

ALPHA1 GO



ALPHA1 GO

English (GB)

Installation and operating instructions	4
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English (GB) Installation and operating instructions

Original installation and operating instructions

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1. General information



Read this document before you install the product. Installation and operation must comply with local regulations and accepted codes of good practice.

1.1 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.

1.2 Notes

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



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.

1.3 Recommended safety equipment

We recommend the following safety equipment, when handling this product.



Wear safety shoes.



Wear protective gloves.



Wear safety glasses.

2. Product introduction

2.1 Product description

ALPHA1 GO is a high-efficiency circulator pump fitted with an electronically commutated motor and designed for circulating liquids in heating and air conditioning systems.

ALPHA1 GO is equipped with intelligent controls and offers three control modes:

- constant pressure
- proportional pressure
- constant curve.

Each mode has three adjustable speed settings.

Replacement of older integrated and stand-alone circulator pumps, including replicating curves, is made easy by using the Grundfos GO app and operating panel.

The toolless installer plug enables a fast and easy electrical connection.

The automatic self-venting ability and dry-running protection ensure quiet operation and reliability of the pump.

The product features robust startup which reduces the risk of blockages from dirt, magnetite and limescale build-up. In the unlikely case of a blocked pump, the motor continuously attempts to start at the highest possible torque, ensuring startup in tough conditions.

The ceramic shaft and bearings experience minimal wear, resulting in a longer lifespan and a reduced likelihood of noise in the system due to increased bearing clearance from wear.

Fault finding is fast and easy by using the error codes on the pump operating panel.

2.2 Intended use

The pump is designed for circulating liquids in the following:

- **heat production:** boilers, heat pumps and district heating systems.
- **distribution systems:** space heating, for example, radiators, underfloor-heating systems and air-conditioning.

This pump is only for indoor use.

Related information

[2.4 Pumped liquids](#)

2.3 Foreseeable misuse

The pump is not a safety component and cannot be used to ensure functional safety in the final appliance.

The pump is not suitable for drinking-water applications.

Do not install the pump at altitudes of 6560 ft. (2000 mtr.) or higher.

2.4 Pumped liquids

The product is suitable for the following liquids:

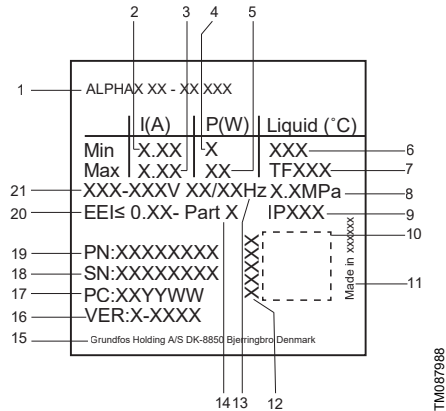
- Clean, thin, non-aggressive and non-explosive liquids, not containing solid particles or fibres.
- In heating systems, the water must meet the requirements of accepted standards on water quality in heating systems, for example the German standard VDI 2035.
- The pH must be between 8.2 and 9.5. The minimum value depends on the water hardness and must not be below 7.4 at 4 °dH (0.712 mmol/l).
- The electrical conductivity at 25 °C must be equal to or larger than 10 µS/cm.
- Mixtures of water with antifreeze media such as glycol or ethanol with a kinematic viscosity lower than 15 mm²/s (15 cSt).

Related information

2.2 *Intended use*

2.5 Identification

2.5.1 Nameplate



Nameplate

Pos.	Description
1	Product name
2	Min. current consumption
3	Max. current consumption
4	Min. power consumption
5	Max. power consumption
6	Min. liquid temperature
7	Max. liquid temperature (TF class)
8	Max. operating pressure
9	Enclosure class
10	Data matrix
11	Country of production
12	Combined legal product code
13	Frequency
14	Part of energy efficiency standard
15	Company address
16	Version (model letter + number)
17	Factory code and production code (year and week)
18	Serial number
19	Product number
20	Energy efficiency index (EEI)
21	Rated voltage

Related information

[3.1 Inspecting the product](#)

[5. Electrical connection](#)

[12. Technical data](#)

2.5.2 Type key

Example: ALPHA1 GO 25-40 180

Example: ALPHA1 GO 80 PH

Code	Explanation	Designation
ALPHA1 GO	Grundfos circulator pump	Pump type
25	Nominal diameter (DN) of inlet and outlet ports	Connections
40	Maximum head [dm]	
PH	Pump head only	Variant
180	Port-to-port length [mm]	

2.6 Approvals and markings



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.



CAUTION Biological hazard

Minor or moderate personal injury

- This product is not approved for drinking water applications.

3. Receiving the product

3.1 Inspecting the product



CAUTION

Crushing of feet

Minor or moderate personal injury

- Wear safety shoes when handling the product.



CAUTION

Sharp element

Minor or moderate personal injury

- Wear protective gloves.

1. Make sure that the delivered product corresponds to the order.
2. Make sure that the voltage and frequency of the product match the voltage and frequency of the installation site.

Related information

[2.5.1 Nameplate](#)

3.2 Scope of delivery

The box contains the following items:

- 1 pump
- 1 power plug
- 2 gaskets
- insulating shells ¹⁾
- 1 quick guide.

¹⁾ Some products can be supplied with or without insulating shells.

4. Mechanical installation

WARNING

Electric shock

Death or serious personal injury

- A damaged product must be repaired or replaced by Grundfos or a service workshop authorized by Grundfos.



CAUTION

Crushing of feet

Minor or moderate personal injury

- Wear safety shoes when handling the product.



CAUTION

Sharp element

Minor or moderate personal injury

- Wear protective gloves.



The pump must always be installed with a horizontal motor shaft within $\pm 5^\circ$.



The pump is a non-submersible pump.

For variants where the minimum liquid temperature is 2°C or -10°C , operation in periodically condensing applications ²⁾ is allowed.

4.1 Mounting the pump



Make sure that the pump orientation is correct.



The arrows on the pump housing indicate the flow direction through the pump.

1. Close the inlet and outlet valves.
2. Fit the two gaskets supplied with the pump when you mount the pump in the pipes.
3. Tighten the unions.
4. Make sure to use an allowed control box position.
5. Mount the power plug.

For illustrations of the installation, see the ALPHA1 GO quick guide.



[ALPHA1 GO quick guide](#)

Related information

[4.2 Changing the pump head position](#)

²⁾ For periodical condensing applications, the circulator pump must not circulate liquid at a temperature below ambient air for more than three consecutive months each year. During the rest of the year, it must operate in non-condensing mode. Prolonged condensing operation may damage the circulator pump.

4.2 Changing the pump head position

CAUTION

Hot surface

Minor or moderate personal injury



- Position the pump so that persons cannot accidentally come into contact with hot surfaces.
- The pump housing may be hot due to the pumped liquid being scalding hot. Close the isolating valves on both sides of the pump and wait for the pump housing to cool down.

WARNING

Pressurised system

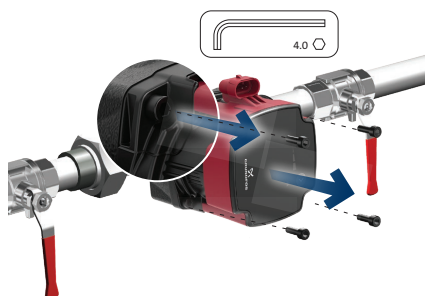
Minor or moderate personal injury



- Before disassembling the pump, drain the system or close the isolating valves on both sides of the pump. The pumped liquid may be under high pressure.

To change the position of the pump head, do as follows:

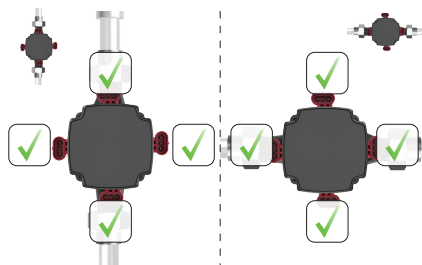
1. Loosen and remove the four screws.



2. Turn the pump head to the desired position.

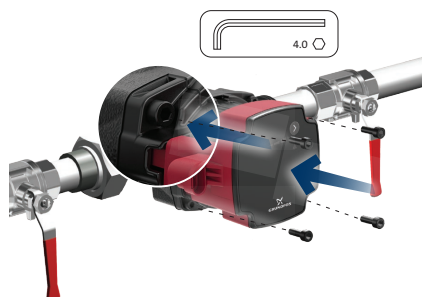


The control box can be turned in steps of 90°.



This variant is permitted only for periodically condensing applications where the minimum liquid temperature is either 2 °C or -10 °C.

3. Insert and cross-tighten the screws (torque 5 Nm).



Related information

[4.1 Mounting the pump](#)

5. Electrical connection

WARNING

Electric shock

Death or serious personal injury



- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.
 - Connect the pump to earth.
 - In case of an insulation fault, the fault current may be a DC or pulsating DC. Observe national legislation about requirements for and selection of Residual Current Device (RCD) when installing the product.
 - All electrical connections must be carried out by a qualified electrician in accordance with local regulations.
- The pump requires no external motor protection.
 - Check that the supply voltage and frequency correspond to the values stated on the nameplate.

Related information

2.5.1 Nameplate

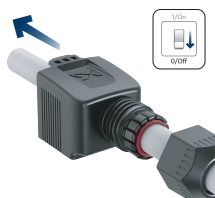
5.1 Assembling the power plug

1. Unscrew the cable gland.



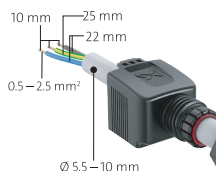
TM087997

2. Insert the power cable into the cable gland and cover.



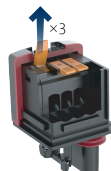
TM087996

3. Strip the wires according to the measurements below.



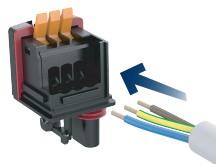
TM087995

4. Open the wire locks.



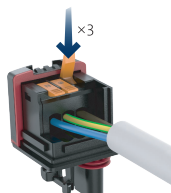
TM087994

5. Insert the wires according to the colour code. Blue: neutral (N), black or brown: phase (L), yellow/green: earth.



TM087993

6. Close the wire locks.



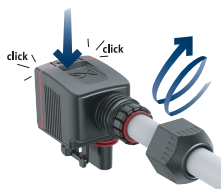
TM087992

7. Slide the cover in.



TM087991

8. Click the cover in place and tighten the cable gland.



TM087990

Related information

5.1.1 Rotating the power plug 90°

5.1.1 Rotating the power plug 90°

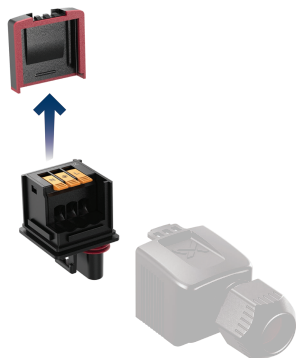
Before assembling the power plug, the following preparations must be completed:

1. Remove the cover.



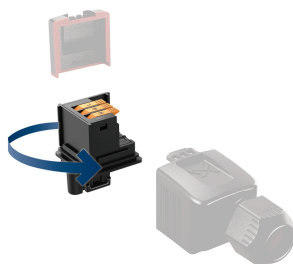
TM089766

2. Lift the back plate of the plug.



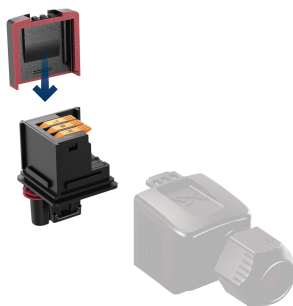
TM089767

3. Turn the plug 90° left.



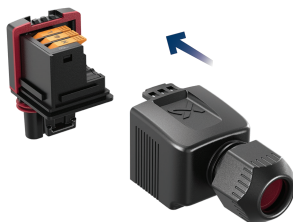
TM089768

4. Place the back plate in the 90° position.



TM089769

5. Slide the cover back on.

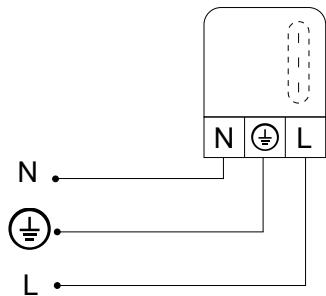


TM089770

Related information

5.1 Assembling the power plug

5.2 Wiring diagram



TM089308

Power plug

Pos.	Description	Wire colour
L	Phase	Black or brown
	Earth	Yellow/green
N	Neutral	Blue

5.3 Control box connections

All control boxes have one power inlet on the side.

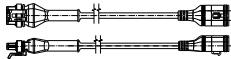
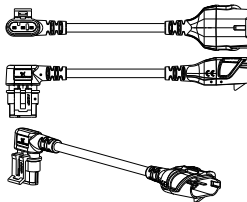


TM089772

Pos.	Description
A	Power inlet (superseal)

5.4 Accessories

Power cable adapters

	Description	Length [mm]	Product number
	Superseal Molex cable adapter, overmoulded, with rubber cap	150	99165311
	Superseal Volex cable adapter, overmoulded, with rubber cap	150	99165312
	Superseal to ALPHA plug	145	93296229

6. Starting up the product

1. Fill the system with liquid and vent it.
2. Make sure the required minimum inlet pressure is available at the pump inlet.
3. Switch on the power supply.

You can change the settings on the operating panel.

Related information

[6.1 Venting the product](#)

[7.1 Operating panel](#)

6.1 Venting the product

Small air pockets trapped inside the pump may cause noise when starting up the pump. However, because the pump is self-venting through the system, the noise ceases over a period of time. We recommend venting the pump in new installations or when the pipes have been emptied and refilled with water.

1. Set the control mode to constant curve, setting III.
2. Let the pump run for 10 minutes.



The pump must not run dry.
You cannot vent the system through the pump.

Related information

[6. Starting up the product](#)

[7.1 Operating panel](#)

6.2 Dry-running protection

The dry-running protection protects the pump against dry running during normal operation.

Normal operation

If dry running is detected during normal operation, the pump retries several times. If dry running continues, the pump stops, the warning and alarm symbol on the display is flashing red and the error code E4 is displayed on the operating panel.

The pump can be restarted by pressing the **Selection** button on the pump. The pump repeats the dry-running detection every 25 hours to verify that the pump is not running dry. Note: The pump can sustain 25 hours of dry-running operation.

6.3 Robust start

The non-magnetic shaft and bearings reduce the risk of blockages from dirt or magnetite, while the bearing system helps prevent limescale build-up. In the unlikely case of a blocked pump, the motor continuously attempts to start at the highest possible torque, ensuring startup in tough conditions.

7. Control functions

7.1 Operating panel

LEDs and buttons on the pump display.



ALPHA1 GO

Pos.	Description
1	Control mode The LED shows the operating mode of the product.
2	Settings for the selected control mode Use the Selection button to toggle between I, II and III.
3	QR code The QR code links to information about the pump and how to set it.
4	If lit, the pump is running in advanced mode.
5	Selection button Use this button to select control mode and settings.
6	Warning and alarm A warning is indicated with yellow, and the pump continues operation. An alarm is indicated with red, and the pump stops.
7	Unit The LED shows the unit used for the number to the left. W = watt.
8	The LED indicates: • power consumption [W] • error code • pump replacement number

TM067886

Related information

[6. Starting up the product](#)

[6.1 Venting the product](#)

[7.1.1 Overview of LEDs](#)

[8. Control modes](#)

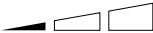
[9. Setting of the product](#)

7.1.1 Overview of LEDs

The LEDs indicate the control mode, setting and operating status.

Factory setting

The pump is factory set to proportional pressure, setting II.

Active light fields	Description
	Advanced mode This mode makes it possible to replicate an UPS pump performance curve. When this function is active, the icon is lit and the control modes on the operating panel are switched off.
	Proportional-pressure mode
	Constant-pressure mode
	Setting I
	Setting II
	Setting III

When the symbols for the constant-pressure and proportional-pressure modes are off, the pump is running in constant-curve mode.

Related information

[7.1 Operating panel](#)

[8.4 Replacement of a UPS pump](#)

7.1.2 Power saving

In order to lower the energy consumption and heat generation, the operating panel goes into power saving mode after 15 minutes of inactivity. The power saving mode switches off the LEDs in the middle including the dot and the units.

- To reactivate the pump from the power saving mode, press the **Selection** button.
- If a warning or an alarm is present during power saving mode, only the yellow or red LED will be lit. Press the **Selection** button to see the error code.

8. Control modes

ALPHA1 GO can be set to the following control modes:

- constant curve
- proportional pressure
- constant pressure
- replacement mode.

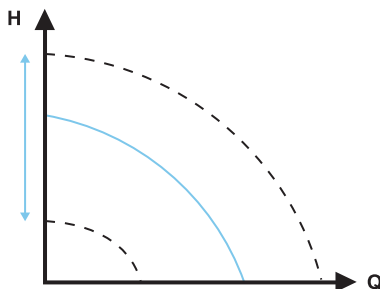
All control modes, including replacement mode, can be set to pump setting I, II, III and can only be set on the operating panel.

Related information

7.1 Operating panel

8.1 Constant curve

In the constant-curve mode, the pump runs at a constant curve, which means that it runs at constant speed or power. The pump performance follows the selected constant curve. This control mode is especially suitable in applications where the characteristics of the heating system are steady, and the emitters require a constant flow. The selection of the constant-curve setting depends on the characteristics of the heating system and the actual required flow and heat demand.



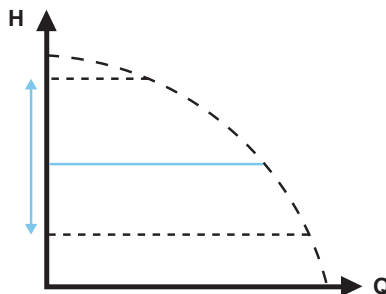
Constant curve

TM071005

8.2 Constant pressure

In the constant-pressure mode, the pump runs at constant pressure, which means the head (pressure difference) is kept constant, regardless of the heat demand (actual number of open zones). The pump performance follows the selected constant-pressure curve.

This control mode is especially suitable for underfloor heating and applications where the pump is used to supply a common manifold for multiple zones. The head across each zone will remain constant, independent of how many zones request heat. Thus a constant flow in each zone will be maintained, independent of other zones. The selection of the constant-pressure setting depends on the characteristics of the zones in the heating system and the actual heat demand.



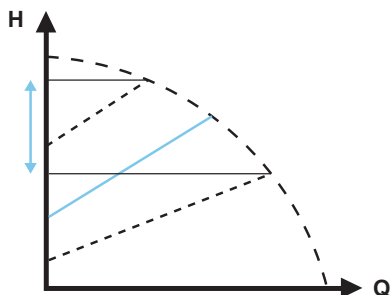
TM083818

Constant pressure

8.3 Proportional pressure

In the proportional-pressure mode, the pump runs at proportional pressure, which means the head (pressure) is reduced at falling heat demand and increased at rising heat demand. The pump performance follows the selected proportional-pressure curve. This control mode is especially suitable for applications where the heat emitters are equipped with a TRV (thermostatic radiator valve) which controls the flow depending on the room temperature. At increased flow, the losses in the distribution system (pipes and fittings) increase, hence the pumps increase the pressure to compensate and vice versa, hereby maintaining an almost constant differential pressure across the thermostatic radiator valve.

The proportional-pressure mode setpoint depends on the heating system's characteristics and the actual heat demand.



Proportional-pressure settings

TM071003

8.4 Replacement of a UPS pump

The product can be used to replace most existing integrated UPS circulator pumps. This means that when you replace an existing integrated pump, the new pump replicates the performance and configuration of the existing pump.

In the Grundfos GO app (via the **GO Replace** tool) or online via <https://grundfos.to/replace>, you can check the compatibility of the pump. During the replacement process, Grundfos GO guides you through the replacement process and helps setting up the new circulator pump to match the existing circulator pump.

Related information

[7.1.1 Overview of LEDs](#)

[8.4.1 Replacing a UPS pump](#)

8.4.1 Replacing a UPS pump

To start the replacement of a UPS pump, follow the steps below:

1. Open Grundfos GO.
 - The QR code on the front of the ALPHA1 GO circulator pump leads you to **GO Replace** in Grundfos GO.
 - If the app is not installed, the QR code leads you to a download site guiding you to install the app on your device.
2. Go to **GO Replace**.
GO Replace can be found in the **Products** tab or in the **Overview** tab after it has been added to **Your tools**.
3. To identify the product being replaced, scan the nameplate or enter the 8-digit product number that can be found after "PN:" on the nameplate.
4. Follow the instructions in Grundfos GO.

To reset the pump to default settings, follow the steps below:

1. Hold the **Selection** button for 10 seconds until the digits are flashing.
2. Set the digits to "0" and wait 10 seconds.
 The pump reverts to the factory settings, and you can toggle between the different control modes again.

Related information

[8.4 Replacement of a UPS pump](#)

9. Setting of the product

The operating panel can be used for the following:

- Selecting proportional pressure (radiator system), constant pressure (underfloor heating system) or constant curve (speed).
- Selecting pump setting (I, II, III) for the three control modes available on the operating panel.
- Selecting the pump advanced mode to enable the pump to replicate a UPS pump performance.

Related information

[7.1 Operating panel](#)

10. Service

WARNING

Electric shock

Death or serious personal injury



- All electrical connections must be carried out by a qualified electrician in accordance with local regulations.
- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.
- A damaged product must be repaired or replaced by Grundfos or a service workshop authorized by Grundfos.
- Connect the pump to earth.

WARNING

Pressurised system

Minor or moderate personal injury



- Before disassembling the pump, drain the system or close the isolating valves on both sides of the pump. Slowly loosen the screws and unpressurize the system. The pumped liquid may be scalding hot and under high pressure.

WARNING

Hot surface

Minor or moderate personal injury



- The pump housing may be hot due to the pumped liquid being scalding hot. Close the isolating valves on both sides of the pump and wait for the pump housing to cool down.

10.1 Dismantling the product

Follow the steps below to dismantle the product:

1. Switch off the power supply.
2. Close the inlet and outlet valves.
3. Pull out the power plug.
4. Loosen the unions.
5. Remove the pump from the system.

11. Fault finding

WARNING

Electric shock

Death or serious personal injury



- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.
- A damaged product must be repaired or replaced by Grundfos or a service workshop authorized by Grundfos.

WARNING

Hot surface

Minor or moderate personal injury



- The pump housing may be hot due to the pumped liquid being scalding hot. Close the isolating valves on both sides of the pump and wait for the pump housing to cool down.

CAUTION

Pressurised system

Minor or moderate personal injury



- Before disassembling the pump, drain the system or close the isolating valves on both sides of the pump. The pumped liquid may be scalding hot and under high pressure.

11.1 Faults indicated on the pump

Faults preventing the pump from operating properly are indicated on the operating panel with the warning and alarm symbol turning either yellow or red.

A warning is indicated when the warning and alarm symbol is turning yellow. The pump is still running, but it does not perform as expected, and action is required in case of insufficient heating or discomfort. The operating panel alternates between showing either the error code or the control mode and setpoint.

An alarm is indicated when the warning and alarm symbol is turning red and the pump stops. In case of an alarm, all modes, speed and unit LEDs are switched off. Action is required.

If an alarm or warning is present, an error code will be displayed in the unit LED display.

LED	Description
	Warning indication
	Alarm indication

11.1.1 Overview of alarm and warning codes

Fault table

Symbol	Code on operating panel	Fault
	E1	Blocked motor
	E2	Undervoltage
	E3	Forced pumping
		Overvoltage
		Internal fault
	E4	Dry running
	E3	Forced pumping

11.2 Resetting alarms and warnings manually

If an alarm or warning is indicated on the display, and the fault has been corrected, press the **Selection** button to reset the alarm or warning.

However, if the fault causing the alarm or warning has not been removed, the alarm or warning will appear again.

11.3 Noise in the system

Cause	Remedy
The flow is too high.	Lower the flow.
There is air in the system.	- Note in which operating mode the pump is running. - Change the setting to constant curve setting III on the operating panel of the pump. - Wait 15 minutes while the pump is venting the system. - Set the pump back to the previous setting, noted in step 1.

11.4 Dry running

The warning and alarm symbol flashes red, the display shows error code **E4** and the pump stops.

Cause	Remedy
Insufficient water in the system or the system pressure is too low.	- Fill the system with the correct amount of liquid. - Prime and vent the pump before a new startup.

11.5 Blocked pump

The warning and alarm symbol flashes red, the display shows error code **E1** and the pump stops.

Cause	Remedy
The pump is blocked.	Only a qualified specialist must perform such work. - Isolate the pump. - Remove the pump head. - Remove the deposits.

11.6 Undervoltage

The warning and alarm symbol flashes red, the display shows error code **E2** and the pump stops.

Cause	Remedy
The supply voltage to the pump is too low.	Make sure that the power supply is within the specified range.

11.7 Overvoltage

The warning and alarm symbol flashes red, the display shows error code **E3** and the pump stops.

Cause	Remedy
The supply voltage to the pump is too high.	Make sure that the power supply is within the specified range.

11.8 Internal fault

The warning and alarm symbol flashes red, the display shows error code **E3** and the pump stops.

Cause	Remedy
Internal fault.	Replace the pump or contact Grundfos.

11.9 Forced pumping

The warning and alarm symbol is either permanently yellow or red and the display shows error code **E3**.

Cause	Remedy
Other pumps or sources create a flow through the pump.	- Check the system for correct position of the non-return valves. - Check the system for defective non-return valves, and replace the valves if necessary.

12. Technical data

Supply voltage	1 × 220-240 V, ± 6 %, 50/60 Hz
Minimum supply voltage	160 VAC (pump operation is ensured above 160 VAC but with reduced performance)
Motor protection	The pump requires no external motor protection.
Enclosure class	Indoor use only IP44
Temperature class	TF110 to EN 60335-2-51
Inrush current	< 4 A
Insulation class	F
Relative humidity	Max. 95 %
Max. outlet pressure	1.0 MPa (10 bar)
Sound pressure level (LP)	< 25 dB(A)
Pump housing	Electrocoated cast iron
Connection type	G 1, G 1 1/4, G 1 1/2, G 2

Product size

	Max. flow rate (Q) [m³/h]	Max. head (H) [m]
XX-40	2.7	4.0
XX-60	3.5	6.0
XX-65	3.9	6.5
XX-80	3.9	8.0

Power usage (approximate)

	Min.	Max.
XX-40	4 W	27 W
XX-60	4 W	45 W
XX-65	4 W	60 W
XX-80	4 W	60 W

Liquid temperature

	Max. ambient temperature 55 °C	Max. ambient temperature 70 °C
XX-40	2 to 110 °C	2 to 75 °C
XX-60	-10 to +110 °C	-10 to +75 °C
XX-65	-10 to +110 °C	-10 to +75 °C
XX-80	-10 to +110 °C	-10 to +75 °C

For variants where the minimum liquid temperature is 2 °C or -10 °C, operation in periodically condensing applications ³⁾ is allowed.

Inlet pressure

Liquid temperature [°C]	Min. inlet pressure [bar]
75	0.05
95	0.5
110	1.08

Related information

2.5.1 Nameplate

13. Disposing of the product

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 workshop.
3. Dispose of the waste battery through the national collective schemes. If in doubt, contact your local Grundfos company.



The crossed-out wheellie bin symbol on a product means that it must be disposed of separately from household waste. When a product marked with this symbol reaches its end of life, take it to a collection point designated by the local waste disposal authorities. The separate collection and recycling of such products will help protect the environment and human health.

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

14. Document quality feedback

To provide feedback about this document, scan the QR-code using your phone's camera or a QR code app.



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³⁾ For periodical condensing applications, the circulator pump must not circulate liquid at a temperature below ambient air temperature for more than three consecutive months each year. During the rest of the year, it must operate in non-condensing mode. Prolonged condensing operation may damage the circulator pump.

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