# ALPHA3

## Model B

## Circulator pump

50/60 Hz




Bluetooth®

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GRUNDFOS

# 1. Product data



TM07 1206 1118

## Product description

The Grundfos ALPHA3 pump is designed for circulating liquids in systems with variable flow rates where it is desirable to optimise the setting of the pump duty point to reduce energy costs.

ALPHA3 is completely controlled with Grundfos GO Remote via Bluetooth, which gives you step by step assistance to pump configuration, maintenance and commissioning, including:

- operating and control modes.
- scheduling for when the pump should operate and when not.
- warning and alarm status with up to 40 fault logs.

Furthermore, ALPHA3 is able to communicate directly with the Grundfos GO Balance app on your smart device, which allows you to hydronically balance two-pipe radiators and underfloor heating systems in a fast and safe way.

ALPHA3 is energy-optimised and complies with the ErP Directive, Commission Regulation (EC) No 641/2009 and Commission Regulation (EU) No 622/2012, which have been effective as from 1 January 2013.

## Intended use

The pump is designed for circulating liquids in heating and air-conditioning systems with temperatures equal to or higher than 2 °C.

## Duty range

| Data | ALPHA3 |
|---|---|
| Maximum flow rate, Q | 3.8 $m^3/h$ |
| Maximum head, H | 8 m |
| Maximum system pressure | 1.0 MPa (10 bar) |
| Liquid temperature | 2 to 110 °C |
| Ambient temperature | 0 to 40 °C |

## Features

- Simple, fast and easy setting, control and monitoring via Grundfos GO Remote.
- Hydronic balancing via Grundfos GO Balance.
- Radiator and underfloor heating modes with $AUTO_{ADAPT}$.
- Proportional pressure, constant pressure and constant curve with setpoint adjustment anywhere between the maximum and minimum curve of the chosen setting.
- Automatic night setback.
- Customised scheduling with real time clock.
- Summer-mode function.
- Dry-running protection.
- High-torque start.
- Pump-venting process after which the pump automatically returns to its initial settings.
- Simple pump display showing the actual power consumption in watt or the actual flow rate in $m^3/h$.
- Motor based on permanent-magnet rotor/compact-stator technology.
- Built-in electrical and thermal protection of the pump.

## Benefits

- Easy, timesaving installation thanks to the ALPHA plug eliminating the need for tools.
- Compact design makes the ALPHA3 suitable even in confined spaces.
- The integrated $AUTO_{ADAPT}$ function provides high comfort levels with the lowest possible energy consumption and makes the commissioning safe and easy.
- Firmware upgrades ensuring that the pump is always up to date and prepared for future digital offerings.
- Low-noise operation.

## Type key

| Example | ALPHA3 | 25 - | 40 | 180 |
|---|---|---|---|---|
| Pump range | | | | |
| Nominal diameter (DN) of inlet and outlet ports [mm] (15 = G 1*, 25 = G 1 1/2, 32 = G 2) | | | | |
| Maximum head [dm] | | | | |
| Cast-iron pump housing | | | | |
| Port-to-port length [mm] | | | | |

* Exception: UK version, size 15 = G 1 1/2.

# 3. Operation

## Pumped liquids

The pump is suitable for the following liquids:

- clean, thin, non-aggressive and non-explosive liquids, not containing solid particles or fibres
- cooling liquids, not containing mineral oil
- softened water.

The kinematic viscosity of water is $\upsilon$ = 1 $mm^2/s$ (1 cSt) at 20 °C. If you use the pump for a liquid with a higher viscosity, the hydraulic performance of the pump will be reduced.

**Example:** 50 % glycol at 20 °C means a viscosity of approximately 10 $mm^2/s$ (10 cSt) and a reduction of pump performance by approximately 15 %.

Do not use additives that in any way can or will disturb the functionality of the pump.

When selecting a pump, take the viscosity of the pumped liquid into consideration.

## Technical data

### Liquid temperature

ALPHA3 pumps: 2-110 °C.

To avoid condensation in the stator, the liquid temperature must always be higher than the ambient temperature. See the table below.

| Ambient temperature [°C] | Liquid temperature | |
|---|---|---|
| | Min. [°C] | Max. [°C] |
| 0 | 2 | 110 |
| 10 | 10 | 110 |
| 20 | 20 | 110 |
| 30 | 30 | 110 |
| 35 | 35 | 90 |
| 40 | 40 | 70 |

The ALPHA3 pump can, however, run at ambient temperatures higher than the liquid temperature if the plug connection in the pump head is pointing downwards.

### System pressure

PN 10: Maximum 1.0 MPa (10 bar).

### Inlet pressure

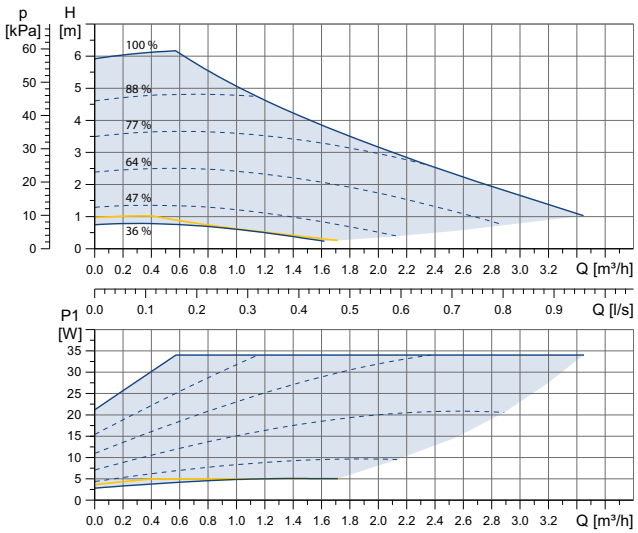
To avoid cavitation noise and damage to the pump bearings, the following minimum pressures are required at the inlet port.

| Liquid temperature | 75 °C | 90 °C | 110 °C |
|---|---|---|---|
| Inlet pressure | 0.5 m head | 2.8 m head | 10.8 m head |
| | 0.005 MPa | 0.028 MPa | 0.108 MPa |
| | 0.05 bar | 0.28 bar | 1.08 bar |

## Electrical data

| | |
|---|---|
| **Supply voltage** | 1 x 230 V ± 10 %, 50/60 Hz, PE. |
| **Motor protection** | The pump requires no external motor protection. |
| **Enclosure class** | IPX4D. |
| **Insulation class** | F. |
| **Relative air humidity** | Maximum 95 %. |
| **Ambient temperature** | 0-40 °C. |
| **Temperature class** | TF110 to EN 60335-2-51. |
| **EMC (electromagnetic compatibility)** | EMC Directive (2014/30/EU) |
| **Radio communication** | Bluetooth |
| | GLoWPAN |
| **Sound pressure level** | ≤ 43 dB(A). |

# ALPHA3 XX-60

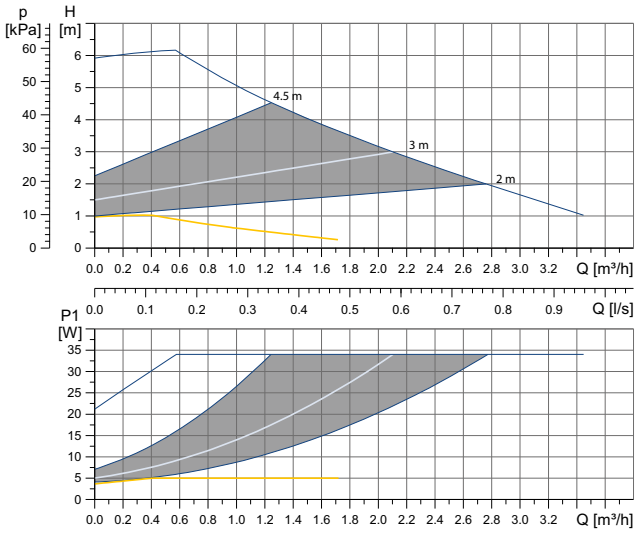


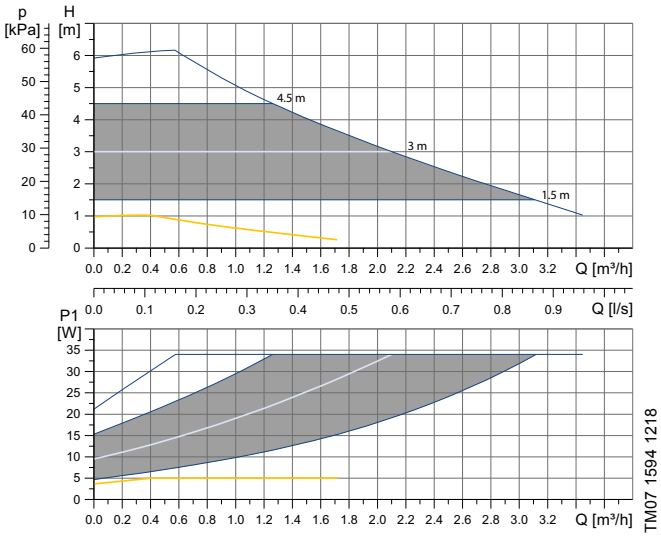

Operating range

Automatic night setback

Default curve (factory setting)

Example of constant curve with corresponding setpoint



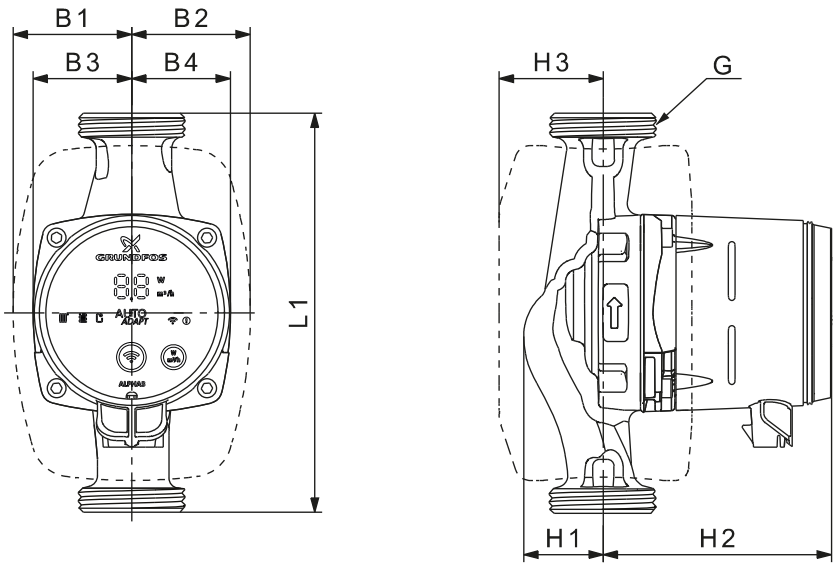




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| | | P1 [W] | $I_1$ [A] |
|---|---|---|---|
| **Speed** | **Min.** | 3 | 0.04 |
| | **Max.** | 34 | 0.32 |
| **Connections** | **See *Unions and valve kits*, page 22.** | | |
| **System pressure** | Maximum 1.0 MPa (10 bar) | | |
| **Liquid temperature** | **2-110 °C (TF 110)** | | |
| **Specific EEI** | **≤ 0.17** | | |

The pump incorporates overload protection.

## Dimensions




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| Pump type | Dimensions [mm] | | | | | | | | | Weights [kg] | | Ship. vol. [$m^3$] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | B1 | B2 | B3 | B4 | H1 | H2 | H3 | G | Net | Gross | |
| ALPHA3 15-60 | 130 | 54 | 54 | 44 | 44 | 36 | 104 | 47 | G 1 | 1.7 | 1.9 | 0.004 |
| ALPHA3 15-50/60* | 130 | 54 | 54 | 44 | 44 | 36 | 104 | 47 | G 1 1/2 | 1.9 | 2.0 | 0.004 |
| ALPHA3 25-60 | 130 | 54 | 54 | 44 | 44 | 36 | 104 | 47 | G 1 1/2 | 1.9 | 2.0 | 0.004 |
| ALPHA3 25-60 | 180 | 54 | 54 | 44 | 44 | 36 | 104 | 47 | G 1 1/2 | 2.0 | 2.1 | 0.004 |
| ALPHA3 32-60 | 180 | 54 | 54 | 44 | 44 | 36 | 104 | 47 | G 2 | 2.1 | 2.3 | 0.004 |

* Available in the UK market only.

See product numbers and QR codes in *Product numbers*, page 24.

# 9. Product numbers

## ALPHA3 for the D-A-CH market (Germany, Austria and Switzerland)

| Pump type | Port-to-port length [mm] | Product number | Data sheet Page |
|---|---|---|---|
| ALPHA3 15-40 | 130 | 99371908 | 16 |
| ALPHA3 15-60 | 130 | 99371909 | 18 |
| ALPHA3 15-80 | 130 | 99371910 | 20 |
| ALPHA3 25-40 | 130 | 99371912 | 16 |
| ALPHA3 25-60 | 130 | 99371923 | 18 |
| ALPHA3 25-80 | 130 | 99371924 | 20 |
| ALPHA3 25-40 | 180 | 99371926 | 16 |
| ALPHA3 25-60 | 180 | 99371929 | 18 |
| ALPHA3 25-80 | 180 | 99371931 | 20 |
| ALPHA3 32-40 | 180 | 99371943 | 16 |
| ALPHA3 32-60 | 180 | 99371944 | 18 |
| ALPHA3 32-80 | 180 | 99371946 | 20 |

**Note:** Click on the product number and go directly to the performance curve in Grundfos Product Center (GPC).

## ALPHA3 for the international market

| Pump type | Port-to-port length [mm] | Product number | Data sheet Page |
|---|---|---|---|
| ALPHA3 15-40 | 130 | 99371948 | 16 |
| ALPHA3 15-60 | 130 | 99371950 | 18 |
| ALPHA3 15-80 | 130 | 99371951 | 20 |
| ALPHA3 25-40 | 130 | 99371952 | 16 |
| ALPHA3 25-60 | 130 | 99371954 | 18 |
| ALPHA3 25-80 | 130 | 99371955 | 20 |
| ALPHA3 25-40 | 180 | 99371956 | 16 |
| ALPHA3 25-60 | 180 | 99371959 | 18 |
| ALPHA3 25-80 | 180 | 99371961 | 20 |
| ALPHA3 32-40 | 180 | 99371962 | 16 |
| ALPHA3 32-60 | 180 | 99371964 | 18 |
| ALPHA3 32-80 | 180 | 99371965 | 20 |

**Note:** Click on the product number and go directly to the performance curve in Grundfos Product Center (GPC).

## ALPHA3 for the UK market

| Pump type | Port-to-port length [mm] | Product number | Data sheet Page |
|---|---|---|---|
| ALPHA3 15-50/60 | 130 | 99371966 | 18 |

**Note:** Click on the product number and go directly to the performance curve in Grundfos Product Center (GPC).

## ALPHA3 for the EAC market

| Pump type | Port-to-port length [mm] | Product number | Data sheet Page |
|---|---|---|---|
| ALPHA3 25-40* | 180 | 99371970 | 16 |
| ALPHA3 25-60* | 180 | 99371971 | 18 |
| ALPHA3 25-80* | 180 | 99371972 | 20 |
| ALPHA3 32-40 | 180 | 99371983 | 16 |
| ALPHA3 32-60 | 180 | 99371985 | 18 |
| ALPHA3 32-80 | 180 | 99371987 | 20 |

**Note:** Click on the product number and go directly to the performance curve in Grundfos Product Center (GPC).

* Including union kit Rp 1"