ETNA®

ECP 32-12-180 Series
Frequency Controlled, Wet Rotor Circulation Pump
User Manual

CONTENT

1. General information

These operating instructions describe the points to be considered when using the circulation pump installed as described. Read this instruction manual carefully before installation. The product may not be used in the medical industry where it has the potential to cause personal injury and may not be used for pumping liquids other than water.

2. Frequency controlled circulation pump

Frequency controlled circulation pumps are suitable for use in the HVAC systems described below.

- Underfloor heating systems
- One-pipe systems
- Double-pipe systems

Frequency controlled circulation pump; It has internal magnet motor and differential pressure measurement facilities and has the ability to provide instant comfort needs of the installation system.

2.1 Advantages of using frequency controlled circulation pumps

Assembly and operation

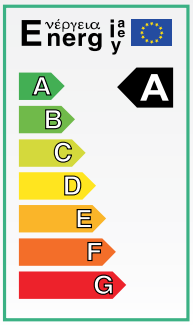
- Frequency controlled circulation pumps are easy to install.
- The pump can be operated in most cases with the factory setting without marking any settings.

High comfort

- Minimum noise from valves

Low energy consumption

- Low energy consumption compared to conventional circulation pumps
- Labelled A energy class



EEI ≤0.23

3. Fluid characteristic

- All clear,
- Free of solid and abrasive particles,
- Viscous and non-hard, chemically neutral water

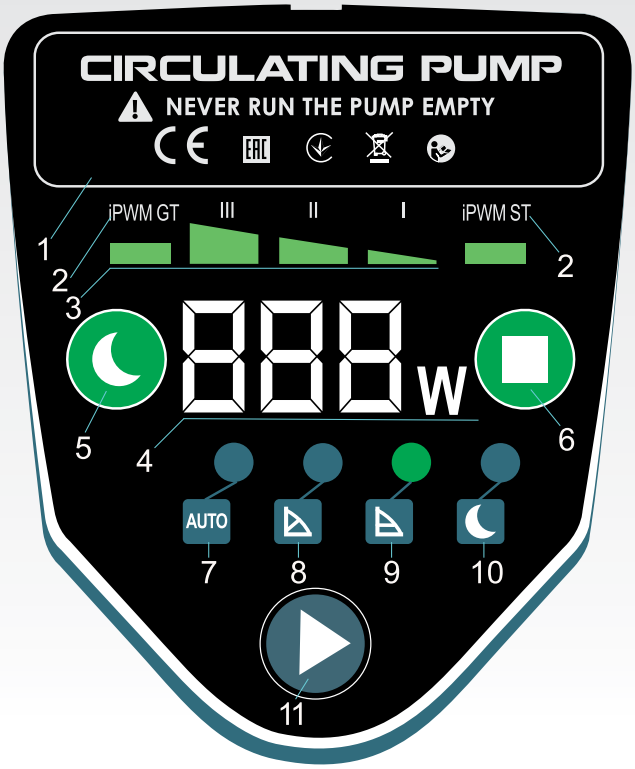
4. Model naming detail

ECP 25 - 4 - 180 N

- N → Pump head material: stainless steel
- 180 → Distance between inlet and outlet
- 4 → Max.head(m)
- 25 → Size of inlet/outlet(mm)
- ECP → Product model

5. Control panel

5.1 Selection buttons on the control panel



No	Name
1	Product certification mark
2	PWM functions
3	**Indicators for each operating mode** The three lights represent different operating conditions and can be switched between two modes (constant pressure and proportional pressure). It lights up when there is no mode indicator and only the gear indicator lights up, this indicates that the pump is in constant means it is in speed mode
4	Power indicator
5	Night mode start/stop
6	PWM function switch
7	AUTO mode indicator
8	Proportional pressure mode indicator
9	Constant pressure mode indicator
10	Night mode indicator
11	Setting button. This button is used to switch between modes and gears

5.2 Lights fields indicating the pumps setting

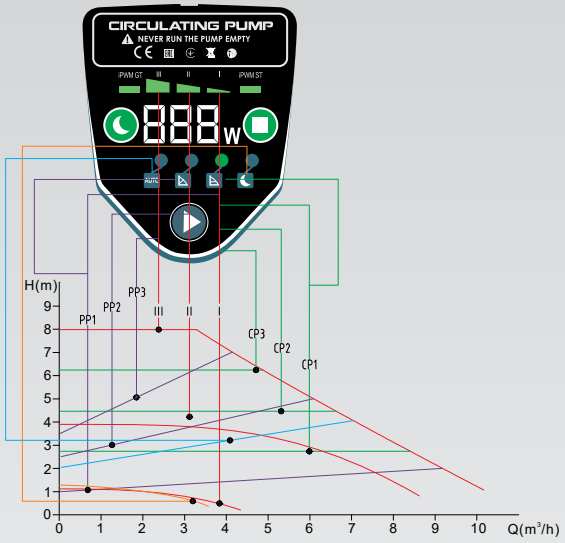
The frequency controlled circulation pump has 7 optional settings selected by pushbutton. See 8 on the label above. The pump setting is indicated by 7 different light fields. See label above.

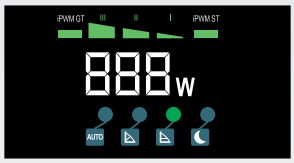
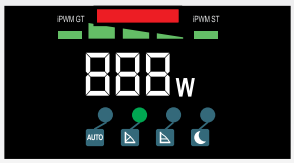
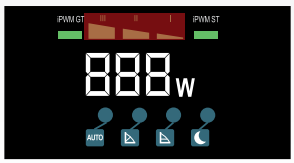
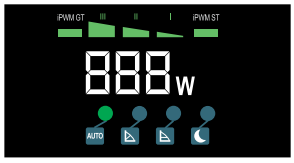
5.3 Button for pump setting selection

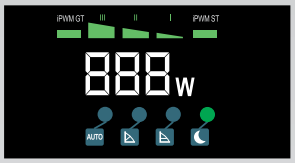
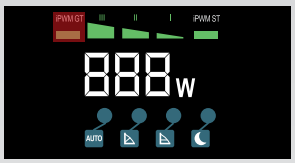
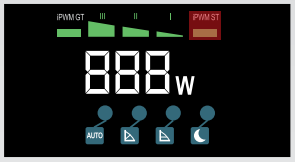
Each time the button is pressed, the pump setting is changed. A cycle is completed by pressing the button 7 times.

6. Relation between pump setting and pump performance

6.1 Basic Mode Introduction



Conrol Panel Pump Curve	Description
 CP1,CP2,CP3	The operating point moves back and forth on the curve according to the flow rate from the system. As shown in the graph, the pump pressure remains constant and is not affected by flow demands.
 PP1,PP2,PP3	The operating point moves back and forth on the pressure curve proportional to the flow rate from the system. As shown in the graph, the pump pressure is proportional to the flow demand.
 I II III	In constant speed mode, the three pump motor speeds can be preset according to a specific pump system. SPD1, SPD2 and SPD3 are the predetermined constant speed curve characterised by the pump.
 AUTO	In adaptive mode, the optimum proportional pressure curve (shaded part) is selected according to the system operation based on the data collected over a certain period of time. The current demand on the system is used to analyse.

Conrol Panel Pump Curve	Description
 Night mode	The night pump is switched to the automatic deceleration curve in the following cases so that it operates at low performance and low power consumption.
 iPWM GT	PWM EXTERNAL SPEED CONTROL(optional) (See 6.2 for details)
 iPWM ST	PWM EXTERNAL SPEED CONTROL(optional) (See 6.2 for details)

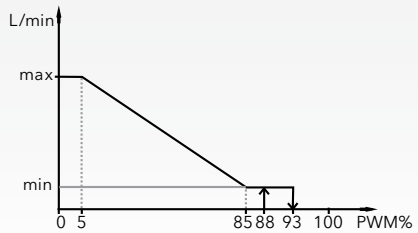
6.2 PWM Description

6.2.1 Control principle

When PWM signal is connected, the circulation pump operation is controlled by PWM. If there is no PWM signal, the circulation pump operation is controlled by the internal control logic.

6.2.2 iPWM GT

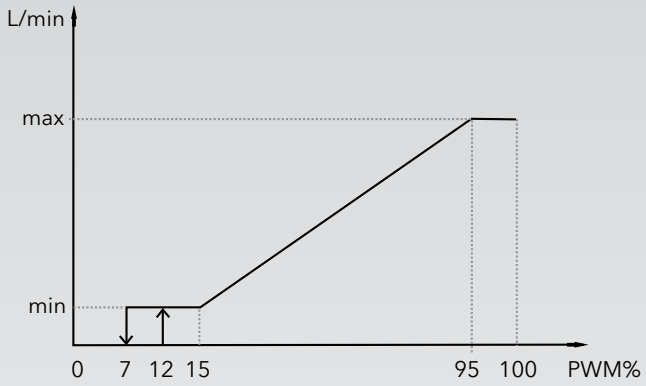
At high PWM signal percentages (duty cycles) a hysteresis prevents the circulation pump from starting and stopping if the input signal fluctuates around the shift point. At low PWM signal percentages the speed of the circulation pump is high for safety reasons. In the event of a cable break in the gas boiler system, the circulation pump will continue to run at maximum speed to transfer heat from the primary heat exchanger. This is also suitable for heat circulation pumps to ensure that the circulation pump can transfer heat in the event of a cable break.



PWM Imput Signal (%)	Pump Status
0≤PWM≤5	Maximum speed: Max.
5<PWM≤85	Variable speed: max. to min.
85<PWM≤93	Minimum speed: Min
85<PWM≤88	Hysteresis area: on/off
94<PWM≤100	Standby mode: off

6.2.3 iPWM ST

At low PWM signal percentages (duty cycles) a hysteresis prevents the circulation pump from starting and stopping its form. If the input signal fluctuates around the shift point without PWM signal percentages, the circulation pump will stop for safety reasons. If a signal is missing, e.g. due to a cable break, the circulation pump will stop and prevent overheating of the solar thermal energy.



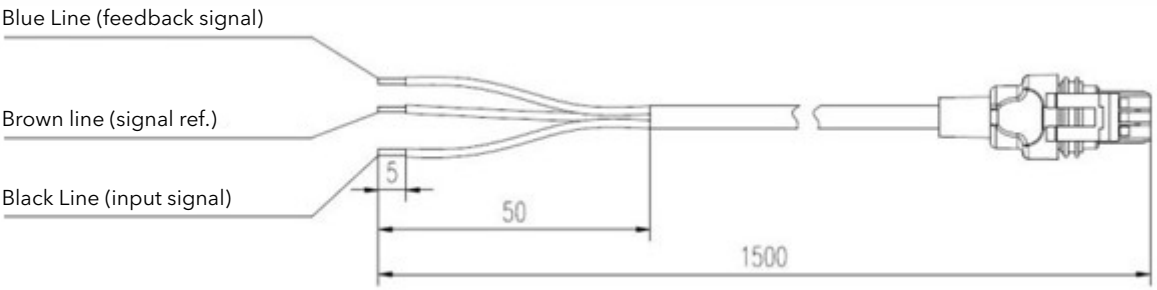
PWM Imput Signal (%)	Pump Status
0≤PWM<7	Standby mode: off
7≤PWM≤12	Hysteresis area: on/off
12<PWM≤15	Minimum speed: Min
15<PWM≤95	Variable speed: min. to max.
95<PWM≤100	Maximum speed: Max

7. Points to be considered in pump use

Warning
Before doing any work on the pump, make sure that the power supply is switched off and cannot be switched on accidentally.

PWM Signal Cable Connection Detail

1. The brown line is connected to the control board DND cable terminal.
2. Black line is connected to the INPUT cable terminal.
3. Blue line is connected to the OUT pump wiring terminal.

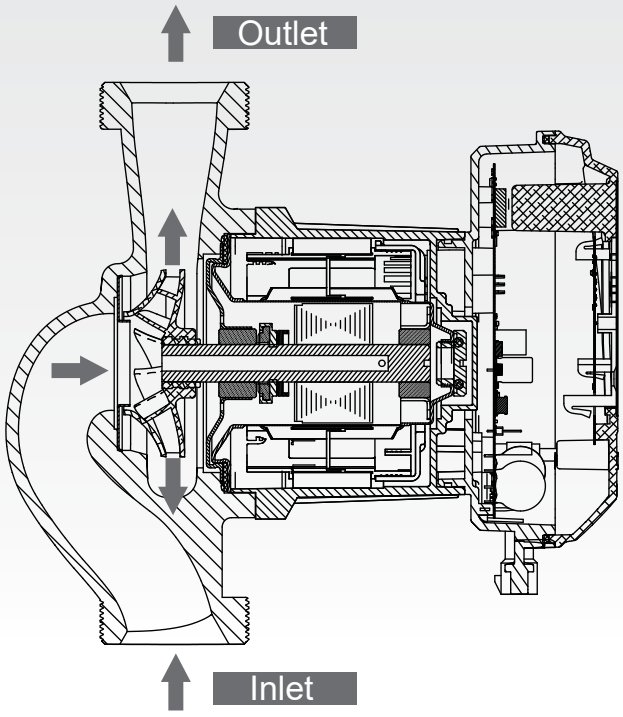


Pump external detail

Figure 1

Terms(Fig.1)	
1	Inlet
2	Outlet
3	Cover
4	Screen
5	Pump Body
6	Cooling fins
7	PWM cable port
8	Power plug

Pump interior detail



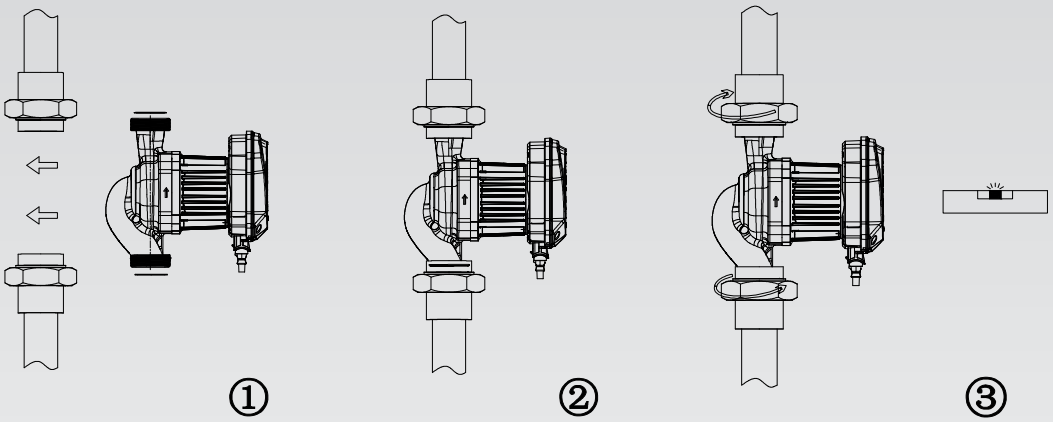
8. Installation Detail

8.1 Installation location

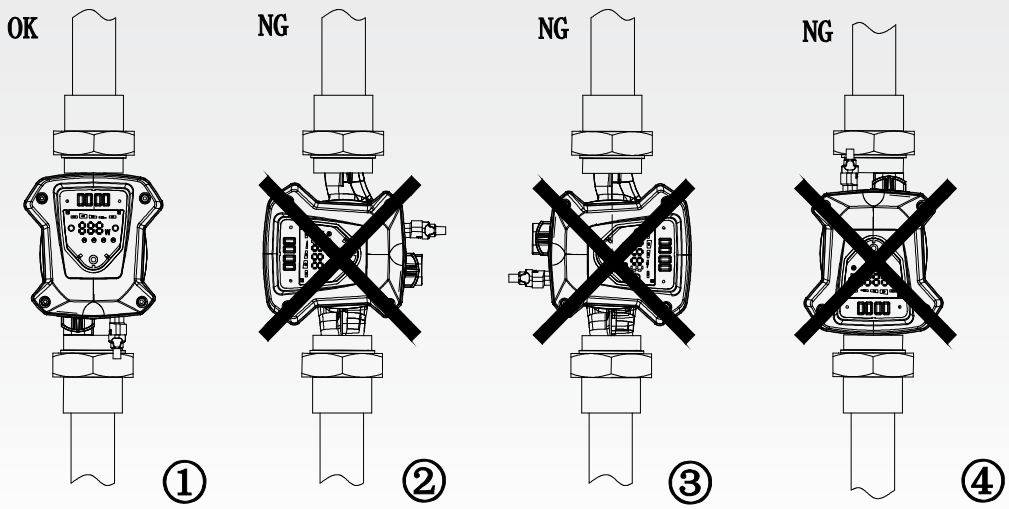
The pump should be installed indoors.

8.2 Installation

When installing the circulation pump, the arrow on the pump casing indicates the direction of fluid flow through the pump. The shaft of the electric pump must be horizontal when installed.



8.3 Installation direction

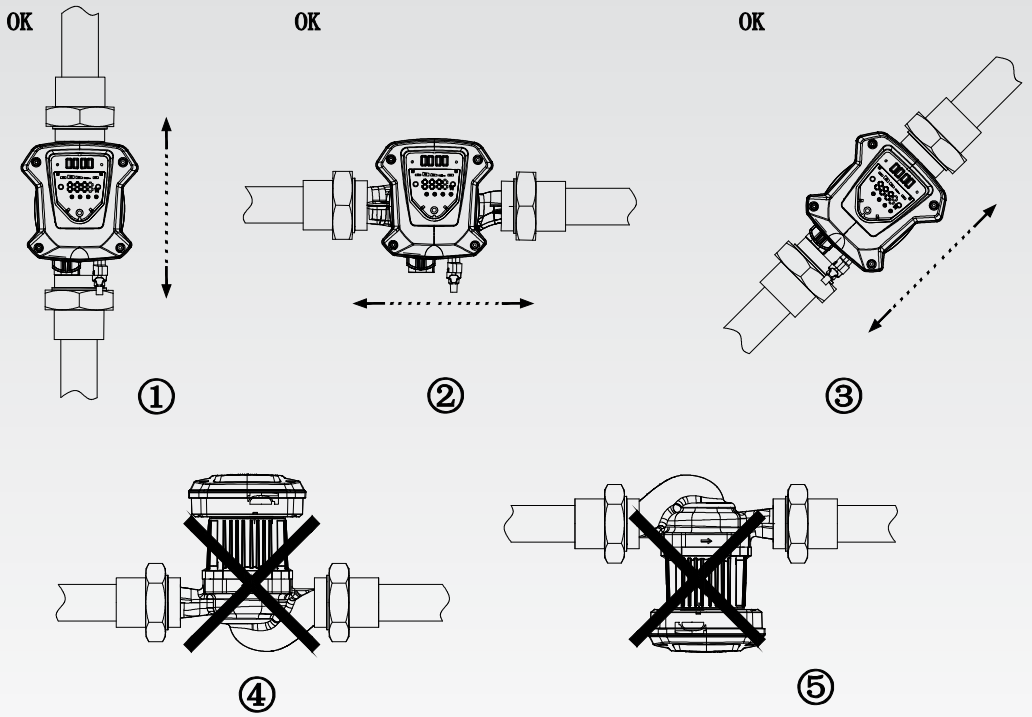


Warning
The pumped liquid may be at high temperature and high pressure. Beforehand, the socket head screws must be removed, the liquid in the system must be drained or the valves on both sides of the electric pump must be closed.

Warning
When changing the position of the junction box, the electric pump can only be started after it has been filled with the liquid pumped by the system or the valves on both sides of the electric pump must be open.

8.3 Control box position

Junction box can be rotated within 90°

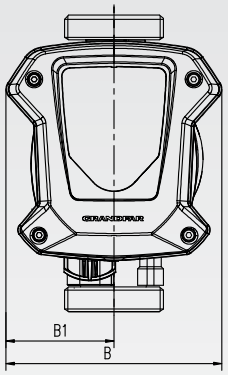


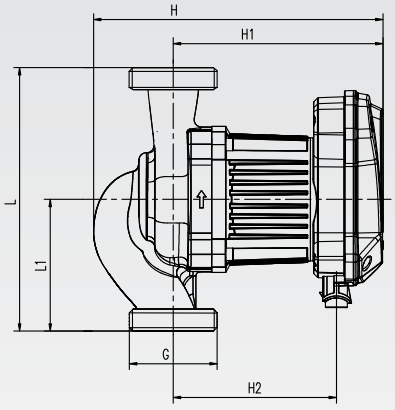
9. Insulation foam

Attention
Limit heat loss from the pump casing.
Reduce the heat loss of the pump by physically isolating the pump, separating the pump casing from the surrounding environment.

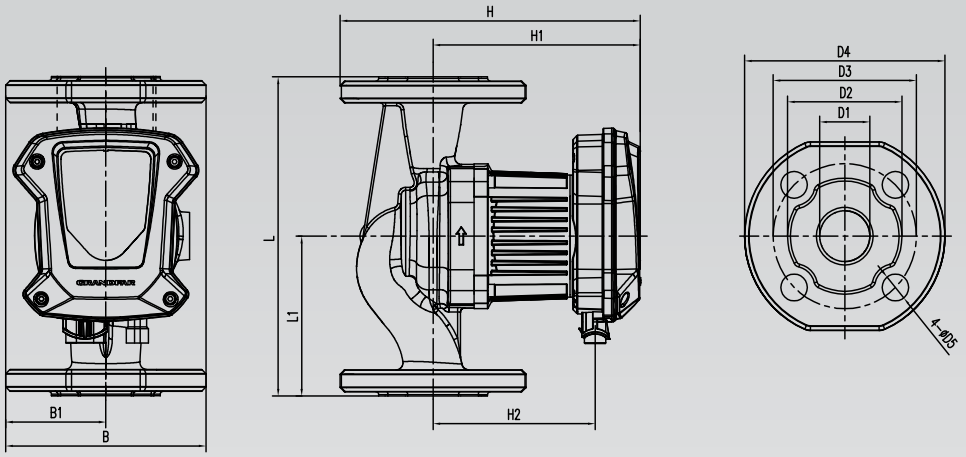
Pump insulation foam is included in the box contents. Insulation foams before pump installation remove and reassemble after assembly.

10. Dimension





Model	Pump body material		Dimensions(mm)							
	Cast iron	Stainless steel	L	L2	B	B1	H	H1	H2	G
ECP25-4-180(N)	●	●	180	90	130	65	196	142	110.5	1.5"
ECP25-6-180(N)	●	●	180	90	130	65	196	142	110.5	1.5"
ECP25-8-180(N)	●	●	180	90	130	65	196	142	110.5	1.5"
ECP25-10-180(N)	●	●	180	90	130	65	196	142	110.5	1.5"
ECP25-12-180(N)	●	●	180	90	130	65	196	142	110.5	1.5"
ECP32-4-180(N)	●	●	180	90	130	65	196	142	110.5	2"
ECP32-6-180(N)	●	●	180	90	130	65	196	142	110.5	2"
ECP32-8-180(N)	●	●	180	90	130	65	196	142	110.5	2"
ECP32-10-180(N)	●	●	180	90	130	65	196	142	110.5	2"
ECP32-12-180(N)	●	●	180	90	130	65	196	142	110.5	2"



Model	Pump body material		Dimensions(mm)											
	Cast iron	Stainless steel	L	L1	B	B1	H	H1	H2	D1	D2	D3	D4	D5
ECP32-4-220F(N)	●	●	180	110	140	70	210	145	113	32	80	100	140	19
ECP32-6-220F(N)	●	●	180	110	140	70	210	145	113	32	80	100	140	19
ECP32-8-220F(N)	●	●	180	110	140	70	210	145	113	32	80	100	140	19
ECP32-10-220F(N)	●	●	180	110	140	70	210	145	113	32	80	100	140	19

11. Warranty Terms

The warranty period of ECP series circulation pump is 2 (two) years from the date of purchase. Warranty period will provide free repair and maintenance service for malfunctions caused by manufacturing defects. Failures to be caused by operating conditions will also provide service for a fee.

(1) Failures caused by operating conditions
(2) Damages caused by installation pollution
(3) Faults caused by faulty wiring or unsuitable power supply
(4) Disassembly or intervention of the product outside the authorised service
(5) Failures caused by improper installation shall be considered outside the scope of warranty.

NOTES

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