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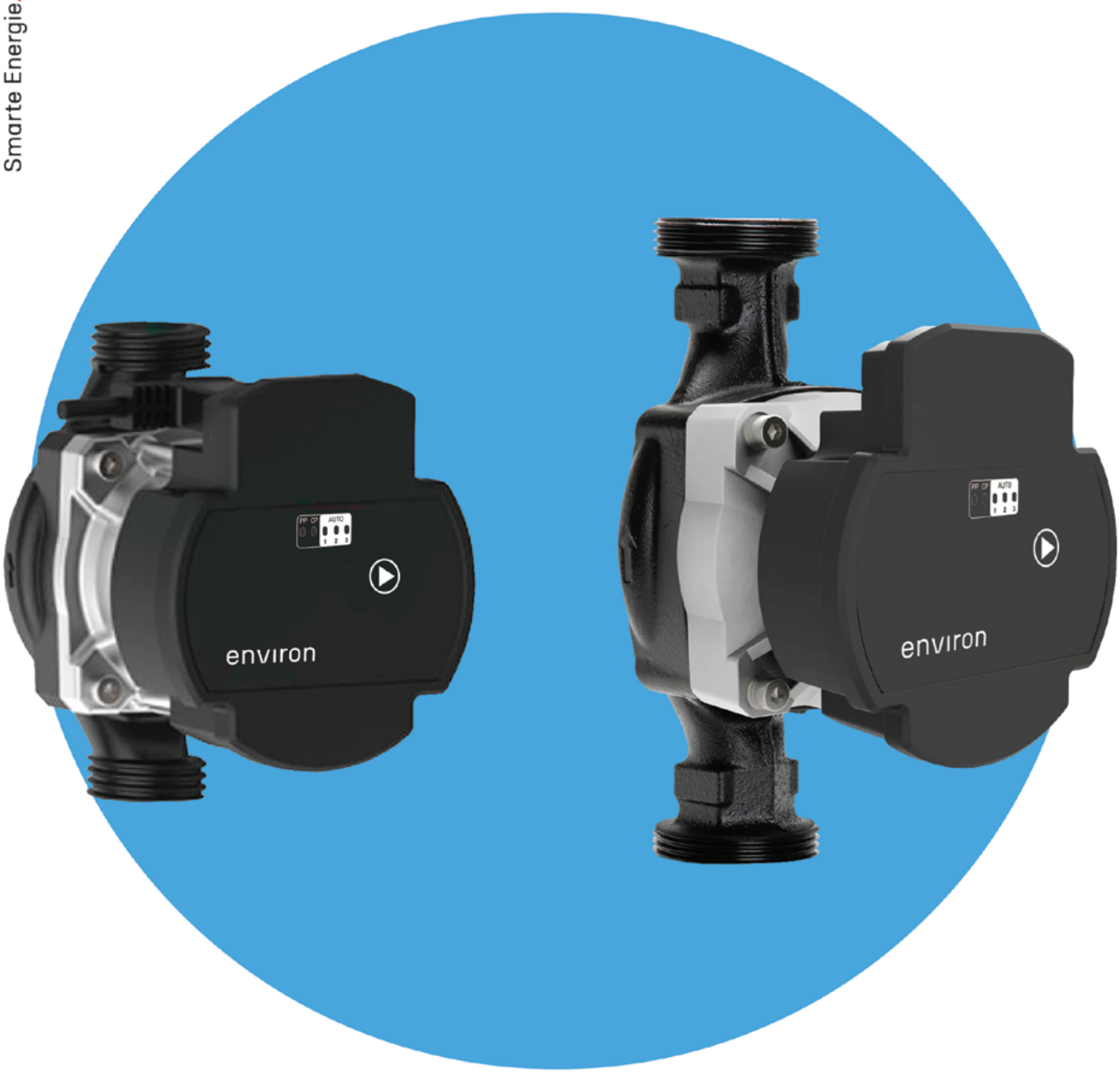
environ Ecostar II

Installation and Operating Instructions

Smarte Energie. Für Alle.



Innovative, trustworthy, experienced

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Purpose

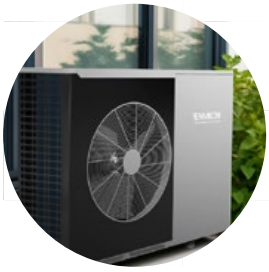
The expertise and enthusiasm for good ideas and solutions that drive our society forward in the field of energy transition are a powerful force behind ENVIRON..

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.

Developing smart energy technology for everyone:
Affordable. Honest. Sustainable.

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Pioneering energy solutions for every home.
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environ Ecostar II

Installation and Operating Manual

1. Product Overview

The Environ Ecostar II Series of intelligent, high-efficiency circulation pumps (hereinafter referred to as electric pumps) comply with the Q/SG 602 standards. The motor stator is fully enclosed, and the rotating components are immersed in clean water, which serves as both a cooling and lubricating medium during operation.
The pump's shielding sleeve features a thin-walled design that completely isolates the motor's inner iron core from water, eliminating the need for a traditional mechanical seal and effectively solving the problem of seal leakage found in conventional water pumps.
The rotating components are equipped with ceramic bearings and ceramic shafts, ensuring wear resistance and smooth operation with water lubrication. This design cools the motor and reduces noise. The pump operates without load at full head, and—provided it is used correctly—generally requires no maintenance.

1.1 Model Description

ENECOS2560180	
EN	Intelligent High-Efficiency Circulation Pump
20	Inlet and outlet diameter: 20 mm
8	Maximum head: 8 m (at a flow rate of 0 m³/h)
130	Distance between inlet and outlet: 130 mm
S	Model code

1.2 Product Application

This product series is specifically designed for heating systems and can be used in various applications, such as:

- Floor heating with mixed-water systems
- Air-to-water heat pump circulation systems
- Heating, ventilation, and air conditioning (HVAC) systems
- Boiler systems
- Heat pump systems
- Micro combined heat and power (CHP) systems

1.3 Main Features

- EEI ≤ 0.21 – Part 3 compliance
- Permanent magnet motor for high efficiency
- Integrated control box in the motor for a compact design and easy installation
- Quick-connect cable for simplified installation and maintenance
- Low noise level and low operating temperature

1.4 Operating Conditions

- Liquid temperature: 0 ~ +110 °C
- Ambient temperature: -25 ~ +60 °C
- Reference table of medium and ambient temperature:

Model	Maximum Ambient Temperature (°C)	Maximum Liquid Temperature (°C)
-	40	110
	55	90
	60	80

- Maximum system pressure: 1.0 MPa (10 bar)
- Rated voltage/frequency: 230 V, 50/60 Hz
- Insulation class: F
- Pumped liquid characteristics: clean liquid, free from solid particles and mineral oils, non-toxic, chemically neutral, and with physical properties similar to water
- To prevent cavitation and damage to the pump bearings, the following inlet pressure must be maintained

Liquid Temperature (°C)	85	90	110
Inlet Pressure	≥0.5m Delivery Head	≥2.8m Delivery Head	≥11m Delivery Head
	≥0.05bar	≥0.27bar	≥1.08bar

1.5 Pumped Liquid

- Heating water
- Glycol solution with a concentration ≤ 50%
- Liquid pH: 6.5 ~ 8.5
- The medium must not contain solid impurities exceeding 0.01% by volume and a particle size larger than 0.1 mm
- The filter mesh size must be at least 55 mesh

Installation Requirements for the Water Pump

- The pump motor shaft must be installed parallel to the horizontal plane
- Do not operate the pump without water
- Before installation, ensure that the piping system is in good condition and clean — welding residue, dirt, or other impurities may damage the pump
- The pump should be installed in a location that allows easy maintenance and replacement

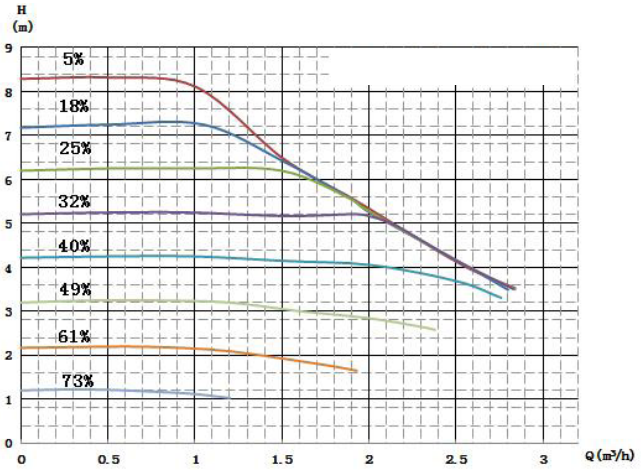
1.7 Technical Data

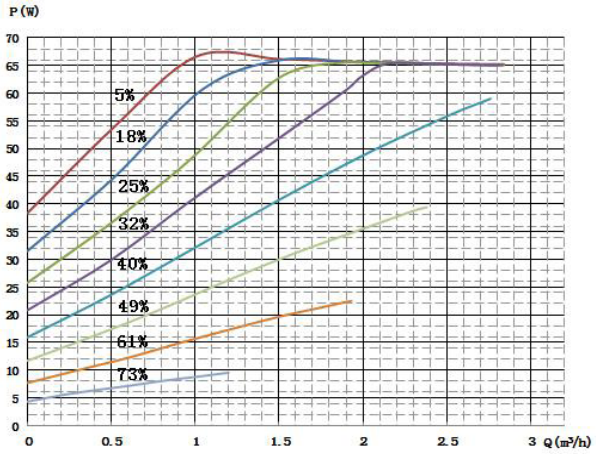
Parameter	Data
Pump type	Centrifugal circulation pump (non self-priming)
Single-phase power supply (AC/DC)	Power supply: AC
Voltage	Voltage: 230 V
Frequency	Frequency: 50/60 Hz
Input power	Input power: 3 ~ 65 W
Current	Current: 0.08 ~ 0.65 A
Speed	Speed: 1200 ~ 4850 rpm
Protection class (IP rating)	Protection class: IP44
Insulation class	Insulation class: F
EEI (Energy Efficiency Index)	EEI (Energy Efficiency Index): 6 m ≤ 0.20, 7 m / 8 m ≤ 0.21 – Part 3
Maximum head	Maximum head: 6 m / 7 m / 8 m
Maximum flow rate	Maximum flow rate: 4.0 m³/h
Pipe size	Pipe size: DN20 / DN25 / DN32
Inlet and outlet connection (size)	Inlet/outlet connection: G1 / G1.5 / G2
Direction of rotation	Direction of rotation: Clockwise (viewed from the control box)

2. Product Function

Nr.	Item	Description
1	Operating and control mode	Internal maximum constant power operation
2	Start-up	At maximum torque
3	Display	LED digital display with error code indication
4	Protection	Overcurrent protection, overvoltage/undervoltage protection, phase failure protection, blocking protection
5	Additional protection	Automatic air-venting function Manual restart function

2.1 Performance Curve

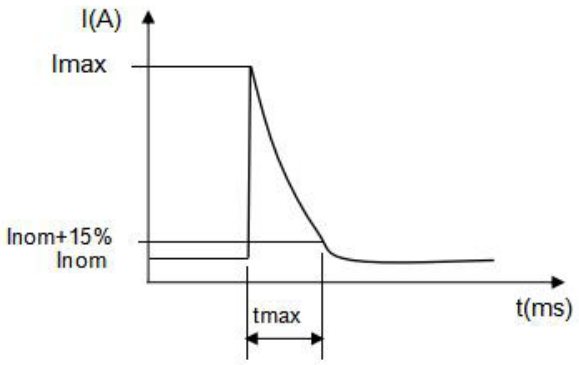




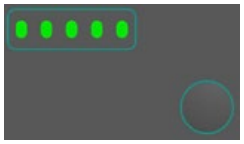
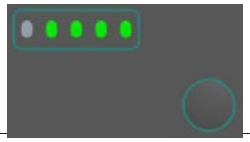
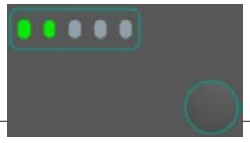
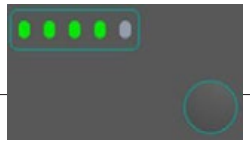
Item	Model	Pipe Size (mm)	Max. Input Power (W)	Max. Head (m)	Rated Flow (m³/h)	Rated Head (m)	Efficiency (%)	EEI
		(mm)	W	m	m^3/h	m	%	≤0.20
1	ENECOS2560130	DN25	65	8	1,9	5	40	≤0.21
2	ENECOS2560180	DN25	65	8	1,9	5	40	≤0.21
3	ENECOS3280180	DN32	65	8	1,9	5	40	≤0.21

2.2 Starting Peak Current

Pump Model	Input Voltage	Imax	Tmax
All Models	180, 230, 255V	<4A	<25ms
Note	To avoid the effect of self-heating, the interval between two measurements should be no less than 15 seconds.		



2.3 Error Display

Error Description		
Protection	**Details**	**Display**
Rotor blocking protection	When the rotor shaft of the electric pump is blocked, the pump will attempt to restart every 10 seconds. During each restart attempt, the pump reports a blocking error, and the control panel displays an error code. The pump repeats this cycle for 5 minutes and then stops.	
Overvoltage / undervoltage protection	Under abnormal conditions, when the input voltage falls below 155 V or exceeds 275 V, the electric pump enters protection mode and stops. It reports an electrical error, and the control panel displays an error code to prevent damage caused by voltage values outside the permissible range. When the voltage returns to 160 V–270 V, the pump will automatically resume operation.	
Phase failure protection	If a phase failure occurs in the electric pump, it will attempt to restart every 5 seconds. During each restart attempt, the pump reports an electrical error, and the control panel displays an error code. The pump repeats this cycle five times and then stops.	
Overcurrent (short circuit) protection	If the electric pump experiences a short circuit, overheating, or any other malfunction, it will attempt to restart every 5 seconds. During each restart attempt, the pump reports an electrical error, and the control panel displays an error code. The pump repeats this cycle five times and then stops.	
Automatic air-venting function	Press and hold the button until the LEDs in the display area light up sequentially (LED1 → LED2 → LED3). Release the button to activate the automatic air-venting function. All LEDs in the display area will flash during operation, and the air-venting process will automatically end after 5 minutes. (Note: This function does not include venting of the geothermal system.)	
Manual restart function	Press and hold the button until the LEDs in the display area light up sequentially (LED1 → LED2 → LED3 → LED4 → LED5). Release the button to activate the manual restart function. LEDs 2, 3, 4, and 5 in the display area will flash, and the manual restart process will automatically end after 5 minutes of operation. (This function is used to eliminate pump blockages, for example, when the pump has been inactive for an extended period, such as during the summer.)	

3 Quality and Safety Requirements

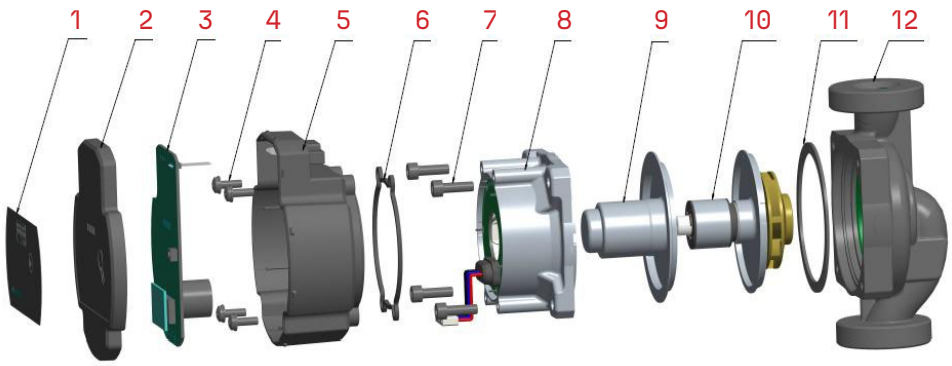
3.1 Manufacturing Standard

3.1.1 Q/SG 602
3.1.2 GB 4706.1-2005
3.1.3 GB 4706.71-2008

3.2 Pump Identification

Requirement	Description
Brand	environ
Protection class	IP44
CE certificate	CE
ErP certificate	EEI≤0.21-Part3

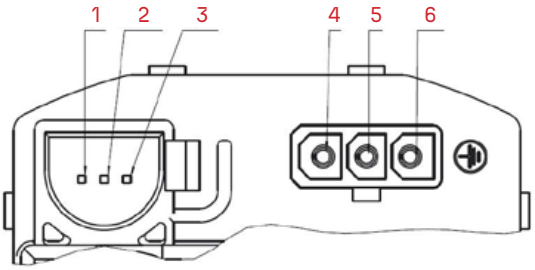
4 Pump Structure



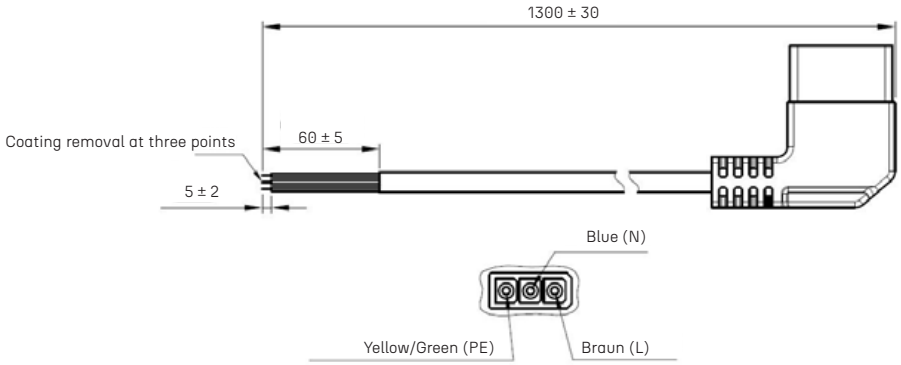
Item	Part Name
1	Display unit
2	Control box cover
3	Control electronics
4	Nuts
5	Control box base
6	Control box seal
7	Nuts
8	Motor
9	Rotor assembly
10	Rotor mounting
11	Flat gasket
12	Pump housing

5 Wiring Diagram

Power and Signal Connector

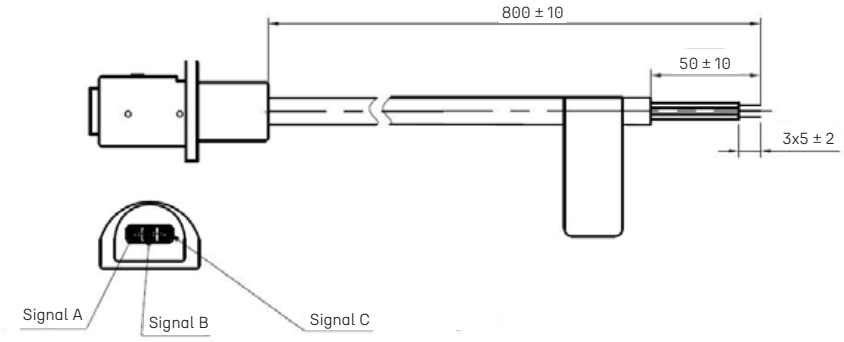


Power Cable



The brown wire of the power cable is connected to the L terminal (phase) on the control board, the blue wire is connected to the N terminal (neutral), and the yellow-green wire is connected to the PE terminal (ground).

Control Cable



6 Packaging

- **Retail packaging: inner box + outer box**
- **OEM production packaging: industrial pallet**

7 Instructions for Use

7.1 Check that the piping system is securely connected and free of debris, welding residue, or dirt before installation.

7.2 Install the electric pump in a dry, well-ventilated area to avoid short circuits and ensure easy maintenance.

7.3 When installed outdoors, add a protective cover; indoors, avoid locations exposed to water or steam to prevent electric shock.

7.4 For easier maintenance, install shut-off valves at the pump's inlet and outlet.

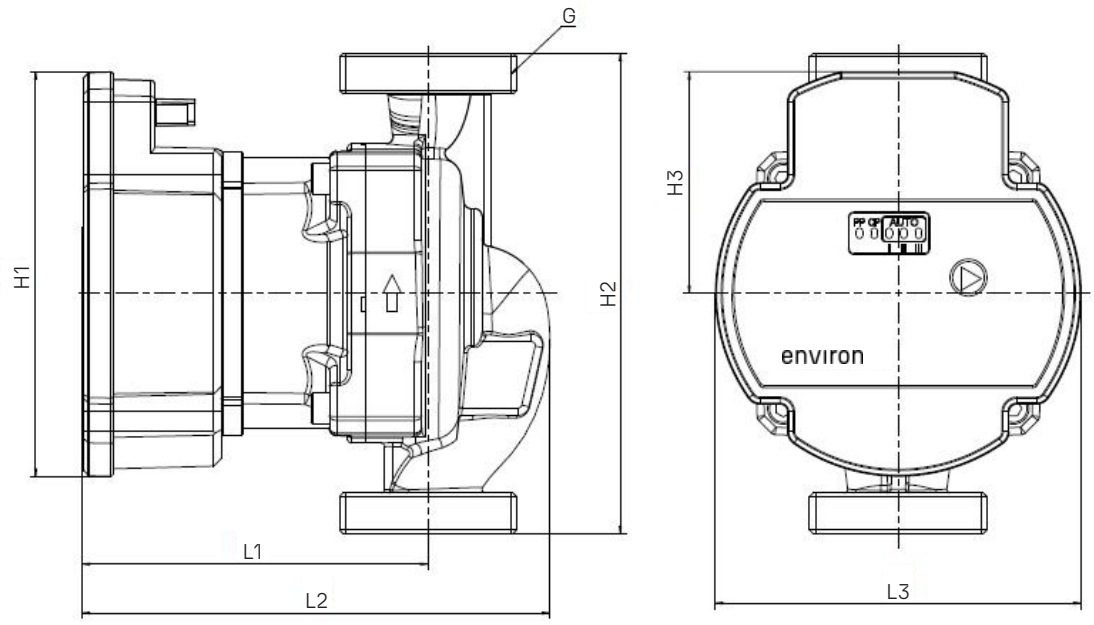
7.5 When supplying water for heating systems, avoid touching the pump or pipes to prevent burns.

7.6 The power plug must be properly grounded; do not modify the grounding connection.

7.7 Disconnect power before adjusting or touching the pump to prevent accidents.

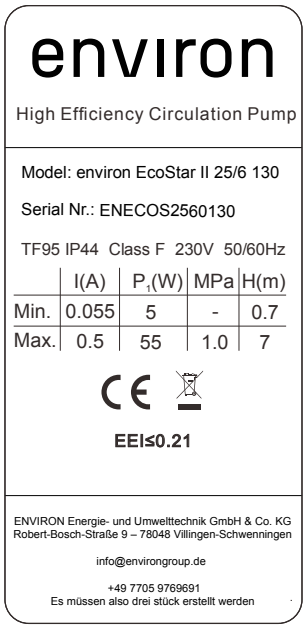
7.8 In winter, if temperatures drop below 0 °C, drain the system to prevent pump body cracks when idle.

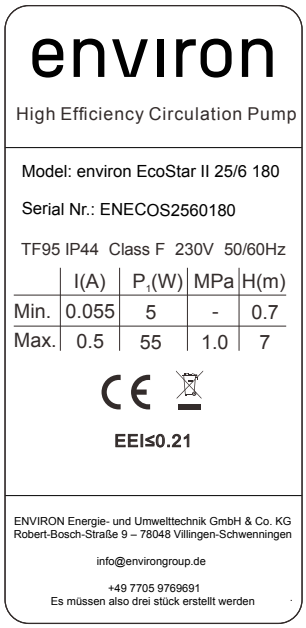
Appendix A: Pump Dimensions

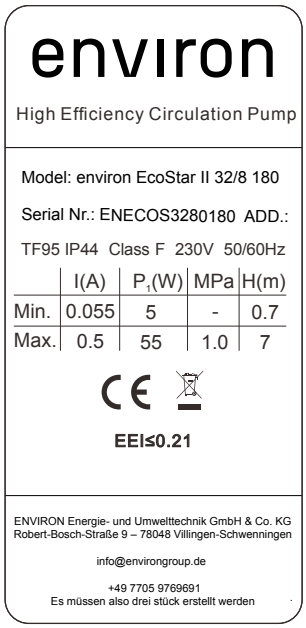


Model	Size (mm)								Inner Box (kg)		Outer Box		
	L1	L2	L3		L1	L2	L3		L1	L2	L3		L1
ENECOS2560130	94	12 7	9 9	11 0	13 0	6 0	G1 1/2	G1 1/2 bis G1	1.6	2.0	8	310× 290× 260	17
ENECOS2560180					18 0				1.7	2.15		400× 290× 240	18
ENECOS3280180							G2	G2 bis G1 1/4	1.85	2.5			21

Appendix B: Nameplate







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