conventional water pumps.

The rotating components are made of ceramic bearings and ceramic shafts, which are highly wear-resistant and lubricated by clean water. This design ensures efficient motor cooling and reduced noise levels. The pump operates without overload at full head, and when used correctly, it is generally maintenance-free.

# 2 Profile and Dimensions

## 2.1 Model Illustration

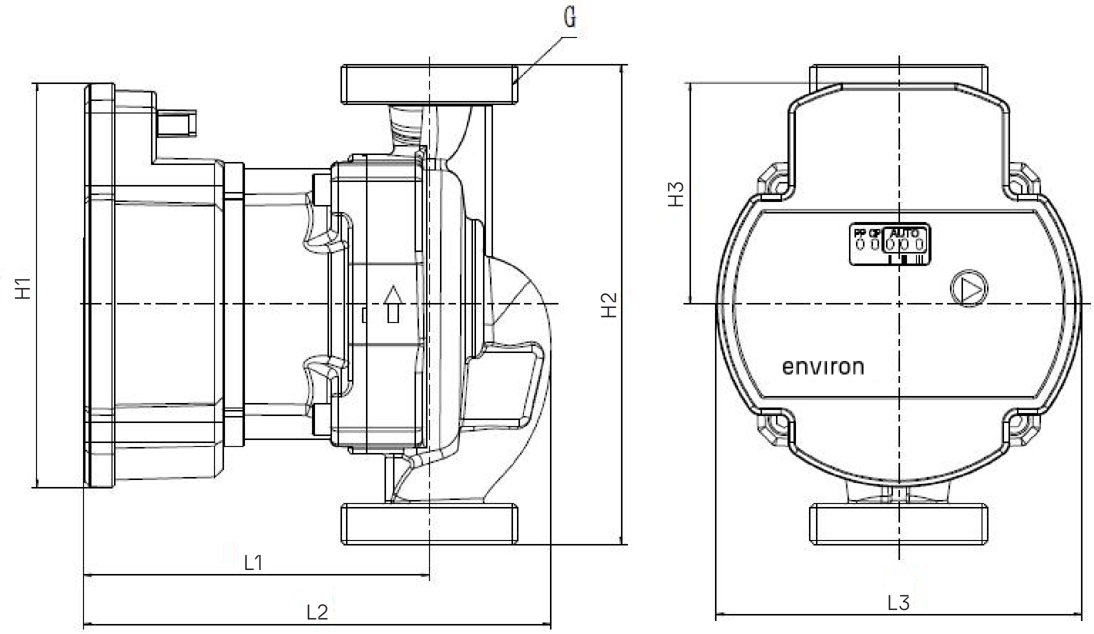
| ENECOS2560130 | |
|---|---|
| EN | Intelligent Frequency-Controlled Circulation Pump |
| 20 | Inlet and outlet diameter: 20 mm |
| 8 | Maximum head: 8 m (at 0 m³/h flow rate) |
| 130 | Distance between inlet and outlet: 130 mm |
| S | Model code |

## 2.2 Profile

<table>
<tr><th rowspan="2">Model</th><th>Pipe Size</th><th rowspan="2">Thread</th><th>Max. Flow</th><th>Head</th><th>Voltage</th><th>Frequency</th><th>Power</th><th>Current</th></tr>
<tr><th>(mm)</th><th>m³/h</th><th>m</th><th>V</th><th>Hz</th><th>W</th><th>A</th></tr>
<tr><td>ENECOS2560130</td><td>25</td><td>G1 1/2</td><td>3,4</td><td rowspan="3">1 ~ 8</td><td rowspan="3">230</td><td rowspan="3">50 / 60</td><td rowspan="3">65</td><td rowspan="3">0,65</td></tr>
<tr><td>ENECOS2560180</td><td>25</td><td>G1 1/2</td><td>3,8</td></tr>
<tr><td>ENECOS3280180</td><td>32</td><td>G2</td><td>4,2</td></tr>
</table>

<table>
<tr><th rowspan="2">Model</th><th colspan="3">Internally controlled</th></tr>
<tr><th>Proportional pressure</th><th>Constant pressure</th><th>Constant curve</th></tr>
<tr><td rowspan="3">ENEC”””””””””</td><td>I</td><td>I</td><td>I</td></tr>
<tr><td>II</td><td>II</td><td>III</td></tr>
<tr><td>III</td><td>III</td><td>III</td></tr>
</table>

## 2.3 Dimensions




<table>
<tr><th rowspan="2">Model</th><th colspan="7">Size (mm)</th></tr>
<tr><th>L1</th><th>L2</th><th>L3</th><th>H1</th><th>H2</th><th>H3</th><th>G</th></tr>
<tr><td>ENECOS2560130</td><td rowspan="3">94</td><td rowspan="3">127</td><td rowspan="3">99</td><td rowspan="3">110</td><td>130</td><td rowspan="3">60</td><td rowspan="2">G1 1/2</td></tr>
<tr><td>ENECOS2560180</td><td rowspan="2">180</td></tr>
<tr><td>ENECOS3280180</td><td>G2</td></tr>
</table>

# 3 Precautions

- Ground the motor before connecting it to the power supply.
- Do not touch the pump while it is operating.
- Do not operate the pump without water.

3.1 The operating voltage of the electric pump is 230 V AC (single-phase) with a frequency of 50/60 Hz.

3.2 Before installation, ensure that the piping system is securely connected and that all impurities, solder residues, and debris have been removed.

3.3 Install the pump in a dry, well-ventilated area to prevent short circuits caused by moisture or splashing and to allow easy access for maintenance and replacement.

3.4 For outdoor installations, a protective cover must be used. For indoor installations, take measures to prevent water splashes and electrical shock risks.
Note: Do not install the pump in bathrooms to prevent steam or moisture from entering the terminal box and causing electrical leakage.

3.5 It is strongly recommended to install shut-off valves at the inlet and outlet for easier maintenance.

3.6 After installation, connect the power supply for a test run, setting the speed controller to the highest level to check proper startup. However, the test run must not exceed 10 seconds to avoid bearing damage due to dry running.

3.7 When supplying water to the heating system, do not touch the pump or pipes to avoid burns.

3.8 The power plug must be grounded. Ensure the grounding pin of the plug is firmly connected to the socket's ground terminal. Do not modify the grounding plug.

3.9 Clear safety warnings must be displayed during pump operation to prevent accidents.

3.10 Before adjusting the pump position or performing any task that may involve contact during operation, disconnect the power supply to prevent accidents.

3.11 Inspect the pump regularly and replace it immediately if any damage is detected.

3.12 The power cable may only be replaced using the specified type or special components.

3.13 In winter, when the ambient temperature falls below 0°C, drain the water completely if the pump is not operating to prevent frost damage.

3.14 The heating pipes should not be refilled frequently with non-decalcified water to avoid lime buildup that could block the rotor.

# 4 Environmental Conditions and Installation

## 4.1 Pumped Liquids

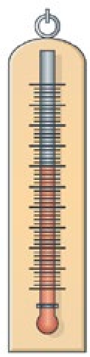
The pumped medium is soft water or a clean, non-corrosive, non-explosive liquid free from solids, fibers, and mineral oils. The pH value should be between 6.5 and 8.5.


Maximum pressure of the electric pump: 1.0 MPa (10 bar)

To avoid cavitation noise and damage to the pump bearings, a minimum inlet pressure must be maintained.

| Liquid Temperature | 85°C | 90°C | 110°C |
|---|---|---|---|
| Inlet Pressure | 0.5m | 2.8m | 11.0m |
| | 0.05bar | 0.28bar | 1.08bar |

## 4.2 Liquid and Ambient Temperature


Do not touch the surface of the control box while the pump is operating to avoid burns.

| Liquid Temperature (t1) (°C) | 2~110 |
|---|---|
| Ambient Temperature (t2) (°C) | 0~40 |

## 4.3 Installation

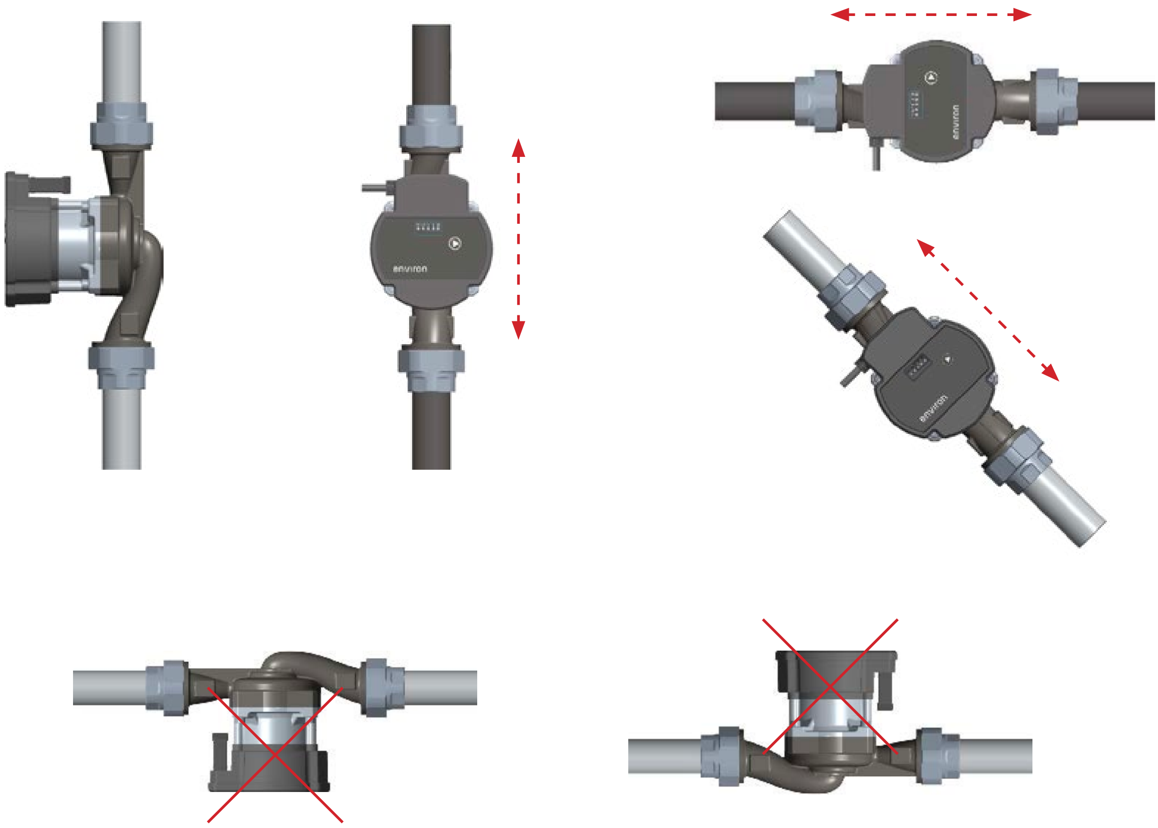
The motor shaft must be kept in a horizontal position during installation, and the flow direction of the liquid in the pipe must match the arrow marked on the pump housing.


Step 1


Step 2


Step 3

### Correct Installation Position of the Motor



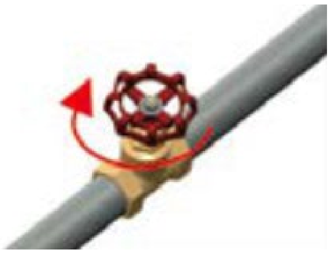
## 4.4 Control Box Positions

The following operations may only be carried out by qualified personnel.

High temperature


1. Installation Direction Preview


2. Disconnect the power supply before making any adjustments.



3. Drain the liquid system and close the valve.

High pressure


4. Remove the hex screws using an Allen key.

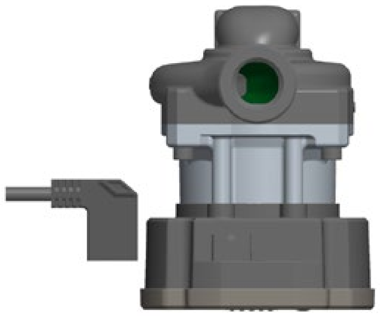

5. Align in the desired direction and tighten the hex screws securely.

6. Open the valve — the pump can be used normally after the power supply is turned on.

The pumped liquid may be a high-temperature or high-pressure fluid.
Before removing the inner hex screws, drain the hot water from the system and close the shut-off valves on both sides of the electric pump.

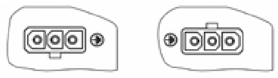
## 4.5 Electrical Connection

Electrical
Connection

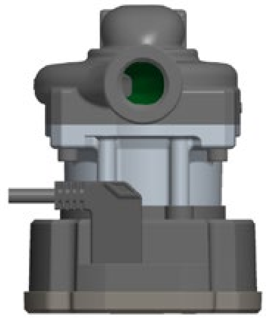


Power Interface

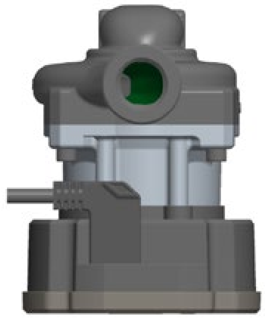
T:L/N/PE T1:PE/N/L



1. Installation Position



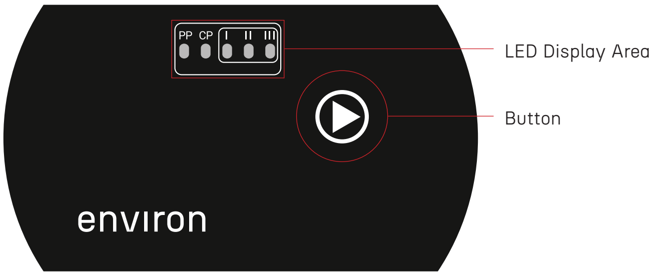
2. Align the plug with the control box socket and insert it firmly.



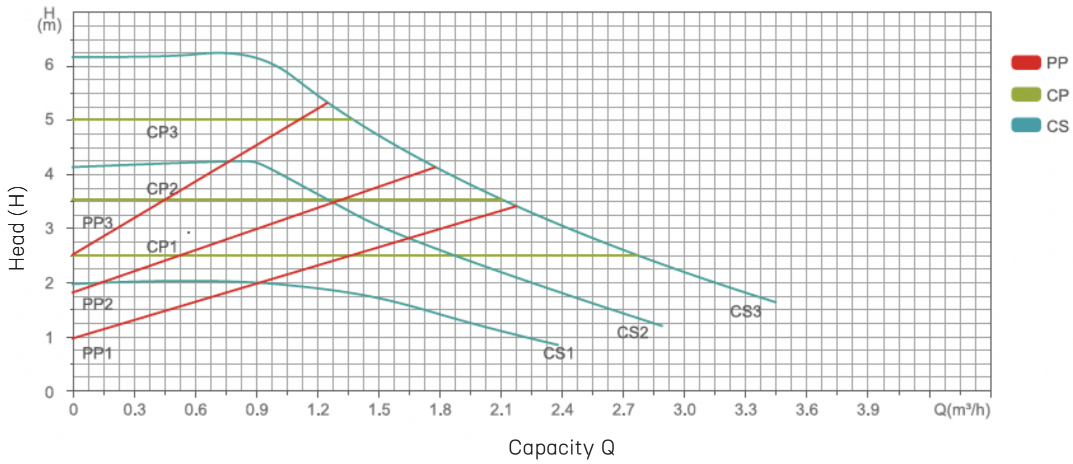
3. Complete the assembly

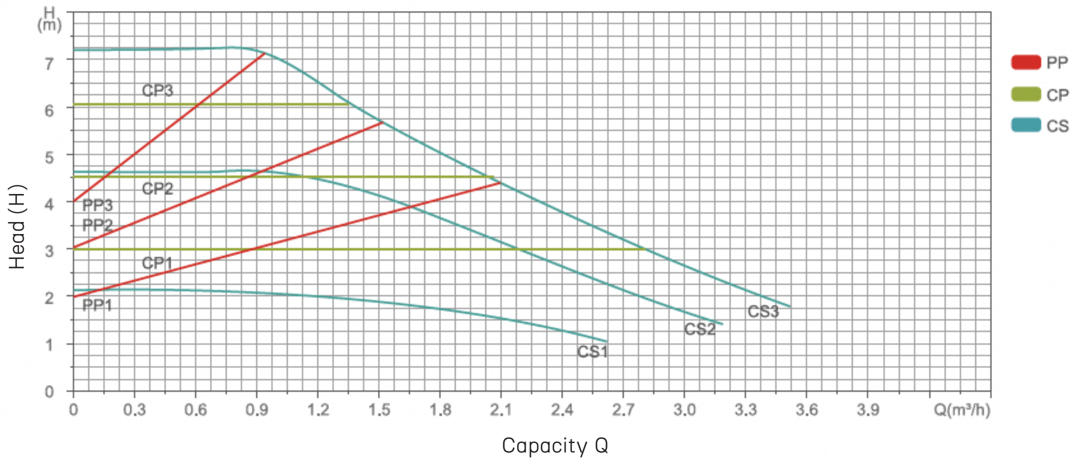
# 5 Operating Instructions

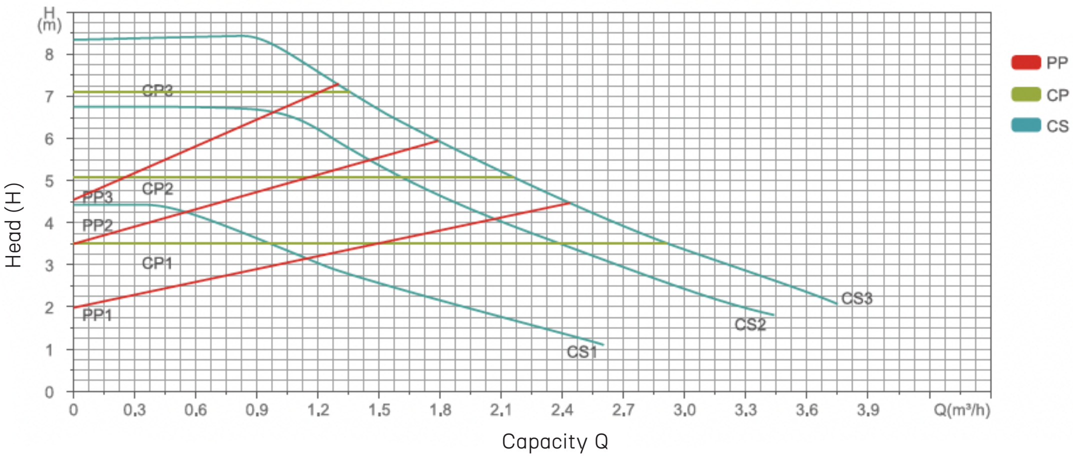
## 5.1 The Control Panel




## 5.2 Performance Curve

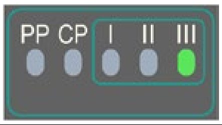
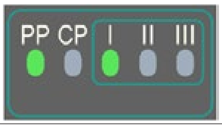
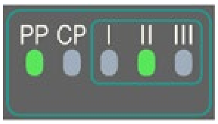
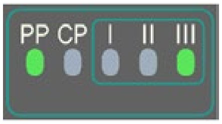
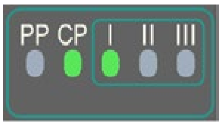
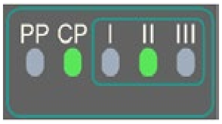
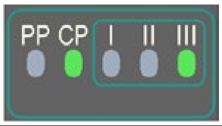
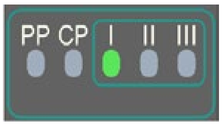
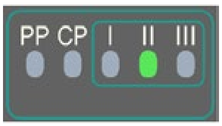
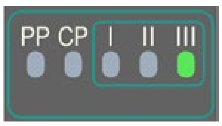


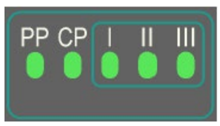



## 5.3 Relationship Between Pump Setting and Illuminated Area

The operating mode of the electric pump is indicated by the following display areas:

| Number of Button Presses | Model | Description | Display |
|---|---|---|---|
| 0 | CS III (Factory Settings) | Constant curve, Speed II |   |
| 1 | PP I | Proportional pressure curve, Speed I |   |
| 2 | PP II | Proportional pressure curve, Speed II |   |
| 3 | PP III | Proportional pressure curve, Speed III |   |
| 4 | CP I | Constant pressure curve, Speed I |   |
| 5 | CP II | Constant pressure curve, Speed II |   |
| 6 | CP III | Constant pressure curve, Speed III |   |
| 7 | CS I | Constant curve, Speed I |   |
| 8 | CS II | Constant curve, Speed II |   |
| 9 | CS III | Constant curve, Speed III |   |

## 5.4 Additional Functions

| Nr.: | Function | Description | Operation | Display |
|---|---|---|---|---|
| 0 | Air Venting | Release air from the pump to ensure normal operation (this function does not vent the heating system). | Press and hold the button for 5 seconds until LED1 + LED2 + LED3 light up, then release. The pump will automatically vent air for 5 minutes. |   |
| 1 | Manual Restart | Manually restart the pump. | Press and hold the button for 8 seconds until LED1 + LED2 + LED3 + LED4 + LED5 light up, then release. The pump will start and stop continuously for 5 minutes to release the blockage. |   |

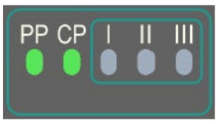
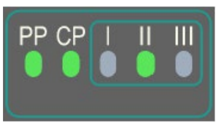
# 6 Technische Daten

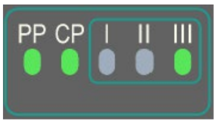
<table>
<tr><td>Supply Voltage</td><td colspan="5">230 V, 50 /60 Hz</td></tr>
<tr><td>Motor Protection</td><td colspan="5">No external motor protection required.</td></tr>
<tr><td>Protection Class</td><td colspan="5">IP44</td></tr>
<tr><td>Insulation Class</td><td colspan="5">F</td></tr>
<tr><td>Relative Humidity</td><td colspan="5">Max. 95%</td></tr>
<tr><td>System Pressure</td><td colspan="5">Max. 1.0 MPa, 10 bar</td></tr>
<tr><td rowspan="3">Inlet Pressure</td><td rowspan="3">Liquid Temperature</td><td>≤ + 85°C</td><td rowspan="3">Min. Inlet Pressure</td><td>0.05bar , 0.005MPa</td></tr>
<tr><td>+ 90°C</td><td>0.28bar , 0.028MPa</td></tr>
<tr><td>EMV-Norm</td><td>1.08bar , 0.108MPa</td></tr>
<tr><td>Ambient Temperature</td><td colspan="5">EN IEC 55014-1:2021<br>EN IEC 55014-2:2021<br>EN IEC 61000-3-2:2019/A1:2021<br>EN 61000-3-3:2013/A2:2021</td></tr>
<tr><td>Surface Temperature</td><td colspan="5">0°C ~ 40°C</td></tr>
<tr><td>Liquid Temperature</td><td colspan="5">Max. + 125°C</td></tr>
<tr><td>Liquid temperature</td><td colspan="5">+2°C ~ + 110°C</td></tr>
</table>

# 7 Troubleshooting

| Symptom | Probable Causes | What to Do |
|---|---|---|
| Pump does not operate | Loose power cable connection | Ensure the power cable is securely connected |
| | Control electronics damaged | Replace the control box |
| | The impeller or motor may be tangled with fibers or clogged with debris | Remove fibers and debris |
| Noise in the system or pump housing | Contamination inside the pump | Disassemble and clean the pump |
| | Air or gas trapped in the system or pump housing | Release trapped air or gas |
| Pump runs but does not build pressure | Inlet valve is closed | Open the valve |
| | Air or gas in the pipes or pump | Open the valve to operate the pump and loosen the outlet connections to allow trapped gas to escape |

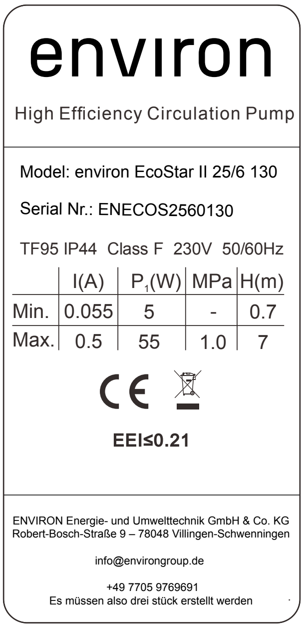
In the event of a malfunction, the electronic control system will respond to certain faults and protect the pump. The protection code will be displayed on the control panel as shown in the following table:

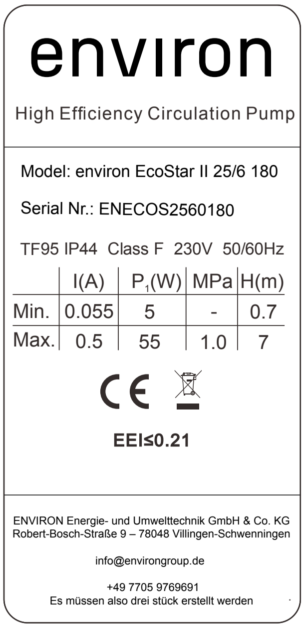
| Protection Type | Display | Probable Causes | What to Do |
|---|---|---|---|
| Blocked Rotor |  | The rotor is blocked | Disassemble the motor and check if the rotor can rotate normally. If not, remove any debris to allow smooth rotation. |
| Overvoltage Undervoltage Protection |  | The input voltage is too high or too low | Check if the voltage is within the normal range. If not, adjust the voltage to the correct level. |

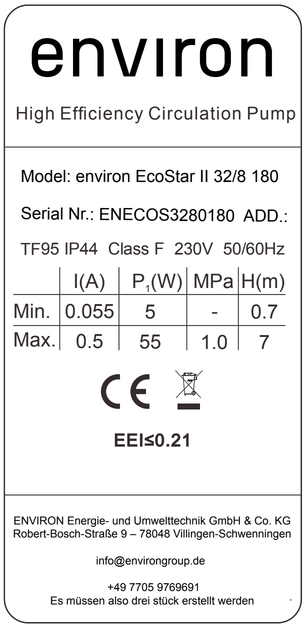
| Protection Type | Display | Probable Causes | What to Do |
|---|---|---|---|
| Phase Failure Protection |   | One or more phases of the internal circuit are disconnected | Replace the pump |
| Overcurrent Protection |   | Short circuit in the internal circuit | Exchange the pump |

**Notes:**

- All illustrations in this manual are schematic representations. The electric pumps and accessories you purchased may differ from the illustrations shown in this manual.
- The product is continuously improved, and all specifications (including appearance, color, etc.) are based on the actual physical product. Changes may be made without prior notice.



Smarte Energie. Für Alle.

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