UPS2

Circulator pumps

50/60 Hz



be
think
innovate

GRUNDFOS

1. Product introduction

UPS2 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.

The installation of UPS2 will reduce power consumption considerably, reduce noise from thermostatic valves and similar fittings and improve the control of the system.

The UPS2 range offers a host of advantages:

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	**UPS2**	**15 - 40/50/60 130**
Pump range		
Nominal diameter (DN) of inlet and outlet ports [mm] (15 = 1"25 = 1 1/2", PH = pump head only)		
Maximum head [dm] of the UPS pump types that can be replaced by the UPS2		
Port-to-port length [mm]		

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

Performance range

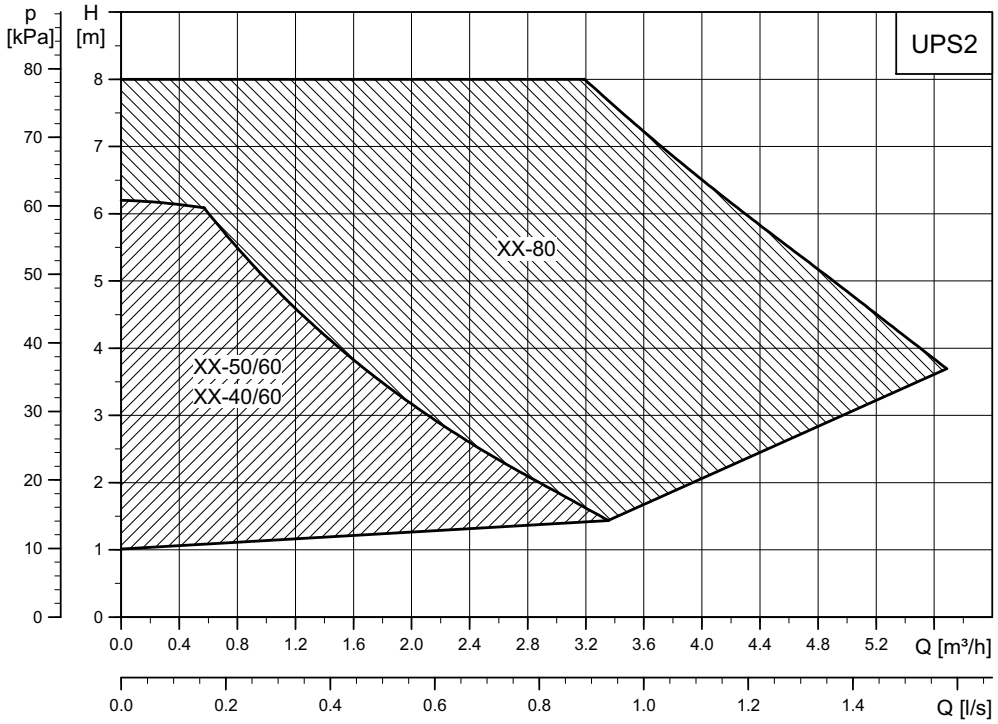


Fig. 1 Performance range

2. Applications

UPS2 is designed specifically for domestic heating systems. The pumps are used primarily for one- and two-pipe heating systems, but are, for example, also suitable for mixing loops in large systems.

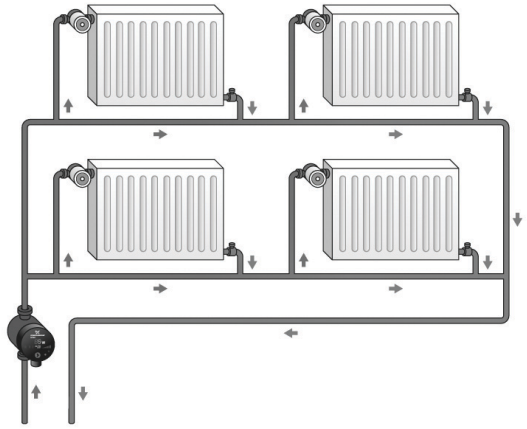


Fig. 2 One-pipe heating system

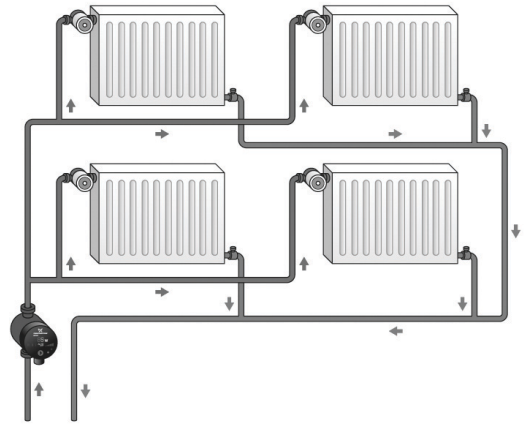


Fig. 3 Two-pipe heating system

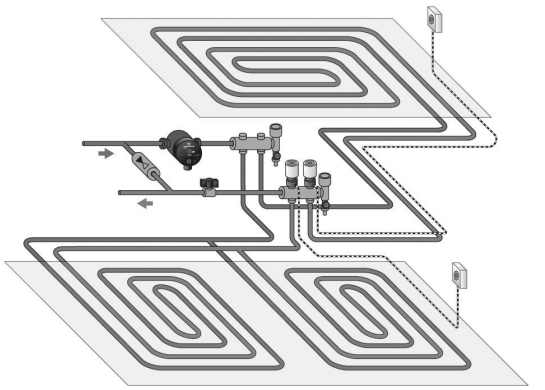


Fig. 4 Underfloor heating system

UPS replacement

UPS2 is the perfect replacement option to optimise efficiency in domestic heating systems.

The most modern technology has been used in the development and manufacturing of the UPS2 pumps. With an EEI value ≤ 0.23, the pump is designed to meet the efficiency demands of the 2015 EuP directive.

UPS2 is designed specifically to meet performance and dimensional demands in relation to replacement of existing UPS pumps.

UPS2 is available as a pump head (PH version) which can be fitted to the pump housing of existing UPS pumps. We offer this solution for the replacement of all UPS pump types. This is a very time-efficient and simple replacement solution as the pump housing does not need to be removed from the pipework.

Design benefits which make UPS2 the ideal replacement pump:

- direct compatibility
- compact pump head
- cable plug integrated in control box
- performance change in terms of speed setting
- easy-to-read interface.

The table below shows a comparison of the speed setting of an existing UPS pump and a UPS2 pump.

Existing pump Head [m]	Speed setting of existing UPS pump	Equivalent speed setting of UPS2
4	I, II, III	I
5	I	I
	II	II
	III	II
6	I	I
	II	II
	III	III
8	I	I
	II	II
	III	III

See section *Control of the pump*, page 7, for further details.

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.

4. Installation and startup

Installation

In most cases, the installation of UPS2 is reduced to the mechanical installation and the connection to the power supply.

The pump must always be installed with horizontal motor shaft.

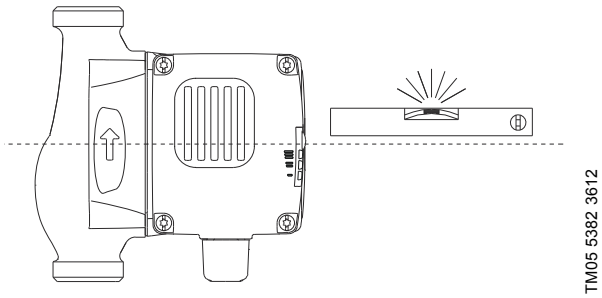


Fig. 12 Horizontal motor shaft

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	IP44.
Insulation class	F.
Relative air humidity	Maximum 95 %.
Ambient temperature	0-55 °C.
Temperature class	TF95 to CEN 335-2-51.
EMC (electromagnetic compatibility)	EN 61000-6-2 and EN 61000-6-3.
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	
	Minimum [°C]	Maximum [°C]
0	2	95
10	10	95
20	20	95
30	30	95
35	35	95
40	40	95

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 inlet 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, you can set the electronically controlled pump to the following:

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

Factory setting

The UPS2 pump has been factory-set to speed III. See fig. 14.

At this setting, the pump will deliver its maximum performance, but the setting can be changed so that it matches the actual heating demand.

Control of the pump

The pump setting can be changed with a single press on the push-button.

Figure 13 illustrates how UPS2 changes between the three speeds. This setting is indicated by a steady green light.

When you press the button for five seconds, the pump will change from fixed-speed operation to proportional-pressure control.

Figure 13 also illustrates how UPS2 changes between the three proportional-pressure curves.

This setting is indicated by a flashing green light.

See section *Change of pump performance*, page 8, for further details.

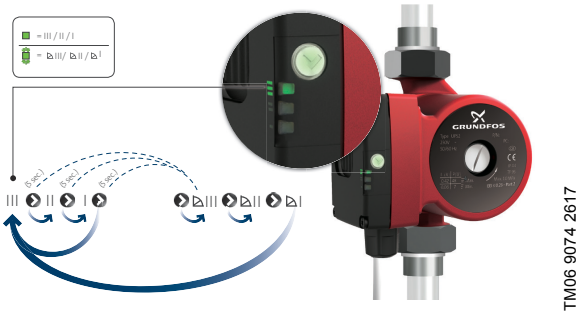


Fig. 13 Control modes

Change of pump performance

The pump performance (flow and head) can be changed by pressing the control box push-button as indicated in fig. 13 and the table below.

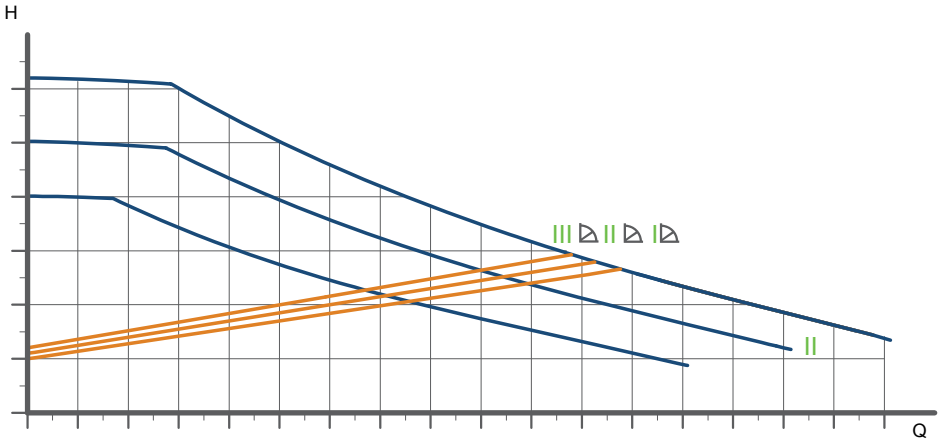
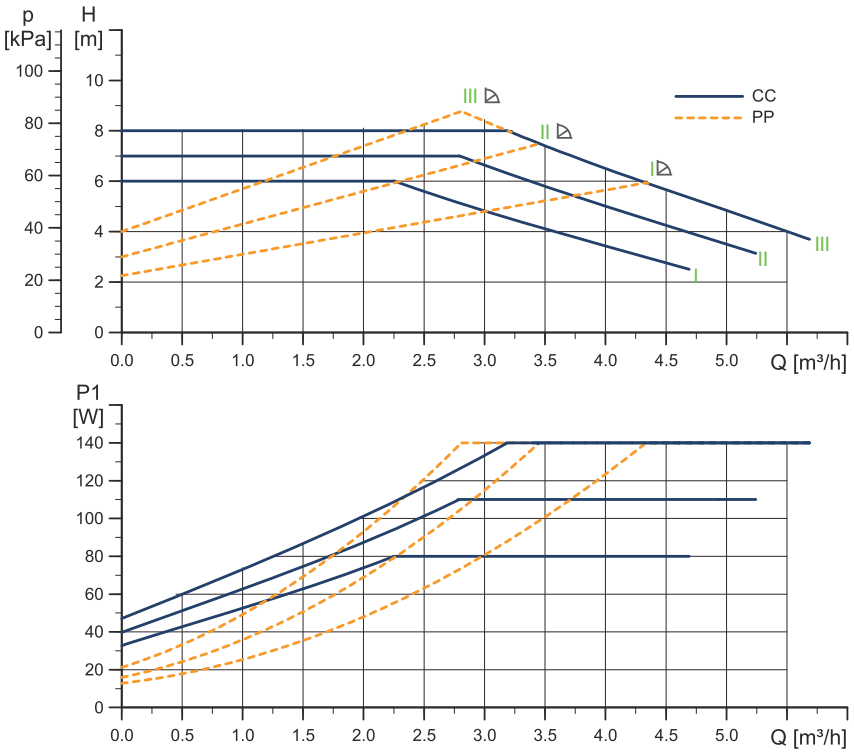


Fig. 14 Pump setting in relation to performance

Setting	Pump curve	Function
I	Lowest proportional-pressure curve PP1	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. 14. The head (pressure) is reduced at falling heat demand and increased at rising heat demand.
II	Intermediate proportional-pressure curve PP2	The duty point of the pump will move up or down on the intermediate proportional-pressure curve, depending on the heat demand in the system. See fig. 14. The head (pressure) is reduced at falling heat demand and increased at rising heat demand.
III	Highest proportional-pressure curve PP3	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. 14. The head (pressure) is reduced at falling heat demand and increased at rising heat demand.
III	Speed III	The pump runs at a constant speed and consequently on a constant curve. In speed III, the pump is set to run on the maximum curve under all operating conditions. See fig. 14. 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. In speed II, the pump is set to run on the intermediate curve under all operating conditions. See fig. 14.
I	Speed I	The pump runs at a constant speed and consequently on a constant curve. In speed I, the pump is set to run on the minimum curve under all operating conditions. See fig. 14.

UPS2 25-80 180, UPS2 32-80 180

1 x 230 V, 50/60 Hz



TM06 2044 3415

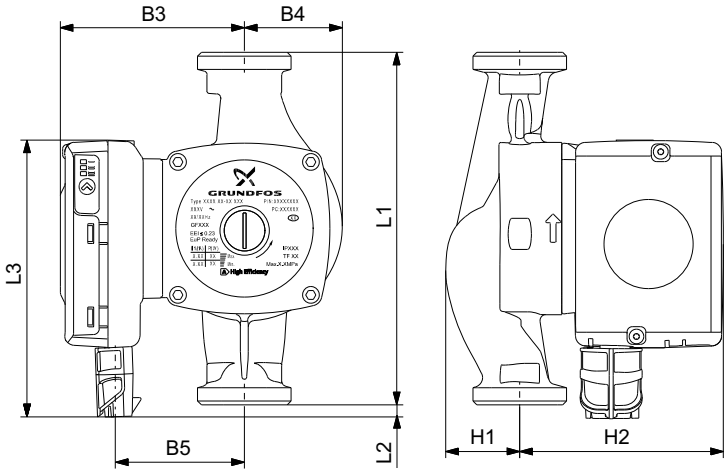
Speed	P1 [W]	$I_{1/1}$ [A]
Min.	11	0.1
Max.	140	1.1

The pump incorporates overload protection.

Connections: See *Insulating kits*, page 13.

System pressure: Maximum 10 bar.

Liquid temperature: 2-95 °C (TF 95).



TM062103 3714

Pump type	Dimensions [mm]										Weights [kg]		Ship. vol. [m³]
	EEI ≤	L1	L2	L3	B3	B4	B5	H1	H2	G	Net	Gross	
UPS2 25-80	0.23	180	22	141	95	50	64	27	112	1 1/2	2.7	2.9	0.005
UPS2 32-80	0.23	180	22	141	95	50	64	27	112	2	2.7	2.9	0.005

8. Product range

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

UPS2

Pump type	Port-to-port length [mm]	Connection	Voltage [V] 50/60 Hz	Product number	Data sheet Page
UPS2 15-40/60	130	G 1	230	98243667	10
UPS2 25-40/60	130	G 1 1/2		98243668	
UPS2 PH-40/60	-	-		98334567	
UPS2 25-80	180	G 1 1/2		98707853	12
UPS2 32-80	180	G 2		98707855	

UPS2, United Kingdom

Pump type	Port-to-port length [mm]	Connection	Voltage [V] 50/60 Hz	Product number	Data sheet Page
UPS2 15-50/60	130	G 1 1/2	230	98334549	11
UPS2 PH-50/60	-	-		98334563	
UPS2 25-80	180	G 1 1/2		98707848	12
UPS2 32-80	180	G 2		98707851	

UPS2, Ireland

Pump type	Port-to-port length [mm]	Connection	Voltage [V] 50/60 Hz	Product number	Data sheet Page
UPS2 25-50/60	130	G 1 1/2	230	98568293	11

UPS2, BU/RO/GR

Pump type	Port-to-port length [mm]	Connection	Voltage [V] 50/60 Hz	Product number	Data sheet Page
UPS2 25-40/60	180	G 1 1/2	230	98633963	10