ALPHA 15-55 HWR-D

Installation and operating instructions
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Original installation and operating instructions

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1. Limited warranty

Products manufactured by Grundfos Pumps Corporation (Grundfos) are warranted to the original user only to be free of defects in material and workmanship for a period of 30 months from date of installation, but not more than 36 months from date of manufacture. Grundfos' liability under this warranty shall be limited to repairing or replacing at Grundfos' option, without charge, F.O.B. Grundfos' factory or authorized service station, any product of Grundfos manufacture.

Grundfos will not be liable for any costs of removal, installation, transportation, or any other charges that may arise in connection with a warranty claim. Products which are sold, but not manufactured by Grundfos, are subject to the warranty provided by the manufacturer of said products and not by Grundfos' warranty. Grundfos will not be liable for damage or wear to products caused by abnormal operating conditions, accident, abuse, misuse, unauthorized alteration or repair, or if the product was not installed in accordance with Grundfos' printed installation and operating instructions and accepted codes of good practice. The warranty does not cover normal wear and tear. To obtain service under this warranty, the defective product must be returned to the distributor or dealer of Grundfos' products from which it was purchased together with proof of purchase and installation date, failure date and supporting installation data. Unless otherwise provided, the distributor or dealer will contact Grundfos or an authorized service station for instructions. Any defective product to be returned to Grundfos or a service station must be sent freight prepaid; documentation supporting the warranty claim and/or a Return Material Authorization must be included if so instructed.

Grundfos will not be liable for any incidental or consequential damages, losses, or expenses arising from installation, use, or any other causes. There are no express or implied warranties, including merchantability or fitness for a particular purpose, which extend beyond those warranties described or referred to above. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages and some jurisdictions do not allow limitations on how long implied warranties may last. Therefore, the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from jurisdiction to jurisdiction. Products which are repaired or replaced by Grundfos or authorized service center under the provisions of these limited warranty terms will continue to be covered by Grundfos warranty only through the remainder of the original warranty period set forth by the original purchase date.

2. General information

2.1 Hazard statements

The symbols and hazard statements below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.

**DANGER**

Indicates a hazardous situation which, if not avoided, will result in death or serious personal injury.
WARNING
Indicates a hazardous situation which, if not avoided, could result in death or serious personal injury.

CAUTION
Indicates a hazardous situation which, if not avoided, could result in minor or moderate personal injury.

The hazard statements are structured in the following way:

**SIGNAL WORD**
Description of the hazard
Consequence of ignoring the warning
• Action to avoid the hazard.

2.2 Notes
The symbols and notes below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.

![FM](image)
Observe these instructions for explosion-proof products.

A blue or gray circle with a white graphical symbol indicates that an action must be taken.

A red or gray circle with a diagonal bar, possibly with a black graphical symbol, indicates that an action must not be taken or must be stopped.

If these instructions are not observed, it may result in malfunction or damage to the equipment.

Tips and advice that make the work easier.

3. Receiving the product

3.1 Inspecting the product

• Make sure that the delivered product corresponds to the order.
• Make sure that the supply voltage and frequency correspond to the values stated on the product nameplate.

![Exclamation Mark](image)
Take care when handling the product. Do not drop the product.

3.2 Scope of delivery
The box contains the following items:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ALPHA HWR-D pump</td>
</tr>
<tr>
<td>1</td>
<td>Line cord</td>
</tr>
<tr>
<td>2</td>
<td>Gaskets</td>
</tr>
<tr>
<td>1</td>
<td>Push-button HWR-D</td>
</tr>
<tr>
<td>1</td>
<td>Temperature sensor HWR-D*</td>
</tr>
<tr>
<td>1</td>
<td>Check valve</td>
</tr>
<tr>
<td>1</td>
<td>&quot;Check valve installed&quot; sticker</td>
</tr>
<tr>
<td>1</td>
<td>Installation and operating instructions</td>
</tr>
</tbody>
</table>

* If included in this system.
4. Installing the product

4.1 Location

The system is intended for indoor use only in areas protected from droplets and splashes. Maximum ambient temperature is 104 °F (40 °C).

**Push-button HWR-D**

Do not install the push-button HWR-D in a shower or under the tap/faucet where it could be exposed to water. Mount it at a suitable height out of reach of small children and pets.

**Repeater**

This repeater is only for use with the ALPHA 15-55 HWR-D system and is intended for indoor installation only in areas safe from droplets and splashes.

For optimum use, place the repeater between the ALPHA 15-55 HWR-D pump and the push-button located furthest away from the pump.

4.2 Tools

You will need the following tools to install the system:

- Hexagon key 4 mm
- Pipe wrench
- Phillips PH1 screwdriver (for temperature sensor screws).

4.3 Insulating the pump housing

Do not insulate the control box. Do not cover the control panel.

4.4 Mechanical installation

4.4.1 Installing the pump

When making pipe connections, follow the piping manufacturer's recommendations and all code requirements for the piping material.

**WARNING**

**Pressurized system**

Death or serious personal injury

- Do not hold the pump in place with tools while tightening the nuts on the pump housing.

1. Flush the system of debris before installation.

2. Insert the check valve if required.
3. Refer to the arrows on the pump housing indicating the direction of the liquid flow through the pump.

4. Install the pump with horizontal motor shaft.

5. Fit the two gaskets supplied to the pump ends.

   Remember to use the two gaskets included with the pump.

---

4.4.2 Changing the power head position

**CAUTION**

**Hot surface**

- Position the pump so that persons cannot accidentally come into contact with hot surfaces.

---

**WARNING**

**Electric shock**

- Switch off the power supply before starting any work on the product. Make sure that the power supply cannot be accidentally switched on.

---

**WARNING**

**Pressurized system**

Death or serious personal injury

- Before dismantling the pump, drain the system or close the isolating valve on either side of the pump before you remove the screws. The pumped liquid may be scalding hot and under high pressure.

If you change the position of the power head, fill the system with the liquid to be pumped or open the isolating valves.

- Make any change to the power head orientation before filling the system with liquid.
- You can turn the power head in steps of 90°. See figure for permissible positions.
- Only use orientations C and D for CSA, enclosure type 2.

Proceed as follows:

1. If liquid is present, drain the liquid from the pump or isolate the liquid from the pump.
2. Remove the four socket head cap screws.
3. Turn the pump head to the desired position.
4. Cross-tighten the screws to: 7 ft-lbs torque.

---

**Removing the four socket head cap screws on the power head**
4.4.3 Installing the temperature sensor

To fulfill the "California water heater regulations 2017 - Title 24", install a temperature sensor HWR-D in proximity to the pump. If the system is to be operated without the temperature sensor, skip this installation step.

Use thermal compound (heat-conducting grease) between the temperature sensor and the pipe system. Thermal compound is not included.

Use only one temperature sensor per system. Follow these steps to install the temperature sensor:

1. Remove the lid of the temperature sensor case.
2. Remove the pull-tab from the end of the AA lithium battery in the sensor case. The temperature sensor will start up.
3. Mount the temperature sensor on a straight section of pipe. Position the temperature sensor to have the best possible contact with the pipe surface. Apply thermal compound (heat-conducting grease) to the back of the sensor case as shown in the figure below. Loosely position the pipe clamp strip around the end of the temperature sensor.
4. Tighten the pipe clamp strip. Keep the clamp on the opposite side of the pipe from the temperature sensor.
   a. To pair the pump and the temperature sensor: Press and hold the connect button on the pump for 2 seconds. The blue connect symbol on the pump will flash. After successful pairing of the pump and the temperature sensor, the blue light will be on continuously for 5 seconds on both devices. If the pairing fails, the connect symbol will flash red for 5 seconds on the pump. If pairing fails, retry the pairing procedure.
5. Replace the lid of the temperature sensor case.
6. Tighten the two end screws on the temperature sensor case. For best performance, fully tighten the screws but do not overtighten.

Then press and hold the connect button on the temperature sensor for more than 2 seconds. The temperature sensor’s internal blue LED will flash. After successful pairing of the pump and the temperature sensor, the blue light will be on continuously for 5 seconds on both devices. If the pairing fails, the connect symbol will flash red for 5 seconds on the pump. If pairing fails, retry the pairing procedure.
4.4.4 Installing the push-button

Do not install the push-button in a shower or under the tap/faucet where it could be exposed to water. Mount it at a suitable height out of reach of small children and pets.

To install the push-button:

1. Remove the mounting bracket from the back of the push-button.

2. Remove the pull-tab from the end of the AAA batteries. The push-button will start up.

3. Use the included double-sided tape to fasten the mounting bracket to a surface or wall away from water droplets or splashes.

4. To pair the push-button with the pump: With the push-button near the pump, press and hold the connect button on the pump for 2 seconds. The blue connect symbol will flash. The connect symbol will stop flashing after 30 seconds if no device has been detected.

5. Press the button on the push-button for 2 seconds. The blue LED on the push-button will flash.

6. After successful pairing of the push-button and the pump, the blue light will be on continuously for 5 seconds on both devices.

7. If the pairing fails, the light will flash red for 5 seconds on both the pump and the push-button. Restart installation of the push-button.

8. To verify operation press button on the push-button for less than 2 seconds. Check that the connect symbol on the pump is on and green for approx. 2 seconds and the pump turns on.

9. Replace the push-button on the mounting bracket.

10. If more than one push-button is used for the system, repeat the installation procedure.

4.4.5 Installing the repeater

To install the repeater:

1. Connect the included USB cable to the repeater.

2. Connect the other end of the USB cable to the included power adapter.

3. Fit the included plug adapter to the power adapter.

4. Plug the power adapter into a power outlet to power on the repeater.

5. The LED on the repeater will light green to indicate the repeater is in operation.

4.5 Electrical connection

**DANGER**

**Electric shock**
Death or serious personal injury
- All electrical work must be carried out by a qualified electrician in accordance with the latest edition of the National Electric Code and state, local codes and regulations.

**DANGER**

**Electric shock**
Death or serious personal injury
- Switch off the power supply before starting any work on the product. Make sure that the power supply cannot be switched on accidentally.
**DANGER**

Electric shock
Death or serious personal injury
- This pump has not been investigated for use in swimming pool or marine areas.

**DANGER**

Electric shock
Death or serious personal injury
- This pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle in accordance with the National Electric Code and any state, local governing codes and regulations.

**DANGER**

Electric shock
Death or serious personal injury
- If national, state or local legislation requires a GFCI (Ground Fault Circuit Interrupter) or equivalent in the electrical installation, this shall be type A or better, due to the nature of pulsating DC leakage current.

A Type-A GFCI is identified by this symbol:

![Type-A GFCI symbol]

The motor is protected by the electronics in the control box and requires no external motor protection.
- Check that the supply voltage and frequency of the installation site correspond to the values stated on the pump.
- Only connect the pump to the power supply with the line cord supplied with the pump.
- Do not modify and only use the line cord supplied.
- The "Power ON" symbol indicates that the electrical supply has been switched on.

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**4.5.1 Connecting the line cord**

![Inserting the line cord plug into the pump (side view)]

To connect the line cord with the pump:
1. Align the line cord plug with the pump.
2. Insert the line cord plug into the pump as shown.
3. Push the line cord plug into the pump.

**4.5.2 Removing the line cord**

![Removing the line cord plug from the pump (bottom view)]

To remove the line cord from the pump:
1. Insert a 1/8 inch flat blade screwdriver into the slot.
2. Twist the screwdriver.
3. Pull the cord to remove it.

**5. Starting up the product**

**5.1 Venting the system**

**WARNING**

Hot water
Death or serious personal injury
- If the hot water temperature is too high, it can cause severe burns or scalding.
- To prevent burns or scalding, be sure to limit the temperature of the hot water source before you vent the system.

To vent the system:
1. Turn on the water supply to the hot water source.
2. Verify that there are no leaks in any of the connections.

3. Turn on the tap/faucet furthest from the hot water source until there is a steady stream of water with no evidence of air in the system.

5.2 Starting the pump

"Power ON" LED and other indicators on the pump display

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Connect&quot; LED</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Temperature sensor&quot; LED</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Power ON&quot; LED</td>
</tr>
<tr>
<td>4</td>
<td>Pairing button</td>
</tr>
<tr>
<td>5</td>
<td>&quot;Pump operation&quot; LED</td>
</tr>
</tbody>
</table>

- Connect the line cord to the power supply to start the pump.
- The pump will run for approx. 5 seconds and then stop.
- The green "Power ON" LED on the pump display will be lit when the power is on.

6. Product introduction

6.1 Product description

The ALPHA HWR-D system is an on-demand hot-water recirculation system for use in domestic hot-water applications. It provides optimal comfort by providing hot water instantly on demand.
6.2 Accessories

HWR-D accessories

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Temperature sensor HWR-D  
One temperature sensor is either included or may be purchased as an accessory. |
| 2    | Push-button HWR-D  
One push-button is included in the delivery. Additional push-buttons may be purchased as accessories. |
| 3    | Repeater HWR-D  
A repeater is not included but may be purchased as an accessory to increase the range of communication between the push-button and the pump. |

6.3 Intended use

The ALPHA 15-55 HWR-D system is intended for domestic hot-water recirculation. When you activate the system with the HWR-D push-button, the pump starts circulating hot water.

To prevent continuous operation, the pump stops recirculating water again when:

a) the media temperature measured at the temperature sensor has increased by 10 °F or is higher than 102 °F.

or

b) the pump has been operating continuously for more than 5 minutes, or for a total of 15 minutes during the last hour.

If the system is operated without the temperature sensor, the pump will stop according to b).

6.4 Pumped liquids/media

**CAUTION**

Chemical hazard

Minor or moderate personal injury
- Do not use the pump for flammable liquids, such as diesel or gasoline.

**WARNING**

Biological hazard

Death or serious personal injury
- In domestic hot-water systems, the temperature of the pumped liquid must always be above 122 °F (50 °C) due to the risk of legionella.

**WARNING**

Biological hazard

Death or serious personal injury
- In domestic hot-water systems, the pump is permanently connected to the main water supply. Therefore, do not connect the pump by a hose.

**WARNING**

Hot water

Death or serious personal injury
- If the hot water temperature is too high, it can cause severe burns or scalding.
- Ensure that the temperature of the hot water source is not high enough to cause burns or scalding.

**CAUTION**

Corrosive substance

Minor or moderate personal injury
- Do not use the pump for aggressive liquids such as acids or seawater.

The pump is suited for domestic hot water.

Maximum: 14 °dH
Maximum: 149 °F (65 °C)
Maximum peak: 158 °F (70 °C).
For water with a higher degree of hardness, contact Grundfos.

6.5 Identification

6.5.1 Nameplate for ALPHA 15-55 HWR-D

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Product number</td>
</tr>
<tr>
<td>2</td>
<td>Voltage [V]</td>
</tr>
<tr>
<td>3</td>
<td>Rated current [A]:</td>
</tr>
<tr>
<td></td>
<td>Min.: Minimum current [A]</td>
</tr>
<tr>
<td></td>
<td>Max.: Maximum current [A]</td>
</tr>
<tr>
<td>4</td>
<td>Input power [W]:</td>
</tr>
<tr>
<td></td>
<td>Min.: Minimum power [W]</td>
</tr>
<tr>
<td></td>
<td>Max.: Maximum power [W]</td>
</tr>
<tr>
<td>5</td>
<td>Maximum liquid temperature [°F]</td>
</tr>
<tr>
<td>6</td>
<td>FCC and IC ID</td>
</tr>
</tbody>
</table>

6.6 Approvals for ALPHA 15-55 HWR-D

Approval marks

FCC sections

Section 15.19 (a) 3

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Section 15.21

Any changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user’s authority to operate this equipment.

Section 15.105 (b)

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  • Reorient or relocate the receiving antenna.
  • Increase the separation between the equipment and receiver.
  • Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
  • Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment should be installed and operated keeping the radiator at least 8 in (20 cm) or more away from person’s body.
Cet équipement est conforme aux limites d'exposition aux rayonnement définies par la norme FCC / IC pour un environnement non contrôlé et est conforme aux directives d'exposition de la FCC en matière de radiofréquences et la norme RSS-102, des règles d'exposition aux radiofréquences (RF) de l'IC. Cet équipement doit être installé et utilisé en maintenant le radiateur à au moins 8 in (20 cm) du corps de la personne.

**Canadian ISED information**

These devices (ALPHA 15-55 HWR-D, Push-button HWR-D, Temperature sensor HWR-D and Repeater HWR-D) contain license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s license-exempt RSS(s). Operation is subject to the following two conditions: 1. This device may not cause interference. 2. This device must accept any interference, including interference that may cause undesired operation of the device. Innovation, Science and Economic Development Canada ICES-003 Compliance Label: CAN ICES-3(B)/NMB-3(B).

L’émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d’Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L’exploitation est autorisée aux deux conditions suivantes : 1. L’appareil ne doit pas produire de brouillage; 2. L’appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement. Étiquette de conformité à la NMB-003 d’Innovation, Sciences et Développement économique Canada : CAN ICES-3(B)/-3(B).

These devices (ALPHA 15-55 HWR-D, Push-button HWR-D, Temperature sensor HWR-D and Repeater HWR-D) comply with Industry Canada RSS-247 and license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Ce dispositif est conforme à lanorme CNR-247 d’Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

### 7. Control functions

#### 7.1 Pump display

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;Connect&quot; LED</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Temperature sensor&quot; LED</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Power ON&quot; LED</td>
</tr>
<tr>
<td>4</td>
<td>Pairing button</td>
</tr>
<tr>
<td>5</td>
<td>&quot;Pump operation&quot; LED</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pump display symbol</th>
<th>Status</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Power ON&quot;</td>
<td>Green</td>
<td>Lights green when pump is powered on.</td>
</tr>
<tr>
<td>&quot;Connect&quot;</td>
<td>Flashing blue</td>
<td>Flashes blue when the pump is ready for pairing with the push-button or temperature sensor. The symbol flashes blue when a paired temperature sensor has been disconnected.</td>
</tr>
<tr>
<td>&quot;Connect&quot;</td>
<td>Blue</td>
<td>Lights blue for 5 seconds when pairing is successful between the pump and the push-button or temperature sensor.</td>
</tr>
</tbody>
</table>

LED symbols and buttons on the pump display
### 7.2 Temperature sensor LED

The LED is located on the temperature sensor beneath the lid. You must remove the lid in order to pair the temperature sensor with the pump.

<table>
<thead>
<tr>
<th>Status</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flasing blue</td>
<td>The LED lights blue when the temperature sensor is ready for pairing with the pump.</td>
</tr>
</tbody>
</table>
7.5 Pump curve

The pump runs at a constant speed and consequently on a constant curve. The pump is set on the maximum curve under all operating conditions.

Performance curve, ALPHA 15-55 HWR-D
8. Servicing the product

8.1 Maintaining the product
The ALPHA HWR-D pump is maintenance-free. If the pump is damaged, for example with fractures or dents, replace the pump.

8.1.1 Battery replacement

WARNING
Biological hazard
Death or serious personal injury
- Keep batteries out of reach of small children, the elderly, and pets. Batteries can cause permanent injury if ingested or placed in the nose, mouth, or ears.
- Immediate emergency room treatment is required for anyone who ingests a battery. In addition, in the US, consult the 24-hour National Battery Ingestion Hotline at 800-498-8666 for assistance.

CAUTION
Corrosive substance
Moderate to minor personal injury and risk of property damage
- The push-button HWR-D or temperature sensor HWR-D must be replaced if battery leakage occurs.

CAUTION
Flammable material
Minor or moderate personal injury
- Do not attempt to recharge non-rechargeable batteries.

To clean the push-button or temperature sensor, wipe it with a clean, damp cloth.

Ensure that disposal of old batteries is in accordance with local regulations. Recycle old batteries where possible.

8.1.1.1 Battery replacement for temperature sensor

The temperature sensor uses AA 3.6 V lithium-thionyl batteries. To change the battery in the temperature sensor, follow these steps:
1. Remove the lid of the temperature sensor.
2. Remove the old battery.
3. Insert the new battery.
4. Replace the lid of the temperature sensor.

8.1.1.2 Battery replacement for push-button

The push-button uses AAA 1.5 V alkaline batteries. To change the battery in the push-button, follow these steps:
1. Remove the push-button from the mounting bracket on the back of the push-button.
2. Remove the old batteries.
3. Insert the two new batteries.
4. Replace the push-button on the mounting bracket.
9. Fault finding the product

9.1 Fault finding table

Fault: The pump does not start.

<table>
<thead>
<tr>
<th>Status</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Power On&quot; LED on the pump control panel is not lit.</td>
<td>The pump is not connected to the power supply.</td>
<td>Make sure the power supply is switched on.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check if external protection has tripped.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Make sure the cables and connections are free from defects and connected securely.</td>
</tr>
<tr>
<td>The &quot;Power On&quot; LED on the pump control panel is green.</td>
<td>The pump is in an alarm state.</td>
<td>Contact your local Grundfos representative.</td>
</tr>
<tr>
<td></td>
<td>If the &quot;Pump Operation&quot; LED on the pump control panel is yellow,</td>
<td>Wait until the yellow &quot;Pump Operation&quot; LED turns off.</td>
</tr>
<tr>
<td></td>
<td>the pump has timed out.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The push-button is not paired with the pump.</td>
<td>Follow the pairing procedure for the push-button.</td>
</tr>
<tr>
<td></td>
<td>The push-button batteries need replacing.</td>
<td>Replace the batteries in the push-button.</td>
</tr>
<tr>
<td></td>
<td>The push-button is out of range.</td>
<td>Use the Repeater HWR-D accessory to increase the range of wireless signals.</td>
</tr>
<tr>
<td>After installing the repeater, the &quot;Power On&quot; LED on the pump control panel is green, but the pump does not start when the push-button is activated.</td>
<td>The push-button is out of range, and the pump does not receive the repeater's wireless signal.</td>
<td>Relocate the repeater within the house for optimum range of wireless signals.</td>
</tr>
</tbody>
</table>

Fault: The "Connect" LED is flashing blue continuously.

<table>
<thead>
<tr>
<th>Status</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The &quot;Connect&quot; LED on the pump control panel is flashing blue.</td>
<td>The temperature sensor is out of range.</td>
<td>Ensure the temperature sensor is in proximity to the pump.</td>
</tr>
<tr>
<td></td>
<td>The temperature sensor batteries need replacing.</td>
<td>Replace the batteries in the temperature sensor.</td>
</tr>
<tr>
<td></td>
<td>The temperature sensor is not working.</td>
<td>Replace the temperature sensor. Follow the pairing procedure for the new temperature sensor.</td>
</tr>
</tbody>
</table>

Fault: There is noise in the hydraulic system.
There are no indicators lit on the pump or accessories.

**Air in the system.**

Open a faucet or tap to let trapped air escape.

---

Fault: There is noise in the circulator pump.

<table>
<thead>
<tr>
<th>Status</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no indicators lit on the pump or accessories.</td>
<td>Air is trapped in the pump.</td>
<td>Open a faucet or tap to let trapped air escape.</td>
</tr>
<tr>
<td></td>
<td>No liquid.</td>
<td>Ensure there is liquid in the hot water supply source.</td>
</tr>
</tbody>
</table>
10. Technical data

10.1 Operating conditions

Supply voltage

- Pump 1 x 115 V, +10 % / -10 %, 60 Hz
- Repeater with USB plug 5 V DC, +10 % / -10 %
- AC power adapter for repeater 100-240 V AC, +10 % / -10 %, 50/60 Hz

Motor protection

The pump requires no external motor protection.

Enclosure class

Indoor use only, IP42, CSA enclosure type 2.

Insulation class

F.

Relative humidity

Maximum 95 %.

Maximum outlet pressure

150 psi (10.34 bar).

Sound pressure level

43 dB (A).

Ambient temperature

34 to 104 °F (1 to 40 °C)

Inlet pressure

<table>
<thead>
<tr>
<th>Liquid temp.</th>
<th>Min. inlet pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>167 °F (75 °C)</td>
<td>0.75 psi (0.05 bar)</td>
</tr>
<tr>
<td>194 °F (90 °C)</td>
<td>4.06 psi (0.28 bar)</td>
</tr>
<tr>
<td>230 °F (110 °C)</td>
<td>15.7 psi (1.08 bar)</td>
</tr>
</tbody>
</table>

Liquid temperature

36 °F (2 °C) to 230 °F (110 °C)

In domestic hot water systems, keep the liquid temperature below 149 °F (65 °C) to eliminate the risk of lime precipitation.

To avoid condensation in the control box and stator, the liquid temperature must always be higher than the ambient temperature.

<table>
<thead>
<tr>
<th>Ambient temp.</th>
<th>Min. liquid temp.</th>
<th>Max. liquid temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[°F (°C)]</td>
<td>[°F (°C)]</td>
<td>[°F (°C)]</td>
</tr>
<tr>
<td>34 (1)</td>
<td>36 (2)</td>
<td>230 (110)</td>
</tr>
<tr>
<td>50 (10)</td>
<td>50 (10)</td>
<td>230 (110)</td>
</tr>
<tr>
<td>68 (20)</td>
<td>68 (20)</td>
<td>230 (110)</td>
</tr>
<tr>
<td>86 (30)</td>
<td>86 (30)</td>
<td>230 (110)</td>
</tr>
<tr>
<td>95 (35)</td>
<td>95 (35)</td>
<td>194 (90)</td>
</tr>
<tr>
<td>104 (40)</td>
<td>104 (40)</td>
<td>158 (70)</td>
</tr>
</tbody>
</table>

Approximate power usage

Minimum: 2 W
Maximum: 45 W

11. Disposing of the product

CAUTION

Magnetic field

Minor or moderate personal injury
- Persons with pacemakers disassembling this product must exercise care when handling the magnetic materials embedded in the rotor.

This product or parts of it must be disposed of in an environmentally sound way:
1. Use the public or private waste collection service.
2. If this is not possible, contact the nearest Grundfos company or service center.

See also end-of-life information at www.grundfos.com/product-recycling.
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