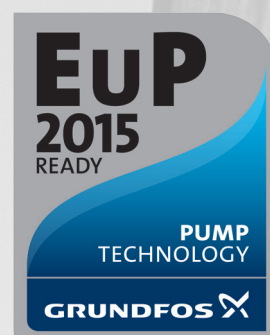


Grundfos ALPHA1

Circulator pumps

50/60 Hz



be
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innovate

GRUNDFOS 

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1. Product introduction

Grundfos ALPHA1 is a complete range of circulator pumps with the following features:

- integrated differential-pressure control enabling adjustment of pump performance to the actual system requirement
- motor based on permanent-magnet/compact-rotor technology.

The pumps are energy-optimised and comply with the requirements of the EuP directive.



Fig. 1 EuP ready

The installation of one of these pumps will reduce power consumption considerably, reduce noise from thermostatic valves and similar fittings and improve the control of the system.

The Grundfos ALPHA1 range offers a host of advantages:

Performance range

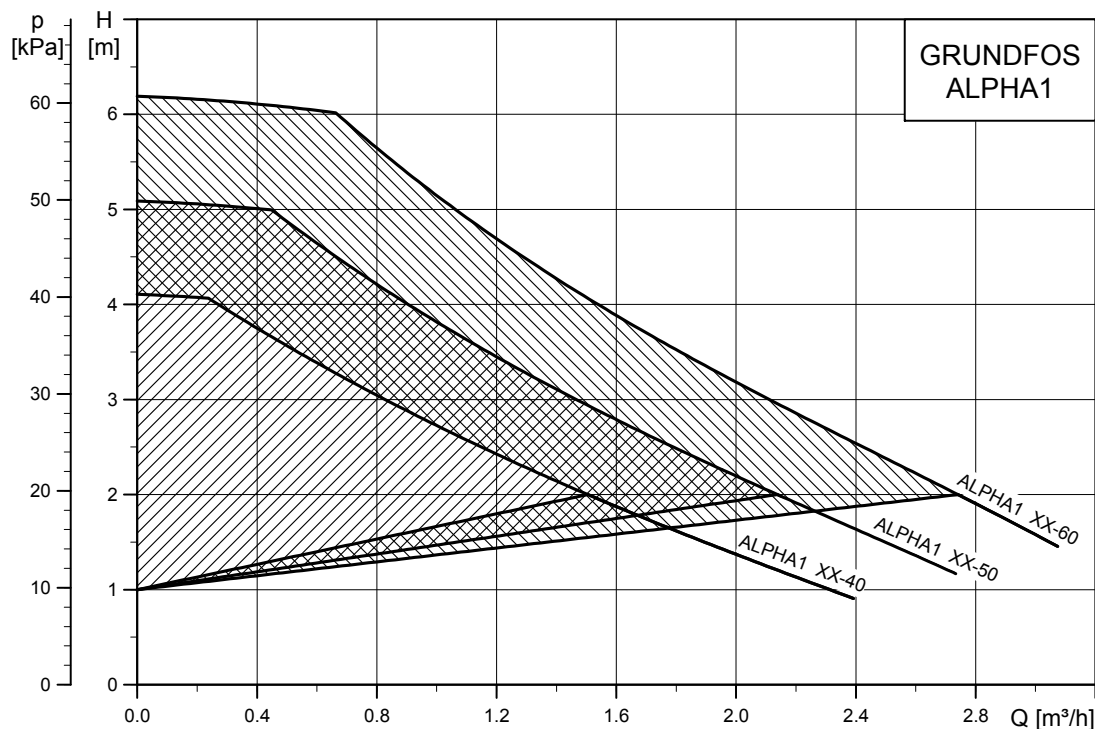


Fig. 2 Performance range

Energy savings

High-efficient permanent-magnet motors.

Flexibility

Suitable for installation in existing systems.

Comfort

Low-noise operation.

Safety

Built-in electrical and thermal protection of the pump.

User friendliness

Simple setting and operation.

Type key

Example	ALPHA1	25 - 40	180
Pump range	[]		
Nominal diameter (DN) of suction and discharge ports [mm] (15 = 1", 20 = 1 1/4", 25 = 1 1/2", 32 = 2")	[]		
Maximum head [dm]	[]		
[]: Cast-iron pump housing N: Stainless-steel pump housing A Pump housing with air separator	[]		
Port-to-port length [mm]	[]		

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

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2. Applications

Grundfos ALPHA1 is designed for circulating liquids in heating systems.

The pumps are suitable for the following systems:

- Systems with constant or variable flows where it is desirable to optimise the pump duty point.
- Systems with variable flow-pipe temperature.

Grundfos ALPHA1 is especially suitable for the following:

- Installation in existing systems where the differential pressure of the pump is too high during periods of reduced flow demand.
- Installation in new systems for automatic adjustment of the performance to flow demands without the use of bypass valves or similar expensive components.

Examples of systems

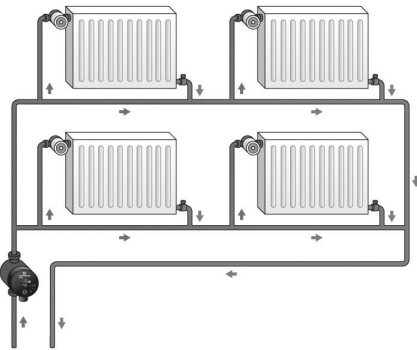


Fig. 3 One-pipe heating system

TM03 3988 4507

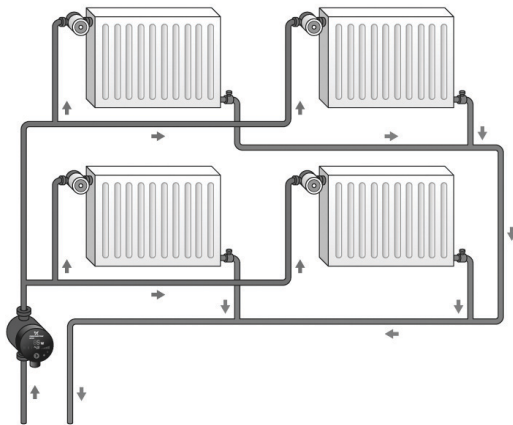


Fig. 4 Two-pipe heating system

TM03 9889 4507

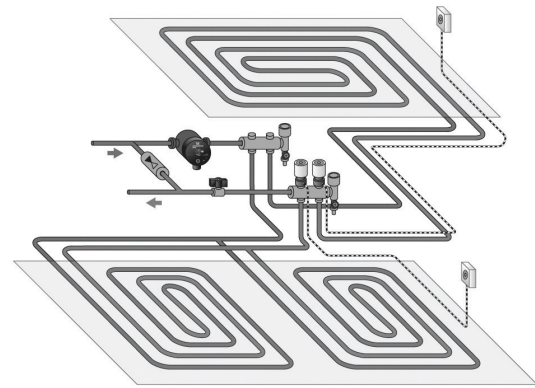


Fig. 5 Underfloor heating system

TM03 9890 4507

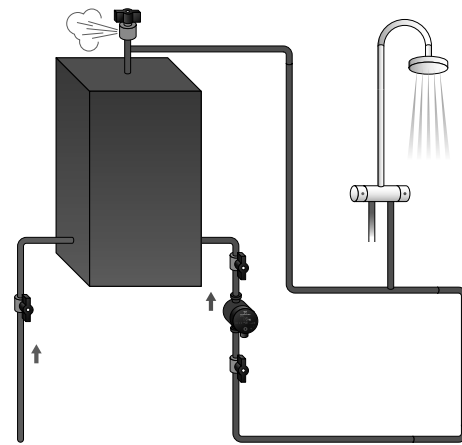


Fig. 6 Domestic hot-water recirculation system

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Pumped liquids

The pump is suitable for clean, thin, non-aggressive and non-explosive liquids, not containing solid particles, fibres or mineral oil.

The pump must not be used for the transfer of flammable liquids, such as diesel oil, petrol and similar liquids.

Control of heating systems

The heating required in a building varies greatly during the day due to changing outdoor temperatures, solar radiation and heat emanating from human beings, electric appliances, etc.

Add to this that the need for heating may vary from one section of the building to another and that the thermostatic valves of some radiators may be turned down by the users.

These circumstances will cause an uncontrolled pump to produce an excessive differential pressure when the heating demand is low.

Possible consequences:

- too high energy consumption
- irregular control of the system
- noise in thermostatic valves and similar fittings.

Grundfos ALPHA1 automatically controls the differential pressure by adjusting the pump performance to the actual heating demand, without the use of external components.

Advantages of pump control

In Grundfos ALPHA1, control is effected by adapting the differential pressure to the flow (proportional- and constant-pressure control).

Contrary to an uncontrolled pump, the proportional-pressure-controlled ALPHA1 pump reduces the differential pressure in case of falling heating demand.

If the heating demand falls, for instance due to solar radiation, the radiator valves will close, and, for the uncontrolled pump, the flow resistance of the system will rise for instance from A_1 to A_2 .

In a heating system with an uncontrolled pump, this situation will cause a pressure rise in the system by ΔH_1 .

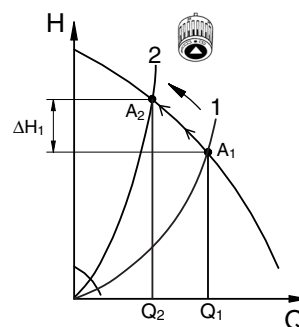


Fig. 7 Uncontrolled pump

In a system with a Grundfos ALPHA1 pump, the pressure will be reduced by ΔH_2 .

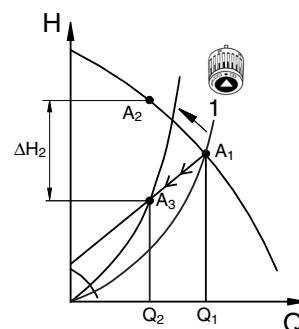


Fig. 8 Pump in proportional-pressure control mode

In a system with an uncontrolled pump, a pressure rise will often cause flow-generated noise in the thermostatic valves. This noise will be reduced considerably with the Grundfos ALPHA1.

The pump has the following control modes

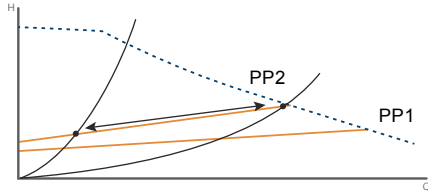
- Proportional-pressure control
- Constant-pressure control
- Constant-curve control.

TM01 9119 5002

TM01 9120 5002

Proportional-pressure control

Proportional-pressure control adjusts the pump performance to the actual heat demand in the system, but the pump performance follows the selected performance curve, PP1 or PP2. See fig. 9 where PP2 has been selected. See [Change of pump performance](#) for further information.

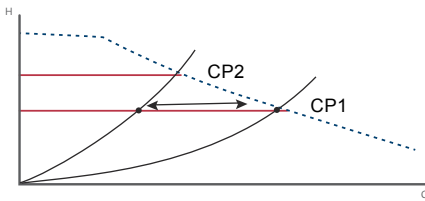


TM06 1833 3114

Fig. 9 Three proportional-pressure curves/settings

Constant-pressure control

Constant-pressure control adjusts the pump performance to the actual heat demand in the system, but the pump performance follows the selected performance curve, CP1 or CP2. See fig. 10 where CP1 has been selected. See [Change of pump performance](#) for further information.



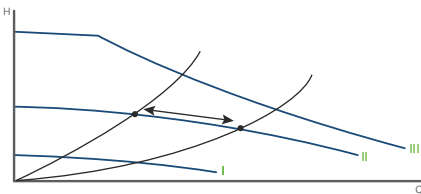
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Fig. 10 Three constant-pressure curves/settings

The selection of the right constant-pressure setting depends on the characteristics of the heating system in question and the actual heat demand.

Constant-curve control

At constant-curve/constant-speed operation, the pump runs at a constant speed, independent of the actual flow demand in the system. The pump performance follows the selected performance curve, I, II or III. See fig. 11 where II has been selected. See [Change of pump performance](#) for further information.



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Fig. 11 Three constant-curve/constant-speed settings

The selection of the right constant-curve/constant-speed setting depends on the characteristics of the heating system in question and the number of taps likely to be opened at the same time.

3. Construction

Grundfos ALPHA1 is designed for long and trouble-free operation including the canned-rotor type, i.e. pump and motor form an integral unit without shaft seal and with only two gaskets for sealing. The bearings are lubricated by the pumped liquid. These constructions ensure maintenance-free operation.

The pumps are characterised by the following:

- Permanent-magnet/compact-stator motor which contributes to high efficiency and high starting torque.
- Ceramic shaft and radial bearings which contribute to long life.
- Carbon thrust bearing which contribute to long life.
- Stainless-steel rotor can, bearing plate and rotor cladding which contribute to corrosion-free long life.
- Composite impeller which contributes to corrosion-free long life.
- Stainless-steel or cast-iron pump housing which contributes to flexibility.
- Automatic air-venting which contributes to easy commissioning.
- Compact design featuring pump head with integrated control box and control panel which fit into most common installations.

Stainless-steel versions N

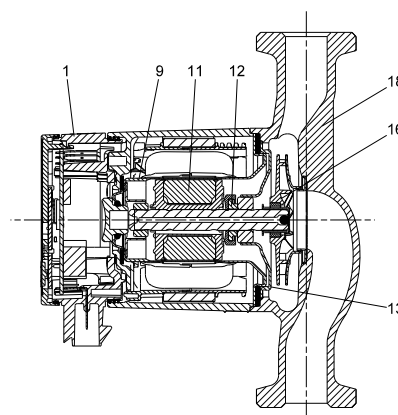
The pump housing of the stainless-steel versions is painted in red colour. The stainless-steel versions can be identified by the N in the type key or by the silver ring around the display. See fig. 12.



Fig. 12 Stainless-steel version N

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Sectional drawing



TM03 9728 4307

Fig. 13 Position numbers

Material specification

Pos.	Description	Material	EN	AISI/ ASTM
1	Controller complete	Composite, PC		
9	Rotor can	Stainless steel	1.4301	304
	Radial bearing	Ceramics		
11	Shaft	Ceramics		
	Rotor cladding	Stainless steel	1.4301	304
	Thrust bearing	Carbon		
12	Thrust bearing retainer	EPDM rubber		
	Bearing plate	Stainless steel	1.4301	304
16	Impeller	Composite, PP or PES		
		Cast iron	EN-JL 1020	A48-25
18	Pump housing	Stainless steel	1.4301*	304*
			1.4308**	CF8**
		Gaskets	EPDM rubber	

* ALPHA1 20-45 N

** ALPHA1 XX-40, XX-50, XX-60 N

Motor and control box

The motor is a 4-pole synchronous permanent-magnet motor.

The pump controller is incorporated in the control box, which is fitted to the stator housing with screws.

Control panel

The control panel is located on the front and is connected to the stator via a terminal plug.

The control panel has:

- a push-button (fig. 14, pos. 1) for selection of pump setting
- seven light fields for indication of the selected pump setting
- "POWER ON" light field
- a 2-digit, 7-segment display.

The light in the display is on when the power supply has been switched on. During operation, the display shows the actual pump power consumption in Watt (in whole numbers). Accuracy: $\pm 5\%$.

The "POWER ON" light field indicates that the power supply has been switched on. When the "POWER ON" light field is on and the display shows "- -", a fault preventing the pump from operating properly (for example seizing-up) has occurred.

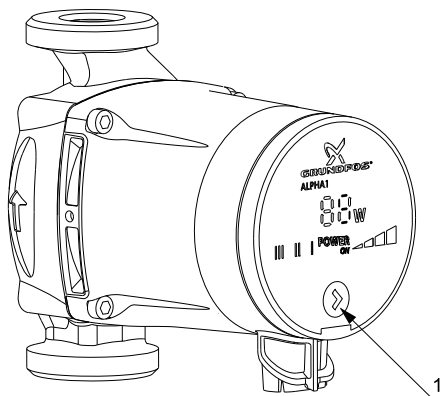


Fig. 14 Push-button position

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Control box positions

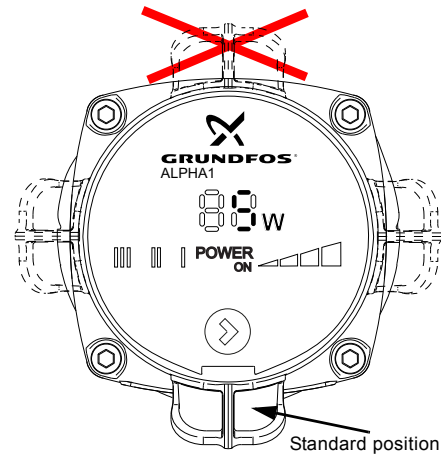


Fig. 15 Possible control box positions

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ALPHA cable with plug

The plug incorporates cable relief and a locking function for securing the supply cable connection.



Fig. 16 ALPHA plug with cable relief and angled ALPHA plug with fixed cable

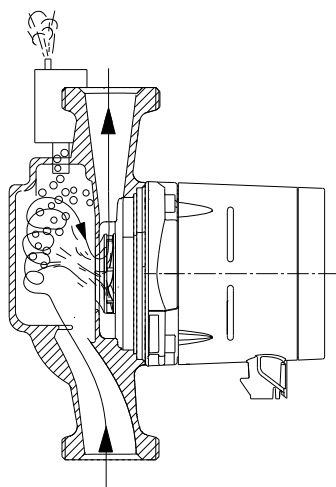
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Unique air vent system

The pump housing with air separator is installed in systems where the liquid contains so much air that a circulator pump without air separator cannot start or keep up a continuous circulation. The pump housing is available only for upward water flows.

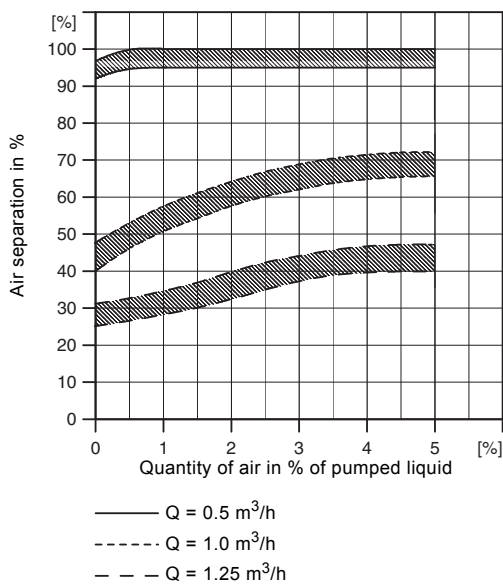
The air-containing liquid is guided from the suction port to the nozzle of the air-separating chamber and caused to circulate considerably in the relatively large chamber, thus creating a relatively lower pressure at the back (top) of the chamber. This lower pressure combined with the reduced velocity of the liquid in the air-separating chamber will cause a separation of air from the liquid. Due to its lower density, the air will escape through an automatic air vent fitted to the air-separating chamber.

The pump housing has an Rp 3/8 tapping for fitting of an air vent. The air vent is not supplied with the pump.



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Fig. 17 Pump housing with air-separating chamber



TM00 9101 1097

Fig. 18 Air separation

4. Installation and startup

Installation

In most cases, the installation of the Grundfos ALPHA1 is reduced to the mechanical installation and the connection to the power supply.

The pump must always be installed with horizontal motor shaft.

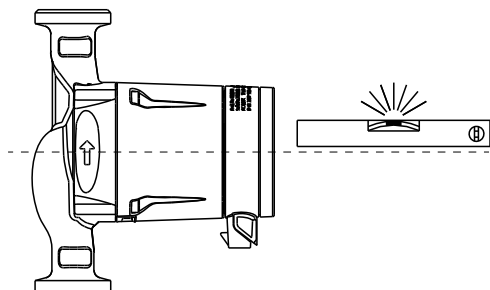


Fig. 19 Horizontal motor shaft

Electrical data

Supply voltage	1 x 230 V - 10 %/+ 10 %, 50/60 Hz, PE
Motor protection	The pump requires no external motor protection.
Enclosure class	IP42
Insulation class	F
Relative air humidity	Maximum 95 %
Ambient temperature	0-40 °C
Temperature class	TF110 to CEN 335-2-51
EMC (electromagnetic compatibility)	EN 55014-1:2006 and EN 55014-2:1997
Sound pressure level	≤ 43 dB(A)

Startup

The pump must not be started until the system has been filled with liquid and vented. Furthermore, the required minimum inlet pressure must be available at the pump inlet. The system cannot be vented through the pump.

The pump is self-venting and does not require venting before startup.

Liquid temperature

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

System pressure

PN 10: Maximum 1.0 MPa (10 bar).

Inlet pressure

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

Liquid temperature		
75 °C	90 °C	110 °C
0.5 m head	2.8 m head	10.8 m head

Setting the pump

Using the push-button on the control box, the electronically controlled pump can be set to the following:

- two constant-pressure curves
- two proportional-pressure curves
- three fixed-speed curves.

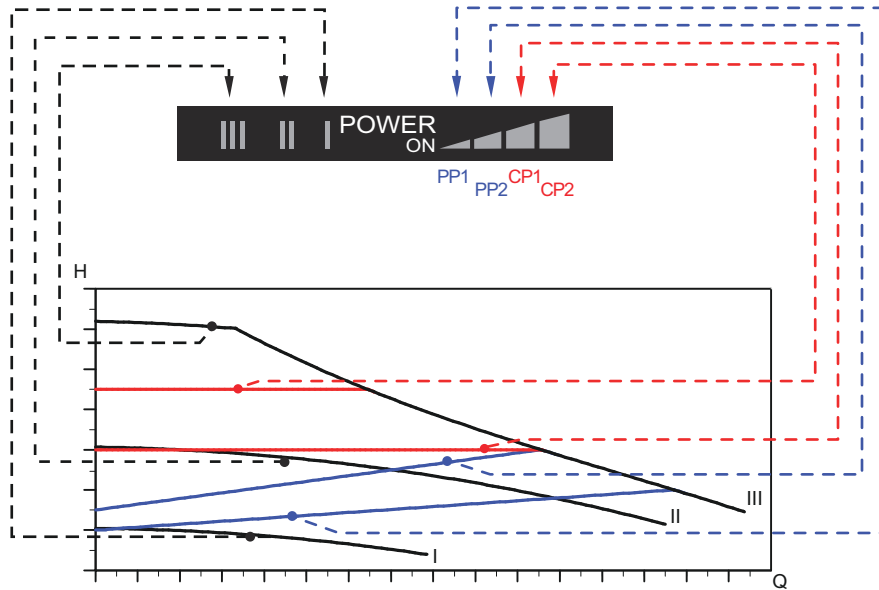
Factory setting

The pump has been factory-set to proportional-pressure curve (PP2). See fig. 20.

This setting is suitable for the majority of all single-family houses.

Change of pump performance

The pump performance (flow and head) can be changed by pressing the control box push-button as indicated in fig. 20 and the table below.



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Fig. 20 Pump setting in relation to performance

Setting	Pump curve	Function
PP1	Lowest proportional-pressure curve	The duty point of the pump will move up or down on the lowest proportional-pressure curve, depending on the heat demand in the system. See fig. 20. The head (pressure) is reduced at falling heat demand and increased at rising heat demand.
PP2	Highest proportional-pressure curve	The duty point of the pump will move up or down on the highest proportional-pressure curve, depending on the heat demand in the system. See fig. 20. The head (pressure) is reduced at falling heat demand and increased at rising heat demand.
CP1	Lowest constant-pressure curve	The duty point of the pump will move out or in on the lowest constant-pressure curve, depending on the heat demand in the system. See fig. 20. The head (pressure) is kept constant, irrespective of the heat demand.
CP2	Highest constant-pressure curve	The duty point of the pump will move out or in on the highest constant-pressure curve, depending on the heat demand in the system. See fig. 20. The head (pressure) is kept constant, irrespective of the heat demand.
III	Speed III	The pump runs at a constant speed and consequently on a constant curve. At speed III, the pump is set to run on the maximum curve under all operating conditions. See fig. 20. Quick venting of the pump can be obtained by setting the pump to speed III for a short period.
II	Speed II	The pump runs at a constant speed and consequently on a constant curve. At speed II, the pump is set to run on the intermediate curve under all operating conditions. See fig. 20.
I	Speed I	The pump runs at a constant speed and consequently on a constant curve. At speed I, the pump is set to run on the minimum curve under all operating conditions. See fig. 20.

5. Guide to performance curves

Energy labelling

The Grundfos ALPHA1 is energy-optimised and complies with the EuP Directive (Commission Regulation (EC) No. 641/2009) which has been in effect since 1 January 2013.

For more information about the new energy directive, please visit:



Energy.grundfos.com

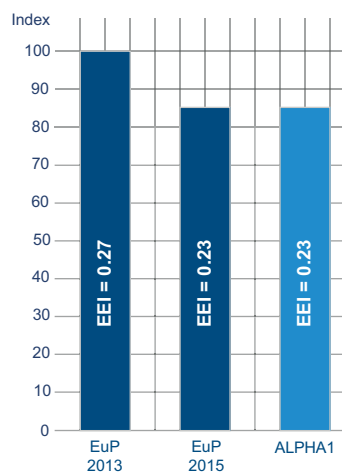
TM05 2683 0412

Curve conditions

The guidelines below apply to the performance curves on the following pages:

- Test liquid: airless water.
- The curves apply to a density of $\rho = 983.2 \text{ kg/m}^3$ and a liquid temperature of $60 \text{ }^\circ\text{C}$.
- All curves show average values and should not be used as guarantee curves. If a specific minimum performance is required, individual measurements must be made.
- The curves for speeds I, II and III are marked.
- The curves apply to a kinematic viscosity of $\nu = 0.474 \text{ mm}^2/\text{s}$ (0.474 cSt).
- The conversion between head H [m] and pressure p [kPa] has been made for water with a density of $\rho = 1000 \text{ kg/m}^3$. For liquids with other densities, for example hot water, the discharge pressure is proportional to the density.

The EEI values for GRUNDFOS ALPHA1 pumps are far below the EuP 2013 value and comply with the requirements for 2015. See fig. 21.



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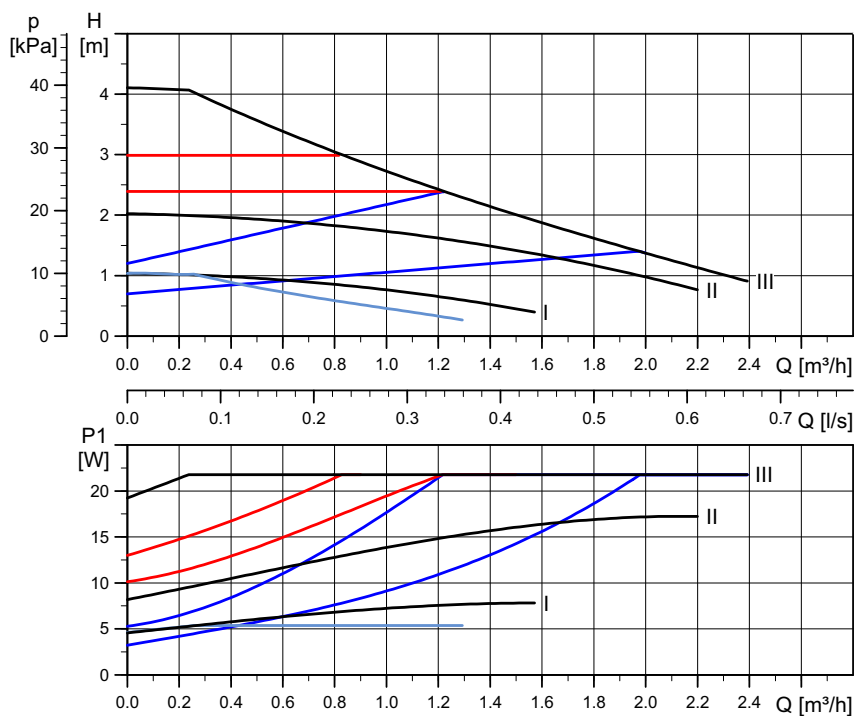
Fig. 21 EEI limits and the current positioning of the ALPHA1

With an energy efficiency index (EEI) at the EuP 2015 requirement level, you can achieve considerable energy savings compared to a typical circulator pump and thus a remarkably fast return on investment.

6. Performance curves and technical data

ALPHA1 15-40, 20-40 (N), 25-40 (N)(A), 32-40

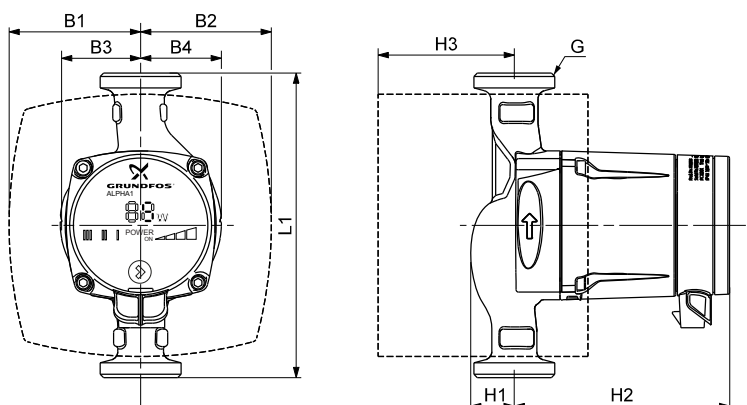
1 x 230 V, 50/60 Hz



Speed	P1 [W]	$I_{1/1}$ [A]
Min.	5	0.05
Max.	22	0.19

The pump incorporates overload protection.

Connections: See [Insulating kits](#), page 14.
 System pressure: Max. 1.0 MPa (10 bar).
 Liquid temperature: 2-110 °C (TF 110).



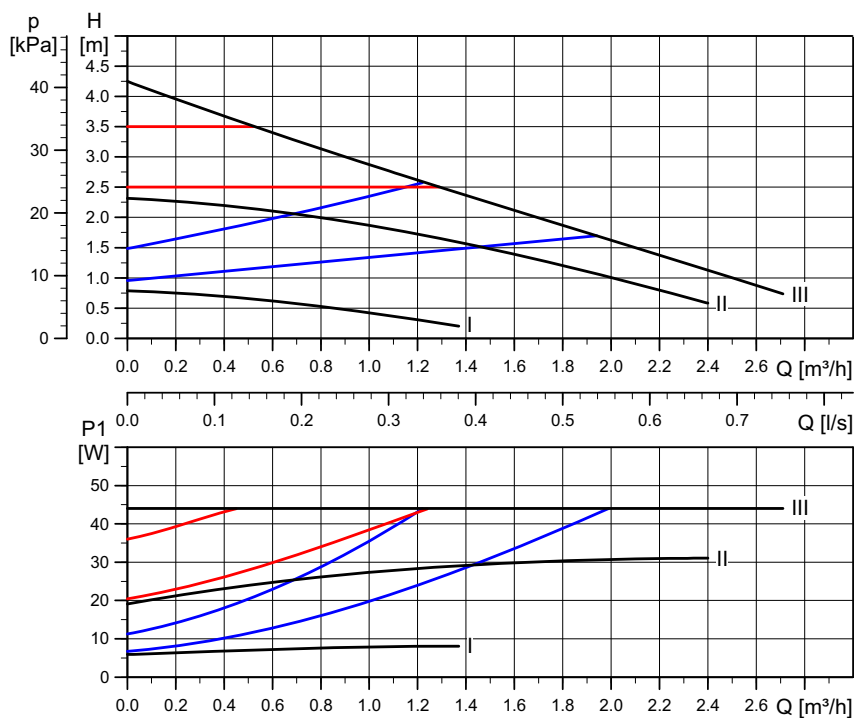
Pump type	EEI <	Dimensions [mm]									Weights [kg]		Ship. vol. [m³]
		L1	B1	B2	B3	B4	H1	H2	H3	G	Net	Gross	
ALPHA1 15-40	0.23	130	78	78	46	49	27	129	58	1	1.9	2.1	0.00383
ALPHA1 20-40	0.23	130	78	78	46	49	27	129	58	1 1/4	1.9	2.1	0.00383
ALPHA1 20-40 N	0.23	150	-	-	49	49	27	129	-	1 1/4	2.4	2.6	0.00383
ALPHA1 25-40	0.23	130	78	78	46	49	27	129	79	1 1/2	1.9	2.1	0.00383
ALPHA1 25-40	0.23	180	78	78	47	48	26	127	81	1 1/2	2.1	2.3	0.00383
ALPHA1 25-40 N	0.23	180	-	-	47	48	28	127	-	1 1/2	2.5	2.8	0.00383
ALPHA1 25-40 A	0.23	180	63	93	32	65	50	135	82	1 1/2	3.1	3.3	0.00383
ALPHA1 32-40	0.23	180	78	78	47	48	26	127	81	2	2.1	2.3	0.00383

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ALPHA1 20-45 N

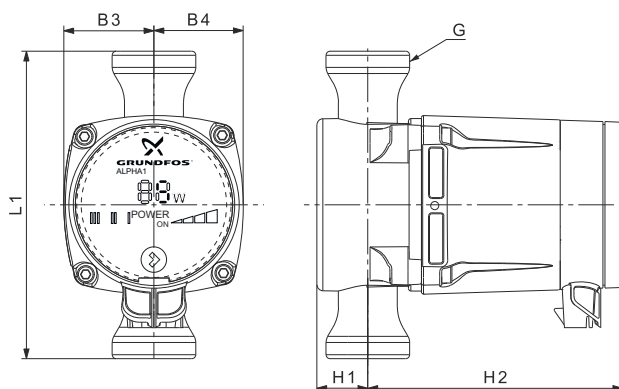
1 x 230 V, 50/60 Hz



Speed	P1 [W]	$I_{1/1}$ [A]
Min.	7	0.07
Max.	45	0.34

The pump incorporates overload protection.

Connections: See [Insulating kits](#), page 14.
 System pressure: Max. 1.0 MPa (10 bar).
 Liquid temperature: 2-110 °C (TF 110).



Pump type	EEI ≤	Dimensions [mm]								Weights [kg]		Ship. vol. [m³]	
		L1	B1	B2	B3	B4	H1	H2	H3	G	Net		Gross
ALPHA1 20-45 N	0.23	150	-	-	43	43	27	127	-	1 1/4	1.8	2.0	0.00383

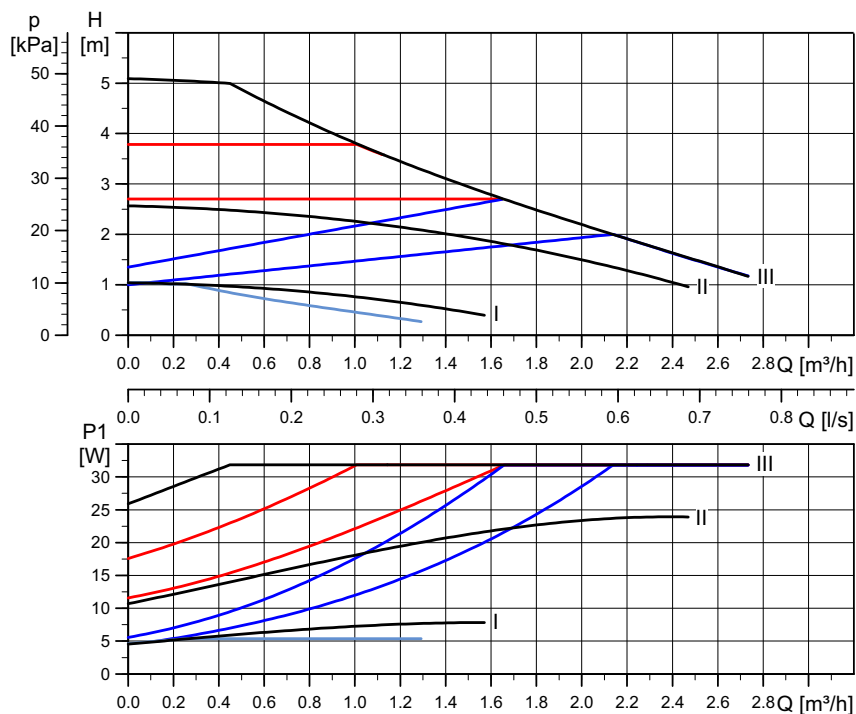
Note: The ALPHA1 20-45 N is especially designed for drinking water applications, but also fully applicable for circulation in heating systems.

TM05 2213

TM05 7974 17 13

ALPHA1 15-50, 20-50 (N), 25-50 (N), 32-50

1 x 230 V, 50/60 Hz

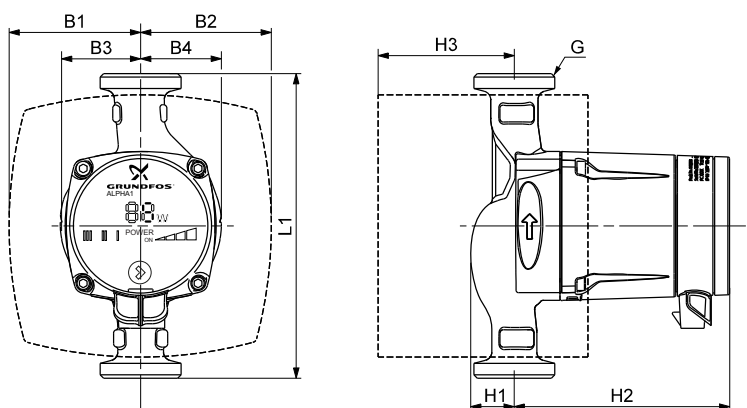


TM04 2109 2614

Speed	P1 [W]	I _{1/1} [A]
Min.	5	0.05
Max.	32	0.27

The pump incorporates overload protection.

Connections: See [Insulating kits](#), page 14.
 System pressure: Max. 10 bar.
 Liquid temperature: 2-110 °C (TF 110).

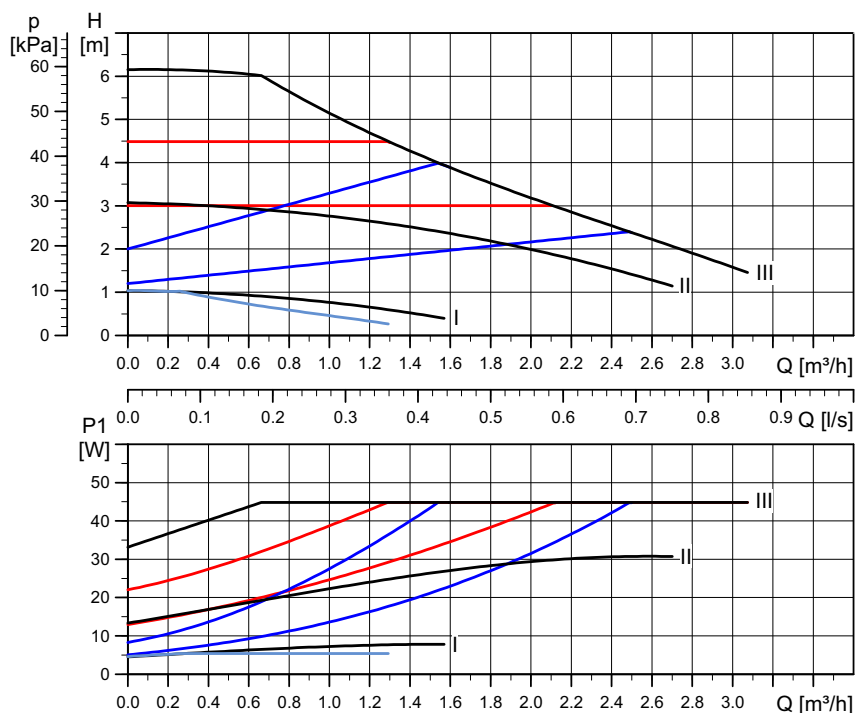


TM05 7971 1713

Pump type	EEI <	Dimensions [mm]									Weights [kg]		Ship. vol. [m³]
		L1	B1	B2	B3	B4	H1	H2	H3	G	Net	Gross	
ALPHA1 15-50	0.23	130	78	78	46	49	27	129	58	1	2.0	2.2	0.00383
ALPHA1 20-50	0.23	130	78	78	46	49	28	129	58	1 1/4	2.4	2.6	0.00383
ALPHA1 20-50 N	0.23	150	-	-	49	49	28	129	-	1 1/4	2.4	2.6	0.00383
ALPHA1 25-50	0.23	130	77	78	46	49	27	129	79	1 1/2	1.9	2.1	0.00383
ALPHA1 25-50	0.23	180	78	77	47	48	26	127	81	1 1/2	2.1	2.3	0.00383
ALPHA1 25-50 N	0.23	180	-	-	47	48	26	127	-	1 1/2	2.6	2.8	0.00383
ALPHA1 32-50	0.23	180	78	77	47	48	26	127	81	2	2.1	2.3	0.00383

ALPHA1 15-60, 20-60 (N), 25-60 (N)(A), 32-60

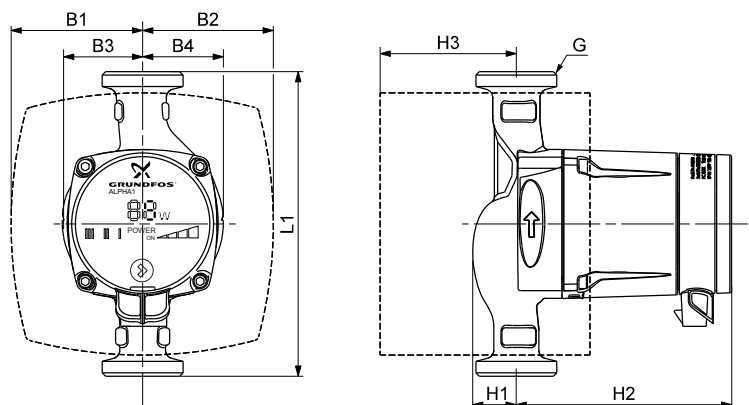
1 x 230 V, 50/60 Hz



Speed	P1 [W]	I _{1/1} [A]
Min.	5	0.05
Max.	45	0.38

The pump incorporates overload protection.

Connections: See [Insulating kits](#), page 14.
 System pressure: Max. 10 bar.
 Liquid temperature: 2-110 °C (TF 110).



Pump type	EEI <	Dimensions [mm]								Weights [kg]		Ship. vol. [m³]	
		L1	B1	B2	B3	B4	H1	H2	H3	G	Net		Gross
ALPHA1 15-60	0.23	130	78	78	46	49	27	129	58	1	1.9	2.1	0.00383
ALPHA1 20-60	0.23	130	78	78	46	49	27	129	58	1 1/4	1.9	2.1	0.00383
ALPHA1 20-60 N	0.23	150	-	-	49	49	27	129	-	1 1/4	2.4	2.6	0.00383
ALPHA1 25-60	0.23	130	77	78	46	49	27	129	79	1 1/2	1.9	2.1	0.00383
ALPHA1 25-60	0.23	180	78	77	47	48	26	127	81	1 1/2	2.1	2.3	0.00383
ALPHA1 25-60 N	0.23	180	-	-	47	48	26	127	-	1 1/2	2.6	2.8	0.00383
ALPHA1 25-60 A	0.23	180	63	93	32	65	50	135	82	1 1/2	3.1	3.3	0.00383
ALPHA1 32-60	0.23	180	78	77	47	48	26	127	81	2	2.1	2.3	0.00383

TM04 2108 2614

TM05 7971 1713

7. Accessories

Union and valve kits

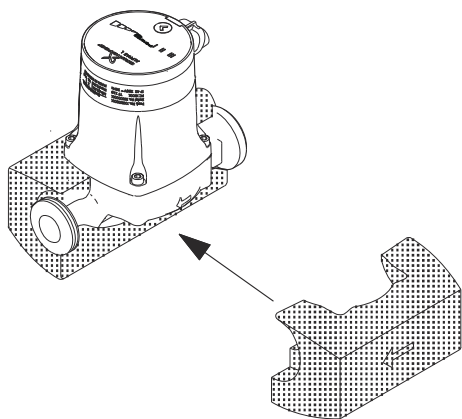
Pump type	Description	Material	Product number
ALPHA1 25-40	3/4" unions	Cast iron	529921
ALPHA1 25-60	1" unions	Cast iron	529922
ALPHA1 32-40	1" unions	Cast iron	509921
ALPHA1 32-60	1 1/4" unions	Cast iron	509922

Insulating kits

Grundfos ALPHA1 pumps can be fitted with two insulating shells.

The insulation thickness of the insulating shells corresponds to the nominal diameter of the pump.

The insulating kit, which is tailored to the individual pump type, encloses the entire pump housing. The two insulating shells are easy to fit around the pump.



TM04 2806 3208

Fig. 22 Insulating shells

Pump type	Product number
Insulating shells (not available for ALPHA1 20-45)	505821
Insulating shells for ALPHA1 XX-XX A pumps (with air separator)	505822

ALPHA plugs



TM05 3073 0612

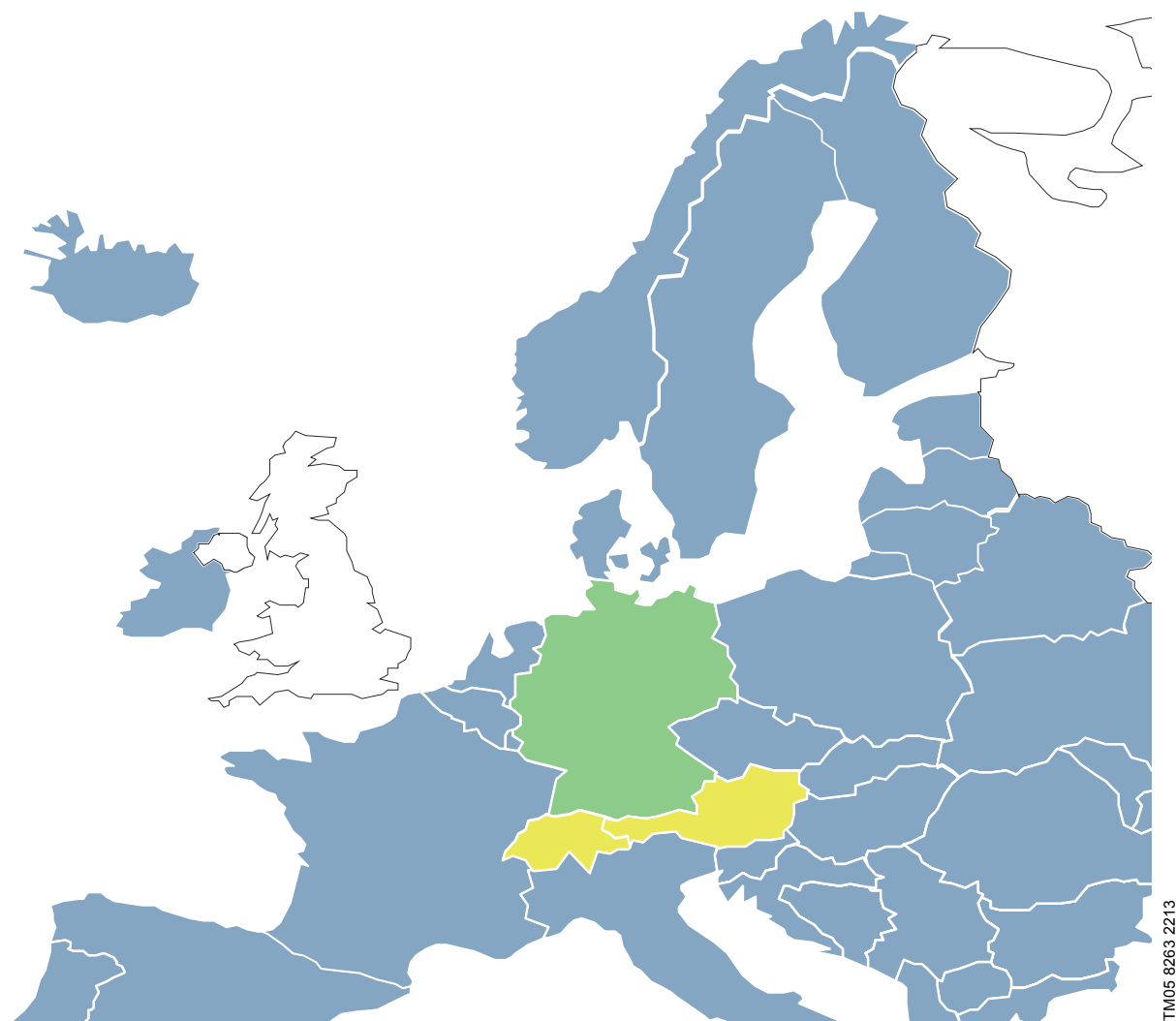
Fig. 23 ALPHA plugs

Pos.	Description	Product number
1	ALPHA plug, standard plug connection	98284561
2	ALPHA angle plug, standard angle plug connection	98610291
3	ALPHA plug, 90 ° bend, including 4 m cable	96884669

Grundfos offers a special cable with an active built-in NTC protection circuit which will reduce possible inrush currents. To be used in case of e.g poor quality of relay components which are sensitive to inrush current.




8. Product range

The sales regions for the Grundfos ALPHA1 pumps are structured as shown in the map below.



TM05 8263 2213

Fig. 24 Sales regions (clusters)

Colour	Companies	Countries
	GWS	Germany
	GPO, GPS	Austria, Switzerland
	All other countries, except United Kingdom, Japan, North America and Russia	

ALPHA1 (N), Germany

Note: Click on the product number and go directly to the performance curve in WebCAPS.

Pump type	Port-to-port length [mm]	Connection	Voltage [V] 50/60 Hz	Product number	Data sheet Page
ALPHA1 15-40	130	G 1	230	98460741	13
ALPHA1 15-60				98460749	16
ALPHA1 20-40		G 1 1/4		98460742	13
ALPHA1 20-60				98460750	16
ALPHA1 25-40	180	G 1 1/2		98460743	13
ALPHA1 25-40				98460745	
ALPHA1 25-40 A				98460746	
ALPHA1 25-60				98460754	
ALPHA1 25-60	180	G 2	98460755	16	
ALPHA1 25-60 A			98463404		
ALPHA1 32-40			98460747	13	
ALPHA1 32-60			98463405	16	
Stainless-steel versions					
ALPHA1 20-40 N	150	G 1 1/4	230	98463407	13
ALPHA1 20-45 N (welded stainless-steel housing)				98463424	14
ALPHA1 20-60 N		G 1 1/2		98463421	16
ALPHA1 25-40 N				98463408	13
ALPHA1 25-60 N	98463422	16			

ALPHA1 (N), Austria and Switzerland

Note: Click on the product number and go directly to the performance curve in WebCAPS.

Pump type	Port-to-port length [mm]	Connection	Voltage [V] 50/60 Hz	Product number	Data sheet Page
ALPHA1 15-40	130	G 1	230	98463426	13
ALPHA1 15-60				98463434	16
ALPHA1 20-40		G 1 1/4		98463428	13
ALPHA1 20-60				98463436	16
ALPHA1 25-40	180	G 1 1/2		98463430	13
ALPHA1 25-40				98463431	
ALPHA1 25-40 A				98463432	
ALPHA1 25-60				98463437	
ALPHA1 25-60	180	G 2	98463438	16	
ALPHA1 25-60 A			98463439		
ALPHA1 32-40			98463433	13	
ALPHA1 32-60			98463442	16	
Stainless-steel versions					
ALPHA1 20-40 N	150	G 1 1/4	230	98463446	13
ALPHA1 20-45 N (welded stainless-steel housing)				98463452	14
ALPHA1 20-60 N		G 1 1/2		98463449	16
ALPHA1 25-40 N				98463448	13
ALPHA1 25-60 N	98463450	16			

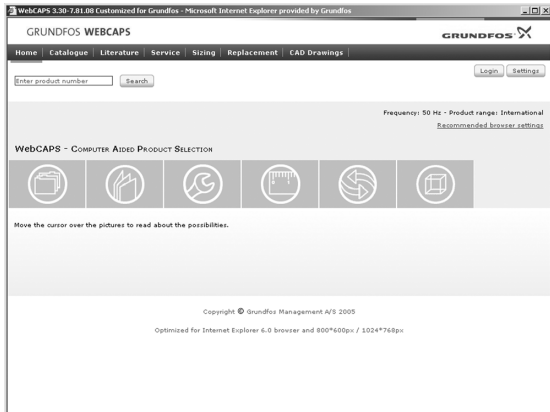
ALPHA1 (N), international

Note: Click on the product number and go directly to the performance curve in WebCAPS.

Pump type	Port-to-port length [mm]	Connection	Voltage [V] 50/60 Hz	Product number	Data sheet Page
ALPHA1 15-40				98475900	13
ALPHA1 15-50		G 1		98475904	15
ALPHA1 15-60				98475906	16
ALPHA1 20-40	130			98475910	13
ALPHA1 20-50		G 1 1/4		98475922	15
ALPHA1 20-60				98475927	16
ALPHA1 25-40				98475932	
ALPHA1 25-40	180		230	98475930	13
ALPHA1 25-40 A				98475964	
ALPHA1 25-50	130	G 1 1/2		98475933	15
ALPHA1 25-50	180			98475934	
ALPHA1 25-60	130			98475935	
ALPHA1 25-60				98475936	16
ALPHA1 25-60 A				98475965	
ALPHA1 32-40	180			98475938	13
ALPHA1 32-50		G 2		98475939	15
ALPHA1 32-60				98475940	16
Stainless-steel versions					
ALPHA1 20-40 N				98475976	13
ALPHA1 20-45 N (welded stainless-steel housing)				98475986	14
ALPHA1 20-50 N	150	G 1 1/4		98475979	15
ALPHA1 20-60 N			230	98475981	16
ALPHA1 25-40 N				98475969	13
ALPHA1 25-50 N	180	G 1 1/2		98475970	15
ALPHA1 25-60 N				98475973	16

9. Further product information

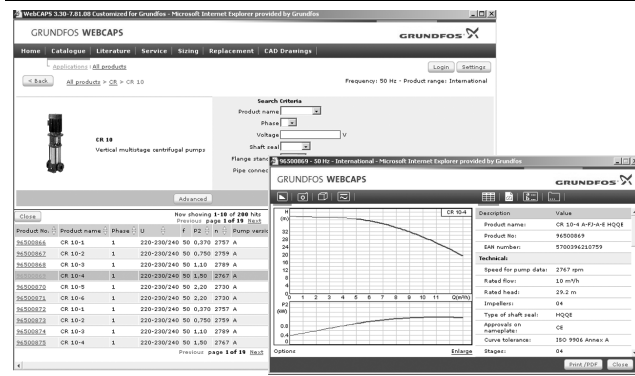
WebCAPS



WebCAPS is a **Web-based Computer Aided Product Selection** program available on www.grundfos.com. WebCAPS contains detailed information on more than 220,000 Grundfos products in more than 30 languages.

Information in WebCAPS is divided into six sections:

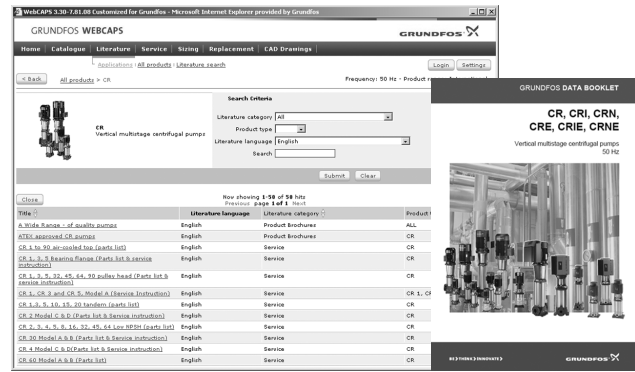
- Catalogue
- Literature
- Service
- Sizing
- Replacement
- CAD drawings.



Catalogue

Based on fields of application and pump types, this section contains the following:

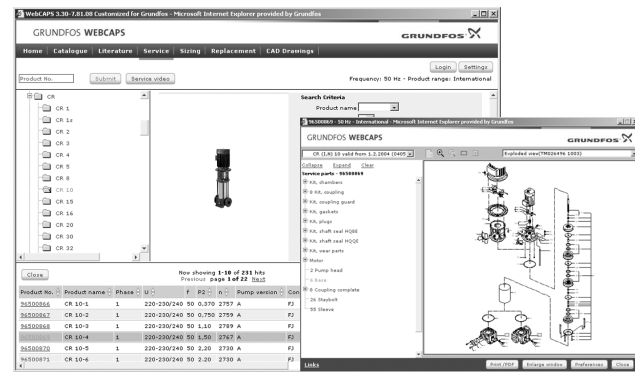
- technical data
- curves (QH, Eta, P1, P2, etc.) which can be adapted to the density and viscosity of the pumped liquid and show the number of pumps in operation
- product photos
- dimensional drawings
- wiring diagrams
- quotation texts, etc.



Literature

This section contains all the latest documents of a given pump, such as

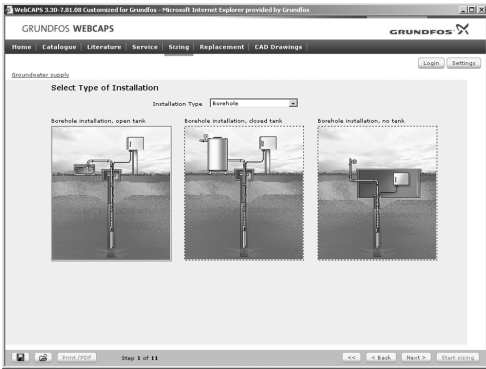
- data booklets
- installation and operating instructions
- service documentation, such as Service kit catalogue and Service kit instructions
- quick guides
- product brochures.



Service

This section contains an easy-to-use interactive service catalogue. Here you can find and identify service parts of both existing and discontinued Grundfos pumps.

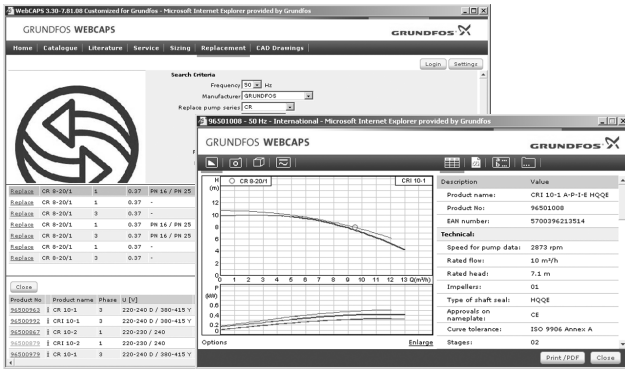
Furthermore, the section contains service videos showing you how to replace service parts.



Sizing

This section is based on different fields of application and installation examples and gives easy step-by-step instructions in how to size a product:

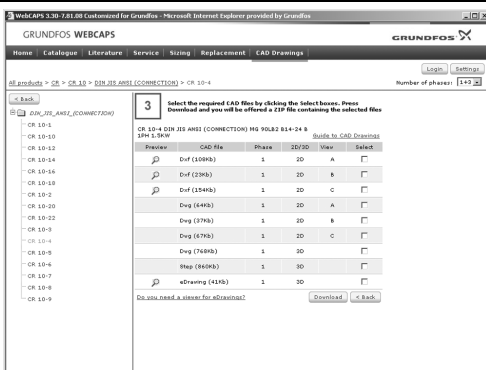
- Select the most suitable and efficient pump for your installation.
- Carry out advanced calculations based on energy, consumption, payback periods, load profiles, life cycle costs, etc.
- Analyse your selected pump via the built-in life cycle cost tool.
- Determine the flow velocity in wastewater applications, etc.



Replacement

In this section you find a guide to selecting and comparing replacement data of an installed pump in order to replace the pump with a more efficient Grundfos pump. The section contains replacement data of a wide range of pumps produced by other manufacturers than Grundfos.

Based on an easy step-by-step guide, you can compare Grundfos pumps with the one you have installed on your site. When you have specified the installed pump, the guide will suggest a number of Grundfos pumps which can improve both comfort and efficiency.



CAD drawings

In this section, it is possible to download 2-dimensional (2D) and 3-dimensional (3D) CAD drawings of most Grundfos pumps.

These formats are available in WebCAPS:

- 2-dimensional drawings:**
- .dxf, wireframe drawings
 - .dwg, wireframe drawings.
- 3-dimensional drawings:**
- .dwg, wireframe drawings (without surfaces)
 - .stp, solid drawings (with surfaces)
 - .eprt, E-drawings.

WinCAPS



Fig. 25 WinCAPS DVD

WinCAPS is a **Windows-based Computer Aided Product Selection** program containing detailed information on more than 220,000 Grundfos products in more than 30 languages.

The program contains the same features and functions as WebCAPS, but is an ideal solution if no internet connection is available.

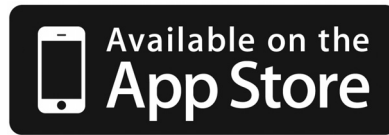
WinCAPS is available on DVD and updated once a year.

GO CAPS

Mobile solution for professionals on the GO!



CAPS functionality on the mobile workplace.



Subject to alterations.

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ECM: 1143112

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