

<b>1</b>	<b>KEY</b> .....	<b>22</b>
1.1	Safety signs .....	22
<b>2</b>	<b>FIELD OF APPLICATION OF PUMPABLE LIQUIDS</b> .....	<b>22</b>
<b>3</b>	<b>GENERAL</b> .....	<b>22</b>
3.1	Product name .....	22
3.2	Classification according to European Reg. ....	22
3.3	Description and intended use .....	22
3.4	Designation of product types .....	23
3.5	Specific product references .....	23
3.5.1	Energy Efficiency Index (EEI).....	23
<b>4</b>	<b>WARNINGS AND RESIDUAL RISKS</b> .....	<b>23</b>
4.1	Improper use.....	23
4.2	Hot or cold parts .....	24
4.3	Powered parts.....	24
4.4	Product disposal .....	24
<b>5</b>	<b>MANAGEMENT</b> .....	<b>24</b>
5.1	Storage .....	24
5.2	Transport .....	24
<b>6</b>	<b>INSTALLATION</b> .....	<b>24</b>
6.1	Recommended setup.....	24
6.1.1	Protecting the system.....	25
6.2	Water and pipe connections .....	25
6.2.1	Positioning the motor shaft .....	26
6.2.2	Positioning of the user interface in system.....	27
6.2.3	Rotation of the user interface .....	27
6.3	Insulating the pump body.....	28
6.4	Electrical connection.....	28
6.4.1	Power supply electrical connection .....	28
<b>7</b>	<b>COMMISSIONING</b> .....	<b>29</b>
7.1	Start-up .....	29
7.2	Degassing the pump.....	30
7.3	Precautions.....	30
<b>8</b>	<b>MAINTENANCE</b> .....	<b>30</b>
8.1	Periodic checks.....	30
8.2	Draining the system .....	31
8.3	Modifications and spare parts .....	31
8.4	CE marking and minimum instructions for DNA.....	31
<b>9</b>	<b>DECLARATION OF CONFORMITY</b> .....	<b>31</b>
<b>10</b>	<b>GUARANTEE</b> .....	<b>31</b>
<b>11</b>	<b>TECHNICAL DATA</b> .....	<b>32</b>
<b>12</b>	<b>INTEGRATED ELECTRONICS</b> .....	<b>33</b>
12.1	Description of regulating modes .....	33
12.1.1	Regulation with proportional differential pressure .....	33
12.1.2	Regulation with constant differential pressure.....	34
12.1.3	Regulation with constant curve .....	35
12.1.4	Sleep mode .....	35
12.2	Control panel .....	36
12.2.1	Regulating mode .....	36
<b>13</b>	<b>RESET AND FACTORY SETTINGS</b> .....	<b>39</b>
<b>14</b>	<b>NON-RETURN VALVE</b> .....	<b>39</b>
<b>15</b>	<b>TROUBLESHOOTING</b> .....	<b>40</b>

## 1 KEY

### 1.1 Safety signs

The use and maintenance manual includes the signs illustrated below (where relevant). These signs have been included to draw users' attention to possible sources of danger.

Failure to pay attention to the signs could result in personal injury, death and/or damage to the machine or equipment.

As a general rule, there are three types of symbols (Table 1).





Symbol	Shape	Type	Description
	Outlined triangle	Danger	Indicates present or potential dangers
	Circular outline	Prohibition	Indicates actions that are to be avoided
	Solid circle	Obligation	Indicates information to be read and complied with
	Circular outline	Information	Indicates useful information other than danger / prohibition / obligation

Table 1 Safety sign types

Depending on the information to be conveyed, the signs may contain symbols denoting the type of danger, prohibition or obligation.

The following symbols have been used in the discussion:



#### **WARNING, GENERAL DANGER.**

Failure to respect the instructions that follow may cause harm to persons and property.



#### **WARNING, ELECTRICAL DANGER.**

Failure to respect the instructions that follow may cause a situation of serious risk for personal safety. Take care not to come into contact with electricity.



#### **WARNING, HOT SURFACE.**

Take care not to come into contact with a hot surface.



#### **WARNING, DANGER OF IGNITION.**

Take care not to cause a fire by igniting flammable and/or combustible material.



#### **Notes and general information.**

Please read the following instructions carefully before operating and installing the machine.

DAB Pumps makes every reasonable effort to ensure that the contents of this manual (e.g. illustrations, texts and data) are accurate, correct and up-to-date. Nevertheless, they may not be free of errors and may not be complete or up-to-date at any time. The company therefore reserves the right to make technical changes and improvements over time, even without prior notice.

DAB Pumps accepts no liability for the contents of this manual unless subsequently confirmed in writing by the company.

## 2 FIELD OF APPLICATION OF PUMPABLE LIQUIDS

The device is designed and made for pumping **solely water**, free from explosive substances and solid particles or fibres, with a density of 1000 Kg/m<sup>3</sup>, a kinematic viscosity of 1 mm<sup>2</sup>/s and non-chemically aggressive liquids. It is possible to use glycol in a percentage of no more than 50%. The use of other fluids is subject to the manufacturer's authorisation.

## 3 GENERAL

3.1 **Product name**  
EVOPLUS LITE

3.2 **Classification according to European Reg.**  
CIRCULATOR

### 3.3 Description and intended use

Evoplus Lite is an energy efficient electronic impeller pump intended to be used in ordinary environments for heating and air conditioning in light industrial and commercial applications. The product is intended for use by experienced personnel and may only be installed and commissioned by a professional. A professional is understood as being a person or an organisation with the necessary

skills to install and/or commission power drive systems or machine tools, including EMC. This instruction manual provides information on installation, set-up and operation.

### 3.4 Designation of product types

Non-domestic hot water models	Domestic hot water models
Evoplus Lite 60/180-25 Evoplus Lite 80/180-25 Evoplus Lite 120/180-25	Evoplus Lite SAN 60/180-25 Evoplus Lite SAN 80/180-25 Evoplus Lite SAN 120/180-25
Evoplus Lite 60/180-32 Evoplus Lite 80/180-32 Evoplus Lite 120/180-32	
Evoplus Lite 60/220-F32 Evoplus Lite 80/220-F32 Evoplus Lite 120/220-F32	Evoplus Lite SAN 60/220-F32 Evoplus Lite SAN 80/220-F32 Evoplus Lite SAN 120/220-F32
Evoplus Lite 60/250-F40 Evoplus Lite 80/250-F40 Evoplus Lite 120/250-F40	Evoplus Lite SAN 60/250-F40 Evoplus Lite SAN 80/250-F40 Evoplus Lite SAN 120/250-F40

Table 2

Solely the models marked SAN (Domestic hot water - as per table above) are made of bronze bodies.

### 3.5 Specific product references

For technical data, refer to the technical data plate and/or the dedicated chapter at the end of these instructions.

#### 3.5.1 Energy Efficiency Index (EEI)

The EEI defines the circulator's efficiency under specific working conditions. This index varies depending on the pump model and can be found on the pump's CE marking (data plate), see chapter 8.4.

## 4 WARNINGS AND RESIDUAL RISKS



In particular, check that all the internal parts of the panel (components, leads, etc.) are completely free from traces of humidity, oxide or dirt: if necessary, clean accurately and check the efficiency of all the components in the panel. If necessary, replace any parts that are not perfectly efficient.



Always switch off the mains power supply before working on the electrical or mechanical part of the system. Wait for the warning lights on the control panel to go out before opening the appliance. The capacitor of the direct current intermediate circuit remains charged with dangerously high voltage even after the mains power has been turned off. Only firmly wired mains connections are admissible. The appliance must be earthed (IEC 536 class 1, NEC and other applicable standards).



Before working on the equipment, disconnect the power and make sure there are no fluid and/or gas leaks in the surrounding environment. Do not open and do not operate if powered.



Some functions might not be available, depending on the software version.

### 4.1 Improper use

The equipment is designed to be used solely for the purposes described in the dedicated section of the manual (paragraph 2). Uses other than those described in this manual are improper and do not therefore comply with safety regulations.



#### ATTENTION!

Improper use may result in personal injury, death and/or damage to the equipment or installations.



#### BIOLOGICAL RISK!

Valid solely for products classified as "Non-potable" as shown in Table 2.

Equipment not intended for use with treated or untreated water for drinking, cooking or food preparation or for other domestic uses. Do not use on circuits intended for drinking water or for other food uses, i.e. water used in a food processing plant for the production, treatment, storage or placing on the market of products or substances intended for human consumption.



#### BIOLOGICAL RISK!

Do not use the products in the food sector for applications in which the water comes into contact with food, barring verification of compliance with FCMA regulation (CE reg. no. 1935/2004) by the end user and/or incorporator on food production machinery.

Below is a list of improper uses that could cause personal injury or damage to the machine or equipment for which DAB Pumps. S.p.A. shall not be held liable:

- Unauthorised changes to or replacement of equipment parts;
- Failure to follow safety instructions;
- Failure to follow instructions on installation, use, operation, maintenance, repairs or having such operations carried out by unqualified personnel;
- Use of improper and incompatible materials or auxiliary equipment;
- Failure to comply with workplace safety rules or relevant legal regulations.

#### 4.2 Hot or cold parts

As well as being at a high temperature and pressure, the fluid in the system may either be in the form of steam or chilled!



##### **DANGER OF SCALDING!**

Beware of contact with the pump or system parts during operation. Touch with care and wait until the pump stops before working on or near it. In the event hot parts are accessible, appropriate protection shall be provided to prevent contact with them. Appropriate PPE shall be used during maintenance work.



##### **DANGER OF LOW TEMPERATURES!**

Beware of contact with the pump or system parts during operation. Touch with care and wait until the pump stops before working on or near it. In the event cold parts are accessible, appropriate protection shall be provided to prevent contact with them. Appropriate PPE shall be used during maintenance work.

#### 4.3 Powered parts

Refer to the Safety Booklet enclosed with the product.

#### 4.4 Product disposal

This product or its parts must be disposed of according to the instructions in the WEEE disposal sheet included in the packaging.

### 5 MANAGEMENT

#### 5.1 Storage

- The panel is supplied in its original pack in which it must remain until the time of installation.
- The panel must be stored in a dry covered place, far from sources of heat and with constant air humidity where possible, free from vibrations and dust.
- The product must be perfectly closed and isolated from the outside environment, so as to avoid the entry of insects, humidity and dust which could damage the electrical components, jeopardizing their regular operation.

#### 5.2 Transport

Avoid subjecting the product to needless impacts and collisions. When needing to lift and transport the circulator, use lifting devices with the aid of the pallet (if supplied as standard).

### 6 INSTALLATION

- The pump may contain a small quantity of water left over from testing.
- We recommend flushing the pump briefly with clean water before final installation.
- Before installing the pump, accurately flush the system with only water at 80°C. Then drain the system completely to eliminate any harmful substance that may have got into circulation.
- The pump must be installed in a well ventilated location, protected from the elements and at an ambient temperature no higher than that stated in the technical specifications of each product.
- Prevent metal pipes from transmitting excessive stresses to the pump ports, so as not to create deformation or breakages.
- The pump must be installed as described in the manual, in compliance with the laws, directives and standards in force at the use site and in accordance with the application.

Carefully follow the advice in this chapter to carry out correct electrical, hydraulic and mechanical installation. Before attempting any installation work, make sure that the power supply is disconnected and locked off. Strictly respect the electric supply values indicated on the CE marking (data plate).



The pump must be connected to an efficient earthing system. Failure to comply with the instructions associated with this sign may cause harm to persons, animals and property.

#### 6.1 Recommended setup

We strongly recommend installing on-off valves upstream and downstream of the pump so that maintenance can be carried out without draining the system. Anti-vibration couplings can be fitted on the suction and delivery pipes to reduce noise to a minimum.

### 6.1.1 Protecting the system

This product contains an inverter within which there are DC voltages and currents with high-frequency components. The differential switch protecting the system must be correctly sized as stated in table "Types of possible earth fault currents".

Types of possible earth fault currents				
	Alternating	Unipolar button	Direct	With high-frequency components
Single-phase power inverter	•	•		•

Table 3 - Types of possible earth fault currents

### 6.2 Water and pipe connections

The circulator may be installed in heating and conditioning systems on either the delivery pipe or the return pipe; the arrow marked on the pump body indicates the direction of flow.

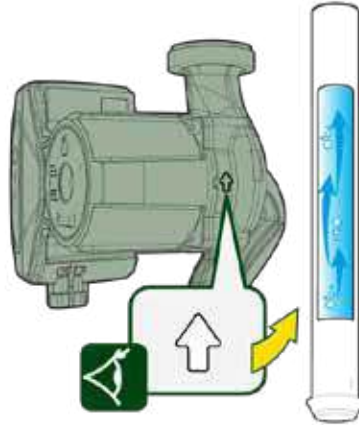


Fig. 3

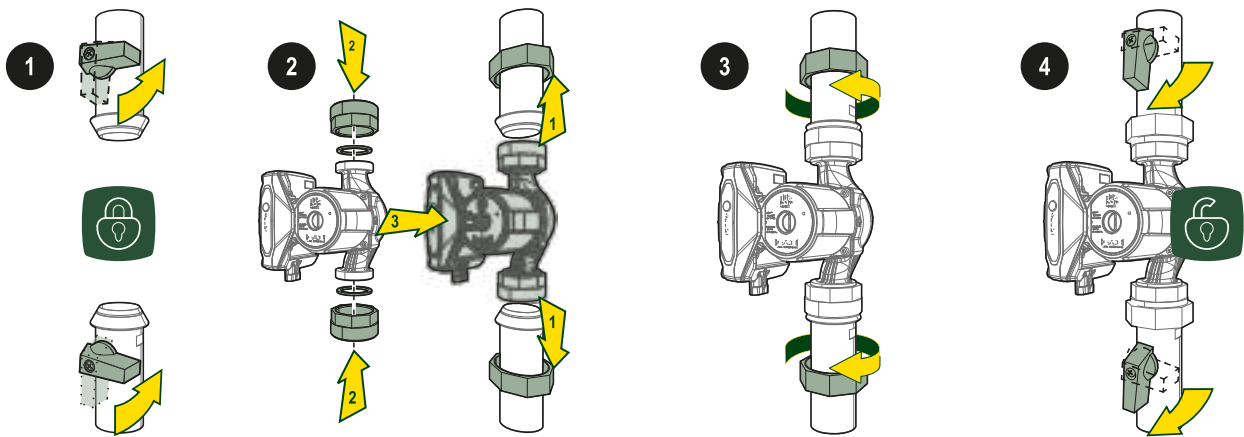


Fig. 4

Proceed as follows for circulators with threaded ports (see Fig. 4):

1. Close the on-off valves in delivery and suction to stop the water flow;



Install the pump with the motor shaft horizontal (see Fig. 6) following the direction of the arrow on the pump body (see Fig. 3).

2. Prepare a seal between the circulator's suction and delivery port and the pipe of the system on which the product is being installed;
3. Tighten the fittings connecting the pump to the pipes using a spanner or pliers;
4. Open the on-off valves first at suction and then at delivery, to restore the water flow.

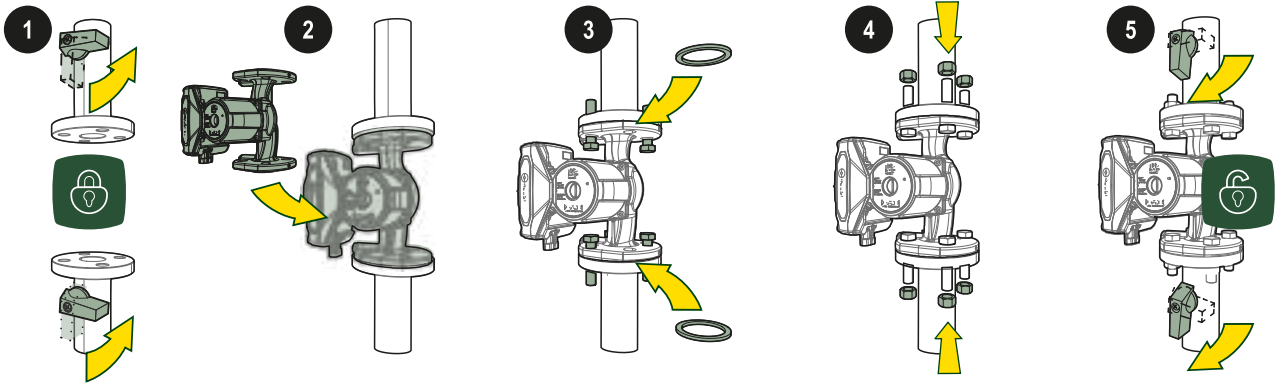


Fig. 5

Proceed as follows for circulators with flanged ports (see Fig. 5):

1. Close the on-off valves in delivery and suction to stop the water flow;



Install the pump with the motor shaft horizontal (see Fig. 6) following the direction of the arrow on the pump body (see Fig. 3).

2. Position the pump in the space between the suction and the delivery pipes;

3. Insert three screws into the flange and counter-flange holes at both suction and delivery. Slide the paper or rubber seal into the space between the flange and counter-flange. Then insert the fourth screw;

4. Tighten all the nuts, preferably in a cross pattern;

5. Open the on-off valves at delivery and suction to restore the water flow.

Assemble in such a way as to avoid dripping on the motor and on the electronic control device during both installation and maintenance. In the event of heat insulation use the special kit (provided separately as an accessory) and ensure that the condensate draining holes in the motor casing are not closed or partly blocked. See chapter 6.3 Insulating the pump body.



To guarantee maximum efficiency of the system and the long life of the circulator, it is recommended to use magnetic sludge-removing filters to separate and collect any impurities in the system (particles of sand, particles of iron and sludge).

In the case of maintenance, always use a set of new gaskets.

The appliance is intended to be permanently connected to the water mains.

### 6.2.1 Positioning the motor shaft



Always install the circulator with the motor shaft in a horizontal position as shown in Fig. 6. Install the electronic control device in a vertical position.

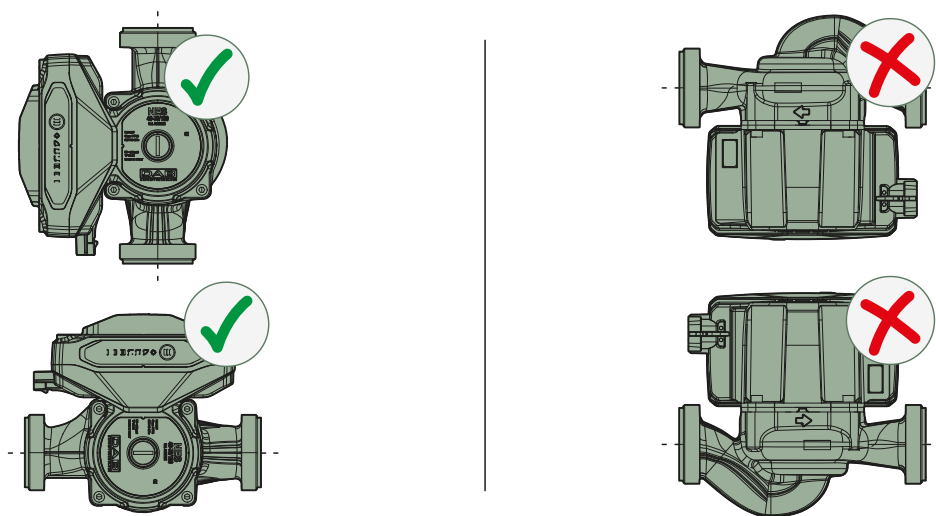


Fig. 6

Install the circulator as far as possible above the minimum boiler level and as far as possible from bends, elbows and junction boxes.



Never insulate the electronic control device.

### 6.2.2 Positioning of the user interface in system

The user interface can be turned to different positions from the standard one, see Fig. 7.



Beware of the difference between ambient temperature and liquid temperature:

If the ambient temperature is higher than that of the liquid, there is a risk of condensation forming, which can and must be discharged through at least one of the **three drainage holes** on the motor body (Fig. 7).

If there is a risk of condensation, ensure the motor body is not positioned with the electronic control device facing down as the condensation would damage the electronics.

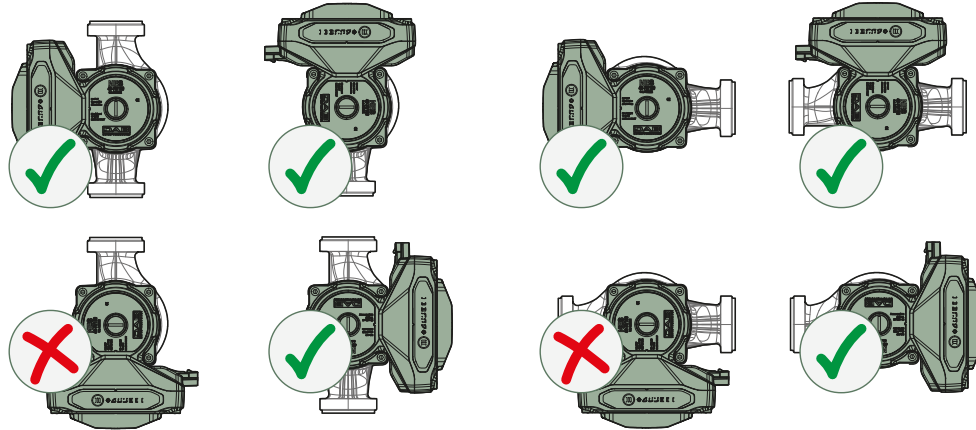


Fig. 7

### 6.2.3 Rotation of the user interface

If the circulator is installed on pipes in a horizontal position, it will be necessary to rotate the interface with the respective electronic device through 90° in order to allow the user a more convenient interaction with the graphic interface.



Completely drain the circulator before rotating it.

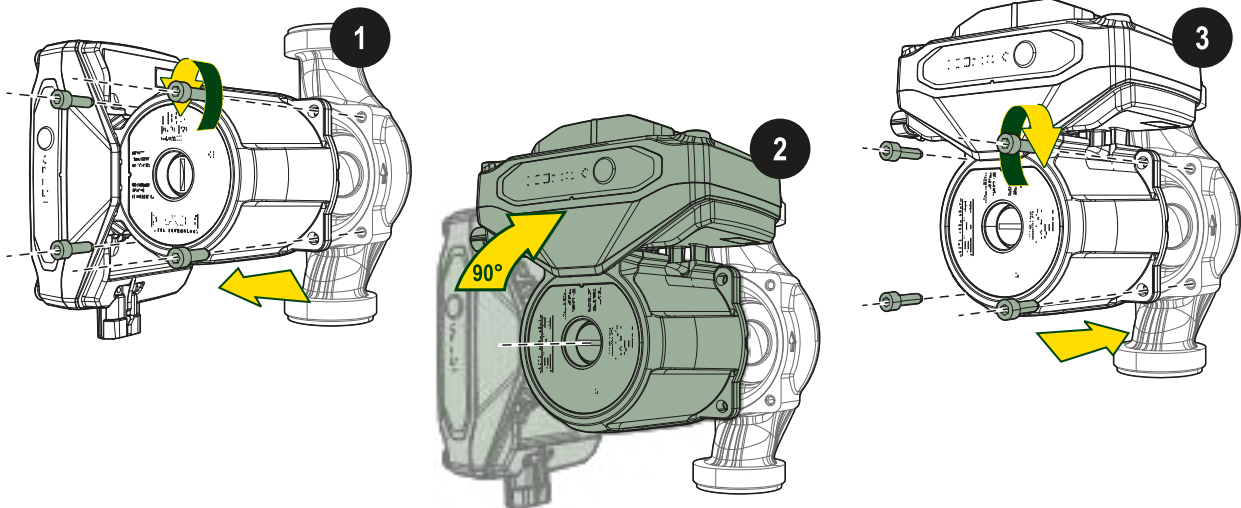


Fig. 8

Proceed as follows to rotate the circulator (see Fig. 8):

1. Close the on-off valves in delivery and suction to stop the water flow;  
Remove the 4 fixing screws of the circulator head;  
Remove the motor casing from the hydraulic housing, taking care with the seal between the motor casing and the hydraulic housing;
2. Rotate the motor casing with the electronic control device through 90° clockwise or counterclockwise, as necessary and in compliance with that described in chapter 6.2.2;
3. Reposition the motor casing in the hydraulic housing, taking care that the seal between the motor casing and the hydraulic housing is positioned correctly;  
Reassemble and tighten the 4 screws that fix the circulator head;  
Open the on-off valves at delivery and suction to restore the water flow.

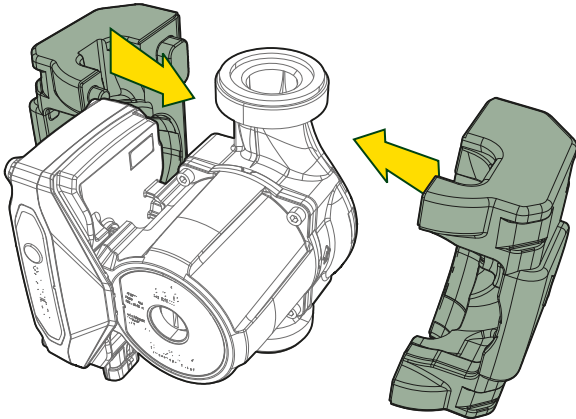


If it is difficult to remove the motor casing from the hydraulic housing, move the motor casing slightly to facilitate its removal, taking care not to damage the impeller connected to it.

### 6.3 Insulating the pump body



Provided separately as an accessory and only available for certain models.



It is possible to reduce heat loss and improve system performance by insulating the pump body with the insulating shells available to purchase separately.



Do not insulate the electronic box and do not cover the control panel

Fig. 9

### 6.4 Electrical connection



Attention: always respect the safety regulations!



Carry out a lightning risk assessment. We recommend installing a type 3/class III surge protective device (SPD) in accordance with EN/IEC 61643-11 to ensure disconnection in the event of lightning and surges.



Check that the mains voltage is the same as that on the motor data plate.



Carry out the wiring and verification of line protections while referring to the Safety Booklet enclosed with the product and the design of the electrical system and/or equipment.

#### 6.4.1 Power supply electrical connection



All the starting operations must be performed with the cover of the Evoplus Lite control panel closed.

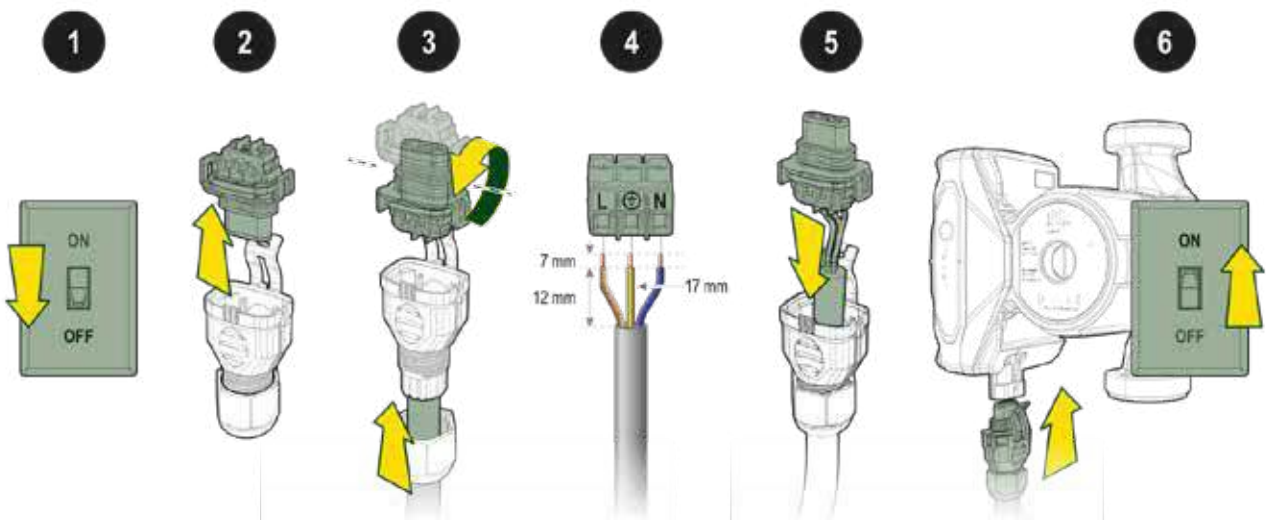


Fig. 10

Proceed as follows to connect the circulator (see Fig. 10):

1. Cut off the electric power supply;
2. Unscrew the cable gland and extract the terminal board from the connector, releasing it from the side clips,



Rotate the terminal board 180°;

Insert the cable through the nut, strip the wires as shown in Fig. 10 and insert it through the cable gland. Connect the phase (L), neutral (N) and earth (PE y/g) wires to the terminal board and tighten the three screws on the wires;

Insert the wired terminal board in the cable gland, securing it with the side clips. Screw on the locking nut;

3. Connect the wired connector to the pump, securing it with the rear hook;
4. Reactivate the electric power supply.



The electrical connections must be made by instructed, trained and authorised personnel in compliance with local regulations and the corresponding wiring diagram



Check that the cross-section of the conductors and the wiring conditions match the specifications in the wiring diagram and that they are correctly sized in accordance with local regulations.

Ensure a power disconnection (cut-off) device is installed. The equipment's installation must be fitted with a device that can be locked in OFF position for voltage isolation. Based on a risk assessment carried out by the installer or end user, the device must be installed in compliance with EN 60204-1 and/or EN 60335-1 and/or national legislation on low voltage fixed electrical installations, such as HD 60364-1 (CEI 64-8 in Italy), in relation to the type of incorporation and/or final installation.

The plant must be either equipped with an external energy cut-off device or connected to an E-STOP device in compliance with EN ISO 13850, if the equipment is incorporated inside machinery.

The power supply must ensure a minimum protection rating of IP X4.



Disconnect the power supply and lock it with a padlock or equivalent device to prevent it being restored accidentally. Follow the company and local Lock Out and Tag Out (Lo.To.) procedures.

Failure to follow Lo.To. procedures results in a risk of electrocution and ignition.



Ensure that the voltage and frequency on the inverter's data plate are the same as those of the power mains.

Risk of electrocution, overheating and fire in the event of incorrect power supply.



Before carrying out any installation or maintenance work, disconnect the inverter from the mains power supply and wait at least 15 minutes before working on internal live parts. Do not work on or touch live parts until this time has elapsed.

Failure to wait the minimum time results in a risk of electrocution.

## 7 COMMISSIONING

### 7.1 Start-up

Once all the electrical and hydraulic connections have been made, fill the system with water and if necessary with glycol. Once the system has been started, the circulator's configuration can be modified to adapt better to plant requirements (see chap.12).



Running dry causes irreparable damage to the product.

For the first start-up, follow the steps below:

- For correct start-up, make sure you have followed the instructions given in INSTALLATION and COMMISSIONING and the respective subsections;
- Check water is present;
- Provide electric power supply;
- If the electronics are integrated, follow the instructions in the dedicated annex. See chap. 12.

## 7.2 Degassing the pump

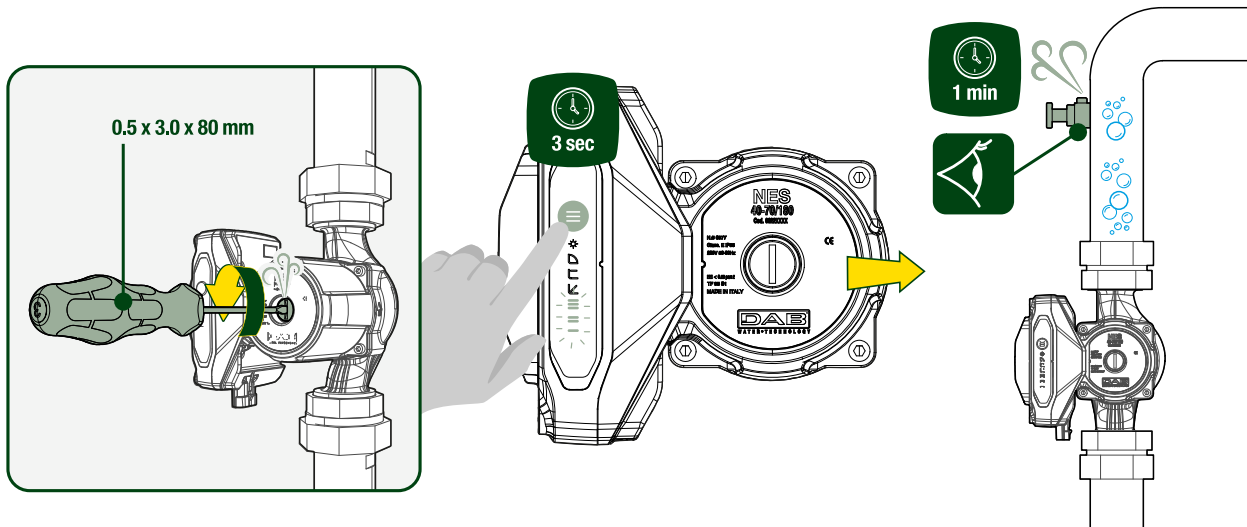


Fig. 11

To degas the pump, press the selection button on the interface for 3 sec. The system displays an animated sequence on the interface LEDs to signal degassing is in progress.



Always vent the pump at first start-up!

## 7.3 Precautions

For a long shutdown period, close the shut-off device on the suction pipe, and, if applicable, all auxiliary control connections. "Sleep Mode" can be activated during long shutdown periods.

Since this mode requires the circulator to remain powered, if this is not possible, plan short running cycles to avoid deterioration and malfunctions. See chapter 12.1.4 Sleep mode.



**RISK OF FREEZING:** if using the pump in an environment subject to freezing or with water at temperatures between  $-20^{\circ}\text{C}$  and  $0^{\circ}\text{C}$ , add glycol to the pump liquid. To avoid unnecessary motor overloads, carefully check that the density of the pumped liquid matches that indicated in chapter 2: remember that very dense liquid may limit the circulator's performance.

## 8 MAINTENANCE

Disconnect the power supply before starting any work on the system.

As well as being at a high temperature and pressure, the fluid in the system may either be in the form of steam or chilled!



### **DANGER OF SCALDING!**

Beware of contact with the pump or system parts during operation. Touch with care and wait until the pump stops before working on or near it. In the event hot parts are accessible, appropriate protection shall be provided to prevent contact with them. Appropriate PPE shall be used during maintenance work



### **DANGER OF LOW TEMPERATURES!**

Beware of contact with the pump or system parts during operation. Touch with care and wait until the pump stops before working on or near it. In the event cold parts are accessible, appropriate protection shall be provided to prevent contact with them. Appropriate PPE shall be used during maintenance work.



### **USE PERSONAL PROTECTIVE EQUIPMENT**

Coming into contact with the pump or system parts may be dangerous. Take particular care with the surfaces of the body, the motor casing and the dissipator, which can become very hot.



### **DISCONNECT THE POWER SUPPLY BEFORE MAINTENANCE**

The power supply to the equipment must be disconnected and locked off before carrying out any maintenance. Failure to comply with the instructions associated with this sign may cause harm to persons, animals and property. Follow the Lock Out and Tag Out (Lo.To.) procedure in the installation area.

## 8.1 Periodic checks

Check that the system is always at the appropriate pressure, as indicated on the circulator's CE marking (nameplate).

We recommend degassing the pump after long shutdown periods, to eliminate any air bubbles or limescale formed during the stoppage (see chap. 7.2).

Check the following during the inspections, to be carried out at least once a year:

- no condensation;
- no clogging in the condensation drain;
- connectors are perfectly sealed;

- no damage to installation cable;
- no abnormal noise and/or vibration.

## 8.2 Draining the system

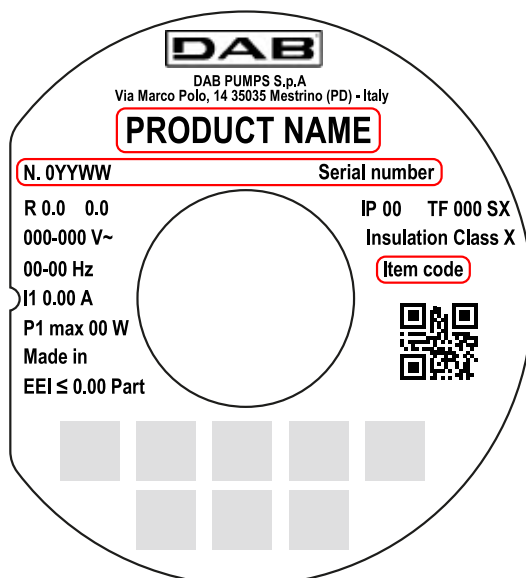
If the liquid is to be drained off for maintenance, check that the draining liquid does not harm persons or property, especially in systems using hot water. Legal provisions for the disposal of any harmful liquids must also be observed. After a prolonged period of use it may become difficult to remove parts in contact with the water: for this purpose use a suitable solvent found on the market and where possible a suitable extractor. It is recommended not to apply force on the various parts with unsuitable tools.

When starting up after a long shutdown period, the operations listed under COMMISSIONING must be repeated.

## 8.3 Modifications and spare parts

Any modification made without prior authorisation relieves the manufacturer of all responsibility.

## 8.4 CE marking and minimum instructions for DNA



*The image is for representative purposes only*

Consult the Product configurator (DNA) available on the DAB PUMPS website.

The platform allows you to search for products by hydraulic performance, model or article number. Technical data sheets, spare parts, user manuals and other technical documentation can be obtained.



<https://dna.dabpumps.com/>

## 9 DECLARATION OF CONFORMITY

For the product indicated in chapter 3.1, we declare that the device described in this instruction manual and marketed by us complies with the relevant EU health and safety regulations.

A detailed and updated declaration of conformity is available with the product.

If the product is modified in any way without our consent, this statement will become invalid.

## 10 GUARANTEE

DAB undertakes to ensure that its Products comply with what has been agreed and are free from original defects and faults connected with their design and/or manufacture that make them unsuitable for the use for which they are normally intended.

For more details on the Legal Guarantee, please read the DAB Guarantee Conditions published on the website <https://www.dabpumps.com/en> or request a printed copy by writing to the addresses published in the "contact" section.

## APPENDIX SECTION

## 11 TECHNICAL DATA

	<b>EVOPLUS LITE</b>
Supply voltage	1x220-240 V <sub>AC</sub>
Supply voltage tolerance	+/-10%
Frequency	50/60 Hz
Degree of protection	IPX4
Workplace room temperature	0 °C ÷ 40 °C
Storage temperature	-25 °C ÷ 70 °C
Liquid temperature	-20 °C ÷ 110 °C
Maximum operating pressure	1.6 Mpa (16 bar)
Minimum operating pressure	0.05 Mpa (0.5 bar)

Table 4

<b>MODELS</b>	<b>IN (A)</b>	<b>P n (W)</b>	<b>H max (m)</b>	<b>Q max (m<sup>3</sup>/h)</b>
Evoplus Lite 60/180-25	0.84	101	6	7.0
Evoplus Lite 80/180-25	1.08	133	8	7.8
Evoplus Lite 120/180-25	1.55	190	12	8.8
Evoplus Lite 60/180-32	0.84	101	6	8.5
Evoplus Lite 80/180-32	1.08	133	8	9.4
Evoplus Lite 120/180-32	1.55	190	12	10.8
Evoplus Lite 60/220-F32	0.84	101	6	9.4
Evoplus Lite 80/220-F32	1.08	133	8	10.5
Evoplus Lite 120/220-F32	1.55	190	12	11.9
Evoplus Lite 60/250-F40	0.84	101	6	10.0
Evoplus Lite 80/250-F40	1.08	133	8	11.0
Evoplus Lite 120/250-F40	1.55	190	12	12.5

Table 5

## 12 INTEGRATED ELECTRONICS

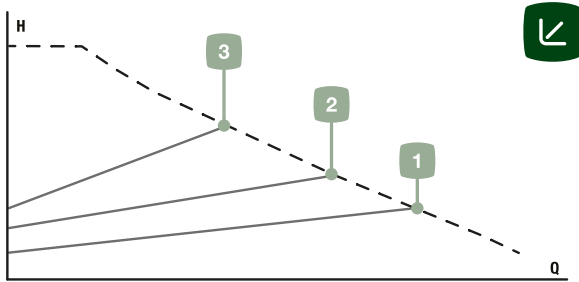
### 12.1 Description of regulating modes

Evoplus Lite circulators allow the following regulating modes, depending on plant requirements:

- Proportional differential pressure regulation depending on the flow present in the plant.
- Constant differential pressure regulation.
- Regulation with constant curve.

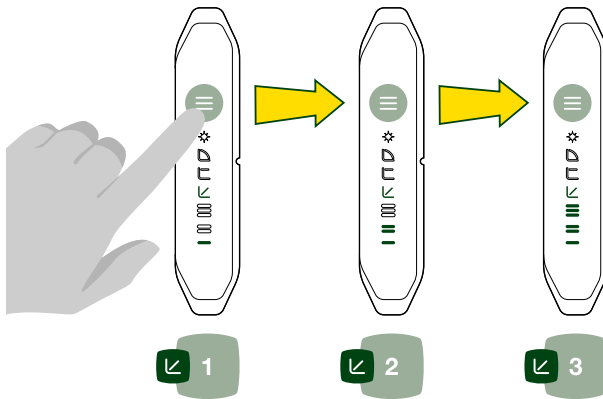
The regulating mode may be set through the Evoplus Lite control panel.

#### 12.1.1 Regulation with proportional differential pressure



In this regulating mode the differential pressure is reduced or increased as the demand for water decreases or increases. The Hs set-point can be selected on the interface by pressing the selection button.

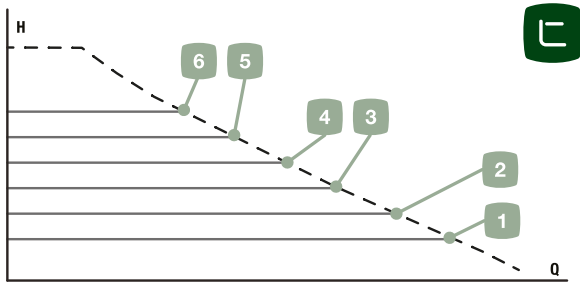
The setting of the reference curves for this regulation is shown below:



Regulation is indicated for:

- Heating and conditioning plants with high load losses.
- Two-pipe systems with thermostatic valves and head  $\geq 4$  m.
- Plants with secondary differential pressure regulator.
- Primary circuits with high load losses.
- Domestic water recirculating systems with thermostatic valves on the rising columns.

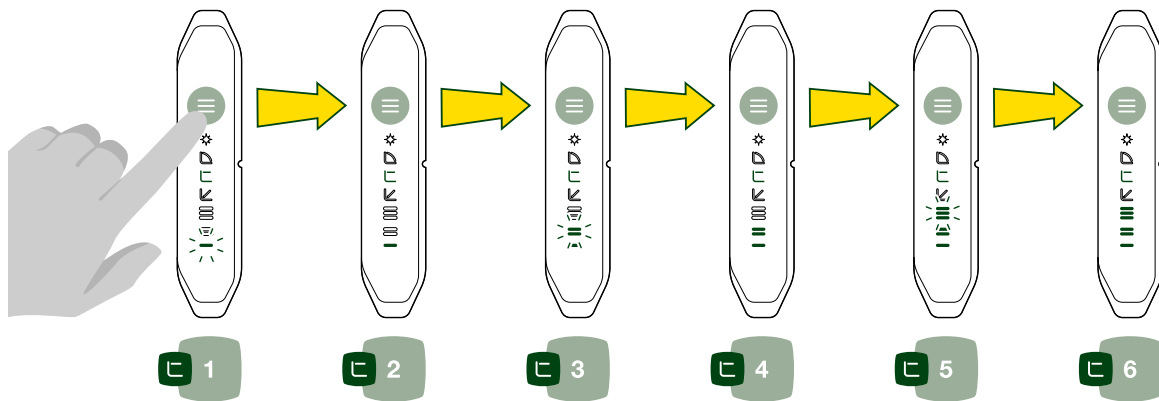
12.1.2 Regulation with constant differential pressure



In this regulating mode the differential pressure is kept constant, irrespective of the demand for water. The Hs set-point can be selected on the interface by pressing the selection button.

The setting of the reference curves for this regulation is shown below:

- LED steady
- ☀ LED flashing

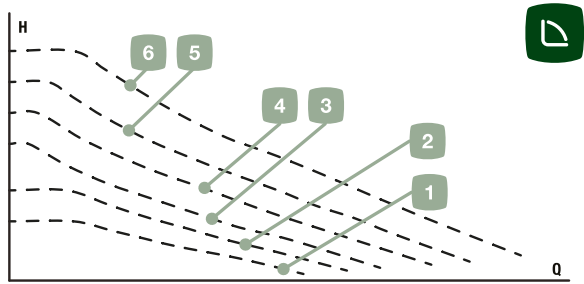


Only three curves (settings 2, 4 and 6) are available in some models and in certain specific configurations.

Regulation is indicated for:

- Heating and conditioning plants with low load losses.
- Two-pipe systems with thermostatic valves and head  $\leq 2$  m.
- Single-pipe systems with thermostatic valves.
- Plants with natural circulation.
- Primary circuits with low load losses.
- Domestic water recirculating systems with thermostatic valves on the rising columns.

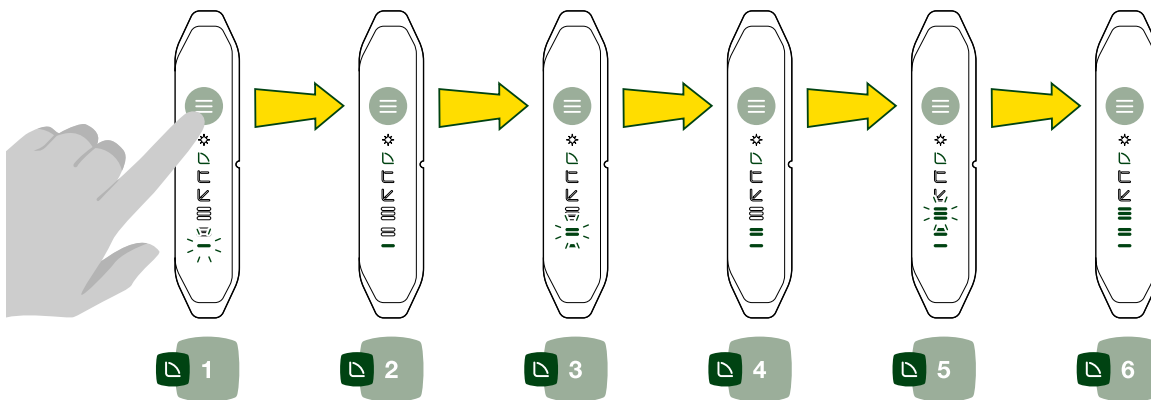
### 12.1.3 Regulation with constant curve



In this regulating mode the circulator works on characteristic curves at a constant speed. The operating curve is selected by setting the rotation speed through a percentage factor. The value 100% indicates the maximum limit curve. The actual rotation speed may depend on the power and differential pressure limits of your circulator model. The speed can be selected on the interface by pressing the selection button.

The reference curves for this regulation are shown below:

- LED steady
- ☼ LED flashing

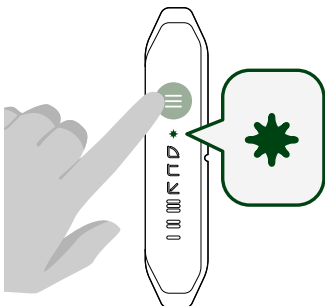


Only three curves (settings 2, 4 and 6) are available in some models and in certain specific configurations.

Regulation is indicated for:

- Heating and conditioning plants with constant flow.

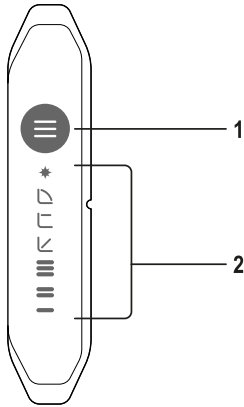
### 12.1.4 Sleep mode



The LED shown in the figure describes and signals the activation of "Sleep Mode". The mode is selected by pressing the selection button until the LED shown in the figure is lit.

When the circulator is unused for prolonged periods of time but is still connected to the mains, "Sleep Mode" switches on the circulator for 1 min on minimum speed every 25 h, to prevent the pump becoming blocked.


12.2 Control panel





1 – KEYS

Key for selecting the pump setting 

2 – LEDS

Sleep mode 

Luminous segments indicating the type of set curve 

Luminous segments indicating the height of the set curve 



*The images in this chapter may differ slightly from your product depending on which software version is installed.*

12.2.1 Regulating mode

Use the selection button  to navigate through the menu, starting from the factory setting.

If no buttons are pressed for 30 seconds, the LEDs relating to the height of the set curve switch off; the remaining LEDs stay on but are dimmed; when the selection button is next pressed all LEDs switch back on.



The button lock function can be activated by pressing it for 10 seconds; press the button again for 10 seconds to re-enable it.










This function is not available on all Evoplus Lite models.







Table showing sequence of regulating modes

- LED steady
-  LED flashing

1	Proportional differential pressure		<p><i>Available in version with 6, 8 or 12 m head</i></p>
2	Proportional differential pressure		<p>Factory settings</p>



3	Proportional differential pressure		<p>Available in version with 6, 8 or 12 m head</p>
4	Constant differential pressure		<p>Available in version with 8 or 12 m head</p>
5	Constant differential pressure		<p>Available in version with 6, 8 or 12 m head</p>
6	Constant differential pressure		<p>Available in version with 8 or 12 m head</p>
7	Constant differential pressure		<p>Available in version with 6, 8 or 12 m head</p>
8	Constant differential pressure		<p>Available in version with 8 or 12 m head</p>
9	Constant differential pressure		<p>Available in version with 6, 8 or 12 m head</p>

10	Constant curve		Available in version with 8 or 12 m head
11	Constant curve		Available in version with 6, 8 or 12 m head
12	Constant curve		Available in version with 8 or 12 m head
13	Constant curve		Available in version with 6, 8 or 12 m head
14	Constant curve		Available in version with 8 or 12 m head
15	Constant curve		Available in version with 6, 8 or 12 m head

16	Sleep mode		<i>Available in version with 6, 8 or 12 m head</i>
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### 13 RESET AND FACTORY SETTINGS

To reset the product, disconnect the device from the power supply and then reconnect it. This operation restarts the machine without deleting the user's settings.

### 14 NON-RETURN VALVE

If the system is equipped with a non-return valve, ensure that the minimum pressure of the circulator is always higher than the valve closing pressure.

## 15 TROUBLESHOOTING



Before starting to look for faults it is necessary to disconnect the power supply to the pump.

The circulator signals errors through the repeated and simultaneous blinking of the curve height LEDs. Refer to the table below.

N° blinks	Description	Reset
No blinking	Pump not correctly powered	Restore pump power supply
	The pump is faulty	Replace the pump
1 blink	Dry operation	Check the system for leaks
2 blinks	Blocked rotor	Release the rotor as per the instructions below, if the problem persists replace the pump
3 blinks	Damaged terminals or short circuit	Replace the pump
4 blinks	Excess temperature	Wait for the temperature to return within the safety range, the pump will then run normally again.
5-6 blinks	Electrical safety	Wait 14 minutes for reset, follow the warning instructions below
> 6 blinks	Software fault	Replace the pump

**2 BLINKS**

In the event of a circulator blockage with 2 blinks, it is recommended to unblock the motor manually:

- Disconnect the appliance from the power supply before doing any work on it;
- Close the interception valves installed in the system, located above and below the pump, to prevent the entire system from emptying during the operation;
- Unscrew the brass cap on the front with a slotted screwdriver and remove it (*water may leak out, so beware of steam escaping*);
- Using a slotted screwdriver size 0.5x3 mm, turn the motor shaft inside the hole until it is free to turn effortlessly;
- Screw the front brass cap back on;
- Re-open the system interception valves located above and below the pump;
- Reconnect the appliance to the power supply mains;
- If the operation has been successful, the pump will no longer display the error and will resume normal operation.

**5-6 BLINKS**

The error may be caused by an unexpected current overload or another hardware error on the board. As a result, the pump is not working and you must proceed with the following steps: keep the pump connected to the power line, and wait 14 minutes for automatic reset. If the error persists, the pump must be replaced.