

Grundfos COMFORT

Circulator pumps

50/60 Hz



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GRUNDFOS 

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1. Product description

Type key Europe

Example	UP	S	20	-14	M	B	X	A	PM
Circulator pump									
Selectric: 3-speed									
Type range: 15 = length 80 mm / Rp 1/2 20 = length 110 mm / G 1 1/4 XX = pump head only									
Maximum head [dm]									
Motor (pump head only - fits all COMFORT pump housings)									
Brass pump housing									
Integrated isolating and non-return valves									
AUTO _{ADAPT}									
Permanent magnet									

Type key USA

Example	UP	10	-16	A	PM	B	5	LC
Circulator pump								
Type range								
Maximum head [dm]								
AUTOADAPT								
Permanent magnet								
Brass pump housing								
5 = 1/2" internal thread N5 = 1/2" NPT U = 1 1/4" NPSM + integrated isolating and non-return valves								
Line cord and plug								

Approvals



Fig. 1 European approvals



Fig. 2 US approvals

Applications

GRUNDFOS COMFORT circulator pumps are designed for

- domestic hot-water systems in single- and two-family houses
- small heating systems
- cooling and air-conditioning systems.

The pumps are suitable for open and closed systems. They must be installed indoors.

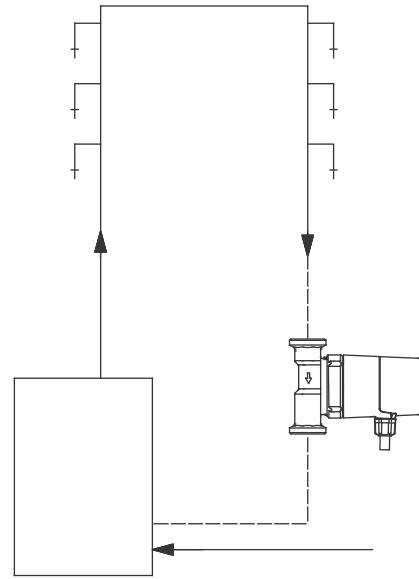


Fig. 3 Single-loop system

TM01 9110 1100

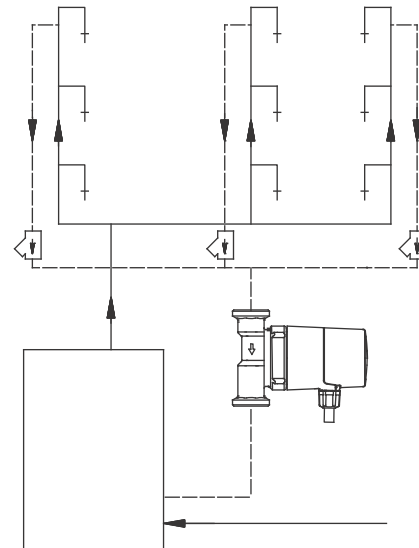


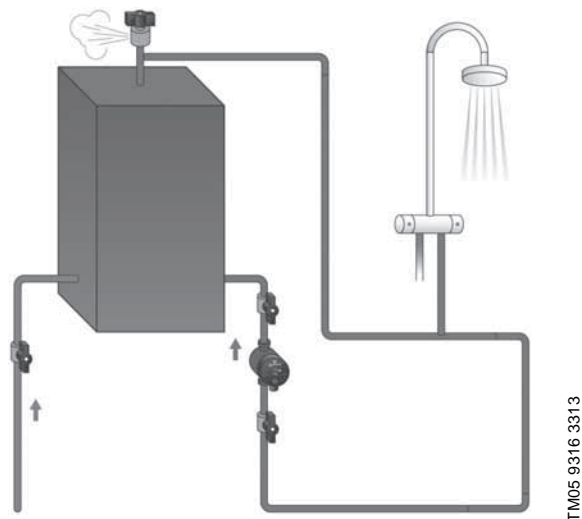
Fig. 4 Branched system

TM01 9111 1100

Domestic hot-water systems

For circulation of drinking water in domestic hot-water systems, use pump type GRUNDFOS COMFORT with stainless-steel, brass or bronze pump housing.

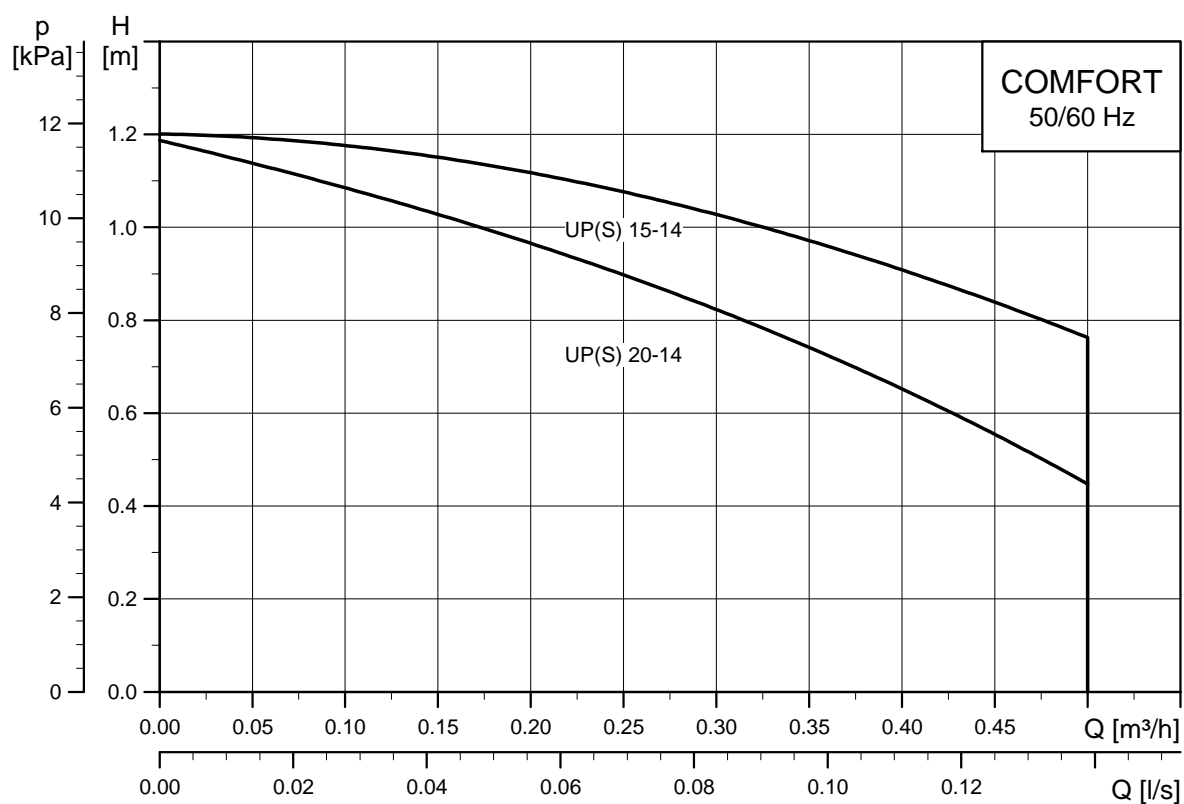
Grundfos recommends that you install the pump in systems with hot-water storage tanks.



TM05 9316 3313

Fig. 5 Domestic hot-water application with hot-water storage tank

Performance range



TM05 8830 2813

Fig. 6 UP(S) COMFORT performance range

2. Operating conditions

Pumped liquids

- Thin, clean, non-aggressive and non-explosive liquids without solid particles or fibres
- Cooling liquids, not containing mineral oil
- Domestic hot water
- Softened water.

The kinematic viscosity of water is 1 mm²/s (1 cSt) at 20 °C. If the pump is used 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 approx. 10 mm²/s, reducing pump performance by approx. 15 %.

When selecting a pump, the viscosity of the pumped liquid must be taken into account.

Liquid and ambient temperatures

Liquid temperature range: 2 to 95 °C.

We recommend that you keep the operating temperature around e.g. 50 °C to minimise build-up of lime deposits. Be aware of the risk of legionella contamination.

The ambient temperature must always be lower than the liquid temperature to minimise condensation in the stator housing.

Maximum system pressure

PN 10: 1.0 MPa (10 bar/145 psi).

Inlet pressure

To prevent cavitation noise and damage to the pump bearing, a minimum inlet pressure of 0.5 bar (5 m head) is required at the pump suction port.

Pump location

Indoors, in a non-aggressive and non-explosive atmosphere.

Relative air humidity: Maximum 95 %.

3. Functions

COMFORT BA PM and BXA PM

COMFORT BA PM and BXA PM models have three operation modes:

- $AUTO_{ADAPT}$ mode
- temperature control mode
- continuous 100 % mode.

$AUTO_{ADAPT}$ mode

COMFORT BA PM and BXA PM pumps feature the $AUTO_{ADAPT}$ function that adapts the pump operating hours by switching on and off according to the tapping pattern of the user(s). This means that the pump provides the maximum comfort and saves energy at the same time.

Energy-saving

The built-in $AUTO_{ADAPT}$ function saves energy in two ways:

- Electrical energy consumption of the pump itself
- Heat energy consumption of the domestic hot-water system.

The $AUTO_{ADAPT}$ function automatically adjusts the number of pump operating hours, based on the hot-water consumption in the given system.

The $AUTO_{ADAPT}$ function requires an included temperature sensor to be installed on the flow pipe 20 to 50 cm from the boiler outlet. This sensor and the temperature sensor incorporated in the pump are used to detect when hot water is tapped. The detected tapping events are logged and used to predict the consumption pattern. The $AUTO_{ADAPT}$ function automatically controls the on/off behaviour of the pump according to this pattern. This ensures that the pump only runs when necessary, which saves both heat energy and electrical energy.

The pump needs two weeks to adapt when hot water is tapped. This means that the pump starts up in temperature mode the first two weeks even if you have selected $AUTO_{ADAPT}$.

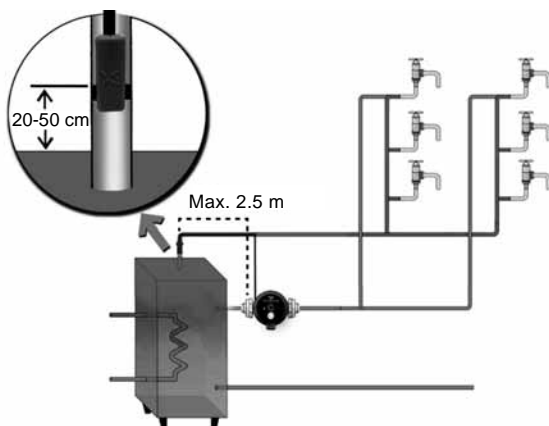


Fig. 7 COMFORT BA PM, BXA PM pump with built-in temperature sensor

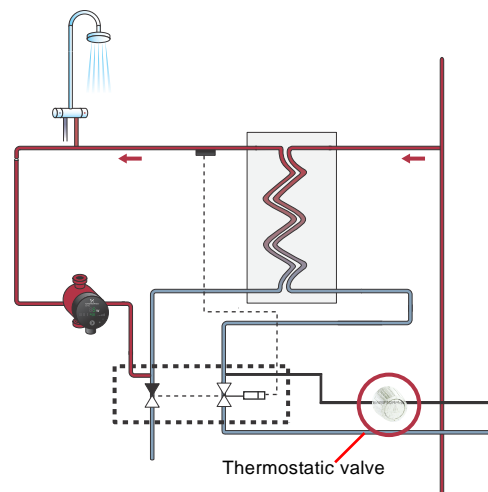
TM04 9359 4010

$AUTO_{ADAPT}$ in heating systems regulated with a thermostatic regulating valve

In systems including a thermostatic regulating valve, choose a COMFORT pump without the $AUTO_{ADAPT}$ function, e.g. from the COMFORT UP(S) range.

Choosing a pump with $AUTO_{ADAPT}$ function will result in two active regulating systems working separately, which is not recommendable.

NOTE: If a pump with $AUTO_{ADAPT}$ function is installed in a circulation system where the temperature of the recirculated water is regulated by a thermostatic regulating valve, Grundfos recommends that you open the thermostatic regulating valve completely. This is done by setting the valve to max., which deactivates its regulating function. See fig. 6.



TM05 7942 1613

Fig. 8 Example of an application with thermostatic regulating valve

Control function

The control function is a combination of three parameters:

- detection of hot-water consumption
- event log function (when the demand occurs)
- pump control.

Detection of hot-water consumption

The detection of hot-water consumption is done via the temperature sensor installed in the flow pipe. The system logs the tapping events. Temperature rise, caused by the pump operation, is not registered in the event log.

Event log function

The COMFORT AUTO pump incorporates an event log that learns the scheme of demand for hot water in the domestic hot-water system. Via the event log, the pump predicts when to start circulating hot water.

The event log function stores the weekly tapping events in the system. The hot-water consumption pattern for two weeks is stored in the event log. See example.

Date	Time of day													
	00:00	00:20	00:40	----->	07:00	07:20	07:40	08:00	08:20	----->	23:30	23:50		
01	0		0			0	T	0	0			0		
02	0		0			0	T	T	0			0		
03	0		0			0	T	0	0			0		
04	0		0			0	T	0	0			0		
05	0		0			0	0	T	0			T		
06	0		0			0	T	0	0			0		
07	0		0			0	T	0	0			0		
08														
09														
10														
11														
12														
13														
14														

0: No consumption.

T: Tapping event is registered.

Example

- From 07:20 to 07:40, six tapping events (T) are registered (morning bath).
- From 07:40 to 08:00, two tapping events (T) are registered.
- From 23:30 to 23:45, one tapping event (T) is registered.

This pattern implies that hot water is to be available for tapping from 07:20 to 08:00.

At 08:00 the pump can stop circulating hot water. Likewise, the pump is to circulate hot water for use from 23:30 to 23:50.

The data shown is for one week of operation only. The pump stores data for two weeks. When data for two weeks has been logged, the pump is able to distinguish between the tapping pattern during workdays and weekends.

Pump control

Pump operation is based on the data stored in the event log and on the temperature of the pipes.

The pump control incorporates a temperature hysteresis, meaning that the pump ensures that the hot-water temperature is within the range of what is accepted as hot water. This temperature hysteresis control is enabled when the data content of the event log makes it probable that hot water will be tapped within the next 20 minutes.

In the example, the hysteresis control will start at 07:00 and run continuously until 08:00.

Disinfection and flushing

Once a week a disinfection function is run for 15 minutes. If, at another time of the week, a higher temperature is measured, the disinfection run will be shifted to this time.

If the pump is switched off for eight hours, it will be on to do a flushing of the circulation pipe with a duration of 15 minutes.

Fault indication

Defective external temperature sensor

If in $AUTO_{ADAPT}$, the red error indicator LED is on and goes off when the pump is switched manually to temperature control mode, the external temperature sensor is defective. In this case, the pump turns internally to temperature control mode, because the external temperature sensor is needed for the $AUTO_{ADAPT}$ control mode. The display does not automatically change to temperature control mode.

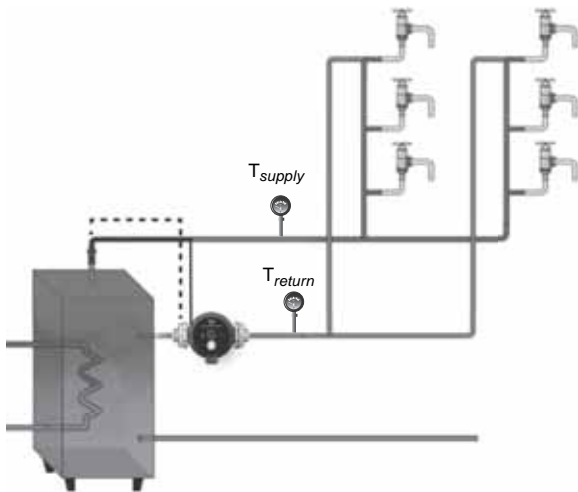
Defective internal temperature sensor

If in $AUTO_{ADAPT}$, the red error indicator is on and doesn't go off when the pump is switched manually to temperature control mode, the internal temperature sensor is defective. In this case, the pump uses the external temperature sensor for the temperature control mode.

Temperature control mode

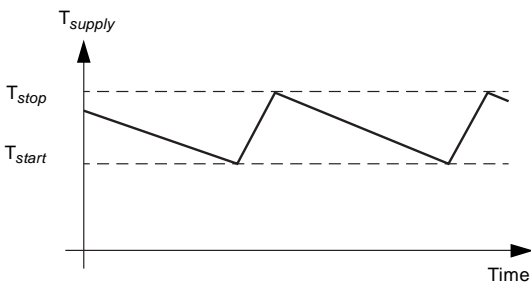
The regulation of the pump is based on temperature control. The working area of the pump is kept within a calculated temperature range. This means that the pump operates in an average temperature area providing the maximum comfort and saves energy at the same time. See fig. 7.

With temperature operation, the maximum temperature measured at both of the sensors is stored and the pump automatically adapts and calculate the gap between T_{stop} and T_{start} . The pump switches on when one of the sensors has a lower temperature than T_{start} . The pump switches off when the T_{stop} temperature range is exceeded on both sensors. See fig. 6.



TM06 0947 1214

Fig. 9 Comfort in heat application



TM06 0948 1214

Fig. 10 Temperature control mode

Continuous 100 % mode

The pump is running continuously at full speed without any control.

4. Construction

Grundfos COMFORT PM circulator pumps come with various pump housing versions and lengths incorporating isolating and non-return valves or prepared for subsequent fitting of such valves.

The motor can be separated from the pump housing, enabling easy maintenance and replacement.

The rotor bearing is self-adjusting and lubricated by the pumped liquid.

The pumps have the following characteristics:

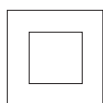
- Parts in contact with the pumped liquid are hermetically separated from the stator by a stainless-steel spherical separator.
- The bearing has no play, and as it has only a single bearing point, it generates very low friction, resulting in reduced power input and noise.

Grundfos COMFORT PM circulator pumps are available with two pump housing versions incorporating isolating and non-return valves or prepared for subsequent fitting of such valves.

The water-conducting part of the pump is hermetically separated from the stator by a stainless-steel spherical separator.

The motor can be separated from the pump housing for easy maintenance and replacement.

Class II electrical insulation



TM05 9197 2913

Fig. 11 Electrical double insulation symbol

All GRUNDFOS COMFORT PM models are designed to be electrically double insulated. This makes the protective earth connector obsolete.

Motor

The motor is a single-phase, 12-pole, permanent-magnet motor in conformity with the EMC directive.

The permanent-magnet motor has no rotating bearing shaft. A green indicator light on the motor is on when the motor is running.

The pump motor is impedance-protected and short-circuit-proof. No additional motor protection is required.

The terminal box is easily accessible and has functional cable connecting terminals. The cable entry is tight and incorporates cable relief.

Voltages

- Europe: 1 x 230 V, 50/60 Hz.
- USA: 1 x 115/230 V, 50/60 Hz.

Enclosure class: IP44.

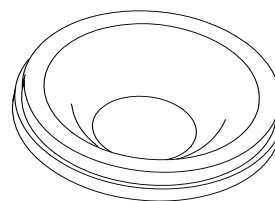
Insulation class: F.

Stator

The stator generates a magnetic field acting directly on the magnetic rotor. As a result, the rotor is caused to rotate. The axial components of the magnetic field act as an attractive force on the rotor, thus stabilising it in its longitudinal axis.

Spherical separator

The stainless-steel spherical separator hermetically seals the water-conducting part of the pump from the electrically active part of the motor without any additional seal.

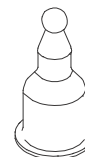


TM06 52014115

Fig. 12 Spherical separator

Bearing pin and bearing ball

The stainless-steel bearing pin is homogeneously welded by laser beam to the spherical separator and the bearing ball. The bearing ball is made of material resistant to wear and corrosion.

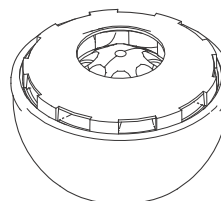


TM06 5202 4115

Fig. 13 Bearing pin

Rotor

The rotor is gimbal-mounted on the bearing ball with its step bearing of high-quality bearing material.



TM06 5203 4115

Fig. 14 Rotor

Pump housing

The pump housing is designed in such a way that a high hydraulic efficiency is achieved when the energy produced by the impeller is converted into pressure. The pump housing thread enables connection to standard pipe dimensions.

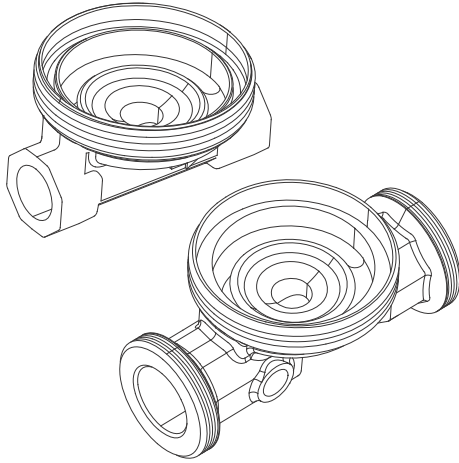


Fig. 15 Pump housings

TM06 5204 4115

Isolating valve and non-return valve

Grundfos COMFORT pump types BX for Europe and BU for the USA come with built-in isolating valve and non-return valve.

The isolating valve ensures that maintenance can be carried out while the suction side is isolated.

The non-return valve isolates the discharge side during maintenance.

Seal ring

Grundfos COMFORT has just one seal ring, between the spherical motor and the pump housing. The seal ring material is resistant to hydrolysis and ageing, thus lasting an entire pump life.

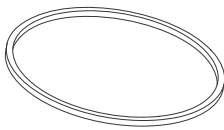


Fig. 16 Seal ring

TM06 5206 4115

Union nut

The union nut ensures that motor and pump housing are tightly connected. Thanks to the thread type, the seal ring is pressed evenly over the entire seal face.

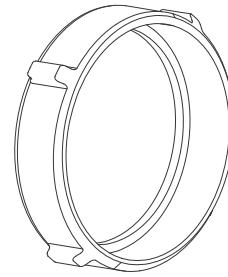


Fig. 17 Union nut

TM06 5207 4115

Sectional drawing

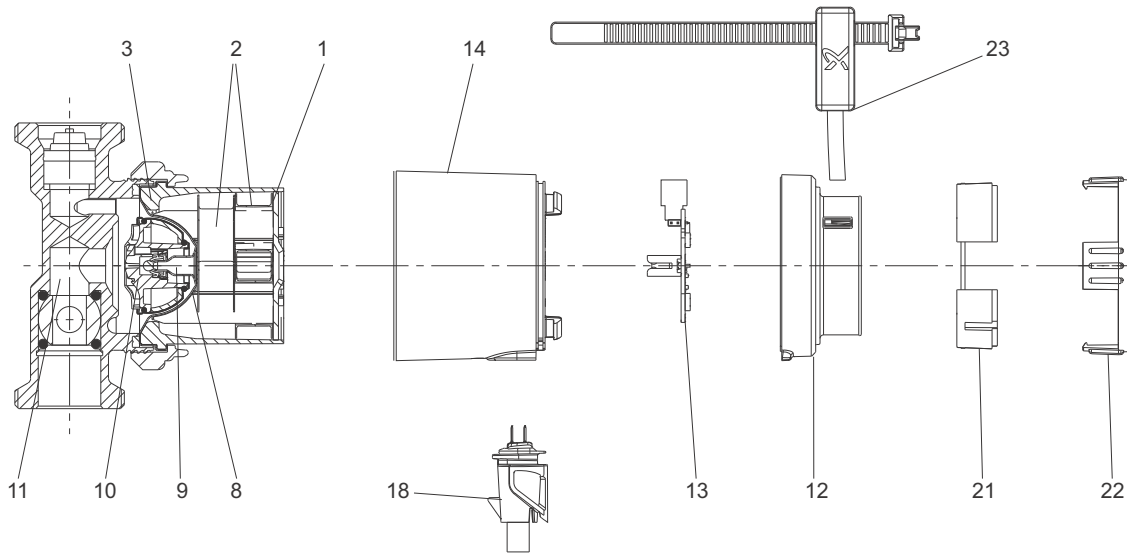
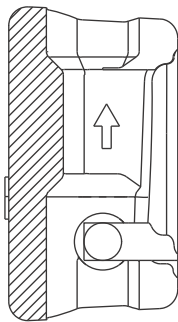


Fig. 18 Sectional drawing COMFORT PM AUTO_{ADAPT}

TM05 2024 4311



TM06 3684 1015

Fig. 19 Sectional drawing insulation shells

Material specification

Pos.	Component	Material	EN	AISI
1	Stator lamination	Steel		
2	Stator windings	Copper wire and enamel		
3	Stator housing	Aluminium/P66		
8	Spherical separator	Stainless steel	1.4016	430
9	Rotor can, complete	Stainless steel/tungsten carbide	1.4571	316 Ti
10	Rotor, impeller	Stainless steel, EPDM, PPO, PFTE, graphite		
11	Pump housing	Brass CW617N		
12	Terminal box cover	PC/ABS		
13	PC board with diode	FR 4		
14	Motor cover	PPO		
15	Screw	Stainless steel	1.4301	304
18	Plug/Alpha plug (BA/BXA)	PA66		
21	Cable ring 1	PC/ABS (AUTO _{ADAPT} variant only)		
22	Cable ring 2	PC/ABS (AUTO _{ADAPT} variant only)		
23	Temperature sensor	(AUTO _{ADAPT} variant only)		
	Insulation shells	EPP 55		

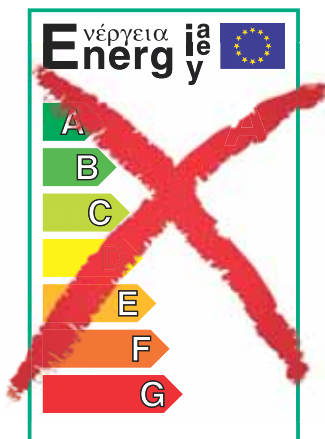
5. Performance curves

Curve conditions

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

- Test liquid: airless water.
- The measurements for UP COMFORT and UPS COMFORT have been made at a water temperature of 20 °C.
- All curves show average values and must not be used as guarantee curves. If a specific minimum performance is required, individual measurements must be made.
- The UP and UPS curves apply to a kinematic viscosity of $\nu = 1 \text{ mm}^2/\text{s}$ (1 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.

Energy labelling



TM05 3936 1712

From 1 January 2013, the previous A to G energy label is no longer effective.

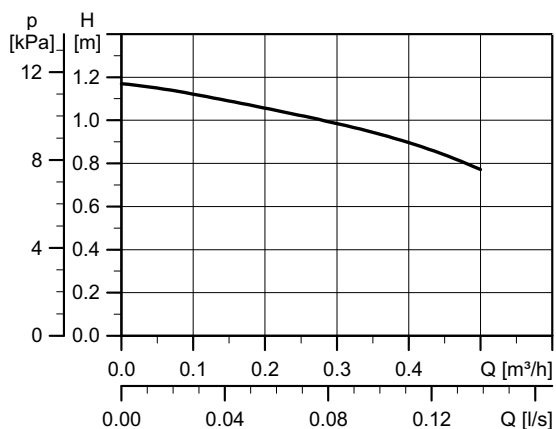
The new energy efficiency index (EEI) must be stated on circulator pumps in order to sell them in the EU.

Exceptions from EuP scope

1. Circulator pumps for domestic hot-water systems are not covered by the EuP requirements from 2013, because they are only suitable for drinking water and may only be used for such purposes. (Commission Regulation (EU) No 622/2012, subject matter and scope (2) (a))
2. Circulator pumps in the COMFORT range are not covered by the EuP requirements from 2013, because their hydraulic performance is below 1 W. (Commission Regulation (EU) No 622/2012, definition (1))

6. Data sheets

COMFORT UP 15-14 B PM, UP 15-14 B PM CN



TM06 3622 0715



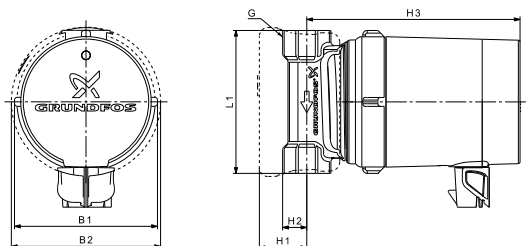
TM05 8545 2013

Electrical data, 1 x 230 V, 50/60 Hz

P1 [W]	I _{1/1} [A]
7	0.07

Connections: Various fittings, see page 27.
 System pressure: Max. 10 bar.
 Liquid temperature: 2-95 °C (TF 95).

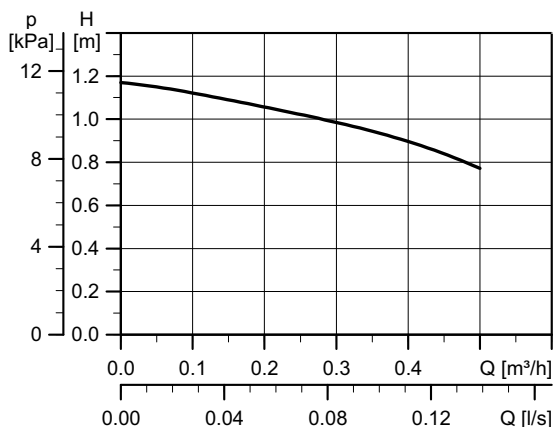
Dimensions



TM05 1650 3411

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m ³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
UP 15-14 B PM	80	25	13.5	119	79.5	84	Rp 1/2	1.00	1.12	0.0026
UP 15-14 B PM CN										

COMFORT UP 15-14 BA PM, UP 15-14 BA PM DE, UP 15-14 BA PM CN

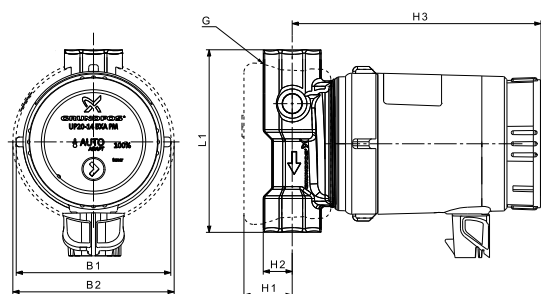


TM06 3622 0715

Electrical data, 1 x 230 V, 50/60 Hz

P1 [W]	I _{1/1} [A]
7	0.07

Dimensions



TM05 2203 4611

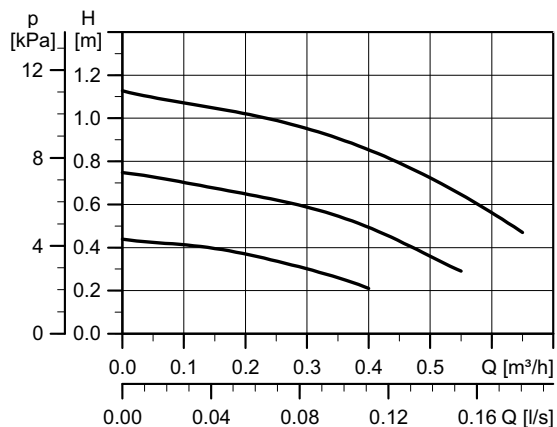
Connections: Various fittings, see page 27.
 System pressure: Max. 10 bar.
 Liquid temperature: 2-95 °C (TF 95).



TM06 3165 4914

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m ³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
UP 15-14 BA PM										
UP 15-14 BA PM DE	80	25	13.5	129	79.5	84	Rp 1/2	1.00	1.12	0.0026
UP 15-14 BA PM CN										

COMFORT UPS 15-14 B PM, UPS 15-14 B PM DE

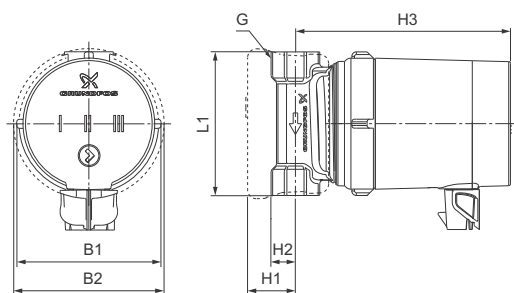


TM06 320 0715

Electrical data, 1 x 230 V, 50/60 Hz

P1 - speed 1/2/3 [W]	$I_{1/1}$ - speed 1/2/3 [A]
2.5 / 4 / 6	0.04 / 0.05 / 0.07

Dimensions



TM06 3435 0215

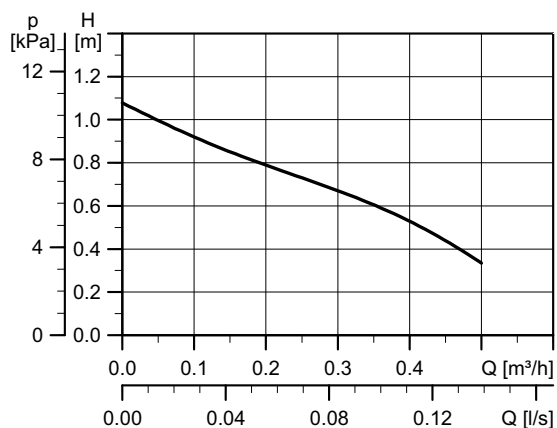


TM05 8544 2013

Connections: Various fittings, see page 27.
 System pressure: Max. 10 bar.
 Liquid temperature: 2-95 °C (TF 95).

Pump type	Dimensions [mm]						Weights [kg]		Shipping volume [m³]	
	L1	H1	H2	H3	B1	B2	G	Net		Gross
UPS 15-14 B PM	80	25	13.5	119	79.5	84	Rp 1/2	1.00	1.12	0.0026
UPS 15-14 B PM DE										

COMFORT UP 20-14 BX PM

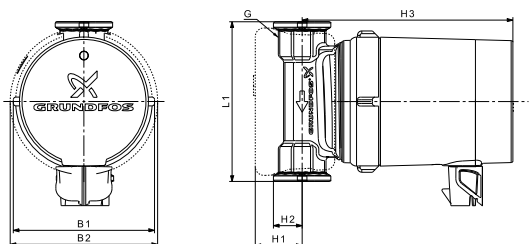


TM06 3623 0715

Electrical data, 1 x 230 V, 50/60 Hz

P1 [W]	I _{1/1} [A]
7	0.07

Dimensions



TM05 2202 4611

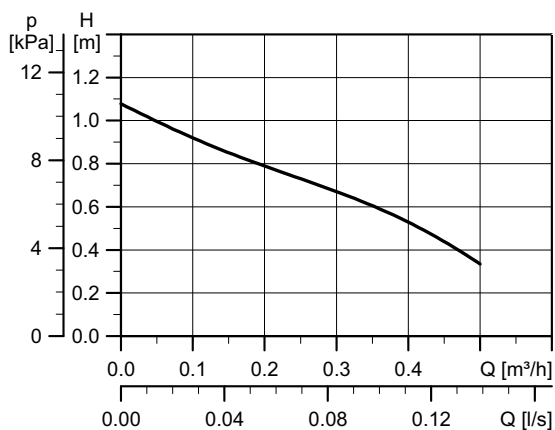


TM05 8549 2013

Connections: Various fittings, see page 27.
 System pressure: Max. 10 bar.
 Liquid temperature: 2-95 °C (TF 95).

Pump type	Dimensions [mm]						Weights [kg]		Shipping volume [m³]	
	L1	H1	H2	H3	B1	B2	G	Net		Gross
UP 20-14 BX PM	110	25	21	119	79.5	84	G 1 1/4	1.35	1.51	0.0034

COMFORT UP 20-14 BXA PM, UP 20-14 BXA PM DE

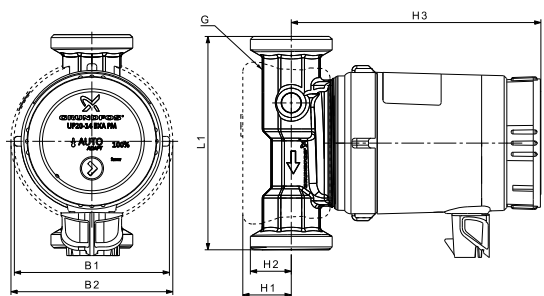


TM06 3623 0715

Electrical data, 1 x 230 V, 50/60 Hz

P1 [W]	I _{1/1} [A]
7	0.07

Dimensions



TM05 1651 3411



TM06 3318 4114

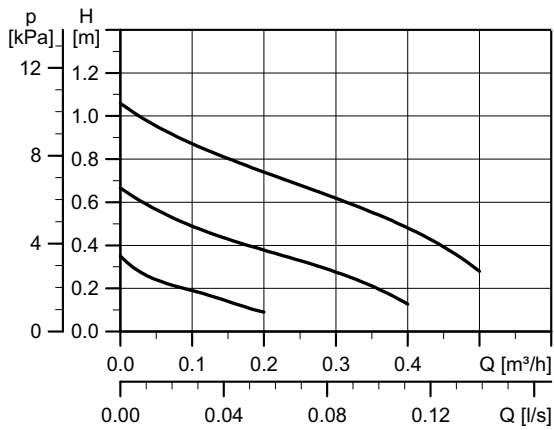
Connections: Various fittings, see page 27.

System pressure: Max. 10 bar.

Liquid temperature: 2-95 °C (TF 95).

Pump type	Dimensions [mm]						Weights [kg]		Shipping volume [m³]	
	L1	H1	H2	H3	B1	B2	G	Net		Gross
UP 20-14 BXA PM	110	25	21	129	79.5	84	G 1 1/4	1.35	1.51	0.0034
UP 20-14 BXA PM DE										

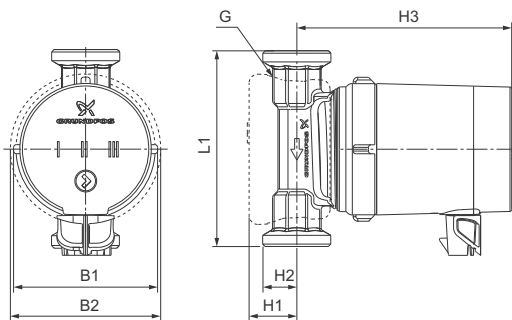
COMFORT UPS 20-14 BX PM, UPS 20-14 BX PM DE



Electrical data, 1 x 230 V, 50/60 Hz

P1 - speed 1/2/3 [W]	I _{1/1} - speed [A]
2.5 / 4 / 6	0.04 / 0.05 / 0.07

Dimensions



Connections: Various fittings, see page 27.
 System pressure: Max. 10 bar.
 Liquid temperature: 2-95 °C (TF 95).

Pump type	Dimensions [mm]						Weights [kg]		Shipping volume [m ³]	
	L1	H1	H2	H3	B1	B2	G	Net		Gross
UPS 20-14 BX PM	110	25	21	119	79.5	84	G 1 1/4	1.00	1.12	0.0026
UPS 20-14 BX PM DE										

COMFORT UPS xx-14 MB PM DE

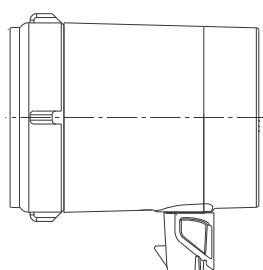
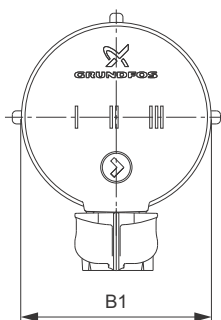
Note:

- Performance curve for pump housing DN 15, see COMFORT UPS 15-14 B PM, UPS 15-14 B PM DE on page 15.
- Performance curve for pump housing DN 20, see COMFORT UPS 20-14 BX PM, UPS 20-14 BX PM DE on page 18.

Electrical data, 1 x 230 V, 50/60 Hz

P1 - speed 1/2/3 [W]	I _{1/1} [A]
2.5/4/6	0.04/0.05/0.07

Dimensions



TM06 3289 5014

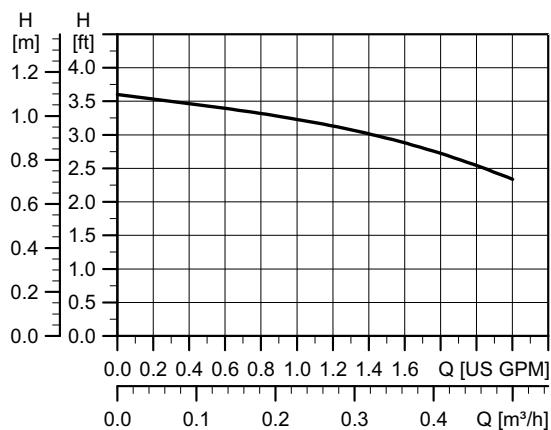


TM05 8550 2013

Connections: Various fittings, see page 27.
 System pressure: Max. 10 bar.
 Liquid temperature: 2-95 °C (TF 95).

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m ³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
UPS xx-14 MB PM DE	-	-	-	(119)	79.5	-	-	0.43	0.44	0.0026

COMFORT UP 10-16 PM B5/LC



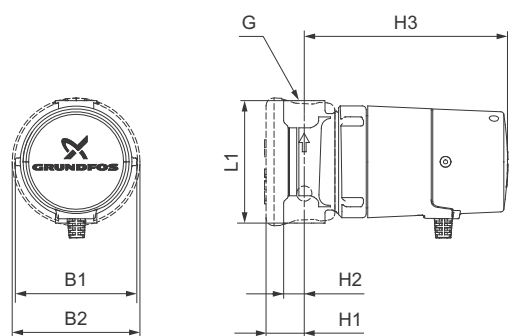
TM06 3624 0715

Electrical data, 1 x 115/230 V, 50/60 Hz

P1 [W]	I _{1/1} [A]
6	0.10 / 0.07

Connections: 1/2" internal thread
 System pressure: 145 psi
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F

Dimensions



TM06 4086 1515

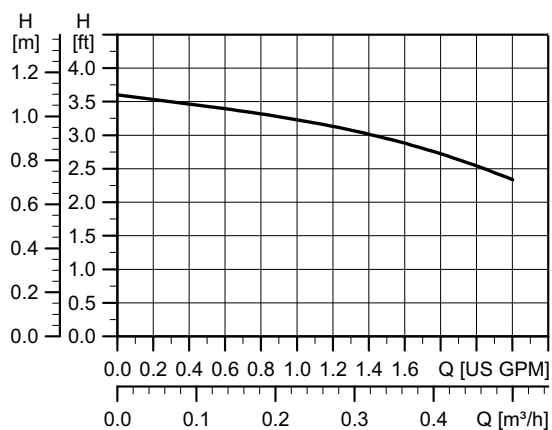
Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft ³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
UP 10-16 PM B5/LC	3 1/8	1	1/2	5 1/4	3	3 1/3	1/2" ★	2.6	2.9	0.116

★ Internal thread



TM06 5324 4315

COMFORT UP 10-16 PM BN5/LC



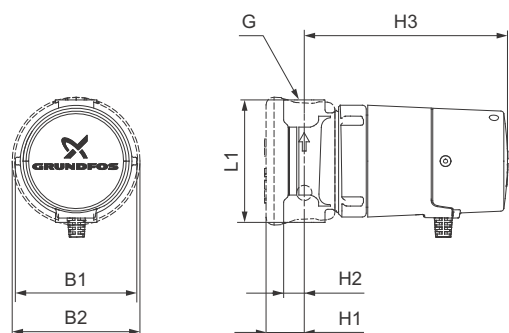
TM06 3624 0715

Electrical data, 1 x 115/230 V, 50/60 Hz

P1 [W]	I _{1/1} [A]
6	0.10 / 0.07

Connections: 1/2" NPT
 System pressure: Max. 145 psi
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F

Dimensions

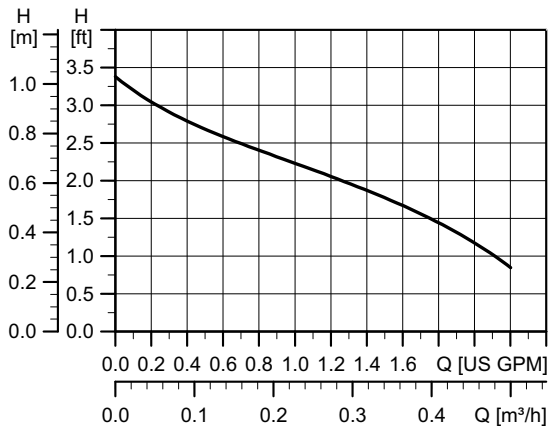


TM06 4086 1515

Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft ³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
UP 10-16 PM BN5/LC	3 1/8	1	1/2	5 1/4	3	3 1/3	1/2" NPT	2.6	2.9	0.116

TM06 5324 4315

COMFORT UP 10-16 PM BU/LC



TM06 3625 0715



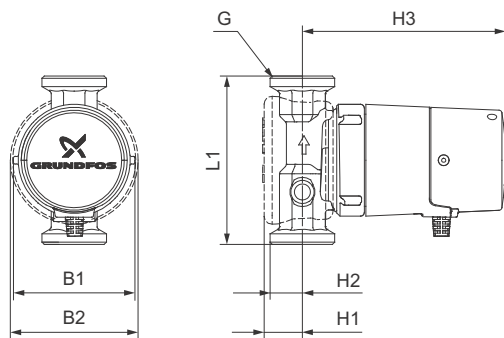
TM06 5324 4315

Electrical data, 1 x 115/230 V, 50/60 Hz

P1 [W]	I _{1/1} [A]
6	0.10 / 0.07

Connections: 1/2" NPT
 System pressure: Max. 145 psi
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F

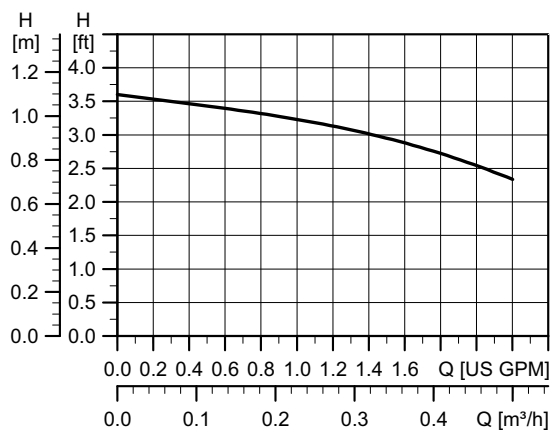
Dimensions



TM06 4087 1515

Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft ³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
UP 10-16 PM BU/LC	4 1/3	1	7/8	5 1/4	3	3 1/3	1/2" NPT	3.4	3.8	0.152

COMFORT UP 10-16 A PM B5/LC

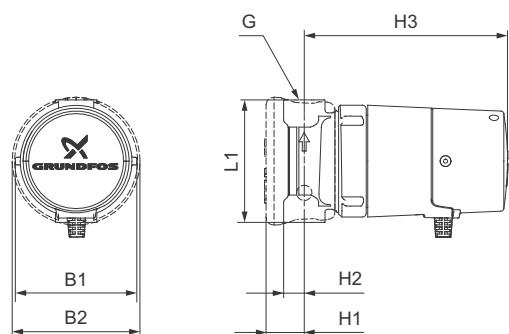


TM06 3624 0715

Electrical data, 1 x 115/230 V, 50/60 Hz

P1 [W]	I _{1/1} [A]
6	0.10 / 0.07

Dimensions



TM06 4086 1515



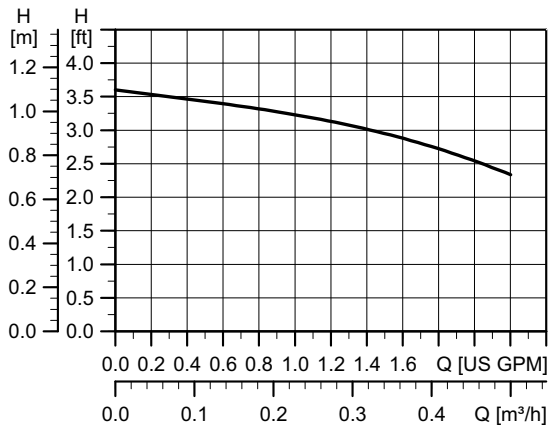
TM06 5323 4315

Connections: 1/2" internal thread
 System pressure: Max. 145 psi
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F

Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft ³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
UP 10-16 A PM B5/LC	3 1/8	1	1/2	5 1/4	3	3 1/3	1/2" ★	2.6	2.9	0.116

★ Internal thread

COMFORT UP 10-16 A PM BN5/LC



TM06 3624 0715

Electrical data, 1 x 115/230 V, 50/60 Hz

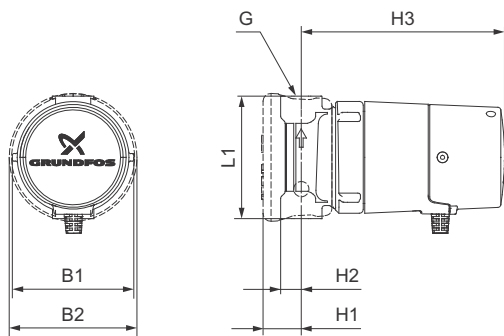
P1 [W]	I _{1/1} [A]
6	0.10 / 0.07



TM06 5323 4315

Connections: 1/2" NPT
 System pressure: Max. 145 psi
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F

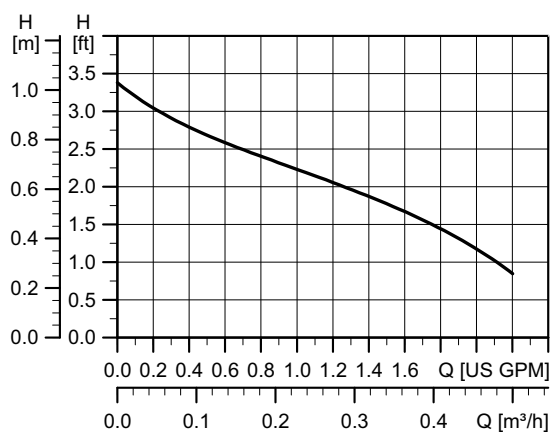
Dimensions



TM06 4086 1515

Pump type	Dimensions [inches]						Weights [lb]		Shipping volume [ft ³]	
	L1	H1	H2	H3	B1	B2	G	Net		Gross
UP 10-16 A PM BN5/LC	3 1/8	1	1/2	5 1/4	3	3 1/3	1/2" NPT	2.6	2.9	0.116

COMFORT UP 10-16 A PM BU/LC



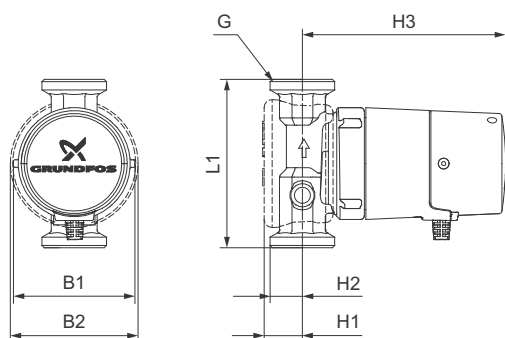
TM06 3625 0715

Electrical data, 1 x 115/230 V, 50/60 Hz

P1 [W]	I _{1/1} [A]
6	0.10 / 0.07

Connections: 1 1/4" NPSM
 System pressure: Max. 145 psi
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F

Dimensions



TM06 4087 1515

Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft ³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
UP 10-16 A PM BU/LC	4 1/3	1	7/8	5 1/4	3	3 1/3	1 1/4"★	3.4	3.8	0.152

★ NPSM

TM06 5323 4315

7. Product numbers

UP(S), international, Germany, China, 50/60 Hz

Market region	Pump type	Product number	Port-to-port length [mm]	Connection	Accessories	Data sheet
International	UP 15-14 B PM	97916771	80 mm	1/2"	Plug-in timer available for all products. See page 28	page 13
	UP 15-14 BA PM	97916757				page 14
	UPS 15-14 B PM	98492992				page 15
	UP 20-14 BX PM	97916772	110 mm	1 1/4"		page 16
	UP 20-14 BXA PM	97916749				page 17
	UPS 20-14 BX PM	98492994				page 18
Germany	UP 15-14 BA PM DE	97989267	80 mm	1/2"		page 14
	UPS 15-14 B PM DE	98358985				page 15
	UP 20-14 BXA PM DE	97989268	110 mm	1 1/4"		page 17
	UPS 20-14 BX PM DE	98358987				page 18
China	UPS xx-14 MB PM DE	98417777	-	-		page 19
	UP 15-14 B PM CN	98485504	80 mm	1/2"		page 13
	UP 15-14 BA PM CN	98485557				page 14

UP, USA, 50/60 Hz

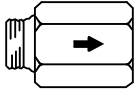
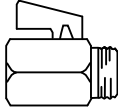
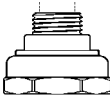

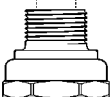
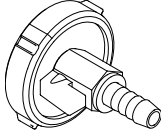
Market region	Pump type	Product number	Port-to-port length [inches]	Connection	Supplied with		Data sheet
					Line cord Plug	Isolating valve Non-return valve	
USA*	UP 10-16 PM B5/LC	98420206	3 1/8"	1/2***	•		page 20
	UP 10-16 PM BN5/LC	98420210		1/2" NPT	•		page 21
	UP 10-16 PM BU/LC	98420221		1/2" NPT	•	•	page 22
	UP 10-16 A PM B5/LC	98420222	4 1/3"	1/2***	•		page 23
	UP 10-16 A PM BN5/LC	98420223		1/2" NPT	•		page 24
	UP 10-16 A PM BU/LC	98420224		1 1/4" NPSM	•	•	page 25

* Lead-free pump housing

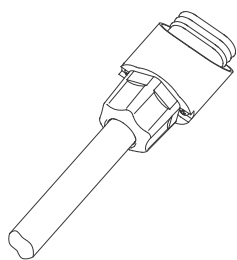
** Internal thread

8. Accessories

Fittings

Pump type	Fitting		Description	Connection	Material	Product number
UP 15-XX		TM01 8647 0300	Non-return valve	1/2	MS	96433904
		TM01 8648 0300	Isolating valve	1/2	MS	96433905
UP 20-XX		TM01 8643 0300	Union set	G 1 1/4 x 15 mm int. / R 1/2 ext.	MS	96433907
		TM01 8644 0300	Union set	G 1 1/4 x Rp 3/4 int.	MS	96433908
		TM01 8645 0300	Union set	G 1 1/4 x Rp 1/2 int. / R 3/4 ext.	MS	96433909
UP 15-XX UP 20-XX		TM01 8560 0300	Venting flange	Flange Union nut Hose	PP CuZn40Pb2 PE	96433906

Service kit for plug



TM01 9911 3400

Type	Product number
Spare plug, COMFORT UP(S) PM	98685259
Connection set for COMFORT (80 pcs)	98890117

Plug-in timer

Plug-in timer to fit 50 Hz household power. See table to find the product to fit country-specific power outlets.

The timer only counts time when it is connected to a power source. There is no battery in the timer.



TM05 8845 2813

Country	Product number
Italy	98465219
Switzerland	98465222
France, Belgium	98465224
UK	98465225
Denmark	98465226
Germany	98465228

9. Grundfos Product Center

Online search and sizing tool to help you make the right choice.

<http://product-selection.grundfos.com>



"SIZING" enables you to size a pump based on entered data and selection choices.

"REPLACEMENT" enables you to find a replacement product. Search results will include information on

- the lowest purchase price
- the lowest energy consumption
- the lowest total life cycle cost.

The screenshot shows the Grundfos Product Center website. At the top, there is a navigation bar with the Grundfos logo and 'PRODUCT CENTER'. Below this is a menu with options: HOME, FIND PRODUCT, COMPARE, YOUR PROJECTS, SAVED ITEMS, and HELP. A search bar is prominently displayed with the text 'Input product number or a whole or partial product name'. Below the search bar are four main navigation buttons: 'SIZING' (Enter pump sizing), 'CATALOGUE' (Products and services), 'REPLACEMENT' (Replace an old pump with a new), and 'LIQUIDS' (Find pump by liquid). The 'QUICK SIZING' section is visible, featuring input fields for 'Flow (Q)*' (m³/h) and 'Head (H)*' (m), and radio buttons to 'Select what to size by': 'Size by application', 'Size by pump design', and 'Size by pump family'. A 'START SIZING' button is located to the right of these options. At the bottom of the 'QUICK SIZING' section, there are links for 'ADVANCED SIZING' with sub-options for 'Advanced sizing by application' and 'Guided selection'.

"CATALOGUE" gives you access to the Grundfos product catalogue.

"LIQUIDS" enables you to find pumps designed for aggressive, flammable or other special liquids.

All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.

Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc. in PDF format.

Subject to alterations.

be think innovate

98553150 1015

ECM: 1168459

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