

HE OEM 2 | 40-XX | 60-XX



INSTALLATION AND
OPERATING INSTRUCTIONS

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EU DECLARATION OF CONFORMITY

Subject of the declaration: Heat circulation pump
Type: HE OEM 2
Design: 40-xx, 60-xx

We declare with sole responsibility that the products specified above, to which this EC Declaration of Conformity refers, fulfil the following standards and guidelines:

Electromagnetic Compatibility Directive 2014/30/EU

EN 55014-1 : 2006 + A1 : 2009 + A2 : 2011

EN 55014-2 : 1997 + A1 : 2001 + A2 : 2008

EN 61000-3-2 : 2014

EN 61000-3-3 : 2013

Low Voltage Guideline 2014/35/EU

Guideline for Energy-Consuming Products 2009/125/EG

Eco-design requirements 641/2009 and 622/2012.

EN 16297-1 : 2012

EN 16297-2 : 2012

EN 60335-1 : 2012

EN 60335-2-51 : 2003 + A1 : 2008 + A2 : 2012

RoHS 2011/65/EU

This declaration is submitted for and on behalf of the manufacturer by:

2 Safety Instructions

2.1 General

These installation and operating instructions are a part of the product, and contain basic information that must be observed during installation, operation and maintenance. For this reason, the installer and specialist personnel or operators must read these instructions prior to set-up.

Please observe both the general safety instructions listed under section 2 and the special safety instructions detailed in the other sections.

A copy of the EC Declaration of Conformity is provided with these instructions. This declaration shall be deemed void in the event of a modification that has not been agreed with us.

2.2 Identification of notes in the operating instructions



General hazard symbol

Warning! Danger of personal injury!

Observe the relevant accident prevention regulations.



Warning! Danger from electrical voltage! Prevent hazards arising from electrical energy. Observe the instructions in local or general regulations (e.g. IEC, VDE, etc.), and those of the local energy supplier.

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Advice

This symbol indicates useful information for handling the product. It indicates potential difficulties and aims to ensure safe operation.

Signs attached directly on the product, such as:

- direction of rotation arrow
- type plate
- identification of connections must be strictly observed and kept in an easily legible state.

2.3 Personnel qualification

The personnel used for mounting, operation and maintenance must have relevant qualifications. Areas of responsibility and monitoring of personnel must be guaranteed by the owner/operator. If personnel do not have the necessary know-how, they must be trained or instructed accordingly. This device can be used by children at or above the age of 8 years, as well as by persons with reduced physical, sensory or mental capabilities, or who lack experience and knowledge, if they are supervised or have been instructed concerning the safe use of the device and if they understand the hazards arising from its use. Children may not play with the device. Cleaning and maintenance operations may not be carried out by children without supervision.



2.4 Danger of not observing safety instructions

Not observing the safety information can endanger persons, the environment and the system. Not observing the safety instructions shall result in the loss of any and all claims to warranty.

Potential dangers include:

- Hazards to persons through electrical and mechanical effects.
- Failure of important system functions.
- Hazard to the environment from escaping fluids resulting from a leak.
- Failure of prescribed repair and maintenance work.

2.5 Safety-conscious working

Observe the safety instructions detailed in this manual, along with the current national accident prevention regulations. Should the system operator also have their own internal regulations, these must also be observed.

2.6 Safety instructions for the operator

- Any existing touch guard protecting moving parts may be neither removed nor shut down while the system is in operation.
- In the event of a fluid leak, any fluids must be collected or diverted in a way that prevents hazards to persons and the environment from arising.

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- Prevent hazards arising from electrical energy.
- Observe the instructions in local or general regulations (e.g. IEC, VDE, etc.), and those of the local energy supplier.
- In the event of hazards arising from the system due to contact with hot or cold parts, these parts must be fitted with a touch guard.
- Keep flammable substances away from the product.



2.7 Safety instructions for installation and maintenance work

The system operator is responsible for ensuring that all installation and maintenance work is carried out by qualified personnel. These persons must also have familiarised themselves in advance with the product using the operating instructions. Conducting work on the pump is only permitted when the system is shut down.

Ensure that the device is securely disconnected from the power supply. Disconnect the device plug to achieve this. Prescribed instructions for shutting down the device can be found in the operating instructions. All protective mechanisms, such as a touch guard, must be correctly reattached after work.

2.8 Unauthorised conversion and production of spare parts

Modification or conversion of the product is only permitted after prior consultation with the manufacturer. Only use original spare parts for repairs. Only use accessories that have

been approved by the manufacturer. The manufacturer shall bear no liability for any consequences resulting from the use of other parts.

2.9 Unpermitted operation

If the pump is disconnected from the power supply, wait at least 1 minute before reactivating. Otherwise, the pump's inrush current limit has no effect, which can lead to functional errors or damage to any connected heating controller. The pump's operational safety can only be ensured if it is used as intended. Please observe section 4 of these operating instructions here. Ensure compliance with the limit values detailed in the technical data.



3 Transport and Storage

After receiving the product, inspect it immediately for damage caused in transport. Should you detect any transport damage, assert a claim with the haulier.

Incorrect transport and storage can lead to personal injury or damage to the product.

- **Protect the product against frost, moisture and damage during transport and storage.**
- **Only carry the pump by the pump housing, and never by the connection cable or terminal box.**
- **If the packaging weakens due to moisture, this can lead to the pump falling out and causing severe injury**



4 Intended use

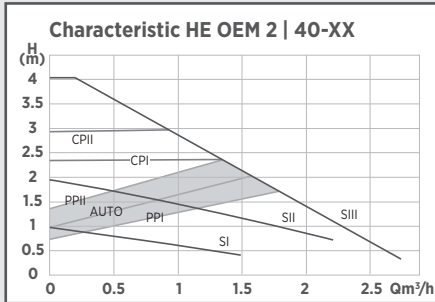
These high efficiency pumps are designed to circulate hot water in central heating systems and are also suitable for pumping low density liquids in industrial and commercial applications. They are also suitable for solar installations.



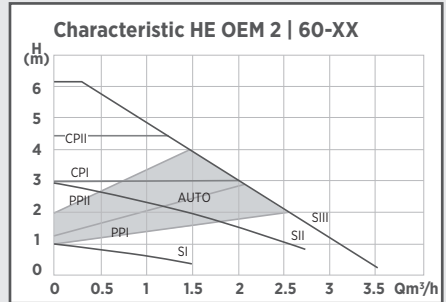
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5 Product information

5.1 Technical data 40-XX | 60-XX



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Maximum elevation height	4.0 m	6.0 m
Maximum flow rate	2800 l/h	3600 l/h
Power consumption P1 (W)	4.5 - 22	4.5 - 38
Supply voltage	1 x 230V 50Hz	
Sound pressure level	<43 dB(A)	
EEl	≤ 0.20	
Protection type	IP 42	
Temperature class	TF 110	
Ambient temperature	0 °C to 40 °C	
Medium temperature	+5 to 110 °C	
System pressure	Max. 10 bar (1MPa)	
Permitted media	heating water acc. to VDI 2035 Water/glycol mixture 1:1	

Supply pressure

Medium temperature	Minimum supply pressure		
< 75 °C	0.05 bar	0.005 MPa	0.5 m
75 °C - 90 °C	0.3 bar	0.03 MPa	3.0 m
90 °C - 110 °C	1.1 bar	0.11 MPa	11.0 m

Acceptable range of application

Temperature range at maximum ambient temperature	Permissible medium temperature
25 °C	5 °C to 110 °C
40 °C	5 °C to 95 °C

Attention!

The use of unsuitable media can destroy the pump and injure you.

It is necessary to observe the manufacturer's information and safety data sheets!

Advice

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5.2 Delivery range

- Original assembly and operating manuals
- Pump
- 2 flat gaskets
- Pump plug
- Insulation



6 Pump description

In an average household, 10 to 20% of electricity consumption is used by conventional standard pumps. Together with the HE OEM 2 pump series, we have developed a circulation pump with an energy efficiency index ≤ 0.20 . By using HE OEM 2, energy consumption can be reduced by up to approx. 80% compared to a conventional circulation pump. The hydraulic capacity can be kept almost the same as with the standard pumps. The pump capacity adapts to the actual system demand as it works according to the proportional pressure method.

7 Pump settings and flow capacity

Description of the operating elements

7.1 Buttons




All pump functions can be controlled with just two buttons. The button  switches the night reduction function on and off. The button  controls the operating modes. The selected operating mode is shown in the clear field of the LED indicator.

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7.1.1 Service mode, setting the capacity range

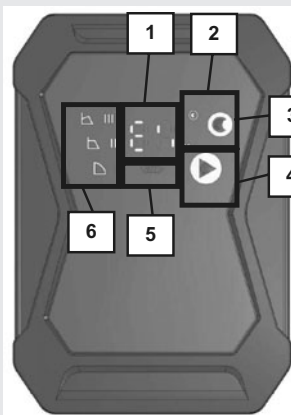
The capacity range can be changed to 4m or 6m in service mode.



- The pump must be disconnected from the 230V mains voltage for at least 15 seconds.
- Connect the pump to the 230V mains voltage.
- Press the  and  buttons simultaneously within 3 seconds.
- Then release both buttons.
- Select the capacity range with the button .
- -4 = 4m
- -6 = 6m
- The pump must be disconnected from the 230V mains voltage for at least 15 seconds.
- Connect the pump to the 230V mains voltage

The setting process is now complete. The pump is now running in the selected capacity range. If necessary, the pump setting can be readjusted at any time.

7.2 Control panel and LED display



1. Display of energy consumption in watts
2. Automatic night reduction display
3. button for activating the automatic night reduction
4. operating mode selection button
5. Display for activated AUTO Smartadapt mode
6. Display of the nine operating levels (characteristics) of the pump

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7.3 Selection of the operating mode and degree of work**1. Constant speed adjustment I, II i III**

In this operating mode, the pump runs at a constant rotational speed over the entire characteristic curve.

2. Constant pressure adjustment CP 1, CP 2

In this type of adjustment, the pressure generated by the pump is kept at a constant level. This type of adjustment is especially suitable for use in underfloor heating systems.

3. Proportional pressure adjustment PP1, PP2










The pump is controlled by the proportional pressure method. In this case, the pressure generated by the pump is adapted to the changing flow rate. This operating mode is especially useful when the pump is to be used as a circulation pump for heating.

4. Smartadapt

The Smartadapt AUTO function is designed for two-circuit heating systems and underfloor heating systems. The pump capacity is automatically adjusted to the actual heat demand of the installation. The pump power is adjusted gradually and may take more than a week. If the power supply to the pump is interrupted, the pump remembers the last setting and resumes adjusting as soon as power is restored.


Upon delivery, the pump is set to the AUTO Smartadapt operating level. Multiple brief pressing the select button will continuously toggle between the constant speed, constant pressure, proportional pressure and AUTO Smartadapt modes.

The selected operating mode is indicated by the appropriate LED with characteristic symbols.



Number of button presses	Display	Description	Symbol Display
0	AUTO (selected on supply)	AUTO Smartadapt	
1	PP1	Min. proportional pressure adjustment	
2	PP2	Average proportional pressure adjustment	
3	CP1	Min. constant pressure adjustment	
4	CP2	Average constant pressure adjustment	
5	I	Constant speed adjustment I	
6	II	Constant speed adjustment II	
7	III	Constant speed adjustment III	
8	AUTO	AUTO Smartadapt	

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5. Automatic night reduction display


Display of  means that automatic night reduction is activated.

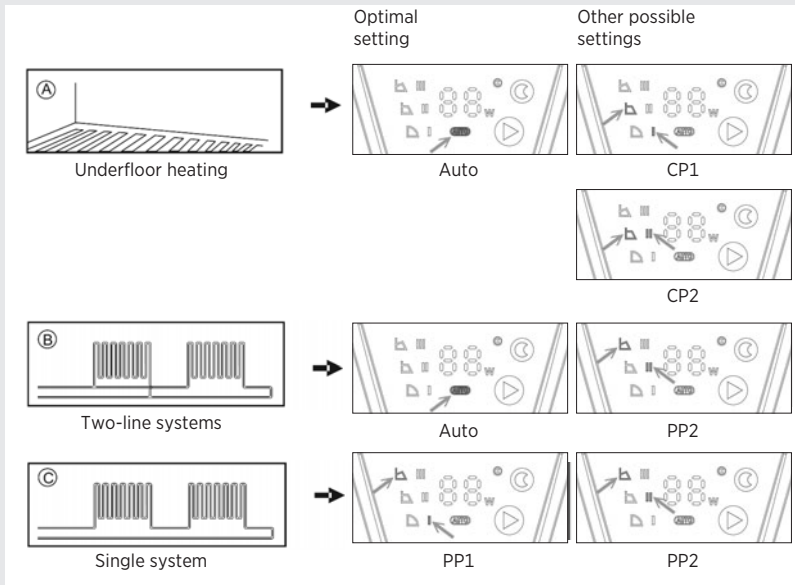
6. Button for activating automatic night reduction

- By pressing the button  in section 3, automatic night reduction is switched on or off.
- When the automatic night reduction is activated, the symbol  lights up in the display field 3.

The "Automatic Night Reduction" function is not available in the constant speed levels.

7. Selection of the degree of work

- Pressing the button  switches between the operating levels.
- The factory configuration of Auto Smartadapt will be re-established by pressing the button ten times.

7.4 Recommendations for selecting a degree of work

Factory configuration = AUTO Smartadapt

7.5 Automatic night reduction

Conditions for automatic night reduction:

Pumps installed in gas boilers with low water capacity must never be set to automatic night reduction:




If the heating system does not supply enough heat to the radiators, check whether the automatic night reduction function is active. If necessary, deactivate the automatic night reduction function.

To ensure that night reduction functions properly, the following requirements must be met:

1. The pump must be installed on the supply
2. The heating system must be equipped with automatic temperature adjustment on the supply.

How automatic night reduction works

Advice

Press the button  to activate the night reduction function. If the adjacent highlighted field is lit, the night reduction is activated and the pump automatically switches between normal operation and night reduction. Switching depends on the flow temperature. The pump automatically switches to night temperature reduction if the flow temperature drops by more than 10°-15°C in 1 hour. Switching to normal operating mode takes place immediately as soon as the flow temperature rises again by 3°C.

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8 Filling and venting the installation

Fill and vent the installation properly. To vent the pump, the electronics should be set to level III and operated in this position for at least 20 minutes. Caution After this procedure, you can set the pump to the desired control mode.

Advice

Incomplete venting will cause noise in the pump and system.

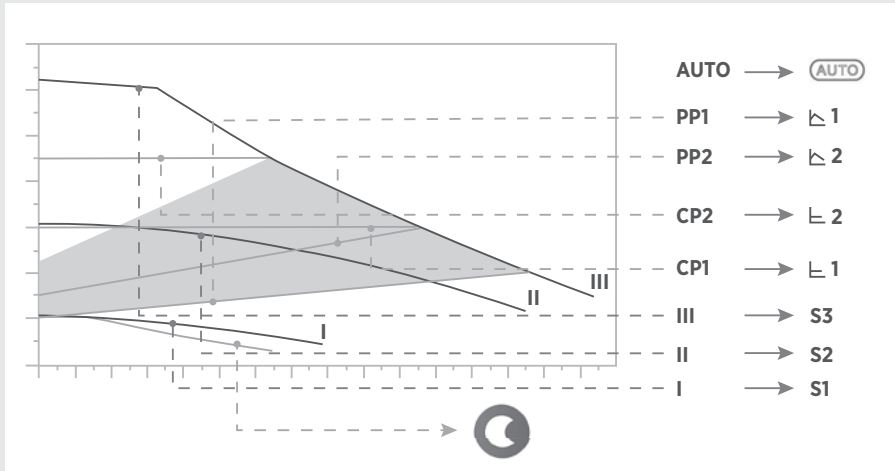
Warning! Danger of burns!
Depending on the operating status of the installation, the entire pump can become very hot.



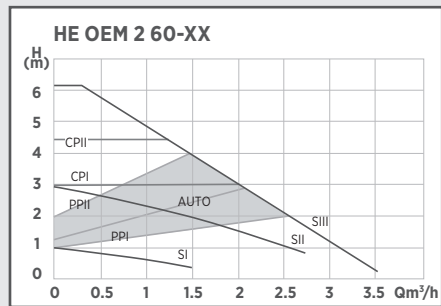
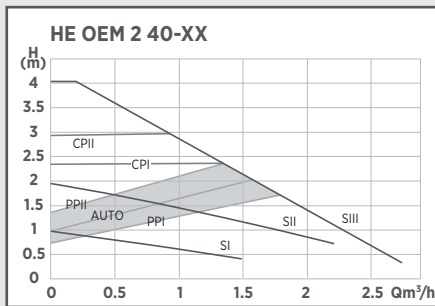
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9 Relation between pump setting and capacity

The characteristic curves show the relationship between pump settings and pump capacity.



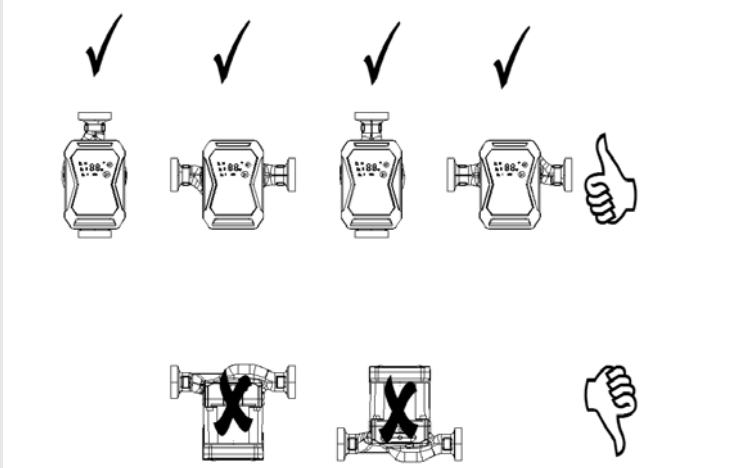
10 Capacity characteristics



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11 Assembly

Correct installation position of the engine



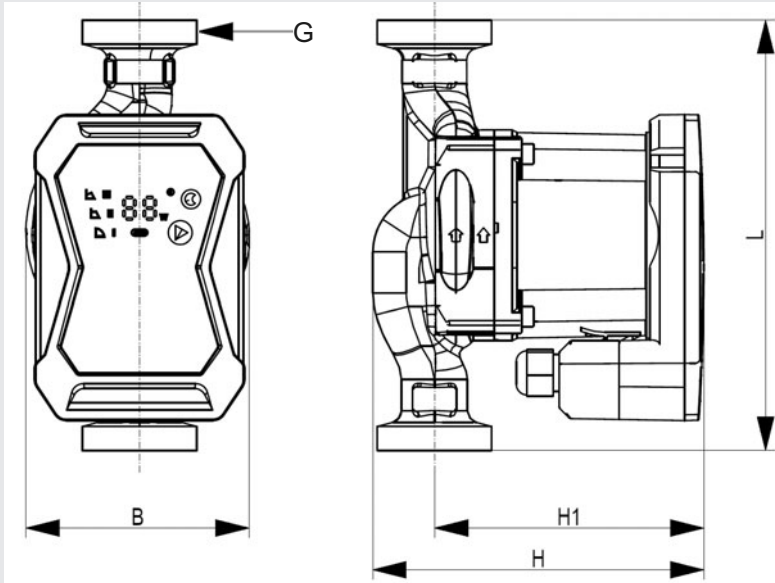
A voltage-free installation must be carried out with the pump motor in a horizontal position (the direction arrow on the pump body shows the direction of flow). When performing thermal insulation, make sure that the pump engine and the electronics body are not insulated. If the installation position is to be changed, the engine case must be rotated as follows.

- Loosen the hexagon socket screws
- Rotate the engine case
- Rescrew and tighten the hexagon socket screws.

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System dimensions

Dimensional sketch and dimension table



Pump type	Dimensions						Technical data		
	H (mm)	H1 (mm)	L (mm)	B (mm)	G (")	Weight kg (without cable)	Current (A)	Elevation height (m)	
40/60 20-130	138	112	130	93	1"	1,94	0,04-0,25/0,04-0,31	0-4/0-6	
40/60 25-130	138	112	130	93	1 ½"	2,12	0,04-0,25/0,04-0,31	0-4/0-6	
40/60 25-180	138	112	180	93	1 ½"	2,27	0,04-0,25/0,04-0,31	0-4/0-6	
40/60 32-180	142	112	180	93	2"	2,46	0,04-0,25/0,04-0,31	0-4/0-6	

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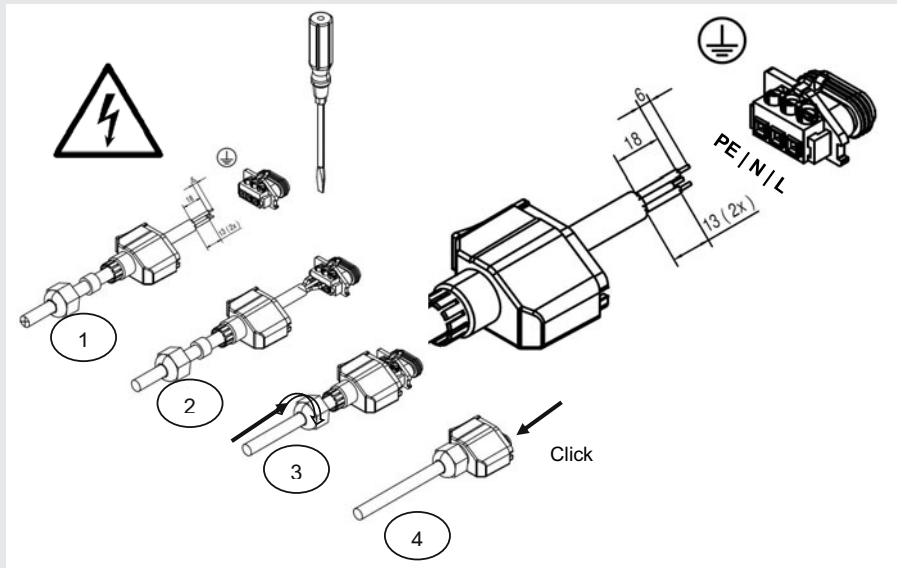
12 Electrical connection

Connect the power cord to the pump as shown in the picture.

Caution mains voltage! Always observe the necessary safety measures, VDE regulations and local regulations.

The cross-section of the cable must not be less than 0.75 mm².

When using cables with fine wires, use end wires sleeves.

**Caution Danger to life!**

Incorrect installation and incorrect electrical connection can be life-threatening.

Electricity hazards must be ruled out.

- Installation and electrical connection may only be performed by qualified personnel and in accordance with the applicable regulations (e.g. IEC, VDE, etc.)!
- The type of current and voltage must comply with the data on the rating plate.
- Comply with the regulations of the local power supply company!
- Comply with the accident prevention regulations!
- Never pull on the power cord
- Do not bend the cord
- Do not place any objects on the cord
- When the pump is used in systems with temperatures above 90°C, a connection cable that is suitably resistant to high temperature must be used
- There is a risk of sharp and jagged edges during assembly.
- Never transport by holding the power cord.
- There is a risk of injury from dropping the pump.



13 Maintenance/service

Before carrying out maintenance, cleaning and repair work, disconnect the system from the power supply and secure it against being switched on again by unauthorized persons.

At high water temperatures and system pressures, wait for the pump to cool down beforehand. **There is a risk of burns!**



14 Malfunctions, causes and elimination

Maintenance work or repair attempts may only be performed by qualified personnel. Before carrying out maintenance, cleaning and repair work, disconnect the system from the power supply and secure it against being switched on again by unauthorized persons. At high water temperatures and system pressures, wait for the pump to cool down beforehand. **There is a risk of burns!**

Malfunction designation or pump error code	Possible cause	Remediation solution
The pump does not work, the display does not light up	Power error	Check the supply voltage at the pump. If necessary, switch the circuit breaker back on.
The pump works but delivers no water	Air in the system	Vent the pump (see chapter 8 in the manual).
	The valve is closed	Open the gate valve
Noise in the system	There is air in the system	Vent the system
	Pump capacity is too high	Check pump settings
The pump is making noise	Air in the pump	Vent the pump (see chapter 8 in the manual).
	System pressure is too low	Increase the pressure on the supply
	Defective expansion vessel	Check the amount of gas in the expansion vessel
The building does not heat up	Incorrect pump setting	Increase the setpoint (see chapter 7.3 in the manual)
	Night reduction can be switched on	Switch off night reduction
No automatic power adjustment in proportional pressure levels	An open overflow valve installed in the system makes it impossible to control	Remove or close the overflow valve, if possible.

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Pump errors or codes displayed	Possible cause	Aid
E 1	Rotor block	Disconnect the pump from the power supply and secure it against being switched on again. If possible, close the overflow valves upstream and downstream of the pump or drain the water. Hot water may flow out depending on the operating status of the system! Danger of burns! Loosen the engine head by unscrewing the 4 hexagon socket screws and remove the pump head. It must be possible to turn the pump rotor easily. Remove any dirt or foreign bodies and reassemble the pump. If the defect persists, replace the pump.
E 2	Electronics malfunctions	Disconnect the pump from the mains for at least 1 minute. If the defect persists, replace the pump.
E 3	Over and under voltage	Disconnect the pump from the mains for at least 1 minute. If the defect persists, replace the pump.
E 4	Electronics malfunction; short circuit	Replace the pump.

If the defect cannot be eliminated, contact a specialized dealer.

After 10 seconds without pressing a button, the display turns off.

Pressing one of the two buttons turns it back on.

15 Disposal

Advice

The pump and its individual parts must not be disposed of with the municipal waste, but must be disposed of in an environmentally friendly manner! To do this, use the services of public or private waste disposal companies. You can find a list of the materials used in our products in the download area of our website.

Advices:

- All illustrations in this manual are schematic representations. Please note that purchased electric pumps and accessories may differ from the illustrations in this manual.
- Product performance is constantly improved and all products (including appearance and color, etc.) are subject to physical products; no notification will be given in the event of changes.



Updated on: 12/2021 · We reserve the right to deviations in dimensions and versions due to manufacturing reasons. Errors and technical changes reserved.